General Engineering Laboratories, Inc., Charleston, SC.
2040 Savage Rd
Charleston SC 29407

Chain of Custody/Analysis Request

COC/Lab Request #: 2013-760

Page 1 of 1

Client Contact:

Lab Agreement # : 126310011

Project Number :

Analysis Turnaround Time:

24 Hour - ☐ Other - ☐
7 Day - ☐
14 Day - ☐
21 Day - ☐
28 Day - ☒

Site Name: Los Alamos National Laboratory

Rad Screening Info: Yes, Below Background

Field Sample ID	Sample Date	Sample Time	Sample Matrix	WSP-8260B-VOA	WSP-8270C-SVOA	WSP-GENINORG	WSP-GrossA/B	WSP-H-3	WSP-Met+B+SN+SR+U	WSP-NH3+NO3/NO2+PO4	WSP-RAD	WSP-TKN+TOC
CAPA-13-29662	Apr 23 2013	13:32	W	2	3		1	1			1	1
CAPA-13-29673	Apr 23 2013	13:32	W			1			1	1		
CAPA-13-29658	Apr 23 2013	13:32	W	2								
CAPA-13-29656	Apr 23 2013	11:21	W	2								
CAPA-13-29674	Apr 23 2013	11:21	W			1			1	1		
CAPA-13-29663	Apr 23 2013	11:21	W	2	3		1				1	1

Special Instructions:

Special Instructions:

Relinquished by: S. Sherwood	S. Sherwood	Date/Time: 4/29/13 3pm	Received by:
Relinquished by:		Date/Time:	Received by:
Relinquished by:		Date/Time:	Received by:

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4164 **EVENT NAME:** Pajarito (General Surveillace Monitoring Group) MY2013 Q3 Sampling Event_Pajarito Canyon

SAMPLE ID: CAPA-13-29656 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		4/22/2013	FIELD MATRIX:	WG	OK
TIME COLLECTED (HH:MM):		1121	MEDIA:	UA	"
PRS ID:		OK	SAMPLE TECH CODE:	UA	MC
LOCATION ID:	18-MW-18	"	FIELD PREP:	UF	OK
LOCATION TYPE:		"	FIELD QC TYPE:	FTB	"
PORT:	SINGLE COMPLETION	"	SAMPLE USAGE:	QC	"

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
N/A	WSP-8260B-VOA	40 ML SEPTUM AMBER GLASS	2	HCL 4/23/13	Y	N/A

SAMPLE COMMENTS: N/A

LOCATION COMMENTS: N/A

FIELD PARAMETERS:

Dissolved Oxygen N/A mg/L Oxidation-Reduction Potential N/A MV pH N/A SU

Specific Conductance N/A µS/cm Temperature N/A deg C Turbidity N/A NTU

COLLECTED BY (PRINT) W. Shaw

RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time
W. William Shaw	4/23/2013 1450		4/23/13 1450
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 04/03/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4164 **EVENT NAME:** Pajarito (General Surveillace Monitoring Group) MY2013 Q3 Sampling Event_Pajarito Canyon

SAMPLE ID: CAPA-13-29658 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		4/23/2013	**FIELD MATRIX:**	WG	OK
TIME COLLECTED (HH:MM):		13:52	**MEDIA:**	UA	"
PRS ID:		OK	**SAMPLE TECH CODE:**	UA	DC
LOCATION ID:	03-B-13		**FIELD PREP:**	UF	OK
LOCATION TYPE:			**FIELD QC TYPE:**	FTB	"
PORT:	SINGLE COMPLETION		**SAMPLE USAGE:**	QC	

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA	WSP-8260B-VOA	40 ML SEPTUM AMBER GLASS	4	HCl	Y	NA

SAMPLE COMMENTS: NA

LOCATION COMMENTS: NA

FIELD PARAMETERS:

Dissolved Oxygen ____ mg/L Oxidation-Reduction Potential ____ MV pH ____ SU

Specific Conductance ____ uS/cm Temperature ____ deg C Turbidity ____ NTU

COLLECTED BY (PRINT) W. Shaw

RELINQUISHED BY (Printed Name) William Shaw **(Signature)**	**Date/Time** 4/23/2013 14:50	**RECEIVED BY (Printed Name)** V. Martin **(Signature)**	**Date/Time** 4/23/13 14:50
RELINQUISHED BY (Printed Name) (Signature)	**Date/Time**	**RECEIVED BY (Printed Name) (Signature)**	**Date/Time**

Report Date 04/03/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4164

EVENT NAME: Pajarito (General Surveillace Monitoring Group) MY2013 Q3 Sampling Event_Pajarito Canyon

SAMPLE ID: CAPA-13-29662

WORK ORDER: NA

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		4/23/2013	**FIELD MATRIX:**	WG	ok
TIME COLLECTED (HH:MM):		1332	**MEDIA:**	UA	
PRS ID:		ok	**SAMPLE TECH CODE:**	UA	BP
LOCATION ID:	03-B-13		**FIELD PREP:**	UF	ok
LOCATION TYPE:	MON		**FIELD QC TYPE:**	REG	
PORT:	SINGLE COMPLETION		**SAMPLE USAGE:**	INV	

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
N/A	WSP-8260B-VOA	40 ML SEPTUM AMBER GLASS	2	HCL	Y	N/A
	WSP-8270C-SVOA	1 LITER AMBER GLASS	2 3	ICE		
	WSP-GrossA/B	1 LITER POLY	1	NONE		
	WSP-H-3	250 ML AMBER GLASS	1	ICE		
	WSP-RAD	1 GAL POLY	1	HNO3		
	WSP-TKN+TOC	500 ML AMBER GLASS	1	H2SO4		

SAMPLE COMMENTS: Raining/snowing while sampling

LOCATION COMMENTS: N/A

FIELD PARAMETERS:

Dissolved Oxygen 0.08 mg/L Oxidation-Reduction Potential 228.6 MV pH 5.92 SU

Specific Conductance 140 uS/cm Temperature 13.56 deg C Turbidity 21.7 NTU

COLLECTED BY (PRINT) D. Fellenz

RELINQUISHED BY (Printed Name) William Shaw **(Signature)**	**Date/Time** 4/23/2013 1450	**RECEIVED BY (Printed Name)** **(Signature)**	**Date/Time** 4/23/13 1450
RELINQUISHED BY (Printed Name) **(Signature)**	**Date/Time**	**RECEIVED BY (Printed Name)** **(Signature)**	**Date/Time**

Report Date 04/03/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4164 **EVENT NAME:** Pajarito (General Surveillace Monitoring Group) MY2013 Q3 Sampling Event_Pajarito Canyon

SAMPLE ID: CAPA-13-29663 **WORK ORDER:** NA

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		4/23/2013	FIELD MATRIX: WG		OK
TIME COLLECTED (HH:MM):		1121	MEDIA: UA		"
PRS ID:		OK	SAMPLE TECH CODE: UA		BP
LOCATION ID: 18-MW-18		"	FIELD PREP: UF		OK
LOCATION TYPE: MON		"	FIELD QC TYPE: REG		"
PORT: SINGLE COMPLETION		"	SAMPLE USAGE: INV		"

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
MA	WSP-8260B-VOA	40 ML SEPTUM AMBER GLASS	2	HCL	Y	MA
"	WSP-8270C-SVOA	1 LITER AMBER GLASS MS 4/23/13	3	ICE	Y	"
"	WSP-GrossA/B	1 LITER POLY	1	NONE	N	"
"	WSP-RAD	1 GAL POLY	1	HNO3	"	"
"	WSP-TKN+TOC	500 ML AMBER GLASS	1	H2SO4	"	"

SAMPLE COMMENTS: Sampled 50' from Pajarito rd

LOCATION COMMENTS: NA

FIELD PARAMETERS:

Dissolved Oxygen 4.27 mg/L Oxidation-Reduction Potential 181.0 MV pH 6.54 SU

Specific Conductance 831 uS/cm Temperature 13.01 deg C Turbidity 910.0 NTU

COLLECTED BY (PRINT) M Green

RELINQUISHED BY (Printed Name) William Shaw (Signature)	Date/Time 4/23/2013 1453	RECEIVED BY (Printed Name) (Signature)	Date/Time 4/23/13 1453
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 04/03/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4164 **EVENT NAME:** Pajarito (General Surveillace Monitoring Group) MY2013 Q3 Sampling Event_Pajarito Canyon

SAMPLE ID: CAPA-13-29673 **WORK ORDER:** NA

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		4/23/2013	**FIELD MATRIX:**	WG	ok
TIME COLLECTED (HH:MM):		1332	**MEDIA:**	UA	"
PRS ID:		ok	**SAMPLE TECH CODE:**	UA	BP
LOCATION ID:	03-B-13	"	**FIELD PREP:**	F	ok
LOCATION TYPE:	MON	"	**FIELD QC TYPE:**	REG	"
PORT:	SINGLE COMPLETION	"	**SAMPLE USAGE:**	INV	"

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
M+	WSP-GENINORG	1 LITER POLY	1	ICE	X	~~NA~~ M+
"	WSP-Met+B+SN+SR+U	1 LITER POLY	1	HNO3	"	"
"	WSP-NH3+NO3/NO2+PO4	500 ML AMBER GLASS	1	H2SO4	"	"

SAMPLE COMMENTS: Raining/snowing while sampling

LOCATION COMMENTS: NA

FIELD PARAMETERS:

Dissolved Oxygen Na mg/L Oxidation-Reduction Potential Na MV pH Na SU

Specific Conductance Na uS/cm Temperature Na deg C Turbidity Na NTU

COLLECTED BY (PRINT) V Fellenz

RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time
William Shaw	4/23/2013 1450	M. Montoya	4/23/13 1450
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date 04/03/2013

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4164

EVENT NAME: Pajarito (General Surveillace Monitoring Group) MY2013 Q3 Sampling Event_Pajarito Canyon

SAMPLE ID: CAPA-13-29674

WORK ORDER: NA

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		4/23/2013	**FIELD MATRIX:**	WG	Ok
TIME COLLECTED (HH:MM):		1121	**MEDIA:**	UA	"
PRS ID:		Ok	**SAMPLE TECH CODE:**	UA	BP
LOCATION ID:	18-MW-18	"	**FIELD PREP:**	F	Ok
LOCATION TYPE:	MON	"	**FIELD QC TYPE:**	REG	"
PORT:	SINGLE COMPLETION	"	**SAMPLE USAGE:**	INV	"

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
N/A	WSP-GENINORG	1 LITER POLY	1	ICE	N	N/A
"	WSP-Met+B+SN+SR+U	1 LITER POLY	1	HNO3	Y	"
"	WSP-NH3+NO3/NO2+PO4	500 ML AMBER GLASS	1	H2SO4	N	"

SAMPLE COMMENTS: N/A

LOCATION COMMENTS: N/A

FIELD PARAMETERS:

Dissolved Oxygen ___ mg/L Oxidation-Reduction Potential ___ MV pH ___ SU

Specific Conductance ___ uS/cm Temperature ___ deg C Turbidity ___ NTU

COLLECTED BY (PRINT) M Green

RELINQUISHED BY (Printed Name) W. Illingsham **(Signature)**	**Date/Time** 4/23/2013 1450	**RECEIVED BY (Printed Name)** M. Martin **(Signature)**	**Date/Time** 4/23/13 1450
RELINQUISHED BY (Printed Name) (Signature)	**Date/Time**	**RECEIVED BY (Printed Name) (Signature)**	**Date/Time**

Report Date 04/03/2013

Data Validation Report

Chain Of Custody No. 2013-760

1. Distribution Of Samples In EDD.

SDG	Analytical Method	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks
324498	EPA:120.1	1				
324498	EPA:150.1	1				
324498	EPA:160.1	1				
324498	EPA:245.2	2				
324498	EPA:300.0	1				
324498	EPA:310.1	1				
324498	EPA:350.1	1				
324498	EPA:351.2	1				
324498	EPA:353.2	1				
324498	EPA:365.4	1				
324498	EPA:900	1				
324498	EPA:901.1	1				
324498	EPA:905.0	1				
324498	EPA:906.0	1				
324498	HASL-300:AM-241	1				
324498	HASL-300:ISOPU	1				
324498	HASL-300:ISOU	1				
324498	SM:A2340B	2				
324498	SW-846:6010B	2				
324498	SW-846:6020	2				
324498	SW-846:8260B	2		2		
324498	SW-846:8270C	2				
324498	SW-846:9060	1				

SDG	Analytical Method	Analysis Lot ID	Prep Lot ID	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks	Method Blanks	Matrix Spikes	Matrix Spike Dups
324498	EPA:120.1	1298042	1298042	1							
324498	EPA:150.1	1297695	1297695	1							
324498	EPA:160.1	1297693	1297693	1					1		
324498	EPA:245.2	1300558	1300554	2					1	1	
324498	EPA:300.0	1297394	1297394	1					1		
324498	EPA:310.1	1298494	1298494	1					1	1	
324498	EPA:350.1	1298091	1298090	1					1	1	
324498	EPA:351.2	1297438	1297437	1					1	1	
324498	EPA:353.2	1298397	1298397	1					1		
324498	EPA:365.4	1297440	1297439	1					1	2	
324498	EPA:900	1298712	1298712	1					1	1	1
324498	EPA:901.1	1298376	1298376	1					1		
324498	EPA:905.0	1298225	1298225	1					1	1	
324498	EPA:906.0	1297917	1297917	1					1	1	
324498	HASL-300:AM-241	1298061	1298061	1					1		
324498	HASL-300:ISOPU	1302191	1302191	1					1		
324498	HASL-300:ISOU	1298064	1298064	1					1		
324498	SM:A2340B	1303342	1303342	2							
324498	SW-846:6010B	1298549	1298546	2					1	1	
324498	SW-846:6020	1298551	1298550	2					1	1	
324498	SW-846:8260B	1299689	1299689	2		2			2		

Analytical Spikes	Post-Digestion Spikes	Lab Control Samples	Lab Control Sample Dups	Blank Spikes	Blank Spike Dups	Lab Duplicates	Storage Blanks	Preparation Blanks	Reagent Blanks
		1				1			
		1				1			
		1				1			
		1				1			
		1				1			
		1				1			
		1				1			
		1				1			
		1				1			
		1				2			
		1				1			
		1				1			
		1				1			
		1				1			
		1				1			
		1				1			
		1				1			
		1				1			
		1				1			
		1				1			
		4							

324498	SW-846:8270C	1297644	1297643	2					1	1	1
324498	SW-846:8270C	1298462	1298461						1	1	1
324498	SW-846:9060	1298028	1298028	1					1		

2. Distribution Of Analytes In EDD.

Analytical Method	Method Category	Field Sample ID	Lab Sample ID	Sample Purpose	Target Analytes	Surrogates	Spikes	TICS
EPA:120.1	GENERAL CHEMISTRY	CAPA-13-29673	1202866186	DUP	1	0	0	0
EPA:120.1	GENERAL CHEMISTRY	CAPA-13-29673	324498002	REG	1	0	0	0
EPA:120.1	GENERAL CHEMISTRY	LCS	1202866187	LCS	0	0	1	0
EPA:150.1	GENERAL CHEMISTRY	CAPA-13-29673	1202865368	DUP	1	0	0	0
EPA:150.1	GENERAL CHEMISTRY	CAPA-13-29673	324498002	REG	1	0	0	0
EPA:150.1	GENERAL CHEMISTRY	LCS	1202865369	LCS	0	0	1	0
EPA:160.1	GENERAL CHEMISTRY	CAPA-13-29673	1202865360	DUP	1	0	0	0
EPA:160.1	GENERAL CHEMISTRY	CAPA-13-29673	324498002	REG	1	0	0	0
EPA:160.1	GENERAL CHEMISTRY	LCS	1202865362	LCS	0	0	1	0
EPA:160.1	GENERAL CHEMISTRY	MB	1202865359	MB	1	0	0	0
EPA:245.2	INORGANIC	CAPA-13-29673	1202872865	DUP	1	0	0	0
EPA:245.2	INORGANIC	CAPA-13-29673	1202872866	MS	0	0	1	0
EPA:245.2	INORGANIC	CAPA-13-29673	324498002	REG	1	0	0	0
EPA:245.2	INORGANIC	CAPA-13-29674	324498005	REG	1	0	0	0
EPA:245.2	INORGANIC	LCS	1202872864	LCS	0	0	1	0
EPA:245.2	INORGANIC	MB	1202872863	MB	1	0	0	0
EPA:300.0	GENERAL CHEMISTRY	CAPA-13-29673	1202864647	DUP	4	0	0	0
EPA:300.0	GENERAL CHEMISTRY	CAPA-13-29673	324498002	REG	4	0	0	0
EPA:300.0	GENERAL CHEMISTRY	LCS	1202864649	LCS	0	0	4	0
EPA:300.0	GENERAL CHEMISTRY	MB	1202864646	MB	4	0	0	0
EPA:310.1	GENERAL CHEMISTRY	CAPA-13-29673	1202867438	DUP	2	0	0	0
EPA:310.1	GENERAL CHEMISTRY	CAPA-13-29673	1202867439	MS	0	0	1	0
EPA:310.1	GENERAL CHEMISTRY	CAPA-13-29673	324498002	REG	2	0	0	0
EPA:310.1	GENERAL CHEMISTRY	LCS	1202867432	LCS	0	0	1	0
EPA:310.1	GENERAL CHEMISTRY	MB	1202867431	MB	2	0	0	0
EPA:350.1	GENERAL CHEMISTRY	CAPA-13-29673	1202866340	DUP	1	0	0	0
EPA:350.1	GENERAL CHEMISTRY	CAPA-13-29673	1202866342	MS	0	0	1	0
EPA:350.1	GENERAL CHEMISTRY	CAPA-13-29673	324498002	REG	1	0	0	0
EPA:350.1	GENERAL CHEMISTRY	LCS	1202866344	LCS	0	0	1	0
EPA:350.1	GENERAL CHEMISTRY	MB	1202866339	MB	1	0	0	0
EPA:351.2	GENERAL CHEMISTRY	CAPA-13-29662	1202864759	DUP	1	0	0	0
EPA:351.2	GENERAL CHEMISTRY	CAPA-13-29662	1202864761	MS	0	0	1	0
EPA:351.2	GENERAL CHEMISTRY	CAPA-13-29662	324498001	REG	1	0	0	0
EPA:351.2	GENERAL CHEMISTRY	LCS	1202864763	LCS	0	0	1	0
EPA:351.2	GENERAL CHEMISTRY	MB	1202864758	MB	1	0	0	0
EPA:353.2	GENERAL CHEMISTRY	CAPA-13-29673	1202867216	DUP	1	0	0	0
EPA:353.2	GENERAL CHEMISTRY	CAPA-13-29673	324498002	REG	1	0	0	0
EPA:353.2	GENERAL CHEMISTRY	LCS	1202867220	LCS	0	0	1	0
EPA:353.2	GENERAL CHEMISTRY	MB	1202867215	MB	1	0	0	0
EPA:365.4	GENERAL CHEMISTRY	CAPA-13-29673	1202864766	DUP	1	0	0	0
EPA:365.4	GENERAL CHEMISTRY	CAPA-13-29673	1202864767	MS	0	0	1	0
EPA:365.4	GENERAL CHEMISTRY	CAPA-13-29673	324498002	REG	1	0	0	0
EPA:365.4	GENERAL CHEMISTRY	LCS	1202864765	LCS	0	0	1	0
EPA:365.4	GENERAL CHEMISTRY	MB	1202864764	MB	1	0	0	0
EPA:365.4	GENERAL CHEMISTRY	NP199-13-30519	1202866336	DUP	1	0	0	0
EPA:365.4	GENERAL CHEMISTRY	NP199-13-30519	1202866337	MS	0	0	1	0
EPA:900	RAD	CAPA-13-29662	324498001	REG	2	0	0	0
EPA:900	RAD	CAPA-13-29667	1202868031	DUP	2	0	0	0
EPA:900	RAD	CAPA-13-29667	1202868032	MS	0	0	2	0
EPA:900	RAD	CAPA-13-29667	1202868033	MSD	0	0	2	0

Data Validation Report for:

Chain Of Custody No. 2013-760

		1							
		1							
		1				1			

EPA:900	RAD	LCS	1202868034	LCS	0	0	2	0
EPA:900	RAD	MB	1202868030	MB	2	0	0	0
EPA:901.1	RAD	CAPA-13-29662	324498001	REG	5	0	0	0
EPA:901.1	RAD	CAPA-13-29667	1202867155	DUP	5	0	0	0
EPA:901.1	RAD	LCS	1202867156	LCS	0	0	3	0
EPA:901.1	RAD	MB	1202867154	MB	5	0	0	0
EPA:905.0	RAD	CAPA-13-29662	324498001	REG	1	0	0	0
EPA:905.0	RAD	CAPA-13-29667	1202866767	DUP	1	0	0	0
EPA:905.0	RAD	CAPA-13-29667	1202866768	MS	0	0	1	0
EPA:905.0	RAD	LCS	1202866769	LCS	0	0	1	0
EPA:905.0	RAD	MB	1202866766	MB	1	0	0	0
EPA:906.0	RAD	CAPA-13-29662	1202865868	DUP	1	0	0	0
EPA:906.0	RAD	CAPA-13-29662	1202865869	MS	0	0	1	0
EPA:906.0	RAD	CAPA-13-29662	324498001	REG	1	0	0	0
EPA:906.0	RAD	LCS	1202865870	LCS	0	0	1	0
EPA:906.0	RAD	MB	1202865867	MB	1	0	0	0
HASL-300:AM-241	RAD	CAMO-13-30558	1202866241	DUP	1	0	0	0
HASL-300:AM-241	RAD	CAPA-13-29662	324498001	REG	1	0	0	0
HASL-300:AM-241	RAD	LCS	1202866242	LCS	0	0	1	0
HASL-300:AM-241	RAD	MB	1202866240	MB	1	0	0	0
HASL-300:ISOPU	RAD	CAMO-13-30558	1202877007	DUP	2	0	0	0
HASL-300:ISOPU	RAD	CAPA-13-29662	324498001	REG	2	0	0	0
HASL-300:ISOPU	RAD	LCS	1202877008	LCS	0	0	1	0
HASL-300:ISOPU	RAD	MB	1202877006	MB	2	0	0	0
HASL-300:ISOU	RAD	CAMO-13-30558	1202866249	DUP	3	0	0	0
HASL-300:ISOU	RAD	CAPA-13-29662	324498001	REG	3	0	0	0
HASL-300:ISOU	RAD	LCS	1202866250	LCS	0	0	1	0
HASL-300:ISOU	RAD	MB	1202866248	MB	3	0	0	0
SM:A2340B	INORGANIC	CAPA-13-29673	324498002	REG	1	0	0	0
SM:A2340B	INORGANIC	CAPA-13-29674	324498005	REG	1	0	0	0
SW-846:6010B	INORGANIC	CAPA-13-29673	324498002	REG	17	0	0	0
SW-846:6010B	INORGANIC	CAPA-13-29674	324498005	REG	16	0	0	0
SW-846:6010B	INORGANIC	CAPA-13-29678	1202867559	DUP	17	0	0	0
SW-846:6010B	INORGANIC	CAPA-13-29678	1202867560	MS	0	0	17	0
SW-846:6010B	INORGANIC	LCS	1202867558	LCS	0	0	17	0
SW-846:6010B	INORGANIC	MB	1202867557	MB	17	0	0	0
SW-846:6020	INORGANIC	CAPA-13-29673	324498002	REG	11	0	0	0
SW-846:6020	INORGANIC	CAPA-13-29674	324498005	REG	11	0	0	0
SW-846:6020	INORGANIC	CAPA-13-29678	1202867564	DUP	11	0	0	0
SW-846:6020	INORGANIC	CAPA-13-29678	1202867565	MS	0	0	11	0
SW-846:6020	INORGANIC	LCS	1202867563	LCS	0	0	11	0
SW-846:6020	INORGANIC	MB	1202867562	MB	11	0	0	0
SW-846:8260B	VOC	CAPA-13-29656	324498004	FTB	80	3	0	0
SW-846:8260B	VOC	CAPA-13-29658	324498003	FTB	80	3	0	0
SW-846:8260B	VOC	CAPA-13-29662	324498001	REG	80	3	0	0
SW-846:8260B	VOC	CAPA-13-29663	324498006	REG	80	3	0	0
SW-846:8260B	VOC	LCS	1202870433	LCS	0	3	70	0
SW-846:8260B	VOC	LCS	1202870434	LCS	0	3	10	0
SW-846:8260B	VOC	LCS	1202870445	LCS	0	3	70	0
SW-846:8260B	VOC	LCS	1202870446	LCS	0	3	10	0
SW-846:8260B	VOC	MB	1202870430	MB	80	3	0	0
SW-846:8260B	VOC	MB	1202870444	MB	80	3	0	0
SW-846:8270C	SVOC	CAPA-13-29662	1202865217	MS	0	6	76	0
SW-846:8270C	SVOC	CAPA-13-29662	1202865218	MSD	0	6	76	0
SW-846:8270C	SVOC	CAPA-13-29662	324498001	REG	80	6	0	0
SW-846:8270C	SVOC	CAPA-13-29663	324498006	REG	80	6	0	0
SW-846:8270C	SVOC	CAPA-13-29667	1202867363	MS	0	6	76	0

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SW-846:8270C	SVOC	CAPA-13-29667	1202867364	MSD	0	6	76	0
SW-846:8270C	SVOC	LCS	1202865216	LCS	0	6	76	0
SW-846:8270C	SVOC	LCS	1202867362	LCS	0	6	76	0
SW-846:8270C	SVOC	MB	1202865215	MB	80	6	0	0
SW-846:8270C	SVOC	MB	1202867361	MB	80	6	0	0
SW-846:9060	GENERAL CHEMISTRY	CAPA-13-29662	1202866145	DUP	1	0	0	0
SW-846:9060	GENERAL CHEMISTRY	CAPA-13-29662	324498001	REG	1	0	0	0
SW-846:9060	GENERAL CHEMISTRY	LCS	1202866149	LCS	0	0	1	0
SW-846:9060	GENERAL CHEMISTRY	MB	1202866144	MB	1	0	0	0

3. Are any analytes missing?

No.

4. Were any holding times exceeded?

No.

5. Any contaminants in blanks?

Field Sample ID	Lab Sample ID	Type Of Blank	Analytical Method	Sample Matrix	Parameter Name	Lab Result	Lab Qualifier	Units	Lab Detection Limit
MB	1202865359	METHOD BLANK	EPA:160.1	W	Total Dissolved Solids	4.29	J	mg/L	14.3
MB	1202867562	METHOD BLANK	SW-846:6020	W	Molybdenum	0.188	J	ug/L	0.5
MB	1202872863	METHOD BLANK	EPA:245.2	W	Mercury	-0.073	J	ug/L	0.2

Any samples affected by the presence of contaminants in blanks?

Field Sample ID	Blank Field Sample ID	Blank Lab Sample ID	Blank Type	Analytical Method	Parameter Name	Units	Blank Result	Sample Result	Lab Qualifier	Detect Limit	Detected
CAPA-13-29673	MB	1202872863	METHOD BLANK	EPA:245.2	Mercury	ug/L	-0.073	0.2	U	0.2	N
CAPA-13-29674	MB	1202872863	METHOD BLANK	EPA:245.2	Mercury	ug/L	-0.073	0.2	U	0.2	N

6. Any surrogate recoveries outside the control limits?

Field Sample ID	Lab Sample ID	Analytical Method	Parameter Name	Analysis Lot ID	Analysis Date	Percent Recovery	Upper Limit	Lower Limit	Rejection Limit
CAPA-13-29663	324498006	SW-846:8270C	Fluorophenol[2-]	1297644	4/29/2013	11	77	14	10
CAPA-13-29663	324498006	SW-846:8270C	Tribromophenol[2,4,6-]	1297644	4/29/2013	11	130	23	10

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

Field Sample ID	Matrix Spike ID	Matrix Spike Dup ID	Analytical Method	Parameter Name	Analysis Lot ID	Analysis Date	Sample Matrix	MS % Recvry	MSD % Recvry	Upper Limit	Lower Limit
CAPA-13-29662	1202864761		EPA:351.2	Total Kjeldahl Nitrogen	1297437	4/30/2013	W	138		110	90
CAPA-13-29662	1202864761		EPA:351.2	Total Kjeldahl Nitrogen	1297437	4/30/2013	W	138		110	90
CAPA-13-29662	1202865217	1202865218	SW-846:8270C	Atrazine	1297643	4/29/2013	W	21	29	119	36
CAPA-13-29662	1202865217	1202865218	SW-846:8270C	Benzidine	1297643	4/29/2013	W	13	33	125	10
CAPA-13-29662	1202865217	1202865218	SW-846:8270C	Benzo(b)fluoranthene	1297643	4/29/2013	W	43	59	115	37
CAPA-13-29662	1202865217	1202865218	SW-846:8270C	Benzo(k)fluoranthene	1297643	4/29/2013	W	46	62	118	36
CAPA-13-29662	1202865217	1202865218	SW-846:8270C	Chrysene	1297643	4/29/2013	W	50	68	115	35

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Correction Factor (ND)	Correction Factor (J)	Use Factors
5		Y
5		Y

Rejection Limit	RPD	RPD Limit
10		
10		
10	30	30
10	85	30
10	31	30
10	31	30
10	31	30

CAPA-13-29662	1202865217	1202865218	SW-846:8270C	Di-n-butylphthalate	1297643	4/29/2013	W	49	67	116	38
CAPA-13-29662	1202865217	1202865218	SW-846:8270C	Dichlorobenzidine[3,3'-]	1297643	4/29/2013	W	41	65	109	27
CAPA-13-29662	1202865217	1202865218	SW-846:8270C	Diethylphthalate	1297643	4/29/2013	W	51	72	116	43
CAPA-13-29662	1202865217	1202865218	SW-846:8270C	Dimethyl Phthalate	1297643	4/29/2013	W	52	72	115	43
CAPA-13-29662	1202865217	1202865218	SW-846:8270C	Dinitrotoluene[2,4-]	1297643	4/29/2013	W	54	77	125	37
CAPA-13-29662	1202865217	1202865218	SW-846:8270C	Dinitrotoluene[2,6-]	1297643	4/29/2013	W	55	75	121	42
CAPA-13-29662	1202865217	1202865218	SW-846:8270C	Fluoranthene	1297643	4/29/2013	W	49	68	116	35
CAPA-13-29662	1202865217	1202865218	SW-846:8270C	Fluorene	1297643	4/29/2013	W	50	67	110	33
CAPA-13-29662	1202865217	1202865218	SW-846:8270C	Nitroaniline[2-]	1297643	4/29/2013	W	62	84	120	31
CAPA-13-29662	1202865217	1202865218	SW-846:8270C	Nitroaniline[3-]	1297643	4/29/2013	W	72	111	123	32
CAPA-13-29662	1202865217	1202865218	SW-846:8270C	Nitroaniline[4-]	1297643	4/29/2013	W	83	119	131	28
CAPA-13-29662	1202865217	1202865218	SW-846:8270C	Pyridine	1297643	4/29/2013	W	35	59	93	21

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

LCS Sample ID	LCSD Sample ID	Analytical Method	Parameter Name	Lab Lot ID	Analysis Date	Sample Matrix	LCS Recovery	LCSD Recovery	Upper Limit	Lower Limit	Lower Reject Limit
1202865216		SW-846:8270C	Atrazine	1297643	4/29/2013	W	34		115	47	10
1202867362		SW-846:8270C	Nitroaniline[4-]	1298461	5/1/2013	W	155		133	38	10

9. Any Field Duplicate RPDs outside the desired limits?

No.

10. Any Lab Duplicate RPDs outside the desired limits?

Field Sample ID	Lab SampleID	Lab Duplicate Sample ID	Analytical Method	Parameter Name	Sample Matrix	Sample Result	Dup Sample Result	Units	Detected In Sample	Detected In Dup	RPD
CAPA-13-29673	324498002	1202866340	EPA:350.1	Ammonia as Nitrogen	W	0.0885	0.109	mg/L	Y	Y	20.8
CAPA-13-29662	324498001	1202864759	EPA:351.2	Total Kjeldahl Nitrogen	W	0.144	0.212	mg/L	Y	Y	38.2

11. Any required reporting limits exceeded?

No.

12. Additional Validator's Coments.

None.

13. Display Flagged Data.

Location ID	Chain Of Custody No	Field Sample ID	Sample Purpose	Analysis Type Code	Analytical Suite	Analytical Method	Parameter Name	Lab Qualifier	Validation Qualifier	Validation Reason Codes	Detected
03-B-13	2013-760	CAPA-13-29662	REG	INIT	RAD	HASL-300:AM-241	Americium-241	U	U	R5	N
03-B-13	2013-760	CAPA-13-29662	REG	INIT	SVOC	SW-846:8270C	Atrazine	U	UJ	SV12a	N
03-B-13	2013-760	CAPA-13-29662	REG	INIT	RAD	EPA:901.1	Cesium-137	U	U	R5	N
03-B-13	2013-760	CAPA-13-29662	REG	INIT	RAD	EPA:901.1	Cobalt-60	U	U	R5	N
03-B-13	2013-760	CAPA-13-29662	REG	INIT	RAD	EPA:900	Gross alpha	U	U	R5	N
03-B-13	2013-760	CAPA-13-29662	REG	INIT	RAD	EPA:901.1	Neptunium-237	U	U	R5	N
03-B-13	2013-760	CAPA-13-29662	REG	INIT	RAD	HASL-300:ISOPU	Plutonium-238	U	U	R5	N
03-B-13	2013-760	CAPA-13-29662	REG	INIT	RAD	HASL-300:ISOPU	Plutonium-239/240	U	U	R5	N
03-B-13	2013-760	CAPA-13-29662	REG	INIT	RAD	EPA:901.1	Potassium-40	U	U	R5	N

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10	31	30
10	44	30
10	34	30
10	32	30
10	34	30
10	31	30
10	33	30
10	31	30
10	31	30
10	42	30
10	36	30
10	51	30

Upper Reject Limit	RPD	RPD Limit

RPD Limit

20

20

Lab Result	Lab Units	Report Result	Report Units	Report MDA	Report Uncertainty	Lab Matrix	Sample Date	Percent Moisture	Analysis Lot ID	Validation Status Code	Use Flag
0.00747	pCi/L	0.00747	pCi/L	0.0724	0.00747	W	4/23/2013		1298061	VAL	Y
10	ug/L	10	ug/L			W	4/23/2013		1297644	VAL	Y
1.75	pCi/L	1.75	pCi/L	5.98	1.5	W	4/23/2013		1298376	VAL	Y
0.157	pCi/L	0.157	pCi/L	6.23	1.61	W	4/23/2013		1298376	VAL	Y
1.79	pCi/L	1.79	pCi/L	1.87	0.788	W	4/23/2013		1298712	VAL	Y
-0.0677	pCi/L	-0.0677	pCi/L	10.5	2.97	W	4/23/2013		1298376	VAL	Y
0	pCi/L	0	pCi/L	0.05	0.00476	W	4/23/2013		1302191	VAL	Y
0	pCi/L	0	pCi/L	0.0602	0.00672	W	4/23/2013		1302191	VAL	Y
-19.9	pCi/L	-19.9	pCi/L	71.8	19.4	W	4/23/2013		1298376	VAL	Y

03-B-13	2013-760	CAPA-13-29662	REG	INIT	RAD	EPA:901.1	Sodium-22	U	U	R5	N
03-B-13	2013-760	CAPA-13-29662	REG	INIT	RAD	EPA:905.0	Strontium-90	U	U	R5	N
03-B-13	2013-760	CAPA-13-29662	REG	INIT	GENERAL CHEMISTRY	EPA:351.2	Total Kjeldahl Nitrogen		J+	I6b	Y
03-B-13	2013-760	CAPA-13-29662	REG	INIT	RAD	EPA:906.0	Tritium	U	U	R5	N
03-B-13	2013-760	CAPA-13-29662	REG	INIT	RAD	HASL-300:ISOU	Uranium-235/236	U	U	R5	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Acenaphthene	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Acenaphthylene	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Aniline	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Anthracene	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Atrazine	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Azobenzene	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Benzidine	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Benzo(a)anthracene	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Benzo(a)pyrene	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Benzo(b)fluoranthene	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Benzo(g,h,i)perylene	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Benzo(k)fluoranthene	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Benzoic Acid	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Benzyl Alcohol	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Bis(2-chloroethoxy)methane	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Bis(2-chloroethyl)ether	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Bis(2-ethylhexyl)phthalate	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Bromophenyl-phenylether[4-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Butylbenzylphthalate	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Chloro-3-methylphenol[4-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Chloroaniline[4-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Chloronaphthalene[2-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Chlorophenol[2-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Chlorophenyl-phenyl[4-] Ether	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Chrysene	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Di-n-butylphthalate	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Di-n-octylphthalate	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Dibenz(a,h)anthracene	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Dibenzofuran	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Dichlorobenzene[1,2-]	U	UJ	SV3a	N

0.899	pCi/L	0.899	pCi/L	6.55	1.63	W	4/23/2013		1298376	VAL	Y
0.275	pCi/L	0.275	pCi/L	0.494	0.151	W	4/23/2013		1298225	VAL	Y
0.144	mg/L	0.144	mg/L			W	4/23/2013		1297438	VAL	Y
30.1	pCi/L	30.1	pCi/L	114	33.1	W	4/23/2013		1297917	VAL	Y
0.00923	pCi/L	0.00923	pCi/L	0.0397	0.013	W	4/23/2013		1298064	VAL	Y
1.15	ug/L	1.15	ug/L			W	4/23/2013		1297644	VAL	Y
1.15	ug/L	1.15	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
1.15	ug/L	1.15	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
1.15	ug/L	1.15	ug/L			W	4/23/2013		1297644	VAL	Y
1.15	ug/L	1.15	ug/L			W	4/23/2013		1297644	VAL	Y
1.15	ug/L	1.15	ug/L			W	4/23/2013		1297644	VAL	Y
1.15	ug/L	1.15	ug/L			W	4/23/2013		1297644	VAL	Y
1.15	ug/L	1.15	ug/L			W	4/23/2013		1297644	VAL	Y
23	ug/L	23	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
1.15	ug/L	1.15	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
1.15	ug/L	1.15	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
1.15	ug/L	1.15	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y

18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Dichlorobenzene[1,3-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Dichlorobenzene[1,4-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Dichlorobenzidine[3,3'-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Dichlorophenol[2,4-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Diethylphthalate	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Dimethyl Phthalate	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Dimethylphenol[2,4-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Dinitro-2-methylphenol[4,6-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Dinitrophenol[2,4-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Dinitrotoluene[2,4-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Dinitrotoluene[2,6-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Dinoseb	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Dioxane[1,4-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Diphenylamine	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Fluoranthene	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Fluorene	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Hexachlorobenzene	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Hexachlorobutadiene	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Hexachlorocyclopentadiene	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Hexachloroethane	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Indeno(1,2,3-cd)pyrene	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Isophorone	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Methylnaphthalene[1-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Methylnaphthalene[2-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Methylphenol[2-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Methylphenol[4-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Naphthalene	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Nitroaniline[2-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Nitroaniline[3-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Nitroaniline[4-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Nitrobenzene	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Nitrophenol[2-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Nitrophenol[4-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Nitroso-di-n-butylamine[N-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Nitroso-di-n-propylamine[N-]	U	UJ	SV3a	N

11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
23	ug/L	23	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
1.15	ug/L	1.15	ug/L			W	4/23/2013		1297644	VAL	Y
1.15	ug/L	1.15	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
1.15	ug/L	1.15	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
1.15	ug/L	1.15	ug/L			W	4/23/2013		1297644	VAL	Y
1.15	ug/L	1.15	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
1.15	ug/L	1.15	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y

18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Nitrosodiethylamine[N-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Nitrosodimethylamine[N-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Nitrosopyrrolidine[N-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Oxybis(1-chloropropane)[2,2'-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Pentachlorobenzene	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Pentachlorophenol	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Phenanthrene	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Phenol	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Pyrene	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Pyridine	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Tetrachlorobenzene[1,2,4,5]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Tetrachlorophenol[2,3,4,6-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Trichlorobenzene[1,2,4-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Trichlorophenol[2,4,5-]	U	UJ	SV3a	N
18-MW-18	2013-760	CAPA-13-29663	REG	INIT	SVOC	SW-846:8270C	Trichlorophenol[2,4,6-]	U	UJ	SV3a	N
03-B-13	2013-760	CAPA-13-29673	REG	INIT	GENERAL CHEMISTRY	EPA:350.1	Ammonia as Nitrogen		J	I10a	Y

Reason Code	Description
I10a	The sample and the duplicate sample results were >=5X the RL and the duplicate RPD was >20% for water samples and >35% for soil samples.
I6b	The associated matrix spike recovery was above the Upper Acceptance Limit (UAL). Follow the external laboratory limits located within the associated data package.
J_LAB	The analytical laboratory qualified the detected result as estimated (J) because the result was less the PQL but greater than the MDL
NQ	The analytical laboratory did not qualifiy the analyte as not detected and/or any other standard qualifire. The analyte is detected in the sample.
R5	Analyte is not detected because the amount reported is less than the MDC.
SV12a	The LCS percent recovery was < the LAL but >10%. Follow the external laboratory limits located within the associated data package.
SV3a	The surrogate is < the Lower Acceptance Level (LAL) but >=10%R. Follow the external laboratory limits located within the associated data package.
U_LAB	The analytical laboratory qualified the analyte as not detected.

14. Useable Result Count.

Field Sample ID	Location ID	Sample Purpose	Analytical Method	No. Unuseable Records	Total No. Of Records
CAPA-13-29656	18-MW-18	FTB	SW-846:8260B	0	80
CAPA-13-29658	03-B-13	FTB	SW-846:8260B	0	80
CAPA-13-29662	03-B-13	REG	EPA:351.2	0	1
CAPA-13-29662	03-B-13	REG	EPA:900	0	2
CAPA-13-29662	03-B-13	REG	EPA:901.1	0	5
CAPA-13-29662	03-B-13	REG	EPA:905.0	0	1
CAPA-13-29662	03-B-13	REG	EPA:906.0	0	1

11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
1.15	ug/L	1.15	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
1.15	ug/L	1.15	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
11.5	ug/L	11.5	ug/L			W	4/23/2013		1297644	VAL	Y
0.0885	mg/L	0.0885	mg/L			W	4/23/2013		1298091	VAL	Y

CAPA-13-29662	03-B-13	REG	HASL-300:AM-241	0	1
CAPA-13-29662	03-B-13	REG	HASL-300:ISOPU	0	2
CAPA-13-29662	03-B-13	REG	HASL-300:ISOU	0	3
CAPA-13-29662	03-B-13	REG	SW-846:8260B	0	80
CAPA-13-29662	03-B-13	REG	SW-846:8270C	0	80
CAPA-13-29662	03-B-13	REG	SW-846:9060	0	1
CAPA-13-29663	18-MW-18	REG	SW-846:8260B	0	80
CAPA-13-29663	18-MW-18	REG	SW-846:8270C	0	80
CAPA-13-29673	03-B-13	REG	EPA:120.1	0	1
CAPA-13-29673	03-B-13	REG	EPA:150.1	0	1
CAPA-13-29673	03-B-13	REG	EPA:160.1	0	1
CAPA-13-29673	03-B-13	REG	EPA:245.2	0	1
CAPA-13-29673	03-B-13	REG	EPA:300.0	0	4
CAPA-13-29673	03-B-13	REG	EPA:310.1	0	2
CAPA-13-29673	03-B-13	REG	EPA:350.1	0	1
CAPA-13-29673	03-B-13	REG	EPA:353.2	0	1
CAPA-13-29673	03-B-13	REG	EPA:365.4	0	1
CAPA-13-29673	03-B-13	REG	SM:A2340B	0	1
CAPA-13-29673	03-B-13	REG	SW-846:6010B	0	17
CAPA-13-29673	03-B-13	REG	SW-846:6020	0	11
CAPA-13-29674	18-MW-18	REG	EPA:245.2	0	1
CAPA-13-29674	18-MW-18	REG	SM:A2340B	0	1
CAPA-13-29674	18-MW-18	REG	SW-846:6010B	0	16
CAPA-13-29674	18-MW-18	REG	SW-846:6020	0	11

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

April 29, 2013

Keith Greene
Los Alamos National Laboratory
PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico 87545

Re: LANL-WQH Water Samples
Work Order: 324498
SDG: 2013-760

Dear Keith Greene:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on April 25, 2013, and analyzed for GC/MS Semivolatile, GC/MS Volatile, General Chemistry, Metals and Radiochemistry. 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,

Hope Taylor for
Valerie Davis
Project Manager

Purchase Order: 63641-10
Chain of Custody: 2013-760
Enclosures

ARS International (63641-10)
LANL-WQH Water Samples
Work Order #: 324498
SDG: 2013-760

Table of Contents

Case Narrative

Case Narrative for
ARS International (63641-10)
LANL-WQH Water Samples
Workorder #: 324498
SDG # : 2013-760

April 29, 2013

Laboratory Identification:

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

Summary

Sample receipt The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on April 25, 2013 for analysis. Please see attached email for discrepancies. The samples were screened according to GEL Standard Operating Procedure. All sample containers arrived without any visible signs of tampering or breakage. The containers for Gross A/B were preserved prior to analysis. Shipping container temperature was within specification (0 - 6C). Shipping container temperatures were checked, documented, and within specifications. There are no additional comments concerning sample receipt.

Sample Identification The laboratory received the following samples:

Laboratory ID	Client ID
324498001	CAPA-13-29662
324498002	CAPA-13-29673
324498003	CAPA-13-29658
324498004	CAPA-13-29656
324498005	CAPA-13-29674
324498006	CAPA-13-29663

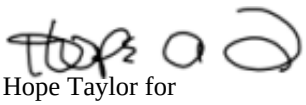
Case Narrative

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

Data Package

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

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.



Hope Taylor for
Valerie Davis
Project Manager

List of current GEL Certifications as of 29 April 2013

State	Certification
Alaska	UST−110
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	P330−12−00283, P330−12−00284
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	LA130005
Maryland	270
Massachusetts	M−SC012
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
Plant Material Permit	PDEP−12−00260
South Carolina Chemistry	10120001
South Carolina Radiochemi	10120002
Tennessee	TN 02934
Texas NELAP	T104704235−13−8
Utah NELAP	SC000122013−8
Vermont	VT87156
Virginia NELAP	460202
Washington	C780−12
Wisconsin	999887790

Chain of Custody and Supporting Documentation

General Engineering Laboratories, Inc., Charleston, SC.
2040 Savage Rd
Charleston SC 29407

Chain of Custody/Analysis Request

324498

COC/Lab Request #: 2013-760

Page 1 of 1

Client Contact:

Lab Agreement # : 126310011

Project Number :

Site Name: Los Alamos National Laboratory

Analysis Turnaround Time:
24 Hour - ☐ Other - ☐
7 Day - ☐
14 Day - ☐
21 Day - ☐
28 Day - ☒

Rad Screening Info: Yes, Below Background

Special Instructions:

Field Sample ID	Sample Date	Sample Time	Sample Matrix	WSP-8260B-VOA	WSP-8270C-SVOA	WSP-GENINORG	WSP-GrossA/B	WSP-H-3	WSP-Met+B+SN+SR+U	WSP-NH3+NO3/NO2+PO4	WSP-RAD	WSP-TKN+TOC
CAPA-13-29662	Apr 23 2013	13:32	W	2	3		1	1			1	1
CAPA-13-29673	Apr 23 2013	13:32	W			1			1	1		
CAPA-13-29658	Apr 23 2013	13:32	W	2								
CAPA-13-29656	Apr 23 2013	11:21	W	2								
CAPA-13-29674	Apr 23 2013	11:21	W			1			1	1		
CAPA-13-29663	Apr 23 2013	11:21	W	2	3		1				1	1

Special Instructions:

Relinquished by: S. Sherwood	S. Sherwood	Date/Time: 4/24/13 3pm	Received by: L. Dent	4-25-13 08:30
Relinquished by:		Date/Time:	Received by:	
Relinquished by:		Date/Time:	Received by:	

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: LANL	**SDG/AR/COC/Work Order: 2013-760**
Received By: Patricia Dent	**Date Received: April 25, 2013**

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	
Package, COC, and/or Samples marked as beryllium or asbestos containing?		X	If yes, samples are to be segregeated as Safety Controlled Samples, and opened by the GEL Safety Group.
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 4C
2a	Daily check performed and passed on IR temperature gun?	X			Temperature Device Serial #: Secondary Temperature Device Serial # (If Applicable):**61524649**
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: **CAPA-13-29662 for Gross A/B** If Preservation added, Lot# **NX0409-75**
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: Sample container reads
10	Date & time on COC match date & time on bottles?	X			Sample ID's affected:
11	Number of containers received match number indicated on COC?			X	Sample ID's affected: **CAPA-13-29656, 29658 the lab received 1 8260b contianer, chain indicates 2 SEE BELOW FOR MORE**
12	Are sample containers identifiable as GEL provided?	X			**Client**
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 **5462 9832 9545 4C 5462 9832 9534 4C**

CAPA-13-29674 the lab did not receive containers for NH3+NO3/NO2+PO4, GENINORG
CAPA-13-29663 the lab did not receive containers for TKN+TOC, WSP-RAD, Gross A/B, 8270C-SVOA

PM (PMA) review Initials KA Date 04/26/13 Page 1 of 1

Subject: RE: Sample issues from today 04/25/13
From: "Greene, Keith R" <kgreene@lanl.gov>
Date: 4/29/2013 10:32 AM
To: Valerie Davis <vsd@gel.com>

Please Cancel,txs

From: Valerie Davis [mailto:vsd@gel.com]
Sent: Monday, April 29, 2013 8:32 AM
To: Greene, Keith R
Subject: Re: Sample issues from today 04/25/13

Just to be clear....Are we to cancel the analysis or try to take aliquots from other containers?

On 4/29/2013 10:18 AM, Greene, Keith R wrote:

> No you will not these were never collected, txs
>
> ---
>
> **From:** Valerie Davis [mailto:vsd@gel.com]
> **Sent:** Monday, April 29, 2013 8:19 AM
> **To:** Greene, Keith R
> **Subject:** Fwd: Sample issues from today 04/25/13
>
> Hi Keith,
>
> Please let me know if we're going to receive the following containers:
>
> ***CAPA-13-29674 the lab did not receive containers for the following test GENINORG, NH3+NO3/NO2+PO4 please advise.**
>
> ****CAPA-13-29663 the lab did not receive containers for the following test TKN+TOC, WSP-RAD & Gross A/B please advise.**
>
> Thanks,
> Valerie
>
> -------- Original Message --------
> **Subject:**Sample issues from today 04/25/13
> **Date:**Thu, 25 Apr 2013 17:20:31 -0400
> **From:**Pat Dent <Pat.Dent@gel.com>
> **To:**Keith R. Greene <kgreene@lanl.gov>
> **CC:**team.davis <team.davis@gel.com>, LANL@amrad.com
>
> Good evening all listed below are today's issues
>
> RN#2013-763
> CAPA-13-29537, 29540 the lab received 1 8260b container, chain indicates 2.

**CAPA-13-760
CAPA-13-29656, 29658 the lab received 1 8260b container, chain indicates 2.

CAPA-13-29674 the lab did not receive containers for the following test GENINORG, NH3+NO3/NO2+PO4 please advise.

CAPA-13-29663 the lab did not receive containers for the following test TKN+TOC, WSP-RAD & Gross A/B please advise.
**CAPA-13-29663 the lab received 2 containers for SVOA the chain indicates 3.

Thanks!!

--
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

--
Valerie S. Davis
Project Manager
GEL Laboratories, LLC
2040 Savage Road
Charleston, SC (USA) 29407
Direct: 843.769.7391
Main: 843.556.8171
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E-mail: vsd@gel.com
Web: www.gel.com

ORIGIN ID: SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 24APR13
ACTWGT: 46.0 LB MAN
CAD: 0014176/CAFE2511

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: WE991158W100

4C

580C1/64BE/10BC

FedEx Express

J111311066G0125

2 of 2
MPS# 0263 5462 9832 9545
Mstr# 5462 9832 9534

THU - 25 APR 10:30A
PRIORITY OVERNIGHT
0201

XX CHSA

29407
SC-US CHS

Part # 156148-434 RIT2 08/10 ©

ORIGIN ID: SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 24APR13
ACTWGT: 22.0 LB MAN
CAD: 0014176/CAFE2511

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: WE991158W100

4C

580C1/64BE/10BC

FedEx Express

J111311060G0125

1 of 2
TRK# 0201 5462 9832 9534
MASTER

THU - 25 APR 10:30A
PRIORITY OVERNIGHT

XX CHSA

29407
SC-US CHS

Part # 156148-434 RIT2 08/10 ©

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 2013-760

Method/Analysis Information

Procedure:	**Volatile Organic Compounds (VOC) by Gas Chromatograph/Mass Spectrometer**
Analytical Method:	SW846 8260B DOE-AL
Analytical Batch Number:	1299689

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
324498001	CAPA-13-29662
324498003	CAPA-13-29658
324498004	CAPA-13-29656
324498006	CAPA-13-29663
1202870430	Method Blank (MB)
1202870431	324498001(CAPA-13-29662) Post Spike (PS)
1202870432	324498001(CAPA-13-29662) Post Spike Duplicate (PSD)
1202870433	Laboratory Control Sample (LCS)
1202870434	Laboratory Control Sample (LCS)
1202870444	Method Blank (MB)
1202870445	Laboratory Control Sample (LCS)
1202870446	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# 19.

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

A complete list of the initial calibration data files with the correct dates and times of analysis are shown in the Calibration History report located in the Standard Data section of the data package.

The surrogate compounds were calibrated using a minimum five-point calibration curve. The surrogates were added by the auto sampler at a concentration of 50 ug/L or 20 ug/L for low level analyses. GEL Laboratories LLC will not have surrogate recoveries reported for Dibromofluoromethane. This is due to increased regulations for this analyte and an industry shortage.

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

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

Quality Control (QC) Information

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

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 324498001 (CAPA-13-29662) 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 1202870432 (CAPA-13-29662) 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. All samples in this SDG met the specified holding time.

Sample Preservation and Integrity
All samples met the sample preservation and integrity requirements.

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

Sample Re-extraction/Re-analysis
Samples 1202870431(CAPA-13-29662) and 1202870432(CAPA-13-29662) were 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
The following DER was generated for this SDG: 1183398.

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

TIC Comment
Tentatively identified compounds (TIC) may be requested for this sample delivery group/work order. Please note that non-requested target analytes that are reported on the quantitation reports will be present on the Form I. These detected analytes are included in the calibrated method and as a result will be reported on the Sample Data Summary (Form I) or Certificate of Analysis (C of A). TIC data, if requested, are included on the Sample Data Summary (Form I) and are also included with the sample raw data.

Additional Comments
Additional comments were not required for this SDG.

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

System Configuration

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

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

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all 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: 2013-760 GEL Work Order: 324498

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

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: 20 MAY 2013 **Title: Data Validator**

Sample Data Summary

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**	**Date Collected:**	**04/23/2013 13:32**	**Matrix:**	**W**
Lab Sample ID:	**324498001**	**Date Received:**	**04/25/2013 08:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAPA-13-29662**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/04/2013 13:06**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/04/2013 13:06**				
Data File:	**050413V9\9K613.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	0.300	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	3.00	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	25.0
75-35-4	1,1-Dichloroethylene	J	0.740	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.50	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	1.50	5.00
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane	J	0.750	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	2.00	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	J	0.530	ug/L	0.300	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane		48.2	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	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	0.300	1.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	J	0.410	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	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	1.50	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	2.20	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**	**Date Collected:**	**04/23/2013 13:32**	**Matrix:**	**W**
Lab Sample ID:	**324498001**	**Date Received:**	**04/25/2013 08:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAPA-13-29662**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/04/2013 13:06**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/04/2013 13:06**				
Data File:	**050413V9\9K613.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	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	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	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
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	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	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	0.400	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.50	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	1.50	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	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**	**Date Collected:**	**04/23/2013 13:32**	**Matrix:**	**W**
Lab Sample ID:	**324498001**	**Date Received:**	**04/25/2013 08:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAPA-13-29662**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/04/2013 13:06**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/04/2013 13:06**				
Data File:	**050413V9\9K613.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	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	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	48.3	50.0	ug/L	96.5	(78%-124%)
Bromofluorobenzene	51.5	50.0	ug/L	103	(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	4.211	8.07	ug/L	0	J

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**	**Date Collected:**	**04/23/2013 13:32**	**Matrix:**	**W**
Lab Sample ID:	**324498003**	**Date Received:**	**04/25/2013 08:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAPA-13-29658**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/04/2013 13:34**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/04/2013 13:34**				
Data File:	**050413V9\9K614.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	0.300	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	3.00	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	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	1.50	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	1.50	5.00
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
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	2.00	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	0.300	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	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	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	0.300	1.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	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	1.50	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	2.20	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**	**Date Collected:**	**04/23/2013 13:32**	**Matrix:**	**W**
Lab Sample ID:	**324498003**	**Date Received:**	**04/25/2013 08:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAPA-13-29658**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/04/2013 13:34**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/04/2013 13:34**				
Data File:	**050413V9\9K614.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	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	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	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
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	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	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	0.400	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.50	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	1.50	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	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**	**Date Collected:**	**04/23/2013 13:32**	**Matrix:**	**W**
Lab Sample ID:	**324498003**	**Date Received:**	**04/25/2013 08:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAPA-13-29658**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/04/2013 13:34**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/04/2013 13:34**				
Data File:	**050413V9\9K614.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	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	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	51.3	50.0	ug/L	103	(78%-124%)
Bromofluorobenzene	51.4	50.0	ug/L	103	(80%-120%)
Toluene-d8	46.1	50.0	ug/L	92.2	(80%-120%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown	4.241	7.21	ug/L	0	J

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**	**Date Collected:**	**04/23/2013 11:21**	**Matrix:**	**W**
Lab Sample ID:	**324498004**	**Date Received:**	**04/25/2013 08:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAPA-13-29656**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/04/2013 14:01**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/04/2013 14:01**				
Data File:	**050413V9\9K615.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	0.300	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	3.00	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	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	1.50	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	1.50	5.00
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
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	2.00	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	0.300	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	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	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	0.300	1.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	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	1.50	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	2.20	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**	**Date Collected:**	**04/23/2013 11:21**	**Matrix:**	**W**
Lab Sample ID:	**324498004**	**Date Received:**	**04/25/2013 08:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAPA-13-29656**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/04/2013 14:01**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/04/2013 14:01**				
Data File:	**050413V9\9K615.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	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	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	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
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	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	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	0.400	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.50	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	1.50	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	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**	**Date Collected:**	**04/23/2013 11:21**	**Matrix:**	**W**
Lab Sample ID:	**324498004**	**Date Received:**	**04/25/2013 08:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAPA-13-29656**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/04/2013 14:01**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/04/2013 14:01**				
Data File:	**050413V9\9K615.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	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	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	54.5	50.0	ug/L	109	(78%-124%)
Bromofluorobenzene	53.0	50.0	ug/L	106	(80%-120%)
Toluene-d8	46.1	50.0	ug/L	92.1	(80%-120%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown	4.241	8.08	ug/L	0	J

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**	**Date Collected:**	**04/23/2013 11:21**	**Matrix:**	**W**
Lab Sample ID:	**324498006**	**Date Received:**	**04/25/2013 08:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAPA-13-29663**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/04/2013 14:28**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/04/2013 14:28**				
Data File:	**050413V9\9K616.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	0.300	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	3.00	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	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	1.50	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	1.50	5.00
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
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	2.00	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	0.300	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	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	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	0.300	1.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	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	1.50	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	2.20	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**	**Date Collected:**	**04/23/2013 11:21**	**Matrix:**	**W**
Lab Sample ID:	**324498006**	**Date Received:**	**04/25/2013 08:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAPA-13-29663**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/04/2013 14:28**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/04/2013 14:28**				
Data File:	**050413V9\9K616.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	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	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	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
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	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	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	0.400	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.50	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	1.50	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	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**	**Date Collected:**	**04/23/2013 11:21**	**Matrix:**	**W**
Lab Sample ID:	**324498006**	**Date Received:**	**04/25/2013 08:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAPA-13-29663**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/04/2013 14:28**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/04/2013 14:28**				
Data File:	**050413V9\9K616.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	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	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	53.7	50.0	ug/L	107	(78%-124%)
Bromofluorobenzene	51.7	50.0	ug/L	103	(80%-120%)
Toluene-d8	47.6	50.0	ug/L	95.2	(80%-120%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown	4.212	26.9	ug/L	0	J

Quality Control Summary

Volatile

Surrogate Recovery Report

SDG Number: 2013-760

Matrix Type: LIQUID

Sample ID	Client ID	DCED4 %REC	TOL %REC	BFB %REC
1202870433	LCS for batch 1299689	95	91	103
1202870434	LCS for batch 1299689	94	92	101
1202870430	MB for batch 1299689	98	93	102
324498001	CAPA-13-29662	97	90	103
324498003	CAPA-13-29658	103	92	103
324498004	CAPA-13-29656	109	92	106
324498006	CAPA-13-29663	107	95	103
1202870445	LCS for batch 1299689	97	92	102
1202870446	LCS for batch 1299689	93	91	99
1202870444	MB for batch 1299689	96	91	102
1202870431	CAPA-13-29662PS	94	89	103
1202870432	CAPA-13-29662PSD	96	91	106

Surrogate			Acceptance Limits
DCED4	=	1,2-Dichloroethane-d4	(78%-124%)
TOL	=	Toluene-d8	(80%-120%)
BFB	=	Bromofluorobenzene	(80%-120%)

* Recovery outside Acceptance Limits

Column to be used to flag recovery values

D Sample Diluted

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-760 **Sample Type:** Post Spike
Client ID: CAPA-13-29662PS **Matrix:** W
Lab Sample ID: 1202870431
Instrument: VOA9.I **Analysis Date:** 05/05/2013 03:27 **Dilution:** 1
Analyst: GRB2 **Prep Batch ID** 1299689
Purge Vol: 5 mL **Batch ID:** 1299689

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	53.1	106	36-123
74-87-3	PS	Chloromethane	50.0	0.00	U	55.6	111	47-134
75-01-4	PS	Vinyl chloride	50.0	0.00	U	52.4	105	49-129
74-83-9	PS	Bromomethane	50.0	0.00	U	57.2	114	56-127
75-00-3	PS	Chloroethane	50.0	0.00	U	55.6	111	67-122
75-69-4	PS	Trichlorofluoromethane	50.0	0.00	U	60.0	120	60-123
60-29-7	PS	Ethyl ether	50.0	0.00	U	53.8	108	69-121
67-64-1	PS	Acetone	250	0.00	U	186	75	30-143
75-05-8	PS	Acetonitrile	1250	0.00	U	1280	103	60-133
75-35-4	PS	1,1-Dichloroethylene	50.0	0.740	J	60.2	119	67-132
74-88-4	PS	Iodomethane	250	0.00	U	290	116	69-147
75-09-2	PS	Methylene chloride	50.0	0.00	U	52.0	104	56-135
75-15-0	PS	Carbon disulfide	250	0.00	U	306	123	65-153
1634-04-4	PS	tert-Butyl methyl ether	50.0	0.00	U	53.6	107	73-126
156-60-5	PS	trans-1,2-Dichloroethylene	50.0	0.00	U	57.5	115	69-128
108-05-4	PS	Vinyl acetate	250	0.00	U	259	104	50-143
75-34-3	PS	1,1-Dichloroethane	50.0	0.750	J	58.1	115	75-124
78-93-3	PS	2-Butanone	250	0.00	U	211	85	30-140
156-59-2	PS	cis-1,2-Dichloroethylene	50.0	0.00	U	57.5	115	52-147
594-20-7	PS	2,2-Dichloropropane	50.0	0.00	U	61.4	123	67-143
67-66-3	PS	Chloroform	50.0	0.530	J	56.3	112	75-125
74-97-5	PS	Bromochloromethane	50.0	0.00	U	55.0	110	80-120

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-760 **Sample Type:** Post Spike
Client ID: CAPA-13-29662PS **Matrix:** W
Lab Sample ID: 1202870431
Instrument: VOA9.I **Analysis Date:** 05/05/2013 03:27 **Dilution:** 1
Analyst: GRB2 **Prep Batch ID** 1299689
Purge Vol: 5 mL **Batch ID:** 1299689

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	48.2		87.2	78	69-140
563-58-6	PS	1,1-Dichloropropene	50.0	0.00	U	59.3	119	71-130
71-36-3	PS	n-Butyl alcohol	5000	0.00	U	6100	122	53-150
56-23-5	PS	Carbon tetrachloride	50.0	0.00	U	63.6	127	69-142
107-06-2	PS	1,2-Dichloroethane	50.0	0.00	U	52.7	105	72-126
71-43-2	PS	Benzene	50.0	0.00	U	56.8	114	73-119
79-01-6	PS	Trichloroethylene	50.0	0.410	J	59.7	119	54-147
78-87-5	PS	1,2-Dichloropropane	50.0	0.00	U	56.5	113	78-123
75-27-4	PS	Bromodichloromethane	50.0	0.00	U	60.9	122	76-131
74-95-3	PS	Dibromomethane	50.0	0.00	U	54.1	108	79-120
108-10-1	PS	4-Methyl-2-pentanone	250	0.00	U	217	87	68-136
10061-01-5	PS	cis-1,3-Dichloropropylene	50.0	0.00	U	60.6	121	72-134
108-88-3	PS	Toluene	50.0	0.00	U	47.8	96	62-126
10061-02-6	PS	trans-1,3-Dichloropropylene	50.0	0.00	U	49.2	98	72-133
79-00-5	PS	1,1,2-Trichloroethane	50.0	0.00	U	46.7	93	74-120
591-78-6	PS	2-Hexanone	250	0.00	U	200	80	31-132
142-28-9	PS	1,3-Dichloropropane	50.0	0.00	U	45.8	92	73-121
127-18-4	PS	Tetrachloroethylene	50.0	0.00	U	48.8	98	54-139
124-48-1	PS	Dibromochloromethane	50.0	0.00	U	55.6	111	74-128
106-93-4	PS	1,2-Dibromoethane	50.0	0.00	U	48.9	98	80-120
108-90-7	PS	Chlorobenzene	50.0	0.00	U	49.0	98	73-119
100-41-4	PS	Ethylbenzene	50.0	0.00	U	49.5	99	66-125

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-760 **Sample Type:** Post Spike
Client ID: CAPA-13-29662PS **Matrix:** W
Lab Sample ID: 1202870431
Instrument: VOA9.I **Analysis Date:** 05/05/2013 03:27 **Dilution:** 1
Analyst: GRB2 **Prep Batch ID** 1299689
Purge Vol: 5 mL **Batch ID:** 1299689

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	98.8	99	56-134
95-47-6	PS	o-Xylene	50.0	0.00	U	46.9	94	68-126
100-42-5	PS	Styrene	50.0	0.00	U	45.8	92	57-138
75-25-2	PS	Bromoform	50.0	0.00	U	58.0	116	66-129
79-34-5	PS	1,1,2,2-Tetrachloroethane	50.0	0.00	U	47.1	94	44-146
96-18-4	PS	1,2,3-Trichloropropane	50.0	0.00	U	46.5	93	68-129
108-86-1	PS	Bromobenzene	50.0	0.00	U	50.3	101	70-122
103-65-1	PS	n-Propylbenzene	50.0	0.00	U	49.7	99	61-131
95-49-8	PS	2-Chlorotoluene	50.0	0.00	U	49.9	100	66-126
98-82-8	PS	Isopropylbenzene	50.0	0.00	U	50.7	101	65-130
108-67-8	PS	1,3,5-Trimethylbenzene	50.0	0.00	U	47.5	95	58-134
106-43-4	PS	4-Chlorotoluene	50.0	0.00	U	48.9	98	63-125
98-06-6	PS	tert-Butylbenzene	50.0	0.00	U	50.7	101	66-129
95-63-6	PS	1,2,4-Trimethylbenzene	50.0	0.00	U	47.4	95	60-131
135-98-8	PS	sec-Butylbenzene	50.0	0.00	U	49.4	99	62-130
99-87-6	PS	4-Isopropyltoluene	50.0	0.00	U	48.4	97	62-132
541-73-1	PS	1,3-Dichlorobenzene	50.0	0.00	U	47.3	95	66-121
106-46-7	PS	1,4-Dichlorobenzene	50.0	0.00	U	46.2	92	65-119
104-51-8	PS	n-Butylbenzene	50.0	0.00	U	46.4	93	55-134
96-12-8	PS	1,2-Dibromo-3-chloropropane	50.0	0.00	U	45.3	91	58-137
87-68-3	PS	Hexachlorobutadiene	50.0	0.00	U	43.6	87	49-139
91-20-3	PS	Naphthalene	50.0	0.00	U	38.8	78	46-145

Quality Control Summary
Spike Recovery Report

SDG Number: **2013-760** **Sample Type:** **Post Spike**

Client ID: **CAPA-13-29662PS** **Matrix:** **W**

Lab Sample ID: **1202870431**

Instrument: **VOA9.I** **Analysis Date:** **05/05/2013 03:27** **Dilution:** **1**

Analyst: **GRB2** **Prep Batch ID** **1299689**

Purge Vol: **5 mL** **Batch ID:** **1299689**

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	38.6	77	54-134
630-20-6	PS	1,1,1,2-Tetrachloroethane	50.0	0.00	U	50.7	101	79-128
120-82-1	PS	1,2,4-Trichlorobenzene	50.0	0.00	U	39.3	79	55-128
95-50-1	PS	1,2-Dichlorobenzene	50.0	0.00	U	46.0	92	68-121

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-760 **Sample Type:** Post Spike Duplicate
Client ID: CAPA-13-29662PSD **Matrix:** W
Lab Sample ID: 1202870432
Instrument: VOA9.I **Analysis Date:** 05/05/2013 03:53 **Dilution:** 1
Analyst: GRB2 **Prep Batch ID** 1299689
Purge Vol: 5 mL **Batch ID:** 1299689

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	49.0	98	36-123	8	0-20
74-87-3	PSD	Chloromethane	50.0	0.00	U	52.2	104	47-134	6	0-20
75-01-4	PSD	Vinyl chloride	50.0	0.00	U	48.0	96	49-129	9	0-20
74-83-9	PSD	Bromomethane	50.0	0.00	U	53.3	107	56-127	7	0-20
75-00-3	PSD	Chloroethane	50.0	0.00	U	51.8	104	67-122	7	0-20
75-69-4	PSD	Trichlorofluoromethane	50.0	0.00	U	55.7	111	60-123	8	0-20
60-29-7	PSD	Ethyl ether	50.0	0.00	U	54.0	108	69-121	0	0-20
67-64-1	PSD	Acetone	250	0.00	U	197	79	30-143	6	0-20
75-05-8	PSD	Acetonitrile	1250	0.00	U	1350	108	60-133	5	0-20
75-35-4	PSD	1,1-Dichloroethylene	50.0	0.740	J	57.1	113	67-132	5	0-20
74-88-4	PSD	Iodomethane	250	0.00	U	280	112	69-147	4	0-20
75-09-2	PSD	Methylene chloride	50.0	0.00	U	50.4	101	56-135	3	0-20
75-15-0	PSD	Carbon disulfide	250	0.00	U	292	117	65-153	5	0-20
1634-04-4	PSD	tert-Butyl methyl ether	50.0	0.00	U	54.6	109	73-126	2	0-20
156-60-5	PSD	trans-1,2-Dichloroethylene	50.0	0.00	U	54.4	109	69-128	6	0-20
108-05-4	PSD	Vinyl acetate	250	0.00	U	263	105	50-143	1	0-20
75-34-3	PSD	1,1-Dichloroethane	50.0	0.750	J	55.2	109	75-124	5	0-20
78-93-3	PSD	2-Butanone	250	0.00	U	226	90	30-140	7	0-20
156-59-2	PSD	cis-1,2-Dichloroethylene	50.0	0.00	U	54.6	109	52-147	5	0-20
594-20-7	PSD	2,2-Dichloropropane	50.0	0.00	U	57.3	115	67-143	7	0-20
67-66-3	PSD	Chloroform	50.0	0.530	J	54.4	108	75-125	4	0-20
74-97-5	PSD	Bromochloromethane	50.0	0.00	U	53.9	108	80-120	2	0-20

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-760 **Sample Type:** Post Spike Duplicate

Client ID: CAPA-13-29662PSD **Matrix:** W

Lab Sample ID: 1202870432

Instrument: VOA9.I **Analysis Date:** 05/05/2013 03:53 **Dilution:** 1

Analyst: GRB2 **Prep Batch ID** 1299689

Purge Vol: 5 mL **Batch ID:** 1299689

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	48.2		80.5	65 *	69-140	8	0-20
563-58-6	PSD	1,1-Dichloropropene	50.0	0.00	U	55.6	111	71-130	6	0-20
71-36-3	PSD	n-Butyl alcohol	5000	0.00	U	6670	133	53-150	9	0-20
56-23-5	PSD	Carbon tetrachloride	50.0	0.00	U	58.9	118	69-142	8	0-20
107-06-2	PSD	1,2-Dichloroethane	50.0	0.00	U	52.9	106	72-126	0	0-20
71-43-2	PSD	Benzene	50.0	0.00	U	54.6	109	73-119	4	0-20
79-01-6	PSD	Trichloroethylene	50.0	0.410	J	57.6	114	54-147	4	0-20
78-87-5	PSD	1,2-Dichloropropane	50.0	0.00	U	54.1	108	78-123	4	0-20
75-27-4	PSD	Bromodichloromethane	50.0	0.00	U	59.4	119	76-131	3	0-20
74-95-3	PSD	Dibromomethane	50.0	0.00	U	55.0	110	79-120	2	0-20
108-10-1	PSD	4-Methyl-2-pentanone	250	0.00	U	238	95	68-136	9	0-20
10061-01-5	PSD	cis-1,3-Dichloropropylene	50.0	0.00	U	58.6	117	72-134	3	0-20
108-88-3	PSD	Toluene	50.0	0.00	U	47.0	94	62-126	2	0-20
10061-02-6	PSD	trans-1,3-Dichloropropylene	50.0	0.00	U	49.9	100	72-133	1	0-20
79-00-5	PSD	1,1,2-Trichloroethane	50.0	0.00	U	48.3	97	74-120	3	0-20
591-78-6	PSD	2-Hexanone	250	0.00	U	219	87	31-132	9	0-20
142-28-9	PSD	1,3-Dichloropropane	50.0	0.00	U	46.9	94	73-121	3	0-20
127-18-4	PSD	Tetrachloroethylene	50.0	0.00	U	47.9	96	54-139	2	0-20
124-48-1	PSD	Dibromochloromethane	50.0	0.00	U	56.3	113	74-128	1	0-20
106-93-4	PSD	1,2-Dibromoethane	50.0	0.00	U	50.6	101	80-120	3	0-20
108-90-7	PSD	Chlorobenzene	50.0	0.00	U	48.4	97	73-119	1	0-20
100-41-4	PSD	Ethylbenzene	50.0	0.00	U	48.3	97	66-125	2	0-20

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-760 **Sample Type:** Post Spike Duplicate
Client ID: CAPA-13-29662PSD **Matrix:** W
Lab Sample ID: 1202870432
Instrument: VOA9.I **Analysis Date:** 05/05/2013 03:53 **Dilution:** 1
Analyst: GRB2 **Prep Batch ID** 1299689
Purge Vol: 5 mL **Batch ID:** 1299689

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
179601-23-1	PSD	m,p-Xylenes	100	0.00	U	99.0	99	56-134	0	0-20
95-47-6	PSD	o-Xylene	50.0	0.00	U	47.5	95	68-126	1	0-20
100-42-5	PSD	Styrene	50.0	0.00	U	49.7	99	57-138	8	0-20
75-25-2	PSD	Bromoform	50.0	0.00	U	62.0	124	66-129	7	0-20
79-34-5	PSD	1,1,2,2-Tetrachloroethane	50.0	0.00	U	51.2	102	44-146	8	0-20
96-18-4	PSD	1,2,3-Trichloropropane	50.0	0.00	U	49.3	99	68-129	6	0-20
108-86-1	PSD	Bromobenzene	50.0	0.00	U	51.5	103	70-122	2	0-20
103-65-1	PSD	n-Propylbenzene	50.0	0.00	U	50.0	100	61-131	1	0-20
95-49-8	PSD	2-Chlorotoluene	50.0	0.00	U	50.7	101	66-126	1	0-20
98-82-8	PSD	Isopropylbenzene	50.0	0.00	U	51.6	103	65-130	2	0-20
108-67-8	PSD	1,3,5-Trimethylbenzene	50.0	0.00	U	50.5	101	58-134	6	0-20
106-43-4	PSD	4-Chlorotoluene	50.0	0.00	U	49.5	99	63-125	1	0-20
98-06-6	PSD	tert-Butylbenzene	50.0	0.00	U	50.0	100	66-129	2	0-20
95-63-6	PSD	1,2,4-Trimethylbenzene	50.0	0.00	U	49.7	99	60-131	5	0-20
135-98-8	PSD	sec-Butylbenzene	50.0	0.00	U	49.9	100	62-130	1	0-20
99-87-6	PSD	4-Isopropyltoluene	50.0	0.00	U	49.3	99	62-132	2	0-20
541-73-1	PSD	1,3-Dichlorobenzene	50.0	0.00	U	47.5	95	66-121	0	0-20
106-46-7	PSD	1,4-Dichlorobenzene	50.0	0.00	U	47.2	94	65-119	2	0-20
104-51-8	PSD	n-Butylbenzene	50.0	0.00	U	46.9	94	55-134	1	0-20
96-12-8	PSD	1,2-Dibromo-3-chloropropane	50.0	0.00	U	51.5	103	58-137	13	0-20
87-68-3	PSD	Hexachlorobutadiene	50.0	0.00	U	43.7	87	49-139	0	0-20
91-20-3	PSD	Naphthalene	50.0	0.00	U	43.3	87	46-145	11	0-20

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-760 **Sample Type:** Post Spike Duplicate

Client ID: CAPA-13-29662PSD **Matrix:** W

Lab Sample ID: 1202870432

Instrument: VOA9.I **Analysis Date:** 05/05/2013 03:53 **Dilution:** 1

Analyst: GRB2 **Prep Batch ID** 1299689

Purge Vol: 5 mL **Batch ID:** 1299689

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	41.1	82	54-134	6	0-20
630-20-6	PSD	1,1,1,2-Tetrachloroethane	50.0	0.00	U	50.5	101	79-128	0	0-20
120-82-1	PSD	1,2,4-Trichlorobenzene	50.0	0.00	U	41.6	83	55-128	6	0-20
95-50-1	PSD	1,2-Dichlorobenzene	50.0	0.00	U	47.0	94	68-121	2	0-20

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-760
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1299689
Matrix: WATER
Lab Sample ID: 1202870433
Instrument: VOA9.I
Analysis Date: 05/04/2013 11:17
Dilution: 1
Analyst: GRB2
Prep Batch ID 1299689
Purge Vol: 5 mL
Batch ID: 1299689

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	50.9	102	39-124
74-87-3	LCS	Chloromethane	50.0	0.0	53.2	106	57-126
75-01-4	LCS	Vinyl chloride	50.0	0.0	49.3	99	62-121
74-83-9	LCS	Bromomethane	50.0	0.0	54.6	109	68-120
75-00-3	LCS	Chloroethane	50.0	0.0	52.3	105	73-120
75-69-4	LCS	Trichlorofluoromethane	50.0	0.0	57.1	114	65-123
60-29-7	LCS	Ethyl ether	50.0	0.0	53.7	107	74-120
67-64-1	LCS	Acetone	250	0.0	202	81	36-163
75-05-8	LCS	Acetonitrile	1250	0.0	1330	107	64-127
75-35-4	LCS	1,1-Dichloroethylene	50.0	0.0	57.1	114	76-127
74-88-4	LCS	Iodomethane	250	0.0	282	113	80-134
75-09-2	LCS	Methylene chloride	50.0	0.0	50.6	101	72-121
75-15-0	LCS	Carbon disulfide	250	0.0	291	117	80-143
1634-04-4	LCS	tert-Butyl methyl ether	50.0	0.0	55.5	111	76-123
156-60-5	LCS	trans-1,2-Dichloroethylene	50.0	0.0	55.8	112	77-123
108-05-4	LCS	Vinyl acetate	250	0.0	285	114	75-144
75-34-3	LCS	1,1-Dichloroethane	50.0	0.0	55.5	111	79-120
78-93-3	LCS	2-Butanone	250	0.0	232	93	46-158
156-59-2	LCS	cis-1,2-Dichloroethylene	50.0	0.0	55.7	111	80-122
594-20-7	LCS	2,2-Dichloropropane	50.0	0.0	58.9	118	76-145
67-66-3	LCS	Chloroform	50.0	0.0	55.7	111	80-120
74-97-5	LCS	Bromochloromethane	50.0	0.0	55.3	111	83-120

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-760
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1299689
Matrix: WATER
Lab Sample ID: 1202870433
Instrument: VOA9.I
Analysis Date: 05/04/2013 11:17
Dilution: 1
Analyst: GRB2
Prep Batch ID 1299689
Purge Vol: 5 mL
Batch ID: 1299689

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	58.9	118	80-133
563-58-6	LCS	1,1-Dichloropropene	50.0	0.0	57.4	115	80-127
71-36-3	LCS	n-Butyl alcohol	5000	0.0	6610	132	66-138
56-23-5	LCS	Carbon tetrachloride	50.0	0.0	61.2	122	77-139
107-06-2	LCS	1,2-Dichloroethane	50.0	0.0	54.9	110	75-121
71-43-2	LCS	Benzene	50.0	0.0	55.2	110	79-120
79-01-6	LCS	Trichloroethylene	50.0	0.0	58.1	116	80-121
78-87-5	LCS	1,2-Dichloropropane	50.0	0.0	54.9	110	80-120
75-27-4	LCS	Bromodichloromethane	50.0	0.0	60.5	121	80-127
74-95-3	LCS	Dibromomethane	50.0	0.0	55.5	111	80-120
108-10-1	LCS	4-Methyl-2-pentanone	250	0.0	239	96	76-131
10061-01-5	LCS	cis-1,3-Dichloropropylene	50.0	0.0	58.7	117	80-127
108-88-3	LCS	Toluene	50.0	0.0	47.5	95	77-120
10061-02-6	LCS	trans-1,3-Dichloropropylene	50.0	0.0	51.1	102	80-128
79-00-5	LCS	1,1,2-Trichloroethane	50.0	0.0	48.6	97	79-120
591-78-6	LCS	2-Hexanone	250	0.0	224	90	53-158
142-28-9	LCS	1,3-Dichloropropane	50.0	0.0	48.2	96	77-120
127-18-4	LCS	Tetrachloroethylene	50.0	0.0	49.0	98	77-125
124-48-1	LCS	Dibromochloromethane	50.0	0.0	57.3	115	77-126
106-93-4	LCS	1,2-Dibromoethane	50.0	0.0	51.4	103	80-120
108-90-7	LCS	Chlorobenzene	50.0	0.0	49.2	98	80-120
100-41-4	LCS	Ethylbenzene	50.0	0.0	49.7	99	78-120

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-760
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1299689
Matrix: WATER
Lab Sample ID: 1202870433
Instrument: VOA9.I
Analysis Date: 05/04/2013 11:17
Dilution: 1
Analyst: GRB2
Prep Batch ID 1299689
Purge Vol: 5 mL
Batch ID: 1299689

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	79-120
95-47-6	LCS	o-Xylene	50.0	0.0	48.7	97	80-120
100-42-5	LCS	Styrene	50.0	0.0	51.4	103	80-121
75-25-2	LCS	Bromoform	50.0	0.0	61.9	124	72-125
79-34-5	LCS	1,1,2,2-Tetrachloroethane	50.0	0.0	49.6	99	73-120
96-18-4	LCS	1,2,3-Trichloropropane	50.0	0.0	49.7	99	74-121
108-86-1	LCS	Bromobenzene	50.0	0.0	51.2	102	79-120
103-65-1	LCS	n-Propylbenzene	50.0	0.0	50.1	100	75-125
95-49-8	LCS	2-Chlorotoluene	50.0	0.0	50.3	101	77-121
98-82-8	LCS	Isopropylbenzene	50.0	0.0	51.3	103	76-125
108-67-8	LCS	1,3,5-Trimethylbenzene	50.0	0.0	50.1	100	77-123
106-43-4	LCS	4-Chlorotoluene	50.0	0.0	49.8	100	75-120
98-06-6	LCS	tert-Butylbenzene	50.0	0.0	50.0	100	79-123
95-63-6	LCS	1,2,4-Trimethylbenzene	50.0	0.0	50.5	101	77-121
135-98-8	LCS	sec-Butylbenzene	50.0	0.0	50.5	101	76-124
99-87-6	LCS	4-Isopropyltoluene	50.0	0.0	49.0	98	79-125
541-73-1	LCS	1,3-Dichlorobenzene	50.0	0.0	47.3	95	78-120
106-46-7	LCS	1,4-Dichlorobenzene	50.0	0.0	47.1	94	77-120
104-51-8	LCS	n-Butylbenzene	50.0	0.0	48.2	96	75-127
96-12-8	LCS	1,2-Dibromo-3-chloropropane	50.0	0.0	51.2	102	69-128
87-68-3	LCS	Hexachlorobutadiene	50.0	0.0	44.0	88	75-128
91-20-3	LCS	Naphthalene	50.0	0.0	43.1	86	71-125

Quality Control Summary
Spike Recovery Report

SDG Number: **2013-760**
Sample Type: **Laboratory Control Sample**
Client ID: **LCS for batch 1299689**
Matrix: **WATER**
Lab Sample ID: **1202870433**
Instrument: **VOA9.I**
Analysis Date: **05/04/2013 11:17**
Dilution: **1**
Analyst: **GRB2**
Prep Batch ID **1299689**
Purge Vol: **5 mL**
Batch ID: **1299689**

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	41.4	83	73-125
630-20-6	LCS	1,1,1,2-Tetrachloroethane	50.0	0.0	51.8	104	80-124
120-82-1	LCS	1,2,4-Trichlorobenzene	50.0	0.0	40.9	82	75-123
95-50-1	LCS	1,2-Dichlorobenzene	50.0	0.0	47.3	95	79-120

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-760
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1299689
Matrix: WATER
Lab Sample ID: 1202870434
Instrument: VOA9.I
Analysis Date: 05/04/2013 12:12
Dilution: 1
Analyst: GRB2
Prep Batch ID 1299689
Purge Vol: 5 mL
Batch ID: 1299689

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	195	78	28-152
76-13-1	LCS	Trichlorotrifluoroethane	250	0.0	244	98	65-157
107-05-1	LCS	Allyl chloride	250	0.0	236	95	60-135
107-13-1	LCS	Acrylonitrile	250	0.0	251	100	64-131
126-99-8	LCS	2-Chloro-1,3-butadiene	50.0	0.0	43.3	87	45-159
107-12-0	LCS	Propionitrile	250	0.0	254	101	67-135
126-98-7	LCS	Methacrylonitrile	250	0.0	248	99	64-132
78-83-1	LCS	Isobutyl alcohol	2500	0.0	2940	117	60-136
80-62-6	LCS	Methyl methacrylate	250	0.0	241	96	66-129
97-63-2	LCS	Ethyl methacrylate	250	0.0	219	88	66-132

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-760
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1299689
Matrix: WATER
Lab Sample ID: 1202870445
Instrument: VOA9.I
Analysis Date: 05/04/2013 22:56
Dilution: 1
Analyst: GRB2
Prep Batch ID 1299689
Purge Vol: 5 mL
Batch ID: 1299689

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	51.3	103	39-124
74-87-3	LCS	Chloromethane	50.0	0.0	53.3	107	57-126
75-01-4	LCS	Vinyl chloride	50.0	0.0	51.0	102	62-121
74-83-9	LCS	Bromomethane	50.0	0.0	54.6	109	68-120
75-00-3	LCS	Chloroethane	50.0	0.0	54.2	108	73-120
75-69-4	LCS	Trichlorofluoromethane	50.0	0.0	57.1	114	65-123
60-29-7	LCS	Ethyl ether	50.0	0.0	56.1	112	74-120
67-64-1	LCS	Acetone	250	0.0	209	83	36-163
75-05-8	LCS	Acetonitrile	1250	0.0	1410	113	64-127
75-35-4	LCS	1,1-Dichloroethylene	50.0	0.0	58.3	117	76-127
74-88-4	LCS	Iodomethane	250	0.0	290	116	80-134
75-09-2	LCS	Methylene chloride	50.0	0.0	51.9	104	72-121
75-15-0	LCS	Carbon disulfide	250	0.0	296	118	80-143
1634-04-4	LCS	tert-Butyl methyl ether	50.0	0.0	57.3	115	76-123
156-60-5	LCS	trans-1,2-Dichloroethylene	50.0	0.0	56.6	113	77-123
108-05-4	LCS	Vinyl acetate	250	0.0	281	112	75-144
75-34-3	LCS	1,1-Dichloroethane	50.0	0.0	56.6	113	79-120
78-93-3	LCS	2-Butanone	250	0.0	238	95	46-158
156-59-2	LCS	cis-1,2-Dichloroethylene	50.0	0.0	56.3	113	80-122
594-20-7	LCS	2,2-Dichloropropane	50.0	0.0	56.5	113	76-145
67-66-3	LCS	Chloroform	50.0	0.0	56.3	113	80-120
74-97-5	LCS	Bromochloromethane	50.0	0.0	55.6	111	83-120

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-760
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1299689
Matrix: WATER
Lab Sample ID: 1202870445
Instrument: VOA9.I
Analysis Date: 05/04/2013 22:56
Dilution: 1
Analyst: GRB2
Prep Batch ID 1299689
Purge Vol: 5 mL
Batch ID: 1299689

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	59.3	119	80-133
563-58-6	LCS	1,1-Dichloropropene	50.0	0.0	57.9	116	80-127
71-36-3	LCS	n-Butyl alcohol	5000	0.0	6770	135	66-138
56-23-5	LCS	Carbon tetrachloride	50.0	0.0	61.0	122	77-139
107-06-2	LCS	1,2-Dichloroethane	50.0	0.0	54.9	110	75-121
71-43-2	LCS	Benzene	50.0	0.0	56.2	112	79-120
79-01-6	LCS	Trichloroethylene	50.0	0.0	58.8	118	80-121
78-87-5	LCS	1,2-Dichloropropane	50.0	0.0	55.7	111	80-120
75-27-4	LCS	Bromodichloromethane	50.0	0.0	61.2	122	80-127
74-95-3	LCS	Dibromomethane	50.0	0.0	56.7	113	80-120
108-10-1	LCS	4-Methyl-2-pentanone	250	0.0	249	99	76-131
10061-01-5	LCS	cis-1,3-Dichloropropylene	50.0	0.0	59.5	119	80-127
108-88-3	LCS	Toluene	50.0	0.0	48.0	96	77-120
10061-02-6	LCS	trans-1,3-Dichloropropylene	50.0	0.0	50.2	100	80-128
79-00-5	LCS	1,1,2-Trichloroethane	50.0	0.0	49.7	99	79-120
591-78-6	LCS	2-Hexanone	250	0.0	231	93	53-158
142-28-9	LCS	1,3-Dichloropropane	50.0	0.0	48.8	98	77-120
127-18-4	LCS	Tetrachloroethylene	50.0	0.0	48.6	97	77-125
124-48-1	LCS	Dibromochloromethane	50.0	0.0	58.0	116	77-126
106-93-4	LCS	1,2-Dibromoethane	50.0	0.0	52.2	104	80-120
108-90-7	LCS	Chlorobenzene	50.0	0.0	48.5	97	80-120
100-41-4	LCS	Ethylbenzene	50.0	0.0	49.1	98	78-120

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-760
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1299689
Matrix: WATER
Lab Sample ID: 1202870445
Instrument: VOA9.I
Analysis Date: 05/04/2013 22:56
Dilution: 1
Analyst: GRB2
Prep Batch ID 1299689
Purge Vol: 5 mL
Batch ID: 1299689

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	99.4	99	79-120
95-47-6	LCS	o-Xylene	50.0	0.0	49.0	98	80-120
100-42-5	LCS	Styrene	50.0	0.0	50.6	101	80-121
75-25-2	LCS	Bromoform	50.0	0.0	62.2	124	72-125
79-34-5	LCS	1,1,2,2-Tetrachloroethane	50.0	0.0	51.1	102	73-120
96-18-4	LCS	1,2,3-Trichloropropane	50.0	0.0	49.6	99	74-121
108-86-1	LCS	Bromobenzene	50.0	0.0	50.4	101	79-120
103-65-1	LCS	n-Propylbenzene	50.0	0.0	48.8	98	75-125
95-49-8	LCS	2-Chlorotoluene	50.0	0.0	49.2	98	77-121
98-82-8	LCS	Isopropylbenzene	50.0	0.0	51.4	103	76-125
108-67-8	LCS	1,3,5-Trimethylbenzene	50.0	0.0	49.4	99	77-123
106-43-4	LCS	4-Chlorotoluene	50.0	0.0	47.8	96	75-120
98-06-6	LCS	tert-Butylbenzene	50.0	0.0	51.2	102	79-123
95-63-6	LCS	1,2,4-Trimethylbenzene	50.0	0.0	48.8	98	77-121
135-98-8	LCS	sec-Butylbenzene	50.0	0.0	49.8	100	76-124
99-87-6	LCS	4-Isopropyltoluene	50.0	0.0	48.3	97	79-125
541-73-1	LCS	1,3-Dichlorobenzene	50.0	0.0	45.6	91	78-120
106-46-7	LCS	1,4-Dichlorobenzene	50.0	0.0	45.0	90	77-120
104-51-8	LCS	n-Butylbenzene	50.0	0.0	44.6	89	75-127
96-12-8	LCS	1,2-Dibromo-3-chloropropane	50.0	0.0	53.8	108	69-128
87-68-3	LCS	Hexachlorobutadiene	50.0	0.0	42.4	85	75-128
91-20-3	LCS	Naphthalene	50.0	0.0	44.3	89	71-125

Quality Control Summary
Spike Recovery Report

SDG Number: **2013-760**
Sample Type: **Laboratory Control Sample**
Client ID: **LCS for batch 1299689**
Matrix: **WATER**
Lab Sample ID: **1202870445**
Instrument: **VOA9.I**
Analysis Date: **05/04/2013 22:56**
Dilution: **1**
Analyst: **GRB2**
Prep Batch ID **1299689**
Purge Vol: **5 mL**
Batch ID: **1299689**

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	40.4	81	73-125
630-20-6	LCS	1,1,1,2-Tetrachloroethane	50.0	0.0	52.3	105	80-124
120-82-1	LCS	1,2,4-Trichlorobenzene	50.0	0.0	38.0	76	75-123
95-50-1	LCS	1,2-Dichlorobenzene	50.0	0.0	45.6	91	79-120

Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-760
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1299689
Matrix: WATER
Lab Sample ID: 1202870446
Instrument: VOA9.I
Analysis Date: 05/04/2013 23:50
Dilution: 1
Analyst: GRB2
Prep Batch ID: 1299689
Purge Vol: 5 mL
Batch ID: 1299689

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	198	79	28-152
76-13-1	LCS	Trichlorotrifluoroethane	250	0.0	244	98	65-157
107-05-1	LCS	Allyl chloride	250	0.0	233	93	60-135
107-13-1	LCS	Acrylonitrile	250	0.0	256	102	64-131
126-99-8	LCS	2-Chloro-1,3-butadiene	50.0	0.0	42.5	85	45-159
107-12-0	LCS	Propionitrile	250	0.0	263	105	67-135
126-98-7	LCS	Methacrylonitrile	250	0.0	251	100	64-132
78-83-1	LCS	Isobutyl alcohol	2500	0.0	2990	120	60-136
80-62-6	LCS	Methyl methacrylate	250	0.0	245	98	66-129
97-63-2	LCS	Ethyl methacrylate	250	0.0	218	87	66-132

Method Blank Summary

SDG Number:	**2013-760**	**Client:**	**ARSL001**	**Matrix:**	**WATER**
Client ID:	**MB for batch 1299689**	**Instrument ID:**	**VOA9.I**	**Data File:**	**050413V9\9K612BAR.D**
Lab Sample ID:	**1202870430**	**Prep Date:**	**05/04/2013 12:39**	**Analyzed:**	**05/04/13 12:39**
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 1299689	1202870433	050413V9\9K609LAR.D	05/04/13	1117
02	LCS for batch 1299689	1202870434	050413V9\9K611SHAR.D	05/04/13	1212
03	CAPA-13-29662	324498001	050413V9\9K613.D	05/04/13	1306
04	CAPA-13-29658	324498003	050413V9\9K614.D	05/04/13	1334
05	CAPA-13-29656	324498004	050413V9\9K615.D	05/04/13	1401
06	CAPA-13-29663	324498006	050413V9\9K616.D	05/04/13	1428

Method Blank Summary

SDG Number:	**2013-760**	**Client:**	**ARSL001**	**Matrix:**	**WATER**
Client ID:	**MB for batch 1299689**	**Instrument ID:**	**VOA9.I**	**Data File:**	**050413V9\9K638BAR.D**
Lab Sample ID:	**1202870444**	**Prep Date:**	**05/05/2013 00:17**	**Analyzed:**	**05/05/13 00:17**
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 1299689**	**1202870445**	**050413V9\9K635LAR.D**	**05/04/13**	**2256**
09	**LCS for batch 1299689**	**1202870446**	**050413V9\9K637SHAR.D**	**05/04/13**	**2350**
10	**CAPA-13-29662PS**	**1202870431**	**050413V9\9K639.D**	**05/05/13**	**0327**
11	**CAPA-13-29662PSD**	**1202870432**	**050413V9\9K640.D**	**05/05/13**	**0353**

Quality Control Data

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**			**Matrix:**	**WATER**
Lab Sample ID:	**1202870430**				
Client Sample:	**QC for batch 1299689**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**MB for batch 1299689**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/04/2013 12:39**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/04/2013 12:39**				
Data File:	**050413V9\9K612BAR.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	0.300	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	3.00	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	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	1.50	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	1.50	5.00
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
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	2.00	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	0.300	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	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	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	0.300	1.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	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	1.50	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	2.20	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**			**Matrix:**	**WATER**
Lab Sample ID:	**1202870430**				
Client Sample:	**QC for batch 1299689**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**MB for batch 1299689**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/04/2013 12:39**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/04/2013 12:39**				
Data File:	**050413V9\9K612BAR.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	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	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	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
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	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	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	0.400	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.50	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	1.50	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	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**			**Matrix:**	**WATER**
Lab Sample ID:	**1202870430**				
Client Sample:	**QC for batch 1299689**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**MB for batch 1299689**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/04/2013 12:39**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/04/2013 12:39**				
Data File:	**050413V9\9K612BAR.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	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	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	48.9	50.0	ug/L	97.8	(78%-124%)
Bromofluorobenzene	51.2	50.0	ug/L	102	(80%-120%)
Toluene-d8	46.5	50.0	ug/L	92.9	(80%-120%)

Tentatively Identified Compound Summary

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

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**	**Date Collected:**	**04/23/2013 13:32**	**Matrix:**	**W**
Lab Sample ID:	**1202870431**	**Date Received:**	**04/25/2013 08:50**		
Client Sample:	**QC for batch 1299689**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAPA-13-29662PS**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/05/2013 03:27**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/05/2013 03:27**				
Data File:	**050413V9\9K639.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane		53.1	ug/L	0.300	1.00
74-87-3	Chloromethane		55.6	ug/L	0.300	1.00
75-01-4	Vinyl chloride		52.4	ug/L	0.300	1.00
74-83-9	Bromomethane		57.2	ug/L	0.300	1.00
75-00-3	Chloroethane		55.6	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane		60.0	ug/L	0.300	1.00
60-29-7	Ethyl ether		53.8	ug/L	0.300	1.00
67-64-1	Acetone		186	ug/L	3.00	10.0
75-05-8	Acetonitrile		1280	ug/L	8.00	25.0
75-35-4	1,1-Dichloroethylene		60.2	ug/L	0.300	1.00
74-88-4	Iodomethane		290	ug/L	1.50	5.00
75-09-2	Methylene chloride		52.0	ug/L	3.00	10.0
75-15-0	Carbon disulfide		306	ug/L	1.50	5.00
1634-04-4	tert-Butyl methyl ether		53.6	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene		57.5	ug/L	0.300	1.00
108-05-4	Vinyl acetate		259	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane		58.1	ug/L	0.300	1.00
78-93-3	2-Butanone		211	ug/L	2.00	5.00
156-59-2	cis-1,2-Dichloroethylene		57.5	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane		61.4	ug/L	0.300	1.00
67-66-3	Chloroform		56.3	ug/L	0.300	1.00
74-97-5	Bromochloromethane		55.0	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane		87.2	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene		59.3	ug/L	0.300	1.00
71-36-3	n-Butyl alcohol		6100	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride		63.6	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane		52.7	ug/L	0.300	1.00
71-43-2	Benzene		56.8	ug/L	0.300	1.00
79-01-6	Trichloroethylene		59.7	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane		56.5	ug/L	0.300	1.00
75-27-4	Bromodichloromethane		60.9	ug/L	0.300	1.00
74-95-3	Dibromomethane		54.1	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone		217	ug/L	1.50	5.00
10061-01-5	cis-1,3-Dichloropropylene		60.6	ug/L	0.300	1.00
108-88-3	Toluene		47.8	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene		49.2	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane		46.7	ug/L	0.300	1.00
591-78-6	2-Hexanone		200	ug/L	2.20	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**	**Date Collected:**	**04/23/2013 13:32**	**Matrix:**	**W**
Lab Sample ID:	**1202870431**	**Date Received:**	**04/25/2013 08:50**		
Client Sample:	**QC for batch 1299689**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAPA-13-29662PS**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/05/2013 03:27**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/05/2013 03:27**				
Data File:	**050413V9\9K639.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane		45.8	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene		48.8	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		55.6	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane		48.9	ug/L	0.300	1.00
108-90-7	Chlorobenzene		49.0	ug/L	0.300	1.00
100-41-4	Ethylbenzene		49.5	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes		98.8	ug/L	0.300	2.00
95-47-6	o-Xylene		46.9	ug/L	0.300	1.00
100-42-5	Styrene		45.8	ug/L	0.300	1.00
75-25-2	Bromoform		58.0	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane		47.1	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane		46.5	ug/L	0.300	1.00
108-86-1	Bromobenzene		50.3	ug/L	0.300	1.00
103-65-1	n-Propylbenzene		49.7	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene		49.9	ug/L	0.300	1.00
98-82-8	Isopropylbenzene		50.7	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene		47.5	ug/L	0.300	1.00
106-43-4	4-Chlorotoluene		48.9	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene		50.7	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene		47.4	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene		49.4	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene		48.4	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene		47.3	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene		46.2	ug/L	0.300	1.00
104-51-8	n-Butylbenzene		46.4	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane		45.3	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene		43.6	ug/L	0.300	1.00
91-20-3	Naphthalene		38.8	ug/L	0.400	1.00
87-61-6	1,2,3-Trichlorobenzene		38.6	ug/L	0.300	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.50	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	1.50	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	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**	**Date Collected:**	**04/23/2013 13:32**	**Matrix:**	**W**
Lab Sample ID:	**1202870431**	**Date Received:**	**04/25/2013 08:50**		
Client Sample:	**QC for batch 1299689**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAPA-13-29662PS**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/05/2013 03:27**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/05/2013 03:27**				
Data File:	**050413V9\9K639.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
630-20-6	1,1,1,2-Tetrachloroethane		50.7	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene		39.3	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene		46.0	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	47.1	50.0	ug/L	94.2	(78%-124%)
Bromofluorobenzene	51.6	50.0	ug/L	103	(80%-120%)
Toluene-d8	44.7	50.0	ug/L	89.4	(80%-120%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**	**Date Collected:**	**04/23/2013 13:32**	**Matrix:**	**W**
Lab Sample ID:	**1202870432**	**Date Received:**	**04/25/2013 08:50**		
Client Sample:	**QC for batch 1299689**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAPA-13-29662PSD**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/05/2013 03:53**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/05/2013 03:53**				
Data File:	**050413V9\9K640.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane		49.0	ug/L	0.300	1.00
74-87-3	Chloromethane		52.2	ug/L	0.300	1.00
75-01-4	Vinyl chloride		48.0	ug/L	0.300	1.00
74-83-9	Bromomethane		53.3	ug/L	0.300	1.00
75-00-3	Chloroethane		51.8	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane		55.7	ug/L	0.300	1.00
60-29-7	Ethyl ether		54.0	ug/L	0.300	1.00
67-64-1	Acetone		197	ug/L	3.00	10.0
75-05-8	Acetonitrile		1350	ug/L	8.00	25.0
75-35-4	1,1-Dichloroethylene		57.1	ug/L	0.300	1.00
74-88-4	Iodomethane		280	ug/L	1.50	5.00
75-09-2	Methylene chloride		50.4	ug/L	3.00	10.0
75-15-0	Carbon disulfide		292	ug/L	1.50	5.00
1634-04-4	tert-Butyl methyl ether		54.6	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene		54.4	ug/L	0.300	1.00
108-05-4	Vinyl acetate		263	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane		55.2	ug/L	0.300	1.00
78-93-3	2-Butanone		226	ug/L	2.00	5.00
156-59-2	cis-1,2-Dichloroethylene		54.6	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane		57.3	ug/L	0.300	1.00
67-66-3	Chloroform		54.4	ug/L	0.300	1.00
74-97-5	Bromochloromethane		53.9	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane		80.5	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene		55.6	ug/L	0.300	1.00
71-36-3	n-Butyl alcohol		6670	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride		58.9	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane		52.9	ug/L	0.300	1.00
71-43-2	Benzene		54.6	ug/L	0.300	1.00
79-01-6	Trichloroethylene		57.6	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane		54.1	ug/L	0.300	1.00
75-27-4	Bromodichloromethane		59.4	ug/L	0.300	1.00
74-95-3	Dibromomethane		55.0	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone		238	ug/L	1.50	5.00
10061-01-5	cis-1,3-Dichloropropylene		58.6	ug/L	0.300	1.00
108-88-3	Toluene		47.0	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene		49.9	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane		48.3	ug/L	0.300	1.00
591-78-6	2-Hexanone		219	ug/L	2.20	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**	**Date Collected:**	**04/23/2013 13:32**	**Matrix:**	**W**
Lab Sample ID:	**1202870432**	**Date Received:**	**04/25/2013 08:50**		
Client Sample:	**QC for batch 1299689**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAPA-13-29662PSD**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/05/2013 03:53**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/05/2013 03:53**				
Data File:	**050413V9\9K640.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane		46.9	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene		47.9	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		56.3	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane		50.6	ug/L	0.300	1.00
108-90-7	Chlorobenzene		48.4	ug/L	0.300	1.00
100-41-4	Ethylbenzene		48.3	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes		99.0	ug/L	0.300	2.00
95-47-6	o-Xylene		47.5	ug/L	0.300	1.00
100-42-5	Styrene		49.7	ug/L	0.300	1.00
75-25-2	Bromoform		62.0	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane		51.2	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane		49.3	ug/L	0.300	1.00
108-86-1	Bromobenzene		51.5	ug/L	0.300	1.00
103-65-1	n-Propylbenzene		50.0	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene		50.7	ug/L	0.300	1.00
98-82-8	Isopropylbenzene		51.6	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene		50.5	ug/L	0.300	1.00
106-43-4	4-Chlorotoluene		49.5	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene		50.0	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene		49.7	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene		49.9	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene		49.3	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene		47.5	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene		47.2	ug/L	0.300	1.00
104-51-8	n-Butylbenzene		46.9	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane		51.5	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene		43.7	ug/L	0.300	1.00
91-20-3	Naphthalene		43.3	ug/L	0.400	1.00
87-61-6	1,2,3-Trichlorobenzene		41.1	ug/L	0.300	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.50	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	1.50	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	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**	**Date Collected:**	**04/23/2013 13:32**	**Matrix:**	**W**
Lab Sample ID:	**1202870432**	**Date Received:**	**04/25/2013 08:50**		
Client Sample:	**QC for batch 1299689**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAPA-13-29662PSD**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/05/2013 03:53**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/05/2013 03:53**				
Data File:	**050413V9\9K640.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
630-20-6	1,1,1,2-Tetrachloroethane		50.5	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene		41.6	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene		47.0	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	48.1	50.0	ug/L	96.2	(78%-124%)
Bromofluorobenzene	52.8	50.0	ug/L	106	(80%-120%)
Toluene-d8	45.4	50.0	ug/L	90.7	(80%-120%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**			**Matrix:**	**WATER**
Lab Sample ID:	**1202870433**				
Client Sample:	**QC for batch 1299689**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1299689**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/04/2013 11:17**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/04/2013 11:17**				
Data File:	**050413V9\9K609LAR.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane		50.9	ug/L	0.300	1.00
74-87-3	Chloromethane		53.2	ug/L	0.300	1.00
75-01-4	Vinyl chloride		49.3	ug/L	0.300	1.00
74-83-9	Bromomethane		54.6	ug/L	0.300	1.00
75-00-3	Chloroethane		52.3	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane		57.1	ug/L	0.300	1.00
60-29-7	Ethyl ether		53.7	ug/L	0.300	1.00
67-64-1	Acetone		202	ug/L	3.00	10.0
75-05-8	Acetonitrile		1330	ug/L	8.00	25.0
75-35-4	1,1-Dichloroethylene		57.1	ug/L	0.300	1.00
74-88-4	Iodomethane		282	ug/L	1.50	5.00
75-09-2	Methylene chloride		50.6	ug/L	3.00	10.0
75-15-0	Carbon disulfide		291	ug/L	1.50	5.00
1634-04-4	tert-Butyl methyl ether		55.5	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene		55.8	ug/L	0.300	1.00
108-05-4	Vinyl acetate		285	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane		55.5	ug/L	0.300	1.00
78-93-3	2-Butanone		232	ug/L	2.00	5.00
156-59-2	cis-1,2-Dichloroethylene		55.7	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane		58.9	ug/L	0.300	1.00
67-66-3	Chloroform		55.7	ug/L	0.300	1.00
74-97-5	Bromochloromethane		55.3	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane		58.9	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene		57.4	ug/L	0.300	1.00
71-36-3	n-Butyl alcohol		6610	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride		61.2	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane		54.9	ug/L	0.300	1.00
71-43-2	Benzene		55.2	ug/L	0.300	1.00
79-01-6	Trichloroethylene		58.1	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane		54.9	ug/L	0.300	1.00
75-27-4	Bromodichloromethane		60.5	ug/L	0.300	1.00
74-95-3	Dibromomethane		55.5	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone		239	ug/L	1.50	5.00
10061-01-5	cis-1,3-Dichloropropylene		58.7	ug/L	0.300	1.00
108-88-3	Toluene		47.5	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene		51.1	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane		48.6	ug/L	0.300	1.00
591-78-6	2-Hexanone		224	ug/L	2.20	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**			**Matrix:**	**WATER**
Lab Sample ID:	**1202870433**				
Client Sample:	**QC for batch 1299689**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1299689**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/04/2013 11:17**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/04/2013 11:17**				
Data File:	**050413V9\9K609LAR.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane		48.2	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene		49.0	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		57.3	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane		51.4	ug/L	0.300	1.00
108-90-7	Chlorobenzene		49.2	ug/L	0.300	1.00
100-41-4	Ethylbenzene		49.7	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes		101	ug/L	0.300	2.00
95-47-6	o-Xylene		48.7	ug/L	0.300	1.00
100-42-5	Styrene		51.4	ug/L	0.300	1.00
75-25-2	Bromoform		61.9	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane		49.6	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane		49.7	ug/L	0.300	1.00
108-86-1	Bromobenzene		51.2	ug/L	0.300	1.00
103-65-1	n-Propylbenzene		50.1	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene		50.3	ug/L	0.300	1.00
98-82-8	Isopropylbenzene		51.3	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene		50.1	ug/L	0.300	1.00
106-43-4	4-Chlorotoluene		49.8	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene		50.0	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene		50.5	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene		50.5	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene		49.0	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene		47.3	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene		47.1	ug/L	0.300	1.00
104-51-8	n-Butylbenzene		48.2	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane		51.2	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene		44.0	ug/L	0.300	1.00
91-20-3	Naphthalene		43.1	ug/L	0.400	1.00
87-61-6	1,2,3-Trichlorobenzene		41.4	ug/L	0.300	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.50	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	1.50	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	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**			**Matrix:**	**WATER**
Lab Sample ID:	**1202870433**				
Client Sample:	**QC for batch 1299689**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1299689**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/04/2013 11:17**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/04/2013 11:17**				
Data File:	**050413V9\9K609LAR.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
630-20-6	1,1,1,2-Tetrachloroethane		51.8	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene		40.9	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene		47.3	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	47.7	50.0	ug/L	95.5	(78%-124%)
Bromofluorobenzene	51.7	50.0	ug/L	103	(80%-120%)
Toluene-d8	45.7	50.0	ug/L	91.4	(80%-120%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**			**Matrix:**	**WATER**
Lab Sample ID:	**1202870434**				
Client Sample:	**QC for batch 1299689**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1299689**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/04/2013 12:12**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/04/2013 12:12**				
Data File:	**050413V9\9K611SHAR.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	0.300	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	3.00	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	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	1.50	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	1.50	5.00
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
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	2.00	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	0.300	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	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	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	0.300	1.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	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	1.50	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	2.20	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**			**Matrix:**	**WATER**
Lab Sample ID:	**1202870434**				
Client Sample:	**QC for batch 1299689**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1299689**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/04/2013 12:12**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/04/2013 12:12**				
Data File:	**050413V9\9K611SHAR.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	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	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	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
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	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	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	0.400	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
107-02-8	Acrolein		195	ug/L	1.50	5.00
76-13-1	Trichlorotrifluoroethane		244	ug/L	1.50	5.00
107-05-1	Allyl chloride		236	ug/L	1.50	5.00
107-13-1	Acrylonitrile		251	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene		43.3	ug/L	0.300	1.00
107-12-0	Propionitrile		254	ug/L	1.50	5.00
126-98-7	Methacrylonitrile		248	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol		2940	ug/L	15.0	50.0
80-62-6	Methyl methacrylate		241	ug/L	1.50	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**			**Matrix:**	**WATER**
Lab Sample ID:	**1202870434**				
Client Sample:	**QC for batch 1299689**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1299689**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/04/2013 12:12**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/04/2013 12:12**				
Data File:	**050413V9\9K611SHAR.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate		219	ug/L	1.50	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	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	47.1	50.0	ug/L	94.1	(78%-124%)
Bromofluorobenzene	50.7	50.0	ug/L	101	(80%-120%)
Toluene-d8	45.9	50.0	ug/L	91.8	(80%-120%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**			**Matrix:**	**WATER**
Lab Sample ID:	**1202870444**				
Client Sample:	**QC for batch 1299689**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**MB for batch 1299689**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/05/2013 00:17**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/05/2013 00:17**				
Data File:	**050413V9\9K638BAR.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	0.300	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	3.00	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	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	1.50	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	1.50	5.00
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
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	2.00	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	0.300	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	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	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	0.300	1.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	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	1.50	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	2.20	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**			**Matrix:**	**WATER**
Lab Sample ID:	**1202870444**				
Client Sample:	**QC for batch 1299689**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**MB for batch 1299689**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/05/2013 00:17**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/05/2013 00:17**				
Data File:	**050413V9\9K638BAR.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	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	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	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
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	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	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	0.400	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.50	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	1.50	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	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**			**Matrix:**	**WATER**
Lab Sample ID:	**1202870444**				
Client Sample:	**QC for batch 1299689**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**MB for batch 1299689**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/05/2013 00:17**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/05/2013 00:17**				
Data File:	**050413V9\9K638BAR.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	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	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	47.9	50.0	ug/L	95.8	(78%-124%)
Bromofluorobenzene	50.9	50.0	ug/L	102	(80%-120%)
Toluene-d8	45.5	50.0	ug/L	91.0	(80%-120%)

Tentatively Identified Compound Summary

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

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**			**Matrix:**	**WATER**
Lab Sample ID:	**1202870445**				
Client Sample:	**QC for batch 1299689**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1299689**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/04/2013 22:56**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/04/2013 22:56**				
Data File:	**050413V9\9K635LAR.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane		51.3	ug/L	0.300	1.00
74-87-3	Chloromethane		53.3	ug/L	0.300	1.00
75-01-4	Vinyl chloride		51.0	ug/L	0.300	1.00
74-83-9	Bromomethane		54.6	ug/L	0.300	1.00
75-00-3	Chloroethane		54.2	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane		57.1	ug/L	0.300	1.00
60-29-7	Ethyl ether		56.1	ug/L	0.300	1.00
67-64-1	Acetone		209	ug/L	3.00	10.0
75-05-8	Acetonitrile		1410	ug/L	8.00	25.0
75-35-4	1,1-Dichloroethylene		58.3	ug/L	0.300	1.00
74-88-4	Iodomethane		290	ug/L	1.50	5.00
75-09-2	Methylene chloride		51.9	ug/L	3.00	10.0
75-15-0	Carbon disulfide		296	ug/L	1.50	5.00
1634-04-4	tert-Butyl methyl ether		57.3	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene		56.6	ug/L	0.300	1.00
108-05-4	Vinyl acetate		281	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane		56.6	ug/L	0.300	1.00
78-93-3	2-Butanone		238	ug/L	2.00	5.00
156-59-2	cis-1,2-Dichloroethylene		56.3	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane		56.5	ug/L	0.300	1.00
67-66-3	Chloroform		56.3	ug/L	0.300	1.00
74-97-5	Bromochloromethane		55.6	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane		59.3	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene		57.9	ug/L	0.300	1.00
71-36-3	n-Butyl alcohol		6770	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		54.9	ug/L	0.300	1.00
71-43-2	Benzene		56.2	ug/L	0.300	1.00
79-01-6	Trichloroethylene		58.8	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane		55.7	ug/L	0.300	1.00
75-27-4	Bromodichloromethane		61.2	ug/L	0.300	1.00
74-95-3	Dibromomethane		56.7	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone		249	ug/L	1.50	5.00
10061-01-5	cis-1,3-Dichloropropylene		59.5	ug/L	0.300	1.00
108-88-3	Toluene		48.0	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene		50.2	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane		49.7	ug/L	0.300	1.00
591-78-6	2-Hexanone		231	ug/L	2.20	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**			**Matrix:**	**WATER**
Lab Sample ID:	**1202870445**				
Client Sample:	**QC for batch 1299689**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1299689**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/04/2013 22:56**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/04/2013 22:56**				
Data File:	**050413V9\9K635LAR.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane		48.8	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene		48.6	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		58.0	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane		52.2	ug/L	0.300	1.00
108-90-7	Chlorobenzene		48.5	ug/L	0.300	1.00
100-41-4	Ethylbenzene		49.1	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes		99.4	ug/L	0.300	2.00
95-47-6	o-Xylene		49.0	ug/L	0.300	1.00
100-42-5	Styrene		50.6	ug/L	0.300	1.00
75-25-2	Bromoform		62.2	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane		51.1	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane		49.6	ug/L	0.300	1.00
108-86-1	Bromobenzene		50.4	ug/L	0.300	1.00
103-65-1	n-Propylbenzene		48.8	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene		49.2	ug/L	0.300	1.00
98-82-8	Isopropylbenzene		51.4	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene		49.4	ug/L	0.300	1.00
106-43-4	4-Chlorotoluene		47.8	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene		51.2	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene		48.8	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene		49.8	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene		48.3	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene		45.6	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene		45.0	ug/L	0.300	1.00
104-51-8	n-Butylbenzene		44.6	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane		53.8	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene		42.4	ug/L	0.300	1.00
91-20-3	Naphthalene		44.3	ug/L	0.400	1.00
87-61-6	1,2,3-Trichlorobenzene		40.4	ug/L	0.300	1.00
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	1.50	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	1.50	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	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**			**Matrix:**	**WATER**
Lab Sample ID:	**1202870445**				
Client Sample:	**QC for batch 1299689**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1299689**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/04/2013 22:56**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/04/2013 22:56**				
Data File:	**050413V9\9K635LAR.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
630-20-6	1,1,1,2-Tetrachloroethane		52.3	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene		38.0	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene		45.6	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	48.6	50.0	ug/L	97.1	(78%-124%)
Bromofluorobenzene	50.8	50.0	ug/L	102	(80%-120%)
Toluene-d8	46.2	50.0	ug/L	92.5	(80%-120%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**			**Matrix:**	**WATER**
Lab Sample ID:	**1202870446**				
Client Sample:	**QC for batch 1299689**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1299689**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/04/2013 23:50**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/04/2013 23:50**				
Data File:	**050413V9\9K637SHAR.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	0.300	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	3.00	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	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	1.50	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	1.50	5.00
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
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	2.00	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	0.300	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	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	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	0.300	1.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	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	1.50	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	2.20	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**			**Matrix:**	**WATER**
Lab Sample ID:	**1202870446**				
Client Sample:	**QC for batch 1299689**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1299689**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/04/2013 23:50**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/04/2013 23:50**				
Data File:	**050413V9\9K637SHAR.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	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	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	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
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	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	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	0.400	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
107-02-8	Acrolein		198	ug/L	1.50	5.00
76-13-1	Trichlorotrifluoroethane		244	ug/L	1.50	5.00
107-05-1	Allyl chloride		233	ug/L	1.50	5.00
107-13-1	Acrylonitrile		256	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene		42.5	ug/L	0.300	1.00
107-12-0	Propionitrile		263	ug/L	1.50	5.00
126-98-7	Methacrylonitrile		251	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol		2990	ug/L	15.0	50.0
80-62-6	Methyl methacrylate		245	ug/L	1.50	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**			**Matrix:**	**WATER**
Lab Sample ID:	**1202870446**				
Client Sample:	**QC for batch 1299689**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1299689**	**Method:**	**SW846 8260B DOE-AL**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1299689**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**05/04/2013 23:50**	**Analyst:**	**GRB2**	**Purge Vol:**	**5 mL**
Prep Date:	**05/04/2013 23:50**				
Data File:	**050413V9\9K637SHAR.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate		218	ug/L	1.50	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	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	46.6	50.0	ug/L	93.3	(78%-124%)
Bromofluorobenzene	49.6	50.0	ug/L	99.1	(80%-120%)
Toluene-d8	45.7	50.0	ug/L	91.4	(80%-120%)

Miscellaneous

DATA EXCEPTION REPORT

Mo.Day Yr.	**Division:**	**Quality Criteria:**	**Type:**
05-MAY-13	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
VOA GC/MS	SW846 8260B DOE-AL	Liquid	ESHL
Batch ID:	**Sample Numbers:**		
1299689	See Below		

Potentially affected work order(s)(SDG): 324498(2013-760),324500(2013-763)

Application Issues:

Failed Recovery for MSD/PSD

Specification and Requirements Exception Description:	**DER Disposition:**
1. The matrix spike duplicate (1202870432MSD) did not meet acceptance criteria for 1,1,1-Trichloroethane at 64.6%. The limits are 69%-140%.	1. The MSD did not meet recovery requirements. The associated MS recovered within the acceptance limits near the lower end of the acceptance limits.

Originator's Name:

Gelester Baskett 05-MAY-13

Data Validator/Group Leader:

Kelle Bellamy 14-MAY-13

Semi-Volatile Analysis

Case Narrative

Semi-Volatile Case Narrative
ARS International (ARSL)
SDG 2013-760

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:	1297644
Prep Batch Number:	1297643

Sample Analysis

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

Sample ID	Client ID
324498001	CAPA-13-29662
324498006	CAPA-13-29663
1202865215	Method Blank (MB)
1202865216	Laboratory Control Sample (LCS)
1202865217	324498001(CAPA-13-29662) Matrix Spike (MS)
1202865218	324498001(CAPA-13-29662) 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# 30.

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).

Calibration Information

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
Sample 324498006 (CAPA-13-29663) recovered surrogates outside of the acceptance limits. Please see the QC Summary report for specific failures. The sample was re-extracted out of holding in batch 1298462. Since the re-extraction displayed similar surrogate recoveries, the failures were attributed to sample matrix interference and the original data results have been reported. The re-extracted raw data results are located in the Miscellaneous Section of the data package.

Laboratory Control Sample (LCS) Recovery
The LCS(1202865216) recovered Atrazine at 34%. The limits are 47%-115%. The analyte had at least 10% recovery in the LCS, MS, and MSD and was well within the %Drift acceptance criteria for Atrazine in the CCV. Since the failure also represented less than 5% of the total requested spike analyte list, the data satisfied the acceptance criteria for the client and the results have been reported.

QC Sample Designation
Sample 324498001 (CAPA-13-29662) was selected for analysis as the matrix spike and matrix spike duplicate.

Matrix Spike (MS) Recovery Statement
The MS(1202865217(CAPA-13-29662)) recovered Atrazine at 21%. The limits are 36%-119%. The analyte had at least 10% recovery in the LCS, MS, and MSD and was well within the %Drift acceptance criteria for Atrazine in the CCV. Since the failure also represented less than 5% of the total requested spike analyte list, the data satisfied the acceptance criteria for the client and the results have been reported.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD(1202865218(CAPA-13-29662)) recovered Atrazine at 29%. The limits are 36%-119%. The analyte had at least 10% recovery in the LCS, MS, and MSD and was well within the %Drift acceptance criteria for Atrazine in the CCV. Since the failure also represented less than 5% of the total requested spike analyte list, the data satisfied the acceptance criteria for the client and the results have been reported.

MS/MSD Relative Percent Difference (RPD) Statement
The MS(1202865217(CAPA-13-29662))/MSD(1202865218(CAPA-13-29662)) pair displayed RPD values outside of the acceptance limits. Please see the QC Summary report for specific failures. Since the spike analytes were individually within the acceptance limits for the MS and MSD, the non-conformance had no adverse impact on the data and the results have been reported.

Internal Standard (ISTD) Acceptance
The internal standard responses used to quantitate the requested target analytes were within the required acceptance criteria for the SDG associated samples in this batch.

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
Sample 324498006 (CAPA-13-29663) was re-extracted out of holding in batch 1298462 due to surrogate failures.

Miscellaneous Information:

Data Exception (DER) Documentation
The following DER was generated for this SDG: 1182733.

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 samples 1202865215 (MB), 324498001 (CAPA-13-29662) and 324498006 (CAPA-13-29663) in this delivery group/work order. Please note that non-requested calibrated analytes detected in a client sample may be reported on the Form 1/Certificate of Analysis as TICs. TIC data, if requested, are included on the Sample Data Summary (Form 1) and are also included with the sample raw data.

Additional Comments
The additional comments field is used to address special issues associated with each analysis, clarify method/contractual issues pertaining to the analysis, and to list any report documents generated as a result of sample analysis or review. The following additional comments were required:

Due to rounding differences in the calculation, the data reported in the Surrogate Recovery Report may differ slightly from the raw data. Due to software issue, the raw data may not correctly display the updated SPC limits. Please see Sample Data Summary Report and Surrogate Recovery Report for the correct surrogate acceptance limits.

Electronic Package Comment

The following package was generated using an electronic data processing program referred to as "virtual packaging". In an effort to increase quality and efficiency, the laboratory is developing systems to eventually generate all data packages electronically. The following change from "traditional" packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative of each electronic package will indicate the reviewer name associated with the generation of the data and package. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and

inserted into the electronic package.

System Configuration

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

Instrument ID	Instrument	System Configuration	Column ID	Column Description
MSD8.I	Agilent 6890/5973 GC/MS w/ 7683 Autosampler	HP6890/HP5973	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: 2013-760 GEL Work Order: 324498

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

J Value is estimated

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

h Preparation or preservation holding time was exceeded

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: Barbara Bailey **Name: Barbara Bailey**

Date: 20 MAY 2013 **Title: Data Validator**

Sample Data Summary

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**	**Date Collected:**	**04/23/2013 13:32**	**Matrix:**	**W**
Lab Sample ID:	**324498001**	**Date Received:**	**04/25/2013 08:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAPA-13-29662**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1297644**	**Inst:**	**MSD8.I**	**Dilution:**	**1**
Run Date:	**04/29/2013 15:18**	**Analyst:**	**RMB**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/26/2013 08:29**	**Aliquot:**	**1000 mL**	**Final Volume:**	**1 mL**
Data File:	**s042913.B\s8D2906.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
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
39638-32-9	bis(2-Chloroisopropyl)ether	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	3.30	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	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:	**2013-760**	**Date Collected:**	**04/23/2013 13:32**	**Matrix:**	**W**
Lab Sample ID:	**324498001**	**Date Received:**	**04/25/2013 08:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAPA-13-29662**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1297644**	**Inst:**	**MSD8.I**	**Dilution:**	**1**
Run Date:	**04/29/2013 15:18**	**Analyst:**	**RMB**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/26/2013 08:29**	**Aliquot:**	**1000 mL**	**Final Volume:**	**1 mL**
Data File:	**s042913.B\s8D2906.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	0.440	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	J	6.22	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:	**2013-760**	**Date Collected:**	**04/23/2013 13:32**	**Matrix:**	**W**
Lab Sample ID:	**324498001**	**Date Received:**	**04/25/2013 08:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAPA-13-29662**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1297644**	**Inst:**	**MSD8.I**	**Dilution:**	**1**
Run Date:	**04/29/2013 15:18**	**Analyst:**	**RMB**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/26/2013 08:29**	**Aliquot:**	**1000 mL**	**Final Volume:**	**1 mL**
Data File:	**s042913.B\s8D2906.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	64.4	100	ug/L	64.4	(23%-130%)
2-Fluorobiphenyl	31.7	50.0	ug/L	63.4	(30%-104%)
2-Fluorophenol	36.8	100	ug/L	36.8	(14%-77%)
Nitrobenzene-d5	36.0	50.0	ug/L	71.9	(34%-125%)
Phenol-d5	27.5	100	ug/L	27.5	(10%-78%)
p-Terphenyl-d14	30.3	50.0	ug/L	60.7	(33%-136%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown	2.079	5.25	ug/L	0	J
000067-66-3	Trichloromethane	2.176	49	ug/L	94	NJ
002213-23-2	Heptane, 2,4-dimethyl-	3.839	7.87	ug/L	91	NJ
	unknown	4.31	5.42	ug/L	0	J

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**	**Date Collected:**	**04/23/2013 11:21**	**Matrix:**	**W**
Lab Sample ID:	**324498006**	**Date Received:**	**04/25/2013 08:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAPA-13-29663**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1297644**	**Inst:**	**MSD8.I**	**Dilution:**	**1**
Run Date:	**04/29/2013 16:54**	**Analyst:**	**RMB**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/26/2013 08:29**	**Aliquot:**	**870 mL**	**Final Volume:**	**1 mL**
Data File:	**s042913.B\s8D2909.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
62-75-9	N-Methyl-N-nitrosomethylamine	U	11.5	ug/L	3.45	11.5
110-86-1	Pyridine	U	11.5	ug/L	3.45	11.5
62-53-3	Aniline	U	11.5	ug/L	3.45	11.5
108-95-2	Phenol	U	11.5	ug/L	3.45	11.5
111-44-4	bis(2-Chloroethyl) ether	U	11.5	ug/L	3.45	11.5
95-57-8	2-Chlorophenol	U	11.5	ug/L	3.45	11.5
541-73-1	1,3-Dichlorobenzene	U	11.5	ug/L	3.45	11.5
106-46-7	1,4-Dichlorobenzene	U	11.5	ug/L	3.45	11.5
95-50-1	1,2-Dichlorobenzene	U	11.5	ug/L	3.45	11.5
39638-32-9	bis(2-Chloroisopropyl)ether	U	11.5	ug/L	3.45	11.5
100-51-6	Benzyl alcohol	U	11.5	ug/L	3.45	11.5
95-48-7	o-Cresol	U	11.5	ug/L	3.45	11.5
65794-96-9	m,p-Cresols	U	11.5	ug/L	3.45	11.5
621-64-7	N-Nitrosodi--n-propylamine *N-Nitrosodipropylamine*	U	11.5	ug/L	3.45	11.5
67-72-1	Hexachloroethane	U	11.5	ug/L	3.45	11.5
98-95-3	Nitrobenzene	U	11.5	ug/L	3.45	11.5
78-59-1	Isophorone	U	11.5	ug/L	3.45	11.5
88-75-5	2-Nitrophenol	U	11.5	ug/L	3.45	11.5
105-67-9	2,4-Dimethylphenol	U	11.5	ug/L	3.45	11.5
111-91-1	bis(2-Chloroethoxy)methane	U	11.5	ug/L	3.45	11.5
120-83-2	2,4-Dichlorophenol	U	11.5	ug/L	3.45	11.5
65-85-0	Benzoic acid	U	23.0	ug/L	6.90	23.0
106-47-8	4-Chloroaniline	U	11.5	ug/L	3.79	11.5
87-68-3	Hexachlorobutadiene	U	11.5	ug/L	3.45	11.5
59-50-7	Parachlorometa cresol *4-Chloro-3-methylphenol*	U	11.5	ug/L	3.45	11.5
91-57-6	2-Methylnaphthalene	U	1.15	ug/L	0.345	1.15
91-20-3	Naphthalene	U	1.15	ug/L	0.345	1.15
90-12-0	1-Methylnaphthalene	U	1.15	ug/L	0.345	1.15
77-47-4	Hexachlorocyclopentadiene	U	11.5	ug/L	3.45	11.5
88-06-2	2,4,6-Trichlorophenol	U	11.5	ug/L	3.45	11.5
95-95-4	2,4,5-Trichlorophenol	U	11.5	ug/L	3.45	11.5
91-58-7	2-Chloronaphthalene	U	1.15	ug/L	0.345	1.15
88-74-4	2-Nitroaniline *o-Nitroaniline*	U	11.5	ug/L	3.45	11.5
99-09-2	3-Nitroaniline *m-Nitroaniline*	U	11.5	ug/L	3.45	11.5
131-11-3	Dimethylphthalate	U	11.5	ug/L	3.45	11.5
606-20-2	2,6-Dinitrotoluene	U	11.5	ug/L	3.45	11.5

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**	**Date Collected:**	**04/23/2013 11:21**	**Matrix:**	**W**
Lab Sample ID:	**324498006**	**Date Received:**	**04/25/2013 08:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAPA-13-29663**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1297644**	**Inst:**	**MSD8.I**	**Dilution:**	**1**
Run Date:	**04/29/2013 16:54**	**Analyst:**	**RMB**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/26/2013 08:29**	**Aliquot:**	**870 mL**	**Final Volume:**	**1 mL**
Data File:	**s042913.B\s8D2909.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
121-14-2	2,4-Dinitrotoluene	U	11.5	ug/L	3.45	11.5
208-96-8	Acenaphthylene	U	1.15	ug/L	0.345	1.15
83-32-9	Acenaphthene	U	1.15	ug/L	0.345	1.15
51-28-5	2,4-Dinitrophenol	U	23.0	ug/L	5.75	23.0
132-64-9	Dibenzofuran	U	11.5	ug/L	3.45	11.5
58-90-2	2,3,4,6-Tetrachlorophenol	U	11.5	ug/L	3.45	11.5
84-66-2	Diethylphthalate	U	11.5	ug/L	3.45	11.5
100-02-7	4-Nitrophenol	U	11.5	ug/L	3.45	11.5
86-73-7	Fluorene	U	1.15	ug/L	0.345	1.15
7005-72-3	4-Chlorophenylphenylether	U	11.5	ug/L	3.45	11.5
100-01-6	4-Nitroaniline *p-Nitroaniline*	U	11.5	ug/L	3.45	11.5
534-52-1	2-Methyl-4,6-dinitrophenol	U	11.5	ug/L	3.45	11.5
122-39-4	Diphenylamine	U	11.5	ug/L	3.45	11.5
122-66-7	Azobenzene *1,2-Diphenylhydrazine*	U	11.5	ug/L	3.45	11.5
101-55-3	4-Bromophenylphenylether	U	11.5	ug/L	3.45	11.5
118-74-1	Hexachlorobenzene	U	11.5	ug/L	3.45	11.5
87-86-5	Pentachlorophenol	U	11.5	ug/L	3.45	11.5
88-85-7	Dinoseb	U	11.5	ug/L	3.45	11.5
85-01-8	Phenanthrene	U	1.15	ug/L	0.345	1.15
120-12-7	Anthracene	U	1.15	ug/L	0.345	1.15
84-74-2	Di-n-butylphthalate	U	11.5	ug/L	3.45	11.5
206-44-0	Fluoranthene	U	1.15	ug/L	0.345	1.15
129-00-0	Pyrene	U	1.15	ug/L	0.345	1.15
85-68-7	Butylbenzylphthalate	U	11.5	ug/L	3.45	11.5
117-81-7	bis(2-Ethylhexyl)phthalate	U	11.5	ug/L	3.45	11.5
56-55-3	Benzo(a)anthracene	U	1.15	ug/L	0.345	1.15
218-01-9	Chrysene	U	1.15	ug/L	0.345	1.15
117-84-0	Di-n-octylphthalate	U	11.5	ug/L	3.45	11.5
205-99-2	Benzo(b)fluoranthene	U	1.15	ug/L	0.345	1.15
207-08-9	Benzo(k)fluoranthene	U	1.15	ug/L	0.345	1.15
50-32-8	Benzo(a)pyrene	U	1.15	ug/L	0.506	1.15
193-39-5	Indeno(1,2,3-cd)pyrene	U	1.15	ug/L	0.345	1.15
53-70-3	Dibenzo(a,h)anthracene	U	1.15	ug/L	0.345	1.15
191-24-2	Benzo(ghi)perylene	U	1.15	ug/L	0.345	1.15
123-91-1	1,4-Dioxane	U	11.5	ug/L	3.45	11.5
55-18-5	N-Nitrosodiethylamine	U	11.5	ug/L	3.45	11.5
930-55-2	N-Nitrosopyrrolidine	U	11.5	ug/L	3.45	11.5

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**	**Date Collected:**	**04/23/2013 11:21**	**Matrix:**	**W**
Lab Sample ID:	**324498006**	**Date Received:**	**04/25/2013 08:50**		
		Client:	**ARSL001**	**Project:**	**ESHL00210**
Client ID:	**CAPA-13-29663**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1297644**	**Inst:**	**MSD8.I**	**Dilution:**	**1**
Run Date:	**04/29/2013 16:54**	**Analyst:**	**RMB**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/26/2013 08:29**	**Aliquot:**	**870 mL**	**Final Volume:**	**1 mL**
Data File:	**s042913.B\s8D2909.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
924-16-3	N-Nitrosodi-n-butylamine	U	11.5	ug/L	3.45	11.5
95-94-3	1,2,4,5-Tetrachlorobenzene	U	11.5	ug/L	3.45	11.5
608-93-5	Pentachlorobenzene	U	11.5	ug/L	3.45	11.5
1912-24-9	Atrazine	U	11.5	ug/L	3.45	11.5
92-87-5	Benzidine	U	11.5	ug/L	3.45	11.5
91-94-1	3,3'-Dichlorobenzidine	U	11.5	ug/L	3.45	11.5
120-82-1	1,2,4-Trichlorobenzene	U	11.5	ug/L	3.45	11.5

Surrogate/Tracer recovery	Result	Nominal		Recovery%		Acceptable Limits
2,4,6-Tribromophenol	12.8	115	ug/L	11.1	*	(23%-130%)
2-Fluorobiphenyl	22.6	57.5	ug/L	39.3		(30%-104%)
2-Fluorophenol	12.5	115	ug/L	10.9	*	(14%-77%)
Nitrobenzene-d5	27.6	57.5	ug/L	48.1		(34%-125%)
Phenol-d5	17.1	115	ug/L	14.9		(10%-78%)
p-Terphenyl-d14	21.6	57.5	ug/L	37.6		(33%-136%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown	2.16	39.3	ug/L	0	J
	unknown	2.186	17.2	ug/L	0	J
	unknown	2.518	6.54	ug/L	0	J
002213-23-2	Heptane, 2,4-dimethyl-	3.839	6.79	ug/L	91	NJ
002216-34-4	Octane, 4-methyl-	4.305	5.9	ug/L	90	NJ

Quality Control Summary

Surrogate Recovery Report

SDG Number: 2013-760

Matrix Type: LIQUID

Sample ID	Client ID	2FP %REC	PHL %REC	NBZ %REC	FBP %REC	TBP %REC	TPH %REC
1202865215	MB for batch 1297643	45	31	75	58	79	75
1202865216	LCS for batch 1297643	42	29	67	63	83	68
324498001	CAPA-13-29662	37	28	72	63	64	61
1202865217	CAPA-13-29662MS	45	42	54	48	52	46
1202865218	CAPA-13-29662MSD	47	49	68	63	58	59
324498006	CAPA-13-29663	11 *	15	48	39	11 *	38

Surrogate			Acceptance Limits
2FP	=	2-Fluorophenol	(14%-77%)
PHL	=	Phenol-d5	(10%-78%)
NBZ	=	Nitrobenzene-d5	(34%-125%)
FBP	=	2-Fluorobiphenyl	(30%-104%)
TBP	=	2,4,6-Tribromophenol	(23%-130%)
TPH	=	p-Terphenyl-d14	(33%-136%)

* Recovery outside Acceptance Limits

Column to be used to flag recovery values

D Sample Diluted

Semi-Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-760 **Sample Type:** Laboratory Control Sample

Client ID: LCS for batch 1297643 **Matrix:** WATER

Lab Sample ID: 1202865216

Instrument: MSD8.I **Analysis Date:** 04/29/2013 14:45 **Dilution:** 1

Analyst: RMB **Prep Batch ID** 1297643

Inj. Vol: 1 uL **Batch ID:** 1297644

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
62-75-9	LCS	N-Methyl-N-nitrosomethylam	50.0	0.0	20.3	41	29-86
110-86-1	LCS	Pyridine	50.0	0.0	28.8	58	25-96
62-53-3	LCS	Aniline	50.0	0.0	41.4	83	38-105
108-95-2	LCS	Phenol	50.0	0.0	15.0	30	13-137
111-44-4	LCS	bis(2-Chloroethyl) ether	50.0	0.0	32.0	64	37-110
95-57-8	LCS	2-Chlorophenol	50.0	0.0	33.7	67	41-98
541-73-1	LCS	1,3-Dichlorobenzene	50.0	0.0	25.5	51	33-86
106-46-7	LCS	1,4-Dichlorobenzene	50.0	0.0	25.7	51	33-87
95-50-1	LCS	1,2-Dichlorobenzene	50.0	0.0	26.2	52	34-86
39638-32-9	LCS	bis(2-Chloroisopropyl)ether	50.0	0.0	27.4	55	30-118
100-51-6	LCS	Benzyl alcohol	50.0	0.0	31.8	64	39-88
95-48-7	LCS	o-Cresol	50.0	0.0	30.6	61	37-89
65794-96-9	LCS	m,p-Cresols	50.0	0.0	32.2	64	33-99
621-64-7	LCS	N-Nitrosodi--n-propylamine *N-Nitrosodipropylamine*	50.0	0.0	37.1	74	40-112
67-72-1	LCS	Hexachloroethane	50.0	0.0	26.0	52	31-87
98-95-3	LCS	Nitrobenzene	50.0	0.0	33.3	67	42-118
78-59-1	LCS	Isophorone	50.0	0.0	35.2	70	50-132
88-75-5	LCS	2-Nitrophenol	50.0	0.0	31.6	63	45-109
105-67-9	LCS	2,4-Dimethylphenol	50.0	0.0	30.7	61	44-98
111-91-1	LCS	bis(2-Chloroethoxy)methane	50.0	0.0	34.7	69	45-109
120-83-2	LCS	2,4-Dichlorophenol	50.0	0.0	32.8	66	46-106
65-85-0	LCS	Benzoic acid	100	0.0	30.4	30	10-134

Semi-Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-760
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1297643
Matrix: WATER
Lab Sample ID: 1202865216
Instrument: MSD8.I
Analysis Date: 04/29/2013 14:45
Dilution: 1
Analyst: RMB
Prep Batch ID 1297643
Inj. Vol: 1 uL
Batch ID: 1297644

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	43.6	87	50-122
87-68-3	LCS	Hexachlorobutadiene	50.0	0.0	24.7	49	29-94
59-50-7	LCS	Parachlorometa cresol *4-Chloro-3-methylphenol*	50.0	0.0	35.1	70	47-110
91-57-6	LCS	2-Methylnaphthalene	50.0	0.0	24.4	49	37-100
91-20-3	LCS	Naphthalene	50.0	0.0	26.3	53	35-97
90-12-0	LCS	1-Methylnaphthalene	50.0	0.0	26.4	53	38-105
77-47-4	LCS	Hexachlorocyclopentadiene	50.0	0.0	18.9	38	38-79
88-06-2	LCS	2,4,6-Trichlorophenol	50.0	0.0	35.2	70	43-108
95-95-4	LCS	2,4,5-Trichlorophenol	50.0	0.0	37.3	75	43-110
91-58-7	LCS	2-Chloronaphthalene	50.0	0.0	30.2	60	40-96
88-74-4	LCS	2-Nitroaniline *o-Nitroaniline*	50.0	0.0	43.1	86	45-116
99-09-2	LCS	3-Nitroaniline *m-Nitroaniline*	50.0	0.0	48.3	97	46-123
131-11-3	LCS	Dimethylphthalate	50.0	0.0	38.0	76	53-111
606-20-2	LCS	2,6-Dinitrotoluene	50.0	0.0	39.2	78	52-117
121-14-2	LCS	2,4-Dinitrotoluene	50.0	0.0	39.4	79	46-124
208-96-8	LCS	Acenaphthylene	50.0	0.0	31.4	63	42-105
83-32-9	LCS	Acenaphthene	50.0	0.0	29.9	60	42-103
51-28-5	LCS	2,4-Dinitrophenol	50.0	0.0	30.4	61	33-105
132-64-9	LCS	Dibenzofuran	50.0	0.0	32.6	65	46-106
58-90-2	LCS	2,3,4,6-Tetrachlorophenol	50.0	0.0	37.4	75	46-119
84-66-2	LCS	Diethylphthalate	50.0	0.0	37.7	75	52-115
100-02-7	LCS	4-Nitrophenol	50.0	0.0	22.1	44	12-130

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-760
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1297643
Matrix: WATER
Lab Sample ID: 1202865216
Instrument: MSD8.I
Analysis Date: 04/29/2013 14:45
Dilution: 1
Analyst: RMB
Prep Batch ID 1297643
Inj. Vol: 1 uL
Batch ID: 1297644

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	33.4	67	44-110
7005-72-3	LCS	4-Chlorophenylphenylether	50.0	0.0	33.7	67	41-113
100-01-6	LCS	4-Nitroaniline *p-Nitroaniline*	50.0	0.0	55.8	112	39-132
534-52-1	LCS	2-Methyl-4,6-dinitrophenol	50.0	0.0	40.8	82	39-111
122-39-4	LCS	Diphenylamine	50.0	0.0	37.8	76	47-111
122-66-7	LCS	Azobenzene *1,2-Diphenylhydrazine*	50.0	0.0	34.6	69	41-111
101-55-3	LCS	4-Bromophenylphenylether	50.0	0.0	37.0	74	42-113
118-74-1	LCS	Hexachlorobenzene	50.0	0.0	39.4	79	44-115
87-86-5	LCS	Pentachlorophenol	50.0	0.0	30.3	61	36-99
85-01-8	LCS	Phenanthrene	50.0	0.0	34.5	69	47-111
120-12-7	LCS	Anthracene	50.0	0.0	34.4	69	46-109
84-74-2	LCS	Di-n-butylphthalate	50.0	0.0	37.2	74	49-115
206-44-0	LCS	Fluoranthene	50.0	0.0	34.8	70	45-118
129-00-0	LCS	Pyrene	50.0	0.0	30.0	60	39-126
85-68-7	LCS	Butylbenzylphthalate	50.0	0.0	31.2	62	41-121
117-81-7	LCS	bis(2-Ethylhexyl)phthalate	50.0	0.0	31.4	63	38-124
56-55-3	LCS	Benzo(a)anthracene	50.0	0.0	34.4	69	49-110
218-01-9	LCS	Chrysene	50.0	0.0	35.1	70	45-117
117-84-0	LCS	Di-n-octylphthalate	50.0	0.0	33.6	67	34-121
205-99-2	LCS	Benzo(b)fluoranthene	50.0	0.0	31.8	64	47-116
207-08-9	LCS	Benzo(k)fluoranthene	50.0	0.0	33.0	66	47-119
50-32-8	LCS	Benzo(a)pyrene	50.0	0.0	33.2	66	48-109

Semi-Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-760
Sample Type: Laboratory Control Sample
Client ID: LCS for batch 1297643
Matrix: WATER
Lab Sample ID: 1202865216
Instrument: MSD8.I
Analysis Date: 04/29/2013 14:45
Dilution: 1
Analyst: RMB
Prep Batch ID 1297643
Inj. Vol: 1 uL
Batch ID: 1297644

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	47.1	94	38-124
53-70-3	LCS	Dibenzo(a,h)anthracene	50.0	0.0	49.1	98	38-124
191-24-2	LCS	Benzo(ghi)perylene	50.0	0.0	47.4	95	36-124
123-91-1	LCS	1,4-Dioxane	50.0	0.0	21.3	43	41-69
930-55-2	LCS	N-Nitrosopyrrolidine	50.0	0.0	34.1	68	42-105
95-94-3	LCS	1,2,4,5-Tetrachlorobenzene	50.0	0.0	27.2	54	40-93
1912-24-9	LCS	Atrazine	50.0	0.0	16.9	34 *	47-115
92-87-5	LCS	Benzidine	100	0.0	26.6	27	19-124
91-94-1	LCS	3,3'-Dichlorobenzidine	50.0	0.0	31.9	64	36-111
120-82-1	LCS	1,2,4-Trichlorobenzene	50.0	0.0	25.6	51	32-92

Semi-Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-760 **Sample Type:** Matrix Spike

Client ID: CAPA-13-29662MS **Matrix:** W

Lab Sample ID: 1202865217

Instrument: MSD8.I **Analysis Date:** 04/29/2013 15:50 **Dilution:** 1

Analyst: RMB **Prep Batch ID** 1297643

Inj. Vol: 1 uL **Batch ID:** 1297644

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
62-75-9	MS	N-Methyl-N-nitrosomethylam	133	0.00	U	62.0	47	27-85
110-86-1	MS	Pyridine	133	0.00	U	46.7	35	21-93
62-53-3	MS	Aniline	133	0.00	U	78.2	59	28-108
108-95-2	MS	Phenol	133	0.00	U	56.7	43	15-100
111-44-4	MS	bis(2-Chloroethyl) ether	133	0.00	U	68.2	51	27-114
95-57-8	MS	2-Chlorophenol	133	0.00	U	69.4	52	32-103
541-73-1	MS	1,3-Dichlorobenzene	133	0.00	U	55.8	42	23-84
106-46-7	MS	1,4-Dichlorobenzene	133	0.00	U	56.8	43	23-88
95-50-1	MS	1,2-Dichlorobenzene	133	0.00	U	57.9	43	24-86
39638-32-9	MS	bis(2-Chloroisopropyl)ether	133	0.00	U	60.3	45	19-122
100-51-6	MS	Benzyl alcohol	133	0.00	U	78.3	59	34-98
95-48-7	MS	o-Cresol	133	0.00	U	71.7	54	29-96
65794-96-9	MS	m,p-Cresols	133	0.00	U	82.1	62	26-111
621-64-7	MS	N-Nitrosodi--n-propylamine *N-Nitrosodipropylamine*	133	0.00	U	77.6	58	32-115
67-72-1	MS	Hexachloroethane	133	0.00	U	55.3	41	25-82
98-95-3	MS	Nitrobenzene	133	0.00	U	73.8	55	35-124
78-59-1	MS	Isophorone	133	0.00	U	69.3	52	37-140
88-75-5	MS	2-Nitrophenol	133	0.00	U	61.7	46	33-115
105-67-9	MS	2,4-Dimethylphenol	133	0.00	U	66.6	50	31-106
111-91-1	MS	bis(2-Chloroethoxy)methane	133	0.00	U	70.9	53	35-112
120-83-2	MS	2,4-Dichlorophenol	133	0.00	U	63.5	48	36-110
65-85-0	MS	Benzoic acid	267	0.00	U	105	39	12-108

Semi-Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-760 **Sample Type:** Matrix Spike
Client ID: CAPA-13-29662MS **Matrix:** W
Lab Sample ID: 1202865217
Instrument: MSD8.I **Analysis Date:** 04/29/2013 15:50 **Dilution:** 1
Analyst: RMB **Prep Batch ID** 1297643
Inj. Vol: 1 uL **Batch ID:** 1297644

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
106-47-8	MS	4-Chloroaniline	133	0.00	U	97.6	73	33-120
87-68-3	MS	Hexachlorobutadiene	133	0.00	U	53.6	40	19-96
59-50-7	MS	Parachlorometa cresol *4-Chloro-3-methylphenol*	133	0.00	U	69.7	52	36-116
91-57-6	MS	2-Methylnaphthalene	133	0.00	U	55.5	42	27-103
91-20-3	MS	Naphthalene	133	0.00	U	60.4	45	28-99
90-12-0	MS	1-Methylnaphthalene	133	0.00	U	59.7	45	29-107
77-47-4	MS	Hexachlorocyclopentadiene	133	0.00	U	47.0	35	25-75
88-06-2	MS	2,4,6-Trichlorophenol	133	0.00	U	58.1	44	36-111
95-95-4	MS	2,4,5-Trichlorophenol	133	0.00	U	65.4	49	34-115
91-58-7	MS	2-Chloronaphthalene	133	0.00	U	66.5	50	33-96
88-74-4	MS	2-Nitroaniline *o-Nitroaniline*	133	0.00	U	82.0	62	31-120
99-09-2	MS	3-Nitroaniline *m-Nitroaniline*	133	0.00	U	96.6	72	32-123
131-11-3	MS	Dimethylphthalate	133	0.00	U	69.4	52	43-115
606-20-2	MS	2,6-Dinitrotoluene	133	0.00	U	72.8	55	42-121
121-14-2	MS	2,4-Dinitrotoluene	133	0.00	U	72.6	54	37-125
208-96-8	MS	Acenaphthylene	133	0.00	U	63.6	48	34-103
83-32-9	MS	Acenaphthene	133	0.00	U	60.6	45	31-104
51-28-5	MS	2,4-Dinitrophenol	133	0.00	U	51.5	39	25-108
132-64-9	MS	Dibenzofuran	133	0.00	U	66.1	50	38-106
58-90-2	MS	2,3,4,6-Tetrachlorophenol	133	0.00	U	58.9	44	33-123
84-66-2	MS	Diethylphthalate	133	0.00	U	67.8	51	43-116
100-02-7	MS	4-Nitrophenol	133	0.00	U	74.5	56	26-72

Semi-Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-760 **Sample Type:** Matrix Spike
Client ID: CAPA-13-29662MS **Matrix:** W
Lab Sample ID: 1202865217
Instrument: MSD8.I **Analysis Date:** 04/29/2013 15:50 **Dilution:** 1
Analyst: RMB **Prep Batch ID** 1297643
Inj. Vol: 1 uL **Batch ID:** 1297644

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
86-73-7	MS	Fluorene	133	0.00	U	66.1	50	33-110
7005-72-3	MS	4-Chlorophenylphenylether	133	0.00	U	66.8	50	30-112
100-01-6	MS	4-Nitroaniline *p-Nitroaniline*	133	0.00	U	110	83	28-131
534-52-1	MS	2-Methyl-4,6-dinitrophenol	133	0.00	U	61.8	46	31-113
122-39-4	MS	Diphenylamine	133	0.00	U	68.6	51	36-110
122-66-7	MS	Azobenzene *1,2-Diphenylhydrazine*	133	0.00	U	66.4	50	33-110
101-55-3	MS	4-Bromophenylphenylether	133	0.00	U	69.4	52	33-111
118-74-1	MS	Hexachlorobenzene	133	0.00	U	72.5	54	36-113
87-86-5	MS	Pentachlorophenol	133	0.00	U	45.3	34	25-110
85-01-8	MS	Phenanthrene	133	0.00	U	65.1	49	36-111
120-12-7	MS	Anthracene	133	0.00	U	65.3	49	36-107
84-74-2	MS	Di-n-butylphthalate	133	0.00	U	65.3	49	38-116
206-44-0	MS	Fluoranthene	133	0.00	U	65.4	49	35-116
129-00-0	MS	Pyrene	133	0.00	U	54.2	41	28-126
85-68-7	MS	Butylbenzylphthalate	133	0.00	U	54.6	41	32-120
117-81-7	MS	bis(2-Ethylhexyl)phthalate	133	0.00	U	55.5	42	30-121
56-55-3	MS	Benzo(a)anthracene	133	0.00	U	65.0	49	38-110
218-01-9	MS	Chrysene	133	0.00	U	66.3	50	35-115
117-84-0	MS	Di-n-octylphthalate	133	0.00	U	61.1	46	30-115
205-99-2	MS	Benzo(b)fluoranthene	133	0.00	U	57.9	43	37-115
207-08-9	MS	Benzo(k)fluoranthene	133	0.00	U	60.8	46	36-118
50-32-8	MS	Benzo(a)pyrene	133	0.00	U	61.9	46	36-109

Semi-Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-760 **Sample Type:** Matrix Spike
Client ID: CAPA-13-29662MS **Matrix:** W
Lab Sample ID: 1202865217
Instrument: MSD8.I **Analysis Date:** 04/29/2013 15:50 **Dilution:** 1
Analyst: RMB **Prep Batch ID** 1297643
Inj. Vol: 1 uL **Batch ID:** 1297644

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	133	0.00	U	89.7	67	28-121
53-70-3	MS	Dibenzo(a,h)anthracene	133	0.00	U	95.8	72	26-124
191-24-2	MS	Benzo(ghi)perylene	133	0.00	U	90.9	68	25-122
123-91-1	MS	1,4-Dioxane	133	6.22	J	70.2	48	26-90
930-55-2	MS	N-Nitrosopyrrolidine	133	0.00	U	75.8	57	40-113
95-94-3	MS	1,2,4,5-Tetrachlorobenzene	133	0.00	U	59.7	45	32-94
1912-24-9	MS	Atrazine	133	0.00	U	28.5	21 *	36-119
92-87-5	MS	Benzidine	267	0.00	U	35.8	13	10-125
91-94-1	MS	3,3'-Dichlorobenzidine	133	0.00	U	55.3	41	27-109
120-82-1	MS	1,2,4-Trichlorobenzene	133	0.00	U	58.4	44	23-90

Semi-Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-760 **Sample Type:** Matrix Spike Duplicate
Client ID: CAPA-13-29662MSD **Matrix:** W
Lab Sample ID: 1202865218
Instrument: MSD8.I **Analysis Date:** 04/29/2013 16:22 **Dilution:** 1
Analyst: RMB **Prep Batch ID** 1297643
Inj. Vol: 1 uL **Batch ID:** 1297644

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
62-75-9	MSD	N-Methyl-N-nitrosomethylam	133	0.00	U	74.4	56	27-85	18	0-30
110-86-1	MSD	Pyridine	133	0.00	U	78.7	59	21-93	51 *	0-30
62-53-3	MSD	Aniline	133	0.00	U	101	76	28-108	25	0-30
108-95-2	MSD	Phenol	133	0.00	U	66.0	50	15-100	15	0-30
111-44-4	MSD	bis(2-Chloroethyl) ether	133	0.00	U	84.9	64	27-114	22	0-30
95-57-8	MSD	2-Chlorophenol	133	0.00	U	74.1	56	32-103	7	0-30
541-73-1	MSD	1,3-Dichlorobenzene	133	0.00	U	68.9	52	23-84	21	0-30
106-46-7	MSD	1,4-Dichlorobenzene	133	0.00	U	70.5	53	23-88	22	0-30
95-50-1	MSD	1,2-Dichlorobenzene	133	0.00	U	72.1	54	24-86	22	0-30
39638-32-9	MSD	bis(2-Chloroisopropyl)ether	133	0.00	U	75.5	57	19-122	22	0-30
100-51-6	MSD	Benzyl alcohol	133	0.00	U	95.3	71	34-98	20	0-30
95-48-7	MSD	o-Cresol	133	0.00	U	88.5	66	29-96	21	0-30
65794-96-9	MSD	m,p-Cresols	133	0.00	U	99.9	75	26-111	20	0-30
621-64-7	MSD	N-Nitrosodi--n-propylamine *N-Nitrosodipropylamine*	133	0.00	U	96.9	73	32-115	22	0-30
67-72-1	MSD	Hexachloroethane	133	0.00	U	70.2	53	25-82	24	0-30
98-95-3	MSD	Nitrobenzene	133	0.00	U	91.0	68	35-124	21	0-30
78-59-1	MSD	Isophorone	133	0.00	U	88.8	67	37-140	25	0-30
88-75-5	MSD	2-Nitrophenol	133	0.00	U	63.0	47	33-115	2	0-30
105-67-9	MSD	2,4-Dimethylphenol	133	0.00	U	81.8	61	31-106	21	0-30
111-91-1	MSD	bis(2-Chloroethoxy)methane	133	0.00	U	89.7	67	35-112	23	0-30
120-83-2	MSD	2,4-Dichlorophenol	133	0.00	U	68.6	51	36-110	8	0-30
65-85-0	MSD	Benzoic acid	267	0.00	U	123	46	12-108	16	0-30

Semi-Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-760 **Sample Type:** Matrix Spike Duplicate
Client ID: CAPA-13-29662MSD **Matrix:** W
Lab Sample ID: 1202865218
Instrument: MSD8.I **Analysis Date:** 04/29/2013 16:22 **Dilution:** 1
Analyst: RMB **Prep Batch ID** 1297643
Inj. Vol: 1 uL **Batch ID:** 1297644

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	133	0.00	U	120	90	33-120	20	0-30
87-68-3	MSD Hexachlorobutadiene	133	0.00	U	66.7	50	19-96	22	0-30
59-50-7	MSD Parachlorometa cresol *4-Chloro-3-methylphenol*	133	0.00	U	88.5	66	36-116	24	0-30
91-57-6	MSD 2-Methylnaphthalene	133	0.00	U	69.8	52	27-103	23	0-30
91-20-3	MSD Naphthalene	133	0.00	U	75.2	56	28-99	22	0-30
90-12-0	MSD 1-Methylnaphthalene	133	0.00	U	74.0	56	29-107	22	0-30
77-47-4	MSD Hexachlorocyclopentadiene	133	0.00	U	58.2	44	25-75	21	0-30
88-06-2	MSD 2,4,6-Trichlorophenol	133	0.00	U	58.6	44	36-111	1	0-30
95-95-4	MSD 2,4,5-Trichlorophenol	133	0.00	U	69.3	52	34-115	6	0-30
91-58-7	MSD 2-Chloronaphthalene	133	0.00	U	83.6	63	33-96	23	0-30
88-74-4	MSD 2-Nitroaniline *o-Nitroaniline*	133	0.00	U	112	84	31-120	31 *	0-30
99-09-2	MSD 3-Nitroaniline *m-Nitroaniline*	133	0.00	U	148	111	32-123	42 *	0-30
131-11-3	MSD Dimethylphthalate	133	0.00	U	95.5	72	43-115	32 *	0-30
606-20-2	MSD 2,6-Dinitrotoluene	133	0.00	U	99.5	75	42-121	31 *	0-30
121-14-2	MSD 2,4-Dinitrotoluene	133	0.00	U	102	77	37-125	34 *	0-30
208-96-8	MSD Acenaphthylene	133	0.00	U	83.5	63	34-103	27	0-30
83-32-9	MSD Acenaphthene	133	0.00	U	78.6	59	31-104	26	0-30
51-28-5	MSD 2,4-Dinitrophenol	133	0.00	U	60.5	45	25-108	16	0-30
132-64-9	MSD Dibenzofuran	133	0.00	U	87.4	66	38-106	28	0-30
58-90-2	MSD 2,3,4,6-Tetrachlorophenol	133	0.00	U	61.0	46	33-123	3	0-30
84-66-2	MSD Diethylphthalate	133	0.00	U	95.7	72	43-116	34 *	0-30
100-02-7	MSD 4-Nitrophenol	133	0.00	U	88.5	66	26-72	17	0-30

Semi-Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-760 **Sample Type:** Matrix Spike Duplicate
Client ID: CAPA-13-29662MSD **Matrix:** W
Lab Sample ID: 1202865218
Instrument: MSD8.I **Analysis Date:** 04/29/2013 16:22 **Dilution:** 1
Analyst: RMB **Prep Batch ID** 1297643
Inj. Vol: 1 uL **Batch ID:** 1297644

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	133	0.00	U	89.9	67	33-110	31 *	0-30
7005-72-3	MSD	4-Chlorophenylphenylether	133	0.00	U	89.8	67	30-112	29	0-30
100-01-6	MSD	4-Nitroaniline *p-Nitroaniline*	133	0.00	U	159	119	28-131	36 *	0-30
534-52-1	MSD	2-Methyl-4,6-dinitrophenol	133	0.00	U	64.1	48	31-113	4	0-30
122-39-4	MSD	Diphenylamine	133	0.00	U	90.3	68	36-110	27	0-30
122-66-7	MSD	Azobenzene *1,2-Diphenylhydrazine*	133	0.00	U	85.1	64	33-110	25	0-30
101-55-3	MSD	4-Bromophenylphenylether	133	0.00	U	92.2	69	33-111	28	0-30
118-74-1	MSD	Hexachlorobenzene	133	0.00	U	95.6	72	36-113	28	0-30
87-86-5	MSD	Pentachlorophenol	133	0.00	U	48.5	36	25-110	7	0-30
85-01-8	MSD	Phenanthrene	133	0.00	U	87.9	66	36-111	30	0-30
120-12-7	MSD	Anthracene	133	0.00	U	87.4	66	36-107	29	0-30
84-74-2	MSD	Di-n-butylphthalate	133	0.00	U	89.4	67	38-116	31 *	0-30
206-44-0	MSD	Fluoranthene	133	0.00	U	91.0	68	35-116	33 *	0-30
129-00-0	MSD	Pyrene	133	0.00	U	71.7	54	28-126	28	0-30
85-68-7	MSD	Butylbenzylphthalate	133	0.00	U	72.8	55	32-120	29	0-30
117-81-7	MSD	bis(2-Ethylhexyl)phthalate	133	0.00	U	73.6	55	30-121	28	0-30
56-55-3	MSD	Benzo(a)anthracene	133	0.00	U	86.9	65	38-110	29	0-30
218-01-9	MSD	Chrysene	133	0.00	U	90.3	68	35-115	31 *	0-30
117-84-0	MSD	Di-n-octylphthalate	133	0.00	U	82.1	62	30-115	29	0-30
205-99-2	MSD	Benzo(b)fluoranthene	133	0.00	U	78.9	59	37-115	31 *	0-30
207-08-9	MSD	Benzo(k)fluoranthene	133	0.00	U	83.0	62	36-118	31 *	0-30
50-32-8	MSD	Benzo(a)pyrene	133	0.00	U	83.8	63	36-109	30	0-30

Semi-Volatile

Quality Control Summary
Spike Recovery Report

SDG Number: 2013-760 **Sample Type:** Matrix Spike Duplicate
Client ID: CAPA-13-29662MSD **Matrix:** W
Lab Sample ID: 1202865218
Instrument: MSD8.I **Analysis Date:** 04/29/2013 16:22 **Dilution:** 1
Analyst: RMB **Prep Batch ID** 1297643
Inj. Vol: 1 uL **Batch ID:** 1297644

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	133	0.00	U	115	87	28-121	25	0-30
53-70-3	MSD Dibenzo(a,h)anthracene	133	0.00	U	124	93	26-124	26	0-30
191-24-2	MSD Benzo(ghi)perylene	133	0.00	U	114	86	25-122	23	0-30
123-91-1	MSD 1,4-Dioxane	133	6.22	J	78.9	55	26-90	12	0-30
930-55-2	MSD N-Nitrosopyrrolidine	133	0.00	U	93.0	70	40-113	20	0-30
95-94-3	MSD 1,2,4,5-Tetrachlorobenzene	133	0.00	U	73.6	55	32-94	21	0-30
1912-24-9	MSD Atrazine	133	0.00	U	38.5	29 *	36-119	30	0-30
92-87-5	MSD Benzidine	267	0.00	U	88.6	33	10-125	85 *	0-30
91-94-1	MSD 3,3'-Dichlorobenzidine	133	0.00	U	86.1	65	27-109	44 *	0-30
120-82-1	MSD 1,2,4-Trichlorobenzene	133	0.00	U	70.1	53	23-90	18	0-30

Method Blank Summary

SDG Number:	**2013-760**	**Client:**	**ARSL001**	**Matrix:**	**WATER**
Client ID:	**MB for batch 1297643**	**Instrument ID:**	**MSD8.I**	**Data File:**	**s042913.B\s8D2904.D**
Lab Sample ID:	**1202865215**	**Prep Date:**	**04/26/2013 08:29**	**Analyzed:**	**04/29/13 14:13**
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 1297643	1202865216	s042913.B\s8D2905.D	04/29/13	1445
02	CAPA-13-29662	324498001	s042913.B\s8D2906.D	04/29/13	1518
03	CAPA-13-29662MS	1202865217	s042913.B\s8D2907.D	04/29/13	1550
04	CAPA-13-29662MSD	1202865218	s042913.B\s8D2908.D	04/29/13	1622
05	CAPA-13-29663	324498006	s042913.B\s8D2909.D	04/29/13	1654

Quality Control Data

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**			**Matrix:**	**WATER**
Lab Sample ID:	**1202865215**				
Client Sample:	**QC for batch 1297643**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**MB for batch 1297643**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1297644**	**Inst:**	**MSD8.I**	**Dilution:**	**1**
Run Date:	**04/29/2013 14:13**	**Analyst:**	**RMB**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/26/2013 08:29**	**Aliquot:**	**1000 mL**	**Final Volume:**	**1 mL**
Data File:	**s042913.B\s8D2904.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
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
39638-32-9	bis(2-Chloroisopropyl)ether	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	3.30	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	3-Nitroaniline *o-Nitroaniline*	U	10.0	ug/L	3.00	10.0
131-11-3	Dimethylphthalate *m-Nitroaniline*	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:	**2013-760**			**Matrix:**	**WATER**
Lab Sample ID:	**1202865215**				
Client Sample:	**QC for batch 1297643**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**MB for batch 1297643**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1297644**	**Inst:**	**MSD8.I**	**Dilution:**	**1**
Run Date:	**04/29/2013 14:13**	**Analyst:**	**RMB**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/26/2013 08:29**	**Aliquot:**	**1000 mL**	**Final Volume:**	**1 mL**
Data File:	**s042913.B\s8D2904.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	0.440	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:	**2013-760**			**Matrix:**	**WATER**
Lab Sample ID:	**1202865215**				
Client Sample:	**QC for batch 1297643**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**MB for batch 1297643**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1297644**	**Inst:**	**MSD8.I**	**Dilution:**	**1**
Run Date:	**04/29/2013 14:13**	**Analyst:**	**RMB**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/26/2013 08:29**	**Aliquot:**	**1000 mL**	**Final Volume:**	**1 mL**
Data File:	**s042913.B\s8D2904.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	79.1	100	ug/L	79.1	(23%-130%)
2-Fluorobiphenyl	29.0	50.0	ug/L	58.0	(30%-104%)
2-Fluorophenol	45.0	100	ug/L	45.0	(14%-77%)
Nitrobenzene-d5	37.6	50.0	ug/L	75.1	(34%-125%)
Phenol-d5	30.7	100	ug/L	30.7	(10%-78%)
p-Terphenyl-d14	37.5	50.0	ug/L	75.1	(33%-136%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown	2.079	4.73	ug/L	0	J
000067-66-3	Trichloromethane	2.186	52.6	ug/L	95	NJ
002213-23-2	Heptane, 2,4-dimethyl-	3.844	7.85	ug/L	91	NJ
002216-34-4	Octane, 4-methyl-	4.31	5.43	ug/L	91	NJ

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**			**Matrix:**	**WATER**
Lab Sample ID:	**1202865216**				
Client Sample:	**QC for batch 1297643**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1297643**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1297644**	**Inst:**	**MSD8.I**	**Dilution:**	**1**
Run Date:	**04/29/2013 14:45**	**Analyst:**	**RMB**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/26/2013 08:29**	**Aliquot:**	**1000 mL**	**Final Volume:**	**1 mL**
Data File:	**s042913.B\s8D2905.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
62-75-9	N-Methyl-N-nitrosomethylamine		20.3	ug/L	3.00	10.0
110-86-1	Pyridine		28.8	ug/L	3.00	10.0
62-53-3	Aniline		41.4	ug/L	3.00	10.0
108-95-2	Phenol		15.0	ug/L	3.00	10.0
111-44-4	bis(2-Chloroethyl) ether		32.0	ug/L	3.00	10.0
95-57-8	2-Chlorophenol		33.7	ug/L	3.00	10.0
541-73-1	1,3-Dichlorobenzene		25.5	ug/L	3.00	10.0
106-46-7	1,4-Dichlorobenzene		25.7	ug/L	3.00	10.0
95-50-1	1,2-Dichlorobenzene		26.2	ug/L	3.00	10.0
39638-32-9	bis(2-Chloroisopropyl)ether		27.4	ug/L	3.00	10.0
100-51-6	Benzyl alcohol		31.8	ug/L	3.00	10.0
95-48-7	o-Cresol		30.6	ug/L	3.00	10.0
65794-96-9	m,p-Cresols		32.2	ug/L	3.00	10.0
621-64-7	N-Nitrosodi--n-propylamine *N-Nitrosodipropylamine*		37.1	ug/L	3.00	10.0
67-72-1	Hexachloroethane		26.0	ug/L	3.00	10.0
98-95-3	Nitrobenzene		33.3	ug/L	3.00	10.0
78-59-1	Isophorone		35.2	ug/L	3.00	10.0
88-75-5	2-Nitrophenol		31.6	ug/L	3.00	10.0
105-67-9	2,4-Dimethylphenol		30.7	ug/L	3.00	10.0
111-91-1	bis(2-Chloroethoxy)methane		34.7	ug/L	3.00	10.0
120-83-2	2,4-Dichlorophenol		32.8	ug/L	3.00	10.0
65-85-0	Benzoic acid		30.4	ug/L	6.00	20.0
106-47-8	4-Chloroaniline		43.6	ug/L	3.30	10.0
87-68-3	Hexachlorobutadiene		24.7	ug/L	3.00	10.0
59-50-7	Parachlorometa cresol *4-Chloro-3-methylphenol*		35.1	ug/L	3.00	10.0
91-57-6	2-Methylnaphthalene		24.4	ug/L	0.300	1.00
91-20-3	Naphthalene		26.3	ug/L	0.300	1.00
90-12-0	1-Methylnaphthalene		26.4	ug/L	0.300	1.00
77-47-4	Hexachlorocyclopentadiene		18.9	ug/L	3.00	10.0
88-06-2	2,4,6-Trichlorophenol		35.2	ug/L	3.00	10.0
95-95-4	2,4,5-Trichlorophenol		37.3	ug/L	3.00	10.0
91-58-7	2-Chloronaphthalene		30.2	ug/L	0.300	1.00
88-74-4	2-Nitroaniline *o-Nitroaniline*		43.1	ug/L	3.00	10.0
99-09-2	3-Nitroaniline *m-Nitroaniline*		48.3	ug/L	3.00	10.0
131-11-3	Dimethylphthalate		38.0	ug/L	3.00	10.0
606-20-2	2,6-Dinitrotoluene		39.2	ug/L	3.00	10.0

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**			**Matrix:**	**WATER**
Lab Sample ID:	**1202865216**				
Client Sample:	**QC for batch 1297643**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1297643**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1297644**	**Inst:**	**MSD8.I**	**Dilution:**	**1**
Run Date:	**04/29/2013 14:45**	**Analyst:**	**RMB**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/26/2013 08:29**	**Aliquot:**	**1000 mL**	**Final Volume:**	**1 mL**
Data File:	**s042913.B\s8D2905.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
121-14-2	2,4-Dinitrotoluene		39.4	ug/L	3.00	10.0
208-96-8	Acenaphthylene		31.4	ug/L	0.300	1.00
83-32-9	Acenaphthene		29.9	ug/L	0.300	1.00
51-28-5	2,4-Dinitrophenol		30.4	ug/L	5.00	20.0
132-64-9	Dibenzofuran		32.6	ug/L	3.00	10.0
58-90-2	2,3,4,6-Tetrachlorophenol		37.4	ug/L	3.00	10.0
84-66-2	Diethylphthalate		37.7	ug/L	3.00	10.0
100-02-7	4-Nitrophenol		22.1	ug/L	3.00	10.0
86-73-7	Fluorene		33.4	ug/L	0.300	1.00
7005-72-3	4-Chlorophenylphenylether		33.7	ug/L	3.00	10.0
100-01-6	4-Nitroaniline		55.8	ug/L	3.00	10.0
	p-Nitroaniline					
534-52-1	2-Methyl-4,6-dinitrophenol		40.8	ug/L	3.00	10.0
122-39-4	Diphenylamine		37.8	ug/L	3.00	10.0
122-66-7	Azobenzene		34.6	ug/L	3.00	10.0
	1,2-Diphenylhydrazine					
101-55-3	4-Bromophenylphenylether		37.0	ug/L	3.00	10.0
118-74-1	Hexachlorobenzene		39.4	ug/L	3.00	10.0
87-86-5	Pentachlorophenol		30.3	ug/L	3.00	10.0
88-85-7	Dinoseb	U	10.0	ug/L	3.00	10.0
85-01-8	Phenanthrene		34.5	ug/L	0.300	1.00
120-12-7	Anthracene		34.4	ug/L	0.300	1.00
84-74-2	Di-n-butylphthalate		37.2	ug/L	3.00	10.0
206-44-0	Fluoranthene		34.8	ug/L	0.300	1.00
129-00-0	Pyrene		30.0	ug/L	0.300	1.00
85-68-7	Butylbenzylphthalate		31.2	ug/L	3.00	10.0
117-81-7	bis(2-Ethylhexyl)phthalate		31.4	ug/L	3.00	10.0
56-55-3	Benzo(a)anthracene		34.4	ug/L	0.300	1.00
218-01-9	Chrysene		35.1	ug/L	0.300	1.00
117-84-0	Di-n-octylphthalate		33.6	ug/L	3.00	10.0
205-99-2	Benzo(b)fluoranthene		31.8	ug/L	0.300	1.00
207-08-9	Benzo(k)fluoranthene		33.0	ug/L	0.300	1.00
50-32-8	Benzo(a)pyrene		33.2	ug/L	0.440	1.00
193-39-5	Indeno(1,2,3-cd)pyrene		47.1	ug/L	0.300	1.00
53-70-3	Dibenzo(a,h)anthracene		49.1	ug/L	0.300	1.00
191-24-2	Benzo(ghi)perylene		47.4	ug/L	0.300	1.00
123-91-1	1,4-Dioxane		21.3	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		34.1	ug/L	3.00	10.0

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**			**Matrix:**	**WATER**
Lab Sample ID:	**1202865216**				
Client Sample:	**QC for batch 1297643**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**LCS for batch 1297643**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1297644**	**Inst:**	**MSD8.I**	**Dilution:**	**1**
Run Date:	**04/29/2013 14:45**	**Analyst:**	**RMB**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/26/2013 08:29**	**Aliquot:**	**1000 mL**	**Final Volume:**	**1 mL**
Data File:	**s042913.B\s8D2905.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		27.2	ug/L	3.00	10.0
608-93-5	Pentachlorobenzene	U	10.0	ug/L	3.00	10.0
1912-24-9	Atrazine		16.9	ug/L	3.00	10.0
92-87-5	Benzidine		26.6	ug/L	3.00	10.0
91-94-1	3,3'-Dichlorobenzidine		31.9	ug/L	3.00	10.0
120-82-1	1,2,4-Trichlorobenzene		25.6	ug/L	3.00	10.0

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
2,4,6-Tribromophenol	83.3	100	ug/L	83.3	(23%-130%)
2-Fluorobiphenyl	31.5	50.0	ug/L	63.0	(30%-104%)
2-Fluorophenol	42.4	100	ug/L	42.4	(14%-77%)
Nitrobenzene-d5	33.3	50.0	ug/L	66.6	(34%-125%)
Phenol-d5	28.7	100	ug/L	28.7	(10%-78%)
p-Terphenyl-d14	33.9	50.0	ug/L	67.7	(33%-136%)

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**	**Date Collected:**	**04/23/2013 13:32**	**Matrix:**	**W**
Lab Sample ID:	**1202865217**	**Date Received:**	**04/25/2013 09:00**		
Client Sample:	**QC for batch 1297643**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAPA-13-29662MS**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1297644**	**Inst:**	**MSD8.I**	**Dilution:**	**1**
Run Date:	**04/29/2013 15:50**	**Analyst:**	**RMB**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/26/2013 08:29**	**Aliquot:**	**375 mL**	**Final Volume:**	**1 mL**
Data File:	**s042913.B\s8D2907.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
62-75-9	N-Methyl-N-nitrosomethylamine		62.0	ug/L	8.00	26.7
110-86-1	Pyridine		46.7	ug/L	8.00	26.7
62-53-3	Aniline		78.2	ug/L	8.00	26.7
108-95-2	Phenol		56.7	ug/L	8.00	26.7
111-44-4	bis(2-Chloroethyl) ether		68.2	ug/L	8.00	26.7
95-57-8	2-Chlorophenol		69.4	ug/L	8.00	26.7
541-73-1	1,3-Dichlorobenzene		55.8	ug/L	8.00	26.7
106-46-7	1,4-Dichlorobenzene		56.8	ug/L	8.00	26.7
95-50-1	1,2-Dichlorobenzene		57.9	ug/L	8.00	26.7
39638-32-9	bis(2-Chloroisopropyl)ether		60.3	ug/L	8.00	26.7
100-51-6	Benzyl alcohol		78.3	ug/L	8.00	26.7
95-48-7	o-Cresol		71.7	ug/L	8.00	26.7
65794-96-9	m,p-Cresols		82.1	ug/L	8.00	26.7
621-64-7	N-Nitrosodi--n-propylamine *N-Nitrosodipropylamine*		77.6	ug/L	8.00	26.7
67-72-1	Hexachloroethane		55.3	ug/L	8.00	26.7
98-95-3	Nitrobenzene		73.8	ug/L	8.00	26.7
78-59-1	Isophorone		69.3	ug/L	8.00	26.7
88-75-5	2-Nitrophenol		61.7	ug/L	8.00	26.7
105-67-9	2,4-Dimethylphenol		66.6	ug/L	8.00	26.7
111-91-1	bis(2-Chloroethoxy)methane		70.9	ug/L	8.00	26.7
120-83-2	2,4-Dichlorophenol		63.5	ug/L	8.00	26.7
65-85-0	Benzoic acid		105	ug/L	16.0	53.3
106-47-8	4-Chloroaniline		97.6	ug/L	8.80	26.7
87-68-3	Hexachlorobutadiene		53.6	ug/L	8.00	26.7
59-50-7	Parachlorometa cresol *4-Chloro-3-methylphenol*		69.7	ug/L	8.00	26.7
91-57-6	2-Methylnaphthalene		55.5	ug/L	0.800	2.67
91-20-3	Naphthalene		60.4	ug/L	0.800	2.67
90-12-0	1-Methylnaphthalene		59.7	ug/L	0.800	2.67
77-47-4	Hexachlorocyclopentadiene		47.0	ug/L	8.00	26.7
88-06-2	2,4,6-Trichlorophenol		58.1	ug/L	8.00	26.7
95-95-4	2,4,5-Trichlorophenol		65.4	ug/L	8.00	26.7
91-58-7	2-Chloronaphthalene		66.5	ug/L	0.800	2.67
88-74-4	2-Nitroaniline *o-Nitroaniline*		82.0	ug/L	8.00	26.7
99-09-2	3-Nitroaniline *m-Nitroaniline*		96.6	ug/L	8.00	26.7
131-11-3	Dimethylphthalate		69.4	ug/L	8.00	26.7
606-20-2	2,6-Dinitrotoluene		72.8	ug/L	8.00	26.7

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**	**Date Collected:**	**04/23/2013 13:32**	**Matrix:**	**W**
Lab Sample ID:	**1202865217**	**Date Received:**	**04/25/2013 09:00**		
Client Sample:	**QC for batch 1297643**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAPA-13-29662MS**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1297644**	**Inst:**	**MSD8.I**	**Dilution:**	**1**
Run Date:	**04/29/2013 15:50**	**Analyst:**	**RMB**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/26/2013 08:29**	**Aliquot:**	**375 mL**	**Final Volume:**	**1 mL**
Data File:	**s042913.B\s8D2907.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
121-14-2	2,4-Dinitrotoluene		72.6	ug/L	8.00	26.7
208-96-8	Acenaphthylene		63.6	ug/L	0.800	2.67
83-32-9	Acenaphthene		60.6	ug/L	0.800	2.67
51-28-5	2,4-Dinitrophenol	J	51.5	ug/L	13.3	53.3
132-64-9	Dibenzofuran		66.1	ug/L	8.00	26.7
58-90-2	2,3,4,6-Tetrachlorophenol		58.9	ug/L	8.00	26.7
84-66-2	Diethylphthalate		67.8	ug/L	8.00	26.7
100-02-7	4-Nitrophenol		74.5	ug/L	8.00	26.7
86-73-7	Fluorene		66.1	ug/L	0.800	2.67
7005-72-3	4-Chlorophenylphenylether		66.8	ug/L	8.00	26.7
100-01-6	4-Nitroaniline *p-Nitroaniline*		110	ug/L	8.00	26.7
534-52-1	2-Methyl-4,6-dinitrophenol		61.8	ug/L	8.00	26.7
122-39-4	Diphenylamine		68.6	ug/L	8.00	26.7
122-66-7	Azobenzene *1,2-Diphenylhydrazine*		66.4	ug/L	8.00	26.7
101-55-3	4-Bromophenylphenylether		69.4	ug/L	8.00	26.7
118-74-1	Hexachlorobenzene		72.5	ug/L	8.00	26.7
87-86-5	Pentachlorophenol		45.3	ug/L	8.00	26.7
88-85-7	Dinoseb	U	26.7	ug/L	8.00	26.7
85-01-8	Phenanthrene		65.1	ug/L	0.800	2.67
120-12-7	Anthracene		65.3	ug/L	0.800	2.67
84-74-2	Di-n-butylphthalate		65.3	ug/L	8.00	26.7
206-44-0	Fluoranthene		65.4	ug/L	0.800	2.67
129-00-0	Pyrene		54.2	ug/L	0.800	2.67
85-68-7	Butylbenzylphthalate		54.6	ug/L	8.00	26.7
117-81-7	bis(2-Ethylhexyl)phthalate		55.5	ug/L	8.00	26.7
56-55-3	Benzo(a)anthracene		65.0	ug/L	0.800	2.67
218-01-9	Chrysene		66.3	ug/L	0.800	2.67
117-84-0	Di-n-octylphthalate		61.1	ug/L	8.00	26.7
205-99-2	Benzo(b)fluoranthene		57.9	ug/L	0.800	2.67
207-08-9	Benzo(k)fluoranthene		60.8	ug/L	0.800	2.67
50-32-8	Benzo(a)pyrene		61.9	ug/L	1.17	2.67
193-39-5	Indeno(1,2,3-cd)pyrene		89.7	ug/L	0.800	2.67
53-70-3	Dibenzo(a,h)anthracene		95.8	ug/L	0.800	2.67
191-24-2	Benzo(ghi)perylene		90.9	ug/L	0.800	2.67
123-91-1	1,4-Dioxane		70.2	ug/L	8.00	26.7
55-18-5	N-Nitrosodiethylamine	U	26.7	ug/L	8.00	26.7
930-55-2	N-Nitrosopyrrolidine		75.8	ug/L	8.00	26.7

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**	**Date Collected:**	**04/23/2013 13:32**	**Matrix:**	**W**
Lab Sample ID:	**1202865217**	**Date Received:**	**04/25/2013 09:00**		
Client Sample:	**QC for batch 1297643**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAPA-13-29662MS**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1297644**	**Inst:**	**MSD8.I**	**Dilution:**	**1**
Run Date:	**04/29/2013 15:50**	**Analyst:**	**RMB**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/26/2013 08:29**	**Aliquot:**	**375 mL**	**Final Volume:**	**1 mL**
Data File:	**s042913.B\s8D2907.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
924-16-3	N-Nitrosodi-n-butylamine	U	26.7	ug/L	8.00	26.7
95-94-3	1,2,4,5-Tetrachlorobenzene		59.7	ug/L	8.00	26.7
608-93-5	Pentachlorobenzene	U	26.7	ug/L	8.00	26.7
1912-24-9	Atrazine		28.5	ug/L	8.00	26.7
92-87-5	Benzidine		35.8	ug/L	8.00	26.7
91-94-1	3,3'-Dichlorobenzidine		55.3	ug/L	8.00	26.7
120-82-1	1,2,4-Trichlorobenzene		58.4	ug/L	8.00	26.7

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
2,4,6-Tribromophenol	139	267	ug/L	52.1	(23%-130%)
2-Fluorobiphenyl	64.1	133	ug/L	48.1	(30%-104%)
2-Fluorophenol	120	267	ug/L	45.0	(14%-77%)
Nitrobenzene-d5	71.9	133	ug/L	53.9	(34%-125%)
Phenol-d5	112	267	ug/L	42.2	(10%-78%)
p-Terphenyl-d14	61.1	133	ug/L	45.9	(33%-136%)

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**	**Date Collected:**	**04/23/2013 13:32**	**Matrix:**	**W**
Lab Sample ID:	**1202865218**	**Date Received:**	**04/25/2013 09:00**		
Client Sample:	**QC for batch 1297643**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAPA-13-29662MSD**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1297644**	**Inst:**	**MSD8.I**	**Dilution:**	**1**
Run Date:	**04/29/2013 16:22**	**Analyst:**	**RMB**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/26/2013 08:29**	**Aliquot:**	**375 mL**	**Final Volume:**	**1 mL**
Data File:	**s042913.B\s8D2908.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
62-75-9	N-Methyl-N-nitrosomethylamine		74.4	ug/L	8.00	26.7
110-86-1	Pyridine		78.7	ug/L	8.00	26.7
62-53-3	Aniline		101	ug/L	8.00	26.7
108-95-2	Phenol		66.0	ug/L	8.00	26.7
111-44-4	bis(2-Chloroethyl) ether		84.9	ug/L	8.00	26.7
95-57-8	2-Chlorophenol		74.1	ug/L	8.00	26.7
541-73-1	1,3-Dichlorobenzene		68.9	ug/L	8.00	26.7
106-46-7	1,4-Dichlorobenzene		70.5	ug/L	8.00	26.7
95-50-1	1,2-Dichlorobenzene		72.1	ug/L	8.00	26.7
39638-32-9	bis(2-Chloroisopropyl)ether		75.5	ug/L	8.00	26.7
100-51-6	Benzyl alcohol		95.3	ug/L	8.00	26.7
95-48-7	o-Cresol		88.5	ug/L	8.00	26.7
65794-96-9	m,p-Cresols		99.9	ug/L	8.00	26.7
621-64-7	N-Nitrosodi--n-propylamine *N-Nitrosodipropylamine*		96.9	ug/L	8.00	26.7
67-72-1	Hexachloroethane		70.2	ug/L	8.00	26.7
98-95-3	Nitrobenzene		91.0	ug/L	8.00	26.7
78-59-1	Isophorone		88.8	ug/L	8.00	26.7
88-75-5	2-Nitrophenol		63.0	ug/L	8.00	26.7
105-67-9	2,4-Dimethylphenol		81.8	ug/L	8.00	26.7
111-91-1	bis(2-Chloroethoxy)methane		89.7	ug/L	8.00	26.7
120-83-2	2,4-Dichlorophenol		68.6	ug/L	8.00	26.7
65-85-0	Benzoic acid		123	ug/L	16.0	53.3
106-47-8	4-Chloroaniline		120	ug/L	8.80	26.7
87-68-3	Hexachlorobutadiene		66.7	ug/L	8.00	26.7
59-50-7	Parachlorometa cresol *4-Chloro-3-methylphenol*		88.5	ug/L	8.00	26.7
91-57-6	2-Methylnaphthalene		69.8	ug/L	0.800	2.67
91-20-3	Naphthalene		75.2	ug/L	0.800	2.67
90-12-0	1-Methylnaphthalene		74.0	ug/L	0.800	2.67
77-47-4	Hexachlorocyclopentadiene		58.2	ug/L	8.00	26.7
88-06-2	2,4,6-Trichlorophenol		58.6	ug/L	8.00	26.7
95-95-4	2,4,5-Trichlorophenol		69.3	ug/L	8.00	26.7
91-58-7	2-Chloronaphthalene		83.6	ug/L	0.800	2.67
88-74-4	2-Nitroaniline		112	ug/L	8.00	26.7
99-09-2	*o-Nitroaniline* 3-Nitroaniline *m-Nitroaniline*		148	ug/L	8.00	26.7
131-11-3	Dimethylphthalate		95.5	ug/L	8.00	26.7
606-20-2	2,6-Dinitrotoluene		99.5	ug/L	8.00	26.7

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**	**Date Collected:**	**04/23/2013 13:32**	**Matrix:**	**W**
Lab Sample ID:	**1202865218**	**Date Received:**	**04/25/2013 09:00**		
Client Sample:	**QC for batch 1297643**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAPA-13-29662MSD**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1297644**	**Inst:**	**MSD8.I**	**Dilution:**	**1**
Run Date:	**04/29/2013 16:22**	**Analyst:**	**RMB**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/26/2013 08:29**	**Aliquot:**	**375 mL**	**Final Volume:**	**1 mL**
Data File:	**s042913.B\s8D2908.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
121-14-2	2,4-Dinitrotoluene		102	ug/L	8.00	26.7
208-96-8	Acenaphthylene		83.5	ug/L	0.800	2.67
83-32-9	Acenaphthene		78.6	ug/L	0.800	2.67
51-28-5	2,4-Dinitrophenol		60.5	ug/L	13.3	53.3
132-64-9	Dibenzofuran		87.4	ug/L	8.00	26.7
58-90-2	2,3,4,6-Tetrachlorophenol		61.0	ug/L	8.00	26.7
84-66-2	Diethylphthalate		95.7	ug/L	8.00	26.7
100-02-7	4-Nitrophenol		88.5	ug/L	8.00	26.7
86-73-7	Fluorene		89.9	ug/L	0.800	2.67
7005-72-3	4-Chlorophenylphenylether		89.8	ug/L	8.00	26.7
100-01-6	4-Nitroaniline		159	ug/L	8.00	26.7
	p-Nitroaniline					
534-52-1	2-Methyl-4,6-dinitrophenol		64.1	ug/L	8.00	26.7
122-39-4	Diphenylamine		90.3	ug/L	8.00	26.7
122-66-7	Azobenzene		85.1	ug/L	8.00	26.7
	1,2-Diphenylhydrazine					
101-55-3	4-Bromophenylphenylether		92.2	ug/L	8.00	26.7
118-74-1	Hexachlorobenzene		95.6	ug/L	8.00	26.7
87-86-5	Pentachlorophenol		48.5	ug/L	8.00	26.7
88-85-7	Dinoseb	U	26.7	ug/L	8.00	26.7
85-01-8	Phenanthrene		87.9	ug/L	0.800	2.67
120-12-7	Anthracene		87.4	ug/L	0.800	2.67
84-74-2	Di-n-butylphthalate		89.4	ug/L	8.00	26.7
206-44-0	Fluoranthene		91.0	ug/L	0.800	2.67
129-00-0	Pyrene		71.7	ug/L	0.800	2.67
85-68-7	Butylbenzylphthalate		72.8	ug/L	8.00	26.7
117-81-7	bis(2-Ethylhexyl)phthalate		73.6	ug/L	8.00	26.7
56-55-3	Benzo(a)anthracene		86.9	ug/L	0.800	2.67
218-01-9	Chrysene		90.3	ug/L	0.800	2.67
117-84-0	Di-n-octylphthalate		82.1	ug/L	8.00	26.7
205-99-2	Benzo(b)fluoranthene		78.9	ug/L	0.800	2.67
207-08-9	Benzo(k)fluoranthene		83.0	ug/L	0.800	2.67
50-32-8	Benzo(a)pyrene		83.8	ug/L	1.17	2.67
193-39-5	Indeno(1,2,3-cd)pyrene		115	ug/L	0.800	2.67
53-70-3	Dibenzo(a,h)anthracene		124	ug/L	0.800	2.67
191-24-2	Benzo(ghi)perylene		114	ug/L	0.800	2.67
123-91-1	1,4-Dioxane		78.9	ug/L	8.00	26.7
55-18-5	N-Nitrosodiethylamine	U	26.7	ug/L	8.00	26.7
930-55-2	N-Nitrosopyrrolidine		93.0	ug/L	8.00	26.7

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**2013-760**	**Date Collected:**	**04/23/2013 13:32**	**Matrix:**	**W**
Lab Sample ID:	**1202865218**	**Date Received:**	**04/25/2013 09:00**		
Client Sample:	**QC for batch 1297643**	**Client:**	**ARSL001**	**Project:**	**QC**
Client ID:	**CAPA-13-29662MSD**	**Method:**	**SW846 8270C**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1297644**	**Inst:**	**MSD8.I**	**Dilution:**	**1**
Run Date:	**04/29/2013 16:22**	**Analyst:**	**RMB**	**Inj. Vol:**	**1 uL**
Prep Date:	**04/26/2013 08:29**	**Aliquot:**	**375 mL**	**Final Volume:**	**1 mL**
Data File:	**s042913.B\s8D2908.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
924-16-3	N-Nitrosodi-n-butylamine	U	26.7	ug/L	8.00	26.7
95-94-3	1,2,4,5-Tetrachlorobenzene		73.6	ug/L	8.00	26.7
608-93-5	Pentachlorobenzene	U	26.7	ug/L	8.00	26.7
1912-24-9	Atrazine		38.5	ug/L	8.00	26.7
92-87-5	Benzidine		88.6	ug/L	8.00	26.7
91-94-1	3,3'-Dichlorobenzidine		86.1	ug/L	8.00	26.7
120-82-1	1,2,4-Trichlorobenzene		70.1	ug/L	8.00	26.7

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
2,4,6-Tribromophenol	154	267	ug/L	57.8	(23%-130%)
2-Fluorobiphenyl	83.6	133	ug/L	62.7	(30%-104%)
2-Fluorophenol	125	267	ug/L	46.8	(14%-77%)
Nitrobenzene-d5	90.7	133	ug/L	68.0	(34%-125%)
Phenol-d5	130	267	ug/L	48.9	(10%-78%)
p-Terphenyl-d14	79.0	133	ug/L	59.2	(33%-136%)

Miscellaneous

DATA EXCEPTION REPORT

Mo.Day Yr.	**Division:**	**Quality Criteria:**	**Type:**
02-MAY-13	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
SEMIVOA GC/MS	SW846 8270C	Liquid	ESHL
Batch ID:	**Sample Numbers:**		
1297644	See Below		

Potentially affected work order(s)(SDG): 324498(2013-760)

Application Issues:

Failed Recovery for MS/PS

Failed RPD for MS/MSD, or PS/PSD

Failed Yield for Surrogates

Failed Recovery for MSD/PSD

Failed Recovery for LCS/LCSD

Specification and Requirements Exception Description:	**DER Disposition:**
1. The LCS(1202865216) recovered Atrazine at 34%. The limits are 47%-115%. 2. The MS(1202865217) and MSD(1202865218) recovered Atrazine at 21% and 29%, respectively. The limits are 36%-119%. 3. Sample 324498006 recovered surrogates outside of the acceptance limits. Please see the QC Summary report for specific failures. 4. The MS(1202865217)/MSD(1202865218) pair displayed RPD values outside of the acceptance limits. Please see the QC Summary report for specific failures.	1., 2. The analyte had at least 10% recovery in the LCS, MS, and MSD and was well within the %Drift acceptance criteria for Atrazine in the CCV. Since the failure also represented less than 5% of the total requested spike analyte list, the data satisfied the acceptance criteria for the client and the results have been reported. 3. The sample was re-extracted out of holding in batch 1298462. Since the re-extraction displayed similar surrogate recoveries, the failures were attributed to sample matrix interference and the original data results have been reported. The re-extracted raw data results are located in the Miscellaneous Section of the data package. 4. Since the spike analytes were individually within the acceptance limits for the MS and MSD, the non-conformance had no adverse impact on the data and the results have been reported.

Originator's Name:

Richard Bomar 02-MAY-13

Data Validator/Group Leader:

Barbara Bailey 03-MAY-13

Metals Analysis

Case Narrative

Metals Fractional Narrative
ARS International (ARSL)
SDG 2013-760

Sample Analysis

Sample ID	Client ID
324498002	CAPA-13-29673
324498005	CAPA-13-29674
1202867557	Method Blank (MB) **ICP**
1202867558	Laboratory Control Sample (LCS)
1202867561	324671009(CAPA-13-29678L) Serial Dilution (SD)
1202867559	324671009(CAPA-13-29678D) Sample Duplicate (DUP)
1202867560	324671009(CAPA-13-29678S) Matrix Spike (MS)
1202867562	Method Blank (MB) **ICP-MS**
1202867563	Laboratory Control Sample (LCS)
1202867566	324671009(CAPA-13-29678L) Serial Dilution (SD)
1202867564	324671009(CAPA-13-29678D) Sample Duplicate (DUP)
1202867565	324671009(CAPA-13-29678S) Matrix Spike (MS)
1202872863	Method Blank (MB) **CVAA**
1202872864	Laboratory Control Sample (LCS)
1202872867	324498002(CAPA-13-29673L) Serial Dilution (SD)
1202872865	324498002(CAPA-13-29673D) Sample Duplicate (DUP)
1202872866	324498002(CAPA-13-29673S) Matrix Spike (MS)

Method/Analysis Information

Analytical Batch:	1298549, 1298551, 1300558 and 1303342
Prep Batch :	1298546, 1298550 and 1300554
Standard Operating Procedures:	GL-MA-E-013 REV# 22, GL-MA-E-006 REV# 9, GL-MA-E-014 REV# 25, GL-MA-E-010 REV# 25 and GL-GC-E-107 REV# 8
Analytical Method:	SW846 3005/6010B, SW846 3005/6020 DOE-AL, EPA 245.1/245.2 and SM 2340 B

Prep Method : SW846 3005A and EPA 245.1/245.2 Prep

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.

System Configuration

The Hardness as CaCO3 is calculated from Calcium and Magnesium results.

The Metals analysis-ICP was performed on a P E 5300 Optima radial/axial-viewing inductively coupled plasma atomic emission spectrometer. The instrument is equipped with a Burgener nebulizer, cyclonic spray chamber, and yttrium or scandium internal standard. Operating conditions for the ICP are set at a power level of 1500 watts. The instrument has a peristaltic pump flow rate of 1.4L/min, argon gas flows of 15 L/min and 0.2 L/min for the torch and auxiliary gases, and a flow setting of 0.65L/min for the nebulizer.

The Metals analysis - ICPMS was performed on a Perkin Elmer ELAN 6100E inductively coupled plasma mass spectrometer (ICP-MS). The instrument is equipped with a cross-flow nebulizer, quadruple mass spectrometer, and dual mode electron multiplier detector. Internal standards of scandium, germanium, indium, tantalum, and/or lutetium were utilized to cover the mass spectrum. Operating conditions are set at 1400W power and combined argon pressures of 360+/-7 kPa for the plasma and auxiliary gases, and 0.85 L/min carrier gas flow, and an initial lens voltage of 5.2.

The Metals analysis - ICPMS was performed on a Perkin Elmer ELAN 9000 inductively coupled plasma mass spectrometer (ICP-MS). The instrument is equipped with a cross-flow nebulizer, quadruple mass spectrometer, and dual mode electron multiplier detector. Internal standards of scandium, germanium, indium, tantalum, and/or lutetium were utilized to cover the mass spectrum. Operating conditions are set at 1400W power and combined argon pressures of 360+/-7 kPa for the plasma and auxiliary gases, and 0.85 L/min carrier gas flow, and an initial lens voltage of 5.2.

The Metals analysis-Mercury was performed on a Perkin-Elmer Flow Injection Mercury System (FIMS-100) automated mercury analyzer. The instrument consists of a cold vapor atomic absorption spectrometer set to detect mercury at a wavelength of 253.7 nm. Sample introduction through the flow injection system is performed via a peristaltic pump at 9 mL/min and nitrogen carrier gas rate of 80 mL/min.

Calibration Information

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

CRDL Requirements
All CRDL standard(s) met the referenced advisory control limits.

ICSA/ICSAB Statement
All interference check samples (ICSA and ICSAB) associated with this SDG met the established acceptance criteria.

Continuing Calibration Blank (CCB) Requirements
All continuing calibration blanks (CCB) bracketing this batch met the established acceptance criteria.

Continuing Calibration Verification (CCV) Requirements
All continuing calibration verifications (CCV) bracketing this SDG met the acceptance criteria.

Quality Control (QC) Information

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

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

Quality Control (QC) Sample Statement
The following samples were selected as the quality control (QC) samples for this SDG: 324671009 (CAPA-13-29678)-ICP and ICP-MS and 324498002 (CAPA-13-29673)-CVAA.

Matrix Spike (MS) Recovery Statement
The percent recoveries (%R) obtained from the MS analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. All applicable elements met the acceptance criteria.

Duplicate Relative Percent Difference (RPD) Statement
The RPD obtained from the designated sample duplicate (DUP) is evaluated based on acceptance criteria of 20% when the sample is >5X the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control of +/-RL is used to evaluate the DUP results. All applicable analytes met these requirements.

Serial Dilution % Difference Statement
The serial dilution is used to assess matrix suppression or enhancement. Raw element concentrations that are 25X the IDL/MDL for CVAA, 50X the IDL/MDL for ICP, and 100X the IDL/MDL for ICP-MS analyses are applicable for serial dilution assessment. All applicable analytes met the acceptance criteria of less than 10% difference (%D).

Technical Information

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

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

Sample Dilutions
Dilutions are performed to minimize matrix interferences resulting from elevated mineral element concentrations present in solid samples and/or to bring over range target analyte concentrations into the linear calibration range of the instruments. Sample 324498005 required a dilution for tin in order to minimize suppression due to matrix interferences.

Preparation Information
The samples in this SDG were prepared exactly according to the cited SOP.

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
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.

Additional Comments
Additional comments were not required for this SDG.
Total Hardness by Calculation is determined using the results of Total Calcium (Ca) and Total Magnesium (Mg) determined by ICP or ICP-MS.

Hardness = 2.497 (Ca) + 4.118 (Mg)

Please refer to the Total Ca and Total Mg data to validate results appearing on the Hardness Summary sheet. Both results are in the Inorganic/metals section of the package. There is no Batch QC for calculated results, and thus no QC Summary for the Hardness by Calculation Batch. The MDLs and PQLs are calculated using the higher of the two calculated values of Ca or Mg.

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:** 05/22/13

Sample Data Summary

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: 2013-760 GEL Work Order: 324498

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

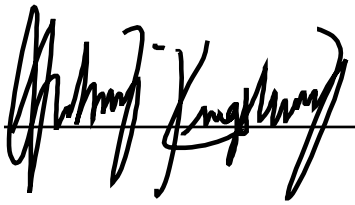
J Value is estimated

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 limit as defined in the 'U' qualifier above.

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  05/22/13

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2013−760 **CONTRACT:** ESHL00210 **METHOD TYPE:** EPA

SAMPLE ID: 324498002 **BASIS:** As Received **DATE COLLECTED** 23−APR−13

CLIENT ID: CAPA−13−29673 **LEVEL:** Low **DATE RECEIVED** 25−APR−13

MATRIX: W **%SOLIDS:** 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7439−97−6	Mercury	0.20	ug/L	U	0.067	0.2	0.2	1	AV	NOR1	05/14/13 11:57	051413W2−4	1300558

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2013−760 **CONTRACT:** ESHL00210 **METHOD TYPE:** SW846

SAMPLE ID: 324498002 **BASIS:** As Received **DATE COLLECTED** 23−APR−13

CLIENT ID: CAPA−13−29673 **LEVEL:** Low **DATE RECEIVED** 25−APR−13

MATRIX: W **%SOLIDS:** 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	2220	ug/L		68	200	200	1	P	HSC	05/17/13 09:42	051713B−1	1298549
7440−36−0	Antimony	3	ug/L	U	1	3	3	1	MS	SKJ	05/18/13 18:36	130518−3	1298551
7440−38−2	Arsenic	5	ug/L	U	1.7	5	5	1	MS	SKJ	05/18/13 18:36	130518−3	1298551
7440−39−3	Barium	29.3	ug/L		1	5	5	1	P	HSC	05/17/13 09:42	051713B−1	1298549
7440−41−7	Beryllium	5	ug/L	U	1	5	5	1	P	HSC	05/17/13 09:42	051713B−1	1298549
7440−42−8	Boron	38.9	ug/L	J	15	50	50	1	P	HSC	05/17/13 09:42	051713B−1	1298549
7440−43−9	Cadmium	1	ug/L	U	0.11	1	1	1	MS	SKJ	05/18/13 18:36	130518−3	1298551
7440−70−2	Calcium	4150	ug/L		50	200	200	1	P	HSC	05/17/13 09:42	051713B−1	1298549
7440−47−3	Chromium	10	ug/L	U	2	10	10	1	MS	SKJ	05/18/13 18:36	130518−3	1298551
7440−48−4	Cobalt	5	ug/L	U	1	5	5	1	P	HSC	05/17/13 09:42	051713B−1	1298549
7440−50−8	Copper	3.27	ug/L	J	3	10	10	1	P	HSC	05/17/13 09:42	051713B−1	1298549
7439−89−6	Iron	1520	ug/L		30	100	100	1	P	HSC	05/17/13 09:42	051713B−1	1298549
7439−92−1	Lead	2.31	ug/L		0.5	2	2	1	MS	SKJ	05/18/13 18:36	130518−3	1298551
7439−95−4	Magnesium	1140	ug/L		110	300	300	1	P	HSC	05/17/13 09:42	051713B−1	1298549
7439−96−5	Manganese	10.4	ug/L		2	10	10	1	P	HSC	05/17/13 09:42	051713B−1	1298549
7439−98−7	Molybdenum	1.07	ug/L		0.165	0.5	0.5	1	MS	SKJ	05/18/13 18:36	130518−3	1298551
7440−02−0	Nickel	1.2	ug/L	J	0.5	2	2	1	MS	SKJ	05/18/13 18:36	130518−3	1298551
7440−09−7	Potassium	4400	ug/L		50	150	150	1	P	HSC	05/17/13 09:42	051713B−1	1298549
7782−49−2	Selenium	5	ug/L	U	1.5	5	5	1	MS	SKJ	05/18/13 18:36	130518−3	1298551
7631−86−9	Silica	45400	ug/L		53	213	213	1	P	HSC	05/17/13 09:42	051713B−1	1298549
7440−22−4	Silver	1	ug/L	U	0.2	1	1	1	MS	SKJ	05/18/13 18:36	130518−3	1298551
7440−23−5	Sodium	23600	ug/L		100	300	300	1	P	HSC	05/17/13 09:42	051713B−1	1298549
7440−24−6	Strontium	23.8	ug/L		1	5	5	1	P	HSC	05/17/13 09:42	051713B−1	1298549
7440−28−0	Thallium	2	ug/L	U	0.45	2	2	1	MS	SKJ	05/18/13 18:36	130518−3	1298551
7440−31−5	Tin	10	ug/L	U	2.5	10	10	1	P	HSC	05/17/13 09:42	051713B−1	1298549
7440−61−1	Uranium	0.232	ug/L		0.067	0.2	0.2	1	MS	SKJ	05/20/13 12:52	130520−2	1298551
7440−62−2	Vanadium	3.17	ug/L	J	1	5	5	1	P	HSC	05/17/13 09:42	051713B−1	1298549
7440−66−6	Zinc	8.81	ug/L	J	3.3	10	10	1	P	HSC	05/17/13 09:42	051713B−1	1298549

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2013−760 **CONTRACT:** ESHL00210 **METHOD TYPE:**

SAMPLE ID: 324498002 **BASIS:** As Received **DATE COLLECTED** 23−APR−13

CLIENT ID: CAPA−13−29673 **LEVEL:** Low **DATE RECEIVED** 25−APR−13

MATRIX: W **%SOLIDS:** 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
	Hardness as CaCO3	15	mg/L		0.453	1.24	1.24	1		JJ2	05/21/13 16:13		1303342

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1298549	1298546	SW846 3005A	50	mL	50	mL	05/16/13	AXG2
1298551	1298550	SW846 3005A	50	mL	50	mL	05/16/13	AXG2
1300558	1300554	EPA 245.1/245.2 Prep	20	mL	20	mL	05/13/13	AXS5

***Analytical Methods:**

MS **SW846 3005/6020 DOE−AL**
P **SW846 3005/6010B**
AV **EPA 245.1/245.2**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2013−760 **CONTRACT:** ESHL00210 **METHOD TYPE:** EPA

SAMPLE ID: 324498005 **BASIS:** As Received **DATE COLLECTED** 23−APR−13

CLIENT ID: CAPA−13−29674 **LEVEL:** Low **DATE RECEIVED** 25−APR−13

MATRIX: W **%SOLIDS:** 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7439−97−6	Mercury	0.20	ug/L	U	0.067	0.2	0.2	1	AV	NOR1	05/14/13 12:04	051413W2−4	1300558

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2013−760 **CONTRACT:** ESHL00210 **METHOD TYPE:** SW846

SAMPLE ID: 324498005 **BASIS:** As Received **DATE COLLECTED** 23−APR−13

CLIENT ID: CAPA−13−29674 **LEVEL:** Low **DATE RECEIVED** 25−APR−13

MATRIX: W **%SOLIDS:** 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	200	ug/L	U	68	200	200	1	P	HSC	05/17/13 09:45	051713B−1	1298549
7440−36−0	Antimony	3	ug/L	U	1	3	3	1	MS	SKJ	05/18/13 18:43	130518−3	1298551
7440−38−2	Arsenic	5	ug/L	U	1.7	5	5	1	MS	SKJ	05/18/13 18:43	130518−3	1298551
7440−39−3	Barium	322	ug/L		1	5	5	1	P	HSC	05/17/13 09:45	051713B−1	1298549
7440−41−7	Beryllium	5	ug/L	U	1	5	5	1	P	HSC	05/17/13 09:45	051713B−1	1298549
7440−42−8	Boron	25.1	ug/L	J	15	50	50	1	P	HSC	05/17/13 09:45	051713B−1	1298549
7440−43−9	Cadmium	1	ug/L	U	0.11	1	1	1	MS	SKJ	05/18/13 18:43	130518−3	1298551
7440−70−2	Calcium	53800	ug/L		50	200	200	1	P	HSC	05/17/13 09:45	051713B−1	1298549
7440−47−3	Chromium	10	ug/L	U	2	10	10	1	MS	SKJ	05/18/13 18:43	130518−3	1298551
7440−48−4	Cobalt	5	ug/L	U	1	5	5	1	P	HSC	05/17/13 09:45	051713B−1	1298549
7440−50−8	Copper	10	ug/L	U	3	10	10	1	P	HSC	05/17/13 09:45	051713B−1	1298549
7439−89−6	Iron	100	ug/L	U	30	100	100	1	P	HSC	05/17/13 09:45	051713B−1	1298549
7439−92−1	Lead	2	ug/L	U	0.5	2	2	1	MS	SKJ	05/18/13 18:43	130518−3	1298551
7439−95−4	Magnesium	16800	ug/L		110	300	300	1	P	HSC	05/17/13 09:45	051713B−1	1298549
7439−96−5	Manganese	10	ug/L	U	2	10	10	1	P	HSC	05/17/13 09:45	051713B−1	1298549
7439−98−7	Molybdenum	1.53	ug/L		0.165	0.5	0.5	1	MS	SKJ	05/18/13 18:43	130518−3	1298551
7440−02−0	Nickel	6.56	ug/L		0.5	2	2	1	MS	SKJ	05/18/13 18:43	130518−3	1298551
7440−09−7	Potassium	7040	ug/L		50	150	150	1	P	HSC	05/17/13 09:45	051713B−1	1298549
7782−49−2	Selenium	5	ug/L	U	1.5	5	5	1	MS	SKJ	05/18/13 18:43	130518−3	1298551
7440−22−4	Silver	1	ug/L	U	0.2	1	1	1	MS	SKJ	05/18/13 18:43	130518−3	1298551
7440−23−5	Sodium	76900	ug/L		100	300	300	1	P	HSC	05/17/13 09:45	051713B−1	1298549
7440−24−6	Strontium	390	ug/L		1	5	5	1	P	HSC	05/17/13 09:45	051713B−1	1298549
7440−28−0	Thallium	2	ug/L	U	0.45	2	2	1	MS	SKJ	05/18/13 18:43	130518−3	1298551
7440−31−5	Tin	100	ug/L	U	25	100	100	10	P	HSC	05/17/13 10:33	051713B−1	1298549
7440−61−1	Uranium	0.244	ug/L		0.067	0.2	0.2	1	MS	SKJ	05/20/13 12:55	130520−2	1298551
7440−62−2	Vanadium	1.11	ug/L	J	1	5	5	1	P	HSC	05/17/13 09:45	051713B−1	1298549
7440−66−6	Zinc	10	ug/L	U	3.3	10	10	1	P	HSC	05/17/13 09:45	051713B−1	1298549

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2013−760 **CONTRACT:** ESHL00210 **METHOD TYPE:**

SAMPLE ID: 324498005 **BASIS:** As Received **DATE COLLECTED** 23−APR−13

CLIENT ID: CAPA−13−29674 **LEVEL:** Low **DATE RECEIVED** 25−APR−13

MATRIX: W **%SOLIDS:** 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
	Hardness as CaCO3	203	mg/L		0.453	1.24	1.24	1		JJ2	05/21/13 16:13		1303342

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1298549	1298546	SW846 3005A	50	mL	50	mL	05/16/13	AXG2
1298551	1298550	SW846 3005A	50	mL	50	mL	05/16/13	AXG2
1300558	1300554	EPA 245.1/245.2 Prep	20	mL	20	mL	05/13/13	AXS5

***Analytical Methods:**

MS **SW846 3005/6020 DOE−AL**
P **SW846 3005/6010B**
AV **EPA 245.1/245.2**

Quality Control Summary

METALS
−3b−
PREPARATION BLANK SUMMARY

SDG NO. 2013−760
Contract: ESHL00210
Matrix: W

Sample ID	Analyte	Result	Units	Acceptance Window	Conc Qual	M*	MDL	RDL
1202867557								
	Aluminum	68	ug/L	+/−200	U	P	68	200
	Barium	1	ug/L	+/−5	U	P	1	5
	Beryllium	1	ug/L	+/−5	U	P	1	5
	Boron	15	ug/L	+/−50	U	P	15	50
	Calcium	50	ug/L	+/−200	U	P	50	200
	Cobalt	1	ug/L	+/−5	U	P	1	5
	Copper	3	ug/L	+/−10	U	P	3	10
	Iron	30	ug/L	+/−100	U	P	30	100
	Magnesium	110	ug/L	+/−300	U	P	110	300
	Manganese	2	ug/L	+/−10	U	P	2	10
	Potassium	50	ug/L	+/−150	U	P	50	150
	Silica	53	ug/L	+/−213	U	P	53	213
	Sodium	100	ug/L	+/−300	U	P	100	300
	Strontium	1	ug/L	+/−5	U	P	1	5
	Tin	2.5	ug/L	+/−10	U	P	2.5	10
	Vanadium	1	ug/L	+/−5	U	P	1	5
	Zinc	3.3	ug/L	+/−10	U	P	3.3	10
1202867562								
	Antimony	1	ug/L	+/−3	U	MS	1	3
	Arsenic	1.7	ug/L	+/−5	U	MS	1.7	5
	Cadmium	0.11	ug/L	+/−1	U	MS	0.11	1
	Chromium	2	ug/L	+/−10	U	MS	2	10
	Lead	0.5	ug/L	+/−2	U	MS	0.5	2
	Molybdenum	0.188	ug/L	+/−0.5	J	MS	0.165	0.5
	Nickel	0.5	ug/L	+/−2	U	MS	0.5	2
	Selenium	1.5	ug/L	+/−5	U	MS	1.5	5
	Silver	0.2	ug/L	+/−1	U	MS	0.2	1
	Thallium	0.45	ug/L	+/−2	U	MS	0.45	2
	Uranium	0.067	ug/L	+/−0.2	U	MS	0.067	0.2
1202872863								
	Mercury	−0.073	ug/L	+/−0.2	J	AV	0.067	0.2

***Analytical Methods:**

MS	**SW846 3005/6020 DOE−AL**
P	**SW846 3005/6010B**
AV	**EPA 245.1/245.2**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2013−760 **Client ID** CAPA−13−29678S

Contract: ESHL00210 **Level:** Low

Matrix: WATER **% Solids:**

Sample ID: 324671009 **Spike ID:** 1202867560

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Aluminum	ug/L	75−125	5260		68	U	5000	105		P
Barium	ug/L	75−125	542		37.4		500	101		P
Beryllium	ug/L	75−125	514		1	U	500	103		P
Boron	ug/L	75−125	514		15	U	500	100		P
Calcium	ug/L	75−125	15200		10100		5000	102		P
Cobalt	ug/L	75−125	501		1	U	500	100		P
Copper	ug/L	75−125	532		3	U	500	106		P
Iron	ug/L	75−125	5330		82.7	J	5000	105		P
Magnesium	ug/L	75−125	8120		2960		5000	103		P
Potassium	ug/L	75−125	6770		1640		5000	103		P
Silica	ug/L		86400		74200		10700	114	N/A	P
Sodium	ug/L	75−125	17300		11900		5000	108		P
Strontium	ug/L	75−125	569		44.1		500	105		P
Tin	ug/L	75−125	503		12.5	U	500	101		P
Vanadium	ug/L	75−125	528		5.77		500	104		P
Zinc	ug/L	75−125	514		3.3	U	500	103		P
Manganese	ug/L	75−125	515		2	U	500	103		P

***Analytical Methods:**

P **SW846 3005/6010B**

METALS
−5a−

Matrix Spike Summary

SDG NO. 2013−760 **Client ID** CAPA−13−29678S

Contract: ESHL00210 **Level:** Low

Matrix: WATER **% Solids:**

Sample ID: 324671009 **Spike ID:** 1202867565

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Antimony	ug/L	75−125	51.8		1	U	50	103		MS
Arsenic	ug/L	75−125	48.3		1.7	U	50	94.4		MS
Cadmium	ug/L	75−125	50.6		0.11	U	50	101		MS
Chromium	ug/L	75−125	48.9		2	U	50	94.3		MS
Lead	ug/L	75−125	50.1		0.5	U	50	100		MS
Molybdenum	ug/L	75−125	49.9		1.21		50	97.5		MS
Nickel	ug/L	75−125	53		5.13		50	95.8		MS
Selenium	ug/L	75−125	50.6		1.5	U	50	101		MS
Silver	ug/L	75−125	51.9		0.2	U	50	104		MS
Thallium	ug/L	75−125	46.5		0.45	U	50	92.9		MS
Uranium	ug/L	75−125	51.3		0.494		50	102		MS

***Analytical Methods:**

MS SW846 3005/6020 DOE−AL

METALS
−5a−

Matrix Spike Summary

SDG NO. 2013−760 **Client ID** CAPA−13−29673S

Contract: ESHL00210 **Level:** Low

Matrix: WATER **% Solids:**

Sample ID: 324498002 **Spike ID:** 1202872866

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Mercury	ug/L	75−125	2.05		0.067	U	2	103		AV

***Analytical Methods:**

AV **EPA 245.1/245.2**

Metals
−6−
Duplicate Sample Summary

SDG No.: 2013−760 **Lab Code:** GEL

Contract: ESHL00210 **Client ID:** CAPA−13−29678D

Matrix: LIQUID **Level:** Low

Sample ID: 324671009 **Duplicate ID:** 1202867559 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Aluminum	ug/L		68	U	68	U			P
Barium	ug/L	+/−20%	37.4		37.2		.472		P
Beryllium	ug/L		1	U	1	U			P
Boron	ug/L		15	U	15	U			P
Calcium	ug/L	+/−20%	10100		10000		.567		P
Cobalt	ug/L		1	U	1	U			P
Copper	ug/L		3	U	3	U			P
Iron	ug/L	+/−100	82.7	J	83.8	J	1.29		P
Magnesium	ug/L	+/−20%	2960		2910		1.63		P
Manganese	ug/L		2	U	2	U			P
Potassium	ug/L	+/−20%	1640		1590		2.98		P
Silica	ug/L	+/−20%	74200		74400		.221		P
Sodium	ug/L	+/−20%	11900		12000		.218		P
Strontium	ug/L	+/−20%	44.1		44		.109		P
Tin	ug/L		12.5	U	12.5	U			P
Vanadium	ug/L	+/−5	5.77		4.88	J	16.6		P
Zinc	ug/L		3.3	U	3.3	U			P

***Analytical Methods:**

P SW846 3005/6010B

Metals
−6−
Duplicate Sample Summary

SDG No.: 2013−760 **Lab Code:** GEL

Contract: ESHL00210 **Client ID:** CAPA−13−29678D

Matrix: LIQUID **Level:** Low

Sample ID: 324671009 **Duplicate ID:** 1202867564 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Antimony	ug/L		1	U	1	U			MS
Arsenic	ug/L		1.7	U	1.7	U			MS
Cadmium	ug/L		0.11	U	0.11	U			MS
Chromium	ug/L		2	U	2	U			MS
Lead	ug/L		0.5	U	0.5	U			MS
Molybdenum	ug/L	+/−.5	1.21		1.14		5.54		MS
Nickel	ug/L	+/−2	5.13		5.16		.602		MS
Selenium	ug/L		1.5	U	1.5	U			MS
Silver	ug/L		0.2	U	0.2	U			MS
Thallium	ug/L		0.45	U	0.45	U			MS
Uranium	ug/L	+/−.2	0.494		0.484		2.04		MS

***Analytical Methods:**

MS SW846 3005/6020 DOE−AL

Metals
−6−
Duplicate Sample Summary

SDG No.: 2013−760 **Lab Code:** GEL

Contract: ESHL00210 **Client ID:** CAPA−13−29673D

Matrix: LIQUID **Level:** Low

Sample ID: 324498002 **Duplicate ID:** 1202872865 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Mercury	ug/L		0.067	U	0.067	U			AV

***Analytical Methods:**

AV EPA 245.1/245.2

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2013−760

Contract: ESHL00210

Aqueous LCS Source: OS2I **Solid LCS Source:**

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1202867558								
	Aluminum	ug/L	5000	5240		105	80−120	P
	Barium	ug/L	500	498		99.6	80−120	P
	Beryllium	ug/L	500	499		99.7	80−120	P
	Boron	ug/L	500	488		97.7	80−120	P
	Calcium	ug/L	5000	5120		102	80−120	P
	Cobalt	ug/L	500	495		99	80−120	P
	Copper	ug/L	500	511		102	80−120	P
	Iron	ug/L	5000	5130		103	80−120	P
	Magnesium	ug/L	5000	5150		103	80−120	P
	Manganese	ug/L	500	509		102	80−120	P
	Potassium	ug/L	5000	5170		103	80−120	P
	Silica	ug/L	10700	10800		100	80−120	P
	Sodium	ug/L	5000	5180		104	80−120	P
	Strontium	ug/L	500	517		103	80−120	P
	Tin	ug/L	500	503		101	80−120	P
	Vanadium	ug/L	500	512		102	80−120	P
	Zinc	ug/L	500	502		100	80−120	P

***Analytical Methods:**

P **SW846 3005/6010B**

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2013−760

Contract: ESHL00210

Aqueous LCS Source: O2Si **Solid LCS Source:**

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1202867563								
	Antimony	ug/L	50	51.8		104	80−120	MS
	Arsenic	ug/L	50	49.6		99.2	80−120	MS
	Cadmium	ug/L	50	52.2		104	80−120	MS
	Chromium	ug/L	50	50.2		100	80−120	MS
	Lead	ug/L	50	51.3		103	80−120	MS
	Molybdenum	ug/L	50	47.6		95.3	80−120	MS
	Nickel	ug/L	50	52.3		105	80−120	MS
	Selenium	ug/L	50	54.3		109	80−120	MS
	Silver	ug/L	50	51.8		104	80−120	MS
	Thallium	ug/L	50	47.7		95.4	80−120	MS
	Uranium	ug/L	50	52.2		104	80−120	MS

***Analytical Methods:**

MS **SW846 3005/6020 DOE−AL**

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 2013−760

Contract: ESHL00210

Aqueous LCS Source: GEL **Solid LCS Source:**

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1202872864								
	Mercury	ug/L	2	2.01		100	85−115	AV

***Analytical Methods:**

AV **EPA 245.1/245.2**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2013−760 **Client ID** CAPA−13−29678L

Contract: ESHL00210

Matrix: LIQUID **Level:** Low

Sample ID: 324671009 **Serial Dilution ID:** 1202867561

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Aluminum	68	U	340	U				P
Barium	37.4		37.9		1.35			P
Beryllium	1	U	5	U				P
Boron	15	U	75	U				P
Calcium	10100		9910		1.6		10	P
Cobalt	1	U	5	U				P
Copper	3	U	15	U				P
Iron	82.7	J	150	U	100			P
Magnesium	2960		3070		3.71			P
Manganese	2	U	10	U				P
Potassium	1640		1750		6.37			P
Silica	74200		74200		.024		10	P
Sodium	11900		11800		.885		10	P
Strontium	44.1		43.1		2.13			P
Tin	2.5	U	12.5	U				P
Vanadium	5.77		6.63	J	14.9			P
Zinc	3.3	U	16.5	U				P

***Analytical Methods:**

P **SW846 3005/6010B**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2013−760 **Client ID** CAPA−13−29678L

Contract: ESHL00210

Matrix: LIQUID **Level:** Low

Sample ID: 324671009 **Serial Dilution ID:** 1202867566

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Antimony	1	U	5	U				MS
Arsenic	1.7	U	8.5	U				MS
Cadmium	.11	U	.55	U				MS
Chromium	2	U	10	U				MS
Lead	.5	U	2.5	U				MS
Molybdenum	1.21		1.8	J	49.3			MS
Nickel	5.13		5.45	J	6.12			MS
Selenium	1.5	U	7.5	U				MS
Silver	.2	U	1	U				MS
Thallium	.45	U	2.25	U				MS
Uranium	.494		.58	J	17.4			MS

***Analytical Methods:**

MS **SW846 3005/6020 DOE−AL**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 2013−760 **Client ID** CAPA−13−29673L

Contract: ESHL00210

Matrix: LIQUID **Level:** Low

Sample ID: 324498002 **Serial Dilution ID:** 1202872867

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Mercury	.067	U	.335	U				AV

***Analytical Methods:**

AV **EPA 245.1/245.2**

General Chem Analysis

Case Narrative

General Chemistry Narrative
ARS International (ARSL)
SDG 2013-760

Method/Analysis Information

Product:	**Carbon, Total Organic**		
Analytical Batch:	1298028	**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
324498001	CAPA-13-29662
1202866144	Method Blank (MB)
1202866145	324498001(CAPA-13-29662) Sample Duplicate (DUP)
1202866147	324498001(CAPA-13-29662) Post Spike (PS)
1202866149	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# 12.

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 sample was selected for QC analysis: 324498001 (CAPA-13-29662).

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 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
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.

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:	**Specific Conductivity**		
Analytical Batch:	1298042	**Method:**	EPA120.1 Specific Conductivity

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA 120.1:

Sample ID	Client ID
324498002	CAPA-13-29673
1202866186	324498002(CAPA-13-29673) Sample Duplicate (DUP)
1202866187	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-009 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 Conductivity analysis was performed on a Orion 160 Conductivity Meter.

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

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

Quality Control (QC) Information

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: 324498002 (CAPA-13-29673).

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
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.

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: **pH**

Analytical Batch: 1297695 **Method:** EPA 150.1 pH

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA 150.1:

Sample ID	Client ID
324498002	CAPA-13-29673
1202865368	324498002(CAPA-13-29673) Sample Duplicate (DUP)
1202865369	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-008 REV# 21.

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 Electrode analysis was performed on a PerpHect pH Meter Orion 370.

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

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

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: 324498002 (CAPA-13-29673).

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
The following sample from this sample group was received by the lab outside of the method specified holding time: 324498002 (CAPA-13-29673).

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
The following DER was generated for this SDG: 1181842 324498002 (CAPA-13-29673).

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:	**Ion Chromatography**		
Analytical Batch:	1297394	**Method:**	EPA 300.0 Anions Liquid 28 day

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA 300.0:

Sample ID	Client ID
324498002	CAPA-13-29673
1202864646	Method Blank (MB)
1202864647	324498002(CAPA-13-29673) Sample Duplicate (DUP)
1202864648	324498002(CAPA-13-29673) Post Spike (PS)
1202864649	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-086 REV# 21.

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 Ion Chromatography analysis was performed on a Dionex ICS-3000 Ion Chromatograph.

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.

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: 324498002 (CAPA-13-29673).

Matrix Spike (MS)/Post Spike (PS) Recovery Statement
The spike recovery falls outside of the established acceptance limits due to matrix interference: 1202864648 (CAPA-13-29673).

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 following samples in this sample group were diluted due to high concentration: 1202864647 (CAPA-13-29673), 1202864648 (CAPA-13-29673) and 324498002 (CAPA-13-29673).

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: 1187095 1202864648 (CAPA-13-29673).

Manual Integrations
The following samples from this sample group had to be manually integrated due to errors in the instrument software peak integration: 1202864649 (LCS) and 324498002 (CAPA-13-29673).

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:	1298091	**Method:**	EPA 350.1 Nitrogen and Ammonia L
Prep Batch :	1298090	**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
324498002	CAPA-13-29673
1202866339	Method Blank (MB)
1202866340	324498002(CAPA-13-29673) Sample Duplicate (DUP)
1202866342	324498002(CAPA-13-29673) Matrix Spike (MS)
1202866344	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# 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 Nutrient analysis was performed on a Lachat QuickChem FIA+ 8000 Series.

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

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

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: 324498002 (CAPA-13-29673).

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
One or more of the values for the sample and/or duplicate are less than 5 times the Practical Quantitation Limit (PQL), and the difference is within one PQL value; therefore, the RPD is not applicable. 1202866340 (CAPA-13-29673).

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
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.

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:	1297438	**Method:**	Nitrogen and Total Kjeldahl (TKN)
Prep Batch :	1297437	**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
324498001	CAPA-13-29662
1202864758	Method Blank (MB)
1202864759	324498001(CAPA-13-29662) Sample Duplicate (DUP)
1202864761	324498001(CAPA-13-29662) Matrix Spike (MS)
1202864763	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# 14.

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.

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

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
No samples were selected for QC analysis. Please see the additional comments section of the Narrative for details.

Matrix Spike (MS)/Post Spike (PS) Recovery Statement
The spike recovery falls outside of the established acceptance limits due to matrix interference: 1202864761 (CAPA-13-29662).

Duplicate Relative Percent Difference (RPD) Statement
The Relative Percent Difference (RPD) between the sample and duplicate falls outside of the established acceptance limits because of the heterogeneous matrix of the sample: 1202864759 (CAPA-13-29662).

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
The following DER was generated for this SDG: 1182632 1202864759 (CAPA-13-29662) and 1202864761 (CAPA-13-29662).

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:	1298397	**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
324498002	CAPA-13-29673
1202867215	Method Blank (MB)
1202867216	324498002(CAPA-13-29673) Sample Duplicate (DUP)
1202867218	324498002(CAPA-13-29673) Post Spike (PS)
1202867220	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# 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+ 8500 Series.

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

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: 324498002 (CAPA-13-29673).

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 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
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.

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:	1297440	**Method:**	EPA 365.4 Phosphorus and Total in
Prep Batch :	1297439	**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
324498002	CAPA-13-29673
1202864764	Method Blank (MB)
1202864765	Laboratory Control Sample (LCS)
1202864766	324498002(CAPA-13-29673) Sample Duplicate (DUP)
1202864767	324498002(CAPA-13-29673) Matrix Spike (MS)
1202866336	324673001(NP199-13-30519) Sample Duplicate (DUP)
1202866337	324673001(NP199-13-30519) Matrix Spike (MS)

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# 10.

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 samples were selected for QC analysis: 324498002 (CAPA-13-29673) and 324673001 (NP199-13-30519).

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 values for the sample and duplicate are less than the Practical Quantitation Limit (PQL); therefore, the RPD is not applicable. 1202864766 (CAPA-13-29673).

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
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.

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:	**Solids, Total Dissolved**		
Analytical Batch:	1297693	**Method:**	EPA 160.1 Solids and Dissolved-F

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA 160.1:

Sample ID	Client ID
324498002	CAPA-13-29673
1202865359	Method Blank (MB)
1202865360	324498002(CAPA-13-29673) Sample Duplicate (DUP)
1202865362	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-001 REV# 13.

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 Solids analysis was performed on a Sartorius Balance BAL216. Solids lab

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

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: 324498002 (CAPA-13-29673).

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.

Sample Aliquot
A sufficient amount of sample was provided by the client for analysis.

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.

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:	**Alkalinity**		
Analytical Batch:	1298494	**Method:**	EPA 310.1 Total Alkalinity

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA 310.1:

Sample ID	Client ID
324498002	CAPA-13-29673
1202867432	Laboratory Control Sample (LCS)
1202867438	324498002(CAPA-13-29673) Sample Duplicate (DUP)
1202867439	324498002(CAPA-13-29673) Matrix Spike (MS)

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-033 REV# 10.

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 Titration analysis was performed on a manually operated buret.

Initial Standardization
The titrant was properly standardized

Quality Control (QC) Information

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: 324498002 (CAPA-13-29673).

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 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
Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents.

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.

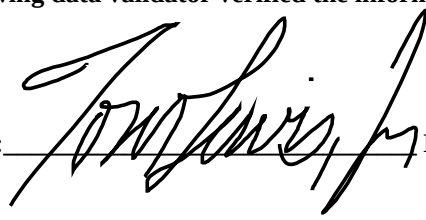
Certification Statement

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:** 22May13

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: 2013-760 GEL Work Order: 324498

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a Tracer compound

** Analyte is a surrogate compound

H Analytical holding time was exceeded

J Value is estimated

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

h Preparation or preservation holding time was exceeded

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 limit as defined in the 'U' qualifier above.

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: May 22, 2013

Company :	Los Alamos National Laboratory
Address :	PO Box 1663 TA-03, SM271, Drop Pt. 02U, Rm111 Los Alamos, New Mexico 87545
Contact:	Keith Greene
Project:	LANL-WQH Water Samples

Client SDG: 2013-760

Client Sample ID:	CAPA-13-29662	Project:	ESHL00210
Sample ID:	324498001	Client ID:	ARSL001
Matrix:	W		
Collect Date:	23-APR-13 13:32		
Receive Date:	25-APR-13		
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		3.45	0.330	1.00	mg/L	1	TSM	04/29/13	1656	1298028	1
Nutrient Analysis											
Nitrogen, Total Kjeldahl (TKN) "As Received"											
Nitrogen, Total Kjeldahl		0.144	0.033	0.100	mg/L	1	KLP1	04/30/13	1654	1297438	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	KLP1	04/29/13	1700	1297437

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9060	
2	EPA 351.2	

Notes:

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

Certificate of Analysis

Report Date: May 22, 2013

Company : Los Alamos National Laboratory
Address : PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico 87545
Contact: Keith Greene
Project: LANL-WQH Water Samples
Client SDG: 2013-760

Client Sample ID: CAPA-13-29673
Sample ID: 324498002
Matrix: W
Collect Date: 23-APR-13 13:32
Receive Date: 25-APR-13
Collector: Client
Project: ESHL00210
Client ID: ARSL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Conductivity Analysis											
EPA120.1 Specific Conductivity "As Received"											
Conductivity		142	1.00	1.00	umhos/cm	1	LXA1	04/29/13	1652	1298042	1
Electrode Analysis											
EPA 150.1 pH "As Received"											
pH at Temp 12.2C	H	6.38	0.010	0.100	SU	1	LYG1	04/26/13	0935	1297695	2
Ion Chromatography											
EPA 300.0 Anions Liquid 28 day "As Received"											
Bromide	U	ND	0.067	0.200	mg/L	1	MAR1	05/14/13	0623	1297394	3
Fluoride		0.141	0.033	0.100	mg/L	1					
Sulfate		3.37	0.133	0.400	mg/L	1					
Chloride		13.8	0.134	0.400	mg/L	2	MAR1	05/15/13	1411	1297394	4
Nutrient Analysis											
EPA 350.1 Nitrogen, Ammonia L "As Received"											
Nitrogen, Ammonia		0.0885	0.017	0.050	mg/L	1	KLP1	05/15/13	1549	1298091	5
EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"											
Nitrogen, Nitrate/Nitrite		0.120	0.017	0.050	mg/L	1	KLP1	05/14/13	1131	1298397	6
EPA 365.4 Phosphorus, Total in "As Received"											
Phosphorus, Total as P	J	0.0207	0.017	0.050	mg/L	1	KLP1	04/30/13	1204	1297440	7
Solids Analysis											
EPA 160.1 Solids, Dissolved-F "As Received"											
Total Dissolved Solids		133	3.40	14.3	mg/L		LYG1	04/26/13	0744	1297693	8
Titration Analysis											
EPA 310.1 Total Alkalinity "As Received"											
Alkalinity, Total as CaCO3		43.0	0.725	1.00	mg/L		TXT1	05/02/13	1101	1298494	9
Carbonate alkalinity (CaCO3)	U	ND	0.725	1.00	mg/L						

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.2 Prep	EPA 350.1 Ammonia Nitrogen Prep	KLP1	05/15/13	1500	1298090
EPA 365.4 Prep	EPA 365.4 Phosphorus, Total in liquid PR	KLP1	04/29/13	1700	1297439

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

Certificate of Analysis

Report Date: May 22, 2013

Company :	Los Alamos National Laboratory
Address :	PO Box 1663 TA-03, SM271, Drop Pt. 02U, Rm111 Los Alamos, New Mexico 87545
Contact:	Keith Greene
Project:	LANL-WQH Water Samples

Client SDG: 2013-760

Client Sample ID:	CAPA-13-29673	Project:	ESHL00210
Sample ID:	324498002	Client ID:	ARSL001

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 120.1	
2	EPA 150.1	
3	EPA 300.0	
4	EPA 300.0	
5	EPA 350.1	
6	EPA 353.2	
7	EPA 365.4	
8	EPA 160.1	
9	EPA 310.1	

Notes:

Quality Control Summary

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

QC Summary

Report Date: May 22, 2013

Los Alamos National Laboratory
PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico

Contact: **Keith Greene**

Workorder: **324498**

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Carbon Analysis												
Batch 1298028												
QC1202866145 324498001 DUP												
Total Organic Carbon Average			3.45		3.30	mg/L	4.27 ^		(+/-1.00)	TSM	04/29/13	17:29
QC1202866149 LCS												
Total Organic Carbon Average	10.0				9.84	mg/L		98.4	(85%-115%)		04/29/13	14:33
QC1202866144 MB												
Total Organic Carbon Average				U	ND	mg/L					04/29/13	14:24
QC1202866147 324498001 PS												
Total Organic Carbon Average	10.0		3.45		13.5	mg/L		100	(65%-120%)		04/29/13	17:49
Conductivity Analysis												
Batch 1298042												
QC1202866186 324498002 DUP												
Conductivity			142		145	umhos/cm	2.37		(0%-10%)	LXA1	04/29/13	16:54
QC1202866187 LCS												
Conductivity	1410				1450	umhos/cm		102	(95%-105%)		04/29/13	16:49
Electrode Analysis												
Batch 1297695												
QC1202865368 324498002 DUP												
pH		H	6.38	H	6.38	SU	0.00		(0%-10%)	LYG1	04/26/13	09:36
QC1202865369 LCS												
pH	7.00				7.02	SU		100	(99%-101%)		04/26/13	09:30
Ion Chromatography												
Batch 1297394												
QC1202864647 324498002 DUP												
Bromide		U	ND	U	ND	mg/L	N/A			MAR1	05/14/13	06:53
Chloride			13.8		13.4	mg/L	3.38		(0%-20%)		05/15/13	14:41
Fluoride			0.141		0.145	mg/L	3.07 ^		(+/-0.100)		05/14/13	06:53
Sulfate			3.37		3.49	mg/L	3.49		(0%-20%)			
QC1202864649 LCS												
Bromide	1.25				1.32	mg/L		106	(90%-110%)		05/14/13	05:53

QC Summary

Workorder: **324498**

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Ion Chromatography											
Batch 1297394											
Chloride	5.00				4.93	mg/L		98.5	(90%-110%)	MAR1	05/14/13 05:53
Fluoride	2.50				2.53	mg/L		101	(90%-110%)		
Sulfate	10.0				10.3	mg/L		103	(90%-110%)		
QC1202864646 MB											
Bromide				U	ND	mg/L					05/14/13 05:23
Chloride				U	ND	mg/L					
Fluoride				U	ND	mg/L					
Sulfate				U	ND	mg/L					
QC1202864648 324498002 PS											
Bromide	1.25	U	ND		1.28	mg/L		103	(90%-110%)		05/14/13 07:23
Chloride	5.00		6.91		12.5	mg/L		111*	(90%-110%)		05/15/13 15:11
Fluoride	2.50		0.141		2.72	mg/L		103	(90%-110%)		05/14/13 07:23
Sulfate	10.0		3.37		14.2	mg/L		108	(90%-110%)		
Nutrient Analysis											
Batch 1297438											
QC1202864759 324498001 DUP											
Nitrogen, Total Kjeldahl			0.144		0.212	mg/L	38.2 ^		(+/-0.100)	KLP1	04/30/13 16:57
QC1202864763 LCS											
Nitrogen, Total Kjeldahl	1.00				0.952	mg/L		95.2	(90%-110%)		04/30/13 16:34
QC1202864758 MB											
Nitrogen, Total Kjeldahl				U	ND	mg/L					04/30/13 16:33
QC1202864761 324498001 MS											
Nitrogen, Total Kjeldahl	1.00		0.144		1.52	mg/L		138*	(90%-110%)		04/30/13 16:58
Batch 1297440											
QC1202864766 324498002 DUP											
Phosphorus, Total as P		J	0.0207	U	ND	mg/L	N/A ^			KLP1	04/30/13 12:04
QC1202866336 324673001 DUP											
Phosphorus, Total as P			1.25		1.16	mg/L	7.47		(0%-31%)		04/30/13 12:18

QC Summary

Workorder: 324498

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Nutrient Analysis											
Batch 1297440											
QC1202864765 LCS											
Phosphorus, Total as P	1.00				1.03	mg/L		103	(76%-120%)	KLP1	04/30/13 11:52
QC1202864764 MB											
Phosphorus, Total as P				U	ND	mg/L					04/30/13 11:51
QC1202864767 324498002 MS											
Phosphorus, Total as P	1.00	J	0.0207		1.11	mg/L		109	(62%-139%)		04/30/13 12:05
QC1202866337 324673001 MS											
Phosphorus, Total as P	1.00		1.25		2.19	mg/L		94	(62%-139%)		04/30/13 12:19
Batch 1298091											
QC1202866340 324498002 DUP											
Nitrogen, Ammonia			0.0885		0.109	mg/L	20.8 ^		(+/-0.050)	KLP1	05/15/13 15:50
QC1202866344 LCS											
Nitrogen, Ammonia	1.00				0.942	mg/L		94.2	(90%-110%)		05/15/13 15:49
QC1202866339 MB											
Nitrogen, Ammonia				U	ND	mg/L					05/15/13 15:48
QC1202866342 324498002 MS											
Nitrogen, Ammonia	1.00		0.0885		1.03	mg/L		94.2	(90%-110%)		05/15/13 15:51
Batch 1298397											
QC1202867216 324498002 DUP											
Nitrogen, Nitrate/Nitrite			0.120		0.121	mg/L	0.830 ^		(+/-0.050)	KLP1	05/14/13 11:32
QC1202867220 LCS											
Nitrogen, Nitrate/Nitrite	1.00				0.986	mg/L		98.6	(90%-110%)		05/14/13 11:30
QC1202867215 MB											
Nitrogen, Nitrate/Nitrite				U	ND	mg/L					05/14/13 11:28
QC1202867218 324498002 PS											
Nitrogen, Nitrate/Nitrite	1.00		0.120		1.10	mg/L		98	(90%-110%)		05/14/13 11:33
Solids Analysis											
Batch 1297693											
QC1202865360 324498002 DUP											
Total Dissolved Solids			133		133	mg/L	0.00		(0%-10%)	LYG1	04/26/13 07:44
QC1202865362 LCS											
Total Dissolved Solids	300				300	mg/L		100	(95%-105%)		04/26/13 07:44

QC Summary

Workorder: **324498**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Solids Analysis										
Batch 1297693										
QC1202865359 MB										
Total Dissolved Solids			J	4.29	mg/L				LYG1	04/26/13 07:44
Titration Analysis										
Batch 1298494										
QC1202867438 324498002 DUP										
Alkalinity, Total as CaCO3		43.0		43.0	mg/L	0.00		(0%-20%)	TXT1	05/02/13 11:04
Carbonate alkalinity (CaCO3)	U	ND	U	ND	mg/L	N/A				
QC1202867432 LCS										
Alkalinity, Total as CaCO3	50.0			51.3	mg/L		103	(90%-110%)		05/02/13 10:25
QC1202867439 324498002 MS										
Alkalinity, Total as CaCO3	50.0	43.0		93.3	mg/L		101	(80%-120%)		05/02/13 11:06

Notes:

**	Analyte is a Tracer compound
**	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	The target analyte was detected in the associated blank.
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
E	%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
E	Concentration of the target analyte exceeds the instrument calibration range
E	General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
FA	Failed analysis.
FB	Mercury was found present at quantifiable concentrations in field blanks received with these samples. Data associated with the blank are deemed invalid for reporting to regulatory agencies
H	Analytical holding time was exceeded
J	Value is estimated
JNX	Non Calibrated Compound
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.

QC Summary

Workorder: **324498**

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

M	M if above MDC and less than LLD
M	REMP Result > MDC/CL and < RDL
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	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	Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.
R	Sample results are rejected
U	Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI	Gamma Spectroscopy--Uncertain identification
UJ	Compound cannot be extracted
UJ	Gamma Spectroscopy--Uncertain identification
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.
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:**
29-APR-13	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
ELECTRODE	EPA 150.1	Liquid	ENRG, ESHL, HNLK
Batch ID:	**Sample Numbers:**		
1297695	See below.		

Potentially affected work order(s)(SDG): 324381,324498(2013-760),324556

Application Issues:

Sample received out of holding

Specification and Requirements Exception Description:	**DER Disposition:**
1. Sample received out of holding: 324381 003 324498 002 324556 001,002	1. Samples were received out of holding.

Originator's Name:

Lisa Gregory 29-APR-13

Data Validator/Group Leader:

Julia Hamilton 30-APR-13

DATA EXCEPTION REPORT

Mo.Day Yr.	**Division:**	**Quality Criteria:**	**Type:**
01-MAY-13	Federal	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
LACHAT Flow Injection Analyzer	EPA 351.2	Liquid	ESHL
Batch ID:	**Sample Numbers:**		
1297438	See Below		

Potentially affected work order(s)(SDG): 324381,324442(32777),324498(2013-760),324591(2013-774),324603

Application Issues:

Failed Recovery for MS/PS

Failed RPD for DUP

Specification and Requirements Exception Description:	**DER Disposition:**
1. Failed RPD for DUP: QC 1202864759DUP 2. Failed Recovery for MS/PS: QC 1202864761MS	1. The Relative Percent Difference (RPD) between the sample and duplicate falls outside of the established acceptance limits because of the heterogeneous matrix of the sample. 2. The spike recovery falls outside of the established acceptance limits due to matrix interference.

Originator's Name:

Kristen Parson 01-MAY-13

Data Validator/Group Leader:

Thomas Lewis 03-MAY-13

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
17-MAY-13	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
IC	EPA 300.0	Liquid	ESHL
Batch ID:	**Sample Numbers:**		
1297394	See Below		

Potentially affected work order(s)(SDG): 324498(2013-760),324591(2013-774),324671(2013-778)

Application Issues:

Failed Recovery for MS/PS

Specification and Requirements Exception Description:	DER Disposition:
1. Failed Recovery for MS/PS: QC 1202864648PS	1. The MS/PS failed required acceptance limits for Chloride due to matrix interference. Of the remaining anions in the MS/PS, several met required acceptance limits. This failure is attributed to the matrix of the sample because the successful recovery of the other compounds indicate that the laboratory process was in control. This variance is judged to have no negative impact on the data. The deviation is noted in the Case Narrative and DER, and the data has been reported.

Originator's Name:

Mary Sherwood 17-MAY-13

Data Validator/Group Leader:

Thomas Lewis 22-MAY-13

Radiological Analysis

Radiochemistry Case Narrative
ARS International (ARSL)
SDG 2013-760
Work Order 324498

Method/Analysis Information

Product:	**Alphaspec Am241 Liquid**
Analytical Method:	DOE EML HASL-300, Am-05-RC Modified
Analytical Batch Number:	1298061

Sample ID	Client ID
324498001	CAPA-13-29662
1202866240	Method Blank (MB)
1202866241	325284005(CAMO-13-30558) Sample Duplicate (DUP)
1202866242	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-RAD-A-011 REV# 24.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met. Calibrations are performed monthly using mixed alpha standards comprised of the following: Gd-148, Np-237, and Cm-244.

Standards Information
Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
Aliquots for samples 1202866240 (MB) and 1202866242 (LCS) were changed to 1.0 per client request.

Designated QC
The following sample was used for QC: 325284005 (CAMO-13-30558). The QC was from ARSL work order 325284.

QC Information

All of the QC samples met the required acceptance limits.

CSU
The blank result is greater than 1.65 times the CSU but less than the MDC.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. The following DER was generated for this SDG: DER 1186476 was generated due to RDL less than MDA. 1. Sample 324498001 did not meet the Am-241 detection limit due to a reduced aliquot. 2. Samples 324671006, 324671007, and 325284005 did not meet the Am-241 detection limit. 1. The aliquot was reduced due to the matrix of the sample. The sample was counted the maximum count time of 1000 minutes in order to achieve the lowest possible MDCs. Reporting results. 2. When a blank population is performed the MDC is greater than the RDL due to the high standard deviation. The samples were counted the maximum count time of 1000 minutes in order to achieve the lowest possible MDCs. Reporting results.

Manual Integration
No manual integrations were performed on data in this batch.

Additional Comments
The MDCs are calculated using a blank population.

Blank Decision Level
The blank result is less than the decision level.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**Alphaspec U, Liquid**
Analytical Method:	DOE EML HASL-300, U-02-RC Modified
Analytical Batch Number:	1298064

Sample ID	Client ID
324498001	CAPA-13-29662
1202866248	Method Blank (MB)
1202866249	325284005(CAMO-13-30558) Sample Duplicate (DUP)
1202866250	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-RAD-A-011 REV# 24.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met. Calibrations are performed monthly using mixed alpha standards comprised of the following: Gd-148, Np-237, and Cm-244.

Standards Information
Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
Aliquots for samples 1202866248 (MB) and 1202866250 (LCS) were changed to 1.0 per client request.

Designated QC
The following sample was used for QC: 325284005 (CAMO-13-30558). The QC was from ARSL work order 325284.

QC Information
All of the QC samples met the required acceptance limits.

CSU
The U-233/234 blank result is greater than 1.65 times the CSU but less than the MDC.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis
The batch was recounted due to low tracer counts. The recounts are reported.

Miscellaneous Information:

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

Manual Integration
No manual integrations were performed on data in this batch.

Additional Comments
The MDCs are calculated using a blank population.

Blank Decision Level
The blank result is less than the decision level.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**Alphaspec Pu, Liquid**
Analytical Method:	DOE EML HASL-300, Pu-11-RC Modified
Analytical Batch Number:	1302191

Sample ID	Client ID
324498001	CAPA-13-29662
1202877006	Method Blank (MB)
1202877007	325284005(CAMO-13-30558) Sample Duplicate (DUP)
1202877008	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-RAD-A-011 REV# 24.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met. Calibrations are performed monthly using mixed alpha standards comprised of the following: Gd-148, Np-237, and Cm-244.

Standards Information
Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
Aliquots for samples 1202877006 (MB) and 1202877008 (LCS) were changed to 1.0 per client request.

Designated QC
The following sample was used for QC: 325284005 (CAMO-13-30558). The QC was from ARSL work order 325284.

QC Information
All of the QC samples meet the required acceptance limits with the following exceptions: Refer to Data Exception Report (DER).

CSU
The blank result is less than 1.65 times the CSU.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis
Samples were reprepped due to high relative percent difference/relative error ratio. The re-analysis is being reported. Sample 1202877007 (CAMO-13-30558) was recounted due to a peak shift. The recount is reported. Sample 1202877006 (MB) was recounted due to poor resolution. The recount is reported.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. The following DER was generated for this SDG: DER 1187810 was generated due to RDL less than MDA. 1. Samples 324498001 and 1202877007 did not meet the Pu-239/240 detection limit due to a reduced aliquot. 2. Samples 324671006, 324671008, and 1202877006 did not meet the Pu-239/240 detection limit. Sample 325284005 did not meet the Pu-238 and Pu-239/240 detection limits. 1. The aliquots were reduced due to the matrix of the samples. The samples were counted the maximum count time of 1000 minutes in order to achieve the lowest possible MDCs. Reporting results. 2. When a blank population is performed the MDC is greater than the RDL due to the high standard deviation. The samples were counted the maximum count time of 1000 minutes in order to achieve the lowest possible MDCs. Reporting results.

Manual Integration
No manual integrations were performed on data in this batch.

Additional Comments
The MDCs are calculated using a blank population.

Blank Decision Level
The blank result is less than the decision level.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**Gammaspec**
Analytical Method:	EPA 901.1
Analytical Batch Number:	1298376

Sample ID	Client ID
324498001	CAPA-13-29662
1202867154	Method Blank (MB)
1202867155	324671006(CAPA-13-29667) Sample Duplicate (DUP)
1202867156	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-RAD-A-013 REV# 25.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met. The initial Calibrations were performed in May 2012, June 2012, July 2012 and August 2012.

Standards Information
Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 324671006 (CAPA-13-29667). The QC was from ARSL work order 324671.

QC Information
All of the QC samples met the required acceptance limits.

CSU
The blank result is less than 1.65 times the CSU.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced

SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments
Additional comments were not required for this sample set.

Blank Decision Level
The blank result is less than the decision level.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**GFPC, Sr90, liquid**
Analytical Method:	EPA 905.0 Modified
Analytical Batch Number:	1298225

Sample ID	Client ID
324498001	CAPA-13-29662
1202866766	Method Blank (MB)
1202866767	324671006(CAPA-13-29667) Sample Duplicate (DUP)
1202866768	324671006(CAPA-13-29667) Matrix Spike (MS)
1202866769	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-RAD-A-004 REV# 16.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met. The initial Calibration was performed in March 2013.

Standards Information
Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
Aliquots for samples 1202866766 (MB) and 1202866769 (LCS) were changed to 1.0 per client request.

Designated QC
The following sample was used for QC: 324671006 (CAPA-13-29667). The QC was from ARSL work order 324671.

QC Information
All of the QC samples met the required acceptance limits.

CSU
The blank result is less than 1.65 times the CSU.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Chemical Recoveries
All chemical recoveries meet the required acceptance limits for this sample set.

Miscellaneous Information:

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

Additional Comments
The matrix spike, 1202866768 (CAPA-13-29667), aliquot was reduced to conserve sample volume.

Blank Decision Level
The blank result is less than the decision level.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**WSP-GrossA/B**
Analytical Method:	EPA 900.0/SW846 9310
Analytical Batch Number:	1298712

Sample ID	Client ID

324498001	CAPA-13-29662
1202868030	Method Blank (MB)
1202868031	324671006(CAPA-13-29667) Sample Duplicate (DUP)
1202868032	324671006(CAPA-13-29667) Matrix Spike (MS)
1202868033	324671006(CAPA-13-29667) Matrix Spike Duplicate (MSD)
1202868034	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-RAD-A-001 REV# 16.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met. The initial Calibration was performed in December 2012.

Standards Information
Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
Aliquots for samples 1202868030 (MB) and 1202868034 (LCS) were changed to 1.0 per client request.

Designated QC
The following sample was used for QC: 324671006 (CAPA-13-29667). The QC was from ARSL work order 324671.

QC Information
All of the QC samples met the required acceptance limits.

CSU
The blank result is less than 1.65 times the CSU.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis
Sample 1202868034 (LCS) was recounted due to high recovery. The recount is reported.

Chemical Recoveries
All chemical recoveries meet the required acceptance limits for this sample set.

Gross Alpha/Beta Preparation Information
High hygroscopic salt content in evaporated samples can cause the sample mass to fluctuate due to moisture

absorption. To minimize this interference, the salts are converted to oxides by heating the sample under a flame until a dull red color is obtained. The conversion to oxides stabilizes the sample weight and ensures that proper alpha/beta efficiencies are assigned for each sample. Volatile radioisotopes of carbon, hydrogen, technetium, polonium and cesium may be lost during sample heating, especially to a dull red heat. For this sample set, the prepared planchet was counted for beta activity before being flamed. After flaming, the planchet was counted for alpha activity.

Miscellaneous Information:

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

Additional Comments
The matrix spike and matrix spike duplicate, 1202868032 (CAPA-13-29667) and 1202868033 (CAPA-13-29667), aliquots were reduced to conserve sample volume.

Blank Decision Level
The blank result is less than the decision level.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**WSP-H-3**
Analytical Method:	EPA 906.0 Modified
Analytical Batch Number:	1297917

Sample ID	Client ID
324498001	CAPA-13-29662
1202865867	Method Blank (MB)
1202865868	324498001(CAPA-13-29662) Sample Duplicate (DUP)
1202865869	324498001(CAPA-13-29662) Matrix Spike (MS)
1202865870	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-RAD-A-002 REV# 21.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met. The initial Calibration was performed in

August 2012.

Standards Information
Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 324498001 (CAPA-13-29662). The QC was from ARSL work order 324498.

QC Information
All of the QC samples met the required acceptance limits.

CSU
The blank result is less than 1.65 times the CSU.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:

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

Additional Comments
Additional comments were not required for this sample set.

Blank Decision Level
The blank result is less than the decision level.

Qualifier Information

Manual qualifiers were not required.

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

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Qualifier Definition Report
for

ARSL001 ARS International (63641-10)

Client SDG: 2013-760 GEL Work Order: 324498

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a Tracer compound

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

Review/Validation

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

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

Signature:  **Name: Kate Gellatly**

Date: 21 MAY 2013 **Title: Analyst I**

DATA EXCEPTION REPORT

Mo.Day Yr.	**Division:**	**Quality Criteria:**	**Type:**
15-MAY-13	Radiochemistry	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
ALPHA SPECTROMETER	DOE EML HASL-300, Am-05-RC Modified	Liquid	ESHL
Batch ID:	**Sample Numbers:**		
1298061	See Below		

Potentially affected work order(s)(SDG): 324498(2013-760),324671(2013-778),325284(2013-809)

Application Issues:

RDL less than MDA

Specification and Requirements Exception Description:	**DER Disposition:**
1. Sample 324498001 did not meet the Am-241 detection limit due to a reduced aliquot.	1. The aliquot was reduced due to the matrix of the sample. The sample was counted the maximum count time of 1000 minutes in order to achieve the lowest possible MDCs. Reporting results.
2. Samples 324671006, 324671007, and 325284005 did not meet the Am-241 detection limit.	2. When a blank population is performed the MDC is greater than the RDL due to the high standard deviation. The samples were counted the maximum count time of 1000 minutes in order to achieve the lowest possible MDCs. Reporting results.

Originator's Name:

Melanie Aycock 15-MAY-13

Data Validator/Group Leader:

Jessica Davis 16-MAY-13

DATA EXCEPTION REPORT

Mo.Day Yr.	**Division:**	**Quality Criteria:**	**Type:**
21-MAY-13	Radiochemistry	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
ALPHA SPECTROMETER	DOE EML HASL-300, Pu-11-RC Modified	Liquid	ESHL
Batch ID:	**Sample Numbers:**		
1302191	See Below		

Potentially affected work order(s)(SDG): 324498(2013-760),324671(2013-778),325284(2013-809)

Application Issues:

RDL less than MDA

Specification and Requirements Exception Description:	**DER Disposition:**
1. Samples 324498001 and 1202877007 did not meet the Pu-239/240 detection limit due to a reduced aliquot. 2. Samples 324671006, 324671008, and 1202877006 did not meet the Pu-239/240 detection limit. Sample 325284005 did not meet the Pu-238 and Pu-239/240 detection limits.	1. The aliquots were reduced due to the matrix of the samples. The samples were counted the maximum count time of 1000 minutes in order to achieve the lowest possible MDCs. Reporting results. 2. When a blank population is performed the MDC is greater than the RDL due to the high standard deviation. The samples were counted the maximum count time of 1000 minutes in order to achieve the lowest possible MDCs. Reporting results.

Originator's Name:

Jessica Downey 21-MAY-13

Data Validator/Group Leader:

Jessica Davis 21-MAY-13

Sample Data Summary

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Los Alamos National Laboratory
Address : PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico 87545

Report Date: May 22, 2013

Contact: Keith Greene
Project: LANL-WQH Water Samples

Client Sample ID: CAPA-13-29662
Sample ID: 324498001
Matrix: W
Collect Date: 23-APR-13
Receive Date: 25-APR-13
Collector: Client

Project: ESHL00210
Client ID: ARSL001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis													
Alphaspec Am241 Liquid "As Received"													
Americium-241	U	0.00747	+/-0.00747	0.0724	+/-0.00748	0.050	pCi/L		MXS2	05/09/13	1209	1298061	1
Alphaspec Pu, Liquid "As Received"													
Plutonium-238	U	0.00	+/-0.00476	0.050	+/-0.00476	0.050	pCi/L		NXP2	05/19/13	1359	1302191	2
Plutonium-239/240	U	0.00	+/-0.00672	0.0602	+/-0.00672	0.050	pCi/L						
Alphaspec U, Liquid "As Received"													
Uranium-234		0.127	+/-0.0236	0.0856	+/-0.025	1.00	pCi/L		MXS2	05/14/13	1604	1298064	3
Uranium-235/236	U	0.00923	+/-0.013	0.0397	+/-0.0131	1.00	pCi/L						
Uranium-238		0.0597	+/-0.0197	0.0517	+/-0.0201	0.500	pCi/L						
Rad Gamma Spec Analysis													
Gammaspec "As Received"													
Cesium-137	U	1.75	+/-1.50	5.98	+/-1.55	8.00	pCi/L		MXR1	05/17/13	0955	1298376	4
Cobalt-60	U	0.157	+/-1.61	6.23	+/-1.61	8.00	pCi/L						
Neptunium-237	U	-0.0677	+/-2.97	10.5	+/-2.97	10.0	pCi/L						
Potassium-40	U	-19.9	+/-19.4	71.8	+/-20.0	10.0	pCi/L						
Sodium-22	U	0.899	+/-1.63	6.55	+/-1.64	10.0	pCi/L						
Rad Gas Flow Proportional Counting													
GFPC, Sr90, liquid "As Received"													
Strontium-90	U	0.275	+/-0.151	0.494	+/-0.152	0.500	pCi/L		BXF1	05/08/13	2110	1298225	5
WSP-GrossA/B "As Received"													
Beta		5.71	+/-1.11	2.97	+/-1.21	3.00	pCi/L		BXF1	05/10/13	1655	1298712	6
Alpha	U	1.79	+/-0.788	1.87	+/-0.804	3.00	pCi/L		BXF1	05/13/13	1535	1298712	7
Rad Liquid Scintillation Analysis													
WSP-H-3 "As Received"													
Tritium	U	30.1	+/-33.1	114	+/-33.2	200	pCi/L		BYS1	05/03/13	1212	1297917	8

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, Am-05-RC Modified
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	EPA 901.1
5	EPA 905.0 Modified
6	EPA 900.0/SW846 9310
7	EPA 900.0/SW846 9310
8	EPA 906.0 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits

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Certificate of Analysis

Company : Los Alamos National Laboratory
Address : PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico 87545

Report Date: May 22, 2013

Contact: Keith Greene
Project: LANL-WQH Water Samples

Client Sample ID: CAPA-13-29662
Sample ID: 324498001

Project: ESHL00210
Client ID: ARSL001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Americium-243 Tracer	Alphaspec Am241 Liquid "As Received"	1298061	84.8	(50%-105%)
Plutonium-242 Tracer	Alphaspec Pu, Liquid "As Received"	1302191	85.3	(50%-105%)
Uranium-232 Tracer	Alphaspec U, Liquid "As Received"	1298064	61.6	(50%-105%)
Strontium Carrier	GFPC, Sr90, liquid "As Received"	1298225	71.3	(50%-105%)

Notes:

TPU and Counting Uncertainty are calculated at the 68% confidence level (1-sigma).

Quality Control Data

QC Summary

Client : **Los Alamos National Laboratory**
PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico

Contact: **Keith Greene**

Workorder: **324498**

Report Date: May 22, 2013

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Alpha Spec										
Batch 1298061										
QC1202866241 325284005 DUP										
Americium-241	U	0.00296	U	-0.00269	pCi/L	0.250		(0-1)	MXS2	05/09/1312:09
	Uncert:	+/-0.00663		+/-0.00466						
	TPU:	+/-0.00663		+/-0.00466						
**Americium-243 Tracer	2.62	2.09		2.18	pCi/L		83.4	(50%-105%)		
	Uncert:	+/-0.0876		+/-0.0834						
	TPU:	+/-0.144		+/-0.139						
QC1202866242 LCS										
Americium-241	1.41			1.32	pCi/L		93.2	(80%-120%)	MXS2	05/09/1312:09
	Uncert:			+/-0.0558						
	TPU:			+/-0.0802						
**Americium-243 Tracer	2.09			1.52	pCi/L		72.8	(50%-105%)		
	Uncert:			+/-0.0698						
	TPU:			+/-0.115						
QC1202866240 MB										
Americium-241			U	0.0164	pCi/L				MXS2	05/09/1312:09
	Uncert:			+/-0.0065						
	TPU:			+/-0.00653						
**Americium-243 Tracer	2.09			1.81	pCi/L		86.3	(50%-105%)		
	Uncert:			+/-0.0654						
	TPU:			+/-0.110						
Batch 1298064										
QC1202866249 325284005 DUP										
Uranium-234	U	0.00306	U	0.00212	pCi/L	0.0318		(0-1)	MXS2	05/14/1316:04
	Uncert:	+/-0.00918		+/-0.00561						
	TPU:	+/-0.00918		+/-0.00561						
Uranium-235/236	U	0.00756	U	0.00	pCi/L	0.335		(0-1)		
	Uncert:	+/-0.00756		+/-0.0037						
	TPU:	+/-0.00758		+/-0.00371						
Uranium-238	U	-0.00306	U	-0.00636	pCi/L	0.132		(0-1)		
	Uncert:	+/-0.00684		+/-0.00561						
	TPU:	+/-0.00684		+/-0.00561						
**Uranium-232 Tracer	2.70	1.95		2.13	pCi/L		79.1	(50%-105%)		
	Uncert:	+/-0.0913		+/-0.0768						
	TPU:	+/-0.200		+/-0.187						
QC1202866250 LCS										
Uranium-234				2.70	pCi/L				MXS2	05/14/1316:04
	Uncert:			+/-0.0824						
	TPU:			+/-0.196						
Uranium-235/236				0.145	pCi/L					
	Uncert:			+/-0.022						
	TPU:			+/-0.024						
Uranium-238	2.70			2.80	pCi/L		104	(80%-120%)		

QC Summary

Workorder: **324498**

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Alpha Spec										
Batch 1298064										
	Uncert:			+/-0.0838						
	TPU:			+/-0.203						
**Uranium-232 Tracer	2.16			1.15	pCi/L		53.5	(50%-105%)		
	Uncert:			+/-0.0742						
	TPU:			+/-0.161						
QC1202866248 MB										
Uranium-234			U	0.00996	pCi/L				MXS2	05/14/1316:04
	Uncert:			+/-0.00597						
	TPU:			+/-0.00601						
Uranium-235/236			U	0.00492	pCi/L					
	Uncert:			+/-0.00492						
	TPU:			+/-0.00493						
Uranium-238			U	-0.00199	pCi/L					
	Uncert:			+/-0.00345						
	TPU:			+/-0.00345						
**Uranium-232 Tracer	2.16			1.46	pCi/L		67.7	(50%-105%)		
	Uncert:			+/-0.0658						
	TPU:			+/-0.153						
Batch 1302191										
QC1202877007 325284005 DUP										
Plutonium-238	U	0.00977	U	0.00	pCi/L	0.336		(0-1)	NXP2	05/20/1315:12
	Uncert:	+/-0.00977		+/-0.00473						
	TPU:	+/-0.00978		+/-0.00474						
Plutonium-239/240	U	-0.00976	U	0.00335	pCi/L	0.380		(0-1)		
	Uncert:	+/-0.00976		+/-0.00748						
	TPU:	+/-0.00977		+/-0.00748						
**Plutonium-242 Tracer	3.25	1.98		2.91	pCi/L		89.5	(50%-105%)		
	Uncert:	+/-0.127		+/-0.105						
	TPU:	+/-0.201		+/-0.174						
QC1202877008 LCS										
Plutonium-238			U	0.00973	pCi/L			(80%-120%)	NXP2	05/19/1314:00
	Uncert:			+/-0.00515						
	TPU:			+/-0.00517						
Plutonium-239/240	1.97			1.70	pCi/L		86.2	(80%-120%)		
	Uncert:			+/-0.0575						
	TPU:			+/-0.0922						
**Plutonium-242 Tracer	1.95			1.83	pCi/L		94	(50%-105%)		
	Uncert:			+/-0.062						
	TPU:			+/-0.103						
QC1202877006 MB										
Plutonium-238			U	-0.0032	pCi/L				NXP2	05/20/1315:12
	Uncert:			+/-0.00554						
	TPU:			+/-0.00554						
Plutonium-239/240			U	-0.0032	pCi/L					
	Uncert:			+/-0.00554						
	TPU:			+/-0.00554						
**Plutonium-242 Tracer	1.95			1.09	pCi/L		55.8	(50%-105%)		
	Uncert:			+/-0.0796						
				+/-0.125						

QC Summary

Workorder: **324498**

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Alpha Spec										
Batch 1302191										
	TPU:									
Rad Gamma Spec										
Batch 1298376										
QC1202867155 324671006 DUP										
Cesium-137	U	1.69	U	0.679	pCi/L	0.167		(0-1)	MXR1	05/17/1312:05
	Uncert:	+/-1.40		+/-1.57						
	TPU:	+/-1.46		+/-1.57						
Cobalt-60	U	0.442	U	-1.14	pCi/L	0.271		(0-1)		
	Uncert:	+/-1.02		+/-1.87						
	TPU:	+/-1.02		+/-1.89						
Neptunium-237	U	2.23	U	-0.798	pCi/L	0.256		(0-1)		
	Uncert:	+/-2.22		+/-3.63						
	TPU:	+/-2.28		+/-3.63						
Potassium-40	U	4.72	U	-8.23	pCi/L	0.189		(0-1)		
	Uncert:	+/-15.5		+/-18.7						
	TPU:	+/-15.5		+/-18.8						
Sodium-22	U	-1.78	U	-0.582	pCi/L	0.188		(0-1)		
	Uncert:	+/-1.26		+/-1.85						
	TPU:	+/-1.32		+/-1.86						
QC1202867156 LCS										
Americium-241	2780			3040	pCi/L		109	(80%-120%)	MXR1	05/17/1312:05
	Uncert:			+/-148						
	TPU:			+/-284						
Cesium-137	6020			5870	pCi/L		97.5	(80%-120%)		
	Uncert:			+/-58.5						
	TPU:			+/-283						
Cobalt-60	5300			5270	pCi/L		99.4	(80%-120%)		
	Uncert:			+/-63.7						
	TPU:			+/-233						
Neptunium-237			U	11.1	pCi/L					
	Uncert:			+/-24.4						
	TPU:			+/-24.6						
Potassium-40			U	-88.6	pCi/L					
	Uncert:			+/-47.2						
	TPU:			+/-51.5						
Sodium-22			U	0.109	pCi/L					
	Uncert:			+/-7.92						
	TPU:			+/-7.92						
QC1202867154 MB										
Cesium-137			U	1.37	pCi/L				MXR1	05/17/1310:03
	Uncert:			+/-2.01						
	TPU:			+/-2.01						
Cobalt-60			U	1.30	pCi/L					
	Uncert:			+/-1.43						
	TPU:			+/-1.46						
Neptunium-237			U	-1.56	pCi/L					
	Uncert:			+/-2.66						
	TPU:			+/-2.68						

QC Summary

Workorder: **324498**

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 1298376										
Potassium-40			U	-0.847	pCi/L					
Uncert:				+/-13.6						
TPU:				+/-13.6						
Sodium-22			U	0.428	pCi/L					
Uncert:				+/-1.02						
TPU:				+/-1.03						
Rad Gas Flow										
Batch 1298225										
QC1202866767 324671006 DUP										
Strontium-90	U	0.405	U	0.429	pCi/L	0.0365		(0-1)	BXF1	05/08/1321:10
Uncert:		+/-0.158		+/-0.160						
TPU:		+/-0.161		+/-0.164						
**Strontium Carrier	8.55	5.40		5.90	mg		69	(50%-105%)		
QC1202866769 LCS										
Strontium-90	24.3			25.5	pCi/L		105	(80%-120%)	BXF1	05/08/1321:10
Uncert:				+/-0.743						
TPU:				+/-2.30						
**Strontium Carrier	8.55			5.70	mg		66.7	(50%-105%)		
QC1202866766 MB										
Strontium-90			U	0.0873	pCi/L				BXF1	05/08/1321:10
Uncert:				+/-0.0712						
TPU:				+/-0.0715						
**Strontium Carrier	8.55			5.90	mg		69	(50%-105%)		
QC1202866768 324671006 MS										
Strontium-90	81.1 U	0.405		88.6	pCi/L		109	(75%-125%)	BXF1	05/08/1321:10
Uncert:		+/-0.158		+/-2.52						
TPU:		+/-0.161		+/-7.54						
**Strontium Carrier	8.55	5.40		5.50	mg		64.3	(50%-105%)		
Batch 1298712										
QC1202868031 324671006 DUP										
Alpha	U	1.58	U	1.11	pCi/L	0.155		(0-1)	BXF1	05/13/1315:34
Uncert:		+/-0.792		+/-0.707						
TPU:		+/-0.803		+/-0.714						
Beta	U	0.854	U	1.42	pCi/L	0.164		(0-1)		05/10/1316:36
Uncert:		+/-0.876		+/-0.851						
TPU:		+/-0.880		+/-0.859						
QC1202868034 LCS										
Alpha	12.3			13.3	pCi/L		108	(80%-120%)	BXF1	05/13/1317:16
Uncert:				+/-0.637						
TPU:				+/-1.30						
Beta	48.6			54.0	pCi/L		111	(80%-120%)		05/10/1316:35
Uncert:				+/-0.939						
TPU:				+/-4.59						
QC1202868030 MB										
Alpha			U	0.0577	pCi/L				BXF1	05/13/1315:32
Uncert:				+/-0.114						
TPU:				+/-0.114						
Beta			U	-0.29	pCi/L					05/10/1316:36

QC Summary

Workorder: **324498**

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Gas Flow										
Batch 1298712										
	Uncert:			+/-0.122						
	TPU:			+/-0.122						
QC1202868032 324671006 MS										
Alpha	247 U	1.58		279	pCi/L		113	(75%-125%)	BXF1	05/13/1315:42
	Uncert:	+/-0.792		+/-14.0						
	TPU:	+/-0.803		+/-28.6						
Beta	972 U	0.854		1050	pCi/L		108	(75%-125%)		05/10/1316:35
	Uncert:	+/-0.876		+/-18.8						
	TPU:	+/-0.880		+/-90.0						
QC1202868033 324671006 MSD										
Alpha	247 U	1.58		285	pCi/L	0.0511	115	(0-1)	BXF1	05/13/1315:42
	Uncert:	+/-0.792		+/-14.9						
	TPU:	+/-0.803		+/-28.7						
Beta	972 U	0.854		1050	pCi/L	0.00197	107	(0-1)		05/10/1316:35
	Uncert:	+/-0.876		+/-18.8						
	TPU:	+/-0.880		+/-89.2						
Rad Liquid Scintillation										
Batch 1297917										
QC1202865868 324498001 DUP										
Tritium	U	30.1	U	94.7	pCi/L	0.465		(0-1)	BYS1	05/03/1313:57
	Uncert:	+/-33.1		+/-35.0						
	TPU:	+/-33.2		+/-36.2						
QC1202865870 LCS										
Tritium	1960			1760	pCi/L		90	(80%-120%)	BYS1	05/03/1315:07
	Uncert:			+/-147						
	TPU:			+/-228						
QC1202865867 MB										
Tritium			U	-10.5	pCi/L				BYS1	05/03/1313:04
	Uncert:			+/-30.6						
	TPU:			+/-30.6						
QC1202865869 324498001 MS										
Tritium	1960 U	30.1		1610	pCi/L		82.1	(75%-125%)	BYS1	05/03/1314:49
	Uncert:	+/-33.1		+/-142						
	TPU:	+/-33.2		+/-213						

Notes:

TPU and Counting Uncertainty are calculated at the 68% confidence level (1-sigma).

The Qualifiers in this report are defined as follows:

**	Analyte is a Tracer compound
**	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	The target analyte was detected in the associated blank.
BD	Results are either below the MDC or tracer recovery is low
C	Analyte has been confirmed by GC/MS analysis

QC Summary

Workorder: **324498**

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

D	Results are reported from a diluted aliquot of the sample
E	%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
E	Concentration of the target analyte exceeds the instrument calibration range
E	General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
FA	Failed analysis.
FB	Mercury was found present at quantifiable concentrations in field blanks received with these samples. Data associated with the blank are deemed invalid for reporting to regulatory agencies
H	Analytical holding time was exceeded
J	Value is estimated
JNX	Non Calibrated Compound
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
M	M if above MDC and less than LLD
M	REMP Result > MDC/CL and < RDL
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	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	Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.
R	Sample results are rejected
U	Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI	Gamma Spectroscopy--Uncertain identification
UJ	Compound cannot be extracted
UJ	Gamma Spectroscopy--Uncertain identification
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.
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

QC Summary

Workorder: **324498**

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

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.
** Indicates analyte is a surrogate/tracer compound.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptence 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.
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.