

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 3855 EVENT NAME: Pajarito (General Surveillance)
 Q3 Watershed Sampling
 SAMPLE ID: CAPA-12-13277 WORK ORDER: NA

	<u>AS PLANNED</u>	<u>AS COLLECTED</u>		<u>AS PLANNED</u>	<u>AS COLLECTED</u>
DATE COLLECTED (MM/DD/YYYY):		04/23/2012	FIELD MATRIX:	WG	ok
TIME COLLECTED (HH:MM):		1145	MEDIA:	WGI	
PRS ID:		ok	SAMPLE TECH CODE:	UA BP	
LOCATION ID: 03-B-13		↓	FIELD PREP:	UF	
LOCATION TYPE: MON		↓	FIELD QC TYPE:	REG	
PORT: SINGLE COMPLETION		↓	SAMPLE USAGE:	INV	

PRIORITY	ORDER	CONTAINER	# PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
w/b	WSP-8260B-VOA	40 ML SEPTUM AMBER GLASS	2 HCL		N/A
↓	WSP-8270C-SVOA	1 LITER AMBER GLASS	2 ICE 4/23/12		
	WSP-8321A-NMED HEXP	1 LITER AMBER GLASS	2 ICE 4/23/12		
	WSP-GrossA/B	1 LITER POLY	1 NONE		
	WSP-H-3	250 ML AMBER GLASS	1 ICE		
	WSP-HEXMOD	1 LITER AMBER GLASS	2 ICE		
	WSP-RAD	1 GAL POLY	1 HNO3		
↓	WSP-TKN+TOC	500 ML AMBER GLASS	1 H2SO4		

SAMPLE COMMENTS:

N/A

LOCATION COMMENTS:

N/A

FIELD PARAMETERS:

Dissolved Oxygen 0.38 mg/L Oxidation-Reduction Potential 207.3 MV pH 5.96 SU
 Specific Conductance 605 uS/cm Temperature 13.79 deg C Turbidity 9.65 NTU

COLLECTED BY (PRINT) D. Woody

RELINQUISHED BY (Printed Name) <u>J. New Yorker</u> (Signature) <u>[Signature]</u>	Date/Time <u>4/23/12</u> <u>1325</u>	RECEIVED BY (Printed Name) <u>D. Greenwood</u> (Signature) <u>[Signature]</u>	Date/Time <u>4/23/12</u> <u>1325</u>
RELINQUISHED BY (Printed Name) _____ (Signature) _____	Date/Time _____	RECEIVED BY (Printed Name) _____ (Signature) _____	Date/Time _____

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 3855 EVENT NAME: Pajarito (General Surveillance)
 Q3 Watershed Sampling
 SAMPLE ID: CAPA-12-13287 WORK ORDER: NA

	<u>AS PLANNED</u>	<u>AS COLLECTED</u>		<u>AS PLANNED</u>	<u>AS COLLECTED</u>
DATE COLLECTED (MM/DD/YYYY):		04/23/2012	FIELD MATRIX:	WG	ok
TIME COLLECTED (HH:MM):		1145	MEDIA:	WGI	
PRS ID:		ok	SAMPLE TECH CODE:	UA	BP
LOCATION ID: 03-B-13			FIELD PREP:	F	
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	Y	N/A
	WSP-Met+B+SN+SR+U	1 LITER POLY	1	HNO3	↓	↓
	WSP-NH3+NO3/NO2+PO4	500 ML AMBER GLASS	1	H2SO4	↓	↓

SAMPLE COMMENTS:

w/h

refer to CAPA-12-13277

LOCATION COMMENTS:

m/k

FIELD PARAMETERS:

Dissolved Oxygen _____ mg/L Oxidation-Reduction Potential _____ MV pH _____ SU
 Specific Conductance _____ uS/cm Temperature _____ deg C Turbidity _____ NTU

COLLECTED BY (PRINT)

D. Woody

RELINQUISHED BY (Printed Name) Andrew Hester (Signature) <i>Andrew Hester</i>	Date/Time 4/23/12 1325	RECEIVED BY (Printed Name) Shawn Sherwood (Signature) <i>Shawn Sherwood</i>	Date/Time 4/23/12 1325
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 3855 EVENT NAME: Pajarito (General Surveillance)
 Q3 Watershed Sampling
 SAMPLE ID: CAPA-12-13309 WORK ORDER: NA

	<u>AS PLANNED</u>	<u>AS COLLECTED</u>		<u>AS PLANNED</u>	<u>AS COLLECTED</u>
DATE COLLECTED (MM/DD/YYYY):		04/23/2012	FIELD MATRIX:	WG	ok
TIME COLLECTED (HH:MM):		1010	MEDIA:	WGI	
PRS ID:		ok	SAMPLE TECH CODE:	UA	BP
LOCATION ID: 03-B-13			FIELD PREP:	UF	
LOCATION TYPE: SUP			FIELD QC TYPE:	EQB	
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	Y	N/A
N/A	WSP-8270C-SVOA	1 LITER AMBER GLASS	1 ICE	Y	N/A

SAMPLE COMMENTS:

refer to CAPA-12-13277

LOCATION COMMENTS:

FIELD PARAMETERS:

Dissolved Oxygen _____ mg/L Oxidation-Reduction Potential _____ MV pH _____ SU
 Specific Conductance _____ uS/cm Temperature _____ deg C Turbidity _____ NTU

COLLECTED BY (PRINT) *D. Woody*

RELINQUISHED BY (Printed Name) <i>Andrew Steh</i> (Signature) <i>[Signature]</i>	Date/Time 4/23/12 1325	RECEIVED BY (Printed Name) <i>D. Sherwood</i> (Signature) <i>[Signature]</i>	Date/Time 4/23/12 1325
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Data Validation Report

Chain Of Custody No. 12-1236

1. Distribution Of Samples In EDD.

SDG	Analytical Method	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks
303221	EPA:120.1		1			
303221	EPA:150.1		1			
303221	EPA:160.1		1			
303221	EPA:245.2		1			
303221	EPA:300.0		1			
303221	EPA:310.1		1			
303221	EPA:350.1		1			
303221	EPA:351.2		1			
303221	EPA:353.2		1			
303221	EPA:365.4		1			
303221	EPA:900		1			
303221	EPA:901.1		1			
303221	EPA:905.0		1			
303221	EPA:906.0		1			
303221	HASL-300:AM-241		1			
303221	HASL-300:ISOPU		1			
303221	HASL-300:ISOU		1			
303221	SM:A2340B		1			
303221	SW-846:6010B		1			
303221	SW-846:6020		2			
303221	SW-846:6850		1			
303221	SW-846:8260B		1		1	1
303221	SW-846:8270C		1		1	1
303221	SW-846:8321A_MOD		1			
303221	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
303221	EPA:120.1	1207629	1207629		1						
303221	EPA:150.1	1207364	1207364		1						
303221	EPA:160.1	1207624	1207624		1					1	
303221	EPA:245.2	1208500	1208499		1					1	1
303221	EPA:300.0	1207431	1207431		1					1	
303221	EPA:310.1	1207761	1207761		1					1	1
303221	EPA:350.1	1207674	1207670		1					1	1
303221	EPA:351.2	1207684	1207679		1					1	1
303221	EPA:353.2	1207641	1207641		1					1	
303221	EPA:365.4	1207687	1207685		1					1	1
303221	EPA:900	1208279	1208279		1					1	1
303221	EPA:901.1	1207234	1207234		1					1	
303221	EPA:905.0	1208282	1208282		1					1	1
303221	EPA:906.0	1207327	1207327		1					1	1
303221	HASL-300:AM-241	1207310	1207310		1					1	
303221	HASL-300:ISOPU	1207311	1207311		1					1	
303221	HASL-300:ISOU	1207313	1207313		1					1	
303221	SM:A2340B	1213521	1213521		1						
303221	SW-846:6010B	1207188	1207187		1					1	1

303221	SW-846:6020	1207190	1207189	1					1	1
303221	SW-846:6020	1209023	1209022	1					1	1
303221	SW-846:6020	1209301	1209300	1					1	1
303221	SW-846:6850	1208033	1208032	1					1	1
303221	SW-846:8260B	1209345	1209345	1		1	1	1	2	
303221	SW-846:8270C	1208252	1208249	1			1	1	1	1
303221	SW-846:8321A MOD	1207463	1207460	1					1	1
303221	SW-846:9060	1210398	1210398	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	CALA-12-12552	1202645404	DUP	1	0	0	0
EPA:120.1	GENERAL CHEMISTRY	CAPA-12-13287	303221003	REG	1	0	0	0
EPA:120.1	GENERAL CHEMISTRY	CAPU-12-12576	1202645405	DUP	1	0	0	0
EPA:120.1	GENERAL CHEMISTRY	LCS	1202645406	LCS	0	0	1	0
EPA:150.1	GENERAL CHEMISTRY	CAPA-12-13287	1202644768	DUP	1	0	0	0
EPA:150.1	GENERAL CHEMISTRY	CAPA-12-13287	303221003	REG	1	0	0	0
EPA:150.1	GENERAL CHEMISTRY	LCS	1202644765	LCS	0	0	1	0
EPA:160.1	GENERAL CHEMISTRY	CAPA-12-13287	1202645375	DUP	1	0	0	0
EPA:160.1	GENERAL CHEMISTRY	CAPA-12-13287	303221003	REG	1	0	0	0
EPA:160.1	GENERAL CHEMISTRY	LCS	1202645378	LCS	0	0	1	0
EPA:160.1	GENERAL CHEMISTRY	MB	1202645374	MB	1	0	0	0
EPA:245.2	INORGANIC	CAPA-12-13287	1202647539	DUP	1	0	0	0
EPA:245.2	INORGANIC	CAPA-12-13287	1202647540	MS	0	0	1	0
EPA:245.2	INORGANIC	CAPA-12-13287	303221003	REG	1	0	0	0
EPA:245.2	INORGANIC	LCS	1202647538	LCS	0	0	1	0
EPA:245.2	INORGANIC	MB	1202647537	MB	1	0	0	0
EPA:300.0	GENERAL CHEMISTRY	CAPA-12-13287	1202644915	DUP	4	0	0	0
EPA:300.0	GENERAL CHEMISTRY	CAPA-12-13287	303221003	REG	4	0	0	0
EPA:300.0	GENERAL CHEMISTRY	LCS	1202644917	LCS	0	0	4	0
EPA:300.0	GENERAL CHEMISTRY	MB	1202644914	MB	4	0	0	0
EPA:310.1	GENERAL CHEMISTRY	CAPA-12-13287	1202645758	DUP	2	0	0	0
EPA:310.1	GENERAL CHEMISTRY	CAPA-12-13287	1202645761	MS	0	0	1	0
EPA:310.1	GENERAL CHEMISTRY	CAPA-12-13287	303221003	REG	2	0	0	0
EPA:310.1	GENERAL CHEMISTRY	LCS	1202645755	LCS	0	0	1	0
EPA:310.1	GENERAL CHEMISTRY	MB	1202645754	MB	3	0	0	0
EPA:350.1	GENERAL CHEMISTRY	CAPA-12-13277	1202645522	DUP	1	0	0	0
EPA:350.1	GENERAL CHEMISTRY	CAPA-12-13277	1202645524	MS	0	0	1	0
EPA:350.1	GENERAL CHEMISTRY	CAPA-12-13277	1202645526	MSD	0	0	1	0
EPA:350.1	GENERAL CHEMISTRY	CAPA-12-13287	303221003	REG	1	0	0	0
EPA:350.1	GENERAL CHEMISTRY	LCS	1202645528	LCS	0	0	1	0
EPA:350.1	GENERAL CHEMISTRY	MB	1202645521	MB	1	0	0	0
EPA:351.2	GENERAL CHEMISTRY	CAPA-12-13277	303221002	REG	1	0	0	0
EPA:351.2	GENERAL CHEMISTRY	CAPA-12-13281	1202645554	DUP	1	0	0	0
EPA:351.2	GENERAL CHEMISTRY	CAPA-12-13281	1202645555	MS	0	0	1	0
EPA:351.2	GENERAL CHEMISTRY	CAPA-12-13281	1202645556	MSD	0	0	1	0
EPA:351.2	GENERAL CHEMISTRY	LCS	1202645557	LCS	0	0	1	0
EPA:351.2	GENERAL CHEMISTRY	MB	1202645553	MB	1	0	0	0
EPA:353.2	GENERAL CHEMISTRY	CAPA-12-13277	1202645436	DUP	1	0	0	0
EPA:353.2	GENERAL CHEMISTRY	CAPA-12-13287	303221003	REG	1	0	0	0
EPA:353.2	GENERAL CHEMISTRY	LCS	1202645442	LCS	0	0	1	0
EPA:353.2	GENERAL CHEMISTRY	MB	1202645435	MB	1	0	0	0
EPA:365.4	GENERAL CHEMISTRY	CAPA-12-13287	1202645563	DUP	1	0	0	0
EPA:365.4	GENERAL CHEMISTRY	CAPA-12-13287	1202645564	MS	0	0	1	0
EPA:365.4	GENERAL CHEMISTRY	CAPA-12-13287	1202645565	MSD	0	0	1	0
EPA:365.4	GENERAL CHEMISTRY	CAPA-12-13287	303221003	REG	1	0	0	0

Data Validation Report for:

Chain Of Custody No. 12-1236

		1				1			
		1				1			
		1				1			
		1							
		4							
		1							
		1							
		1				2			

EPA:365.4	GENERAL CHEMISTRY	LCS	1202645566	LCS	0	0	1	0
EPA:365.4	GENERAL CHEMISTRY	MB	1202645562	MB	1	0	0	0
EPA:900	RAD	CAPA-12-13277	303221002	REG	2	0	0	0
EPA:900	RAD	CAPU-12-12567	1202646911	DUP	2	0	0	0
EPA:900	RAD	CAPU-12-12567	1202646912	MS	0	0	2	0
EPA:900	RAD	CAPU-12-12567	1202646913	MSD	0	0	2	0
EPA:900	RAD	LCS	1202646914	LCS	0	0	2	0
EPA:900	RAD	MB	1202646910	MB	2	0	0	0
EPA:901.1	RAD	CAPA-12-13277	1202644415	DUP	5	0	0	0
EPA:901.1	RAD	CAPA-12-13277	303221002	REG	5	0	0	0
EPA:901.1	RAD	LCS	1202644416	LCS	0	0	3	0
EPA:901.1	RAD	MB	1202644414	MB	5	0	0	0
EPA:905.0	RAD	CAPA-12-13277	303221002	REG	1	0	0	0
EPA:905.0	RAD	CAPA-12-13281	1202646923	DUP	1	0	0	0
EPA:905.0	RAD	CAPA-12-13281	1202646924	MS	0	0	1	0
EPA:905.0	RAD	LCS	1202646925	LCS	0	0	1	0
EPA:905.0	RAD	MB	1202646922	MB	1	0	0	0
EPA:906.0	RAD	CAPA-12-13277	1202644665	DUP	1	0	0	0
EPA:906.0	RAD	CAPA-12-13277	1202644666	MS	0	0	1	0
EPA:906.0	RAD	CAPA-12-13277	303221002	REG	1	0	0	0
EPA:906.0	RAD	LCS	1202644667	LCS	0	0	1	0
EPA:906.0	RAD	MB	1202644664	MB	1	0	0	0
HASL-300:AM-241	RAD	CAPA-12-13277	1202644609	DUP	1	0	0	0
HASL-300:AM-241	RAD	CAPA-12-13277	303221002	REG	1	0	0	0
HASL-300:AM-241	RAD	LCS	1202644610	LCS	0	0	1	0
HASL-300:AM-241	RAD	MB	1202644608	MB	1	0	0	0
HASL-300:ISOPU	RAD	CAPA-12-13277	1202644612	DUP	2	0	0	0
HASL-300:ISOPU	RAD	CAPA-12-13277	303221002	REG	2	0	0	0
HASL-300:ISOPU	RAD	LCS	1202644613	LCS	0	0	1	0
HASL-300:ISOPU	RAD	MB	1202644611	MB	2	0	0	0
HASL-300:ISOU	RAD	CAPA-12-13277	1202644615	DUP	3	0	0	0
HASL-300:ISOU	RAD	CAPA-12-13277	303221002	REG	3	0	0	0
HASL-300:ISOU	RAD	LCS	1202644616	LCS	0	0	1	0
HASL-300:ISOU	RAD	MB	1202644614	MB	3	0	0	0
SM:A2340B	INORGANIC	CAPA-12-13287	303221003	REG	1	0	0	0
SW-846:6010B	INORGANIC	CAPA-12-13277	1202644303	DUP	17	0	0	0
SW-846:6010B	INORGANIC	CAPA-12-13277	1202644304	MS	0	0	17	0
SW-846:6010B	INORGANIC	CAPA-12-13287	303221003	REG	17	0	0	0
SW-846:6010B	INORGANIC	LCS	1202644302	LCS	0	0	17	0
SW-846:6010B	INORGANIC	MB	1202644301	MB	17	0	0	0
SW-846:6020	INORGANIC	CAPA-12-13277	1202648675	DUP	11	0	0	0
SW-846:6020	INORGANIC	CAPA-12-13277	1202648676	MS	0	0	11	0
SW-846:6020	INORGANIC	CAPA-12-13277	303221002	REG	11	0	0	0
SW-846:6020	INORGANIC	CAPA-12-13287	1202644308	DUP	10	0	0	0
SW-846:6020	INORGANIC	CAPA-12-13287	1202644309	MS	0	0	10	0
SW-846:6020	INORGANIC	CAPA-12-13287	1202649372	DUP	1	0	0	0
SW-846:6020	INORGANIC	CAPA-12-13287	1202649373	MS	0	0	1	0
SW-846:6020	INORGANIC	CAPA-12-13287	303221003	REG	11	0	0	0
SW-846:6020	INORGANIC	LCS	1202644307	LCS	0	0	10	0
SW-846:6020	INORGANIC	LCS	1202648674	LCS	0	0	11	0
SW-846:6020	INORGANIC	LCS	1202649371	LCS	0	0	1	0
SW-846:6020	INORGANIC	MB	1202644306	MB	10	0	0	0
SW-846:6020	INORGANIC	MB	1202648673	MB	11	0	0	0
SW-846:6020	INORGANIC	MB	1202649370	MB	1	0	0	0
SW-846:6850	LCMS/MS PERCHLORATE	CAPA-12-13287	1202646393	MS	0	0	1	0

Data Validation Report for:

Chain Of Custody No. 12-1236

SW-846:6850	LCMS/MS PERCHLORATE	CAPA-12-13287	1202646394	MSD	0	0	1	0
SW-846:6850	LCMS/MS PERCHLORATE	CAPA-12-13287	303221003	REG	1	0	0	0
SW-846:6850	LCMS/MS PERCHLORATE	LCS	1202646392	LCS	0	0	1	0
SW-846:6850	LCMS/MS PERCHLORATE	MB	1202646391	MB	1	0	0	0
SW-846:8260B	VOC	CAPA-12-13277	303221001	REG	160	6	0	0
SW-846:8260B	VOC	CAPA-12-13306	303221004	FB	80	3	0	0
SW-846:8260B	VOC	CAPA-12-13309	303221005	EQB	80	3	0	0
SW-846:8260B	VOC	CAPA-12-13310	303221006	FTB	80	3	0	0
SW-846:8260B	VOC	LCS	1202649504	LCS	0	3	70	0
SW-846:8260B	VOC	LCS	1202649505	LCS	0	3	10	0
SW-846:8260B	VOC	LCS	1202651500	LCS	0	3	70	0
SW-846:8260B	VOC	LCS	1202651501	LCS	0	3	10	0
SW-846:8260B	VOC	MB	1202649501	MB	80	3	0	0
SW-846:8260B	VOC	MB	1202651499	MB	80	3	0	0
SW-846:8270C	SVOC	CAPA-12-13277	1202646830	MS	0	6	76	0
SW-846:8270C	SVOC	CAPA-12-13277	1202646831	MSD	0	6	76	0
SW-846:8270C	SVOC	CAPA-12-13277	303221001	REG	80	6	0	0
SW-846:8270C	SVOC	CAPA-12-13306	303221004	FB	80	6	0	0
SW-846:8270C	SVOC	CAPA-12-13309	303221005	EQB	80	6	0	0
SW-846:8270C	SVOC	LCS	1202646829	LCS	0	6	76	0
SW-846:8270C	SVOC	MB	1202646828	MB	80	6	0	0
SW-846:8321A_MOD	LCMS/MS HIGH EXPLOSIVES	CAPA-12-13277	1202644998	MS	0	2	23	0
SW-846:8321A_MOD	LCMS/MS HIGH EXPLOSIVES	CAPA-12-13277	1202644999	MSD	0	2	23	0
SW-846:8321A_MOD	LCMS/MS HIGH EXPLOSIVES	CAPA-12-13277	303221002	REG	23	2	0	0
SW-846:8321A_MOD	LCMS/MS HIGH EXPLOSIVES	LCS	1202644997	LCS	0	2	23	0
SW-846:8321A_MOD	LCMS/MS HIGH EXPLOSIVES	MB	1202644996	MB	23	2	0	0
SW-846:9060	GENERAL CHEMISTRY	CAPA-12-13277	1202652080	DUP	1	0	0	0
SW-846:9060	GENERAL CHEMISTRY	CAPA-12-13277	303221002	REG	1	0	0	0
SW-846:9060	GENERAL CHEMISTRY	CAPA-12-13286	1202655722	DUP	1	0	0	0
SW-846:9060	GENERAL CHEMISTRY	LCS	1202652082	LCS	0	0	1	0
SW-846:9060	GENERAL CHEMISTRY	MB	1202652079	MB	1	0	0	0

3. Are any analytes missing?

No.

4. Were any holding times exceeded?

Field	Lab	Analytical	Sample	Extraction	Analysis	Extraction	Max Extract	Reject	Exceeds	Analysis	Max Analysis	
Sample ID	Sample ID	Method	Date	Date	Date	Hold Time	Hold Time	Above	Limit	Hold Time	Hold Time	
CAPA-12-13277	303221001	SW-846:8270C	4/23/2012	4/30/2012	5/1/2012	7	7	7	14	X	1	40
CAPA-12-13277	303221001	SW-846:8270C	4/23/2012	4/30/2012	5/2/2012	7	7	7	14	X	2	40
CAPA-12-13306	303221004	SW-846:8270C	4/23/2012	4/30/2012	5/1/2012	7	7	7	14	X	1	40
CAPA-12-13309	303221005	SW-846:8270C	4/23/2012	4/30/2012	5/1/2012	7	7	7	14	X	1	40
CAPA-12-13277	303221002	SW-846:9060	4/23/2012		5/11/2012	NA					18	14

5. Any contaminants in blanks?

Data Validation Report for:

Chain Of Custody No. 12-1236

Reject	Exceeds
Above	Limit
40	
40	
40	
40	
28	X

No.

Any samples affected by the presence of contaminants in blanks?

Field	Blank Field	Blank Lab	Blank	Analytical	Parameter		Blank	Sample	Lab	Detect	
Sample ID	Sample ID	Sample ID	Type	Method	Name	Units	Result	Result	Qualifier	Limit	Detected
CAPA-12-13287	MB	1202647537	METHOD BLANK	EPA:245.2	Mercury	ug/L	-0.094	0.2	U	0.2	N

6. Any surrogate recoveries outside the control limits?

No.

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

Field	Matrix	Matrix	Analytical	Parameter	Analysis	Analysis	Sample	MS %	MSD %	Upper	Lower
Sample ID	Spike ID	Spike Dup ID	Method	Name	Lot ID	Date	Matrix	Recvry	Recvry	Limit	Limit
CAPA-12-13281	1202645555	1202645556	EPA:351.2	Total Kjeldahl Nitrogen	1207679	5/8/2012	W	87.5	88.2	110	90
CAPA-12-13277	1202644304		SW-846:6010B	Sodium	1207187	5/1/2012	W	163		125	75
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Acenaphthene	1208249	5/1/2012	W	49	67	104	31
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Acenaphthylene	1208249	5/1/2012	W	55	74	107	33
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Anthracene	1208249	5/1/2012	W	58	79	112	35
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Atrazine	1208249	5/1/2012	W	62	77	120	32
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Azobenzene	1208249	5/1/2012	W	48	66	117	35
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Benzidine	1208249	5/1/2012	W	14	13	127	30
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Benzo(a)anthracene	1208249	5/1/2012	W	61	81	116	32
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Benzo(a)pyrene	1208249	5/1/2012	W	60	82	111	34
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Benzo(b)fluoranthene	1208249	5/1/2012	W	63	87	116	34
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Benzo(k)fluoranthene	1208249	5/1/2012	W	64	86	118	33
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Bis(2-ethylhexyl)phthalate	1208249	5/1/2012	W	58	75	128	29
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Bromophenyl-phenylether[4-]	1208249	5/1/2012	W	60	84	113	32
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Butylbenzylphthalate	1208249	5/1/2012	W	60	79	122	33
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Chloroaniline[4-]	1208249	5/1/2012	W	59	74	119	34
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Chloronaphthalene[2-]	1208249	5/1/2012	W	43	60	98	33
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Chlorophenyl-phenyl[4-] Ether	1208249	5/1/2012	W	53	73	109	32
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Chrysene	1208249	5/1/2012	W	71	96	118	32
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Di-n-butylphthalate	1208249	5/1/2012	W	54	70	121	40
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Dibenz(a,h)anthracene	1208249	5/1/2012	W	66	86	127	26
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Dibenzofuran	1208249	5/1/2012	W	51	70	108	37
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Dichlorobenzene[1,2-]	1208249	5/1/2012	W	36	49	87	27
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Dichlorobenzene[1,3-]	1208249	5/1/2012	W	34	47	84	24
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Dichlorobenzene[1,4-]	1208249	5/1/2012	W	35	48	88	25
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Dichlorobenzidine[3,3'-]	1208249	5/1/2012	W	45	59	128	18
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Diethylphthalate	1208249	5/1/2012	W	66	83	120	43

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

Rejection Limit	RPD	RPD Limit
10	0.797	20
10		
10	31	20
10	30	21
10	31	22
10	22	20
10	30	20
10	6	22
10	29	20
10	30	22
10		
10	32	22
10		
10	30	22
10		
10	25	22
10	32	21
10		
10	28	22
10	23	22
10		
10	33	20
10		
10	32	20
10	30	22
10	26	21
10		
10	27	26
10	32	19
10		
10	31	24
10		
10	34	23
10		
10	32	24
10		
10	27	24
10	23	20

CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Dimethyl Phthalate	1208249	5/1/2012	W	68	84	120	40
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Dinitrotoluene[2,4-]	1208249	5/1/2012	W	65	85	115	42
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Dinitrotoluene[2,6-]	1208249	5/1/2012	W	68	88	114	42
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Dioxane[1,4-]	1208249	5/2/2012	W	140	267	97	27
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Diphenylamine	1208249	5/1/2012	W	62	84	115	31
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Fluoranthene	1208249	5/1/2012	W	56	73	125	29
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Fluorene	1208249	5/1/2012	W	55	77	114	32
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Hexachlorobenzene	1208249	5/1/2012	W	56	76	126	33
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Hexachlorobutadiene	1208249	5/1/2012	W	30	45	100	15
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Hexachlorocyclopentadiene	1208249	5/1/2012	W	20	32	92	10
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Hexachloroethane	1208249	5/1/2012	W	28	42	89	21
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Indeno[1,2,3-cd]pyrene	1208249	5/1/2012	W	66	88	124	26
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Methylnaphthalene[1-]	1208249	5/1/2012	W	51	67	100	32
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Methylnaphthalene[2-]	1208249	5/1/2012	W	48	65	96	31
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Naphthalene	1208249	5/1/2012	W	50	65	100	27
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Nitroaniline[2-]	1208249	5/1/2012	W	47	61	119	32
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Nitroaniline[3-]	1208249	5/1/2012	W	64	83	119	33
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Nitroaniline[4-]	1208249	5/1/2012	W	51	68	135	30
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Phenanthrene	1208249	5/1/2012	W	59	81	112	37
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Pyrene	1208249	5/1/2012	W	69	96	121	26
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Tetrachlorobenzene[1,2,4,5]	1208249	5/1/2012	W	40	57	97	25
CAPA-12-13277	1202646830	1202646831	SW-846:8270C	Trichlorobenzene[1,2,4-]	1208249	5/1/2012	W	35	49	87	24

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

LCS	LCSD	Analytical	Parameter	Lab	Analysis	Sample	LCS	LCSD	Upper	Lower	Lower Reject
Sample ID	Sample ID	Method	Name	Lot ID	Date	Matrix	Recovery	Recovery	Limit	Limit	Limit
1202646829		SW-846:8270C	Benzoic Acid	1208249	5/1/2012	W	21		100	25	10
1202646829		SW-846:8270C	Dibenz(a,h)anthracene	1208249	5/1/2012	W	126		123	42	10

9. Any Field Duplicate RPDs outside the desired limits?

No.

10. Any Lab Duplicate RPDs outside the desired limits?

No.

11. Any required reporting limits exceeded?

No.

12. Additional Validator's Comments.

None.

13. Display Flagged Data.

10	22	21
10	26	22
10	26	21
10	23	22
10	30	20
10	26	23
10	33	21
10	30	21
10	41	25
10	45	28
10	39	25
10	28	26
10	28	22
10	30	22
10	25	23
10	26	21
10	25	22
10	28	25
10	32	20
10	33	25
10	36	23
10	32	22

Upper Reject		RPD
Limit	RPD	Limit

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	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Acenaphthene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Acenaphthylene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	RAD	HASL-300:AM-241	Americium-241	U	U	R5	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Aniline	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Anthracene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Atrazine	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Azobenzene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Benzidine	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Benzo(a)anthracene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Benzo(a)pyrene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Benzo(b)fluoranthene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Benzo(g,h,i)perylene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Benzo(k)fluoranthene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Benzoic Acid	U	UJ	SV12a,SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Benzyl Alcohol	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Bis(2-chloroethoxy)methane	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Bis(2-chloroethyl)ether	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Bis(2-ethylhexyl)phthalate	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Bromophenylphenylether[4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Butylbenzylphthalate	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	RAD	EPA:901.1	Cesium-137	U	U	R5	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Chloro-3-methylphenol[4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Chloroaniline[4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Chloronaphthalene[2-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Chlorophenol[2-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Chlorophenylphenyl[4-] Ether	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Chrysene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	RAD	EPA:901.1	Cobalt-60	U	U	R5	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Di-n-butylphthalate	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Di-n-octylphthalate	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Dibenz(a,h)anthracene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Dibenzofuran	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Dichlorobenzene[1,2-]	U	UJ	SV9	N

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
1	ug/L	1	ug/L			W	4/23/2012		1208252	VAL	Y
1	ug/L	1	ug/L			W	4/23/2012		1208252	VAL	Y
0.0244	pCi/L	0.0244	pCi/L	0.0731	0.0161	W	4/23/2012		1207310	VAL	Y
10	ug/L	10	ug/L			W	4/23/2012		1208252	VAL	Y
1	ug/L	1	ug/L			W	4/23/2012		1208252	VAL	Y
10	ug/L	10	ug/L			W	4/23/2012		1208252	VAL	Y
10	ug/L	10	ug/L			W	4/23/2012		1208252	VAL	Y
10	ug/L	10	ug/L			W	4/23/2012		1208252	VAL	Y
1	ug/L	1	ug/L			W	4/23/2012		1208252	VAL	Y
1	ug/L	1	ug/L			W	4/23/2012		1208252	VAL	Y
1	ug/L	1	ug/L			W	4/23/2012		1208252	VAL	Y
1	ug/L	1	ug/L			W	4/23/2012		1208252	VAL	Y
1	ug/L	1	ug/L			W	4/23/2012		1208252	VAL	Y
20	ug/L	20	ug/L			W	4/23/2012		1208252	VAL	Y
10	ug/L	10	ug/L			W	4/23/2012		1208252	VAL	Y
10	ug/L	10	ug/L			W	4/23/2012		1208252	VAL	Y
10	ug/L	10	ug/L			W	4/23/2012		1208252	VAL	Y
10	ug/L	10	ug/L			W	4/23/2012		1208252	VAL	Y
10	ug/L	10	ug/L			W	4/23/2012		1208252	VAL	Y
10	ug/L	10	ug/L			W	4/23/2012		1208252	VAL	Y
10	ug/L	10	ug/L			W	4/23/2012		1208252	VAL	Y
1.79	pCi/L	1.79	pCi/L	6.3	1.65	W	4/23/2012		1207234	VAL	Y
10	ug/L	10	ug/L			W	4/23/2012		1208252	VAL	Y
10	ug/L	10	ug/L			W	4/23/2012		1208252	VAL	Y
1	ug/L	1	ug/L			W	4/23/2012		1208252	VAL	Y
10	ug/L	10	ug/L			W	4/23/2012		1208252	VAL	Y
10	ug/L	10	ug/L			W	4/23/2012		1208252	VAL	Y
1	ug/L	1	ug/L			W	4/23/2012		1208252	VAL	Y
-0.29	pCi/L	-0.29	pCi/L	5.85	1.53	W	4/23/2012		1207234	VAL	Y
10	ug/L	10	ug/L			W	4/23/2012		1208252	VAL	Y
10	ug/L	10	ug/L			W	4/23/2012		1208252	VAL	Y
1	ug/L	1	ug/L			W	4/23/2012		1208252	VAL	Y
10	ug/L	10	ug/L			W	4/23/2012		1208252	VAL	Y
10	ug/L	10	ug/L			W	4/23/2012		1208252	VAL	Y

03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Dichlorobenzene[1,3-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Dichlorobenzene[1,4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Dichlorobenzidine[3,3'-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Dichlorophenol[2,4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Diethylphthalate	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Dimethyl Phthalate	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Dimethylphenol[2,4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Dinitro-2-methylphenol[4,6-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Dinitrophenol[2,4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Dinitrotoluene[2,4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Dinitrotoluene[2,6-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Dinoseb	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	DL	SVOC	SW-846:8270C	Dioxane[1,4-]		J-	SV9	Y
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Diphenylamine	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Fluoranthene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Fluorene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	RAD	EPA:900	Gross alpha		U	R11	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Hexachlorobenzene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Hexachlorobutadiene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Hexachlorocyclopentadiene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Hexachloroethane	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Indeno(1,2,3-cd)pyrene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Isophorone	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Methylnaphthalene[1-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Methylnaphthalene[2-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Methylphenol[2-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Methylphenol[4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Naphthalene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	RAD	EPA:901.1	Neptunium-237	U	U	R5	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Nitroaniline[2-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Nitroaniline[3-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Nitroaniline[4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Nitrobenzene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Nitrophenol[2-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Nitrophenol[4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Nitroso-di-n-butylamine[N-]	U	UJ	SV9	N

03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Nitroso-di-n-propylamine[N-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Nitrosodiethylamine[N-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Nitrosodimethylamine[N-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Nitrosopyrrolidine[N-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Oxybis(1-chloropropane)[2,2'-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Pentachlorobenzene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Pentachlorophenol	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Phenanthrene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Phenol	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	RAD	HASL-300:ISOPU	Plutonium-238	U	U	R5	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	RAD	HASL-300:ISOPU	Plutonium-239/240	U	U	R5	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	RAD	EPA:901.1	Potassium-40	U	U	R5	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Pyrene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Pyridine	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	RAD	EPA:901.1	Sodium-22	U	U	R5	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	RAD	EPA:905.0	Strontium-90	U	U	R5	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Tetrachlorobenzene[1,2,4,5]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Tetrachlorophenol[2,3,4,6-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	GENERAL CHEMISTRY	SW-846:9060	Total Organic Carbon		J-	I9	Y
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Trichlorobenzene[1,2,4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	VOC	SW-846:8260B	Trichloroethane[1,1,1-]	E	R	V7	Y
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Trichlorophenol[2,4,5-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	SVOC	SW-846:8270C	Trichlorophenol[2,4,6-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	RAD	HASL-300:ISOU	Uranium-234	U	U	R5	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	RAD	HASL-300:ISOU	Uranium-235/236	U	U	R5	N
03-B-13	12-1236	CAPA-12-13277	REG	INIT	RAD	HASL-300:ISOU	Uranium-238	U	U	R5	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Acenaphthene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Acenaphthylene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Aniline	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Anthracene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Atrazine	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Azobenzene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Benzidine	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Benzo(a)anthracene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Benzo(a)pyrene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Benzo(b)fluoranthene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Benzo(g,h,i)perylene	U	UJ	SV9	N

10 ug/L	10 ug/L			W	4/23/2012		1208252	VAL	Y
10 ug/L	10 ug/L			W	4/23/2012		1208252	VAL	Y
10 ug/L	10 ug/L			W	4/23/2012		1208252	VAL	Y
10 ug/L	10 ug/L			W	4/23/2012		1208252	VAL	Y
10 ug/L	10 ug/L			W	4/23/2012		1208252	VAL	Y
10 ug/L	10 ug/L			W	4/23/2012		1208252	VAL	Y
10 ug/L	10 ug/L			W	4/23/2012		1208252	VAL	Y
10 ug/L	10 ug/L			W	4/23/2012		1208252	VAL	Y
1 ug/L	1 ug/L			W	4/23/2012		1208252	VAL	Y
10 ug/L	10 ug/L			W	4/23/2012		1208252	VAL	Y
-0.0151 pCi/L	-0.0151 pCi/L	0.0468	0.00796	W	4/23/2012		1207311	VAL	Y
-0.00903 pCi/L	-0.00903 pCi/L	0.0397	0.00796	W	4/23/2012		1207311	VAL	Y
-16.9 pCi/L	-16.9 pCi/L	77.1	19.4	W	4/23/2012		1207234	VAL	Y
1 ug/L	1 ug/L			W	4/23/2012		1208252	VAL	Y
10 ug/L	10 ug/L			W	4/23/2012		1208252	VAL	Y
-1.02 pCi/L	-1.02 pCi/L	5.57	1.58	W	4/23/2012		1207234	VAL	Y
0.336 pCi/L	0.336 pCi/L	0.484	0.149	W	4/23/2012		1208282	VAL	Y
10 ug/L	10 ug/L			W	4/23/2012		1208252	VAL	Y
10 ug/L	10 ug/L			W	4/23/2012		1208252	VAL	Y
4.18 mg/L	4.18 mg/L			W	4/23/2012		1210398	VAL	Y
10 ug/L	10 ug/L			W	4/23/2012		1208252	VAL	Y
170 ug/L	170 ug/L			W	4/23/2012		1209345	VAL	Y
10 ug/L	10 ug/L			W	4/23/2012		1208252	VAL	Y
10 ug/L	10 ug/L			W	4/23/2012		1208252	VAL	Y
0.066 pCi/L	0.066 pCi/L	0.0769	0.0186	W	4/23/2012		1207313	VAL	Y
0.00156 pCi/L	0.00156 pCi/L	0.0549	0.00685	W	4/23/2012		1207313	VAL	Y
0.0237 pCi/L	0.0237 pCi/L	0.0388	0.0115	W	4/23/2012		1207313	VAL	Y
1.06 ug/L	1.06 ug/L			W	4/23/2012		1208252	VAL	Y
1.06 ug/L	1.06 ug/L			W	4/23/2012		1208252	VAL	Y
10.6 ug/L	10.6 ug/L			W	4/23/2012		1208252	VAL	Y
1.06 ug/L	1.06 ug/L			W	4/23/2012		1208252	VAL	Y
10.6 ug/L	10.6 ug/L			W	4/23/2012		1208252	VAL	Y
10.6 ug/L	10.6 ug/L			W	4/23/2012		1208252	VAL	Y
10.6 ug/L	10.6 ug/L			W	4/23/2012		1208252	VAL	Y
1.06 ug/L	1.06 ug/L			W	4/23/2012		1208252	VAL	Y
1.06 ug/L	1.06 ug/L			W	4/23/2012		1208252	VAL	Y
1.06 ug/L	1.06 ug/L			W	4/23/2012		1208252	VAL	Y
1.06 ug/L	1.06 ug/L			W	4/23/2012		1208252	VAL	Y

03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Benzo(k)fluoranthene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Benzoic Acid	U	UJ	SV12a,SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Benzyl Alcohol	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Bis(2-chloroethoxy)methane	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Bis(2-chloroethyl)ether	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Bis(2-ethylhexyl)phthalate	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Bromophenylphenylether[4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Butylbenzylphthalate	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Chloro-3-methylphenol[4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Chloroaniline[4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Chloronaphthalene[2-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Chloropheno[2-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Chlorophenylphenyl[4-] Ether	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Chrysene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Di-n-butylphthalate	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Di-n-octylphthalate	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Dibenz(a,h)anthracene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Dibenzofuran	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Dichlorobenzene[1,2-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Dichlorobenzene[1,3-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Dichlorobenzene[1,4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Dichlorobenzidine[3,3'-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Dichlorophenol[2,4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Diethylphthalate	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Dimethyl Phthalate	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Dimethylphenol[2,4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Dinitro-2-methylphenol[4,6-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Dinitrophenol[2,4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Dinitrotoluene[2,4-]	U	UJ	SV9	N

03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Dinitrotoluene[2,6-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Dinoseb	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Dioxane[1,4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Diphenylamine	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Fluoranthene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Fluorene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Hexachlorobenzene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Hexachlorobutadiene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Hexachlorocyclopentadiene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Hexachloroethane	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Indeno(1,2,3-cd)pyrene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Isophorone	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Methylnaphthalene[1-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Methylnaphthalene[2-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Methylphenol[2-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Methylphenol[4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Naphthalene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Nitroaniline[2-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Nitroaniline[3-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Nitroaniline[4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Nitrobenzene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Nitrophenol[2-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Nitrophenol[4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Nitroso-di-n-butylamine[N-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Nitroso-di-n-propylamine[N-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Nitrosodiethylamine[N-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Nitrosodimethylamine[N-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Nitrosopyrrolidine[N-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Oxybis(1-chloropropane)[2,2']	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Pentachlorobenzene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Pentachlorophenol	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Phenanthrene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Phenol	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Pyrene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Pyridine	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Tetrachlorobenzene[1,2,4,5]	U	UJ	SV9	N

03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Tetrachlorophenol[2,3,4,6-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Trichlorobenzene[1,2,4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Trichlorophenol[2,4,5-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13306	FB	INIT	SVOC	SW-846:8270C	Trichlorophenol[2,4,6-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Acenaphthene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Acenaphthylene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Aniline	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Anthracene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Atrazine	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Azobenzene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Benidine	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Benzo(a)anthracene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Benzo(a)pyrene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Benzo(b)fluoranthene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Benzo(g,h,i)perylene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Benzo(k)fluoranthene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Benzoic Acid	U	UJ	SV12a,SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Benzyl Alcohol	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Bis(2-chloroethoxy)methane	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Bis(2-chloroethyl)ether	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Bis(2-ethylhexyl)phthalate	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Bromophenylphenylether[4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Butylbenzylphthalate	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Chloro-3-methylphenol[4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Chloroaniline[4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Chloronaphthalene[2-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Chlorophenol[2-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Chlorophenylphenyl[4-] Ether	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Chrysene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Di-n-butylphthalate	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Di-n-octylphthalate	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Dibenz(a,h)anthracene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Dibenzofuran	U	UJ	SV9	N

10.6 ug/L	10.6 ug/L			W	4/23/2012		1208252	VAL	Y
10.6 ug/L	10.6 ug/L			W	4/23/2012		1208252	VAL	Y
10.6 ug/L	10.6 ug/L			W	4/23/2012		1208252	VAL	Y
10.6 ug/L	10.6 ug/L			W	4/23/2012		1208252	VAL	Y
1.09 ug/L	1.09 ug/L			W	4/23/2012		1208252	VAL	Y
1.09 ug/L	1.09 ug/L			W	4/23/2012		1208252	VAL	Y
10.9 ug/L	10.9 ug/L			W	4/23/2012		1208252	VAL	Y
1.09 ug/L	1.09 ug/L			W	4/23/2012		1208252	VAL	Y
10.9 ug/L	10.9 ug/L			W	4/23/2012		1208252	VAL	Y
10.9 ug/L	10.9 ug/L			W	4/23/2012		1208252	VAL	Y
1.09 ug/L	1.09 ug/L			W	4/23/2012		1208252	VAL	Y
1.09 ug/L	1.09 ug/L			W	4/23/2012		1208252	VAL	Y
1.09 ug/L	1.09 ug/L			W	4/23/2012		1208252	VAL	Y
1.09 ug/L	1.09 ug/L			W	4/23/2012		1208252	VAL	Y
1.09 ug/L	1.09 ug/L			W	4/23/2012		1208252	VAL	Y
21.7 ug/L	21.7 ug/L			W	4/23/2012		1208252	VAL	Y
10.9 ug/L	10.9 ug/L			W	4/23/2012		1208252	VAL	Y
10.9 ug/L	10.9 ug/L			W	4/23/2012		1208252	VAL	Y
10.9 ug/L	10.9 ug/L			W	4/23/2012		1208252	VAL	Y
10.9 ug/L	10.9 ug/L			W	4/23/2012		1208252	VAL	Y
10.9 ug/L	10.9 ug/L			W	4/23/2012		1208252	VAL	Y
10.9 ug/L	10.9 ug/L			W	4/23/2012		1208252	VAL	Y
1.09 ug/L	1.09 ug/L			W	4/23/2012		1208252	VAL	Y
10.9 ug/L	10.9 ug/L			W	4/23/2012		1208252	VAL	Y
10.9 ug/L	10.9 ug/L			W	4/23/2012		1208252	VAL	Y
1.09 ug/L	1.09 ug/L			W	4/23/2012		1208252	VAL	Y
10.9 ug/L	10.9 ug/L			W	4/23/2012		1208252	VAL	Y
10.9 ug/L	10.9 ug/L			W	4/23/2012		1208252	VAL	Y
1.09 ug/L	1.09 ug/L			W	4/23/2012		1208252	VAL	Y
10.9 ug/L	10.9 ug/L			W	4/23/2012		1208252	VAL	Y

03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Dichlorobenzene[1,2-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Dichlorobenzene[1,3-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Dichlorobenzene[1,4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Dichlorobenzidine[3,3'-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Dichlorophenol[2,4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Diethylphthalate	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Dimethyl Phthalate	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Dimethylphenol[2,4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Dinitro-2-methylphenol[4,6-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Dinitrophenol[2,4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Dinitrotoluene[2,4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Dinitrotoluene[2,6-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Dinoseb	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Dioxane[1,4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Diphenylamine	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Fluoranthene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Fluorene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Hexachlorobenzene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Hexachlorobutadiene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Hexachlorocyclopentadiene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Hexachloroethane	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Indeno(1,2,3-cd)pyrene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Isophorone	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Methylnaphthalene[1-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Methylnaphthalene[2-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Methylphenol[2-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Methylphenol[4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Naphthalene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Nitroaniline[2-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Nitroaniline[3-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Nitroaniline[4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Nitrobenzene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Nitrophenol[2-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Nitrophenol[4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Nitroso-di-n-butylamine[N-]	U	UJ	SV9	N

03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Nitroso-di-n-propylamine[N-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Nitrosodiethylamine[N-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Nitrosodimethylamine[N-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Nitrosopyrrolidine[N-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Oxybis(1-chloropropane)[2,2']	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Pentachlorobenzene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Pentachlorophenol	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Phenanthrene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Phenol	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Pyrene	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Pyridine	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Tetrachlorobenzene[1,2,4,5]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Tetrachlorophenol[2,3,4,6-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Trichlorobenzene[1,2,4-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Trichloropheno[2,4,5-]	U	UJ	SV9	N
03-B-13	12-1236	CAPA-12-13309	EQB	INIT	SVOC	SW-846:8270C	Trichloropheno[2,4,6-]	U	UJ	SV9	N

- Reason Code** Description
- I9 The holding time was >1 and <=2 times the applicable holding time requirement.
 - 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 qualify the analyte as not detected and/or any other standard qualifire. The analyte is detected in the sample.
 - R11 The results for the affected analytes should be regarded as not-detected (U) because the associated sample concentration was less than 3x the 1 sigma TPU.
 - R5 Analyte is not detected because the amount reported is less than the MDC.
 - SV9 The holding time was >1 and <=2 times the applicable holding time requirement.
 - U_LAB The analytical laboratory qualified the analyte as not detected.
 - V7 The affected results were not analyzed with a valid 5 point calibration cvure and/or a standard at the reporting limit.

14. Useable Result Count.

Field	Location	Sample	Analytical	No. Unuseable	Total No. Of
Sample ID	ID	Purpose	Method	Records	Records
CAPA-12-13277	03-B-13	REG	EPA:351.2	0	1
CAPA-12-13277	03-B-13	REG	EPA:900	0	2
CAPA-12-13277	03-B-13	REG	EPA:901.1	0	5
CAPA-12-13277	03-B-13	REG	EPA:905.0	0	1
CAPA-12-13277	03-B-13	REG	EPA:906.0	0	1
CAPA-12-13277	03-B-13	REG	HASL-300:AM-241	0	1
CAPA-12-13277	03-B-13	REG	HASL-300:ISOPU	0	2
CAPA-12-13277	03-B-13	REG	HASL-300:ISOU	0	3
CAPA-12-13277	03-B-13	REG	SW-846:6020	0	11

CAPA-12-13277	03-B-13	REG	SW-846:8260B	0	160
CAPA-12-13277	03-B-13	REG	SW-846:8270C	0	80
CAPA-12-13277	03-B-13	REG	SW-846:8321A_MOD	0	23
CAPA-12-13277	03-B-13	REG	SW-846:9060	0	1
CAPA-12-13287	03-B-13	REG	EPA:120.1	0	1
CAPA-12-13287	03-B-13	REG	EPA:150.1	0	1
CAPA-12-13287	03-B-13	REG	EPA:160.1	0	1
CAPA-12-13287	03-B-13	REG	EPA:245.2	0	1
CAPA-12-13287	03-B-13	REG	EPA:300.0	0	4
CAPA-12-13287	03-B-13	REG	EPA:310.1	0	2
CAPA-12-13287	03-B-13	REG	EPA:350.1	0	1
CAPA-12-13287	03-B-13	REG	EPA:353.2	0	1
CAPA-12-13287	03-B-13	REG	EPA:365.4	0	1
CAPA-12-13287	03-B-13	REG	SM:A2340B	0	1
CAPA-12-13287	03-B-13	REG	SW-846:6010B	0	17
CAPA-12-13287	03-B-13	REG	SW-846:6020	0	11
CAPA-12-13287	03-B-13	REG	SW-846:6850	0	1
CAPA-12-13306	03-B-13	FB	SW-846:8260B	0	80
CAPA-12-13306	03-B-13	FB	SW-846:8270C	0	80
CAPA-12-13309	03-B-13	EQB	SW-846:8260B	0	80
CAPA-12-13309	03-B-13	EQB	SW-846:8270C	0	80
CAPA-12-13310	03-B-13	FTB	SW-846:8260B	0	80



May 04, 2012

www.gel.com

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: 303221
SDG: 12-1236

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, 2012, and analyzed for Explosives by LCMSMS, GC/MS Semivolatile, GC/MS Volatile, General Chemistry, Metals, Perchlorates by LCMSMS 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: 12-1236
Enclosures



ARS International (63641-10)
LANL-WQH Water Samples
Work Order #: 303221
SDG: 12-1236

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Case Narrative

**Case Narrative for
ARS International (63641-10)
LANL-WQH Water Samples
Workorder #: 303221
SDG # : 12-1236**

May 04, 2012

Laboratory Identification:

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

Summary

Sample receipt The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on April 25, 2012 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:

<u>Laboratory ID</u>	<u>Client ID</u>
303221001	CAPA-12-13277
303221002	CAPA-12-13277
303221003	CAPA-12-13287
303221004	CAPA-12-13306
303221005	CAPA-12-13309
303221006	CAPA-12-13310

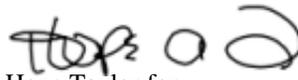
Case Narrative

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

Data Package

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Explosives by LCMSMS, GC/MS Semivolatile, GC/MS Volatile, General Chemistry, Metals, Perchlorates by LCMSMS 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 04 May 2012

State	Certification
Arizona	AZ0766
Arkansas	88-0651
CLIA	42D0904046
California NELAP	01151CA
Colorado	SC00012
Connecticut	PH-0169
Delaware	SC00012
DoD ELAP A2LA ISO 17025	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-09-00191
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA120008
Maryland	270
Massachusetts	M-SC012
Mississippi	SC00012
Nevada	SC000122011-1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
Oklahoma	9904
Pennsylvania NELAP	68-00485
South Carolina Chemistry	10120001
South Carolina Radiochemi	10120002
Tennessee	TN 02934
Texas NELAP	T104704235-12-7
Utah NELAP	SC00012
Vermont	VT87156
Virginia NELAP	460202
Washington	C780
Wisconsin	999887790

Chain of Custody and Supporting Documentation



SAMPLE RECEIPT & REVIEW FORM

Client: LANL		SDG/AR/COC/Work Order: 12-1236	
Received By: Patricia Dent		Date Received: April 25, 2012	
Suspected Hazard Information		Yes	No
			<input checked="" type="checkbox"/>
COC/Samples marked as radioactive?			<input checked="" type="checkbox"/>
Classified Radioactive II or III by RSO?			<input checked="" type="checkbox"/>
COC/Samples marked containing PCBs?			<input checked="" type="checkbox"/>
Package, COC, and/or Samples marked as beryllium or asbestos containing?			<input checked="" type="checkbox"/>
Shipped as a DOT Hazardous?			<input checked="" type="checkbox"/>
Samples identified as Foreign Soil?			<input checked="" type="checkbox"/>

Sample Receipt Criteria		Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Samples requiring cold preservation within ($0 \leq 6$ deg. C)?*	<input checked="" type="checkbox"/>			Preservation Method: Ice bags Blue ice Dry ice None Other (describe) *all temperatures are recorded in Celsius 1,2C
2a	Daily check performed and passed on IR temperature gun?	<input checked="" type="checkbox"/>			Temperature Device Serial #: Secondary Temperature Device Serial # (If Applicable): 61524646
3	Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>			
4	Sample containers intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5	Samples requiring chemical preservation at proper pH?			<input checked="" type="checkbox"/>	Sample ID's, containers affected and observed pH: CAPA-12-13277 for Gross A/B If Preservation added, Lot#: K45047
6	VOA vials free of headspace (defined as < 6mm bubble)?	<input checked="" type="checkbox"/>			Sample ID's and containers affected:
7	Are Encore containers present?			<input checked="" type="checkbox"/>	(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	<input checked="" type="checkbox"/>			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>			Sample ID's affected:
11	Number of containers received match number indicated on COC?			<input checked="" type="checkbox"/>	Sample ID's affected: CAPA-12-13306, 13309 for SVOA, HEXP the lab rec'd (1) container each instead of (2) as indicated on COC. CAPA-12-13310 for 8260B lab rec'd (1) container instead of (2)-as indicated on COC.
12	Are sample containers identifiable as GEL provided?			<input checked="" type="checkbox"/>	CLIENT
13	COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>			
14	Carrier and tracking number.				Circle Applicable: FedEx Air FedEx Ground UPS Field Services Courier Other 7209 7856 5828 1C 7209 7856 5817 2C

Comments (Use Continuation Form if needed):

Subject: Today's Issues 04/25/12
From: Pat Dent <Pat.Dent@gel.com>
Date: Wed, 25 Apr 2012 15:39:01 -0400
To: "Keith R. Greene" <kgreene@lanl.gov>
CC: "team.davis" <team.davis@gel.com>

Good Afternoon all listed below are today's Issues

Container received for Gross A/B was preserved prior to analysis.

RN#12-1235 CAPA-12-13421,13431 the lab received (1)-8260B container the COC indicates (2) each.

RN#12-1236 CAPA-12-13310 the lab received (1)-8260B container instead of (2)-as indicated on COC, RN#12-1235 CAPA-12-13422 the lab did not receive any 8260B containers.

RN# 12-1236 CAPA-12-13306 for SVOA,13309 for HEXP the lab received (1)-Amber container each instead of (2) as indicated on COC.

Thanks!
Pat Dent

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

Data Review Qualifier Flag Definition Sheet

Data Review Qualifier Definitions

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

Volatile Analysis

Case Narrative

**ChemStation Case Narrative
ARS International (ARSL)
SDG 12-1236**

Method/Analysis Information

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

Analytical Method: SW846 8260B DOE-AL

Analytical Batch Number: 1209345

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
303221001	CAPA-12-13277
303221004	CAPA-12-13306
303221005	CAPA-12-13309
303221006	CAPA-12-13310
1202649501	Method Blank (MB)
1202649502	303220001(CAPA-12-13239) Post Spike (PS)
1202649503	303220001(CAPA-12-13239) Post Spike Duplicate (PSD)
1202649504	Laboratory Control Sample (LCS)
1202649505	Laboratory Control Sample (LCS)
1202651499	Method Blank (MB)
1202651500	Laboratory Control Sample (LCS)
1202651501	Laboratory Control Sample (LCS)

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

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

Preparation/Analytical Method Verification

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-038 REV# 16.

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

Calibration Information

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

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

Initial Calibration

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

Continuing Calibration Verification Requirements

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

Quality Control (QC) Information

Blank (MB) Statement

Target analytes were detected in the blank 1202651499 (MB) below the reporting limit.

Surrogate Recoveries

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

Laboratory Control Sample (LCS) Recovery

The LCS spike recoveries met the acceptance limits.

QC Sample Designation

Sample 303220001 (CAPA-12-13239) 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 recoveries were within the required acceptance limits.

Relative Percent Difference (RPD) Statement

The RPD between the matrix spike pair 1202649502 (CAPA-12-13239) and 1202649503 (CAPA-12-13239) were not all within the acceptance limits. See the Data Exception Report in the miscellaneous section of the deliverable.

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

Sample 303221001 (CAPA-12-13277) was diluted because target analyte concentrations exceeded the

calibration range.

Sample Re-extraction/Re-analysis

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

Miscellaneous Information

Electronic Packaging Comment

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

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Data Exception (DER) Documentation

DER # 1077013 was generated for this SDG.

Manual Integrations

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

TIC Comment

Tentatively identified compounds (TIC) 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
VOA6.I	Agilent 6890N/5975 GC/MS w/ OI 4560/Archon Autosampler	HP6890N/HP5975	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: 12-1236 GEL Work Order: 303221

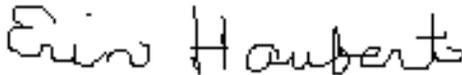
The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- E Organics--Concentration of the target analyte exceeds the instrument calibration range
- 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: 

Name: Erin Haubert

Date: 15 MAY 2012

Title: Data Validator

Sample Data Summary

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 12-1236	Date Collected: 04/23/2012 11:45	Matrix: W
Lab Sample ID: 303221001	Date Received: 04/25/2012 09:00	
Client ID: CAPA-12-13277	Client: ARSL001	Project: ESHL00210
Batch ID: 1209345	Method: SW846 8260B DOE-AL	SOP Ref: GL-OA-E-038
Run Date: 05/03/2012 18:13	Inst: VOA6.I	Dilution: 1
Prep Date: 05/03/2012 18:13	Analyst: RXD1	Purge Vol: 5 mL
Data File: 050312V6\6K415.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		4.91	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		4.37	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	0.780	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	E	170	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		1.65	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	J	0.450	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: 12-1236	Date Collected: 04/23/2012 11:45	Matrix: W
Lab Sample ID: 303221001	Date Received: 04/25/2012 09:00	
Client ID: CAPA-12-13277	Client: ARSL001	Project: ESHL00210
Batch ID: 1209345	Method: SW846 8260B DOE-AL	SOP Ref: GL-OA-E-038
Run Date: 05/03/2012 18:13	Inst: VOA6.I	Dilution: 1
Prep Date: 05/03/2012 18:13	Analyst: RXD1	Purge Vol: 5 mL
Data File: 050312V6\6K415.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: 12-1236	Date Collected: 04/23/2012 11:45	Matrix: W
Lab Sample ID: 303221001	Date Received: 04/25/2012 09:00	
Client ID: CAPA-12-13277	Client: ARSL001	Project: ESHL00210
Batch ID: 1209345	Method: SW846 8260B DOE-AL	SOP Ref: GL-OA-E-038
Run Date: 05/03/2012 18:13	Inst: VOA6.I	Dilution: 1
Prep Date: 05/03/2012 18:13	Analyst: RXD1	Purge Vol: 5 mL
Data File: 050312V6\6K415.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	51.7	50.0	ug/L 103	(80%-123%)
Bromofluorobenzene	50.5	50.0	ug/L 101	(80%-120%)
Toluene-d8	51.3	50.0	ug/L 103	(80%-120%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown siloxane	14.064	6.22	ug/L	0	J

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 12-1236	Date Collected: 04/23/2012 11:45	Matrix: W
Lab Sample ID: 303221001	Date Received: 04/25/2012 09:00	
Client ID: CAPA-12-13277DL	Client: ARSL001	Project: ESHL00210
Batch ID: 1209345	Method: SW846 8260B DOE-AL	SOP Ref: GL-OA-E-038
Run Date: 05/04/2012 13:17	Inst: VOA6.I	Dilution: 2
Prep Date: 05/04/2012 13:17	Analyst: RXD1	Purge Vol: 5 mL
Data File: 050412V6\6K508.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane	U	2.00	ug/L	0.600	2.00
74-87-3	Chloromethane	U	2.00	ug/L	0.600	2.00
75-01-4	Vinyl chloride	U	2.00	ug/L	0.600	2.00
74-83-9	Bromomethane	U	2.00	ug/L	0.600	2.00
75-00-3	Chloroethane	U	2.00	ug/L	0.600	2.00
75-69-4	Trichlorofluoromethane	U	2.00	ug/L	0.600	2.00
60-29-7	Ethyl ether	U	2.00	ug/L	0.600	2.00
67-64-1	Acetone	U	20.0	ug/L	6.00	20.0
75-05-8	Acetonitrile	U	50.0	ug/L	16.0	50.0
75-35-4	1,1-Dichloroethylene		3.22	ug/L	0.600	2.00
74-88-4	Iodomethane	U	10.0	ug/L	3.00	10.0
75-09-2	Methylene chloride	U	20.0	ug/L	6.00	20.0
75-15-0	Carbon disulfide	U	10.0	ug/L	3.00	10.0
1634-04-4	tert-Butyl methyl ether	U	2.00	ug/L	0.600	2.00
156-60-5	trans-1,2-Dichloroethylene	U	2.00	ug/L	0.600	2.00
108-05-4	Vinyl acetate	U	10.0	ug/L	3.00	10.0
75-34-3	1,1-Dichloroethane		3.12	ug/L	0.600	2.00
78-93-3	2-Butanone	U	10.0	ug/L	4.00	10.0
156-59-2	cis-1,2-Dichloroethylene	U	2.00	ug/L	0.600	2.00
594-20-7	2,2-Dichloropropane	U	2.00	ug/L	0.600	2.00
67-66-3	Chloroform	J	0.660	ug/L	0.600	2.00
74-97-5	Bromochloromethane	U	2.00	ug/L	0.600	2.00
71-55-6	1,1,1-Trichloroethane		113	ug/L	0.600	2.00
563-58-6	1,1-Dichloropropene	U	2.00	ug/L	0.600	2.00
71-36-3	n-Butyl alcohol	U	100	ug/L	30.0	100
56-23-5	Carbon tetrachloride	U	2.00	ug/L	0.600	2.00
107-06-2	1,2-Dichloroethane	U	2.00	ug/L	0.600	2.00
71-43-2	Benzene	U	2.00	ug/L	0.600	2.00
79-01-6	Trichloroethylene	J	1.28	ug/L	0.600	2.00
78-87-5	1,2-Dichloropropane	U	2.00	ug/L	0.600	2.00
75-27-4	Bromodichloromethane	U	2.00	ug/L	0.600	2.00
74-95-3	Dibromomethane	U	2.00	ug/L	0.600	2.00
108-10-1	4-Methyl-2-pentanone	U	10.0	ug/L	3.00	10.0
10061-01-5	cis-1,3-Dichloropropylene	U	2.00	ug/L	0.600	2.00
108-88-3	Toluene	U	2.00	ug/L	0.600	2.00
10061-02-6	trans-1,3-Dichloropropylene	U	2.00	ug/L	0.600	2.00
79-00-5	1,1,2-Trichloroethane	U	2.00	ug/L	0.600	2.00
591-78-6	2-Hexanone	U	10.0	ug/L	4.40	10.0

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 12-1236	Date Collected: 04/23/2012 11:45	Matrix: W
Lab Sample ID: 303221001	Date Received: 04/25/2012 09:00	
Client ID: CAPA-12-13277DL	Client: ARSL001	Project: ESHL00210
Batch ID: 1209345	Method: SW846 8260B DOE-AL	SOP Ref: GL-OA-E-038
Run Date: 05/04/2012 13:17	Inst: VOA6.I	Dilution: 2
Prep Date: 05/04/2012 13:17	Analyst: RXD1	Purge Vol: 5 mL
Data File: 050412V6\6K508.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane	U	2.00	ug/L	0.600	2.00
127-18-4	Tetrachloroethylene	U	2.00	ug/L	0.600	2.00
124-48-1	Dibromochloromethane	U	2.00	ug/L	0.600	2.00
106-93-4	1,2-Dibromoethane	U	2.00	ug/L	0.600	2.00
108-90-7	Chlorobenzene	U	2.00	ug/L	0.600	2.00
100-41-4	Ethylbenzene	U	2.00	ug/L	0.600	2.00
179601-23-1	m,p-Xylenes	U	4.00	ug/L	0.600	4.00
95-47-6	o-Xylene	U	2.00	ug/L	0.600	2.00
100-42-5	Styrene	U	2.00	ug/L	0.600	2.00
75-25-2	Bromoform	U	2.00	ug/L	0.600	2.00
79-34-5	1,1,2,2-Tetrachloroethane	U	2.00	ug/L	0.600	2.00
96-18-4	1,2,3-Trichloropropane	U	2.00	ug/L	0.600	2.00
108-86-1	Bromobenzene	U	2.00	ug/L	0.600	2.00
103-65-1	n-Propylbenzene	U	2.00	ug/L	0.600	2.00
95-49-8	2-Chlorotoluene	U	2.00	ug/L	0.600	2.00
98-82-8	Isopropylbenzene	U	2.00	ug/L	0.600	2.00
108-67-8	1,3,5-Trimethylbenzene	U	2.00	ug/L	0.600	2.00
106-43-4	4-Chlorotoluene	U	2.00	ug/L	0.600	2.00
98-06-6	tert-Butylbenzene	U	2.00	ug/L	0.600	2.00
95-63-6	1,2,4-Trimethylbenzene	U	2.00	ug/L	0.600	2.00
135-98-8	sec-Butylbenzene	U	2.00	ug/L	0.600	2.00
99-87-6	4-Isopropyltoluene	U	2.00	ug/L	0.600	2.00
541-73-1	1,3-Dichlorobenzene	U	2.00	ug/L	0.600	2.00
106-46-7	1,4-Dichlorobenzene	U	2.00	ug/L	0.600	2.00
104-51-8	n-Butylbenzene	U	2.00	ug/L	0.600	2.00
96-12-8	1,2-Dibromo-3-chloropropane	U	2.00	ug/L	0.600	2.00
87-68-3	Hexachlorobutadiene	U	2.00	ug/L	0.600	2.00
91-20-3	Naphthalene	U	2.00	ug/L	0.800	2.00
87-61-6	1,2,3-Trichlorobenzene	U	2.00	ug/L	0.600	2.00
107-02-8	Acrolein	U	10.0	ug/L	3.00	10.0
76-13-1	Trichlorotrifluoroethane	U	10.0	ug/L	3.00	10.0
107-05-1	Allyl chloride	U	10.0	ug/L	3.00	10.0
107-13-1	Acrylonitrile	U	10.0	ug/L	3.00	10.0
126-99-8	2-Chloro-1,3-butadiene	U	2.00	ug/L	0.600	2.00
107-12-0	Propionitrile	U	10.0	ug/L	3.00	10.0
126-98-7	Methacrylonitrile	U	10.0	ug/L	3.00	10.0
78-83-1	Isobutyl alcohol	U	100	ug/L	30.0	100
80-62-6	Methyl methacrylate	U	10.0	ug/L	3.00	10.0

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 12-1236	Date Collected: 04/23/2012 11:45	Matrix: W
Lab Sample ID: 303221001	Date Received: 04/25/2012 09:00	
Client ID: CAPA-12-13277DL	Client: ARSL001	Project: ESHL00210
Batch ID: 1209345	Method: SW846 8260B DOE-AL	SOP Ref: GL-OA-E-038
Run Date: 05/04/2012 13:17	Inst: VOA6.I	Dilution: 2
Prep Date: 05/04/2012 13:17	Analyst: RXD1	Purge Vol: 5 mL
Data File: 050412V6\6K508.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate	U	10.0	ug/L	3.00	10.0
630-20-6	1,1,1,2-Tetrachloroethane	U	2.00	ug/L	0.600	2.00
120-82-1	1,2,4-Trichlorobenzene	U	2.00	ug/L	0.600	2.00
95-50-1	1,2-Dichlorobenzene	U	2.00	ug/L	0.600	2.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	51.8	50.0	104	(80%-123%)
Bromofluorobenzene	49.5	50.0	99.1	(80%-120%)
Toluene-d8	50.2	50.0	100	(80%-120%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown siloxane	15.991	17.6	ug/L	0	J

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 12-1236	Date Collected: 04/23/2012 11:45	Matrix: W
Lab Sample ID: 303221004	Date Received: 04/25/2012 09:00	
Client ID: CAPA-12-13306	Client: ARSL001	Project: ESHL00210
Batch ID: 1209345	Method: SW846 8260B DOE-AL	SOP Ref: GL-OA-E-038
Run Date: 05/03/2012 18:42	Inst: VOA6.I	Dilution: 1
Prep Date: 05/03/2012 18:42	Analyst: RXD1	Purge Vol: 5 mL
Data File: 050312V6\6K416.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	J	0.340	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: 12-1236	Date Collected: 04/23/2012 11:45	Matrix: W
Lab Sample ID: 303221004	Date Received: 04/25/2012 09:00	
Client ID: CAPA-12-13306	Client: ARSL001	Project: ESHL00210
Batch ID: 1209345	Method: SW846 8260B DOE-AL	SOP Ref: GL-OA-E-038
Run Date: 05/03/2012 18:42	Inst: VOA6.I	Dilution: 1
Prep Date: 05/03/2012 18:42	Analyst: RXD1	Purge Vol: 5 mL
Data File: 050312V6\6K416.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: 12-1236	Date Collected: 04/23/2012 11:45	Matrix: W
Lab Sample ID: 303221004	Date Received: 04/25/2012 09:00	
Client ID: CAPA-12-13306	Client: ARSL001	Project: ESHL00210
Batch ID: 1209345	Method: SW846 8260B DOE-AL	SOP Ref: GL-OA-E-038
Run Date: 05/03/2012 18:42	Inst: VOA6.I	Dilution: 1
Prep Date: 05/03/2012 18:42	Analyst: RXD1	Purge Vol: 5 mL
Data File: 050312V6\6K416.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	51.5	50.0	ug/L 103	(80%-123%)
Bromofluorobenzene	50.9	50.0	ug/L 102	(80%-120%)
Toluene-d8	51.6	50.0	ug/L 103	(80%-120%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown siloxane	14.064	15.5	ug/L	0	J
	unknown siloxane	15.991	7.13	ug/L	0	J

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 12-1236	Date Collected: 04/23/2012 10:10	Matrix: W
Lab Sample ID: 303221005	Date Received: 04/25/2012 09:00	
Client ID: CAPA-12-13309	Client: ARSL001	Project: ESHL00210
Batch ID: 1209345	Method: SW846 8260B DOE-AL	SOP Ref: GL-OA-E-038
Run Date: 05/03/2012 19:11	Inst: VOA6.I	Dilution: 1
Prep Date: 05/03/2012 19:11	Analyst: RXD1	Purge Vol: 5 mL
Data File: 050312V6\6K417.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: 12-1236	Date Collected: 04/23/2012 10:10	Matrix: W
Lab Sample ID: 303221005	Date Received: 04/25/2012 09:00	
Client ID: CAPA-12-13309	Client: ARSL001	Project: ESHL00210
Batch ID: 1209345	Method: SW846 8260B DOE-AL	SOP Ref: GL-OA-E-038
Run Date: 05/03/2012 19:11	Inst: VOA6.I	Dilution: 1
Prep Date: 05/03/2012 19:11	Analyst: RXD1	Purge Vol: 5 mL
Data File: 050312V6\6K417.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: 12-1236	Date Collected: 04/23/2012 10:10	Matrix: W
Lab Sample ID: 303221005	Date Received: 04/25/2012 09:00	
Client ID: CAPA-12-13309	Client: ARSL001	Project: ESHL00210
Batch ID: 1209345	Method: SW846 8260B DOE-AL	SOP Ref: GL-OA-E-038
Run Date: 05/03/2012 19:11	Inst: VOA6.I	Dilution: 1
Prep Date: 05/03/2012 19:11	Analyst: RXD1	Purge Vol: 5 mL
Data File: 050312V6\6K417.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	52.6	50.0	105	(80%-123%)
Bromofluorobenzene	50.0	50.0	100	(80%-120%)
Toluene-d8	50.6	50.0	101	(80%-120%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown siloxane	14.064	8.13	ug/L	0	J
	unknown siloxane	15.991	5.42	ug/L	0	J

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 12-1236	Date Collected: 04/23/2012 11:45	Matrix: W
Lab Sample ID: 303221006	Date Received: 04/25/2012 09:00	
Client ID: CAPA-12-13310	Client: ARSL001	Project: ESHL00210
Batch ID: 1209345	Method: SW846 8260B DOE-AL	SOP Ref: GL-OA-E-038
Run Date: 05/03/2012 19:40	Inst: VOA6.I	Dilution: 1
Prep Date: 05/03/2012 19:40	Analyst: RXD1	Purge Vol: 5 mL
Data File: 050312V6\6K418.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: 12-1236	Date Collected: 04/23/2012 11:45	Matrix: W
Lab Sample ID: 303221006	Date Received: 04/25/2012 09:00	
Client ID: CAPA-12-13310	Client: ARSL001	Project: ESHL00210
Batch ID: 1209345	Method: SW846 8260B DOE-AL	SOP Ref: GL-OA-E-038
Run Date: 05/03/2012 19:40	Inst: VOA6.I	Dilution: 1
Prep Date: 05/03/2012 19:40	Analyst: RXD1	Purge Vol: 5 mL
Data File: 050312V6\6K418.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: 12-1236	Date Collected: 04/23/2012 11:45	Matrix: W
Lab Sample ID: 303221006	Date Received: 04/25/2012 09:00	
Client ID: CAPA-12-13310	Client: ARSL001	Project: ESHL00210
Batch ID: 1209345	Method: SW846 8260B DOE-AL	SOP Ref: GL-OA-E-038
Run Date: 05/03/2012 19:40	Inst: VOA6.I	Dilution: 1
Prep Date: 05/03/2012 19:40	Analyst: RXD1	Purge Vol: 5 mL
Data File: 050312V6\6K418.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	52.5	50.0	105	(80%-123%)
Bromofluorobenzene	50.4	50.0	101	(80%-120%)
Toluene-d8	50.2	50.0	100	(80%-120%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown siloxane	15.991	7.95	ug/L	0	J

Quality Control Summary

Volatile
Surrogate Recovery Report

SDG Number: 12-1236

Matrix Type: LIQUID

Sample ID	Client ID	DCED4 %REC	TOL %REC	BFB %REC
1202649504	LCS for batch 1209345	101	102	100
1202649505	LCS for batch 1209345	105	102	103
1202649501	MB for batch 1209345	106	101	101
303221001	CAPA-12-13277	103	103	101
303221004	CAPA-12-13306	103	103	102
303221005	CAPA-12-13309	105	101	100
303221006	CAPA-12-13310	105	100	101
1202649502	CAPA-12-13239PS	103	103	99
1202649503	CAPA-12-13239PSD	107	101	98
1202651500	LCS for batch 1209345	106	98	98
1202651501	LCS for batch 1209345	104	101	101
1202651499	MB for batch 1209345	104	103	100
303221001	CAPA-12-13277DL	104 D	100 D	99 D

Surrogate

DCED4 = 1,2-Dichloroethane-d4

TOL = Toluene-d8

BFB = Bromofluorobenzene

Acceptance Limits

(80%-123%)

(80%-120%)

(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: 12-1236

Sample Type: Post Spike

Client ID: CAPA-12-13239PS

Matrix: W

Lab Sample ID: 1202649502

Instrument: VOA6.I

Analysis Date: 05/03/2012 21:08

Dilution: 1

Analyst: RXD1

Prep Batch II 1209345

Purge Vol: 5 mL

Batch ID: 1209345

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 30.6	61	39-118
74-87-3	PS Chloromethane	50.0	0.00	U 41.3	83	52-135
75-01-4	PS Vinyl chloride	50.0	0.00	U 43.2	86	52-125
74-83-9	PS Bromomethane	50.0	0.00	U 43.9	88	68-122
75-00-3	PS Chloroethane	50.0	0.00	U 44.5	89	75-122
75-69-4	PS Trichlorofluoromethane	50.0	0.00	U 41.0	82	58-135
60-29-7	PS Ethyl ether	50.0	0.00	U 48.0	96	71-114
67-64-1	PS Acetone	250	0.00	U 97.0	39	30-143
75-05-8	PS Acetonitrile	1250	0.00	U 1150	92	65-126
75-35-4	PS 1,1-Dichloroethylene	50.0	0.00	U 50.4	101	67-129
74-88-4	PS Iodomethane	250	0.00	U 292	117	74-134
75-09-2	PS Methylene chloride	50.0	0.00	U 49.2	98	73-118
75-15-0	PS Carbon disulfide	250	0.00	U 295	118	66-143
1634-04-4	PS tert-Butyl methyl ether	50.0	0.00	U 50.6	101	71-122
156-60-5	PS trans-1,2-Dichloroethylene	50.0	0.00	U 51.0	102	58-125
108-05-4	PS Vinyl acetate	250	0.00	U 241	96	49-162
75-34-3	PS 1,1-Dichloroethane	50.0	0.00	U 52.4	105	75-124
78-93-3	PS 2-Butanone	250	0.00	U 144	57	30-136
156-59-2	PS cis-1,2-Dichloroethylene	50.0	0.00	U 52.4	105	69-141
594-20-7	PS 2,2-Dichloropropane	50.0	0.00	U 55.2	110	70-134
67-66-3	PS Chloroform	50.0	0.00	U 52.9	106	76-123
74-97-5	PS Bromochloromethane	50.0	0.00	U 50.5	101	80-121

Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: 12-1236

Sample Type: Post Spike

Client ID: CAPA-12-13239PS

Matrix: W

Lab Sample ID: 1202649502

Instrument: VOA6.I

Analysis Date: 05/03/2012 21:08

Dilution: 1

Analyst: RXD1

Prep Batch II 1209345

Purge Vol: 5 mL

Batch ID: 1209345

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
71-55-6	PS 1,1,1-Trichloroethane	50.0	0.00	U 54.0	108	73-132
563-58-6	PS 1,1-Dichloropropene	50.0	0.00	U 52.1	104	73-128
71-36-3	PS n-Butyl alcohol	5000	0.00	U 4630	93	66-134
56-23-5	PS Carbon tetrachloride	50.0	0.00	U 54.2	108	71-139
107-06-2	PS 1,2-Dichloroethane	50.0	0.00	U 51.6	103	70-124
71-43-2	PS Benzene	50.0	0.00	U 50.9	102	74-118
79-01-6	PS Trichloroethylene	50.0	0.00	U 52.2	104	70-130
78-87-5	PS 1,2-Dichloropropane	50.0	0.00	U 52.5	105	77-124
75-27-4	PS Bromodichloromethane	50.0	0.00	U 53.4	107	78-130
74-95-3	PS Dibromomethane	50.0	0.00	U 50.6	101	78-121
108-10-1	PS 4-Methyl-2-pentanone	250	0.00	U 241	96	68-132
10061-01-5	PS cis-1,3-Dichloropropylene	50.0	0.00	U 53.0	106	79-129
108-88-3	PS Toluene	50.0	0.00	U 49.3	99	69-119
10061-02-6	PS trans-1,3-Dichloropropylene	50.0	0.00	U 53.7	107	78-126
79-00-5	PS 1,1,2-Trichloroethane	50.0	0.00	U 48.8	98	75-118
591-78-6	PS 2-Hexanone	250	0.00	U 184	73	31-132
142-28-9	PS 1,3-Dichloropropane	50.0	0.00	U 51.4	103	75-119
127-18-4	PS Tetrachloroethylene	50.0	0.00	U 50.6	101	66-127
124-48-1	PS Dibromochloromethane	50.0	0.00	U 52.5	105	75-123
106-93-4	PS 1,2-Dibromoethane	50.0	0.00	U 49.3	99	80-119
108-90-7	PS Chlorobenzene	50.0	0.00	U 50.6	101	73-119
100-41-4	PS Ethylbenzene	50.0	0.00	U 50.8	102	69-123

Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: 12-1236

Sample Type: Post Spike

Client ID: CAPA-12-13239PS

Matrix: W

Lab Sample ID: 1202649502

Instrument: VOA6.I

Analysis Date: 05/03/2012 21:08

Dilution: 1

Analyst: RXD1

Prep Batch ID: 1209345

Purge Vol: 5 mL

Batch ID: 1209345

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 101	101	69-124
95-47-6	PS o-Xylene	50.0	0.00	U 51.5	103	72-124
100-42-5	PS Styrene	50.0	0.00	U 51.3	103	73-125
75-25-2	PS Bromoform	50.0	0.00	U 49.6	99	69-123
79-34-5	PS 1,1,2,2-Tetrachloroethane	50.0	0.00	U 46.3	93	67-124
96-18-4	PS 1,2,3-Trichloropropane	50.0	0.00	U 46.5	93	73-122
108-86-1	PS Bromobenzene	50.0	0.00	U 48.6	97	70-121
103-65-1	PS n-Propylbenzene	50.0	0.00	U 49.0	98	59-128
95-49-8	PS 2-Chlorotoluene	50.0	0.00	U 50.8	102	66-126
98-82-8	PS Isopropylbenzene	50.0	0.00	U 49.6	99	66-127
108-67-8	PS 1,3,5-Trimethylbenzene	50.0	0.00	U 50.1	100	65-128
106-43-4	PS 4-Chlorotoluene	50.0	0.00	U 48.1	96	63-122
98-06-6	PS tert-Butylbenzene	50.0	0.00	U 49.9	100	67-127
95-63-6	PS 1,2,4-Trimethylbenzene	50.0	0.00	U 49.0	98	65-126
135-98-8	PS sec-Butylbenzene	50.0	0.00	U 49.3	99	63-129
99-87-6	PS 4-Isopropyltoluene	50.0	0.00	U 48.8	98	62-134
541-73-1	PS 1,3-Dichlorobenzene	50.0	0.00	U 47.5	95	66-122
106-46-7	PS 1,4-Dichlorobenzene	50.0	0.00	U 46.5	93	65-119
104-51-8	PS n-Butylbenzene	50.0	0.00	U 48.1	96	56-135
96-12-8	PS 1,2-Dibromo-3-chloropropane	50.0	0.00	U 42.4	85	62-129
87-68-3	PS Hexachlorobutadiene	50.0	0.00	U 48.1	96	52-133
91-20-3	PS Naphthalene	50.0	0.00	U 42.3	85	66-127

Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: 12-1236

Sample Type: Post Spike

Client ID: CAPA-12-13239PS

Matrix: W

Lab Sample ID: 1202649502

Instrument: VOA6.I

Analysis Date: 05/03/2012 21:08

Dilution: 1

Analyst: RXD1

Prep Batch ID: 1209345

Purge Vol: 5 mL

Batch ID: 1209345

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	45.5	91	63-126
630-20-6	PS 1,1,1,2-Tetrachloroethane	50.0	0.00 U	55.0	110	80-126
120-82-1	PS 1,2,4-Trichlorobenzene	50.0	0.00 U	45.0	90	60-123
95-50-1	PS 1,2-Dichlorobenzene	50.0	0.00 U	47.4	95	69-119

Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: 12-1236

Sample Type: Post Spike Duplicate

Client ID: CAPA-12-13239PSD

Matrix: W

Lab Sample ID: 1202649503

Instrument: VOA6.I

Analysis Date: 05/03/2012 21:37

Dilution: 1

Analyst: RXD1

Prep Batch ID: 1209345

Purge Vol: 5 mL

Batch ID: 1209345

CAS No	Parname	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 31.1	62	39-118	2	0-20
74-87-3	PSD Chloromethane	50.0	0.00	U 41.2	82	52-135	0	0-20
75-01-4	PSD Vinyl chloride	50.0	0.00	U 44.0	88	52-125	2	0-20
74-83-9	PSD Bromomethane	50.0	0.00	U 42.9	86	68-122	2	0-20
75-00-3	PSD Chloroethane	50.0	0.00	U 44.0	88	75-122	1	0-20
75-69-4	PSD Trichlorofluoromethane	50.0	0.00	U 41.7	83	58-135	2	0-20
60-29-7	PSD Ethyl ether	50.0	0.00	U 49.8	100	71-114	4	0-20
67-64-1	PSD Acetone	250	0.00	U 116	46	30-143	18	0-20
75-05-8	PSD Acetonitrile	1250	0.00	U 1330	107	65-126	15	0-20
75-35-4	PSD 1,1-Dichloroethylene	50.0	0.00	U 50.9	102	67-129	1	0-20
74-88-4	PSD Iodomethane	250	0.00	U 289	116	74-134	1	0-20
75-09-2	PSD Methylene chloride	50.0	0.00	U 48.7	97	73-118	1	0-20
75-15-0	PSD Carbon disulfide	250	0.00	U 294	118	66-143	0	0-20
1634-04-4	PSD tert-Butyl methyl ether	50.0	0.00	U 53.9	108	71-122	6	0-20
156-60-5	PSD trans-1,2-Dichloroethylene	50.0	0.00	U 51.0	102	58-125	0	0-20
108-05-4	PSD Vinyl acetate	250	0.00	U 258	103	49-162	7	0-20
75-34-3	PSD 1,1-Dichloroethane	50.0	0.00	U 52.2	104	75-124	0	0-20
78-93-3	PSD 2-Butanone	250	0.00	U 174	70	30-136	19	0-20
156-59-2	PSD cis-1,2-Dichloroethylene	50.0	0.00	U 52.3	105	69-141	0	0-20
594-20-7	PSD 2,2-Dichloropropane	50.0	0.00	U 56.2	112	70-134	2	0-20
67-66-3	PSD Chloroform	50.0	0.00	U 52.6	105	76-123	1	0-20
74-97-5	PSD Bromochloromethane	50.0	0.00	U 51.5	103	80-121	2	0-20

Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: 12-1236

Sample Type: Post Spike Duplicate

Client ID: CAPA-12-13239PSD

Matrix: W

Lab Sample ID: 1202649503

Instrument: VOA6.I

Analysis Date: 05/03/2012 21:37

Dilution: 1

Analyst: RXD1

Prep Batch II 1209345

Purge Vol: 5 mL

Batch ID: 1209345

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
71-55-6	PSD 1,1,1-Trichloroethane	50.0	0.00	U 54.2	108	73-132	0	0-20
563-58-6	PSD 1,1-Dichloropropene	50.0	0.00	U 53.0	106	73-128	2	0-20
71-36-3	PSD n-Butyl alcohol	5000	0.00	U 5880	118	66-134	24 *	0-20
56-23-5	PSD Carbon tetrachloride	50.0	0.00	U 54.7	109	71-139	1	0-20
107-06-2	PSD 1,2-Dichloroethane	50.0	0.00	U 52.6	105	70-124	2	0-20
71-43-2	PSD Benzene	50.0	0.00	U 50.9	102	74-118	0	0-20
79-01-6	PSD Trichloroethylene	50.0	0.00	U 51.8	104	70-130	1	0-20
78-87-5	PSD 1,2-Dichloropropane	50.0	0.00	U 53.0	106	77-124	1	0-20
75-27-4	PSD Bromodichloromethane	50.0	0.00	U 53.7	107	78-130	1	0-20
74-95-3	PSD Dibromomethane	50.0	0.00	U 53.1	106	78-121	5	0-20
108-10-1	PSD 4-Methyl-2-pentanone	250	0.00	U 284	114	68-132	16	0-20
10061-01-5	PSD cis-1,3-Dichloropropylene	50.0	0.00	U 53.9	108	79-129	2	0-20
108-88-3	PSD Toluene	50.0	0.00	U 49.1	98	69-119	0	0-20
10061-02-6	PSD trans-1,3-Dichloropropylene	50.0	0.00	U 55.6	111	78-126	3	0-20
79-00-5	PSD 1,1,2-Trichloroethane	50.0	0.00	U 50.9	102	75-118	4	0-20
591-78-6	PSD 2-Hexanone	250	0.00	U 221	89	31-132	19	0-20
142-28-9	PSD 1,3-Dichloropropane	50.0	0.00	U 53.2	106	75-119	3	0-20
127-18-4	PSD Tetrachloroethylene	50.0	0.00	U 51.1	102	66-127	1	0-20
124-48-1	PSD Dibromochloromethane	50.0	0.00	U 53.3	107	75-123	2	0-20
106-93-4	PSD 1,2-Dibromoethane	50.0	0.00	U 52.2	104	80-119	6	0-20
108-90-7	PSD Chlorobenzene	50.0	0.00	U 50.6	101	73-119	0	0-20
100-41-4	PSD Ethylbenzene	50.0	0.00	U 50.5	101	69-123	1	0-20

Volatile

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**Quality Control Summary
Spike Recovery Report**

SDG Number: 12-1236

Sample Type: Post Spike Duplicate

Client ID: CAPA-12-13239PSD

Matrix: W

Lab Sample ID: 1202649503

Instrument: VOA6.I

Analysis Date: 05/03/2012 21:37

Dilution: 1

Analyst: RXD1

Prep Batch II 1209345

Purge Vol: 5 mL

Batch ID: 1209345

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	U	Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
179601-23-1	PSD m,p-Xylenes	100	0.00	U	100	100	69-124	1	0-20
95-47-6	PSD o-Xylene	50.0	0.00	U	51.0	102	72-124	1	0-20
100-42-5	PSD Styrene	50.0	0.00	U	51.1	102	73-125	0	0-20
75-25-2	PSD Bromoform	50.0	0.00	U	53.3	107	69-123	7	0-20
79-34-5	PSD 1,1,2,2-Tetrachloroethane	50.0	0.00	U	51.2	102	67-124	10	0-20
96-18-4	PSD 1,2,3-Trichloropropane	50.0	0.00	U	52.4	105	73-122	12	0-20
108-86-1	PSD Bromobenzene	50.0	0.00	U	48.5	97	70-121	0	0-20
103-65-1	PSD n-Propylbenzene	50.0	0.00	U	49.4	99	59-128	1	0-20
95-49-8	PSD 2-Chlorotoluene	50.0	0.00	U	50.4	101	66-126	1	0-20
98-82-8	PSD Isopropylbenzene	50.0	0.00	U	49.8	100	66-127	0	0-20
108-67-8	PSD 1,3,5-Trimethylbenzene	50.0	0.00	U	50.2	100	65-128	0	0-20
106-43-4	PSD 4-Chlorotoluene	50.0	0.00	U	47.9	96	63-122	0	0-20
98-06-6	PSD tert-Butylbenzene	50.0	0.00	U	50.1	100	67-127	0	0-20
95-63-6	PSD 1,2,4-Trimethylbenzene	50.0	0.00	U	49.0	98	65-126	0	0-20
135-98-8	PSD sec-Butylbenzene	50.0	0.00	U	49.9	100	63-129	1	0-20
99-87-6	PSD 4-Isopropyltoluene	50.0	0.00	U	49.6	99	62-134	2	0-20
541-73-1	PSD 1,3-Dichlorobenzene	50.0	0.00	U	47.5	95	66-122	0	0-20
106-46-7	PSD 1,4-Dichlorobenzene	50.0	0.00	U	46.6	93	65-119	0	0-20
104-51-8	PSD n-Butylbenzene	50.0	0.00	U	48.6	97	56-135	1	0-20
96-12-8	PSD 1,2-Dibromo-3-chloropropane	50.0	0.00	U	52.6	105	62-129	21 *	0-20
87-68-3	PSD Hexachlorobutadiene	50.0	0.00	U	50.7	101	52-133	5	0-20
91-20-3	PSD Naphthalene	50.0	0.00	U	47.6	95	66-127	12	0-20

Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: 12-1236

Sample Type: Post Spike Duplicate

Client ID: CAPA-12-13239PSD

Matrix: W

Lab Sample ID: 1202649503

Instrument: VOA6.I

Analysis Date: 05/03/2012 21:37

Dilution: 1

Analyst: RXD1

Prep Batch ID: 1209345

Purge Vol: 5 mL

Batch ID: 1209345

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 48.3	97	63-126	6	0-20
630-20-6	PSD 1,1,1,2-Tetrachloroethane	50.0	0.00	U 54.2	108	80-126	2	0-20
120-82-1	PSD 1,2,4-Trichlorobenzene	50.0	0.00	U 46.2	92	60-123	3	0-20
95-50-1	PSD 1,2-Dichlorobenzene	50.0	0.00	U 48.0	96	69-119	1	0-20

Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: 12-1236

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1209345

Matrix: WATER

Lab Sample ID: 1202649504

Instrument: VOA6.I

Analysis Date: 05/03/2012 11:41

Dilution: 1

Analyst: RXD1

Prep Batch II 1209345

Purge Vol: 5 mL

Batch ID: 1209345

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	32.0	64	41-125
74-87-3	LCS Chloromethane	50.0	0.0	41.5	83	57-131
75-01-4	LCS Vinyl chloride	50.0	0.0	45.2	90	60-122
74-83-9	LCS Bromomethane	50.0	0.0	43.5	87	71-121
75-00-3	LCS Chloroethane	50.0	0.0	45.2	90	78-123
75-69-4	LCS Trichlorofluoromethane	50.0	0.0	43.4	87	62-138
60-29-7	LCS Ethyl ether	50.0	0.0	47.8	96	73-120
67-64-1	LCS Acetone	250	0.0	251	101	32-151
75-05-8	LCS Acetonitrile	1250	0.0	1140	91	68-122
75-35-4	LCS 1,1-Dichloroethylene	50.0	0.0	52.5	105	73-127
74-88-4	LCS Iodomethane	250	0.0	292	117	79-132
75-09-2	LCS Methylene chloride	50.0	0.0	48.7	97	75-120
75-15-0	LCS Carbon disulfide	250	0.0	301	121	73-142
1634-04-4	LCS tert-Butyl methyl ether	50.0	0.0	51.2	102	75-120
156-60-5	LCS trans-1,2-Dichloroethylene	50.0	0.0	52.6	105	62-125
108-05-4	LCS Vinyl acetate	250	0.0	286	114	71-153
75-34-3	LCS 1,1-Dichloroethane	50.0	0.0	52.6	105	79-122
78-93-3	LCS 2-Butanone	250	0.0	267	107	35-150
156-59-2	LCS cis-1,2-Dichloroethylene	50.0	0.0	52.9	106	72-140
594-20-7	LCS 2,2-Dichloropropane	50.0	0.0	59.9	120	78-138
67-66-3	LCS Chloroform	50.0	0.0	52.4	105	80-120
74-97-5	LCS Bromochloromethane	50.0	0.0	50.1	100	80-120

Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: 12-1236

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1209345

Matrix: WATER

Lab Sample ID: 1202649504

Instrument: VOA6.I

Analysis Date: 05/03/2012 11:41

Dilution: 1

Analyst: RXD1

Prep Batch II 1209345

Purge Vol: 5 mL

Batch ID: 1209345

CAS No	Parname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
71-55-6	LCS 1,1,1-Trichloroethane	50.0	0.0	55.4	111	80-132
563-58-6	LCS 1,1-Dichloropropene	50.0	0.0	55.1	110	80-127
71-36-3	LCS n-Butyl alcohol	5000	0.0	4950	99	71-129
56-23-5	LCS Carbon tetrachloride	50.0	0.0	56.9	114	78-140
107-06-2	LCS 1,2-Dichloroethane	50.0	0.0	50.3	101	74-120
71-43-2	LCS Benzene	50.0	0.0	51.4	103	79-120
79-01-6	LCS Trichloroethylene	50.0	0.0	53.2	106	80-122
78-87-5	LCS 1,2-Dichloropropane	50.0	0.0	52.9	106	80-121
75-27-4	LCS Bromodichloromethane	50.0	0.0	53.7	107	80-127
74-95-3	LCS Dibromomethane	50.0	0.0	50.2	100	80-120
108-10-1	LCS 4-Methyl-2-pentanone	250	0.0	254	102	71-132
10061-01-5	LCS cis-1,3-Dichloropropylene	50.0	0.0	55.2	110	80-128
108-88-3	LCS Toluene	50.0	0.0	50.9	102	76-120
10061-02-6	LCS trans-1,3-Dichloropropylene	50.0	0.0	55.8	112	80-125
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	277	111	42-150
142-28-9	LCS 1,3-Dichloropropane	50.0	0.0	50.5	101	77-120
127-18-4	LCS Tetrachloroethylene	50.0	0.0	54.4	109	79-124
124-48-1	LCS Dibromochloromethane	50.0	0.0	52.8	106	78-122
106-93-4	LCS 1,2-Dibromoethane	50.0	0.0	49.6	99	80-120
108-90-7	LCS Chlorobenzene	50.0	0.0	51.9	104	80-120
100-41-4	LCS Ethylbenzene	50.0	0.0	52.9	106	79-120

Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: 12-1236

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1209345

Matrix: WATER

Lab Sample ID: 1202649504

Instrument: VOA6.I

Analysis Date: 05/03/2012 11:41

Dilution: 1

Analyst: RXD1

Prep Batch II 1209345

Purge Vol: 5 mL

Batch ID: 1209345

CAS No	Parname	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	106	106	80-121
95-47-6	LCS o-Xylene	50.0	0.0	52.6	105	80-121
100-42-5	LCS Styrene	50.0	0.0	52.9	106	80-123
75-25-2	LCS Bromoform	50.0	0.0	52.0	104	74-122
79-34-5	LCS 1,1,2,2-Tetrachloroethane	50.0	0.0	47.5	95	75-120
96-18-4	LCS 1,2,3-Trichloropropane	50.0	0.0	48.0	96	76-120
108-86-1	LCS Bromobenzene	50.0	0.0	50.5	101	79-120
103-65-1	LCS n-Propylbenzene	50.0	0.0	53.7	107	74-123
95-49-8	LCS 2-Chlorotoluene	50.0	0.0	53.7	107	78-121
98-82-8	LCS Isopropylbenzene	50.0	0.0	53.4	107	77-124
108-67-8	LCS 1,3,5-Trimethylbenzene	50.0	0.0	54.3	109	78-124
106-43-4	LCS 4-Chlorotoluene	50.0	0.0	51.7	103	76-120
98-06-6	LCS tert-Butylbenzene	50.0	0.0	53.6	107	80-123
95-63-6	LCS 1,2,4-Trimethylbenzene	50.0	0.0	53.3	107	79-120
135-98-8	LCS sec-Butylbenzene	50.0	0.0	53.9	108	79-123
99-87-6	LCS 4-Isopropyltoluene	50.0	0.0	54.7	109	80-128
541-73-1	LCS 1,3-Dichlorobenzene	50.0	0.0	51.4	103	80-120
106-46-7	LCS 1,4-Dichlorobenzene	50.0	0.0	50.4	101	78-120
104-51-8	LCS n-Butylbenzene	50.0	0.0	55.7	111	77-128
96-12-8	LCS 1,2-Dibromo-3-chloropropane	50.0	0.0	46.7	93	65-129
87-68-3	LCS Hexachlorobutadiene	50.0	0.0	56.6	113	78-126
91-20-3	LCS Naphthalene	50.0	0.0	45.5	91	73-127

Volatile

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**Quality Control Summary
Spike Recovery Report**

SDG Number: 12-1236

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1209345

Matrix: WATER

Lab Sample ID:1202649504

Instrument: VOA6.I

Analysis Date: 05/03/2012 11:41

Dilution: 1

Analyst: RXD1

Prep Batch ID 1209345

Purge Vol: 5 mL

Batch ID: 1209345

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	50.5	101	77-125
630-20-6	LCS 1,1,1,2-Tetrachloroethane	50.0	0.0	54.7	109	80-124
120-82-1	LCS 1,2,4-Trichlorobenzene	50.0	0.0	52.4	105	78-122
95-50-1	LCS 1,2-Dichlorobenzene	50.0	0.0	50.5	101	80-120

Volatile

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**Quality Control Summary
Spike Recovery Report**

SDG Number: 12-1236

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1209345

Matrix: WATER

Lab Sample ID:1202649505

Instrument: VOA6.I

Analysis Date: 05/03/2012 12:40

Dilution: 1

Analyst: RXD1

Prep Batch II 1209345

Purge Vol: 5 mL

Batch ID: 1209345

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	235	94	40-157
76-13-1	LCS Trichlorotrifluoroethane	250	0.0	313	125	69-162
107-05-1	LCS Allyl chloride	250	0.0	280	112	60-135
107-13-1	LCS Acrylonitrile	250	0.0	242	97	71-120
126-99-8	LCS 2-Chloro-1,3-butadiene	50.0	0.0	60.9	122	54-129
107-12-0	LCS Propionitrile	250	0.0	240	96	76-124
126-98-7	LCS Methacrylonitrile	250	0.0	252	101	70-120
78-83-1	LCS Isobutyl alcohol	2500	0.0	2270	91	70-130
80-62-6	LCS Methyl methacrylate	250	0.0	253	101	72-124
97-63-2	LCS Ethyl methacrylate	250	0.0	268	107	68-125

Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: 12-1236

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1209345

Matrix: WATER

Lab Sample ID: 1202651500

Instrument: VOA6.I

Analysis Date: 05/04/2012 10:50

Dilution: 1

Analyst: RXD1

Prep Batch II 1209345

Purge Vol: 5 mL

Batch ID: 1209345

CAS No	Parname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
75-71-8	LCS Dichlorodifluoromethane	50.0	0.0	32.4	65	41-125
74-87-3	LCS Chloromethane	50.0	0.0	42.9	86	57-131
75-01-4	LCS Vinyl chloride	50.0	0.0	47.0	94	60-122
74-83-9	LCS Bromomethane	50.0	0.0	44.5	89	71-121
75-00-3	LCS Chloroethane	50.0	0.0	46.4	93	78-123
75-69-4	LCS Trichlorofluoromethane	50.0	0.0	45.1	90	62-138
60-29-7	LCS Ethyl ether	50.0	0.0	49.2	98	73-120
67-64-1	LCS Acetone	250	0.0	282	113	32-151
75-05-8	LCS Acetonitrile	1250	0.0	1270	102	68-122
75-35-4	LCS 1,1-Dichloroethylene	50.0	0.0	54.8	110	73-127
74-88-4	LCS Iodomethane	250	0.0	299	120	79-132
75-09-2	LCS Methylene chloride	50.0	0.0	49.9	100	75-120
75-15-0	LCS Carbon disulfide	250	0.0	315	126	73-142
1634-04-4	LCS tert-Butyl methyl ether	50.0	0.0	52.6	105	75-120
156-60-5	LCS trans-1,2-Dichloroethylene	50.0	0.0	54.3	109	62-125
108-05-4	LCS Vinyl acetate	250	0.0	302	121	71-153
75-34-3	LCS 1,1-Dichloroethane	50.0	0.0	54.3	109	79-122
78-93-3	LCS 2-Butanone	250	0.0	298	119	35-150
156-59-2	LCS cis-1,2-Dichloroethylene	50.0	0.0	54.0	108	72-140
594-20-7	LCS 2,2-Dichloropropane	50.0	0.0	61.6	123	78-138
67-66-3	LCS Chloroform	50.0	0.0	54.0	108	80-120
74-97-5	LCS Bromochloromethane	50.0	0.0	51.4	103	80-120

Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: 12-1236

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1209345

Matrix: WATER

Lab Sample ID: 1202651500

Instrument: VOA6.I

Analysis Date: 05/04/2012 10:50

Dilution: 1

Analyst: RXD1

Prep Batch II 1209345

Purge Vol: 5 mL

Batch ID: 1209345

CAS No	Parname	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	58.2	116	80-132
563-58-6	LCS 1,1-Dichloropropene	50.0	0.0	57.3	115	80-127
71-36-3	LCS n-Butyl alcohol	5000	0.0	5270	105	71-129
56-23-5	LCS Carbon tetrachloride	50.0	0.0	58.9	118	78-140
107-06-2	LCS 1,2-Dichloroethane	50.0	0.0	52.2	104	74-120
71-43-2	LCS Benzene	50.0	0.0	52.6	105	79-120
79-01-6	LCS Trichloroethylene	50.0	0.0	55.2	110	80-122
78-87-5	LCS 1,2-Dichloropropane	50.0	0.0	53.7	107	80-121
75-27-4	LCS Bromodichloromethane	50.0	0.0	54.9	110	80-127
74-95-3	LCS Dibromomethane	50.0	0.0	52.2	104	80-120
108-10-1	LCS 4-Methyl-2-pentanone	250	0.0	272	109	71-132
10061-01-5	LCS cis-1,3-Dichloropropylene	50.0	0.0	56.1	112	80-128
108-88-3	LCS Toluene	50.0	0.0	50.5	101	76-120
10061-02-6	LCS trans-1,3-Dichloropropylene	50.0	0.0	55.5	111	80-125
79-00-5	LCS 1,1,2-Trichloroethane	50.0	0.0	49.5	99	79-120
591-78-6	LCS 2-Hexanone	250	0.0	298	119	42-150
142-28-9	LCS 1,3-Dichloropropane	50.0	0.0	51.6	103	77-120
127-18-4	LCS Tetrachloroethylene	50.0	0.0	54.6	109	79-124
124-48-1	LCS Dibromochloromethane	50.0	0.0	52.8	106	78-122
106-93-4	LCS 1,2-Dibromoethane	50.0	0.0	50.7	101	80-120
108-90-7	LCS Chlorobenzene	50.0	0.0	51.4	103	80-120
100-41-4	LCS Ethylbenzene	50.0	0.0	52.8	106	79-120

Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: 12-1236

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1209345

Matrix: WATER

Lab Sample ID: 1202651500

Instrument: VOA6.I

Analysis Date: 05/04/2012 10:50

Dilution: 1

Analyst: RXD1

Prep Batch II 1209345

Purge Vol: 5 mL

Batch ID: 1209345

CAS No	Parname	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	105	105	80-121
95-47-6	LCS o-Xylene	50.0	0.0	52.7	105	80-121
100-42-5	LCS Styrene	50.0	0.0	52.5	105	80-123
75-25-2	LCS Bromoform	50.0	0.0	52.9	106	74-122
79-34-5	LCS 1,1,2,2-Tetrachloroethane	50.0	0.0	49.5	99	75-120
96-18-4	LCS 1,2,3-Trichloropropane	50.0	0.0	49.2	98	76-120
108-86-1	LCS Bromobenzene	50.0	0.0	49.8	100	79-120
103-65-1	LCS n-Propylbenzene	50.0	0.0	53.6	107	74-123
95-49-8	LCS 2-Chlorotoluene	50.0	0.0	53.3	107	78-121
98-82-8	LCS Isopropylbenzene	50.0	0.0	53.1	106	77-124
108-67-8	LCS 1,3,5-Trimethylbenzene	50.0	0.0	53.8	108	78-124
106-43-4	LCS 4-Chlorotoluene	50.0	0.0	51.1	102	76-120
98-06-6	LCS tert-Butylbenzene	50.0	0.0	52.9	106	80-123
95-63-6	LCS 1,2,4-Trimethylbenzene	50.0	0.0	52.5	105	79-120
135-98-8	LCS sec-Butylbenzene	50.0	0.0	53.6	107	79-123
99-87-6	LCS 4-Isopropyltoluene	50.0	0.0	54.3	109	80-128
541-73-1	LCS 1,3-Dichlorobenzene	50.0	0.0	50.4	101	80-120
106-46-7	LCS 1,4-Dichlorobenzene	50.0	0.0	49.7	99	78-120
104-51-8	LCS n-Butylbenzene	50.0	0.0	54.9	110	77-128
96-12-8	LCS 1,2-Dibromo-3-chloropropane	50.0	0.0	49.0	98	65-129
87-68-3	LCS Hexachlorobutadiene	50.0	0.0	55.1	110	78-126
91-20-3	LCS Naphthalene	50.0	0.0	45.7	91	73-127

Volatile

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**Quality Control Summary
Spike Recovery Report**

SDG Number: 12-1236

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1209345

Matrix: WATER

Lab Sample ID:1202651500

Instrument: VOA6.I

Analysis Date: 05/04/2012 10:50

Dilution: 1

Analyst: RXD1

Prep Batch II 1209345

Purge Vol: 5 mL

Batch ID: 1209345

CAS No	Parname	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	49.7	99	77-125
630-20-6	LCS 1,1,1,2-Tetrachloroethane	50.0	0.0	54.8	110	80-124
120-82-1	LCS 1,2,4-Trichlorobenzene	50.0	0.0	51.1	102	78-122
95-50-1	LCS 1,2-Dichlorobenzene	50.0	0.0	49.2	98	80-120

Volatile

Page 1 of 1

**Quality Control Summary
Spike Recovery Report**

SDG Number: 12-1236

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1209345

Matrix: WATER

Lab Sample ID:1202651501

Instrument: VOA6.I

Analysis Date: 05/04/2012 11:49

Dilution: 1

Analyst: RXD1

Prep Batch II 1209345

Purge Vol: 5 mL

Batch ID: 1209345

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	230	92	40-157
76-13-1	LCS Trichlorotrifluoroethane	250	0.0	313	125	69-162
107-05-1	LCS Allyl chloride	250	0.0	277	111	60-135
107-13-1	LCS Acrylonitrile	250	0.0	228	91	71-120
126-99-8	LCS 2-Chloro-1,3-butadiene	50.0	0.0	60.8	122	54-129
107-12-0	LCS Propionitrile	250	0.0	225	90	76-124
126-98-7	LCS Methacrylonitrile	250	0.0	237	95	70-120
78-83-1	LCS Isobutyl alcohol	2500	0.0	2000	80	70-130
80-62-6	LCS Methyl methacrylate	250	0.0	233	93	72-124
97-63-2	LCS Ethyl methacrylate	250	0.0	248	99	68-125

Method Blank Summary

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SDG Number:	12-1236	Client:	ARSL001	Matrix:	WATER
Client ID:	MB for batch 1209345	Instrument ID:	VOA6.I	Data File:	050312V6\6K407BA.D
Lab Sample ID:	1202649501	Prep Date:	05/03/2012 13:38	Analyzed:	05/03/12 13:38
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 1209345	1202649504	050312V6\6K403LA.D	05/03/12	1141
02 LCS for batch 1209345	1202649505	050312V6\6K405SA.D	05/03/12	1240
03 CAPA-12-13277	303221001	050312V6\6K415.D	05/03/12	1813
04 CAPA-12-13306	303221004	050312V6\6K416.D	05/03/12	1842
05 CAPA-12-13309	303221005	050312V6\6K417.D	05/03/12	1911
06 CAPA-12-13310	303221006	050312V6\6K418.D	05/03/12	1940
07 CAPA-12-13239PS	1202649502	050312V6\6K421.D	05/03/12	2108
08 CAPA-12-13239PSD	1202649503	050312V6\6K422.D	05/03/12	2137

Method Blank Summary

Page 1 of 1

SDG Number:	12-1236	Client:	ARSL001	Matrix:	WATER
Client ID:	MB for batch 1209345	Instrument ID:	VOA6.I	Data File:	050412V6\6K507BA.D
Lab Sample ID:	1202651499	Prep Date:	05/04/2012 12:47	Analyzed:	05/04/12 12:47
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
10 LCS for batch 1209345	1202651500	050412V6\6K503LA.D	05/04/12	1050
11 LCS for batch 1209345	1202651501	050412V6\6K505SA.D	05/04/12	1149
12 CAPA-12-13277DL	303221001	050412V6\6K508.D	05/04/12	1317

Quality Control Data

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 12-1236	Matrix: WATER
Lab Sample ID: 1202649501	
Client Sample: QC for batch 1209345	Client: ARSL001
Client ID: MB for batch 1209345	Method: SW846 8260B DOE-AL
Batch ID: 1209345	Inst: VOA6.I
Run Date: 05/03/2012 13:38	Analyst: RXD1
Prep Date: 05/03/2012 13:38	Purge Vol: 5 mL
Data File: 050312V6\6K407BA.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: 12-1236	Matrix: WATER
Lab Sample ID: 1202649501	
Client Sample: QC for batch 1209345	Client: ARSL001
Client ID: MB for batch 1209345	Method: SW846 8260B DOE-AL
Batch ID: 1209345	Inst: VOA6.I
Run Date: 05/03/2012 13:38	Analyst: RXD1
Prep Date: 05/03/2012 13:38	Purge Vol: 5 mL
Data File: 050312V6\6K407BA.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: 12-1236		Matrix: WATER
Lab Sample ID: 1202649501		
Client Sample: QC for batch 1209345	Client: ARSL001	Project: QC
Client ID: MB for batch 1209345	Method: SW846 8260B DOE-AL	SOP Ref: GL-OA-E-038
Batch ID: 1209345	Inst: VOA6.I	Dilution: 1
Run Date: 05/03/2012 13:38	Analyst: RXD1	Purge Vol: 5 mL
Prep Date: 05/03/2012 13:38		
Data File: 050312V6\6K407BA.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	53.2	50.0	106	(80%-123%)
Bromofluorobenzene	50.3	50.0	101	(80%-120%)
Toluene-d8	50.6	50.0	101	(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: 12-1236	Date Collected: 04/23/2012 13:33	Matrix: W
Lab Sample ID: 1202649502	Date Received: 04/25/2012 09:00	
Client Sample: QC for batch 1209345	Client: ARSL001	Project: QC
Client ID: CAPA-12-13239PS	Method: SW846 8260B DOE-AL	SOP Ref: GL-OA-E-038
Batch ID: 1209345	Inst: VOA6.I	Dilution: 1
Run Date: 05/03/2012 21:08	Analyst: RXD1	Purge Vol: 5 mL
Prep Date: 05/03/2012 21:08		
Data File: 050312V6\6K421.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane		30.6	ug/L	0.300	1.00
74-87-3	Chloromethane		41.3	ug/L	0.300	1.00
75-01-4	Vinyl chloride		43.2	ug/L	0.300	1.00
74-83-9	Bromomethane		43.9	ug/L	0.300	1.00
75-00-3	Chloroethane		44.5	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane		41.0	ug/L	0.300	1.00
60-29-7	Ethyl ether		48.0	ug/L	0.300	1.00
67-64-1	Acetone		97.0	ug/L	3.00	10.0
75-05-8	Acetonitrile		1150	ug/L	8.00	25.0
75-35-4	1,1-Dichloroethylene		50.4	ug/L	0.300	1.00
74-88-4	Iodomethane		292	ug/L	1.50	5.00
75-09-2	Methylene chloride		49.2	ug/L	3.00	10.0
75-15-0	Carbon disulfide		295	ug/L	1.50	5.00
1634-04-4	tert-Butyl methyl ether		50.6	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene		51.0	ug/L	0.300	1.00
108-05-4	Vinyl acetate		241	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane		52.4	ug/L	0.300	1.00
78-93-3	2-Butanone		144	ug/L	2.00	5.00
156-59-2	cis-1,2-Dichloroethylene		52.4	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane		55.2	ug/L	0.300	1.00
67-66-3	Chloroform		52.9	ug/L	0.300	1.00
74-97-5	Bromochloromethane		50.5	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane		54.0	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene		52.1	ug/L	0.300	1.00
71-36-3	n-Butyl alcohol		4630	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride		54.2	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane		51.6	ug/L	0.300	1.00
71-43-2	Benzene		50.9	ug/L	0.300	1.00
79-01-6	Trichloroethylene		52.2	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane		52.5	ug/L	0.300	1.00
75-27-4	Bromodichloromethane		53.4	ug/L	0.300	1.00
74-95-3	Dibromomethane		50.6	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone		241	ug/L	1.50	5.00
10061-01-5	cis-1,3-Dichloropropylene		53.0	ug/L	0.300	1.00
108-88-3	Toluene		49.3	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene		53.7	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane		48.8	ug/L	0.300	1.00
591-78-6	2-Hexanone		184	ug/L	2.20	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 12-1236	Date Collected: 04/23/2012 13:33	Matrix: W
Lab Sample ID: 1202649502	Date Received: 04/25/2012 09:00	
Client Sample: QC for batch 1209345	Client: ARSL001	Project: QC
Client ID: CAPA-12-13239PS	Method: SW846 8260B DOE-AL	SOP Ref: GL-OA-E-038
Batch ID: 1209345	Inst: VOA6.I	Dilution: 1
Run Date: 05/03/2012 21:08	Analyst: RXD1	Purge Vol: 5 mL
Prep Date: 05/03/2012 21:08		
Data File: 050312V6\6K421.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane		51.4	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene		50.6	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		52.5	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane		49.3	ug/L	0.300	1.00
108-90-7	Chlorobenzene		50.6	ug/L	0.300	1.00
100-41-4	Ethylbenzene		50.8	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes		101	ug/L	0.300	2.00
95-47-6	o-Xylene		51.5	ug/L	0.300	1.00
100-42-5	Styrene		51.3	ug/L	0.300	1.00
75-25-2	Bromoform		49.6	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane		46.3	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		48.6	ug/L	0.300	1.00
103-65-1	n-Propylbenzene		49.0	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene		50.8	ug/L	0.300	1.00
98-82-8	Isopropylbenzene		49.6	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		48.1	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene		49.9	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene		49.0	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene		49.3	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene		48.8	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		46.5	ug/L	0.300	1.00
104-51-8	n-Butylbenzene		48.1	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane		42.4	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene		48.1	ug/L	0.300	1.00
91-20-3	Naphthalene		42.3	ug/L	0.400	1.00
87-61-6	1,2,3-Trichlorobenzene		45.5	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: 12-1236	Date Collected: 04/23/2012 13:33	Matrix: W
Lab Sample ID: 1202649502	Date Received: 04/25/2012 09:00	
Client Sample: QC for batch 1209345	Client: ARSL001	Project: QC
Client ID: CAPA-12-13239PS	Method: SW846 8260B DOE-AL	SOP Ref: GL-OA-E-038
Batch ID: 1209345	Inst: VOA6.I	Dilution: 1
Run Date: 05/03/2012 21:08	Analyst: RXD1	Purge Vol: 5 mL
Prep Date: 05/03/2012 21:08		
Data File: 050312V6\6K421.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		55.0	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene		45.0	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene		47.4	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	51.5	50.0	103	(80%-123%)
Bromofluorobenzene	49.7	50.0	99.4	(80%-120%)
Toluene-d8	51.7	50.0	103	(80%-120%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 12-1236	Date Collected: 04/23/2012 13:33	Matrix: W
Lab Sample ID: 1202649503	Date Received: 04/25/2012 09:00	
Client Sample: QC for batch 1209345	Client: ARSL001	Project: QC
Client ID: CAPA-12-13239PSD	Method: SW846 8260B DOE-AL	SOP Ref: GL-OA-E-038
Batch ID: 1209345	Inst: VOA6.I	Dilution: 1
Run Date: 05/03/2012 21:37	Analyst: RXD1	Purge Vol: 5 mL
Prep Date: 05/03/2012 21:37		
Data File: 050312V6\6K422.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane		31.1	ug/L	0.300	1.00
74-87-3	Chloromethane		41.2	ug/L	0.300	1.00
75-01-4	Vinyl chloride		44.0	ug/L	0.300	1.00
74-83-9	Bromomethane		42.9	ug/L	0.300	1.00
75-00-3	Chloroethane		44.0	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane		41.7	ug/L	0.300	1.00
60-29-7	Ethyl ether		49.8	ug/L	0.300	1.00
67-64-1	Acetone		116	ug/L	3.00	10.0
75-05-8	Acetonitrile		1330	ug/L	8.00	25.0
75-35-4	1,1-Dichloroethylene		50.9	ug/L	0.300	1.00
74-88-4	Iodomethane		289	ug/L	1.50	5.00
75-09-2	Methylene chloride		48.7	ug/L	3.00	10.0
75-15-0	Carbon disulfide		294	ug/L	1.50	5.00
1634-04-4	tert-Butyl methyl ether		53.9	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene		51.0	ug/L	0.300	1.00
108-05-4	Vinyl acetate		258	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane		52.2	ug/L	0.300	1.00
78-93-3	2-Butanone		174	ug/L	2.00	5.00
156-59-2	cis-1,2-Dichloroethylene		52.3	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane		56.2	ug/L	0.300	1.00
67-66-3	Chloroform		52.6	ug/L	0.300	1.00
74-97-5	Bromochloromethane		51.5	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane		54.2	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene		53.0	ug/L	0.300	1.00
71-36-3	n-Butyl alcohol		5880	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride		54.7	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane		52.6	ug/L	0.300	1.00
71-43-2	Benzene		50.9	ug/L	0.300	1.00
79-01-6	Trichloroethylene		51.8	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane		53.0	ug/L	0.300	1.00
75-27-4	Bromodichloromethane		53.7	ug/L	0.300	1.00
74-95-3	Dibromomethane		53.1	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone		284	ug/L	1.50	5.00
10061-01-5	cis-1,3-Dichloropropylene		53.9	ug/L	0.300	1.00
108-88-3	Toluene		49.1	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene		55.6	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane		50.9	ug/L	0.300	1.00
591-78-6	2-Hexanone		221	ug/L	2.20	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 12-1236	Date Collected: 04/23/2012 13:33	Matrix: W
Lab Sample ID: 1202649503	Date Received: 04/25/2012 09:00	
Client Sample: QC for batch 1209345	Client: ARSL001	Project: QC
Client ID: CAPA-12-13239PSD	Method: SW846 8260B DOE-AL	SOP Ref: GL-OA-E-038
Batch ID: 1209345	Inst: VOA6.I	Dilution: 1
Run Date: 05/03/2012 21:37	Analyst: RXD1	Purge Vol: 5 mL
Prep Date: 05/03/2012 21:37		
Data File: 050312V6\6K422.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane		53.2	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene		51.1	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		53.3	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane		52.2	ug/L	0.300	1.00
108-90-7	Chlorobenzene		50.6	ug/L	0.300	1.00
100-41-4	Ethylbenzene		50.5	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes		100	ug/L	0.300	2.00
95-47-6	o-Xylene		51.0	ug/L	0.300	1.00
100-42-5	Styrene		51.1	ug/L	0.300	1.00
75-25-2	Bromoform		53.3	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		52.4	ug/L	0.300	1.00
108-86-1	Bromobenzene		48.5	ug/L	0.300	1.00
103-65-1	n-Propylbenzene		49.4	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene		50.4	ug/L	0.300	1.00
98-82-8	Isopropylbenzene		49.8	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene		50.2	ug/L	0.300	1.00
106-43-4	4-Chlorotoluene		47.9	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene		50.1	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene		49.0	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene		49.9	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene		49.6	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		46.6	ug/L	0.300	1.00
104-51-8	n-Butylbenzene		48.6	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane		52.6	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene		50.7	ug/L	0.300	1.00
91-20-3	Naphthalene		47.6	ug/L	0.400	1.00
87-61-6	1,2,3-Trichlorobenzene		48.3	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: 12-1236	Date Collected: 04/23/2012 13:33	Matrix: W
Lab Sample ID: 1202649503	Date Received: 04/25/2012 09:00	
Client Sample: QC for batch 1209345	Client: ARSL001	Project: QC
Client ID: CAPA-12-13239PSD	Method: SW846 8260B DOE-AL	SOP Ref: GL-OA-E-038
Batch ID: 1209345	Inst: VOA6.I	Dilution: 1
Run Date: 05/03/2012 21:37	Analyst: RXD1	Purge Vol: 5 mL
Prep Date: 05/03/2012 21:37		
Data File: 050312V6\6K422.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		54.2	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene		46.2	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene		48.0	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	53.3	50.0	107	(80%-123%)
Bromofluorobenzene	49.2	50.0	98.4	(80%-120%)
Toluene-d8	50.6	50.0	101	(80%-120%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 12-1236	Matrix: WATER
Lab Sample ID: 1202649504	
Client Sample: QC for batch 1209345	Client: ARSL001
Client ID: LCS for batch 1209345	Method: SW846 8260B DOE-AL
Batch ID: 1209345	Inst: VOA6.I
Run Date: 05/03/2012 11:41	Analyst: RXD1
Prep Date: 05/03/2012 11:41	Purge Vol: 5 mL
Data File: 050312V6\6K403LA.D	Column: DB-624

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane		32.0	ug/L	0.300	1.00
74-87-3	Chloromethane		41.5	ug/L	0.300	1.00
75-01-4	Vinyl chloride		45.2	ug/L	0.300	1.00
74-83-9	Bromomethane		43.5	ug/L	0.300	1.00
75-00-3	Chloroethane		45.2	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane		43.4	ug/L	0.300	1.00
60-29-7	Ethyl ether		47.8	ug/L	0.300	1.00
67-64-1	Acetone		251	ug/L	3.00	10.0
75-05-8	Acetonitrile		1140	ug/L	8.00	25.0
75-35-4	1,1-Dichloroethylene		52.5	ug/L	0.300	1.00
74-88-4	Iodomethane		292	ug/L	1.50	5.00
75-09-2	Methylene chloride		48.7	ug/L	3.00	10.0
75-15-0	Carbon disulfide		301	ug/L	1.50	5.00
1634-04-4	tert-Butyl methyl ether		51.2	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene		52.6	ug/L	0.300	1.00
108-05-4	Vinyl acetate		286	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane		52.6	ug/L	0.300	1.00
78-93-3	2-Butanone		267	ug/L	2.00	5.00
156-59-2	cis-1,2-Dichloroethylene		52.9	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane		59.9	ug/L	0.300	1.00
67-66-3	Chloroform		52.4	ug/L	0.300	1.00
74-97-5	Bromochloromethane		50.1	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane		55.4	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene		55.1	ug/L	0.300	1.00
71-36-3	n-Butyl alcohol		4950	ug/L	15.0	50.0
56-23-5	Carbon tetrachloride		56.9	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane		50.3	ug/L	0.300	1.00
71-43-2	Benzene		51.4	ug/L	0.300	1.00
79-01-6	Trichloroethylene		53.2	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane		52.9	ug/L	0.300	1.00
75-27-4	Bromodichloromethane		53.7	ug/L	0.300	1.00
74-95-3	Dibromomethane		50.2	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone		254	ug/L	1.50	5.00
10061-01-5	cis-1,3-Dichloropropylene		55.2	ug/L	0.300	1.00
108-88-3	Toluene		50.9	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene		55.8	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		277	ug/L	2.20	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 12-1236	Matrix: WATER
Lab Sample ID: 1202649504	
Client Sample: QC for batch 1209345	Client: ARSL001
Client ID: LCS for batch 1209345	Method: SW846 8260B DOE-AL
Batch ID: 1209345	Inst: VOA6.I
Run Date: 05/03/2012 11:41	Analyst: RXD1
Prep Date: 05/03/2012 11:41	Purge Vol: 5 mL
Data File: 050312V6\6K403LA.D	Column: DB-624

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane		50.5	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene		54.4	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		52.8	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane		49.6	ug/L	0.300	1.00
108-90-7	Chlorobenzene		51.9	ug/L	0.300	1.00
100-41-4	Ethylbenzene		52.9	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes		106	ug/L	0.300	2.00
95-47-6	o-Xylene		52.6	ug/L	0.300	1.00
100-42-5	Styrene		52.9	ug/L	0.300	1.00
75-25-2	Bromoform		52.0	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane		47.5	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane		48.0	ug/L	0.300	1.00
108-86-1	Bromobenzene		50.5	ug/L	0.300	1.00
103-65-1	n-Propylbenzene		53.7	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene		53.7	ug/L	0.300	1.00
98-82-8	Isopropylbenzene		53.4	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene		54.3	ug/L	0.300	1.00
106-43-4	4-Chlorotoluene		51.7	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene		53.6	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene		53.3	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene		53.9	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene		54.7	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene		51.4	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene		50.4	ug/L	0.300	1.00
104-51-8	n-Butylbenzene		55.7	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane		46.7	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene		56.6	ug/L	0.300	1.00
91-20-3	Naphthalene		45.5	ug/L	0.400	1.00
87-61-6	1,2,3-Trichlorobenzene		50.5	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: 12-1236		Matrix: WATER	
Lab Sample ID: 1202649504			
Client Sample: QC for batch 1209345	Client: ARSL001	Project: QC	
Client ID: LCS for batch 1209345	Method: SW846 8260B DOE-AL	SOP Ref: GL-OA-E-038	
Batch ID: 1209345	Inst: VOA6.I	Dilution: 1	
Run Date: 05/03/2012 11:41	Analyst: RXD1	Purge Vol: 5 mL	
Prep Date: 05/03/2012 11:41			
Data File: 050312V6\6K403LA.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		54.7	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene		52.4	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene		50.5	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	50.6	50.0	101	(80%-123%)
Bromofluorobenzene	49.8	50.0	99.5	(80%-120%)
Toluene-d8	50.9	50.0	102	(80%-120%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 12-1236	Matrix: WATER
Lab Sample ID: 1202649505	
Client Sample: QC for batch 1209345	Client: ARSL001
Client ID: LCS for batch 1209345	Method: SW846 8260B DOE-AL
Batch ID: 1209345	Inst: VOA6.I
Run Date: 05/03/2012 12:40	Analyst: RXD1
Prep Date: 05/03/2012 12:40	Purge Vol: 5 mL
Data File: 050312V6\6K40SSA.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: 12-1236	Matrix: WATER
Lab Sample ID: 1202649505	
Client Sample: QC for batch 1209345	Client: ARSL001
Client ID: LCS for batch 1209345	Method: SW846 8260B DOE-AL
Batch ID: 1209345	Inst: VOA6.I
Run Date: 05/03/2012 12:40	Analyst: RXD1
Prep Date: 05/03/2012 12:40	Purge Vol: 5 mL
Data File: 050312V6\6K40SSA.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		235	ug/L	1.50	5.00
76-13-1	Trichlorotrifluoroethane		313	ug/L	1.50	5.00
107-05-1	Allyl chloride		280	ug/L	1.50	5.00
107-13-1	Acrylonitrile		242	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene		60.9	ug/L	0.300	1.00
107-12-0	Propionitrile		240	ug/L	1.50	5.00
126-98-7	Methacrylonitrile		252	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol		2270	ug/L	15.0	50.0
80-62-6	Methyl methacrylate		253	ug/L	1.50	5.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 12-1236		Matrix: WATER
Lab Sample ID: 1202649505		
Client Sample: QC for batch 1209345	Client: ARSL001	Project: QC
Client ID: LCS for batch 1209345	Method: SW846 8260B DOE-AL	SOP Ref: GL-OA-E-038
Batch ID: 1209345	Inst: VOA6.I	Dilution: 1
Run Date: 05/03/2012 12:40	Analyst: RXD1	Purge Vol: 5 mL
Prep Date: 05/03/2012 12:40		
Data File: 050312V6\6K405SA.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate		268	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	52.5	50.0	105	(80%-123%)
Bromofluorobenzene	51.5	50.0	103	(80%-120%)
Toluene-d8	51.0	50.0	102	(80%-120%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 12-1236	Matrix: WATER
Lab Sample ID: 1202651499	
Client Sample: QC for batch 1209345	Client: ARSL001
Client ID: MB for batch 1209345	Method: SW846 8260B DOE-AL
Batch ID: 1209345	Inst: VOA6.I
Run Date: 05/04/2012 12:47	Analyst: RXD1
Prep Date: 05/04/2012 12:47	Purge Vol: 5 mL
Data File: 050412V6\6K507BA.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: 12-1236	Matrix: WATER
Lab Sample ID: 1202651499	
Client Sample: QC for batch 1209345	Client: ARSL001
Client ID: MB for batch 1209345	Method: SW846 8260B DOE-AL
Batch ID: 1209345	Inst: VOA6.I
Run Date: 05/04/2012 12:47	Analyst: RXD1
Prep Date: 05/04/2012 12:47	Project: QC
Data File: 050412V6\6K507BA.D	SOP Ref: GL-OA-E-038
	Dilution: 1
	Purge Vol: 5 mL
	Column: DB-624

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
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: 12-1236	Matrix: WATER
Lab Sample ID: 1202651499	
Client Sample: QC for batch 1209345	Client: ARSL001
Client ID: MB for batch 1209345	Method: SW846 8260B DOE-AL
Batch ID: 1209345	Inst: VOA6.I
Run Date: 05/04/2012 12:47	Analyst: RXD1
Prep Date: 05/04/2012 12:47	Column: DB-624
Data File: 050412V6\6K507BA.D	
	Project: QC
	SOP Ref: GL-OA-E-038
	Dilution: 1
	Purge Vol: 5 mL

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	J	0.310	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	52.0	50.0	104	(80%-123%)
Bromofluorobenzene	50.1	50.0	100	(80%-120%)
Toluene-d8	51.3	50.0	103	(80%-120%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown siloxane	15.991	30.6	ug/L	0	J

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 12-1236	Matrix: WATER
Lab Sample ID: 1202651500	
Client Sample: QC for batch 1209345	Client: ARSL001
Client ID: LCS for batch 1209345	Method: SW846 8260B DOE-AL
Batch ID: 1209345	Inst: VOA6.I
Run Date: 05/04/2012 10:50	Analyst: RXD1
Prep Date: 05/04/2012 10:50	Purge Vol: 5 mL
Data File: 050412V6\6K503LA.D	Column: DB-624

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
75-71-8	Dichlorodifluoromethane		32.4	ug/L	0.300	1.00
74-87-3	Chloromethane		42.9	ug/L	0.300	1.00
75-01-4	Vinyl chloride		47.0	ug/L	0.300	1.00
74-83-9	Bromomethane		44.5	ug/L	0.300	1.00
75-00-3	Chloroethane		46.4	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane		45.1	ug/L	0.300	1.00
60-29-7	Ethyl ether		49.2	ug/L	0.300	1.00
67-64-1	Acetone		282	ug/L	3.00	10.0
75-05-8	Acetonitrile		1270	ug/L	8.00	25.0
75-35-4	1,1-Dichloroethylene		54.8	ug/L	0.300	1.00
74-88-4	Iodomethane		299	ug/L	1.50	5.00
75-09-2	Methylene chloride		49.9	ug/L	3.00	10.0
75-15-0	Carbon disulfide		315	ug/L	1.50	5.00
1634-04-4	tert-Butyl methyl ether		52.6	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene		54.3	ug/L	0.300	1.00
108-05-4	Vinyl acetate		302	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane		54.3	ug/L	0.300	1.00
78-93-3	2-Butanone		298	ug/L	2.00	5.00
156-59-2	cis-1,2-Dichloroethylene		54.0	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane		61.6	ug/L	0.300	1.00
67-66-3	Chloroform		54.0	ug/L	0.300	1.00
74-97-5	Bromochloromethane		51.4	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane		58.2	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene		57.3	ug/L	0.300	1.00
71-36-3	n-Butyl alcohol		5270	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		52.2	ug/L	0.300	1.00
71-43-2	Benzene		52.6	ug/L	0.300	1.00
79-01-6	Trichloroethylene		55.2	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane		53.7	ug/L	0.300	1.00
75-27-4	Bromodichloromethane		54.9	ug/L	0.300	1.00
74-95-3	Dibromomethane		52.2	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone		272	ug/L	1.50	5.00
10061-01-5	cis-1,3-Dichloropropylene		56.1	ug/L	0.300	1.00
108-88-3	Toluene		50.5	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene		55.5	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane		49.5	ug/L	0.300	1.00
591-78-6	2-Hexanone		298	ug/L	2.20	5.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 12-1236	Matrix: WATER
Lab Sample ID: 1202651500	
Client Sample: QC for batch 1209345	Client: ARSL001
Client ID: LCS for batch 1209345	Method: SW846 8260B DOE-AL
Batch ID: 1209345	Inst: VOA6.I
Run Date: 05/04/2012 10:50	Analyst: RXD1
Prep Date: 05/04/2012 10:50	Purge Vol: 5 mL
Data File: 050412V6\6K503LA.D	Column: DB-624

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
142-28-9	1,3-Dichloropropane		51.6	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene		54.6	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		52.8	ug/L	0.300	1.00
106-93-4	1,2-Dibromoethane		50.7	ug/L	0.300	1.00
108-90-7	Chlorobenzene		51.4	ug/L	0.300	1.00
100-41-4	Ethylbenzene		52.8	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes		105	ug/L	0.300	2.00
95-47-6	o-Xylene		52.7	ug/L	0.300	1.00
100-42-5	Styrene		52.5	ug/L	0.300	1.00
75-25-2	Bromoform		52.9	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane		49.5	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane		49.2	ug/L	0.300	1.00
108-86-1	Bromobenzene		49.8	ug/L	0.300	1.00
103-65-1	n-Propylbenzene		53.6	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene		53.3	ug/L	0.300	1.00
98-82-8	Isopropylbenzene		53.1	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene		53.8	ug/L	0.300	1.00
106-43-4	4-Chlorotoluene		51.1	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene		52.9	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene		52.5	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene		53.6	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene		54.3	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene		50.4	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene		49.7	ug/L	0.300	1.00
104-51-8	n-Butylbenzene		54.9	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane		49.0	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene		55.1	ug/L	0.300	1.00
91-20-3	Naphthalene		45.7	ug/L	0.400	1.00
87-61-6	1,2,3-Trichlorobenzene		49.7	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: 12-1236		Matrix: WATER
Lab Sample ID: 1202651500		
Client Sample: QC for batch 1209345	Client: ARSL001	Project: QC
Client ID: LCS for batch 1209345	Method: SW846 8260B DOE-AL	SOP Ref: GL-OA-E-038
Batch ID: 1209345	Inst: VOA6.I	Dilution: 1
Run Date: 05/04/2012 10:50	Analyst: RXD1	Purge Vol: 5 mL
Prep Date: 05/04/2012 10:50		
Data File: 050412V6\6K503LA.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		54.8	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene	B	51.1	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene		49.2	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	53.1	50.0	106	(80%-123%)
Bromofluorobenzene	49.2	50.0	98.4	(80%-120%)
Toluene-d8	49.2	50.0	98.5	(80%-120%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 12-1236	Matrix: WATER
Lab Sample ID: 1202651501	
Client Sample: QC for batch 1209345	Client: ARSL001
Client ID: LCS for batch 1209345	Method: SW846 8260B DOE-AL
Batch ID: 1209345	Inst: VOA6.I
Run Date: 05/04/2012 11:49	Analyst: RXD1
Prep Date: 05/04/2012 11:49	Purge Vol: 5 mL
Data File: 050412V6\6K50SSA.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: 12-1236	Matrix: WATER
Lab Sample ID: 1202651501	
Client Sample: QC for batch 1209345	Client: ARSL001
Client ID: LCS for batch 1209345	Method: SW846 8260B DOE-AL
Batch ID: 1209345	Inst: VOA6.I
Run Date: 05/04/2012 11:49	Analyst: RXD1
Prep Date: 05/04/2012 11:49	Project: QC
Data File: 050412V6\6K505SA.D	SOP Ref: GL-OA-E-038
	Dilution: 1
	Purge Vol: 5 mL
	Column: DB-624

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
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		230	ug/L	1.50	5.00
76-13-1	Trichlorotrifluoroethane		313	ug/L	1.50	5.00
107-05-1	Allyl chloride		277	ug/L	1.50	5.00
107-13-1	Acrylonitrile		228	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene		60.8	ug/L	0.300	1.00
107-12-0	Propionitrile		225	ug/L	1.50	5.00
126-98-7	Methacrylonitrile		237	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol		2000	ug/L	15.0	50.0
80-62-6	Methyl methacrylate		233	ug/L	1.50	5.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 12-1236	Matrix: WATER
Lab Sample ID: 1202651501	
Client Sample: QC for batch 1209345	Client: ARSL001
Client ID: LCS for batch 1209345	Method: SW846 8260B DOE-AL
Batch ID: 1209345	Inst: VOA6.I
Run Date: 05/04/2012 11:49	Analyst: RXD1
Prep Date: 05/04/2012 11:49	Purge Vol: 5 mL
Data File: 050412V6\6K505SA.D	Column: DB-624
	Project: QC
	SOP Ref: GL-OA-E-038
	Dilution: 1

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
97-63-2	Ethyl methacrylate		248	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	51.8	50.0	104	(80%-123%)
Bromofluorobenzene	50.5	50.0	101	(80%-120%)
Toluene-d8	50.3	50.0	101	(80%-120%)

Miscellaneous

DATA EXCEPTION REPORT

Mo.Day Yr. 09-MAY-12	Division: Industrial	Quality Criteria: Specifications	Type: Process
Instrument Type: VOA GC/MS	Test / Method: SW846 8260B DOE-AL	Matrix Type: Liquid	Client Code: ESHL
Batch ID: 1209345	Sample Numbers: See Below		
Potentially affected work order(s)(SDG): 303220(12-1235),303221(12-1236),303233(12-1240)			
Application Issues: Failed RPD for MS/MSD, or PS/PSD			
Specification and Requirements Exception Description:		DER Disposition:	
<p>The following compounds did not meet acceptance limits for the RPD recoveries between the MS and the MSD. (1202649502MS, 1202649503MSD)</p> <p>1,2-Dibromo-3-chloropropane had an RPD of 21.4% and n-Butyl alcohol had an RPD of 23.8%. The limits are 0.00%-20.00%.</p>		<p>The RPD recoveries were not all within the acceptance limits. The MS/MSD pair passed recoveries for all analytes. The results are reported.</p>	

Originator's Name:
Ryan Dushak 09-MAY-12

Data Validator/Group Leader:
Kelle Bellamy 10-MAY-12

Semi-Volatile Analysis

Case Narrative

**Semi-Volatile Case Narrative
ARS International (ARSL)
SDG 12-1236**

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:	1208252
Prep Batch Number:	1208249

Sample Analysis

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

Sample ID	Client ID
303221001	CAPA-12-13277
303221004	CAPA-12-13306
303221005	CAPA-12-13309
1202646828	Method Blank (MB)
1202646829	Laboratory Control Sample (LCS)
1202646830	303221001(CAPA-12-13277) Matrix Spike (MS)
1202646831	303221001(CAPA-12-13277) Matrix Spike Duplicate (MSD)

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

Preparation/Analytical Method Verification

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-009 REV# 27.

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

Calibration Information

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

All the surrogate recoveries were within the established acceptance criteria for this SDG in this batch.

Laboratory Control Sample (LCS) Recovery

The LCS(1202646829) recovered Benzoic acid and Dibenzo(a,h)anthracene outside of the established acceptance limits. Please see the QC Summary report for specific failures. The LCS(1202646829) failures represent less than 5% of the total requested spike analyte list. That satisfied the acceptance criteria for the client and the data were reported.

QC Sample Designation

Sample 303221001 (CAPA-12-13277) was selected for analysis as the matrix spike and matrix spike duplicate.

Matrix Spike (MS) Recovery Statement

The MS(1202646830(CAPA-12-13277)) recovered Benzidine and 1,4-Dioxane outside of the established acceptance limits. Please see the QC Summary report for specific failures. Since the MSD displayed similar spike recoveries to the MS, the failures were attributed to sample matrix interference and the data results have been reported.

Matrix Spike Duplicate (MSD) Recovery Statement

The MSD(1202646831(CAPA-12-13277)) recovered Benzidine and 1,4-Dioxane outside of the established acceptance limits. Please see the QC Summary report for specific failures. Since the MSD displayed similar spike recoveries to the MS, the failures were attributed to sample matrix interference and the data results have been reported.

MS/MSD Relative Percent Difference (RPD) Statement

The MS(1202646830(CAPA-12-13277))/MSD(1202646831(CAPA-12-13277)) pair displayed RPD values outside of the established 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, with the exception of 1,4-Dioxane, the data results have been reported unqualified for the RPD failures. The 1,4-Dioxane RPD failure was attributed to sample matrix interference and the data 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 sample(s) 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

Sample 303221001 (CAPA-12-13277) was analyzed at a dilution due to the presence of over range target analytes. The re-analysis data were reported for the over range analytes only and the original analysis data were reported for all other analytes.

Sample Re-extraction/Re-analysis

Re-extractions or re-analyses were not required in this SDG unless confirmations or dilutions were required.

Miscellaneous Information:

Data Exception (DER) Documentation

The following DER was generated for this SDG: 1075056.

Manual Integrations

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

TIC Comment

Tentatively identified compounds (TIC) may be requested for this sample delivery group/work order. Please note that non-requested 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

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

Certification Statement

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

GEL LABORATORIES LLC

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

Qualifier Definition Report for

ARSL001 ARS International (63641-10)

Client SDG: 12-1236 GEL Work Order: 303221

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- E Organics--Concentration of the target analyte exceeds the instrument calibration range
- 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: 

Name: Barbara Bailey

Date: 18 MAY 2012

Title: Data Validator

Sample Data Summary

**Semi-Volatile
Certificate of Analysis
Sample Summary**

Page 1 of 3

SDG Number: 12-1236	Date Collected: 04/23/2012 11:45	Matrix: W
Lab Sample ID: 303221001	Date Received: 04/25/2012 09:00	
Client ID: CAPA-12-13277	Client: ARSL001	Project: ESHL00210
Batch ID: 1208252	Method: SW846 8270C	SOP Ref: GL-OA-E-009
Run Date: 05/01/2012 16:22	Inst: MSD3.I	Dilution: 1
Prep Date: 04/30/2012 18:00	Analyst: JLD1	Inj. Vol: 1 uL
Data File: S050112.B\3e0119.D	Aliquot: 1000 mL	Final Volume: 1 mL
	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	U	10.0	ug/L	3.00	10.0
	<i>N-Nitrosodipropylamine</i>					
67-72-1	Hexachloroethane	U	10.0	ug/L	3.00	10.0
98-95-3	Nitrobenzene	U	10.0	ug/L	3.00	10.0
78-59-1	Isophorone	U	10.0	ug/L	3.00	10.0
88-75-5	2-Nitrophenol	U	10.0	ug/L	3.00	10.0
105-67-9	2,4-Dimethylphenol	U	10.0	ug/L	3.00	10.0
111-91-1	bis(2-Chloroethoxy)methane	U	10.0	ug/L	3.00	10.0
120-83-2	2,4-Dichlorophenol	U	10.0	ug/L	3.00	10.0
65-85-0	Benzoic acid	U	20.0	ug/L	6.00	20.0
106-47-8	4-Chloroaniline	U	10.0	ug/L	3.00	10.0
87-68-3	Hexachlorobutadiene	U	10.0	ug/L	3.00	10.0
59-50-7	Parachlorometa cresol	U	10.0	ug/L	3.00	10.0
	<i>4-Chloro-3-methylphenol</i>					
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
	<i>o-Nitroaniline</i>					
99-09-2	3-Nitroaniline	U	10.0	ug/L	3.00	10.0
	<i>m-Nitroaniline</i>					
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**

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SDG Number: 12-1236	Date Collected: 04/23/2012 11:45	Matrix: W
Lab Sample ID: 303221001	Date Received: 04/25/2012 09:00	
Client ID: CAPA-12-13277	Client: ARSL001	Project: ESHL00210
Batch ID: 1208252	Method: SW846 8270C	SOP Ref: GL-OA-E-009
Run Date: 05/01/2012 16:22	Inst: MSD3.I	Dilution: 1
Prep Date: 04/30/2012 18:00	Analyst: JLD1	Inj. Vol: 1 uL
Data File: S050112.B\3e0119.D	Aliquot: 1000 mL	Final Volume: 1 mL
	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	U	10.0	ug/L	3.00	10.0
	<i>p</i> -Nitroaniline					
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	U	10.0	ug/L	3.00	10.0
	<i>1,2-Diphenylhydrazine</i>					
101-55-3	4-Bromophenylphenylether	U	10.0	ug/L	3.00	10.0
118-74-1	Hexachlorobenzene	U	10.0	ug/L	3.00	10.0
87-86-5	Pentachlorophenol	U	10.0	ug/L	3.00	10.0
88-85-7	Dinoseb	U	10.0	ug/L	3.00	10.0
85-01-8	Phenanthrene	U	1.00	ug/L	0.300	1.00
120-12-7	Anthracene	U	1.00	ug/L	0.300	1.00
84-74-2	Di-n-butylphthalate	U	10.0	ug/L	3.00	10.0
206-44-0	Fluoranthene	U	1.00	ug/L	0.300	1.00
129-00-0	Pyrene	U	1.00	ug/L	0.300	1.00
85-68-7	Butylbenzylphthalate	U	10.0	ug/L	3.00	10.0
117-81-7	bis(2-Ethylhexyl)phthalate	U	10.0	ug/L	3.00	10.0
56-55-3	Benzo(a)anthracene	U	1.00	ug/L	0.300	1.00
218-01-9	Chrysene	U	1.00	ug/L	0.300	1.00
117-84-0	Di-n-octylphthalate	U	10.0	ug/L	3.00	10.0
205-99-2	Benzo(b)fluoranthene	U	1.00	ug/L	0.300	1.00
207-08-9	Benzo(k)fluoranthene	U	1.00	ug/L	0.300	1.00
50-32-8	Benzo(a)pyrene	U	1.00	ug/L	0.300	1.00
193-39-5	Indeno(1,2,3-cd)pyrene	U	1.00	ug/L	0.300	1.00
53-70-3	Dibenzo(a,h)anthracene	U	1.00	ug/L	0.300	1.00
191-24-2	Benzo(ghi)perylene	U	1.00	ug/L	0.300	1.00
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
924-16-3	N-Nitrosodi-n-butylamine	U	10.0	ug/L	3.00	10.0

**Semi-Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 12-1236	Date Collected: 04/23/2012 11:45	Matrix: W
Lab Sample ID: 303221001	Date Received: 04/25/2012 09:00	
Client ID: CAPA-12-13277	Client: ARSL001	Project: ESHL00210
Batch ID: 1208252	Method: SW846 8270C	SOP Ref: GL-OA-E-009
Run Date: 05/01/2012 16:22	Inst: MSD3.I	Dilution: 1
Prep Date: 04/30/2012 18:00	Analyst: JLD1	Inj. Vol: 1 uL
Data File: S050112.B\3e0119.D	Aliquot: 1000 mL	Final Volume: 1 mL
	Column: DB-5ms	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
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	58.6	100	ug/L 58.6	(26%-131%)
2-Fluorobiphenyl	31.6	50.0	ug/L 63.2	(29%-102%)
2-Fluorophenol	35.6	100	ug/L 35.6	(15%-78%)
Nitrobenzene-d5	37.0	50.0	ug/L 74.0	(36%-125%)
Phenol-d5	25.4	100	ug/L 25.4	(10%-72%)
p-Terphenyl-d14	42.7	50.0	ug/L 85.3	(31%-133%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
000071-55-6	Ethane, 1,1,1-trichloro-	1.903	9.53	ug/L	90	NJ

**Semi-Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 12-1236	Date Collected: 04/23/2012 11:45	Matrix: W
Lab Sample ID: 303221001	Date Received: 04/25/2012 09:00	
Client ID: CAPA-12-13277DL	Client: ARSL001	Project: ESHL00210
Batch ID: 1208252	Method: SW846 8270C	SOP Ref: GL-OA-E-009
Run Date: 05/02/2012 16:17	Inst: MSD3.I	Dilution: 10
Prep Date: 04/30/2012 18:00	Analyst: JLD1	Inj. Vol: 1 uL
Data File: S050212.B\3e0219.D	Aliquot: 1000 mL	Final Volume: 1 mL
	Column: DB-5ms	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
123-91-1	1,4-Dioxane		462	ug/L	30.0	100

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits

Tentatively Identified Compound Summary

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

Semi-Volatile
Certificate of Analysis
Sample Summary

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SDG Number: 12-1236	Date Collected: 04/23/2012 11:45	Matrix: W
Lab Sample ID: 303221004	Date Received: 04/25/2012 09:00	
	Client: ARSL001	Project: ESHL00210
Client ID: CAPA-12-13306	Method: SW846 8270C	SOP Ref: GL-OA-E-009
Batch ID: 1208252	Inst: MSD3.I	Dilution: 1
Run Date: 05/01/2012 17:37	Analyst: JLD1	Inj. Vol: 1 uL
Prep Date: 04/30/2012 18:00	Aliquot: 940 mL	Final Volume: 1 mL
Data File: S050112.B\3e0122.D	Column: DB-5ms	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
62-75-9	N-Methyl-N-nitrosomethylamine	U	10.6	ug/L	3.19	10.6
110-86-1	Pyridine	U	10.6	ug/L	3.19	10.6
62-53-3	Aniline	U	10.6	ug/L	3.19	10.6
108-95-2	Phenol	U	10.6	ug/L	3.19	10.6
111-44-4	bis(2-Chloroethyl) ether	U	10.6	ug/L	3.19	10.6
95-57-8	2-Chlorophenol	U	10.6	ug/L	3.19	10.6
541-73-1	1,3-Dichlorobenzene	U	10.6	ug/L	3.19	10.6
106-46-7	1,4-Dichlorobenzene	U	10.6	ug/L	3.19	10.6
95-50-1	1,2-Dichlorobenzene	U	10.6	ug/L	3.19	10.6
39638-32-9	bis(2-Chloroisopropyl)ether	U	10.6	ug/L	3.19	10.6
100-51-6	Benzyl alcohol	U	10.6	ug/L	3.19	10.6
95-48-7	o-Cresol	U	10.6	ug/L	3.19	10.6
65794-96-9	m,p-Cresols	U	10.6	ug/L	3.19	10.6
621-64-7	N-Nitrosodi--n-propylamine	U	10.6	ug/L	3.19	10.6
	<i>N-Nitrosodipropylamine</i>					
67-72-1	Hexachloroethane	U	10.6	ug/L	3.19	10.6
98-95-3	Nitrobenzene	U	10.6	ug/L	3.19	10.6
78-59-1	Isophorone	U	10.6	ug/L	3.19	10.6
88-75-5	2-Nitrophenol	U	10.6	ug/L	3.19	10.6
105-67-9	2,4-Dimethylphenol	U	10.6	ug/L	3.19	10.6
111-91-1	bis(2-Chloroethoxy)methane	U	10.6	ug/L	3.19	10.6
120-83-2	2,4-Dichlorophenol	U	10.6	ug/L	3.19	10.6
65-85-0	Benzoic acid	U	21.3	ug/L	6.38	21.3
106-47-8	4-Chloroaniline	U	10.6	ug/L	3.19	10.6
87-68-3	Hexachlorobutadiene	U	10.6	ug/L	3.19	10.6
59-50-7	Parachlorometa cresol	U	10.6	ug/L	3.19	10.6
	<i>4-Chloro-3-methylphenol</i>					
91-57-6	2-Methylnaphthalene	U	1.06	ug/L	0.319	1.06
91-20-3	Naphthalene	U	1.06	ug/L	0.319	1.06
90-12-0	1-Methylnaphthalene	U	1.06	ug/L	0.319	1.06
77-47-4	Hexachlorocyclopentadiene	U	10.6	ug/L	3.19	10.6
88-06-2	2,4,6-Trichlorophenol	U	10.6	ug/L	3.19	10.6
95-95-4	2,4,5-Trichlorophenol	U	10.6	ug/L	3.19	10.6
91-58-7	2-Chloronaphthalene	U	1.06	ug/L	0.319	1.06
88-74-4	2-Nitroaniline	U	10.6	ug/L	3.19	10.6
	<i>o-Nitroaniline</i>					
99-09-2	3-Nitroaniline	U	10.6	ug/L	3.19	10.6
	<i>m-Nitroaniline</i>					
131-11-3	Dimethylphthalate	U	10.6	ug/L	3.19	10.6
606-20-2	2,6-Dinitrotoluene	U	10.6	ug/L	3.19	10.6

**Semi-Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 12-1236	Date Collected: 04/23/2012 11:45	Matrix: W
Lab Sample ID: 303221004	Date Received: 04/25/2012 09:00	
Client ID: CAPA-12-13306	Client: ARSL001	Project: ESHL00210
Batch ID: 1208252	Method: SW846 8270C	SOP Ref: GL-OA-E-009
Run Date: 05/01/2012 17:37	Inst: MSD3.I	Dilution: 1
Prep Date: 04/30/2012 18:00	Analyst: JLD1	Inj. Vol: 1 uL
Data File: S050112.B\3e0122.D	Aliquot: 940 mL	Final Volume: 1 mL
	Column: DB-5ms	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
121-14-2	2,4-Dinitrotoluene	U	10.6	ug/L	3.19	10.6
208-96-8	Acenaphthylene	U	1.06	ug/L	0.319	1.06
83-32-9	Acenaphthene	U	1.06	ug/L	0.319	1.06
51-28-5	2,4-Dinitrophenol	U	21.3	ug/L	5.32	21.3
132-64-9	Dibenzofuran	U	10.6	ug/L	3.19	10.6
58-90-2	2,3,4,6-Tetrachlorophenol	U	10.6	ug/L	3.19	10.6
84-66-2	Diethylphthalate	U	10.6	ug/L	3.19	10.6
100-02-7	4-Nitrophenol	U	10.6	ug/L	3.19	10.6
86-73-7	Fluorene	U	1.06	ug/L	0.319	1.06
7005-72-3	4-Chlorophenylphenylether	U	10.6	ug/L	3.19	10.6
100-01-6	4-Nitroaniline	U	10.6	ug/L	3.19	10.6
	<i>p</i> -Nitroaniline					
534-52-1	2-Methyl-4,6-dinitrophenol	U	10.6	ug/L	3.19	10.6
122-39-4	Diphenylamine	U	10.6	ug/L	3.19	10.6
122-66-7	Azobenzene	U	10.6	ug/L	3.19	10.6
	<i>1,2-Diphenylhydrazine</i>					
101-55-3	4-Bromophenylphenylether	U	10.6	ug/L	3.19	10.6
118-74-1	Hexachlorobenzene	U	10.6	ug/L	3.19	10.6
87-86-5	Pentachlorophenol	U	10.6	ug/L	3.19	10.6
88-85-7	Dinoseb	U	10.6	ug/L	3.19	10.6
85-01-8	Phenanthrene	U	1.06	ug/L	0.319	1.06
120-12-7	Anthracene	U	1.06	ug/L	0.319	1.06
84-74-2	Di-n-butylphthalate	U	10.6	ug/L	3.19	10.6
206-44-0	Fluoranthene	U	1.06	ug/L	0.319	1.06
129-00-0	Pyrene	U	1.06	ug/L	0.319	1.06
85-68-7	Butylbenzylphthalate	U	10.6	ug/L	3.19	10.6
117-81-7	bis(2-Ethylhexyl)phthalate	U	10.6	ug/L	3.19	10.6
56-55-3	Benzo(a)anthracene	U	1.06	ug/L	0.319	1.06
218-01-9	Chrysene	U	1.06	ug/L	0.319	1.06
117-84-0	Di-n-octylphthalate	U	10.6	ug/L	3.19	10.6
205-99-2	Benzo(b)fluoranthene	U	1.06	ug/L	0.319	1.06
207-08-9	Benzo(k)fluoranthene	U	1.06	ug/L	0.319	1.06
50-32-8	Benzo(a)pyrene	U	1.06	ug/L	0.319	1.06
193-39-5	Indeno(1,2,3-cd)pyrene	U	1.06	ug/L	0.319	1.06
53-70-3	Dibenzo(a,h)anthracene	U	1.06	ug/L	0.319	1.06
191-24-2	Benzo(ghi)perylene	U	1.06	ug/L	0.319	1.06
123-91-1	1,4-Dioxane	U	10.6	ug/L	3.19	10.6
55-18-5	N-Nitrosodiethylamine	U	10.6	ug/L	3.19	10.6
930-55-2	N-Nitrosopyrrolidine	U	10.6	ug/L	3.19	10.6

**Semi-Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 12-1236	Date Collected: 04/23/2012 11:45	Matrix: W
Lab Sample ID: 303221004	Date Received: 04/25/2012 09:00	
Client ID: CAPA-12-13306	Client: ARSL001	Project: ESHL00210
Batch ID: 1208252	Method: SW846 8270C	SOP Ref: GL-OA-E-009
Run Date: 05/01/2012 17:37	Inst: MSD3.I	Dilution: 1
Prep Date: 04/30/2012 18:00	Analyst: JLD1	Inj. Vol: 1 uL
Data File: S050112.B\3e0122.D	Aliquot: 940 mL	Final Volume: 1 mL
	Column: DB-5ms	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
924-16-3	N-Nitrosodi-n-butylamine	U	10.6	ug/L	3.19	10.6
95-94-3	1,2,4,5-Tetrachlorobenzene	U	10.6	ug/L	3.19	10.6
608-93-5	Pentachlorobenzene	U	10.6	ug/L	3.19	10.6
1912-24-9	Atrazine	U	10.6	ug/L	3.19	10.6
92-87-5	Benzidine	U	10.6	ug/L	3.19	10.6
91-94-1	3,3'-Dichlorobenzidine	U	10.6	ug/L	3.19	10.6
120-82-1	1,2,4-Trichlorobenzene	U	10.6	ug/L	3.19	10.6

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
2,4,6-Tribromophenol	95.7	106	ug/L 90.0	(26%-131%)
2-Fluorobiphenyl	33.6	53.2	ug/L 63.1	(29%-102%)
2-Fluorophenol	46.6	106	ug/L 43.8	(15%-78%)
Nitrobenzene-d5	36.8	53.2	ug/L 69.1	(36%-125%)
Phenol-d5	28.9	106	ug/L 27.2	(10%-72%)
p-Terphenyl-d14	48.3	53.2	ug/L 90.7	(31%-133%)

Tentatively Identified Compound Summary

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

**Semi-Volatile
Certificate of Analysis
Sample Summary**

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SDG Number: 12-1236	Date Collected: 04/23/2012 10:10	Matrix: W
Lab Sample ID: 303221005	Date Received: 04/25/2012 09:00	
Client ID: CAPA-12-13309	Client: ARSL001	Project: ESHL00210
Batch ID: 1208252	Method: SW846 8270C	SOP Ref: GL-OA-E-009
Run Date: 05/01/2012 18:02	Inst: MSD3.I	Dilution: 1
Prep Date: 04/30/2012 18:00	Analyst: JLD1	Inj. Vol: 1 uL
Data File: S050112.B\3e0123.D	Aliquot: 920 mL	Final Volume: 1 mL
	Column: DB-5ms	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
62-75-9	N-Methyl-N-nitrosomethylamine	U	10.9	ug/L	3.26	10.9
110-86-1	Pyridine	U	10.9	ug/L	3.26	10.9
62-53-3	Aniline	U	10.9	ug/L	3.26	10.9
108-95-2	Phenol	U	10.9	ug/L	3.26	10.9
111-44-4	bis(2-Chloroethyl) ether	U	10.9	ug/L	3.26	10.9
95-57-8	2-Chlorophenol	U	10.9	ug/L	3.26	10.9
541-73-1	1,3-Dichlorobenzene	U	10.9	ug/L	3.26	10.9
106-46-7	1,4-Dichlorobenzene	U	10.9	ug/L	3.26	10.9
95-50-1	1,2-Dichlorobenzene	U	10.9	ug/L	3.26	10.9
39638-32-9	bis(2-Chloroisopropyl)ether	U	10.9	ug/L	3.26	10.9
100-51-6	Benzyl alcohol	U	10.9	ug/L	3.26	10.9
95-48-7	o-Cresol	U	10.9	ug/L	3.26	10.9
65794-96-9	m,p-Cresols	U	10.9	ug/L	3.26	10.9
621-64-7	N-Nitrosodi--n-propylamine	U	10.9	ug/L	3.26	10.9
	<i>N-Nitrosodipropylamine</i>					
67-72-1	Hexachloroethane	U	10.9	ug/L	3.26	10.9
98-95-3	Nitrobenzene	U	10.9	ug/L	3.26	10.9
78-59-1	Isophorone	U	10.9	ug/L	3.26	10.9
88-75-5	2-Nitrophenol	U	10.9	ug/L	3.26	10.9
105-67-9	2,4-Dimethylphenol	U	10.9	ug/L	3.26	10.9
111-91-1	bis(2-Chloroethoxy)methane	U	10.9	ug/L	3.26	10.9
120-83-2	2,4-Dichlorophenol	U	10.9	ug/L	3.26	10.9
65-85-0	Benzoic acid	U	21.7	ug/L	6.52	21.7
106-47-8	4-Chloroaniline	U	10.9	ug/L	3.26	10.9
87-68-3	Hexachlorobutadiene	U	10.9	ug/L	3.26	10.9
59-50-7	Parachlorometa cresol	U	10.9	ug/L	3.26	10.9
	<i>4-Chloro-3-methylphenol</i>					
91-57-6	2-Methylnaphthalene	U	1.09	ug/L	0.326	1.09
91-20-3	Naphthalene	U	1.09	ug/L	0.326	1.09
90-12-0	1-Methylnaphthalene	U	1.09	ug/L	0.326	1.09
77-47-4	Hexachlorocyclopentadiene	U	10.9	ug/L	3.26	10.9
88-06-2	2,4,6-Trichlorophenol	U	10.9	ug/L	3.26	10.9
95-95-4	2,4,5-Trichlorophenol	U	10.9	ug/L	3.26	10.9
91-58-7	2-Chloronaphthalene	U	1.09	ug/L	0.326	1.09
88-74-4	2-Nitroaniline	U	10.9	ug/L	3.26	10.9
	<i>o-Nitroaniline</i>					
99-09-2	3-Nitroaniline	U	10.9	ug/L	3.26	10.9
	<i>m-Nitroaniline</i>					
131-11-3	Dimethylphthalate	U	10.9	ug/L	3.26	10.9
606-20-2	2,6-Dinitrotoluene	U	10.9	ug/L	3.26	10.9

**Semi-Volatile
Certificate of Analysis
Sample Summary**

Page 2 of 3

SDG Number: 12-1236	Date Collected: 04/23/2012 10:10	Matrix: W
Lab Sample ID: 303221005	Date Received: 04/25/2012 09:00	
Client ID: CAPA-12-13309	Client: ARSL001	Project: ESHL00210
Batch ID: 1208252	Method: SW846 8270C	SOP Ref: GL-OA-E-009
Run Date: 05/01/2012 18:02	Inst: MSD3.I	Dilution: 1
Prep Date: 04/30/2012 18:00	Analyst: JLD1	Inj. Vol: 1 uL
Data File: S050112.B\3e0123.D	Aliquot: 920 mL	Final Volume: 1 mL
	Column: DB-5ms	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
121-14-2	2,4-Dinitrotoluene	U	10.9	ug/L	3.26	10.9
208-96-8	Acenaphthylene	U	1.09	ug/L	0.326	1.09
83-32-9	Acenaphthene	U	1.09	ug/L	0.326	1.09
51-28-5	2,4-Dinitrophenol	U	21.7	ug/L	5.43	21.7
132-64-9	Dibenzofuran	U	10.9	ug/L	3.26	10.9
58-90-2	2,3,4,6-Tetrachlorophenol	U	10.9	ug/L	3.26	10.9
84-66-2	Diethylphthalate	U	10.9	ug/L	3.26	10.9
100-02-7	4-Nitrophenol	U	10.9	ug/L	3.26	10.9
86-73-7	Fluorene	U	1.09	ug/L	0.326	1.09
7005-72-3	4-Chlorophenylphenylether	U	10.9	ug/L	3.26	10.9
100-01-6	4-Nitroaniline	U	10.9	ug/L	3.26	10.9
	<i>p</i> -Nitroaniline					
534-52-1	2-Methyl-4,6-dinitrophenol	U	10.9	ug/L	3.26	10.9
122-39-4	Diphenylamine	U	10.9	ug/L	3.26	10.9
122-66-7	Azobenzene	U	10.9	ug/L	3.26	10.9
	<i>1,2-Diphenylhydrazine</i>					
101-55-3	4-Bromophenylphenylether	U	10.9	ug/L	3.26	10.9
118-74-1	Hexachlorobenzene	U	10.9	ug/L	3.26	10.9
87-86-5	Pentachlorophenol	U	10.9	ug/L	3.26	10.9
88-85-7	Dinoseb	U	10.9	ug/L	3.26	10.9
85-01-8	Phenanthrene	U	1.09	ug/L	0.326	1.09
120-12-7	Anthracene	U	1.09	ug/L	0.326	1.09
84-74-2	Di-n-butylphthalate	U	10.9	ug/L	3.26	10.9
206-44-0	Fluoranthene	U	1.09	ug/L	0.326	1.09
129-00-0	Pyrene	U	1.09	ug/L	0.326	1.09
85-68-7	Butylbenzylphthalate	U	10.9	ug/L	3.26	10.9
117-81-7	bis(2-Ethylhexyl)phthalate	U	10.9	ug/L	3.26	10.9
56-55-3	Benzo(a)anthracene	U	1.09	ug/L	0.326	1.09
218-01-9	Chrysene	U	1.09	ug/L	0.326	1.09
117-84-0	Di-n-octylphthalate	U	10.9	ug/L	3.26	10.9
205-99-2	Benzo(b)fluoranthene	U	1.09	ug/L	0.326	1.09
207-08-9	Benzo(k)fluoranthene	U	1.09	ug/L	0.326	1.09
50-32-8	Benzo(a)pyrene	U	1.09	ug/L	0.326	1.09
193-39-5	Indeno(1,2,3-cd)pyrene	U	1.09	ug/L	0.326	1.09
53-70-3	Dibenzo(a,h)anthracene	U	1.09	ug/L	0.326	1.09
191-24-2	Benzo(ghi)perylene	U	1.09	ug/L	0.326	1.09
123-91-1	1,4-Dioxane	U	10.9	ug/L	3.26	10.9
55-18-5	N-Nitrosodiethylamine	U	10.9	ug/L	3.26	10.9
930-55-2	N-Nitrosopyrrolidine	U	10.9	ug/L	3.26	10.9

**Semi-Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 12-1236	Date Collected: 04/23/2012 10:10	Matrix: W
Lab Sample ID: 303221005	Date Received: 04/25/2012 09:00	
Client ID: CAPA-12-13309	Client: ARSL001	Project: ESHL00210
Batch ID: 1208252	Method: SW846 8270C	SOP Ref: GL-OA-E-009
Run Date: 05/01/2012 18:02	Inst: MSD3.I	Dilution: 1
Prep Date: 04/30/2012 18:00	Analyst: JLD1	Inj. Vol: 1 uL
Data File: S050112.B\3e0123.D	Aliquot: 920 mL	Final Volume: 1 mL
	Column: DB-5ms	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
924-16-3	N-Nitrosodi-n-butylamine	U	10.9	ug/L	3.26	10.9
95-94-3	1,2,4,5-Tetrachlorobenzene	U	10.9	ug/L	3.26	10.9
608-93-5	Pentachlorobenzene	U	10.9	ug/L	3.26	10.9
1912-24-9	Atrazine	U	10.9	ug/L	3.26	10.9
92-87-5	Benzidine	U	10.9	ug/L	3.26	10.9
91-94-1	3,3'-Dichlorobenzidine	U	10.9	ug/L	3.26	10.9
120-82-1	1,2,4-Trichlorobenzene	U	10.9	ug/L	3.26	10.9

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
2,4,6-Tribromophenol	75.1	109	ug/L	69.1	(26%-131%)
2-Fluorobiphenyl	27.7	54.3	ug/L	51.0	(29%-102%)
2-Fluorophenol	40.8	109	ug/L	37.6	(15%-78%)
Nitrobenzene-d5	29.4	54.3	ug/L	54.2	(36%-125%)
Phenol-d5	25.2	109	ug/L	23.2	(10%-72%)
p-Terphenyl-d14	47.3	54.3	ug/L	87.0	(31%-133%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
000050-84-0	Benzoic acid, 2,4-dichloro-	7.734	53.8	ug/L	99	NJ

Quality Control Summary

Semi-Volatile
Surrogate Recovery Report

SDG Number: 12-1236

Matrix Type: LIQUID

Sample ID	Client ID	2FP %REC	PHL %REC	NBZ %REC	FBP %REC	TBP %REC	TPH %REC
1202646828	MB for batch 1208249	53	32	83	60	105	113
1202646829	LCS for batch 1208249	41	25	61	59	87	90
303221001	CAPA-12-13277	36	25	74	63	59	85
1202646830	CAPA-12-13277MS	53	43	61	59	71	68
1202646831	CAPA-12-13277MSD	61	50	72	69	80	84
303221004	CAPA-12-13306	44	27	69	63	90	91
303221005	CAPA-12-13309	38	23	54	51	69	87
303221001	CAPA-12-13277DL	30 D	21 D	64 D	56 D	29 D	63 D

Surrogate

2FP = 2-Fluorophenol
 PHL = Phenol-d5
 NBZ = Nitrobenzene-d5
 FBP = 2-Fluorobiphenyl
 TBP = 2,4,6-Tribromophenol
 TPH = p-Terphenyl-d14

Acceptance Limits

(15%-78%)
 (10%-72%)
 (36%-125%)
 (29%-102%)
 (26%-131%)
 (31%-133%)

* 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: 12-1236

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1208249

Matrix: WATER

Lab Sample ID: 1202646829

Instrument: MSD3.I

Analysis Date: 05/01/2012 12:37

Dilution: 1

Analyst: JLD1

Prep Batch II 1208249

Inj. Vol: 1 uL

Batch ID: 1208252

CAS No	Parname	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	18.6	37	36-80
110-86-1	LCS Pyridine	50.0	0.0	24.9	50	30-95
62-53-3	LCS Aniline	50.0	0.0	27.6	55	40-114
108-95-2	LCS Phenol	50.0	0.0	12.2	24	15-103
111-44-4	LCS bis(2-Chloroethyl) ether	50.0	0.0	29.2	58	40-116
95-57-8	LCS 2-Chlorophenol	50.0	0.0	31.6	63	48-105
541-73-1	LCS 1,3-Dichlorobenzene	50.0	0.0	24.0	48	39-85
106-46-7	LCS 1,4-Dichlorobenzene	50.0	0.0	24.2	48	37-87
95-50-1	LCS 1,2-Dichlorobenzene	50.0	0.0	24.4	49	39-86
39638-32-9	LCS bis(2-Chloroisopropyl)ether	50.0	0.0	24.1	48	29-126
100-51-6	LCS Benzyl alcohol	50.0	0.0	28.6	57	41-95
95-48-7	LCS o-Cresol	50.0	0.0	26.2	52	40-93
65794-96-9	LCS m,p-Cresols	50.0	0.0	27.7	55	39-100
621-64-7	LCS N-Nitrosodi--n-propylamine <i>N-Nitrosodipropylamine</i>	50.0	0.0	30.2	60	49-120
67-72-1	LCS Hexachloroethane	50.0	0.0	22.2	44	36-88
98-95-3	LCS Nitrobenzene	50.0	0.0	31.9	64	45-118
78-59-1	LCS Isophorone	50.0	0.0	37.0	74	59-118
88-75-5	LCS 2-Nitrophenol	50.0	0.0	35.7	71	49-111
105-67-9	LCS 2,4-Dimethylphenol	50.0	0.0	33.5	67	50-105
111-91-1	LCS bis(2-Chloroethoxy)methane	50.0	0.0	37.7	75	51-109
120-83-2	LCS 2,4-Dichlorophenol	50.0	0.0	34.6	69	51-109
65-85-0	LCS Benzoic acid	100	0.0	21.2	21 *	25-100

Semi-Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: 12-1236

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1208249

Matrix: WATER

Lab Sample ID: 1202646829

Instrument: MSD3.I

Analysis Date: 05/01/2012 12:37

Dilution: 1

Analyst: JLD1

Prep Batch II 1208249

Inj. Vol: 1 uL

Batch ID: 1208252

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	38.5	77	55-115
87-68-3	LCS Hexachlorobutadiene	50.0	0.0	23.9	48	35-91
59-50-7	LCS Parachlorometa cresol <i>4-Chloro-3-methylphenol</i>	50.0	0.0	33.9	68	53-116
91-57-6	LCS 2-Methylnaphthalene	50.0	0.0	32.1	64	41-92
91-20-3	LCS Naphthalene	50.0	0.0	31.3	63	40-90
90-12-0	LCS 1-Methylnaphthalene	50.0	0.0	33.4	67	42-97
77-47-4	LCS Hexachlorocyclopentadiene	50.0	0.0	16.0	32	25-102
88-06-2	LCS 2,4,6-Trichlorophenol	50.0	0.0	39.0	78	45-113
95-95-4	LCS 2,4,5-Trichlorophenol	50.0	0.0	38.4	77	43-114
91-58-7	LCS 2-Chloronaphthalene	50.0	0.0	30.6	61	39-102
88-74-4	LCS 2-Nitroaniline <i>o-Nitroaniline</i>	50.0	0.0	32.7	65	46-122
99-09-2	LCS 3-Nitroaniline <i>m-Nitroaniline</i>	50.0	0.0	37.3	75	48-118
131-11-3	LCS Dimethylphthalate	50.0	0.0	39.5	79	57-115
606-20-2	LCS 2,6-Dinitrotoluene	50.0	0.0	40.8	82	53-113
121-14-2	LCS 2,4-Dinitrotoluene	50.0	0.0	39.7	79	49-117
208-96-8	LCS Acenaphthylene	50.0	0.0	37.2	74	47-102
83-32-9	LCS Acenaphthene	50.0	0.0	35.1	70	43-103
51-28-5	LCS 2,4-Dinitrophenol	50.0	0.0	29.3	59	30-129
132-64-9	LCS Dibenzofuran	50.0	0.0	35.7	71	48-106
58-90-2	LCS 2,3,4,6-Tetrachlorophenol	50.0	0.0	36.2	72	44-116
84-66-2	LCS Diethylphthalate	50.0	0.0	38.2	76	56-118
100-02-7	LCS 4-Nitrophenol	50.0	0.0	11.5	23	15-103

Semi-Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: 12-1236

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1208249

Matrix: WATER

Lab Sample ID: 1202646829

Instrument: MSD3.I

Analysis Date: 05/01/2012 12:37

Dilution: 1

Analyst: JLD1

Prep Batch II 1208249

Inj. Vol: 1 uL

Batch ID: 1208252

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	39.0	78	47-109
7005-72-3	LCS 4-Chlorophenylphenylether	50.0	0.0	37.9	76	43-110
100-01-6	LCS 4-Nitroaniline <i>p-Nitroaniline</i>	50.0	0.0	38.0	76	44-140
534-52-1	LCS 2-Methyl-4,6-dinitrophenol	50.0	0.0	36.9	74	41-126
122-39-4	LCS Diphenylamine	50.0	0.0	40.6	81	51-110
122-66-7	LCS Azobenzene <i>1,2-Diphenylhydrazine</i>	50.0	0.0	33.1	66	47-118
101-55-3	LCS 4-Bromophenylphenylether	50.0	0.0	42.6	85	44-112
118-74-1	LCS Hexachlorobenzene	50.0	0.0	37.4	75	45-120
87-86-5	LCS Pentachlorophenol	50.0	0.0	32.3	65	35-114
85-01-8	LCS Phenanthrene	50.0	0.0	40.7	81	51-108
120-12-7	LCS Anthracene	50.0	0.0	39.7	79	51-108
84-74-2	LCS Di-n-butylphthalate	50.0	0.0	35.8	72	53-120
206-44-0	LCS Fluoranthene	50.0	0.0	39.1	78	47-118
129-00-0	LCS Pyrene	50.0	0.0	49.8	100	38-119
85-68-7	LCS Butylbenzylphthalate	50.0	0.0	41.2	82	45-123
117-81-7	LCS bis(2-Ethylhexyl)phthalate	50.0	0.0	39.0	78	43-125
56-55-3	LCS Benzo(a)anthracene	50.0	0.0	41.8	84	51-108
218-01-9	LCS Chrysene	50.0	0.0	48.3	97	51-108
117-84-0	LCS Di-n-octylphthalate	50.0	0.0	34.5	69	41-126
205-99-2	LCS Benzo(b)fluoranthene	50.0	0.0	44.2	88	45-115
207-08-9	LCS Benzo(k)fluoranthene	50.0	0.0	44.0	88	47-114
50-32-8	LCS Benzo(a)pyrene	50.0	0.0	41.6	83	48-108

Semi-Volatile

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**Quality Control Summary
Spike Recovery Report**

SDG Number: 12-1236

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1208249

Matrix: WATER

Lab Sample ID: 1202646829

Instrument: MSD3.I

Analysis Date: 05/01/2012 12:37

Dilution: 1

Analyst: JLD1

Prep Batch II 1208249

Inj. Vol: 1 uL

Batch ID: 1208252

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	48.6	97	42-121
53-70-3	LCS Dibenzo(a,h)anthracene	50.0	0.0	62.9	126 *	42-123
191-24-2	LCS Benzo(ghi)perylene	50.0	0.0	45.1	90	38-122
123-91-1	LCS 1,4-Dioxane	50.0	0.0	20.0	40	39-76
930-55-2	LCS N-Nitrosopyrrolidine	50.0	0.0	34.1	68	50-120
95-94-3	LCS 1,2,4,5-Tetrachlorobenzene	50.0	0.0	30.2	60	40-94
1912-24-9	LCS Atrazine	50.0	0.0	38.7	77	46-122
92-87-5	LCS Benzidine	100	0.0	51.8	52	21-134
91-94-1	LCS 3,3'-Dichlorobenzidine	50.0	0.0	36.3	73	39-126
120-82-1	LCS 1,2,4-Trichlorobenzene	50.0	0.0	25.1	50	39-83

Semi-Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: 12-1236

Sample Type: Matrix Spike

Client ID: CAPA-12-13277MS

Matrix: W

Lab Sample ID: 1202646830

Instrument: MSD3.I

Analysis Date: 05/01/2012 16:47

Dilution: 1

Analyst: JLD1

Prep Batch II 1208249

Inj. Vol: 1 uL

Batch ID: 1208252

CAS No	Parname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
62-75-9	MS N-Methyl-N-nitrosomethylam	143	0.00	U 65.1	46	26-96
110-86-1	MS Pyridine	143	0.00	U 63.3	44	15-105
62-53-3	MS Aniline	143	0.00	U 54.1	38	28-115
108-95-2	MS Phenol	143	0.00	U 55.9	39	21-71
111-44-4	MS bis(2-Chloroethyl) ether	143	0.00	U 77.1	54	30-113
95-57-8	MS 2-Chlorophenol	143	0.00	U 81.6	57	34-108
541-73-1	MS 1,3-Dichlorobenzene	143	0.00	U 48.1	34	24-84
106-46-7	MS 1,4-Dichlorobenzene	143	0.00	U 49.4	35	25-88
95-50-1	MS 1,2-Dichlorobenzene	143	0.00	U 51.1	36	27-87
39638-32-9	MS bis(2-Chloroisopropyl)ether	143	0.00	U 62.9	44	19-121
100-51-6	MS Benzyl alcohol	143	0.00	U 82.9	58	32-105
95-48-7	MS o-Cresol	143	0.00	U 76.1	53	28-101
65794-96-9	MS m,p-Cresols	143	0.00	U 84.1	59	26-113
621-64-7	MS N-Nitrosodi--n-propylamine <i>N-Nitrosodipropylamine</i>	143	0.00	U 75.7	53	36-121
67-72-1	MS Hexachloroethane	143	0.00	U 40.6	28	21-89
98-95-3	MS Nitrobenzene	143	0.00	U 88.7	62	38-121
78-59-1	MS Isophorone	143	0.00	U 93.2	65	42-123
88-75-5	MS 2-Nitrophenol	143	0.00	U 87.3	61	31-118
105-67-9	MS 2,4-Dimethylphenol	143	0.00	U 86.8	61	30-113
111-91-1	MS bis(2-Chloroethoxy)methane	143	0.00	U 96.1	67	40-109
120-83-2	MS 2,4-Dichlorophenol	143	0.00	U 85.2	60	33-116
65-85-0	MS Benzoic acid	286	0.00	U 127	44	10-109

Semi-Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: 12-1236

Sample Type: Matrix Spike

Client ID: CAPA-12-13277MS

Matrix: W

Lab Sample ID: 1202646830

Instrument: MSD3.I

Analysis Date: 05/01/2012 16:47

Dilution: 1

Analyst: JLD1

Prep Batch II 1208249

Inj. Vol: 1 uL

Batch ID: 1208252

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
106-47-8	MS 4-Chloroaniline	143	0.00	U 84.6	59	34-119
87-68-3	MS Hexachlorobutadiene	143	0.00	U 42.3	30	15-100
59-50-7	MS Parachlorometa cresol 4-Chloro-3-methylphenol	143	0.00	U 85.9	60	36-123
91-57-6	MS 2-Methylnaphthalene	143	0.00	U 68.6	48	31-96
91-20-3	MS Naphthalene	143	0.00	U 71.6	50	27-100
90-12-0	MS 1-Methylnaphthalene	143	0.00	U 72.7	51	32-100
77-47-4	MS Hexachlorocyclopentadiene	143	0.00	U 28.9	20	10-92
88-06-2	MS 2,4,6-Trichlorophenol	143	0.00	U 83.9	59	33-115
95-95-4	MS 2,4,5-Trichlorophenol	143	0.00	U 83.8	59	31-118
91-58-7	MS 2-Chloronaphthalene	143	0.00	U 61.5	43	33-98
88-74-4	MS 2-Nitroaniline o-Nitroaniline	143	0.00	U 66.9	47	32-119
99-09-2	MS 3-Nitroaniline m-Nitroaniline	143	0.00	U 91.5	64	33-119
131-11-3	MS Dimethylphthalate	143	0.00	U 96.7	68	40-120
606-20-2	MS 2,6-Dinitrotoluene	143	0.00	U 97.6	68	42-114
121-14-2	MS 2,4-Dinitrotoluene	143	0.00	U 93.5	65	42-115
208-96-8	MS Acenaphthylene	143	0.00	U 78.1	55	33-107
83-32-9	MS Acenaphthene	143	0.00	U 69.9	49	31-104
51-28-5	MS 2,4-Dinitrophenol	143	0.00	U 60.0	42	19-130
132-64-9	MS Dibenzofuran	143	0.00	U 72.9	51	37-108
58-90-2	MS 2,3,4,6-Tetrachlorophenol	143	0.00	U 78.5	55	28-120
84-66-2	MS Diethylphthalate	143	0.00	U 93.8	66	43-120
100-02-7	MS 4-Nitrophenol	143	0.00	U 55.2	39	13-75

Semi-Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: 12-1236

Sample Type: Matrix Spike

Client ID: CAPA-12-13277MS

Matrix: W

Lab Sample ID: 1202646830

Instrument: MSD3.I

Analysis Date: 05/01/2012 16:47

Dilution: 1

Analyst: JLD1

Prep Batch II 1208249

Inj. Vol: 1 uL

Batch ID: 1208252

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
86-73-7	MS Fluorene	143	0.00	U 78.9	55	32-114
7005-72-3	MS 4-Chlorophenylphenylether	143	0.00	U 75.7	53	32-109
100-01-6	MS 4-Nitroaniline <i>p-Nitroaniline</i>	143	0.00	U 73.1	51	30-135
534-52-1	MS 2-Methyl-4,6-dinitrophenol	143	0.00	U 75.3	53	28-129
122-39-4	MS Diphenylamine	143	0.00	U 88.2	62	31-115
122-66-7	MS Azobenzene <i>1,2-Diphenylhydrazine</i>	143	0.00	U 69.1	48	35-117
101-55-3	MS 4-Bromophenylphenylether	143	0.00	U 86.2	60	32-113
118-74-1	MS Hexachlorobenzene	143	0.00	U 80.6	56	33-126
87-86-5	MS Pentachlorophenol	143	0.00	U 68.1	48	23-123
85-01-8	MS Phenanthrene	143	0.00	U 84.2	59	37-112
120-12-7	MS Anthracene	143	0.00	U 82.7	58	35-112
84-74-2	MS Di-n-butylphthalate	143	0.00	U 77.5	54	40-121
206-44-0	MS Fluoranthene	143	0.00	U 80.3	56	29-125
129-00-0	MS Pyrene	143	0.00	U 98.4	69	26-121
85-68-7	MS Butylbenzylphthalate	143	0.00	U 85.8	60	33-122
117-81-7	MS bis(2-Ethylhexyl)phthalate	143	0.00	U 83.4	58	29-128
56-55-3	MS Benzo(a)anthracene	143	0.00	U 86.7	61	32-116
218-01-9	MS Chrysene	143	0.00	U 101	71	32-118
117-84-0	MS Di-n-octylphthalate	143	0.00	U 78.5	55	30-125
205-99-2	MS Benzo(b)fluoranthene	143	0.00	U 89.7	63	34-116
207-08-9	MS Benzo(k)fluoranthene	143	0.00	U 91.1	64	33-118
50-32-8	MS Benzo(a)pyrene	143	0.00	U 86.4	60	34-111

Semi-Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: 12-1236

Sample Type: Matrix Spike

Client ID: CAPA-12-13277MS

Matrix: W

Lab Sample ID: 1202646830

Instrument: MSD3.I

Analysis Date: 05/01/2012 16:47

Dilution: 1

Analyst: JLD1

Prep Batch II 1208249

Inj. Vol: 1 uL

Batch ID: 1208252

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	143	0.00	U 94.6	66	26-124
53-70-3	MS Dibenzo(a,h)anthracene	143	0.00	U 93.7	66	26-127
191-24-2	MS Benzo(ghi)perylene	143	0.00	U 93.5	65	21-126
123-91-1	MS 1,4-Dioxane	143	499	E 699	140 *	27-97
930-55-2	MS N-Nitrosopyrrolidine	143	0.00	U 89.2	62	42-125
95-94-3	MS 1,2,4,5-Tetrachlorobenzene	143	0.00	U 57.3	40	25-97
1912-24-9	MS Atrazine	143	0.00	U 88.3	62	32-120
92-87-5	MS Benzidine	286	0.00	U 39.0	14 *	30-127
91-94-1	MS 3,3'-Dichlorobenzidine	143	0.00	U 64.7	45	18-128
120-82-1	MS 1,2,4-Trichlorobenzene	143	0.00	U 50.6	35	24-87

Semi-Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: 12-1236

Sample Type: Matrix Spike Duplicate

Client ID: CAPA-12-13277MSD

Matrix: W

Lab Sample ID: 1202646831

Instrument: MSD3.I

Analysis Date: 05/01/2012 17:11

Dilution: 1

Analyst: JLD1

Prep Batch II 1208249

Inj. Vol: 1 uL

Batch ID: 1208252

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	U	Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
62-75-9	MSD N-Methyl-N-nitrosomethylam	143	0.00	U	79.0	55	26-96	19	0-22
110-86-1	MSD Pyridine	143	0.00	U	74.1	52	15-105	16	0-30
62-53-3	MSD Aniline	143	0.00	U	66.1	46	28-115	20	0-25
108-95-2	MSD Phenol	143	0.00	U	66.7	47	21-71	18	0-25
111-44-4	MSD bis(2-Chloroethyl) ether	143	0.00	U	95.1	67	30-113	21	0-23
95-57-8	MSD 2-Chlorophenol	143	0.00	U	98.5	69	34-108	19	0-24
541-73-1	MSD 1,3-Dichlorobenzene	143	0.00	U	67.8	47	24-84	34 *	0-23
106-46-7	MSD 1,4-Dichlorobenzene	143	0.00	U	68.4	48	25-88	32 *	0-24
95-50-1	MSD 1,2-Dichlorobenzene	143	0.00	U	69.7	49	27-87	31 *	0-24
39638-32-9	MSD bis(2-Chloroisopropyl)ether	143	0.00	U	77.3	54	19-121	21	0-23
100-51-6	MSD Benzyl alcohol	143	0.00	U	101	71	32-105	20	0-23
95-48-7	MSD o-Cresol	143	0.00	U	92.6	65	28-101	20	0-25
65794-96-9	MSD m,p-Cresols	143	0.00	U	103	72	26-113	21	0-25
621-64-7	MSD N-Nitrosodi--n-propylamine <i>N-Nitrosodipropylamine</i>	143	0.00	U	93.9	66	36-121	21	0-22
67-72-1	MSD Hexachloroethane	143	0.00	U	60.4	42	21-89	39 *	0-25
98-95-3	MSD Nitrobenzene	143	0.00	U	106	74	38-121	18	0-22
78-59-1	MSD Isophorone	143	0.00	U	112	78	42-123	19	0-21
88-75-5	MSD 2-Nitrophenol	143	0.00	U	102	71	31-118	15	0-25
105-67-9	MSD 2,4-Dimethylphenol	143	0.00	U	102	71	30-113	16	0-23
111-91-1	MSD bis(2-Chloroethoxy)methane	143	0.00	U	116	81	40-109	19	0-21
120-83-2	MSD 2,4-Dichlorophenol	143	0.00	U	100	70	33-116	16	0-23
65-85-0	MSD Benzoic acid	286	0.00	U	150	53	10-109	17	0-28

Semi-Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: 12-1236

Sample Type: Matrix Spike Duplicate

Client ID: CAPA-12-13277MSD

Matrix: W

Lab Sample ID: 1202646831

Instrument: MSD3.I

Analysis Date: 05/01/2012 17:11

Dilution: 1

Analyst: JLD1

Prep Batch ID: 1208249

Inj. Vol: 1 uL

Batch ID: 1208252

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	U	Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
106-47-8	MSD 4-Chloroaniline	143	0.00	U	106	74	34-119	23 *	0-22
87-68-3	MSD Hexachlorobutadiene	143	0.00	U	63.9	45	15-100	41 *	0-25
59-50-7	MSD Parachlorometa cresol <i>4-Chloro-3-methylphenol</i>	143	0.00	U	104	73	36-123	19	0-25
91-57-6	MSD 2-Methylnaphthalene	143	0.00	U	92.3	65	31-96	30 *	0-22
91-20-3	MSD Naphthalene	143	0.00	U	92.1	65	27-100	25 *	0-23
90-12-0	MSD 1-Methylnaphthalene	143	0.00	U	96.2	67	32-100	28 *	0-22
77-47-4	MSD Hexachlorocyclopentadiene	143	0.00	U	45.5	32	10-92	45 *	0-28
88-06-2	MSD 2,4,6-Trichlorophenol	143	0.00	U	96.4	67	33-115	14	0-23
95-95-4	MSD 2,4,5-Trichlorophenol	143	0.00	U	99.1	69	31-118	17	0-25
91-58-7	MSD 2-Chloronaphthalene	143	0.00	U	85.5	60	33-98	33 *	0-20
88-74-4	MSD 2-Nitroaniline <i>o-Nitroaniline</i>	143	0.00	U	86.7	61	32-119	26 *	0-21
99-09-2	MSD 3-Nitroaniline <i>m-Nitroaniline</i>	143	0.00	U	118	83	33-119	25 *	0-22
131-11-3	MSD Dimethylphthalate	143	0.00	U	121	84	40-120	22 *	0-21
606-20-2	MSD 2,6-Dinitrotoluene	143	0.00	U	126	88	42-114	26 *	0-21
121-14-2	MSD 2,4-Dinitrotoluene	143	0.00	U	122	85	42-115	26 *	0-22
208-96-8	MSD Acenaphthylene	143	0.00	U	106	74	33-107	30 *	0-21
83-32-9	MSD Acenaphthene	143	0.00	U	95.8	67	31-104	31 *	0-20
51-28-5	MSD 2,4-Dinitrophenol	143	0.00	U	72.6	51	19-130	19	0-26
132-64-9	MSD Dibenzofuran	143	0.00	U	100	70	37-108	32 *	0-19
58-90-2	MSD 2,3,4,6-Tetrachlorophenol	143	0.00	U	90.1	63	28-120	14	0-24
84-66-2	MSD Diethylphthalate	143	0.00	U	118	83	43-120	23 *	0-20
100-02-7	MSD 4-Nitrophenol	143	0.00	U	64.6	45	13-75	16	0-29

Semi-Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: 12-1236

Sample Type: Matrix Spike Duplicate

Client ID: CAPA-12-13277MSD

Matrix: W

Lab Sample ID: 1202646831

Instrument: MSD3.I

Analysis Date: 05/01/2012 17:11

Dilution: 1

Analyst: JLD1

Prep Batch II 1208249

Inj. Vol: 1 uL

Batch ID: 1208252

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	143	0.00	U 110	77	32-114	33 *	0-21
7005-72-3	MSD 4-Chlorophenylphenylether	143	0.00	U 105	73	32-109	32 *	0-20
100-01-6	MSD 4-Nitroaniline <i>p-Nitroaniline</i>	143	0.00	U 96.9	68	30-135	28 *	0-25
534-52-1	MSD 2-Methyl-4,6-dinitrophenol	143	0.00	U 86.1	60	28-129	13	0-25
122-39-4	MSD Diphenylamine	143	0.00	U 119	84	31-115	30 *	0-20
122-66-7	MSD Azobenzene <i>1,2-Diphenylhydrazine</i>	143	0.00	U 93.8	66	35-117	30 *	0-20
101-55-3	MSD 4-Bromophenylphenylether	143	0.00	U 120	84	32-113	32 *	0-21
118-74-1	MSD Hexachlorobenzene	143	0.00	U 108	76	33-126	30 *	0-21
87-86-5	MSD Pentachlorophenol	143	0.00	U 79.5	56	23-123	15	0-23
85-01-8	MSD Phenanthrene	143	0.00	U 116	81	37-112	32 *	0-20
120-12-7	MSD Anthracene	143	0.00	U 113	79	35-112	31 *	0-22
84-74-2	MSD Di-n-butylphthalate	143	0.00	U 101	70	40-121	26 *	0-21
206-44-0	MSD Fluoranthene	143	0.00	U 104	73	29-125	26 *	0-23
129-00-0	MSD Pyrene	143	0.00	U 137	96	26-121	33 *	0-25
85-68-7	MSD Butylbenzylphthalate	143	0.00	U 113	79	33-122	28 *	0-22
117-81-7	MSD bis(2-Ethylhexyl)phthalate	143	0.00	U 107	75	29-128	25 *	0-22
56-55-3	MSD Benzo(a)anthracene	143	0.00	U 116	81	32-116	29 *	0-20
218-01-9	MSD Chrysene	143	0.00	U 137	96	32-118	30 *	0-22
117-84-0	MSD Di-n-octylphthalate	143	0.00	U 99.8	70	30-125	24	0-24
205-99-2	MSD Benzo(b)fluoranthene	143	0.00	U 124	87	34-116	32 *	0-22
207-08-9	MSD Benzo(k)fluoranthene	143	0.00	U 123	86	33-118	30 *	0-22
50-32-8	MSD Benzo(a)pyrene	143	0.00	U 117	82	34-111	30 *	0-22

Semi-Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: 12-1236

Sample Type: Matrix Spike Duplicate

Client ID: CAPA-12-13277MSD

Matrix: W

Lab Sample ID: 1202646831

Instrument: MSD3.I

Analysis Date: 05/01/2012 17:11

Dilution: 1

Analyst: JLD1

Prep Batch II 1208249

Inj. Vol: 1 uL

Batch ID: 1208252

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	143	0.00	U 125	88	26-124	28 *	0-26
53-70-3	MSD Dibenzo(a,h)anthracene	143	0.00	U 122	86	26-127	27 *	0-26
191-24-2	MSD Benzo(ghi)perylene	143	0.00	U 123	86	21-126	27	0-27
123-91-1	MSD 1,4-Dioxane	143	499	E 881	267 *	27-97	23 *	0-22
930-55-2	MSD N-Nitrosopyrrolidine	143	0.00	U 108	76	42-125	19	0-22
95-94-3	MSD 1,2,4,5-Tetrachlorobenzene	143	0.00	U 82.1	57	25-97	36 *	0-23
1912-24-9	MSD Atrazine	143	0.00	U 110	77	32-120	22 *	0-20
92-87-5	MSD Benzidine	286	0.00	U 36.8	13 *	30-127	6	0-22
91-94-1	MSD 3,3'-Dichlorobenzidine	143	0.00	U 84.7	59	18-128	27 *	0-24
120-82-1	MSD 1,2,4-Trichlorobenzene	143	0.00	U 70.1	49	24-87	32 *	0-22

Method Blank Summary

Page 1 of 1

SDG Number:	12-1236	Client:	ARSL001	Matrix:	WATER
Client ID:	MB for batch 1208249	Instrument ID:	MSD3.I	Data File:	S050112.B\s3e0109.D
Lab Sample ID:	1202646828	Prep Date:	04/30/2012 18:00	Analyzed:	05/01/12 12:12
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 1208249	1202646829	S050112.B\s3e0110.D	05/01/12	1237
02 CAPA-12-13277	303221001	S050112.B\s3e0119.D	05/01/12	1622
03 CAPA-12-13277MS	1202646830	S050112.B\s3e0120.D	05/01/12	1647
04 CAPA-12-13277MSD	1202646831	S050112.B\s3e0121.D	05/01/12	1711
05 CAPA-12-13306	303221004	S050112.B\s3e0122.D	05/01/12	1737
06 CAPA-12-13309	303221005	S050112.B\s3e0123.D	05/01/12	1802
07 CAPA-12-13277DL	303221001	S050212.B\s3e0219.D	05/02/12	1617

Quality Control Data

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number: 12-1236		Matrix: WATER	
Lab Sample ID: 1202646828			
Client Sample: QC for batch 1208249	Client: ARSL001	Project: QC	
Client ID: MB for batch 1208249	Method: SW846 8270C	SOP Ref: GL-OA-E-009	
Batch ID: 1208252	Inst: MSD3.I	Dilution: 1	
Run Date: 05/01/2012 12:12	Analyst: JLD1	Inj. Vol: 1 uL	
Prep Date: 04/30/2012 18:00	Aliquot: 1000 mL	Final Volume: 1 mL	
Data File: S050112.B\3e0109.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	U	10.0	ug/L	3.00	10.0
	<i>N-Nitrosodipropylamine</i>					
67-72-1	Hexachloroethane	U	10.0	ug/L	3.00	10.0
98-95-3	Nitrobenzene	U	10.0	ug/L	3.00	10.0
78-59-1	Isophorone	U	10.0	ug/L	3.00	10.0
88-75-5	2-Nitrophenol	U	10.0	ug/L	3.00	10.0
105-67-9	2,4-Dimethylphenol	U	10.0	ug/L	3.00	10.0
111-91-1	bis(2-Chloroethoxy)methane	U	10.0	ug/L	3.00	10.0
120-83-2	2,4-Dichlorophenol	U	10.0	ug/L	3.00	10.0
65-85-0	Benzoic acid	U	20.0	ug/L	6.00	20.0
106-47-8	4-Chloroaniline	U	10.0	ug/L	3.00	10.0
87-68-3	Hexachlorobutadiene	U	10.0	ug/L	3.00	10.0
59-50-7	Parachlorometa cresol	U	10.0	ug/L	3.00	10.0
	<i>4-Chloro-3-methylphenol</i>					
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
	<i>o-Nitroaniline</i>					
99-09-2	3-Nitroaniline	U	10.0	ug/L	3.00	10.0
	<i>m-Nitroaniline</i>					
131-11-3	Dimethylphthalate	U	10.0	ug/L	3.00	10.0
606-20-2	2,6-Dinitrotoluene	U	10.0	ug/L	3.00	10.0

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	12-1236	Matrix:	WATER
Lab Sample ID:	1202646828		
Client Sample:	QC for batch 1208249	Client:	ARSL001
Client ID:	MB for batch 1208249	Method:	SW846 8270C
Batch ID:	1208252	Inst:	MSD3.I
Run Date:	05/01/2012 12:12	Analyst:	JLD1
Prep Date:	04/30/2012 18:00	Aliquot:	1000 mL
Data File:	S050112.B\3e0109.D	Column:	DB-5ms
		Project:	QC
		SOP Ref:	GL-OA-E-009
		Dilution:	1
		Inj. Vol:	1 uL
		Final Volume:	1 mL

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	U	10.0	ug/L	3.00	10.0
	<i>p</i> -Nitroaniline					
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	U	10.0	ug/L	3.00	10.0
	<i>1,2</i> -Diphenylhydrazine					
101-55-3	4-Bromophenylphenylether	U	10.0	ug/L	3.00	10.0
118-74-1	Hexachlorobenzene	U	10.0	ug/L	3.00	10.0
87-86-5	Pentachlorophenol	U	10.0	ug/L	3.00	10.0
88-85-7	Dinoseb	U	10.0	ug/L	3.00	10.0
85-01-8	Phenanthrene	U	1.00	ug/L	0.300	1.00
120-12-7	Anthracene	U	1.00	ug/L	0.300	1.00
84-74-2	Di-n-butylphthalate	U	10.0	ug/L	3.00	10.0
206-44-0	Fluoranthene	U	1.00	ug/L	0.300	1.00
129-00-0	Pyrene	U	1.00	ug/L	0.300	1.00
85-68-7	Butylbenzylphthalate	U	10.0	ug/L	3.00	10.0
117-81-7	bis(2-Ethylhexyl)phthalate	U	10.0	ug/L	3.00	10.0
56-55-3	Benzo(a)anthracene	U	1.00	ug/L	0.300	1.00
218-01-9	Chrysene	U	1.00	ug/L	0.300	1.00
117-84-0	Di-n-octylphthalate	U	10.0	ug/L	3.00	10.0
205-99-2	Benzo(b)fluoranthene	U	1.00	ug/L	0.300	1.00
207-08-9	Benzo(k)fluoranthene	U	1.00	ug/L	0.300	1.00
50-32-8	Benzo(a)pyrene	U	1.00	ug/L	0.300	1.00
193-39-5	Indeno(1,2,3-cd)pyrene	U	1.00	ug/L	0.300	1.00
53-70-3	Dibenzo(a,h)anthracene	U	1.00	ug/L	0.300	1.00
191-24-2	Benzo(ghi)perylene	U	1.00	ug/L	0.300	1.00
123-91-1	1,4-Dioxane	U	10.0	ug/L	3.00	10.0
55-18-5	N-Nitrosodiethylamine	U	10.0	ug/L	3.00	10.0
930-55-2	N-Nitrosopyrrolidine	U	10.0	ug/L	3.00	10.0

**Semi-Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 12-1236		Matrix: WATER
Lab Sample ID: 1202646828		
Client Sample: QC for batch 1208249	Client: ARSL001	Project: QC
Client ID: MB for batch 1208249	Method: SW846 8270C	SOP Ref: GL-OA-E-009
Batch ID: 1208252	Inst: MSD3.I	Dilution: 1
Run Date: 05/01/2012 12:12	Analyst: JLD1	Inj. Vol: 1 uL
Prep Date: 04/30/2012 18:00	Aliquot: 1000 mL	Final Volume: 1 mL
Data File: S050112.B\3e0109.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	105	100	105	(26%-131%)
2-Fluorobiphenyl	30.1	50.0	60.3	(29%-102%)
2-Fluorophenol	52.7	100	52.7	(15%-78%)
Nitrobenzene-d5	41.6	50.0	83.2	(36%-125%)
Phenol-d5	31.5	100	31.5	(10%-72%)
p-Terphenyl-d14	56.7	50.0	113	(31%-133%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
000109-99-9	Furan, tetrahydro-	1.827	17.9	ug/L	91	NJ

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number: 12-1236		Matrix: WATER	
Lab Sample ID: 1202646829			
Client Sample: QC for batch 1208249	Client: ARSL001	Project: QC	
Client ID: LCS for batch 1208249	Method: SW846 8270C	SOP Ref: GL-OA-E-009	
Batch ID: 1208252	Inst: MSD3.I	Dilution: 1	
Run Date: 05/01/2012 12:37	Analyst: JLD1	Inj. Vol: 1 uL	
Prep Date: 04/30/2012 18:00	Aliquot: 1000 mL	Final Volume: 1 mL	
Data File: S050112.B\3e0110.D	Column: DB-5ms		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
62-75-9	N-Methyl-N-nitrosomethylamine		18.6	ug/L	3.00	10.0
110-86-1	Pyridine		24.9	ug/L	3.00	10.0
62-53-3	Aniline		27.6	ug/L	3.00	10.0
108-95-2	Phenol		12.2	ug/L	3.00	10.0
111-44-4	bis(2-Chloroethyl) ether		29.2	ug/L	3.00	10.0
95-57-8	2-Chlorophenol		31.6	ug/L	3.00	10.0
541-73-1	1,3-Dichlorobenzene		24.0	ug/L	3.00	10.0
106-46-7	1,4-Dichlorobenzene		24.2	ug/L	3.00	10.0
95-50-1	1,2-Dichlorobenzene		24.4	ug/L	3.00	10.0
39638-32-9	bis(2-Chloroisopropyl)ether		24.1	ug/L	3.00	10.0
100-51-6	Benzyl alcohol		28.6	ug/L	3.00	10.0
95-48-7	o-Cresol		26.2	ug/L	3.00	10.0
65794-96-9	m,p-Cresols		27.7	ug/L	3.00	10.0
621-64-7	N-Nitrosodi--n-propylamine		30.2	ug/L	3.00	10.0
	<i>N-Nitrosodipropylamine</i>					
67-72-1	Hexachloroethane		22.2	ug/L	3.00	10.0
98-95-3	Nitrobenzene		31.9	ug/L	3.00	10.0
78-59-1	Isophorone		37.0	ug/L	3.00	10.0
88-75-5	2-Nitrophenol		35.7	ug/L	3.00	10.0
105-67-9	2,4-Dimethylphenol		33.5	ug/L	3.00	10.0
111-91-1	bis(2-Chloroethoxy)methane		37.7	ug/L	3.00	10.0
120-83-2	2,4-Dichlorophenol		34.6	ug/L	3.00	10.0
65-85-0	Benzoic acid		21.2	ug/L	6.00	20.0
106-47-8	4-Chloroaniline		38.5	ug/L	3.00	10.0
87-68-3	Hexachlorobutadiene		23.9	ug/L	3.00	10.0
59-50-7	Parachlorometa cresol		33.9	ug/L	3.00	10.0
	<i>4-Chloro-3-methylphenol</i>					
91-57-6	2-Methylnaphthalene		32.1	ug/L	0.300	1.00
91-20-3	Naphthalene		31.3	ug/L	0.300	1.00
90-12-0	1-Methylnaphthalene		33.4	ug/L	0.300	1.00
77-47-4	Hexachlorocyclopentadiene		16.0	ug/L	3.00	10.0
88-06-2	2,4,6-Trichlorophenol		39.0	ug/L	3.00	10.0
95-95-4	2,4,5-Trichlorophenol		38.4	ug/L	3.00	10.0
91-58-7	2-Chloronaphthalene		30.6	ug/L	0.300	1.00
88-74-4	2-Nitroaniline		32.7	ug/L	3.00	10.0
	<i>o-Nitroaniline</i>					
99-09-2	3-Nitroaniline		37.3	ug/L	3.00	10.0
	<i>m-Nitroaniline</i>					
131-11-3	Dimethylphthalate		39.5	ug/L	3.00	10.0
606-20-2	2,6-Dinitrotoluene		40.8	ug/L	3.00	10.0

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number: 12-1236		Matrix: WATER	
Lab Sample ID: 1202646829			
Client Sample: QC for batch 1208249	Client: ARSL001	Project: QC	
Client ID: LCS for batch 1208249	Method: SW846 8270C	SOP Ref: GL-OA-E-009	
Batch ID: 1208252	Inst: MSD3.I	Dilution: 1	
Run Date: 05/01/2012 12:37	Analyst: JLD1	Inj. Vol: 1 uL	
Prep Date: 04/30/2012 18:00	Aliquot: 1000 mL	Final Volume: 1 mL	
Data File: S050112.B\3e0110.D	Column: DB-5ms		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
121-14-2	2,4-Dinitrotoluene		39.7	ug/L	3.00	10.0
208-96-8	Acenaphthylene		37.2	ug/L	0.300	1.00
83-32-9	Acenaphthene		35.1	ug/L	0.300	1.00
51-28-5	2,4-Dinitrophenol		29.3	ug/L	5.00	20.0
132-64-9	Dibenzofuran		35.7	ug/L	3.00	10.0
58-90-2	2,3,4,6-Tetrachlorophenol		36.2	ug/L	3.00	10.0
84-66-2	Diethylphthalate		38.2	ug/L	3.00	10.0
100-02-7	4-Nitrophenol		11.5	ug/L	3.00	10.0
86-73-7	Fluorene		39.0	ug/L	0.300	1.00
7005-72-3	4-Chlorophenylphenylether		37.9	ug/L	3.00	10.0
100-01-6	4-Nitroaniline		38.0	ug/L	3.00	10.0
	<i>p</i> -Nitroaniline					
534-52-1	2-Methyl-4,6-dinitrophenol		36.9	ug/L	3.00	10.0
122-39-4	Diphenylamine		40.6	ug/L	3.00	10.0
122-66-7	Azobenzene		33.1	ug/L	3.00	10.0
	<i>1,2-Diphenylhydrazine</i>					
101-55-3	4-Bromophenylphenylether		42.6	ug/L	3.00	10.0
118-74-1	Hexachlorobenzene		37.4	ug/L	3.00	10.0
87-86-5	Pentachlorophenol		32.3	ug/L	3.00	10.0
88-85-7	Dinoseb	U	10.0	ug/L	3.00	10.0
85-01-8	Phenanthrene		40.7	ug/L	0.300	1.00
120-12-7	Anthracene		39.7	ug/L	0.300	1.00
84-74-2	Di-n-butylphthalate		35.8	ug/L	3.00	10.0
206-44-0	Fluoranthene		39.1	ug/L	0.300	1.00
129-00-0	Pyrene		49.8	ug/L	0.300	1.00
85-68-7	Butylbenzylphthalate		41.2	ug/L	3.00	10.0
117-81-7	bis(2-Ethylhexyl)phthalate		39.0	ug/L	3.00	10.0
56-55-3	Benzo(a)anthracene		41.8	ug/L	0.300	1.00
218-01-9	Chrysene		48.3	ug/L	0.300	1.00
117-84-0	Di-n-octylphthalate		34.5	ug/L	3.00	10.0
205-99-2	Benzo(b)fluoranthene		44.2	ug/L	0.300	1.00
207-08-9	Benzo(k)fluoranthene		44.0	ug/L	0.300	1.00
50-32-8	Benzo(a)pyrene		41.6	ug/L	0.300	1.00
193-39-5	Indeno(1,2,3-cd)pyrene		48.6	ug/L	0.300	1.00
53-70-3	Dibenzo(a,h)anthracene		62.9	ug/L	0.300	1.00
191-24-2	Benzo(ghi)perylene		45.1	ug/L	0.300	1.00
123-91-1	1,4-Dioxane		20.0	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		34.1	ug/L	3.00	10.0

**Semi-Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 12-1236		Matrix: WATER
Lab Sample ID: 1202646829		
Client Sample: QC for batch 1208249	Client: ARSL001	Project: QC
Client ID: LCS for batch 1208249	Method: SW846 8270C	SOP Ref: GL-OA-E-009
Batch ID: 1208252	Inst: MSD3.I	Dilution: 1
Run Date: 05/01/2012 12:37	Analyst: JLD1	Inj. Vol: 1 uL
Prep Date: 04/30/2012 18:00	Aliquot: 1000 mL	Final Volume: 1 mL
Data File: S050112.B\3e0110.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		30.2	ug/L	3.00	10.0
608-93-5	Pentachlorobenzene	U	10.0	ug/L	3.00	10.0
1912-24-9	Atrazine		38.7	ug/L	3.00	10.0
92-87-5	Benzidine		51.8	ug/L	3.00	10.0
91-94-1	3,3'-Dichlorobenzidine		36.3	ug/L	3.00	10.0
120-82-1	1,2,4-Trichlorobenzene		25.1	ug/L	3.00	10.0

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
2,4,6-Tribromophenol	86.9	100	ug/L 86.9	(26%-131%)
2-Fluorobiphenyl	29.6	50.0	ug/L 59.3	(29%-102%)
2-Fluorophenol	40.8	100	ug/L 40.8	(15%-78%)
Nitrobenzene-d5	30.6	50.0	ug/L 61.1	(36%-125%)
Phenol-d5	25.4	100	ug/L 25.4	(10%-72%)
p-Terphenyl-d14	44.8	50.0	ug/L 89.6	(31%-133%)

**Semi-Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 12-1236	Date Collected: 04/23/2012 11:45	Matrix: W
Lab Sample ID: 1202646830	Date Received: 04/25/2012 09:00	
Client Sample: QC for batch 1208249	Client: ARSL001	Project: QC
Client ID: CAPA-12-13277MS	Method: SW846 8270C	SOP Ref: GL-OA-E-009
Batch ID: 1208252	Inst: MSD3.I	Dilution: 1
Run Date: 05/01/2012 16:47	Analyst: JLD1	Inj. Vol: 1 uL
Prep Date: 04/30/2012 18:00	Aliquot: 350 mL	Final Volume: 1 mL
Data File: S050112.B\3e0120.D	Column: DB-5ms	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
62-75-9	N-Methyl-N-nitrosomethylamine		65.1	ug/L	8.57	28.6
110-86-1	Pyridine		63.3	ug/L	8.57	28.6
62-53-3	Aniline		54.1	ug/L	8.57	28.6
108-95-2	Phenol		55.9	ug/L	8.57	28.6
111-44-4	bis(2-Chloroethyl) ether		77.1	ug/L	8.57	28.6
95-57-8	2-Chlorophenol		81.6	ug/L	8.57	28.6
541-73-1	1,3-Dichlorobenzene		48.1	ug/L	8.57	28.6
106-46-7	1,4-Dichlorobenzene		49.4	ug/L	8.57	28.6
95-50-1	1,2-Dichlorobenzene		51.1	ug/L	8.57	28.6
39638-32-9	bis(2-Chloroisopropyl)ether		62.9	ug/L	8.57	28.6
100-51-6	Benzyl alcohol		82.9	ug/L	8.57	28.6
95-48-7	o-Cresol		76.1	ug/L	8.57	28.6
65794-96-9	m,p-Cresols		84.1	ug/L	8.57	28.6
621-64-7	N-Nitrosodi--n-propylamine		75.7	ug/L	8.57	28.6
	<i>N-Nitrosodipropylamine</i>					
67-72-1	Hexachloroethane		40.6	ug/L	8.57	28.6
98-95-3	Nitrobenzene		88.7	ug/L	8.57	28.6
78-59-1	Isophorone		93.2	ug/L	8.57	28.6
88-75-5	2-Nitrophenol		87.3	ug/L	8.57	28.6
105-67-9	2,4-Dimethylphenol		86.8	ug/L	8.57	28.6
111-91-1	bis(2-Chloroethoxy)methane		96.1	ug/L	8.57	28.6
120-83-2	2,4-Dichlorophenol		85.2	ug/L	8.57	28.6
65-85-0	Benzoic acid		127	ug/L	17.1	57.1
106-47-8	4-Chloroaniline		84.6	ug/L	8.57	28.6
87-68-3	Hexachlorobutadiene		42.3	ug/L	8.57	28.6
59-50-7	Parachlorometa cresol		85.9	ug/L	8.57	28.6
	<i>4-Chloro-3-methylphenol</i>					
91-57-6	2-Methylnaphthalene		68.6	ug/L	0.857	2.86
91-20-3	Naphthalene		71.6	ug/L	0.857	2.86
90-12-0	1-Methylnaphthalene		72.7	ug/L	0.857	2.86
77-47-4	Hexachlorocyclopentadiene		28.9	ug/L	8.57	28.6
88-06-2	2,4,6-Trichlorophenol		83.9	ug/L	8.57	28.6
95-95-4	2,4,5-Trichlorophenol		83.8	ug/L	8.57	28.6
91-58-7	2-Chloronaphthalene		61.5	ug/L	0.857	2.86
88-74-4	2-Nitroaniline		66.9	ug/L	8.57	28.6
	<i>o-Nitroaniline</i>					
99-09-2	3-Nitroaniline		91.5	ug/L	8.57	28.6
	<i>m-Nitroaniline</i>					
131-11-3	Dimethylphthalate		96.7	ug/L	8.57	28.6
606-20-2	2,6-Dinitrotoluene		97.6	ug/L	8.57	28.6

**Semi-Volatile
Certificate of Analysis
Sample Summary**

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SDG Number: 12-1236	Date Collected: 04/23/2012 11:45	Matrix: W
Lab Sample ID: 1202646830	Date Received: 04/25/2012 09:00	
Client Sample: QC for batch 1208249	Client: ARSL001	Project: QC
Client ID: CAPA-12-13277MS	Method: SW846 8270C	SOP Ref: GL-OA-E-009
Batch ID: 1208252	Inst: MSD3.I	Dilution: 1
Run Date: 05/01/2012 16:47	Analyst: JLD1	Inj. Vol: 1 uL
Prep Date: 04/30/2012 18:00	Aliquot: 350 mL	Final Volume: 1 mL
Data File: S050112.B\3e0120.D	Column: DB-5ms	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
121-14-2	2,4-Dinitrotoluene		93.5	ug/L	8.57	28.6
208-96-8	Acenaphthylene		78.1	ug/L	0.857	2.86
83-32-9	Acenaphthene		69.9	ug/L	0.857	2.86
51-28-5	2,4-Dinitrophenol		60.0	ug/L	14.3	57.1
132-64-9	Dibenzofuran		72.9	ug/L	8.57	28.6
58-90-2	2,3,4,6-Tetrachlorophenol		78.5	ug/L	8.57	28.6
84-66-2	Diethylphthalate		93.8	ug/L	8.57	28.6
100-02-7	4-Nitrophenol		55.2	ug/L	8.57	28.6
86-73-7	Fluorene		78.9	ug/L	0.857	2.86
7005-72-3	4-Chlorophenylphenylether		75.7	ug/L	8.57	28.6
100-01-6	4-Nitroaniline		73.1	ug/L	8.57	28.6
	<i>p</i> -Nitroaniline					
534-52-1	2-Methyl-4,6-dinitrophenol		75.3	ug/L	8.57	28.6
122-39-4	Diphenylamine		88.2	ug/L	8.57	28.6
122-66-7	Azobenzene		69.1	ug/L	8.57	28.6
	<i>1,2-Diphenylhydrazine</i>					
101-55-3	4-Bromophenylphenylether		86.2	ug/L	8.57	28.6
118-74-1	Hexachlorobenzene		80.6	ug/L	8.57	28.6
87-86-5	Pentachlorophenol		68.1	ug/L	8.57	28.6
88-85-7	Dinoseb	U	28.6	ug/L	8.57	28.6
85-01-8	Phenanthrene		84.2	ug/L	0.857	2.86
120-12-7	Anthracene		82.7	ug/L	0.857	2.86
84-74-2	Di-n-butylphthalate		77.5	ug/L	8.57	28.6
206-44-0	Fluoranthene		80.3	ug/L	0.857	2.86
129-00-0	Pyrene		98.4	ug/L	0.857	2.86
85-68-7	Butylbenzylphthalate		85.8	ug/L	8.57	28.6
117-81-7	bis(2-Ethylhexyl)phthalate		83.4	ug/L	8.57	28.6
56-55-3	Benzo(a)anthracene		86.7	ug/L	0.857	2.86
218-01-9	Chrysene		101	ug/L	0.857	2.86
117-84-0	Di-n-octylphthalate		78.5	ug/L	8.57	28.6
205-99-2	Benzo(b)fluoranthene		89.7	ug/L	0.857	2.86
207-08-9	Benzo(k)fluoranthene		91.1	ug/L	0.857	2.86
50-32-8	Benzo(a)pyrene		86.4	ug/L	0.857	2.86
193-39-5	Indeno(1,2,3-cd)pyrene		94.6	ug/L	0.857	2.86
53-70-3	Dibenzo(a,h)anthracene		93.7	ug/L	0.857	2.86
191-24-2	Benzo(ghi)perylene		93.5	ug/L	0.857	2.86
123-91-1	1,4-Dioxane	E	699	ug/L	8.57	28.6
55-18-5	N-Nitrosodiethylamine	U	28.6	ug/L	8.57	28.6
930-55-2	N-Nitrosopyrrolidine		89.2	ug/L	8.57	28.6

**Semi-Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 12-1236	Date Collected: 04/23/2012 11:45	Matrix: W
Lab Sample ID: 1202646830	Date Received: 04/25/2012 09:00	
Client Sample: QC for batch 1208249	Client: ARSL001	Project: QC
Client ID: CAPA-12-13277MS	Method: SW846 8270C	SOP Ref: GL-OA-E-009
Batch ID: 1208252	Inst: MSD3.I	Dilution: 1
Run Date: 05/01/2012 16:47	Analyst: JLD1	Inj. Vol: 1 uL
Prep Date: 04/30/2012 18:00	Aliquot: 350 mL	Final Volume: 1 mL
Data File: S050112.B\3e0120.D	Column: DB-5ms	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
924-16-3	N-Nitrosodi-n-butylamine	U	28.6	ug/L	8.57	28.6
95-94-3	1,2,4,5-Tetrachlorobenzene		57.3	ug/L	8.57	28.6
608-93-5	Pentachlorobenzene	U	28.6	ug/L	8.57	28.6
1912-24-9	Atrazine		88.3	ug/L	8.57	28.6
92-87-5	Benzidine		39.0	ug/L	8.57	28.6
91-94-1	3,3'-Dichlorobenzidine		64.7	ug/L	8.57	28.6
120-82-1	1,2,4-Trichlorobenzene		50.6	ug/L	8.57	28.6

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
2,4,6-Tribromophenol	203	286	ug/L	71.2	(26%-131%)
2-Fluorobiphenyl	83.6	143	ug/L	58.5	(29%-102%)
2-Fluorophenol	151	286	ug/L	52.9	(15%-78%)
Nitrobenzene-d5	87.5	143	ug/L	61.3	(36%-125%)
Phenol-d5	123	286	ug/L	43.0	(10%-72%)
p-Terphenyl-d14	96.6	143	ug/L	67.6	(31%-133%)

**Semi-Volatile
Certificate of Analysis
Sample Summary**

Page 1 of 3

SDG Number: 12-1236	Date Collected: 04/23/2012 11:45	Matrix: W
Lab Sample ID: 1202646831	Date Received: 04/25/2012 09:00	
Client Sample: QC for batch 1208249	Client: ARSL001	Project: QC
Client ID: CAPA-12-13277MSD	Method: SW846 8270C	SOP Ref: GL-OA-E-009
Batch ID: 1208252	Inst: MSD3.I	Dilution: 1
Run Date: 05/01/2012 17:11	Analyst: JLD1	Inj. Vol: 1 uL
Prep Date: 04/30/2012 18:00	Aliquot: 350 mL	Final Volume: 1 mL
Data File: S050112.B\3e0121.D	Column: DB-5ms	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
62-75-9	N-Methyl-N-nitrosomethylamine		79.0	ug/L	8.57	28.6
110-86-1	Pyridine		74.1	ug/L	8.57	28.6
62-53-3	Aniline		66.1	ug/L	8.57	28.6
108-95-2	Phenol		66.7	ug/L	8.57	28.6
111-44-4	bis(2-Chloroethyl) ether		95.1	ug/L	8.57	28.6
95-57-8	2-Chlorophenol		98.5	ug/L	8.57	28.6
541-73-1	1,3-Dichlorobenzene		67.8	ug/L	8.57	28.6
106-46-7	1,4-Dichlorobenzene		68.4	ug/L	8.57	28.6
95-50-1	1,2-Dichlorobenzene		69.7	ug/L	8.57	28.6
39638-32-9	bis(2-Chloroisopropyl)ether		77.3	ug/L	8.57	28.6
100-51-6	Benzyl alcohol		101	ug/L	8.57	28.6
95-48-7	o-Cresol		92.6	ug/L	8.57	28.6
65794-96-9	m,p-Cresols		103	ug/L	8.57	28.6
621-64-7	N-Nitrosodi--n-propylamine		93.9	ug/L	8.57	28.6
	<i>N-Nitrosodipropylamine</i>					
67-72-1	Hexachloroethane		60.4	ug/L	8.57	28.6
98-95-3	Nitrobenzene		106	ug/L	8.57	28.6
78-59-1	Isophorone		112	ug/L	8.57	28.6
88-75-5	2-Nitrophenol		102	ug/L	8.57	28.6
105-67-9	2,4-Dimethylphenol		102	ug/L	8.57	28.6
111-91-1	bis(2-Chloroethoxy)methane		116	ug/L	8.57	28.6
120-83-2	2,4-Dichlorophenol		100	ug/L	8.57	28.6
65-85-0	Benzoic acid		150	ug/L	17.1	57.1
106-47-8	4-Chloroaniline		106	ug/L	8.57	28.6
87-68-3	Hexachlorobutadiene		63.9	ug/L	8.57	28.6
59-50-7	Parachlorometa cresol		104	ug/L	8.57	28.6
	<i>4-Chloro-3-methylphenol</i>					
91-57-6	2-Methylnaphthalene		92.3	ug/L	0.857	2.86
91-20-3	Naphthalene		92.1	ug/L	0.857	2.86
90-12-0	1-Methylnaphthalene		96.2	ug/L	0.857	2.86
77-47-4	Hexachlorocyclopentadiene		45.5	ug/L	8.57	28.6
88-06-2	2,4,6-Trichlorophenol		96.4	ug/L	8.57	28.6
95-95-4	2,4,5-Trichlorophenol		99.1	ug/L	8.57	28.6
91-58-7	2-Chloronaphthalene		85.5	ug/L	0.857	2.86
88-74-4	2-Nitroaniline		86.7	ug/L	8.57	28.6
	<i>o-Nitroaniline</i>					
99-09-2	3-Nitroaniline		118	ug/L	8.57	28.6
	<i>m-Nitroaniline</i>					
131-11-3	Dimethylphthalate		121	ug/L	8.57	28.6
606-20-2	2,6-Dinitrotoluene		126	ug/L	8.57	28.6

**Semi-Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 12-1236	Date Collected: 04/23/2012 11:45	Matrix: W
Lab Sample ID: 1202646831	Date Received: 04/25/2012 09:00	
Client Sample: QC for batch 1208249	Client: ARSL001	Project: QC
Client ID: CAPA-12-13277MSD	Method: SW846 8270C	SOP Ref: GL-OA-E-009
Batch ID: 1208252	Inst: MSD3.I	Dilution: 1
Run Date: 05/01/2012 17:11	Analyst: JLD1	Inj. Vol: 1 uL
Prep Date: 04/30/2012 18:00	Aliquot: 350 mL	Final Volume: 1 mL
Data File: S050112.B\3e0121.D	Column: DB-5ms	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
121-14-2	2,4-Dinitrotoluene		122	ug/L	8.57	28.6
208-96-8	Acenaphthylene		106	ug/L	0.857	2.86
83-32-9	Acenaphthene		95.8	ug/L	0.857	2.86
51-28-5	2,4-Dinitrophenol		72.6	ug/L	14.3	57.1
132-64-9	Dibenzofuran		100	ug/L	8.57	28.6
58-90-2	2,3,4,6-Tetrachlorophenol		90.1	ug/L	8.57	28.6
84-66-2	Diethylphthalate		118	ug/L	8.57	28.6
100-02-7	4-Nitrophenol		64.6	ug/L	8.57	28.6
86-73-7	Fluorene		110	ug/L	0.857	2.86
7005-72-3	4-Chlorophenylphenylether		105	ug/L	8.57	28.6
100-01-6	4-Nitroaniline		96.9	ug/L	8.57	28.6
	<i>p</i> -Nitroaniline					
534-52-1	2-Methyl-4,6-dinitrophenol		86.1	ug/L	8.57	28.6
122-39-4	Diphenylamine		119	ug/L	8.57	28.6
122-66-7	Azobenzene		93.8	ug/L	8.57	28.6
	<i>1,2-Diphenylhydrazine</i>					
101-55-3	4-Bromophenylphenylether		120	ug/L	8.57	28.6
118-74-1	Hexachlorobenzene		108	ug/L	8.57	28.6
87-86-5	Pentachlorophenol		79.5	ug/L	8.57	28.6
88-85-7	Dinoseb	U	28.6	ug/L	8.57	28.6
85-01-8	Phenanthrene		116	ug/L	0.857	2.86
120-12-7	Anthracene		113	ug/L	0.857	2.86
84-74-2	Di-n-butylphthalate		101	ug/L	8.57	28.6
206-44-0	Fluoranthene		104	ug/L	0.857	2.86
129-00-0	Pyrene		137	ug/L	0.857	2.86
85-68-7	Butylbenzylphthalate		113	ug/L	8.57	28.6
117-81-7	bis(2-Ethylhexyl)phthalate		107	ug/L	8.57	28.6
56-55-3	Benzo(a)anthracene		116	ug/L	0.857	2.86
218-01-9	Chrysene		137	ug/L	0.857	2.86
117-84-0	Di-n-octylphthalate		99.8	ug/L	8.57	28.6
205-99-2	Benzo(b)fluoranthene		124	ug/L	0.857	2.86
207-08-9	Benzo(k)fluoranthene		123	ug/L	0.857	2.86
50-32-8	Benzo(a)pyrene		117	ug/L	0.857	2.86
193-39-5	Indeno(1,2,3-cd)pyrene		125	ug/L	0.857	2.86
53-70-3	Dibenzo(a,h)anthracene		122	ug/L	0.857	2.86
191-24-2	Benzo(ghi)perylene		123	ug/L	0.857	2.86
123-91-1	1,4-Dioxane	E	881	ug/L	8.57	28.6
55-18-5	N-Nitrosodiethylamine	U	28.6	ug/L	8.57	28.6
930-55-2	N-Nitrosopyrrolidine		108	ug/L	8.57	28.6

**Semi-Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 12-1236	Date Collected: 04/23/2012 11:45	Matrix: W
Lab Sample ID: 1202646831	Date Received: 04/25/2012 09:00	
Client Sample: QC for batch 1208249	Client: ARSL001	Project: QC
Client ID: CAPA-12-13277MSD	Method: SW846 8270C	SOP Ref: GL-OA-E-009
Batch ID: 1208252	Inst: MSD3.I	Dilution: 1
Run Date: 05/01/2012 17:11	Analyst: JLD1	Inj. Vol: 1 uL
Prep Date: 04/30/2012 18:00	Aliquot: 350 mL	Final Volume: 1 mL
Data File: S050112.B\3e0121.D	Column: DB-5ms	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
924-16-3	N-Nitrosodi-n-butylamine	U	28.6	ug/L	8.57	28.6
95-94-3	1,2,4,5-Tetrachlorobenzene		82.1	ug/L	8.57	28.6
608-93-5	Pentachlorobenzene	U	28.6	ug/L	8.57	28.6
1912-24-9	Atrazine		110	ug/L	8.57	28.6
92-87-5	Benzidine		36.8	ug/L	8.57	28.6
91-94-1	3,3'-Dichlorobenzidine		84.7	ug/L	8.57	28.6
120-82-1	1,2,4-Trichlorobenzene		70.1	ug/L	8.57	28.6

Surrogate/Tracer recovery	Result	Nominal		Recovery%	Acceptable Limits
2,4,6-Tribromophenol	227	286	ug/L	79.6	(26%-131%)
2-Fluorobiphenyl	98.8	143	ug/L	69.1	(29%-102%)
2-Fluorophenol	173	286	ug/L	60.6	(15%-78%)
Nitrobenzene-d5	103	143	ug/L	71.9	(36%-125%)
Phenol-d5	142	286	ug/L	49.7	(10%-72%)
p-Terphenyl-d14	121	143	ug/L	84.4	(31%-133%)

Miscellaneous

DATA EXCEPTION REPORT

Mo.Day Yr. 02-MAY-12	Division: Industrial	Quality Criteria: Specifications	Type: Process
Instrument Type: SEMIOVA GC/MS	Test / Method: SW846 8270C	Matrix Type: Liquid	Client Code: ESHL, LANL
Batch ID: 1208252	Sample Numbers: See Below		

Potentially affected work order(s)(SDG): 303221(12-1236),303319,303442(12-1248),303443(12-1249)

Application Issues:

- Failed Recovery for MS/PS
- Failed RPD for MS/MSD, or PS/PSD
- Failed Recovery for LCS/LCSD
- Failed Yield for Surrogates
- Failed Recovery for MSD/PSD

**Specification and Requirements
Exception Description:**

DER Disposition:

1. Sample 303319001 recovered surrogates outside of the established acceptance limits. Please see the QC Summary report for specific failures.
2. The LCS(1202646829) recovered Benzoic acid and Dibenzo(a,h)anthracene outside of the established acceptance limits. Please see the QC Summary report for specific failures.
3. The MS(1202646830) and MSD(1202646831) recovered Benzidine and 1,4-Dioxane outside of the established acceptance limits. Please see the QC Summary report for specific failures.
4. The MS(1202646830)/MSD(1202646831) pair displayed RPD values outside of the established acceptance limits. Please see the QC Summary report for specific failures.

1. Since there was insufficient sample volume remaining to perform a re-extraction, the data results have been reported.
2. The LCS(1202646829) failures represent less than 5% of the total requested spike analyte list. That satisfied the acceptance criteria for the client and the data were reported.
3. Since the MSD displayed similar spike recoveries to the MS, the failures were attributed to sample matrix interference and the data results have been reported.
4. Since the spike analytes were individually within the acceptance limits for the MS and MSD, with the exception of 1,4-Dioxane, the data results have been reported unqualified for the RPD failures.
The 1,4-Dioxane RPD failure was attributed to sample matrix interference and the data results have been reported.

Originator's Name:

Jennifer Dunagan Jones02-MAY-12

Data Validator/Group Leader:

Barbara Bailey 04-MAY-12

Perchlorates by LCMSMS Analysis

Case Narrative

**Perchlorate by LC/MSMS
ARS International (ARSL)
SDG 12-1236**

Method/Analysis Information

Procedure: **Definitive Low Level Perchlorate Analysis Utilizing Liquid Chromatography/Mass Spectrometry/Mass Spectrometry (LC/MS/MS) by EPA Method 6850 Modified (6850M)**

Analytical Method: SW846 6850 Modified

Prep Method: SW846 6850 Modified

Analytical Batch Number: 1208033

Prep Batch Number: 1208032

Sample Analysis

Sample ID	Client ID
303221003	CAPA-12-13287
1202646395	Interference Check Sample (ICS)
1202646391	Method Blank (MB)
1202646392	Laboratory Control Sample (LCS)
1202646393	303221003(CAPA-12-13287) Matrix Spike (MS)
1202646394	303221003(CAPA-12-13287) 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-067 REV# 9.

Calibration Information

Initial Calibration

All initial calibration requirements have been met for this SDG. Due to software constraints, all Initial Calibration Blanks must be designated as IPB001.

CCV Requirements

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

CCB Requirements

All continuing calibration blanks (CCB) bracketing the analyses associated with this batch were within acceptance criteria.

CCV Requirements

All continuing calibration checks (CCV) requirements were met by all bracketing CCV standards.

Low Level Standard (CRI) Requirements

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

Quality Control (QC) Information**Method Blank (MB) Statement**

The MB(s) analyzed with this SDG met the acceptance criteria.

Interference Check Sample (ICS)

The interference check sample (ICS) met all recovery acceptance criteria.

Laboratory Control Sample (LCS) Recovery

The LCS spike recoveries met the acceptance limits.

QC Sample Designation

Sample 303221003 (CAPA-12-13287) was chosen for matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement

The MS recoveries were within the established acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement

The MSD recoveries were within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement

The RPD(s) between the MS and MSD met the acceptance limits.

Retention Time Standard Area Acceptance

The retention time standard areas were within the required acceptance criteria for all samples and QC.

Retention Time

During the analysis of Perchlorate by LC/MS/MS, retention time shifts are commonly observed. These retention time shifts, which are caused by fouling of the column by the sample matrices, are problematic when the retention time is used as one of the criterion for confirmation. To overcome this problem, a known amount of O(18) labeled Perchlorate was added to each sample as a retention time standard. The presence of Perchlorate was confirmed by the relative retention time (RRT) of the Perchlorate peak and the O(18) standard. A RRT window of 0.98 to 1.02, as required by Method 332.0, has been used. In addition to the isotopic ratio, the presence of Perchlorate in the samples associated with this data package have been confirmed using the relative retention criteria stated above, not the absolute retention time.

Technical Information**Holding Time Specifications**

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

Preparation/Analytical Method Verification

All procedures were performed as stated in the SOP.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis

Re-extractions or re-analyses were not required in this SDG.

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 for this analytical batch.

Manual Integrations

Some initial calibration standards, continuing calibration standards, and/or samples may require manual integrations due to software limitations.

Method Comments

The samples in this SDG were not originally analyzed using EPA Method 314.0.

Additional Comments

The Perchlorate Isotope Ratio on the Form I may differ slightly from the ratio on the corresponding raw data due to rounding rules and/or significant figures or due to software limitations when there are manual integrations, dilutions or other factors. The ratio value of the Form I is the correct value. The retention time marker, Perchlorate-O (18), is added to all samples, instrument blanks, and standards prior to injection. It is used to verify the retention time of Perchlorate and Perchlorate-101 and to insure an accurate injection occurred. Due to various anions affecting the recovery of Perchlorate-O (18) and not Perchlorate and Perchlorate-101, the calibration curves of Perchlorate and Perchlorate-101 are not internally corrected for using Perchlorate-O (18). They are external calibrations.

Perchlorate Isotope Ratio

The Perchlorate isotope ratio met acceptance criteria for all samples and QC samples. Please see the isotope ratio criteria in the Miscellaneous Section.

System Configuration

The laboratory utilizes a Waters LC 2795 liquid chromatography instrument for perchlorate analysis. It is coupled with either a Micromass Quattro Micro Mass Spectrometer/ Mass Spectrometer, or a Micromass Quattro Ultima Mass Spectrometer/ Mass Spectrometer. Each being designated as LCMSMS #1 and LCMSMS #2, respectively. It is fitted with an electrospray probe that is operated in the negative electrospray ionization mode for perchlorate analysis. The laboratory may also utilize an Agilent 1100 liquid chromatography instrument for perchlorate analysis. It is coupled with an Applied Biosystems 4000 Mass Spectrometer/ Mass Spectrometer, designated as LCMSMS #3 or LCMSMS #4. It is also fitted with an electrospray probe that is operated in the negative electrospray ionization mode for perchlorate analysis.

Electronic Packaging Comment

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

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and

dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Chromatographic Columns

Chromatographic separation of perchlorate is accomplished through analysis on the following anion column:

Dionex: IonPac AG-16 2 x 50 mm.

Certification Statement

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

GEL LABORATORIES LLC

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

Qualifier Definition Report for

ARSL001 ARS International (63641-10)

Client SDG: 12-1236 GEL Work Order: 303221

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: 

Name: Patricia Steele

Date: 22 MAY 2012

Title: Data Validator

Sample Data Summary

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample No.

CAPA-12-13287Lab Code: GELDate Received: 25-APR-12Instrument: LCMSMSGEL Job No (SDG): 12-1236Method: SW846 6850 ModifiedGEL Sample ID: 303221003Matrix: WATERDate Filtered: 14-MAY-12Extraction Batch ID: 1208032Injection Volume (uL): 20Extraction Type: Filter/DAISample Volume/Weight: 10.0 mL

%Solids: .

Concentrated Extract Volume: 10.0

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.265	ug/L		1	14-MAY-12 18:27	per0514017a
	Perchlorate Isotope Ratio			3.16			1	14-MAY-12 18:27	per0514017a
14797-73-0	Perchlorate-101	.05	.2	0.265	ug/L		1	14-MAY-12 18:27	per0514017a
	Perchlorate-O(18)			0.581	ug/L		1	14-MAY-12 18:27	per0514017a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\% \text{Solids}}$$

Quality Control Summary

Perchlorate Laboratory Control Sample

Lab Name: General Engineering Laboratories

Lab Code: GEL

GEL Job No. (SDG): 12-1236

Extract Batch Code: 1208032

Date Filtered: 14-MAY-12

Matrix: WATER

Sample ID: 1202646392

Analyte [^]	True	Found	Units	%Rec	Q	Control Limits
Perchlorate	0.200	.186	ug/L	93.2		85 - 115
Perchlorate Isotope Ratio		3.08				-
Perchlorate-101	0.200	.191	ug/L	95.4		85 - 115
Perchlorate-O(18)		.48	ug/L			-

[^] When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

Perchlorate Spike/Spike Duplicate Summary

Lab Name: General Engineering LaboratoriesLab Code: GELGEL Job No (SDG): 12-1236Extract Batch Code: 1208032Date Extracted: 14-MAY-12GEL MS/PS ID: 1202646393Client ID: CAPA-12-13287GEL MSD/PSD ID: 1202646394QC Type: MS

Compound^	Spike Added	Sample Conc	Units	MS Conc	MS Rec #	MSD Conc	MSD Rec #	RPD #	RPD Limit	Recovery Limit
Perchlorate	0.200	0.265	ug/L	0.482	108	.511	123	5.74	30	75 - 125
Perchlorate Isotope Ratio	0	3.16		3.12		3.19		2.23		-
Perchlorate-101	0.200	0.265	ug/L	0.487	111	.504	120	3.51	30	75 - 125
Perchlorate-O(18)	0	0.581	ug/L	0.579		.6		3.68		-

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

Quality Control Data

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLCLab Code: GELInstrument: LCMSMSMethod: EPA 6850 ModifiedMatrix: WATERExtraction Batch ID: 1208032Extraction Type: Filter/DAISample Volume/Weight: 10.0 mLConcentrated Extract Volume: 10.0

Client Sample No.

MBDate Received: 14-MAY-12GEL Job No (SDG): 12-1236GEL Sample ID: 1202646391Date Filtered: 14-MAY-12Injection Volume (uL): 20

%Solids: .

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.050	ug/L	U	1	14-MAY-12 18:04	per0514014a
	Perchlorate Isotope Ratio						1	14-MAY-12 18:04	per0514014a
14797-73-0	Perchlorate-101	.05	.2	0.050	ug/L	U	1	14-MAY-12 18:04	per0514014a
	Perchlorate-O(18)			0.517	ug/L		1	14-MAY-12 18:04	per0514014a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\% \text{Solids}}$$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample No.

LCSLab Code: GELDate Received: 14-MAY-12Instrument: LCMSMSGEL Job No (SDG): 12-1236Method: EPA 6850 ModifiedGEL Sample ID: 1202646392Matrix: WATERDate Filtered: 14-MAY-12Extraction Batch ID: 1208032Injection Volume (uL): 20Extraction Type: Filter/DAISample Volume/Weight: 10.0 mL

%Solids: .

Concentrated Extract Volume: 10.0

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.186	ug/L	J	1	14-MAY-12 18:12	per0514015a
	Perchlorate Isotope Ratio			3.08			1	14-MAY-12 18:12	per0514015a
14797-73-0	Perchlorate-101	.05	.2	0.191	ug/L	J	1	14-MAY-12 18:12	per0514015a
	Perchlorate-O(18)			0.480	ug/L		1	14-MAY-12 18:12	per0514015a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\% \text{Solids}}$$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample No.

ICSLab Code: GEL

Date Received:

Instrument: LCMSMSGEL Job No (SDG): 12-1236Method: SW846 6850 ModifiedGEL Sample ID: 1202646395Matrix: WATERDate Filtered: 14-MAY-12Extraction Batch ID: 1208032Injection Volume (uL): 20Extraction Type: Filter/DAISample Volume/Weight: 10.0 mL

%Solids:

Concentrated Extract Volume: 10.0

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.226	ug/L		1	14-MAY-12 18:19	per0514016a
	Perchlorate Isotope Ratio			3.24			1	14-MAY-12 18:19	per0514016a
14797-73-0	Perchlorate-101	.05	.2	0.221	ug/L		1	14-MAY-12 18:19	per0514016a
	Perchlorate-O(18)			0.558	ug/L		1	14-MAY-12 18:19	per0514016a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\% \text{Solids}}$$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLCLab Code: GELInstrument: LCMSMSMethod: SW846 6850 ModifiedMatrix: WATERExtraction Batch ID: 1208032Extraction Type: Filter/DAISample Volume/Weight: 10.0 mLConcentrated Extract Volume: 10.0

Client Sample No.

CAPA-12-13287MSDate Received: 25-APR-12GEL Job No (SDG): 12-1236GEL Sample ID: 1202646393Date Filtered: 14-MAY-12Injection Volume (uL): 20

%Solids: .

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.482	ug/L		1	14-MAY-12 18:34	per0514018a
	Perchlorate Isotope Ratio			3.12			1	14-MAY-12 18:34	per0514018a
14797-73-0	Perchlorate-101	.05	.2	0.487	ug/L		1	14-MAY-12 18:34	per0514018a
	Perchlorate-O(18)			0.579	ug/L		1	14-MAY-12 18:34	per0514018a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\% \text{Solids}}$$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLCLab Code: GELInstrument: LCMSMSMethod: SW846 6850 ModifiedMatrix: WATERExtraction Batch ID: 1208032Extraction Type: Filter/DAISample Volume/Weight: 10.0 mLConcentrated Extract Volume: 10.0

Client Sample No.

CAPA-12-13287MSDDate Received: 25-APR-12GEL Job No (SDG): 12-1236GEL Sample ID: 1202646394Date Filtered: 14-MAY-12Injection Volume (uL): 20

%Solids: .

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.511	ug/L		1	14-MAY-12 18:42	per0514019a
	Perchlorate Isotope Ratio			3.19			1	14-MAY-12 18:42	per0514019a
14797-73-0	Perchlorate-101	.05	.2	0.504	ug/L		1	14-MAY-12 18:42	per0514019a
	Perchlorate-O(18)			0.600	ug/L		1	14-MAY-12 18:42	per0514019a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\% \text{Solids}}$$

Explosives by LCMSMS Analysis

Case Narrative

**LC/MS/MS Case Narrative
ARS International (ARSL)
SDG 12-1236**

Method/Analysis Information

Procedure: **Definitive Low Level Analysis of Nitroaromatic Explosives Utilizing Liquid Chromatography / Mass Spectrometry / Mass Spectrometry (LC/MS/MS) by SW-846 Method 8321 Modified (8321M)**

Analytical Method: SW846 3535/8321A Modified

Prep Method: SW846 Method 3535

Analytical Batch Number: 1207463

Prep Batch Number: 1207460

Sample Analysis

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

Sample ID	Client ID
303221002	CAPA-12-13277
1202644996	Method Blank (MB)
1202644997	Laboratory Control Sample (LCS)
1202644998	303221002(CAPA-12-13277) Matrix Spike (MS)
1202644999	303221002(CAPA-12-13277) Matrix Spike Duplicate (MSD)

Preparation/Analytical Method Verification

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-056 REV# 16.

Primary Analyte Analysis

Calibration Information

Initial Calibration

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

Calibration Verification Standard Requirements

The closing CCV EXP0518041.wiff did not meet acceptance criteria of 80-120% for 3-Nitrotoluene at 75.6%. The data are Q qualified according to the SOP and are reported.

Calibration Blank Requirements

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

CRI Requirements

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

Quality Control (QC) Information**Method Blank (MB) Statement**

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

Surrogate Recoveries

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

Laboratory Control Sample (LCS) Recovery

The LCS spike recoveries were within the established acceptance limits.

QC Sample Designation

Client sample 303221002 (CAPA-12-13277) was chosen for matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement

The MS spike recoveries were within the established acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement

The MSD spike recoveries were within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement

The RPD(s) between the MS and MSD met the acceptance limits for this analysis.

Internal Standard (ISTD) Acceptance

A final internal standard concentration of 100ug/L is employed in order to meet the minimum response factor requirement of 0.01 per EPA Method 8000C for the analysis of explosives on the API 4000. The internal standard responses were within the required acceptance criteria for all samples and QC in this SDG.

Technical Information**Holding Time Specifications**

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

Preparation/Analytical Method Verification

All procedures were performed as stated in the SOP.

Sample Dilutions

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

Sample Re-extraction/Re-analysis

Re-extractions or re-analyses were not required in this SDG in this analytical batch for the Primary analyte analysis.

Secondary Analyte Analysis

Calibration Information

Initial Calibration

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

Calibration Verification Standard Requirements

All associated calibration verification standards (ICV and CCV) for this analysis met the acceptance criteria.

Calibration Blank Requirements

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

CRI Requirements

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

Quality Control (QC) Information

Method Blank (MB) Statement

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

Surrogate Recoveries

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

Laboratory Control Sample (LCS) Recovery

The LCS spike recoveries were within the established acceptance limits.

QC Sample Designation

Client sample 303221002 (CAPA-12-13277) was chosen for matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement

The MS spike recoveries were within the established acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement

The MSD spike recoveries were within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement

The RPD(s) between the MS and MSD met the acceptance limits for this analysis.

Internal Standard (ISTD) Acceptance

The internal standard was not added to the Secondary analyte analysis extracts.

Technical Information

Holding Time Specifications

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

Preparation/Analytical Method Verification

All procedures were performed as stated in the SOP.

Sample Dilutions

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

Sample Re-extraction/Re-analysis

Re-extractions or re-analyses were not required in this SDG in this analytical batch for the Secondary analyte 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.

Manual Integrations

Some initial calibration standards, continuing calibration standards, and/or samples may require manual integrations due to software limitations.

Flagging Convention

The samples were not originally analyzed using SW-846 Method 8330.

Additional Comments

Due to software limitations, all initial calibration blanks must be designated as XIB001 in order for the forms to be correct. Due to software limitations in the Secondary analyte analysis, false positives and analytes detected below the MDL cannot be deleted from the raw data. Due to software limitations, file extensions such as DL, RE, etc. may not appear on the generated forms and/or raw data.

System Configuration

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

Electronic Packaging Comment

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

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Chromatographic Columns

The detection of the Primary analyte Nitroaromatic and Nitramines is accomplished through analysis on the following reversed phase column:

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

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

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

Certification Statement

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

GEL LABORATORIES LLC

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

Qualifier Definition Report for

ARSL001 ARS International (63641-10)

Client SDG: 12-1236 GEL Work Order: 303221

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
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- 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: 

Name: Michael Penny

Date: 22 MAY 2012

Title: Group Leader

Sample Data Summary

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAPA-12-13277

Lab Code: GEL

GEL Job No (SDG) 12-1236

Matrix: WATER

GEL Sample ID: 303221002

Sample Amount 815 mL

Date Received: 25-APR-12

Moisture:

Extraction Batch ID: 1207460

Extraction Type Sol Exchange

Date Extracted: 27-APR-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

GEL data file: EXP0518037.wiff

Date Analyzed: 19-MAY-12 12:34

Dilution Factor: 2

Concentration Units: ug/L

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	0.307	U	0.0982	0.307
<i>118-96-7</i>	<i>2,4,6-Trinitrotoluene</i>				
121-14-2	2,4-Dinitrotoluene	0.307	U	0.0982	0.307
<i>121-14-2</i>	<i>2,4-Dinitrotoluene</i>				
121-82-4	RDX	0.307	U	0.0982	0.307
<i>121-82-4</i>	<i>RDX</i>				
13980-04-6	TNX	0.307	U	0.0982	0.307
<i>13980-04-6</i>	<i>TNX</i>				
19406-51-0	4-Amino-2,6-dinitrotoluene	0.307	U	0.0982	0.307
<i>19406-51-0</i>	<i>4-Amino-2,6-dinitrotoluene</i>				
2691-41-0	HMX	0.307	U	0.0982	0.307
<i>2691-41-0</i>	<i>HMX</i>				
35572-78-2	2-Amino-4,6-dinitrotoluene	0.307	U	0.0982	0.307
<i>35572-78-2</i>	<i>2-Amino-4,6-dinitrotoluene</i>				
5755-27-1	MNX	0.307	U	0.0982	0.307
<i>5755-27-1</i>	<i>MNX</i>				
606-20-2	2,6-Dinitrotoluene	0.307	U	0.0982	0.307
<i>606-20-2</i>	<i>2,6-Dinitrotoluene</i>				
80251-29-2	DNX	0.307	U	0.0982	0.307
<i>80251-29-2</i>	<i>DNX</i>				
88-72-2	o-Nitrotoluene	0.307	U	0.101	0.307
<i>88-72-2</i>	<i>o-Nitrotoluene</i>				
98-95-3	Nitrobenzene	0.307	U	0.0982	0.307
<i>98-95-3</i>	<i>Nitrobenzene</i>				
99-08-1	m-Nitrotoluene	0.307	QU	0.0982	0.307
<i>99-08-1</i>	<i>m-Nitrotoluene</i>				

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAPA-12-13277

Lab Code: GEL

GEL Job No (SDG) 12-1236

Matrix: WATER

GEL Sample ID: 303221002

Sample Amount 815 mL

Date Received: 25-APR-12

Moisture: .

Extraction Batch ID: 1207460

Extraction Type Sol Exchange

Date Extracted: 27-APR-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-35-4 99-35-4	1,3,5-Trinitrobenzene <i>1,3,5-Trinitrobenzene</i>	0.307	U	0.0982	0.307
99-65-0 99-65-0	m-Dinitrobenzene <i>m-Dinitrobenzene</i>	0.307	U	0.0982	0.307
479-45-8 479-45-8	Tetryl <i>Tetryl</i>	0.613	U	0.0982	0.613
78-11-5 78-11-5	PETN <i>PETN</i>	0.613	U	0.123	0.613
99-99-0 99-99-0	p-Nitrotoluene <i>p-Nitrotoluene</i>	0.613	U	0.184	0.613

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAPA-12-13277

Lab Code: GEL

GEL Job No (SDG) 12-1236

Matrix: WATER

GEL Sample ID: 303221002

Sample Amount 815 mL

Date Received: 25-APR-12

Moisture: .

Extraction Batch ID: 1207460

Extraction Type Sol Exchange

Date Extracted: 27-APR-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

GEL data file: EXS05010016.wiff

Date Analyzed: 01-MAY-12 18:31

Dilution Factor: 2

Concentration Units: ug/L

Cas No.	Compound	Concentration*	Q	MDL	PQL
3058-38-6 3058-38-6	TATB <i>TATB</i>	1.23	U	0.368	1.23
618-87-1 618-87-1	3,5-Dinitroaniline <i>3,5-Dinitroaniline</i>	1.23	U	0.368	1.23
78-30-8 78-30-8	tris(o-cresyl) phosphate <i>tris(o-cresyl) phosphate</i>	1.23	U	0.368	1.23
59229-75-3 59229-75-3	2,6-Diamino-4-nitrotoluene <i>2,6-Diamino-4-nitrotoluene</i>	3.07	U	0.613	3.07
6629-29-4 6629-29-4	2,4-Diamino-6-nitrotoluene <i>2,4-Diamino-6-nitrotoluene</i>	3.07	U	0.613	3.07

Quality Control Summary

High Explosives Surrogate Recovery Summary

Lab Name: GEL Laboratories LLCGEL Job No (SDG): 12-1236Lab Code: GELHPLC Column: Phenomenex Ultracarb 5u ODS(20)

Lab Sample ID	Client Sample ID	DNT	QC Limits	Flg
303221002	CAPA-12-13277	103	68 - 122	
303221002	CAPA-12-13277	85.6	68 - 122	
1202644996	MB for batch 1207460	94	68 - 122	
1202644996	MB for batch 1207460	87.6	68 - 122	
1202644997	LCS for batch 1207460	105	68 - 122	
1202644997	LCS for batch 1207460	89.2	68 - 122	
1202644998	CAPA-12-13277(303221002MS)	103	68 - 122	
1202644998	CAPA-12-13277(303221002MS)	91.2	68 - 122	
1202644999	CAPA-12-13277(303221002MSD)	92.8	68 - 122	
1202644999	CAPA-12-13277(303221002MSD)	93.2	68 - 122	

DNT = 3,4-Dinitrotoluene

3B
High Explosives LCS/LCS Duplicate Summary

Lab Name: GEL Laboratories LLC

Client ID: LCS

Lab Code: GEL

GEL Job No (SDG) 12-1236

Extract Batch Code: 1207460

Date Extracted: 27-APR-12

GEL LCS ID: 1202644997

GEL LCSDUP ID:

Analysis Date/Time: 19-MAY-12 11:59

DUP Analysis Date/Time:

Reporting Units: ug/L

QC Type: LCS/LCSD

Compound	Spike Added	LCS Conc	LCS Rec #	LCSD Conc	LCSD Rec #	RPD #	RPD	Recovery Limits
m-Nitrotoluene	5	3.6	72					63 - 109
o-Nitrotoluene	5	4.07	81.4					61 - 109
p-Nitrotoluene	5	3.56	71.2					64 - 112
2,4-Dinitrotoluene	5	4.99	99.8					78 - 125
2,4,6-Trinitrotoluene	5	5.11	102					77 - 132
1,3,5-Trinitrobenzene	5	4.41	88.2					60 - 115
2,6-Dinitrotoluene	5	4.27	85.4					82 - 111
4-Amino-2,6-dinitrotoluene	5	5.18	104					78 - 125
HMX	5	4.88	97.6					65 - 112
m-Dinitrobenzene	5	4.47	89.4					86 - 119
Tetryl	5	4.28	85.6					38 - 150
TNX	5	4.02	80.4					66 - 118
RDX	5	4.86	97.2					79 - 128
PETN	5	5.06	101					61 - 138
Nitrobenzene	5	3.61	72.2					63 - 110
MNX	5	4.67	93.4					68 - 129
DNX	5	4.75	95					73 - 117
2-Amino-4,6-dinitrotoluene	5	4.98	99.6					75 - 129

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

* Values outside of QC limits

3B
High Explosives LCS/LCS Duplicate Summary

Lab Name: GEL Laboratories LLC

Client ID: LCS

Lab Code: GEL

GEL Job No (SDG) 12-1236

Extract Batch Code: 1207460

Date Extracted: 27-APR-12

GEL LCS ID: 1202644997

GEL LCSDUP ID:

Analysis Date/Time: 01-MAY-12 18:14

DUP Analysis Date/Time:

Reporting Units: ug/L

QC Type: LCS/LCSD

Compound	Spike Added	LCS Conc	LCS Rec #	LCSD Conc	LCSD Rec #	RPD #	RPD	Recovery Limits
2,4-Diamino-6-nitrotoluene	5	4.1	82					49 - 112
2,6-Diamino-4-nitrotoluene	5	4.31	86.2					61 - 116
3,5-Dinitroaniline	5	4.29	85.8					66 - 119
TATB	5	3.27	65.4					32 - 169
tris(o-cresyl) phosphate	5	2.92	58.4					38 - 87

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

* Values outside of QC limits

3
High Explosives MS/MSD Summary

Lab Name: GEL Laboratories LLC

Client ID: CAPA-12-13277

Lab Code: GEL

GEL Job No (SDG) 12-1236

Extract Batch Code: 1207460

Date Extracted: 27-APR-12

GEL Spike ID: 1202644998

GEL SpikeDup ID: 1202644999

Analysis Date/Time: 19-MAY-12 13:09

MSD Analysis Date/Time: 19-MAY-12 13:44

Reporting Units: ug/L

QC Type: MS/MSD

Compound	Spike Added	Sample Conc	MS Conc	MS Rec #	MSD Conc	MSD Rec #	RPD #	RPD Limit	Rec Limits
1,3,5-Trinitrobenzene	6.25	0	5.3	84.8	5.01	87.6	5.71	25	58 - 114
2,4,6-Trinitrotoluene	6.25	0	6.15	98.4	5.25	91.8	15.9	25	65 - 140
2,4-Dinitrotoluene	6.25	0	5.94	95	5.13	89.8	14.6	25	73 - 128
2,6-Dinitrotoluene	6.25	0	5.46	87.4	4.83	84.6	12.2	25	79 - 115
4-Amino-2,6-dinitrotoluene	6.25	0	6.11	97.8	5.34	93.4	13.5	25	65 - 137
DNX	6.25	0	5.29	84.6	5.14	90	2.77	34	67 - 126
HMX	6.25	0	5.59	89.4	5.47	95.8	2.05	25	51 - 128
MNX	6.25	0	5.39	86.2	5.5	96.2	2.02	25	74 - 127
Nitrobenzene	6.25	0	3.95	63.2	3.58	62.6	9.91	25	61 - 118
PETN	6.25	0	5.41	86.6	4.9	85.8	9.88	27	53 - 143
RDX	6.25	0	5.44	87	5.17	90.4	5.13	25	63 - 145
TNX	6.25	0	4.98	79.6	4.9	85.8	1.46	31	51 - 133
Tetryl	6.25	0	3.96	63.4	3.14	55	23.1	28	31 - 119
m-Dinitrobenzene	6.25	0	5.63	90	5.01	87.6	11.7	25	79 - 126
m-Nitrotoluene	6.25	0	3.94	63	3.54	62	10.6	25	55 - 123
o-Nitrotoluene	6.25	.0101	4.39	70	3.86	67.4	12.7	25	57 - 119
p-Nitrotoluene	6.25	0	4.74	75.8	3.83	67	21.2	25	57 - 124
2-Amino-4,6-dinitrotoluene	6.25	0	6.19	99	5.44	95.2	12.9	25	66 - 137

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

3
High Explosives MS/MSD Summary

Lab Name: GEL Laboratories LLC

Client ID: CAPA-12-13277

Lab Code: GEL

GEL Job No (SDG) 12-1236

Extract Batch Code: 1207460

Date Extracted: 27-APR-12

GEL Spike ID: 1202644998

GEL SpikeDup ID: 1202644999

Analysis Date/Time: 01-MAY-12 18:48

MSD Analysis Date/Time: 01-MAY-12 19:05

Reporting Units: ug/L

QC Type: MS/MSD

Compound	Spike Added	Sample Conc	MS Conc	MS Rec #	MSD Conc	MSD Rec #	RPD #	RPD Limit	Rec Limits
2,4-Diamino-6-nitrotoluene	6.25	0	4.93	78.8	4.73	82.8	4.01	25	42 - 117
2,6-Diamino-4-nitrotoluene	6.25	0	5.79	92.6	5.41	94.6	6.82	25	50 - 121
3,5-Dinitroaniline	6.25	0	5.69	91	5.43	95	4.66	25	59 - 125
TATB	6.25	0	4.03	64.4	3.82	66.8	5.3	25	30 - 169
tris(o-cresyl) phosphate	6.25	.0255	3.95	62.8	3.55	61.8	10.5	25	28 - 87

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

Quality Control Data

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 1207460

Lab Code: GEL

GEL Job No (SDG) 12-1236

Matrix: WATER

GEL Sample ID: 1202644996

Sample Amount 1000 mL

Date Received: 25-APR-12

Moisture: .

Extraction Batch ID: 1207460

Extraction Type Sol Exchange

Date Extracted: 27-APR-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

GEL data file: EXP0518035.wiff

Date Analyzed: 19-MAY-12 11:24

Dilution Factor: 2

Concentration Units: ug/L

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	0.250	U	0.080	0.250
<i>118-96-7</i>	<i>2,4,6-Trinitrotoluene</i>				
121-14-2	2,4-Dinitrotoluene	0.250	U	0.080	0.250
<i>121-14-2</i>	<i>2,4-Dinitrotoluene</i>				
121-82-4	RDX	0.250	U	0.080	0.250
<i>121-82-4</i>	<i>RDX</i>				
13980-04-6	TNX	0.250	U	0.080	0.250
<i>13980-04-6</i>	<i>TNX</i>				
19406-51-0	4-Amino-2,6-dinitrotoluene	0.250	U	0.080	0.250
<i>19406-51-0</i>	<i>4-Amino-2,6-dinitrotoluene</i>				
2691-41-0	HMX	0.250	U	0.080	0.250
<i>2691-41-0</i>	<i>HMX</i>				
35572-78-2	2-Amino-4,6-dinitrotoluene	0.250	U	0.080	0.250
<i>35572-78-2</i>	<i>2-Amino-4,6-dinitrotoluene</i>				
5755-27-1	MNX	0.250	U	0.080	0.250
<i>5755-27-1</i>	<i>MNX</i>				
606-20-2	2,6-Dinitrotoluene	0.250	U	0.080	0.250
<i>606-20-2</i>	<i>2,6-Dinitrotoluene</i>				
80251-29-2	DNX	0.250	U	0.080	0.250
<i>80251-29-2</i>	<i>DNX</i>				
88-72-2	o-Nitrotoluene	0.250	U	0.082	0.250
<i>88-72-2</i>	<i>o-Nitrotoluene</i>				
98-95-3	Nitrobenzene	0.250	U	0.080	0.250
<i>98-95-3</i>	<i>Nitrobenzene</i>				
99-08-1	m-Nitrotoluene	0.250	QU	0.080	0.250
<i>99-08-1</i>	<i>m-Nitrotoluene</i>				

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 1207460

Lab Code: GEL

GEL Job No (SDG) 12-1236

Matrix: WATER

GEL Sample ID: 1202644996

Sample Amount 1000 mL

Date Received: 25-APR-12

Moisture: .

Extraction Batch ID: 1207460

Extraction Type Sol Exchange

Date Extracted: 27-APR-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-35-4 <i>99-35-4</i>	1,3,5-Trinitrobenzene <i>1,3,5-Trinitrobenzene</i>	0.250	U	0.080	0.250
99-65-0 <i>99-65-0</i>	m-Dinitrobenzene <i>m-Dinitrobenzene</i>	0.250	U	0.080	0.250
479-45-8 <i>479-45-8</i>	Tetryl <i>Tetryl</i>	0.500	U	0.080	0.500
78-11-5 <i>78-11-5</i>	PETN <i>PETN</i>	0.500	U	0.100	0.500
99-99-0 <i>99-99-0</i>	p-Nitrotoluene <i>p-Nitrotoluene</i>	0.500	U	0.150	0.500

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 1207460

Lab Code: GEL

GEL Job No (SDG) 12-1236

Matrix: WATER

GEL Sample ID: 1202644996

Sample Amount 1000 mL

Date Received: 25-APR-12

Moisture: .

Extraction Batch ID: 1207460

Extraction Type Sol Exchange

Date Extracted: 27-APR-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

GEL data file: EXS05010014.wiff

Date Analyzed: 01-MAY-12 17:58

Dilution Factor: 2

Concentration Units: ug/L

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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 1207460

Lab Code: GEL

GEL Job No (SDG) 12-1236

Matrix: WATER

GEL Sample ID: 1202644997

Sample Amount 1000 mL

Date Received: 25-APR-12

Moisture: .

Extraction Batch ID: 1207460

Extraction Type Sol Exchange

Date Extracted: 27-APR-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

GEL data file: EXP0518036.wiff

Date Analyzed: 19-MAY-12 11:59

Dilution Factor: 2

Concentration Units: ug/L

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-99-0 <i>99-99-0</i>	p-Nitrotoluene <i>p-Nitrotoluene</i>	3.56		0.150	0.500
99-08-1 <i>99-08-1</i>	m-Nitrotoluene <i>m-Nitrotoluene</i>	3.6	Q	0.080	0.250
98-95-3 <i>98-95-3</i>	Nitrobenzene <i>Nitrobenzene</i>	3.61		0.080	0.250
13980-04-6 <i>13980-04-6</i>	TNX <i>TNX</i>	4.02		0.080	0.250
88-72-2 <i>88-72-2</i>	o-Nitrotoluene <i>o-Nitrotoluene</i>	4.07		0.082	0.250
606-20-2 <i>606-20-2</i>	2,6-Dinitrotoluene <i>2,6-Dinitrotoluene</i>	4.27		0.080	0.250
479-45-8 <i>479-45-8</i>	Tetryl <i>Tetryl</i>	4.28		0.080	0.500
99-35-4 <i>99-35-4</i>	1,3,5-Trinitrobenzene <i>1,3,5-Trinitrobenzene</i>	4.41		0.080	0.250
99-65-0 <i>99-65-0</i>	m-Dinitrobenzene <i>m-Dinitrobenzene</i>	4.47		0.080	0.250
5755-27-1 <i>5755-27-1</i>	MNX <i>MNX</i>	4.67		0.080	0.250
80251-29-2 <i>80251-29-2</i>	DNX <i>DNX</i>	4.75		0.080	0.250
121-82-4 <i>121-82-4</i>	RDX <i>RDX</i>	4.86		0.080	0.250
2691-41-0 <i>2691-41-0</i>	HMX <i>HMX</i>	4.88		0.080	0.250

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 1207460

Lab Code: GEL

GEL Job No (SDG) 12-1236

Matrix: WATER

GEL Sample ID: 1202644997

Sample Amount 1000 mL

Date Received: 25-APR-12

Moisture: .

Extraction Batch ID: 1207460

Extraction Type Sol Exchange

Date Extracted: 27-APR-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
35572-78-2	2-Amino-4,6-dinitrotoluene	4.98		0.080	0.250
<i>35572-78-2</i>	<i>2-Amino-4,6-dinitrotoluene</i>				
121-14-2	2,4-Dinitrotoluene	4.99		0.080	0.250
<i>121-14-2</i>	<i>2,4-Dinitrotoluene</i>				
78-11-5	PETN	5.06		0.100	0.500
<i>78-11-5</i>	<i>PETN</i>				
118-96-7	2,4,6-Trinitrotoluene	5.11		0.080	0.250
<i>118-96-7</i>	<i>2,4,6-Trinitrotoluene</i>				
19406-51-0	4-Amino-2,6-dinitrotoluene	5.18		0.080	0.250
<i>19406-51-0</i>	<i>4-Amino-2,6-dinitrotoluene</i>				

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 1207460

Lab Code: GEL

GEL Job No (SDG) 12-1236

Matrix: WATER

GEL Sample ID: 1202644997

Sample Amount 1000 mL

Date Received: 25-APR-12

Moisture: .

Extraction Batch ID: 1207460

Extraction Type Sol Exchange

Date Extracted: 27-APR-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

GEL data file: EXS05010015.wiff

Date Analyzed: 01-MAY-12 18:14

Dilution Factor: 2

Concentration Units: ug/L

Cas No.	Compound	Concentration*	Q	MDL	PQL
78-30-8	tris(o-cresyl) phosphate	2.92		0.300	1.00
78-30-8	<i>tris(o-cresyl) phosphate</i>				
3058-38-6	TATB	3.27		0.300	1.00
3058-38-6	<i>TATB</i>				
6629-29-4	2,4-Diamino-6-nitrotoluene	4.1		0.500	2.50
6629-29-4	<i>2,4-Diamino-6-nitrotoluene</i>				
618-87-1	3,5-Dinitroaniline	4.29		0.300	1.00
618-87-1	<i>3,5-Dinitroaniline</i>				
59229-75-3	2,6-Diamino-4-nitrotoluene	4.31		0.500	2.50
59229-75-3	<i>2,6-Diamino-4-nitrotoluene</i>				

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAPA-12-13277(303221002MS)MS

Lab Code: GEL

GEL Job No (SDG) 12-1236

Matrix: WATER

GEL Sample ID: 1202644998

Sample Amount 800 mL

Date Received: 25-APR-12

Moisture: .

Extraction Batch ID: 1207460

Extraction Type Sol Exchange

Date Extracted: 27-APR-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

GEL data file: EXP0518038.wiff

Date Analyzed: 19-MAY-12 13:09

Dilution Factor: 2

Concentration Units: ug/L

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-08-1 <i>99-08-1</i>	m-Nitrotoluene <i>m-Nitrotoluene</i>	3.94	Q	0.100	0.313
98-95-3 <i>98-95-3</i>	Nitrobenzene <i>Nitrobenzene</i>	3.95		0.100	0.313
479-45-8 <i>479-45-8</i>	Tetryl <i>Tetryl</i>	3.96		0.100	0.625
88-72-2 <i>88-72-2</i>	o-Nitrotoluene <i>o-Nitrotoluene</i>	4.39		0.103	0.313
99-99-0 <i>99-99-0</i>	p-Nitrotoluene <i>p-Nitrotoluene</i>	4.74		0.188	0.625
13980-04-6 <i>13980-04-6</i>	TNX <i>TNX</i>	4.98		0.100	0.313
80251-29-2 <i>80251-29-2</i>	DNX <i>DNX</i>	5.29		0.100	0.313
99-35-4 <i>99-35-4</i>	1,3,5-Trinitrobenzene <i>1,3,5-Trinitrobenzene</i>	5.3		0.100	0.313
5755-27-1 <i>5755-27-1</i>	MNX <i>MNX</i>	5.39		0.100	0.313
78-11-5 <i>78-11-5</i>	PETN <i>PETN</i>	5.41		0.125	0.625
121-82-4 <i>121-82-4</i>	RDX <i>RDX</i>	5.44		0.100	0.313
606-20-2 <i>606-20-2</i>	2,6-Dinitrotoluene <i>2,6-Dinitrotoluene</i>	5.46		0.100	0.313
2691-41-0 <i>2691-41-0</i>	HMX <i>HMX</i>	5.59		0.100	0.313

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAPA-12-13277(303221002MS)MS

Lab Code: GEL

GEL Job No (SDG) 12-1236

Matrix: WATER

GEL Sample ID: 1202644998

Sample Amount 800 mL

Date Received: 25-APR-12

Moisture: .

Extraction Batch ID: 1207460

Extraction Type Sol Exchange

Date Extracted: 27-APR-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
99-65-0 <i>99-65-0</i>	m-Dinitrobenzene <i>m-Dinitrobenzene</i>	5.63		0.100	0.313
121-14-2 <i>121-14-2</i>	2,4-Dinitrotoluene <i>2,4-Dinitrotoluene</i>	5.94		0.100	0.313
19406-51-0 <i>19406-51-0</i>	4-Amino-2,6-dinitrotoluene <i>4-Amino-2,6-dinitrotoluene</i>	6.11		0.100	0.313
118-96-7 <i>118-96-7</i>	2,4,6-Trinitrotoluene <i>2,4,6-Trinitrotoluene</i>	6.15		0.100	0.313
35572-78-2 <i>35572-78-2</i>	2-Amino-4,6-dinitrotoluene <i>2-Amino-4,6-dinitrotoluene</i>	6.19		0.100	0.313

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAPA-12-13277(303221002MS)MS

Lab Code: GEL

GEL Job No (SDG) 12-1236

Matrix: WATER

GEL Sample ID: 1202644998

Sample Amount 800 mL

Date Received: 25-APR-12

Moisture: .

Extraction Batch ID: 1207460

Extraction Type Sol Exchange

Date Extracted: 27-APR-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

GEL data file: EXS05010017.wiff

Date Analyzed: 01-MAY-12 18:48

Dilution Factor: 2

Concentration Units: ug/L

Cas No.	Compound	Concentration*	Q	MDL	PQL
78-30-8	tris(o-cresyl) phosphate	3.95		0.375	1.25
78-30-8	<i>tris(o-cresyl) phosphate</i>				
3058-38-6	TATB	4.03		0.375	1.25
3058-38-6	<i>TATB</i>				
6629-29-4	2,4-Diamino-6-nitrotoluene	4.93		0.625	3.13
6629-29-4	<i>2,4-Diamino-6-nitrotoluene</i>				
618-87-1	3,5-Dinitroaniline	5.69		0.375	1.25
618-87-1	<i>3,5-Dinitroaniline</i>				
59229-75-3	2,6-Diamino-4-nitrotoluene	5.79		0.625	3.13
59229-75-3	<i>2,6-Diamino-4-nitrotoluene</i>				

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAPA-12-13277(303221002MSD)MSD

Lab Code: GEL

GEL Job No (SDG) 12-1236

Matrix: WATER

GEL Sample ID: 1202644999

Sample Amount 875 mL

Date Received: 25-APR-12

Moisture:

Extraction Batch ID: 1207460

Extraction Type Sol Exchange

Date Extracted: 27-APR-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

GEL data file: EXP0518039.wiff

Date Analyzed: 19-MAY-12 13:44

Dilution Factor: 2

Concentration Units: ug/L

Cas No.	Compound	Concentration*	Q	MDL	PQL
479-45-8 <i>479-45-8</i>	Tetryl <i>Tetryl</i>	3.14		0.0914	0.571
99-08-1 <i>99-08-1</i>	m-Nitrotoluene <i>m-Nitrotoluene</i>	3.54	Q	0.0914	0.286
98-95-3 <i>98-95-3</i>	Nitrobenzene <i>Nitrobenzene</i>	3.58		0.0914	0.286
99-99-0 <i>99-99-0</i>	p-Nitrotoluene <i>p-Nitrotoluene</i>	3.83		0.171	0.571
88-72-2 <i>88-72-2</i>	o-Nitrotoluene <i>o-Nitrotoluene</i>	3.86		0.0937	0.286
606-20-2 <i>606-20-2</i>	2,6-Dinitrotoluene <i>2,6-Dinitrotoluene</i>	4.83		0.0914	0.286
13980-04-6 <i>13980-04-6</i>	TNX <i>TNX</i>	4.9		0.0914	0.286
78-11-5 <i>78-11-5</i>	PETN <i>PETN</i>	4.9		0.114	0.571
99-35-4 <i>99-35-4</i>	1,3,5-Trinitrobenzene <i>1,3,5-Trinitrobenzene</i>	5.01		0.0914	0.286
99-65-0 <i>99-65-0</i>	m-Dinitrobenzene <i>m-Dinitrobenzene</i>	5.01		0.0914	0.286
121-14-2 <i>121-14-2</i>	2,4-Dinitrotoluene <i>2,4-Dinitrotoluene</i>	5.13		0.0914	0.286
80251-29-2 <i>80251-29-2</i>	DNX <i>DNX</i>	5.14		0.0914	0.286
121-82-4 <i>121-82-4</i>	RDX <i>RDX</i>	5.17		0.0914	0.286

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAPA-12-13277(303221002MSD)MSD

Lab Code: GEL

GEL Job No (SDG) 12-1236

Matrix: WATER

GEL Sample ID: 1202644999

Sample Amount 875 mL

Date Received: 25-APR-12

Moisture: .

Extraction Batch ID: 1207460

Extraction Type Sol Exchange

Date Extracted: 27-APR-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

Cas No.	Compound	Concentration*	Q	MDL	PQL
118-96-7	2,4,6-Trinitrotoluene	5.25		0.0914	0.286
<i>118-96-7</i>	<i>2,4,6-Trinitrotoluene</i>				
19406-51-0	4-Amino-2,6-dinitrotoluene	5.34		0.0914	0.286
<i>19406-51-0</i>	<i>4-Amino-2,6-dinitrotoluene</i>				
35572-78-2	2-Amino-4,6-dinitrotoluene	5.44		0.0914	0.286
<i>35572-78-2</i>	<i>2-Amino-4,6-dinitrotoluene</i>				
2691-41-0	HMX	5.47		0.0914	0.286
<i>2691-41-0</i>	<i>HMX</i>				
5755-27-1	MNX	5.5		0.0914	0.286
<i>5755-27-1</i>	<i>MNX</i>				

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAPA-12-13277(303221002MSD)MSD

Lab Code: GEL

GEL Job No (SDG) 12-1236

Matrix: WATER

GEL Sample ID: 1202644999

Sample Amount 875 mL

Date Received: 25-APR-12

Moisture: .

Extraction Batch ID: 1207460

Extraction Type Sol Exchange

Date Extracted: 27-APR-12

Concentrated Extract Volume (mL) 5

Injection Volume (uL): 50

GEL data file: EXS05010018.wiff

Date Analyzed: 01-MAY-12 19:05

Dilution Factor: 2

Concentration Units: ug/L

Cas No.	Compound	Concentration*	Q	MDL	PQL
78-30-8	tris(o-cresyl) phosphate	3.55		0.343	1.14
78-30-8	<i>tris(o-cresyl) phosphate</i>				
3058-38-6	TATB	3.82		0.343	1.14
3058-38-6	<i>TATB</i>				
6629-29-4	2,4-Diamino-6-nitrotoluene	4.73		0.571	2.86
6629-29-4	<i>2,4-Diamino-6-nitrotoluene</i>				
59229-75-3	2,6-Diamino-4-nitrotoluene	5.41		0.571	2.86
59229-75-3	<i>2,6-Diamino-4-nitrotoluene</i>				
618-87-1	3,5-Dinitroaniline	5.43		0.343	1.14
618-87-1	<i>3,5-Dinitroaniline</i>				

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLCGEL Job No(SDG): 12-1236Lab Code: GELLab Sample ID: XIBLK01Analysis Date: 18-MAY-12 15:36GEL Data File: EXP0518001.wiffInstrument ID: LCMSMSColumn: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
DNX	0	0
MNX	0	0
TNX	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
Nitroglycerin	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLCGEL Job No(SDG): 12-1236Lab Code: GELLab Sample ID: XIBLK01Analysis Date: 18-MAY-12 16:11GEL Data File: EXP0518002.wiffInstrument ID: LCMSMSColumn: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	1.54
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0
3,4-Dinitrotoluene	0	0
DNX	0	0
MNX	0	0
TNX	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
Nitroglycerin	0	0

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLCGEL Job No(SDG): 12-1236Lab Code: GELLab Sample ID: XIBLK01Analysis Date: 01-MAY-12 14:20GEL Data File: EXS05010001.wiffInstrument ID: LCMSMSColumn: Phenomenex Ultracarb 5u ODS(20)

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

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLCGEL Job No(SDG): 12-1236Lab Code: GELLab Sample ID: XIBLK01Analysis Date: 01-MAY-12 14:37GEL Data File: EXS05010002.wiffInstrument ID: LCMSMSColumn: Phenomenex Ultracarb 5u ODS(20)

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

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 12-1236

Lab Code: GEL

Lab Sample ID: XIBLK02

Analysis Date: 18-MAY-12 20:15

GEL Data File: EXP0518009.wiff

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
DNX	0	1.15
MNX	0	.968
TNX	0	1.02
1,3,5-Trinitrobenzene	0	.601
2,4,6-Trinitrotoluene	0	.539
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	.438
2-Amino-4,6-dinitrotoluene	0	.989
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	.987
Nitrobenzene	0	0
Nitroglycerin	0	0
PETN	0	0
RDX	0	0
Tetryl	0	.73
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 12-1236

Lab Code: GEL

Lab Sample ID: XIBLK03

Analysis Date: 18-MAY-12 21:25

GEL Data File: EXP0518011.wiff

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
Nitroglycerin	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	.972
p-Nitrotoluene	0	0
3,4-Dinitrotoluene	0	0
DNX	0	0
MNX	0	0
TNX	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 12-1236

Lab Code: GEL

Lab Sample ID: XIBLK04

Analysis Date: 18-MAY-12 23:45

GEL Data File: EXP0518015.wiff

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
DNX	0	0
MNX	0	0
TNX	0	0
1,3,5-Trinitrobenzene	0	.3
2,4,6-Trinitrotoluene	0	.29
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
Nitroglycerin	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	1.41
p-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 12-1236

Lab Code: GEL

Lab Sample ID: XIBLK05

Analysis Date: 19-MAY-12 03:50

GEL Data File: EXP0518022.wiff

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
DNX	0	0
MNX	0	0
TNX	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
Nitroglycerin	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0
3,4-Dinitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 12-1236

Lab Code: GEL

Lab Sample ID: XIBLK06

Analysis Date: 19-MAY-12 04:59

GEL Data File: EXP0518024.wiff

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
DNX	0	0
MNX	0	0
TNX	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
Nitroglycerin	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 12-1236

Lab Code: GEL

Lab Sample ID: XIBLK07

Analysis Date: 19-MAY-12 10:14

GEL Data File: EXP0518033.wiff

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
Nitroglycerin	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0
3,4-Dinitrotoluene	0	0
DNX	0	0
MNX	0	0
TNX	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 12-1236

Lab Code: GEL

Lab Sample ID: XIBLK08

Analysis Date: 19-MAY-12 15:29

GEL Data File: EXP0518042.wiff

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
DNX	0	0
MNX	0	0
TNX	0	0
1,3,5-Trinitrobenzene	0	0
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
Nitroglycerin	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	2.5

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 12-1236

Lab Code: GEL

Lab Sample ID: XIBLK02

Analysis Date: 01-MAY-12 16:51

GEL Data File: EXS05010010.wiff

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	9.44
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 12-1236

Lab Code: GEL

Lab Sample ID: XIBLK03

Analysis Date: 01-MAY-12 17:24

GEL Data File: EXS05010012.wiff

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	4.11
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 12-1236

Lab Code: GEL

Lab Sample ID: XIBLK04

Analysis Date: 01-MAY-12 19:38

GEL Data File: EXS05010020.wiff

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

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

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 12-1236

Lab Code: GEL

Lab Sample ID: XIBLK05

Analysis Date: 01-MAY-12 20:28

GEL Data File: EXS05010023.wiff

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	3.46
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

Metals Analysis

Case Narrative

**Metals Fractional Narrative
ARS International (ARSL)
SDG 12-1236**

Sample Analysis

Sample ID	Client ID
303221002	CAPA-12-13277
303221003	CAPA-12-13287
1202644301	Method Blank (MB) ICP
1202644302	Laboratory Control Sample (LCS)
1202644305	303221002(CAPA-12-13277L) Serial Dilution (SD)
1202644303	303221002(CAPA-12-13277D) Sample Duplicate (DUP)
1202644304	303221002(CAPA-12-13277S) Matrix Spike (MS)
1202644306	Method Blank (MB) ICP-MS
1202648673	Method Blank (MB) ICP-MS
1202649370	Method Blank (MB) ICP-MS
1202644307	Laboratory Control Sample (LCS)
1202648674	Laboratory Control Sample (LCS)
1202649371	Laboratory Control Sample (LCS)
1202648677	303221002(CAPA-12-13277L) Serial Dilution (SD)
1202644310	303221003(CAPA-12-13287L) Serial Dilution (SD)
1202649374	303221003(CAPA-12-13287L) Serial Dilution (SD)
1202648675	303221002(CAPA-12-13277D) Sample Duplicate (DUP)
1202644308	303221003(CAPA-12-13287D) Sample Duplicate (DUP)
1202649372	303221003(CAPA-12-13287D) Sample Duplicate (DUP)
1202648676	303221002(CAPA-12-13277S) Matrix Spike (MS)
1202644309	303221003(CAPA-12-13287S) Matrix Spike (MS)
1202649373	303221003(CAPA-12-13287S) Matrix Spike (MS)
1202647537	Method Blank (MB) CVAA
1202647538	Laboratory Control Sample (LCS)
1202647541	303221003(CAPA-12-13287L) Serial Dilution (SD)
1202647539	303221003(CAPA-12-13287D) Sample Duplicate (DUP)
1202647540	303221003(CAPA-12-13287S) Matrix Spike (MS)

Method/Analysis Information

Analytical Batch:	1207188, 1207190, 1209301, 1209023, 1208500 and 1213521
Prep Batch :	1207187, 1207189, 1209300, 1209022 and 1208499
Standard Operating Procedures:	GL-MA-E-013 REV# 20, GL-MA-E-006 REV# 9, GL-MA-E-014 REV# 24, GL-MA-E-010 REV# 25 and GL-GC-E-107 REV# 7
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 9000 inductively coupled plasma mass spectrometer (ICP-MS). The instrument is equipped with a cross-flow nebulizer, quadrupole 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: 303221002 (CAPA-12-13277)-ICP and ICP-MS and 303221003 (CAPA-12-13287)-CVAA, ICP-MS and ICP-MS.

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. Dilutions were required for this SDG in order to minimize suppression due to matrix interferences. 303221002 (CAPA-12-13277) and 303221003 (CAPA-12-13287)-ICP. The samples were diluted because tin was suppressed. 303221002 (CAPA-12-13277) and 303221003 (CAPA-12-13287)-ICP.

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

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:** _____

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: 12-1236 GEL Work Order: 303221

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.

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

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

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

Reviewed by _____

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 12-1236

METHOD TYPE: SW846

SAMPLE ID: 303221002

CLIENT ID: CAPA-12-13277

CONTRACT: ESHL00210

MATRIX: W

DATE RECEIVED 25-APR-12

LEVEL: Low %SOLIDS:

<u>CAS No</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>C</u>	<u>Qual</u>	<u>M*</u>	<u>MDL</u>	<u>DF</u>	<u>Inst ID</u>	<u>Analytical Run</u>
7440-36-0	Antimony	1	ug/L	U		MS	1	1	ICPMS6	120508-4
7440-38-2	Arsenic	1.7	ug/L	U		MS	1.7	1	ICPMS6	120508-4
7440-43-9	Cadmium	0.11	ug/L	U		MS	0.11	1	ICPMS6	120508-4
7440-47-3	Chromium	2	ug/L	U		MS	2	1	ICPMS6	120508-4
7439-92-1	Lead	1.08	ug/L	J		MS	0.5	1	ICPMS6	120508-4
7439-98-7	Molybdenum	0.457	ug/L	J		MS	0.165	1	ICPMS6	120508-4
7440-02-0	Nickel	2.01	ug/L			MS	0.5	1	ICPMS6	120508-4
7782-49-2	Selenium	1.5	ug/L	U		MS	1.5	1	ICPMS6	120508-4
7440-22-4	Silver	0.2	ug/L	U		MS	0.2	1	ICPMS6	120508-4
7440-28-0	Thallium	0.45	ug/L	U		MS	0.45	1	ICPMS6	120508-4
7440-61-1	Uranium	0.185	ug/L	J		MS	0.067	1	ICPMS6	120511-5

*Analytical Methods:

MS SW846 3005/6020 DOE-AL

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 12-1236

METHOD TYPE: EPA

SAMPLE ID: 303221003

CLIENT ID: CAPA-12-13287

CONTRACT: ESHL00210

MATRIX: W

DATE RECEIVED 25-APR-12

LEVEL: Low %SOLIDS:

<u>CAS No</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>C</u>	<u>Qual</u>	<u>M*</u>	<u>MDL</u>	<u>DF</u>	<u>Inst ID</u>	<u>Analytical Run</u>
7439-97-6	Mercury	0.067	ug/L	U		AV	0.067	1	MER536	051512W1-6
7631-86-9	Silica	17.6	mg/L			P	0.053	1	OPTIMA3	050112-1
7429-90-5	Aluminum	1520	ug/L			P	68	1	OPTIMA3	050112-1
7440-36-0	Antimony	1	ug/L	U		MS	1	1	ICPMS5	120502-2
7440-38-2	Arsenic	1.7	ug/L	U		MS	1.7	1	ICPMS5	120502-2
7440-39-3	Barium	125	ug/L			P	1	1	OPTIMA3	050112-1
7440-41-7	Beryllium	1	ug/L	U		P	1	1	OPTIMA3	050112-1
7440-42-8	Boron	41.6	ug/L	J		P	15	1	OPTIMA3	050112-1
7440-43-9	Cadmium	0.11	ug/L	U		MS	0.11	1	ICPMS5	120502-2
7440-70-2	Calcium	20300	ug/L			P	50	1	OPTIMA3	050112-1
7440-47-3	Chromium	6.72	ug/L	J		MS	2	1	ICPMS5	120502-2
7440-48-4	Cobalt	1	ug/L	U		P	1	1	OPTIMA3	050112-1
7440-50-8	Copper	3	ug/L	U		P	3	1	OPTIMA3	050112-1
7439-89-6	Iron	857	ug/L			P	30	1	OPTIMA3	050112-1
7439-92-1	Lead	1.08	ug/L	J		MS	0.5	1	ICPMS5	120502-2
7439-95-4	Magnesium	5010	ug/L			P	110	1	OPTIMA3	050112-1
7439-96-5	Manganese	13.6	ug/L			P	2	1	OPTIMA3	050112-1
7439-98-7	Molybdenum	0.605	ug/L			MS	0.165	1	ICPMS5	120502-2
7440-02-0	Nickel	1.61	ug/L	J		MS	0.5	1	ICPMS5	120509-3
7440-09-7	Potassium	10100	ug/L			P	50	1	OPTIMA3	050112-1
7782-49-2	Selenium	1.5	ug/L	U		MS	1.5	1	ICPMS5	120502-2
7440-22-4	Silver	0.2	ug/L	U		MS	0.2	1	ICPMS5	120502-2
7440-23-5	Sodium	75400	ug/L			P	100	1	OPTIMA3	050112-1
7440-24-6	Strontium	122	ug/L			P	1	1	OPTIMA3	050112-1
7440-28-0	Thallium	0.45	ug/L	U		MS	0.45	1	ICPMS5	120502-2
7440-31-5	Tin	12.5	ug/L	U		P	12.5	5	OPTIMA3	050112-1

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 12-1236

METHOD TYPE: EPA

SAMPLE ID: 303221003

CLIENT ID: CAPA-12-13287

CONTRACT: ESHL00210

MATRIX:W

DATE RECEIVED 25-APR-12

LEVEL: Low **%SOLIDS:**

<u>CAS No</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>C</u>	<u>Qual</u>	<u>M*</u>	<u>MDL</u>	<u>DF</u>	<u>Inst ID</u>	<u>Analytical Run</u>
7440-61-1	Uranium	0.173	ug/L	J		MS	0.067	1	ICPMS5	120502-2
7440-62-2	Vanadium	1.77	ug/L	J		P	1	1	OPTIMA3	050112-1
7440-66-6	Zinc	17.9	ug/L			P	3.3	1	OPTIMA3	050112-1
	Hardness as CaCO3	71.3	mg/L				0.453	1	CALC001	

***Analytical Methods:**

- MS** SW846 3005/6020 DOE-AL
- P** SW846 3005/6010B
- AV** EPA 245.1/245.2
- SM 2340 B

Quality Control Summary

METALS
-3b-
PREPARATION BLANK SUMMARY

SDG NO. 12-1236
Contract: ESHL00210
Matrix: W

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Acceptance Window</u>	<u>Conc Qual</u>	<u>M*</u>	<u>MDL</u>	<u>RDL</u>
1202644301								
	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	0.053	mg/L	+/-0.213	U	P	0.053	0.213
	Sodium	100	ug/L	+/-300	U	P	100	300
	Strontium	1	ug/L	+/-5	U	P	1	5
	Tin	4.06	ug/L	+/-10	J	P	2.5	10
	Vanadium	1	ug/L	+/-5	U	P	1	5
	Zinc	3.3	ug/L	+/-10	U	P	3.3	10
1202644306								
	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	0.165	ug/L	+/-0.5	U	MS	0.165	0.5
	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
1202647537								
	Mercury	-0.094	ug/L	+/-0.2	J	AV	0.067	0.2
1202648673								
	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	0.165	ug/L	+/-0.5	U	MS	0.165	0.5

METALS
-3b-
PREPARATION BLANK SUMMARY

SDG NO. 12-1236
Contract: ESHL00210
Matrix: W

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Acceptance Window</u>	<u>Conc Qual</u>	<u>M*</u>	<u>MDL</u>	<u>RDL</u>
	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

1202649370	Nickel	0.5	ug/L	+/-2	U	MS	0.5	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. 12-1236 Client ID: CAPA-12-13277S

Contract: ESHL00210 Level: Low

Matrix: WATER % Solids:

Sample ID: 303221002 Spike ID: 1202644304

<u>Analyte</u>	<u>Units</u>	<u>Acceptance Limit</u>	<u>Spiked Result</u>	<u>C</u>	<u>Sample Result</u>	<u>C</u>	<u>Spike Added</u>	<u>% Recovery</u>	<u>Qual</u>	<u>M*</u>
Aluminum	ug/L	75-125	5870		803		5000	101		P
Barium	ug/L	75-125	624		119		500	101		P
Beryllium	ug/L	75-125	500		1	U	500	99.9		P
Boron	ug/L	75-125	540		41.2	J	500	99.8		P
Calcium	ug/L	75-125	25700		19400		5000	125		P
Cobalt	ug/L	75-125	506		1	U	500	101		P
Copper	ug/L	75-125	517		3	U	500	103		P
Iron	ug/L	75-125	5490		427		5000	101		P
Magnesium	ug/L	75-125	10000		4720		5000	107		P
Manganese	ug/L	75-125	500		11.2		500	97.7		P
Potassium	ug/L	75-125	15000		9660		5000	107		P
Silica	mg/L	75-125	26.2		14		10.7	114		P
Sodium	ug/L		80400		72200		5000	163	N/A	P
Strontium	ug/L	75-125	623		117		500	101		P
Tin	ug/L	75-125	501		12.5	U	500	100		P
Vanadium	ug/L	75-125	513		1.22	J	500	102		P
Zinc	ug/L	75-125	506		16.9		500	97.8		P

*Analytical Methods:
P SW846 3005/6010B

METALS

-5a-

Matrix Spike Summary

SDG NO. 12-1236 Client ID: CAPA-12-13287S

Contract: ESHL00210 Level: Low

Matrix: WATER % Solids:

Sample ID: 303221003 Spike ID: 1202644309

<u>Analyte</u>	<u>Units</u>	<u>Acceptance Limit</u>	<u>Spiked Result</u>	<u>C</u>	<u>Sample Result</u>	<u>C</u>	<u>Spike Added</u>	<u>% Recovery</u>	<u>Qual</u>	<u>M*</u>
Antimony	ug/L	75-125	195		1	U	200	97		MS
Arsenic	ug/L	75-125	77.3		1.7	U	80	95.6		MS
Cadmium	ug/L	75-125	10.2		0.11	U	10	102		MS
Chromium	ug/L	75-125	48.9		6.72	J	50	84.4		MS
Lead	ug/L	75-125	41.6		1.08	J	40	101		MS
Molybdenum	ug/L	75-125	50.7		0.605		50	100		MS
Selenium	ug/L	75-125	19.6		1.5	U	20	95.1		MS
Silver	ug/L	75-125	49.3		0.2	U	50	98.6		MS
Thallium	ug/L	75-125	94.5		0.45	U	100	94.4		MS
Uranium	ug/L	75-125	53.2		0.173	J	50	106		MS

*Analytical Methods:
MS SW846 3005/6020 DOE-AL

METALS

-5a-

Matrix Spike Summary

SDG NO. 12-1236 Client ID: CAPA-12-13287S

Contract: ESHL00210 Level: Low

Matrix: WATER % Solids:

Sample ID: 303221003 Spike ID: 1202647540

<u>Analyte</u>	<u>Units</u>	<u>Acceptance Limit</u>	<u>Spiked Result</u>	<u>C</u>	<u>Sample Result</u>	<u>C</u>	<u>Spike Added</u>	<u>% Recovery</u>	<u>Qual</u>	<u>M*</u>
Mercury	ug/L	75-125	1.99		0.067	U	2	99.3		AV

*Analytical Methods:
 AV EPA 245.1/245.2

METALS

-5a-

Matrix Spike Summary

SDG NO. 12-1236 Client ID: CAPA-12-13277S

Contract: ESHL00210 Level: Low

Matrix: WATER % Solids:

Sample ID: 303221002 Spike ID: 1202648676

<u>Analyte</u>	<u>Units</u>	<u>Acceptance Limit</u>	<u>Spiked Result</u>	<u>C</u>	<u>Sample Result</u>	<u>C</u>	<u>Spike Added</u>	<u>% Recovery</u>	<u>Qual</u>	<u>M*</u>
Antimony	ug/L	75-125	195		1	U	200	97.6		MS
Arsenic	ug/L	75-125	76.4		1.7	U	80	95.4		MS
Cadmium	ug/L	75-125	10.3		0.11	U	10	103		MS
Chromium	ug/L	75-125	49.4		2	U	50	96		MS
Lead	ug/L	75-125	38.6		1.08	J	40	93.8		MS
Molybdenum	ug/L	75-125	47.7		0.457	J	50	94.5		MS
Nickel	ug/L	75-125	49.9		2.01		50	95.8		MS
Selenium	ug/L	75-125	20.4		1.5	U	20	101		MS
Silver	ug/L	75-125	47.5		0.2	U	50	95		MS
Thallium	ug/L	75-125	87.7		0.45	U	100	87.4		MS
Uranium	ug/L	75-125	50.9		0.185	J	50	102		MS

*Analytical Methods:
MS SW846 3005/6020 DOE-AL

METALS

-5a-

Matrix Spike Summary

SDG NO. 12-1236 Client ID: CAPA-12-13287S

Contract: ESHL00210 Level: Low

Matrix: WATER % Solids:

Sample ID: 303221003 Spike ID: 1202649373

<u>Analyte</u>	<u>Units</u>	<u>Acceptance Limit</u>	<u>Spiked Result</u>	<u>C</u>	<u>Sample Result</u>	<u>C</u>	<u>Spike Added</u>	<u>% Recovery</u>	<u>Qual</u>	<u>M*</u>
Nickel	ug/L	75-125	48.2		1.61	J	50	93.2		MS

*Analytical Methods:
MS SW846 3005/6020 DOE-AL

Metals
-6-
Duplicate Sample Summary

SDG No.: 12-1236

Lab Code: GEL

Contract: ESHL00210

Client ID: CAPA-12-13277D

Matrix: LIQUID

Level: Low

Sample ID: 303221002

Duplicate ID: 1202644303

Percent Solids for Dup: N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Aluminum	ug/L	+/-200	803		902		11.6		P
Barium	ug/L	+/-20%	119		125		5.01		P
Beryllium	ug/L		1 U		1 U				P
Boron	ug/L	+/-50	41.2 J		42.2 J		2.19		P
Calcium	ug/L	+/-20%	19400		20200		4		P
Cobalt	ug/L		1 U		1 U				P
Copper	ug/L		3 U		3 U				P
Iron	ug/L	+/-100	427		479		11.5		P
Magnesium	ug/L	+/-20%	4720		4910		3.83		P
Manganese	ug/L	+/-10	11.2		11.9		5.78		P
Potassium	ug/L	+/-20%	9660		10100		4.04		P
Silica	mg/L	+/-20%	14		15.1		7.18		P
Sodium	ug/L	+/-20%	72200		75100		3.95		P
Strontium	ug/L	+/-20%	117		121		3.77		P
Tin	ug/L		12.5 U		12.5 U				P
Vanadium	ug/L	+/-5	1.22 J		1.17 J		3.81		P
Zinc	ug/L	+/-10	16.9		17.9		5.36		P

*Analytical Methods:

P SW846 3005/6010B

Metals
-6-
Duplicate Sample Summary

SDG No.: 12-1236

Lab Code: GEL

Contract: ESHL00210

Client ID: CAPA-12-13287D

Matrix: LIQUID

Level: Low

Sample ID: 303221003

Duplicate ID: 1202644308

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		6.72 J		2 U		200		MS
Lead	ug/L	+/-2	1.08 J		1.04 J		3.76		MS
Molybdenum	ug/L	+/- .5	0.605		0.568		6.31		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	0.173 J		0.177 J		2.29		MS

***Analytical Methods:**

MS SW846 3005/6020 DOE-AL

Metals
-6-
Duplicate Sample Summary

SDG No.: 12-1236

Lab Code: GEL

Contract: ESHL00210

Client ID: CAPA-12-13287D

Matrix: LIQUID

Level: Low

Sample ID: 303221003

Duplicate ID: 1202647539

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
-6-
Duplicate Sample Summary

SDG No.: 12-1236

Lab Code: GEL

Contract: ESHL00210

Client ID: CAPA-12-13277D

Matrix: LIQUID

Level: Low

Sample ID: 303221002

Duplicate ID: 1202648675

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	+/-2	1.08 J		1.05 J		3.01		MS
Molybdenum	ug/L	+/- .5	0.457 J		0.423 J		7.73		MS
Nickel	ug/L	+/-2	2.01		1.91 J		4.96		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	0.185 J		0.163 J		12.6		MS

***Analytical Methods:**

MS SW846 3005/6020 DOE-AL

Metals
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Duplicate Sample Summary

SDG No.: 12-1236

Lab Code: GEL

Contract: ESHL00210

Client ID: CAPA-12-13287D

Matrix: LIQUID

Level: Low

Sample ID: 303221003

Duplicate ID: 1202649372

Percent Solids for Dup: N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Nickel	ug/L	+/-2	1.61 J		1.63 J		.741		MS

***Analytical Methods:**

MS SW846 3005/6020 DOE-AL

METALS

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Laboratory Control Sample Summary

SDG NO. 12-1236

Contract: ESHL00210

Aqueous LCS Source:OS2I

Solid LCS Source:

<u>Sample ID</u>	<u>Analyte</u>	<u>Units</u>	<u>True Value</u>	<u>Result</u>	<u>C</u>	<u>% Recovery</u>	<u>Acceptance Limit</u>	<u>M*</u>
1202644302								
	Aluminum	ug/L	5000	4830		96.6	80-120	P
	Barium	ug/L	500	503		101	80-120	P
	Beryllium	ug/L	500	497		99.4	80-120	P
	Boron	ug/L	500	493		98.6	80-120	P
	Calcium	ug/L	5000	4850		97	80-120	P
	Cobalt	ug/L	500	512		102	80-120	P
	Copper	ug/L	500	497		99.5	80-120	P
	Iron	ug/L	5000	4930		98.6	80-120	P
	Magnesium	ug/L	5000	4990		99.8	80-120	P
	Manganese	ug/L	500	496		99.3	80-120	P
	Potassium	ug/L	5000	4980		99.7	80-120	P
	Silica	mg/L	10.7	10.6		99.5	80-120	P
	Sodium	ug/L	5000	5000		100	80-120	P
	Strontium	ug/L	500	494		98.8	80-120	P
	Tin	ug/L	500	505		101	80-120	P
	Vanadium	ug/L	500	505		101	80-120	P
	Zinc	ug/L	500	486		97.2	80-120	P

*Analytical Methods:

P SW846 3005/6010B

METALS

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Laboratory Control Sample Summary

SDG NO. 12-1236

Contract: ESHL00210

Aqueous LCS Source:O2si

Solid LCS Source:

<u>Sample ID</u>	<u>Analyte</u>	<u>Units</u>	<u>True Value</u>	<u>Result</u>	<u>C</u>	<u>% Recovery</u>	<u>Acceptance Limit</u>	<u>M*</u>
1202644307								
	Antimony	ug/L	50	50.4		101	80-120	MS
	Arsenic	ug/L	50	52		104	80-120	MS
	Cadmium	ug/L	50	53.7		107	80-120	MS
	Chromium	ug/L	50	51		102	80-120	MS
	Lead	ug/L	50	54.7		109	80-120	MS
	Molybdenum	ug/L	50	51.3		103	80-120	MS
	Selenium	ug/L	50	53.3		107	80-120	MS
	Silver	ug/L	50	53		106	80-120	MS
	Thallium	ug/L	50	52.5		105	80-120	MS
	Uranium	ug/L	50	55.4		111	80-120	MS

*Analytical Methods:

MS SW846 3005/6020 DOE-AL

METALS

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Laboratory Control Sample Summary

SDG NO. 12-1236

Contract: ESHL00210

Aqueous LCS Source:GEL

Solid LCS Source:

<u>Sample ID</u>	<u>Analyte</u>	<u>Units</u>	<u>True Value</u>	<u>Result</u>	<u>C</u>	<u>% Recovery</u>	<u>Acceptance Limit</u>	<u>M*</u>
1202647538	Mercury	ug/L	2	2.02		101	85-115	AV

*Analytical Methods:

AV EPA 245.1/245.2

METALS

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Laboratory Control Sample Summary

SDG NO. 12-1236

Contract: ESHL00210

Aqueous LCS Source:O2si

Solid LCS Source:

<u>Sample ID</u>	<u>Analyte</u>	<u>Units</u>	<u>True Value</u>	<u>Result</u>	<u>C</u>	<u>% Recovery</u>	<u>Acceptance Limit</u>	<u>M*</u>
1202648674								
	Antimony	ug/L	50	49.5		99	80-120	MS
	Arsenic	ug/L	50	49.4		98.7	80-120	MS
	Cadmium	ug/L	50	50.8		102	80-120	MS
	Chromium	ug/L	50	49.3		98.6	80-120	MS
	Lead	ug/L	50	50.1		100	80-120	MS
	Molybdenum	ug/L	50	48.5		97	80-120	MS
	Nickel	ug/L	50	50.3		101	80-120	MS
	Selenium	ug/L	50	52.9		106	80-120	MS
	Silver	ug/L	50	50.8		102	80-120	MS
	Thallium	ug/L	50	48.3		96.6	80-120	MS
	Uranium	ug/L	50	52		104	80-120	MS

*Analytical Methods:

MS SW846 3005/6020 DOE-AL

METALS

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Laboratory Control Sample Summary

SDG NO. 12-1236

Contract: ESHL00210

Aqueous LCS Source:O2si

Solid LCS Source:

<u>Sample ID</u>	<u>Analyte</u>	<u>Units</u>	<u>True Value</u>	<u>Result</u>	<u>C</u>	<u>% Recovery</u>	<u>Acceptance Limit</u>	<u>M*</u>
1202649371	Nickel	ug/L	50	48.6		97.1	80-120	MS

*Analytical Methods:

MS SW846 3005/6020 DOE-AL

METALS

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Serial Dilution Sample Summary

SDG NO. 12-1236 Client ID: CAPA-12-13277L

Contract: ESHL00210

Matrix: LIQUID Level: Low

Sample ID: 303221002 Serial Dilution ID: 1202644305

<u>Analyte</u>	<u>Initial Value</u> ug/L	<u>C</u>	<u>Serial Value</u> ug/L	<u>C</u>	<u>% Difference</u>	<u>Qual</u>	<u>Acceptance Limit</u>	<u>M*</u>
Aluminum	803		838	J	4.33			P
Barium	119		119		.148		10	P
Beryllium	1	U	5	U				P
Boron	41.2	J	75	U	100			P
Calcium	19400		19500		.335		10	P
Cobalt	1	U	5	U				P
Copper	3	U	15	U				P
Iron	427		441	J	3.16			P
Magnesium	4720		4870		3.24			P
Manganese	11.2		11	J	1.52			P
Potassium	9660		10200		5.87		10	P
Silica	14000		14400		2.38		10	P
Sodium	72200		74700		3.36		10	P
Strontium	117		118		1.28		10	P
Tin	2.5	U	12.5	U				P
Vanadium	1.22	J	5	U	100			P
Zinc	16.9		18.6	J	9.94			P

*Analytical Methods:

P SW846 3005/6010B

METALS

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Serial Dilution Sample Summary

SDG NO. 12-1236 Client ID: CAPA-12-13287L

Contract: ESHL00210

Matrix: LIQUID Level: Low

Sample ID: 303221003 Serial Dilution ID: 1202644310

<u>Analyte</u>	<u>Initial Value</u> ug/L	<u>C</u>	<u>Serial Value</u> ug/L	<u>C</u>	<u>% Difference</u>	<u>Qual</u>	<u>Acceptance Limit</u>	<u>M*</u>
Antimony	1	U	5	U				MS
Arsenic	1.7	U	8.5	U				MS
Cadmium	.11	U	.55	U				MS
Chromium	6.72	J	10	U	100			MS
Lead	1.08	J	2.5	U	100			MS
Molybdenum	.605		.825	U	100			MS
Selenium	1.5	U	7.5	U				MS
Silver	.2	U	1	U				MS
Thallium	.45	U	2.25	U				MS
Uranium	.173	J	.335	U	100			MS

*Analytical Methods:

MS SW846 3005/6020 DOE-AL

METALS

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Serial Dilution Sample Summary

SDG NO. 12-1236 Client ID: CAPA-12-13287L

Contract: ESHL00210

Matrix: LIQUID Level: Low

Sample ID: 303221003 Serial Dilution ID: 1202647541

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

*Analytical Methods:

AV EPA 245.1/245.2

METALS

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Serial Dilution Sample Summary

SDG NO. 12-1236 Client ID: CAPA-12-13277L

Contract: ESHL00210

Matrix: LIQUID Level: Low

Sample ID: 303221002 Serial Dilution ID: 1202648677

<u>Analyte</u>	<u>Initial Value</u> ug/L	<u>C</u>	<u>Serial Value</u> ug/L	<u>C</u>	<u>% Difference</u>	<u>Qual</u>	<u>Acceptance Limit</u>	<u>M*</u>
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	1.08	J	2.5	U	100			MS
Molybdenum	.457	J	.825	U	100			MS
Nickel	2.01		2.5	U	100			MS
Selenium	1.5	U	7.5	U				MS
Silver	.2	U	1	U				MS
Thallium	.45	U	2.25	U				MS
Uranium	.185	J	.335	U	100			MS

*Analytical Methods:

MS SW846 3005/6020 DOE-AL

METALS

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Serial Dilution Sample Summary

SDG NO. 12-1236 Client ID: CAPA-12-13287L

Contract: ESHL00210

Matrix: LIQUID Level: Low

Sample ID: 303221003 Serial Dilution ID: 1202649374

<u>Analyte</u>	<u>Initial Value</u> ug/L	<u>C</u>	<u>Serial Value</u> ug/L	<u>C</u>	<u>% Difference</u>	<u>Qual</u>	<u>Acceptance Limit</u>	<u>M*</u>
Nickel	1.61	J	2.5	U	100			MS

*Analytical Methods:

MS SW846 3005/6020 DOE-AL

General Chem Analysis

Case Narrative

**General Chemistry Narrative
ARS International (ARSL)
SDG 12-1236**

Method/Analysis Information

Product: Carbon, Total Organic

Analytical Batch: 1210398

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
303221002	CAPA-12-13277
1202652079	Method Blank (MB)
1202652080	303221002(CAPA-12-13277) Sample Duplicate (DUP)
1202652081	303221002(CAPA-12-13277) Post Spike (PS)
1202652082	Laboratory Control Sample (LCS)
1202655722	303971001(CAPA-12-13286) Sample Duplicate (DUP)
1202655723	303971001(CAPA-12-13286) Post Spike (PS)

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

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-093 REV# 9.

Preparation/Analytical Method Verification

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

Calibration Information

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

Initial Calibration

All initial calibration requirements have been met for this SDG.

Continuing Calibration Blanks

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

Calibration Verification Information (CCV)

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

Quality Control (QC) Information**Method Blank (MB) Statement**

The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery

The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation

The following samples were selected for QC analysis: 303221002 (CAPA-12-13277) and 303971001 (CAPA-12-13286).

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The MS/PS recoveries for this sample set were within the required acceptance limits.

Duplicate Relative Percent Difference (RPD) Statement

The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

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

Holding Times

All samples in this SDG met the specified holding time.

Sample Preservation/Integrity

All the samples from this sample group met the preservation and integrity requirements of the method.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-analysis

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

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

A DER was not required for this SDG.

Additional Comments

A 15 mg/L Total Inorganic Carbon check standard is analyzed with each analytical run to prove that the instrument is effectively sparging away the inorganic carbon.

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: 1207629 **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
303221003	CAPA-12-13287
1202645404	302385003(CALA-12-12552) Sample Duplicate (DUP)
1202645405	302901002(CAPU-12-12576) Sample Duplicate (DUP)
1202645406	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# 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 Conductivity analysis was performed on a Orion 160 Conductivity Meter.

Initial Calibration

All initial calibration requirements have been met for this SDG.

Quality Control (QC) Information

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: 302385003 (CALA-12-12552) and 302901002 (CAPU-12-12576).

Duplicate Relative Percent Difference (RPD) Statement

The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

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

Holding Times

All samples in this SDG met the specified holding time.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-analysis

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

Miscellaneous Information

Data Exception (DER) Documentation

A DER was not required for this SDG.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

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

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

Method/Analysis Information

Product: pH
Analytical Batch: 1207364 **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
303221003	CAPA-12-13287
1202644765	Laboratory Control Sample (LCS)
1202644768	303221003(CAPA-12-13287) Sample Duplicate (DUP)

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# 20.

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: 303221003 (CAPA-12-13287).

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: 303221003 (CAPA-12-13287).

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: 1073972 303221003 (CAPA-12-13287).

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: 1207431 **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
303221003	CAPA-12-13287
1202644914	Method Blank (MB)
1202644915	303221003(CAPA-12-13287) Sample Duplicate (DUP)
1202644916	303221003(CAPA-12-13287) Post Spike (PS)
1202644917	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: 303221003 (CAPA-12-13287).

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The spike recovery falls outside of the established acceptance limits due to matrix interference: 1202644916 (CAPA-12-13287).

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: 1202644915 (CAPA-12-13287), 1202644916 (CAPA-12-13287) and 303221003 (CAPA-12-13287).

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: 1076964 1202644916 (CAPA-12-13287).

Manual Integrations

The following samples from this sample group had to be manually integrated due to errors in the instrument software peak integration: 1202644915 (CAPA-12-13287), 1202644916 (CAPA-12-13287), 1202644917 (LCS) and 303221003 (CAPA-12-13287).

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: 1207674 **Method:** EPA 350.1 Nitrogen and Ammonia L
Prep Batch : 1207670 **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
303221003	CAPA-12-13287
1202645521	Method Blank (MB)
1202645522	303221002(CAPA-12-13277) Sample Duplicate (DUP)
1202645524	303221002(CAPA-12-13277) Matrix Spike (MS)
1202645526	303221002(CAPA-12-13277) Matrix Spike Duplicate (MSD)
1202645528	Laboratory Control Sample (LCS)

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

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-106 REV# 7.

Preparation/Analytical Method Verification

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

Calibration Information

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

Continuing Calibration Blanks

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

Calibration Verification Information (CCV)

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

acceptance limits.

Y Intercept Rule

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

Quality Control (QC) Information

Method Blank (MB) Statement

The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery

The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation

The following sample was selected for QC analysis: 303221002 (CAPA-12-13277).

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The MS/PS recovery for this sample set was within the required acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement

The MSD recoveries for this sample set were within the required acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement

The RPD between the spike and spike duplicate met the acceptance limits.

Duplicate Relative Percent Difference (RPD) Statement

The Relative Percent Difference (RPD) between the sample and duplicate falls outside of the established acceptance limits because of the heterogeneous matrix of the sample: 1202645522 (CAPA-12-13277).

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: 1074223 1202645522 (CAPA-12-13277).

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: 1207684 **Method:** Nitrogen and Total Kjeldahl (TKN)
Prep Batch : 1207679 **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
303221002	CAPA-12-13277
1202645553	Method Blank (MB)
1202645554	303234001(CAPA-12-13281) Sample Duplicate (DUP)
1202645555	303234001(CAPA-12-13281) Matrix Spike (MS)
1202645556	303234001(CAPA-12-13281) Matrix Spike Duplicate (MSD)
1202645557	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# 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 Nutrient analysis was performed on a Lachat QuickChem FIA+ 8000 Series.

Continuing Calibration Blanks

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

Calibration Verification Information (CCV)

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

acceptance limits.

Y Intercept Rule

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

Quality Control (QC) Information

Method Blank (MB) Statement

The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery

The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation

The following sample was selected for QC analysis: 303234001 (CAPA-12-13281).

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The spike recovery falls outside of the established acceptance limits due to matrix interference: 1202645555 (CAPA-12-13281).

Matrix Spike Duplicate (MSD) Recovery Statement

The spike duplicate recovery falls outside of the established acceptance limits due to matrix interference: 1202645556 (CAPA-12-13281).

MS/MSD Relative Percent Difference (RPD) Statement

The RPD between the spike and spike duplicate met the acceptance limits.

Duplicate Relative Percent Difference (RPD) Statement

The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

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

Holding Times

All samples in this SDG met the specified holding time.

Sample Preservation/Integrity

All the samples from this sample group met the preservation and integrity requirements of the method.

Sample Dilutions

The 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: 1076467 1202645555 (CAPA-12-13281) and 1202645556

(CAPA-12-13281).

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: 1207641 **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
303221002	CAPA-12-13277
303221003	CAPA-12-13287
1202645435	Method Blank (MB)
1202645436	303221002(CAPA-12-13277) Sample Duplicate (DUP)
1202645439	303221002(CAPA-12-13277) Post Spike (PS)
1202645442	Laboratory Control Sample (LCS)

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

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-128 REV# 7.

Preparation/Analytical Method Verification

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

Calibration Information

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

Continuing Calibration Blanks

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

Calibration Verification Information (CCV)

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

Y Intercept Rule

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

Quality Control (QC) Information

Method Blank (MB) Statement

The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery

The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation

The following sample was selected for QC analysis: 303221002 (CAPA-12-13277).

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The MS/PS recoveries for this sample set were within the required acceptance limits.

Duplicate Relative Percent Difference (RPD) Statement

The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

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

Holding Times

All samples in this SDG met the specified holding time.

Sample Preservation/Integrity

All the samples from this sample group met the preservation and integrity requirements of the method.

Sample Dilutions

The following samples in this sample group were diluted due to matrix interference: 1202645436 (CAPA-12-13277), 1202645439 (CAPA-12-13277), 303221002 (CAPA-12-13277) and 303221003 (CAPA-12-13287).

Sample Re-analysis

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

Miscellaneous Information

Data Exception (DER) Documentation

A DER was not required for this SDG.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

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

effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

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

Method/Analysis Information

Product: Total Phosphorus
Analytical Batch: 1207687 **Method:** EPA 365.4 Phosphorus and Total in
Prep Batch : 1207685 **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
303221003	CAPA-12-13287
1202645562	Method Blank (MB)
1202645563	303221003(CAPA-12-13287) Sample Duplicate (DUP)
1202645564	303221003(CAPA-12-13287) Matrix Spike (MS)
1202645565	303221003(CAPA-12-13287) Matrix Spike Duplicate (MSD)
1202645566	Laboratory Control Sample (LCS)

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

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-103 REV# 8.

Preparation/Analytical Method Verification

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

Calibration Information

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

Continuing Calibration Blanks

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

Calibration Verification Information (CCV)

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

acceptance limits.

Y Intercept Rule

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

Quality Control (QC) Information

Method Blank (MB) Statement

The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery

The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation

The following sample was selected for QC analysis: 303221003 (CAPA-12-13287).

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The MS/PS recovery for this sample set was within the required acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement

The MSD recovery for this sample set was within the required acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement

The RPD between the spike and spike duplicate met the acceptance limits.

Duplicate Relative Percent Difference (RPD) Statement

The 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

A DER was not required for this SDG.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

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

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Method/Analysis Information

Product: Solids, Total Dissolved
Analytical Batch: 1207624 **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
303221003	CAPA-12-13287
1202645374	Method Blank (MB)
1202645375	303221003(CAPA-12-13287) Sample Duplicate (DUP)
1202645378	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# 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 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: 303221003 (CAPA-12-13287).

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 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

A DER was not required for this SDG.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

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

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Method/Analysis Information

Product: Alkalinity
Analytical Batch: 1207761 **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
303221003	CAPA-12-13287
1202645754	Method Blank (MB)
1202645755	Laboratory Control Sample (LCS)
1202645758	303221003(CAPA-12-13287) Sample Duplicate (DUP)
1202645761	303221003(CAPA-12-13287) 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# 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 Titration analysis was performed on a manually operated buret.

Initial Standardization

The titrant was properly standardized

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: 303221003 (CAPA-12-13287).

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 Re-analysis

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

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

A DER was not required for this SDG.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

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

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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: 22May12

Sample Data Summary

GEL LABORATORIES LLC

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Certificate of Analysis Report for

ARSL001 ARS International (63641-10)

Client SDG: 12-1236 GEL Work Order: 303221

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- E Organics--Concentration of the target analyte exceeds the instrument calibration range
- H Analytical holding time was exceeded
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

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

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

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

Reviewed by



GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: May 21, 2012

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: 12-1236

Client Sample ID: CAPA-12-13277

Project: ESHL00210

Sample ID: 303221002

Client ID: ARSL001

Matrix: W

Collect Date: 23-APR-12 11:45

Receive Date: 25-APR-12

Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW 9060 Total Organic Carbon "As Received"											
Total Organic Carbon Average		4.18	0.330	1.00	mg/L	1	TSM	05/11/12	1549	1210398	1
Nutrient Analysis											
Nitrogen, Total Kjeldahl (TKN) "As Received"											
Nitrogen, Total Kjeldahl	J	0.0874	0.035	0.100	mg/L	1	KLP1	05/08/12	1004	1207684	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	05/07/12	1405	1207679

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9060	
2	EPA 351.2	

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: May 21, 2012

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: 12-1236

Client Sample ID: CAPA-12-13287
 Sample ID: 303221003
 Matrix: W
 Collect Date: 23-APR-12 11:45
 Receive Date: 25-APR-12
 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		566	1.00	1.00	umhos/cm	1	TXT1	04/27/12	1314	1207629	1
Electrode Analysis											
EPA 150.1 pH "As Received"											
pH at Temp 18.4C	H	6.42	0.010	0.100	SU	1	LXA1	04/27/12	1303	1207364	2
Ion Chromatography											
EPA 300.0 Anions Liquid 28 day "As Received"											
Bromide	U	ND	0.067	0.200	mg/L	1	MAR1	05/08/12	0118	1207431	3
Fluoride		0.133	0.033	0.100	mg/L	1					
Sulfate		13.3	0.133	0.400	mg/L	1					
Chloride		130	0.670	2.00	mg/L	10	MAR1	05/08/12	1948	1207431	4
Nutrient Analysis											
EPA 350.1 Nitrogen, Ammonia L "As Received"											
Nitrogen, Ammonia		0.150	0.017	0.050	mg/L	1	KLP1	04/30/12	1438	1207674	5
EPA 353.2 Nitrogen, Nitrate/Nitrite "As Received"											
Nitrogen, Nitrate/Nitrite		0.454	0.085	0.250	mg/L	5	KLP1	05/02/12	1130	1207641	6
EPA 365.4 Phosphorus, Total in "As Received"											
Phosphorus, Total as P	J	0.0396	0.017	0.050	mg/L	1	KLP1	05/09/12	1514	1207687	7
Solids Analysis											
EPA 160.1 Solids, Dissolved-F "As Received"											
Total Dissolved Solids		303	3.40	14.3	mg/L		LYG1	04/27/12	1022	1207624	8
Titration Analysis											
EPA 310.1 Total Alkalinity "As Received"											
Alkalinity, Total as CaCO3		48.5	0.725	1.00	mg/L		LXA1	04/27/12	1621	1207761	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	04/30/12	1309	1207670
EPA 365.4 Prep	EPA 365.4 Phosphorus, Total in liquid PR	KLP1	05/09/12	1245	1207685

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: May 21, 2012

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: 12-1236

Client Sample ID: CAPA-12-13287

Project: ESHL00210

Sample ID: 303221003

Client ID: ARSL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
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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	

Quality Control Summary

GEL LABORATORIES LLC

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

QC Summary

Report Date: May 21, 2012
Page 1 of 4

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

Workorder: 303221

Paramname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Carbon Analysis											
Batch	1210398										
QC1202652080	303221002	DUP									
Total Organic Carbon Average		4.18		4.15	mg/L	0.865	^	(+/-1.00)	TSM	05/11/12	16:22
QC1202655722	303971001	DUP									
Total Organic Carbon Average		1.71		1.70	mg/L	0.234	^	(+/-1.00)		05/11/12	23:18
QC1202652082	LCS										
Total Organic Carbon Average	10.0			9.59	mg/L			(85%-115%)		05/11/12	15:41
QC1202652079	MB										
Total Organic Carbon Average			U	ND	mg/L					05/11/12	15:32
QC1202652081	303221002	PS									
Total Organic Carbon Average	10.0	4.18		12.8	mg/L			(65%-120%)		05/11/12	16:42
QC1202655723	303971001	PS									
Total Organic Carbon Average	10.0	1.71		11.1	mg/L			(65%-120%)		05/11/12	23:37
Conductivity Analysis											
Batch	1207629										
QC1202645404	302385003	DUP									
Conductivity		362		364	umhos/cm	0.551		(0%-10%)	TXT1	04/27/12	13:10
QC1202645405	302901002	DUP									
Conductivity		381		383	umhos/cm	0.524		(0%-10%)		04/27/12	13:12
QC1202645406	LCS										
Conductivity	1410			1410	umhos/cm			(95%-105%)		04/27/12	13:09
Electrode Analysis											
Batch	1207364										
QC1202644768	303221003	DUP									
pH	H	6.42	H	6.44	SU	0.311		(0%-10%)	LXA1	04/27/12	13:06
QC1202644765	LCS										
pH	7.00			7.00	SU			(99%-101%)		04/27/12	11:53
Ion Chromatography											
Batch	1207431										
QC1202644915	303221003	DUP									
Bromide	U	ND	U	ND	mg/L	N/A			MAR1	05/08/12	01:51
Chloride		130		130	mg/L	0.110		(0%-20%)		05/08/12	20:21
Fluoride		0.133		0.134	mg/L	1.12	^	(+/-0.100)		05/08/12	01:51
Sulfate		13.3		13.8	mg/L	4.10		(0%-20%)			
QC1202644917	LCS										
Bromide	2.50			2.60	mg/L			104 (90%-110%)		05/08/12	00:45
Chloride	10.0			9.73	mg/L			97.3 (90%-110%)			
Fluoride	5.00			5.09	mg/L			102 (90%-110%)			
Sulfate	20.0			20.0	mg/L			99.8 (90%-110%)			
QC1202644914	MB										
Bromide			U	ND	mg/L					05/08/12	00:12
Chloride			U	ND	mg/L						

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QC Summary

Workorder: 303221

Page 2 of 4

Parname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time	
Ion Chromatography												
Batch	1207431											
Fluoride			U	ND	mg/L							
Sulfate			U	ND	mg/L				MAR1	05/08/12	00:12	
QC1202644916	303221003	PS										
Bromide	2.50	U	ND	2.64	mg/L		103	(90%-110%)		05/08/12	02:24	
Chloride	10.0		13.0	24.6	mg/L		116*	(90%-110%)		05/08/12	20:54	
Fluoride	5.00		0.133	5.13	mg/L		99.9	(90%-110%)		05/08/12	02:24	
Sulfate	20.0		13.3	35.5	mg/L		111*	(90%-110%)				
Nutrient Analysis												
Batch	1207641											
QC1202645436	303221002	DUP										
Nitrogen, Nitrate/Nitrite			0.464	0.459	mg/L	1.08	^	(+/-0.250)	KLP1	05/02/12	11:28	
QC1202645442	LCS											
Nitrogen, Nitrate/Nitrite	1.00			1.06	mg/L		106	(90%-110%)		05/02/12	10:31	
QC1202645435	MB											
Nitrogen, Nitrate/Nitrite			U	ND	mg/L					05/02/12	10:29	
QC1202645439	303221002	PS										
Nitrogen, Nitrate/Nitrite	1.00		0.0927	1.15	mg/L		106	(90%-110%)		05/02/12	11:29	
Batch	1207674											
QC1202645522	303221002	DUP										
Nitrogen, Ammonia			0.190	0.0975	mg/L	64.3*	^	(+/-0.050)	KLP1	04/30/12	14:36	
QC1202645528	LCS											
Nitrogen, Ammonia	1.00			1.04	mg/L		104	(90%-110%)		04/30/12	14:24	
QC1202645521	MB											
Nitrogen, Ammonia			U	ND	mg/L					04/30/12	14:23	
QC1202645524	303221002	MS										
Nitrogen, Ammonia	1.00		0.190	1.15	mg/L		96	(90%-110%)		04/30/12	14:37	
QC1202645526	303221002	MSD										
Nitrogen, Ammonia	1.00		0.190	1.23	mg/L	6.72	104	(0%-15%)		04/30/12	14:38	
Batch	1207684											
QC1202645554	303234001	DUP										
Nitrogen, Total Kjeldahl		U	ND	U	ND	mg/L	N/A		KLP1	05/08/12	10:06	
QC1202645557	LCS											
Nitrogen, Total Kjeldahl	1.00			0.928	mg/L		92.8	(90%-110%)		05/08/12	10:01	
QC1202645553	MB											
Nitrogen, Total Kjeldahl			U	ND	mg/L					05/08/12	10:00	
QC1202645555	303234001	MS										
Nitrogen, Total Kjeldahl	1.00	U	ND	0.875	mg/L		87.5*	(90%-110%)		05/08/12	10:07	
QC1202645556	303234001	MSD										
Nitrogen, Total Kjeldahl	1.00	U	ND	0.882	mg/L	0.797	88.2*	(0%-20%)		05/08/12	10:07	
Batch	1207687											
QC1202645563	303221003	DUP										
Phosphorus, Total as P		J	0.0396	J	0.0462	mg/L	15.4	^	(+/-0.050)	KLP1	05/09/12	15:14
QC1202645566	LCS											
Phosphorus, Total as P	1.00			0.984	mg/L		98.4	(84%-122%)		05/09/12	15:13	
QC1202645562	MB											
Phosphorus, Total as P			U	ND	mg/L					05/09/12	15:12	
QC1202645564	303221003	MS										

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QC Summary

Workorder: 303221

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Nutrient Analysis											
Batch	1207687										
Phosphorus, Total as P	1.00	J	0.0396	1.02	mg/L		98	(46%-146%)		05/09/12	15:15
QC1202645565 303221003 MSD											
Phosphorus, Total as P	1.00	J	0.0396	1.03	mg/L	0.976	99	(0%-21%)	KLP1	05/09/12	15:16
Solids Analysis											
Batch	1207624										
QC1202645375 303221003 DUP											
Total Dissolved Solids			303	299	mg/L	1.43		(0%-10%)	LYG1	04/27/12	10:22
QC1202645378 LCS											
Total Dissolved Solids	300			293	mg/L		97.6	(95%-105%)		04/27/12	10:22
QC1202645374 MB											
Total Dissolved Solids			J	7.14	mg/L					04/27/12	10:22
Titration Analysis											
Batch	1207761										
QC1202645758 303221003 DUP											
Alkalinity, Total as CaCO3			48.5	48.5	mg/L	0.00		(0%-20%)	LXA1	04/27/12	16:21
Carbonate alkalinity (CaCO3)		U	ND	U	ND	mg/L	N/A				
QC1202645755 LCS											
Alkalinity, Total as CaCO3	50.0			51.6	mg/L		103	(90%-110%)		04/27/12	14:46
QC1202645754 MB											
Alkalinity, Total as CaCO3			U	ND	mg/L					04/27/12	14:43
Carbonate alkalinity (CaCO3)			U	ND	mg/L						
QC1202645761 303221003 MS											
Alkalinity, Total as CaCO3	50.0		48.5	99.0	mg/L		101	(80%-120%)		04/27/12	16:22

Notes:

RER is calculated at the 95% confidence level (2-sigma).

The Qualifiers in this report are defined as follows:

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- 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 General Chemistry--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
- E Organics--Concentration of the target analyte exceeds the instrument calibration range
- F Estimated Value
- 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

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QC Summary

Workorder: 303221

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Parname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
J											
J											
JNX											
JNX											
K											
K											
L											
L											
M											
M											
M											
M											
N											
N											
N											
N											
N/A											
N/A											
N1											
N1											
ND											
ND											
NJ											
NJ											
P											
P											
Q											
Q											
R											
R											
U											
U											
UI											
UI											
UJ											
UJ											
UJ											
UL											
UL											
X											
X											
Y											
Y											
Z											
Z											
^											
^											
d											
d											
h											
h											

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. 30-APR-12	Division: Industrial	Quality Criteria: Specifications	Type: Process
Instrument Type: ELECTRODE	Test / Method: EPA 150.1	Matrix Type: Liquid	Client Code: ARGN, BETT, ESHL, GELC,
Batch ID: 1207364	Sample Numbers: See below.		
Potentially affected work order(s)(SDG): 303144,303181,303187,303201,303206,303221(12-1236),303234(12-1241)			
Application Issues: Sample received out of holding			
Specification and Requirements Exception Description:		DER Disposition:	
<p>1. Sample received out of holding:</p> <p>303144 001,002</p> <p>303181 001</p> <p>303187 004,005,006</p> <p>303201 001,002</p> <p>303206 001,002,003,004,005,006,007</p> <p>303221 003</p> <p>303234 002</p>		<p>1. Samples were received out of holding.</p>	

Originator's Name:
Lindsey Jensen 30-APR-12

Data Validator/Group Leader:
Julia Hamilton 03-MAY-12

DATA EXCEPTION REPORT

Mo.Day Yr. 30-APR-12	Division: Industrial	Quality Criteria: Specifications	Type: Process
Instrument Type: LACHAT Flow Injection Analyzer	Test / Method: EPA 350.1	Matrix Type: Liquid	Client Code: ESHL
Batch ID: 1207674	Sample Numbers: See below.		
Potentially affected work order(s)(SDG): 303180,303206,303221(12-1236),303234(12-1241),303295			
Application Issues: Failed RPD for DUP			
Specification and Requirements Exception Description:		DER Disposition:	
<p>1. Failed RPD for DUP: QC 1202645522DUP</p>		<p>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.</p>	

Originator's Name:

Kristen Parson 30-APR-12

Data Validator/Group Leader:

Julia Hamilton 01-MAY-12

DATA EXCEPTION REPORT

Mo.Day Yr. 08-MAY-12	Division: Industrial	Quality Criteria: Specifications	Type: Process
Instrument Type: LACHAT Flow Injection Analyzer	Test / Method: EPA 351.2	Matrix Type: Liquid	Client Code: BETT, ESHL
Batch ID: 1207684	Sample Numbers: See below.		
Potentially affected work order(s)(SDG): 303187,303221(12-1236),303234(12-1241),303443(12-1249),303489(12-1254),303613(12-1268)			
Application Issues: Failed Recovery for MS/PS Failed Recovery for MSD/PSD			
Specification and Requirements Exception Description:		DER Disposition:	
<p>1. Failed Recovery for MS/MSD: QC 1202645555MS, QC 1202645556MSD</p>		<p>1. The MS recovery falls outside of the established acceptance limits. The MSD verifies the recovery failure with a passing RPD; therefore, the failure is attributed to matrix interference.</p>	

Originator's Name:
Kristen Parson 08-MAY-12

Data Validator/Group Leader:
Julia Hamilton 21-MAY-12

DATA EXCEPTION REPORT

Mo.Day Yr. 09-MAY-12	Division: Industrial	Quality Criteria: Specifications	Type: Process
Instrument Type: IC	Test / Method: EPA 300.0	Matrix Type: Liquid	Client Code: ESHL
Batch ID: 1207431	Sample Numbers: See Below		
Potentially affected work order(s)(SDG): 303221(12-1236),303234(12-1241),303443(12-1249),303488(12-1253),303489(12-1254)			
Application Issues: Failed Recovery for MS/PS			
Specification and Requirements Exception Description:		DER Disposition:	
<p>1. Failed Recovery for MS/PS:</p> <p>QC 1202644916PS</p>		<p>1. The MS/PS failed required acceptance limits for chloride and sulfate due to matrix interference. Of the remaining anions in the MS/PS, all except Orthophosphate 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.</p>	

Originator's Name:

Mary Sherwood 09-MAY-12

Data Validator/Group Leader:

Virginia Winger 09-MAY-12

Radiological Analysis

**Radiochemistry Case Narrative
ARS International (ARSL)
SDG 12-1236
Work Order 303221**

Method/Analysis Information

Product: Alphaspec Am241 Liquid
Analytical Method: DOE EML HASL-300, Am-05-RC Modified
Analytical Batch Number: 1207310

Sample ID	Client ID
303221002	CAPA-12-13277
1202644608	Method Blank (MB)
1202644609	303221002(CAPA-12-13277) Sample Duplicate (DUP)
1202644610	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# 21.

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 1202644608 (MB) and 1202644610 (LCS) were changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 303221002 (CAPA-12-13277). The QC was from ARSL work order 303221.

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

None of the samples in this sample set required prep 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 1078237 was generated due to RDL less than MDA. 1. Samples 303221002, 303234001, 303489001, 303750001, 303750003, 303750005, 303750007, 1202644608, and 1202644609 did not meet the Am-241 detection limit. 1. When a blank population is performed the MDC may be greater than the RDL due to the high standard deviation. The samples did meet the client's tracer yield requirement and were counted for 1000 minutes to achieve the lowest MDC possible. 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 Pu, Liquid
Analytical Method: DOE EML HASL-300, Pu-11-RC Modified
Analytical Batch Number: 1207311

Sample ID	Client ID
303221002	CAPA-12-13277
1202644611	Method Blank (MB)
1202644612	303221002(CAPA-12-13277) Sample Duplicate (DUP)
1202644613	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# 21.

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 1202644611 (MB) and 1202644613 (LCS) were changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 303221002 (CAPA-12-13277). The QC was from ARSL work order 303221.

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.

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: 1207313

Sample ID	Client ID
303221002	CAPA-12-13277
1202644614	Method Blank (MB)
1202644615	303221002(CAPA-12-13277) Sample Duplicate (DUP)
1202644616	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# 21.

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 1202644614 (MB) and 1202644616 (LCS) were changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 303221002 (CAPA-12-13277). The QC was from ARSL work order 303221.

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.

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:	1207234

Sample ID	Client ID
303221002	CAPA-12-13277
1202644414	Method Blank (MB)
1202644415	303221002(CAPA-12-13277) Sample Duplicate (DUP)
1202644416	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# 24.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met. The initial Calibrations were performed in August 2011, November 2011, February 2012 and March 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: 303221002 (CAPA-12-13277). The QC was from ARSL work order 303221.

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: WSP-GrossA/B
Analytical Method: EPA 900.0/SW846 9310
Analytical Batch Number: 1208279

Sample ID	Client ID
303221002	CAPA-12-13277
1202646910	Method Blank (MB)
1202646911	302717001(CAPU-12-12567) Sample Duplicate (DUP)
1202646912	302717001(CAPU-12-12567) Matrix Spike (MS)
1202646913	302717001(CAPU-12-12567) Matrix Spike Duplicate (MSD)
1202646914	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# 15.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met. The initial Calibration was performed in September 2011. The discrimination settings are calibrated in beta discriminating mode to reduce beta to alpha crosstalk.

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 1202646910 (MB) and 1202646914 (LCS) were changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 302717001 (CAPU-12-12567). The QC was from ARSL work order 302717.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The blank 1202646910 (MB) beta 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.

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, 1202646912 (CAPU-12-12567) and 1202646913 (CAPU-12-12567), aliquots were reduced to conserve sample volume.

Blank Decision Level

The blank 1202646910 (MB) beta result is greater than the decision level but less than the MDC.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product: GFPC, Sr90, liquid
Analytical Method: EPA 905.0 Modified
Analytical Batch Number: 1208282

Sample ID	Client ID
303221002	CAPA-12-13277
1202646922	Method Blank (MB)
1202646923	303234001(CAPA-12-13281) Sample Duplicate (DUP)

1202646924 303234001(CAPA-12-13281) Matrix Spike (MS)
1202646925 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# 15.

Calibration Information:

Calibration Information

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

Calibration Information

All of the calibration verification standard requirements were met.

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 1202646922 (MB) and 1202646925 (LCS) were changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 303234001 (CAPA-12-13281). The QC was from ARSL work order 303234.

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, 1202646924 (CAPA-12-13281), 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-H-3
Analytical Method: EPA 906.0 Modified
Analytical Batch Number: 1207327

Sample ID	Client ID
303221002	CAPA-12-13277
1202644664	Method Blank (MB)
1202644665	303221002(CAPA-12-13277) Sample Duplicate (DUP)
1202644666	303221002(CAPA-12-13277) Matrix Spike (MS)
1202644667	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# 20.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met. The initial Calibration was performed in August 2011.

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: 303221002 (CAPA-12-13277). The QC was from ARSL work order 303221.

QC Information

All of the QC samples meet the required acceptance limits with the following exceptions: The blank, 1202644664 (MB), did not meet the detection limit due to keeping the blank volume consistent with the other sample aliquots. All other samples met the detection 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

Samples were recounted due to low recovery. 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.

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.

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Qualifier Definition Report for

ARSL001 ARS International (63641-10)

Client SDG: 12-1236 GEL Work Order: 303221

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

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: 22 MAY 2012

Title: Analyst I

DATA EXCEPTION REPORT

Mo.Day Yr. 14-MAY-12	Division: Radiochemistry	Quality Criteria: Specifications	Type: Process
Instrument Type: ALPHA SPECTROMETER	Test / Method: DOE EML HASL-300, Am-05-RC Modified	Matrix Type: Liquid	Client Code: ESHL
Batch ID: 1207310	Sample Numbers: See Below		
Potentially affected work order(s)(SDG): 303221(12-1236),303234(12-1241),303489(12-1254),303750(12-1274)			
Application Issues: RDL less than MDA			
Specification and Requirements Exception Description:		DER Disposition:	
1. Samples 303221002, 303234001, 303489001, 303750001, 303750003, 303750005, 303750007, 1202644608, and 1202644609 did not meet the Am-241 detection limit.		1. When a blank population is performed the MDC may be greater than the RDL due to the high standard deviation. The samples did meet the client's tracer yield requirement and were counted for 1000 minutes to achieve the lowest MDC possible. Reporting results.	

Originator's Name:
Melanie Aycock 14-MAY-12

Data Validator/Group Leader:
Denise Smalls 15-MAY-12

Sample Data Summary

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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
 Contact: Keith Greene
 Project: LANL-WQH Water Samples

Report Date: May 22, 2012

Client Sample ID: CAPA-12-13277
 Sample ID: 303221002
 Matrix: W
 Collect Date: 23-APR-12
 Receive Date: 25-APR-12
 Collector: Client

Project: ESHL00210
 Client ID: ARSL001

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis													
<i>Alphaspec Am241 Liquid "As Received"</i>													
Americium-241	U	0.0244	+/-0.0161	0.0731	+/-0.0162	0.050	pCi/L		JXD2	05/12/12	1152	1207310	1
<i>Alphaspec Pu, Liquid "As Received"</i>													
Plutonium-238	U	-0.0151	+/-0.00796	0.0468	+/-0.00797	0.050	pCi/L		JXD2	05/15/12	1833	1207311	2
Plutonium-239/240	U	-0.00903	+/-0.00796	0.0397	+/-0.00796	0.050	pCi/L						
<i>Alphaspec U, Liquid "As Received"</i>													
Uranium-234	U	0.066	+/-0.0186	0.0769	+/-0.0192	1.00	pCi/L		JXD2	05/15/12	1736	1207313	3
Uranium-235/236	U	0.00156	+/-0.00685	0.0549	+/-0.00686	1.00	pCi/L						
Uranium-238	U	0.0237	+/-0.0115	0.0388	+/-0.0116	0.500	pCi/L						
Rad Gamma Spec Analysis													
<i>Gammastec "As Received"</i>													
Cesium-137	U	1.79	+/-1.65	6.30	+/-1.65	8.00	pCi/L		KXG3	04/27/12	1150	1207234	4
Cobalt-60	U	-0.29	+/-1.53	5.85	+/-1.53	8.00	pCi/L						
Neptunium-237	U	-2.21	+/-3.45	11.7	+/-3.45	10.0	pCi/L						
Potassium-40	U	-16.9	+/-19.4	77.1	+/-19.4	10.0	pCi/L						
Sodium-22	U	-1.02	+/-1.58	5.57	+/-1.58	10.0	pCi/L						
Rad Gas Flow Proportional Counting													
<i>GFPC, Sr90, liquid "As Received"</i>													
Strontium-90	U	0.336	+/-0.149	0.484	+/-0.151	0.500	pCi/L		VXC2	05/19/12	1445	1208282	5
<i>WSP-GrossA/B "As Received"</i>													
Beta		12.6	+/-1.36	2.24	+/-1.72	3.00	pCi/L		BXF1	05/11/12	1100	1208279	6
Alpha		3.68	+/-1.27	2.91	+/-1.31	3.00	pCi/L		BXF1	05/11/12	1437	1208279	7
Rad Liquid Scintillation Analysis													
<i>WSP-H-3 "As Received"</i>													
Tritium		1670	+/-85.2	205	+/-186	200	pCi/L		BYS1	05/12/12	0526	1207327	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
Americium-243 Tracer	Alphaspec Am241 Liquid "As Received"	1207310	72.4	(50%-105%)
Plutonium-242 Tracer	Alphaspec Pu, Liquid "As Received"	1207311	76.5	(50%-105%)

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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, 2012

Contact: Keith Greene
Project: LANL-WQH Water Samples

Client Sample ID: CAPA-12-13277
Sample ID: 303221002

Project: ESHL00210
Client ID: ARSL001

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Surrogate/Tracer Recovery		Test					Batch ID		Recovery%			Acceptable Limits	
Uranium-232 Tracer		Alphaspec U, Liquid "As Received"					1207313		66.4			(50%-105%)	
Strontium Carrier		GFPC, Sr90, liquid "As Received"					1208282		88.9			(50%-105%)	

Notes:

TPU and Uncertainty are calculated at the 67% confidence level (1-sigma).

Quality Control Data

GEL LABORATORIES LLC

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QC Summary

Report Date: May 22, 2012
Page 1 of 6

Client : Los Alamos National Laboratory
PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm
Los Alamos, New Mexico
Contact: Keith Greene
Workorder: 303221

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Alpha Spec										
Batch	1207310									
QC1202644609	303221002	DUP								
Americium-241	U	0.0244	U	0.0151	pCi/L	0.157		(0-1)	JXD2	05/12/1211:53
	Uncert:	+/-0.0161		+/-0.0133						
	TPU:	+/-0.0162		+/-0.0133						
	Yield:	72.4		84.2						
QC1202644610	LCS									
Americium-241	1.42			1.39	pCi/L		97.8	(80%-120%)		05/12/1211:53
	Uncert:			+/-0.0508						
	TPU:			+/-0.0767						
	Yield:			97.5						
QC1202644608	MB									
Americium-241			U	-0.0334	pCi/L					05/12/1211:53
	Uncert:			+/-0.0164						
	TPU:			+/-0.0164						
	Yield:			66.6						
Batch	1207311									
QC1202644612	303221002	DUP								
Plutonium-238	U	-0.0151	U	-0.0402	pCi/L	0.587		(0-1)	JXD2	05/15/1218:34
	Uncert:	+/-0.00796		+/-0.0135						
	TPU:	+/-0.00797		+/-0.0135						
	Yield:	76.5		67.0						
Plutonium-239/240	U	-0.00903	U	0.00	pCi/L	0.366		(0-1)		
	Uncert:	+/-0.00796		+/-0.00437						
	TPU:	+/-0.00796		+/-0.00438						
	Yield:	76.5		67.0						
QC1202644613	LCS									
Plutonium-238			U	0.00211	pCi/L			(80%-120%)		05/15/1218:34
	Uncert:			+/-0.00761						
	TPU:			+/-0.00761						
	Yield:			83.3						
Plutonium-239/240	2.03			2.07	pCi/L		102	(80%-120%)		
	Uncert:			+/-0.0662						
	TPU:			+/-0.128						
	Yield:			83.3						
QC1202644611	MB									
Plutonium-238			U	0.00932	pCi/L					05/15/1218:33
	Uncert:			+/-0.00737						
	TPU:			+/-0.00738						
	Yield:			74.3						
Plutonium-239/240			U	-0.00699	pCi/L					
	Uncert:			+/-0.00521						
	TPU:			+/-0.00521						
	Yield:			74.3						

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QC Summary

Workorder: 303221

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Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Alpha Spec										
Batch	1207313									
QC1202644615	303221002 DUP									
Uranium-234	U	0.066	U	0.055	pCi/L	0.144		(0-1)	JXD2	05/15/1218:41
	Uncert:	+/-0.0186		+/-0.0186						
	TPU:	+/-0.0192		+/-0.019						
	Yield:	66.4		67.2						
Uranium-235/236	U	0.00156	U	-0.00244	pCi/L	0.135		(0-1)		
	Uncert:	+/-0.00685		+/-0.00793						
	TPU:	+/-0.00686		+/-0.00794						
	Yield:	66.4		67.2						
Uranium-238	U	0.0237	U	0.0115	pCi/L	0.282		(0-1)		
	Uncert:	+/-0.0115		+/-0.0101						
	TPU:	+/-0.0116		+/-0.0101						
	Yield:	66.4		67.2						
QC1202644616	LCS									
Uranium-234				2.45	pCi/L					
	Uncert:			+/-0.0822						
	TPU:			+/-0.182						
	Yield:			78.4						
Uranium-235/236				0.155	pCi/L					
	Uncert:			+/-0.0228						
	TPU:			+/-0.025						
	Yield:			78.4						
Uranium-238	2.67			2.55	pCi/L		95.4	(80%-120%)		
	Uncert:			+/-0.0833						
	TPU:			+/-0.189						
	Yield:			78.4						
QC1202644614	MB									
Uranium-234			U	-0.00317	pCi/L					
	Uncert:			+/-0.00738						
	TPU:			+/-0.00738						
	Yield:			83.5						
Uranium-235/236			U	-0.00629	pCi/L					
	Uncert:			+/-0.00466						
	TPU:			+/-0.00466						
	Yield:			83.5						
Uranium-238			U	0.00132	pCi/L					
	Uncert:			+/-0.00411						
	TPU:			+/-0.00411						
	Yield:			83.5						
Rad Gamma Spec										
Batch	1207234									
QC1202644415	303221002 DUP									
Cesium-137	U	1.79	U	-2.01	pCi/L	0.562		(0-1)	KXG3	04/28/1210:08
	Uncert:	+/-1.65		+/-1.73						
	TPU:	+/-1.65		+/-1.73						
Cobalt-60	U	-0.29	U	-1.16	pCi/L	0.155		(0-1)		
	Uncert:	+/-1.53		+/-1.29						
	TPU:	+/-1.53		+/-1.29						

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QC Summary

Workorder: 303221

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Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	1207234										
Neptunium-237	U	-2.21	U	1.72	pCi/L	0.320		(0-1)			
	Uncert:	+/-3.45		+/-2.69							
	TPU:	+/-3.45		+/-2.69							
Potassium-40	U	-16.9	U	25.4	pCi/L	0.526		(0-1)			
	Uncert:	+/-19.4		+/-20.7							
	TPU:	+/-19.4		+/-20.7							
Sodium-22	U	-1.02	U	-0.596	pCi/L	0.0759		(0-1)			
	Uncert:	+/-1.58		+/-1.24							
	TPU:	+/-1.58		+/-1.24							
QC1202644416 LCS											
Americium-241	2790			2690	pCi/L		96.6	(80%-120%)		04/28/1211:48	
	Uncert:			+/-182							
	TPU:			+/-182							
Cesium-137	6170			6390	pCi/L		104	(80%-120%)			
	Uncert:			+/-272							
	TPU:			+/-272							
Cobalt-60	6080			6200	pCi/L		102	(80%-120%)			
	Uncert:			+/-259							
	TPU:			+/-259							
Neptunium-237			U	21.5	pCi/L						
	Uncert:			+/-27.3							
	TPU:			+/-27.3							
Potassium-40			U	77.9	pCi/L						
	Uncert:			+/-65.7							
	TPU:			+/-65.7							
Sodium-22			U	-16.8	pCi/L						
	Uncert:			+/-8.56							
	TPU:			+/-8.56							
QC1202644414 MB											
Cesium-137			U	-1.13	pCi/L					04/28/1210:07	
	Uncert:			+/-1.72							
	TPU:			+/-1.72							
Cobalt-60			U	-0.474	pCi/L						
	Uncert:			+/-1.64							
	TPU:			+/-1.64							
Neptunium-237			U	-2.29	pCi/L						
	Uncert:			+/-2.98							
	TPU:			+/-2.98							
Potassium-40			U	-23	pCi/L						
	Uncert:			+/-20.4							
	TPU:			+/-20.4							
Sodium-22			U	0.704	pCi/L						
	Uncert:			+/-1.35							
	TPU:			+/-1.35							
Rad Gas Flow											
Batch	1208279										
QC1202646911 302717001 DUP											
Alpha	U	0.840	U	1.41	pCi/L	0.209		(0-1)	BXF1	05/11/1214:40	

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QC Summary

Workorder: 303221

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Parmname	NOM	Sample Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Gas Flow									
Batch	1208279								
		Uncert:	+/-0.665						+/-0.680
		TPU:	+/-0.669						+/-0.690
Beta		U	2.05	4.02	pCi/L	0.534	(0-1)		05/11/1211:00
		Uncert:	+/-0.832						+/-0.935
		TPU:	+/-0.850						+/-0.994
QC1202646914	LCS								
Alpha	12.0			12.4	pCi/L		103 (80%-120%)		05/11/1214:48
		Uncert:		+/-0.633					
		TPU:		+/-1.30					
Beta	50.3			54.5	pCi/L		108 (80%-120%)		05/11/1211:01
		Uncert:		+/-0.935					
		TPU:		+/-4.62					
QC1202646910	MB								
Alpha			U	-0.0801	pCi/L				05/11/1214:38
		Uncert:		+/-0.0945					
		TPU:		+/-0.0945					
Beta			U	0.275	pCi/L				05/11/1211:00
		Uncert:		+/-0.119					
		TPU:		+/-0.122					
QC1202646912	302717001	MS							
Alpha	241	U	0.840	252	pCi/L		105 (75%-125%)		05/11/1214:57
		Uncert:	+/-0.665	+/-15.2					
		TPU:	+/-0.669	+/-26.2					
Beta	1010	U	2.05	1080	pCi/L		107 (75%-125%)		05/11/1211:00
		Uncert:	+/-0.832	+/-19.1					
		TPU:	+/-0.850	+/-93.5					
QC1202646913	302717001	MSD							
Alpha	241	U	0.840	250	pCi/L	0.0249	104 (0-1)		05/11/1214:47
		Uncert:	+/-0.665	+/-13.2					
		TPU:	+/-0.669	+/-24.8					
Beta	1010	U	2.05	1130	pCi/L	0.133	112 (0-1)		05/11/1211:00
		Uncert:	+/-0.832	+/-19.5					
		TPU:	+/-0.850	+/-95.1					
Batch	1208282								
QC1202646923	303234001	DUP							
Strontium-90		U	0.250	U	0.213	pCi/L	0.0622	(0-1) VXC2	05/19/1214:46
		Uncert:	+/-0.147		+/-0.145				
		TPU:	+/-0.148		+/-0.146				
		Yield:	88.9		95.6				
QC1202646925	LCS								
Strontium-90	25.1			24.8	pCi/L		98.7 (80%-120%)		05/19/1214:46
		Uncert:		+/-0.662					
		TPU:		+/-2.07					
		Yield:		94.4					
QC1202646922	MB								
Strontium-90			U	-0.22	pCi/L				05/19/1214:46
		Uncert:		+/-0.120					
		TPU:		+/-0.120					
		Yield:		93.3					

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QC Summary

Workorder: 303221

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Parmname	NOM	Sample Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Gas Flow									
Batch	1208282								
QC1202646924	303234001	MS							
Strontium-90	126	U	0.250	122	pCi/L	97.2	(75%-125%)		05/19/1214:46
	Uncert:		+/-0.147	+/-3.34					
	TPU:		+/-0.148	+/-10.3					
	Yield:		88.9	90.0					
Rad Liquid Scintillation									
Batch	1207327								
QC1202644665	303221002	DUP							
Tritium			1670	1740	pCi/L	0.0932	(0-1)	BYS1	05/12/1209:30
	Uncert:		+/-85.2	+/-87.0					
	TPU:		+/-186	+/-193					
QC1202644667	LCS								
Tritium	2020			2040	pCi/L	101	(80%-120%)		05/12/1211:47
	Uncert:			+/-221					
	TPU:			+/-299					
QC1202644664	MB								
Tritium		U		68.0	pCi/L				05/12/1207:28
	Uncert:			+/-61.8					
	TPU:			+/-62.1					
QC1202644666	303221002	MS							
Tritium	2020		1670	3410	pCi/L	86	(75%-125%)		05/12/1211:31
	Uncert:		+/-85.2	+/-271					
	TPU:		+/-186	+/-432					

Notes:

The Qualifiers in this report are defined as follows:

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- 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 General Chemistry--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
- E Organics--Concentration of the target analyte exceeds the instrument calibration range
- F Estimated Value
- 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.

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QC Summary

Workorder: 303221

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Parname	NOM	Sample Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
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		Matrix Related Failure								
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		RPD or %Recovery limits do not apply.								
N1		See case narrative								
ND		Analyte concentration is not detected above the detection limit								
NJ		Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier								
P		Organics--The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, difference is also <70%								
Q		One or more quality control criteria have not been met. Refer to the applicable narrative or DER.								
R		Sample results are rejected								
U		Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.								
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		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.

** Indicates analyte is a surrogate compound.

^ 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.

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.