Hard Copy Required

Friday, February 03, 2012

REQUEST NUMBER: 12-711

LOS ALAMOS
NATIONAL LABORATORY

ATTN: Valerie Davis
General Engineering Laboratories, Inc., Charleston, SC.
2040 Savage Rd
Charleston, SC 29407

These Samples are on:
LANL Request Number:12-711
Per Agreement Number:126310011
Project Cost Code: MR1A015AGWJ0

Please analyse the enclosed samples
according to the schedule indicated:

SHIP DATE: 2/3/2012
TURNAROUND/REPORT DUE: 3/4/2012
TURNAROUND REQ'D: 30 Days

RAD SCREENING: Yes, Below Background
LAB REQUEST COMMENTS:

LANL ER SMO CONTACT:
Signature:

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA:350.1	1	CAAN-12-2025	WG	2/2/2012	
	EPA:351.2	1	CAAN-12-2024	WG	2/2/2012	
	EPA:353.2	1	CAAN-12-2025	WG	2/2/2012	
	EPA:365.4	1	CAAN-12-2025	WG	2/2/2012	
	SW-846:8260B	1	CAAN-12-2024	WG	2/2/2012	
		2	CAAN-12-2024	WG	2/2/2012	
		1	CAAN-12-2026	WG	2/2/2012	
		2	CAAN-12-2026	WG	2/2/2012	
	SW-846:8270C	1	CAAN-12-2024	WG	2/2/2012	
		2	CAAN-12-2024	WG	2/2/2012	

Hard Copy Required

Friday, February 03, 2012

REQUEST NUMBER: 12-711

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	SW-846:8270C	3	CAAN-12-2024	WG	2/2/2012	
	SW-846:8321A_MOD	1	CAAN-12-2024	WG	2/2/2012	
		2	CAAN-12-2024	WG	2/2/2012	
		3	CAAN-12-2024	WG	2/2/2012	
	SW-846:9060	1	CAAN-12-2024	WG	2/2/2012	

Final Page of REQUEST NUMBER 12-711

Friday, February 03, 2012

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 12-711C

REQUEST NUMBER: 12-711

LOS ALAMOS
NATIONAL LABORATORY

ATTN: Valerie Davis

General Engineering Laboratories, Inc., Charleston, SC.

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

TURNAROUND/REPORT DUE: 3/4/2012

TURNAROUND REQ'D: 30

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
CAAN-12-2024	1	SEPTUM AMBER GLASS	WSP-8260B-VOA	Hydrochloric Acid (HCL)	WG
CAAN-12-2024	2	SEPTUM AMBER GLASS	WSP-8260B-VOA	Hydrochloric Acid (HCL)	WG
CAAN-12-2024	1	AMBER GLASS	WSP-8270C-SVOA	Ice	WG
CAAN-12-2024	2	AMBER GLASS	WSP-8270C-SVOA	Ice	WG
CAAN-12-2024	3	AMBER GLASS	WSP-8270C-SVOA	Ice	WG
CAAN-12-2024	1	AMBER GLASS	WSP-8321A-NMED HEXP	Ice	WG
CAAN-12-2024	2	AMBER GLASS	WSP-8321A-NMED HEXP	Ice	WG
CAAN-12-2024	3	AMBER GLASS	WSP-8321A-NMED HEXP	Ice	WG
CAAN-12-2024	1	AMBER GLASS	WSP-TKN+TOC	Sulfuric Acid (H2SO4)	WG
CAAN-12-2025	1	AMBER GLASS	WSP-NH3+NO3/NO2+ PO4	Sulfuric Acid (H2SO4)	WG
CAAN-12-2026	1	SEPTUM AMBER GLASS	WSP-8260B-VOA	Hydrochloric Acid (HCL)	WG
CAAN-12-2026	2	SEPTUM AMBER GLASS	WSP-8260B-VOA	Hydrochloric Acid (HCL)	WG

Relinquished By: **Date** **Time** **Received By:** **Date** **Time**

Signature Signature

2/3/12 3:00

Signature Signature

Signature Signature

Received for DISPOSAL By: **Date** **Time** **Remarks:**

Signature

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 3734 **EVENT NAME:** Ancho, MDA AB Mon. Group Sampling Q2, January 2012, 2011 Interim Plan rev. 1

SAMPLE ID: CAAN-12-2024 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		02/02/2012	MEDIA:	WGR	OK
TIME COLLECTED (HH:MM)		1035	SUB-MEDIA:	UA	
PRS ID:	Ancho	OK	SAMPLE TECH CODE:	GSP	
LOCATION ID:	R-29		FIELD QC TYPE:	NA	
LOCATION TYPE:	MON		FIELD PREP:	UF	
PORT:	SINGLE COMPLETION		SAMPLE USAGE:	INV	
			SCREEN/PORT DESC:		
FIELD MATRIX:	WG		EXCAVATED: YES / NO (NA)		

COMPOSITE TYPE: NA COMPOSITE TIME INTERVAL: NA WATER FLOWING: YES / NO (NA)

BOREHOLE: YES / NO (NA) BOREHOLE DECLINATION: NA BOREHOLE DIRECTION: NA

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
2		WSP-8260B-VOA	40 ML SEPTUM AMBER GLASS	Hydrochloric Acid (HCL)	Y	NA
2	LG 1/31/12	WSP-8270C-SVOA	1 LITER AMBER GLASS	Ice		
2		WSP-8321A-NMED HEXP	1 LITER AMBER GLASS	Ice		
1		WSP-GrossA/B	1 LITER POLY	None		
2		WSP-HEXMOD	1 LITER AMBER GLASS	Ice		
1		WSP-LL-H-3	1 LITER POLY	None		
1		WSP-RAD	1 GAL POLY	Nitric Acid (HNO3)		
1		WSP-TKN+TOC	500 ML AMBER GLASS	Sulfuric Acid (H2SO4)		
~~1~~		~~Ra226+228~~	~~1 GAL POLY~~	~~Nitric Acid (HNO3)~~	MK 1/30/12	

SAMPLE DESC:
NA

SAMPLE COMMENTS:
Samples taken within 50 feet of a running diesel generator

LOCATION DESC:
NA

FIELD SCREENING/MEASUREMENT RESULTS:

Time (MST)	pH (SU)	Temp (°C)	SC (µS/cm)	DO (mg/L)	Turb (NTU)	ORP (mV)	Q (gpm)
1035	8.13	18.15	133	7.22	8.94	36.2	6.8

COLLECTED BY (PRINT) W Shaw **REVIEWED BY (PRINT)** D Woody

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 3734 **EVENT NAME:** Ancho, MDA AB Mon. Group Sampling Q2, January 2012, 2011 Interim Plan rev.

(Printed Name) D Woody	02/02/12	(Printed Name) M. Martyn	02/02/12
(Signature) D Woody	1200	(Signature)	1200
RELINQUISHED BY	**Date/Time**	**RECEIVED BY**	**Date/Time**
(Printed Name)		(Printed Name)	
(Signature)		(Signature)	

3734
CAAN-12-2024

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 3734 **EVENT NAME:** Ancho, MDA AB Mon. Group Sampling Q2, January 2012, 2011 Interim Plan rev. 1

SAMPLE ID: CAAN-12-2025 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		02/02/2012	MEDIA:	WGR	OK
TIME COLLECTED (HH:MM)		1035	SUB-MEDIA:	UA	
PRS ID:	Ancho	OK	SAMPLE TECH CODE:	GSP	
LOCATION ID:	R-29		FIELD QC TYPE:	NA	
LOCATION TYPE:	MON		FIELD PREP:	F	
PORT:	SINGLE COMPLETION		SAMPLE USAGE:	INV	
			SCREEN/PORT DESC:		
FIELD MATRIX:	WG		EXCAVATED: YES / NO / (NA)		

COMPOSITE TYPE: NA COMPOSITE TIME INTERVAL: NA WATER FLOWING: YES / NO / (NA)

BOREHOLE: YES / NO / (NA) BOREHOLE DECLINATION: NA BOREHOLE DIRECTION: NA

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	NA	WSP-GENINORG	1 LITER POLY	Ice	Y	NA
1		WSP-Met+B+SN +SR+U	1 LITER POLY	Nitric Acid (HNO3)		
1		WSP-NH3+NO3/ NO2+PO4	500 ML AMBER GLASS	Sulfuric Acid (H2SO4)		

SAMPLE DESC:

SAMPLE COMMENTS: See CAAN-12-2024

LOCATION DESC:

FIELD SCREENING/MEASUREMENT RESULTS:

COLLECTED BY (PRINT) W Shaw **REVIEWED BY (PRINT)** D Woody

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) D Woody	02/02/12 1200	(Printed Name) M. Martin	02/02/12 1200
(Signature) D Woody		(Signature)	
RELINQUISHED BY	**Date/Time**	**RECEIVED BY**	**Date/Time**
(Printed Name)		(Printed Name)	
(Signature)		(Signature)	

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 3734 **EVENT NAME:** Ancho, MDA AB Mon. Group Sampling Q2, January 2012, 2011 Interim Plan rev. 1

SAMPLE ID: CAAN-12-2026 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		02/02/12 DW 02/02/12 2012	MEDIA:	WGR	OK
TIME COLLECTED (HH:MM)		1035	SUB-MEDIA:	UA	
PRS ID:	Ancho	OK	SAMPLE TECH CODE:	NA	
LOCATION ID:	R-29		FIELD QC TYPE:	FTB	
LOCATION TYPE:	MON		FIELD PREP:	UF	
PORT:	SINGLE COMPLETION		SAMPLE USAGE:	QC	
			SCREEN/PORT DESC:		
FIELD MATRIX:	WG		EXCAVATED: YES / NO / (NA)		

COMPOSITE TYPE: NA COMPOSITE TIME INTERVAL: NA WATER FLOWING: YES / NO / (NA)

BOREHOLE: YES / NO / (NA) BOREHOLE DECLINATION: NA BOREHOLE DIRECTION: NA

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1 2	45 1/31/12 NA	WSP-8260B-VOA	40 ML SEPTUM AMBER GLASS	Hydrochloric Acid (HCL)	Y	NA

SAMPLE DESC: QC Sample of CAAN-12-2024

SAMPLE COMMENTS:

LOCATION DESC: See CAAN-12-2024

FIELD SCREENING/MEASUREMENT RESULTS:

COLLECTED BY (PRINT) W Shaw **REVIEWED BY (PRINT)** D Woody

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) D Woody	02/02/12	(Printed Name) M. Montoya	02/02/12
(Signature) D Woody	1200	(Signature)	1200
RELINQUISHED BY	**Date/Time**	**RECEIVED BY**	**Date/Time**
(Printed Name)		(Printed Name)	
(Signature)		(Signature)	

DATA VALIDATION COVER SHEET

5114-1

Data Validation Cover Sheet

Records Use only

Los Alamos NATIONAL LABORATORY EST.1943

Section I.

REQUEST NUMBER: 12-711 VALIDATION DATE: 3/8/12 LAB CODE: GEL

CONTRACT LABORATORY NAME: GEL Laboratories LLC

VALIDATOR: Eric T. Mink ORGANIZATION: Analytical Quality Associates, Inc.

ANALYTICAL SUITE (CHECK ALL THAT APPLY):

☐ **TPH-GRO**	☐ **HIGH EXPLOSIVES**	☐ **DIOXIN FURANS**	☐ **LCMSMS PERCHLORATES**
☐ **TPH-DRO**	☐ **METALS**	☐ **PCB CONGENERS**	☐ **ORGANOCHLORINE PESTICIDES/POLYCHLORINATED BIPHENYLS**
☐ **GENERAL CHEMISTRY**	☐ **RADIOCHEMISTRY**	☐ **LCMSMS HIGH EXPLOSIVES**	

☒ **OTHER (DESCRIBE):** VOCs

Section II. Completeness Check

YES	NO	N/A	(CHECK ONE)	YES	NO	N/A	(CHECK ONE)
☒	☐	☐	1. CHAIN-OF-CUSTODY FORM(S)	☒	☐	☐	6. RAW/BSS DATA
☒	☐	☐	2. CASE NARRATIVE	☒	☐	☐	7. QUALITY CONTROL FORMS
☒	☐	☐	3. SAMPLE RESULT FORMS	☒	☐	☐	8. QUANTITATION REPORTS
☒	☐	☐	4. SAMPLE CHROMATOGRAMS	☒	☐	☐	9. TICS FORMS
☐	☐	☒	5. STANDARD CHROMATOGRAMS	☒	☐	☐	10. TICS MASS SPECTRA

Comments/problems noted (include information about requests for further information submitted to the contract laboratory and agreed-upon date of resolution and contract laboratory point of contact):

1. Naphthalene was detected in the MB. The associated sample results were NDs and, thus, were not qualified.
2. The 1,2,3-trichlorobenzene result for sample CAAN-12-2026RA was analyzed >1X but ≤2X the method specified HT. The associated sample result was an ND and, thus, was qualified UJ,V9.
3. The ICAL %RSDs were >15% for bromoform and 1,2-dibromo-3-chloropropane. The associated sample results were NDs and, thus, were qualified UJ,V7a.
4. The ICAL, ICV and CCV RRFs were <0.05 but ≥0.01 for acetonitrile, n-butyl alcohol, propionitrile, and isobutyl alcohol. The associated sample results were NDs and, thus, were qualified UJ,V7b.
5. The ICV and/or CCV %Ds were >20% for dichlorodifluoromethane, acrolein, and 2-chloro-1,3-butadiene. The associated sample results were NDs and, thus, were qualified UJ,V7c.
6. It should be noted that the MSD %R were outside the laboratory's acceptance limits for iodomethane and carbon disulfide and ten target compounds were not represented in the MS/MSD spiking solution. It should also be noted that the MS/MSD analyses were performed on a LANL sample from another RN. However, MS/MSD analyses were not required for this method and, thus, no sample data were qualified.

Reviewed by: Larry M. Fukui Level: I Date: 3/12/12

VALIDATOR'S SIGNATURE: Eric T. Mink DATE: 3/8/12

DATA VALIDATION COVER SHEET

5114-1 **Data Validation Cover Sheet**	Records Use only 
Form 5114-1, Revision 0.0	LOS ALAMOS Environmental Restoration Project

VOLATILE ORGANIC COMPOUND (VOC) ANALYTICAL DATA VALIDATION CHECKLIST

5114-2

Volatile Organic Compound (VOC) Analytical Data Validation Checklist

Records Use only

Los Alamos NATIONAL LABORATORY EST.1943

Yes	No	N/A		Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
☒	☐	☐	1. The holding time was >1 and ≤2 times the applicable holding time requirement.	UJ, V9	J-, V9
☐	☒	☐	2. The holding time was >2 times the applicable holding time requirement.	R, V9a	J-, V9a
☐	☐	☒	3. The instrument performance sample did not pass method acceptance criteria.	R, V16	R, V16
☐	☐	☒	4. Samples were analyzed outside specific method tune time criteria.	N/A	J, V16b
☐	☐	☒	5. The required instrument performance sample information is missing. Contact the SMO or external laboratory for information.	R, V16c	R, V16c
☐	☒	☐	6. The affected results were not analyzed with a valid 5-point calibration curve and/or a standard at the reporting limit.	UJ or R, V7	J, V7
☒	☐	☐	7. The affected analytes were analyzed with an initial calibration curve that exceeded the %RSD criteria and/or the associated multipoint calibration correlation coefficient is <0.995.	UJ, V7a	J, V7a
☒	☐	☐	8. The affected analytes were analyzed with an RRF of <0.05 in the initial calibration and/or CCV.	R, V7b	J, V7b
☒	☐	☐	9. The Initial Calibration Verification (ICV) and/or Continuing Calibration Verification (CCV) were recovered outside the method-specific limits.	UJ, V7c	J, V7c
☐	☒	☐	10. The ICV and/or CCV were not analyzed at the appropriate method frequency.	UJ, V7d	J, V7d
☐	☒	☐	11. Required calibration information is missing or samples were analyzed on an expired calibration. Contact the SMO or external laboratory for information.	R, V7f	R, V7f

VOLATILE ORGANIC COMPOUND (VOC) ANALYTICAL DATA VALIDATION CHECKLIST	
5114-2 **Volatile Organic Compound (VOC) Analytical Data Validation Checklist**	Records Use only Los Alamos NATIONAL LABORATORY EST.1943

Yes	No	N/A		Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
☒	☐	☐	12. The sample result is ≤5X (10X for common organic laboratory contaminants) the concentration of the related analyte in the method blank.	U, V4	N/A
☐	☒	☐	13. The affected analytes are considered estimated and biased high because this analyte was identified in the method blank but was >5X (10X for common laboratory contaminants).	N/A	J, V4a
☐	☒	☐	14. The sample result is ≤5X the concentration of the related analyte in the trip blank, rinsate blank, and/or equipment blank.	U, V4d	N/A
☐	☒	☐	15. Required method blank information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, V4e	R, V4e
☐	☒	☐	16. The IS retention time has shifted by more than 30 seconds.	UJ, V0	J, V0
☐	☐	☒	17. Analyte is positively confirmed but outside the IS retention time window; however, spectral matches must be provided.	N/A	J, V0a
☐	☒	☐	18. Required IS retention time documentation is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, V0b	R, V0b
☐	☐	☒	19. The quantitating IS are count is <10% of the expected value, which indicates increased potential for false negative results and other possible problems with sample quantitation. Follow method-specific windows.	R, V1a	J, V1a
☐	☐	☒	20. The IS area count for the quantitating IS is <50% but >10% for organics window relation to the previous continuing calibration. Follow the method-specific windows.	UJ, V1b	J, V1b

VOLATILE ORGANIC COMPOUND (VOC) ANALYTICAL DATA VALIDATION CHECKLIST	
5114-2 **Volatile Organic Compound (VOC) Analytical Data Validation Checklist**	Records Use only Los Alamos NATIONAL LABORATORY EST.1943

Yes	No	N/A	(Check One)	Assign Qualifier Listed Below If Criterion = Yes	
				Non-detected Analyte	Detected Analyte
☐	☐	☒	21. The IS area count for the quantitating IS is >200% of the area count for the previous organic continuing calibration. Follow the method-specific windows.	UJ, V1c	J, V1c
☐	☐	☒	22. Required IS information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, V1d	R, V1d
☐	☒	☐	23. The surrogate is <10%R. Follow the external laboratory limits located within the associated data package.	R, V3	J-, V3
☐	☒	☐	24. The surrogate is < the Lower Acceptance Limit (LAL) but ≥10%R. Follow the external laboratory limits located within the associated data package.	UJ, V3a	J-, V3a
☐	☒	☐	25. The surrogate %R is > the Upper Acceptance Limit (UAL) Follow the external laboratory limits located within the associated data package.	N/A	J+, V3b
☐	☒	☐	26. At least one surrogate is > the UAL and one surrogate is < the LAL. Follow the external laboratory limits located within the associated data package.	UJ, V3c	J, V3c
☐	☒	☐	27. Required surrogate information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, V3d	R, V3d
☐	☒	☐	28. The LCS percent recovery was <10%. Follow the external laboratory limits located within the associated data package.	R, V12	J-, V12
☐	☒	☐	29. The LCS percent recovery was < the LAL but > 10%. Follow the external laboratory limits located within the associated data package.	UV, V12a	J-, V12a
☐	☒	☐	30. The LCS percent recover was > the UAL. Follow the external laboratory limits located within the associated data package.	N/A	J+, V12b

VOLATILE ORGANIC COMPOUND (VOC) ANALYTICAL DATA VALIDATION CHECKLIST	
5114-2 **Volatile Organic Compound (VOC) Analytical Data Validation Checklist**	Records Use only 

Yes	No	N/A		Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
☐	☒	☐	31. The LCS documentation is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, V12c	R, V12c
☐	☐	☒	32. The affected analyte is considered not detected because mass spectrum did not meet specifications.	N/A	U, V8
☐	☐	☒	33. The mass spectrum column documentation is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, V8a	R, V8a
☐	☒	☐	34. Duplicate, dilution, or reanalysis.	UJ, V88	J, V88
☐	☐	☒	35. The affected analytes have elevated detection limits and may not meet project DQOs because the sample was diluted without any target analytees identified due to matrix interference. Qualify as Reject if the analytical laboratory cannot provide proof for matrix interference.	UJ, R, V15	R, V15
☒	☐	☐	36. Qualification of data via data validation did not occur based on Quality Control requirements in this procedure. Adhere to the external laboratory qualifiers found within the Form I analytical data summary sheets generated by the external laboratory.	U, U_LAB	J, J_LAB, NQ, NQ
☐	☒	☐	37. The LANL project chemist identified quality deficiencies in the reported data that requires further qualification. This code can only be used and/or under advisement by the LANL project chemist.	UJ, R, V19	J, R, V19

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/02/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**295388001**	**Date Received:**	**02/04/2012 09:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAAN-12-2024**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/15/2012 17:21**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2012 17:21**				
Data File:	**021512V9\9Z319.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00	UJ,V7c
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00	
75-01-4	Vinyl chloride	U	1.00	ug/L	0.500	1.00	
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00	
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00	
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00	
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00	
67-64-1	Acetone	U	10.0	ug/L	3.50	10.0	
75-05-8	Acetonitrile	U	25.0	ug/L	6.25	25.0	UJ,V7b
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00	
74-88-4	Iodomethane	U	5.00	ug/L	1.25	5.00	
75-09-2	Methylene chloride	U	10.0	ug/L	3.00	10.0	
75-15-0	Carbon disulfide	U	5.00	ug/L	1.25	5.00	
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.250	1.00	
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00	
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00	
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00	
78-93-3	2-Butanone	U	5.00	ug/L	1.25	5.00	
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00	
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00	
67-66-3	Chloroform	U	1.00	ug/L	0.250	1.00	
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00	
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.325	1.00	
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.250	1.00	
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0	UJ,V7b
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00	
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.250	1.00	
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00	
79-01-6	Trichloroethylene	U	1.00	ug/L	0.250	1.00	
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.250	1.00	
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.250	1.00	
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00	
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.25	5.00	
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.250	1.00	
108-88-3	Toluene	U	1.00	ug/L	0.250	1.00	
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.250	1.00	
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.250	1.00	
591-78-6	2-Hexanone	U	5.00	ug/L	1.25	5.00	

ETM
3/8/12

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/02/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**295388001**	**Date Received:**	**02/04/2012 09:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAAN-12-2024**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/15/2012 17:21**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2012 17:21**				
Data File:	**021512V9\9Z319.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00	
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00	
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00	
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.250	1.00	
108-90-7	Chlorobenzene	U	1.00	ug/L	0.250	1.00	
100-41-4	Ethylbenzene	U	1.00	ug/L	0.250	1.00	
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.500	2.00	
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00	
100-42-5	Styrene	U	1.00	ug/L	0.250	1.00	
75-25-2	Bromoform	U	1.00	ug/L	0.250	1.00	UJ,V7a
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.250	1.00	
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00	
108-86-1	Bromobenzene	U	1.00	ug/L	0.250	1.00	
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.250	1.00	
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.250	1.00	
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.250	1.00	
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.250	1.00	
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.250	1.00	
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.250	1.00	
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.250	1.00	
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.250	1.00	
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.250	1.00	
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.250	1.00	
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.250	1.00	
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.250	1.00	
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.300	1.00	UJ,V7a
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00	
91-20-3	Naphthalene	U	1.00	ug/L	0.250	1.00	
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.332	1.00	
107-02-8	Acrolein	U	5.00	ug/L	1.25	5.00	UJ,V7c
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.00	5.00	
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00	
107-13-1	Acrylonitrile	U	5.00	ug/L	1.00	5.00	
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00	UJ,V7c
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00	UJ,V7b
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.00	5.00	
78-83-1	Isobutyl alcohol	U	50.0	ug/L	12.5	50.0	UJ,V7b
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.00	5.00	

ETM
3/8/12

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/02/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**295388001**	**Date Received:**	**02/04/2012 09:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAAN-12-2024**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/15/2012 17:21**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2012 17:21**				
Data File:	**021512V9\9Z319.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.00	5.00
630-20-6	1,1,1,2-Tetrachloroethane	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
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.250	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	50.1	50.0	ug/L	100	(76%-127%)
Bromofluorobenzene	53.3	50.0	ug/L	107	(80%-120%)
Toluene-d8	49.0	50.0	ug/L	98.0	(80%-120%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown hydrocarbon	4.29	67.8	ug/L	0	J
	unknown siloxane	14.77	11.6	ug/L	0	J

ETM
3/8/12

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/02/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**295388004**	**Date Received:**	**02/04/2012 09:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAAN-12-2026**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/15/2012 15:59**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2012 15:59**				
Data File:	**021512V9\9Z316.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00	UJ,V7c
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00	
75-01-4	Vinyl chloride	U	1.00	ug/L	0.500	1.00	
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00	
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00	
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00	
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00	
67-64-1	Acetone	U	10.0	ug/L	3.50	10.0	
75-05-8	Acetonitrile	U	25.0	ug/L	6.25	25.0	UJ,V7b
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00	
74-88-4	Iodomethane	U	5.00	ug/L	1.25	5.00	
75-09-2	Methylene chloride	U	10.0	ug/L	3.00	10.0	
75-15-0	Carbon disulfide	U	5.00	ug/L	1.25	5.00	
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.250	1.00	
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00	
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00	
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00	
78-93-3	2-Butanone	U	5.00	ug/L	1.25	5.00	
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00	
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00	
67-66-3	Chloroform	U	1.00	ug/L	0.250	1.00	
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00	
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.325	1.00	
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.250	1.00	
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0	UJ,V7b
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00	
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.250	1.00	
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00	
79-01-6	Trichloroethylene	U	1.00	ug/L	0.250	1.00	
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.250	1.00	
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.250	1.00	
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00	
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.25	5.00	
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.250	1.00	
108-88-3	Toluene	U	1.00	ug/L	0.250	1.00	
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.250	1.00	
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.250	1.00	
591-78-6	2-Hexanone	U	5.00	ug/L	1.25	5.00	

ETM
3/8/12

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/02/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**295388004**	**Date Received:**	**02/04/2012 09:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAAN-12-2026**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/15/2012 15:59**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2012 15:59**				
Data File:	**021512V9\9Z316.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00	
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00	
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00	
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.250	1.00	
108-90-7	Chlorobenzene	U	1.00	ug/L	0.250	1.00	
100-41-4	Ethylbenzene	U	1.00	ug/L	0.250	1.00	
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.500	2.00	
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00	
100-42-5	Styrene	U	1.00	ug/L	0.250	1.00	
75-25-2	Bromoform	U	1.00	ug/L	0.250	1.00	UJ,V7a
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.250	1.00	
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00	
108-86-1	Bromobenzene	U	1.00	ug/L	0.250	1.00	
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.250	1.00	
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.250	1.00	
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.250	1.00	
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.250	1.00	
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.250	1.00	
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.250	1.00	
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.250	1.00	
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.250	1.00	
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.250	1.00	
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.250	1.00	
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.250	1.00	
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.250	1.00	
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.300	1.00	UJ,V7a
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00	
91-20-3	Naphthalene	U	1.00	ug/L	0.250	1.00	
107-02-8	Acrolein	U	5.00	ug/L	1.25	5.00	UJ,V7c
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.00	5.00	
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00	
107-13-1	Acrylonitrile	U	5.00	ug/L	1.00	5.00	
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00	UJ,V7c
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00	UJ,V7b
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.00	5.00	
78-83-1	Isobutyl alcohol	U	50.0	ug/L	12.5	50.0	UJ,V7b
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.00	5.00	
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.00	5.00	

ETM
3/8/12

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/02/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**295388004**	**Date Received:**	**02/04/2012 09:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAAN-12-2026**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/15/2012 15:59**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2012 15:59**				
Data File:	**021512V9\9Z316.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
120-82-1	1,2,4-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.250	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	46.0	50.0	ug/L	92.1	(76%-127%)
Bromofluorobenzene	49.6	50.0	ug/L	99.2	(80%-120%)
Toluene-d8	45.5	50.0	ug/L	91.1	(80%-120%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown hydrocarbon	4.29	39	ug/L	0	J
000634-66-2	Benzene, 1,2,3,4-tetrachloro-	13.67	50	ug/L	99	NJ

ETM
3/8/12

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/02/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**295388004**	**Date Received:**	**02/04/2012 09:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAAN-12-2026RA**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/17/2012 16:16**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/17/2012 16:16**				
Data File:	**021712V9\9Z517.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	
87-61-6	1,2,3-Trichlorobenzene	HU	1.00	ug/L	0.332	1.00	UJ,V9

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	42.6	50.0	ug/L	85.2	(76%-127%)
Bromofluorobenzene	49.5	50.0	ug/L	98.9	(80%-120%)
Toluene-d8	44.9	50.0	ug/L	89.8	(80%-120%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown hydrocarbon	4.27	41.3	ug/L	0	J
	unknown hydrocarbon	7.35	13.1	ug/L	0	J
	unknown siloxane	12.41	5.26	ug/L	0	J
	unknown siloxane	14.77	7.46	ug/L	0	J
	unknown siloxane	16.74	5.75	ug/L	0	J

ETM
3/8/12

DATA VALIDATION COVER SHEET

5115-1

Data Validation Cover Sheet

Records Use only

Los Alamos NATIONAL LABORATORY EST.1943

Section I.

REQUEST NUMBER: 12-711 VALIDATION DATE: 3/8/12 LAB CODE: GEL

CONTRACT LABORATORY NAME: GEL Laboratories LLC

VALIDATOR: Eric T. Mink ORGANIZATION: Analytical Quality Associates, Inc.

ANALYTICAL SUITE (CHECK ALL THAT APPLY):

☐ **TPH-GRO**	☐ **HIGH EXPLOSIVES**	☐ **DIOXIN FURANS**	☐ **LCMSMS PERCHLORATES**
☐ **TPH-DRO**	☐ **METALS**	☐ **PCB CONGENERS**	☐ **ORGANOCHLORINE PESTICIDES/POLYCHLORINATED BIPHENYLS**
☐ **GENERAL CHEMISTRY**	☐ **RADIOCHEMISTRY**	☐ **LCMSMS HIGH EXPLOSIVES**	

☒ **OTHER (DESCRIBE):** SVOCs

Section II. Completeness Check

YES	NO	N/A	(CHECK ONE)	YES	NO	N/A	(CHECK ONE)
☒	☐	☐	1. CHAIN-OF-CUSTODY FORM(S)	☒	☐	☐	6. RAW/BSS DATA
☒	☐	☐	2. CASE NARRATIVE	☒	☐	☐	7. QUALITY CONTROL FORMS
☒	☐	☐	3. SAMPLE RESULT FORMS	☒	☐	☐	8. QUANTITATION REPORTS
☒	☐	☐	4. SAMPLE CHROMATOGRAMS	☒	☐	☐	9. TICS FORMS
☐	☐	☒	5. STANDARD CHROMATOGRAMS	☐	☐	☒	10. TICS MASS SPECTRA

Comments/problems noted (include information about requests for further information submitted to the contract laboratory and agreed-upon date of resolution and contract laboratory point of contact):

1. The ICAL RRF was <0.05 but ≥0.01 for atrazine. The associated sample result was an ND and, thus, was qualified UJ,SV7b.
2. The ICV and/or CCV %Ds were >20% for hexachlorocyclopentadiene; 4-nitrophenol; and p-nitroaniline. The associated sample results were NDs and, thus, were qualified UJ,SV7c.
3. The 2-fluorophenol surrogate %R was > the laboratory's UAL for the MSD. Since this was a QC sample, no sample data were qualified.
4. The LCS %Rs were < the laboratory's LALs but ≥10% for benzoic acid and benzidine. The associated sample results were NDs and, thus, were qualified UJ,SV12a.
5. It should be noted that the MS/MSD analyses were performed on a LANL sample from another RN. No sample data were qualified.
6. It should be noted that four target compounds were not represented in the LCS and MS/MSD spiking solutions. No sample data were qualified.

Reviewed by: Larry M. Fukui Level: I Date: 3/12/12

VALIDATOR'S SIGNATURE: Eric T. Mink DATE: 3/8/12

DATA VALIDATION COVER SHEET

5115-1 **Data Validation Cover Sheet**	Records Use only Los Alamos NATIONAL LABORATORY EST.1943
Form 5115-1, Revision 0.0	LOS ALAMOS Environmental Restoration Project

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYTICAL DATA VALIDATION CHECKLIST

5115-2

Semivolatile Organic Compound (SVOC) Analytical Data Validation Checklist

Records Use only

Los Alamos NATIONAL LABORATORY EST. 1943

Yes	No	N/A		Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
☐	☒	☐	1. The holding time was >1 and ≤2 times the applicable holding time requirement.	UJ, SV9	J-, SV9
☐	☒	☐	2. The holding time was >2 times the applicable holding time requirement.	R, SV9a	J-, SV9a
☐	☒	☐	3. The affected analytes are regarded as rejected because the analytical holding time was exceeded.	R, SV9b	R, SV9b
☐	☐	☒	4. The instrument performance sample did not pass method acceptance criteria.	R, SV16	R, SV16
☐	☐	☒	5. Samples were analyzed outside specific method tune time criteria.	N/A	J, SV16b
☐	☐	☒	6. The required instrument performance sample information is missing. Contact the SMO or external laboratory for information.	R, SV16c	R, SV16c
☐	☒	☐	7. The affected results were not analyzed with a valid 5-point calibration curve and/or a standard at the reporting limit.	UJ, R, SV7	J, SV7
☐	☒	☐	8. The affected analytes were analyzed with an initial calibration curve that exceeded the %RSD criteria and/or the associated multipoint calibration correlation coefficient is <0.995.	UJ, SV7a	J, SV7a
☒	☐	☐	9. The affected analytes were analyzed with an RRF of <0.05 in the initial calibration and/or Continuing Calibration Verification (CCV).	R, SV7b	J, SV7b
☒	☐	☐	10. The Initial Calibration Verification (ICV) and/or CCV were recovered outside the method-specific limits.	UJ, SV7c	J, SV7c
☐	☒	☐	11. The ICV and/or CCV were not analyzed at the appropriate method frequency.	UJ, SV7d	J, SV7d

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYTICAL DATA VALIDATION CHECKLIST	
5115-2 **Semivolatile Organic Compound (SVOC) Analytical Data Validation Checklist**	Records Use only 

Yes	No	N/A		Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
☐	☒	☐	12. Required calibration information is missing or samples were analyzed on an expired calibration. Contact the SMO or external laboratory for information.	R, SV7f	R, SV7f
☐	☒	☐	13. The sample result is ≤5X (10X for common organic laboratory contaminates) the concentration of the related analyte in the method blank.	U, SV4	J, V4a
☐	☒	☐	14. The affected analytes are considered estimated and biased high because this analyte was identified in the method blank but was greater than 5X (10X for common laboratory contaminates).	N/A	J, SV4a
☐	☐	☒	15. The sample result is ≤5X the concentration of the related analyte in the trip blank, rinsate blank, or equipment blank.	UJ, SV4d	N/A
☐	☒	☐	16. Required method blank information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, SV4e	R, SV4e
☐	☒	☐	17. The IS retention time has shifted by more than 30 seconds.	UJ, SV0	J, SV0
☐	☐	☒	18. Analyte is positively confirmed but outside the IS retention time window; however, spectral matches must be provided.	N/A	J, SV0a
☐	☒	☐	19. Required IS retention time documentation is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, SV0b	R, SV0b
☐	☐	☒	20. The quantitating IS area count is <10% of the expected value, which indicates increased potential for false negative results and other possible problems with sample quantitation. Follow method-specific windows.	R, SV1a	J, SV1a

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYTICAL DATA VALIDATION CHECKLIST	
5115-2 **Semivolatile Organic Compound (SVOC) Analytical Data Validation Checklist**	Records Use only 

Yes	No	N/A		Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
☐	☐	☒	21. The IS area count for the quantitating IS is <50% but >10% for organics window relation to the previous continuing calibration. Follow method-specific windows.	UJ, SV1b	J, SV1b
☐	☐	☒	22. The IS area count for the quantitating IS is >200% of the area count for the previous continuing calibration. Follow method-specific windows.	UJ, SV1c	J, SV1c
☐	☐	☒	23. Required IS information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, SV1d	R, SV1d
☐	☒	☐	24. The surrogate is <10%R. Follow the external laboratory limits located within the associated data package.	R, SV3	J-, SV3
☐	☒	☐	25. The surrogate is < the Lower Acceptance Level (LAL) but ≥10%R. Follow the external laboratory limits located within the associated data package.	UJ, SV3a	J-, SV3a
☒	☐	☐	26. The surrogate %R value is > the UAL. Follow the external laboratory limits located within the associated data package.	N/A	J+, SV3b
☐	☒	☐	27. At least one surrogate is > the Upper Acceptance Limit (UAL) and one surrogate is < the LAL. Follow the external laboratory limits located within the associated data package.	UJ, SV3c	J, SV3c
☐	☒	☐	28. Required surrogate information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, SV3d	R, SV3d
☐	☒	☐	29. The LCS percent recovery was <10%. Follow the external laboratory limits located within the associated data package.	R, SV12	J-, SV12

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYTICAL DATA VALIDATION CHECKLIST	
5115-2 **Semivolatile Organic Compound (SVOC) Analytical Data Validation Checklist**	Records Use only 

Yes	No	N/A		Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
☒	☐	☐	30. The LCS percent recovery was < the LAL but >10%. Follow the external laboratory limits located within the associated data package.	UJ, SV12a	J-, SV12a
☐	☒	☐	31. The LCS percent recovery was > the UAL. Follow the external laboratory limits located within the associated data package.	N/A	J+, SV12b
☐	☒	☐	32. The LCS documentation is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, SV12c	R, SV12c
☐	☐	☒	33. The affected analyte is considered not detected because mass spectrum did not meet specifications.	N/A	U, SV8
☐	☐	☒	34. The mass spectrum column documentation is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, SV8a	R, SV8a
☐	☒	☐	35. Duplicate, dilution, or reanalysis.	UJ, SV88	J, SV88
☐	☐	☒	36. The affected analytes have elevated detection limits and may not meet project DQOs because the sample was diluted without any target analytees identified due to matrix interference. Qualify as Reject if the analytical laboratory cannot provide proof for matrix interference.	UJ, R, SV15	R, SV15
☒	☐	☐	37. Qualification of data via data validation did not occur based on Quality Control requirements in this procedure. Adhere to the external laboratory qualifiers found within the Form I analytical data summary sheets generated by the external laboratory.	U, U_LAB	J, J_LAB, NQ, NQ
☐	☒	☐	38. The LANL project chemist identified quality deficiencies in the reported data that requires further qualification. This code can only be used and/or under advisement by the LANL project chemist.	UJ, R, SV19	J, R, SV19

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/02/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**295388001**	**Date Received:**	**02/04/2012 09:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAAN-12-2024**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1186837**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**02/09/2012 12:33**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**02/08/2012 17:46**	**Aliquot:**	**950 mL**	**Final Volume:**	**1 mL**
Data File:	**S020912.B\s3b0912.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	
39638-32-9	bis(2-Chloroisopropyl)ether	U	10.5	ug/L	3.16	10.5	
62-75-9	N-Methyl-N-nitrosomethylamine	U	10.5	ug/L	3.16	10.5	
110-86-1	Pyridine	U	10.5	ug/L	3.16	10.5	
62-53-3	Aniline	U	10.5	ug/L	3.16	10.5	
108-95-2	Phenol	U	10.5	ug/L	3.16	10.5	
111-44-4	bis(2-Chloroethyl) ether	U	10.5	ug/L	3.16	10.5	
95-57-8	2-Chlorophenol	U	10.5	ug/L	3.16	10.5	
541-73-1	1,3-Dichlorobenzene	U	10.5	ug/L	3.16	10.5	
106-46-7	1,4-Dichlorobenzene	U	10.5	ug/L	3.16	10.5	
95-50-1	1,2-Dichlorobenzene	U	10.5	ug/L	3.16	10.5	
100-51-6	Benzyl alcohol	U	10.5	ug/L	3.16	10.5	
95-48-7	o-Cresol	U	10.5	ug/L	3.16	10.5	
65794-96-9	m,p-Cresols	U	10.5	ug/L	3.16	10.5	
621-64-7	N-Nitrosodi--n-propylamine *N-Nitrosodipropylamine*	U	10.5	ug/L	3.16	10.5	
67-72-1	Hexachloroethane	U	10.5	ug/L	3.16	10.5	
98-95-3	Nitrobenzene	U	10.5	ug/L	3.16	10.5	
78-59-1	Isophorone	U	10.5	ug/L	3.16	10.5	
88-75-5	2-Nitrophenol	U	10.5	ug/L	3.16	10.5	
105-67-9	2,4-Dimethylphenol	U	10.5	ug/L	3.16	10.5	
111-91-1	bis(2-Chloroethoxy)methane	U	10.5	ug/L	3.16	10.5	
120-83-2	2,4-Dichlorophenol	U	10.5	ug/L	3.16	10.5	
65-85-0	Benzoic acid	U	21.1	ug/L	6.32	21.1	UJ,SV12a
106-47-8	4-Chloroaniline	U	10.5	ug/L	3.16	10.5	
87-68-3	Hexachlorobutadiene	U	10.5	ug/L	3.16	10.5	
59-50-7	Parachlorometa cresol *4-Chloro-3-methylphenol*	U	10.5	ug/L	3.16	10.5	
91-57-6	2-Methylnaphthalene	U	1.05	ug/L	0.316	1.05	
91-20-3	Naphthalene	U	1.05	ug/L	0.316	1.05	
90-12-0	1-Methylnaphthalene	U	1.05	ug/L	0.316	1.05	
77-47-4	Hexachlorocyclopentadiene	U	10.5	ug/L	3.16	10.5	UJ,SV7c
88-06-2	2,4,6-Trichlorophenol	U	10.5	ug/L	3.16	10.5	
95-95-4	2,4,5-Trichlorophenol	U	10.5	ug/L	3.16	10.5	
91-58-7	2-Chloronaphthalene	U	1.05	ug/L	0.316	1.05	
88-74-4	2-Nitroaniline *o-Nitroaniline*	U	10.5	ug/L	3.16	10.5	
99-09-2	3-Nitroaniline *m-Nitroaniline*	U	10.5	ug/L	3.16	10.5	
131-11-3	Dimethylphthalate	U	10.5	ug/L	3.16	10.5	
606-20-2	2,6-Dinitrotoluene	U	10.5	ug/L	3.16	10.5	

ETM
3/8/12

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/02/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**295388001**	**Date Received:**	**02/04/2012 09:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAAN-12-2024**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1186837**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**02/09/2012 12:33**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**02/08/2012 17:46**	**Aliquot:**	**950 mL**	**Final Volume:**	**1 mL**
Data File:	**S020912.B\s3b0912.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	
121-14-2	2,4-Dinitrotoluene	U	10.5	ug/L	3.16	10.5	
208-96-8	Acenaphthylene	U	1.05	ug/L	0.316	1.05	
83-32-9	Acenaphthene	U	1.05	ug/L	0.316	1.05	
51-28-5	2,4-Dinitrophenol	U	21.1	ug/L	5.26	21.1	
132-64-9	Dibenzofuran	U	10.5	ug/L	3.16	10.5	
58-90-2	2,3,4,6-Tetrachlorophenol	U	10.5	ug/L	3.16	10.5	
84-66-2	Diethylphthalate	U	10.5	ug/L	3.16	10.5	
100-02-7	4-Nitrophenol	U	10.5	ug/L	3.16	10.5	UJ,SV7c
86-73-7	Fluorene	U	1.05	ug/L	0.316	1.05	
7005-72-3	4-Chlorophenylphenylether	U	10.5	ug/L	3.16	10.5	
100-01-6	4-Nitroaniline *p-Nitroaniline*	U	10.5	ug/L	3.16	10.5	UJ,SV7c
534-52-1	2-Methyl-4,6-dinitrophenol	U	10.5	ug/L	3.16	10.5	
122-39-4	Diphenylamine	U	10.5	ug/L	3.16	10.5	
122-66-7	Azobenzene *1,2-Diphenylhydrazine*	U	10.5	ug/L	3.16	10.5	
101-55-3	4-Bromophenylphenylether	U	10.5	ug/L	3.16	10.5	
118-74-1	Hexachlorobenzene	U	10.5	ug/L	3.16	10.5	
87-86-5	Pentachlorophenol	U	10.5	ug/L	3.16	10.5	
88-85-7	Dinoseb	U	10.5	ug/L	3.16	10.5	
85-01-8	Phenanthrene	U	1.05	ug/L	0.316	1.05	
120-12-7	Anthracene	U	1.05	ug/L	0.316	1.05	
84-74-2	Di-n-butylphthalate	U	10.5	ug/L	3.16	10.5	
206-44-0	Fluoranthene	U	1.05	ug/L	0.316	1.05	
129-00-0	Pyrene	U	1.05	ug/L	0.316	1.05	
85-68-7	Butylbenzylphthalate	U	10.5	ug/L	3.16	10.5	
117-81-7	bis(2-Ethylhexyl)phthalate	U	10.5	ug/L	3.16	10.5	
56-55-3	Benzo(a)anthracene	U	1.05	ug/L	0.316	1.05	
218-01-9	Chrysene	U	1.05	ug/L	0.316	1.05	
117-84-0	Di-n-octylphthalate	U	10.5	ug/L	3.16	10.5	
205-99-2	Benzo(b)fluoranthene	U	1.05	ug/L	0.316	1.05	
207-08-9	Benzo(k)fluoranthene	U	1.05	ug/L	0.316	1.05	
50-32-8	Benzo(a)pyrene	U	1.05	ug/L	0.316	1.05	
193-39-5	Indeno(1,2,3-cd)pyrene	U	1.05	ug/L	0.316	1.05	
53-70-3	Dibenzo(a,h)anthracene	U	1.05	ug/L	0.316	1.05	
191-24-2	Benzo(ghi)perylene	U	1.05	ug/L	0.316	1.05	
123-91-1	1,4-Dioxane	U	10.5	ug/L	3.16	10.5	
55-18-5	N-Nitrosodiethylamine	U	10.5	ug/L	3.16	10.5	
930-55-2	N-Nitrosopyrrolidine	U	10.5	ug/L	3.16	10.5	

ETM
3/8/12

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/02/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**295388001**	**Date Received:**	**02/04/2012 09:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAAN-12-2024**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1186837**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**02/09/2012 12:33**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**02/08/2012 17:46**	**Aliquot:**	**950 mL**	**Final Volume:**	**1 mL**
Data File:	**S020912.B\s3b0912.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	
924-16-3	N-Nitrosodi-n-butylamine	U	10.5	ug/L	3.16	10.5	
95-94-3	1,2,4,5-Tetrachlorobenzene	U	10.5	ug/L	3.16	10.5	
608-93-5	Pentachlorobenzene	U	10.5	ug/L	3.16	10.5	
1912-24-9	Atrazine	U	10.5	ug/L	3.16	10.5	UJ,SV7b
92-87-5	Benzidine	U	10.5	ug/L	3.16	10.5	UJ,SV12a
91-94-1	3,3'-Dichlorobenzidine	U	10.5	ug/L	3.16	10.5	
120-82-1	1,2,4-Trichlorobenzene	U	10.5	ug/L	3.16	10.5	

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
2,4,6-Tribromophenol	56.1	105	ug/L	53.3	(30%-128%)
2-Fluorobiphenyl	30.3	52.6	ug/L	57.6	(34%-98%)
2-Fluorophenol	42.8	105	ug/L	40.7	(21%-78%)
Nitrobenzene-d5	36.7	52.6	ug/L	69.8	(39%-117%)
Phenol-d5	27.1	105	ug/L	25.8	(14%-80%)
p-Terphenyl-d14	31.8	52.6	ug/L	60.5	(39%-129%)

Tentatively Identified Compound Summary

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

ETM
3/8/12

DATA VALIDATION COVER SHEET

5122-1

Data Validation Cover Sheet

Records Use only

Los Alamos NATIONAL LABORATORY EST.1943

Section I.

REQUEST NUMBER: 12-711 VALIDATION DATE: 3/8/12 LAB CODE: GEL

CONTRACT LABORATORY NAME: GEL Laboratories LLC

VALIDATOR: Eric T. Mink ORGANIZATION: Analytical Quality Associates, Inc.

ANALYTICAL SUITE (CHECK ALL THAT APPLY):

☐ **TPH-GRO**	☐ **HIGH EXPLOSIVES**	☐ **DIOXIN FURANS**	☐ **LCMSMS PERCHLORATES**
☐ **TPH-DRO**	☐ **METALS**	☐ **PCB CONGENERS**	☐ **ORGANOCHLORINE PESTICIDES/POLYCHLORINATED BIPHENYLS**
☐ **GENERAL CHEMISTRY**	☐ **RADIOCHEMISTRY**	☒ **LCMSMS HIGH EXPLOSIVES**	

☐ **OTHER (DESCRIBE):** _____

Section II. Completeness Check

YES	NO	N/A	(CHECK ONE)	YES	NO	N/A	(CHECK ONE)
☒	☐	☐	1. CHAIN-OF-CUSTODY FORM(S)	☒	☐	☐	6. RAW/BSS DATA
☒	☐	☐	2. CASE NARRATIVE	☒	☐	☐	7. QUALITY CONTROL FORMS
☒	☐	☐	3. SAMPLE RESULT FORMS	☒	☐	☐	8. QUANTITATION REPORTS
☒	☐	☐	4. SAMPLE CHROMATOGRAMS	☐	☐	☒	9. TICS FORMS
☐	☐	☒	5. STANDARD CHROMATOGRAMS	☐	☐	☒	10. TICS MASS SPECTRA

Comments/problems noted (include information about requests for further information submitted to the contract laboratory and agreed-upon date of resolution and contract laboratory point of contact):

1. It should be noted that the parent sample for the MS/MSD analyses was a LANL sample from another RN and the raw data for the parent sample were not included in the data package. No sample data were qualified as a result.
2. It should also be noted that the raw ICAL data from the instrument used for the secondary HE analysis were not reported in the data package. Thus, the surrogate retention time criteria could not be evaluated. No sample data were qualified as a result.

Reviewed by: Larry M. Fukui Level: I Date: 3/12/12

VALIDATOR'S SIGNATURE: Eric T. Mink DATE: 3/8/12

LC/MS/MS HIGH EXPLOSIVE ANALYTICAL DATA VALIDATION CHECKLIST	
5122-2 **LC/MS/MS High Explosive Analytical Data Validation Checklist**	Records Use only Los Alamos NATIONAL LABORATORY EST. 1943

Yes	No	N/A		Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
☐	☒	☐	1. The IS retention time has shifted by more than 30 seconds.	R, UJ, HE0	J, HE0
☐	☒	☐	2. Required IS retention time documentation is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, HE0b	R, HE0b
☐	☐	☒	3. The quantitating IS area count is <25% of the expected value, which indicates increased potential for false negative results and other possible problems with sample quantitation. Follow the method-specific windows.	R, HE1a	J, HE1a
☐	☐	☒	4. The IS area count for the quantitating IS is <70% but >25% of the average of that obtained from the calibration standards.	UJ, HE1b	J+, HE1b
☐	☐	☒	5. The IS area count for the quantitating IS is >130% of the average of that obtained from the calibration standards.	UJ, HE1c	J-, HE1c
☐	☐	☒	6. Required IS information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, HE1d	R, HE1d
☐	☒	☐	7. The surrogate is <10%R. Follow the external laboratory limits.	R, HE3	J-, HE3
☐	☒	☐	8. The surrogate is < the Lower Acceptance Limit but ≥10% recovery. Follow the external laboratory limits.	UJ, HE3a	J-, HE3a
☐	☒	☐	9. The surrogate %R value is > the Upper Acceptance Limit. Follow the external laboratory limits.	N/A	J+, HE3b
☐	☐	☒	10. At least one surrogate is > the Upper Acceptance Limit and one surrogate is < the Lower Acceptance Limit. Follow the external laboratory limits.	UJ, HE3c	J, HE3c

LC/MS/MS HIGH EXPLOSIVE ANALYTICAL DATA VALIDATION CHECKLIST	
5122-2 **LC/MS/MS High Explosive Analytical Data Validation Checklist**	Records Use only Los Alamos NATIONAL LABORATORY EST. 1943

Yes	No	N/A		Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
☐	☒	☐	11. Required surrogate information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, HE3d	R, HE3d
☐	☒	☐	12. The sample result is ≤5 times the concentration of the related analyte in the method blank.	U, HE4	N/A
☐	☒	☐	13. The affected analytes are considered estimated and biased high because this analyte was identified in the method blank but was >5x.	N/A	J, HE4a
☐	☐	☒	14. The sample result is ≤5 times the concentration of the related analyte in the trip blank, rinsate blank, and/or equipment blank.	U, HE4d	N/A
☐	☒	☐	15. Required method blank information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, HE4e	R, HE4e
☐	☒	☐	16. The absence of sample carry-over must be determined and verified.	N/A	R, N, HE4f
☐	☒	☐	17. The affected results were not analyzed with a valid 5-point calibration curve and/or a standard at the reporting limit.	UJ, HE7	J, HE7
☐	☒	☐	18. The affected analytes were analyzed with an initial calibration curve that exceeded the %RSD criteria and/or the associated multipoint calibration correlation coefficient is less < 0.99.	UJ, R, HE7a	J, HE7a
☐	☒	☐	19. The affected analytes were analyzed with a RRF of <0.05 in the initial calibration and/or CCV.	UJ, R, HE7b	J, HE7b
☐	☒	☐	20. The ICV and/or CCV were recovered outside the method limits.	UJ, R, HE7c	J, HE7c
☐	☒	☐	21. The ICV and/or CCV were not analyzed at the appropriate method frequency.	UJ, R, HE7d	J, HE7d
☐	☒	☐	22. Required calibration information is missing or samples were analyzed on an expired calibration. Contact the SMO or external laboratory for information.	R, HE7f	R, HE7f

LC/MS/MS HIGH EXPLOSIVE ANALYTICAL DATA VALIDATION CHECKLIST	
5122-2 **LC/MS/MS High Explosive Analytical Data Validation Checklist**	Records Use only Los Alamos NATIONAL LABORATORY EST. 1943

Yes	No	N/A		Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
☐	☒	☐	23. The mass spectral documentation is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, HE8a	R, HE8a
☐	☒	☐	24. The holding time was >1 and ≤2 times the applicable holding time requirement.	UJ, HE9	J-, HE9
☐	☒	☐	25. The holding time was >2 times the applicable holding time requirement.	R, HE9a	J-, HE9a
☐	☒	☐	26. The LCS percent recovery was <10%. Follow the external laboratory limits.	R, HE12	J-, HE12
☐	☒	☐	27. The LCS percent recovery was < the Lower Acceptance Limit but >10%. Follow the external laboratory limits.	UJ, HE12a	J-, HE12a
☐	☒	☐	28. The LCS percent recovery was > the Upper Acceptance Limit. Follow the external laboratory limits.	N/A	J+, HE12b
☐	☒	☐	29. The LCS documentation is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, HE12c	R, HE12c
☐	☒	☐	30. The MS/MSD percent recovery was <10%.	R, HE12d	R, HE12d
☐	☒	☐	31. The MS/MSD percent recovery was >10% but <70%.	UJ, HE12e	J, HE12e
☐	☒	☐	32. The MS/MSD percent recover was >70%.	N/A	J+, HE12f
☐	☒	☐	33. The MS/MSD relative percent difference was >30%.	UJ, HE12g	J, HE12g
☐	☐	☒	34. The affected analytes are considered suspect because the sample was diluted without any target analytes identified due to matrix interference. (Qualify as Reject if the analytical laboratory cannot provide proof for matrix interference.)	UJ, R, HE15	R, HE15
☐	☐	☒	35. The sample was diluted because target analytes were > the initial verification calibration.	UJ, HE15a	J, HE15a

LC/MS/MS HIGH EXPLOSIVE ANALYTICAL DATA VALIDATION CHECKLIST	
5122-2 **LC/MS/MS High Explosive Analytical Data Validation Checklist**	Records Use only Los Alamos NATIONAL LABORATORY EST. 1943

Yes	No	N/A		Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
☐	☐	☒	**36. The Contract Required Detection Limit Check Standard (CRI) sample did not pass method acceptance criteria.**	**UJ, R, HE16**	**J, HE16**
☐	☐	☒	**37. The required CRI sample information is missing. Contact the SMO or external laboratory for information.**	**R, HE16c**	**R, HE16c**
☐	☒	☐	**38. The LANL project chemist identified quality deficiencies in the reported data that requires further qualification. This code can only be used and/or under advisement by the LANL project chemist.**	**UJ, R, HE19**	**J, R, HE19**
☐	☒	☐	**39. Duplicate, dilution, or reanalysis.**	**UJ, HE88**	**J, HE88**

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAAN-12-2024

Lab Code: GEL

GEL Job No (SDG) 12-711

Matrix: WATER

GEL Sample ID: 295388002

Sample Amount 920 mL

Date Received: 04-FEB-12

Moisture:

Extraction Batch ID: 1185692

Extraction Type Sol Exchange

Date Extracted: 07-FEB-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

GEL data file: EXP0227021a

Date Analyzed: 28-FEB-12 04:49

Dilution Factor: 2

Concentration Units: ug/L

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	0.272	U	0.087	0.272
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	0.272	U	0.087	0.272
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	0.272	U	0.087	0.272
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	0.272	U	0.087	0.272
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	0.272	U	0.087	0.272
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	0.272	U	0.087	0.272
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
606-20-2	2,6-Dinitrotoluene	0.272	U	0.087	0.272
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	0.272	U	0.0891	0.272
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	0.272	U	0.087	0.272
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	0.272	U	0.087	0.272
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	0.272	U	0.087	0.272
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	0.272	U	0.087	0.272
99-65-0	*m-Dinitrobenzene*				
479-45-8	Tetryl	0.543	U	0.087	0.543
479-45-8	*Tetryl*				

ETM
3/8/12

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAAN-12-2024

Lab Code: GEL

GEL Job No (SDG) 12-711

Matrix: WATER

GEL Sample ID: 295388002

Sample Amount 920 mL

Date Received: 04-FEB-12

Moisture:

Extraction Batch ID: 1185692

Extraction Type Sol Exchange

Date Extracted: 07-FEB-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
78-11-5	PETN	0.543	U	0.109	0.543
78-11-5	*PETN*				
99-99-0	p-Nitrotoluene	0.543	U	0.163	0.543
99-99-0	*p-Nitrotoluene*				

ETM
3/8/12

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAAN-12-2024

Lab Code: GEL

GEL Job No (SDG) 12-711

Matrix: WATER

GEL Sample ID: 295388002

Sample Amount 920 mL

Date Received: 04-FEB-12

Moisture:

Extraction Batch ID: 1185692

Extraction Type Sol Exchange

Date Extracted: 07-FEB-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

GEL data file: EXS02160022.wiff

Date Analyzed: 16-FEB-12 19:59

Dilution Factor: 2

Concentration Units: ug/L

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	1.09	U	0.326	1.09
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	1.09	U	0.326	1.09
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	1.09	U	0.326	1.09
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	2.72	U	0.543	2.72
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	2.72	U	0.543	2.72
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

ETM
3/8/12

DATA VALIDATION COVER SHEET

5120-1

Data Validation Cover Sheet

Records Use only

Los Alamos NATIONAL LABORATORY EST.1943

Section I.

REQUEST NUMBER: 12-711 VALIDATION DATE: 3/8/12 LAB CODE: GEL

CONTRACT LABORATORY NAME: GEL Laboratories LLC

VALIDATOR: Eric T. Mink ORGANIZATION: Analytical Quality Associates, Inc.

ANALYTICAL SUITE (CHECK ALL THAT APPLY):

☐ **TPH-GRO**	☐ **HIGH EXPLOSIVES**	☐ **DIOXIN FURANS**	☐ **LCMSMS PERCHLORATES**
☐ **TPH-DRO**	☐ **METALS**	☐ **PCB CONGENERS**	☐ **ORGANOCHLORINE PESTICIDES/POLYCHLORINATED BIPHENYLS**
☒ **GENERAL CHEMISTRY**	☐ **RADIOCHEMISTRY**	☐ **LCMSMS HIGH EXPLOSIVES**	

☐ **OTHER (DESCRIBE):** _____

Section II. Completeness Check

YES	NO	N/A	(CHECK ONE)	YES	NO	N/A	(CHECK ONE)
☒	☐	☐	1. CHAIN-OF-CUSTODY FORM(S)	☒	☐	☐	6. RAW/BSS DATA
☒	☐	☐	2. CASE NARRATIVE	☒	☐	☐	7. QUALITY CONTROL FORMS
☒	☐	☐	3. SAMPLE RESULT FORMS	☒	☐	☐	8. QUANTITATION REPORTS
☐	☐	☒	4. SAMPLE CHROMATOGRAMS	☐	☐	☒	9. TICS FORMS
☐	☐	☒	5. STANDARD CHROMATOGRAMS	☐	☐	☒	10. TICS MASS SPECTRA

Comments/problems noted (include information about requests for further information submitted to the contract laboratory and agreed-upon date of resolution and contract laboratory point of contact):

1. The MS %R was < the laboratory's LAL but ≥10% for TKN. The associated sample result was an ND and, thus, was qualified UJ,I6a.
2. It should be noted that the parent samples for the QC analyses were LANL samples from other RNs. No sample data were qualified as a result.
3. Some analyses included multiple matrix QC samples. For each batch, the QC sample most comparable to the matrix of this RN was selected for data validation purposes, and the extraneous QC samples were not evaluated.

Reviewed by: Larry M. Fukui Level: I Date: 3/12/12

VALIDATOR'S SIGNATURE: Eric T. Mink DATE: 3/8/12

GENERAL CHEMISTRY ANALYTICAL DATA VALIDATION CHECKLIST	
5120-2 **General Chemistry Analytical Data Validation Checklist**	Records Use only Los Alamos NATIONAL LABORATORY EST. 1943

Yes	No	N/A		Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
☐	☒	☐	1. The holding time was >1 and ≤2 times the applicable holding time requirement.	UJ, I9	J-, I9
☐	☒	☐	2. The holding time was >2 times the applicable holding time requirement.	R, I9a	J-, I9a
☐	☐	☒	3. The affected analytes are regarded as rejected because the analytical holding time was exceeded.	R, I9b	R, I9b
☐	☒	☐	4. The affected results were not analyzed with a valid 5-point calibration curve and/or a standard at the reporting limit.	UJ, R, I7	J, I7
☐	☒	☐	5. The affected analytes were analyzed with an initial calibration curve that exceeded the %RSD criteria and/or the associated multipoint calibration correlation coefficient is <0.995.	UJ, I7a	J, I7a
☐	☒	☐	6. The ICV and/or CCV were recovered outside the method specific limits.	UJ, I7c	J, I7c
☐	☒	☐	7. The ICV and/or CCV were not analyzed at the appropriate method frequency.	UJ, I7d	J, I7d
☐	☒	☐	8. Required calibration information is missing or samples were analyzed on an expired calibration. Contact the SMO or external laboratory for information.	R, I7f	R, I7f
☐	☐	☒	9. The interference check sample percent recovery value is <50%.	R, I2	J-, I2
☐	☐	☒	10. The interference check sample percent recovery value is ≥50% and <80%.	UJ, I2a	J-, I2a
☐	☐	☒	11. The interference check sample percent recovery value is >120%.	N/A	J+, I2b
☐	☐	☒	12. The interference check sample was not analyzed with the samples.	R, I2c	R, I2c
☐	☒	☐	13. The sample result is ≤5X the concentration of the related analyte in the method blank.	U, I4	N/A

GENERAL CHEMISTRY ANALYTICAL DATA VALIDATION CHECKLIST	
5120-2 **General Chemistry Analytical Data Validation Checklist**	Records Use only Los Alamos NATIONAL LABORATORY EST. 1943

Yes	No	N/A		Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
☐	☒	☐	14. The affected analytes are considered estimated and biased high because this analyte was identified in the method blank but was >5X.	N/A	J, I4a
☐	☒	☐	15. The sample result is ≤5X the concentration of the related analyte in the instrument blank and continuing calibration blank.	U, I4b	N/A
☐	☒	☐	16. Continuing calibration blanks were not analyzed at the appropriate method frequency.	UJ, I4c	J, I4c
☐	☐	☒	17. The sample result is ≤5X the concentration of the related analyte in the trip blank, rinsate blank, or equipment blank.	U, I4d	N/A
☐	☒	☐	18. Required method blank information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, I4e	R, I4e
☐	☒	☐	19. The associate matrix spike recovery was <10%. Follow the external laboratory limits located within the associated data package.	R, I6	R, I6
☒	☐	☐	20. The associated matrix spike recovery was below the Lower Acceptance Limit (LAL) but >10%. Follow the external laboratory limits located within the associated data package.	UJ, I6a	J-, I6a
☐	☒	☐	21. The associated matrix spike recovery was above the Upper Acceptance Limit (UAL). Follow the external laboratory limits located within the associated data package.	UJ, I6b	J+, I6b
☐	☒	☐	22. Required matrix spike information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information. If LCS information is present, do not reject. Qualify data based on LCS information.	R, I6c	R, I6c
☐	☒	☐	23. The sample and/or the duplicate sample results RPD is not within the acceptance limits. Follow the external laboratory limits located within the associated data package.	UJ, I10b	J, I10b

GENERAL CHEMISTRY ANALYTICAL DATA VALIDATION CHECKLIST	
5120-2 **General Chemistry Analytical Data Validation Checklist**	Records Use only Los Alamos NATIONAL LABORATORY EST. 1943

Yes	No	N/A		Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
☐	☒	☐	24. The duplicate sample was not prepared and/or analyzed with the samples for unspecified reasons. The duplicate information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	UJ, I10d	J, I10d
☐	☒	☐	25. The LCS percent recovery was <10%. Follow the external laboratory limits located within the associated data package.	R, I12	R, I12
☐	☒	☐	26. The LCS percent recover was < the LAL but >10%. Follow the external laboratory limits located within the associated data package.	UJ, I12a	J-, I12a
☐	☒	☐	27. The LCS percent recovery was > the UAL. Follow the external laboratory limits located within the associated data package.	N/A	J+, I12b
☐	☒	☐	28. The LCS documentation is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information. Do not Reject if MS/MSD information is present. Qualify according to MS/MSD criteria.	R, I12c	R, I12c
☐	☒	☐	29. Duplicate, dilution, or reanalysis	UJ, I88	J, I88
☐	☒	☐	30. The LANL project chemist identified quality deficiencies in the reported data that require further qualification. This code can ONLY be used and/or under advisement by the LANL project chemist.	UJ, R, I19	J, R, I19
☒	☐	☐	31. Qualification of data via data validation does not occur based on Quality Control requirements in this procedure. Adhere to the external laboratory qualifiers found within the Form I analytical data summary sheets generated by the external laboratory.	U, U_LAB	J, J_LAB NQ, NQ (no qualification)

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

Certificate of Analysis

Report Date: February 27, 2012

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: LANL-WQH Water Samples

Client SDG: 12-711

Client Sample ID: CAAN-12-2024
Sample ID: 295388002
Matrix: WG
Collect Date: 02-FEB-12 12:00
Receive Date: 04-FEB-12
Collector: Client

Project: ESHL00210
Client ID: ARSL001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis												
SW 9060 Total Organic Carbon "As Received"												
Total Organic Carbon Average	J	0.387		0.330	1.00	mg/L	1	TSM	02/07/12	2215	1186182	1
Nutrient Analysis												
Nitrogen, Total Kjeldahl (TKN) "As Received"												
Nitrogen, Total Kjeldahl	U	ND	UJ,I6a	0.175	0.500	mg/L	5	KLP1	02/17/12	1052	1186025	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	AXS5	02/14/12	1649	1186024

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9060	
2	EPA 351.2	

ETM
3/8/12

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

Certificate of Analysis

Report Date: February 27, 2012

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: LANL-WQH Water Samples

Client SDG: 12-711

Client Sample ID: CAAN-12-2025
Sample ID: 295388003
Matrix: WG
Collect Date: 02-FEB-12 12:00
Receive Date: 04-FEB-12
Collector: Client

Project: ESHL00210
Client ID: ARSL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Nutrient Analysis											
EPA 350.1 Nitrogen, Ammonia L "As Received"											
Nitrogen, Ammonia	J	0.0387	0.016	0.050	mg/L	1	KLP1	02/08/12	1552	1186023	1
EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"											
Nitrogen, Nitrate/Nitrite		0.299	0.050	0.250	mg/L	5	KLP1	02/14/12	1242	1186031	2
EPA 365.4 Phosphorus, Total in "As Received"											
Phosphorus, Total as P	J	0.0477	0.015	0.050	mg/L	1	KLP1	02/08/12	1406	1186020	3

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	AXS5	02/07/12	1658	1186022
EPA 365.4 Prep	EPA 365.4 Phosphorus, Total in liquid PR	AXS5	02/08/12	1159	1186019

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 350.1	
2	EPA 353.2	
3	EPA 365.4	

ETM
3/8/12

Friday, February 03, 2012

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 12-711C

REQUEST NUMBER: 12-711

LOS ALAMOS

NATIONAL LABORATORY

ATTN: Valerie Davis

General Engineering Laboratories, Inc., Charleston, SC.

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

TURNAROUND/REPORT DUE: 3/4/2012

TURNAROUND REQ'D: 30

295388 "/.

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
CAAN-12-2024	1	SEPTUM AMBER GLASS	WSP-8260B-VOA	Hydrochloric Acid (HCL)	WG
CAAN-12-2024	2	SEPTUM AMBER GLASS	WSP-8260B-VOA	Hydrochloric Acid (HCL)	WG
CAAN-12-2024	1	AMBER GLASS	WSP-8270C-SVOA	Ice	WG
CAAN-12-2024	2	AMBER GLASS	WSP-8270C-SVOA	Ice	WG
CAAN-12-2024	3	AMBER GLASS	WSP-8270C-SVOA	Ice	WG
CAAN-12-2024	1	AMBER GLASS	WSP-8321A-NMED HEXP	Ice	WG
CAAN-12-2024	2	AMBER GLASS	WSP-8321A-NMED HEXP	Ice	WG
CAAN-12-2024	3	AMBER GLASS	WSP-8321A-NMED HEXP	Ice	WG
CAAN-12-2024	1	AMBER GLASS	WSP-TKN+TOC	Sulfuric Acid (H2SO4)	WG
CAAN-12-2025	1	AMBER GLASS	WSP-NH3+NO3/NO2+PO4	Sulfuric Acid (H2SO4)	WG
CAAN-12-2026	1	SEPTUM AMBER GLASS	WSP-8260B-VOA	Hydrochloric Acid (HCL)	WG
CAAN-12-2026	2	SEPTUM AMBER GLASS	WSP-8260B-VOA	Hydrochloric Acid (HCL)	WG

Relinquished By:	**Date**	**Time**	**Received By:**	**Date**	**Time**
Signature			Signature		
Signature	2/3/12	3:00	Signature	2/4/12	09:50
Signature			Signature		

Received for DISPOSAL By: **Date** **Time** **Remarks:**

Signature

Friday, February 03, 2012 REQUEST NUMBER: 12-711

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	SW-846:8270C	3	CAAN-12-2024	WG	2/2/2012	
	SW-846:8321A_MOD	1	CAAN-12-2024	WG	2/2/2012	
		2	CAAN-12-2024	WG	2/2/2012	
		3	CAAN-12-2024	WG	2/2/2012	
	SW-846:9060	1	CAAN-12-2024	WG	2/2/2012	

Final Page of REQUEST NUMBER 12-711

Friday, February 03, 2012

REQUEST NUMBER: 12-711

LOS ALAMOS
NATIONAL LABORATORY

ATTN: Valerie Davis
General Engineering Laboratories, Inc., Charleston, SC.
2040 Savage Rd
Charleston, SC 29407

These Samples are on:
LANL Request Number:12-711
Per Agreement Number:126310011
Project Cost Code: MR1A015AGWJ0

Please analyse the enclosed samples
according to the schedule indicated:

SHIP DATE: 2/3/2012
TURNAROUND/REPORT DUE: 3/4/2012
TURNAROUND REQ'D: 30 Days

RAD SCREENING: Yes, Below Background
LAB REQUEST COMMENTS:

LANL ER SMO CONTACT:
Signature:

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA:350.1	1	CAAN-12-2025	WG	2/2/2012	
	EPA:351.2	1	CAAN-12-2024	WG	2/2/2012	
	EPA:353.2	1	CAAN-12-2025	WG	2/2/2012	
	EPA:365.4	1	CAAN-12-2025	WG	2/2/2012	
	SW-846:8260B	1	CAAN-12-2024	WG	2/2/2012	
		2	CAAN-12-2024	WG	2/2/2012	
		1	CAAN-12-2026	WG	2/2/2012	
		2	CAAN-12-2026	WG	2/2/2012	
	SW-846:8270C	1	CAAN-12-2024	WG	2/2/2012	
		2	CAAN-12-2024	WG		

GEL Laboratories LLC

a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407

P 843.556.8171 F 843.766.1178

www.gel.com

February 07, 2012

Ms. Joylene Valdez
Los Alamos National Laboratory
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico 87545

Re: LANL-WQH Water Samples
Work Order: 295388
SDG: 12-711

Dear Ms. Valdez:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on February 04, 2012, and analyzed for Explosives by LCMSMS, GC/MS Semivolatile, GC/MS Volatile and General Chemistry. 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,

for

Valerie Davis
Project Manager

Purchase Order: 63641-10
Chain of Custody: 12-711
Enclosures

ARS International (63641-10)
LANL-WQH Water Samples
Work Order #: 295388
SDG: 12-711

Table of Contents

Case Narrative

Case Narrative for
ARS International (63641-10)
LANL-WQH Water Samples
Workorder #: 295388
SDG # : 12-711

February 07, 2012

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 February 04, 2012 for analysis. The samples were prepared/analyzed within the required holding time. Shipping container temperatures were checked, documented, and within specifications. The samples were screened according to GEL Standard Operating Procedure. Please see attached email for discrepancies. 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).

Sample Identification The laboratory received the following samples:

Laboratory ID	Client ID
295388001	CAAN-12-2024
295388002	CAAN-12-2024
295388003	CAAN-12-2025
295388004	CAAN-12-2026

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: Explosives by LCMSMS, GC/MS Semivolatile, GC/MS Volatile and General Chemistry.

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.

for
Valerie Davis
Project Manager

List of current GEL Certifications as of 07 February 2012

State	Certification
Arizona	AZ0766
Arkansas	88−0651
CLIA	42D0904046
California NELAP	01151CA
Colorado	SC00012
Connecticut	PH−0169
Delaware	SC00012
DoD ELAP A2LA ISO 17025	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330−09−00191
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C−SC−01
Kansas NELAP	E−10332
Kentucky	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA110008
Maryland	270
Massachusetts	M−SC012
Mississippi	SC00012
Nevada	SC000122011−1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
Oklahoma	9904
Pennsylvania NELAP	68−00485
South Carolina Chemistry	10120001
South Carolina Radiochemi	10120002
Tennessee	TN 02934
Texas NELAP	T104704235−12−7
Utah NELAP	SC00012
Vermont	VT87156
Virginia NELAP	460202
Washington	C780
Wisconsin	999887790

Chain of Custody and Supporting Documentation

Friday, February 03, 2012

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 12-711C

REQUEST NUMBER: 12-711

LOS ALAMOS

NATIONAL LABORATORY

ATTN: Valerie Davis

General Engineering Laboratories, Inc., Charleston, SC.

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

TURNAROUND/REPORT DUE: 3/4/2012

TURNAROUND REQ'D: 30

295388 "/.

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
CAAN-12-2024	1	SEPTUM AMBER GLASS	WSP-8260B-VOA	Hydrochloric Acid (HCL)	WG
CAAN-12-2024	2	SEPTUM AMBER GLASS	WSP-8260B-VOA	Hydrochloric Acid (HCL)	WG
CAAN-12-2024	1	AMBER GLASS	WSP-8270C-SVOA	Ice	WG
CAAN-12-2024	2	AMBER GLASS	WSP-8270C-SVOA	Ice	WG
CAAN-12-2024	3	AMBER GLASS	WSP-8270C-SVOA	Ice	WG
CAAN-12-2024	1	AMBER GLASS	WSP-8321A-NMED HEXP	Ice	WG
CAAN-12-2024	2	AMBER GLASS	WSP-8321A-NMED HEXP	Ice	WG
CAAN-12-2024	3	AMBER GLASS	WSP-8321A-NMED HEXP	Ice	WG
CAAN-12-2024	1	AMBER GLASS	WSP-TKN+TOC	Sulfuric Acid (H2SO4)	WG
CAAN-12-2025	1	AMBER GLASS	WSP-NH3+NO3/NO2+PO4	Sulfuric Acid (H2SO4)	WG
CAAN-12-2026	1	SEPTUM AMBER GLASS	WSP-8260B-VOA	Hydrochloric Acid (HCL)	WG
CAAN-12-2026	2	SEPTUM AMBER GLASS	WSP-8260B-VOA	Hydrochloric Acid (HCL)	WG

Relinquished By:	Date	Time	Received By:	Date	Time
Signature			Signature		
Signature	2/3/12	3:00	Signature	2/4/12	09:50
Signature			Signature		

Received for DISPOSAL By: **Date** **Time** **Remarks:**

Signature

Hard Copy Required

Friday, February 03, 2012

REQUEST NUMBER: 12-711

LOS ALAMOS
NATIONAL LABORATORY

ATTN: Valerie Davis
General Engineering Laboratories, Inc., Charleston, SC.
2040 Savage Rd
Charleston, SC 29407

These Samples are on:
LANL Request Number:12-711
Per Agreement Number:126310011
Project Cost Code: MR1A015AGWJ0

Please analyse the enclosed samples
according to the schedule indicated:

SHIP DATE: 2/3/2012
TURNAROUND/REPORT DUE: 3/4/2012
TURNAROUND REQ'D: 30 Days

RAD SCREENING: Yes, Below Background
LAB REQUEST COMMENTS:

LANL ER SMO CONTACT:
Signature:

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA:350.1	1	CAAN-12-2025	WG	2/2/2012	
	EPA:351.2	1	CAAN-12-2024	WG	2/2/2012	
	EPA:353.2	1	CAAN-12-2025	WG	2/2/2012	
	EPA:365.4	1	CAAN-12-2025	WG	2/2/2012	
	SW-846:8260B	1	CAAN-12-2024	WG	2/2/2012	
		2	CAAN-12-2024	WG	2/2/2012	
		1	CAAN-12-2026	WG	2/2/2012	
		2	CAAN-12-2026	WG	2/2/2012	
	SW-846:8270C	1	CAAN-12-2024	WG	2/2/2012	
		2	CAAN-12-2024	WG	2/2/2012	

Hard Copy Required

Friday, February 03, 2012

REQUEST NUMBER: 12-711

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	SW-846:8270C	3	CAAN-12-2024	WG	2/2/2012	
	SW-846:8321A_MOD	1	CAAN-12-2024	WG	2/2/2012	
		2	CAAN-12-2024	WG	2/2/2012	
		3	CAAN-12-2024	WG	2/2/2012	
	SW-846:9060	1	CAAN-12-2024	WG	2/2/2012	

Final Page of REQUEST NUMBER 12-711

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: LANL			SDG/AR/COC/Work Order: 12-711
Received By: Patricia Dent			**Date Received: February 4, 2012**
Suspected Hazard Information	**Yes**	**No**	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?		X	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): **0 CPM**
Classified Radioactive II or III by RSO?		X	If yes, Were swipes taken of sample contatiners < action levels?
COC/Samples marked containing PCBs?		X	
Shipped as a DOT Hazardous?		X	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		X	

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	X			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	X			Preservation Method: Ice bags Blue ice Dry ice None Other (describe) *all temperatures are recorded in Celsius **3,4C**
2a	Daily check performed and passed on IR temperature gun?	X			Temperature Device Serial #: Secondary Temperature Device Serial # (If Applicable):**61524646**
3	Chain of custody documents included with shipment?	X			
4	Sample containers intact and sealed?	X			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5	Samples requiring chemical preservation at proper pH?	X			Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	VOA vials free of headspace (defined as < 6mm bubble)?	X			Sample ID's and containers affected:
7	Are Encore containers present?			X	(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	X			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	X			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?			X	Sample ID's affected: **Time not notated on COC**
11	Number of containers received match number indicated on COC?			X	Sample ID's affected: **CAAN-12-2024 for SVOA, 8321A-NMEDIIEXP the lab received (2)-Amber Jars the COC indicates (3). CAAN-12-2026 for VOA the lab received (1)-40ml Vial the COC indicates (2)**
12	Are sample containers identifiable as GEL provided?			X	**Clients**
13	COC form is properly signed in relinquished/received sections?	X			
14	Carrier and tracking number.	X			Circle Applicable: FedEx Air FedEx Ground UPS Field Services Courier Other **7209 7856 3240 3C 7209 7856 3230 4C 7209 7856 3251 4C**

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials HA Date 020712 Page 1 of 1

Subject: ISSUES FROM TODAY 02/04/12
From: Pat Dent <Pat.Dent@gel.com>
Date: Sat, 04 Feb 2012 13:07:39 -0500
To: "Keith R. Greene" <kgreene@lanl.gov>
CC: Joylene Valdez <joylenev@lanl.gov>, LANL@amrad.com, "team.davis" <team.davis@gel.com>

Good Afternoon all listed below are today's issues 02/04/12

The containers received for Gross A/B was preserved prior to analysis

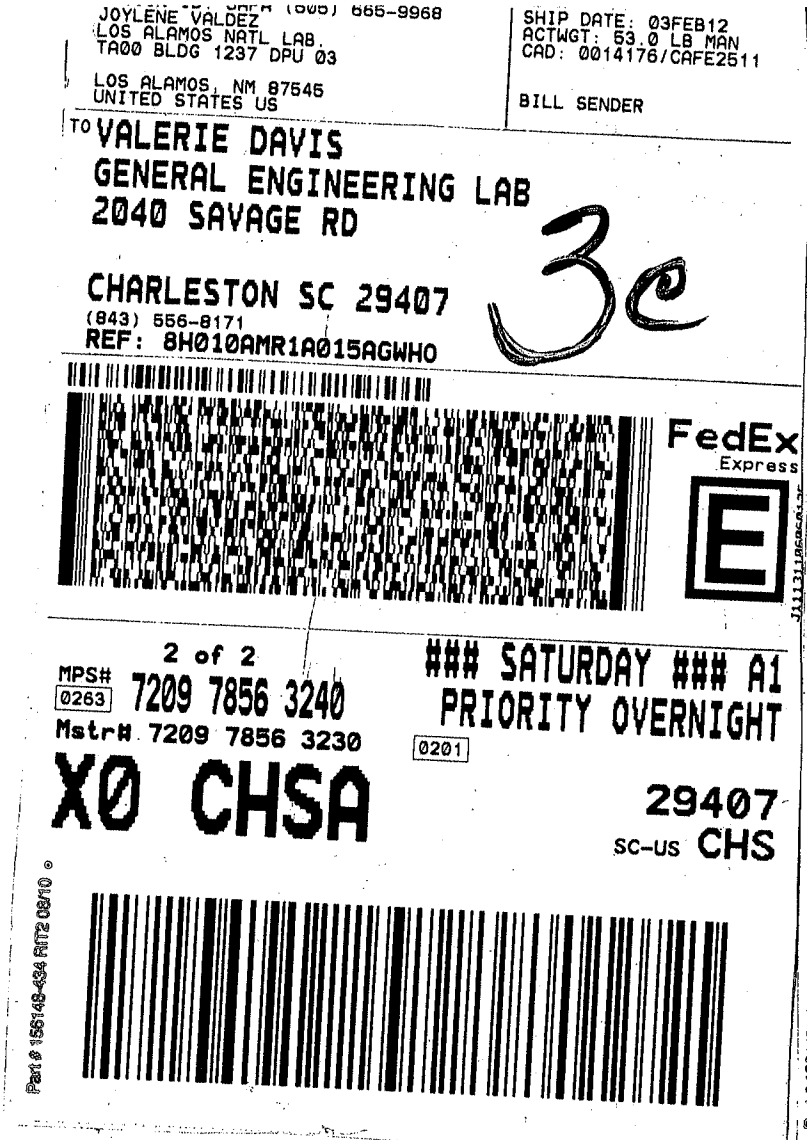
RN#12-711 the lab received (2)-SVOA,(2)- NMEDHEXP containers for CAAN-12-2024 the COC indicates (3)
RN#12-711 the lab received (1)-8260B VOA container for CAAN-12-2026 the COC indicates (2).

RN#12-712,719 the lab did not receive Ra226+228 containers for CAAN-12-2024,CAWA-12-2018.

RN#12-718 the lab received (1)-8260B VOA container for CAWA-12-2020 the COC indicates (2).

Thanks!
Pat Dent

--
Patricia Dent
Project Manager Assistant
GEL Laboratories, LLC
2040 Savage Rd.
Charleston, S.C. 29407
Main: 843-556-8171 Ext 4264
Fax: 843-766-1178
Email: pad@gel.com
Web: www.gel.com


JOYLENE VALDEZ (505) 665-9968
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 03FEB12
ACTWGT: 53.0 LB MAN
CAD: 0014176/CAFE2511

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: 8H010AMR1A015AGWHO

3c

FedEx Express

2 of 2
MPS# 0263 7209 7856 3240
Mstr# 7209 7856 3230

SATURDAY ### A1
PRIORITY OVERNIGHT
0201

X0 CHSA

29407
SC-US CHS

Part # 156148-434 RIT2 08/10


ORIGIN ID: SAFA (505) 665-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 03FEB12
ACTWGT: 49.0 LB MAN
CAD: 0014176/CAFE2511

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: 8H010AMR1A015AGWHO

4c

FedEx Express

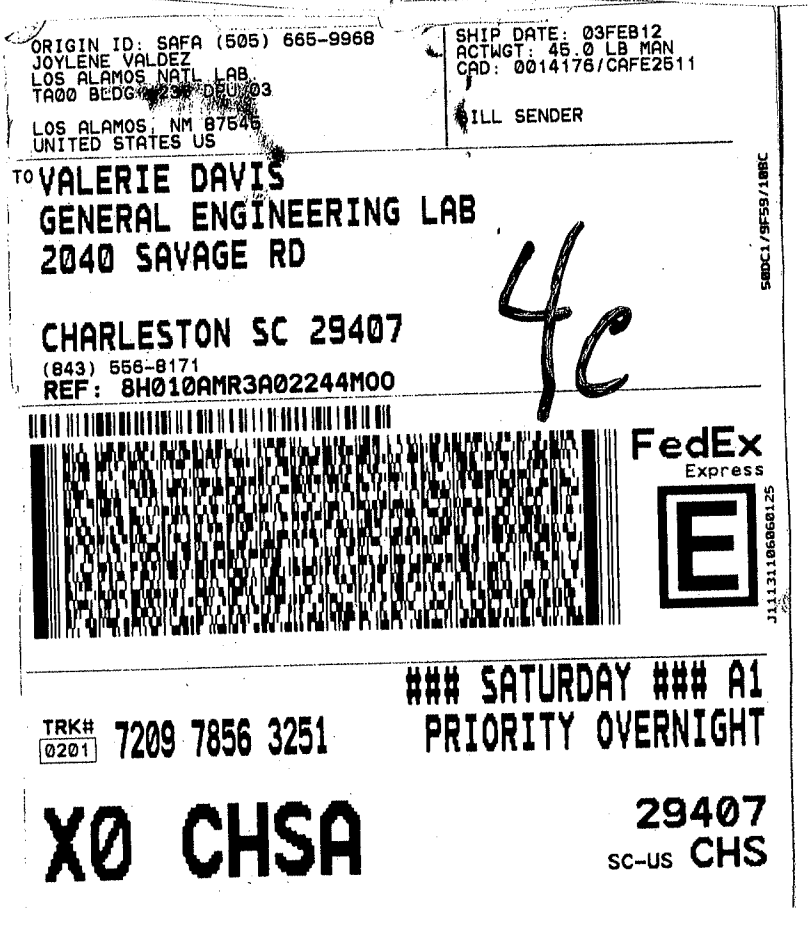
1 of 2
TRK# 0201 7209 7856 3230
MASTER

SATURDAY ### A1
PRIORITY OVERNIGHT

X0 CHSA

29407
SC-US CHS

Part # 156148-434 RIT2 08/10


ORIGIN ID: SAFA (505) 665-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 03FEB12
ACTWGT: 45.0 LB MAN
CAD: 0014176/CAFE2511

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: 8H010AMR3A02244M00

4c

FedEx Express

TRK# 0201 7209 7856 3251

SATURDAY ### A1
PRIORITY OVERNIGHT

X0 CHSA

29407
SC-US CHS

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.

Volatile Analysis

Case Narrative

ChemStation Case Narrative
ARS International (ARSL)
SDG 12-711

Method/Analysis Information

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

Analytical Method: SW846 8260B DOE-AL

Analytical Batch Number: 1188640

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
295388001	CAAN-12-2024
295388004	CAAN-12-2026
1202599787	Method Blank (MB)
1202599788	295435003(CAWA-12-2023) Post Spike (PS)
1202599789	295435003(CAWA-12-2023) Post Spike Duplicate (PSD)
1202599790	Laboratory Control Sample (LCS)
1202599791	Laboratory Control Sample (LCS)
1202600766	Method Blank (MB)
1202600767	Laboratory Control Sample (LCS)
1202600768	Laboratory Control Sample (LCS)

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

The samples in this SDG were analyzed on an "as received" basis.

Preparation/Analytical Method Verification

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# 16.

Raw data reports are processed and reviewed by the analyst using the Chemstation software package. False positives have been removed from the quantitation reports per standard operating procedures (SOP) section 19.1.2. False positive analytes are designated on the quantitation report with a 'd' qualifier.

Calibration Information

Please note that the 'Cal Date' indicated on each quantitation report reflects the date and time of the most recent calibrated analyte(s) in the processing method. Since the laboratory may calibrate with multiple solutions on different days using the same processing method, the software will update the 'Cal Date' to the last calibration file, date and time. The correct dates and times for all calibration files are located on the Calibration History report in the Standard Data section in 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. GEL Laboratories LLC will not have surrogate recoveries reported for Dibromofluoromethane. This is due to increased regulations for this analyte and an industry shortage.

A complete list of the initial calibration data files are shown in the Calibration History report located in the Standard Data section of the data package.

Initial Calibration
For any analytes that did not pass the x-intercept criteria of less than or equal to 3X MDL, they were put on Average at the request of the client because they were less than 60%.

Continuing Calibration Verification Requirements
All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

Quality Control (QC) Information

Method Blank (MB) Statement
Target analytes were detected in the blank 1202599787 (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 295435003 (CAWA-12-2023) was designated for spike analysis.

Matrix Spike (PS) Recovery Statement
The spike recoveries were within the required acceptance limits.

Matrix Spike Duplicate (PSD) Recovery Statement
The spike duplicate 1202599789 (CAWA-12-2023) recoveries were not all within the acceptance limits. See the Data Exception Report in the miscellaneous section of the data package.

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
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 295388004 (CAAN-12-2026) was initially analyzed within holding. However, the sample was re-analyzed outside the recommended holding time but within the two times the holding period. The sample was re-analyzed due to possible carry-over for 1,2,3-Trichlorobenzene from a previously analyzed sample. Only 1,2,3-Trichlobenzene is reported from the out of holding analysis. See the Data Exception Report in the miscellaneous section of the deliverable.

Sample Preservation and Integrity
Sample 295388004 (CAAN-12-2026) was re-analyzed because the initial analysis contained possible carry-over from a previously analyzed sample. The client only provided one vial for the sample. As a result, the re-analysis aliquots were taken from a vial that contained head-space. See the Data Exception Report in the miscellaneous section of the deliverable.

Sample Dilutions/Methanol Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Sample 295388004 (CAAN-12-2026) was re-analyzed due to unacceptable recoveries in the initial analysis.

Miscellaneous Information

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to 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 will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Data Exception (DER) Documentation
DER # 1052528 was generated for this SDG.

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) were required for this sample delivery group/work order. The tentatively identified compounds may include some silanols. These compounds were due to column or septum bleed and were not native to the affected samples. Please note that non-requested target analytes that are reported on the quantitation reports will not be present on the Form I. These detected analytes are included in the calibrated method and as a result cannot be reported on the TIC quantitation report.

Additional Comments
Sample 295388004 (CAAN-12-2026) was re-analyzed because the initial analysis contained possible carry-over from a previously analyzed sample. The client only provided one vial for the sample. As a result, the re-analysis aliquot was taken from a vial that contained head-space. See the Data Exception Report in the miscellaneous section of the deliverable.

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

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

GEL LABORATORIES LLC

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

Qualifier Definition Report
for

ARSL001 ARS International (63641−10)

Client SDG: 12−711 GEL Work Order: 295388

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 For General Chemistry and Organic analysis the target analyte was detected in the associated blank.

H Analytical holding time was exceeded

J Value is estimated

U Analyte was analyzed for, but not detected above the MDL, MDA, 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: Erin Haubert **Name: Erin Haubert**

Date: 02 MAR 2012 **Title: Data Validator**

Sample Data Summary

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/02/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**295388001**	**Date Received:**	**02/04/2012 09:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAAN-12-2024**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/15/2012 17:21**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2012 17:21**				
Data File:	**021512V9\9Z319.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.500	1.00
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
67-64-1	Acetone	U	10.0	ug/L	3.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	6.25	25.0
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.25	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	3.00	10.0
75-15-0	Carbon disulfide	U	5.00	ug/L	1.25	5.00
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.250	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	1.25	5.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.250	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.325	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.250	1.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.250	1.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.250	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.250	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.250	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.25	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.250	1.00
108-88-3	Toluene	U	1.00	ug/L	0.250	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.250	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.250	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.25	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/02/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**295388001**	**Date Received:**	**02/04/2012 09:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAAN-12-2024**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/15/2012 17:21**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2012 17:21**				
Data File:	**021512V9\9Z319.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.250	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.250	1.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.250	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.500	2.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
100-42-5	Styrene	U	1.00	ug/L	0.250	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.250	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.250	1.00
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.250	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.250	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.250	1.00
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.250	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.250	1.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.250	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.250	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.250	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.250	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.250	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.250	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.250	1.00
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.250	1.00
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
91-20-3	Naphthalene	U	1.00	ug/L	0.250	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.332	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.25	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.00	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.00	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.00	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	12.5	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.00	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/02/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**295388001**	**Date Received:**	**02/04/2012 09:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAAN-12-2024**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/15/2012 17:21**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2012 17:21**				
Data File:	**021512V9\9Z319.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.00	5.00
630-20-6	1,1,1,2-Tetrachloroethane	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
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.250	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	50.1	50.0	ug/L	100	(76%-127%)
Bromofluorobenzene	53.3	50.0	ug/L	107	(80%-120%)
Toluene-d8	49.0	50.0	ug/L	98.0	(80%-120%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown hydrocarbon	4.29	67.8	ug/L	0	J
	unknown siloxane	14.77	11.6	ug/L	0	J

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/02/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**295388004**	**Date Received:**	**02/04/2012 09:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAAN-12-2026**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/15/2012 15:59**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2012 15:59**				
Data File:	**021512V9\9Z316.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.500	1.00
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
67-64-1	Acetone	U	10.0	ug/L	3.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	6.25	25.0
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.25	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	3.00	10.0
75-15-0	Carbon disulfide	U	5.00	ug/L	1.25	5.00
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.250	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	1.25	5.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.250	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.325	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.250	1.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.250	1.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.250	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.250	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.250	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.25	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.250	1.00
108-88-3	Toluene	U	1.00	ug/L	0.250	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.250	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.250	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.25	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/02/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**295388004**	**Date Received:**	**02/04/2012 09:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAAN-12-2026**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/15/2012 15:59**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2012 15:59**				
Data File:	**021512V9\9Z316.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.250	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.250	1.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.250	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.500	2.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
100-42-5	Styrene	U	1.00	ug/L	0.250	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.250	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.250	1.00
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.250	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.250	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.250	1.00
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.250	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.250	1.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.250	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.250	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.250	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.250	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.250	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.250	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.250	1.00
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.250	1.00
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
91-20-3	Naphthalene	U	1.00	ug/L	0.250	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.25	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.00	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.00	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.00	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	12.5	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.00	5.00
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.00	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/02/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**295388004**	**Date Received:**	**02/04/2012 09:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAAN-12-2026**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/15/2012 15:59**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2012 15:59**				
Data File:	**021512V9\9Z316.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
120-82-1	1,2,4-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.250	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	46.0	50.0	ug/L	92.1	(76%-127%)
Bromofluorobenzene	49.6	50.0	ug/L	99.2	(80%-120%)
Toluene-d8	45.5	50.0	ug/L	91.1	(80%-120%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown hydrocarbon	4.29	39	ug/L	0	J
000634-66-2	Benzene, 1,2,3,4-tetrachloro-	13.67	50	ug/L	99	NJ

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/02/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**295388004**	**Date Received:**	**02/04/2012 09:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAAN-12-2026RA**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/17/2012 16:16**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/17/2012 16:16**				
Data File:	**021712V9\9Z517.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
87-61-6	1,2,3-Trichlorobenzene	HU	1.00	ug/L	0.332	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	42.6	50.0	ug/L	85.2	(76%-127%)
Bromofluorobenzene	49.5	50.0	ug/L	98.9	(80%-120%)
Toluene-d8	44.9	50.0	ug/L	89.8	(80%-120%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown hydrocarbon	4.27	41.3	ug/L	0	J
	unknown hydrocarbon	7.35	13.1	ug/L	0	J
	unknown siloxane	12.41	5.26	ug/L	0	J
	unknown siloxane	14.77	7.46	ug/L	0	J
	unknown siloxane	16.74	5.75	ug/L	0	J

Quality Control Summary

Volatile

Surrogate Recovery Report

SDG Number: 12-711

Matrix Type: LIQUID

Sample ID	Client ID	DCED4 %REC	TOL %REC	BFB %REC
1202599790	LCS for batch 1188640	85	90	97
1202599791	LCS for batch 1188640	86	91	103
1202599787	MB for batch 1188640	87	92	101
295388004	CAAN-12-2026	92	91	99
295388001	CAAN-12-2024	100	98	107
1202599788	CAWA-12-2023PS	93	92	98
1202599789	CAWA-12-2023PSD	88	90	97
1202600767	LCS for batch 1188640	82	87	96
1202600768	LCS for batch 1188640	79	87	97
1202600766	MB for batch 1188640	80	90	96
295388004	CAAN-12-2026RA	85	90	99

Surrogate			Acceptance Limits
DCED4	=	1,2-Dichloroethane-d4	(76%-127%)
TOL	=	Toluene-d8	(80%-120%)
BFB	=	Bromofluorobenzene	(80%-120%)

* Recovery outside Acceptance Limits

Column to be used to flag recovery values

D Sample Diluted

Quality Control Summary
Spike Recovery Report

SDG Number: **12-711** **Sample Type:** **Post Spike**

Client ID: **CAWA-12-2023PS** **Matrix:** **WG**

Lab Sample ID: **1202599788**

Instrument: **VOA9.I** **Analysis Date:** **02/15/2012 19:36** **Dilution:** **1**

Analyst: **RXY1** **Prep Batch ID** **1188640**

Purge Vol: **5 mL** **Batch ID:** **1188640**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
75-71-8	PS	Dichlorodifluoromethane	50.0	0.00	U	41.9	84	33-133
74-87-3	PS	Chloromethane	50.0	0.00	U	51.8	104	52-142
75-01-4	PS	Vinyl chloride	50.0	0.00	U	49.5	99	54-132
74-83-9	PS	Bromomethane	50.0	0.00	U	51.0	102	63-125
75-00-3	PS	Chloroethane	50.0	0.00	U	51.6	103	71-133
75-69-4	PS	Trichlorofluoromethane	50.0	0.00	U	46.6	93	65-139
60-29-7	PS	Ethyl ether	50.0	0.00	U	49.7	99	70-114
67-64-1	PS	Acetone	250	0.00	U	196	78	30-162
75-05-8	PS	Acetonitrile	1250	0.00	U	1450	116	57-126
75-35-4	PS	1,1-Dichloroethylene	50.0	0.00	U	56.1	112	68-123
74-88-4	PS	Iodomethane	250	0.00	U	305	122	71-122
75-09-2	PS	Methylene chloride	50.0	0.00	U	49.8	100	74-128
75-15-0	PS	Carbon disulfide	250	0.00	U	324	130	69-130
1634-04-4	PS	tert-Butyl methyl ether	50.0	0.00	U	51.6	103	69-126
156-60-5	PS	trans-1,2-Dichloroethylene	50.0	0.00	U	56.6	113	64-122
108-05-4	PS	Vinyl acetate	250	0.00	U	290	116	49-155
75-34-3	PS	1,1-Dichloroethane	50.0	0.00	U	56.2	112	74-122
78-93-3	PS	2-Butanone	250	0.00	U	240	96	16-146
156-59-2	PS	cis-1,2-Dichloroethylene	50.0	0.00	U	55.1	110	66-137
594-20-7	PS	2,2-Dichloropropane	50.0	0.00	U	55.6	111	68-134
67-66-3	PS	Chloroform	50.0	0.00	U	53.8	108	75-126
74-97-5	PS	Bromochloromethane	50.0	0.00	U	53.2	106	79-126

Quality Control Summary
Spike Recovery Report

SDG Number: **12-711** **Sample Type:** **Post Spike**

Client ID: **CAWA-12-2023PS** **Matrix:** **WG**

Lab Sample ID: **1202599788**

Instrument: **VOA9.I** **Analysis Date:** **02/15/2012 19:36** **Dilution: 1**

Analyst: **RXY1** **Prep Batch ID** **1188640**

Purge Vol: **5 mL** **Batch ID:** **1188640**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
71-55-6	PS	1,1,1-Trichloroethane	50.0	0.00	U	56.3	113	70-137
563-58-6	PS	1,1-Dichloropropene	50.0	0.00	U	58.6	117	74-125
71-36-3	PS	n-Butyl alcohol	5000	0.00	U	6350	127	59-136
56-23-5	PS	Carbon tetrachloride	50.0	0.00	U	58.3	117	70-143
107-06-2	PS	1,2-Dichloroethane	50.0	0.00	U	52.4	105	70-126
71-43-2	PS	Benzene	50.0	0.00	U	56.0	112	74-119
79-01-6	PS	Trichloroethylene	50.0	0.00	U	56.7	113	69-126
78-87-5	PS	1,2-Dichloropropane	50.0	0.00	U	57.3	115	76-121
75-27-4	PS	Bromodichloromethane	50.0	0.00	U	54.7	109	77-131
74-95-3	PS	Dibromomethane	50.0	0.00	U	53.1	106	79-123
108-10-1	PS	4-Methyl-2-pentanone	250	0.00	U	275	110	65-128
10061-01-5	PS	cis-1,3-Dichloropropylene	50.0	0.00	U	55.3	111	77-125
108-88-3	PS	Toluene	50.0	0.00	U	51.4	103	69-119
10061-02-6	PS	trans-1,3-Dichloropropylene	50.0	0.00	U	52.5	105	75-125
79-00-5	PS	1,1,2-Trichloroethane	50.0	0.00	U	52.0	104	74-119
591-78-6	PS	2-Hexanone	250	0.00	U	223	89	31-144
142-28-9	PS	1,3-Dichloropropane	50.0	0.00	U	51.5	103	76-117
127-18-4	PS	Tetrachloroethylene	50.0	0.00	U	54.8	110	65-126
124-48-1	PS	Dibromochloromethane	50.0	0.00	U	53.3	107	74-126
106-93-4	PS	1,2-Dibromoethane	50.0	0.00	U	51.9	104	78-121
108-90-7	PS	Chlorobenzene	50.0	0.00	U	51.9	104	74-119
100-41-4	PS	Ethylbenzene	50.0	0.00	U	52.5	105	71-121

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 12-711 **Sample Type:** Post Spike
Client ID: CAWA-12-2023PS **Matrix:** WG
Lab Sample ID: 1202599788
Instrument: VOA9.I **Analysis Date:** 02/15/2012 19:36 **Dilution:** 1
Analyst: RXY1 **Prep Batch ID** 1188640
Purge Vol: 5 mL **Batch ID:** 1188640

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	105	105	70-123
95-47-6	PS	o-Xylene	50.0	0.00	U	52.2	104	71-125
100-42-5	PS	Styrene	50.0	0.00	U	51.7	103	71-128
75-25-2	PS	Bromoform	50.0	0.00	U	50.8	102	71-126
79-34-5	PS	1,1,2,2-Tetrachloroethane	50.0	0.00	U	49.3	99	67-126
96-18-4	PS	1,2,3-Trichloropropane	50.0	0.00	U	49.5	99	76-124
108-86-1	PS	Bromobenzene	50.0	0.00	U	49.0	98	72-120
103-65-1	PS	n-Propylbenzene	50.0	0.00	U	50.7	101	64-125
95-49-8	PS	2-Chlorotoluene	50.0	0.00	U	50.2	100	68-126
98-82-8	PS	Isopropylbenzene	50.0	0.00	U	49.6	99	68-127
108-67-8	PS	1,3,5-Trimethylbenzene	50.0	0.00	U	49.3	99	67-128
106-43-4	PS	4-Chlorotoluene	50.0	0.00	U	48.3	97	67-123
98-06-6	PS	tert-Butylbenzene	50.0	0.00	U	49.5	99	67-130
95-63-6	PS	1,2,4-Trimethylbenzene	50.0	0.00	U	48.9	98	67-127
135-98-8	PS	sec-Butylbenzene	50.0	0.00	U	49.8	100	66-129
99-87-6	PS	4-Isopropyltoluene	50.0	0.00	U	50.1	100	63-134
541-73-1	PS	1,3-Dichlorobenzene	50.0	0.00	U	49.1	98	68-122
106-46-7	PS	1,4-Dichlorobenzene	50.0	0.00	U	48.5	97	67-121
104-51-8	PS	n-Butylbenzene	50.0	0.00	U	49.9	100	59-133
96-12-8	PS	1,2-Dibromo-3-chloropropane	50.0	0.00	U	52.3	105	62-129
87-68-3	PS	Hexachlorobutadiene	50.0	0.00	U	48.2	96	52-137
91-20-3	PS	Naphthalene	50.0	0.00	U	46.2	92	63-129

Quality Control Summary
Spike Recovery Report

SDG Number: **12-711**
Sample Type: **Post Spike**
Client ID: **CAWA-12-2023PS**
Matrix: **WG**
Lab Sample ID: **1202599788**
Instrument: **VOA9.I**
Analysis Date: **02/15/2012 19:36**
Dilution: **1**
Analyst: **RXY1**
Prep Batch ID: **1188640**
Purge Vol: **5 mL**
Batch ID: **1188640**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
87-61-6	PS	1,2,3-Trichlorobenzene	50.0	0.00	U	59.0	118	59-131
630-20-6	PS	1,1,1,2-Tetrachloroethane	50.0	0.00	U	52.7	105	76-128
120-82-1	PS	1,2,4-Trichlorobenzene	50.0	0.00	U	45.7	91	59-127
95-50-1	PS	1,2-Dichlorobenzene	50.0	0.00	U	48.4	97	72-119

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 12-711 **Sample Type:** Post Spike Duplicate
Client ID: CAWA-12-2023PSD **Matrix:** WG
Lab Sample ID: 1202599789
Instrument: VOA9.I **Analysis Date:** 02/15/2012 20:03 **Dilution:** 1
Analyst: RXY1 **Prep Batch ID** 1188640
Purge Vol: 5 mL **Batch ID:** 1188640

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
75-71-8	PSD	Dichlorodifluoromethane	50.0	0.00	U	42.5	85	33-133	1	0-20
74-87-3	PSD	Chloromethane	50.0	0.00	U	53.5	107	52-142	3	0-20
75-01-4	PSD	Vinyl chloride	50.0	0.00	U	50.6	101	54-132	2	0-20
74-83-9	PSD	Bromomethane	50.0	0.00	U	53.1	106	63-125	4	0-20
75-00-3	PSD	Chloroethane	50.0	0.00	U	54.9	110	71-133	6	0-20
75-69-4	PSD	Trichlorofluoromethane	50.0	0.00	U	47.7	95	65-139	2	0-20
60-29-7	PSD	Ethyl ether	50.0	0.00	U	51.8	104	70-114	4	0-20
67-64-1	PSD	Acetone	250	0.00	U	196	78	30-162	0	0-21
75-05-8	PSD	Acetonitrile	1250	0.00	U	1450	116	57-126	0	0-20
75-35-4	PSD	1,1-Dichloroethylene	50.0	0.00	U	58.1	116	68-123	3	0-20
74-88-4	PSD	Iodomethane	250	0.00	U	318	127 *	71-122	4	0-20
75-09-2	PSD	Methylene chloride	50.0	0.00	U	51.3	103	74-128	3	0-20
75-15-0	PSD	Carbon disulfide	250	0.00	U	331	132 *	69-130	2	0-20
1634-04-4	PSD	tert-Butyl methyl ether	50.0	0.00	U	54.1	108	69-126	5	0-20
156-60-5	PSD	trans-1,2-Dichloroethylene	50.0	0.00	U	59.1	118	64-122	4	0-20
108-05-4	PSD	Vinyl acetate	250	0.00	U	290	116	49-155	0	0-20
75-34-3	PSD	1,1-Dichloroethane	50.0	0.00	U	58.5	117	74-122	4	0-20
78-93-3	PSD	2-Butanone	250	0.00	U	238	95	16-146	1	0-20
156-59-2	PSD	cis-1,2-Dichloroethylene	50.0	0.00	U	57.7	115	66-137	5	0-20
594-20-7	PSD	2,2-Dichloropropane	50.0	0.00	U	57.5	115	68-134	3	0-20
67-66-3	PSD	Chloroform	50.0	0.00	U	56.1	112	75-126	4	0-20
74-97-5	PSD	Bromochloromethane	50.0	0.00	U	56.3	113	79-126	6	0-20

Quality Control Summary
Spike Recovery Report

SDG Number: **12-711**
Sample Type: **Post Spike Duplicate**
Client ID: **CAWA-12-2023PSD**
Matrix: **WG**
Lab Sample ID: **1202599789**
Instrument: **VOA9.I**
Analysis Date: **02/15/2012 20:03**
Dilution: **1**
Analyst: **RXY1**
Prep Batch ID: **1188640**
Purge Vol: **5 mL**
Batch ID: **1188640**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
71-55-6	PSD	1,1,1-Trichloroethane	50.0	0.00	U	59.1	118	70-137	5	0-20
563-58-6	PSD	1,1-Dichloropropene	50.0	0.00	U	60.4	121	74-125	3	0-20
71-36-3	PSD	n-Butyl alcohol	5000	0.00	U	6210	124	59-136	2	0-22
56-23-5	PSD	Carbon tetrachloride	50.0	0.00	U	61.0	122	70-143	5	0-20
107-06-2	PSD	1,2-Dichloroethane	50.0	0.00	U	53.8	108	70-126	3	0-20
71-43-2	PSD	Benzene	50.0	0.00	U	58.0	116	74-119	4	0-20
79-01-6	PSD	Trichloroethylene	50.0	0.00	U	59.8	120	69-126	5	0-20
78-87-5	PSD	1,2-Dichloropropane	50.0	0.00	U	60.5	121	76-121	5	0-20
75-27-4	PSD	Bromodichloromethane	50.0	0.00	U	56.7	113	77-131	4	0-20
74-95-3	PSD	Dibromomethane	50.0	0.00	U	55.5	111	79-123	4	0-20
108-10-1	PSD	4-Methyl-2-pentanone	250	0.00	U	274	110	65-128	0	0-20
10061-01-5	PSD	cis-1,3-Dichloropropylene	50.0	0.00	U	58.4	117	77-125	5	0-20
108-88-3	PSD	Toluene	50.0	0.00	U	52.4	105	69-119	2	0-20
10061-02-6	PSD	trans-1,3-Dichloropropylene	50.0	0.00	U	53.6	107	75-125	2	0-20
79-00-5	PSD	1,1,2-Trichloroethane	50.0	0.00	U	52.8	106	74-119	2	0-20
591-78-6	PSD	2-Hexanone	250	0.00	U	220	88	31-144	1	0-20
142-28-9	PSD	1,3-Dichloropropane	50.0	0.00	U	53.1	106	76-117	3	0-20
127-18-4	PSD	Tetrachloroethylene	50.0	0.00	U	56.2	112	65-126	3	0-20
124-48-1	PSD	Dibromochloromethane	50.0	0.00	U	56.0	112	74-126	5	0-20
106-93-4	PSD	1,2-Dibromoethane	50.0	0.00	U	53.5	107	78-121	3	0-20
108-90-7	PSD	Chlorobenzene	50.0	0.00	U	54.1	108	74-119	4	0-20
100-41-4	PSD	Ethylbenzene	50.0	0.00	U	54.3	109	71-121	3	0-20

Quality Control Summary
Spike Recovery Report

SDG Number: **12-711**
Sample Type: **Post Spike Duplicate**
Client ID: **CAWA-12-2023PSD**
Matrix: **WG**
Lab Sample ID: **1202599789**
Instrument: **VOA9.I**
Analysis Date: **02/15/2012 20:03**
Dilution: **1**
Analyst: **RXY1**
Prep Batch ID: **1188640**
Purge Vol: **5 mL**
Batch ID: **1188640**

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	110	110	70-123	4	0-23
95-47-6	PSD	o-Xylene	50.0	0.00	U	54.3	109	71-125	4	0-20
100-42-5	PSD	Styrene	50.0	0.00	U	53.7	107	71-128	4	0-20
75-25-2	PSD	Bromoform	50.0	0.00	U	54.5	109	71-126	7	0-20
79-34-5	PSD	1,1,2,2-Tetrachloroethane	50.0	0.00	U	51.4	103	67-126	4	0-20
96-18-4	PSD	1,2,3-Trichloropropane	50.0	0.00	U	52.2	104	76-124	5	0-20
108-86-1	PSD	Bromobenzene	50.0	0.00	U	52.1	104	72-120	6	0-20
103-65-1	PSD	n-Propylbenzene	50.0	0.00	U	53.1	106	64-125	5	0-23
95-49-8	PSD	2-Chlorotoluene	50.0	0.00	U	53.4	107	68-126	6	0-20
98-82-8	PSD	Isopropylbenzene	50.0	0.00	U	52.8	106	68-127	6	0-20
108-67-8	PSD	1,3,5-Trimethylbenzene	50.0	0.00	U	51.6	103	67-128	5	0-21
106-43-4	PSD	4-Chlorotoluene	50.0	0.00	U	50.7	101	67-123	5	0-20
98-06-6	PSD	tert-Butylbenzene	50.0	0.00	U	53.2	106	67-130	7	0-20
95-63-6	PSD	1,2,4-Trimethylbenzene	50.0	0.00	U	51.0	102	67-127	4	0-22
135-98-8	PSD	sec-Butylbenzene	50.0	0.00	U	52.5	105	66-129	5	0-20
99-87-6	PSD	4-Isopropyltoluene	50.0	0.00	U	52.2	104	63-134	4	0-22
541-73-1	PSD	1,3-Dichlorobenzene	50.0	0.00	U	50.6	101	68-122	3	0-20
106-46-7	PSD	1,4-Dichlorobenzene	50.0	0.00	U	49.5	99	67-121	2	0-20
104-51-8	PSD	n-Butylbenzene	50.0	0.00	U	50.7	101	59-133	2	0-20
96-12-8	PSD	1,2-Dibromo-3-chloropropane	50.0	0.00	U	52.5	105	62-129	0	0-20
87-68-3	PSD	Hexachlorobutadiene	50.0	0.00	U	51.2	102	52-137	6	0-20
91-20-3	PSD	Naphthalene	50.0	0.00	U	48.3	97	63-129	4	0-20

Quality Control Summary
Spike Recovery Report

SDG Number: **12-711**
Sample Type: **Post Spike Duplicate**
Client ID: **CAWA-12-2023PSD**
Matrix: **WG**
Lab Sample ID: **1202599789**
Instrument: **VOA9.I**
Analysis Date: **02/15/2012 20:03**
Dilution: **1**
Analyst: **RXY1**
Prep Batch ID: **1188640**
Purge Vol: **5 mL**
Batch ID: **1188640**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
87-61-6	PSD	1,2,3-Trichlorobenzene	50.0	0.00	U	50.1	100	59-131	16	0-22
630-20-6	PSD	1,1,1,2-Tetrachloroethane	50.0	0.00	U	54.6	109	76-128	4	0-20
120-82-1	PSD	1,2,4-Trichlorobenzene	50.0	0.00	U	46.2	92	59-127	1	0-22
95-50-1	PSD	1,2-Dichlorobenzene	50.0	0.00	U	50.1	100	72-119	4	0-20

Quality Control Summary
Spike Recovery Report

SDG Number: **12-711**
Sample Type: **Laboratory Control Sample**
Client ID: **LCS for batch 1188640**
Matrix: **WATER**
Lab Sample ID: **1202599790**
Instrument: **VOA9.I**
Analysis Date: **02/15/2012 10:05**
Dilution: **1**
Analyst: **RXY1**
Prep Batch ID: **1188640**
Purge Vol: **5 mL**
Batch ID: **1188640**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
75-71-8	LCS	Dichlorodifluoromethane	50.0	0.0	38.4	77	40-136
74-87-3	LCS	Chloromethane	50.0	0.0	49.2	98	62-136
75-01-4	LCS	Vinyl chloride	50.0	0.0	47.1	94	64-128
74-83-9	LCS	Bromomethane	50.0	0.0	48.1	96	69-122
75-00-3	LCS	Chloroethane	50.0	0.0	50.1	100	79-131
75-69-4	LCS	Trichlorofluoromethane	50.0	0.0	44.9	90	74-138
60-29-7	LCS	Ethyl ether	50.0	0.0	46.3	93	73-120
67-64-1	LCS	Acetone	250	0.0	251	100	42-164
75-05-8	LCS	Acetonitrile	1250	0.0	1260	101	62-120
75-35-4	LCS	1,1-Dichloroethylene	50.0	0.0	53.2	106	74-122
74-88-4	LCS	Iodomethane	250	0.0	289	115	76-120
75-09-2	LCS	Methylene chloride	50.0	0.0	46.7	93	80-124
75-15-0	LCS	Carbon disulfide	250	0.0	305	122	74-130
1634-04-4	LCS	tert-Butyl methyl ether	50.0	0.0	48.3	97	73-122
156-60-5	LCS	trans-1,2-Dichloroethylene	50.0	0.0	53.4	107	67-123
108-05-4	LCS	Vinyl acetate	250	0.0	288	115	70-150
75-34-3	LCS	1,1-Dichloroethane	50.0	0.0	53.2	106	80-120
78-93-3	LCS	2-Butanone	250	0.0	227	91	45-153
156-59-2	LCS	cis-1,2-Dichloroethylene	50.0	0.0	52.9	106	71-134
594-20-7	LCS	2,2-Dichloropropane	50.0	0.0	55.9	112	75-137
67-66-3	LCS	Chloroform	50.0	0.0	50.9	102	80-122
74-97-5	LCS	Bromochloromethane	50.0	0.0	49.3	99	80-123

Quality Control Summary
Spike Recovery Report

SDG Number: **12-711**
Sample Type: **Laboratory Control Sample**
Client ID: **LCS for batch 1188640**
Matrix: **WATER**
Lab Sample ID: **1202599790**
Instrument: **VOA9.I**
Analysis Date: **02/15/2012 10:05**
Dilution: **1**
Analyst: **RXY1**
Prep Batch ID: **1188640**
Purge Vol: **5 mL**
Batch ID: **1188640**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
71-55-6	LCS	1,1,1-Trichloroethane	50.0	0.0	54.6	109	75-136
563-58-6	LCS	1,1-Dichloropropene	50.0	0.0	55.5	111	80-124
71-36-3	LCS	n-Butyl alcohol	5000	0.0	5380	108	64-133
56-23-5	LCS	Carbon tetrachloride	50.0	0.0	56.5	113	75-144
107-06-2	LCS	1,2-Dichloroethane	50.0	0.0	47.5	95	74-121
71-43-2	LCS	Benzene	50.0	0.0	52.3	105	80-120
79-01-6	LCS	Trichloroethylene	50.0	0.0	54.7	109	80-120
78-87-5	LCS	1,2-Dichloropropane	50.0	0.0	54.1	108	80-120
75-27-4	LCS	Bromodichloromethane	50.0	0.0	51.4	103	80-128
74-95-3	LCS	Dibromomethane	50.0	0.0	48.9	98	80-120
108-10-1	LCS	4-Methyl-2-pentanone	250	0.0	249	100	70-125
10061-01-5	LCS	cis-1,3-Dichloropropylene	50.0	0.0	53.8	108	80-124
108-88-3	LCS	Toluene	50.0	0.0	49.3	99	77-120
10061-02-6	LCS	trans-1,3-Dichloropropylene	50.0	0.0	50.8	102	80-124
79-00-5	LCS	1,1,2-Trichloroethane	50.0	0.0	48.1	96	77-120
591-78-6	LCS	2-Hexanone	250	0.0	244	98	53-149
142-28-9	LCS	1,3-Dichloropropane	50.0	0.0	47.6	95	78-120
127-18-4	LCS	Tetrachloroethylene	50.0	0.0	52.9	106	75-124
124-48-1	LCS	Dibromochloromethane	50.0	0.0	50.1	100	77-125
106-93-4	LCS	1,2-Dibromoethane	50.0	0.0	47.8	96	80-120
108-90-7	LCS	Chlorobenzene	50.0	0.0	50.6	101	80-120
100-41-4	LCS	Ethylbenzene	50.0	0.0	51.2	102	80-120

Quality Control Summary
Spike Recovery Report

SDG Number: **12-711**
Sample Type: **Laboratory Control Sample**
Client ID: **LCS for batch 1188640**
Matrix: **WATER**
Lab Sample ID: **1202599790**
Instrument: **VOA9.I**
Analysis Date: **02/15/2012 10:05**
Dilution: **1**
Analyst: **RXY1**
Prep Batch ID: **1188640**
Purge Vol: **5 mL**
Batch ID: **1188640**

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	103	103	80-120
95-47-6	LCS	o-Xylene	50.0	0.0	50.5	101	80-121
100-42-5	LCS	Styrene	50.0	0.0	50.2	100	79-125
75-25-2	LCS	Bromoform	50.0	0.0	50.1	100	73-126
79-34-5	LCS	1,1,2,2-Tetrachloroethane	50.0	0.0	46.3	93	73-122
96-18-4	LCS	1,2,3-Trichloropropane	50.0	0.0	46.9	94	78-121
108-86-1	LCS	Bromobenzene	50.0	0.0	49.3	99	79-120
103-65-1	LCS	n-Propylbenzene	50.0	0.0	51.1	102	76-121
95-49-8	LCS	2-Chlorotoluene	50.0	0.0	50.4	101	80-120
98-82-8	LCS	Isopropylbenzene	50.0	0.0	50.2	100	78-124
108-67-8	LCS	1,3,5-Trimethylbenzene	50.0	0.0	49.1	98	79-123
106-43-4	LCS	4-Chlorotoluene	50.0	0.0	49.0	98	78-120
98-06-6	LCS	tert-Butylbenzene	50.0	0.0	48.3	97	79-125
95-63-6	LCS	1,2,4-Trimethylbenzene	50.0	0.0	48.9	98	79-121
135-98-8	LCS	sec-Butylbenzene	50.0	0.0	49.8	100	79-124
99-87-6	LCS	4-Isopropyltoluene	50.0	0.0	49.7	99	80-128
541-73-1	LCS	1,3-Dichlorobenzene	50.0	0.0	48.8	98	80-120
106-46-7	LCS	1,4-Dichlorobenzene	50.0	0.0	48.2	96	79-120
104-51-8	LCS	n-Butylbenzene	50.0	0.0	49.3	99	78-127
96-12-8	LCS	1,2-Dibromo-3-chloropropane	50.0	0.0	48.2	96	66-126
87-68-3	LCS	Hexachlorobutadiene	50.0	0.0	46.8	94	71-132
91-20-3	LCS	Naphthalene	50.0	0.0	43.8	88	68-127

Quality Control Summary
Spike Recovery Report

SDG Number: **12-711**
Sample Type: **Laboratory Control Sample**
Client ID: **LCS for batch 1188640**
Matrix: **WATER**
Lab Sample ID: **1202599790**
Instrument: **VOA9.I**
Analysis Date: **02/15/2012 10:05**
Dilution: **1**
Analyst: **RXY1**
Prep Batch ID: **1188640**
Purge Vol: **5 mL**
Batch ID: **1188640**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
87-61-6	LCS	1,2,3-Trichlorobenzene	50.0	0.0	45.3	91	70-129
630-20-6	LCS	1,1,1,2-Tetrachloroethane	50.0	0.0	50.4	101	80-125
120-82-1	LCS	1,2,4-Trichlorobenzene	50.0	0.0	45.9	92	74-126
95-50-1	LCS	1,2-Dichlorobenzene	50.0	0.0	46.4	93	80-120

Quality Control Summary
Spike Recovery Report

SDG Number: **12-711**
Sample Type: **Laboratory Control Sample**
Client ID: **LCS for batch 1188640**
Matrix: **WATER**
Lab Sample ID: **1202599791**
Instrument: **VOA9.I**
Analysis Date: **02/15/2012 10:32**
Dilution: **1**
Analyst: **RXY1**
Prep Batch ID: **1188640**
Purge Vol: **5 mL**
Batch ID: **1188640**

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	236	95	60-137
76-13-1	LCS	Trichlorotrifluoroethane	250	0.0	274	110	66-140
107-05-1	LCS	Allyl chloride	250	0.0	228	91	59-137
107-13-1	LCS	Acrylonitrile	250	0.0	233	93	69-120
126-99-8	LCS	2-Chloro-1,3-butadiene	50.0	0.0	39.7	79	61-138
107-12-0	LCS	Propionitrile	250	0.0	255	102	69-120
126-98-7	LCS	Methacrylonitrile	250	0.0	234	94	67-120
78-83-1	LCS	Isobutyl alcohol	2500	0.0	2420	97	60-126
80-62-6	LCS	Methyl methacrylate	250	0.0	231	92	73-120
97-63-2	LCS	Ethyl methacrylate	250	0.0	222	89	71-120

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 12-711
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1188640
Matrix: WATER
Lab Sample ID: 1202600767
Instrument: VOA9.I
Analysis Date: 02/17/2012 10:54
Dilution: 1
Analyst: RXY1
Prep Batch ID: 1188640
Purge Vol: 5 mL
Batch ID: 1188640

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
75-71-8	LCS	Dichlorodifluoromethane	50.0	0.0	35.1	70	40-136
74-87-3	LCS	Chloromethane	50.0	0.0	37.7	75	62-136
75-01-4	LCS	Vinyl chloride	50.0	0.0	37.0	74	64-128
74-83-9	LCS	Bromomethane	50.0	0.0	43.9	88	69-122
75-00-3	LCS	Chloroethane	50.0	0.0	51.5	103	79-131
75-69-4	LCS	Trichlorofluoromethane	50.0	0.0	45.3	91	74-138
60-29-7	LCS	Ethyl ether	50.0	0.0	46.9	94	73-120
67-64-1	LCS	Acetone	250	0.0	262	105	42-164
75-05-8	LCS	Acetonitrile	1250	0.0	1350	108	62-120
75-35-4	LCS	1,1-Dichloroethylene	50.0	0.0	52.1	104	74-122
74-88-4	LCS	Iodomethane	250	0.0	295	118	76-120
75-09-2	LCS	Methylene chloride	50.0	0.0	47.9	96	80-124
75-15-0	LCS	Carbon disulfide	250	0.0	290	116	74-130
1634-04-4	LCS	tert-Butyl methyl ether	50.0	0.0	47.1	94	73-122
156-60-5	LCS	trans-1,2-Dichloroethylene	50.0	0.0	53.1	106	67-123
108-05-4	LCS	Vinyl acetate	250	0.0	282	113	70-150
75-34-3	LCS	1,1-Dichloroethane	50.0	0.0	52.6	105	80-120
78-93-3	LCS	2-Butanone	250	0.0	263	105	45-153
156-59-2	LCS	cis-1,2-Dichloroethylene	50.0	0.0	52.8	106	71-134
594-20-7	LCS	2,2-Dichloropropane	50.0	0.0	55.1	110	75-137
67-66-3	LCS	Chloroform	50.0	0.0	51.0	102	80-122
74-97-5	LCS	Bromochloromethane	50.0	0.0	52.5	105	80-123

Quality Control Summary
Spike Recovery Report

SDG Number: **12-711**
Sample Type: **Laboratory Control Sample**
Client ID: **LCS for batch 1188640**
Matrix: **WATER**
Lab Sample ID: **1202600767**
Instrument: **VOA9.I**
Analysis Date: **02/17/2012 10:54**
Dilution: **1**
Analyst: **RXY1**
Prep Batch ID: **1188640**
Purge Vol: **5 mL**
Batch ID: **1188640**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
71-55-6	LCS	1,1,1-Trichloroethane	50.0	0.0	55.8	112	75-136
563-58-6	LCS	1,1-Dichloropropene	50.0	0.0	56.2	112	80-124
71-36-3	LCS	n-Butyl alcohol	5000	0.0	5840	117	64-133
56-23-5	LCS	Carbon tetrachloride	50.0	0.0	58.5	117	75-144
107-06-2	LCS	1,2-Dichloroethane	50.0	0.0	46.3	93	74-121
71-43-2	LCS	Benzene	50.0	0.0	52.9	106	80-120
79-01-6	LCS	Trichloroethylene	50.0	0.0	56.0	112	80-120
78-87-5	LCS	1,2-Dichloropropane	50.0	0.0	53.6	107	80-120
75-27-4	LCS	Bromodichloromethane	50.0	0.0	50.5	101	80-128
74-95-3	LCS	Dibromomethane	50.0	0.0	49.6	99	80-120
108-10-1	LCS	4-Methyl-2-pentanone	250	0.0	252	101	70-125
10061-01-5	LCS	cis-1,3-Dichloropropylene	50.0	0.0	53.2	106	80-124
108-88-3	LCS	Toluene	50.0	0.0	47.4	95	77-120
10061-02-6	LCS	trans-1,3-Dichloropropylene	50.0	0.0	48.3	97	80-124
79-00-5	LCS	1,1,2-Trichloroethane	50.0	0.0	46.9	94	77-120
591-78-6	LCS	2-Hexanone	250	0.0	247	99	53-149
142-28-9	LCS	1,3-Dichloropropane	50.0	0.0	46.5	93	78-120
127-18-4	LCS	Tetrachloroethylene	50.0	0.0	54.8	110	75-124
124-48-1	LCS	Dibromochloromethane	50.0	0.0	50.9	102	77-125
106-93-4	LCS	1,2-Dibromoethane	50.0	0.0	48.7	97	80-120
108-90-7	LCS	Chlorobenzene	50.0	0.0	50.6	101	80-120
100-41-4	LCS	Ethylbenzene	50.0	0.0	49.4	99	80-120

Quality Control Summary
Spike Recovery Report

SDG Number: **12-711**
Sample Type: **Laboratory Control Sample**
Client ID: **LCS for batch 1188640**
Matrix: **WATER**
Lab Sample ID: **1202600767**
Instrument: **VOA9.I**
Analysis Date: **02/17/2012 10:54**
Dilution: **1**
Analyst: **RXY1**
Prep Batch ID: **1188640**
Purge Vol: **5 mL**
Batch ID: **1188640**

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	80-120
95-47-6	LCS	o-Xylene	50.0	0.0	49.0	98	80-121
100-42-5	LCS	Styrene	50.0	0.0	48.3	97	79-125
75-25-2	LCS	Bromoform	50.0	0.0	51.2	102	73-126
79-34-5	LCS	1,1,2,2-Tetrachloroethane	50.0	0.0	45.8	92	73-122
96-18-4	LCS	1,2,3-Trichloropropane	50.0	0.0	47.6	95	78-121
108-86-1	LCS	Bromobenzene	50.0	0.0	48.1	96	79-120
103-65-1	LCS	n-Propylbenzene	50.0	0.0	48.2	96	76-121
95-49-8	LCS	2-Chlorotoluene	50.0	0.0	47.9	96	80-120
98-82-8	LCS	Isopropylbenzene	50.0	0.0	49.0	98	78-124
108-67-8	LCS	1,3,5-Trimethylbenzene	50.0	0.0	46.3	93	79-123
106-43-4	LCS	4-Chlorotoluene	50.0	0.0	46.3	93	78-120
98-06-6	LCS	tert-Butylbenzene	50.0	0.0	48.0	96	79-125
95-63-6	LCS	1,2,4-Trimethylbenzene	50.0	0.0	46.4	93	79-121
135-98-8	LCS	sec-Butylbenzene	50.0	0.0	47.8	96	79-124
99-87-6	LCS	4-Isopropyltoluene	50.0	0.0	48.8	98	80-128
541-73-1	LCS	1,3-Dichlorobenzene	50.0	0.0	47.8	96	80-120
106-46-7	LCS	1,4-Dichlorobenzene	50.0	0.0	47.2	94	79-120
104-51-8	LCS	n-Butylbenzene	50.0	0.0	45.9	92	78-127
96-12-8	LCS	1,2-Dibromo-3-chloropropane	50.0	0.0	51.2	102	66-126
87-68-3	LCS	Hexachlorobutadiene	50.0	0.0	48.6	97	71-132
91-20-3	LCS	Naphthalene	50.0	0.0	45.6	91	68-127

Quality Control Summary
Spike Recovery Report

SDG Number: **12-711**
Sample Type: **Laboratory Control Sample**
Client ID: **LCS for batch 1188640**
Matrix: **WATER**
Lab Sample ID: **1202600767**
Instrument: **VOA9.I**
Analysis Date: **02/17/2012 10:54**
Dilution: **1**
Analyst: **RXY1**
Prep Batch ID: **1188640**
Purge Vol: **5 mL**
Batch ID: **1188640**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
87-61-6	LCS	1,2,3-Trichlorobenzene	50.0	0.0	46.9	94	70-129
630-20-6	LCS	1,1,1,2-Tetrachloroethane	50.0	0.0	49.3	99	80-125
120-82-1	LCS	1,2,4-Trichlorobenzene	50.0	0.0	47.0	94	74-126
95-50-1	LCS	1,2-Dichlorobenzene	50.0	0.0	46.1	92	80-120

Quality Control Summary
Spike Recovery Report

SDG Number: 12-711
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1188640
Matrix: WATER
Lab Sample ID: 1202600768
Instrument: VOA9.I
Analysis Date: 02/17/2012 12:14
Dilution: 1
Analyst: RXY1
Prep Batch ID: 1188640
Purge Vol: 5 mL
Batch ID: 1188640

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
107-02-8	LCS	Acrolein	250	0.0	242	97	60-137
76-13-1	LCS	Trichlorotrifluoroethane	250	0.0	294	118	66-140
107-05-1	LCS	Allyl chloride	250	0.0	235	94	59-137
107-13-1	LCS	Acrylonitrile	250	0.0	245	98	69-120
126-99-8	LCS	2-Chloro-1,3-butadiene	50.0	0.0	42.3	85	61-138
107-12-0	LCS	Propionitrile	250	0.0	269	108	69-120
126-98-7	LCS	Methacrylonitrile	250	0.0	231	92	67-120
78-83-1	LCS	Isobutyl alcohol	2500	0.0	2370	95	60-126
80-62-6	LCS	Methyl methacrylate	250	0.0	227	91	73-120
97-63-2	LCS	Ethyl methacrylate	250	0.0	208	83	71-120

Method Blank Summary

SDG Number:	**12-711**	**Client:**	**ARSL001**	**Matrix:**	**WATER**
Client ID:	**MB for batch 1188640**	**Instrument ID:**	**VOA9.I**	**Data File:**	**021512V9\9Z305B1.D**
Lab Sample ID:	**1202599787**	**Prep Date:**	**02/15/2012 10:59**	**Analyzed:**	**02/15/12 10:59**
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 1188640	1202599790	021512V9\9Z303L1.D	02/15/12	1005
02	LCS for batch 1188640	1202599791	021512V9\9Z304L1.D	02/15/12	1032
03	CAAN-12-2026	295388004	021512V9\9Z316.D	02/15/12	1559
04	CAAN-12-2024	295388001	021512V9\9Z319.D	02/15/12	1721
05	CAWA-12-2023PS	1202599788	021512V9\9Z324.D	02/15/12	1936
06	CAWA-12-2023PSD	1202599789	021512V9\9Z325.D	02/15/12	2003

Method Blank Summary

SDG Number:	**12-711**	**Client:**	**ARSL001**	**Matrix:**	**WATER**
Client ID:	**MB for batch 1188640**	**Instrument ID:**	**VOA9.I**	**Data File:**	**021712V9\9Z512B.D**
Lab Sample ID:	**1202600766**	**Prep Date:**	**02/17/2012 14:00**	**Analyzed:**	**02/17/12 14:00**
Column:	**DB-624**				

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

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
08	LCS for batch 1188640	1202600767	021712V9\9Z505L.D	02/17/12	1054
09	LCS for batch 1188640	1202600768	021712V9\9Z508L1.D	02/17/12	1214
10	CAAN-12-2026RA	295388004	021712V9\9Z517.D	02/17/12	1616

Quality Control Data

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**			**Matrix:**	**WATER**
Lab Sample ID:	**1202599787**				
Client Sample:	**QC for batch 1188640**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**MB for batch 1188640**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/15/2012 10:59**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2012 10:59**				
Data File:	**021512V9\9Z305B1.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.500	1.00
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
67-64-1	Acetone	U	10.0	ug/L	3.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	6.25	25.0
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.25	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	3.00	10.0
75-15-0	Carbon disulfide	U	5.00	ug/L	1.25	5.00
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.250	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	1.25	5.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.250	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.325	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.250	1.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.250	1.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.250	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.250	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.250	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.25	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.250	1.00
108-88-3	Toluene	U	1.00	ug/L	0.250	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.250	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.250	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.25	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**			**Matrix:**	**WATER**
Lab Sample ID:	**1202599787**				
Client Sample:	**QC for batch 1188640**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**MB for batch 1188640**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/15/2012 10:59**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2012 10:59**				
Data File:	**021512V9\9Z305B1.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.250	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.250	1.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.250	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.500	2.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
100-42-5	Styrene	U	1.00	ug/L	0.250	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.250	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.250	1.00
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.250	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.250	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.250	1.00
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.250	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.250	1.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.250	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.250	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.250	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.250	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.250	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.250	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.250	1.00
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.250	1.00
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
91-20-3	Naphthalene	J	0.280	ug/L	0.250	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.332	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.25	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.00	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.00	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.00	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	12.5	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.00	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**			**Matrix:**	**WATER**
Lab Sample ID:	**1202599787**				
Client Sample:	**QC for batch 1188640**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**MB for batch 1188640**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/15/2012 10:59**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2012 10:59**				
Data File:	**021512V9\9Z305B1.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.00	5.00
630-20-6	1,1,1,2-Tetrachloroethane	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
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.250	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	43.6	50.0	ug/L	87.2	(76%-127%)
Bromofluorobenzene	50.5	50.0	ug/L	101	(80%-120%)
Toluene-d8	46.2	50.0	ug/L	92.5	(80%-120%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown hydrocarbon	4.29	22.9	ug/L	0	J

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/03/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**1202599788**	**Date Received:**	**02/07/2012 08:40**		
Client Sample:	**QC for batch 1188640**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAWA-12-2023PS**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/15/2012 19:36**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2012 19:36**				
Data File:	**021512V9\9Z324.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane		41.9	ug/L	0.300	1.00
74-87-3	Chloromethane		51.8	ug/L	0.300	1.00
75-01-4	Vinyl chloride		49.5	ug/L	0.500	1.00
74-83-9	Bromomethane		51.0	ug/L	0.300	1.00
75-00-3	Chloroethane		51.6	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane		46.6	ug/L	0.300	1.00
60-29-7	Ethyl ether		49.7	ug/L	0.300	1.00
67-64-1	Acetone		196	ug/L	3.50	10.0
75-05-8	Acetonitrile		1450	ug/L	6.25	25.0
75-35-4	1,1-Dichloroethylene		56.1	ug/L	0.300	1.00
74-88-4	Iodomethane		305	ug/L	1.25	5.00
75-09-2	Methylene chloride		49.8	ug/L	3.00	10.0
75-15-0	Carbon disulfide		324	ug/L	1.25	5.00
1634-04-4	tert-Butyl methyl ether		51.6	ug/L	0.250	1.00
156-60-5	trans-1,2-Dichloroethylene		56.6	ug/L	0.300	1.00
108-05-4	Vinyl acetate		290	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane		56.2	ug/L	0.300	1.00
78-93-3	2-Butanone		240	ug/L	1.25	5.00
156-59-2	cis-1,2-Dichloroethylene		55.1	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane		55.6	ug/L	0.300	1.00
67-66-3	Chloroform		53.8	ug/L	0.250	1.00
74-97-5	Bromochloromethane		53.2	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane		56.3	ug/L	0.325	1.00
563-58-6	1,1-Dichloropropene		58.6	ug/L	0.250	1.00
71-36-3	n-Butyl alcohol		6350	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride		58.3	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane		52.4	ug/L	0.250	1.00
71-43-2	Benzene		56.0	ug/L	0.300	1.00
79-01-6	Trichloroethylene		56.7	ug/L	0.250	1.00
78-87-5	1,2-Dichloropropane		57.3	ug/L	0.250	1.00
75-27-4	Bromodichloromethane		54.7	ug/L	0.250	1.00
74-95-3	Dibromomethane		53.1	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone		275	ug/L	1.25	5.00
10061-01-5	cis-1,3-Dichloropropylene		55.3	ug/L	0.250	1.00
108-88-3	Toluene		51.4	ug/L	0.250	1.00
10061-02-6	trans-1,3-Dichloropropylene		52.5	ug/L	0.250	1.00
79-00-5	1,1,2-Trichloroethane		52.0	ug/L	0.250	1.00
591-78-6	2-Hexanone		223	ug/L	1.25	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/03/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**1202599788**	**Date Received:**	**02/07/2012 08:40**		
Client Sample:	**QC for batch 1188640**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAWA-12-2023PS**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/15/2012 19:36**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2012 19:36**				
Data File:	**021512V9\9Z324.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane		51.5	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene		54.8	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		53.3	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane		51.9	ug/L	0.250	1.00
108-90-7	Chlorobenzene		51.9	ug/L	0.250	1.00
100-41-4	Ethylbenzene		52.5	ug/L	0.250	1.00
179601-23-1	m,p-Xylenes		105	ug/L	0.500	2.00
95-47-6	o-Xylene		52.2	ug/L	0.300	1.00
100-42-5	Styrene		51.7	ug/L	0.250	1.00
75-25-2	Bromoform		50.8	ug/L	0.250	1.00
79-34-5	1,1,2,2-Tetrachloroethane		49.3	ug/L	0.250	1.00
96-18-4	1,2,3-Trichloropropane		49.5	ug/L	0.300	1.00
108-86-1	Bromobenzene		49.0	ug/L	0.250	1.00
103-65-1	n-Propylbenzene		50.7	ug/L	0.250	1.00
95-49-8	2-Chlorotoluene		50.2	ug/L	0.250	1.00
98-82-8	Isopropylbenzene		49.6	ug/L	0.250	1.00
108-67-8	1,3,5-Trimethylbenzene		49.3	ug/L	0.250	1.00
106-43-4	4-Chlorotoluene		48.3	ug/L	0.250	1.00
98-06-6	tert-Butylbenzene		49.5	ug/L	0.250	1.00
95-63-6	1,2,4-Trimethylbenzene		48.9	ug/L	0.250	1.00
135-98-8	sec-Butylbenzene		49.8	ug/L	0.250	1.00
99-87-6	4-Isopropyltoluene		50.1	ug/L	0.250	1.00
541-73-1	1,3-Dichlorobenzene		49.1	ug/L	0.250	1.00
106-46-7	1,4-Dichlorobenzene		48.5	ug/L	0.250	1.00
104-51-8	n-Butylbenzene		49.9	ug/L	0.250	1.00
96-12-8	1,2-Dibromo-3-chloropropane		52.3	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene		48.2	ug/L	0.300	1.00
91-20-3	Naphthalene	B	46.2	ug/L	0.250	1.00
87-61-6	1,2,3-Trichlorobenzene		59.0	ug/L	0.332	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.25	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.00	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.00	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.00	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	12.5	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.00	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/03/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**1202599788**	**Date Received:**	**02/07/2012 08:40**		
Client Sample:	**QC for batch 1188640**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAWA-12-2023PS**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/15/2012 19:36**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2012 19:36**				
Data File:	**021512V9\9Z324.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.00	5.00
630-20-6	1,1,1,2-Tetrachloroethane		52.7	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene		45.7	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene		48.4	ug/L	0.250	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	46.3	50.0	ug/L	92.7	(76%-127%)
Bromofluorobenzene	49.0	50.0	ug/L	98.0	(80%-120%)
Toluene-d8	46.2	50.0	ug/L	92.4	(80%-120%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/03/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**1202599789**	**Date Received:**	**02/07/2012 08:40**		
Client Sample:	**QC for batch 1188640**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAWA-12-2023PSD**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/15/2012 20:03**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2012 20:03**				
Data File:	**021512V9\9Z325.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane		42.5	ug/L	0.300	1.00
74-87-3	Chloromethane		53.5	ug/L	0.300	1.00
75-01-4	Vinyl chloride		50.6	ug/L	0.500	1.00
74-83-9	Bromomethane		53.1	ug/L	0.300	1.00
75-00-3	Chloroethane		54.9	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane		47.7	ug/L	0.300	1.00
60-29-7	Ethyl ether		51.8	ug/L	0.300	1.00
67-64-1	Acetone		196	ug/L	3.50	10.0
75-05-8	Acetonitrile		1450	ug/L	6.25	25.0
75-35-4	1,1-Dichloroethylene		58.1	ug/L	0.300	1.00
74-88-4	Iodomethane		318	ug/L	1.25	5.00
75-09-2	Methylene chloride		51.3	ug/L	3.00	10.0
75-15-0	Carbon disulfide		331	ug/L	1.25	5.00
1634-04-4	tert-Butyl methyl ether		54.1	ug/L	0.250	1.00
156-60-5	trans-1,2-Dichloroethylene		59.1	ug/L	0.300	1.00
108-05-4	Vinyl acetate		290	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane		58.5	ug/L	0.300	1.00
78-93-3	2-Butanone		238	ug/L	1.25	5.00
156-59-2	cis-1,2-Dichloroethylene		57.7	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane		57.5	ug/L	0.300	1.00
67-66-3	Chloroform		56.1	ug/L	0.250	1.00
74-97-5	Bromochloromethane		56.3	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane		59.1	ug/L	0.325	1.00
563-58-6	1,1-Dichloropropene		60.4	ug/L	0.250	1.00
71-36-3	n-Butyl alcohol		6210	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride		61.0	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane		53.8	ug/L	0.250	1.00
71-43-2	Benzene		58.0	ug/L	0.300	1.00
79-01-6	Trichloroethylene		59.8	ug/L	0.250	1.00
78-87-5	1,2-Dichloropropane		60.5	ug/L	0.250	1.00
75-27-4	Bromodichloromethane		56.7	ug/L	0.250	1.00
74-95-3	Dibromomethane		55.5	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone		274	ug/L	1.25	5.00
10061-01-5	cis-1,3-Dichloropropylene		58.4	ug/L	0.250	1.00
108-88-3	Toluene		52.4	ug/L	0.250	1.00
10061-02-6	trans-1,3-Dichloropropylene		53.6	ug/L	0.250	1.00
79-00-5	1,1,2-Trichloroethane		52.8	ug/L	0.250	1.00
591-78-6	2-Hexanone		220	ug/L	1.25	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/03/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**1202599789**	**Date Received:**	**02/07/2012 08:40**		
Client Sample:	**QC for batch 1188640**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAWA-12-2023PSD**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/15/2012 20:03**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2012 20:03**				
Data File:	**021512V9\9Z325.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane		53.1	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene		56.2	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		56.0	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane		53.5	ug/L	0.250	1.00
108-90-7	Chlorobenzene		54.1	ug/L	0.250	1.00
100-41-4	Ethylbenzene		54.3	ug/L	0.250	1.00
179601-23-1	m,p-Xylenes		110	ug/L	0.500	2.00
95-47-6	o-Xylene		54.3	ug/L	0.300	1.00
100-42-5	Styrene		53.7	ug/L	0.250	1.00
75-25-2	Bromoform		54.5	ug/L	0.250	1.00
79-34-5	1,1,2,2-Tetrachloroethane		51.4	ug/L	0.250	1.00
96-18-4	1,2,3-Trichloropropane		52.2	ug/L	0.300	1.00
108-86-1	Bromobenzene		52.1	ug/L	0.250	1.00
103-65-1	n-Propylbenzene		53.1	ug/L	0.250	1.00
95-49-8	2-Chlorotoluene		53.4	ug/L	0.250	1.00
98-82-8	Isopropylbenzene		52.8	ug/L	0.250	1.00
108-67-8	1,3,5-Trimethylbenzene		51.6	ug/L	0.250	1.00
106-43-4	4-Chlorotoluene		50.7	ug/L	0.250	1.00
98-06-6	tert-Butylbenzene		53.2	ug/L	0.250	1.00
95-63-6	1,2,4-Trimethylbenzene		51.0	ug/L	0.250	1.00
135-98-8	sec-Butylbenzene		52.5	ug/L	0.250	1.00
99-87-6	4-Isopropyltoluene		52.2	ug/L	0.250	1.00
541-73-1	1,3-Dichlorobenzene		50.6	ug/L	0.250	1.00
106-46-7	1,4-Dichlorobenzene		49.5	ug/L	0.250	1.00
104-51-8	n-Butylbenzene		50.7	ug/L	0.250	1.00
96-12-8	1,2-Dibromo-3-chloropropane		52.5	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene		51.2	ug/L	0.300	1.00
91-20-3	Naphthalene	B	48.3	ug/L	0.250	1.00
87-61-6	1,2,3-Trichlorobenzene		50.1	ug/L	0.332	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.25	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.00	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.00	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.00	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	12.5	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.00	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/03/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**1202599789**	**Date Received:**	**02/07/2012 08:40**		
Client Sample:	**QC for batch 1188640**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAWA-12-2023PSD**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/15/2012 20:03**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2012 20:03**				
Data File:	**021512V9\9Z325.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.00	5.00
630-20-6	1,1,1,2-Tetrachloroethane		54.6	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene		46.2	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene		50.1	ug/L	0.250	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	44.1	50.0	ug/L	88.3	(76%-127%)
Bromofluorobenzene	48.6	50.0	ug/L	97.2	(80%-120%)
Toluene-d8	45.0	50.0	ug/L	90.0	(80%-120%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**			**Matrix:**	**WATER**
Lab Sample ID:	**1202599790**				
Client Sample:	**QC for batch 1188640**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1188640**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/15/2012 10:05**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2012 10:05**				
Data File:	**021512V9\9Z303L1.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane		38.4	ug/L	0.300	1.00
74-87-3	Chloromethane		49.2	ug/L	0.300	1.00
75-01-4	Vinyl chloride		47.1	ug/L	0.500	1.00
74-83-9	Bromomethane		48.1	ug/L	0.300	1.00
75-00-3	Chloroethane		50.1	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane		44.9	ug/L	0.300	1.00
60-29-7	Ethyl ether		46.3	ug/L	0.300	1.00
67-64-1	Acetone		251	ug/L	3.50	10.0
75-05-8	Acetonitrile		1260	ug/L	6.25	25.0
75-35-4	1,1-Dichloroethylene		53.2	ug/L	0.300	1.00
74-88-4	Iodomethane		289	ug/L	1.25	5.00
75-09-2	Methylene chloride		46.7	ug/L	3.00	10.0
75-15-0	Carbon disulfide		305	ug/L	1.25	5.00
1634-04-4	tert-Butyl methyl ether		48.3	ug/L	0.250	1.00
156-60-5	trans-1,2-Dichloroethylene		53.4	ug/L	0.300	1.00
108-05-4	Vinyl acetate		288	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane		53.2	ug/L	0.300	1.00
78-93-3	2-Butanone		227	ug/L	1.25	5.00
156-59-2	cis-1,2-Dichloroethylene		52.9	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane		55.9	ug/L	0.300	1.00
67-66-3	Chloroform		50.9	ug/L	0.250	1.00
74-97-5	Bromochloromethane		49.3	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane		54.6	ug/L	0.325	1.00
563-58-6	1,1-Dichloropropene		55.5	ug/L	0.250	1.00
71-36-3	n-Butyl alcohol		5380	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride		56.5	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane		47.5	ug/L	0.250	1.00
71-43-2	Benzene		52.3	ug/L	0.300	1.00
79-01-6	Trichloroethylene		54.7	ug/L	0.250	1.00
78-87-5	1,2-Dichloropropane		54.1	ug/L	0.250	1.00
75-27-4	Bromodichloromethane		51.4	ug/L	0.250	1.00
74-95-3	Dibromomethane		48.9	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone		249	ug/L	1.25	5.00
10061-01-5	cis-1,3-Dichloropropylene		53.8	ug/L	0.250	1.00
108-88-3	Toluene		49.3	ug/L	0.250	1.00
10061-02-6	trans-1,3-Dichloropropylene		50.8	ug/L	0.250	1.00
79-00-5	1,1,2-Trichloroethane		48.1	ug/L	0.250	1.00
591-78-6	2-Hexanone		244	ug/L	1.25	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**			**Matrix:**	**WATER**
Lab Sample ID:	**1202599790**				
Client Sample:	**QC for batch 1188640**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1188640**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/15/2012 10:05**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2012 10:05**				
Data File:	**021512V9\9Z303L1.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane		47.6	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene		52.9	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		50.1	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane		47.8	ug/L	0.250	1.00
108-90-7	Chlorobenzene		50.6	ug/L	0.250	1.00
100-41-4	Ethylbenzene		51.2	ug/L	0.250	1.00
179601-23-1	m,p-Xylenes		103	ug/L	0.500	2.00
95-47-6	o-Xylene		50.5	ug/L	0.300	1.00
100-42-5	Styrene		50.2	ug/L	0.250	1.00
75-25-2	Bromoform		50.1	ug/L	0.250	1.00
79-34-5	1,1,2,2-Tetrachloroethane		46.3	ug/L	0.250	1.00
96-18-4	1,2,3-Trichloropropane		46.9	ug/L	0.300	1.00
108-86-1	Bromobenzene		49.3	ug/L	0.250	1.00
103-65-1	n-Propylbenzene		51.1	ug/L	0.250	1.00
95-49-8	2-Chlorotoluene		50.4	ug/L	0.250	1.00
98-82-8	Isopropylbenzene		50.2	ug/L	0.250	1.00
108-67-8	1,3,5-Trimethylbenzene		49.1	ug/L	0.250	1.00
106-43-4	4-Chlorotoluene		49.0	ug/L	0.250	1.00
98-06-6	tert-Butylbenzene		48.3	ug/L	0.250	1.00
95-63-6	1,2,4-Trimethylbenzene		48.9	ug/L	0.250	1.00
135-98-8	sec-Butylbenzene		49.8	ug/L	0.250	1.00
99-87-6	4-Isopropyltoluene		49.7	ug/L	0.250	1.00
541-73-1	1,3-Dichlorobenzene		48.8	ug/L	0.250	1.00
106-46-7	1,4-Dichlorobenzene		48.2	ug/L	0.250	1.00
104-51-8	n-Butylbenzene		49.3	ug/L	0.250	1.00
96-12-8	1,2-Dibromo-3-chloropropane		48.2	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene		46.8	ug/L	0.300	1.00
91-20-3	Naphthalene	B	43.8	ug/L	0.250	1.00
87-61-6	1,2,3-Trichlorobenzene		45.3	ug/L	0.332	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.25	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.00	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.00	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.00	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	12.5	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.00	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**			**Matrix:**	**WATER**
Lab Sample ID:	**1202599790**				
Client Sample:	**QC for batch 1188640**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1188640**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/15/2012 10:05**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2012 10:05**				
Data File:	**021512V9\9Z303L1.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.00	5.00
630-20-6	1,1,1,2-Tetrachloroethane		50.4	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene		45.9	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene		46.4	ug/L	0.250	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	42.7	50.0	ug/L	85.4	(76%-127%)
Bromofluorobenzene	48.5	50.0	ug/L	97.1	(80%-120%)
Toluene-d8	44.8	50.0	ug/L	89.6	(80%-120%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**			**Matrix:**	**WATER**
Lab Sample ID:	**1202599791**				
Client Sample:	**QC for batch 1188640**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1188640**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/15/2012 10:32**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2012 10:32**				
Data File:	**021512V9\9Z304L1.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.500	1.00
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
67-64-1	Acetone	U	10.0	ug/L	3.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	6.25	25.0
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.25	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	3.00	10.0
75-15-0	Carbon disulfide	U	5.00	ug/L	1.25	5.00
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.250	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	1.25	5.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.250	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.325	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.250	1.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.250	1.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.250	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.250	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.250	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.25	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.250	1.00
108-88-3	Toluene	U	1.00	ug/L	0.250	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.250	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.250	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.25	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**			**Matrix:**	**WATER**
Lab Sample ID:	**1202599791**				
Client Sample:	**QC for batch 1188640**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1188640**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/15/2012 10:32**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2012 10:32**				
Data File:	**021512V9\9Z304L1.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.250	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.250	1.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.250	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.500	2.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
100-42-5	Styrene	U	1.00	ug/L	0.250	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.250	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.250	1.00
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.250	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.250	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.250	1.00
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.250	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.250	1.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.250	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.250	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.250	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.250	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.250	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.250	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.250	1.00
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.250	1.00
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
91-20-3	Naphthalene	U	1.00	ug/L	0.250	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.332	1.00
107-02-8	Acrolein		236	ug/L	1.25	5.00
76-13-1	Trichlorotrifluoroethane		274	ug/L	1.00	5.00
107-05-1	Allyl chloride		228	ug/L	1.50	5.00
107-13-1	Acrylonitrile		233	ug/L	1.00	5.00
126-99-8	2-Chloro-1,3-butadiene		39.7	ug/L	0.300	1.00
107-12-0	Propionitrile		255	ug/L	1.50	5.00
126-98-7	Methacrylonitrile		234	ug/L	1.00	5.00
78-83-1	Isobutyl alcohol		2420	ug/L	12.5	50.0
80-62-6	Methyl methacrylate		231	ug/L	1.00	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**			**Matrix:**	**WATER**
Lab Sample ID:	**1202599791**				
Client Sample:	**QC for batch 1188640**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1188640**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/15/2012 10:32**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/15/2012 10:32**				
Data File:	**021512V9\9Z304L1.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate		222	ug/L	1.00	5.00
630-20-6	1,1,1,2-Tetrachloroethane	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
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.250	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	42.9	50.0	ug/L	85.8	(76%-127%)
Bromofluorobenzene	51.7	50.0	ug/L	103	(80%-120%)
Toluene-d8	45.4	50.0	ug/L	90.7	(80%-120%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**			**Matrix:**	**WATER**
Lab Sample ID:	**1202600766**				
Client Sample:	**QC for batch 1188640**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**MB for batch 1188640**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/17/2012 14:00**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/17/2012 14:00**				
Data File:	**021712V9\9Z512B.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.500	1.00
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
67-64-1	Acetone	U	10.0	ug/L	3.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	6.25	25.0
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.25	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	3.00	10.0
75-15-0	Carbon disulfide	U	5.00	ug/L	1.25	5.00
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.250	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	1.25	5.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.250	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.325	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.250	1.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.250	1.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.250	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.250	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.250	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.25	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.250	1.00
108-88-3	Toluene	U	1.00	ug/L	0.250	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.250	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.250	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.25	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**			**Matrix:**	**WATER**
Lab Sample ID:	**1202600766**				
Client Sample:	**QC for batch 1188640**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**MB for batch 1188640**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/17/2012 14:00**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/17/2012 14:00**				
Data File:	**021712V9\9Z512B.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.250	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.250	1.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.250	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.500	2.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
100-42-5	Styrene	U	1.00	ug/L	0.250	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.250	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.250	1.00
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.250	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.250	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.250	1.00
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.250	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.250	1.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.250	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.250	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.250	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.250	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.250	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.250	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.250	1.00
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.250	1.00
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
91-20-3	Naphthalene	U	1.00	ug/L	0.250	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.332	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.25	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.00	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.00	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.00	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	12.5	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.00	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**			**Matrix:**	**WATER**
Lab Sample ID:	**1202600766**				
Client Sample:	**QC for batch 1188640**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**MB for batch 1188640**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/17/2012 14:00**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/17/2012 14:00**				
Data File:	**021712V9\9Z512B.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.00	5.00
630-20-6	1,1,1,2-Tetrachloroethane	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
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.250	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	40.0	50.0	ug/L	80.1	(76%-127%)
Bromofluorobenzene	47.8	50.0	ug/L	95.7	(80%-120%)
Toluene-d8	45.1	50.0	ug/L	90.2	(80%-120%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown hydrocarbon	4.29	24.3	ug/L	0	J
	unknown hydrocarbon	6.22	13.8	ug/L	0	J

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**			**Matrix:**	**WATER**
Lab Sample ID:	**1202600767**				
Client Sample:	**QC for batch 1188640**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1188640**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/17/2012 10:54**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/17/2012 10:54**				
Data File:	**021712V9\9Z505L.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane		35.1	ug/L	0.300	1.00
74-87-3	Chloromethane		37.7	ug/L	0.300	1.00
75-01-4	Vinyl chloride		37.0	ug/L	0.500	1.00
74-83-9	Bromomethane		43.9	ug/L	0.300	1.00
75-00-3	Chloroethane		51.5	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane		45.3	ug/L	0.300	1.00
60-29-7	Ethyl ether		46.9	ug/L	0.300	1.00
67-64-1	Acetone		262	ug/L	3.50	10.0
75-05-8	Acetonitrile		1350	ug/L	6.25	25.0
75-35-4	1,1-Dichloroethylene		52.1	ug/L	0.300	1.00
74-88-4	Iodomethane		295	ug/L	1.25	5.00
75-09-2	Methylene chloride		47.9	ug/L	3.00	10.0
75-15-0	Carbon disulfide		290	ug/L	1.25	5.00
1634-04-4	tert-Butyl methyl ether		47.1	ug/L	0.250	1.00
156-60-5	trans-1,2-Dichloroethylene		53.1	ug/L	0.300	1.00
108-05-4	Vinyl acetate		282	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane		52.6	ug/L	0.300	1.00
78-93-3	2-Butanone		263	ug/L	1.25	5.00
156-59-2	cis-1,2-Dichloroethylene		52.8	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane		55.1	ug/L	0.300	1.00
67-66-3	Chloroform		51.0	ug/L	0.250	1.00
74-97-5	Bromochloromethane		52.5	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane		55.8	ug/L	0.325	1.00
563-58-6	1,1-Dichloropropene		56.2	ug/L	0.250	1.00
71-36-3	n-Butyl alcohol		5840	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride		58.5	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane		46.3	ug/L	0.250	1.00
71-43-2	Benzene		52.9	ug/L	0.300	1.00
79-01-6	Trichloroethylene		56.0	ug/L	0.250	1.00
78-87-5	1,2-Dichloropropane		53.6	ug/L	0.250	1.00
75-27-4	Bromodichloromethane		50.5	ug/L	0.250	1.00
74-95-3	Dibromomethane		49.6	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone		252	ug/L	1.25	5.00
10061-01-5	cis-1,3-Dichloropropylene		53.2	ug/L	0.250	1.00
108-88-3	Toluene		47.4	ug/L	0.250	1.00
10061-02-6	trans-1,3-Dichloropropylene		48.3	ug/L	0.250	1.00
79-00-5	1,1,2-Trichloroethane		46.9	ug/L	0.250	1.00
591-78-6	2-Hexanone		247	ug/L	1.25	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**			**Matrix:**	**WATER**
Lab Sample ID:	**1202600767**				
Client Sample:	**QC for batch 1188640**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1188640**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/17/2012 10:54**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/17/2012 10:54**				
Data File:	**021712V9\9Z505L.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane		46.5	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene		54.8	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		50.9	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane		48.7	ug/L	0.250	1.00
108-90-7	Chlorobenzene		50.6	ug/L	0.250	1.00
100-41-4	Ethylbenzene		49.4	ug/L	0.250	1.00
179601-23-1	m,p-Xylenes		101	ug/L	0.500	2.00
95-47-6	o-Xylene		49.0	ug/L	0.300	1.00
100-42-5	Styrene		48.3	ug/L	0.250	1.00
75-25-2	Bromoform		51.2	ug/L	0.250	1.00
79-34-5	1,1,2,2-Tetrachloroethane		45.8	ug/L	0.250	1.00
96-18-4	1,2,3-Trichloropropane		47.6	ug/L	0.300	1.00
108-86-1	Bromobenzene		48.1	ug/L	0.250	1.00
103-65-1	n-Propylbenzene		48.2	ug/L	0.250	1.00
95-49-8	2-Chlorotoluene		47.9	ug/L	0.250	1.00
98-82-8	Isopropylbenzene		49.0	ug/L	0.250	1.00
108-67-8	1,3,5-Trimethylbenzene		46.3	ug/L	0.250	1.00
106-43-4	4-Chlorotoluene		46.3	ug/L	0.250	1.00
98-06-6	tert-Butylbenzene		48.0	ug/L	0.250	1.00
95-63-6	1,2,4-Trimethylbenzene		46.4	ug/L	0.250	1.00
135-98-8	sec-Butylbenzene		47.8	ug/L	0.250	1.00
99-87-6	4-Isopropyltoluene		48.8	ug/L	0.250	1.00
541-73-1	1,3-Dichlorobenzene		47.8	ug/L	0.250	1.00
106-46-7	1,4-Dichlorobenzene		47.2	ug/L	0.250	1.00
104-51-8	n-Butylbenzene		45.9	ug/L	0.250	1.00
96-12-8	1,2-Dibromo-3-chloropropane		51.2	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene		48.6	ug/L	0.300	1.00
91-20-3	Naphthalene		45.6	ug/L	0.250	1.00
87-61-6	1,2,3-Trichlorobenzene		46.9	ug/L	0.332	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.25	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.00	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.00	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.00	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	12.5	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.00	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**			**Matrix:**	**WATER**
Lab Sample ID:	**1202600767**				
Client Sample:	**QC for batch 1188640**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1188640**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/17/2012 10:54**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/17/2012 10:54**				
Data File:	**021712V9\9Z505L.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.00	5.00
630-20-6	1,1,1,2-Tetrachloroethane		49.3	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene		47.0	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene		46.1	ug/L	0.250	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	41.2	50.0	ug/L	82.4	(76%-127%)
Bromofluorobenzene	48.2	50.0	ug/L	96.4	(80%-120%)
Toluene-d8	43.5	50.0	ug/L	86.9	(80%-120%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**			**Matrix:**	**WATER**
Lab Sample ID:	**1202600768**				
Client Sample:	**QC for batch 1188640**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1188640**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/17/2012 12:14**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/17/2012 12:14**				
Data File:	**021712V9\9Z508L1.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.500	1.00
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
67-64-1	Acetone	U	10.0	ug/L	3.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	6.25	25.0
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.25	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	3.00	10.0
75-15-0	Carbon disulfide	U	5.00	ug/L	1.25	5.00
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.250	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	1.25	5.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.250	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.325	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.250	1.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.250	1.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.250	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.250	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.250	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.25	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.250	1.00
108-88-3	Toluene	U	1.00	ug/L	0.250	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.250	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.250	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.25	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**			**Matrix:**	**WATER**
Lab Sample ID:	**1202600768**				
Client Sample:	**QC for batch 1188640**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1188640**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/17/2012 12:14**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/17/2012 12:14**				
Data File:	**021712V9\9Z508L1.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.250	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.250	1.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.250	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.500	2.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
100-42-5	Styrene	U	1.00	ug/L	0.250	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.250	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.250	1.00
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.250	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.250	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.250	1.00
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.250	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.250	1.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.250	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.250	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.250	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.250	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.250	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.250	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.250	1.00
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.250	1.00
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
91-20-3	Naphthalene	U	1.00	ug/L	0.250	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.332	1.00
107-02-8	Acrolein		242	ug/L	1.25	5.00
76-13-1	Trichlorotrifluoroethane		294	ug/L	1.00	5.00
107-05-1	Allyl chloride		235	ug/L	1.50	5.00
107-13-1	Acrylonitrile		245	ug/L	1.00	5.00
126-99-8	2-Chloro-1,3-butadiene		42.3	ug/L	0.300	1.00
107-12-0	Propionitrile		269	ug/L	1.50	5.00
126-98-7	Methacrylonitrile		231	ug/L	1.00	5.00
78-83-1	Isobutyl alcohol		2370	ug/L	12.5	50.0
80-62-6	Methyl methacrylate		227	ug/L	1.00	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**			**Matrix:**	**WATER**
Lab Sample ID:	**1202600768**				
Client Sample:	**QC for batch 1188640**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1188640**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1188640**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**02/17/2012 12:14**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**02/17/2012 12:14**				
Data File:	**021712V9\9Z508L1.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate		208	ug/L	1.00	5.00
630-20-6	1,1,1,2-Tetrachloroethane	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
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.250	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	39.7	50.0	ug/L	79.4	(76%-127%)
Bromofluorobenzene	48.7	50.0	ug/L	97.5	(80%-120%)
Toluene-d8	43.4	50.0	ug/L	86.8	(80%-120%)

Miscellaneous

DATA EXCEPTION REPORT

Mo.Day Yr.	**Division:**	**Quality Criteria:**	**Type:**
20-FEB-12	Federal	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
VOA GC/MS	SW846 8260B DOE-AL	Liquid	ESHL
Batch ID:	**Sample Numbers:**		
1188640	295388004, 295392004, 1202599789, 1202599789		

Potentially affected work order(s)(SDG): 295388(12-711),295392(12-718),295435(12-726)

Application Issues:

Sample Analyzed out of Holding

Other

Failed Recovery for MSD/PSD

Specification and Requirements Exception Description:	**DER Disposition:**
1. Sample 295388004 was analyzed out of hold.	1. The sample was initially analyzed within holding. There was possible carry-over for 1,2,3-Trichlorobenzene in the initial analysis. The sample was re-analyzed within two times the recommended holding time which satisfies the client's criteria. Only 1,2,3-Trichlorobenzene was reported from the out of holding analysis.
2. QC sample 1202599789 (MSD) did not meet the acceptable criteria for Carbon disulfide and Iodomethane. Carbon disulfide: 132% (Limits of: 69.00% - 130.00%) Iodomethane: 127% (Limits of: 71.00% - 122.00%)	2. The associated MS recovered at the upper limits for both of these analytes. The RPD criteria were met. The results are reported.
3. The second analyses of samples 295388004 and 295392004 were from client vials that contained "head space."	3. The client only supplied the VOA lab with one vial for each of the samples (295388004 and 295392004). Therefore, the re-analyses for these samples were from vials that contained "head space." The samples were re-analyzed because there was possible carry-over for 1,2,3-Trichlorobenzene in the initial analyses. Only 1,2,3-Trichlorobenzene was reported from the out of holding analyses.

Originator's Name:

Ramona Yarbrough 20-FEB-12

Data Validator/Group Leader:

Erin Haubert 02-MAR-12

Semi-Volatile Analysis

Case Narrative

Semi-Volatile Case Narrative
ARS International (ARSL)
SDG 12-711

Method/Analysis Information

Procedure:	**Analysis of Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry**
Analytical Method:	SW846 8270C
Prep Method:	SW846 3510C
Analytical Batch Number:	1186837
Prep Batch Number:	1186831

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 8270C:

Sample ID	Client ID
295388001	CAAN-12-2024
1202595534	Method Blank (MB)
1202595535	Laboratory Control Sample (LCS)
1202595536	295270002(CAAN-12-2031) Matrix Spike (MS)
1202595537	295270002(CAAN-12-2031) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on an "as received" basis.

Preparation/Analytical Method Verification

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-009 REV# 27.

Raw data reports are processed and reviewed by the analyst using the data analysis software package. False positives have been removed from the quantitation reports per standard operating procedures (SOP) section 18.2.

Calibration Information

Due to software limitations, the Form 6 may not indicate all the calibration files comprising the initial calibration. A complete list of the initial calibration data files are shown in the Calibration History report located in the Standard Data section of the data package. The various calibration mixes may not be calibrated using all of the calibration levels. In addition, not all of the mixes are calibrated using the same levels.

Diphenylamine has now superseded N-Nitroso-diphenylamine on Quantitation Reports, Initial Calibration Reports, Calibration Check Standard Reports, etc. Previous versions of EPA Methodologies referenced N-Nitroso-diphenylamine. However, as stated in EPA Methodology, "N-Nitroso-diphenylamine decomposes in the gas chromatographic inlet and cannot be separated from Diphenylamine." Studies of these two compounds at GEL, both independent of each other and together, showed that they not only co-elute, but also have similar mass spectra. N-Nitroso-diphenylamine and Diphenylamine will be reported as Diphenylamine on all reports and forms.

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG) in this batch. A second source initial calibration verification (ICV) was included in the standard section directly behind the initial calibration.

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

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG in this batch met the acceptance criteria.

Surrogate Recoveries
The MSD(1202595537) displayed one biased high surrogate. Please see the QC Summary for the specific recovery value. The MB, LCS and MS satisfied batch QC acceptance criteria (with the exception of Benzidine in the MS and MSD - see Spike Recovery Statements). Therefore, it was determined that the biased high failures were limited to the MSD sample only (the surrogate and spike recoveries were in general significantly higher in the MSD compared to the MS recoveries). Since the associated parent sample was reported as non-detected for all requested target analytes, a re-extraction was considered unnecessary and the data have been reported. Please see data exception report 1048967.

Laboratory Control Sample (LCS) Recovery
The LCS(1202595535) recovered Benzidine at 17.3% (limits: 23%-131%) and Benzoic acid 28.7% (limits: 30%-142%). The failures represented less than 5% of the total requested spike analyte list. That satisfied the acceptance criteria for the client and the data were reported. Please note, both Benzidine and Benzoic acid are designated as being poor responding analytes in the analytical method. This may account for the biased low recoveries for those analytes. Please see data exception report 1048967.

QC Sample Designation
Client sample 295270002 (CAAN-12-2031) from SDG 12-700 was selected for analysis as the matrix spike and matrix spike duplicate.

Matrix Spike (MS) Recovery Statement
The MS(1202595536) recovered Benzidine at 29.6%. The limits are 30%-120%. Since the MS(1202595536) and MSD(1202595537) displayed similar recoveries for Benzidine, the failures may attributed to matrix interference. Please note, Benzidine is designated as being poor responding analyte in the analytical method. This may account for the biased low recoveries for that analyte in the MS and MSD. Please see data exception report 1048967.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD(1202595537(CAAN-12-2031)) recovered Benzidine at 27.5%. The limits are 30%-120%. Since the MS(1202595536(CAAN-12-2031)) and MSD(1202595537(CAAN-12-2031)) displayed similar recoveries for Benzidine, the failures may attributed to matrix interference. Please note, Benzidine is designated as being poor responding analyte in the analytical method. This may account for the biased low recoveries for that analyte in the MS and MSD. The MSD(1202595537(CAAN-12-2031)) multiple biased high spike recoveries. Please see the QC Summary for the specific recovery values. The MB, LCS and MS satisfied batch QC acceptance criteria (with the exception of Benzidine in the MS and MSD - see Spike Recovery Statements). Therefore, it was determined that the biased high failures were limited to the MSD sample only (the surrogate and spike recoveries were in general significantly higher in the MSD compared to the MS recoveries). Since the associated parent sample was reported as non-detected for all requested target analytes, a re-extraction was considered unnecessary and the data have been reported. The MSD also recovered N-Nitrosopyrrolidine at 130% (Limits are 51-115%), Atrazine at 120% (Limits are 38-112%) and 3,3'-Dichlorobenzidine at 114% (Limits are 28-112%). The latter three analytes were not detected in the associated samples. The data is unaffected and are reported. Please see data exception report 1048967.

MS/MSD Relative Percent Difference (RPD) Statement
The MS(1202595536) and MSD(1202595537) displayed multiple RPD value failures. Please see the QC Summary for the specific recovery values. The RPD failures were attributed to the biased high recoveries in the MSD (see the Spike Recovery Statement).

Internal Standard (ISTD) Acceptance
The internal standard responses were within the required acceptance criteria for all samples and QC.

Technical Information:

Holding Time Specifications
All samples in this SDG in this batch met the specified holding time. GEL assigns holding times based on the associated methodology that 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.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP. All reported compound mass spectra met the detection specifications in the method.

Sample Dilutions
The samples in this SDG in this batch did not require dilutions.

Sample Re-extraction/Re-analysis
The 1202595537(MSD) was re-analyzed. The re-analysis is reported.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception report 1048967 was generated for this SDG.

Manual Integrations
Some initial calibration standards, continuing calibration standards, and/or samples may require manual integrations due to software limitations. Manual integrations, if any, are included with the raw data.

TIC Comment
Tentatively identified compounds (TIC) may be requested for this sample delivery group/work order. Please note that non-requested target analytes that are reported on the quantitation reports will not be present on the Form I. These detected analytes are included in the calibrated method and as a result cannot be reported on the TIC quantitation report. TIC data, if requested, are included on the Sample Data Summary (Form 1) and are also included with the sample raw data.

Additional Comments
Additional comments were not required for the SDG associated samples in this batch.

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 analyst, reviewer, and report specialist names 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 Semi-Volatile-GC/MS analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
MSD3.I	Agilent 7890A/5975C GC/MS w/ 7683 Autosampler	HP7890A/HP5975C	DB-5MS	25m x 0.2mm, 0.33um (5% Phenylmethylpolysiloxane)

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

ARSL001 ARS International (63641-10)

Client SDG: 12-711 GEL Work Order: 295388

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

E Organics--Concentration of the target analyte exceeds the instrument calibration range

J Value is estimated

U Analyte was analyzed for, but not detected above the MDL, MDA, 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: Herbert R Maier **Name: Herbert Maier**

Date: 23 FEB 2012 **Title: Data Validator**

Sample Data Summary

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/02/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**295388001**	**Date Received:**	**02/04/2012 09:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAAN-12-2024**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1186837**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**02/09/2012 12:33**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**02/08/2012 17:46**	**Aliquot:**	**950 mL**	**Final Volume:**	**1 mL**
Data File:	**S020912.B\s3b0912.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
39638-32-9	bis(2-Chloroisopropyl)ether	U	10.5	ug/L	3.16	10.5
62-75-9	N-Methyl-N-nitrosomethylamine	U	10.5	ug/L	3.16	10.5
110-86-1	Pyridine	U	10.5	ug/L	3.16	10.5
62-53-3	Aniline	U	10.5	ug/L	3.16	10.5
108-95-2	Phenol	U	10.5	ug/L	3.16	10.5
111-44-4	bis(2-Chloroethyl) ether	U	10.5	ug/L	3.16	10.5
95-57-8	2-Chlorophenol	U	10.5	ug/L	3.16	10.5
541-73-1	1,3-Dichlorobenzene	U	10.5	ug/L	3.16	10.5
106-46-7	1,4-Dichlorobenzene	U	10.5	ug/L	3.16	10.5
95-50-1	1,2-Dichlorobenzene	U	10.5	ug/L	3.16	10.5
100-51-6	Benzyl alcohol	U	10.5	ug/L	3.16	10.5
95-48-7	o-Cresol	U	10.5	ug/L	3.16	10.5
65794-96-9	m,p-Cresols	U	10.5	ug/L	3.16	10.5
621-64-7	N-Nitrosodi--n-propylamine *N-Nitrosodipropylamine*	U	10.5	ug/L	3.16	10.5
67-72-1	Hexachloroethane	U	10.5	ug/L	3.16	10.5
98-95-3	Nitrobenzene	U	10.5	ug/L	3.16	10.5
78-59-1	Isophorone	U	10.5	ug/L	3.16	10.5
88-75-5	2-Nitrophenol	U	10.5	ug/L	3.16	10.5
105-67-9	2,4-Dimethylphenol	U	10.5	ug/L	3.16	10.5
111-91-1	bis(2-Chloroethoxy)methane	U	10.5	ug/L	3.16	10.5
120-83-2	2,4-Dichlorophenol	U	10.5	ug/L	3.16	10.5
65-85-0	Benzoic acid	U	21.1	ug/L	6.32	21.1
106-47-8	4-Chloroaniline	U	10.5	ug/L	3.16	10.5
87-68-3	Hexachlorobutadiene	U	10.5	ug/L	3.16	10.5
59-50-7	Parachlorometa cresol *4-Chloro-3-methylphenol*	U	10.5	ug/L	3.16	10.5
91-57-6	2-Methylnaphthalene	U	1.05	ug/L	0.316	1.05
91-20-3	Naphthalene	U	1.05	ug/L	0.316	1.05
90-12-0	1-Methylnaphthalene	U	1.05	ug/L	0.316	1.05
77-47-4	Hexachlorocyclopentadiene	U	10.5	ug/L	3.16	10.5
88-06-2	2,4,6-Trichlorophenol	U	10.5	ug/L	3.16	10.5
95-95-4	2,4,5-Trichlorophenol	U	10.5	ug/L	3.16	10.5
91-58-7	2-Chloronaphthalene	U	1.05	ug/L	0.316	1.05
88-74-4	2-Nitroaniline *o-Nitroaniline*	U	10.5	ug/L	3.16	10.5
99-09-2	3-Nitroaniline *m-Nitroaniline*	U	10.5	ug/L	3.16	10.5
131-11-3	Dimethylphthalate	U	10.5	ug/L	3.16	10.5
606-20-2	2,6-Dinitrotoluene	U	10.5	ug/L	3.16	10.5

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/02/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**295388001**	**Date Received:**	**02/04/2012 09:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAAN-12-2024**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1186837**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**02/09/2012 12:33**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**02/08/2012 17:46**	**Aliquot:**	**950 mL**	**Final Volume:**	**1 mL**
Data File:	**S020912.B\s3b0912.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
121-14-2	2,4-Dinitrotoluene	U	10.5	ug/L	3.16	10.5
208-96-8	Acenaphthylene	U	1.05	ug/L	0.316	1.05
83-32-9	Acenaphthene	U	1.05	ug/L	0.316	1.05
51-28-5	2,4-Dinitrophenol	U	21.1	ug/L	5.26	21.1
132-64-9	Dibenzofuran	U	10.5	ug/L	3.16	10.5
58-90-2	2,3,4,6-Tetrachlorophenol	U	10.5	ug/L	3.16	10.5
84-66-2	Diethylphthalate	U	10.5	ug/L	3.16	10.5
100-02-7	4-Nitrophenol	U	10.5	ug/L	3.16	10.5
86-73-7	Fluorene	U	1.05	ug/L	0.316	1.05
7005-72-3	4-Chlorophenylphenylether	U	10.5	ug/L	3.16	10.5
100-01-6	4-Nitroaniline *p-Nitroaniline*	U	10.5	ug/L	3.16	10.5
534-52-1	2-Methyl-4,6-dinitrophenol	U	10.5	ug/L	3.16	10.5
122-39-4	Diphenylamine	U	10.5	ug/L	3.16	10.5
122-66-7	Azobenzene *1,2-Diphenylhydrazine*	U	10.5	ug/L	3.16	10.5
101-55-3	4-Bromophenylphenylether	U	10.5	ug/L	3.16	10.5
118-74-1	Hexachlorobenzene	U	10.5	ug/L	3.16	10.5
87-86-5	Pentachlorophenol	U	10.5	ug/L	3.16	10.5
88-85-7	Dinoseb	U	10.5	ug/L	3.16	10.5
85-01-8	Phenanthrene	U	1.05	ug/L	0.316	1.05
120-12-7	Anthracene	U	1.05	ug/L	0.316	1.05
84-74-2	Di-n-butylphthalate	U	10.5	ug/L	3.16	10.5
206-44-0	Fluoranthene	U	1.05	ug/L	0.316	1.05
129-00-0	Pyrene	U	1.05	ug/L	0.316	1.05
85-68-7	Butylbenzylphthalate	U	10.5	ug/L	3.16	10.5
117-81-7	bis(2-Ethylhexyl)phthalate	U	10.5	ug/L	3.16	10.5
56-55-3	Benzo(a)anthracene	U	1.05	ug/L	0.316	1.05
218-01-9	Chrysene	U	1.05	ug/L	0.316	1.05
117-84-0	Di-n-octylphthalate	U	10.5	ug/L	3.16	10.5
205-99-2	Benzo(b)fluoranthene	U	1.05	ug/L	0.316	1.05
207-08-9	Benzo(k)fluoranthene	U	1.05	ug/L	0.316	1.05
50-32-8	Benzo(a)pyrene	U	1.05	ug/L	0.316	1.05
193-39-5	Indeno(1,2,3-cd)pyrene	U	1.05	ug/L	0.316	1.05
53-70-3	Dibenzo(a,h)anthracene	U	1.05	ug/L	0.316	1.05
191-24-2	Benzo(ghi)perylene	U	1.05	ug/L	0.316	1.05
123-91-1	1,4-Dioxane	U	10.5	ug/L	3.16	10.5
55-18-5	N-Nitrosodiethylamine	U	10.5	ug/L	3.16	10.5
930-55-2	N-Nitrosopyrrolidine	U	10.5	ug/L	3.16	10.5

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/02/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**295388001**	**Date Received:**	**02/04/2012 09:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAAN-12-2024**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1186837**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**02/09/2012 12:33**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**02/08/2012 17:46**	**Aliquot:**	**950 mL**	**Final Volume:**	**1 mL**
Data File:	**S020912.B\s3b0912.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
924-16-3	N-Nitrosodi-n-butylamine	U	10.5	ug/L	3.16	10.5
95-94-3	1,2,4,5-Tetrachlorobenzene	U	10.5	ug/L	3.16	10.5
608-93-5	Pentachlorobenzene	U	10.5	ug/L	3.16	10.5
1912-24-9	Atrazine	U	10.5	ug/L	3.16	10.5
92-87-5	Benzidine	U	10.5	ug/L	3.16	10.5
91-94-1	3,3'-Dichlorobenzidine	U	10.5	ug/L	3.16	10.5
120-82-1	1,2,4-Trichlorobenzene	U	10.5	ug/L	3.16	10.5

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
2,4,6-Tribromophenol	56.1	105	ug/L	53.3	(30%-128%)
2-Fluorobiphenyl	30.3	52.6	ug/L	57.6	(34%-98%)
2-Fluorophenol	42.8	105	ug/L	40.7	(21%-78%)
Nitrobenzene-d5	36.7	52.6	ug/L	69.8	(39%-117%)
Phenol-d5	27.1	105	ug/L	25.8	(14%-80%)
p-Terphenyl-d14	31.8	52.6	ug/L	60.5	(39%-129%)

Tentatively Identified Compound Summary

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

Quality Control Summary

Surrogate Recovery Report

SDG Number: 12-711

Matrix Type: LIQUID

Sample ID	Client ID	2FP %REC	PHL %REC	NBZ %REC	FBP %REC	TBP %REC	TPH %REC
1202595534	MB for batch 1186831	56	35	95	83	95	84
1202595535	LCS for batch 1186831	50	31	88	79	82	80
1202595536	CAAN-12-2031MS	56	46	73	65	77	63
295388001	CAAN-12-2024	41	26	70	58	53	60
1202595537	CAAN-12-2031MSD	87 *	70	107	88	95	88

Surrogate			Acceptance Limits
2FP	=	2-Fluorophenol	(21%-78%)
PHL	=	Phenol-d5	(14%-80%)
NBZ	=	Nitrobenzene-d5	(39%-117%)
FBP	=	2-Fluorobiphenyl	(34%-98%)
TBP	=	2,4,6-Tribromophenol	(30%-128%)
TPH	=	p-Terphenyl-d14	(39%-129%)

* Recovery outside Acceptance Limits

Column to be used to flag recovery values

D Sample Diluted

Quality Control Summary
Spike Recovery Report

SDG Number: **12-711**
Sample Type: **Laboratory Control Sample**
Client ID: **LCS for batch 1186831**
Matrix: **WATER**
Lab Sample ID: **1202595535**
Instrument: **MSD3.I**
Analysis Date: **02/09/2012 10:03**
Dilution: **1**
Analyst: **JLD1**
Prep Batch ID **1186831**
Inj. Vol: **1 uL**
Batch ID: **1186837**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
39638-32-9	LCS	bis(2-Chloroisopropyl)ether	50.0	0.0	38.5	77	27-129
62-75-9	LCS	N-Methyl-N-nitrosomethylam	50.0	0.0	24.9	50	30-89
110-86-1	LCS	Pyridine	50.0	0.0	16.7	33	27-95
62-53-3	LCS	Aniline	50.0	0.0	39.6	79	39-120
108-95-2	LCS	Phenol	50.0	0.0	15.2	30	15-103
111-44-4	LCS	bis(2-Chloroethyl) ether	50.0	0.0	40.2	80	39-115
95-57-8	LCS	2-Chlorophenol	50.0	0.0	38.1	76	45-105
541-73-1	LCS	1,3-Dichlorobenzene	50.0	0.0	29.3	59	31-93
106-46-7	LCS	1,4-Dichlorobenzene	50.0	0.0	29.6	59	32-93
95-50-1	LCS	1,2-Dichlorobenzene	50.0	0.0	30.3	61	33-94
100-51-6	LCS	Benzyl alcohol	50.0	0.0	36.2	72	37-105
95-48-7	LCS	o-Cresol	50.0	0.0	35.5	71	39-94
65794-96-9	LCS	m,p-Cresols	50.0	0.0	39.0	78	37-102
621-64-7	LCS	N-Nitrosodi--n-propylamine *N-Nitrosodipropylamine*	50.0	0.0	49.3	99	45-120
67-72-1	LCS	Hexachloroethane	50.0	0.0	28.2	56	31-92
98-95-3	LCS	Nitrobenzene	50.0	0.0	41.9	84	46-118
78-59-1	LCS	Isophorone	50.0	0.0	47.6	95	48-120
88-75-5	LCS	2-Nitrophenol	50.0	0.0	40.8	82	48-110
105-67-9	LCS	2,4-Dimethylphenol	50.0	0.0	40.5	81	42-102
111-91-1	LCS	bis(2-Chloroethoxy)methane	50.0	0.0	39.3	79	46-106
120-83-2	LCS	2,4-Dichlorophenol	50.0	0.0	41.6	83	49-110
65-85-0	LCS	Benzoic acid	100	0.0	28.7	29 *	30-142

Quality Control Summary
Spike Recovery Report

SDG Number: 12-711
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1186831
Matrix: WATER
Lab Sample ID: 1202595535
Instrument: MSD3.I
Analysis Date: 02/09/2012 10:03
Dilution: 1
Analyst: JLD1
Prep Batch ID 1186831
Inj. Vol: 1 uL
Batch ID: 1186837

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
106-47-8	LCS	4-Chloroaniline	50.0	0.0	44.1	88	50-123
87-68-3	LCS	Hexachlorobutadiene	50.0	0.0	30.1	60	29-97
59-50-7	LCS	Parachlorometa cresol *4-Chloro-3-methylphenol*	50.0	0.0	44.1	88	53-113
91-57-6	LCS	2-Methylnaphthalene	50.0	0.0	35.8	72	35-104
91-20-3	LCS	Naphthalene	50.0	0.0	32.6	65	35-99
90-12-0	LCS	1-Methylnaphthalene	50.0	0.0	38.0	76	36-104
77-47-4	LCS	Hexachlorocyclopentadiene	50.0	0.0	19.9	40	28-93
88-06-2	LCS	2,4,6-Trichlorophenol	50.0	0.0	39.9	80	48-111
95-95-4	LCS	2,4,5-Trichlorophenol	50.0	0.0	41.0	82	44-114
91-58-7	LCS	2-Chloronaphthalene	50.0	0.0	35.8	72	37-102
88-74-4	LCS	2-Nitroaniline *o-Nitroaniline*	50.0	0.0	43.3	87	43-125
99-09-2	LCS	3-Nitroaniline *m-Nitroaniline*	50.0	0.0	38.5	77	45-125
131-11-3	LCS	Dimethylphthalate	50.0	0.0	43.9	88	47-127
606-20-2	LCS	2,6-Dinitrotoluene	50.0	0.0	41.6	83	52-119
121-14-2	LCS	2,4-Dinitrotoluene	50.0	0.0	39.5	79	52-122
208-96-8	LCS	Acenaphthylene	50.0	0.0	37.0	74	42-108
83-32-9	LCS	Acenaphthene	50.0	0.0	37.1	74	40-105
51-28-5	LCS	2,4-Dinitrophenol	50.0	0.0	31.3	63	33-126
132-64-9	LCS	Dibenzofuran	50.0	0.0	39.3	79	47-111
58-90-2	LCS	2,3,4,6-Tetrachlorophenol	50.0	0.0	39.4	79	47-124
84-66-2	LCS	Diethylphthalate	50.0	0.0	43.9	88	48-128
100-02-7	LCS	4-Nitrophenol	50.0	0.0	8.76	18	15-103

Quality Control Summary
Spike Recovery Report

SDG Number: **12-711**
Sample Type: **Laboratory Control Sample**
Client ID: **LCS for batch 1186831**
Matrix: **WATER**
Lab Sample ID: **1202595535**
Instrument: **MSD3.I**
Analysis Date: **02/09/2012 10:03**
Dilution: **1**
Analyst: **JLD1**
Prep Batch ID **1186831**
Inj. Vol: **1 uL**
Batch ID: **1186837**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
86-73-7	LCS	Fluorene	50.0	0.0	38.3	77	45-108
7005-72-3	LCS	4-Chlorophenylphenylether	50.0	0.0	37.9	76	45-107
100-01-6	LCS	4-Nitroaniline *p-Nitroaniline*	50.0	0.0	36.4	73	44-139
534-52-1	LCS	2-Methyl-4,6-dinitrophenol	50.0	0.0	37.1	74	45-122
122-39-4	LCS	Diphenylamine	50.0	0.0	45.7	91	47-112
122-66-7	LCS	Azobenzene *1,2-Diphenylhydrazine*	50.0	0.0	49.6	99	41-117
101-55-3	LCS	4-Bromophenylphenylether	50.0	0.0	43.3	87	44-110
118-74-1	LCS	Hexachlorobenzene	50.0	0.0	45.8	92	44-114
87-86-5	LCS	Pentachlorophenol	50.0	0.0	31.0	62	36-108
85-01-8	LCS	Phenanthrene	50.0	0.0	41.7	83	50-111
120-12-7	LCS	Anthracene	50.0	0.0	39.8	80	51-111
84-74-2	LCS	Di-n-butylphthalate	50.0	0.0	46.5	93	46-130
206-44-0	LCS	Fluoranthene	50.0	0.0	39.5	79	50-118
129-00-0	LCS	Pyrene	50.0	0.0	40.8	82	41-121
85-68-7	LCS	Butylbenzylphthalate	50.0	0.0	43.9	88	41-129
117-81-7	LCS	bis(2-Ethylhexyl)phthalate	50.0	0.0	43.0	86	39-132
56-55-3	LCS	Benzo(a)anthracene	50.0	0.0	41.3	83	51-111
218-01-9	LCS	Chrysene	50.0	0.0	43.9	88	50-113
117-84-0	LCS	Di-n-octylphthalate	50.0	0.0	45.1	90	36-134
205-99-2	LCS	Benzo(b)fluoranthene	50.0	0.0	44.9	90	46-117
207-08-9	LCS	Benzo(k)fluoranthene	50.0	0.0	44.1	88	46-120
50-32-8	LCS	Benzo(a)pyrene	50.0	0.0	41.0	82	49-114

Semi-Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 12-711 **Sample Type:** Laboratory Control Sample
Client ID: LCS for batch 1186831 **Matrix:** WATER
Lab Sample ID: 1202595535
Instrument: MSD3.I **Analysis Date:** 02/09/2012 10:03 **Dilution:** 1
Analyst: JLD1 **Prep Batch ID** 1186831
Inj. Vol: 1 uL **Batch ID:** 1186837

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
193-39-5	LCS	Indeno(1,2,3-cd)pyrene	50.0	0.0	37.9	76	40-133
53-70-3	LCS	Dibenzo(a,h)anthracene	50.0	0.0	44.0	88	41-133
191-24-2	LCS	Benzo(ghi)perylene	50.0	0.0	38.0	76	37-133
123-91-1	LCS	1,4-Dioxane	50.0	0.0	26.5	53	39-76
930-55-2	LCS	N-Nitrosopyrrolidine	50.0	0.0	50.1	100	53-108
95-94-3	LCS	1,2,4,5-Tetrachlorobenzene	50.0	0.0	37.6	75	35-97
1912-24-9	LCS	Atrazine	50.0	0.0	54.4	109	47-111
92-87-5	LCS	Benzidine	100	0.0	17.3	17 *	23-131
91-94-1	LCS	3,3'-Dichlorobenzidine	50.0	0.0	40.2	80	45-106
120-82-1	LCS	1,2,4-Trichlorobenzene	50.0	0.0	29.9	60	31-94

Quality Control Summary
Spike Recovery Report

SDG Number: **12-711**
Sample Type: **Matrix Spike**
Client ID: **CAAN-12-2031MS**
Matrix: **WG**
Lab Sample ID: **1202595536**
Instrument: **MSD3.I**
Analysis Date: **02/09/2012 10:53**
Dilution: **1**
Analyst: **JLD1**
Prep Batch ID **1186831**
Inj. Vol: **1 uL**
Batch ID: **1186837**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
39638-32-9	MS	bis(2-Chloroisopropyl)ether	118	0.00	U	74.8	64	30-135
62-75-9	MS	N-Methyl-N-nitrosomethylam	118	0.00	U	60.5	51	26-103
110-86-1	MS	Pyridine	118	0.00	U	46.1	39	21-103
62-53-3	MS	Aniline	118	0.00	U	89.6	76	29-126
108-95-2	MS	Phenol	118	0.00	U	52.5	45	21-82
111-44-4	MS	bis(2-Chloroethyl) ether	118	0.00	U	78.2	66	32-121
95-57-8	MS	2-Chlorophenol	118	0.00	U	74.6	63	37-111
541-73-1	MS	1,3-Dichlorobenzene	118	0.00	U	52.7	45	27-90
106-46-7	MS	1,4-Dichlorobenzene	118	0.00	U	53.4	45	28-92
95-50-1	MS	1,2-Dichlorobenzene	118	0.00	U	56.8	48	27-97
100-51-6	MS	Benzyl alcohol	118	0.00	U	81.4	69	33-115
95-48-7	MS	o-Cresol	118	0.00	U	77.9	66	36-102
65794-96-9	MS	m,p-Cresols	118	0.00	U	91.7	78	32-117
621-64-7	MS	N-Nitrosodi--n-propylamine *N-Nitrosodipropylamine*	118	0.00	U	96.6	82	39-124
67-72-1	MS	Hexachloroethane	118	0.00	U	47.8	41	26-91
98-95-3	MS	Nitrobenzene	118	0.00	U	82.9	70	36-131
78-59-1	MS	Isophorone	118	0.00	U	93.8	80	43-120
88-75-5	MS	2-Nitrophenol	118	0.00	U	81.7	69	39-114
105-67-9	MS	2,4-Dimethylphenol	118	0.00	U	78.7	67	37-105
111-91-1	MS	bis(2-Chloroethoxy)methane	118	0.00	U	78.0	66	41-108
120-83-2	MS	2,4-Dichlorophenol	118	0.00	U	83.3	71	37-116
65-85-0	MS	Benzoic acid	235	0.00	U	116	49	17-96

Quality Control Summary
Spike Recovery Report

SDG Number: **12-711**
Sample Type: **Matrix Spike**
Client ID: **CAAN-12-2031MS**
Matrix: **WG**
Lab Sample ID: **1202595536**
Instrument: **MSD3.I**
Analysis Date: **02/09/2012 10:53**
Dilution: **1**
Analyst: **JLD1**
Prep Batch ID **1186831**
Inj. Vol: **1 uL**
Batch ID: **1186837**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
106-47-8	MS	4-Chloroaniline	118	0.00	U	93.5	80	37-125
87-68-3	MS	Hexachlorobutadiene	118	0.00	U	50.5	43	22-98
59-50-7	MS	Parachlorometa cresol *4-Chloro-3-methylphenol*	118	0.00	U	95.9	81	46-119
91-57-6	MS	2-Methylnaphthalene	118	0.00	U	69.1	59	32-107
91-20-3	MS	Naphthalene	118	0.00	U	65.1	55	29-103
90-12-0	MS	1-Methylnaphthalene	118	0.00	U	73.0	62	29-111
77-47-4	MS	Hexachlorocyclopentadiene	118	0.00	U	44.8	38	19-90
88-06-2	MS	2,4,6-Trichlorophenol	118	0.00	U	84.7	72	37-116
95-95-4	MS	2,4,5-Trichlorophenol	118	0.00	U	86.9	74	37-118
91-58-7	MS	2-Chloronaphthalene	118	0.00	U	68.1	58	35-101
88-74-4	MS	2-Nitroaniline *o-Nitroaniline*	118	0.00	U	96.8	82	36-126
99-09-2	MS	3-Nitroaniline *m-Nitroaniline*	118	0.00	U	90.2	77	35-126
131-11-3	MS	Dimethylphthalate	118	0.00	U	94.1	80	42-125
606-20-2	MS	2,6-Dinitrotoluene	118	0.00	U	89.5	76	48-118
121-14-2	MS	2,4-Dinitrotoluene	118	0.00	U	88.3	75	49-120
208-96-8	MS	Acenaphthylene	118	0.00	U	74.2	63	35-114
83-32-9	MS	Acenaphthene	118	0.00	U	72.0	61	33-111
51-28-5	MS	2,4-Dinitrophenol	118	0.00	U	88.2	75	21-131
132-64-9	MS	Dibenzofuran	118	0.00	U	79.8	68	43-113
58-90-2	MS	2,3,4,6-Tetrachlorophenol	118	0.00	U	89.9	76	36-130
84-66-2	MS	Diethylphthalate	118	0.00	U	94.8	81	42-128
100-02-7	MS	4-Nitrophenol	118	0.00	U	41.8	36	20-90

Quality Control Summary
Spike Recovery Report

SDG Number: **12-711**
Sample Type: **Matrix Spike**
Client ID: **CAAN-12-2031MS**
Matrix: **WG**
Lab Sample ID: **1202595536**
Instrument: **MSD3.I**
Analysis Date: **02/09/2012 10:53**
Dilution: **1**
Analyst: **JLD1**
Prep Batch ID **1186831**
Inj. Vol: **1 uL**
Batch ID: **1186837**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
86-73-7	MS	Fluorene	118	0.00	U	76.9	65	38-115
7005-72-3	MS	4-Chlorophenylphenylether	118	0.00	U	74.9	64	41-110
100-01-6	MS	4-Nitroaniline *p-Nitroaniline*	118	0.00	U	96.0	82	34-138
534-52-1	MS	2-Methyl-4,6-dinitrophenol	118	0.00	U	89.7	76	32-124
122-39-4	MS	Diphenylamine	118	0.00	U	94.8	81	42-111
122-66-7	MS	Azobenzene *1,2-Diphenylhydrazine*	118	0.00	U	98.2	84	36-118
101-55-3	MS	4-Bromophenylphenylether	118	0.00	U	80.2	68	40-112
118-74-1	MS	Hexachlorobenzene	118	0.00	U	86.9	74	40-116
87-86-5	MS	Pentachlorophenol	118	0.00	U	74.5	63	31-114
85-01-8	MS	Phenanthrene	118	0.00	U	85.4	73	41-119
120-12-7	MS	Anthracene	118	0.00	U	83.9	71	41-118
84-74-2	MS	Di-n-butylphthalate	118	0.00	U	92.5	79	41-128
206-44-0	MS	Fluoranthene	118	0.00	U	87.0	74	40-124
129-00-0	MS	Pyrene	118	0.00	U	73.0	62	34-126
85-68-7	MS	Butylbenzylphthalate	118	0.00	U	79.8	68	37-128
117-81-7	MS	bis(2-Ethylhexyl)phthalate	118	0.00	U	79.6	68	34-132
56-55-3	MS	Benzo(a)anthracene	118	0.00	U	86.3	73	38-120
218-01-9	MS	Chrysene	118	0.00	U	91.8	78	43-116
117-84-0	MS	Di-n-octylphthalate	118	0.00	U	94.2	80	30-135
205-99-2	MS	Benzo(b)fluoranthene	118	0.00	U	87.2	74	38-123
207-08-9	MS	Benzo(k)fluoranthene	118	0.00	U	86.8	74	40-123
50-32-8	MS	Benzo(a)pyrene	118	0.00	U	86.2	73	42-117

Quality Control Summary
Spike Recovery Report

SDG Number: **12-711**
Sample Type: **Matrix Spike**
Client ID: **CAAN-12-2031MS**
Matrix: **WG**
Lab Sample ID: **1202595536**
Instrument: **MSD3.I**
Analysis Date: **02/09/2012 10:53**
Dilution: **1**
Analyst: **JLD1**
Prep Batch ID **1186831**
Inj. Vol: **1 uL**
Batch ID: **1186837**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
193-39-5	MS	Indeno(1,2,3-cd)pyrene	118	0.00	U	91.1	77	33-135
53-70-3	MS	Dibenzo(a,h)anthracene	118	0.00	U	107	91	35-134
191-24-2	MS	Benzo(ghi)perylene	118	0.00	U	88.4	75	29-134
123-91-1	MS	1,4-Dioxane	118	0.00	U	64.4	55	30-98
930-55-2	MS	N-Nitrosopyrrolidine	118	0.00	U	104	88	51-115
95-94-3	MS	1,2,4,5-Tetrachlorobenzene	118	0.00	U	68.0	58	31-101
1912-24-9	MS	Atrazine	118	0.00	U	104	88	38-112
92-87-5	MS	Benzidine	235	0.00	U	69.5	30	30-120
91-94-1	MS	3,3'-Dichlorobenzidine	118	0.00	U	109	92	28-112
120-82-1	MS	1,2,4-Trichlorobenzene	118	0.00	U	56.5	48	25-94

Quality Control Summary
Spike Recovery Report

SDG Number: 12-711 **Sample Type:** Matrix Spike Duplicate
Client ID: CAAN-12-2031MSD **Matrix:** WG
Lab Sample ID: 1202595537
Instrument: MSD3.I **Analysis Date:** 02/09/2012 13:48 **Dilution:** 1
Analyst: JLD1 **Prep Batch ID** 1186831
Inj. Vol: 1 uL **Batch ID:** 1186837

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
39638-32-9	MSD	bis(2-Chloroisopropyl)ether	118	0.00	U	114	97	30-135	41 *	0-27
62-75-9	MSD	N-Methyl-N-nitrosomethylam	118	0.00	U	101	86	26-103	50 *	0-27
110-86-1	MSD	Pyridine	118	0.00	U	41.6	35	21-103	10	0-25
62-53-3	MSD	Aniline	118	0.00	U	108	92	29-126	19	0-25
108-95-2	MSD	Phenol	118	0.00	U	79.2	67	21-82	41 *	0-33
111-44-4	MSD	bis(2-Chloroethyl) ether	118	0.00	U	119	101	32-121	41 *	0-28
95-57-8	MSD	2-Chlorophenol	118	0.00	U	115	98	37-111	43 *	0-25
541-73-1	MSD	1,3-Dichlorobenzene	118	0.00	U	76.5	65	27-90	37 *	0-28
106-46-7	MSD	1,4-Dichlorobenzene	118	0.00	U	78.9	67	28-92	39 *	0-27
95-50-1	MSD	1,2-Dichlorobenzene	118	0.00	U	81.9	70	27-97	36 *	0-28
100-51-6	MSD	Benzyl alcohol	118	0.00	U	120	102	33-115	38 *	0-28
95-48-7	MSD	o-Cresol	118	0.00	U	116	98	36-102	39 *	0-29
65794-96-9	MSD	m,p-Cresols	118	0.00	U	138	117	32-117	40 *	0-29
621-64-7	MSD	N-Nitrosodi--n-propylamine *N-Nitrosodipropylamine*	118	0.00	U	140	119	39-124	37 *	0-24
67-72-1	MSD	Hexachloroethane	118	0.00	U	72.2	61	26-91	41 *	0-29
98-95-3	MSD	Nitrobenzene	118	0.00	U	123	104	36-131	39 *	0-23
78-59-1	MSD	Isophorone	118	0.00	U	134	114	43-120	35 *	0-23
88-75-5	MSD	2-Nitrophenol	118	0.00	U	118	101	39-114	37 *	0-32
105-67-9	MSD	2,4-Dimethylphenol	118	0.00	U	118	100	37-105	40 *	0-29
111-91-1	MSD	bis(2-Chloroethoxy)methane	118	0.00	U	114	97	41-108	37 *	0-23
120-83-2	MSD	2,4-Dichlorophenol	118	0.00	U	118	100	37-116	35 *	0-25
65-85-0	MSD	Benzoic acid	235	0.00	U	153	65	17-96	28 *	0-25

Quality Control Summary
Spike Recovery Report

SDG Number: 12-711
Sample Type: Matrix Spike Duplicate
Client ID: CAAN-12-2031MSD
Matrix: WG
Lab Sample ID: 1202595537
Instrument: MSD3.I
Analysis Date: 02/09/2012 13:48
Dilution: 1
Analyst: JLD1
Prep Batch ID 1186831
Inj. Vol: 1 uL
Batch ID: 1186837

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
106-47-8	MSD 4-Chloroaniline	118	0.00	U	129	110	37-125	32 *	0-30
87-68-3	MSD Hexachlorobutadiene	118	0.00	U	70.7	60	22-98	33 *	0-28
59-50-7	MSD Parachlorometa cresol *4-Chloro-3-methylphenol*	118	0.00	U	135	115	46-119	34 *	0-27
91-57-6	MSD 2-Methylnaphthalene	118	0.00	U	91.9	78	32-107	28 *	0-26
91-20-3	MSD Naphthalene	118	0.00	U	91.3	78	29-103	34 *	0-27
90-12-0	MSD 1-Methylnaphthalene	118	0.00	U	99.6	85	29-111	31 *	0-27
77-47-4	MSD Hexachlorocyclopentadiene	118	0.00	U	53.1	45	19-90	17	0-25
88-06-2	MSD 2,4,6-Trichlorophenol	118	0.00	U	114	97	37-116	29 *	0-25
95-95-4	MSD 2,4,5-Trichlorophenol	118	0.00	U	122	104	37-118	34 *	0-25
91-58-7	MSD 2-Chloronaphthalene	118	0.00	U	88.4	75	35-101	26	0-28
88-74-4	MSD 2-Nitroaniline *o-Nitroaniline*	118	0.00	U	127	108	36-126	27 *	0-26
99-09-2	MSD 3-Nitroaniline *m-Nitroaniline*	118	0.00	U	115	98	35-126	24	0-28
131-11-3	MSD Dimethylphthalate	118	0.00	U	124	105	42-125	27 *	0-25
606-20-2	MSD 2,6-Dinitrotoluene	118	0.00	U	116	99	48-118	26 *	0-23
121-14-2	MSD 2,4-Dinitrotoluene	118	0.00	U	115	98	49-120	26 *	0-23
208-96-8	MSD Acenaphthylene	118	0.00	U	93.5	80	35-114	23	0-25
83-32-9	MSD Acenaphthene	118	0.00	U	89.2	76	33-111	21	0-29
51-28-5	MSD 2,4-Dinitrophenol	118	0.00	U	92.0	78	21-131	4	0-25
132-64-9	MSD Dibenzofuran	118	0.00	U	99.6	85	43-113	22	0-24
58-90-2	MSD 2,3,4,6-Tetrachlorophenol	118	0.00	U	113	96	36-130	22	0-25
84-66-2	MSD Diethylphthalate	118	0.00	U	124	105	42-128	27 *	0-26
100-02-7	MSD 4-Nitrophenol	118	0.00	U	41.0	35	20-90	2	0-25

Semi-Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 12-711 **Sample Type:** Matrix Spike Duplicate
Client ID: CAAN-12-2031MSD **Matrix:** WG
Lab Sample ID: 1202595537
Instrument: MSD3.I **Analysis Date:** 02/09/2012 13:48 **Dilution:** 1
Analyst: JLD1 **Prep Batch ID** 1186831
Inj. Vol: 1 uL **Batch ID:** 1186837

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
86-73-7	MSD	Fluorene	118	0.00	U	97.4	83	38-115	24	0-27
7005-72-3	MSD	4-Chlorophenylphenylether	118	0.00	U	90.7	77	41-110	19	0-26
100-01-6	MSD	4-Nitroaniline *p-Nitroaniline*	118	0.00	U	113	96	34-138	17	0-25
534-52-1	MSD	2-Methyl-4,6-dinitrophenol	118	0.00	U	110	94	32-124	21	0-25
122-39-4	MSD	Diphenylamine	118	0.00	U	128	109	42-111	30 *	0-27
122-66-7	MSD	Azobenzene *1,2-Diphenylhydrazine*	118	0.00	U	132	112	36-118	29 *	0-26
101-55-3	MSD	4-Bromophenylphenylether	118	0.00	U	104	88	40-112	26	0-27
118-74-1	MSD	Hexachlorobenzene	118	0.00	U	112	95	40-116	25	0-26
87-86-5	MSD	Pentachlorophenol	118	0.00	U	85.7	73	31-114	14	0-25
85-01-8	MSD	Phenanthrene	118	0.00	U	111	95	41-119	26	0-29
120-12-7	MSD	Anthracene	118	0.00	U	112	95	41-118	28	0-29
84-74-2	MSD	Di-n-butylphthalate	118	0.00	U	129	109	41-128	33 *	0-25
206-44-0	MSD	Fluoranthene	118	0.00	U	111	95	40-124	25	0-27
129-00-0	MSD	Pyrene	118	0.00	U	110	93	34-126	40 *	0-25
85-68-7	MSD	Butylbenzylphthalate	118	0.00	U	120	102	37-128	40 *	0-28
117-81-7	MSD	bis(2-Ethylhexyl)phthalate	118	0.00	U	118	100	34-132	39 *	0-25
56-55-3	MSD	Benzo(a)anthracene	118	0.00	U	115	98	38-120	29	0-29
218-01-9	MSD	Chrysene	118	0.00	U	122	104	43-116	28	0-29
117-84-0	MSD	Di-n-octylphthalate	118	0.00	U	126	107	30-135	29 *	0-25
205-99-2	MSD	Benzo(b)fluoranthene	118	0.00	U	116	99	38-123	29 *	0-28
207-08-9	MSD	Benzo(k)fluoranthene	118	0.00	U	120	102	40-123	33 *	0-29
50-32-8	MSD	Benzo(a)pyrene	118	0.00	U	115	98	42-117	29 *	0-25

Semi-Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 12-711 **Sample Type:** Matrix Spike Duplicate
Client ID: CAAN-12-2031MSD **Matrix:** WG
Lab Sample ID: 1202595537
Instrument: MSD3.I **Analysis Date:** 02/09/2012 13:48 **Dilution:** 1
Analyst: JLD1 **Prep Batch ID** 1186831
Inj. Vol: 1 uL **Batch ID:** 1186837

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
193-39-5	MSD Indeno(1,2,3-cd)pyrene	118	0.00	U	120	102	33-135	27 *	0-25
53-70-3	MSD Dibenzo(a,h)anthracene	118	0.00	U	143	121	35-134	29 *	0-25
191-24-2	MSD Benzo(ghi)perylene	118	0.00	U	122	104	29-134	32 *	0-25
123-91-1	MSD 1,4-Dioxane	118	0.00	U	107	91	30-98	50 *	0-27
930-55-2	MSD N-Nitrosopyrrolidine	118	0.00	U	153	130 *	51-115	38 *	0-26
95-94-3	MSD 1,2,4,5-Tetrachlorobenzene	118	0.00	U	86.3	73	31-101	24	0-27
1912-24-9	MSD Atrazine	118	0.00	U	142	120 *	38-112	31 *	0-24
92-87-5	MSD Benzidine	235	0.00	U	64.8	28 *	30-120	7	0-25
91-94-1	MSD 3,3'-Dichlorobenzidine	118	0.00	U	134	114 *	28-112	21	0-25
120-82-1	MSD 1,2,4-Trichlorobenzene	118	0.00	U	79.3	67	25-94	34 *	0-28

Method Blank Summary

SDG Number:	**12-711**	**Client:**	**ARSL001**	**Matrix:**	**WATER**
Client ID:	**MB for batch 1186831**	**Instrument ID:**	**MSD3.I**	**Data File:**	**S020912.B\s3b0905.D**
Lab Sample ID:	**1202595534**	**Prep Date:**	**02/08/2012 17:46**	**Analyzed:**	**02/09/12 09:38**
Column:	**DB-5ms**				

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 1186831	1202595535	S020912.B\s3b0906.D	02/09/12	1003
02	CAAN-12-2031MS	1202595536	S020912.B\s3b0908.D	02/09/12	1053
03	CAAN-12-2024	295388001	S020912.B\s3b0912.D	02/09/12	1233
04	CAAN-12-2031MSD	1202595537	S020912.B\s3b0915.D	02/09/12	1348

Quality Control Data

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**			**Matrix:**	**WATER**
Lab Sample ID:	**1202595534**				
Client Sample:	**QC for batch 1186831**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**MB for batch 1186831**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1186837**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**02/09/2012 09:38**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**02/08/2012 17:46**	**Aliquot:**	**1000 mL**	**Final Volume:**	**1 mL**
Data File:	**S020912.B\s3b0905.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
39638-32-9	bis(2-Chloroisopropyl)ether	U	10.0	ug/L	3.00	10.0
62-75-9	N-Methyl-N-nitrosomethylamine	U	10.0	ug/L	3.00	10.0
110-86-1	Pyridine	U	10.0	ug/L	3.00	10.0
62-53-3	Aniline	U	10.0	ug/L	3.00	10.0
108-95-2	Phenol	U	10.0	ug/L	3.00	10.0
111-44-4	bis(2-Chloroethyl) ether	U	10.0	ug/L	3.00	10.0
95-57-8	2-Chlorophenol	U	10.0	ug/L	3.00	10.0
541-73-1	1,3-Dichlorobenzene	U	10.0	ug/L	3.00	10.0
106-46-7	1,4-Dichlorobenzene	U	10.0	ug/L	3.00	10.0
95-50-1	1,2-Dichlorobenzene	U	10.0	ug/L	3.00	10.0
100-51-6	Benzyl alcohol	U	10.0	ug/L	3.00	10.0
95-48-7	o-Cresol	U	10.0	ug/L	3.00	10.0
65794-96-9	m,p-Cresols	U	10.0	ug/L	3.00	10.0
621-64-7	N-Nitrosodi--n-propylamine *N-Nitrosodipropylamine*	U	10.0	ug/L	3.00	10.0
67-72-1	Hexachloroethane	U	10.0	ug/L	3.00	10.0
98-95-3	Nitrobenzene	U	10.0	ug/L	3.00	10.0
78-59-1	Isophorone	U	10.0	ug/L	3.00	10.0
88-75-5	2-Nitrophenol	U	10.0	ug/L	3.00	10.0
105-67-9	2,4-Dimethylphenol	U	10.0	ug/L	3.00	10.0
111-91-1	bis(2-Chloroethoxy)methane	U	10.0	ug/L	3.00	10.0
120-83-2	2,4-Dichlorophenol	U	10.0	ug/L	3.00	10.0
65-85-0	Benzoic acid	U	20.0	ug/L	6.00	20.0
106-47-8	4-Chloroaniline	U	10.0	ug/L	3.00	10.0
87-68-3	Hexachlorobutadiene	U	10.0	ug/L	3.00	10.0
59-50-7	Parachlorometa cresol *4-Chloro-3-methylphenol*	U	10.0	ug/L	3.00	10.0
91-57-6	2-Methylnaphthalene	U	1.00	ug/L	0.300	1.00
91-20-3	Naphthalene	U	1.00	ug/L	0.300	1.00
90-12-0	1-Methylnaphthalene	U	1.00	ug/L	0.300	1.00
77-47-4	Hexachlorocyclopentadiene	U	10.0	ug/L	3.00	10.0
88-06-2	2,4,6-Trichlorophenol	U	10.0	ug/L	3.00	10.0
95-95-4	2,4,5-Trichlorophenol	U	10.0	ug/L	3.00	10.0
91-58-7	2-Chloronaphthalene	U	1.00	ug/L	0.300	1.00
88-74-4	2-Nitroaniline	U	10.0	ug/L	3.00	10.0
99-09-2	*o-Nitroaniline* 3-Nitroaniline *m-Nitroaniline*	U	10.0	ug/L	3.00	10.0
131-11-3	Dimethylphthalate	U	10.0	ug/L	3.00	10.0
606-20-2	2,6-Dinitrotoluene	U	10.0	ug/L	3.00	10.0

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**			**Matrix:**	**WATER**
Lab Sample ID:	**1202595534**				
Client Sample:	**QC for batch 1186831**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**MB for batch 1186831**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1186837**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**02/09/2012 09:38**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**02/08/2012 17:46**	**Aliquot:**	**1000 mL**	**Final Volume:**	**1 mL**
Data File:	**S020912.B\s3b0905.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
121-14-2	2,4-Dinitrotoluene	U	10.0	ug/L	3.00	10.0
208-96-8	Acenaphthylene	U	1.00	ug/L	0.300	1.00
83-32-9	Acenaphthene	U	1.00	ug/L	0.300	1.00
51-28-5	2,4-Dinitrophenol	U	20.0	ug/L	5.00	20.0
132-64-9	Dibenzofuran	U	10.0	ug/L	3.00	10.0
58-90-2	2,3,4,6-Tetrachlorophenol	U	10.0	ug/L	3.00	10.0
84-66-2	Diethylphthalate	U	10.0	ug/L	3.00	10.0
100-02-7	4-Nitrophenol	U	10.0	ug/L	3.00	10.0
86-73-7	Fluorene	U	1.00	ug/L	0.300	1.00
7005-72-3	4-Chlorophenylphenylether	U	10.0	ug/L	3.00	10.0
100-01-6	4-Nitroaniline *p-Nitroaniline*	U	10.0	ug/L	3.00	10.0
534-52-1	2-Methyl-4,6-dinitrophenol	U	10.0	ug/L	3.00	10.0
122-39-4	Diphenylamine	U	10.0	ug/L	3.00	10.0
122-66-7	Azobenzene *1,2-Diphenylhydrazine*	U	10.0	ug/L	3.00	10.0
101-55-3	4-Bromophenylphenylether	U	10.0	ug/L	3.00	10.0
118-74-1	Hexachlorobenzene	U	10.0	ug/L	3.00	10.0
87-86-5	Pentachlorophenol	U	10.0	ug/L	3.00	10.0
88-85-7	Dinoseb	U	10.0	ug/L	3.00	10.0
85-01-8	Phenanthrene	U	1.00	ug/L	0.300	1.00
120-12-7	Anthracene	U	1.00	ug/L	0.300	1.00
84-74-2	Di-n-butylphthalate	U	10.0	ug/L	3.00	10.0
206-44-0	Fluoranthene	U	1.00	ug/L	0.300	1.00
129-00-0	Pyrene	U	1.00	ug/L	0.300	1.00
85-68-7	Butylbenzylphthalate	U	10.0	ug/L	3.00	10.0
117-81-7	bis(2-Ethylhexyl)phthalate	U	10.0	ug/L	3.00	10.0
56-55-3	Benzo(a)anthracene	U	1.00	ug/L	0.300	1.00
218-01-9	Chrysene	U	1.00	ug/L	0.300	1.00
117-84-0	Di-n-octylphthalate	U	10.0	ug/L	3.00	10.0
205-99-2	Benzo(b)fluoranthene	U	1.00	ug/L	0.300	1.00
207-08-9	Benzo(k)fluoranthene	U	1.00	ug/L	0.300	1.00
50-32-8	Benzo(a)pyrene	U	1.00	ug/L	0.300	1.00
193-39-5	Indeno(1,2,3-cd)pyrene	U	1.00	ug/L	0.300	1.00
53-70-3	Dibenzo(a,h)anthracene	U	1.00	ug/L	0.300	1.00
191-24-2	Benzo(ghi)perylene	U	1.00	ug/L	0.300	1.00
123-91-1	1,4-Dioxane	U	10.0	ug/L	3.00	10.0
55-18-5	N-Nitrosodiethylamine	U	10.0	ug/L	3.00	10.0
930-55-2	N-Nitrosopyrrolidine	U	10.0	ug/L	3.00	10.0

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**			**Matrix:**	**WATER**
Lab Sample ID:	**1202595534**				
Client Sample:	**QC for batch 1186831**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**MB for batch 1186831**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1186837**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**02/09/2012 09:38**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**02/08/2012 17:46**	**Aliquot:**	**1000 mL**	**Final Volume:**	**1 mL**
Data File:	**S020912.B\s3b0905.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
924-16-3	N-Nitrosodi-n-butylamine	U	10.0	ug/L	3.00	10.0
95-94-3	1,2,4,5-Tetrachlorobenzene	U	10.0	ug/L	3.00	10.0
608-93-5	Pentachlorobenzene	U	10.0	ug/L	3.00	10.0
1912-24-9	Atrazine	U	10.0	ug/L	3.00	10.0
92-87-5	Benzidine	U	10.0	ug/L	3.00	10.0
91-94-1	3,3'-Dichlorobenzidine	U	10.0	ug/L	3.00	10.0
120-82-1	1,2,4-Trichlorobenzene	U	10.0	ug/L	3.00	10.0

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
2,4,6-Tribromophenol	95.3	100	ug/L	95.3	(30%-128%)
2-Fluorobiphenyl	41.4	50.0	ug/L	82.8	(34%-98%)
2-Fluorophenol	55.8	100	ug/L	55.8	(21%-78%)
Nitrobenzene-d5	47.4	50.0	ug/L	94.8	(39%-117%)
Phenol-d5	35.3	100	ug/L	35.3	(14%-80%)
p-Terphenyl-d14	42.2	50.0	ug/L	84.3	(39%-129%)

Tentatively Identified Compound Summary

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

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**			**Matrix:**	**WATER**
Lab Sample ID:	**1202595535**				
Client Sample:	**QC for batch 1186831**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1186831**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1186837**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**02/09/2012 10:03**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**02/08/2012 17:46**	**Aliquot:**	**1000 mL**	**Final Volume:**	**1 mL**
Data File:	**S020912.B\s3b0906.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
39638-32-9	bis(2-Chloroisopropyl)ether		38.5	ug/L	3.00	10.0
62-75-9	N-Methyl-N-nitrosomethylamine		24.9	ug/L	3.00	10.0
110-86-1	Pyridine		16.7	ug/L	3.00	10.0
62-53-3	Aniline		39.6	ug/L	3.00	10.0
108-95-2	Phenol		15.2	ug/L	3.00	10.0
111-44-4	bis(2-Chloroethyl) ether		40.2	ug/L	3.00	10.0
95-57-8	2-Chlorophenol		38.1	ug/L	3.00	10.0
541-73-1	1,3-Dichlorobenzene		29.3	ug/L	3.00	10.0
106-46-7	1,4-Dichlorobenzene		29.6	ug/L	3.00	10.0
95-50-1	1,2-Dichlorobenzene		30.3	ug/L	3.00	10.0
100-51-6	Benzyl alcohol		36.2	ug/L	3.00	10.0
95-48-7	o-Cresol		35.5	ug/L	3.00	10.0
65794-96-9	m,p-Cresols		39.0	ug/L	3.00	10.0
621-64-7	N-Nitrosodi--n-propylamine *N-Nitrosodipropylamine*		49.3	ug/L	3.00	10.0
67-72-1	Hexachloroethane		28.2	ug/L	3.00	10.0
98-95-3	Nitrobenzene		41.9	ug/L	3.00	10.0
78-59-1	Isophorone		47.6	ug/L	3.00	10.0
88-75-5	2-Nitrophenol		40.8	ug/L	3.00	10.0
105-67-9	2,4-Dimethylphenol		40.5	ug/L	3.00	10.0
111-91-1	bis(2-Chloroethoxy)methane		39.3	ug/L	3.00	10.0
120-83-2	2,4-Dichlorophenol		41.6	ug/L	3.00	10.0
65-85-0	Benzoic acid		28.7	ug/L	6.00	20.0
106-47-8	4-Chloroaniline		44.1	ug/L	3.00	10.0
87-68-3	Hexachlorobutadiene		30.1	ug/L	3.00	10.0
59-50-7	Parachlorometa cresol *4-Chloro-3-methylphenol*		44.1	ug/L	3.00	10.0
91-57-6	2-Methylnaphthalene		35.8	ug/L	0.300	1.00
91-20-3	Naphthalene		32.6	ug/L	0.300	1.00
90-12-0	1-Methylnaphthalene		38.0	ug/L	0.300	1.00
77-47-4	Hexachlorocyclopentadiene		19.9	ug/L	3.00	10.0
88-06-2	2,4,6-Trichlorophenol		39.9	ug/L	3.00	10.0
95-95-4	2,4,5-Trichlorophenol		41.0	ug/L	3.00	10.0
91-58-7	2-Chloronaphthalene		35.8	ug/L	0.300	1.00
88-74-4	2-Nitroaniline		43.3	ug/L	3.00	10.0
99-09-2	3-Nitroaniline *m-Nitroaniline*		38.5	ug/L	3.00	10.0
131-11-3	Dimethylphthalate		43.9	ug/L	3.00	10.0
606-20-2	2,6-Dinitrotoluene		41.6	ug/L	3.00	10.0

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**			**Matrix:**	**WATER**
Lab Sample ID:	**1202595535**				
Client Sample:	**QC for batch 1186831**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1186831**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1186837**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**02/09/2012 10:03**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**02/08/2012 17:46**	**Aliquot:**	**1000 mL**	**Final Volume:**	**1 mL**
Data File:	**S020912.B\s3b0906.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
121-14-2	2,4-Dinitrotoluene		39.5	ug/L	3.00	10.0
208-96-8	Acenaphthylene		37.0	ug/L	0.300	1.00
83-32-9	Acenaphthene		37.1	ug/L	0.300	1.00
51-28-5	2,4-Dinitrophenol		31.3	ug/L	5.00	20.0
132-64-9	Dibenzofuran		39.3	ug/L	3.00	10.0
58-90-2	2,3,4,6-Tetrachlorophenol		39.4	ug/L	3.00	10.0
84-66-2	Diethylphthalate		43.9	ug/L	3.00	10.0
100-02-7	4-Nitrophenol	J	8.76	ug/L	3.00	10.0
86-73-7	Fluorene		38.3	ug/L	0.300	1.00
7005-72-3	4-Chlorophenylphenylether		37.9	ug/L	3.00	10.0
100-01-6	4-Nitroaniline		36.4	ug/L	3.00	10.0
	p-Nitroaniline					
534-52-1	2-Methyl-4,6-dinitrophenol		37.1	ug/L	3.00	10.0
122-39-4	Diphenylamine		45.7	ug/L	3.00	10.0
122-66-7	Azobenzene		49.6	ug/L	3.00	10.0
	1,2-Diphenylhydrazine					
101-55-3	4-Bromophenylphenylether		43.3	ug/L	3.00	10.0
118-74-1	Hexachlorobenzene		45.8	ug/L	3.00	10.0
87-86-5	Pentachlorophenol		31.0	ug/L	3.00	10.0
88-85-7	Dinoseb	U	10.0	ug/L	3.00	10.0
85-01-8	Phenanthrene		41.7	ug/L	0.300	1.00
120-12-7	Anthracene		39.8	ug/L	0.300	1.00
84-74-2	Di-n-butylphthalate		46.5	ug/L	3.00	10.0
206-44-0	Fluoranthene		39.5	ug/L	0.300	1.00
129-00-0	Pyrene		40.8	ug/L	0.300	1.00
85-68-7	Butylbenzylphthalate		43.9	ug/L	3.00	10.0
117-81-7	bis(2-Ethylhexyl)phthalate		43.0	ug/L	3.00	10.0
56-55-3	Benzo(a)anthracene		41.3	ug/L	0.300	1.00
218-01-9	Chrysene		43.9	ug/L	0.300	1.00
117-84-0	Di-n-octylphthalate		45.1	ug/L	3.00	10.0
205-99-2	Benzo(b)fluoranthene		44.9	ug/L	0.300	1.00
207-08-9	Benzo(k)fluoranthene		44.1	ug/L	0.300	1.00
50-32-8	Benzo(a)pyrene		41.0	ug/L	0.300	1.00
193-39-5	Indeno(1,2,3-cd)pyrene		37.9	ug/L	0.300	1.00
53-70-3	Dibenzo(a,h)anthracene		44.0	ug/L	0.300	1.00
191-24-2	Benzo(ghi)perylene		38.0	ug/L	0.300	1.00
123-91-1	1,4-Dioxane		26.5	ug/L	3.00	10.0
55-18-5	N-Nitrosodiethylamine	U	10.0	ug/L	3.00	10.0
930-55-2	N-Nitrosopyrrolidine		50.1	ug/L	3.00	10.0

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**			**Matrix:**	**WATER**
Lab Sample ID:	**1202595535**				
Client Sample:	**QC for batch 1186831**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1186831**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1186837**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**02/09/2012 10:03**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**02/08/2012 17:46**	**Aliquot:**	**1000 mL**	**Final Volume:**	**1 mL**
Data File:	**S020912.B\s3b0906.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
924-16-3	N-Nitrosodi-n-butylamine	U	10.0	ug/L	3.00	10.0
95-94-3	1,2,4,5-Tetrachlorobenzene		37.6	ug/L	3.00	10.0
608-93-5	Pentachlorobenzene	U	10.0	ug/L	3.00	10.0
1912-24-9	Atrazine		54.4	ug/L	3.00	10.0
92-87-5	Benzidine		17.3	ug/L	3.00	10.0
91-94-1	3,3'-Dichlorobenzidine		40.2	ug/L	3.00	10.0
120-82-1	1,2,4-Trichlorobenzene		29.9	ug/L	3.00	10.0

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
2,4,6-Tribromophenol	82.2	100	ug/L	82.2	(30%-128%)
2-Fluorobiphenyl	39.4	50.0	ug/L	78.9	(34%-98%)
2-Fluorophenol	49.6	100	ug/L	49.6	(21%-78%)
Nitrobenzene-d5	44.1	50.0	ug/L	88.1	(39%-117%)
Phenol-d5	31.3	100	ug/L	31.3	(14%-80%)
p-Terphenyl-d14	39.8	50.0	ug/L	79.6	(39%-129%)

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/01/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**1202595536**	**Date Received:**	**02/03/2012 08:45**		
Client Sample:	**QC for batch 1186831**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAAN-12-2031MS**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1186837**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**02/09/2012 10:53**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**02/08/2012 17:46**	**Aliquot:**	**425 mL**	**Final Volume:**	**1 mL**
Data File:	**S020912.B\s3b0908.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
39638-32-9	bis(2-Chloroisopropyl)ether		74.8	ug/L	7.06	23.5
62-75-9	N-Methyl-N-nitrosomethylamine		60.5	ug/L	7.06	23.5
110-86-1	Pyridine		46.1	ug/L	7.06	23.5
62-53-3	Aniline		89.6	ug/L	7.06	23.5
108-95-2	Phenol		52.5	ug/L	7.06	23.5
111-44-4	bis(2-Chloroethyl) ether		78.2	ug/L	7.06	23.5
95-57-8	2-Chlorophenol		74.6	ug/L	7.06	23.5
541-73-1	1,3-Dichlorobenzene		52.7	ug/L	7.06	23.5
106-46-7	1,4-Dichlorobenzene		53.4	ug/L	7.06	23.5
95-50-1	1,2-Dichlorobenzene		56.8	ug/L	7.06	23.5
100-51-6	Benzyl alcohol		81.4	ug/L	7.06	23.5
95-48-7	o-Cresol		77.9	ug/L	7.06	23.5
65794-96-9	m,p-Cresols		91.7	ug/L	7.06	23.5
621-64-7	N-Nitrosodi--n-propylamine *N-Nitrosodipropylamine*		96.6	ug/L	7.06	23.5
67-72-1	Hexachloroethane		47.8	ug/L	7.06	23.5
98-95-3	Nitrobenzene		82.9	ug/L	7.06	23.5
78-59-1	Isophorone		93.8	ug/L	7.06	23.5
88-75-5	2-Nitrophenol		81.7	ug/L	7.06	23.5
105-67-9	2,4-Dimethylphenol		78.7	ug/L	7.06	23.5
111-91-1	bis(2-Chloroethoxy)methane		78.0	ug/L	7.06	23.5
120-83-2	2,4-Dichlorophenol		83.3	ug/L	7.06	23.5
65-85-0	Benzoic acid		116	ug/L	14.1	47.1
106-47-8	4-Chloroaniline		93.5	ug/L	7.06	23.5
87-68-3	Hexachlorobutadiene		50.5	ug/L	7.06	23.5
59-50-7	Parachlorometa cresol *4-Chloro-3-methylphenol*		95.9	ug/L	7.06	23.5
91-57-6	2-Methylnaphthalene		69.1	ug/L	0.706	2.35
91-20-3	Naphthalene		65.1	ug/L	0.706	2.35
90-12-0	1-Methylnaphthalene		73.0	ug/L	0.706	2.35
77-47-4	Hexachlorocyclopentadiene		44.8	ug/L	7.06	23.5
88-06-2	2,4,6-Trichlorophenol		84.7	ug/L	7.06	23.5
95-95-4	2,4,5-Trichlorophenol		86.9	ug/L	7.06	23.5
91-58-7	2-Chloronaphthalene		68.1	ug/L	0.706	2.35
88-74-4	2-Nitroaniline		96.8	ug/L	7.06	23.5
99-09-2	*o-Nitroaniline* 3-Nitroaniline *m-Nitroaniline*		90.2	ug/L	7.06	23.5
131-11-3	Dimethylphthalate		94.1	ug/L	7.06	23.5
606-20-2	2,6-Dinitrotoluene		89.5	ug/L	7.06	23.5

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/01/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**1202595536**	**Date Received:**	**02/03/2012 08:45**		
Client Sample:	**QC for batch 1186831**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAAN-12-2031MS**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1186837**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**02/09/2012 10:53**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**02/08/2012 17:46**	**Aliquot:**	**425 mL**	**Final Volume:**	**1 mL**
Data File:	**S020912.B\s3b0908.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
121-14-2	2,4-Dinitrotoluene		88.3	ug/L	7.06	23.5
208-96-8	Acenaphthylene		74.2	ug/L	0.706	2.35
83-32-9	Acenaphthene		72.0	ug/L	0.706	2.35
51-28-5	2,4-Dinitrophenol		88.2	ug/L	11.8	47.1
132-64-9	Dibenzofuran		79.8	ug/L	7.06	23.5
58-90-2	2,3,4,6-Tetrachlorophenol		89.9	ug/L	7.06	23.5
84-66-2	Diethylphthalate		94.8	ug/L	7.06	23.5
100-02-7	4-Nitrophenol		41.8	ug/L	7.06	23.5
86-73-7	Fluorene		76.9	ug/L	0.706	2.35
7005-72-3	4-Chlorophenylphenylether		74.9	ug/L	7.06	23.5
100-01-6	4-Nitroaniline		96.0	ug/L	7.06	23.5
	p-Nitroaniline					
534-52-1	2-Methyl-4,6-dinitrophenol		89.7	ug/L	7.06	23.5
122-39-4	Diphenylamine		94.8	ug/L	7.06	23.5
122-66-7	Azobenzene		98.2	ug/L	7.06	23.5
	1,2-Diphenylhydrazine					
101-55-3	4-Bromophenylphenylether		80.2	ug/L	7.06	23.5
118-74-1	Hexachlorobenzene		86.9	ug/L	7.06	23.5
87-86-5	Pentachlorophenol		74.5	ug/L	7.06	23.5
88-85-7	Dinoseb	U	23.5	ug/L	7.06	23.5
85-01-8	Phenanthrene		85.4	ug/L	0.706	2.35
120-12-7	Anthracene		83.9	ug/L	0.706	2.35
84-74-2	Di-n-butylphthalate		92.5	ug/L	7.06	23.5
206-44-0	Fluoranthene		87.0	ug/L	0.706	2.35
129-00-0	Pyrene		73.0	ug/L	0.706	2.35
85-68-7	Butylbenzylphthalate		79.8	ug/L	7.06	23.5
117-81-7	bis(2-Ethylhexyl)phthalate		79.6	ug/L	7.06	23.5
56-55-3	Benzo(a)anthracene		86.3	ug/L	0.706	2.35
218-01-9	Chrysene		91.8	ug/L	0.706	2.35
117-84-0	Di-n-octylphthalate		94.2	ug/L	7.06	23.5
205-99-2	Benzo(b)fluoranthene		87.2	ug/L	0.706	2.35
207-08-9	Benzo(k)fluoranthene		86.8	ug/L	0.706	2.35
50-32-8	Benzo(a)pyrene		86.2	ug/L	0.706	2.35
193-39-5	Indeno(1,2,3-cd)pyrene		91.1	ug/L	0.706	2.35
53-70-3	Dibenzo(a,h)anthracene		107	ug/L	0.706	2.35
191-24-2	Benzo(ghi)perylene		88.4	ug/L	0.706	2.35
123-91-1	1,4-Dioxane		64.4	ug/L	7.06	23.5
55-18-5	N-Nitrosodiethylamine	U	23.5	ug/L	7.06	23.5
930-55-2	N-Nitrosopyrrolidine		104	ug/L	7.06	23.5

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/01/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**1202595536**	**Date Received:**	**02/03/2012 08:45**		
Client Sample:	**QC for batch 1186831**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAAN-12-2031MS**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1186837**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**02/09/2012 10:53**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**02/08/2012 17:46**	**Aliquot:**	**425 mL**	**Final Volume:**	**1 mL**
Data File:	**S020912.B\s3b0908.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
924-16-3	N-Nitrosodi-n-butylamine	U	23.5	ug/L	7.06	23.5
95-94-3	1,2,4,5-Tetrachlorobenzene		68.0	ug/L	7.06	23.5
608-93-5	Pentachlorobenzene	U	23.5	ug/L	7.06	23.5
1912-24-9	Atrazine		104	ug/L	7.06	23.5
92-87-5	Benzidine		69.5	ug/L	7.06	23.5
91-94-1	3,3'-Dichlorobenzidine		109	ug/L	7.06	23.5
120-82-1	1,2,4-Trichlorobenzene		56.5	ug/L	7.06	23.5

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
2,4,6-Tribromophenol	181	235	ug/L	76.9	(30%-128%)
2-Fluorobiphenyl	76.4	118	ug/L	64.9	(34%-98%)
2-Fluorophenol	131	235	ug/L	55.7	(21%-78%)
Nitrobenzene-d5	85.3	118	ug/L	72.5	(39%-117%)
Phenol-d5	108	235	ug/L	46.0	(14%-80%)
p-Terphenyl-d14	74.5	118	ug/L	63.4	(39%-129%)

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/01/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**1202595537**	**Date Received:**	**02/03/2012 08:45**		
Client Sample:	**QC for batch 1186831**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAAN-12-2031MSD**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1186837**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**02/09/2012 13:48**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**02/08/2012 17:46**	**Aliquot:**	**425 mL**	**Final Volume:**	**1 mL**
Data File:	**S020912.B\s3b0915.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
39638-32-9	bis(2-Chloroisopropyl)ether		114	ug/L	7.06	23.5
62-75-9	N-Methyl-N-nitrosomethylamine		101	ug/L	7.06	23.5
110-86-1	Pyridine		41.6	ug/L	7.06	23.5
62-53-3	Aniline		108	ug/L	7.06	23.5
108-95-2	Phenol		79.2	ug/L	7.06	23.5
111-44-4	bis(2-Chloroethyl) ether		119	ug/L	7.06	23.5
95-57-8	2-Chlorophenol		115	ug/L	7.06	23.5
541-73-1	1,3-Dichlorobenzene		76.5	ug/L	7.06	23.5
106-46-7	1,4-Dichlorobenzene		78.9	ug/L	7.06	23.5
95-50-1	1,2-Dichlorobenzene		81.9	ug/L	7.06	23.5
100-51-6	Benzyl alcohol		120	ug/L	7.06	23.5
95-48-7	o-Cresol		116	ug/L	7.06	23.5
65794-96-9	m,p-Cresols		138	ug/L	7.06	23.5
621-64-7	N-Nitrosodi--n-propylamine *N-Nitrosodipropylamine*		140	ug/L	7.06	23.5
67-72-1	Hexachloroethane		72.2	ug/L	7.06	23.5
98-95-3	Nitrobenzene		123	ug/L	7.06	23.5
78-59-1	Isophorone		134	ug/L	7.06	23.5
88-75-5	2-Nitrophenol		118	ug/L	7.06	23.5
105-67-9	2,4-Dimethylphenol		118	ug/L	7.06	23.5
111-91-1	bis(2-Chloroethoxy)methane		114	ug/L	7.06	23.5
120-83-2	2,4-Dichlorophenol		118	ug/L	7.06	23.5
65-85-0	Benzoic acid		153	ug/L	14.1	47.1
106-47-8	4-Chloroaniline		129	ug/L	7.06	23.5
87-68-3	Hexachlorobutadiene		70.7	ug/L	7.06	23.5
59-50-7	Parachlorometa cresol *4-Chloro-3-methylphenol*		135	ug/L	7.06	23.5
91-57-6	2-Methylnaphthalene		91.9	ug/L	0.706	2.35
91-20-3	Naphthalene		91.3	ug/L	0.706	2.35
90-12-0	1-Methylnaphthalene		99.6	ug/L	0.706	2.35
77-47-4	Hexachlorocyclopentadiene		53.1	ug/L	7.06	23.5
88-06-2	2,4,6-Trichlorophenol		114	ug/L	7.06	23.5
95-95-4	2,4,5-Trichlorophenol		122	ug/L	7.06	23.5
91-58-7	2-Chloronaphthalene		88.4	ug/L	0.706	2.35
88-74-4	2-Nitroaniline *o-Nitroaniline*		127	ug/L	7.06	23.5
99-09-2	3-Nitroaniline *m-Nitroaniline*		115	ug/L	7.06	23.5
131-11-3	Dimethylphthalate		124	ug/L	7.06	23.5
606-20-2	2,6-Dinitrotoluene		116	ug/L	7.06	23.5

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/01/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**1202595537**	**Date Received:**	**02/03/2012 08:45**		
Client Sample:	**QC for batch 1186831**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAAN-12-2031MSD**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1186837**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**02/09/2012 13:48**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**02/08/2012 17:46**	**Aliquot:**	**425 mL**	**Final Volume:**	**1 mL**
Data File:	**S020912.B\s3b0915.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
121-14-2	2,4-Dinitrotoluene		115	ug/L	7.06	23.5
208-96-8	Acenaphthylene		93.5	ug/L	0.706	2.35
83-32-9	Acenaphthene		89.2	ug/L	0.706	2.35
51-28-5	2,4-Dinitrophenol		92.0	ug/L	11.8	47.1
132-64-9	Dibenzofuran		99.6	ug/L	7.06	23.5
58-90-2	2,3,4,6-Tetrachlorophenol		113	ug/L	7.06	23.5
84-66-2	Diethylphthalate		124	ug/L	7.06	23.5
100-02-7	4-Nitrophenol		41.0	ug/L	7.06	23.5
86-73-7	Fluorene		97.4	ug/L	0.706	2.35
7005-72-3	4-Chlorophenylphenylether		90.7	ug/L	7.06	23.5
100-01-6	4-Nitroaniline		113	ug/L	7.06	23.5
	p-Nitroaniline					
534-52-1	2-Methyl-4,6-dinitrophenol		110	ug/L	7.06	23.5
122-39-4	Diphenylamine		128	ug/L	7.06	23.5
122-66-7	Azobenzene		132	ug/L	7.06	23.5
	1,2-Diphenylhydrazine					
101-55-3	4-Bromophenylphenylether		104	ug/L	7.06	23.5
118-74-1	Hexachlorobenzene		112	ug/L	7.06	23.5
87-86-5	Pentachlorophenol		85.7	ug/L	7.06	23.5
88-85-7	Dinoseb	U	23.5	ug/L	7.06	23.5
85-01-8	Phenanthrene		111	ug/L	0.706	2.35
120-12-7	Anthracene		112	ug/L	0.706	2.35
84-74-2	Di-n-butylphthalate		129	ug/L	7.06	23.5
206-44-0	Fluoranthene		111	ug/L	0.706	2.35
129-00-0	Pyrene		110	ug/L	0.706	2.35
85-68-7	Butylbenzylphthalate		120	ug/L	7.06	23.5
117-81-7	bis(2-Ethylhexyl)phthalate		118	ug/L	7.06	23.5
56-55-3	Benzo(a)anthracene		115	ug/L	0.706	2.35
218-01-9	Chrysene		122	ug/L	0.706	2.35
117-84-0	Di-n-octylphthalate		126	ug/L	7.06	23.5
205-99-2	Benzo(b)fluoranthene		116	ug/L	0.706	2.35
207-08-9	Benzo(k)fluoranthene		120	ug/L	0.706	2.35
50-32-8	Benzo(a)pyrene		115	ug/L	0.706	2.35
193-39-5	Indeno(1,2,3-cd)pyrene		120	ug/L	0.706	2.35
53-70-3	Dibenzo(a,h)anthracene	E	143	ug/L	0.706	2.35
191-24-2	Benzo(ghi)perylene		122	ug/L	0.706	2.35
123-91-1	1,4-Dioxane		107	ug/L	7.06	23.5
55-18-5	N-Nitrosodiethylamine	U	23.5	ug/L	7.06	23.5
930-55-2	N-Nitrosopyrrolidine		153	ug/L	7.06	23.5

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**12-711**	**Date Collected:**	**02/01/2012 12:00**	**Matrix:**	**WG**
Lab Sample ID:	**1202595537**	**Date Received:**	**02/03/2012 08:45**		
Client Sample:	**QC for batch 1186831**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAAN-12-2031MSD**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1186837**	**Inst:**	**MSD3.I**	**Dilution:**	**1**
Run Date:	**02/09/2012 13:48**	**Analyst:**	**JLD1**	**Inj. Vol:**	**1 uL**
Prep Date:	**02/08/2012 17:46**	**Aliquot:**	**425 mL**	**Final Volume:**	**1 mL**
Data File:	**S020912.B\s3b0915.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
924-16-3	N-Nitrosodi-n-butylamine	U	23.5	ug/L	7.06	23.5
95-94-3	1,2,4,5-Tetrachlorobenzene		86.3	ug/L	7.06	23.5
608-93-5	Pentachlorobenzene	U	23.5	ug/L	7.06	23.5
1912-24-9	Atrazine		142	ug/L	7.06	23.5
92-87-5	Benzidine		64.8	ug/L	7.06	23.5
91-94-1	3,3'-Dichlorobenzidine		134	ug/L	7.06	23.5
120-82-1	1,2,4-Trichlorobenzene		79.3	ug/L	7.06	23.5

Surrogate/Tracer recovery	Result	Nominal		Recovery%		Acceptable Limits
2,4,6-Tribromophenol	224	235	ug/L	95.4		(30%-128%)
2-Fluorobiphenyl	103	118	ug/L	87.8		(34%-98%)
2-Fluorophenol	204	235	ug/L	86.8	*	(21%-78%)
Nitrobenzene-d5	125	118	ug/L	107		(39%-117%)
Phenol-d5	165	235	ug/L	70.1		(14%-80%)
p-Terphenyl-d14	104	118	ug/L	88.4		(39%-129%)

Miscellaneous

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
09-FEB-12	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
SEMIVOA GC/MS	SW846 8270C	Liquid	ESHL
Batch ID:	**Sample Numbers:**		
1186837	See Below		

Potentially affected work order(s)(SDG): 295270(12-700),295388(12-711),295392(12-718),295435(12-726)

Application Issues:

Failed Recovery for MS/PS

Failed RPD for MS/MSD, or PS/PSD

Failed Recovery for LCS/LCSD

Failed Yield for Surrogates

Failed Recovery for MSD/PSD

Specification and Requirements Exception Description:	DER Disposition:
1. The LCS(1202595535) recovered Benzidine at 17.3% (limits: 23%-131%) and Benzoic acid 28.7% (limits: 30%-142%).	1. The failures represented less than 5% of the total requested spike analyte list. That satisfied the acceptance criteria for the client and the data were reported. Please note, both Benzidine and Benzoic acid are designated as being poor responding analytes in the analytical method. This may account for the biased low recoveries for those analytes.
2. The MS(1202595536) and MSD(1202595537) recovered Benzidine at 29.6% and 27.5%, respectively. The limits are 30%-120%. The MSD also recovered N-Nitrosopyrrolidine at 130% (Limits are 51-115%), Atrazine at 120% (Limits are 38-112%) and 3,3'-Dichlorobenzidine at 114% (Limits are 28-112%).	2. Since the MS(1202595536) and MSD(1202595537) displayed similar recoveries for Benzidine, the failures may attributed to matrix interference. Please note, Benzidine is designated as being poor responding analyte in the analytical method. This may account for the biased low recoveries for that analyte in the MS and MSD. The latter three analytes were not detected in the associated samples. The data is unaffected and are reported.
3. The MSD(1202595537) displayed one biased high surrogate and multiple biased high spike recoveries. Please see the QC Summary for the specific recovery values.	3. The MB, LCS and MS satisfied batch QC acceptance criteria (with the exception of Benzidine in the MS and MSD - see item #2 above). Therefore, it was determined that the biased high failures were limited to the MSD sample only (the surrogate and spike recoveries were in general significantly higher in the MSD compared to the MS recoveries). Since the associated parent sample was reported as non-detected for all requested target analytes, a re-extraction was considered un-necessary and the data have been reported.
4. The MS(1202595536) and MSD(1202595537) displayed multiple RPD value failures. Please see the QC Summary for the specific recovery values.	4. The RPD failures were attributed to the biased high recoveries in the MSD (see item #3 above).

Originator's Name:

Jennifer Dunagan Jones10-FEB-12

Data Validator/Group Leader:

Herbert Maier 22-FEB-12

Explosives by LCMSMS Analysis

Case Narrative

LC/MS/MS Case Narrative
ARS International (ARSL)
SDG 12-711

Method/Analysis Information

Procedure:	**Definitive Low Level Analysis of Nitroaromatic Explosives Utilizing Liquid Chromatography / Mass Spectrometry / Mass Spectrometry (LC/MS/MS) by SW-846 Method 8321 Modified (8321M)**
Analytical Method:	SW846 3535/8321A Modified
Prep Method:	SW846 Method 3535
Analytical Batch Number:	1185693
Prep Batch Number:	1185692

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 3535/8321A Modified :

Sample ID	Client ID
295388002	CAAN-12-2024
1202592978	Method Blank (MB)
1202592979	Laboratory Control Sample (LCS)
1202592980	295270003(CAAN-12-2031) Matrix Spike (MS)
1202592981	295270003(CAAN-12-2031) Matrix Spike Duplicate (MSD)

Preparation/Analytical Method Verification

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-056 REV# 16.

Primary Analyte Analysis

Calibration Information

Initial Calibration
All initial calibration requirements for this analysis have been met for this SDG.

Calibration Verification Standard Requirements
All associated calibration verification standard(s) (ICV or CCV) for this analysis met the acceptance criteria.

Calibration Blank Requirements
All initial or continuing calibration blanks (ICB or CCB) bracketing the analyses associated with this batch for this analysis were within acceptance criteria. Due to software limitations, the CCBs and/or the ICBs may have a concentration for target analytes in the Found column. These values should be zero.

CRI Requirements
All low level calibration verification (CRI) requirements for this analysis were met by all bracketing CRI standards.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB(s) analyzed with this SDG for this analysis met the acceptance criteria.

Surrogate Recoveries
All the surrogate recoveries were within the established acceptance criteria in this SDG in this analytical batch for this analysis.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries were within the established acceptance limits.

QC Sample Designation
Client sample 295270003 (CAAN-12-2031) from SDG 112-700 was chosen for matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement
The MS spike recoveries were within the established acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD spike recoveries were within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement
The RPD(s) between the MS and MSD met the acceptance limits for this analysis.

Internal Standard (ISTD) Acceptance
The internal standard responses were within the required acceptance criteria for all samples and QC in this SDG.

Technical Information

Holding Time Specifications
All samples in this SDG in this analytical batch met the specified holding time. GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of 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.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
According to the GEL SOP for Method 8321A, all sample and QC extracts are diluted 1:1 v/v with HPLC grade water. The samples in this SDG in this analytical batch for this analysis did not require any additional dilutions.

Sample Re-extraction/Re-analysis
The SDG was re-analyzed due to a CCV failing acceptance criteria. The re-analysis passed acceptance criteria and is reported.

Secondary Analyte Analysis

Calibration Information

Initial Calibration
All initial calibration requirements for this analysis have been met for this SDG.

Calibration Verification Standard Requirements
All associated calibration verification standard(s) (ICV or CCV) for this analysis met the acceptance criteria.

Calibration Blank Requirements
All initial or continuing calibration blanks (ICB or CCB) bracketing the analyses associated with this batch for this analysis were within acceptance criteria. Due to software limitations, the CCBs and/or the ICBs may have a concentration for target analytes in the Found column. These values should be zero.

CRI Requirements
All low level calibration verification (CRI) requirements for this analysis were met by all bracketing CRI standards.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB(s) analyzed with this SDG for this analysis met the acceptance criteria.

Surrogate Recoveries
All the surrogate recoveries were within the established acceptance criteria in this SDG in this analytical batch for this analysis.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries were within the established acceptance limits.

QC Sample Designation
Client sample 295270003 (CAAN-12-2031) from SDG 112-700 was chosen for matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement
The MS spike recoveries were within the established acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD spike recoveries were within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement
The RPD(s) between the MS and MSD met the acceptance limits for this analysis.

Internal Standard (ISTD) Acceptance
The internal standards were not added to the secondary analyte extracts.

Technical Information

Holding Time Specifications
All samples in this SDG in this analytical batch met the specified holding time. GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of 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.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
According to the GEL SOP for Method 8321A, all sample and QC extracts are diluted 1:1 v/v with HPLC grade water. The samples in this SDG in this analytical batch for this analysis did not require any additional dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG in this analytical batch for this analysis except for dilutions.

Miscellaneous Information

Data Exception (DER) Documentation
Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Manual Integrations
Some initial calibration standards, continuing calibration standards, and/or samples required manual integrations due to software limitations.

Flagging Convention
The sample was not originally analyzed using SW-846 Method 8330.

Additional Comments
Due to software limitations, all initial calibration blanks must be designated as XIB001 in order for the forms to be correct.

Due to software limitations in the Secondary analyte analysis, false positives and analytes detected below the MDL cannot be deleted from the raw data.

Due to software limitations, file extensions such as DL, RE, etc. may not appear on the generated forms and/or raw data.

System Configuration

The laboratory utilizes a Waters LC 2795 liquid chromatography instrument for primary analyte analysis. It is coupled with either a Micromass Quattro Micro Mass Spectrometer/ Mass Spectrometer, or a Micromass Quattro Ultima Mass Spectrometer/ Mass Spectrometer. Each being designated as LCMSMS #1 and LCMSMS #2, respectively. It is fitted with an APCI (Atmospheric Pressure chemical Ionization) probe that is operated in the negative ionization mode for the primary analyte analysis. The laboratory also utilizes an Agilent 1100 liquid chromatography instrument for either primary or secondary analyte analysis. It is coupled with an Applied Biosystems 4000 Mass Spectrometer/ Mass Spectrometer, designated as either LCMSMS #3 or LCMSMS #4. It is fitted with an APCI (Atmospheric Pressure chemical Ionization) probe that is operated in the negative ionization mode for both the primary and secondary analyte analysis.

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to 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 will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Chromatographic Columns

The detection of the primary analyte nitroaromatic and nitramines is accomplished through analysis on the following reversed phase column:

Phenomenex: Ultracarb 5u ODS (20), 250 x 4.60 mm ID.

The detection of the secondary analytes is accomplished through analysis on the following reversed phase column:

YMC: J'sphere ODS-H80, 150 x 4.6mm I.D.

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

ARSL001 ARS International (63641-10)

Client SDG: 12-711 GEL Work Order: 295388

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

U Analyte was analyzed for, but not detected above the MDL, MDA, 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: Herbert N Maier **Name: Herbert Maier**

Date: 28 FEB 2012 **Title: Data Validator**

Sample Data Summary

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAAN-12-2024

Lab Code: GEL

GEL Job No (SDG) 12-711

Matrix: WATER

GEL Sample ID: 295388002

Sample Amount 920 mL

Date Received: 04-FEB-12

Moisture:

Extraction Batch ID: 1185692

Extraction Type Sol Exchange

Date Extracted: 07-FEB-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

GEL data file: EXP0227021a

Date Analyzed: 28-FEB-12 04:49

Dilution Factor: 2

Concentration Units: ug/L

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	0.272	U	0.087	0.272
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	0.272	U	0.087	0.272
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	0.272	U	0.087	0.272
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	0.272	U	0.087	0.272
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	0.272	U	0.087	0.272
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	0.272	U	0.087	0.272
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
606-20-2	2,6-Dinitrotoluene	0.272	U	0.087	0.272
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	0.272	U	0.0891	0.272
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	0.272	U	0.087	0.272
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	0.272	U	0.087	0.272
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	0.272	U	0.087	0.272
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	0.272	U	0.087	0.272
99-65-0	*m-Dinitrobenzene*				
479-45-8	Tetryl	0.543	U	0.087	0.543
479-45-8	*Tetryl*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAAN-12-2024

Lab Code: GEL

GEL Job No (SDG) 12-711

Matrix: WATER

GEL Sample ID: 295388002

Sample Amount 920 mL

Date Received: 04-FEB-12

Moisture:

Extraction Batch ID: 1185692

Extraction Type Sol Exchange

Date Extracted: 07-FEB-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
78-11-5	PETN	0.543	U	0.109	0.543
78-11-5	*PETN*				
99-99-0	p-Nitrotoluene	0.543	U	0.163	0.543
99-99-0	*p-Nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAAN-12-2024

Lab Code: GEL

GEL Job No (SDG) 12-711

Matrix: WATER

GEL Sample ID: 295388002

Sample Amount 920 mL

Date Received: 04-FEB-12

Moisture:

Extraction Batch ID: 1185692

Extraction Type Sol Exchange

Date Extracted: 07-FEB-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

GEL data file: EXS02160022.wiff

Date Analyzed: 16-FEB-12 19:59

Dilution Factor: 2

Concentration Units: ug/L

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	1.09	U	0.326	1.09
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	1.09	U	0.326	1.09
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	1.09	U	0.326	1.09
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	2.72	U	0.543	2.72
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	2.72	U	0.543	2.72
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

Quality Control Summary

High Explosives Surrogate Recovery Summary

Lab Name: GEL Laboratories LLC **GEL Job No (SDG):** 12-711

Lab Code: GEL **HPLC Column:** Phenomenex Ultracarb 5u ODS(20)

Lab Sample ID	Client Sample ID	DNT	QC Limits	Flg
295388002	CAAN-12-2024	96.5	66 - 130	
295388002	CAAN-12-2024	102	66 - 130	
1202592978	MB for batch 1185692	89.8	66 - 130	
1202592978	MB for batch 1185692	104	66 - 130	
1202592979	LCS for batch 1185692	93.1	66 - 130	
1202592979	LCS for batch 1185692	108	66 - 130	
1202592980	CAAN-12-2031(295270003MS)	95.8	66 - 130	
1202592980	CAAN-12-2031(295270003MS)	103	66 - 130	
1202592981	CAAN-12-2031(295270003MSD)	96.1	66 - 130	
1202592981	CAAN-12-2031(295270003MSD)	101	66 - 130	

DNT = 3,4-Dinitrotoluene

3B
High Explosives LCS/LCS Duplicate Summary

Lab Name: GEL Laboratories LLC

Client ID: LCS

Lab Code: GEL

GEL Job No (SDG) 12-711

Extract Batch Code: 1185692

Date Extracted: 07-FEB-12

GEL LCS ID: 1202592979

GEL LCSDUP ID:

Analysis Date/Time: 28-FEB-12 01:21

DUP Analysis Date/Time:

Reporting Units: ug/L

QC Type: LCS/LCSD

Compound	Spike Added	LCS Conc	LCS Rec #	LCSD Conc	LCSD Rec #	RPD #	RPD	Recovery Limits
4-Amino-2,6-dinitrotoluene	5	4.57	91.3					73 - 125
HMX	5	4.22	84.4					56 - 122
Nitrobenzene	5	4.26	85.2					66 - 112
PETN	5	4.52	90.3					56 - 140
RDX	5	4.55	91					74 - 135
Tetryl	5	4	80					67 - 118
m-Dinitrobenzene	5	4.52	90.4					80 - 120
m-Nitrotoluene	5	4.02	80.5					67 - 111
1,3,5-Trinitrobenzene	5	4.49	89.7					69 - 120
2-Amino-4,6-dinitrotoluene	5	4.49	89.9					72 - 127
2,6-Dinitrotoluene	5	4.56	91.1					80 - 120
2,4-Dinitrotoluene	5	4.83	96.7					77 - 121
2,4,6-Trinitrotoluene	5	4.73	94.6					74 - 131
o-Nitrotoluene	5	4.07	81.4					63 - 114
p-Nitrotoluene	5	4.36	87.2					66 - 118

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

3B
High Explosives LCS/LCS Duplicate Summary

Lab Name: GEL Laboratories LLC

Client ID: LCS

Lab Code: GEL

GEL Job No (SDG) 12-711

Extract Batch Code: 1185692

Date Extracted: 07-FEB-12

GEL LCS ID: 1202592979

GEL LCSDUP ID:

Analysis Date/Time: 16-FEB-12 18:02

DUP Analysis Date/Time:

Reporting Units: ug/L

QC Type: LCS/LCSD

Compound	Spike Added	LCS Conc	LCS Rec	#	LCSD Conc	LCSD Rec	#	RPD	#	RPD	Recovery Limits
2,4-Diamino-6-nitrotoluene	5	4.76	95.2								51 - 100
2,6-Diamino-4-nitrotoluene	5	5.51	110								52 - 117
3,5-Dinitroaniline	5	5.47	109								70 - 120
TATB	10	3.73	37.3								21 - 147
tris(o-cresyl) phosphate	5	3.49	69.8								41 - 92

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

High Explosives MS/MSD Summary

Lab Name: GEL Laboratories LLC

Client ID: CAAN-12-2031

Lab Code: GEL

GEL Job No (SDG) 12-711

Extract Batch Code: 1185692

Date Extracted: 07-FEB-12

GEL Spike ID: 1202592980

GEL SpikeDup ID: 1202592981

Analysis Date/Time: 28-FEB-12 02:21

MSD Analysis Date/Time: 28-FEB-12 02:50

Reporting Units: ug/L

QC Type: MS/MSD

Compound	Spike Added	Sample Conc	MS Conc	MS Rec #	MSD Conc	MSD Rec #	RPD #	RPD Limit	Rec Limits
Tetryl	5.31915	0	4.1	77.1	4.16	77.4	1.45	29	28 - 118
m-Dinitrobenzene	5.31915	0	5.06	95.2	5.2	96.6	2.61	20	70 - 130
m-Nitrotoluene	5.31915	0	4.26	80.1	4.53	84.3	6.28	26	66 - 115
1,3,5-Trinitrobenzene	5.31915	0	4.59	86.4	4.69	87.3	2.16	23	51 - 120
o-Nitrotoluene	5.31915	0	4.13	77.7	4.56	84.8	9.73	26	66 - 118
p-Nitrotoluene	5.31915	0	4.32	81.2	4.58	85.3	5.99	24	68 - 122
2,4,6-Trinitrotoluene	5.31915	0	5.06	95.1	5.53	103	8.98	23	65 - 138
2,6-Dinitrotoluene	5.31915	0	4.63	87	5.08	94.5	9.33	20	78 - 117
4-Amino-2,6-dinitrotoluene	5.31915	0	4.8	90.3	5.06	94.1	5.18	22	70 - 134
RDX	5.31915	0	4.9	92.2	5.05	94	3.04	28	61 - 150
PETN	5.31915	0	4.8	90.2	5.14	95.6	6.85	25	50 - 148
Nitrobenzene	5.31915	0	4.54	85.4	4.53	84.3	.136	26	66 - 116
HMX	5.31915	0	4.36	82.1	4.38	81.5	.432	31	48 - 137
2-Amino-4,6-dinitrotoluene	5.31915	0	4.58	86.2	4.96	92.2	7.84	24	72 - 134
2,4-Dinitrotoluene	5.31915	0	5.15	96.8	5.2	96.6	.887	22	77 - 123

#Column to be used to flag recovery and RPD values with an asterisk

High Explosives MS/MSD Summary

Lab Name: GEL Laboratories LLC

Client ID: CAAN-12-2031

Lab Code: GEL

GEL Job No (SDG) 12-711

Extract Batch Code: 1185692

Date Extracted: 07-FEB-12

GEL Spike ID: 1202592980

GEL SpikeDup ID: 1202592981

Analysis Date/Time: 16-FEB-12 18:36

MSD Analysis Date/Time: 16-FEB-12 18:52

Reporting Units: ug/L

QC Type: MS/MSD

Compound	Spike Added	Sample Conc	MS Conc	MS Rec	#	MSD Conc	MSD Rec	#	RPD	#	RPD Limit	Rec Limits
2,4-Diamino-6-nitrotoluene	5.31915	0	5.04	94.8		5.35	99.6		6.01		26	43 - 109
2,6-Diamino-4-nitrotoluene	5.31915	0	5.61	105		5.3	98.6		5.6		26	37 - 125
3,5-Dinitroaniline	5.31915	0	5.69	107		5.62	105		1.2		20	66 - 117
TATB	10.6383	0	3.7	34.8		3.76	35		1.64		21	30 - 161
tris(o-cresyl) phosphate	5.31915	.0297	3.94	73.4		3.85	71		2.23		28	37 - 88

#Column to be used to flag recovery and RPD values with an asterisk

Quality Control Data

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 1185692

Lab Code: GEL

GEL Job No (SDG) 12-711

Matrix: WATER

GEL Sample ID: 1202592978

Sample Amount 1000 mL

Date Received: 04-FEB-12

Moisture:

Extraction Batch ID: 1185692

Extraction Type Sol Exchange

Date Extracted: 07-FEB-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

GEL data file: EXP0227013a

Date Analyzed: 28-FEB-12 00:52

Dilution Factor: 2

Concentration Units: ug/L

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	0.250	U	0.080	0.250
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	0.250	U	0.080	0.250
121-14-2	*2,4-Dinitrotoluene*				
121-82-4	RDX	0.250	U	0.080	0.250
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	0.250	U	0.080	0.250
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
2691-41-0	HMX	0.250	U	0.080	0.250
2691-41-0	*HMX*				
35572-78-2	2-Amino-4,6-dinitrotoluene	0.250	U	0.080	0.250
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
606-20-2	2,6-Dinitrotoluene	0.250	U	0.080	0.250
606-20-2	*2,6-Dinitrotoluene*				
88-72-2	o-Nitrotoluene	0.250	U	0.082	0.250
88-72-2	*o-Nitrotoluene*				
98-95-3	Nitrobenzene	0.250	U	0.080	0.250
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	0.250	U	0.080	0.250
99-08-1	*m-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	0.250	U	0.080	0.250
99-35-4	*1,3,5-Trinitrobenzene*				
99-65-0	m-Dinitrobenzene	0.250	U	0.080	0.250
99-65-0	*m-Dinitrobenzene*				
479-45-8	Tetryl	0.500	U	0.080	0.500
479-45-8	*Tetryl*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 1185692

Lab Code: GEL

GEL Job No (SDG) 12-711

Matrix: WATER

GEL Sample ID: 1202592978

Sample Amount 1000 mL

Date Received: 04-FEB-12

Moisture:

Extraction Batch ID: 1185692

Extraction Type Sol Exchange

Date Extracted: 07-FEB-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
78-11-5	PETN	0.500	U	0.100	0.500
78-11-5	*PETN*				
99-99-0	p-Nitrotoluene	0.500	U	0.150	0.500
99-99-0	*p-Nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 1185692

Lab Code: GEL

GEL Job No (SDG) 12-711

Matrix: WATER

GEL Sample ID: 1202592978

Sample Amount 1000 mL

Date Received: 04-FEB-12

Moisture:

Extraction Batch ID: 1185692

Extraction Type Sol Exchange

Date Extracted: 07-FEB-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

GEL data file: EXS02160014.wiff

Date Analyzed: 16-FEB-12 17:46

Dilution Factor: 2

Concentration Units: ug/L

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	1.00	U	0.300	1.00
3058-38-6	*TATB*				
618-87-1	3,5-Dinitroaniline	1.00	U	0.300	1.00
618-87-1	*3,5-Dinitroaniline*				
78-30-8	tris(o-cresyl) phosphate	1.00	U	0.300	1.00
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	2.50	U	0.500	2.50
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	2.50	U	0.500	2.50
6629-29-4	*2,4-Diamino-6-nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 1185692

Lab Code: GEL

GEL Job No (SDG) 12-711

Matrix: WATER

GEL Sample ID: 1202592979

Sample Amount 1000 mL

Date Received: 04-FEB-12

Moisture:

Extraction Batch ID: 1185692

Extraction Type Sol Exchange

Date Extracted: 07-FEB-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

GEL data file: EXP0227014a

Date Analyzed: 28-FEB-12 01:21

Dilution Factor: 2

Concentration Units: ug/L

Cas No.	Compound	Concentration*	Q	MDL	PQL
479-45-8	Tetryl	4		0.080	0.500
479-45-8	*Tetryl*				
99-08-1	m-Nitrotoluene	4.02		0.080	0.250
99-08-1	*m-Nitrotoluene*				
88-72-2	o-Nitrotoluene	4.07		0.082	0.250
88-72-2	*o-Nitrotoluene*				
2691-41-0	HMX	4.22		0.080	0.250
2691-41-0	*HMX*				
98-95-3	Nitrobenzene	4.26		0.080	0.250
98-95-3	*Nitrobenzene*				
99-99-0	p-Nitrotoluene	4.36		0.150	0.500
99-99-0	*p-Nitrotoluene*				
35572-78-2	2-Amino-4,6-dinitrotoluene	4.49		0.080	0.250
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	4.49		0.080	0.250
99-35-4	*1,3,5-Trinitrobenzene*				
78-11-5	PETN	4.52		0.100	0.500
78-11-5	*PETN*				
99-65-0	m-Dinitrobenzene	4.52		0.080	0.250
99-65-0	*m-Dinitrobenzene*				
121-82-4	RDX	4.55		0.080	0.250
121-82-4	*RDX*				
606-20-2	2,6-Dinitrotoluene	4.56		0.080	0.250
606-20-2	*2,6-Dinitrotoluene*				
19406-51-0	4-Amino-2,6-dinitrotoluene	4.57		0.080	0.250
19406-51-0	*4-Amino-2,6-dinitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 1185692

Lab Code: GEL

GEL Job No (SDG) 12-711

Matrix: WATER

GEL Sample ID: 1202592979

Sample Amount 1000 mL

Date Received: 04-FEB-12

Moisture:

Extraction Batch ID: 1185692

Extraction Type Sol Exchange

Date Extracted: 07-FEB-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	4.73		0.080	0.250
118-96-7	*2,4,6-Trinitrotoluene*				
121-14-2	2,4-Dinitrotoluene	4.83		0.080	0.250
121-14-2	*2,4-Dinitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 1185692

Lab Code: GEL

GEL Job No (SDG) 12-711

Matrix: WATER

GEL Sample ID: 1202592979

Sample Amount 1000 mL

Date Received: 04-FEB-12

Moisture:

Extraction Batch ID: 1185692

Extraction Type Sol Exchange

Date Extracted: 07-FEB-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

GEL data file: EXS02160015.wiff

Date Analyzed: 16-FEB-12 18:02

Dilution Factor: 2

Concentration Units: ug/L

Cas No.	Compound	Concentration*	Q	MDL	PQL
78-30-8	tris(o-cresyl) phosphate	3.49		0.300	1.00
78-30-8	*tris(o-cresyl) phosphate*				
3058-38-6	TATB	3.73		0.300	1.00
3058-38-6	*TATB*				
6629-29-4	2,4-Diamino-6-nitrotoluene	4.76		0.500	2.50
6629-29-4	*2,4-Diamino-6-nitrotoluene*				
618-87-1	3,5-Dinitroaniline	5.47		0.300	1.00
618-87-1	*3,5-Dinitroaniline*				
59229-75-3	2,6-Diamino-4-nitrotoluene	5.51		0.500	2.50
59229-75-3	*2,6-Diamino-4-nitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAAN-12-2031(295270003MS)MS

Lab Code: GEL

GEL Job No (SDG) 12-711

Matrix: WATER

GEL Sample ID: 1202592980

Sample Amount 940 mL

Date Received: 04-FEB-12

Moisture:

Extraction Batch ID: 1185692

Extraction Type Sol Exchange

Date Extracted: 07-FEB-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

GEL data file: EXP0227016a

Date Analyzed: 28-FEB-12 02:21

Dilution Factor: 2

Concentration Units: ug/L

Cas No.	Compound	Concentration*	Q	MDL	PQL
479-45-8	Tetryl	4.1		0.0851	0.532
479-45-8	*Tetryl*				
88-72-2	o-Nitrotoluene	4.13		0.0872	0.266
88-72-2	*o-Nitrotoluene*				
99-08-1	m-Nitrotoluene	4.26		0.0851	0.266
99-08-1	*m-Nitrotoluene*				
99-99-0	p-Nitrotoluene	4.32		0.160	0.532
99-99-0	*p-Nitrotoluene*				
2691-41-0	HMX	4.36		0.0851	0.266
2691-41-0	*HMX*				
98-95-3	Nitrobenzene	4.54		0.0851	0.266
98-95-3	*Nitrobenzene*				
35572-78-2	2-Amino-4,6-dinitrotoluene	4.58		0.0851	0.266
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	4.59		0.0851	0.266
99-35-4	*1,3,5-Trinitrobenzene*				
606-20-2	2,6-Dinitrotoluene	4.63		0.0851	0.266
606-20-2	*2,6-Dinitrotoluene*				
19406-51-0	4-Amino-2,6-dinitrotoluene	4.8		0.0851	0.266
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
78-11-5	PETN	4.8		0.106	0.532
78-11-5	*PETN*				
121-82-4	RDX	4.9		0.0851	0.266
121-82-4	*RDX*				
118-96-7	2,4,6-Trinitrotoluene	5.06		0.0851	0.266
118-96-7	*2,4,6-Trinitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAAN-12-2031(295270003MS)MS

Lab Code: GEL

GEL Job No (SDG) 12-711

Matrix: WATER

GEL Sample ID: 1202592980

Sample Amount 940 mL

Date Received: 04-FEB-12

Moisture:

Extraction Batch ID: 1185692

Extraction Type Sol Exchange

Date Extracted: 07-FEB-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-65-0	m-Dinitrobenzene	5.06		0.0851	0.266
99-65-0	*m-Dinitrobenzene*				
121-14-2	2,4-Dinitrotoluene	5.15		0.0851	0.266
121-14-2	*2,4-Dinitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAAN-12-2031(295270003MS)MS

Lab Code: GEL

GEL Job No (SDG) 12-711

Matrix: WATER

GEL Sample ID: 1202592980

Sample Amount 940 mL

Date Received: 04-FEB-12

Moisture:

Extraction Batch ID: 1185692

Extraction Type Sol Exchange

Date Extracted: 07-FEB-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

GEL data file: EXS02160017.wiff

Date Analyzed: 16-FEB-12 18:36

Dilution Factor: 2

Concentration Units: ug/L

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	3.7		0.319	1.06
3058-38-6	*TATB*				
78-30-8	tris(o-cresyl) phosphate	3.94		0.319	1.06
78-30-8	*tris(o-cresyl) phosphate*				
6629-29-4	2,4-Diamino-6-nitrotoluene	5.04		0.532	2.66
6629-29-4	*2,4-Diamino-6-nitrotoluene*				
59229-75-3	2,6-Diamino-4-nitrotoluene	5.61		0.532	2.66
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
618-87-1	3,5-Dinitroaniline	5.69		0.319	1.06
618-87-1	*3,5-Dinitroaniline*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAAN-12-2031(295270003MSD)MSD

Lab Code: GEL

GEL Job No (SDG) 12-711

Matrix: WATER

GEL Sample ID: 1202592981

Sample Amount 930 mL

Date Received: 04-FEB-12

Moisture:

Extraction Batch ID: 1185692

Extraction Type Sol Exchange

Date Extracted: 07-FEB-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

GEL data file: EXP0227017a

Date Analyzed: 28-FEB-12 02:50

Dilution Factor: 2

Concentration Units: ug/L

Cas No.	Compound	Concentration*	Q	MDL	PQL
479-45-8	Tetryl	4.16		0.086	0.538
479-45-8	*Tetryl*				
2691-41-0	HMX	4.38		0.086	0.269
2691-41-0	*HMX*				
98-95-3	Nitrobenzene	4.53		0.086	0.269
98-95-3	*Nitrobenzene*				
99-08-1	m-Nitrotoluene	4.53		0.086	0.269
99-08-1	*m-Nitrotoluene*				
88-72-2	o-Nitrotoluene	4.56		0.0882	0.269
88-72-2	*o-Nitrotoluene*				
99-99-0	p-Nitrotoluene	4.58		0.161	0.538
99-99-0	*p-Nitrotoluene*				
99-35-4	1,3,5-Trinitrobenzene	4.69		0.086	0.269
99-35-4	*1,3,5-Trinitrobenzene*				
35572-78-2	2-Amino-4,6-dinitrotoluene	4.96		0.086	0.269
35572-78-2	*2-Amino-4,6-dinitrotoluene*				
121-82-4	RDX	5.05		0.086	0.269
121-82-4	*RDX*				
19406-51-0	4-Amino-2,6-dinitrotoluene	5.06		0.086	0.269
19406-51-0	*4-Amino-2,6-dinitrotoluene*				
606-20-2	2,6-Dinitrotoluene	5.08		0.086	0.269
606-20-2	*2,6-Dinitrotoluene*				
78-11-5	PETN	5.14		0.108	0.538
78-11-5	*PETN*				
121-14-2	2,4-Dinitrotoluene	5.2		0.086	0.269
121-14-2	*2,4-Dinitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAAN-12-2031(295270003MSD)MSD

Lab Code: GEL

GEL Job No (SDG) 12-711

Matrix: WATER

GEL Sample ID: 1202592981

Sample Amount 930 mL

Date Received: 04-FEB-12

Moisture:

Extraction Batch ID: 1185692

Extraction Type Sol Exchange

Date Extracted: 07-FEB-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-65-0	m-Dinitrobenzene	5.2		0.086	0.269
99-65-0	*m-Dinitrobenzene*				
118-96-7	2,4,6-Trinitrotoluene	5.53		0.086	0.269
118-96-7	*2,4,6-Trinitrotoluene*				

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAAN-12-2031(295270003MSD)MSD

Lab Code: GEL

GEL Job No (SDG) 12-711

Matrix: WATER

GEL Sample ID: 1202592981

Sample Amount 930 mL

Date Received: 04-FEB-12

Moisture:

Extraction Batch ID: 1185692

Extraction Type Sol Exchange

Date Extracted: 07-FEB-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

GEL data file: EXS02160018.wiff

Date Analyzed: 16-FEB-12 18:52

Dilution Factor: 2

Concentration Units: ug/L

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6	TATB	3.76		0.323	1.08
3058-38-6	*TATB*				
78-30-8	tris(o-cresyl) phosphate	3.85		0.323	1.08
78-30-8	*tris(o-cresyl) phosphate*				
59229-75-3	2,6-Diamino-4-nitrotoluene	5.3		0.538	2.69
59229-75-3	*2,6-Diamino-4-nitrotoluene*				
6629-29-4	2,4-Diamino-6-nitrotoluene	5.35		0.538	2.69
6629-29-4	*2,4-Diamino-6-nitrotoluene*				
618-87-1	3,5-Dinitroaniline	5.62		0.323	1.08
618-87-1	*3,5-Dinitroaniline*				

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 12-711

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 27-FEB-12 18:57

GEL Data File: EXP0227001a

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
1,3-Dinitrobenzene-d4	500	610.636
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	513.817
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 12-711

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 27-FEB-12 19:26

GEL Data File: EXP0227002a

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
1,3-Dinitrobenzene-d4	500	584.986
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	603.501
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 12-711

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 16-FEB-12 14:08

GEL Data File: EXS02160001.wiff

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 12-711

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 16-FEB-12 14:25

GEL Data File: EXS02160002.wiff

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC **GEL Job No(SDG):** 12-711

Lab Code: GEL **Lab Sample ID:** XIBLK02

Analysis Date: 27-FEB-12 22:53 **GEL Data File:** EXP0227009a

Instrument ID: LCMSMS **Column:** Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
1,3-Dinitrobenzene-d4	500	464.531
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	462.395
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC **GEL Job No(SDG):** 12-711

Lab Code: GEL **Lab Sample ID:** XIBLK03

Analysis Date: 27-FEB-12 23:53 **GEL Data File:** EXP0227011a

Instrument ID: LCMSMS **Column:** Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
1,3-Dinitrobenzene-d4	500	461.381
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	494.767
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC **GEL Job No(SDG):** 12-711

Lab Code: GEL **Lab Sample ID:** XIBLK04

Analysis Date: 28-FEB-12 06:17 **GEL Data File:** EXP0227024a

Instrument ID: LCMSMS **Column:** Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
1,3-Dinitrobenzene-d4	500	433.33
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	441.639
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC
GEL Job No(SDG): 12-711
Lab Code: GEL
Lab Sample ID: XIBLK02
Analysis Date: 16-FEB-12 16:39
GEL Data File: EXS02160010.wiff
Instrument ID: LCMSMS
Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	6.76
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 12-711

Lab Code: GEL

Lab Sample ID: XIBLK03

Analysis Date: 16-FEB-12 17:12

GEL Data File: EXS02160012.wiff

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
tris(o-cresyl) phosphate	0	3.6
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0
3,4-Dinitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 12-711

Lab Code: GEL

Lab Sample ID: XIBLK04

Analysis Date: 16-FEB-12 20:49

GEL Data File: EXS02160025.wiff

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	2.72
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

General Chem Analysis

Case Narrative

General Chemistry Narrative
ARS International (ARSL)
SDG 12-711

Method/Analysis Information

Product: **Carbon, Total Organic**

Analytical Batch: 1186182 **Method:** SW 9060 Total Organic Carbon

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 9060:

Sample ID	Client ID
295388002	CAAN-12-2024
1202594161	Method Blank (MB)
1202594162	295075001(BuckmanPZ-12-2179) Sample Duplicate (DUP)
1202594163	295392002(CAWA-12-2018) Sample Duplicate (DUP)
1202594164	295075001(BuckmanPZ-12-2179) Post Spike (PS)
1202594165	295392002(CAWA-12-2018) Post Spike (PS)
1202594166	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

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-GC-E-093 REV# 9.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Carbon analysis was performed on a O-I Analytical Model 1010 Total Organic Carbon Analyzer.

Initial Calibration
All initial calibration requirements have been met for this SDG.

Continuing Calibration Blanks
All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Calibration Verification Information (CCV)
All continuing calibration verification standards (CCVs) associated with reported data from this batch were within acceptance limits.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation
The following samples were selected for QC analysis: 295075001 (BuckmanPZ-12-2179) and 295392002 (CAWA-12-2018).

Matrix Spike (MS)/Post Spike (PS) Recovery Statement
The MS/PS recoveries for this sample set were within the required acceptance limits.

Duplicate Relative Percent Difference (RPD) Statement
The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times
All samples in this SDG met the specified holding time.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-analysis
The samples in this SDG did not require re-analysis.

Miscellaneous Information

Data Exception (DER) Documentation
A DER was not required for this SDG.

Additional Comments
Additional comments were not required for this SDG.

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to 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. 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.

Method/Analysis Information

Product:	**Ammonia Nitrogen**		
Analytical Batch:	1186023	**Method:**	EPA 350.1 Nitrogen and Ammonia L
Prep Batch :	1186022	**Method:**	EEPA 350.2 Prep

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA 350.1:

Sample ID	Client ID
295388003	CAAN-12-2025
1202593853	Method Blank (MB)
1202593854	295270001(CAAN-12-2030) Sample Duplicate (DUP)
1202593855	295270001(CAAN-12-2030) Matrix Spike (MS)
1202593856	295270001(CAAN-12-2030) Matrix Spike Duplicate (MSD)
1202593857	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

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-GC-E-106 REV# 7.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Nutrient analysis was performed on a Lachat QuickChem FIA+ 8000 Series.

Continuing Calibration Blanks
All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Calibration Verification Information (CCV)
All continuing calibration verification standards (CCVs) associated with reported data from this batch were within

acceptance limits.

Y Intercept Rule
The absolute value of the intercept is less than 3 times the MDL.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation
The following sample was selected for QC analysis: 295270001 (CAAN-12-2030).

Matrix Spike (MS)/Post Spike (PS) Recovery Statement
The MS/PS recovery for this sample set was within the required acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD recovery for this sample set was within the required acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement
The RPD between the spike and spike duplicate met the acceptance limits.

Duplicate Relative Percent Difference (RPD) Statement
The values for the sample and duplicate are less than the Practical Quantitation Limit (PQL); therefore, the RPD is not applicable. 1202593854 (CAAN-12-2030).

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times
All samples in this SDG met the specified holding time.

Sample Preservation/Integrity
All the samples from this sample group met the preservation and integrity requirements of the method.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-analysis
The samples in this SDG did not require re-analysis.

Miscellaneous Information

Data Exception (DER) Documentation
A DER was not required for this SDG.

Additional Comments
Additional comments were not required for this SDG.

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to 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. 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.

Method/Analysis Information

Product:	**Total Kjeldahl Nitrogen**		
Analytical Batch:	1186025	**Method:**	Nitrogen and Total Kjeldahl (TKN)
Prep Batch :	1186024	**Method:**	EEPA 351.2 Prep

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA 351.2:

Sample ID	Client ID
295388002	CAAN-12-2024
1202593858	Method Blank (MB)
1202593859	295270003(CAAN-12-2031) Sample Duplicate (DUP)
1202593860	295270003(CAAN-12-2031) Matrix Spike (MS)
1202593861	295270003(CAAN-12-2031) Matrix Spike Duplicate (MSD)
1202593862	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

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-GC-E-104 REV# 11.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Nutrient analysis was performed on a Lachat QuickChem FIA+ 8000 Series.

Continuing Calibration Blanks
All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Calibration Verification Information (CCV)
All continuing calibration verification standards (CCVs) associated with reported data from this batch were within

acceptance limits.

Y Intercept Rule
The absolute value of the intercept is less than 3 times the MDL.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation
The following sample was selected for QC analysis: 295270003 (CAAN-12-2031).

Matrix Spike (MS)/Post Spike (PS) Recovery Statement
The spike recovery falls outside of the GEL acceptance limits but within the client specified limits. 1202593860 (CAAN-12-2031).

Matrix Spike Duplicate (MSD) Recovery Statement
The spike duplicate recovery falls outside of the GEL acceptance limits but within the client specified limits. 1202593861 (CAAN-12-2031).

MS/MSD Relative Percent Difference (RPD) Statement
The RPD between the spike and spike duplicate met the acceptance limits.

Duplicate Relative Percent Difference (RPD) Statement
The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times
All samples in this SDG met the specified holding time.

Sample Preservation/Integrity
All the samples from this sample group met the preservation and integrity requirements of the method.

Sample Dilutions
The following sample in this sample group was diluted due to matrix interference: 295388002 (CAAN-12-2024).

Sample Re-analysis
The samples in this SDG did not require re-analysis.

Miscellaneous Information

Data Exception (DER) Documentation
The following DER was generated for this SDG: 1051875 1202593860 (CAAN-12-2031) and 1202593861

(CAAN-12-2031).

Additional Comments
Additional comments were not required for this SDG.

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to 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. 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.

Method/Analysis Information

Product:	**Nitrate Nitrite by Cadmium Reduction**		
Analytical Batch:	1186031	**Method:**	EPA 353.2 Nitrogen and Nitrate/Nitrite

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA 353.2:

Sample ID	Client ID
295388003	CAAN-12-2025
1202593872	Method Blank (MB)
1202593873	295075001(BuckmanPZ-12-2179) Sample Duplicate (DUP)
1202593875	295075001(BuckmanPZ-12-2179) Post Spike (PS)
1202593877	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

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-GC-E-128 REV# 7.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Nutrient analysis was performed on a Lachat QuickChem FIA+ 8500 Series.

Continuing Calibration Blanks
All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Calibration Verification Information (CCV)
All continuing calibration verification standards (CCVs) associated with reported data from this batch were within

acceptance limits.

Y Intercept Rule
The absolute value of the intercept is less than 3 times the MDL.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation
The following sample was selected for QC analysis: 295075001 (BuckmanPZ-12-2179).

Matrix Spike (MS)/Post Spike (PS) Recovery Statement
The MS/PS recovery for this sample set was within the required acceptance limits.

Duplicate Relative Percent Difference (RPD) Statement
The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times
All samples in this SDG met the specified holding time.

Sample Preservation/Integrity
All the samples from this sample group met the preservation and integrity requirements of the method.

Sample Dilutions
The following samples in this sample group were diluted due to high concentration: 1202593873 (BuckmanPZ-12-2179) and 1202593875 (BuckmanPZ-12-2179). The following sample in this sample group was diluted due to matrix interference: 295388003 (CAAN-12-2025).

Sample Re-analysis
The samples in this SDG did not require re-analysis.

Miscellaneous Information

Data Exception (DER) Documentation
A DER was not required for this SDG.

Additional Comments
Additional comments were not required for this SDG.

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an

effort to increase quality and efficiency, the laboratory has developed systems to 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. 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.

Method/Analysis Information

Product:	**Total Phosphorus**		
Analytical Batch:	1186020	**Method:**	EPA 365.4 Phosphorus and Total in
Prep Batch :	1186019	**Method:**	EEPA 365.4 Prep

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA 365.4:

Sample ID	Client ID
295388003	CAAN-12-2025
1202593841	Method Blank (MB)
1202593842	295075001(BuckmanPZ-12-2179) Sample Duplicate (DUP)
1202593844	295075001(BuckmanPZ-12-2179) Matrix Spike (MS)
1202593846	295075001(BuckmanPZ-12-2179) Matrix Spike Duplicate (MSD)
1202593848	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

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-GC-E-103 REV# 8.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Nutrient analysis was performed on a Lachat QuickChem FIA+ 8000 Series.

Continuing Calibration Blanks
All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Calibration Verification Information (CCV)
All continuing calibration verification standards (CCVs) associated with reported data from this batch were within

acceptance limits.

Y Intercept Rule
The absolute value of the intercept is less than 3 times the MDL.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation
The following sample was selected for QC analysis: 295075001 (BuckmanPZ-12-2179).

Matrix Spike (MS)/Post Spike (PS) Recovery Statement
The MS/PS recovery for this sample set was within the required acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD recovery for this sample set was within the required acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement
The RPD between the spike and spike duplicate met the acceptance limits.

Duplicate Relative Percent Difference (RPD) Statement
The values for the sample and duplicate are less than the Practical Quantitation Limit (PQL); therefore, the RPD is not applicable. 1202593842 (BuckmanPZ-12-2179).

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times
All samples in this SDG met the specified holding time.

Sample Preservation/Integrity
All the samples from this sample group met the preservation and integrity requirements of the method.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-analysis
The following sample was re-analyzed due to instrument failure: 1202593841 (MB).

Miscellaneous Information

Data Exception (DER) Documentation
A DER was not required for this SDG.

Additional Comments
Additional comments were not required for this SDG.

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to 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. 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.

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.

Review Validation:

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

The following data validator verified the information presented in this case narrative:

Reviewer:  **Date:** 02March12

Sample Data Summary

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

Certificate of Analysis Report
for

ARSL001 ARS International (63641-10)

Client SDG: 12-711 GEL Work Order: 295388

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 For General Chemistry and Organic analysis the target analyte was detected in the associated blank.

E Organics--Concentration of the target analyte exceeds the instrument calibration range

H Analytical holding time was exceeded

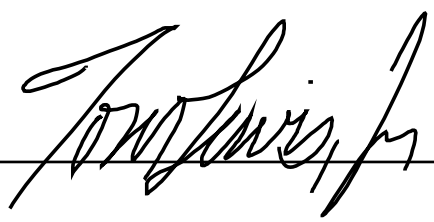
J Value is estimated

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

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the detection limit.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis.

Reviewed by 

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

Certificate of Analysis

Report Date: February 27, 2012

Company :	Los Alamos National Laboratory
Address :	TA-03, SM271, Drop Pt. 02U, Rm111
	Los Alamos, New Mexico 87545
Contact:	Ms. Joylene Valdez
Project:	LANL-WQH Water Samples

Client SDG: 12-711

Client Sample ID:	CAAN-12-2024	Project:	ESHL00210
Sample ID:	295388002	Client ID:	ARSL001
Matrix:	WG		
Collect Date:	02-FEB-12 12:00		
Receive Date:	04-FEB-12		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW 9060 Total Organic Carbon "As Received"											
Total Organic Carbon Average	J	0.387	0.330	1.00	mg/L	1	TSM	02/07/12	2215	1186182	1
Nutrient Analysis											
Nitrogen, Total Kjeldahl (TKN) "As Received"											
Nitrogen, Total Kjeldahl	U	ND	0.175	0.500	mg/L	5	KLP1	02/17/12	1052	1186025	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 351.2 Prep	EPA 351.2 Total Kjeldahl Nitrogen Prep	AXS5	02/14/12	1649	1186024

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9060	
2	EPA 351.2	

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

Certificate of Analysis

Report Date: February 27, 2012

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: LANL-WQH Water Samples

Client SDG: 12-711

Client Sample ID: CAAN-12-2025
Sample ID: 295388003
Matrix: WG
Collect Date: 02-FEB-12 12:00
Receive Date: 04-FEB-12
Collector: Client

Project: ESHL00210
Client ID: ARSL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Nutrient Analysis											
EPA 350.1 Nitrogen, Ammonia L "As Received"											
Nitrogen, Ammonia	J	0.0387	0.016	0.050	mg/L	1	KLP1	02/08/12	1552	1186023	1
EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"											
Nitrogen, Nitrate/Nitrite		0.299	0.050	0.250	mg/L	5	KLP1	02/14/12	1242	1186031	2
EPA 365.4 Phosphorus, Total in "As Received"											
Phosphorus, Total as P	J	0.0477	0.015	0.050	mg/L	1	KLP1	02/08/12	1406	1186020	3

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	AXS5	02/07/12	1658	1186022
EPA 365.4 Prep	EPA 365.4 Phosphorus, Total in liquid PR	AXS5	02/08/12	1159	1186019

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 350.1	
2	EPA 353.2	
3	EPA 365.4	

Quality Control Summary

QC Summary

Report Date: February 27, 2012

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

Contact: **Ms. Joylene Valdez**

Workorder: **295388**

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Carbon Analysis											
Batch 1186182											
QC1202594162 295075001 DUP											
Total Organic Carbon Average		J	0.654	J	0.597	mg/L	9.11 ^		(+/-1.00)	TSM	02/07/12 20:40
QC1202594163 295392002 DUP											
Total Organic Carbon Average		J	0.473	J	0.484	mg/L	2.30 ^		(+/-1.00)		02/07/12 23:22
QC1202594166 LCS											
Total Organic Carbon Average	10.0				9.63	mg/L		96.3	(85%-115%)		02/07/12 15:58
QC1202594161 MB											
Total Organic Carbon Average				U	ND	mg/L					02/07/12 15:49
QC1202594164 295075001 PS											
Total Organic Carbon Average	10.0	J	0.654		10.7	mg/L		100	(65%-120%)		02/07/12 21:00
QC1202594165 295392002 PS											
Total Organic Carbon Average	10.0	J	0.473		10.6	mg/L		102	(65%-120%)		02/07/12 23:42
Nutrient Analysis											
Batch 1186020											
QC1202593842 295075001 DUP											
Phosphorus, Total as P		J	0.0201	U	ND	mg/L	N/A ^			KLP1	02/08/12 13:53
QC1202593848 LCS											
Phosphorus, Total as P	1.00				1.05	mg/L		105	(84%-116%)		02/08/12 13:48
QC1202593841 MB											
Phosphorus, Total as P				U	ND	mg/L					02/08/12 13:54
QC1202593844 295075001 MS											
Phosphorus, Total as P	1.00	J	0.0201		0.943	mg/L		92.3	(54%-139%)		02/08/12 13:53
QC1202593846 295075001 MSD											
Phosphorus, Total as P	1.00	J	0.0201		0.959	mg/L	1.68	93.9	(0%-21%)		02/08/12 13:59
Batch 1186023											
QC1202593854 295270001 DUP											
Nitrogen, Ammonia		U	ND	U	ND	mg/L	N/A			KLP1	02/08/12 15:43
QC1202593857 LCS											
Nitrogen, Ammonia	1.00				1.00	mg/L		100	(90%-110%)		02/08/12 15:41
QC1202593853 MB											
Nitrogen, Ammonia				U	ND	mg/L					02/08/12 15:40
QC1202593855 295270001 MS											
Nitrogen, Ammonia	1.00	U	ND		1.01	mg/L		100	(90%-110%)		02/08/12 15:44
QC1202593856 295270001 MSD											
Nitrogen, Ammonia	1.00	U	ND		1.09	mg/L	7.62	108	(0%-15%)		02/08/12 15:48
Batch 1186025											
QC1202593859 295270003 DUP											
Nitrogen, Total Kjeldahl		U	ND	U	ND	mg/L	N/A			KLP1	02/17/12 10:39
QC1202593862 LCS											
Nitrogen, Total Kjeldahl	1.00				0.913	mg/L		91.3	(90%-110%)		02/17/12 10:37
QC1202593858 MB											
Nitrogen, Total Kjeldahl				U	ND	mg/L					02/17/12 10:36
QC1202593860 295270003 MS											

QC Summary

Workorder: 295388

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Nutrient Analysis											
Batch 1186025											
Nitrogen, Total Kjeldahl	1.00	U	ND		0.889	mg/L		88.9 *	(90%-110%)		02/17/12 10:40
QC1202593861 295270003 MSD											
Nitrogen, Total Kjeldahl	1.00	U	ND		0.811	mg/L	9.18	81.1 *	(0%-20%)	KLP1	02/17/12 10:41
Batch 1186031											
QC1202593873 295075001 DUP											
Nitrogen, Nitrate/Nitrite			5.16		5.07	mg/L	1.76		(0%-20%)	KLP1	02/14/12 11:36
QC1202593877 LCS											
Nitrogen, Nitrate/Nitrite	1.00				1.02	mg/L		102	(90%-110%)		02/14/12 11:26
QC1202593872 MB											
Nitrogen, Nitrate/Nitrite				U	ND	mg/L					02/14/12 11:25
QC1202593875 295075001 PS											
Nitrogen, Nitrate/Nitrite	1.00		0.516		1.53	mg/L		101	(90%-110%)		02/14/12 11:41

Notes:
RER is calculated at the 95% confidence level (2-sigma).
The Qualifiers in this report are defined as follows:

**	Analyte is a surrogate compound
<	Result is less than value reported
>	Result is greater than value reported
A	The TIC is a suspected aldol-condensation product
B	For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
C	Analyte has been confirmed by GC/MS analysis
D	Results are reported from a diluted aliquot of the sample
E	General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
E	Organics--Concentration of the target analyte exceeds the instrument calibration range
F	Estimated Value
H	Analytical holding time was exceeded
J	Value is estimated
JNX	Non Calibrated Compound
M	Matrix Related Failure
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	RPD or %Recovery limits do not apply.
N1	See case narrative
ND	Analyte concentration is not detected above the detection limit
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
P	Organics--The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, difference is also <70%
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
R	Sample results are rejected
U	Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

QC Summary

Workorder: **295388**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

UJ	Compound cannot be extracted
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.
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
d	5-day BOD--The 2:1 depletion requirement was not met for this sample
h	Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Miscellaneous

DATA EXCEPTION REPORT

Mo.Day Yr.	**Division:**	**Quality Criteria:**	**Type:**
17-FEB-12	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
LACHAT Flow Injection Analyzer	EPA 351.2	Liquid	ESHL
Batch ID:	**Sample Numbers:**		
1186025	See below.		

Potentially affected work order(s)(SDG): 295270(12-700),295275(12-704),295388(12-711),295392(12-718)

Application Issues:

Failed Recovery for MS/PS

Failed Recovery for MSD/PSD

Specification and Requirements Exception Description:	**DER Disposition:**
1. Failed Recovery for MS/MSD: QC 1202593860MS, QC 1202593861MSD	1. The spike and spike duplicate recoveries fall outside of the GEL acceptance limits but within the client specified limits.

Originator's Name:

Kristen Parson 17-FEB-12

Data Validator/Group Leader:

Julia Hamilton 24-FEB-12