GEL Laboratories LLC
a member of The GEL Group INC

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July 17, 2017

Mr. Scot Fitzgerald
CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352

Re: CHPRC SAF S17-006
Work Order: 425783
SDG: GEL425783

Dear Mr. Fitzgerald:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on June 20, 2017. 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. 4505.

Sincerely,

B. Luthman

Brielle Luthman for
Heather Shaffer
Project Manager

Purchase Order: 300071-7H
Chain of Custody: S17-006-253, S17-006-255 and S17-006-487
Enclosures

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Case Narrative

General Narrative
for
CH2MHill Plateau Remediation Company
CHPRC SAF S17-006
SDG: GEL425783

July 17, 2017

Laboratory Identification:

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

Summary

Sample receipt

The sample(s) arrived at GEL Laboratories, LLC, Charleston, South Carolina on June 20, 2017, for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Items of Note All efforts were made by the lab to meet any short hold times. Samples that were analyzed outside of the initial hold time but still within 2X hold time will be noted in the lab case narrative.

Sample Identification
The laboratory received the following samples:

Laboratory Identification	Sample Description
425783001	B39TT4
425783002	B39T65
425783003	B39T93
425783004	B39T90

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: General Narrative, Chain of Custody and Supporting Documentation, and data from the following fractions: GC/MS Volatile, General Chemistry, Metals and Radiochemistry.

We certify that this package is in compliance with the SOW, both technically and for completeness, including a full description of, explanation of, and corrective actions for, any and all deviations, from either the analyses requested or the case narrative requested. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager (or designee) and the laboratory's client services representative as verified by their signatures on this report.

B Luthman

Brielle Luthman for
Heather Shaffer
Project Manager

Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL425783
Work Order #: 425783

GC/MS Volatile

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

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Blank (MB) Statement
Target analytes were detected in the blank 1203818381 (MB) below the reporting limit.

Miscellaneous Information

Manual Integrations
Some initial calibration standards, continuing calibration standards, and/or sample 425783002 (B39T65) may have required manual integrations due to software limitations.

Metals

Determination of Metals by ICP-MS

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Determination of Metals by ICP-MS

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

General Chemistry

Ion Chromatography

All sample data provided in this report met the acceptance criteria specified in the analytical methods and

procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Sample Dilutions
The following samples 1203814959 (B39TT4DUP), 1203814960 (B39TT4PS) and 425783001 (B39TT4) were diluted because target analyte concentrations exceeded the calibration range.

Analyte	425783
	001
Sulfate	2X

Radiochemistry

TC99_EIE_LSC: COMMON

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Recounts
Sample 1203815897 (LCS) was recounted due to low recovery. The recount is reported.

TRITIUM_DIST_LSC: COMMON

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Miscellaneous Information

Additional Comments
The matrix spike, 1203822935 (B39T65MS), aliquot was reduced to conserve sample volume.

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.

Chain of Custody and Supporting Documentation

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

425783

C.O.C. # S17-006-487

Page 1 of 1

Collector	Dan Woehle CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	S17-006	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071
Project Title	SURV, JUNE 2017	Logbook No.	HNF-N-506 93/55	Ice Chest No.	GWS-628
Shipped To (Lab)	GEL Laboratories, LLC	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	7794 3949 9099
Protocol	SURV	Priority:	30 Days PRIORITY	Offsite Property No.	8065

POSSIBLE SAMPLE HAZARDS/REMARKS

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B39TT4	N		JUN 1 9 2017	1144	1x125-mL G/P	9056_ANIONS_IC: COMMON	48 Hours	Cool <=6C

July 17, 2017

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Dan Woehle CHPRC			JUN 1 9 2017 1200	Troy Bacon CHPRC	Troy L. Bacon		JUN 1 9 2017 1200
Troy Bacon CHPRC	Troy L. Bacon		JUN 1 9 2017 1400	FEDEX			
FEDEX			6.20.17	Kaitlyn Stone			6.20.17 0900

Matrix *

S	= Soil	DS	= Drum Solids		
SE	= Sediment	DL	= Drum Liquids		
SO	= Solid	T	= Tissue		
SL	= Sludge	WI	= Wipe		
W	= Water	L	= Liquid		
O	= Oil	V	= Vegetation		
A	= Air	X	= Other		

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

PRINTED ON 4/26/2017 FSR ID = FSR44853 A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

425783

C.O.C. # S17-006-253

Page 1 of 1

Collector	DAVE WIGHT CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	S17-006	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071
Project Title	SURV, JUNE 2017	Logbook No.	HNF-N-506 931 54	Ice Chest No.	GWS-619
Shipped To (Lab)	GEL Laboratories, LLC	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	7794 3549 3095
Protocol	SURV	Priority:	30 Days PRIORITY	Offsite Property No.	80162

POSSIBLE SAMPLE HAZARDS/REMARKS

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B39T65	N	W	JUN 16 2017	1450	5x40-mL aGs*	8260_VOA_GCMS_IX: COMMON REV 1	14 Days	HCl or H2SO4 to pH <2/Cool <=6C
B39T65	N	W	↓	↓	1x250-mL P	TRITIUM_DIST_LSC: COMMON	6 Months	None

July 17, 2017

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
DAVE WIGHT CHPRC			JUN 16 2017 1525	SSU-1			JUN 16 2017 1525
SSU-1			JUN 19 2017 0730	Curt Hoffman CHPRC			JUN 19 2017 0730
Curt Hoffman CHPRC			JUN 19 2017 1400	FEDEX			
FEDEX				Kaitlyn Stone			6.20.17 0900

Matrix *

S	= Soil	DS	= Drum Solids
SE	= Sediment	DL	= Drum Liquids
SO	= Solid	T	= Tissue
SL	= Sludge	WI	= Wipe
W	= Water	L	= Liquid
O	= Oil	V	= Vegetation
A	= Air	X	= Other

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

PRINTED ON 4/26/2017 FSR ID = FSR31935 A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company

841105

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

425783

C.O.C. # S17-006-255

Page 1 of 1

Collector	DAVE WIGHT CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	S17-006	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071
Project Title	SURV, JUNE 2017	Logbook No.	HNF-N-506 93/54	Ice Chest No.	GWS-619
Shipped To (Lab)	GEL Laboratories, LLC	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	7794 38493095
Protocol	SURV	Priority:	30 Days PRIORITY	Offsite Property No.	8062

POSSIBLE SAMPLE HAZARDS/REMARKS

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B39T93	Y	W	JUN 16 2017	1304	1x500-mL G/P	6020_METALS_ICPMS: GW 01	6 Months	HNO3 to pH <2
B39T90	N	W	↓	↓	1x500-mL G/P	6020_METALS_ICPMS: GW 01	6 Months	HNO3 to pH <2
B39T90	N	W	↓	↓	1x500-mL G/P	TC99_EIE_LSC: COMMON	6 Months	HNO3 to pH <2
B39T90	N	W	↓	↓	1x250-mL P	TRITIUM_DIST_LSC: COMMON	6 Months	None

July 17, 2017

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
DAVE WIGHT CHPRC			JUN 16 2017 1525	SSU-1			JUN 16 2017 1525
SSU-1			JUN 19 2017 0730	Curt Hoffman CHPRC			JUN 19 2017 0730
Curt Hoffman CHPRC			JUN 19 2017 1400	FEDEX			
FEDEX				Kaitlyn Stone			6.20.17 0900

Matrix *

S	= Soil	DS	= Drum Solids
SE	= Sediment	DL	= Drum Liquids
SO	= Solid	T	= Tissue
SL	= Sludge	WI	= Wipe
W	= Water	L	= Liquid
O	= Oil	V	= Vegetation
A	= Air	X	= Other

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

PRINTED ON 4/26/2017 FSR ID = FSR32052 A-6004-842 (REV 2)

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: CPRC	SDG/AR/COC/Work Order: 425783
Received By: KS	Date Received: 6.20.17
Carrier and Tracking Number	Circle Applicable: (FedEx Express) FedEx Ground UPS Field Services Courier Other 7794 3549 3095 7794 3949 9099 7794 3549 2846

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
Shipped as a DOT Hazardous?		/	Hazard Class Shipped: UN#:
COC/Samples marked or classified as radioactive?		/	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
Is package, COC, and/or Samples marked HAZ?		/	If yes, select Hazards below, and contact the GEL Safety Group. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	/			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	/			
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	/			Preservation Method: Wet Ice Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius. TEMP: 1°
4	Daily check performed and passed on IR temperature gun?	/			Temperature Device Serial #: IR4-17 Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	/			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?	/			Sample ID's and Containers Affected: If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?	/			If Yes, Are Encores or Soil Kits present? Yes___ No / (If yes, take to VOA Freezer) Do VOA vials contain acid preservation? Yes / No___ N/A (If unknown, select No) VOA vials free of headspace? Yes / No___ N/A Sample ID's and containers affected:
8	Samples received within holding time?	/			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	/			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	/			Sample ID's affected:
11	Number of containers received match number indicated on COC?	/			Sample ID's affected:
12	Are sample containers identifiable as GEL provided?			/	
13	COC form is properly signed in relinquished/received sections?	/			

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials KS Date 6/21/17 Page 1 of 1

GL-CHL-SR-001 Rev 5

Data Review Qualifier Definitions

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 (843) 556−8171

Report Date: 17−JUL−17

Project Specific Qualifier Definitions for GEL Client Code: CPRC

Qualifier	Qualifier Definition	Department	Fraction
U	Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.		
J	The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated	Organics	
P	Aroclor target analyte with greater than 25% difference between column analyses.	Organics	
C	Analyte has been confirmed by GC/MS analysis	Organics	Pesticide
B	The analyte was detected in both the associated QC blank and in the sample.	Organics	
E	Concentration exceeds the calibration range of the instrument	Organics	
A	The TIC is a suspected aldol−condensation product	Organics	Semi−Volatile
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier		
N	Spike Sample recovery is outside control limits.		
*	Duplicate analysis not within control limits	Inorganics	
>	Result greater than quantifiable range or greater than upper limit of the analysis range	General Chemistry	
Z	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier		
B	The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).	Inorganics	Metals
D	Results are reported from a diluted aliquot of sample.		
E	Reported value is estimated due to interferences. See comment in narrative.	Inorganics	Metals
M	Duplicate precision not met.	Inorganics	Metals
o	Analyte failed to recover within LCS limits (0rganics only)	Organics	
S	Reported value determined by the Method of Standard Additions (MSA)	Inorganics	
T	Spike and/or spike duplicate sample recovery is outside control limits.	Organics	
W	Post−digestion spike recovery for GFAA out of control limit. Sample absorbency < 50% of spike absorbency.	Inorganics	
B	The associated QC sample blank has a result >= 2X the MDA and, after corrections, result is >= MDA for this sample	Radiological	
Y	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier		
+	Correlation coefficient for Method of Standard Additions (MSA) is < 0.995	Inorganics	
B	The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).	General Chemistry	
C	Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.	Inorganics	Metals
C	Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.	General Chemistry	
<	Sample is below the EPA guidance level for Reactive Releasable Cyanide and/or Reactive Releasable Sulfide	General Chemistry	
UX	Gamma Spectroscopy−−Uncertain identification	Radiological	

Laboratory Certifications

List of current GEL Certifications as of 17 July 2017

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

Volatile Analysis

Case Narrative

GC/MS Volatile
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL425783
Work Order #: 425783

Product: **Volatile Organic Compounds (VOC) by Gas Chromatograph/Mass Spectrometer**
Analytical Method: SW846 8260C
Analytical Procedure: GL-OA-E-038 REV# 26
Analytical Batch: 1676993

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
425783002	B39T65
1203818381	Method Blank (MB)
1203818383	Laboratory Control Sample (LCS)
1203818384	425725004(NonSDG) Post Spike (PS)
1203818385	425725004(NonSDG) Post Spike Duplicate (PSD)

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

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Blank (MB) Statement
Target analytes were detected in the blank 1203818381 (MB) below the reporting limit.

Miscellaneous Information

Manual Integrations
Some initial calibration standards, continuing calibration standards, and/or sample 425783002 (B39T65) may have required manual integrations due to software limitations.

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

CPRC001 CH2MHill Plateau Remediation Company

Client SDG: GEL425783 GEL Work Order: 425783

The Qualifiers in this report are defined as follows:

B The analyte was detected in both the associated QC blank and in the sample.

J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

DL Indicates that sample is diluted.

RA Indicates that sample is re-analyzed without re-extraction.

RE Indicates that sample is re-extracted.

Review/Validation

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

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

Signature: Erin Haubert **Name: Erin Haubert**

Date: 14 JUL 2017 **Title: Data Validator**

Sample Data Summary

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**GEL425783**	**Date Collected:**	**06/16/2017 14:50**	**Matrix:**	**WATER**
Lab Sample ID:	**425783002**	**Date Received:**	**06/20/2017 09:00**		
		Client:	**CPRC001**	**Project:**	**CPRC0S17006**
Client ID:	**B39T65**	**Method:**	**SW846 8260C**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1676993**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**06/27/2017 17:01**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**06/27/2017 17:01**				
Data File:	**062717V9\9Y216.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
79-01-6	Trichloroethylene	J	0.390	ug/L	0.300	2.00	1.00
630-20-6	1,1,1,2-Tetrachloroethane	U	0.300	ug/L	0.300	2.00	1.7
56-23-5	Carbon tetrachloride		7.19	ug/L	0.300	2.00	3.00
106-46-7	1,4-Dichlorobenzene	U	0.300	ug/L	0.300	2.00	4.00
100-41-4	Ethylbenzene	U	0.300	ug/L	0.300	2.00	4.00
71-55-6	1,1,1-Trichloroethane	U	0.300	ug/L	0.300	2.00	5.00
79-34-5	1,1,2,2-Tetrachloroethane	U	0.300	ug/L	0.300	2.00	5.00
79-00-5	1,1,2-Trichloroethane	U	0.300	ug/L	0.300	2.00	5.00
96-18-4	1,2,3-Trichloropropane	U	0.300	ug/L	0.300	2.00	5.00
96-12-8	1,2-Dibromo-3-chloropropane	U	0.500	ug/L	0.500	2.00	5.00
106-93-4	1,2-Dibromoethane	U	0.300	ug/L	0.300	2.00	5.00
107-06-2	1,2-Dichloroethane	U	0.300	ug/L	0.300	2.00	5.00
78-87-5	1,2-Dichloropropane	U	0.300	ug/L	0.300	2.00	5.00
71-43-2	Benzene	U	0.300	ug/L	0.300	2.00	5.00
75-27-4	Bromodichloromethane	U	0.300	ug/L	0.300	2.00	5.00
75-25-2	Bromoform	U	0.300	ug/L	0.300	2.00	5.00
75-15-0	Carbon disulfide	U	1.60	ug/L	1.60	10.0	5.00
108-90-7	Chlorobenzene	U	0.300	ug/L	0.300	2.00	5.00
67-66-3	Chloroform	J	1.41	ug/L	0.300	2.00	5.00
124-48-1	Dibromochloromethane	U	0.300	ug/L	0.300	2.00	5.00
75-09-2	Methylene chloride	U	1.60	ug/L	1.60	5.00	5.00
100-42-5	Styrene	U	0.300	ug/L	0.300	2.00	5.00
127-18-4	Tetrachloroethylene	U	0.300	ug/L	0.300	2.00	5.00
108-88-3	Toluene	U	0.300	ug/L	0.300	2.00	5.00
156-59-2	cis-1,2-Dichloroethylene	U	0.300	ug/L	0.300	2.00	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	0.300	ug/L	0.300	2.00	5.00
156-60-5	trans-1,2-Dichloroethylene	U	0.300	ug/L	0.300	2.00	5.00
10061-02-6	trans-1,3-Dichloropropylene	U	0.300	ug/L	0.300	2.00	5.00
75-34-3	1,1-Dichloroethane	U	0.300	ug/L	0.300	2.00	10.0
75-35-4	1,1-Dichloroethylene	U	0.300	ug/L	0.300	2.00	10.0
78-93-3	2-Butanone	U	3.00	ug/L	3.00	10.0	10.0
126-99-8	2-Chloro-1,3-butadiene	U	0.300	ug/L	0.300	2.00	10.0
108-10-1	4-Methyl-2-pentanone	U	3.00	ug/L	3.00	10.0	10.0
107-05-1	Allyl chloride	U	3.00	ug/L	3.00	10.0	10.0
74-83-9	Bromomethane	U	0.300	ug/L	0.300	2.00	10.0
75-00-3	Chloroethane	U	0.300	ug/L	0.300	2.00	10.0
74-87-3	Chloromethane	U	0.300	ug/L	0.300	2.00	10.0
74-95-3	Dibromomethane	U	0.300	ug/L	0.300	2.00	10.0

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**GEL425783**	**Date Collected:**	**06/16/2017 14:50**	**Matrix:**	**WATER**
Lab Sample ID:	**425783002**	**Date Received:**	**06/20/2017 09:00**		
		Client:	**CPRC001**	**Project:**	**CPRC0S17006**
Client ID:	**B39T65**	**Method:**	**SW846 8260C**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1676993**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**06/27/2017 17:01**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**06/27/2017 17:01**				
Data File:	**062717V9\9Y216.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
75-71-8	Dichlorodifluoromethane	U	0.300	ug/L	0.300	2.00	10.0
97-63-2	Ethyl methacrylate	U	3.00	ug/L	3.00	10.0	10.0
74-88-4	Iodomethane	U	3.00	ug/L	3.00	10.0	10.0
126-98-7	Methacrylonitrile	U	3.00	ug/L	3.00	10.0	10.0
80-62-6	Methyl methacrylate	U	3.00	ug/L	3.00	10.0	10.0
107-12-0	Propionitrile	U	3.00	ug/L	3.00	10.0	10.0
75-69-4	Trichlorofluoromethane	U	0.300	ug/L	0.300	2.00	10.0
75-01-4	Vinyl chloride	U	0.300	ug/L	0.300	2.00	10.0
1330-20-7	Xylenes (total)	U	0.300	ug/L	0.300	6.00	10.0
591-78-6	2-Hexanone	U	3.00	ug/L	3.00	10.0	20.0
67-64-1	Acetone	U	3.00	ug/L	3.00	10.0	20.0
108-05-4	Vinyl acetate	U	1.60	ug/L	1.60	5.00	50.0
110-57-6	trans-1,4-Dichloro-2-butene	U	1.50	ug/L	1.50	10.0	50.0
75-05-8	Acetonitrile	U	16.7	ug/L	16.7	50.0	100
107-02-8	Acrolein	U	3.00	ug/L	3.00	10.0	100
107-13-1	Acrylonitrile	U	3.00	ug/L	3.00	10.0	100
78-83-1	Isobutyl alcohol	U	33.0	ug/L	33.0	100	500

Quality Control Summary

Volatile

Surrogate Recovery Report

SDG Number: GEL425783

Matrix Type: LIQUID

Sample ID	Client ID	DCED4 %REC	TOL %REC	BFB %REC
1203818383	LCS for batch 1676993	94	103	106
1203818381	MB for batch 1676993	97	103	107
425783002	B39T65	98	100	106
1203818384	B39NN0PS	96	103	102
1203818385	B39NN0PSD	94	101	104

Surrogate		Acceptance Limits
DCED4	= 1,2-Dichloroethane-d4	(70%-130%)
TOL	= Toluene-d8	(70%-130%)
BFB	= Bromofluorobenzene	(70%-130%)

* Recovery outside Acceptance Limits
\# Column to be used to flag recovery values
D Sample Diluted

Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: GEL425783
Client ID: LCS for batch 1676993
Lab Sample ID 1203818383
Instrument: VOA9.I
Analyst: RXY1
Purge Vol: 5 mL

Sample Type: Laboratory Control Sample
Matrix: WATER
Analysis Date: 06/27/2017 11:17
Dilution: 1
Batch ID: 1676993

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
75-05-8	LCS	Acetonitrile	1250	0.0	1290	103	70-130
1330-20-7	LCS	Xylenes (total)	150	0.0	162	108	70-130
67-64-1	LCS	Acetone	250	0.0	252	101	70-130
74-88-4	LCS	Iodomethane	250	0.0	228	91	70-130
75-15-0	LCS	Carbon disulfide	250	0.0	247	99	70-130
108-05-4	LCS	Vinyl acetate	250	0.0	234	94	70-130
78-93-3	LCS	2-Butanone	250	0.0	265	106	70-130
108-10-1	LCS	4-Methyl-2-pentanone	250	0.0	270	108	70-130
591-78-6	LCS	2-Hexanone	250	0.0	269	107	70-130
75-71-8	LCS	Dichlorodifluoromethane	50.0	0.0	36.6	73	70-130
74-87-3	LCS	Chloromethane	50.0	0.0	46.7	93	70-130
75-01-4	LCS	Vinyl chloride	50.0	0.0	44.3	89	70-130
74-83-9	LCS	Bromomethane	50.0	0.0	42.4	85	70-130
75-00-3	LCS	Chloroethane	50.0	0.0	46.1	92	70-130
75-69-4	LCS	Trichlorofluoromethane	50.0	0.0	41.7	83	70-130
75-35-4	LCS	1,1-Dichloroethylene	50.0	0.0	51.0	102	70-130
75-09-2	LCS	Methylene chloride	50.0	0.0	53.6	107	70-130
156-60-5	LCS	trans-1,2-Dichloroethylene	50.0	0.0	53.5	107	70-130
75-34-3	LCS	1,1-Dichloroethane	50.0	0.0	53.5	107	70-130
156-59-2	LCS	cis-1,2-Dichloroethylene	50.0	0.0	52.7	105	70-130
67-66-3	LCS	Chloroform	50.0	0.0	50.1	100	70-130
71-55-6	LCS	1,1,1-Trichloroethane	50.0	0.0	48.8	98	70-130

Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: GEL425783
Client ID: LCS for batch 1676993
Lab Sample ID 1203818383
Instrument: VOA9.I
Analyst: RXY1
Purge Vol: 5 mL

Sample Type: Laboratory Control Sample
Matrix: WATER
Analysis Date: 06/27/2017 11:17
Dilution: 1
Batch ID: 1676993

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
56-23-5	LCS	Carbon tetrachloride	50.0	0.0	49.4	99	70-130
107-06-2	LCS	1,2-Dichloroethane	50.0	0.0	48.3	97	70-130
71-43-2	LCS	Benzene	50.0	0.0	52.2	104	70-130
79-01-6	LCS	Trichloroethylene	50.0	0.0	51.2	102	70-130
78-87-5	LCS	1,2-Dichloropropane	50.0	0.0	53.7	107	70-130
74-95-3	LCS	Dibromomethane	50.0	0.0	51.2	102	70-130
75-27-4	LCS	Bromodichloromethane	50.0	0.0	53.3	107	70-130
10061-01-5	LCS	cis-1,3-Dichloropropylene	50.0	0.0	54.7	109	70-130
108-88-3	LCS	Toluene	50.0	0.0	52.9	106	70-130
10061-02-6	LCS	trans-1,3-Dichloropropylene	50.0	0.0	57.0	114	70-130
79-00-5	LCS	1,1,2-Trichloroethane	50.0	0.0	55.4	111	70-130
127-18-4	LCS	Tetrachloroethylene	50.0	0.0	48.0	96	70-130
124-48-1	LCS	Dibromochloromethane	50.0	0.0	56.3	113	70-130
106-93-4	LCS	1,2-Dibromoethane	50.0	0.0	53.6	107	70-130
108-90-7	LCS	Chlorobenzene	50.0	0.0	51.9	104	70-130
100-41-4	LCS	Ethylbenzene	50.0	0.0	52.0	104	70-130
100-42-5	LCS	Styrene	50.0	0.0	54.0	108	70-130
75-25-2	LCS	Bromoform	50.0	0.0	58.0	116	70-130
79-34-5	LCS	1,1,2,2-Tetrachloroethane	50.0	0.0	56.7	113	70-130
96-18-4	LCS	1,2,3-Trichloropropane	50.0	0.0	52.7	105	70-130
106-46-7	LCS	1,4-Dichlorobenzene	50.0	0.0	51.3	103	70-130
96-12-8	LCS	1,2-Dibromo-3-chloropropane	50.0	0.0	54.3	109	70-130

Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: **GEL425783**
Client ID: **LCS for batch 1676993**
Lab Sample ID **1203818383**
Instrument: **VOA9.I**
Analyst: **RXY1**
Purge Vol: **5 mL**

Sample Type: **Laboratory Control Sample**
Matrix: **WATER**
Analysis Date: **06/27/2017 11:17**
Dilution: 1
Batch ID: **1676993**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
630-20-6	LCS	1,1,1,2-Tetrachloroethane	50.0	0.0	53.8	108	70-130

Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: GEL425783
Client ID: B39NN0PS
Lab Sample ID 1203818384
Instrument: VOA9.I
Analyst: RXY1
Purge Vol: 5 mL

Sample Type: Post Spike
Matrix: WATER
Analysis Date: 06/27/2017 21:16
Dilution: 1
Batch ID: 1676993

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
75-05-8	PS	Acetonitrile	1250	0.00	U	1310	104	70-130
1330-20-7	PS	Xylenes (total)	150	0.00	U	159	106	70-130
67-64-1	PS	Acetone	250	0.00	U	199	80	70-130
74-88-4	PS	Iodomethane	250	0.00	U	224	90	70-130
75-15-0	PS	Carbon disulfide	250	0.00	U	250	100	70-130
108-05-4	PS	Vinyl acetate	250	0.00	U	247	99	70-130
78-93-3	PS	2-Butanone	250	0.00	U	226	91	70-130
108-10-1	PS	4-Methyl-2-pentanone	250	0.00	U	260	104	70-130
591-78-6	PS	2-Hexanone	250	0.00	U	225	90	70-130
75-71-8	PS	Dichlorodifluoromethane	50.0	0.00	U	42.1	84	70-130
74-87-3	PS	Chloromethane	50.0	0.00	U	50.2	100	70-130
75-01-4	PS	Vinyl chloride	50.0	0.00	U	47.7	95	70-130
74-83-9	PS	Bromomethane	50.0	0.00	U	50.2	100	70-130
75-00-3	PS	Chloroethane	50.0	0.00	U	49.6	99	70-130
75-69-4	PS	Trichlorofluoromethane	50.0	0.00	U	45.9	92	70-130
75-35-4	PS	1,1-Dichloroethylene	50.0	0.00	U	49.4	99	70-130
75-09-2	PS	Methylene chloride	50.0	0.00	U	51.1	102	70-130
156-60-5	PS	trans-1,2-Dichloroethylene	50.0	0.00	U	52.0	104	70-130
75-34-3	PS	1,1-Dichloroethane	50.0	0.00	U	52.4	105	70-130
156-59-2	PS	cis-1,2-Dichloroethylene	50.0	0.00	U	51.9	104	70-130
67-66-3	PS	Chloroform	50.0	0.00	U	49.5	99	70-130
71-55-6	PS	1,1,1-Trichloroethane	50.0	0.00	U	49.2	98	70-130

Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: GEL425783
Client ID: B39NN0PS
Lab Sample ID 1203818384
Instrument: VOA9.I
Analyst: RXY1
Purge Vol: 5 mL

Sample Type: Post Spike
Matrix: WATER
Analysis Date: 06/27/2017 21:16
Dilution: 1
Batch ID: 1676993

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
56-23-5	PS	Carbon tetrachloride	50.0	0.00	U	50.1	100	70-130
107-06-2	PS	1,2-Dichloroethane	50.0	0.00	U	47.7	95	70-130
71-43-2	PS	Benzene	50.0	0.00	U	50.9	102	70-130
79-01-6	PS	Trichloroethylene	50.0	0.00	U	49.4	99	70-130
78-87-5	PS	1,2-Dichloropropane	50.0	0.00	U	52.6	105	70-130
74-95-3	PS	Dibromomethane	50.0	0.00	U	49.7	99	70-130
75-27-4	PS	Bromodichloromethane	50.0	0.00	U	52.7	105	70-130
10061-01-5	PS	cis-1,3-Dichloropropylene	50.0	0.00	U	51.1	102	70-130
108-88-3	PS	Toluene	50.0	0.00	U	52.1	104	70-130
10061-02-6	PS	trans-1,3-Dichloropropylene	50.0	0.00	U	54.9	110	70-130
79-00-5	PS	1,1,2-Trichloroethane	50.0	0.00	U	54.3	109	70-130
127-18-4	PS	Tetrachloroethylene	50.0	0.00	U	47.9	96	70-130
124-48-1	PS	Dibromochloromethane	50.0	0.00	U	54.7	109	70-130
106-93-4	PS	1,2-Dibromoethane	50.0	0.00	U	52.0	104	70-130
108-90-7	PS	Chlorobenzene	50.0	0.00	U	51.2	102	70-130
100-41-4	PS	Ethylbenzene	50.0	0.00	U	51.4	103	70-130
100-42-5	PS	Styrene	50.0	0.00	U	52.9	106	70-130
75-25-2	PS	Bromoform	50.0	0.00	U	54.2	108	70-130
79-34-5	PS	1,1,2,2-Tetrachloroethane	50.0	0.00	U	55.4	111	70-130
96-18-4	PS	1,2,3-Trichloropropane	50.0	0.00	U	52.1	104	70-130
106-46-7	PS	1,4-Dichlorobenzene	50.0	0.00	U	48.5	97	70-130
96-12-8	PS	1,2-Dibromo-3-chloropropane	50.0	0.00	U	51.8	104	70-130

Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: **GEL425783**
Client ID: **B39NN0PS**
Lab Sample ID **1203818384**
Instrument: **VOA9.I**
Analyst: **RXY1**
Purge Vol: **5 mL**

Sample Type: **Post Spike**
Matrix: **WATER**
Analysis Date: **06/27/2017 21:16**
Dilution: 1
Batch ID: **1676993**

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits
630-20-6	PS	1,1,1,2-Tetrachloroethane	50.0	0.00	U	53.5	107	70-130

Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: GEL425783
Client ID: B39NN0PSD
Lab Sample ID 1203818385
Instrument: VOA9.I
Analyst: RXY1
Purge Vol: 5 mL

Sample Type: Post Spike Duplicate
Matrix: WATER
Analysis Date: 06/27/2017 21:45
Dilution: 1
Batch ID: 1676993

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
75-05-8	PSD	Acetonitrile	1250	0.00	U	1410	113	70-130	8	0-20
1330-20-7	PSD	Xylenes (total)	150	0.00	U	165	110	70-130	4	0-20
67-64-1	PSD	Acetone	250	0.00	U	216	86	70-130	8	0-20
74-88-4	PSD	Iodomethane	250	0.00	U	238	95	70-130	6	0-20
75-15-0	PSD	Carbon disulfide	250	0.00	U	259	104	70-130	4	0-20
108-05-4	PSD	Vinyl acetate	250	0.00	U	272	109	70-130	9	0-20
78-93-3	PSD	2-Butanone	250	0.00	U	249	99	70-130	9	0-20
108-10-1	PSD	4-Methyl-2-pentanone	250	0.00	U	274	109	70-130	5	0-20
591-78-6	PSD	2-Hexanone	250	0.00	U	239	96	70-130	6	0-20
75-71-8	PSD	Dichlorodifluoromethane	50.0	0.00	U	46.8	94	70-130	11	0-20
74-87-3	PSD	Chloromethane	50.0	0.00	U	56.9	114	70-130	12	0-20
75-01-4	PSD	Vinyl chloride	50.0	0.00	U	55.0	110	70-130	14	0-20
74-83-9	PSD	Bromomethane	50.0	0.00	U	54.2	108	70-130	8	0-20
75-00-3	PSD	Chloroethane	50.0	0.00	U	55.7	111	70-130	12	0-20
75-69-4	PSD	Trichlorofluoromethane	50.0	0.00	U	51.5	103	70-130	11	0-20
75-35-4	PSD	1,1-Dichloroethylene	50.0	0.00	U	52.3	105	70-130	6	0-20
75-09-2	PSD	Methylene chloride	50.0	0.00	U	54.3	109	70-130	6	0-20
156-60-5	PSD	trans-1,2-Dichloroethylene	50.0	0.00	U	55.2	110	70-130	6	0-20
75-34-3	PSD	1,1-Dichloroethane	50.0	0.00	U	55.2	110	70-130	5	0-20
156-59-2	PSD	cis-1,2-Dichloroethylene	50.0	0.00	U	54.8	110	70-130	5	0-20
67-66-3	PSD	Chloroform	50.0	0.00	U	51.8	104	70-130	5	0-20
71-55-6	PSD	1,1,1-Trichloroethane	50.0	0.00	U	52.1	104	70-130	6	0-20

Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: GEL425783
Client ID: B39NN0PSD
Lab Sample ID 1203818385
Instrument: VOA9.I
Analyst: RXY1
Purge Vol: 5 mL

Sample Type: Post Spike Duplicate
Matrix: WATER
Analysis Date: 06/27/2017 21:45
Dilution: 1
Batch ID: 1676993

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
56-23-5	PSD	Carbon tetrachloride	50.0	0.00	U	52.6	105	70-130	5	0-20
107-06-2	PSD	1,2-Dichloroethane	50.0	0.00	U	49.8	100	70-130	4	0-20
71-43-2	PSD	Benzene	50.0	0.00	U	53.5	107	70-130	5	0-20
79-01-6	PSD	Trichloroethylene	50.0	0.00	U	52.5	105	70-130	6	0-20
78-87-5	PSD	1,2-Dichloropropane	50.0	0.00	U	55.7	111	70-130	6	0-20
74-95-3	PSD	Dibromomethane	50.0	0.00	U	53.2	106	70-130	7	0-20
75-27-4	PSD	Bromodichloromethane	50.0	0.00	U	55.6	111	70-130	5	0-20
10061-01-5	PSD	cis-1,3-Dichloropropylene	50.0	0.00	U	55.2	110	70-130	8	0-20
108-88-3	PSD	Toluene	50.0	0.00	U	53.4	107	70-130	2	0-20
10061-02-6	PSD	trans-1,3-Dichloropropylene	50.0	0.00	U	57.5	115	70-130	5	0-20
79-00-5	PSD	1,1,2-Trichloroethane	50.0	0.00	U	56.8	114	70-130	5	0-20
127-18-4	PSD	Tetrachloroethylene	50.0	0.00	U	48.9	98	70-130	2	0-20
124-48-1	PSD	Dibromochloromethane	50.0	0.00	U	57.8	116	70-130	5	0-20
106-93-4	PSD	1,2-Dibromoethane	50.0	0.00	U	55.5	111	70-130	6	0-20
108-90-7	PSD	Chlorobenzene	50.0	0.00	U	53.5	107	70-130	4	0-20
100-41-4	PSD	Ethylbenzene	50.0	0.00	U	53.2	106	70-130	3	0-20
100-42-5	PSD	Styrene	50.0	0.00	U	55.3	111	70-130	4	0-20
75-25-2	PSD	Bromoform	50.0	0.00	U	59.6	119	70-130	10	0-20
79-34-5	PSD	1,1,2,2-Tetrachloroethane	50.0	0.00	U	59.6	119	70-130	7	0-20
96-18-4	PSD	1,2,3-Trichloropropane	50.0	0.00	U	55.0	110	70-130	6	0-20
106-46-7	PSD	1,4-Dichlorobenzene	50.0	0.00	U	51.3	103	70-130	6	0-20
96-12-8	PSD	1,2-Dibromo-3-chloropropane	50.0	0.00	U	57.3	115	70-130	10	0-20

Volatile
Quality Control Summary
Spike Recovery Report

SDG Number: GEL425783
Client ID: B39NN0PSD
Lab Sample ID 1203818385
Instrument: VOA9.I
Analyst: RXY1
Purge Vol: 5 mL

Sample Type: Post Spike Duplicate
Matrix: WATER
Analysis Date: 06/27/2017 21:45
Dilution: 1
Batch ID: 1676993

CAS No		Parmname	Amount Added ug/L	Sample Conc. ug/L		Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
630-20-6	PSD	1,1,1,2-Tetrachloroethane	50.0	0.00	U	55.3	111	70-130	3	0-20

Method Blank Summary

SDG Number:	**GEL425783**	**Client:**	**CPRC001**	**Matrix:**	**WATER**
Client ID:	**MB for batch 1676993**	**Instrument ID:**	**VOA9.I**	**Data File:**	**062717V9\9Y207B.D**
Lab Sample ID:	**1203818381**	**Prep Date:**	**06/27/2017 12:42**	**Analyzed:**	**06/27/17 12:42**
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 1676993	1203818383	062717V9\9Y204L.D	06/27/17	1117
02 B39T65	425783002	062717V9\9Y216.D	06/27/17	1701
03 B39NN0PS	1203818384	062717V9\9Y225.D	06/27/17	2116
04 B39NN0PSD	1203818385	062717V9\9Y226.D	06/27/17	2145

Instrument Performance Check

BROMOFLUOROBENZENE

Lab Name GEL Laboratories LLC **Client SDG:** GEL425783

Instrument ID: VOA9.I **Injection Date/Time:** 16-JUN-17 14:55

Column Description: DB-624 **Lab File ID** 061617V9\9W510.D

m/e	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	17.3
75	30.0 - 60.0% of mass 95	48
95	Base Peak, 100% Relative Abundance	100
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.5
174	50.0 - 100.0% of mass 95	95.2
175	5.0 -9.0% of mass 174	6.9
176	95.0 - 101.0% of mass 174	98.9
177	5.0 - 9.0% of mass 176	6.5

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

Client Sample ID	Lab Sample ID	Lab File ID	Time Analyzed
ICALMIX[A]	W9VM170616-05	061617V9\9W511.D	16-JUN-17 15:21
ICALMIX[A]	W9VM170616-06	061617V9\9W512.D	16-JUN-17 15:49
ICALMIX[A]	W9VM170616-07	061617V9\9W513.D	16-JUN-17 16:18
ICALMIX[A]	W9VM170616-10	061617V9\9W517.D	16-JUN-17 18:10
ICALMIX[A]	W9VM170616-11	061617V9\9W518.D	16-JUN-17 18:38
ICALMIX[A]	W9VM170616-12	061617V9\9W519.D	16-JUN-17 19:07
ICALMIX[A]	W9VM170616-13	061617V9\9W520.D	16-JUN-17 19:35
ICVMIX[A]01	W9VM170616-14	061617V9\9W521.D	16-JUN-17 20:03
ICALMIX[B]	W9VM170616-15	061617V9\9W522.D	16-JUN-17 20:32
ICALMIX[B]	W9VM170616-16	061617V9\9W523.D	16-JUN-17 21:00
ICALMIX[B]	W9VM170616-17	061617V9\9W524.D	16-JUN-17 21:28
ICALMIX[B]	W9VM170616-18	061617V9\9W525.D	16-JUN-17 21:56
ICALMIX[B]	W9VM170616-19	061617V9\9W526.D	16-JUN-17 22:24
ICALMIX[B]	W9VM170616-20	061617V9\9W527.D	16-JUN-17 22:52
ICALMIX[B]	W9VM170616-21	061617V9\9W528.D	16-JUN-17 23:21
ICALMIX[B]	W9VM170616-22	061617V9\9W529.D	16-JUN-17 23:48
ICVMIX[B]02	W9VM170616-25	061617V9\9W533.D	17-JUN-17 01:41

Instrument Performance Check

BROMOFLUOROBENZENE

Lab Name GEL Laboratories LLC **Client SDG:** GEL425783

Instrument ID: VOA9.I **Injection Date/Time:** 27-JUN-17 09:53

Column Description: DB-624 **Lab File ID** 062717V9\9Y201.D

m/e	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	17.3
75	30.0 - 60.0% of mass 95	47.2
95	Base Peak, 100% Relative Abundance	100
96	5.0 - 9.0% of mass 95	7.1
173	Less than 2.0% of mass 174	0.5
174	50.0 - 100.0% of mass 95	89
175	5.0 -9.0% of mass 174	7.1
176	95.0 - 101.0% of mass 174	97.9
177	5.0 - 9.0% of mass 176	6.6

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, LCS, LCSD,BLANKS AND STANDARDS

Client Sample ID	Lab Sample ID	Lab File ID	Time Analyzed
CCVMIX[A]01	W9VM170627-02	062717V9\9Y203.D	27-JUN-17 10:48
BLK01LCS	1203818383	062717V9\9Y204L.D	27-JUN-17 11:17
CCVMIX[B]02	W9VM170627-04	062717V9\9Y205.D	27-JUN-17 11:46
BLK01	1203818381	062717V9\9Y207B.D	27-JUN-17 12:42
B39T65	425783002	062717V9\9Y216.D	27-JUN-17 17:01
B39NN0MS	1203818384	062717V9\9Y225.D	27-JUN-17 21:16
B39NN0MSD	1203818385	062717V9\9Y226.D	27-JUN-17 21:45

Internal Standard
Area and RT Summary

Lab Name : GEL Laboratories LLC

Client SDG: GEL425783

Instrument: VOA9.I

STD Analysis Time: 27-JUN-17 10:48

GC Column: DB-624

Data File: 062717V9\9Y203.D

	Fluorobenzene			Chlorobenzene-d5			1,4-Dichlorobenzene-d4		
	Area	#	RT #	Area	#	RT #	Area	#	RT #
12 Hour STD	1331359		10.5	1026201		13.6	601067		16.0
Upper Limit	2662718		11.0	2052402		14.1	1202134		16.5
Lower Limit	665680		9.95	513101		13.1	300534		15.5
Sample ID									
BLK01LCS	1384884		10.5	1044174		13.6	616439		16.0
BLK01	1366505		10.5	1029771		13.6	596401		16.0
B39T65	1200331		10.5	903483		13.6	514551		16.0
B39NN0MS	1248718		10.5	938846		13.6	570969		16.0
B39NN0MSD	1247388		10.5	969825		13.6	581069		16.0

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area

RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk
* Value outside of QC Limits

Sample Data

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**GEL425783**	**Date Collected:**	**06/16/2017 14:50**	**Matrix:**	**WATER**
Lab Sample ID:	**425783002**	**Date Received:**	**06/20/2017 09:00**		
		Client:	**CPRC001**	**Project:**	**CPRC0S17006**
Client ID:	**B39T65**	**Method:**	**SW846 8260C**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1676993**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**06/27/2017 17:01**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**06/27/2017 17:01**				
Data File:	**062717V9\9Y216.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
79-01-6	Trichloroethylene	J	0.390	ug/L	0.300	2.00	1.00
630-20-6	1,1,1,2-Tetrachloroethane	U	0.300	ug/L	0.300	2.00	1.7
56-23-5	Carbon tetrachloride		7.19	ug/L	0.300	2.00	3.00
106-46-7	1,4-Dichlorobenzene	U	0.300	ug/L	0.300	2.00	4.00
100-41-4	Ethylbenzene	U	0.300	ug/L	0.300	2.00	4.00
71-55-6	1,1,1-Trichloroethane	U	0.300	ug/L	0.300	2.00	5.00
79-34-5	1,1,2,2-Tetrachloroethane	U	0.300	ug/L	0.300	2.00	5.00
79-00-5	1,1,2-Trichloroethane	U	0.300	ug/L	0.300	2.00	5.00
96-18-4	1,2,3-Trichloropropane	U	0.300	ug/L	0.300	2.00	5.00
96-12-8	1,2-Dibromo-3-chloropropane	U	0.500	ug/L	0.500	2.00	5.00
106-93-4	1,2-Dibromoethane	U	0.300	ug/L	0.300	2.00	5.00
107-06-2	1,2-Dichloroethane	U	0.300	ug/L	0.300	2.00	5.00
78-87-5	1,2-Dichloropropane	U	0.300	ug/L	0.300	2.00	5.00
71-43-2	Benzene	U	0.300	ug/L	0.300	2.00	5.00
75-27-4	Bromodichloromethane	U	0.300	ug/L	0.300	2.00	5.00
75-25-2	Bromoform	U	0.300	ug/L	0.300	2.00	5.00
75-15-0	Carbon disulfide	U	1.60	ug/L	1.60	10.0	5.00
108-90-7	Chlorobenzene	U	0.300	ug/L	0.300	2.00	5.00
67-66-3	Chloroform	J	1.41	ug/L	0.300	2.00	5.00
124-48-1	Dibromochloromethane	U	0.300	ug/L	0.300	2.00	5.00
75-09-2	Methylene chloride	U	1.60	ug/L	1.60	5.00	5.00
100-42-5	Styrene	U	0.300	ug/L	0.300	2.00	5.00
127-18-4	Tetrachloroethylene	U	0.300	ug/L	0.300	2.00	5.00
108-88-3	Toluene	U	0.300	ug/L	0.300	2.00	5.00
156-59-2	cis-1,2-Dichloroethylene	U	0.300	ug/L	0.300	2.00	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	0.300	ug/L	0.300	2.00	5.00
156-60-5	trans-1,2-Dichloroethylene	U	0.300	ug/L	0.300	2.00	5.00
10061-02-6	trans-1,3-Dichloropropylene	U	0.300	ug/L	0.300	2.00	5.00
75-34-3	1,1-Dichloroethane	U	0.300	ug/L	0.300	2.00	10.0
75-35-4	1,1-Dichloroethylene	U	0.300	ug/L	0.300	2.00	10.0
78-93-3	2-Butanone	U	3.00	ug/L	3.00	10.0	10.0
126-99-8	2-Chloro-1,3-butadiene	U	0.300	ug/L	0.300	2.00	10.0
108-10-1	4-Methyl-2-pentanone	U	3.00	ug/L	3.00	10.0	10.0
107-05-1	Allyl chloride	U	3.00	ug/L	3.00	10.0	10.0
74-83-9	Bromomethane	U	0.300	ug/L	0.300	2.00	10.0
75-00-3	Chloroethane	U	0.300	ug/L	0.300	2.00	10.0
74-87-3	Chloromethane	U	0.300	ug/L	0.300	2.00	10.0
74-95-3	Dibromomethane	U	0.300	ug/L	0.300	2.00	10.0

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**GEL425783**	**Date Collected:**	**06/16/2017 14:50**	**Matrix:**	**WATER**
Lab Sample ID:	**425783002**	**Date Received:**	**06/20/2017 09:00**		
		Client:	**CPRC001**	**Project:**	**CPRC0S17006**
Client ID:	**B39T65**	**Method:**	**SW846 8260C**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1676993**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**06/27/2017 17:01**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**06/27/2017 17:01**				
Data File:	**062717V9\9Y216.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
75-71-8	Dichlorodifluoromethane	U	0.300	ug/L	0.300	2.00	10.0
97-63-2	Ethyl methacrylate	U	3.00	ug/L	3.00	10.0	10.0
74-88-4	Iodomethane	U	3.00	ug/L	3.00	10.0	10.0
126-98-7	Methacrylonitrile	U	3.00	ug/L	3.00	10.0	10.0
80-62-6	Methyl methacrylate	U	3.00	ug/L	3.00	10.0	10.0
107-12-0	Propionitrile	U	3.00	ug/L	3.00	10.0	10.0
75-69-4	Trichlorofluoromethane	U	0.300	ug/L	0.300	2.00	10.0
75-01-4	Vinyl chloride	U	0.300	ug/L	0.300	2.00	10.0
1330-20-7	Xylenes (total)	U	0.300	ug/L	0.300	6.00	10.0
591-78-6	2-Hexanone	U	3.00	ug/L	3.00	10.0	20.0
67-64-1	Acetone	U	3.00	ug/L	3.00	10.0	20.0
108-05-4	Vinyl acetate	U	1.60	ug/L	1.60	5.00	50.0
110-57-6	trans-1,4-Dichloro-2-butene	U	1.50	ug/L	1.50	10.0	50.0
75-05-8	Acetonitrile	U	16.7	ug/L	16.7	50.0	100
107-02-8	Acrolein	U	3.00	ug/L	3.00	10.0	100
107-13-1	Acrylonitrile	U	3.00	ug/L	3.00	10.0	100
78-83-1	Isobutyl alcohol	U	33.0	ug/L	33.0	100	500

July 17, 2017

Quantitation Report
GEL Laboratories, LLC

RY 06/28/2017

Data Path : C:\msdchem\1\DATA\062717V9\
Data File : 9Y216.D
Acq On : 27 Jun 2017 17:01
Operator : RXY1
InstName : VOA9
Sample : |425783002|1676993|1|VOA|1|VOA8260CL|
Misc : CPRC 5mL pH<2
ALS Vial : 16 Sample Multiplier: 1

EM 07/06/2017

Quant Time: Jun 28 11:17:58 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	Dev(Min)
Internal Standards								
1) Fluorobenzene	96	10.453	10.454	1.000	1200331	50.00	ug/L	0.00
43) Chlorobenzene-d5	117	13.632	13.632	1.000	903483	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	514551	50.00	ug/L	0.00
84) B Fluorobenzene	96	10.453	10.454	1.000	1200331	50.00	ug/L	0.00
98) B Chlorobenzene-d5	117	13.632	13.632	1.000	903483	50.00	ug/L	0.00
100) B 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	514551	50.00	ug/L	0.00
System Monitoring Compounds								Dev(Min)
30) 1,2-Dichloroethane-d4	65	10.110	10.098	0.967	290138	49.01	ug/L	0.01
45) Toluene-d8	98	12.090	12.090	0.887	1020583	50.11	ug/L	0.00
63) Bromofluorobenzene	95	14.817	14.817	0.924	412338	53.05	ug/L	0.00

Compound	Amount	Range	Recovery
30) 1,2-Dichloroethane-d4	50.000	70 - 130	98%
45) Toluene-d8	50.000	70 - 130	100%
63) Bromofluorobenzene	50.000	70 - 130	106%

Target Compounds	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	QValue
2) Dichlorodifluoromethane		0.000	4.672	0.000	0	N.D.		
3) Chloromethane		0.000	5.011	0.000	0	N.D.		
4) Vinyl chloride		0.000	5.260	0.000	0	N.D.		
5) Bromomethane		0.000	5.852	0.000	0	N.D.		
6) Chloroethane		0.000	6.007	0.000	0	N.D.		
7) Trichlorofluoromethane		0.000	6.410	0.000	0	N.D.		
8) Ethyl ether	59	6.765	6.766	0.647	190	N.D.		
9) Acetone	43	7.169	7.157	0.686	2189m	N.D.		
10) 1,1-Dichloroethylene		0.000	7.157	0.000	0	N.D.		
11) Iodomethane		0.000	7.418	0.000	0	N.D.		
12) Acetonitrile	41	7.548	7.513	0.722	193	N.D.		
13) Methyl acetate		0.000	7.548	0.000	0	N.D.		
14) Carbon disulfide	76	7.560	7.548	0.723	423	N.D.		
15) Methylene chloride	84	7.750	7.738	0.741	3976	N.D.		
16) tert-Butyl methyl ether		0.000	8.034	0.000	0	N.D.		
17) trans-1,2-Dichloroethy...		0.000	8.082	0.000	0	N.D.		
18) Hexane		0.000	8.355	0.000	0	N.D.		
19) Vinyl acetate		0.000	8.521	0.000	0	N.D.		
20) 1,1-Dichloroethane		0.000	8.580	0.000	0	N.D.		
21) 2-Butanone		0.000	9.161	0.000	0	N.D.		
22) cis-1,2-Dichloroethylene		0.000	9.220	0.000	0	N.D.		
23) 2,2-Dichloropropane		0.000	9.244	0.000	0	N.D.		
24) Bromochloromethane		0.000	9.493	0.000	0	N.D.		
25) Chloroform	83	9.528	9.529	0.912	13839	1.41	ug/L	97
26) 1,1,1-Trichloroethane		0.000	9.801	0.000	0	N.D.		
27) Cyclohexane		0.000	9.896	0.000	0	N.D.		
28) 1,1-Dichloropropene		0.000	9.956	0.000	0	N.D.		
29) Carbon tetrachloride	117	10.003	10.003	0.957	57197	7.19	ug/L	99
31) 1,2-Dichloroethane		0.000	10.181	0.000	0	N.D.		
32) Benzene		0.000	10.205	0.000	0	N.D.		
33) Cyclohexene	67	10.453	10.311	1.000	186	N.D.		
34) n-Butyl alcohol		0.000	10.537	0.000	0	N.D.		
35) Trichloroethylene	95	10.845	10.833	1.037	2247	0.39	ug/L	93

Data Path : C:\msdchem\1\DATA\062717V9\
Data File : 9Y216.D
Acq On : 27 Jun 2017 17:01
Operator : RXY1
InstName : VOA9
Sample : |425783002|1676993|1|VOA|1|VOA8260CL|
Misc : CPRC 5mL pH<2
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jun 28 11:17:58 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

	Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units
36)	2-Pentanone		0.000	10.916	0.000	0	N.D.	
37)	1,2-Dichloropropane		0.000	11.094	0.000	0	N.D.	
38)	Methylcyclohexane		0.000	11.082	0.000	0	N.D.	
39)	Dibromomethane		0.000	11.224	0.000	0	N.D.	
40)	Bromodichloromethane		0.000	11.331	0.000	0	N.D.	
41)	2-Chloroethylvinyl ether		0.000	11.545	0.000	0	N.D.	
42)	cis-1,3-Dichloropropylene		0.000	11.782	0.000	0	N.D.	
44)	4-Methyl-2-pentanone		0.000	11.865	0.000	0	N.D.	
46)	Toluene		0.000	12.173	0.000	0	N.D.	
47)	trans-1,3-Dichloroprop...		0.000	12.315	0.000	0m	N.D.	d
48)	1,1,2-Trichloroethane		0.000	12.541	0.000	0	N.D.	
49)	2-Hexanone		0.000	12.719	0.000	0	N.D.	
50)	1,3-Dichloropropane		0.000	12.742	0.000	0	N.D.	
51)	Tetrachloroethylene		0.000	12.766	0.000	0	N.D.	
52)	Dibromochloromethane		0.000	13.003	0.000	0	N.D.	
53)	1,2-Dibromoethane		0.000	13.181	0.000	0	N.D.	
54)	Chlorobenzene		0.000	13.655	0.000	0	N.D.	
55)	1,1,1,2-Tetrachloroethane		0.000	13.715	0.000	0	N.D.	
56)	Ethylbenzene		0.000	13.715	0.000	0	N.D.	
57)	m,p-Xylenes		0.000	13.821	0.000	0	N.D.	
58)	o-Xylene		0.000	14.260	0.000	0	N.D.	
59)	Styrene		0.000	14.260	0.000	0	N.D.	
61)	Bromoform		0.000	14.533	0.000	0	N.D.	
62)	Isopropylbenzene		0.000	14.616	0.000	0	N.D.	
64)	1,1,2,2-Tetrachloroethane		0.000	14.889	0.000	0	N.D.	
65)	1,2,3-Trichloropropane		0.000	14.983	0.000	0	N.D.	
66)	Bromobenzene		0.000	15.031	0.000	0	N.D.	
67)	n-Propylbenzene		0.000	15.043	0.000	0	N.D.	
68)	1,3,5-Trimethylbenzene		0.000	15.185	0.000	0	N.D.	
69)	2-Chlorotoluene		0.000	15.197	0.000	0	N.D.	
70)	4-Chlorotoluene		0.000	15.292	0.000	0	N.D.	
71)	tert-Butylbenzene		0.000	15.565	0.000	0	N.D.	
72)	1,2,4-Trimethylbenzene		0.000	15.600	0.000	0	N.D.	
73)	sec-Butylbenzene		0.000	15.790	0.000	0	N.D.	
74)	4-Isopropyltoluene		0.000	15.908	0.000	0	N.D.	
75)	1,3-Dichlorobenzene	146	15.991	15.991	0.997	181	N.D.	
76)	1,4-Dichlorobenzene	146	16.074	16.074	1.002	754	N.D.	
77)	n-Butylbenzene		0.000	16.359	0.000	0	N.D.	
78)	1,2-Dichlorobenzene		0.000	16.513	0.000	0	N.D.	
79)	1,2-Dibromo-3-chloropr...		0.000	17.415	0.000	0	N.D.	
80)	1,2,4-Trichlorobenzene	180	18.517	18.505	1.155	194	N.D.	
81)	Hexachlorobutadiene		0.000	18.683	0.000	0	N.D.	
82)	Naphthalene	128	18.920	18.921	1.180	786	N.D.	
83)	1,2,3-Trichlorobenzene		0.000	19.276	0.000	0	N.D.	
85)	Acrolein		0.000	6.979	0.000	0	N.D.	
86)	Trichlorotrifluoroethane		0.000	7.133	0.000	0	N.D.	
87)	Allyl chloride	41	7.548	7.596	0.722	193	N.D.	
88)	Acrylonitrile		0.000	7.999	0.000	0	N.D.	
89)	2-Chloro-1,3-butadiene		0.000	8.675	0.000	0	N.D.	
90)	Ethyl acetate		0.000	9.161	0.000	0	N.D.	
91)	Propionitrile		0.000	9.244	0.000	0	N.D.	
92)	Methacrylonitrile		0.000	9.422	0.000	0	N.D.	

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\062717V9\
Data File : 9Y216.D
Acq On : 27 Jun 2017 17:01
Operator : RXY1
InstName : VOA9
Sample : |425783002|1676993|1|VOA|1|VOA8260CL|
Misc : CPRC 5mL pH<2
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jun 28 11:17:58 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

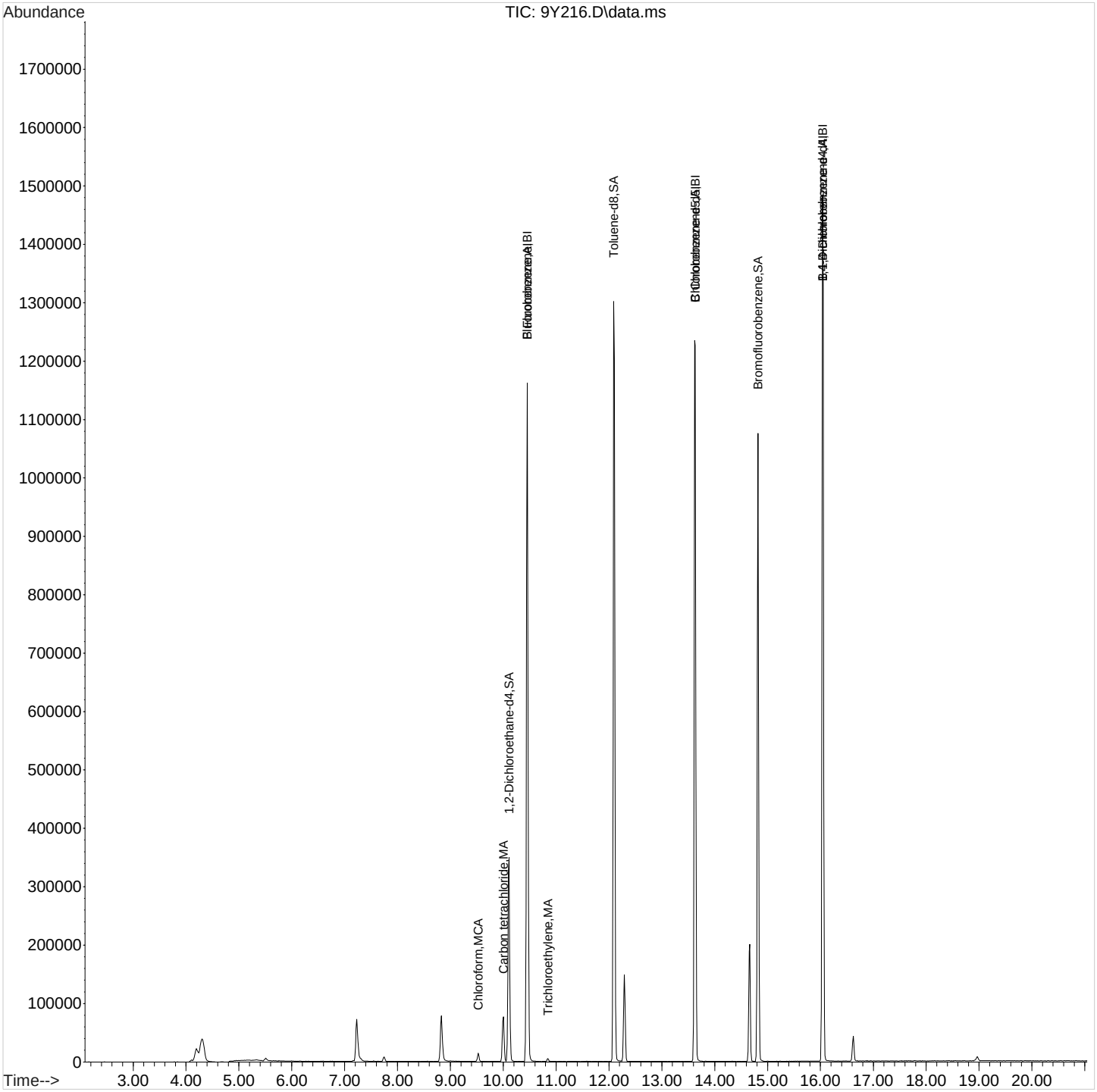
	Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units
93)	Tetrahydrofuran		0.000	9.540	0.000	0	N.D.	
94)	Isobutyl alcohol	41	10.003	9.849	0.957	687	N.D.	
95)	Methyl methacrylate	69	11.058	11.046	1.058	206	N.D.	
96)	1,4-Dioxane		0.000	11.165	0.000	0	N.D.	
97)	2-Nitropropane		0.000	11.544	0.000	0	N.D.	
99)	Ethyl methacrylate		0.000	12.303	0.000	0	N.D.	
101)	cis-1,4-Dichloro-2-butene		0.000	14.651	0.000	0	N.D.	
102)	Cyclohexanone		0.000	14.782	0.000	0	N.D.	
103)	trans-1,4-Dichloro-2-b...		0.000	14.936	0.000	0	N.D.	
104)	Pentachloroethane		0.000	15.636	0.000	0	N.D.	
105)	Benzyl chloride	91	16.193	16.193	1.010	385	N.D.	
106)	bis(2-Chloroisopropyl)...	45	16.620	16.584	1.036	1709	N.D.	

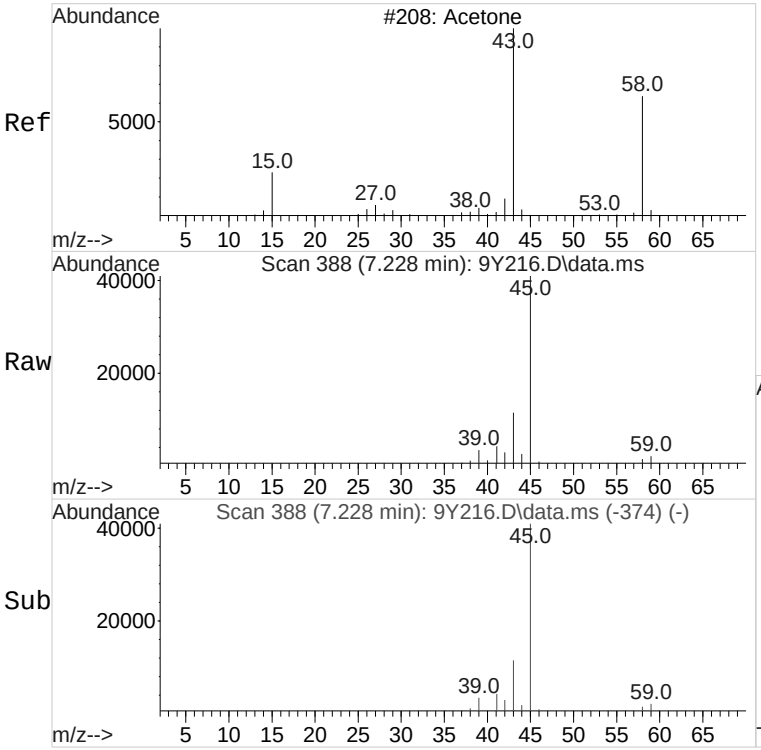
(#) = qualifier out of range (m) = manual integration (+) = signals summed
(A) = Over the calibration range (d) = deleted

Quantitation Report
GEL Laboratories, LLC

```
Data Path : C:\msdchem\1\DATA\062717V9\
Data File : 9Y216.D
Acq On    : 27 Jun 2017  17:01
Operator  : RXY1
InstName  : VOA9
Sample    : |425783002|1676993|1|VOA|1|VOA8260CL|
Misc      : CPRC 5mL pH<2
ALS Vial  : 16   Sample Multiplier: 1

Quant Time: Jun 28 11:17:58 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title  : Volatile Organics 8260B                    SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE
```

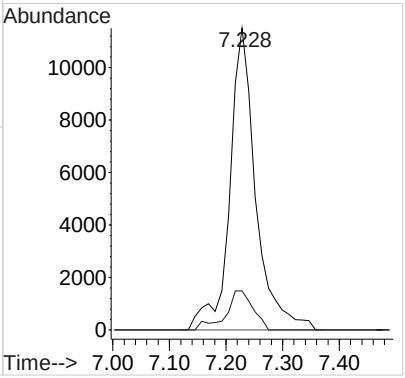


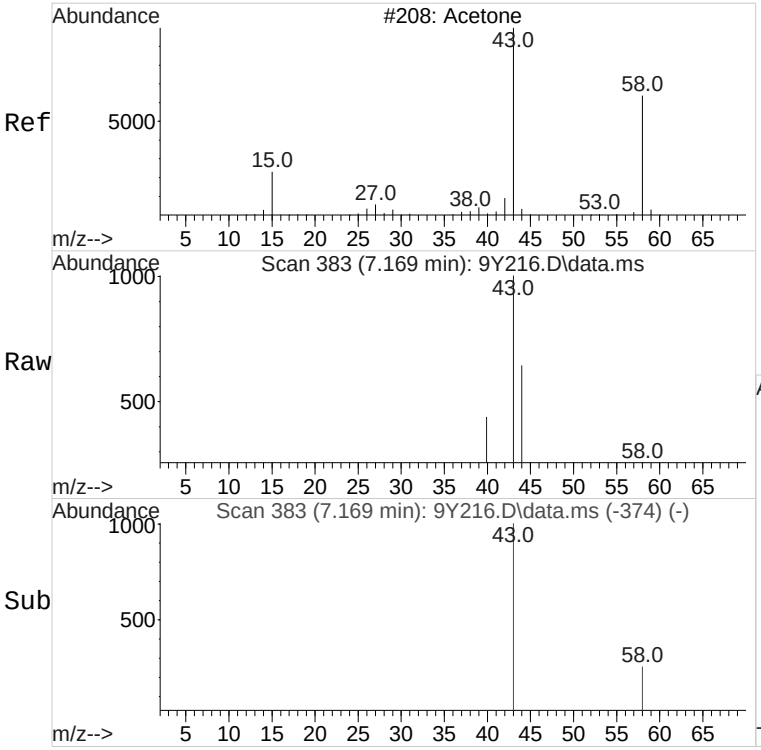


#9 BEFORE analyst integration
Acetone
Concen: 24.55 ug/L
RT: 7.228 min Scan# 388
Delta R.T. 0.071 min
Lab File: 9Y216.D
Acq: 27 Jun 2017 17:01

Tgt Ion: 43 Resp: 37059

Ion	Ratio	Lower	Upper
43	100		
58	13.6	1.1	61.1

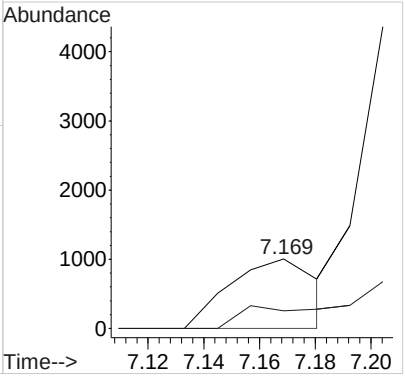


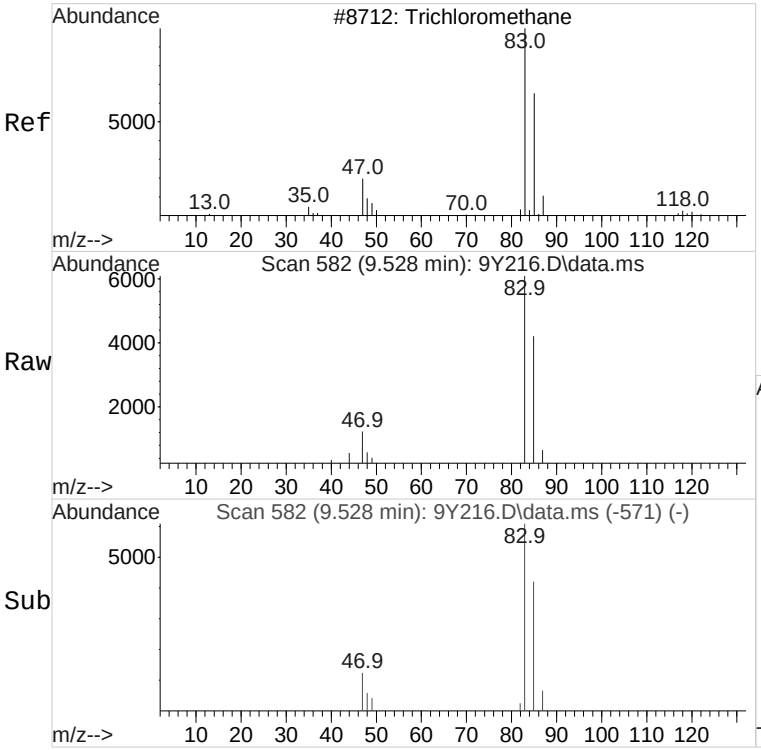


#9 AFTER analyst integration AB
Acetone
Concen: Below Cal MANUALLY INTEGRATED
RT: 7.169 min Scan# 383
Delta R.T. 0.012 min
Lab File: 9Y216.D
Acq: 27 Jun 2017 17:01

Tgt Ion: 43 Resp: 2189

Ion	Ratio	Lower	Upper
43	100		
58	229.5	1.1	61.1#

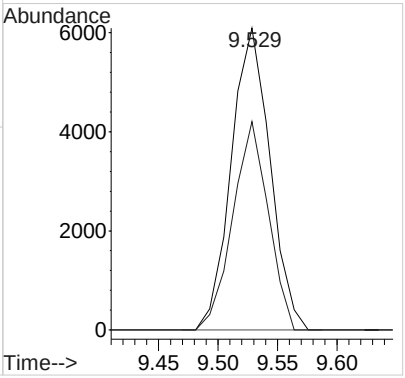


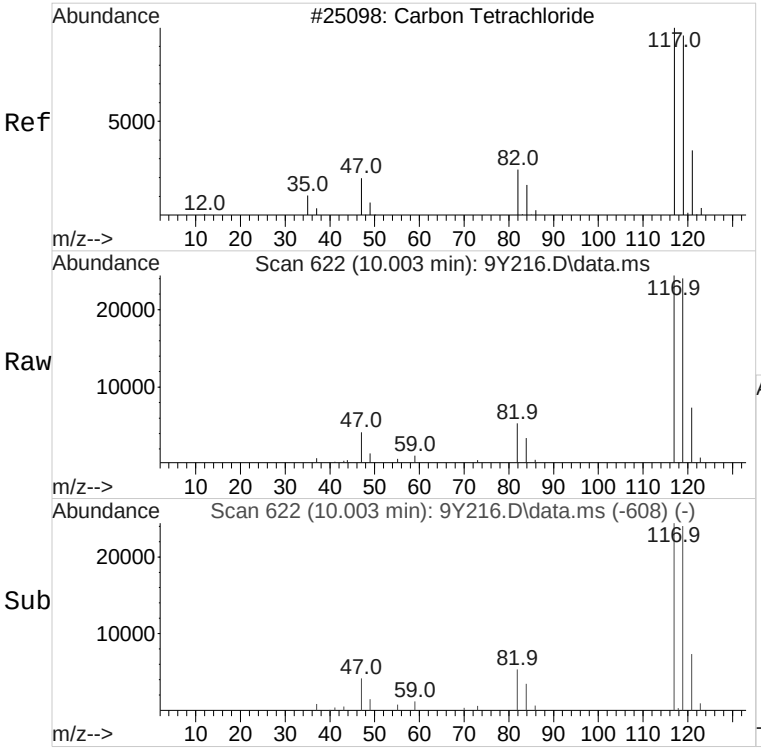


#25
Chloroform
Concen: 1.41 ug/L
RT: 9.528 min Scan# 582
Delta R.T. -0.001 min
Lab File: 9Y216.D
Acq: 27 Jun 2017 17:01

Tgt Ion: 83 Resp: 13839

Ion	Ratio	Lower	Upper
83	100		
85	63.3	35.9	95.9

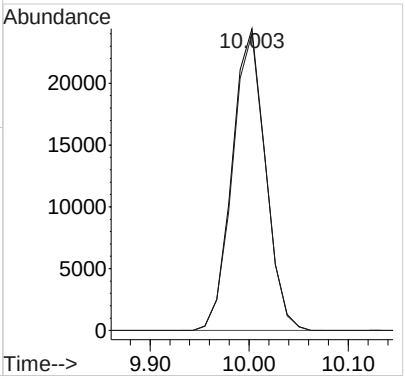


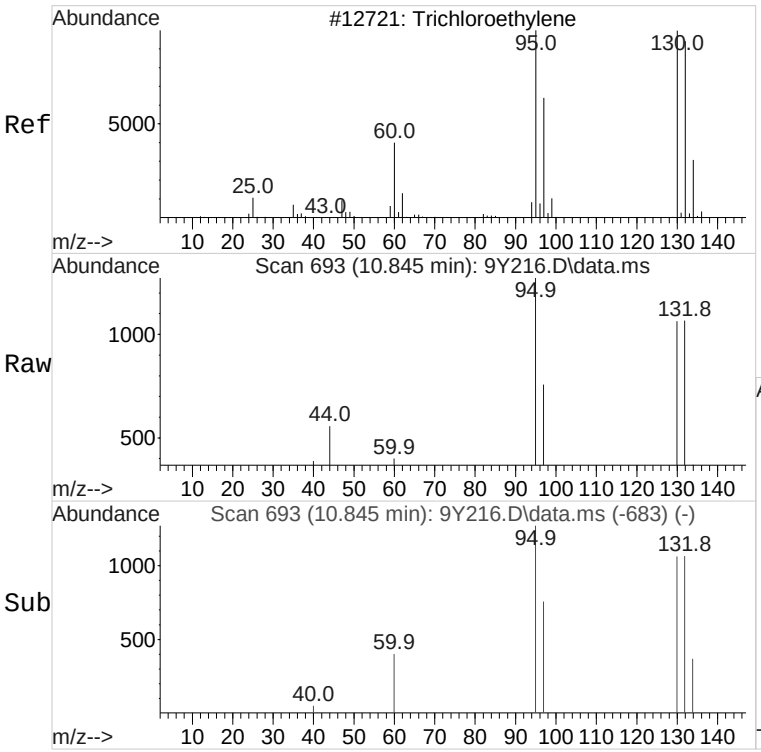


#29
Carbon tetrachloride
Concen: 7.19 ug/L
RT: 10.003 min Scan# 622
Delta R.T. -0.000 min
Lab File: 9Y216.D
Acq: 27 Jun 2017 17:01

Tgt Ion:117 Resp: 57197

Ion	Ratio	Lower	Upper
117	100		
119	97.8	68.3	128.3

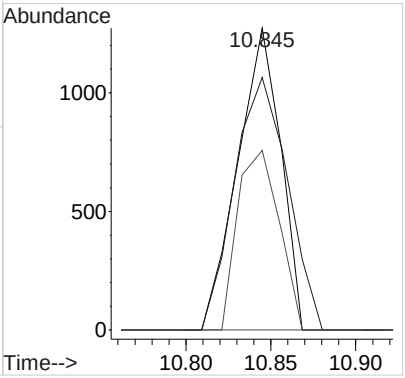


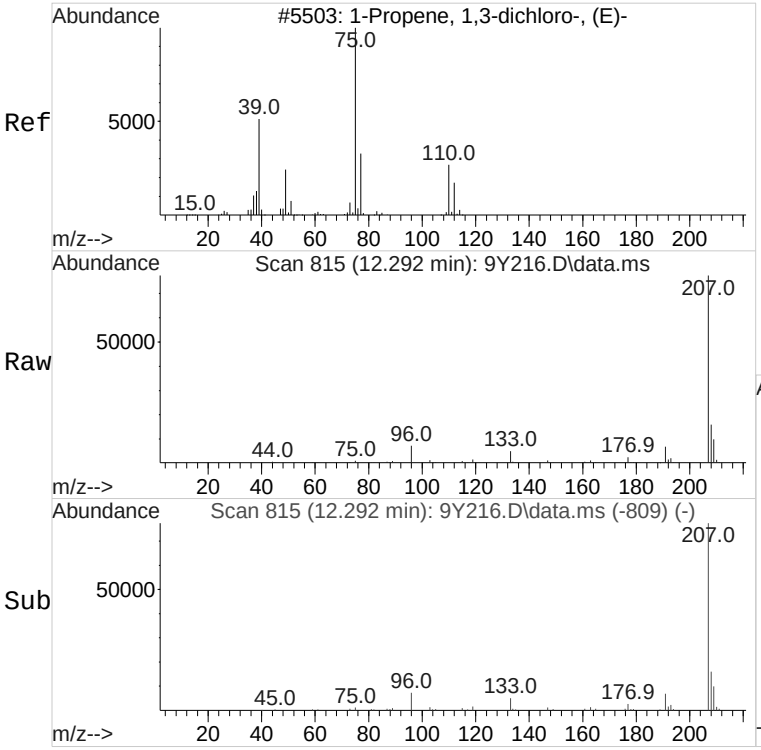


#35
Trichloroethylene
Concen: 0.39 ug/L
RT: 10.845 min Scan# 693
Delta R.T. 0.012 min
Lab File: 9Y216.D
Acq: 27 Jun 2017 17:01

Tgt Ion: 95 Resp: 2247

Ion	Ratio	Lower	Upper
95	100		
130	103.4	77.9	137.9
97	57.7	36.0	96.0

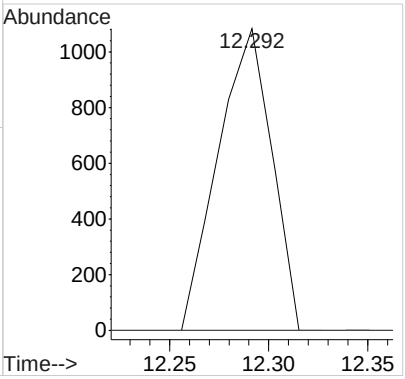




#47 BEFORE analyst DELETION
trans-1,3-Dichloropropylene
Concen: 0.31 ug/L
RT: 12.292 min Scan# 815
Delta R.T. -0.023 min
Lab File: 9Y216.D
Acq: 27 Jun 2017 17:01

Tgt Ion: 75 Resp: 2048

Ion	Ratio	Lower	Upper
75	100		
39	0.0	15.9	75.9#
77	0.0	2.4	62.4#



Standards

Low level SW846 8260B and Regular level 8260B and EPA 624
Calibration Standard Concentration Levels

	Level 1	Level 1a	Level 2	Level 3	Level 4	Level 5	Level 6 #	Level 7 !	Level 7a
Fluorobenzene (IS)	20	20/50	20/50	20/50	20/50	20/50	20/50	20/50	20/50
1,2-Dichloroethane-d4(surr)		20/50	20/50	20/50	20/50	20/50	20/50	20/50	20/50
Dichlorodifluoromethane		0.5	1	2	5	10	20	50	100
Chloromethane		0.5	1	2	5	10	20	50	100
Vinyl chloride		0.5	1	2	5	10	20	50	100
Bromomethane		0.5	1	2	5	10	20	50	100
Chloroethane		0.5	1	2	5	10	20	50	100
Trichlorofluoromethane		0.5	1	2	5	10	20	50	100
1,1-Dichloroethene		0.5	1	2	5	10	20	50	100
Acetone	1	2.5	5	10	25	50	100	250	500
Iodomethane	1	2.5	5	10	25	50	100	250	500
Carbon disulfide	1	2.5	5	10	25	50	100	250	500
Methylene chloride		0.5	1	2	5	10	20	50	100
trans-1,2-Dichloroethene		0.5	1	2	5	10	20	50	100
1,1-Dichloroethane		0.5	1	2	5	10	20	50	100
Ethyl ether		0.5	1	2	5	10	20	50	100
Vinyl acetate	1	2.5	5	10	25	50	100	250	500
cis-1,2-Dichloroethene		0.5	1	2	5	10	20	50	100
1,2-Dichloroethene (total)		1	2	4	10	20	40	100	200
Cyclohexene		0.5	1	2	5	10	20	50	100
2-Chloroethylvinyl ether			5	10	25	50	100	250	500
2,2-Dichloropropane		0.5	1	2	5	10	20	50	100
2-Butanone	1	2.5	5	10	25	50	100	250	500
Bromochloromethane		0.5	1	2	5	10	20	50	100
Chloroform		0.5	1	2	5	10	20	50	100
1,1,1-Trichloroethane		0.5	1	2	5	10	20	50	100
1,1-Dichloropropene		0.5	1	2	5	10	20	50	100
Carbon tetrachloride		0.5	1	2	5	10	20	50	100
Benzene		0.5	1	2	5	10	20	50	100
1,2-Dichloroethane		0.5	1	2	5	10	20	50	100
Trichloroethene		0.5	1	2	5	10	20	50	100
1,2-Dichloropropane		0.5	1	2	5	10	20	50	100
Dibromomethane		0.5	1	2	5	10	20	50	100
Bromodichloromethane		0.5	1	2	5	10	20	50	100
cis-1,3-Dichloropropene		0.5	1	2	5	10	20	50	100
tert-Butylmethylether		0.5	1	2	5	10	20	50	100
Ethyl Ether			1	2	5	10	20	50	100
Acetonitrile			25	50	125	250	500	1250	2500
Methyl acetate			5	10	25	50	100	250	500
Cyclohexane			1	2	5	10	20	50	100
Methylcyclohexane			1	2	5	10	20	50	100
n-Butyl alcohol		50	100	200	500	1000	2000	5000	10000
2-Nitropropane			5	10	25	50	100	250	500
Ethyl acetate			5	10	25	50	100	250	500
Acrolein			5	10	25	50	100	250	500
Trichlorotrifluoroethane		2	5	10	25	50	100	250	500
Allyl chloride			5	10	25	50	100	250	500
Acrylonitrile			5	10	25	50	100	250	500
1,4-Dioxane			50	100	250	500	1000	2500	5000
Isobutyl alcohol			50	100	250	500	1000	2500	5000
Methacrylonitrile			5	10	25	50	100	250	500
Propionitrile			5	10	25	50	100	250	500
Methyl methacrylate			5	10	25	50	100	250	500
Chlorotrifluoroethylene			5	10	25	50	100	150	200
2-Chloro-1,1,1-trifluoroethane			5	10	25	50	100	150	200
Tetrahydrofuran			5	10	25	50	100	250	500
tert-Butyl alcohol			50	100	250	500	1000	2500	5000
Isopropyl ether			1	2	5	10	20	50	100
Ethyl tert-butyl ether			1	2	5	10	20	50	100
Isopropyl alcohol			50	100	250	500	1000	2500	5000
Methyl tert-amyl ether			1	2	5	10	20	50	100
1-Chlorohexane			1	2	5	10	20	50	100
2-Chloro-1,3-butadiene(chloroprene)			1	2	5	10	20	50	100
Chlorobenzene-d5 (IS)	20	20	20/50	20/50	20/50	20/50	20/50	20/50	20/50
Toluene-d8 (surr)		20	20/50	20/50	20/50	20/50	20/50	20/50	20/50
4-Methyl-2-pentanone	1	2.5	5	10	25	50	100	250	500
Toluene		0.5	1	2	5	10	20	50	100
trans-1,3-Dichloropropene		0.5	1	2	5	10	20	50	100
1,1,2-Trichloroethane		0.5	1	2	5	10	20	50	100
Tetrachloroethene		0.5	1	2	5	10	20	50	100
1,3-Dichloropropane		0.5	1	2	5	10	20	50	100
2-Hexanone	1	2.5	5	10	25	50	20	250	500
Dibromochloromethane		0.5	1	2	5	10	20	50	100
1,2-Dibromoethane		0.5	1	2	5	10	20	50	100
Chlorobenzene		0.5	1	2	5	10	20	50	100
1,1,1,2-Tetrachloroethane		0.5	1	2	5	10	20	50	100
Ethylbenzene		0.5	1	2	5	10	20	50	100
m,p-Xylene		1	2	4	10	20	20	100	200
o-Xylene		0.5	1	2	5	10	20	50	100
Xylenes (total)		1.5	3	6	15	30	60	150	300
Stryene		0.5	1	2	5	10	20	50	100
Ethyl methacrylate			5	10	25	50	100	250	500
1,4-Dichlorobenzene-d4 (IS)	20	20	20/50	20/50	20/50	20/50	20/50	20/50	20/50
Bromofluorobenzene (surr)		20	20/50	20/50	20/50	20/50	20/50	20/50	20/50
Bromoform		0.5	1	2	5	10	20	50	100
Isopropylbenzene		0.5	1	2	5	10	20	50	100
1,1,2,2-Tetrachloroethane		0.5	1	2	5	10	20	50	100
Bromobenzene		0.5	1	2	5	10	20	50	100
1,2,3-Trichloropropane		0.5	1	2	5	10	20	50	100
n-Propylbenzene		0.5	1	2	5	10	20	50	100
2-Chlorotoluene		0.5	1	2	5	10	20	50	100
1,3,5-Trimethylbenzene		0.5	1	2	5	10	20	50	100
4-Chlorotoluene		0.5	1	2	5	10	20	50	100
1,2,4-Trimethylbenzene		0.5	1	2	5	10	20	50	100
sec-Butylbenzene		0.5	1	2	5	10	20	50	100
1,3-Dichlorobenzene		0.5	1	2	5	10	20	50	100
tert-Butylbenzene		0.5	1	2	5	10	20	50	100
Isopropyltoluene		0.5	1	2	5	10	20	50	100
1,4-Dichlorobenzene		0.5	1	2	5	10	20	50	100
n-Butylbenzene		0.5	1	2	5	10	20	50	100
1,2-Dichlorobenzene		0.5	1	2	5	10	20	50	100
1,2-Dibromo-3-chloropropa		0.5	1	2	5	10	20	50	100
1,2,4-Trichlorobenzene		0.5	1	2	5	10	20	50	100
Hexachlorobutadiene		0.5	1	2	5	10	20	50	100
Naphthalene		0.5	1	2	5	10	20	50	100
1,2,3-Trichlorobenzene		0.5	1	2	5	10	20	50	100
cis-1,4-Dichloro-2-butene			5	10	25	50	100	250	500
trans-1,4-Dichloro-2-butene			5	10	25	50	100	250	500
Pentachloroethane			5	10	25	50	100	250	500
Benzyl chloride			5	10	25	50	100	250	500
Cyclohexanone			25	50	125	250	500	1250	2500
bis(2-Chloro-isopropyl)ether			5	10	25	50	100	250	500

Method	PQL	Concentration range		
SW 846 8260B low level	Level 1 &1a	Levels 1-> 7a	IS/SS @ 20 ppb	
EPA 524.2	Level 1a	Levels 1a-> 7a	IS/SS @ 20 ppb	
SW846 8260B/624	Level 2	Levels 1a-> 7a	IS/SS @ 50 ppb	n-butyl alchol only in 1a

#: Indicates calibration verification concentration level used for low level analysis
!: Indicates calibration verification concentration level used for regular level analysis

July 17, 2017

Calibration History Report VOA9
GEL Laboratories, LLC

RY 06/17/2017

Method File : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Last Update : Sat Jun 17 13:36:41 2017
Integrator : (RTE Integrator) Response via : Initial Calibration

EH 06/17/2017

Cal Lvl:8 Amt:0.00 None of the compounds use this level.

Injection Date	Mix	Calibration File

Cal Lvl:1 Amt:0.00 Last Updated with: C:\msdchem\1\DATA\061617V9\9W522.D

Injection Date	Mix	Calibration File
16 Jun 2017 20:32	B	C:\msdchem\1\DATA\061617V9\9W522.D

Cal Lvl:2 Amt:2.00 Last Updated with: C:\msdchem\1\DATA\061617V9\9W523.D

Injection Date	Mix	Calibration File
16 Jun 2017 18:10	A	C:\msdchem\1\DATA\061617V9\9W517.D
16 Jun 2017 21:00	B	C:\msdchem\1\DATA\061617V9\9W523.D

Cal Lvl:3 Amt:5.00 Last Updated with: C:\msdchem\1\DATA\061617V9\9W524.D

Injection Date	Mix	Calibration File
16 Jun 2017 18:38	A	C:\msdchem\1\DATA\061617V9\9W518.D
16 Jun 2017 21:28	B	C:\msdchem\1\DATA\061617V9\9W524.D

Cal Lvl:4 Amt:10.00 Last Updated with: C:\msdchem\1\DATA\061617V9\9W525.D

Injection Date	Mix	Calibration File
16 Jun 2017 19:07	A	C:\msdchem\1\DATA\061617V9\9W519.D
16 Jun 2017 21:56	B	C:\msdchem\1\DATA\061617V9\9W525.D

Cal Lvl:5 Amt:20.00 Last Updated with: C:\msdchem\1\DATA\061617V9\9W526.D

Injection Date	Mix	Calibration File
16 Jun 2017 19:35	A	C:\msdchem\1\DATA\061617V9\9W520.D
16 Jun 2017 22:24	B	C:\msdchem\1\DATA\061617V9\9W526.D

Cal Lvl:6 Amt:50.00 Last Updated with: C:\msdchem\1\DATA\061617V9\9W527.D

Injection Date	Mix	Calibration File
16 Jun 2017 15:21	A	C:\msdchem\1\DATA\061617V9\9W511.D
16 Jun 2017 22:52	B	C:\msdchem\1\DATA\061617V9\9W527.D

Cal Lvl:7 Amt:100.00 Last Updated with: C:\msdchem\1\DATA\061617V9\9W529.D

Injection Date	Mix	Calibration File
16 Jun 2017 16:18	A	C:\msdchem\1\DATA\061617V9\9W513.D
16 Jun 2017 23:48	B	C:\msdchem\1\DATA\061617V9\9W529.D

Cal Lvl:9 Amt:80.00 Last Updated with:C:\msdchem\1\DATA\061617V9\9W528.D

Injection Date	Mix	Calibration File
16 Jun 2017 15:49	A	C:\msdchem\1\DATA\061617V9\9W512.D
16 Jun 2017 23:21	B	C:\msdchem\1\DATA\061617V9\9W528.D

VOA9-8260C-061617.M Sat Jun 17 13:40:09 2017

Response Factor Report VOA9
GEL Laboratories, LLC
July 17, 2017

Method File : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Last Update : Sat Jun 17 13:36:41 2017
Integrator : (RTE Integrator) Response via : Initial Calibration

RY 06/17/2017
EM 06/17/2017

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b | m1 | m2	8 6	1 7	2 9	3	4	5	Avg	Curve	Exp	%RSD/r2
2)MA Dichlorodifluoromethane			0.3000507	0.2892899	0.2768939	0.2608606				
	0.2935892	0.2403736	0.2592093				0.2743	AVRG		7.9112
3)MPA Chloromethane			0.2669700	0.2734884	0.2604935	0.2651192				
	0.2747633	0.2538391	0.2524692				0.2639	AVRG		3.3338
4)MCA Vinyl chloride			0.2869163	0.2906486	0.2786617	0.2838946				
	0.2958086	0.2751808	0.2811691				0.2846	AVRG		2.5003
5)MA Bromomethane			0.2479415	0.2451759	0.2374919	0.2477012				
	0.2602229	0.2379579	0.2446450				0.2459	AVRG		3.0993
6)MA Chloroethane			0.2228557	0.2263506	0.2193237	0.2238501				
	0.2440729	0.2189019	0.2192854				0.2249	AVRG		3.9494
7)MA Trichlorofluoromethane			0.3811002	0.3981732	0.3828492	0.3971809				
	0.4405701	0.3900168	0.4122235				0.4003	AVRG		5.1571
8)MA Ethyl ether			0.1788026	0.1854487	0.1851756	0.1880182				
	0.1951804	0.1780968	0.1834541				0.1849	AVRG		3.1332
9)MA Acetone			0.0657656	0.0596094	0.0641641	0.0583547				
	0.0730847	0.0601973	0.0590496				0.0629	AVRG		8.3928
10)MCA 1,1-Dichloroethylene			0.3967636	0.3807067	0.3924051	0.3794336				
	0.4117422	0.3973387	0.3768232				0.3907	AVRG		3.2133
11)MA Iodomethane			0.4645401	0.4529730	0.4653602	0.4380397				
	0.4525718	0.4292003	0.4088123				0.4445	AVRG		4.6134
12)MA Acetonitrile			0.0278522	0.0241444	0.0256427	0.0232733				
	0.0252510	0.0210557	0.0200237				0.0239	AVRG		11.3409
13)MA Methyl acetate			0.1569759	0.1420902	0.1465194	0.1346128				
	0.1373079	0.1121845	0.1100988				0.1343	AVRG		12.9302
14)MA Carbon disulfide			0.8567760	0.8128188	0.8347471	0.7662513				
	0.7826480	0.7011047	0.6782894				0.7761	AVRG		8.5837
15)MA Methylene chloride				0.2722553	0.2704079	0.2589471				
	0.2722693	0.2667849	0.2504044				0.2652	AVRG		3.3193
16)MA tert-Butyl methyl ether			0.6289194	0.6086280	0.6420118	0.6284600				
	0.6764247	0.6518358	0.6026984				0.6341	AVRG		4.0008

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Integrator : (RTE Integrator) Response via : Initial Calibration

For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b | m1 | m2	8 6	1 7	2 9	3	4	5	Avg	Curve	Exp	%RSD/r2
17)MA trans-1,2-Dichloroethyle			0.3793259	0.3547110	0.3672153	0.3452823				
	0.3632862	0.3531006	0.3371596				0.3572	AVRG		3.9490
18)MA Hexane				0.3023977	0.3423016	0.3230314				
	0.3547985	0.3156303	0.3321653				0.3284	AVRG		5.7332
19)MA Vinyl acetate			0.3026123	0.3129248	0.3268845	0.3276422				
	0.3330889	0.2881489	0.2983987				0.3128	AVRG		5.4583
20)MPA 1,1-Dichloroethane			0.4585399	0.4383840	0.4393645	0.4151089				
	0.4339595	0.4218486	0.4065209				0.4305	AVRG		4.0516
21)MA 2-Butanone			0.0837947	0.0760047	0.0859419	0.0789515				
	0.0979748	0.0851545	0.0829253				0.0844	AVRG		8.2370
22)MA cis-1,2-Dichloroethylene			0.4094900	0.3963433	0.3996204	0.3772109				
	0.3977882	0.3806826	0.3651280				0.3895	AVRG		3.9782
23)MA 2,2-Dichloropropane			0.3749002	0.3650150	0.3667126	0.3535746				
	0.4137320	0.3955887	0.3763956				0.3780	AVRG		5.3905
24)MA Bromochloromethane			0.1272646	0.1206167	0.1242223	0.1216952				
	0.1262033	0.1256042	0.1182388				0.1234	AVRG		2.6798
25)MCA Chloroform			0.4329850	0.4199750	0.4123410	0.3975142				
	0.4162468	0.3992417	0.3820959				0.4086	AVRG		4.1307
26)MA 1,1,1-Trichloroethane			0.3841391	0.3735677	0.3874273	0.3800982				
	0.4114338	0.3957304	0.3744739				0.3867	AVRG		3.4468
27)MA Cyclohexane			0.4470983	0.4381092	0.4387505	0.4347275				
	0.4625249	0.4562928	0.4274607				0.4436	AVRG		2.7982
28)MA 1,1-Dichloropropene			0.3230970	0.3183407	0.3185293	0.3031056				
	0.3215214	0.3214024	0.3033320				0.3156	AVRG		2.7367
29)MA Carbon tetrachloride			0.3236884	0.3088063	0.3259795	0.3216640				
	0.3592780	0.3492609	0.3312728				0.3314	AVRG		5.2121
30)SA 1,2-Dichloroethane-d4			0.2468484	0.2478037	0.2477606	0.2440859				
	0.2560379	0.2406099	0.2431853				0.2466	AVRG		1.9988
31)MA 1,2-Dichloroethane			0.2934631	0.2787660	0.2874181	0.2691289				
	0.2793373	0.2667028	0.2539206				0.2755	AVRG		4.8551

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For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b | m1 | m2	8 6	1 7	2 9	3	4	5	Avg	Curve	Exp	%RSD/r2
32)MA Benzene			0.9837713	0.9377597	0.9462176	0.8971211				
	0.9171885	0.8940300	0.8472416				0.9176	AVRG		4.7771
33)MA Cyclohexene			0.4521563	0.4294544	0.4434151	0.4281257				
	0.4642852	0.4584166	0.4301067				0.4437	AVRG		3.3708
34)MA n-Butyl alcohol			0.0031074	0.0037066	0.0041232	0.0030727				
	0.0041898	0.0035049	0.0033195				0.0036	AVRG	#	12.7018
35)MA Trichloroethylene			0.2567726	0.2426234	0.2395852	0.2349454				
	0.2405723	0.2406610	0.2261792				0.2402	AVRG		3.8212
36)MA 2-Pentanone			0.1141220	0.1113085	0.1361394	0.1234484				
	0.1419225	0.1075490	0.1134399				0.1211	AVRG		10.9320
37)MCA 1,2-Dichloropropane			0.2328493	0.2242066	0.2213140	0.2135880				
	0.2080758	0.2047769	0.1948163				0.2142	AVRG		6.0290
38)MA Methylcyclohexane			0.4865422	0.4607670	0.4594487	0.4599018				
	0.4878219	0.4779597	0.4504783				0.4690	AVRG		3.1711
39)MA Dibromomethane			0.1155986	0.1185826	0.1240781	0.1214984				
	0.1262232	0.1247561	0.1161106				0.1210	AVRG		3.5398
40)MA Bromodichloromethane			0.2326861	0.2501080	0.2660482	0.2726908				
	0.2865464	0.2930018	0.2728888				0.2677	AVRG		7.7539
41)MA 2-Chloroethylvinyl ether			0.1004574	0.1165705	0.1197060	0.1227180				
	0.1179728	0.1058256	0.1078129				0.1130	AVRG		7.3378
42)MA cis-1,3-Dichloropropylen			0.2912400	0.3185684	0.3388979	0.3460914				
	0.3538733	0.3615755	0.3368557				0.3353	AVRG		7.0874
44)MA 4-Methyl-2-pentanone			0.0841644	0.0818995	0.0924726	0.0880954				
	0.0958440	0.0860948	0.0823020				0.0873	AVRG		6.0239
45)SA Toluene-d8			1.1176461	1.1264387	1.1300904	1.1304112				
	1.1181386	1.1351596	1.1316715				1.1271	AVRG		0.6016
46)MCA Toluene			1.3186032	1.2490757	1.2592075	1.1865945				
	1.1766576	1.1456039	1.1078433				1.2062	AVRG		6.0436
47)MA trans-1,3-Dichloropropyl			0.3186832	0.3311010	0.3585782	0.3695509				
	0.3935824	0.4055041	0.3781921				0.3650	AVRG		8.6544

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For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b | m1 | m2	8 6	1 7	2 9	3	4	5	Avg	Curve	Exp	%RSD/r2
48)MA 1,1,2-Trichloroethane			0.1970264	0.1883010	0.1930698	0.1906205				
	0.1926017	0.1907376	0.1785220				0.1901	AVRG		3.0443
49)MA 2-Hexanone			0.1634791	0.1526266	0.1723128	0.1562244				
	0.1922007	0.1595281	0.1657206				0.1660	AVRG		7.9649
50)MA 1,3-Dichloropropane			0.4134149	0.3984721	0.4024106	0.3798849				
	0.3766843	0.3670070	0.3474437				0.3836	AVRG		5.9331
51)MA Tetrachloroethylene			0.3296508	0.2984064	0.2961407	0.2844522				
	0.2905929	0.2951313	0.2779240				0.2960	AVRG		5.5646
52)MA Dibromochloromethane			0.2073182	0.2092658	0.2331248	0.2478287				
	0.2738704	0.2922192	0.2673236				0.2473	AVRG		13.1778
53)MA 1,2-Dibromoethane			0.2322162	0.2242349	0.2380744	0.2351890				
	0.2472530	0.2449636	0.2291098				0.2359	AVRG		3.5134
54)MPA Chlorobenzene			0.9038368	0.8680374	0.8588966	0.8200160				
	0.8381240	0.8278222	0.7893254				0.8437	AVRG		4.3924
55)MA 1,1,1,2-Tetrachloroethan			0.2853127	0.2883465	0.2978027	0.2919930				
	0.3142933	0.3233681	0.3022522				0.3005	AVRG		4.6558
56)MCA Ethylbenzene			1.5171370	1.4534222	1.4340785	1.3534257				
	1.3686333	1.2925797	1.2497687				1.3813	AVRG		6.7751
57)MA m,p-Xylenes			0.6044767	0.5790269	0.5787326	0.4471553				
	0.5793432	0.5690776	0.5439014				0.5574	AVRG		9.2915
58)MA o-Xylene			0.5833603	0.5817129	0.5840182	0.5640126				
	0.5913910	0.5875569	0.5527979				0.5778	AVRG		2.4269
59)MA Styrene			0.8719737	0.8981265	0.9294097	0.9018519				
	0.9266973	0.8858438	0.8441172				0.8940	AVRG		3.3686
61)MPA Bromoform			0.2192003	0.2112293	0.2544139	0.2844020				
	0.3262192	0.3465936	0.3193595				0.2802	AVRG	#	19.1191
62)MA Isopropylbenzene			2.5929262	2.4653959	2.5575833	2.4863564				
	2.4642096	2.3446984	2.3088767				2.4600	AVRG		4.2005
63)SA Bromofluorobenzene			0.7556506	0.7579072	0.7664732	0.7660088				
	0.7499489	0.7443491	0.7468457				0.7553	AVRG		1.1674

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For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b | m1 | m2	8 6	1 7	2 9	3	4	5	Avg	Curve	Exp	%RSD/r2
64)MPA 1,1,2,2-Tetrachloroethan			0.5135239	0.5017761	0.5442578	0.5297688				
	0.5490162	0.5143691	0.4890315				0.5202	AVRG		4.2187
65)MA 1,2,3-Trichloropropane			0.1609903	0.1450358	0.1527256	0.1520218				
	0.1626378	0.1504146	0.1440212				0.1525	AVRG		4.6896
66)MA Bromobenzene			0.7879544	0.7192151	0.7193214	0.6839385				
	0.6857421	0.6870977	0.6498573				0.7047	AVRG		6.2025
67)MA n-Propylbenzene			3.2715113	3.0041355	3.0266630	2.8806514				
	2.8013161	2.6157563	2.5729228				2.8819	AVRG		8.5055
68)MA 1,3,5-Trimethylbenzene			2.2127775	2.1627245	2.2037046	2.1298776				
	2.1022741	2.0021783	1.9582574				2.1103	AVRG		4.6281
69)MA 2-Chlorotoluene			0.6745561	0.6670959	0.6673397	0.6427386				
	0.6497965	0.6446679	0.6156963				0.6517	AVRG		3.0904
70)MA 4-Chlorotoluene			2.0554804	1.8875956	1.8871015	1.8171711				
	1.8065806	1.7430035	1.6954787				1.8418	AVRG		6.3793
71)MA tert-Butylbenzene			0.4693313	0.4612572	0.4820000	0.4798725				
	0.4906860	0.5113383	0.4844472				0.4827	AVRG		3.3125
72)MA 1,2,4-Trimethylbenzene			2.3542945	2.2286231	2.2663229	2.1443955				
	2.1332002	2.0439997	1.9740915				2.1636	AVRG		6.0457
73)MA sec-Butylbenzene			3.0474846	2.9369425	2.9649547	2.8295908				
	2.8580519	2.6764187	2.6344001				2.8497	AVRG		5.3000
74)MA 4-Isopropyltoluene			2.7285676	2.5960297	2.6032207	2.5200073				
	2.5490215	2.4217969	2.3435148				2.5375	AVRG		4.9774
75)MA 1,3-Dichlorobenzene			1.6450726	1.4788672	1.4413556	1.3471888				
	1.3651983	1.3299094	1.2696107				1.4110	AVRG		8.8258
76)MA 1,4-Dichlorobenzene			1.6140161	1.4173433	1.3790205	1.3242309				
	1.3411523	1.3104855	1.2462961				1.3761	AVRG		8.5667
77)MA n-Butylbenzene			2.6034602	2.3970396	2.3749564	2.2890533				
	2.3121980	2.1415114	2.0932144				2.3159	AVRG		7.3425
78)MA 1,2-Dichlorobenzene			1.5003660	1.3821330	1.3436163	1.2983180				
	1.3026406	1.2621905	1.2074761				1.3281	AVRG		7.0944

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For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b | m1 | m2	8 6	1 7	2 9	3	4	5	Avg	Curve	Exp	%RSD/r2
79)MA 1,2-Dibromo-3-chloroprop			0.1056761	0.0910160	0.1090628	0.1172360				
	0.1410557	0.1429612	0.1297841				0.1195	AVRG	#	16.1536
80)MA 1,2,4-Trichlorobenzene			1.3606955	1.1512095	1.1393040	1.0879430				
	1.1299410	1.0967498	1.0621322				1.1469	AVRG		8.6648
81)MA Hexachlorobutadiene			1.0295238	0.8022191	0.7663925	0.7396983				
	0.7579542	0.7375209	0.7122581				0.7922	AVRG		13.6728
82)MA Naphthalene			2.0815847	1.8622324	2.0057622	1.9839294				
	2.1414666	2.0071376	1.9050600				1.9982	AVRG		4.7907
83)MA 1,2,3-Trichlorobenzene			1.2264390	1.0436779	1.0399078	0.9812276				
	1.0318944	0.9791072	0.9466732				1.0356	AVRG		8.8656
85)B Acrolein			0.0300580	0.0355161	0.0342056	0.0374242				
	0.0339615	0.0344019	0.0371253				0.0347	AVRG		7.1033
86)B Trichlorotrifluoroethane		0.1189085	0.1092589	0.1265194	0.1133102	0.1067651				
	0.0962161	0.0951272	0.0906895				0.1071	AVRG		11.6568
87)B Allyl chloride			0.3544346	0.3883429	0.3572056	0.3413869				
	0.2951770	0.2881393	0.2970264				0.3317	AVRG		11.6142
88)B Acrylonitrile			0.0685488	0.0777841	0.0716508	0.0673482				
	0.0628866	0.0646940	0.0667033				0.0685	AVRG		7.2161
89)B 2-Chloro-1,3-butadiene			0.3033340	0.3558555	0.3375651	0.3300287				
	0.3089898	0.3250223	0.3107539				0.3245	AVRG		5.7131
90)B Ethyl acetate			0.1636684	0.1823319	0.1615738	0.1477787				
	0.1349280	0.1263907	0.1341268				0.1501	AVRG		13.3440
91)B Propionitrile			0.0257068	0.0281510	0.0260616	0.0241119				
	0.0227699	0.0234595	0.0241809				0.0249	AVRG		7.3842
92)B Methacrylonitrile			0.1003425	0.1103528	0.1034658	0.0951792				
	0.0863379	0.0862035	0.0899521				0.0960	AVRG		9.5794
93)B Tetrahydrofuran			0.0580870	0.0614904	0.0550934	0.0501848				
	0.0470584	0.0476412	0.0499662				0.0528	AVRG		10.4671
94)B Isobutyl alcohol			0.0067903	0.0076788	0.0068321	0.0062341				
	0.0057969	0.0054853	0.0061215				0.0064	AVRG	#	11.5117

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For Linear Calibration: x = concentration ratio, y = response ratio. y = b + m1(x) + m2(xE2)

Compound b | m1 | m2	8 6	1 7	2 9	3	4	5	Avg	Curve	Exp	%RSD/r2
95)B Methyl methacrylate			0.1237866	0.1404501	0.1284631	0.1184686				
	0.1114098	0.1074259	0.1152161				0.1207	AVRG		9.3050
96)B 1,4-Dioxane		0.0020138	0.0020278	0.0024922	0.0022341	0.0022596				
	0.0021630	0.0020309	0.0023516				0.0022	AVRG	#	7.8347
97)B 2-Nitropropane			0.0337989	0.0435859	0.0429124	0.0435662				
	0.0466334	0.0484819	0.0498308				0.0441	AVRG		11.9421
99)B Ethyl methacrylate			0.3092311	0.3443046	0.3247927	0.2973425				
	0.2664426	0.2599933	0.2657267				0.2954	AVRG		11.0761
101)B cis-1,4-Dichloro-2-buten			0.1313375	0.1573816	0.1517482	0.1432428				
	0.1358290	0.1301031	0.1377839				0.1411	AVRG		7.3106
102)B Cyclohexanone			0.0091116	0.0106364	0.0105317	0.0110643				
	0.0106771	0.0099602	0.0121542				0.0106	AVRG	$	8.8466
103)B trans-1,4-Dichloro-2-but			0.1268647	0.1474266	0.1398049	0.1283312				
	0.1218404	0.1172624	0.1241653				0.1294	AVRG		8.1835
104)B Pentachloroethane			0.3465654	0.3993359	0.3998494	0.3831157				
	0.3412942	0.3533235	0.3351272				0.3655	AVRG		7.6165
105)B Benzyl chloride			0.7323354	0.8907486	0.8710101	0.8234970				
	0.7346010	0.7044816	0.7379095				0.7849	AVRG		9.6010
106)B bis(2-Chloroisopropyl)et			0.2201496	0.2473771	0.2307353	0.2136755				
	0.1990491	0.1951234	0.2097614				0.2166	AVRG		8.3976

(#) = Out of Range ($) = Individual RF Out of Range
AVRG = Average, LINR = Linear Regression, 1/x = the inverse of concentration, 1/x^2 = the inverse square of concentration

July 17, 2017

Quantitation Report
GEL Laboratories, LLC

RY 06/17/2017

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W511.D
Acq On : 16 Jun 2017 15:21
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-05|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL50 5mL n/a MIX[A]0509-07B+0606-07B+0330-07
ALS Vial : 11 Sample Multiplier: 1

EM 06/17/2017

Quant Time: Jun 17 13:36:56 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	Dev(Min)
Internal Standards								
1) Fluorobenzene	96	10.454	10.454	1.000	1154368	50.00	ug/L	0.00
43) Chlorobenzene-d5	117	13.632	13.632	1.000	905724	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	152	16.051	16.039	1.000	566996	50.00	ug/L	0.01
84) B Fluorobenzene	96	10.454	10.454	1.000	0m	50.00	ug/L	0.00
98) B Chlorobenzene-d5	117	13.632	13.632	1.000	0m	50.00	ug/L	0.00
100) B 1,4-Dichlorobenzene-d4	152	16.051	16.039	1.000	0m	50.00	ug/L	0.01
System Monitoring Compounds								Dev(Min)
30) 1,2-Dichloroethane-d4	65	10.098	10.098	0.966	295562	51.91	ug/L	0.00
45) Toluene-d8	98	12.090	12.090	0.887	1012725	49.60	ug/L	0.00
63) Bromofluorobenzene	95	14.817	14.817	0.923	425218	49.64	ug/L	0.00

Target Compounds	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	QValue
2) Dichlorodifluoromethane	85	4.672	4.672	0.447	338910	53.51	ug/L	100
3) Chloromethane	50	5.011	5.011	0.479	317178	52.06	ug/L	100
4) Vinyl chloride	62	5.260	5.260	0.503	341472	51.97	ug/L	100
5) Bromomethane	94	5.852	5.852	0.560	300393	52.92	ug/L	100
6) Chloroethane	64	6.007	6.007	0.575	281750	54.25	ug/L	100
7) Trichlorofluoromethane	101	6.410	6.410	0.613	508580	55.03	ug/L	100
8) Ethyl ether	59	6.766	6.766	0.647	225310	52.79	ug/L	100
9) Acetone	43	7.157	7.157	0.685	421833	290.53	ug/L	100
10) 1,1-Dichloroethylene	61	7.157	7.157	0.685	475302	52.69	ug/L	100
11) Iodomethane	142	7.418	7.418	0.710	2612172	254.54	ug/L	100
12) Acetonitrile	41	7.513	7.513	0.719	728725	1321.11	ug/L	100
13) Methyl acetate	43	7.548	7.548	0.722	792519	255.68	ug/L	100
14) Carbon disulfide	76	7.548	7.548	0.722	4517319	252.11	ug/L	100
15) Methylene chloride	84	7.738	7.738	0.740	314299	51.34	ug/L	100
16) tert-Butyl methyl ether	73	8.034	8.034	0.769	780843	53.33	ug/L	100
17) trans-1,2-Dichloroethy...	61	8.082	8.082	0.773	419366	50.86	ug/L	100
18) Hexane	57	8.355	8.355	0.799	409568	54.02	ug/L	100
19) Vinyl acetate	43	8.521	8.521	0.815	1922536	266.20	ug/L	100
20) 1,1-Dichloroethane	63	8.580	8.580	0.821	500949	50.40	ug/L	100
21) 2-Butanone	43	9.161	9.161	0.876	565495	290.24	ug/L	100
22) cis-1,2-Dichloroethylene	61	9.220	9.220	0.882	459194	51.07	ug/L	100
23) 2,2-Dichloropropane	77	9.244	9.244	0.884	477599	54.73	ug/L	100
24) Bromochloromethane	128	9.493	9.493	0.908	145685	51.13	ug/L	100
25) Chloroform	83	9.529	9.529	0.912	480502	50.93	ug/L	100
26) 1,1,1-Trichloroethane	97	9.801	9.801	0.938	474946	53.20	ug/L	100
27) Cyclohexane	56	9.896	9.896	0.947	533924	52.14	ug/L	100
28) 1,1-Dichloropropene	75	9.956	9.956	0.952	371154	50.94	ug/L	100
29) Carbon tetrachloride	117	10.003	10.003	0.957	414739	54.20	ug/L	100
31) 1,2-Dichloroethane	62	10.181	10.181	0.974	322458	50.69	ug/L	100
32) Benzene	78	10.205	10.205	0.976	1058773	49.98	ug/L	100
33) Cyclohexene	67	10.311	10.311	0.986	535956	52.32	ug/L	100
34) n-Butyl alcohol	41	10.537	10.537	1.008	483661	5860.15	ug/L	100
35) Trichloroethylene	95	10.833	10.833	1.036	277709	50.08	ug/L	100
36) 2-Pentanone	43	10.916	10.916	1.044	819154	292.91	ug/L	100
37) 1,2-Dichloropropane	63	11.094	11.094	1.061	240196	48.56	ug/L	100
38) Methylcyclohexane	83	11.082	11.082	1.060	563126	52.01	ug/L	100
39) Dibromomethane	93	11.224	11.224	1.074	145708	52.17	ug/L	100

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W511.D
Acq On : 16 Jun 2017 15:21
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-05|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL50 5mL n/a MIX[A]0509-07B+0606-07B+0330-07
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 17 13:36:56 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	
40) Bromodichloromethane	83	11.331	11.331	1.084	330780	53.52	ug/L	100
41) 2-Chloroethylvinyl ether	63	11.545	11.545	1.104	680920	260.98	ug/L	100
42) cis-1,3-Dichloropropylene	75	11.782	11.782	1.127	408500	52.77	ug/L	100
44) 4-Methyl-2-pentanone	58	11.865	11.865	0.870	434041	274.57	ug/L	100
46) Toluene	91	12.173	12.173	0.893	1065727	48.77	ug/L	100
47) trans-1,3-Dichloroprop...	75	12.315	12.315	0.903	356477	53.91	ug/L	100
48) 1,1,2-Trichloroethane	83	12.541	12.541	0.920	174444	50.65	ug/L	100
49) 2-Hexanone	43	12.719	12.719	0.933	870404	289.44	ug/L	100
50) 1,3-Dichloropropane	76	12.742	12.742	0.935	341172	49.10	ug/L	100
51) Tetrachloroethylene	164	12.766	12.766	0.936	263197	49.08	ug/L	100
52) Dibromochloromethane	129	13.003	13.003	0.954	248051	55.38	ug/L	100
53) 1,2-Dibromoethane	107	13.181	13.181	0.967	223943	52.41	ug/L	100
54) Chlorobenzene	112	13.655	13.655	1.002	759109	49.67	ug/L	100
55) 1,1,1,2-Tetrachloroethane	131	13.715	13.715	1.006	284663	52.30	ug/L	100
56) Ethylbenzene	91	13.715	13.715	1.006	1239604	49.54	ug/L	100
57) m,p-Xylenes	106	13.821	13.821	1.014	1049450	103.94	ug/L	100
58) o-Xylene	106	14.260	14.260	1.046	535637	51.17	ug/L	100
59) Styrene	104	14.260	14.260	1.046	839332	51.83	ug/L	100
61) Bromoform	173	14.533	14.533	0.905	184965	58.21	ug/L	100
62) Isopropylbenzene	105	14.616	14.616	0.911	1397197	50.09	ug/L	100
64) 1,1,2,2-Tetrachloroethane	83	14.889	14.889	0.928	311290	52.76	ug/L	100
65) 1,2,3-Trichloropropane	110	14.983	14.983	0.934	92215	53.31	ug/L	100
66) Bromobenzene	156	15.031	15.031	0.936	388813	48.65	ug/L	100
67) n-Propylbenzene	91	15.043	15.043	0.937	1588335	48.60	ug/L	100
68) 1,3,5-Trimethylbenzene	105	15.185	15.185	0.946	1191981	49.81	ug/L	100
69) 2-Chlorotoluene	126	15.197	15.197	0.947	368432	49.85	ug/L	100
70) 4-Chlorotoluene	91	15.292	15.292	0.953	1024324	49.04	ug/L	100
71) tert-Butylbenzene	134	15.565	15.565	0.970	278217	50.83	ug/L	100
72) 1,2,4-Trimethylbenzene	105	15.600	15.600	0.972	1209516	49.30	ug/L	100
73) sec-Butylbenzene	105	15.790	15.790	0.984	1620504	50.15	ug/L	100
74) 4-Isopropyltoluene	119	15.908	15.908	0.991	1445285	50.23	ug/L	100
75) 1,3-Dichlorobenzene	146	15.991	15.991	0.996	774062	48.38	ug/L	100
76) 1,4-Dichlorobenzene	146	16.074	16.074	1.001	760428	48.73	ug/L	100
77) n-Butylbenzene	91	16.359	16.359	1.019	1311007	49.92	ug/L	100
78) 1,2-Dichlorobenzene	146	16.513	16.513	1.029	738592	49.04	ug/L	100
79) 1,2-Dibromo-3-chloropr...	157	17.415	17.415	1.085	79978	59.00	ug/L	100
80) 1,2,4-Trichlorobenzene	180	18.505	18.505	1.153	640672	49.26	ug/L	100
81) Hexachlorobutadiene	225	18.683	18.683	1.164	429757	47.84	ug/L	100
82) Naphthalene	128	18.921	18.921	1.179	1214203	53.59	ug/L	100
83) 1,2,3-Trichlorobenzene	180	19.276	19.276	1.201	585080	49.82	ug/L	100
85) Acrolein		6.908	6.979	0.661	0m	N.D.	d	
86) Trichlorotrifluoroethane		0.000	7.133	0.000	0	N.D.		
87) Allyl chloride		7.513	7.596	0.719	0m	N.D.	d	
88) Acrylonitrile		8.034	7.999	0.769	0m	N.D.	d	
89) 2-Chloro-1,3-butadiene		8.687	8.675	0.831	0m	N.D.	d	
90) Ethyl acetate		9.161	9.161	0.876	0m	N.D.	d	
91) Propionitrile		9.161	9.244	0.876	0m	N.D.	d	
92) Methacrylonitrile		9.517	9.422	0.910	0m	N.D.	d	
93) Tetrahydrofuran		9.540	9.540	0.913	0m	N.D.	d	
94) Isobutyl alcohol		9.896	9.849	0.947	0m	N.D.	d	
95) Methyl methacrylate		11.082	11.046	1.060	0m	N.D.	d	
96) 1,4-Dioxane		11.236	11.165	1.075	0m	N.D.	d	

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W511.D
Acq On : 16 Jun 2017 15:21
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-05|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL50 5mL n/a MIX[A]0509-07B+0606-07B+0330-07
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 17 13:36:56 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

	Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units
97)	2-Nitropropane		11.545	11.544	1.104	0m	N.D.	d
99)	Ethyl methacrylate		12.303	12.303	0.903	0m	N.D.	d
101)	cis-1,4-Dichloro-2-butene		14.616	14.651	0.911	0m	N.D.	d
102)	Cyclohexanone		14.545	14.782	0.906	0m	N.D.	d
103)	trans-1,4-Dichloro-2-b...		15.031	14.936	0.936	0m	N.D.	d
104)	Pentachloroethane		15.648	15.636	0.975	0m	N.D.	d
105)	Benzyl chloride		16.193	16.193	1.009	0m	N.D.	d
106)	bis(2-Chloroisopropyl)...		16.608	16.584	1.035	0m	N.D.	d

(#) = qualifier out of range (m) = manual integration (+) = signals summed
(A) = Over the calibration range (d) = deleted

Quantitation Report
GEL Laboratories, LLC

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Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W511.D
Acq On    : 16 Jun 2017  15:21
Operator  : RXY1
InstName  : VOA9
Sample    : |W9VM170616-05|ICAL|1|VOA|1|VOA8260BL|
Misc      : GEL50 5mL n/a MIX[A]0509-07B+0606-07B+0330-07
ALS Vial  : 11   Sample Multiplier: 1

Quant Time: Jun 17 13:36:56 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title  : Volatile Organics 8260B                    SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE
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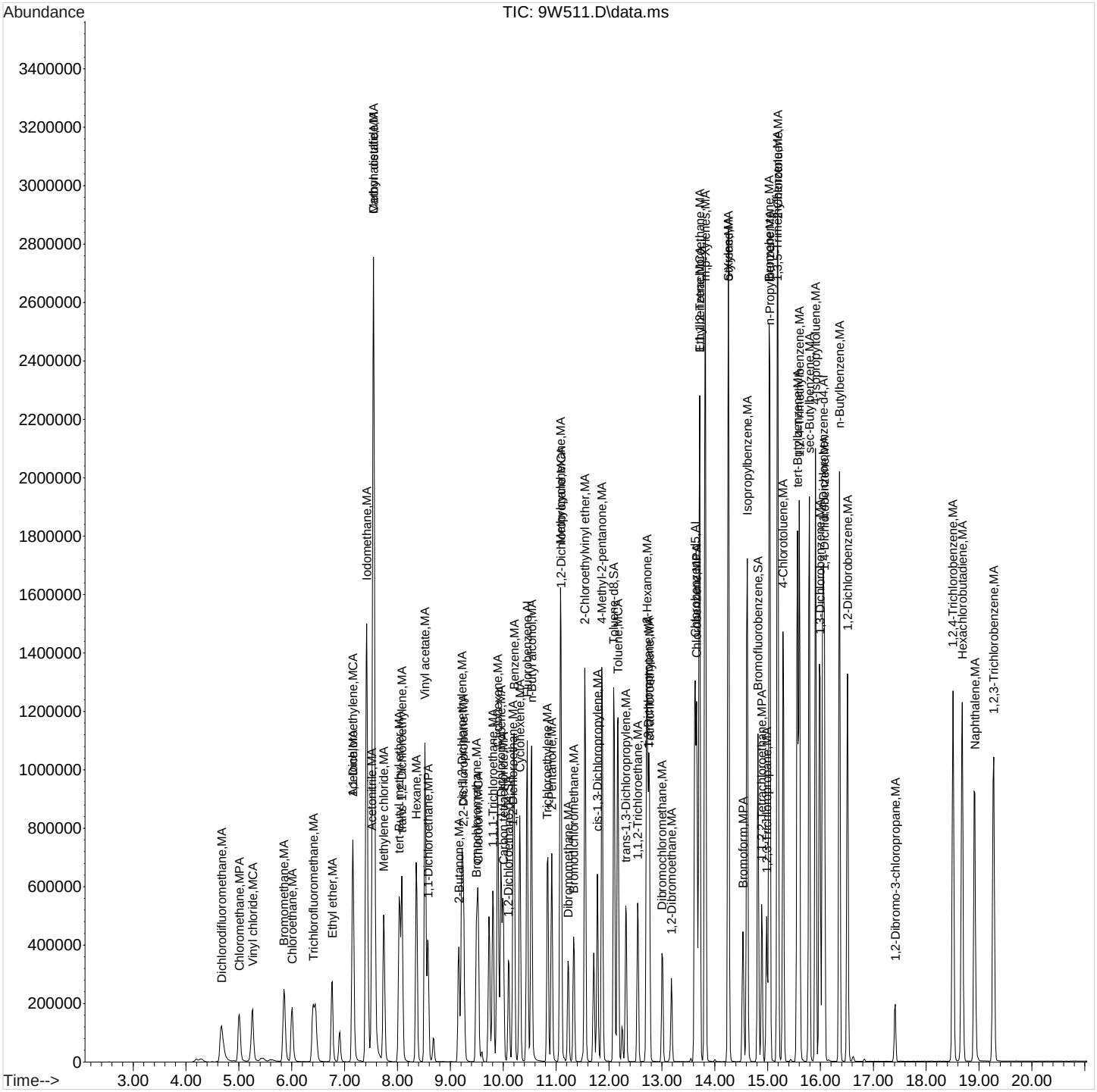

July 17, 2017

Quantitation Report
GEL Laboratories, LLC

RY 06/17/2017

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W512.D
Acq On : 16 Jun 2017 15:49
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-06|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL80 5mL n/a MIX[A]0509-08B+0606-08B+0330-08
ALS Vial : 12 Sample Multiplier: 1

EM 06/17/2017

Quant Time: Jun 17 13:37:01 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	Dev(Min)
Internal Standards								
1) Fluorobenzene	96	10.453	10.454	1.000	1289202	50.00	ug/L	0.00
43) Chlorobenzene-d5	117	13.631	13.632	1.000	994422	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	152	16.051	16.039	1.000	610509	50.00	ug/L	0.01
84) B Fluorobenzene	96	10.453	10.454	1.000	0m	50.00	ug/L	0.00
98) B Chlorobenzene-d5	117	13.631	13.632	1.000	0m	50.00	ug/L	0.00
100) B 1,4-Dichlorobenzene-d4	152	16.051	16.039	1.000	0m	50.00	ug/L	0.01
System Monitoring Compounds								Dev(Min)
30) 1,2-Dichloroethane-d4	65	10.109	10.098	0.967	313515	49.30	ug/L	0.01
45) Toluene-d8	98	12.090	12.090	0.887	1125359	50.20	ug/L	0.00
63) Bromofluorobenzene	95	14.817	14.817	0.923	455956	49.44	ug/L	0.00

Target Compounds	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	QValue
2) Dichlorodifluoromethane	85	4.672	4.672	0.447	534677	75.59	ug/L	99
3) Chloromethane	50	5.022	5.011	0.480	520774	76.54	ug/L	100
4) Vinyl chloride	62	5.271	5.260	0.504	579974	79.03	ug/L	99
5) Bromomethane	94	5.864	5.852	0.561	504635	79.60	ug/L	100
6) Chloroethane	64	6.018	6.007	0.576	452325	77.99	ug/L	99
7) Trichlorofluoromethane	101	6.410	6.410	0.613	850303	82.38	ug/L	99
8) Ethyl ether	59	6.765	6.766	0.647	378415	79.38	ug/L	100
9) Acetone	43	7.157	7.157	0.685	609015	375.58	ug/L	100
10) 1,1-Dichloroethylene	61	7.157	7.157	0.685	777282	77.15	ug/L	99
11) Iodomethane	142	7.418	7.418	0.710	4216333	367.89	ug/L	100
12) Acetonitrile	41	7.524	7.513	0.720	1032583	1676.19	ug/L	99
13) Methyl acetate	43	7.548	7.548	0.722	1135517	328.03	ug/L	99
14) Carbon disulfide	76	7.548	7.548	0.722	6995616	349.59	ug/L	98
15) Methylene chloride	84	7.750	7.738	0.741	516515	75.54	ug/L	99
16) tert-Butyl methyl ether	73	8.034	8.034	0.769	1243200	76.03	ug/L	100
17) trans-1,2-Dichloroethy...	61	8.082	8.082	0.773	695467	75.52	ug/L	99
18) Hexane	57	8.366	8.355	0.800	685165	80.92	ug/L	97
19) Vinyl acetate	43	8.520	8.521	0.815	3077570	381.57	ug/L	99
20) 1,1-Dichloroethane	63	8.580	8.580	0.821	838540	75.54	ug/L	99
21) 2-Butanone	43	9.161	9.161	0.876	855260	393.05	ug/L	100
22) cis-1,2-Dichloroethylene	61	9.220	9.220	0.882	753158	75.00	ug/L	98
23) 2,2-Dichloropropane	77	9.244	9.244	0.884	776400	79.66	ug/L	98
24) Bromochloromethane	128	9.493	9.493	0.908	243894	76.65	ug/L	98
25) Chloroform	83	9.528	9.529	0.912	788158	74.81	ug/L	98
26) 1,1,1-Trichloroethane	97	9.801	9.801	0.938	772436	77.47	ug/L	99
27) Cyclohexane	56	9.896	9.896	0.947	881733	77.10	ug/L	99
28) 1,1-Dichloropropene	75	9.955	9.956	0.952	625690	76.89	ug/L	99
29) Carbon tetrachloride	117	10.003	10.003	0.957	683324	79.96	ug/L	99
31) 1,2-Dichloroethane	62	10.181	10.181	0.974	523768	73.72	ug/L	100
32) Benzene	78	10.204	10.205	0.976	1747625	73.86	ug/L	100
33) Cyclohexene	67	10.311	10.311	0.986	887191	77.55	ug/L	100
34) n-Butyl alcohol	41	10.536	10.537	1.008	684712	7428.47	ug/L	98
35) Trichloroethylene	95	10.845	10.833	1.037	466545	75.33	ug/L	100
36) 2-Pentanone	43	10.916	10.916	1.044	1169976	374.60	ug/L	99
37) 1,2-Dichloropropane	63	11.094	11.094	1.061	401852	72.75	ug/L	99
38) Methylcyclohexane	83	11.082	11.082	1.060	929212	76.84	ug/L	98
39) Dibromomethane	93	11.224	11.224	1.074	239504	76.78	ug/L	98

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W512.D
Acq On : 16 Jun 2017 15:49
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-06|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL80 5mL n/a MIX[A]0509-08B+0606-08B+0330-08
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jun 17 13:37:01 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	
40) Bromodichloromethane	83	11.331	11.331	1.084	562894	81.55	ug/L	99
41) 2-Chloroethylvinyl ether	63	11.544	11.545	1.104	1111941	381.61	ug/L	98
42) cis-1,3-Dichloropropylene	75	11.781	11.782	1.127	694840	80.37	ug/L	100
44) 4-Methyl-2-pentanone	58	11.865	11.865	0.870	654743	377.24	ug/L	97
46) Toluene	91	12.173	12.173	0.893	1762662	73.47	ug/L	98
47) trans-1,3-Dichloroprop...	75	12.315	12.315	0.903	601732	82.89	ug/L	100
48) 1,1,2-Trichloroethane	83	12.540	12.541	0.920	284042	75.12	ug/L	99
49) 2-Hexanone	43	12.718	12.719	0.933	1318370	399.30	ug/L	99
50) 1,3-Dichloropropane	76	12.742	12.742	0.935	552809	72.46	ug/L	97
51) Tetrachloroethylene	164	12.766	12.766	0.936	442198	75.10	ug/L	99
52) Dibromochloromethane	129	13.003	13.003	0.954	425332	86.48	ug/L	100
53) 1,2-Dibromoethane	107	13.181	13.181	0.967	364531	77.71	ug/L	99
54) Chlorobenzene	112	13.655	13.655	1.002	1255876	74.84	ug/L	99
55) 1,1,1,2-Tetrachloroethane	131	13.714	13.715	1.006	480906	80.47	ug/L	100
56) Ethylbenzene	91	13.714	13.715	1.006	1988476	72.38	ug/L	98
57) m,p-Xylenes	106	13.821	13.821	1.014	1730776	156.13	ug/L	95
58) o-Xylene	106	14.260	14.260	1.046	879543	76.53	ug/L	97
59) Styrene	104	14.260	14.260	1.046	1343054	75.54	ug/L	98
61) Bromoform	173	14.533	14.533	0.905	311955	91.18	ug/L	99
62) Isopropylbenzene	105	14.616	14.616	0.911	2255344	75.09	ug/L	98
64) 1,1,2,2-Tetrachloroethane	83	14.888	14.889	0.928	477693	75.20	ug/L	100
65) 1,2,3-Trichloropropane	110	14.983	14.983	0.934	140682	75.53	ug/L	94
66) Bromobenzene	156	15.031	15.031	0.936	634790	73.77	ug/L	97
67) n-Propylbenzene	91	15.043	15.043	0.937	2513268	71.42	ug/L	98
68) 1,3,5-Trimethylbenzene	105	15.185	15.185	0.946	1912854	74.24	ug/L	99
69) 2-Chlorotoluene	126	15.197	15.197	0.947	601421	75.58	ug/L	96
70) 4-Chlorotoluene	91	15.292	15.292	0.953	1656168	73.65	ug/L	98
71) tert-Butylbenzene	134	15.564	15.565	0.970	473215	80.29	ug/L	92
72) 1,2,4-Trimethylbenzene	105	15.600	15.600	0.972	1928321	72.99	ug/L	98
73) sec-Butylbenzene	105	15.790	15.790	0.984	2573320	73.96	ug/L	98
74) 4-Isopropyltoluene	119	15.908	15.908	0.991	2289179	73.89	ug/L	99
75) 1,3-Dichlorobenzene	146	15.991	15.991	0.996	1240174	71.98	ug/L	99
76) 1,4-Dichlorobenzene	146	16.074	16.074	1.001	1217400	72.45	ug/L	99
77) n-Butylbenzene	91	16.359	16.359	1.019	2044682	72.31	ug/L	97
78) 1,2-Dichlorobenzene	146	16.513	16.513	1.029	1179480	72.73	ug/L	99
79) 1,2-Dibromo-3-chloropr...	157	17.414	17.415	1.085	126775	86.85	ug/L	98
80) 1,2,4-Trichlorobenzene	180	18.505	18.505	1.153	1037506	74.09	ug/L	99
81) Hexachlorobutadiene	225	18.683	18.683	1.164	695744	71.92	ug/L	99
82) Naphthalene	128	18.920	18.921	1.179	1860890	76.27	ug/L	100
83) 1,2,3-Trichlorobenzene	180	19.276	19.276	1.201	924724	73.13	ug/L	99
85) Acrolein		6.908	6.979	0.661	0m	N.D.	d	
86) Trichlorotrifluoroethane		0.000	7.133	0.000	0	N.D.		
87) Allyl chloride		7.524	7.596	0.720	0m	N.D.	d	
88) Acrylonitrile		8.034	7.999	0.769	0m	N.D.	d	
89) 2-Chloro-1,3-butadiene		8.686	8.675	0.831	0m	N.D.	d	
90) Ethyl acetate		9.161	9.161	0.876	0m	N.D.	d	
91) Propionitrile		9.161	9.244	0.876	0m	N.D.	d	
92) Methacrylonitrile		9.517	9.422	0.910	0m	N.D.	d	
93) Tetrahydrofuran		9.517	9.540	0.910	0m	N.D.	d	
94) Isobutyl alcohol		9.896	9.849	0.947	0m	N.D.	d	
95) Methyl methacrylate		11.082	11.046	1.060	0m	N.D.	d	
96) 1,4-Dioxane		11.224	11.165	1.074	0m	N.D.	d	

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W512.D
Acq On : 16 Jun 2017 15:49
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-06|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL80 5mL n/a MIX[A]0509-08B+0606-08B+0330-08
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jun 17 13:37:01 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

	Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units
97)	2-Nitropropane		11.544	11.544	1.104	0m	N.D.	d
99)	Ethyl methacrylate		12.244	12.303	0.898	0m	N.D.	d
101)	cis-1,4-Dichloro-2-butene		14.616	14.651	0.911	0m	N.D.	d
102)	Cyclohexanone		14.545	14.782	0.906	0m	N.D.	d
103)	trans-1,4-Dichloro-2-b...		15.031	14.936	0.936	0m	N.D.	d
104)	Pentachloroethane		15.636	15.636	0.974	0m	N.D.	d
105)	Benzyl chloride		16.157	16.193	1.007	0m	N.D.	d
106)	bis(2-Chloroisopropyl)...		16.608	16.584	1.035	0m	N.D.	d

(#) = qualifier out of range (m) = manual integration (+) = signals summed
(A) = Over the calibration range (d) = deleted

Quantitation Report
GEL Laboratories, LLC

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Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W512.D
Acq On    : 16 Jun 2017  15:49
Operator  : RXY1
InstName  : VOA9
Sample    : |W9VM170616-06|ICAL|1|VOA|1|VOA8260BL|
Misc      : GEL80 5mL n/a MIX[A]0509-08B+0606-08B+0330-08
ALS Vial  : 12   Sample Multiplier: 1

Quant Time: Jun 17 13:37:01 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title  : Volatile Organics 8260B                    SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE
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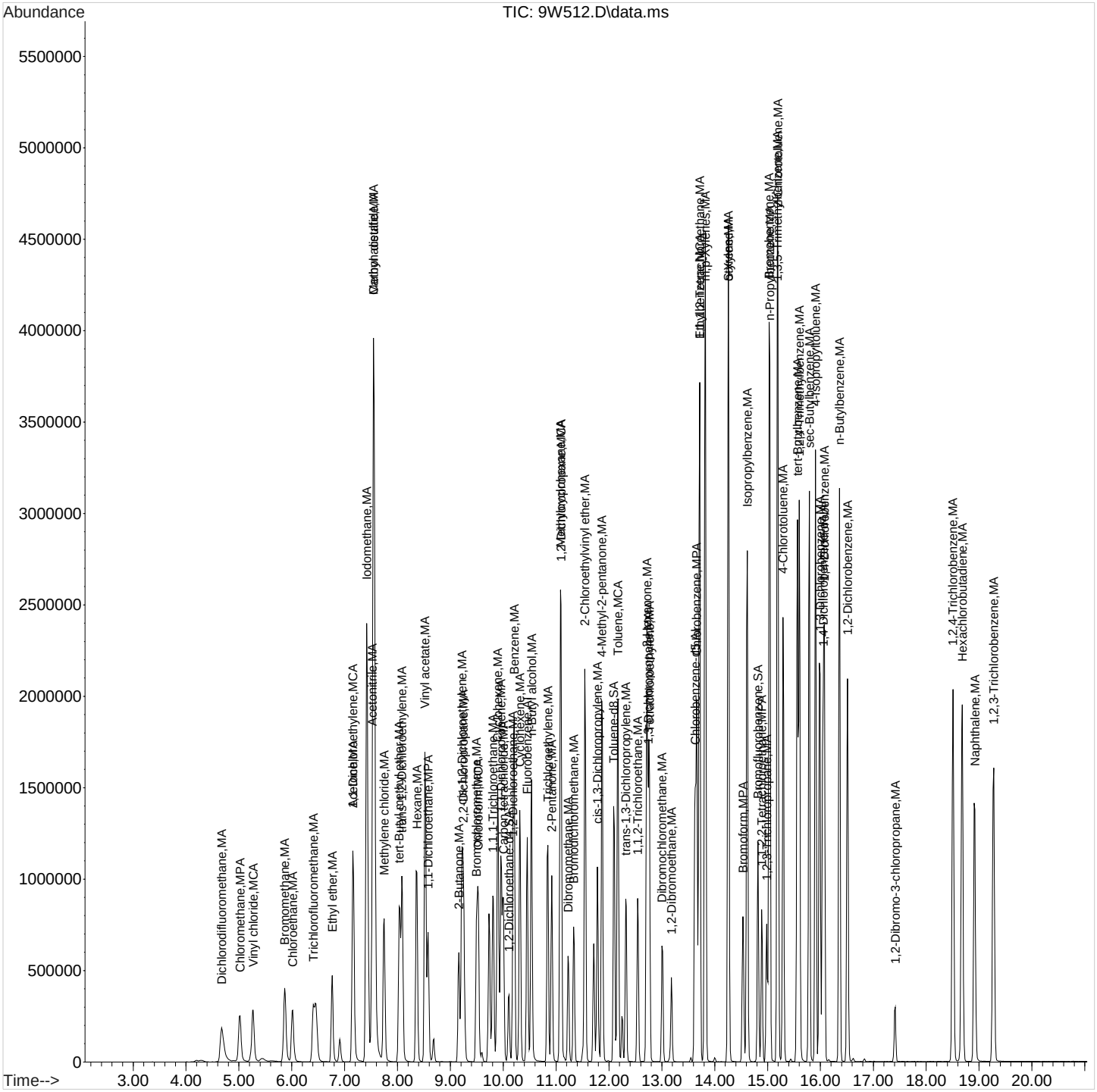

July 17, 2017

Quantitation Report
GEL Laboratories, LLC

RY 06/17/2017

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W513.D
Acq On : 16 Jun 2017 16:18
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-07|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL100 5mL n/a MIX[A]0509-08B+0606-08B+0330-0
ALS Vial : 13 Sample Multiplier: 1

EM 06/17/2017

Quant Time: Jun 17 13:37:03 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	Dev(Min)
Internal Standards								
1) Fluorobenzene	96	10.454	10.454	1.000	1291115	50.00	ug/L	0.00
43) Chlorobenzene-d5	117	13.632	13.632	1.000	1005478	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	152	16.051	16.039	1.000	628709	50.00	ug/L	0.01
84) B Fluorobenzene	96	10.454	10.454	1.000	0m	50.00	ug/L	0.00
98) B Chlorobenzene-d5	117	13.632	13.632	1.000	0m	50.00	ug/L	0.00
100) B 1,4-Dichlorobenzene-d4	152	16.051	16.039	1.000	0m	50.00	ug/L	0.01
System Monitoring Compounds								Dev(Min)
30) 1,2-Dichloroethane-d4	65	10.098	10.098	0.966	310655	48.78	ug/L	0.00
45) Toluene-d8	98	12.090	12.090	0.887	1141378	50.36	ug/L	0.00
63) Bromofluorobenzene	95	14.818	14.817	0.923	467979	49.27	ug/L	0.00

Target Compounds	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	QValue
2) Dichlorodifluoromethane	85	4.672	4.672	0.447	620700	87.62	ug/L	99
3) Chloromethane	50	5.011	5.011	0.479	655471	96.20	ug/L	99
4) Vinyl chloride	62	5.260	5.260	0.503	710580	96.69	ug/L	100
5) Bromomethane	94	5.864	5.852	0.561	614462	96.78	ug/L	99
6) Chloroethane	64	6.007	6.007	0.575	565255	97.31	ug/L	100
7) Trichlorofluoromethane	101	6.445	6.410	0.617	1007113	97.43	ug/L	99
8) Ethyl ether	59	6.754	6.766	0.646	459887	96.33	ug/L	100
9) Acetone	43	7.145	7.157	0.684	777216	478.60	ug/L	99
10) 1,1-Dichloroethylene	61	7.157	7.157	0.685	1026020	101.69	ug/L	98 A
11) Iodomethane	142	7.418	7.418	0.710	5541469	482.79	ug/L	100
12) Acetonitrile	41	7.513	7.513	0.719	1359265	2203.23	ug/L	99
13) Methyl acetate	43	7.548	7.548	0.722	1448431	417.80	ug/L	98
14) Carbon disulfide	76	7.548	7.548	0.722	9052068	451.69	ug/L	97
15) Methylene chloride	84	7.738	7.738	0.740	688900	100.61	ug/L	98 A
16) tert-Butyl methyl ether	73	8.034	8.034	0.769	1683190	102.79	ug/L	99 A
17) trans-1,2-Dichloroethy...	61	8.082	8.082	0.773	911787	98.86	ug/L	98
18) Hexane	57	8.355	8.355	0.799	815030	96.12	ug/L	97
19) Vinyl acetate	43	8.521	8.521	0.815	3720334	460.58	ug/L	98
20) 1,1-Dichloroethane	63	8.580	8.580	0.821	1089310	97.98	ug/L	99
21) 2-Butanone	43	9.161	9.161	0.876	1099442	504.51	ug/L	98 A
22) cis-1,2-Dichloroethylene	61	9.208	9.220	0.881	983010	97.74	ug/L	97
23) 2,2-Dichloropropane	77	9.244	9.244	0.884	1021501	104.66	ug/L	97 A
24) Bromochloromethane	128	9.493	9.493	0.908	324339	101.78	ug/L	98 A
25) Chloroform	83	9.529	9.529	0.912	1030934	97.70	ug/L	98
26) 1,1,1-Trichloroethane	97	9.801	9.801	0.938	1021867	102.34	ug/L	99 A
27) Cyclohexane	56	9.896	9.896	0.947	1178253	102.87	ug/L	98 A
28) 1,1-Dichloropropene	75	9.956	9.956	0.952	829935	101.83	ug/L	98 A
29) Carbon tetrachloride	117	10.003	10.003	0.957	901872	105.38	ug/L	98 A
31) 1,2-Dichloroethane	62	10.181	10.181	0.974	688688	96.79	ug/L	98
32) Benzene	78	10.205	10.205	0.976	2308591	97.43	ug/L	100
33) Cyclohexene	67	10.311	10.311	0.986	1183737	103.31	ug/L	100 A
34) n-Butyl alcohol	41	10.537	10.537	1.008	905033	9804.19	ug/L	97
35) Trichloroethylene	95	10.845	10.833	1.037	621442	100.20	ug/L	99 A
36) 2-Pentanone	43	10.916	10.916	1.044	1388581	443.93	ug/L	98
37) 1,2-Dichloropropane	63	11.094	11.094	1.061	528781	95.59	ug/L	99
38) Methylcyclohexane	83	11.082	11.082	1.060	1234202	101.91	ug/L	98 A
39) Dibromomethane	93	11.224	11.224	1.074	322149	103.12	ug/L	97 A

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W513.D
Acq On : 16 Jun 2017 16:18
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-07|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL100 5mL n/a MIX[A]0509-08B+0606-08B+0330-0
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 17 13:37:03 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units		
40) Bromodichloromethane	83	11.331	11.331	1.084	756598	109.45	ug/L	99	A
41) 2-Chloroethylvinyl ether	63	11.545	11.545	1.104	1366330	468.22	ug/L	98	
42) cis-1,3-Dichloropropylene	75	11.782	11.782	1.127	933671	107.84	ug/L	99	A
44) 4-Methyl-2-pentanone	58	11.865	11.865	0.870	865664	493.28	ug/L	94	
46) Toluene	91	12.173	12.173	0.893	2303759	94.97	ug/L	97	
47) trans-1,3-Dichloroprop...	75	12.315	12.315	0.903	815451	111.09	ug/L	99	A
48) 1,1,2-Trichloroethane	83	12.541	12.541	0.920	383565	100.32	ug/L	99	A
49) 2-Hexanone	43	12.719	12.719	0.933	1604020	480.47	ug/L	98	
50) 1,3-Dichloropropane	76	12.742	12.742	0.935	738035	95.67	ug/L	93	
51) Tetrachloroethylene	164	12.766	12.766	0.936	593496	99.69	ug/L	99	
52) Dibromochloromethane	129	13.003	13.003	0.954	587640	118.17	ug/L	100	A
53) 1,2-Dibromoethane	107	13.181	13.181	0.967	492611	103.86	ug/L	99	A
54) Chlorobenzene	112	13.655	13.655	1.002	1664714	98.12	ug/L	99	
55) 1,1,1,2-Tetrachloroethane	131	13.715	13.715	1.006	650279	107.62	ug/L	100	A
56) Ethylbenzene	91	13.715	13.715	1.006	2599321	93.58	ug/L	97	
57) m,p-Xylenes	106	13.821	13.821	1.014	2288780	204.19	ug/L	93	A
58) o-Xylene	106	14.260	14.260	1.046	1181551	101.68	ug/L	94	A
59) Styrene	104	14.260	14.260	1.046	1781393	99.09	ug/L	98	
61) Bromoform	173	14.533	14.533	0.905	435813	123.69	ug/L	99	A
62) Isopropylbenzene	105	14.616	14.616	0.911	2948266	95.31	ug/L	96	
64) 1,1,2,2-Tetrachloroethane	83	14.889	14.889	0.928	646777	98.87	ug/L	99	
65) 1,2,3-Trichloropropane	110	14.984	14.983	0.934	189134	98.60	ug/L	94	
66) Bromobenzene	156	15.031	15.031	0.936	863969	97.50	ug/L	96	
67) n-Propylbenzene	91	15.043	15.043	0.937	3289099	90.77	ug/L	96	
68) 1,3,5-Trimethylbenzene	105	15.185	15.185	0.946	2517575	94.88	ug/L	98	
69) 2-Chlorotoluene	126	15.197	15.197	0.947	810617	98.92	ug/L	93	
70) 4-Chlorotoluene	91	15.292	15.292	0.953	2191684	94.64	ug/L	97	
71) tert-Butylbenzene	134	15.565	15.565	0.970	642966	105.93	ug/L	89	A
72) 1,2,4-Trimethylbenzene	105	15.600	15.600	0.972	2570162	94.47	ug/L	97	
73) sec-Butylbenzene	105	15.790	15.790	0.984	3365377	93.92	ug/L	96	
74) 4-Isopropyltoluene	119	15.908	15.908	0.991	3045211	95.44	ug/L	98	
75) 1,3-Dichlorobenzene	146	15.992	15.991	0.996	1672252	94.25	ug/L	98	
76) 1,4-Dichlorobenzene	146	16.075	16.074	1.001	1647828	95.23	ug/L	98	
77) n-Butylbenzene	91	16.359	16.359	1.019	2692775	92.47	ug/L	96	
78) 1,2-Dichlorobenzene	146	16.513	16.513	1.029	1587101	95.04	ug/L	98	
79) 1,2-Dibromo-3-chloropr...	157	17.415	17.415	1.085	179762	119.59	ug/L	98	A
80) 1,2,4-Trichlorobenzene	180	18.506	18.505	1.153	1379073	95.63	ug/L	98	
81) Hexachlorobutadiene	225	18.683	18.683	1.164	927372	93.10	ug/L	99	
82) Naphthalene	128	18.921	18.921	1.179	2523811	100.45	ug/L	99	A
83) 1,2,3-Trichlorobenzene	180	19.276	19.276	1.201	1231147	94.55	ug/L	98	
85) Acrolein		6.908	6.979	0.661	0m	N.D.	d		
86) Trichlorotrifluoroethane		7.133	7.133	0.682	0m	N.D.	d		
87) Allyl chloride		7.513	7.596	0.719	0m	N.D.	d		
88) Acrylonitrile		8.034	7.999	0.769	0m	N.D.	d		
89) 2-Chloro-1,3-butadiene		8.675	8.675	0.830	0m	N.D.	d		
90) Ethyl acetate		9.161	9.161	0.876	0m	N.D.	d		
91) Propionitrile		9.161	9.244	0.876	0m	N.D.	d		
92) Methacrylonitrile		9.517	9.422	0.910	0m	N.D.	d		
93) Tetrahydrofuran		9.529	9.540	0.912	0m	N.D.	d		
94) Isobutyl alcohol		9.896	9.849	0.947	0m	N.D.	d		
95) Methyl methacrylate		11.082	11.046	1.060	0m	N.D.	d		
96) 1,4-Dioxane		11.224	11.165	1.074	0m	N.D.	d		

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W513.D
Acq On : 16 Jun 2017 16:18
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-07|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL100 5mL n/a MIX[A]0509-08B+0606-08B+0330-0
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 17 13:37:03 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

	Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units
97)	2-Nitropropane		11.545	11.544	1.104	0m	N.D.	d
99)	Ethyl methacrylate		12.244	12.303	0.898	0m	N.D.	d
101)	cis-1,4-Dichloro-2-butene		14.604	14.651	0.910	0m	N.D.	d
102)	Cyclohexanone		14.545	14.782	0.906	0m	N.D.	d
103)	trans-1,4-Dichloro-2-b...		15.043	14.936	0.937	0m	N.D.	d
104)	Pentachloroethane		15.636	15.636	0.974	0m	N.D.	d
105)	Benzyl chloride		16.158	16.193	1.007	0m	N.D.	d
106)	bis(2-Chloroisopropyl)...		16.608	16.584	1.035	0m	N.D.	d

(#) = qualifier out of range (m) = manual integration (+) = signals summed
(A) = Over the calibration range (d) = deleted

Quantitation Report
GEL Laboratories, LLC

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Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W513.D
Acq On    : 16 Jun 2017  16:18
Operator  : RXY1
InstName  : VOA9
Sample    : |W9VM170616-07|ICAL|1|VOA|1|VOA8260BL|
Misc      : GEL100 5mL n/a MIX[A]0509-08B+0606-08B+0330-0
ALS Vial  : 13   Sample Multiplier: 1

Quant Time: Jun 17 13:37:03 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title  : Volatile Organics 8260B                    SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE
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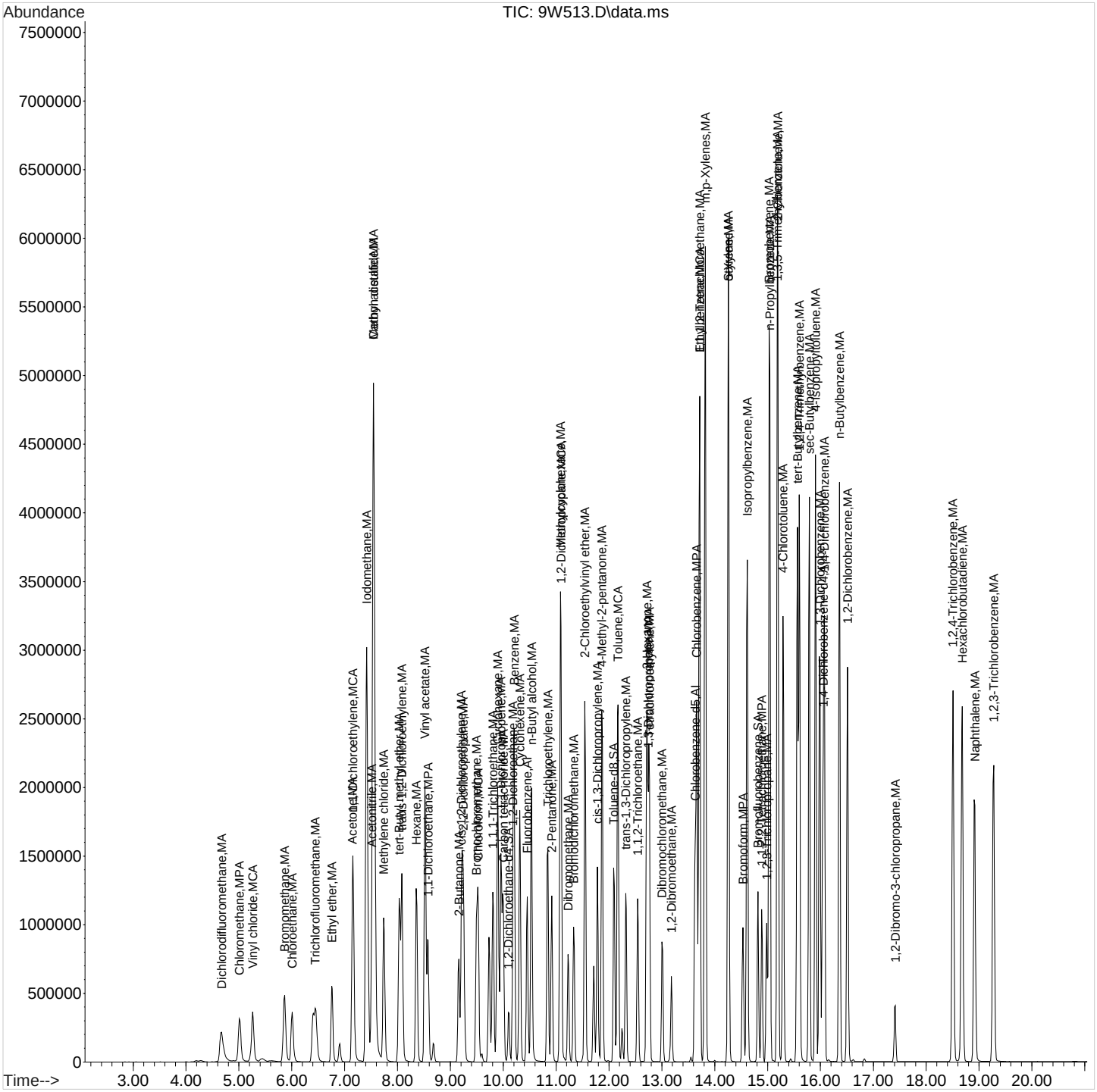

July 17, 2017

Quantitation Report
GEL Laboratories, LLC

RY 06/17/2017

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W517.D
Acq On : 16 Jun 2017 18:10
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-10|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL2 5mL n/a MIX[A]0509-03B+0606-03B+0330-03C
ALS Vial : 17 Sample Multiplier: 1

EM 06/17/2017

Quant Time: Jun 17 13:37:11 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	Dev(Min)
Internal Standards								
1) Fluorobenzene	96	10.453	10.454	1.000	1225793	50.00	ug/L	0.00
43) Chlorobenzene-d5	117	13.632	13.632	1.000	961927	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	595688	50.00	ug/L	0.00
84) B Fluorobenzene	96	10.453	10.454	1.000	0m	50.00	ug/L	0.00
98) B Chlorobenzene-d5	117	13.632	13.632	1.000	0m	50.00	ug/L	0.00
100) B 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	0m	50.00	ug/L	0.00
System Monitoring Compounds								Dev(Min)
30) 1,2-Dichloroethane-d4	65	10.098	10.098	0.966	302585	50.05	ug/L	0.00
45) Toluene-d8	98	12.090	12.090	0.887	1075094	49.58	ug/L	0.00
63) Bromofluorobenzene	95	14.817	14.817	0.924	450132	50.02	ug/L	0.00

Target Compounds	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	QValue
2) Dichlorodifluoromethane	85	4.672	4.672	0.447	14712	2.19	ug/L	91
3) Chloromethane	50	4.999	5.011	0.478	13090	2.02	ug/L	99
4) Vinyl chloride	62	5.248	5.260	0.502	14068	2.02	ug/L	97
5) Bromomethane	94	5.852	5.852	0.560	12157	2.02	ug/L	93
6) Chloroethane	64	6.007	6.007	0.575	10927	1.98	ug/L	96
7) Trichlorofluoromethane	101	6.410	6.410	0.613	18686	1.90	ug/L	99
8) Ethyl ether	59	6.765	6.766	0.647	8767	1.93	ug/L	96
9) Acetone	43	7.157	7.157	0.685	16123	10.46	ug/L	98
10) 1,1-Dichloroethylene	61	7.157	7.157	0.685	19454	2.03	ug/L	98
11) Iodomethane	142	7.418	7.418	0.710	113886	10.45	ug/L	100
12) Acetonitrile	41	7.536	7.513	0.721	34141	58.29	ug/L	81
13) Methyl acetate	43	7.548	7.548	0.722	38484	11.69	ug/L	97
14) Carbon disulfide	76	7.548	7.548	0.722	210046	11.04	ug/L	97
15) Methylene chloride	84	7.750	7.738	0.741	14833	2.28	ug/L	98
16) tert-Butyl methyl ether	73	8.046	8.034	0.770	30837	1.98	ug/L	99
17) trans-1,2-Dichloroethy...	61	8.082	8.082	0.773	18599	2.12	ug/L	99
18) Hexane	57	8.354	8.355	0.799	15809	1.96	ug/L	95
19) Vinyl acetate	43	8.521	8.521	0.815	74188	9.67	ug/L	95
20) 1,1-Dichloroethane	63	8.580	8.580	0.821	22483	2.13	ug/L	98
21) 2-Butanone	43	9.161	9.161	0.876	20543	9.93	ug/L	96
22) cis-1,2-Dichloroethylene	61	9.220	9.220	0.882	20078	2.10	ug/L	97
23) 2,2-Dichloropropane	77	9.244	9.244	0.884	18382	1.98	ug/L	88
24) Bromochloromethane	128	9.493	9.493	0.908	6240	2.06	ug/L	98
25) Chloroform	83	9.528	9.529	0.912	21230	2.12	ug/L	99
26) 1,1,1-Trichloroethane	97	9.801	9.801	0.938	18835	1.99	ug/L	97
27) Cyclohexane	56	9.896	9.896	0.947	21922	2.02	ug/L	95
28) 1,1-Dichloropropene	75	9.955	9.956	0.952	15842	2.05	ug/L	95
29) Carbon tetrachloride	117	10.003	10.003	0.957	15871	1.95	ug/L	98
31) 1,2-Dichloroethane	62	10.181	10.181	0.974	14389	2.13	ug/L	97
32) Benzene	78	10.204	10.205	0.976	48236	2.14	ug/L	99
33) Cyclohexene	67	10.311	10.311	0.986	22170	2.04	ug/L	99
34) n-Butyl alcohol	41	10.536	10.537	1.008	19045	217.31	ug/L	86
35) Trichloroethylene	95	10.845	10.833	1.037	12590	2.14	ug/L	98
36) 2-Pentanone	43	10.928	10.916	1.045	27978	9.42	ug/L	95
37) 1,2-Dichloropropane	63	11.094	11.094	1.061	11417	2.17	ug/L	93
38) Methylcyclohexane	83	11.082	11.082	1.060	23856	2.07	ug/L	95
39) Dibromomethane	93	11.236	11.224	1.075	5668	1.91	ug/L	99

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W517.D
Acq On : 16 Jun 2017 18:10
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-10|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL2 5mL n/a MIX[A]0509-03B+0606-03B+0330-03C
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jun 17 13:37:11 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	
40) Bromodichloromethane	83	11.331	11.331	1.084	11409	1.74	ug/L	96
41) 2-Chloroethylvinyl ether	63	11.544	11.545	1.104	24628	8.89	ug/L	95
42) cis-1,3-Dichloropropylene	75	11.782	11.782	1.127	14280	1.74	ug/L	97
44) 4-Methyl-2-pentanone	58	11.876	11.865	0.871	16192	9.64	ug/L	90
46) Toluene	91	12.173	12.173	0.893	50736	2.19	ug/L	95
47) trans-1,3-Dichloroprop...	75	12.327	12.315	0.904	12262	1.75	ug/L	97
48) 1,1,2-Trichloroethane	83	12.541	12.541	0.920	7581	2.07	ug/L	95
49) 2-Hexanone	43	12.718	12.719	0.933	31451	9.85	ug/L	93
50) 1,3-Dichloropropane	76	12.742	12.742	0.935	15907	2.16	ug/L	96
51) Tetrachloroethylene	164	12.766	12.766	0.936	12684	2.23	ug/L	97
52) Dibromochloromethane	129	13.003	13.003	0.954	7977	1.68	ug/L	98
53) 1,2-Dibromoethane	107	13.181	13.181	0.967	8935	1.97	ug/L	95
54) Chlorobenzene	112	13.655	13.655	1.002	34777	2.14	ug/L	80
55) 1,1,1,2-Tetrachloroethane	131	13.715	13.715	1.006	10978	1.90	ug/L	96
56) Ethylbenzene	91	13.715	13.715	1.006	58375	2.20	ug/L	95
57) m,p-Xylenes	106	13.821	13.821	1.014	46517	4.34	ug/L	89
58) o-Xylene	106	14.260	14.260	1.046	22446	2.02	ug/L	89
59) Styrene	104	14.260	14.260	1.046	33551	1.95	ug/L	97
61) Bromoform	173	14.533	14.533	0.906	5223	1.56	ug/L	96
62) Isopropylbenzene	105	14.616	14.616	0.911	61783	2.11	ug/L	97
64) 1,1,2,2-Tetrachloroethane	83	14.889	14.889	0.928	12236	1.97	ug/L	99
65) 1,2,3-Trichloropropane	110	14.983	14.983	0.934	3836	2.11	ug/L #	70
66) Bromobenzene	156	15.031	15.031	0.937	18775	2.24	ug/L	96
67) n-Propylbenzene	91	15.043	15.043	0.938	77952	2.27	ug/L	95
68) 1,3,5-Trimethylbenzene	105	15.185	15.185	0.947	52725	2.10	ug/L	97
69) 2-Chlorotoluene	126	15.197	15.197	0.948	16073	2.07	ug/L #	80
70) 4-Chlorotoluene	91	15.292	15.292	0.953	48977	2.23	ug/L	97
71) tert-Butylbenzene	134	15.564	15.565	0.970	11183	1.94	ug/L	92
72) 1,2,4-Trimethylbenzene	105	15.600	15.600	0.973	56097	2.18	ug/L	98
73) sec-Butylbenzene	105	15.790	15.790	0.984	72614	2.14	ug/L	97
74) 4-Isopropyltoluene	119	15.908	15.908	0.992	65015	2.15	ug/L	97
75) 1,3-Dichlorobenzene	146	15.991	15.991	0.997	39198	2.33	ug/L	99
76) 1,4-Dichlorobenzene	146	16.074	16.074	1.002	38458	2.35	ug/L	90
77) n-Butylbenzene	91	16.359	16.359	1.020	62034	2.25	ug/L	94
78) 1,2-Dichlorobenzene	146	16.513	16.513	1.030	35750	2.26	ug/L	96
79) 1,2-Dibromo-3-chloropr...	157	17.414	17.415	1.086	2518	1.77	ug/L	93
80) 1,2,4-Trichlorobenzene	180	18.505	18.505	1.154	32422	2.37	ug/L	98
81) Hexachlorobutadiene	225	18.683	18.683	1.165	24531	2.60	ug/L	98
82) Naphthalene	128	18.920	18.921	1.180	49599	2.08	ug/L	98
83) 1,2,3-Trichlorobenzene	180	19.276	19.276	1.202	29223	2.37	ug/L	99
85) Acrolein		0.000	6.979	0.000	0	N.D.		
86) Trichlorotrifluoroethane		0.000	7.133	0.000	0	N.D.		
87) Allyl chloride		7.536	7.596	0.721	0m	N.D. d		
88) Acrylonitrile		0.000	7.999	0.000	0	N.D.		
89) 2-Chloro-1,3-butadiene		0.000	8.675	0.000	0	N.D.		
90) Ethyl acetate		9.161	9.161	0.876	0m	N.D. d		
91) Propionitrile		0.000	9.244	0.000	0	N.D.		
92) Methacrylonitrile		9.244	9.422	0.884	0m	N.D. d		
93) Tetrahydrofuran		9.552	9.540	0.914	0m	N.D. d		
94) Isobutyl alcohol		9.896	9.849	0.947	0m	N.D. d		
95) Methyl methacrylate		11.082	11.046	1.060	0m	N.D. d		
96) 1,4-Dioxane		0.000	11.165	0.000	0	N.D.		

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W517.D
Acq On : 16 Jun 2017 18:10
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-10|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL2 5mL n/a MIX[A]0509-03B+0606-03B+0330-03C
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jun 17 13:37:11 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

	Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units
97)	2-Nitropropane		11.544	11.544	1.104	0m	N.D.	d
99)	Ethyl methacrylate		12.375	12.303	0.908	0m	N.D.	d
101)	cis-1,4-Dichloro-2-butene		14.616	14.651	0.911	0m	N.D.	d
102)	Cyclohexanone		0.000	14.782	0.000	0	N.D.	
103)	trans-1,4-Dichloro-2-b...		0.000	14.936	0.000	0	N.D.	
104)	Pentachloroethane		0.000	15.636	0.000	0	N.D.	
105)	Benzyl chloride		16.193	16.193	1.010	0m	N.D.	d
106)	bis(2-Chloroisopropyl)...		16.608	16.584	1.035	0m	N.D.	d

(#) = qualifier out of range (m) = manual integration (+) = signals summed
(A) = Over the calibration range (d) = deleted

Quantitation Report
GEL Laboratories, LLC

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Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W517.D
Acq On    : 16 Jun 2017  18:10
Operator  : RXY1
InstName  : VOA9
Sample    : |W9VM170616-10|ICAL|1|VOA|1|VOA8260BL|
Misc      : GEL2 5mL n/a MIX[A]0509-03B+0606-03B+0330-03C
ALS Vial  : 17   Sample Multiplier: 1

Quant Time: Jun 17 13:37:11 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title  : Volatile Organics 8260B                    SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE
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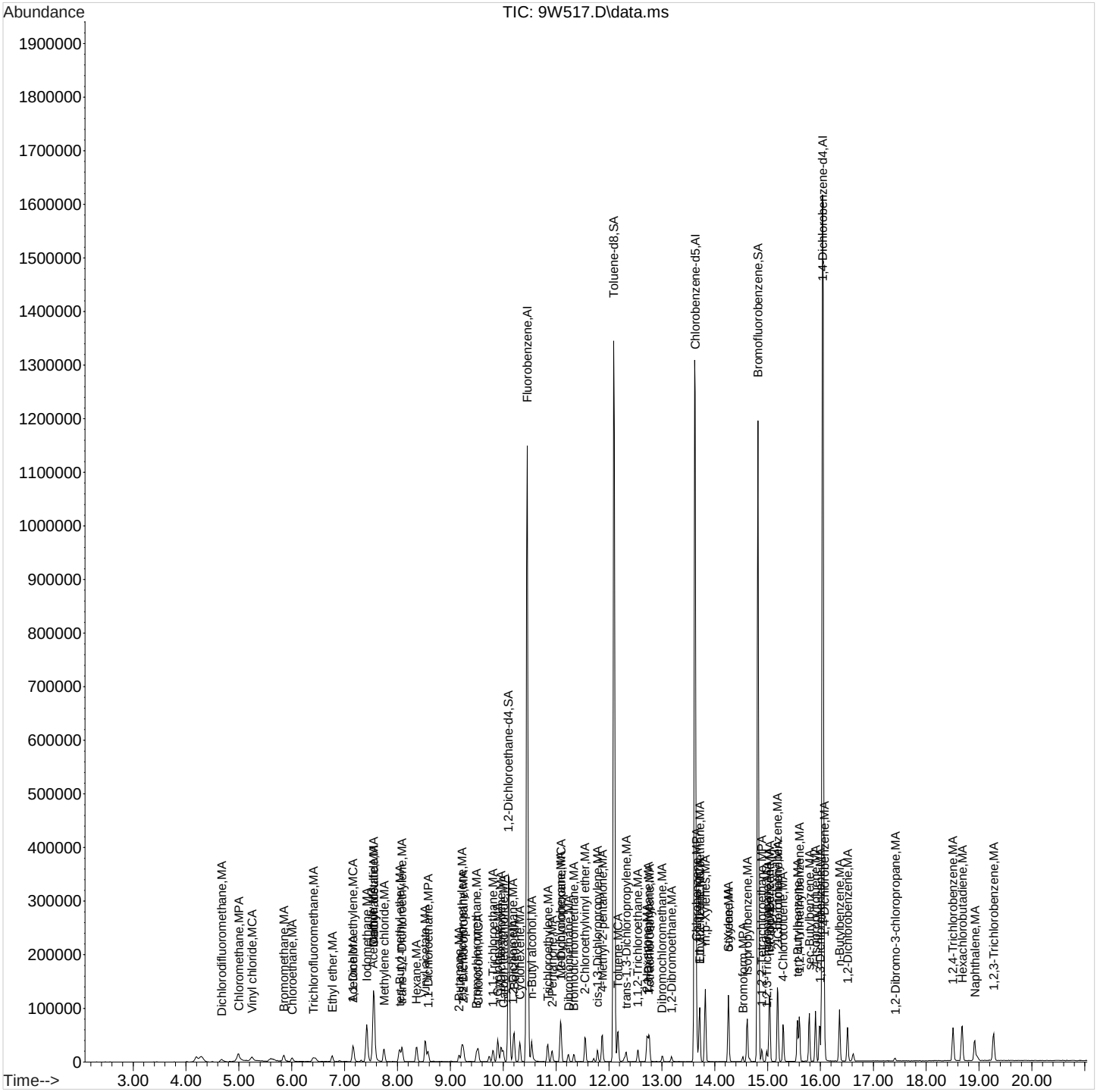

July 17, 2017

Quantitation Report
GEL Laboratories, LLC

RY 06/17/2017

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W518.D
Acq On : 16 Jun 2017 18:38
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-11|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL5 5mL n/a MIX[A]0509-04B+0606-04B+0330-04C
ALS Vial : 18 Sample Multiplier: 1

EM 06/17/2017

Quant Time: Jun 17 13:37:13 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	Dev(Min)
Internal Standards								
1) Fluorobenzene	96	10.453	10.454	1.000	1273290	50.00	ug/L	0.00
43) Chlorobenzene-d5	117	13.631	13.632	1.000	994047	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	610332	50.00	ug/L	0.00
84) B Fluorobenzene	96	10.453	10.454	1.000	0m	50.00	ug/L	0.00
98) B Chlorobenzene-d5	117	13.631	13.632	1.000	0m	50.00	ug/L	0.00
100) B 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	0m	50.00	ug/L	0.00
System Monitoring Compounds								Dev(Min)
30) 1,2-Dichloroethane-d4	65	10.098	10.098	0.966	315526	50.24	ug/L	0.00
45) Toluene-d8	98	12.090	12.090	0.887	1119733	49.97	ug/L	0.00
63) Bromofluorobenzene	95	14.817	14.817	0.924	462575	50.17	ug/L	0.00

Target Compounds	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	QValue
2) Dichlorodifluoromethane	85	4.672	4.672	0.447	36835	5.27	ug/L	98
3) Chloromethane	50	4.998	5.011	0.478	34823	5.18	ug/L	98
4) Vinyl chloride	62	5.247	5.260	0.502	37008	5.11	ug/L	98
5) Bromomethane	94	5.852	5.852	0.560	31218	4.99	ug/L	100
6) Chloroethane	64	6.006	6.007	0.575	28821	5.03	ug/L	100
7) Trichlorofluoromethane	101	6.421	6.410	0.614	50699	4.97	ug/L	99
8) Ethyl ether	59	6.765	6.766	0.647	23613	5.02	ug/L	98
9) Acetone	43	7.157	7.157	0.685	37950	23.70	ug/L	99
10) 1,1-Dichloroethylene	61	7.157	7.157	0.685	48475	4.87	ug/L	99
11) Iodomethane	142	7.418	7.418	0.710	288383	25.48	ug/L	99
12) Acetonitrile	41	7.524	7.513	0.720	76857	126.32	ug/L	99
13) Methyl acetate	43	7.548	7.548	0.722	90461	26.46	ug/L	99
14) Carbon disulfide	76	7.548	7.548	0.722	517477	26.18	ug/L	97
15) Methylene chloride	84	7.750	7.738	0.741	34666	5.13	ug/L	97
16) tert-Butyl methyl ether	73	8.034	8.034	0.769	77496	4.80	ug/L	98
17) trans-1,2-Dichloroethy...	61	8.082	8.082	0.773	45165	4.97	ug/L	99
18) Hexane	57	8.354	8.355	0.799	38504	4.60	ug/L	97
19) Vinyl acetate	43	8.520	8.521	0.815	199222	25.01	ug/L	97
20) 1,1-Dichloroethane	63	8.580	8.580	0.821	55819	5.09	ug/L	98
21) 2-Butanone	43	9.161	9.161	0.876	48388	22.52	ug/L	96
22) cis-1,2-Dichloroethylene	61	9.220	9.220	0.882	50466	5.09	ug/L	100
23) 2,2-Dichloropropane	77	9.244	9.244	0.884	46477	4.83	ug/L	95
24) Bromochloromethane	128	9.493	9.493	0.908	15358	4.89	ug/L	96
25) Chloroform	83	9.528	9.529	0.912	53475	5.14	ug/L	97
26) 1,1,1-Trichloroethane	97	9.801	9.801	0.938	47566	4.83	ug/L	99
27) Cyclohexane	56	9.896	9.896	0.947	55784	4.94	ug/L	98
28) 1,1-Dichloropropene	75	9.955	9.956	0.952	40534	5.04	ug/L	98
29) Carbon tetrachloride	117	10.003	10.003	0.957	39320	4.66	ug/L	100
31) 1,2-Dichloroethane	62	10.181	10.181	0.974	35495	5.06	ug/L	98
32) Benzene	78	10.204	10.205	0.976	119404	5.11	ug/L	99
33) Cyclohexene	67	10.311	10.311	0.986	54682	4.84	ug/L	99
34) n-Butyl alcohol	41	10.536	10.537	1.008	47196	518.43	ug/L	90
35) Trichloroethylene	95	10.845	10.833	1.037	30893	5.05	ug/L	98
36) 2-Pentanone	43	10.916	10.916	1.044	70864	22.97	ug/L	97
37) 1,2-Dichloropropane	63	11.094	11.094	1.061	28548	5.23	ug/L	99
38) Methylcyclohexane	83	11.082	11.082	1.060	58669	4.91	ug/L	95
39) Dibromomethane	93	11.224	11.224	1.074	15099	4.90	ug/L	99

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W518.D
Acq On : 16 Jun 2017 18:38
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-11|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL5 5mL n/a MIX[A]0509-04B+0606-04B+0330-04C
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jun 17 13:37:13 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units		
40) Bromodichloromethane	83	11.331	11.331	1.084	31846	4.67	ug/L		99
41) 2-Chloroethylvinyl ether	63	11.544	11.545	1.104	74214	25.79	ug/L		98
42) cis-1,3-Dichloropropylene	75	11.781	11.782	1.127	40563	4.75	ug/L		96
44) 4-Methyl-2-pentanone	58	11.876	11.865	0.871	40706	23.46	ug/L		88
46) Toluene	91	12.173	12.173	0.893	124164	5.18	ug/L		97
47) trans-1,3-Dichloroprop...	75	12.327	12.315	0.904	32913	4.54	ug/L		99
48) 1,1,2-Trichloroethane	83	12.540	12.541	0.920	18718	4.95	ug/L		97
49) 2-Hexanone	43	12.718	12.719	0.933	75859	22.98	ug/L		96
50) 1,3-Dichloropropane	76	12.742	12.742	0.935	39610	5.19	ug/L		92
51) Tetrachloroethylene	164	12.766	12.766	0.936	29663	5.04	ug/L		98
52) Dibromochloromethane	129	13.003	13.003	0.954	20802	4.23	ug/L		97
53) 1,2-Dibromoethane	107	13.181	13.181	0.967	22290	4.75	ug/L		99
54) Chlorobenzene	112	13.655	13.655	1.002	86287	5.14	ug/L		93
55) 1,1,1,2-Tetrachloroethane	131	13.714	13.715	1.006	28663	4.80	ug/L		97
56) Ethylbenzene	91	13.714	13.715	1.006	144477	5.26	ug/L		96
57) m,p-Xylenes	106	13.821	13.821	1.014	115116	10.39	ug/L		90
58) o-Xylene	106	14.260	14.260	1.046	57825	5.03	ug/L		89
59) Styrene	104	14.260	14.260	1.046	89278	5.02	ug/L		97
61) Bromoform	173	14.533	14.533	0.906	12892	3.77	ug/L		98
62) Isopropylbenzene	105	14.616	14.616	0.911	150471	5.01	ug/L		97
64) 1,1,2,2-Tetrachloroethane	83	14.888	14.889	0.928	30625	4.82	ug/L		96
65) 1,2,3-Trichloropropane	110	14.983	14.983	0.934	8852	4.75	ug/L	#	65
66) Bromobenzene	156	15.031	15.031	0.937	43896	5.10	ug/L		97
67) n-Propylbenzene	91	15.043	15.043	0.938	183352	5.21	ug/L		96
68) 1,3,5-Trimethylbenzene	105	15.185	15.185	0.947	131998	5.12	ug/L		97
69) 2-Chlorotoluene	126	15.197	15.197	0.948	40715	5.12	ug/L		89
70) 4-Chlorotoluene	91	15.292	15.292	0.953	115206	5.12	ug/L		98
71) tert-Butylbenzene	134	15.564	15.565	0.970	28152	4.78	ug/L		92
72) 1,2,4-Trimethylbenzene	105	15.600	15.600	0.973	136020	5.15	ug/L		96
73) sec-Butylbenzene	105	15.790	15.790	0.984	179251	5.15	ug/L		97
74) 4-Isopropyltoluene	119	15.908	15.908	0.992	158444	5.12	ug/L		98
75) 1,3-Dichlorobenzene	146	15.991	15.991	0.997	90260	5.24	ug/L		98
76) 1,4-Dichlorobenzene	146	16.074	16.074	1.002	86505	5.15	ug/L		97
77) n-Butylbenzene	91	16.359	16.359	1.020	146299	5.18	ug/L		96
78) 1,2-Dichlorobenzene	146	16.513	16.513	1.030	84356	5.20	ug/L		97
79) 1,2-Dibromo-3-chloropr...	157	17.414	17.415	1.086	5555	3.81	ug/L		94
80) 1,2,4-Trichlorobenzene	180	18.505	18.505	1.154	70262	5.02	ug/L		98
81) Hexachlorobutadiene	225	18.683	18.683	1.165	48962	5.06	ug/L		98
82) Naphthalene	128	18.920	18.921	1.180	113658	4.66	ug/L		99
83) 1,2,3-Trichlorobenzene	180	19.276	19.276	1.202	63699	5.04	ug/L		99
85) Acrolein		0.000	6.979	0.000	0	N.D.			
86) Trichlorotrifluoroethane		0.000	7.133	0.000	0	N.D.			
87) Allyl chloride		7.524	7.596	0.720	0m	N.D.	d		
88) Acrylonitrile		8.046	7.999	0.770	0m	N.D.	d		
89) 2-Chloro-1,3-butadiene		0.000	8.675	0.000	0	N.D.			
90) Ethyl acetate		9.161	9.161	0.876	0m	N.D.	d		
91) Propionitrile		0.000	9.244	0.000	0	N.D.			
92) Methacrylonitrile		9.244	9.422	0.884	0m	N.D.	d		
93) Tetrahydrofuran		9.540	9.540	0.913	0m	N.D.	d		
94) Isobutyl alcohol		9.896	9.849	0.947	0m	N.D.	d		
95) Methyl methacrylate		11.082	11.046	1.060	0m	N.D.	d		
96) 1,4-Dioxane		0.000	11.165	0.000	0	N.D.			

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W518.D
Acq On : 16 Jun 2017 18:38
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-11|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL5 5mL n/a MIX[A]0509-04B+0606-04B+0330-04C
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jun 17 13:37:13 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

	Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units
97)	2-Nitropropane		11.544	11.544	1.104	0m	N.D.	d
99)	Ethyl methacrylate		12.291	12.303	0.902	0m	N.D.	d
101)	cis-1,4-Dichloro-2-butene		14.616	14.651	0.911	0m	N.D.	d
102)	Cyclohexanone		14.604	14.782	0.911	0m	N.D.	d
103)	trans-1,4-Dichloro-2-b...		15.031	14.936	0.937	0m	N.D.	d
104)	Pentachloroethane		0.000	15.636	0.000	0	N.D.	
105)	Benzyl chloride		16.051	16.193	1.001	0m	N.D.	d
106)	bis(2-Chloroisopropyl)...		0.000	16.584	0.000	0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed
(A) = Over the calibration range (d) = deleted

Quantitation Report
GEL Laboratories, LLC

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Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W518.D
Acq On    : 16 Jun 2017  18:38
Operator  : RXY1
InstName  : VOA9
Sample    : |W9VM170616-11|ICAL|1|VOA|1|VOA8260BL|
Misc      : GEL5 5mL n/a MIX[A]0509-04B+0606-04B+0330-04C
ALS Vial  : 18   Sample Multiplier: 1

Quant Time: Jun 17 13:37:13 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title  : Volatile Organics 8260B                    SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE
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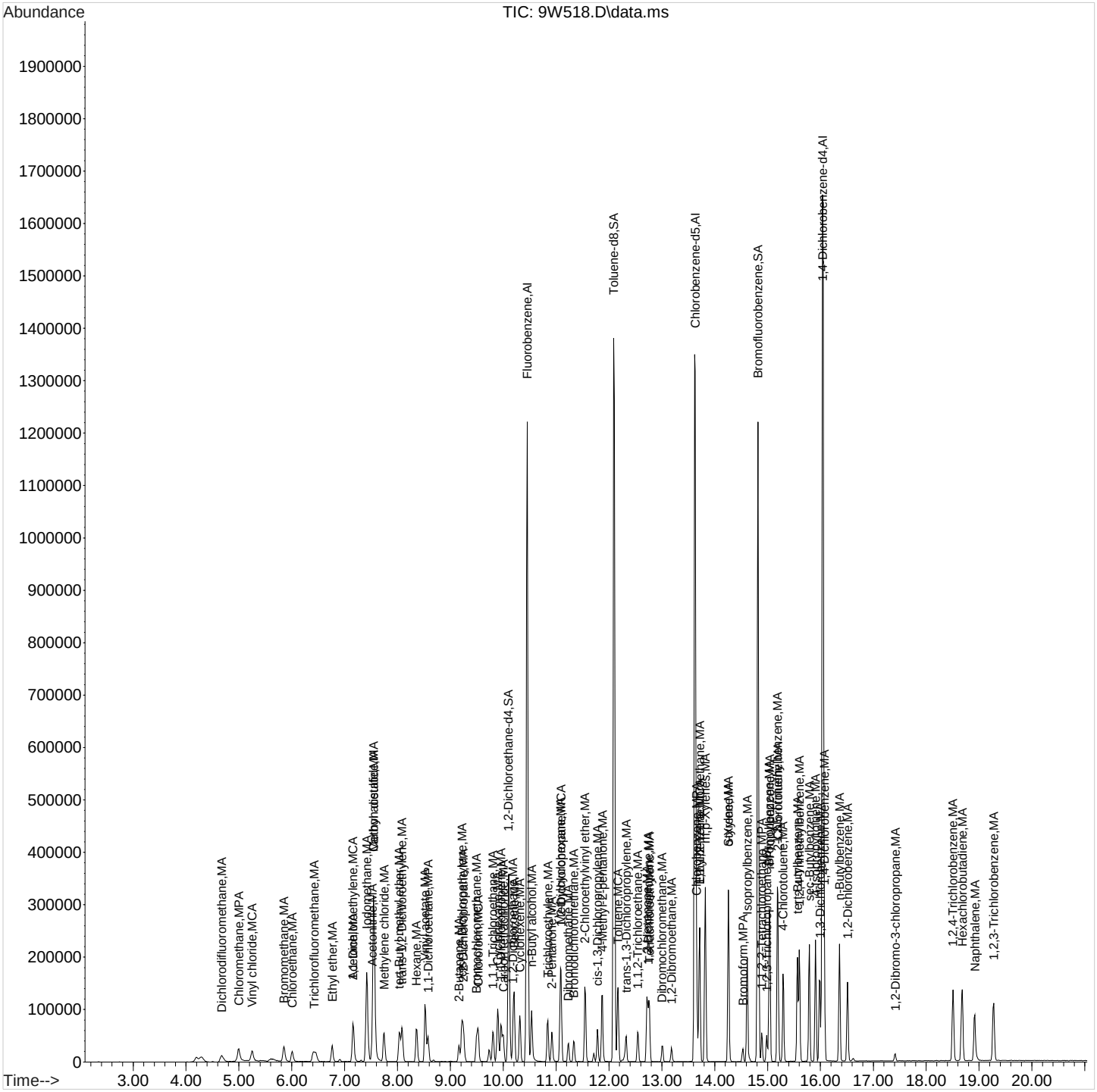

July 17, 2017

Quantitation Report
GEL Laboratories, LLC

RY 06/17/2017

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W519.D
Acq On : 16 Jun 2017 19:07
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-12|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL10 5mL n/a MIX[A]0509-05B+0606-05B+0330-05
ALS Vial : 19 Sample Multiplier: 1

EM 06/17/2017

Quant Time: Jun 17 13:37:15 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	Dev(Min)
Internal Standards								
1) Fluorobenzene	96	10.454	10.454	1.000	1213389	50.00	ug/L	0.00
43) Chlorobenzene-d5	117	13.632	13.632	1.000	959679	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	152	16.051	16.039	1.000	582417	50.00	ug/L	0.01
84) B Fluorobenzene	96	10.454	10.454	1.000	0m	50.00	ug/L	0.00
98) B Chlorobenzene-d5	117	13.632	13.632	1.000	0m	50.00	ug/L	0.00
100) B 1,4-Dichlorobenzene-d4	152	16.051	16.039	1.000	0m	50.00	ug/L	0.01
System Monitoring Compounds								Dev(Min)
30) 1,2-Dichloroethane-d4	65	10.098	10.098	0.966	300630	50.23	ug/L	0.00
45) Toluene-d8	98	12.090	12.090	0.887	1084524	50.13	ug/L	0.00
63) Bromofluorobenzene	95	14.817	14.817	0.923	446407	50.74	ug/L	0.00

Target Compounds	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	QValue
2) Dichlorodifluoromethane	85	4.672	4.672	0.447	67196	10.09	ug/L	99
3) Chloromethane	50	4.999	5.011	0.478	63216	9.87	ug/L	99
4) Vinyl chloride	62	5.248	5.260	0.502	67625	9.79	ug/L	99
5) Bromomethane	94	5.841	5.852	0.559	57634	9.66	ug/L	98
6) Chloroethane	64	6.007	6.007	0.575	53225	9.75	ug/L	98
7) Trichlorofluoromethane	101	6.445	6.410	0.617	92909	9.56	ug/L	100
8) Ethyl ether	59	6.754	6.766	0.646	44938	10.02	ug/L	98
9) Acetone	43	7.157	7.157	0.685	77856	51.01	ug/L	99
10) 1,1-Dichloroethylene	61	7.157	7.157	0.685	95228	10.04	ug/L	99
11) Iodomethane	142	7.418	7.418	0.710	564663	52.35	ug/L	99
12) Acetonitrile	41	7.524	7.513	0.720	155573	268.32	ug/L	99
13) Methyl acetate	43	7.548	7.548	0.722	177785	54.57	ug/L	99
14) Carbon disulfide	76	7.548	7.548	0.722	1012873	53.78	ug/L	97
15) Methylene chloride	84	7.738	7.738	0.740	65622	10.20	ug/L	98
16) tert-Butyl methyl ether	73	8.034	8.034	0.769	155802	10.12	ug/L	99
17) trans-1,2-Dichloroethy...	61	8.082	8.082	0.773	89115	10.28	ug/L	99
18) Hexane	57	8.355	8.355	0.799	83069	10.42	ug/L	98
19) Vinyl acetate	43	8.521	8.521	0.815	396638	52.25	ug/L	98
20) 1,1-Dichloroethane	63	8.580	8.580	0.821	106624	10.21	ug/L	100
21) 2-Butanone	43	9.161	9.161	0.876	104281	50.92	ug/L	98
22) cis-1,2-Dichloroethylene	61	9.220	9.220	0.882	96979	10.26	ug/L	100
23) 2,2-Dichloropropane	77	9.244	9.244	0.884	88993	9.70	ug/L	96
24) Bromochloromethane	128	9.493	9.493	0.908	30146	10.07	ug/L	98
25) Chloroform	83	9.529	9.529	0.912	100066	10.09	ug/L	100
26) 1,1,1-Trichloroethane	97	9.801	9.801	0.938	94020	10.02	ug/L	100
27) Cyclohexane	56	9.896	9.896	0.947	106475	9.89	ug/L	98
28) 1,1-Dichloropropene	75	9.955	9.956	0.952	77300	10.09	ug/L	99
29) Carbon tetrachloride	117	10.003	10.003	0.957	79108	9.84	ug/L	98
31) 1,2-Dichloroethane	62	10.181	10.181	0.974	69750	10.43	ug/L	97
32) Benzene	78	10.204	10.205	0.976	229626	10.31	ug/L	99
33) Cyclohexene	67	10.311	10.311	0.986	107607	9.99	ug/L	99
34) n-Butyl alcohol	41	10.537	10.537	1.008	100060	1153.38	ug/L	95
35) Trichloroethylene	95	10.833	10.833	1.036	58142	9.97	ug/L	99
36) 2-Pentanone	43	10.916	10.916	1.044	165190	56.19	ug/L	99
37) 1,2-Dichloropropane	63	11.094	11.094	1.061	53708	10.33	ug/L	100
38) Methylcyclohexane	83	11.082	11.082	1.060	111498	9.80	ug/L	97
39) Dibromomethane	93	11.224	11.224	1.074	30111	10.26	ug/L	100

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W519.D
Acq On : 16 Jun 2017 19:07
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-12|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL10 5mL n/a MIX[A]0509-05B+0606-05B+0330-05
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jun 17 13:37:15 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	
40) Bromodichloromethane	83	11.331	11.331	1.084	64564	9.94	ug/L	99
41) 2-Chloroethylvinyl ether	63	11.544	11.545	1.104	145250	52.96	ug/L	98
42) cis-1,3-Dichloropropylene	75	11.782	11.782	1.127	82243	10.11	ug/L	99
44) 4-Methyl-2-pentanone	58	11.865	11.865	0.870	88744	52.98	ug/L	95
46) Toluene	91	12.173	12.173	0.893	241687	10.44	ug/L	97
47) trans-1,3-Dichloroprop...	75	12.327	12.315	0.904	68824	9.82	ug/L	98
48) 1,1,2-Trichloroethane	83	12.541	12.541	0.920	37057	10.15	ug/L	98
49) 2-Hexanone	43	12.719	12.719	0.933	165365	51.90	ug/L	96
50) 1,3-Dichloropropane	76	12.742	12.742	0.935	77237	10.49	ug/L	95
51) Tetrachloroethylene	164	12.766	12.766	0.936	56840	10.00	ug/L	99
52) Dibromochloromethane	129	13.003	13.003	0.954	44745	9.43	ug/L	98
53) 1,2-Dibromoethane	107	13.181	13.181	0.967	45695	10.09	ug/L	100
54) Chlorobenzene	112	13.655	13.655	1.002	164853	10.18	ug/L	96
55) 1,1,1,2-Tetrachloroethane	131	13.715	13.715	1.006	57159	9.91	ug/L	98
56) Ethylbenzene	91	13.715	13.715	1.006	275251	10.38	ug/L	98
57) m,p-Xylenes	106	13.821	13.821	1.014	222159	20.77	ug/L	91
58) o-Xylene	106	14.260	14.260	1.046	112094	10.11	ug/L	91
59) Styrene	104	14.260	14.260	1.046	178387	10.40	ug/L	99
61) Bromoform	173	14.533	14.533	0.905	29635	9.08	ug/L	99
62) Isopropylbenzene	105	14.616	14.616	0.911	297916	10.40	ug/L	97
64) 1,1,2,2-Tetrachloroethane	83	14.889	14.889	0.928	63397	10.46	ug/L	99
65) 1,2,3-Trichloropropane	110	14.983	14.983	0.934	17790	10.01	ug/L #	74
66) Bromobenzene	156	15.031	15.031	0.936	83789	10.21	ug/L	96
67) n-Propylbenzene	91	15.043	15.043	0.937	352556	10.50	ug/L	97
68) 1,3,5-Trimethylbenzene	105	15.185	15.185	0.946	256695	10.44	ug/L	96
69) 2-Chlorotoluene	126	15.197	15.197	0.947	77734	10.24	ug/L	91
70) 4-Chlorotoluene	91	15.292	15.292	0.953	219816	10.25	ug/L	99
71) tert-Butylbenzene	134	15.565	15.565	0.970	56145	9.99	ug/L	95
72) 1,2,4-Trimethylbenzene	105	15.600	15.600	0.972	263989	10.47	ug/L	96
73) sec-Butylbenzene	105	15.790	15.790	0.984	345368	10.40	ug/L	98
74) 4-Isopropyltoluene	119	15.908	15.908	0.991	303232	10.26	ug/L	98
75) 1,3-Dichlorobenzene	146	15.991	15.991	0.996	167894	10.21	ug/L	98
76) 1,4-Dichlorobenzene	146	16.074	16.074	1.001	160633	10.02	ug/L	98
77) n-Butylbenzene	91	16.359	16.359	1.019	276643	10.25	ug/L	97
78) 1,2-Dichlorobenzene	146	16.513	16.513	1.029	156509	10.12	ug/L	99
79) 1,2-Dibromo-3-chloropr...	157	17.414	17.415	1.085	12704	9.12	ug/L	98
80) 1,2,4-Trichlorobenzene	180	18.505	18.505	1.153	132710	9.93	ug/L	99
81) Hexachlorobutadiene	225	18.683	18.683	1.164	89272	9.67	ug/L	100
82) Naphthalene	128	18.921	18.921	1.179	233638	10.04	ug/L	99
83) 1,2,3-Trichlorobenzene	180	19.276	19.276	1.201	121132	10.04	ug/L	98
85) Acrolein		0.000	6.979	0.000	0	N.D.		
86) Trichlorotrifluoroethane		0.000	7.133	0.000	0	N.D.		
87) Allyl chloride		7.524	7.596	0.720	0m	N.D.	d	
88) Acrylonitrile		8.034	7.999	0.769	0m	N.D.	d	
89) 2-Chloro-1,3-butadiene		0.000	8.675	0.000	0	N.D.		
90) Ethyl acetate		9.161	9.161	0.876	0m	N.D.	d	
91) Propionitrile		0.000	9.244	0.000	0	N.D.		
92) Methacrylonitrile		9.244	9.422	0.884	0m	N.D.	d	
93) Tetrahydrofuran		9.540	9.540	0.913	0m	N.D.	d	
94) Isobutyl alcohol		9.896	9.849	0.947	0m	N.D.	d	
95) Methyl methacrylate		11.082	11.046	1.060	0m	N.D.	d	
96) 1,4-Dioxane		0.000	11.165	0.000	0	N.D.		

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W519.D
Acq On : 16 Jun 2017 19:07
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-12|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL10 5mL n/a MIX[A]0509-05B+0606-05B+0330-05
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jun 17 13:37:15 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

	Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units
97)	2-Nitropropane		11.544	11.544	1.104	0m	N.D.	d
99)	Ethyl methacrylate		12.244	12.303	0.898	0m	N.D.	d
101)	cis-1,4-Dichloro-2-butene		14.616	14.651	0.911	0m	N.D.	d
102)	Cyclohexanone		14.604	14.782	0.910	0m	N.D.	d
103)	trans-1,4-Dichloro-2-b...		15.043	14.936	0.937	0m	N.D.	d
104)	Pentachloroethane		15.636	15.636	0.974	0m	N.D.	d
105)	Benzyl chloride		16.039	16.193	0.999	0m	N.D.	d
106)	bis(2-Chloroisopropyl)...		0.000	16.584	0.000	0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed
(A) = Over the calibration range (d) = deleted

Quantitation Report
GEL Laboratories, LLC

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Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W519.D
Acq On    : 16 Jun 2017  19:07
Operator  : RXY1
InstName  : VOA9
Sample    : |W9VM170616-12|ICAL|1|VOA|1|VOA8260BL|
Misc      : GEL10 5mL n/a MIX[A]0509-05B+0606-05B+0330-05
ALS Vial  : 19   Sample Multiplier: 1

Quant Time: Jun 17 13:37:15 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title  : Volatile Organics 8260B                    SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE
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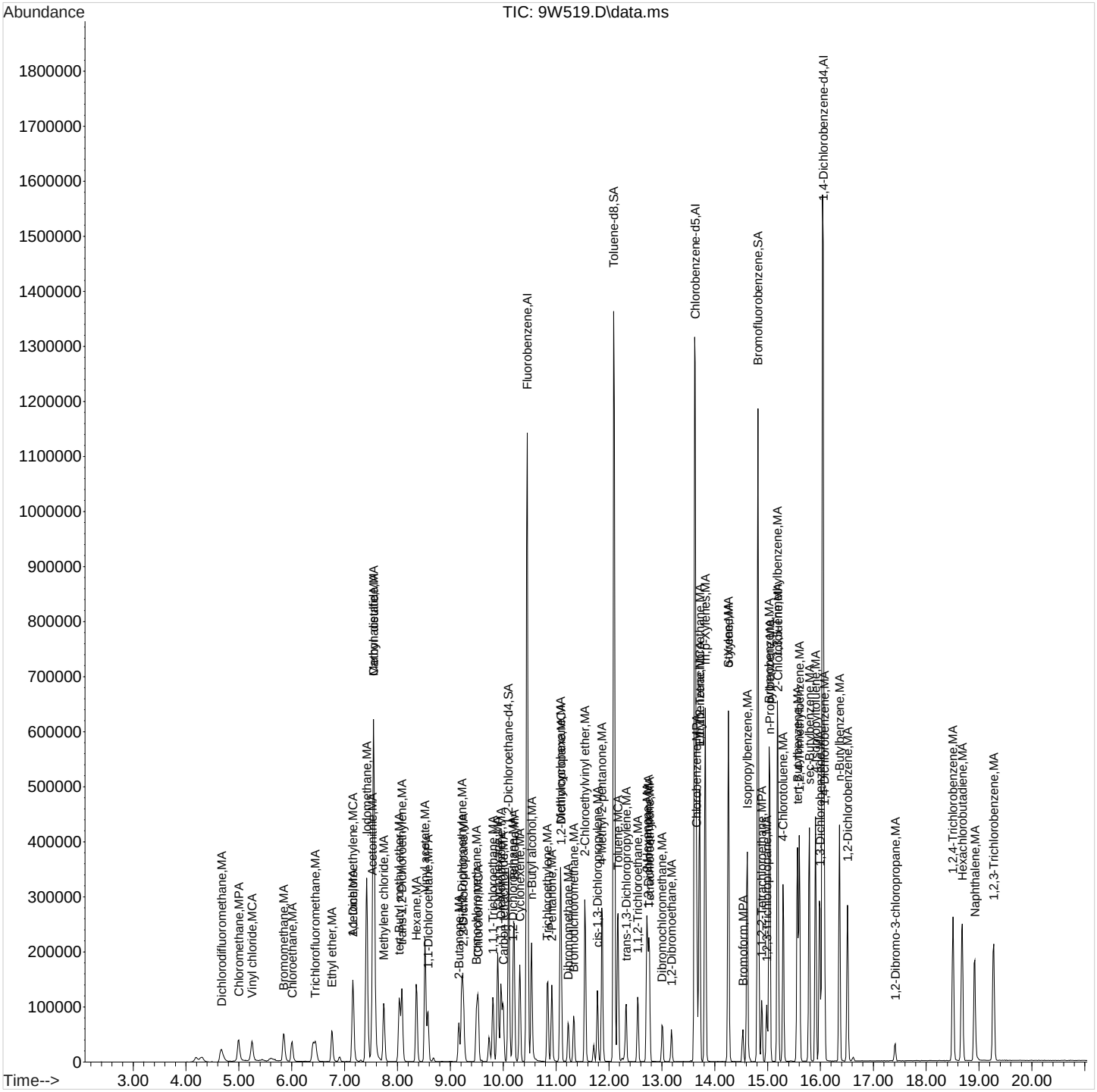

July 17, 2017

Quantitation Report
GEL Laboratories, LLC

RY 06/17/2017

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W520.D
Acq On : 16 Jun 2017 19:35
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-13|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL20 5mL n/a MIX[A]0509-07B+0606-06B+0330-06
ALS Vial : 20 Sample Multiplier: 1

EM 06/17/2017

Quant Time: Jun 17 13:37:17 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	Dev(Min)
Internal Standards								
1) Fluorobenzene	96	10.453	10.454	1.000	1245119	50.00	ug/L	0.00
43) Chlorobenzene-d5	117	13.632	13.632	1.000	989938	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	594783	50.00	ug/L	0.00
84) B Fluorobenzene	96	10.453	10.454	1.000	0m	50.00	ug/L	0.00
98) B Chlorobenzene-d5	117	13.632	13.632	1.000	0m	50.00	ug/L	0.00
100) B 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	0m	50.00	ug/L	0.00
System Monitoring Compounds								Dev(Min)
30) 1,2-Dichloroethane-d4	65	10.098	10.098	0.966	303916	49.49	ug/L	0.00
45) Toluene-d8	98	12.090	12.090	0.887	1119037	50.15	ug/L	0.00
63) Bromofluorobenzene	95	14.817	14.817	0.924	455609	50.71	ug/L	0.00

Target Compounds	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	QValue
2) Dichlorodifluoromethane	85	4.672	4.672	0.447	129921	19.02	ug/L	100
3) Chloromethane	50	4.999	5.011	0.478	132042	20.09	ug/L	100
4) Vinyl chloride	62	5.248	5.260	0.502	141393	19.95	ug/L	100
5) Bromomethane	94	5.852	5.852	0.560	123367	20.15	ug/L	99
6) Chloroethane	64	6.007	6.007	0.575	111488	19.90	ug/L	98
7) Trichlorofluoromethane	101	6.410	6.410	0.613	197815	19.84	ug/L	100
8) Ethyl ether	59	6.754	6.766	0.646	93642	20.34	ug/L	99
9) Acetone	43	7.157	7.157	0.685	145317	92.79	ug/L	99
10) 1,1-Dichloroethylene	61	7.157	7.157	0.685	188976	19.42	ug/L	99
11) Iodomethane	142	7.418	7.418	0.710	1090823	98.55	ug/L	99
12) Acetonitrile	41	7.524	7.513	0.720	289780	487.05	ug/L	99
13) Methyl acetate	43	7.548	7.548	0.722	335218	100.27	ug/L	99
14) Carbon disulfide	76	7.548	7.548	0.722	1908148	98.73	ug/L	98
15) Methylene chloride	84	7.738	7.738	0.740	128968	19.53	ug/L	99
16) tert-Butyl methyl ether	73	8.034	8.034	0.769	313003	19.82	ug/L	100
17) trans-1,2-Dichloroethy...	61	8.082	8.082	0.773	171967	19.34	ug/L	99
18) Hexane	57	8.355	8.355	0.799	160885	19.67	ug/L	100
19) Vinyl acetate	43	8.521	8.521	0.815	815907	104.74	ug/L	98
20) 1,1-Dichloroethane	63	8.580	8.580	0.821	206744	19.28	ug/L	99
21) 2-Butanone	43	9.161	9.161	0.876	196608	93.55	ug/L	98
22) cis-1,2-Dichloroethylene	61	9.220	9.220	0.882	187869	19.37	ug/L	99
23) 2,2-Dichloropropane	77	9.244	9.244	0.884	176097	18.71	ug/L	98
24) Bromochloromethane	128	9.493	9.493	0.908	60610	19.72	ug/L	98
25) Chloroform	83	9.529	9.529	0.912	197981	19.46	ug/L	100
26) 1,1,1-Trichloroethane	97	9.801	9.801	0.938	189307	19.66	ug/L	99
27) Cyclohexane	56	9.896	9.896	0.947	216515	19.60	ug/L	100
28) 1,1-Dichloropropene	75	9.955	9.956	0.952	150961	19.21	ug/L	100
29) Carbon tetrachloride	117	10.003	10.003	0.957	160204	19.41	ug/L	99
31) 1,2-Dichloroethane	62	10.181	10.181	0.974	134039	19.54	ug/L	98
32) Benzene	78	10.204	10.205	0.976	446809	19.55	ug/L	99
33) Cyclohexene	67	10.311	10.311	0.986	213227	19.30	ug/L	100
34) n-Butyl alcohol	41	10.536	10.537	1.008	191291	2148.80	ug/L	96
35) Trichloroethylene	95	10.845	10.833	1.037	117014	19.56	ug/L	98
36) 2-Pentanone	43	10.916	10.916	1.044	307416	101.91	ug/L	99
37) 1,2-Dichloropropane	63	11.094	11.094	1.061	106377	19.94	ug/L	99
38) Methylcyclohexane	83	11.082	11.082	1.060	229053	19.61	ug/L	99
39) Dibromomethane	93	11.224	11.224	1.074	60512	20.09	ug/L	100

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W520.D
Acq On : 16 Jun 2017 19:35
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-13|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL20 5mL n/a MIX[A]0509-07B+0606-06B+0330-06
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jun 17 13:37:17 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	
40) Bromodichloromethane	83	11.331	11.331	1.084	135813	20.37	ug/L	100
41) 2-Chloroethylvinyl ether	63	11.544	11.545	1.104	305597	108.59	ug/L	99
42) cis-1,3-Dichloropropylene	75	11.782	11.782	1.127	172370	20.64	ug/L	99
44) 4-Methyl-2-pentanone	58	11.865	11.865	0.870	174418	100.95	ug/L	98
46) Toluene	91	12.173	12.173	0.893	469862	19.67	ug/L	98
47) trans-1,3-Dichloroprop...	75	12.327	12.315	0.904	146333	20.25	ug/L	99
48) 1,1,2-Trichloroethane	83	12.541	12.541	0.920	75481	20.05	ug/L	98
49) 2-Hexanone	43	12.718	12.719	0.933	309305	94.10	ug/L	99
50) 1,3-Dichloropropane	76	12.742	12.742	0.935	150425	19.81	ug/L	93
51) Tetrachloroethylene	164	12.766	12.766	0.936	112636	19.22	ug/L	100
52) Dibromochloromethane	129	13.003	13.003	0.954	98134	20.04	ug/L	98
53) 1,2-Dibromoethane	107	13.181	13.181	0.967	93129	19.94	ug/L	99
54) Chlorobenzene	112	13.655	13.655	1.002	324706	19.44	ug/L	98
55) 1,1,1,2-Tetrachloroethane	131	13.715	13.715	1.006	115622	19.44	ug/L	99
56) Ethylbenzene	91	13.715	13.715	1.006	535923	19.60	ug/L	98
57) m,p-Xylenes	106	13.821	13.821	1.014	442656	40.11	ug/L	94
58) o-Xylene	106	14.260	14.260	1.046	223335	19.52	ug/L	95
59) Styrene	104	14.260	14.260	1.046	357111	20.18	ug/L	100
61) Bromoform	173	14.533	14.533	0.906	67663	20.30	ug/L	100
62) Isopropylbenzene	105	14.616	14.616	0.911	591537	20.21	ug/L	98
64) 1,1,2,2-Tetrachloroethane	83	14.889	14.889	0.928	126039	20.37	ug/L	99
65) 1,2,3-Trichloropropane	110	14.983	14.983	0.934	36168	19.93	ug/L #	87
66) Bromobenzene	156	15.031	15.031	0.937	162718	19.41	ug/L	98
67) n-Propylbenzene	91	15.043	15.043	0.938	685345	19.99	ug/L	98
68) 1,3,5-Trimethylbenzene	105	15.185	15.185	0.947	506726	20.19	ug/L	98
69) 2-Chlorotoluene	126	15.197	15.197	0.948	152916	19.73	ug/L	94
70) 4-Chlorotoluene	91	15.292	15.292	0.953	432329	19.73	ug/L	99
71) tert-Butylbenzene	134	15.564	15.565	0.970	114168	19.88	ug/L	98
72) 1,2,4-Trimethylbenzene	105	15.600	15.600	0.973	510180	19.82	ug/L	97
73) sec-Butylbenzene	105	15.790	15.790	0.984	673197	19.86	ug/L	98
74) 4-Isopropyltoluene	119	15.908	15.908	0.992	599543	19.86	ug/L	99
75) 1,3-Dichlorobenzene	146	15.991	15.991	0.997	320514	19.10	ug/L	99
76) 1,4-Dichlorobenzene	146	16.074	16.074	1.002	315052	19.25	ug/L	99
77) n-Butylbenzene	91	16.359	16.359	1.020	544596	19.77	ug/L	97
78) 1,2-Dichlorobenzene	146	16.513	16.513	1.030	308887	19.55	ug/L	99
79) 1,2-Dibromo-3-chloropr...	157	17.414	17.415	1.086	27892	19.61	ug/L	98
80) 1,2,4-Trichlorobenzene	180	18.505	18.505	1.154	258836	18.97	ug/L	99
81) Hexachlorobutadiene	225	18.683	18.683	1.165	175984	18.67	ug/L	99
82) Naphthalene	128	18.920	18.921	1.180	472003	19.86	ug/L	99
83) 1,2,3-Trichlorobenzene	180	19.276	19.276	1.202	233447	18.95	ug/L	100
85) Acrolein		0.000	6.979	0.000	0	N.D.		
86) Trichlorotrifluoroethane		0.000	7.133	0.000	0	N.D.		
87) Allyl chloride		7.524	7.596	0.720	0m	N.D.	d	
88) Acrylonitrile		8.046	7.999	0.770	0m	N.D.	d	
89) 2-Chloro-1,3-butadiene		8.687	8.675	0.831	0m	N.D.	d	
90) Ethyl acetate		9.161	9.161	0.876	0m	N.D.	d	
91) Propionitrile		0.000	9.244	0.000	0	N.D.		
92) Methacrylonitrile		9.244	9.422	0.884	0m	N.D.	d	
93) Tetrahydrofuran		9.540	9.540	0.913	0m	N.D.	d	
94) Isobutyl alcohol		9.896	9.849	0.947	0m	N.D.	d	
95) Methyl methacrylate		11.082	11.046	1.060	0m	N.D.	d	
96) 1,4-Dioxane		0.000	11.165	0.000	0	N.D.		

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W520.D
Acq On : 16 Jun 2017 19:35
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-13|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL20 5mL n/a MIX[A]0509-07B+0606-06B+0330-06
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jun 17 13:37:17 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

	Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units
97)	2-Nitropropane		11.544	11.544	1.104	0m	N.D.	d
99)	Ethyl methacrylate		12.220	12.303	0.896	0m	N.D.	d
101)	cis-1,4-Dichloro-2-butene		14.604	14.651	0.911	0m	N.D.	d
102)	Cyclohexanone		14.604	14.782	0.911	0m	N.D.	d
103)	trans-1,4-Dichloro-2-b...		15.031	14.936	0.937	0m	N.D.	d
104)	Pentachloroethane		15.636	15.636	0.975	0m	N.D.	d
105)	Benzyl chloride		16.157	16.193	1.007	0m	N.D.	d
106)	bis(2-Chloroisopropyl)...		16.620	16.584	1.036	0m	N.D.	d

(#) = qualifier out of range (m) = manual integration (+) = signals summed
(A) = Over the calibration range (d) = deleted

Quantitation Report
GEL Laboratories, LLC

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Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W520.D
Acq On    : 16 Jun 2017  19:35
Operator  : RXY1
InstName  : VOA9
Sample    : |W9VM170616-13|ICAL|1|VOA|1|VOA8260BL|
Misc      : GEL20 5mL n/a MIX[A]0509-07B+0606-06B+0330-06
ALS Vial  : 20   Sample Multiplier: 1

Quant Time: Jun 17 13:37:17 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title  : Volatile Organics 8260B                    SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE
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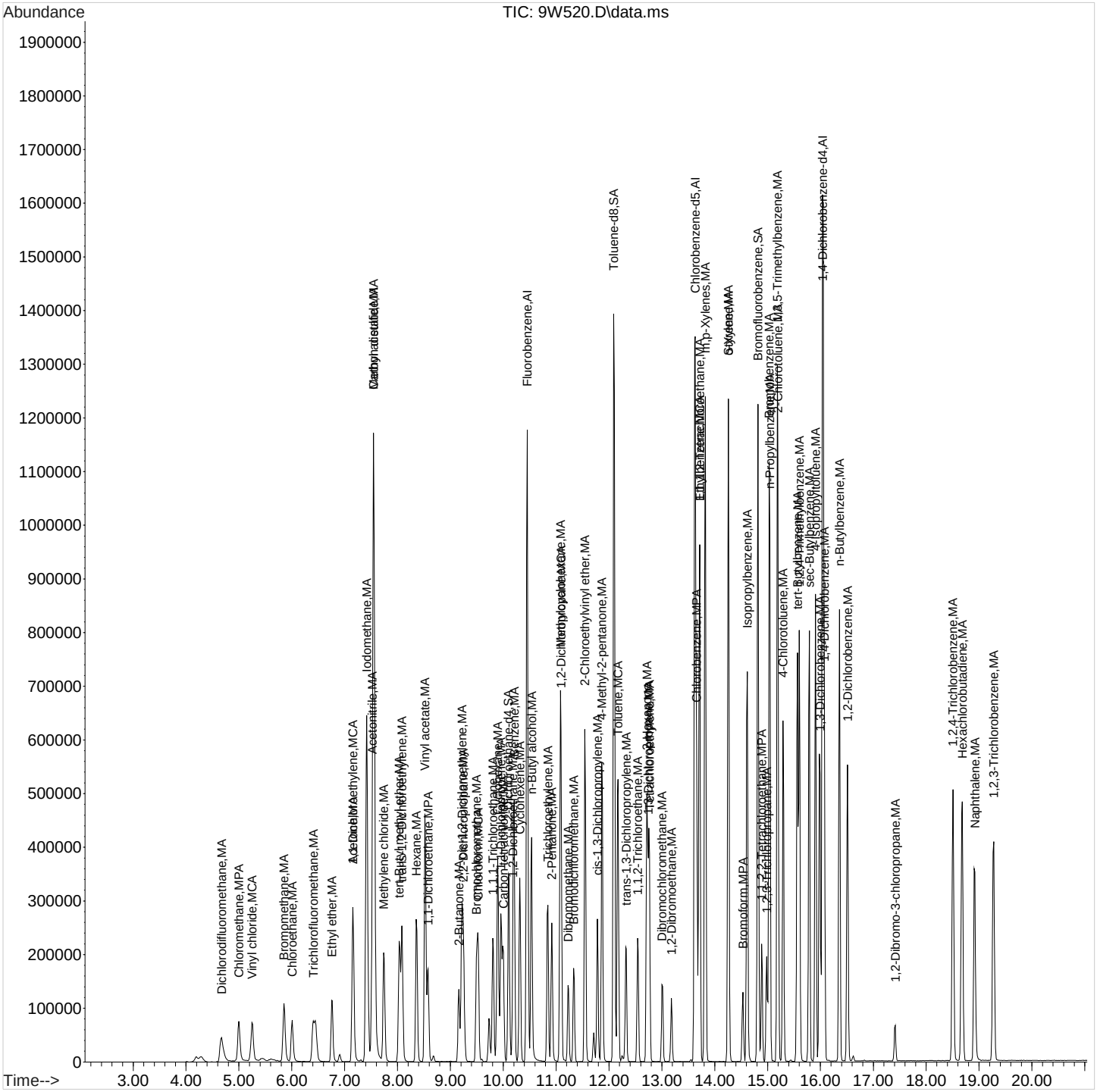
Abundance
TIC: 9W520.D\data.ms
Time-->
Dichlorodifluoromethane,MA
Chloromethane,MA
Vinyl chloride,MCA
Brommethane,MA
Chloroethane,MA
Trichlorofluoromethane,MA
Ethyl ether,MA
Methylene chloride,MA
Hexane,MA
Vinyl acetate,MA
Fluorobenzene,AI
Toluene-d8,SA
Chlorobenzene-d5,AI
Bromofluorobenzene,SA
1,4-Dichlorobenzene-d4,AI
Iodomethane,MA
Acetonitrile,MA
Toluene,MCA
Isopropylbenzene,MA
n-Propylbenzene,MA
4-Chlorotoluene,MA
n-Butylbenzene,MA
1,2-Dichlorobenzene,MA
1,2-Dibromo-3-chloropropane,MA
1,2,4-Trichlorobenzene,MA
Hexachlorobutadiene,MA
Naphthalene,MA
1,2,3-Trichlorobenzene,MA
Bromoform,MPA
Dibromochloromethane,MA
1,2-Dibromoethane,MA
trans-1,3-Dichloropropylene,MA
1,1,2-Trichloroethane,MA
cis-1,3-Dichloropropylene,MA
4-Methyl-2-pentanone,MA
2-Chloroethylvinyl ether,MA
n-Butyl alcohol,MA
Cyclohexane,MA
2-Hexanone,MA
Dibromomethane,MA
Bromodichloromethane,MA
1,2-Dichloroethane,MA
Carbon tetrachloride,MA
1,1,1-Trichloroethane,MA
Bromobenzene,MA
2-Butanone,MA
1,1-Dichloroethane,MA
Chloroform,MA
Methyl acetate,MA
Methyl tert-butyl ether,MA
Benzene,MA
Ethylbenzene,MA
Chloroprene,MA
Methyl iodide,MA
Methyl acrylonitrile,MA
Methacrylonitrile,MA
Propionitrile,MA
Acrylonitrile,MA
Acetone,MA
Methyl acrylate,MA
Methyl methacrylate,MA
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Methyl methacrylate,MA
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Methyl acrylate,MA
Ethyl acrylate

Continuing Calibration Summary

Client SDG: GEL425783

Instrument ID: VOA9.I

Injection Date: 16-JUN-17 20:03

Data File: 061617V9\9W521.D

Init. Cal. Date(s) 16-JUN-17 15:21 - 16-JUN-17 23:48

Lab Sample ID W9VM170616-14

Method: 061617V9\VOA9-8260C-061617.M

Quant Type ISTD

Method Update: 17-JUN-17 13:36

	Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type
S	1,2-Dichloroethane-d4	0.2466	0.24284		.01		-1.52474	30		Averaged
S	Toluene-d8	1.1271	1.13011		.01		0.26706	30		Averaged
S	Bromofluorobenzene	0.7553	0.75195		.01		-0.44353	30		Averaged
	Dichlorodifluoromethane	0.2743	0.23073		.01		-15.88407	30		Averaged
	Chloromethane	0.2639	0.24494		.1		-7.18454	30		Averaged
	Vinyl chloride	0.2846	0.2623		.01		-7.83556	30		Averaged
	Bromomethane	0.2459	0.22373		.01		-9.01586	30		Averaged
	Chloroethane	0.2249	0.20862		.01		-7.23877	30		Averaged
	Trichlorofluoromethane	0.4003	0.38365		.01		-4.15938	30		Averaged
	Acetone	0.0629	0.057		.01		-9.37997	30		Averaged
	1,1-Dichloroethylene	0.3907	0.37399		.01		-4.27694	30		Averaged
	Iodomethane	0.4445	0.41225		.01		-7.25534	30		Averaged
	Acetonitrile	0.0239	0.02203		.01		-7.82427	30		Averaged
	Carbon disulfide	0.7761	0.7048		.01		-9.18696	30		Averaged
	Methylene chloride	0.2652	0.25834		.01		-2.58673	30		Averaged
	trans-1,2-Dichloroethylene	0.3572	0.35557		.01		-0.45633	30		Averaged
	Vinyl acetate	0.3128	0.30093		.01		-3.79476	30		Averaged
	1,1-Dichloroethane	0.4305	0.42676		.1		-0.86876	30		Averaged
	2-Butanone	0.0844	0.08225		.01		-2.54739	30		Averaged
	cis-1,2-Dichloroethylene	0.3895	0.38763		.01		-0.4801	30		Averaged
	Chloroform	0.4086	0.40204		.01		-1.60548	30		Averaged
	1,1,1-Trichloroethane	0.3867	0.38225		.01		-1.15076	30		Averaged
	Carbon tetrachloride	0.3314	0.33464		.01		0.97767	30		Averaged
	1,2-Dichloroethane	0.2755	0.27378		.01		-0.62432	30		Averaged
	Benzene	0.9176	0.90512		.01		-1.36007	30		Averaged
	Trichloroethylene	0.2402	0.24454		.01		1.80683	30		Averaged
	1,2-Dichloropropane	0.2142	0.2105		.01		-1.72736	30		Averaged
	Dibromomethane	0.121	0.12211		.01		0.91736	30		Averaged
	Bromodichloromethane	0.2677	0.28599		.01		6.83227	30		Averaged
	cis-1,3-Dichloropropylene	0.3353	0.35		.01		4.38413	30		Averaged
	4-Methyl-2-pentanone	0.0873	0.08523		.01		-2.37113	30		Averaged
	Toluene	1.2062	1.20673		.01		0.04394	30		Averaged
	trans-1,3-Dichloropropylene	0.365	0.39645		.01		8.61644	30		Averaged
	1,1,2-Trichloroethane	0.1901	0.19472		.01		2.4303	30		Averaged
	2-Hexanone	0.166	0.15835		.01		-4.60843	30		Averaged
	Tetrachloroethylene	0.296	0.29384		.01		-0.72973	30		Averaged
	Dibromochloromethane	0.2473	0.27898		.01		12.81035	30		Averaged

Continuing Calibration Summary

Instrument ID: VOA9.I **Injection Date:** 16-JUN-17 20:03

Data File: 061617V9\9W521.D **Init. Cal. Date(s)** 16-JUN-17 15:21 16-JUN-17 23:48

Lab Sample ID W9VM170616-14 **Method:** 061617V9\VOA9-8260C-061617.M

Quant Type ISTD

Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type
1,2-Dibromoethane	0.2359	0.24771		.01		5.00636	30		Averaged
Chlorobenzene	0.8437	0.84001		.3		-0.43736	30		Averaged
1,1,1,2-Tetrachloroethane	0.3005	0.32094		.01		6.802	30		Averaged
Ethylbenzene	1.3813	1.35362		.01		-2.00391	30		Averaged
m,p-Xylenes	0.5574	0.58196		.01		4.40617	30		Averaged
o-Xylene	0.5778	0.58941		.01		2.00935	30		Averaged
Styrene	0.894	0.92686		.01		3.67562	30		Averaged
Bromoform	0.2802	0.32421		.1		15.70664	30		Averaged
1,1,2,2-Tetrachloroethane	0.5202	0.52207		.3		0.35948	30		Averaged
1,2,3-Trichloropropane	0.1525	0.15294		.01		0.28852	30		Averaged
1,4-Dichlorobenzene	1.3761	1.34381		.01		-2.34649	30		Averaged
1,2-Dibromo-3-chloropropane	0.1195	0.13168		.01		10.19247	30		Averaged

July 17, 2017

Quantitation Report
GEL Laboratories, LLC

RY 06/17/2017

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W521.D
Acq On : 16 Jun 2017 20:03
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-14|ICV|1|VOA|1|VOA8260BL|
Misc : GEL 5mL n/a MIX[A]0503-01E+0504-10D+0615-01+0
ALS Vial : 21 Sample Multiplier: 1

EM 06/17/2017

Quant Time: Jun 17 13:37:19 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	Dev(Min)
Internal Standards								
1) Fluorobenzene	96	10.454	10.454	1.000	1236332	50.00	ug/L	0.00
43) Chlorobenzene-d5	117	13.632	13.632	1.000	966742	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	593664	50.00	ug/L	0.00
84) B Fluorobenzene	96	10.454	10.454	1.000	1236332	50.00	ug/L	0.00
98) B Chlorobenzene-d5	117	13.632	13.632	1.000	966742	50.00	ug/L	0.00
100) B 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	593664	50.00	ug/L	0.00
System Monitoring Compounds								Dev(Min)
30) 1,2-Dichloroethane-d4	65	10.098	10.098	0.966	300228	49.23	ug/L	0.00
45) Toluene-d8	98	12.090	12.090	0.887	1092527	50.13	ug/L	0.00
63) Bromofluorobenzene	95	14.817	14.817	0.924	446408	49.78	ug/L	0.00

Target Compounds	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	QValue
2) Dichlorodifluoromethane	85	4.672	4.672	0.447	285255	42.05	ug/L	99
3) Chloromethane	50	5.010	5.011	0.479	302826	46.41	ug/L	100
4) Vinyl chloride	62	5.259	5.260	0.503	324294	46.08	ug/L	99
5) Bromomethane	94	5.852	5.852	0.560	276603	45.50	ug/L	100
6) Chloroethane	64	6.007	6.007	0.575	257926	46.37	ug/L	100
7) Trichlorofluoromethane	101	6.445	6.410	0.617	474319	47.92	ug/L	100
8) Ethyl ether	59	6.766	6.766	0.647	223308	48.85	ug/L	100
9) Acetone	43	7.157	7.157	0.685	352333	226.57	ug/L	100
10) 1,1-Dichloroethylene	61	7.157	7.157	0.685	462376	47.86	ug/L	99
11) Iodomethane	142	7.418	7.418	0.710	2548362	231.86	ug/L	99
12) Acetonitrile	41	7.524	7.513	0.720	680979	1152.71	ug/L	99
13) Methyl acetate	43	7.548	7.548	0.722	765216	230.51	ug/L	100
14) Carbon disulfide	76	7.548	7.548	0.722	4356844	227.04	ug/L	100
15) Methylene chloride	84	7.750	7.738	0.741	319396	48.71	ug/L	99
16) tert-Butyl methyl ether	73	8.034	8.034	0.769	785492	50.09	ug/L	100
17) trans-1,2-Dichloroethy...	61	8.082	8.082	0.773	439603	49.78	ug/L	99
18) Hexane	57	8.355	8.355	0.799	333329	41.05	ug/L	99
19) Vinyl acetate	43	8.521	8.521	0.815	1860253	240.50	ug/L	100
20) 1,1-Dichloroethane	63	8.580	8.580	0.821	527623	49.56	ug/L	100
21) 2-Butanone	43	9.161	9.161	0.876	508438	243.65	ug/L	100
22) cis-1,2-Dichloroethylene	61	9.220	9.220	0.882	479240	49.76	ug/L	98
23) 2,2-Dichloropropane	77	9.244	9.244	0.884	459777	49.19	ug/L	99
24) Bromochloromethane	128	9.493	9.493	0.908	152759	50.06	ug/L	99
25) Chloroform	83	9.529	9.529	0.912	497059	49.19	ug/L	100
26) 1,1,1-Trichloroethane	97	9.801	9.801	0.938	472588	49.43	ug/L	100
27) Cyclohexane	56	9.896	9.896	0.947	539266	49.17	ug/L	100
28) 1,1-Dichloropropene	75	9.955	9.956	0.952	380860	48.80	ug/L	99
29) Carbon tetrachloride	117	10.003	10.003	0.957	413730	50.49	ug/L	100
31) 1,2-Dichloroethane	62	10.181	10.181	0.974	338487	49.68	ug/L	100
32) Benzene	78	10.204	10.205	0.976	1119035	49.32	ug/L	100
33) Cyclohexene	67	10.311	10.311	0.986	541951	49.40	ug/L	100
34) n-Butyl alcohol	41	10.537	10.537	1.008	453435	5129.70	ug/L	98
35) Trichloroethylene	95	10.845	10.833	1.037	302330	50.90	ug/L	100
36) 2-Pentanone	43	10.916	10.916	1.044	736034	245.74	ug/L	100
37) 1,2-Dichloropropane	63	11.094	11.094	1.061	260242	49.13	ug/L	100
38) Methylcyclohexane	83	11.082	11.082	1.060	573388	49.44	ug/L	100
39) Dibromomethane	93	11.224	11.224	1.074	150971	50.47	ug/L	98

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W521.D
Acq On : 16 Jun 2017 20:03
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-14|ICV|1|VOA|1|VOA8260BL|
Misc : GEL 5mL n/a MIX[A]0503-01E+0504-10D+0615-01+0
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jun 17 13:37:19 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	
40) Bromodichloromethane	83	11.331	11.331	1.084	353576	53.41	ug/L	100
41) 2-Chloroethylvinyl ether	63	11.544	11.545	1.104	632652	226.41	ug/L	99
42) cis-1,3-Dichloropropylene	75	11.782	11.782	1.127	432717	52.19	ug/L	100
44) 4-Methyl-2-pentanone	58	11.865	11.865	0.870	411979	244.16	ug/L	99
46) Toluene	91	12.173	12.173	0.893	1166595	50.02	ug/L	99
47) trans-1,3-Dichloroprop...	75	12.315	12.315	0.903	383268	54.30	ug/L	99
48) 1,1,2-Trichloroethane	83	12.541	12.541	0.920	188247	51.21	ug/L	99
49) 2-Hexanone	43	12.718	12.719	0.933	765420	238.46	ug/L	100
50) 1,3-Dichloropropane	76	12.742	12.742	0.935	361618	48.75	ug/L	93
51) Tetrachloroethylene	164	12.766	12.766	0.936	284066	49.63	ug/L	100
52) Dibromochloromethane	129	13.003	13.003	0.954	269703	56.41	ug/L	100
53) 1,2-Dibromoethane	107	13.181	13.181	0.967	239474	52.51	ug/L	100
54) Chlorobenzene	112	13.655	13.655	1.002	812072	49.78	ug/L	100
55) 1,1,1,2-Tetrachloroethane	131	13.715	13.715	1.006	310267	53.40	ug/L	100
56) Ethylbenzene	91	13.715	13.715	1.006	1308605	49.00	ug/L	99
57) m,p-Xylenes	106	13.821	13.821	1.014	1125216	104.41	ug/L	99
58) o-Xylene	106	14.260	14.260	1.046	569804	51.00	ug/L	100
59) Styrene	104	14.260	14.260	1.046	896030	51.84	ug/L	100
61) Bromoform	173	14.533	14.533	0.906	192474	57.85	ug/L	100
62) Isopropylbenzene	105	14.616	14.616	0.911	1477889	50.60	ug/L	99
64) 1,1,2,2-Tetrachloroethane	83	14.889	14.889	0.928	309937	50.18	ug/L	99
65) 1,2,3-Trichloropropane	110	14.983	14.983	0.934	90794	50.13	ug/L #	90
66) Bromobenzene	156	15.031	15.031	0.937	413477	49.41	ug/L	99
67) n-Propylbenzene	91	15.043	15.043	0.938	1664201	48.64	ug/L	100
68) 1,3,5-Trimethylbenzene	105	15.185	15.185	0.947	1275500	50.91	ug/L	100
69) 2-Chlorotoluene	126	15.197	15.197	0.948	386979	50.01	ug/L	100
70) 4-Chlorotoluene	91	15.292	15.292	0.953	1073312	49.08	ug/L	99
71) tert-Butylbenzene	134	15.565	15.565	0.970	304728	53.17	ug/L	96
72) 1,2,4-Trimethylbenzene	105	15.600	15.600	0.973	1294547	50.39	ug/L	100
73) sec-Butylbenzene	105	15.790	15.790	0.984	1732544	51.21	ug/L	100
74) 4-Isopropyltoluene	119	15.908	15.908	0.992	1544244	51.26	ug/L	100
75) 1,3-Dichlorobenzene	146	15.991	15.991	0.997	810505	48.38	ug/L	100
76) 1,4-Dichlorobenzene	146	16.074	16.074	1.002	797772	48.83	ug/L	100
77) n-Butylbenzene	91	16.359	16.359	1.020	1357145	49.36	ug/L	99
78) 1,2-Dichlorobenzene	146	16.513	16.513	1.030	777663	49.32	ug/L	100
79) 1,2-Dibromo-3-chloropr...	157	17.414	17.415	1.086	78175	55.08	ug/L	99
80) 1,2,4-Trichlorobenzene	180	18.505	18.505	1.154	670555	49.24	ug/L	100
81) Hexachlorobutadiene	225	18.683	18.683	1.165	454878	48.36	ug/L	100
82) Naphthalene	128	18.920	18.921	1.180	1249507	52.67	ug/L	100
83) 1,2,3-Trichlorobenzene	180	19.276	19.276	1.202	606536	49.33	ug/L	100
85) Acrolein		0.000	6.979	0.000	0	N.D.		
86) Trichlorotrifluoroethane		7.133	7.133	0.682	0m	N.D.	d	
87) Allyl chloride		7.524	7.596	0.720	0m	N.D.	d	
88) Acrylonitrile		8.034	7.999	0.769	0m	N.D.	d	
89) 2-Chloro-1,3-butadiene		8.675	8.675	0.830	0m	N.D.	d	
90) Ethyl acetate		9.161	9.161	0.876	0m	N.D.	d	
91) Propionitrile		9.161	9.244	0.876	0m	N.D.	d	
92) Methacrylonitrile		9.517	9.422	0.910	0m	N.D.	d	
93) Tetrahydrofuran		9.529	9.540	0.912	0m	N.D.	d	
94) Isobutyl alcohol		9.896	9.849	0.947	0m	N.D.	d	
95) Methyl methacrylate		11.082	11.046	1.060	0m	N.D.	d	
96) 1,4-Dioxane		11.224	11.165	1.074	0m	N.D.	d	

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W521.D
Acq On : 16 Jun 2017 20:03
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-14|ICV|1|VOA|1|VOA8260BL|
Misc : GEL 5mL n/a MIX[A]0503-01E+0504-10D+0615-01+0
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jun 17 13:37:19 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

	Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units
97)	2-Nitropropane		11.544	11.544	1.104	0m	N.D.	d
99)	Ethyl methacrylate		12.315	12.303	0.903	0m	N.D.	d
101)	cis-1,4-Dichloro-2-butene		14.604	14.651	0.911	0m	N.D.	d
102)	Cyclohexanone		14.604	14.782	0.911	0m	N.D.	d
103)	trans-1,4-Dichloro-2-b...		15.031	14.936	0.937	0m	N.D.	d
104)	Pentachloroethane		15.636	15.636	0.975	0m	N.D.	d
105)	Benzyl chloride		16.193	16.193	1.010	0m	N.D.	d
106)	bis(2-Chloroisopropyl)...		16.608	16.584	1.035	0m	N.D.	d

(#) = qualifier out of range (m) = manual integration (+) = signals summed
(A) = Over the calibration range (d) = deleted

Quantitation Report
GEL Laboratories, LLC

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Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W521.D
Acq On    : 16 Jun 2017  20:03
Operator  : RXY1
InstName  : VOA9
Sample    : |W9VM170616-14|ICV|1|VOA|1|VOA8260BL|
Misc      : GEL 5mL n/a MIX[A]0503-01E+0504-10D+0615-01+0
ALS Vial  : 21   Sample Multiplier: 1

Quant Time: Jun 17 13:37:19 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title  : Volatile Organics 8260B                    SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE
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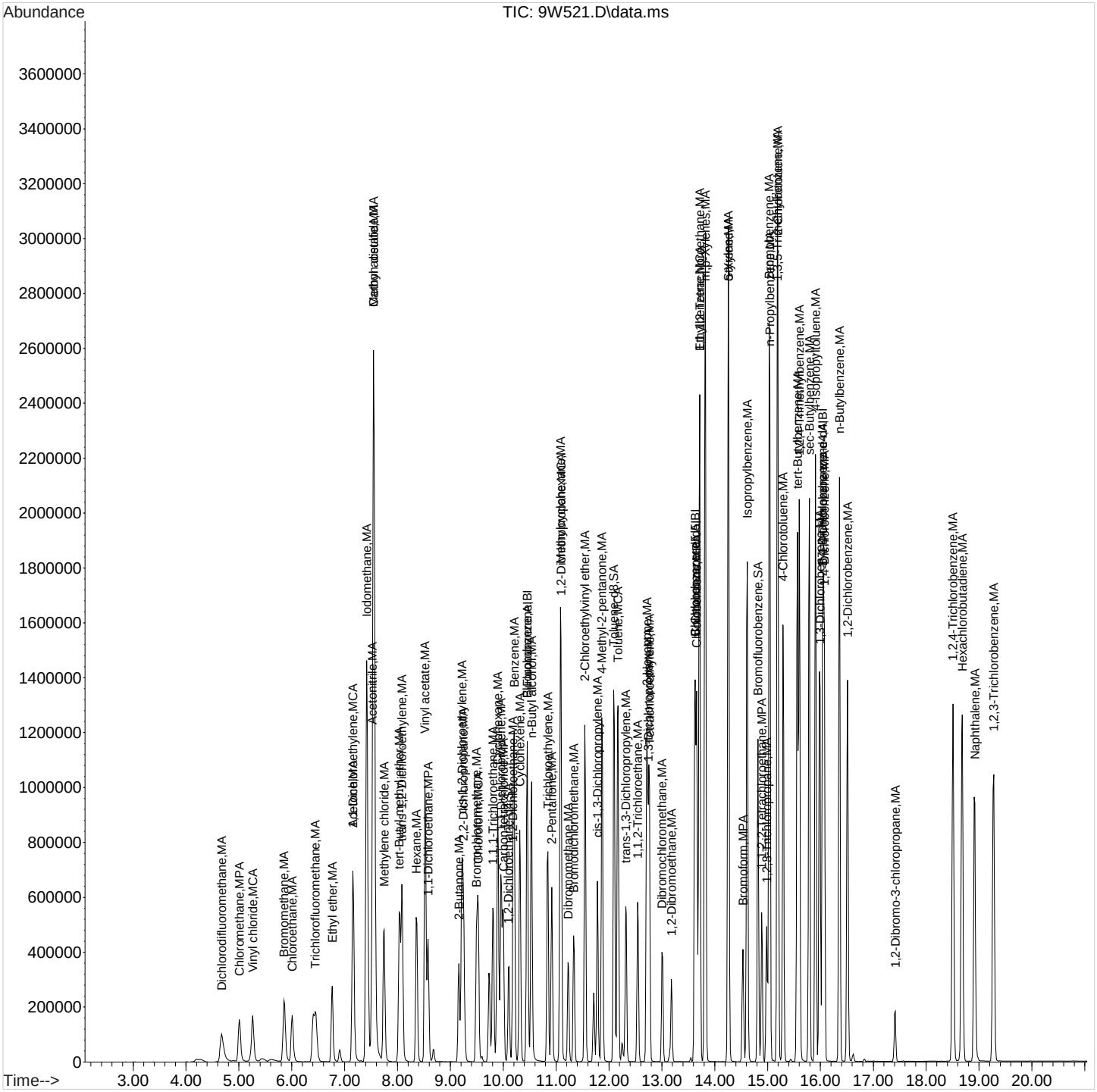

Quantitation Report
GEL Laboratories, LLC

RY 06/17/2017

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W522.D
Acq On : 16 Jun 2017 20:32
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-15|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL5 5mL n/a MIX[B]0612-01A+0526-01A
ALS Vial : 22 Sample Multiplier: 1

EM 06/17/2017

Quant Time: Jun 17 13:37:21 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	Dev(Min)
Internal Standards								
1) Fluorobenzene	96	10.453	10.454	1.000	0m	50.00	ug/L	0.00
43) Chlorobenzene-d5	117	13.632	13.632	1.000	0m	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	0m	50.00	ug/L	0.00
84) B Fluorobenzene	96	10.453	10.454	1.000	1245916	50.00	ug/L	0.00
98) B Chlorobenzene-d5	117	13.632	13.632	1.000	972939	50.00	ug/L	0.00
100) B 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	591132	50.00	ug/L	0.00
System Monitoring Compounds								Dev(Min)
30) 1,2-Dichloroethane-d4	65	10.110	10.098	0.967	0d	0.00	ug/L	
45) Toluene-d8	98	12.090	12.090	0.887	0d	0.00	ug/L	
63) Bromofluorobenzene	95	14.817	14.817	0.924	0d	0.00	ug/L	

Target Compounds	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	QValue
2) Dichlorodifluoromethane		0.000	4.672	0.000	0	N.D.		
3) Chloromethane		0.000	5.011	0.000	0	N.D.		
4) Vinyl chloride		0.000	5.260	0.000	0	N.D.		
5) Bromomethane		0.000	5.852	0.000	0	N.D.		
6) Chloroethane		0.000	6.007	0.000	0	N.D.		
7) Trichlorofluoromethane		0.000	6.410	0.000	0	N.D.		
8) Ethyl ether		0.000	6.766	0.000	0	N.D.		
9) Acetone		7.157	7.157	0.685	0m	N.D.	d	
10) 1,1-Dichloroethylene		0.000	7.157	0.000	0	N.D.		
11) Iodomethane		7.418	7.418	0.710	0m	N.D.	d	
12) Acetonitrile		7.596	7.513	0.727	0m	N.D.	d	
13) Methyl acetate		7.560	7.548	0.723	0m	N.D.	d	
14) Carbon disulfide		7.596	7.548	0.727	0m	N.D.	d	
15) Methylene chloride		7.738	7.738	0.740	0m	N.D.	d	
16) tert-Butyl methyl ether		0.000	8.034	0.000	0	N.D.		
17) trans-1,2-Dichloroethy...		8.082	8.082	0.773	0m	N.D.	d	
18) Hexane		8.366	8.355	0.800	0m	N.D.	d	
19) Vinyl acetate		8.532	8.521	0.816	0m	N.D.	d	
20) 1,1-Dichloroethane		0.000	8.580	0.000	0	N.D.		
21) 2-Butanone		9.173	9.161	0.877	0m	N.D.	d	
22) cis-1,2-Dichloroethylene		9.173	9.220	0.877	0m	N.D.	d	
23) 2,2-Dichloropropane		0.000	9.244	0.000	0	N.D.		
24) Bromochloromethane		0.000	9.493	0.000	0	N.D.		
25) Chloroform		0.000	9.529	0.000	0	N.D.		
26) 1,1,1-Trichloroethane		0.000	9.801	0.000	0	N.D.		
27) Cyclohexane		9.861	9.896	0.943	0m	N.D.	d	
28) 1,1-Dichloropropene		9.955	9.956	0.952	0m	N.D.	d	
29) Carbon tetrachloride		0.000	10.003	0.000	0	N.D.		
31) 1,2-Dichloroethane		10.181	10.181	0.974	0m	N.D.	d	
32) Benzene		10.204	10.205	0.976	0m	N.D.	d	
33) Cyclohexene		0.000	10.311	0.000	0	N.D.		
34) n-Butyl alcohol		10.548	10.537	1.009	0m	N.D.	d	
35) Trichloroethylene		10.845	10.833	1.037	0m	N.D.	d	
36) 2-Pentanone		10.928	10.916	1.045	0m	N.D.	d	
37) 1,2-Dichloropropane		0.000	11.094	0.000	0	N.D.		
38) Methylcyclohexane		11.082	11.082	1.060	0m	N.D.	d	
39) Dibromomethane		0.000	11.224	0.000	0	N.D.		

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W522.D
Acq On : 16 Jun 2017 20:32
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-15|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL5 5mL n/a MIX[B]0612-01A+0526-01A
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jun 17 13:37:21 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	
40) Bromodichloromethane		0.000	11.331	0.000	0	N.D.		
41) 2-Chloroethylvinyl ether		0.000	11.545	0.000	0	N.D.		
42) cis-1,3-Dichloropropylene		11.782	11.782	1.127	0m	N.D.	d	
44) 4-Methyl-2-pentanone		11.876	11.865	0.871	0m	N.D.	d	
46) Toluene		12.173	12.173	0.893	0m	N.D.	d	
47) trans-1,3-Dichloroprop...		12.327	12.315	0.904	0m	N.D.	d	
48) 1,1,2-Trichloroethane		0.000	12.541	0.000	0	N.D.		
49) 2-Hexanone		12.730	12.719	0.934	0m	N.D.	d	
50) 1,3-Dichloropropane		12.742	12.742	0.935	0m	N.D.	d	
51) Tetrachloroethylene		12.766	12.766	0.936	0m	N.D.	d	
52) Dibromochloromethane		0.000	13.003	0.000	0	N.D.		
53) 1,2-Dibromoethane		13.181	13.181	0.967	0m	N.D.	d	
54) Chlorobenzene		13.655	13.655	1.002	0m	N.D.	d	
55) 1,1,1,2-Tetrachloroethane		13.715	13.715	1.006	0m	N.D.	d	
56) Ethylbenzene		13.715	13.715	1.006	0m	N.D.	d	
57) m,p-Xylenes		13.821	13.821	1.014	0m	N.D.	d	
58) o-Xylene		14.260	14.260	1.046	0m	N.D.	d	
59) Styrene		14.272	14.260	1.047	0m	N.D.	d	
61) Bromoform		0.000	14.533	0.000	0	N.D.		
62) Isopropylbenzene		14.616	14.616	0.911	0m	N.D.	d	
64) 1,1,2,2-Tetrachloroethane		14.889	14.889	0.928	0m	N.D.	d	
65) 1,2,3-Trichloropropane		0.000	14.983	0.000	0	N.D.		
66) Bromobenzene		15.031	15.031	0.937	0m	N.D.	d	
67) n-Propylbenzene		15.043	15.043	0.938	0m	N.D.	d	
68) 1,3,5-Trimethylbenzene		15.185	15.185	0.947	0m	N.D.	d	
69) 2-Chlorotoluene		15.197	15.197	0.948	0m	N.D.	d	
70) 4-Chlorotoluene		15.304	15.292	0.954	0m	N.D.	d	
71) tert-Butylbenzene		15.564	15.565	0.970	0m	N.D.	d	
72) 1,2,4-Trimethylbenzene		15.600	15.600	0.973	0m	N.D.	d	
73) sec-Butylbenzene		15.790	15.790	0.984	0m	N.D.	d	
74) 4-Isopropyltoluene		15.908	15.908	0.992	0m	N.D.	d	
75) 1,3-Dichlorobenzene		15.991	15.991	0.997	0m	N.D.	d	
76) 1,4-Dichlorobenzene		16.074	16.074	1.002	0m	N.D.	d	
77) n-Butylbenzene		16.359	16.359	1.020	0m	N.D.	d	
78) 1,2-Dichlorobenzene		16.513	16.513	1.030	0m	N.D.	d	
79) 1,2-Dibromo-3-chloropr...		17.414	17.415	1.086	0m	N.D.	d	
80) 1,2,4-Trichlorobenzene		18.505	18.505	1.154	0m	N.D.	d	
81) Hexachlorobutadiene		18.683	18.683	1.165	0m	N.D.	d	
82) Naphthalene		18.920	18.921	1.180	0m	N.D.	d	
83) 1,2,3-Trichlorobenzene		19.276	19.276	1.202	0m	N.D.	d	
85) Acrolein	56	6.991	6.979	0.669	3060	3.54	ug/L	95
86) Trichlorotrifluoroethane	85	7.121	7.133	0.681	14815	5.55	ug/L	97
87) Allyl chloride	41	7.596	7.596	0.727	48121	5.82	ug/L	94
88) Acrylonitrile	53	8.011	7.999	0.766	8418	4.93	ug/L	96
89) 2-Chloro-1,3-butadiene	53	8.687	8.675	0.831	7489	0.93	ug/L	93
90) Ethyl acetate	43	9.173	9.161	0.877	20556	5.50	ug/L	97
91) Propionitrile	54	9.256	9.244	0.885	2667	4.29	ug/L #	62
92) Methacrylonitrile	41	9.422	9.422	0.901	11838	4.95	ug/L	100
93) Tetrahydrofuran	42	9.540	9.540	0.913	6939	5.28	ug/L	92
94) Isobutyl alcohol	41	9.849	9.849	0.942	7736	48.36	ug/L	94
95) Methyl methacrylate	69	11.058	11.046	1.058	15339	5.10	ug/L	93
96) 1,4-Dioxane	88	11.177	11.165	1.069	2509	45.84	ug/L	92

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W522.D
Acq On : 16 Jun 2017 20:32
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-15|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL5 5mL n/a MIX[B]0612-01A+0526-01A
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jun 17 13:37:21 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

	Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units		
97)	2-Nitropropane	43	11.544	11.544	1.104	4170	3.79	ug/L		98
99)	Ethyl methacrylate	69	12.315	12.303	0.903	27938	4.86	ug/L		95
101)	cis-1,4-Dichloro-2-butene	53	14.651	14.651	0.913	7469	4.48	ug/L	#	74
102)	Cyclohexanone	42	14.782	14.782	0.922	2488	19.87	ug/L		84
103)	trans-1,4-Dichloro-2-b...	53	14.936	14.936	0.931	6655	4.35	ug/L		88
104)	Pentachloroethane	167	15.636	15.636	0.975	19355	4.48	ug/L		71
105)	Benzyl chloride	91	16.193	16.193	1.010	37956	4.09	ug/L		94
106)	bis(2-Chloroisopropyl)...	45	16.584	16.584	1.034	12282	4.80	ug/L		94

(#) = qualifier out of range (m) = manual integration (+) = signals summed
(A) = Over the calibration range (d) = deleted

Quantitation Report
GEL Laboratories, LLC

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Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W522.D
Acq On    : 16 Jun 2017  20:32
Operator  : RXY1
InstName  : VOA9
Sample    : |W9VM170616-15|ICAL|1|VOA|1|VOA8260BL|
Misc      : GEL5 5mL n/a MIX[B]0612-01A+0526-01A
ALS Vial  : 22   Sample Multiplier: 1

Quant Time: Jun 17 13:37:21 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title  : Volatile Organics 8260B                    SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE
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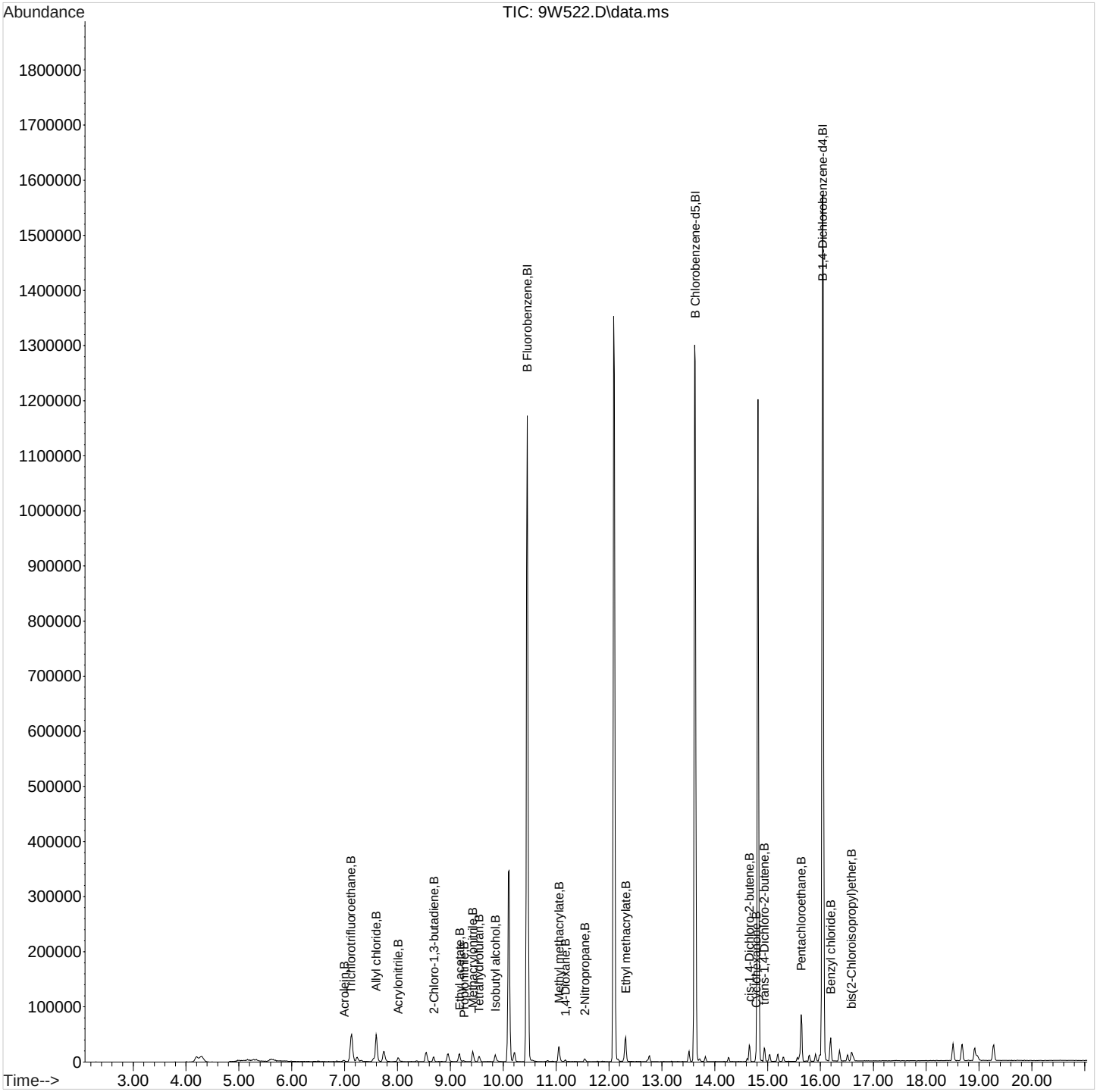

Quantitation Report
GEL Laboratories, LLC

RY 06/17/2017

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W523.D
Acq On : 16 Jun 2017 21:00
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-16|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL10 5mL n/a MIX[B]0612-02A+0526-02A
ALS Vial : 23 Sample Multiplier: 1

EM 06/17/2017

Quant Time: Jun 17 13:37:24 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	Dev(Min)
Internal Standards								
1) Fluorobenzene	96	10.453	10.454	1.000	0m	50.00	ug/L	0.00
43) Chlorobenzene-d5	117	13.632	13.632	1.000	0m	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	0m	50.00	ug/L	0.00
84) B Fluorobenzene	96	10.453	10.454	1.000	1261728	50.00	ug/L	0.00
98) B Chlorobenzene-d5	117	13.632	13.632	1.000	965071	50.00	ug/L	0.00
100) B 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	590235	50.00	ug/L	0.00
System Monitoring Compounds								Dev(Min)
30) 1,2-Dichloroethane-d4	65	10.110	10.098	0.967	0d	0.00	ug/L	
45) Toluene-d8	98	12.090	12.090	0.887	0d	0.00	ug/L	
63) Bromofluorobenzene	95	14.817	14.817	0.924	0d	0.00	ug/L	

Target Compounds	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	QValue
2) Dichlorodifluoromethane		0.000	4.672	0.000	0	N.D.		
3) Chloromethane		0.000	5.011	0.000	0	N.D.		
4) Vinyl chloride		0.000	5.260	0.000	0	N.D.		
5) Bromomethane		0.000	5.852	0.000	0	N.D.		
6) Chloroethane		0.000	6.007	0.000	0	N.D.		
7) Trichlorofluoromethane		0.000	6.410	0.000	0	N.D.		
8) Ethyl ether		0.000	6.766	0.000	0	N.D.		
9) Acetone		7.228	7.157	0.691	0m	N.D.	d	
10) 1,1-Dichloroethylene		0.000	7.157	0.000	0	N.D.		
11) Iodomethane		0.000	7.418	0.000	0	N.D.		
12) Acetonitrile		7.596	7.513	0.727	0m	N.D.	d	
13) Methyl acetate		7.560	7.548	0.723	0m	N.D.	d	
14) Carbon disulfide		7.596	7.548	0.727	0m	N.D.	d	
15) Methylene chloride		7.750	7.738	0.741	0m	N.D.	d	
16) tert-Butyl methyl ether		0.000	8.034	0.000	0	N.D.		
17) trans-1,2-Dichloroethy...		0.000	8.082	0.000	0	N.D.		
18) Hexane		8.355	8.355	0.799	0m	N.D.	d	
19) Vinyl acetate		8.544	8.521	0.817	0m	N.D.	d	
20) 1,1-Dichloroethane		0.000	8.580	0.000	0	N.D.		
21) 2-Butanone		9.173	9.161	0.877	0m	N.D.	d	
22) cis-1,2-Dichloroethylene		9.161	9.220	0.876	0m	N.D.	d	
23) 2,2-Dichloropropane		0.000	9.244	0.000	0	N.D.		
24) Bromochloromethane		0.000	9.493	0.000	0	N.D.		
25) Chloroform		0.000	9.529	0.000	0	N.D.		
26) 1,1,1-Trichloroethane		0.000	9.801	0.000	0	N.D.		
27) Cyclohexane		9.849	9.896	0.942	0m	N.D.	d	
28) 1,1-Dichloropropene		0.000	9.956	0.000	0	N.D.		
29) Carbon tetrachloride		0.000	10.003	0.000	0	N.D.		
31) 1,2-Dichloroethane		0.000	10.181	0.000	0	N.D.		
32) Benzene		10.204	10.205	0.976	0m	N.D.	d	
33) Cyclohexene		0.000	10.311	0.000	0	N.D.		
34) n-Butyl alcohol		0.000	10.537	0.000	0	N.D.		
35) Trichloroethylene		10.833	10.833	1.036	0m	N.D.	d	
36) 2-Pentanone		10.928	10.916	1.045	0m	N.D.	d	
37) 1,2-Dichloropropane		0.000	11.094	0.000	0	N.D.		
38) Methylcyclohexane		11.082	11.082	1.060	0m	N.D.	d	
39) Dibromomethane		0.000	11.224	0.000	0	N.D.		

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W523.D
Acq On : 16 Jun 2017 21:00
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-16|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL10 5mL n/a MIX[B]0612-02A+0526-02A
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Jun 17 13:37:24 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	
40) Bromodichloromethane		0.000	11.331	0.000	0	N.D.		
41) 2-Chloroethylvinyl ether		0.000	11.545	0.000	0	N.D.		
42) cis-1,3-Dichloropropylene		0.000	11.782	0.000	0	N.D.		
44) 4-Methyl-2-pentanone		0.000	11.865	0.000	0	N.D.		
46) Toluene		12.161	12.173	0.892	0m	N.D.	d	
47) trans-1,3-Dichloroprop...		0.000	12.315	0.000	0	N.D.		
48) 1,1,2-Trichloroethane		0.000	12.541	0.000	0	N.D.		
49) 2-Hexanone		12.730	12.719	0.934	0m	N.D.	d	
50) 1,3-Dichloropropane		0.000	12.742	0.000	0	N.D.		
51) Tetrachloroethylene		12.766	12.766	0.936	0m	N.D.	d	
52) Dibromochloromethane		0.000	13.003	0.000	0	N.D.		
53) 1,2-Dibromoethane		0.000	13.181	0.000	0	N.D.		
54) Chlorobenzene		13.667	13.655	1.003	0m	N.D.	d	
55) 1,1,1,2-Tetrachloroethane		0.000	13.715	0.000	0	N.D.		
56) Ethylbenzene		13.715	13.715	1.006	0m	N.D.	d	
57) m,p-Xylenes		13.821	13.821	1.014	0m	N.D.	d	
58) o-Xylene		14.260	14.260	1.046	0m	N.D.	d	
59) Styrene		14.272	14.260	1.047	0m	N.D.	d	
61) Bromoform		0.000	14.533	0.000	0	N.D.		
62) Isopropylbenzene		14.616	14.616	0.911	0m	N.D.	d	
64) 1,1,2,2-Tetrachloroethane		0.000	14.889	0.000	0	N.D.		
65) 1,2,3-Trichloropropane		0.000	14.983	0.000	0	N.D.		
66) Bromobenzene		15.031	15.031	0.937	0m	N.D.	d	
67) n-Propylbenzene		15.043	15.043	0.938	0m	N.D.	d	
68) 1,3,5-Trimethylbenzene		15.185	15.185	0.947	0m	N.D.	d	
69) 2-Chlorotoluene		15.197	15.197	0.948	0m	N.D.	d	
70) 4-Chlorotoluene		15.304	15.292	0.954	0m	N.D.	d	
71) tert-Butylbenzene		15.564	15.565	0.970	0m	N.D.	d	
72) 1,2,4-Trimethylbenzene		15.600	15.600	0.973	0m	N.D.	d	
73) sec-Butylbenzene		15.790	15.790	0.984	0m	N.D.	d	
74) 4-Isopropyltoluene		15.908	15.908	0.992	0m	N.D.	d	
75) 1,3-Dichlorobenzene		15.991	15.991	0.997	0m	N.D.	d	
76) 1,4-Dichlorobenzene		16.074	16.074	1.002	0m	N.D.	d	
77) n-Butylbenzene		16.359	16.359	1.020	0m	N.D.	d	
78) 1,2-Dichlorobenzene		16.513	16.513	1.030	0m	N.D.	d	
79) 1,2-Dibromo-3-chloropr...		0.000	17.415	0.000	0	N.D.		
80) 1,2,4-Trichlorobenzene		18.505	18.505	1.154	0m	N.D.	d	
81) Hexachlorobutadiene		18.683	18.683	1.165	0m	N.D.	d	
82) Naphthalene		18.920	18.921	1.180	0m	N.D.	d	
83) 1,2,3-Trichlorobenzene		19.276	19.276	1.202	0m	N.D.	d	
85) Acrolein	56	6.979	6.979	0.668	7585	8.67	ug/L	100
86) Trichlorotrifluoroethane	85	7.133	7.133	0.682	27571	10.20	ug/L	96
87) Allyl chloride	41	7.596	7.596	0.727	89440	10.69	ug/L	99
88) Acrylonitrile	53	8.011	7.999	0.766	17298	10.00	ug/L	97
89) 2-Chloro-1,3-butadiene	53	8.687	8.675	0.831	15309	1.87	ug/L	98
90) Ethyl acetate	43	9.173	9.161	0.877	41301	10.90	ug/L	97
91) Propionitrile	54	9.244	9.244	0.884	6487	10.32	ug/L	85
92) Methacrylonitrile	41	9.422	9.422	0.901	25321	10.45	ug/L	98
93) Tetrahydrofuran	42	9.540	9.540	0.913	14658	11.00	ug/L	95
94) Isobutyl alcohol	41	9.849	9.849	0.942	17135	105.77	ug/L	90
95) Methyl methacrylate	69	11.046	11.046	1.057	31237	10.25	ug/L	96
96) 1,4-Dioxane	88	11.177	11.165	1.069	5117	92.31	ug/L	94

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W523.D
Acq On : 16 Jun 2017 21:00
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-16|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL10 5mL n/a MIX[B]0612-02A+0526-02A
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Jun 17 13:37:24 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

	Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	
97)	2-Nitropropane	43	11.544	11.544	1.104	8529	7.66	ug/L	93
99)	Ethyl methacrylate	69	12.315	12.303	0.903	59686	10.47	ug/L	97
101)	cis-1,4-Dichloro-2-butene	53	14.651	14.651	0.913	15504	9.31	ug/L	77
102)	Cyclohexanone	42	14.782	14.782	0.922	5378	43.02	ug/L	88
103)	trans-1,4-Dichloro-2-b...	53	14.936	14.936	0.931	14976	9.81	ug/L	82
104)	Pentachloroethane	167	15.636	15.636	0.975	40911	9.48	ug/L	75
105)	Benzyl chloride	91	16.193	16.193	1.010	86450	9.33	ug/L	94
106)	bis(2-Chloroisopropyl)...	45	16.584	16.584	1.034	25988	10.17	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed
(A) = Over the calibration range (d) = deleted

Quantitation Report
GEL Laboratories, LLC

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Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W523.D
Acq On    : 16 Jun 2017  21:00
Operator  : RXY1
InstName  : VOA9
Sample    : |W9VM170616-16|ICAL|1|VOA|1|VOA8260BL|
Misc      : GEL10 5mL n/a MIX[B]0612-02A+0526-02A
ALS Vial  : 23   Sample Multiplier: 1

Quant Time: Jun 17 13:37:24 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title  : Volatile Organics 8260B                    SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE
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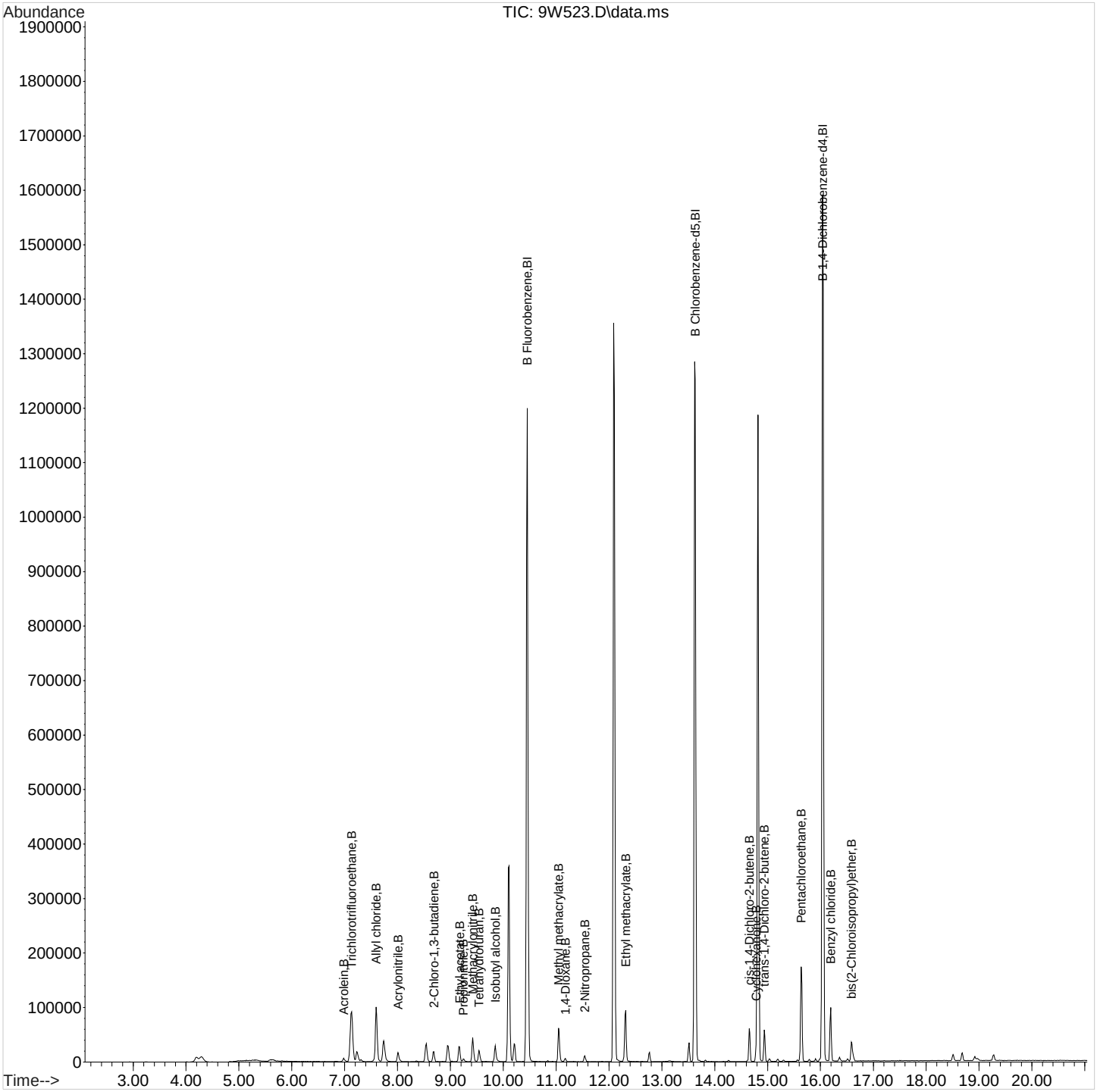

July 17, 2017

Quantitation Report
GEL Laboratories, LLC

RY 06/17/2017

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W524.D
Acq On : 16 Jun 2017 21:28
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-17|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL25 5mL n/a MIX[B]0612-03A+0526-03A
ALS Vial : 24 Sample Multiplier: 1

EM 06/17/2017

Quant Time: Jun 17 13:37:26 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	Dev(Min)
Internal Standards								
1) Fluorobenzene	96	10.453	10.454	1.000	0m	50.00	ug/L	0.00
43) Chlorobenzene-d5	117	13.632	13.632	1.000	0m	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	0m	50.00	ug/L	0.00
84) B Fluorobenzene	96	10.453	10.454	1.000	1180704	50.00	ug/L	0.00
98) B Chlorobenzene-d5	117	13.632	13.632	1.000	959871	50.00	ug/L	0.00
100) B 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	579407	50.00	ug/L	0.00
System Monitoring Compounds								Dev(Min)
30) 1,2-Dichloroethane-d4	65	10.110	10.098	0.967	0d	0.00	ug/L	
45) Toluene-d8	98	12.090	12.090	0.887	0d	0.00	ug/L	
63) Bromofluorobenzene	95	14.817	14.817	0.924	0d	0.00	ug/L	

Target Compounds	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	QValue
2) Dichlorodifluoromethane		0.000	4.672	0.000	0	N.D.		
3) Chloromethane		0.000	5.011	0.000	0	N.D.		
4) Vinyl chloride		0.000	5.260	0.000	0	N.D.		
5) Bromomethane		5.603	5.852	0.536	0m	N.D.	d	
6) Chloroethane		0.000	6.007	0.000	0	N.D.		
7) Trichlorofluoromethane		0.000	6.410	0.000	0	N.D.		
8) Ethyl ether		0.000	6.766	0.000	0	N.D.		
9) Acetone		7.228	7.157	0.691	0m	N.D.	d	
10) 1,1-Dichloroethylene		0.000	7.157	0.000	0	N.D.		
11) Iodomethane		0.000	7.418	0.000	0	N.D.		
12) Acetonitrile		7.596	7.513	0.727	0m	N.D.	d	
13) Methyl acetate		7.560	7.548	0.723	0m	N.D.	d	
14) Carbon disulfide		7.596	7.548	0.727	0m	N.D.	d	
15) Methylene chloride		7.750	7.738	0.741	0m	N.D.	d	
16) tert-Butyl methyl ether		0.000	8.034	0.000	0	N.D.		
17) trans-1,2-Dichloroethy...		0.000	8.082	0.000	0	N.D.		
18) Hexane		8.366	8.355	0.800	0m	N.D.	d	
19) Vinyl acetate		8.544	8.521	0.817	0m	N.D.	d	
20) 1,1-Dichloroethane		0.000	8.580	0.000	0	N.D.		
21) 2-Butanone		9.161	9.161	0.876	0m	N.D.	d	
22) cis-1,2-Dichloroethylene		9.173	9.220	0.877	0m	N.D.	d	
23) 2,2-Dichloropropane		0.000	9.244	0.000	0	N.D.		
24) Bromochloromethane		0.000	9.493	0.000	0	N.D.		
25) Chloroform		0.000	9.529	0.000	0	N.D.		
26) 1,1,1-Trichloroethane		0.000	9.801	0.000	0	N.D.		
27) Cyclohexane		9.849	9.896	0.942	0m	N.D.	d	
28) 1,1-Dichloropropene		0.000	9.956	0.000	0	N.D.		
29) Carbon tetrachloride		0.000	10.003	0.000	0	N.D.		
31) 1,2-Dichloroethane		0.000	10.181	0.000	0	N.D.		
32) Benzene		10.204	10.205	0.976	0m	N.D.	d	
33) Cyclohexene		0.000	10.311	0.000	0	N.D.		
34) n-Butyl alcohol		0.000	10.537	0.000	0	N.D.		
35) Trichloroethylene		10.845	10.833	1.037	0m	N.D.	d	
36) 2-Pentanone		10.940	10.916	1.047	0m	N.D.	d	
37) 1,2-Dichloropropane		0.000	11.094	0.000	0	N.D.		
38) Methylcyclohexane		0.000	11.082	0.000	0	N.D.		
39) Dibromomethane		0.000	11.224	0.000	0	N.D.		

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W524.D
Acq On : 16 Jun 2017 21:28
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-17|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL25 5mL n/a MIX[B]0612-03A+0526-03A
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Jun 17 13:37:26 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	
40) Bromodichloromethane		0.000	11.331	0.000	0	N.D.		
41) 2-Chloroethylvinyl ether		0.000	11.545	0.000	0	N.D.		
42) cis-1,3-Dichloropropylene		0.000	11.782	0.000	0	N.D.		
44) 4-Methyl-2-pentanone		0.000	11.865	0.000	0	N.D.		
46) Toluene		12.173	12.173	0.893	0m	N.D.	d	
47) trans-1,3-Dichloroprop...		12.339	12.315	0.905	0m	N.D.	d	
48) 1,1,2-Trichloroethane		0.000	12.541	0.000	0	N.D.		
49) 2-Hexanone		12.730	12.719	0.934	0m	N.D.	d	
50) 1,3-Dichloropropane		0.000	12.742	0.000	0	N.D.		
51) Tetrachloroethylene		12.766	12.766	0.936	0m	N.D.	d	
52) Dibromochloromethane		0.000	13.003	0.000	0	N.D.		
53) 1,2-Dibromoethane		0.000	13.181	0.000	0	N.D.		
54) Chlorobenzene		13.655	13.655	1.002	0m	N.D.	d	
55) 1,1,1,2-Tetrachloroethane		0.000	13.715	0.000	0	N.D.		
56) Ethylbenzene		13.715	13.715	1.006	0m	N.D.	d	
57) m,p-Xylenes		13.821	13.821	1.014	0m	N.D.	d	
58) o-Xylene		14.260	14.260	1.046	0m	N.D.	d	
59) Styrene		14.272	14.260	1.047	0m	N.D.	d	
61) Bromoform		0.000	14.533	0.000	0	N.D.		
62) Isopropylbenzene		14.616	14.616	0.911	0m	N.D.	d	
64) 1,1,2,2-Tetrachloroethane		0.000	14.889	0.000	0	N.D.		
65) 1,2,3-Trichloropropane		0.000	14.983	0.000	0	N.D.		
66) Bromobenzene		15.043	15.031	0.938	0m	N.D.	d	
67) n-Propylbenzene		15.043	15.043	0.938	0m	N.D.	d	
68) 1,3,5-Trimethylbenzene		15.185	15.185	0.947	0m	N.D.	d	
69) 2-Chlorotoluene		15.197	15.197	0.948	0m	N.D.	d	
70) 4-Chlorotoluene		15.292	15.292	0.953	0m	N.D.	d	
71) tert-Butylbenzene		15.636	15.565	0.975	0m	N.D.	d	
72) 1,2,4-Trimethylbenzene		15.612	15.600	0.973	0m	N.D.	d	
73) sec-Butylbenzene		15.790	15.790	0.984	0m	N.D.	d	
74) 4-Isopropyltoluene		15.908	15.908	0.992	0m	N.D.	d	
75) 1,3-Dichlorobenzene		15.991	15.991	0.997	0m	N.D.	d	
76) 1,4-Dichlorobenzene		16.074	16.074	1.002	0m	N.D.	d	
77) n-Butylbenzene		16.359	16.359	1.020	0m	N.D.	d	
78) 1,2-Dichlorobenzene		16.513	16.513	1.030	0m	N.D.	d	
79) 1,2-Dibromo-3-chloropr...		0.000	17.415	0.000	0	N.D.		
80) 1,2,4-Trichlorobenzene		18.505	18.505	1.154	0m	N.D.	d	
81) Hexachlorobutadiene		18.683	18.683	1.165	0m	N.D.	d	
82) Naphthalene		18.920	18.921	1.180	0m	N.D.	d	
83) 1,2,3-Trichlorobenzene		19.276	19.276	1.202	0m	N.D.	d	
85) Acrolein	56	6.979	6.979	0.668	20967	25.61	ug/L	98
86) Trichlorotrifluoroethane	85	7.133	7.133	0.682	74691	29.53	ug/L	97
87) Allyl chloride	41	7.596	7.596	0.727	229259	29.27	ug/L	98
88) Acrylonitrile	53	8.011	7.999	0.766	45920	28.38	ug/L	98
89) 2-Chloro-1,3-butadiene	53	8.687	8.675	0.831	42016	5.48	ug/L	96
90) Ethyl acetate	43	9.161	9.161	0.876	107640	30.37	ug/L	98
91) Propionitrile	54	9.244	9.244	0.884	16619	28.24	ug/L	96
92) Methacrylonitrile	41	9.422	9.422	0.901	65147	28.74	ug/L	100
93) Tetrahydrofuran	42	9.540	9.540	0.913	36301	29.12	ug/L	99
94) Isobutyl alcohol	41	9.849	9.849	0.942	45332	299.03	ug/L	92
95) Methyl methacrylate	69	11.046	11.046	1.057	82915	29.08	ug/L	99
96) 1,4-Dioxane	88	11.177	11.165	1.069	14713	283.64	ug/L	99

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W524.D
Acq On : 16 Jun 2017 21:28
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-17|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL25 5mL n/a MIX[B]0612-03A+0526-03A
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Jun 17 13:37:26 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

	Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	
97)	2-Nitropropane	43	11.544	11.544	1.104	25731	24.70	ug/L	93
99)	Ethyl methacrylate	69	12.315	12.303	0.903	165244	29.14	ug/L	98
101)	cis-1,4-Dichloro-2-butene	53	14.651	14.651	0.913	45594	27.89	ug/L	86
102)	Cyclohexanone	42	14.782	14.782	0.922	15407	125.54	ug/L	97
103)	trans-1,4-Dichloro-2-b...	53	14.936	14.936	0.931	42710	28.49	ug/L	90
104)	Pentachloroethane	167	15.636	15.636	0.975	115689	27.31	ug/L	86
105)	Benzyl chloride	91	16.193	16.193	1.010	258053	28.37	ug/L	96
106)	bis(2-Chloroisopropyl)...	45	16.584	16.584	1.034	71666	28.56	ug/L	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed
(A) = Over the calibration range (d) = deleted

Quantitation Report
GEL Laboratories, LLC

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Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W524.D
Acq On    : 16 Jun 2017  21:28
Operator  : RXY1
InstName  : VOA9
Sample    : |W9VM170616-17|ICAL|1|VOA|1|VOA8260BL|
Misc      : GEL25 5mL n/a MIX[B]0612-03A+0526-03A
ALS Vial  : 24   Sample Multiplier: 1

Quant Time: Jun 17 13:37:26 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title  : Volatile Organics 8260B                    SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE
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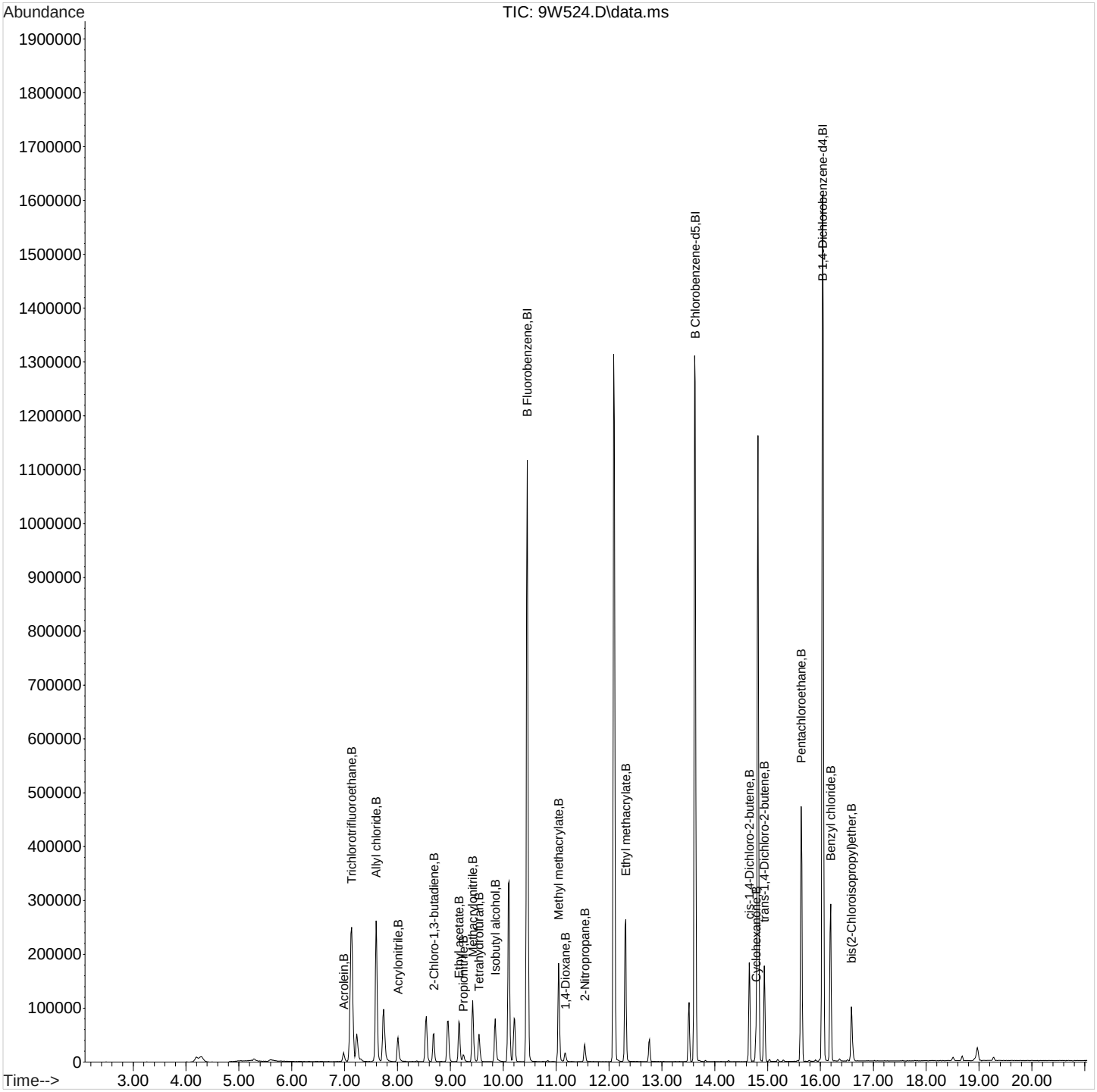

July 17, 2017

Quantitation Report
GEL Laboratories, LLC

RY 06/17/2017

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W525.D
Acq On : 16 Jun 2017 21:56
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-18|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL50 5mL n/a MIX[B]0612-04A+0526-04A
ALS Vial : 25 Sample Multiplier: 1

EM 06/17/2017

Quant Time: Jun 17 13:37:29 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	Dev(Min)
Internal Standards								
1) Fluorobenzene	96	10.454	10.454	1.000	0m	50.00	ug/L	0.00
43) Chlorobenzene-d5	117	13.632	13.632	1.000	0m	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	0m	50.00	ug/L	0.00
84) B Fluorobenzene	96	10.454	10.454	1.000	1240294	50.00	ug/L	0.00
98) B Chlorobenzene-d5	117	13.632	13.632	1.000	985524	50.00	ug/L	0.00
100) B 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	593806	50.00	ug/L	0.00
System Monitoring Compounds								Dev(Min)
30) 1,2-Dichloroethane-d4	65	10.098	10.098	0.966	0d	0.00	ug/L	
45) Toluene-d8	98	12.090	12.090	0.887	0d	0.00	ug/L	
63) Bromofluorobenzene	95	14.817	14.817	0.924	0d	0.00	ug/L	

Target Compounds	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	QValue
2) Dichlorodifluoromethane		0.000	4.672	0.000	0	N.D.		
3) Chloromethane		0.000	5.011	0.000	0	N.D.		
4) Vinyl chloride		0.000	5.260	0.000	0	N.D.		
5) Bromomethane		0.000	5.852	0.000	0	N.D.		
6) Chloroethane		0.000	6.007	0.000	0	N.D.		
7) Trichlorofluoromethane		0.000	6.410	0.000	0	N.D.		
8) Ethyl ether		0.000	6.766	0.000	0	N.D.		
9) Acetone		7.133	7.157	0.682	0m	N.D.	d	
10) 1,1-Dichloroethylene		7.121	7.157	0.681	0m	N.D.	d	
11) Iodomethane		0.000	7.418	0.000	0	N.D.		
12) Acetonitrile		7.596	7.513	0.727	0m	N.D.	d	
13) Methyl acetate		7.548	7.548	0.722	0m	N.D.	d	
14) Carbon disulfide		7.596	7.548	0.727	0m	N.D.	d	
15) Methylene chloride		7.750	7.738	0.741	0m	N.D.	d	
16) tert-Butyl methyl ether		8.046	8.034	0.770	0m	N.D.	d	
17) trans-1,2-Dichloroethy...		0.000	8.082	0.000	0	N.D.		
18) Hexane		8.366	8.355	0.800	0m	N.D.	d	
19) Vinyl acetate		8.544	8.521	0.817	0m	N.D.	d	
20) 1,1-Dichloroethane		8.687	8.580	0.831	0m	N.D.	d	
21) 2-Butanone		9.161	9.161	0.876	0m	N.D.	d	
22) cis-1,2-Dichloroethylene		9.161	9.220	0.876	0m	N.D.	d	
23) 2,2-Dichloropropane		0.000	9.244	0.000	0	N.D.		
24) Bromochloromethane		0.000	9.493	0.000	0	N.D.		
25) Chloroform		0.000	9.529	0.000	0	N.D.		
26) 1,1,1-Trichloroethane		0.000	9.801	0.000	0	N.D.		
27) Cyclohexane		9.849	9.896	0.942	0m	N.D.	d	
28) 1,1-Dichloropropene		0.000	9.956	0.000	0	N.D.		
29) Carbon tetrachloride		0.000	10.003	0.000	0	N.D.		
31) 1,2-Dichloroethane		0.000	10.181	0.000	0	N.D.		
32) Benzene		10.204	10.205	0.976	0m	N.D.	d	
33) Cyclohexene		0.000	10.311	0.000	0	N.D.		
34) n-Butyl alcohol		0.000	10.537	0.000	0	N.D.		
35) Trichloroethylene		10.845	10.833	1.037	0m	N.D.	d	
36) 2-Pentanone		11.046	10.916	1.057	0m	N.D.	d	
37) 1,2-Dichloropropane		0.000	11.094	0.000	0	N.D.		
38) Methylcyclohexane		11.046	11.082	1.057	0m	N.D.	d	
39) Dibromomethane		0.000	11.224	0.000	0	N.D.		

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W525.D
Acq On : 16 Jun 2017 21:56
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-18|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL50 5mL n/a MIX[B]0612-04A+0526-04A
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jun 17 13:37:29 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	
40) Bromodichloromethane		0.000	11.331	0.000	0	N.D.		
41) 2-Chloroethylvinyl ether		0.000	11.545	0.000	0	N.D.		
42) cis-1,3-Dichloropropylene		0.000	11.782	0.000	0	N.D.		
44) 4-Methyl-2-pentanone		0.000	11.865	0.000	0	N.D.		
46) Toluene		12.173	12.173	0.893	0m	N.D.	d	
47) trans-1,3-Dichloroprop...		0.000	12.315	0.000	0	N.D.		
48) 1,1,2-Trichloroethane		0.000	12.541	0.000	0	N.D.		
49) 2-Hexanone		12.730	12.719	0.934	0m	N.D.	d	
50) 1,3-Dichloropropane		0.000	12.742	0.000	0	N.D.		
51) Tetrachloroethylene		12.766	12.766	0.936	0m	N.D.	d	
52) Dibromochloromethane		0.000	13.003	0.000	0	N.D.		
53) 1,2-Dibromoethane		13.181	13.181	0.967	0m	N.D.	d	
54) Chlorobenzene		13.667	13.655	1.003	0m	N.D.	d	
55) 1,1,1,2-Tetrachloroethane		0.000	13.715	0.000	0	N.D.		
56) Ethylbenzene		13.715	13.715	1.006	0m	N.D.	d	
57) m,p-Xylenes		13.821	13.821	1.014	0m	N.D.	d	
58) o-Xylene		0.000	14.260	0.000	0	N.D.		
59) Styrene		14.260	14.260	1.046	0m	N.D.	d	
61) Bromoform		0.000	14.533	0.000	0	N.D.		
62) Isopropylbenzene		14.616	14.616	0.911	0m	N.D.	d	
64) 1,1,2,2-Tetrachloroethane		0.000	14.889	0.000	0	N.D.		
65) 1,2,3-Trichloropropane		0.000	14.983	0.000	0	N.D.		
66) Bromobenzene		15.031	15.031	0.937	0m	N.D.	d	
67) n-Propylbenzene		15.043	15.043	0.938	0m	N.D.	d	
68) 1,3,5-Trimethylbenzene		15.185	15.185	0.947	0m	N.D.	d	
69) 2-Chlorotoluene		15.197	15.197	0.948	0m	N.D.	d	
70) 4-Chlorotoluene		15.304	15.292	0.954	0m	N.D.	d	
71) tert-Butylbenzene		15.636	15.565	0.975	0m	N.D.	d	
72) 1,2,4-Trimethylbenzene		15.600	15.600	0.973	0m	N.D.	d	
73) sec-Butylbenzene		15.790	15.790	0.984	0m	N.D.	d	
74) 4-Isopropyltoluene		15.908	15.908	0.992	0m	N.D.	d	
75) 1,3-Dichlorobenzene		15.991	15.991	0.997	0m	N.D.	d	
76) 1,4-Dichlorobenzene		16.074	16.074	1.002	0m	N.D.	d	
77) n-Butylbenzene		16.359	16.359	1.020	0m	N.D.	d	
78) 1,2-Dichlorobenzene		16.513	16.513	1.030	0m	N.D.	d	
79) 1,2-Dibromo-3-chloropr...		0.000	17.415	0.000	0	N.D.		
80) 1,2,4-Trichlorobenzene		18.517	18.505	1.155	0m	N.D.	d	
81) Hexachlorobutadiene		18.683	18.683	1.165	0m	N.D.	d	
82) Naphthalene		18.920	18.921	1.180	0m	N.D.	d	
83) 1,2,3-Trichlorobenzene		19.264	19.276	1.201	0m	N.D.	d	
85) Acrolein	56	6.979	6.979	0.668	42425	49.33	ug/L	99
86) Trichlorotrifluoroethane	85	7.133	7.133	0.682	140538	52.90	ug/L	97
87) Allyl chloride	41	7.596	7.596	0.727	443040	53.85	ug/L	98
88) Acrylonitrile	53	8.011	7.999	0.766	88868	52.29	ug/L	99
89) 2-Chloro-1,3-butadiene	53	8.687	8.675	0.831	83736	10.40	ug/L	100
90) Ethyl acetate	43	9.161	9.161	0.876	200399	53.82	ug/L	99
91) Propionitrile	54	9.244	9.244	0.884	32324	52.29	ug/L	97
92) Methacrylonitrile	41	9.422	9.422	0.901	128328	53.90	ug/L	99
93) Tetrahydrofuran	42	9.540	9.540	0.913	68332	52.18	ug/L	99
94) Isobutyl alcohol	41	9.849	9.849	0.942	84738	532.11	ug/L	95
95) Methyl methacrylate	69	11.046	11.046	1.057	159332	53.20	ug/L	97
96) 1,4-Dioxane	88	11.177	11.165	1.069	27709	508.52	ug/L	100

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W525.D
Acq On : 16 Jun 2017 21:56
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-18|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL50 5mL n/a MIX[B]0612-04A+0526-04A
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jun 17 13:37:29 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

	Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	
97)	2-Nitropropane	43	11.544	11.544	1.104	53224	48.64	ug/L	96
99)	Ethyl methacrylate	69	12.315	12.303	0.903	320091	54.97	ug/L	99
101)	cis-1,4-Dichloro-2-butene	53	14.651	14.651	0.913	90109	53.79	ug/L	91
102)	Cyclohexanone	42	14.782	14.782	0.922	31269	248.61	ug/L	97
103)	trans-1,4-Dichloro-2-b...	53	14.936	14.936	0.931	83017	54.03	ug/L	94
104)	Pentachloroethane	167	15.636	15.636	0.975	237433	54.70	ug/L	92
105)	Benzyl chloride	91	16.193	16.193	1.010	517211	55.48	ug/L	96
106)	bis(2-Chloroisopropyl)...	45	16.584	16.584	1.034	137012	53.27	ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed
(A) = Over the calibration range (d) = deleted

Quantitation Report
GEL Laboratories, LLC

```
Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W525.D
Acq On    : 16 Jun 2017  21:56
Operator  : RXY1
InstName  : VOA9
Sample    : |W9VM170616-18|ICAL|1|VOA|1|VOA8260BL|
Misc      : GEL50 5mL n/a MIX[B]0612-04A+0526-04A
ALS Vial  : 25   Sample Multiplier: 1

Quant Time: Jun 17 13:37:29 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title  : Volatile Organics 8260B                    SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE
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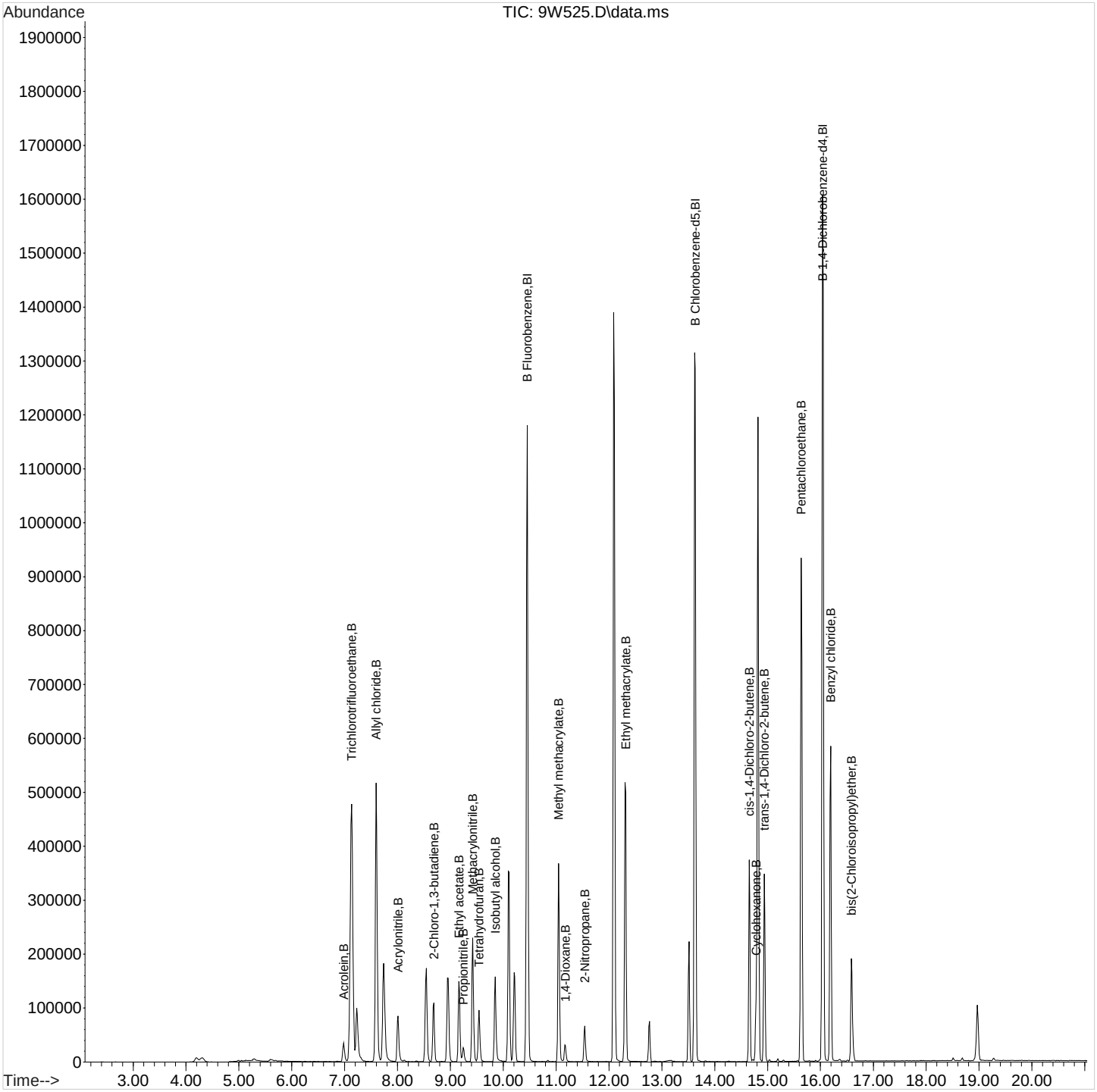

July 17, 2017

Quantitation Report
GEL Laboratories, LLC

RY 06/17/2017

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W526.D
Acq On : 16 Jun 2017 22:24
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-19|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL100 5mL n/a MIX[B]0612-05A+0526-05A
ALS Vial : 26 Sample Multiplier: 1

EM 06/17/2017

Quant Time: Jun 17 13:37:32 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	Dev(Min)
Internal Standards								
1) Fluorobenzene	96	10.453	10.454	1.000	0m	50.00	ug/L	0.00
43) Chlorobenzene-d5	117	13.631	13.632	1.000	0m	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	0m	50.00	ug/L	0.00
84) B Fluorobenzene	96	10.453	10.454	1.000	1218985	50.00	ug/L	0.00
98) B Chlorobenzene-d5	117	13.631	13.632	1.000	942948	50.00	ug/L	0.00
100) B 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	574350	50.00	ug/L	0.00
System Monitoring Compounds								Dev(Min)
30) 1,2-Dichloroethane-d4	65	10.110	10.098	0.967	0d	0.00	ug/L	
45) Toluene-d8	98	12.090	12.090	0.887	0d	0.00	ug/L	
63) Bromofluorobenzene	95	14.817	14.817	0.924	0d	0.00	ug/L	

Target Compounds	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	QValue
2) Dichlorodifluoromethane		0.000	4.672	0.000	0	N.D.		
3) Chloromethane		0.000	5.011	0.000	0	N.D.		
4) Vinyl chloride		0.000	5.260	0.000	0	N.D.		
5) Bromomethane		0.000	5.852	0.000	0	N.D.		
6) Chloroethane		0.000	6.007	0.000	0	N.D.		
7) Trichlorofluoromethane		0.000	6.410	0.000	0	N.D.		
8) Ethyl ether		0.000	6.766	0.000	0	N.D.		
9) Acetone		7.133	7.157	0.682	0m	N.D.	d	
10) 1,1-Dichloroethylene		7.133	7.157	0.682	0m	N.D.	d	
11) Iodomethane		0.000	7.418	0.000	0	N.D.		
12) Acetonitrile		7.596	7.513	0.727	0m	N.D.	d	
13) Methyl acetate		7.560	7.548	0.723	0m	N.D.	d	
14) Carbon disulfide		7.596	7.548	0.727	0m	N.D.	d	
15) Methylene chloride		7.750	7.738	0.741	0m	N.D.	d	
16) tert-Butyl methyl ether		8.034	8.034	0.769	0m	N.D.	d	
17) trans-1,2-Dichloroethy...		0.000	8.082	0.000	0	N.D.		
18) Hexane		8.354	8.355	0.799	0m	N.D.	d	
19) Vinyl acetate		8.544	8.521	0.817	0m	N.D.	d	
20) 1,1-Dichloroethane		8.686	8.580	0.831	0m	N.D.	d	
21) 2-Butanone		9.161	9.161	0.876	0m	N.D.	d	
22) cis-1,2-Dichloroethylene		9.161	9.220	0.876	0m	N.D.	d	
23) 2,2-Dichloropropane		0.000	9.244	0.000	0	N.D.		
24) Bromochloromethane		0.000	9.493	0.000	0	N.D.		
25) Chloroform		0.000	9.529	0.000	0	N.D.		
26) 1,1,1-Trichloroethane		0.000	9.801	0.000	0	N.D.		
27) Cyclohexane		9.849	9.896	0.942	0m	N.D.	d	
28) 1,1-Dichloropropene		0.000	9.956	0.000	0	N.D.		
29) Carbon tetrachloride		0.000	10.003	0.000	0	N.D.		
31) 1,2-Dichloroethane		0.000	10.181	0.000	0	N.D.		
32) Benzene		10.204	10.205	0.976	0m	N.D.	d	
33) Cyclohexene		10.453	10.311	1.000	0m	N.D.	d	
34) n-Butyl alcohol		0.000	10.537	0.000	0	N.D.		
35) Trichloroethylene		10.845	10.833	1.037	0m	N.D.	d	
36) 2-Pentanone		11.046	10.916	1.057	0m	N.D.	d	
37) 1,2-Dichloropropane		0.000	11.094	0.000	0	N.D.		
38) Methylcyclohexane		11.046	11.082	1.057	0m	N.D.	d	
39) Dibromomethane		0.000	11.224	0.000	0	N.D.		

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W526.D
Acq On : 16 Jun 2017 22:24
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-19|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL100 5mL n/a MIX[B]0612-05A+0526-05A
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Jun 17 13:37:32 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	
40) Bromodichloromethane		0.000	11.331	0.000	0	N.D.		
41) 2-Chloroethylvinyl ether		0.000	11.545	0.000	0	N.D.		
42) cis-1,3-Dichloropropylene		0.000	11.782	0.000	0	N.D.		
44) 4-Methyl-2-pentanone		0.000	11.865	0.000	0	N.D.		
46) Toluene		12.173	12.173	0.893	0m	N.D.	d	
47) trans-1,3-Dichloroprop...		0.000	12.315	0.000	0	N.D.		
48) 1,1,2-Trichloroethane		0.000	12.541	0.000	0	N.D.		
49) 2-Hexanone		12.861	12.719	0.943	0m	N.D.	d	
50) 1,3-Dichloropropane		0.000	12.742	0.000	0	N.D.		
51) Tetrachloroethylene		12.766	12.766	0.936	0m	N.D.	d	
52) Dibromochloromethane		0.000	13.003	0.000	0	N.D.		
53) 1,2-Dibromoethane		13.181	13.181	0.967	0m	N.D.	d	
54) Chlorobenzene		13.655	13.655	1.002	0m	N.D.	d	
55) 1,1,1,2-Tetrachloroethane		0.000	13.715	0.000	0	N.D.		
56) Ethylbenzene		13.714	13.715	1.006	0m	N.D.	d	
57) m,p-Xylenes		13.821	13.821	1.014	0m	N.D.	d	
58) o-Xylene		0.000	14.260	0.000	0	N.D.		
59) Styrene		14.272	14.260	1.047	0m	N.D.	d	
61) Bromoform		0.000	14.533	0.000	0	N.D.		
62) Isopropylbenzene		14.616	14.616	0.911	0m	N.D.	d	
64) 1,1,2,2-Tetrachloroethane		14.936	14.889	0.931	0m	N.D.	d	
65) 1,2,3-Trichloropropane		0.000	14.983	0.000	0	N.D.		
66) Bromobenzene		15.031	15.031	0.937	0m	N.D.	d	
67) n-Propylbenzene		15.043	15.043	0.938	0m	N.D.	d	
68) 1,3,5-Trimethylbenzene		15.185	15.185	0.947	0m	N.D.	d	
69) 2-Chlorotoluene		15.197	15.197	0.948	0m	N.D.	d	
70) 4-Chlorotoluene		15.292	15.292	0.953	0m	N.D.	d	
71) tert-Butylbenzene		15.636	15.565	0.975	0m	N.D.	d	
72) 1,2,4-Trimethylbenzene		15.612	15.600	0.973	0m	N.D.	d	
73) sec-Butylbenzene		15.790	15.790	0.984	0m	N.D.	d	
74) 4-Isopropyltoluene		15.908	15.908	0.992	0m	N.D.	d	
75) 1,3-Dichlorobenzene		15.991	15.991	0.997	0m	N.D.	d	
76) 1,4-Dichlorobenzene		16.074	16.074	1.002	0m	N.D.	d	
77) n-Butylbenzene		0.000	16.359	0.000	0	N.D.		
78) 1,2-Dichlorobenzene		16.525	16.513	1.030	0m	N.D.	d	
79) 1,2-Dibromo-3-chloropr...		0.000	17.415	0.000	0	N.D.		
80) 1,2,4-Trichlorobenzene		18.505	18.505	1.154	0m	N.D.	d	
81) Hexachlorobutadiene		18.683	18.683	1.165	0m	N.D.	d	
82) Naphthalene		18.920	18.921	1.180	0m	N.D.	d	
83) 1,2,3-Trichlorobenzene		19.276	19.276	1.202	0m	N.D.	d	
85) Acrolein	56	6.979	6.979	0.668	91239	107.94	ug/L	99
86) Trichlorotrifluoroethane	85	7.133	7.133	0.682	260290	99.69	ug/L	98
87) Allyl chloride	41	7.596	7.596	0.727	832291	102.93	ug/L	99
88) Acrylonitrile	53	8.011	7.999	0.766	164193	98.29	ug/L	99
89) 2-Chloro-1,3-butadiene	53	8.686	8.675	0.831	160920	20.34	ug/L	100
90) Ethyl acetate	43	9.161	9.161	0.876	360280	98.44	ug/L	99
91) Propionitrile	54	9.244	9.244	0.884	58784	96.76	ug/L	97
92) Methacrylonitrile	41	9.422	9.422	0.901	232044	99.17	ug/L	99
93) Tetrahydrofuran	42	9.540	9.540	0.913	122349	95.07	ug/L	99
94) Isobutyl alcohol	41	9.849	9.849	0.942	151986	971.07	ug/L	97
95) Methyl methacrylate	69	11.046	11.046	1.057	288823	98.11	ug/L	99
96) 1,4-Dioxane	88	11.165	11.165	1.068	55089	1028.68	ug/L	99

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W526.D
Acq On : 16 Jun 2017 22:24
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-19|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL100 5mL n/a MIX[B]0612-05A+0526-05A
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Jun 17 13:37:32 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

	Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	
97)	2-Nitropropane	43	11.544	11.544	1.104	106213	98.75	ug/L	97
99)	Ethyl methacrylate	69	12.303	12.303	0.903	560757	100.66	ug/L	99
101)	cis-1,4-Dichloro-2-butene	53	14.651	14.651	0.913	164543	101.55	ug/L	94
102)	Cyclohexanone	42	14.782	14.782	0.922	63548	522.36	ug/L	99
103)	trans-1,4-Dichloro-2-b...	53	14.936	14.936	0.931	147414	99.19	ug/L	97
104)	Pentachloroethane	167	15.636	15.636	0.975	440085	104.82	ug/L	96
105)	Benzyl chloride	91	16.193	16.193	1.010	945951	104.91	ug/L	98
106)	bis(2-Chloroisopropyl)...	45	16.584	16.584	1.034	245449	98.67	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed
(A) = Over the calibration range (d) = deleted

Quantitation Report
GEL Laboratories, LLC

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Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W526.D
Acq On    : 16 Jun 2017  22:24
Operator  : RXY1
InstName  : VOA9
Sample    : |W9VM170616-19|ICAL|1|VOA|1|VOA8260BL|
Misc      : GEL100 5mL n/a MIX[B]0612-05A+0526-05A
ALS Vial  : 26   Sample Multiplier: 1

Quant Time: Jun 17 13:37:32 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title  : Volatile Organics 8260B                    SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE
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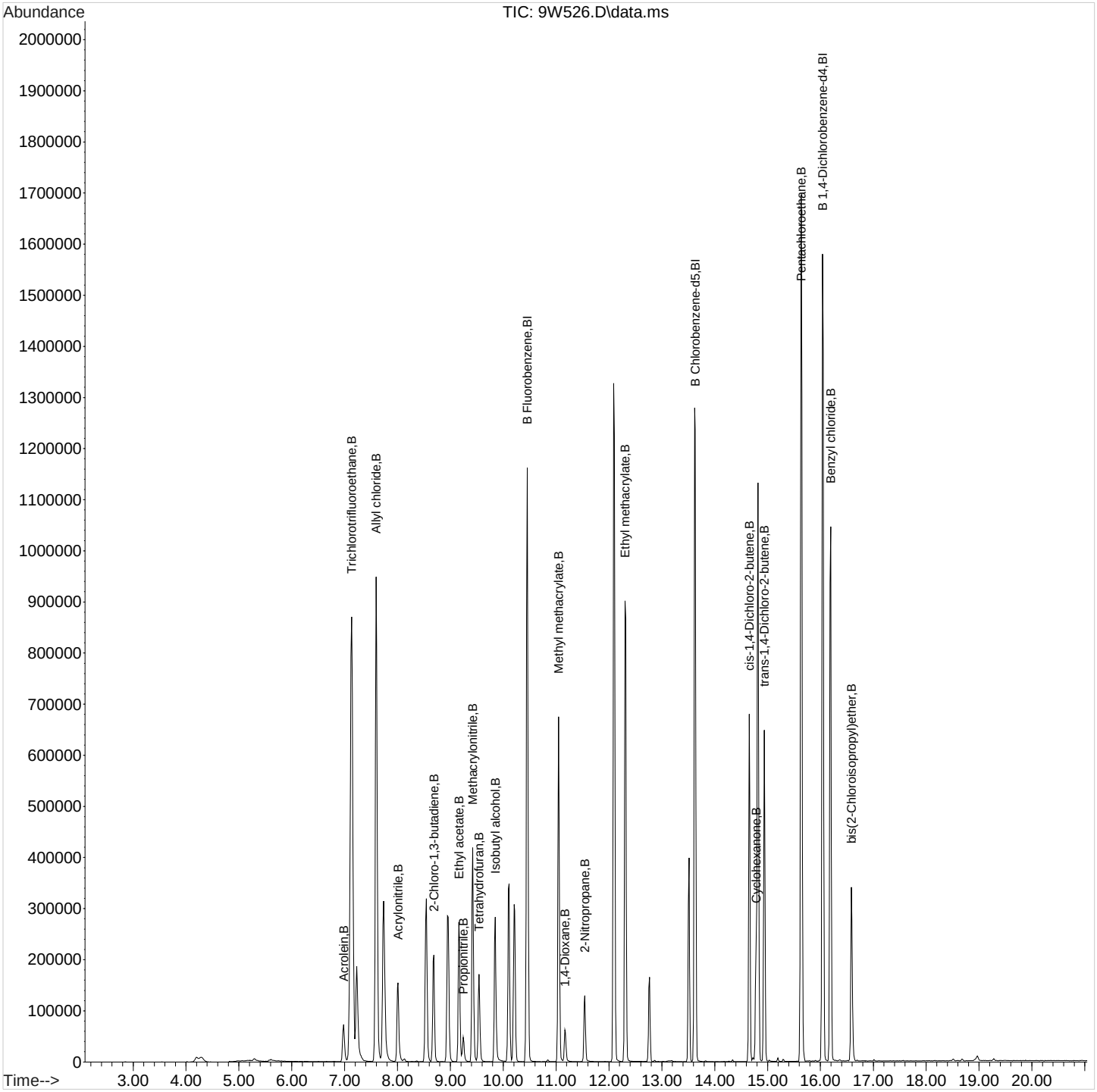

July 17, 2017

Quantitation Report
GEL Laboratories, LLC

RY 06/17/2017

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W527.D
Acq On : 16 Jun 2017 22:52
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-20|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL250 5mL n/a MIX[B]0612-06A+0526-06A
ALS Vial : 27 Sample Multiplier: 1

EM 06/17/2017

Quant Time: Jun 17 13:37:34 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	Dev(Min)
Internal Standards								
1) Fluorobenzene	96	10.454	10.454	1.000	0m	50.00	ug/L	0.00
43) Chlorobenzene-d5	117	13.632	13.632	1.000	0m	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	0m	50.00	ug/L	0.00
84) B Fluorobenzene	96	10.454	10.454	1.000	1207014	50.00	ug/L	0.00
98) B Chlorobenzene-d5	117	13.632	13.632	1.000	967367	50.00	ug/L	0.00
100) B 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	587434	50.00	ug/L	0.00
System Monitoring Compounds								Dev(Min)
30) 1,2-Dichloroethane-d4	65	10.110	10.098	0.967	0d	0.00	ug/L	
45) Toluene-d8	98	12.090	12.090	0.887	0d	0.00	ug/L	
63) Bromofluorobenzene	95	14.817	14.817	0.924	0d	0.00	ug/L	

Target Compounds	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	QValue
2) Dichlorodifluoromethane		0.000	4.672	0.000	0	N.D.		
3) Chloromethane		0.000	5.011	0.000	0	N.D.		
4) Vinyl chloride		0.000	5.260	0.000	0	N.D.		
5) Bromomethane		0.000	5.852	0.000	0	N.D.		
6) Chloroethane		0.000	6.007	0.000	0	N.D.		
7) Trichlorofluoromethane		6.410	6.410	0.613	0m	N.D.	d	
8) Ethyl ether		0.000	6.766	0.000	0	N.D.		
9) Acetone		7.133	7.157	0.682	0m	N.D.	d	
10) 1,1-Dichloroethylene		7.133	7.157	0.682	0m	N.D.	d	
11) Iodomethane		0.000	7.418	0.000	0	N.D.		
12) Acetonitrile		7.596	7.513	0.727	0m	N.D.	d	
13) Methyl acetate		7.548	7.548	0.722	0m	N.D.	d	
14) Carbon disulfide		7.596	7.548	0.727	0m	N.D.	d	
15) Methylene chloride		7.750	7.738	0.741	0m	N.D.	d	
16) tert-Butyl methyl ether		8.046	8.034	0.770	0m	N.D.	d	
17) trans-1,2-Dichloroethy...		0.000	8.082	0.000	0	N.D.		
18) Hexane		8.355	8.355	0.799	0m	N.D.	d	
19) Vinyl acetate		8.544	8.521	0.817	0m	N.D.	d	
20) 1,1-Dichloroethane		8.687	8.580	0.831	0m	N.D.	d	
21) 2-Butanone		9.161	9.161	0.876	0m	N.D.	d	
22) cis-1,2-Dichloroethylene		9.161	9.220	0.876	0m	N.D.	d	
23) 2,2-Dichloropropane		0.000	9.244	0.000	0	N.D.		
24) Bromochloromethane		0.000	9.493	0.000	0	N.D.		
25) Chloroform		9.529	9.529	0.912	0m	N.D.	d	
26) 1,1,1-Trichloroethane		0.000	9.801	0.000	0	N.D.		
27) Cyclohexane		9.849	9.896	0.942	0m	N.D.	d	
28) 1,1-Dichloropropene		0.000	9.956	0.000	0	N.D.		
29) Carbon tetrachloride		0.000	10.003	0.000	0	N.D.		
31) 1,2-Dichloroethane		10.204	10.181	0.976	0m	N.D.	d	
32) Benzene		10.204	10.205	0.976	0m	N.D.	d	
33) Cyclohexene		0.000	10.311	0.000	0	N.D.		
34) n-Butyl alcohol		0.000	10.537	0.000	0	N.D.		
35) Trichloroethylene		10.845	10.833	1.037	0m	N.D.	d	
36) 2-Pentanone		10.940	10.916	1.047	0m	N.D.	d	
37) 1,2-Dichloropropane		0.000	11.094	0.000	0	N.D.		
38) Methylcyclohexane		11.046	11.082	1.057	0m	N.D.	d	
39) Dibromomethane		0.000	11.224	0.000	0	N.D.		

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W527.D
Acq On : 16 Jun 2017 22:52
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-20|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL250 5mL n/a MIX[B]0612-06A+0526-06A
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Jun 17 13:37:34 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	
40) Bromodichloromethane		0.000	11.331	0.000	0	N.D.		
41) 2-Chloroethylvinyl ether		0.000	11.545	0.000	0	N.D.		
42) cis-1,3-Dichloropropylene		0.000	11.782	0.000	0	N.D.		
44) 4-Methyl-2-pentanone		0.000	11.865	0.000	0	N.D.		
46) Toluene		12.173	12.173	0.893	0m	N.D.	d	
47) trans-1,3-Dichloroprop...		0.000	12.315	0.000	0	N.D.		
48) 1,1,2-Trichloroethane		0.000	12.541	0.000	0	N.D.		
49) 2-Hexanone		12.730	12.719	0.934	0m	N.D.	d	
50) 1,3-Dichloropropane		0.000	12.742	0.000	0	N.D.		
51) Tetrachloroethylene		12.766	12.766	0.936	0m	N.D.	d	
52) Dibromochloromethane		0.000	13.003	0.000	0	N.D.		
53) 1,2-Dibromoethane		13.181	13.181	0.967	0m	N.D.	d	
54) Chlorobenzene		13.655	13.655	1.002	0m	N.D.	d	
55) 1,1,1,2-Tetrachloroethane		13.715	13.715	1.006	0m	N.D.	d	
56) Ethylbenzene		13.715	13.715	1.006	0m	N.D.	d	
57) m,p-Xylenes		13.821	13.821	1.014	0m	N.D.	d	
58) o-Xylene		0.000	14.260	0.000	0	N.D.		
59) Styrene		14.272	14.260	1.047	0m	N.D.	d	
61) Bromoform		0.000	14.533	0.000	0	N.D.		
62) Isopropylbenzene		14.616	14.616	0.911	0m	N.D.	d	
64) 1,1,2,2-Tetrachloroethane		14.936	14.889	0.931	0m	N.D.	d	
65) 1,2,3-Trichloropropane		0.000	14.983	0.000	0	N.D.		
66) Bromobenzene		15.031	15.031	0.937	0m	N.D.	d	
67) n-Propylbenzene		15.043	15.043	0.938	0m	N.D.	d	
68) 1,3,5-Trimethylbenzene		15.185	15.185	0.947	0m	N.D.	d	
69) 2-Chlorotoluene		15.197	15.197	0.948	0m	N.D.	d	
70) 4-Chlorotoluene		15.292	15.292	0.953	0m	N.D.	d	
71) tert-Butylbenzene		15.636	15.565	0.975	0m	N.D.	d	
72) 1,2,4-Trimethylbenzene		15.600	15.600	0.973	0m	N.D.	d	
73) sec-Butylbenzene		15.790	15.790	0.984	0m	N.D.	d	
74) 4-Isopropyltoluene		15.908	15.908	0.992	0m	N.D.	d	
75) 1,3-Dichlorobenzene		15.991	15.991	0.997	0m	N.D.	d	
76) 1,4-Dichlorobenzene		16.074	16.074	1.002	0m	N.D.	d	
77) n-Butylbenzene		0.000	16.359	0.000	0	N.D.		
78) 1,2-Dichlorobenzene		16.525	16.513	1.030	0m	N.D.	d	
79) 1,2-Dibromo-3-chloropr...		0.000	17.415	0.000	0	N.D.		
80) 1,2,4-Trichlorobenzene		18.505	18.505	1.154	0m	N.D.	d	
81) Hexachlorobutadiene		18.683	18.683	1.165	0m	N.D.	d	
82) Naphthalene		18.920	18.921	1.180	0m	N.D.	d	
83) 1,2,3-Trichlorobenzene		19.276	19.276	1.202	0m	N.D.	d	
85) Acrolein	56	6.979	6.979	0.668	204960	244.89	ug/L	100
86) Trichlorotrifluoroethane	85	7.133	7.133	0.682	580671	224.60	ug/L	100
87) Allyl chloride	41	7.596	7.596	0.727	1781414	222.49	ug/L	100
88) Acrylonitrile	53	7.999	7.999	0.765	379525	229.46	ug/L	100
89) 2-Chloro-1,3-butadiene	53	8.675	8.675	0.830	372955	47.61	ug/L	100
90) Ethyl acetate	43	9.161	9.161	0.876	814300	224.71	ug/L	100
91) Propionitrile	54	9.244	9.244	0.884	137418	228.43	ug/L	100
92) Methacrylonitrile	41	9.422	9.422	0.901	521055	224.89	ug/L	100
93) Tetrahydrofuran	42	9.540	9.540	0.913	284001	222.86	ug/L	100
94) Isobutyl alcohol	41	9.849	9.849	0.942	349847	2257.41	ug/L	100
95) Methyl methacrylate	69	11.046	11.046	1.057	672366	230.67	ug/L	100
96) 1,4-Dioxane	88	11.165	11.165	1.068	130541	2461.77	ug/L	100

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W527.D
Acq On : 16 Jun 2017 22:52
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-20|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL250 5mL n/a MIX[B]0612-06A+0526-06A
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Jun 17 13:37:34 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

	Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	
97)	2-Nitropropane	43	11.544	11.544	1.104	281436	264.27	ug/L	100
99)	Ethyl methacrylate	69	12.303	12.303	0.903	1288739	225.49	ug/L	100
101)	cis-1,4-Dichloro-2-butene	53	14.651	14.651	0.913	398953	240.73	ug/L	100
102)	Cyclohexanone	42	14.782	14.782	0.922	156803	1260.19	ug/L	100
103)	trans-1,4-Dichloro-2-b...	53	14.936	14.936	0.931	357866	235.42	ug/L	100
104)	Pentachloroethane	167	15.636	15.636	0.975	1002439	233.43	ug/L	100
105)	Benzyl chloride	91	16.193	16.193	1.010	2157648	233.97	ug/L	100
106)	bis(2-Chloroisopropyl)...	45	16.584	16.584	1.034	584641	229.79	ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed
(A) = Over the calibration range (d) = deleted

Quantitation Report
GEL Laboratories, LLC

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Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W527.D
Acq On    : 16 Jun 2017  22:52
Operator  : RXY1
InstName  : VOA9
Sample    : |W9VM170616-20|ICAL|1|VOA|1|VOA8260BL|
Misc      : GEL250 5mL n/a MIX[B]0612-06A+0526-06A
ALS Vial  : 27   Sample Multiplier: 1

Quant Time: Jun 17 13:37:34 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title  : Volatile Organics 8260B                    SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE
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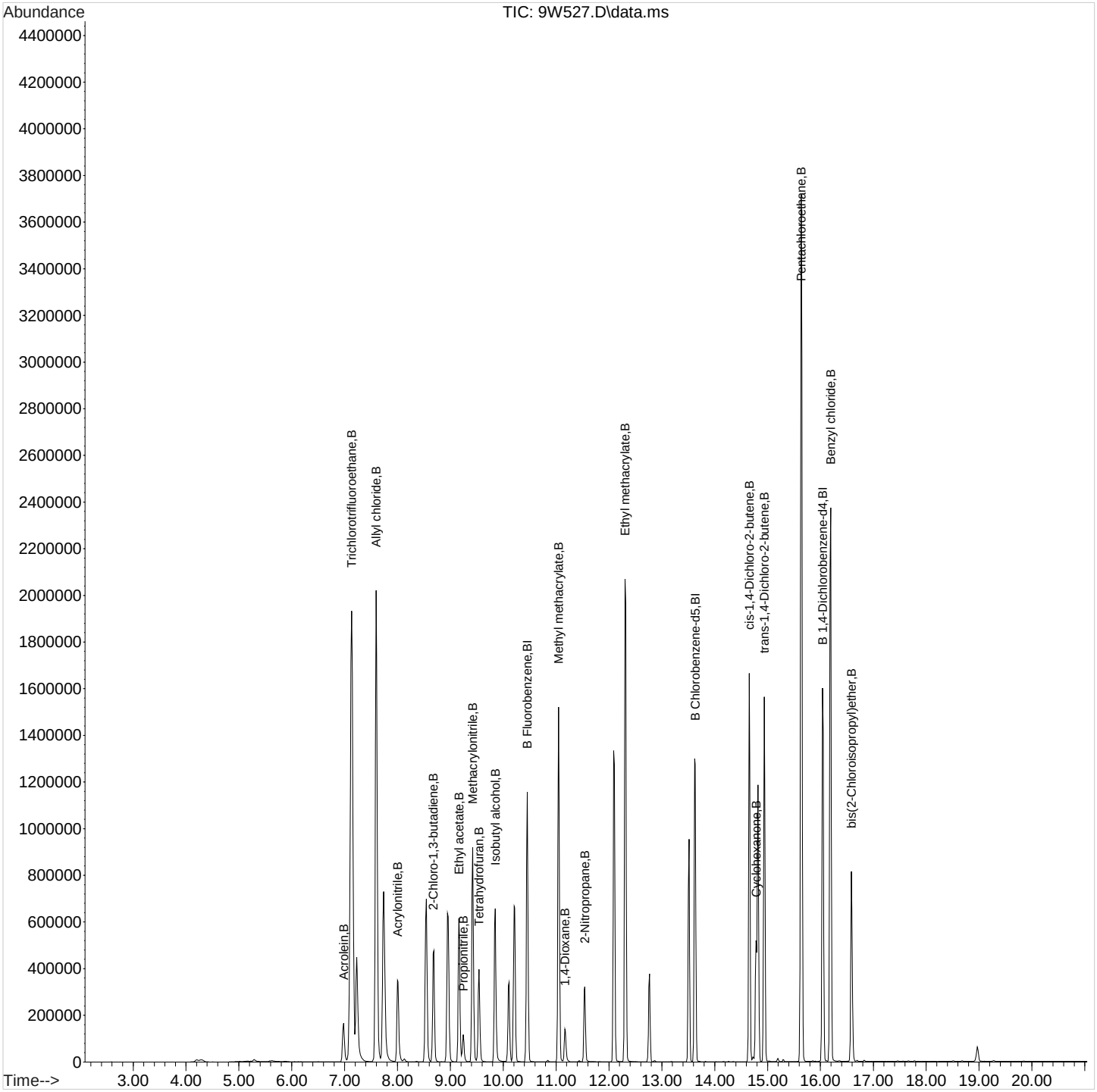

July 17, 2017

Quantitation Report
GEL Laboratories, LLC

RY 06/17/2017

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W528.D
Acq On : 16 Jun 2017 23:21
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-21|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL300 5mL n/a MIX[B]0612-07A+0526-07A
ALS Vial : 28 Sample Multiplier: 1

EM 06/17/2017

Quant Time: Jun 17 13:37:37 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	Dev(Min)
Internal Standards								
1) Fluorobenzene	96	10.454	10.454	1.000	0m	50.00	ug/L	0.00
43) Chlorobenzene-d5	117	13.632	13.632	1.000	0m	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	0m	50.00	ug/L	0.00
84) B Fluorobenzene	96	10.454	10.454	1.000	1174445	50.00	ug/L	0.00
98) B Chlorobenzene-d5	117	13.632	13.632	1.000	950952	50.00	ug/L	0.00
100) B 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	580311	50.00	ug/L	0.00
System Monitoring Compounds								Dev(Min)
30) 1,2-Dichloroethane-d4	65	10.098	10.098	0.966	0d	0.00	ug/L	
45) Toluene-d8	98	12.090	12.090	0.887	0d	0.00	ug/L	
63) Bromofluorobenzene	95	14.817	14.817	0.924	0d	0.00	ug/L	

Target Compounds	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	QValue
2) Dichlorodifluoromethane		0.000	4.672	0.000	0	N.D.		
3) Chloromethane		0.000	5.011	0.000	0	N.D.		
4) Vinyl chloride		0.000	5.260	0.000	0	N.D.		
5) Bromomethane		0.000	5.852	0.000	0	N.D.		
6) Chloroethane		0.000	6.007	0.000	0	N.D.		
7) Trichlorofluoromethane		6.422	6.410	0.614	0m	N.D.	d	
8) Ethyl ether		0.000	6.766	0.000	0	N.D.		
9) Acetone		7.133	7.157	0.682	0m	N.D.	d	
10) 1,1-Dichloroethylene		7.121	7.157	0.681	0m	N.D.	d	
11) Iodomethane		0.000	7.418	0.000	0	N.D.		
12) Acetonitrile		7.596	7.513	0.727	0m	N.D.	d	
13) Methyl acetate		7.548	7.548	0.722	0m	N.D.	d	
14) Carbon disulfide		7.596	7.548	0.727	0m	N.D.	d	
15) Methylene chloride		7.738	7.738	0.740	0m	N.D.	d	
16) tert-Butyl methyl ether		8.034	8.034	0.769	0m	N.D.	d	
17) trans-1,2-Dichloroethy...		0.000	8.082	0.000	0	N.D.		
18) Hexane		8.355	8.355	0.799	0m	N.D.	d	
19) Vinyl acetate		8.544	8.521	0.817	0m	N.D.	d	
20) 1,1-Dichloroethane		8.687	8.580	0.831	0m	N.D.	d	
21) 2-Butanone		9.161	9.161	0.876	0m	N.D.	d	
22) cis-1,2-Dichloroethylene		9.161	9.220	0.876	0m	N.D.	d	
23) 2,2-Dichloropropane		0.000	9.244	0.000	0	N.D.		
24) Bromochloromethane		0.000	9.493	0.000	0	N.D.		
25) Chloroform		9.529	9.529	0.912	0m	N.D.	d	
26) 1,1,1-Trichloroethane		0.000	9.801	0.000	0	N.D.		
27) Cyclohexane		9.849	9.896	0.942	0m	N.D.	d	
28) 1,1-Dichloropropene		0.000	9.956	0.000	0	N.D.		
29) Carbon tetrachloride		0.000	10.003	0.000	0	N.D.		
31) 1,2-Dichloroethane		10.204	10.181	0.976	0m	N.D.	d	
32) Benzene		10.204	10.205	0.976	0m	N.D.	d	
33) Cyclohexene		0.000	10.311	0.000	0	N.D.		
34) n-Butyl alcohol		10.548	10.537	1.009	0m	N.D.	d	
35) Trichloroethylene		10.845	10.833	1.037	0m	N.D.	d	
36) 2-Pentanone		11.046	10.916	1.057	0m	N.D.	d	
37) 1,2-Dichloropropane		0.000	11.094	0.000	0	N.D.		
38) Methylcyclohexane		11.046	11.082	1.057	0m	N.D.	d	
39) Dibromomethane		0.000	11.224	0.000	0	N.D.		

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W528.D
Acq On : 16 Jun 2017 23:21
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-21|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL300 5mL n/a MIX[B]0612-07A+0526-07A
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Jun 17 13:37:37 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	
40) Bromodichloromethane		0.000	11.331	0.000	0	N.D.		
41) 2-Chloroethylvinyl ether		0.000	11.545	0.000	0	N.D.		
42) cis-1,3-Dichloropropylene		0.000	11.782	0.000	0	N.D.		
44) 4-Methyl-2-pentanone		0.000	11.865	0.000	0	N.D.		
46) Toluene		12.173	12.173	0.893	0m	N.D.	d	
47) trans-1,3-Dichloroprop...		0.000	12.315	0.000	0	N.D.		
48) 1,1,2-Trichloroethane		0.000	12.541	0.000	0	N.D.		
49) 2-Hexanone		12.730	12.719	0.934	0m	N.D.	d	
50) 1,3-Dichloropropane		0.000	12.742	0.000	0	N.D.		
51) Tetrachloroethylene		12.766	12.766	0.936	0m	N.D.	d	
52) Dibromochloromethane		0.000	13.003	0.000	0	N.D.		
53) 1,2-Dibromoethane		13.181	13.181	0.967	0m	N.D.	d	
54) Chlorobenzene		13.667	13.655	1.003	0m	N.D.	d	
55) 1,1,1,2-Tetrachloroethane		13.703	13.715	1.005	0m	N.D.	d	
56) Ethylbenzene		13.715	13.715	1.006	0m	N.D.	d	
57) m,p-Xylenes		13.821	13.821	1.014	0m	N.D.	d	
58) o-Xylene		0.000	14.260	0.000	0	N.D.		
59) Styrene		14.272	14.260	1.047	0m	N.D.	d	
61) Bromoform		0.000	14.533	0.000	0	N.D.		
62) Isopropylbenzene		14.616	14.616	0.911	0m	N.D.	d	
64) 1,1,2,2-Tetrachloroethane		14.936	14.889	0.931	0m	N.D.	d	
65) 1,2,3-Trichloropropane		0.000	14.983	0.000	0	N.D.		
66) Bromobenzene		15.043	15.031	0.938	0m	N.D.	d	
67) n-Propylbenzene		15.043	15.043	0.938	0m	N.D.	d	
68) 1,3,5-Trimethylbenzene		15.185	15.185	0.947	0m	N.D.	d	
69) 2-Chlorotoluene		15.197	15.197	0.948	0m	N.D.	d	
70) 4-Chlorotoluene		15.292	15.292	0.953	0m	N.D.	d	
71) tert-Butylbenzene		15.636	15.565	0.975	0m	N.D.	d	
72) 1,2,4-Trimethylbenzene		15.612	15.600	0.973	0m	N.D.	d	
73) sec-Butylbenzene		15.790	15.790	0.984	0m	N.D.	d	
74) 4-Isopropyltoluene		15.908	15.908	0.992	0m	N.D.	d	
75) 1,3-Dichlorobenzene		15.991	15.991	0.997	0m	N.D.	d	
76) 1,4-Dichlorobenzene		16.074	16.074	1.002	0m	N.D.	d	
77) n-Butylbenzene		0.000	16.359	0.000	0	N.D.		
78) 1,2-Dichlorobenzene		16.513	16.513	1.030	0m	N.D.	d	
79) 1,2-Dibromo-3-chloropr...		0.000	17.415	0.000	0	N.D.		
80) 1,2,4-Trichlorobenzene		18.505	18.505	1.154	0m	N.D.	d	
81) Hexachlorobutadiene		18.683	18.683	1.165	0m	N.D.	d	
82) Naphthalene		18.921	18.921	1.180	0m	N.D.	d	
83) 1,2,3-Trichlorobenzene		19.276	19.276	1.202	0m	N.D.	d	
85) Acrolein	56	6.979	6.979	0.668	261610	321.24	ug/L	99
86) Trichlorotrifluoroethane	85	7.133	7.133	0.682	639059	254.03	ug/L	100
87) Allyl chloride	41	7.596	7.596	0.727	2093047	268.66	ug/L	99
88) Acrylonitrile	53	7.999	7.999	0.765	470036	292.06	ug/L	99
89) 2-Chloro-1,3-butadiene	53	8.675	8.675	0.830	437956	57.46	ug/L	100
90) Ethyl acetate	43	9.161	9.161	0.876	945147	268.05	ug/L	100
91) Propionitrile	54	9.244	9.244	0.884	170395	291.10	ug/L	100
92) Methacrylonitrile	41	9.422	9.422	0.901	633863	281.17	ug/L	99
93) Tetrahydrofuran	42	9.540	9.540	0.913	352095	283.96	ug/L	99
94) Isobutyl alcohol	41	9.849	9.849	0.942	431360	2860.56	ug/L	100
95) Methyl methacrylate	69	11.046	11.046	1.057	811890	286.26	ug/L	99
96) 1,4-Dioxane	88	11.165	11.165	1.068	165712	3211.69	ug/L	100

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W528.D
Acq On : 16 Jun 2017 23:21
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-21|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL300 5mL n/a MIX[B]0612-07A+0526-07A
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Jun 17 13:37:37 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

	Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	
97)	2-Nitropropane	43	11.545	11.544	1.104	351141	338.86	ug/L	100
99)	Ethyl methacrylate	69	12.303	12.303	0.903	1516160	269.86	ug/L	99
101)	cis-1,4-Dichloro-2-butene	53	14.651	14.651	0.913	479745	293.03	ug/L	98
102)	Cyclohexanone	42	14.782	14.782	0.922	211596	1721.42	ug/L	99
103)	trans-1,4-Dichloro-2-b...	53	14.936	14.936	0.931	432327	287.90	ug/L	99
104)	Pentachloroethane	167	15.636	15.636	0.975	1166868	275.06	ug/L	99
105)	Benzyl chloride	91	16.193	16.193	1.010	2569302	282.03	ug/L	99
106)	bis(2-Chloroisopropyl)...	45	16.584	16.584	1.034	730361	290.59	ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed
(A) = Over the calibration range (d) = deleted

Quantitation Report
GEL Laboratories, LLC

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Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W528.D
Acq On    : 16 Jun 2017  23:21
Operator  : RXY1
InstName  : VOA9
Sample    : |W9VM170616-21|ICAL|1|VOA|1|VOA8260BL|
Misc      : GEL300 5mL n/a MIX[B]0612-07A+0526-07A
ALS Vial  : 28   Sample Multiplier: 1

Quant Time: Jun 17 13:37:37 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title  : Volatile Organics 8260B                    SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE
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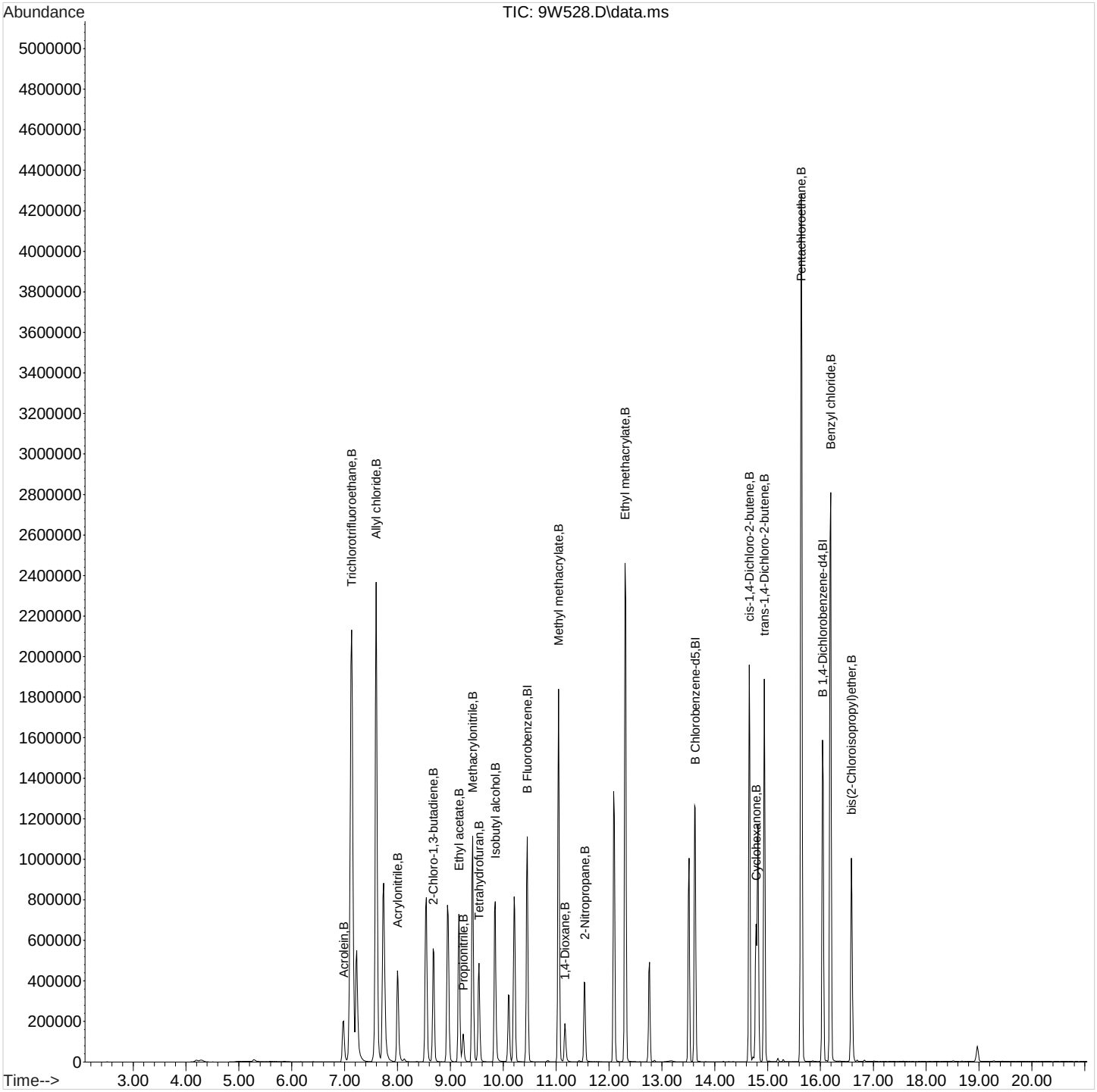

July 17, 2017

Quantitation Report
GEL Laboratories, LLC

RY 06/17/2017

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W529.D
Acq On : 16 Jun 2017 23:48
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-22|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL500 5mL n/a MIX[B]0612-07A+0526-07A
ALS Vial : 29 Sample Multiplier: 1

EM 06/17/2017

Quant Time: Jun 17 13:37:40 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	Dev(Min)
Internal Standards								
1) Fluorobenzene	96	10.454	10.454	1.000	0m	50.00	ug/L	0.00
43) Chlorobenzene-d5	117	13.632	13.632	1.000	0m	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	0m	50.00	ug/L	0.00
84) B Fluorobenzene	96	10.454	10.454	1.000	1248313	50.00	ug/L	0.00
98) B Chlorobenzene-d5	117	13.632	13.632	1.000	956198	50.00	ug/L	0.00
100) B 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	603469	50.00	ug/L	0.00
System Monitoring Compounds								Dev(Min)
30) 1,2-Dichloroethane-d4	65	10.110	10.098	0.967	0d	0.00	ug/L	
45) Toluene-d8	98	12.090	12.090	0.887	0d	0.00	ug/L	
63) Bromofluorobenzene	95	14.817	14.817	0.924	0d	0.00	ug/L	

Target Compounds	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	QValue
2) Dichlorodifluoromethane		0.000	4.672	0.000	0	N.D.		
3) Chloromethane		0.000	5.011	0.000	0	N.D.		
4) Vinyl chloride		0.000	5.260	0.000	0	N.D.		
5) Bromomethane		0.000	5.852	0.000	0	N.D.		
6) Chloroethane		0.000	6.007	0.000	0	N.D.		
7) Trichlorofluoromethane		6.422	6.410	0.614	0m	N.D.	d	
8) Ethyl ether		0.000	6.766	0.000	0	N.D.		
9) Acetone		7.133	7.157	0.682	0m	N.D.	d	
10) 1,1-Dichloroethylene		7.133	7.157	0.682	0m	N.D.	d	
11) Iodomethane		0.000	7.418	0.000	0	N.D.		
12) Acetonitrile		7.596	7.513	0.727	0m	N.D.	d	
13) Methyl acetate		7.548	7.548	0.722	0m	N.D.	d	
14) Carbon disulfide		7.596	7.548	0.727	0m	N.D.	d	
15) Methylene chloride		7.750	7.738	0.741	0m	N.D.	d	
16) tert-Butyl methyl ether		8.034	8.034	0.769	0m	N.D.	d	
17) trans-1,2-Dichloroethy...		0.000	8.082	0.000	0	N.D.		
18) Hexane		8.355	8.355	0.799	0m	N.D.	d	
19) Vinyl acetate		8.544	8.521	0.817	0m	N.D.	d	
20) 1,1-Dichloroethane		8.675	8.580	0.830	0m	N.D.	d	
21) 2-Butanone		9.161	9.161	0.876	0m	N.D.	d	
22) cis-1,2-Dichloroethylene		9.161	9.220	0.876	0m	N.D.	d	
23) 2,2-Dichloropropane		0.000	9.244	0.000	0	N.D.		
24) Bromochloromethane		0.000	9.493	0.000	0	N.D.		
25) Chloroform		9.529	9.529	0.912	0m	N.D.	d	
26) 1,1,1-Trichloroethane		0.000	9.801	0.000	0	N.D.		
27) Cyclohexane		9.849	9.896	0.942	0m	N.D.	d	
28) 1,1-Dichloropropene		0.000	9.956	0.000	0	N.D.		
29) Carbon tetrachloride		0.000	10.003	0.000	0	N.D.		
31) 1,2-Dichloroethane		10.205	10.181	0.976	0m	N.D.	d	
32) Benzene		10.205	10.205	0.976	0m	N.D.	d	
33) Cyclohexene		0.000	10.311	0.000	0	N.D.		
34) n-Butyl alcohol		10.560	10.537	1.010	0m	N.D.	d	
35) Trichloroethylene		10.845	10.833	1.037	0m	N.D.	d	
36) 2-Pentanone		11.046	10.916	1.057	0m	N.D.	d	
37) 1,2-Dichloropropane		0.000	11.094	0.000	0	N.D.		
38) Methylcyclohexane		11.046	11.082	1.057	0m	N.D.	d	
39) Dibromomethane		0.000	11.224	0.000	0	N.D.		

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W529.D
Acq On : 16 Jun 2017 23:48
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-22|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL500 5mL n/a MIX[B]0612-07A+0526-07A
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Jun 17 13:37:40 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units		
40) Bromodichloromethane		0.000	11.331	0.000	0	N.D.			
41) 2-Chloroethylvinyl ether		0.000	11.545	0.000	0	N.D.			
42) cis-1,3-Dichloropropylene		0.000	11.782	0.000	0	N.D.			
44) 4-Methyl-2-pentanone		0.000	11.865	0.000	0	N.D.			
46) Toluene		12.173	12.173	0.893	0m	N.D.		d	
47) trans-1,3-Dichloroprop...		12.315	12.315	0.903	0m	N.D.		d	
48) 1,1,2-Trichloroethane		0.000	12.541	0.000	0	N.D.			
49) 2-Hexanone		12.730	12.719	0.934	0m	N.D.		d	
50) 1,3-Dichloropropane		12.778	12.742	0.937	0m	N.D.		d	
51) Tetrachloroethylene		12.766	12.766	0.936	0m	N.D.		d	
52) Dibromochloromethane		0.000	13.003	0.000	0	N.D.			
53) 1,2-Dibromoethane		13.181	13.181	0.967	0m	N.D.		d	
54) Chlorobenzene		13.667	13.655	1.003	0m	N.D.		d	
55) 1,1,1,2-Tetrachloroethane		13.703	13.715	1.005	0m	N.D.		d	
56) Ethylbenzene		13.715	13.715	1.006	0m	N.D.		d	
57) m,p-Xylenes		13.821	13.821	1.014	0m	N.D.		d	
58) o-Xylene		0.000	14.260	0.000	0	N.D.			
59) Styrene		14.260	14.260	1.046	0m	N.D.		d	
61) Bromoform		0.000	14.533	0.000	0	N.D.			
62) Isopropylbenzene		14.616	14.616	0.911	0m	N.D.		d	
64) 1,1,2,2-Tetrachloroethane		14.936	14.889	0.931	0m	N.D.		d	
65) 1,2,3-Trichloropropane		0.000	14.983	0.000	0	N.D.			
66) Bromobenzene		0.000	15.031	0.000	0	N.D.			
67) n-Propylbenzene		15.043	15.043	0.938	0m	N.D.		d	
68) 1,3,5-Trimethylbenzene		15.185	15.185	0.947	0m	N.D.		d	
69) 2-Chlorotoluene		15.197	15.197	0.948	0m	N.D.		d	
70) 4-Chlorotoluene		15.292	15.292	0.953	0m	N.D.		d	
71) tert-Butylbenzene		15.636	15.565	0.975	0m	N.D.		d	
72) 1,2,4-Trimethylbenzene		15.600	15.600	0.973	0m	N.D.		d	
73) sec-Butylbenzene		15.790	15.790	0.984	0m	N.D.		d	
74) 4-Isopropyltoluene		15.908	15.908	0.992	0m	N.D.		d	
75) 1,3-Dichlorobenzene		15.991	15.991	0.997	0m	N.D.		d	
76) 1,4-Dichlorobenzene		16.074	16.074	1.002	0m	N.D.		d	
77) n-Butylbenzene		0.000	16.359	0.000	0	N.D.			
78) 1,2-Dichlorobenzene		16.513	16.513	1.030	0m	N.D.		d	
79) 1,2-Dibromo-3-chloropr...		0.000	17.415	0.000	0	N.D.			
80) 1,2,4-Trichlorobenzene		18.517	18.505	1.155	0m	N.D.		d	
81) Hexachlorobutadiene		18.671	18.683	1.164	0m	N.D.		d	
82) Naphthalene		18.921	18.921	1.180	0m	N.D.		d	
83) 1,2,3-Trichlorobenzene		19.276	19.276	1.202	0m	N.D.		d	
85) Acrolein	56	6.979	6.979	0.668	429443	496.13	ug/L	99	
86) Trichlorotrifluoroethane	85	7.133	7.133	0.682	1187485	444.11	ug/L	98	
87) Allyl chloride	41	7.596	7.596	0.727	3596880	434.37	ug/L	98	
88) Acrylonitrile	53	7.999	7.999	0.765	807584	472.11	ug/L	99	
89) 2-Chloro-1,3-butadiene	53	8.675	8.675	0.830	811459	100.16	ug/L	99	A
90) Ethyl acetate	43	9.161	9.161	0.876	1577751	420.98	ug/L	99	
91) Propionitrile	54	9.244	9.244	0.884	292848	470.69	ug/L	100	
92) Methacrylonitrile	41	9.422	9.422	0.901	1076090	449.09	ug/L	99	
93) Tetrahydrofuran	42	9.540	9.540	0.913	594711	451.24	ug/L	98	
94) Isobutyl alcohol	41	9.849	9.849	0.942	684743	4272.17	ug/L	97	
95) Methyl methacrylate	69	11.046	11.046	1.057	1341012	444.84	ug/L	98	
96) 1,4-Dioxane	88	11.165	11.165	1.068	253519	4622.74	ug/L	99	

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W529.D
Acq On : 16 Jun 2017 23:48
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-22|ICAL|1|VOA|1|VOA8260BL|
Misc : GEL500 5mL n/a MIX[B]0612-07A+0526-07A
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Jun 17 13:37:40 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

	Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units		
97)	2-Nitropropane	43	11.533	11.544	1.103	605206	549.49	ug/L	97	A
99)	Ethyl methacrylate	69	12.303	12.303	0.903	2486051	440.06	ug/L	99	
101)	cis-1,4-Dichloro-2-butene	53	14.651	14.651	0.913	785132	461.16	ug/L	96	
102)	Cyclohexanone	42	14.782	14.782	0.922	300533	2351.14	ug/L	97	
103)	trans-1,4-Dichloro-2-b...	53	14.936	14.936	0.931	707642	453.15	ug/L	97	
104)	Pentachloroethane	167	15.636	15.636	0.975	2132198	483.32	ug/L	98	
105)	Benzyl chloride	91	16.193	16.193	1.010	4251328	448.75	ug/L	97	
106)	bis(2-Chloroisopropyl)...	45	16.584	16.584	1.034	1177509	450.52	ug/L	97	

(#) = qualifier out of range (m) = manual integration (+) = signals summed
(A) = Over the calibration range (d) = deleted

Quantitation Report
GEL Laboratories, LLC

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Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W529.D
Acq On    : 16 Jun 2017  23:48
Operator  : RXY1
InstName  : VOA9
Sample    : |W9VM170616-22|ICAL|1|VOA|1|VOA8260BL|
Misc      : GEL500 5mL n/a MIX[B]0612-07A+0526-07A
ALS Vial  : 29   Sample Multiplier: 1

Quant Time: Jun 17 13:37:40 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title  : Volatile Organics 8260B                    SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE
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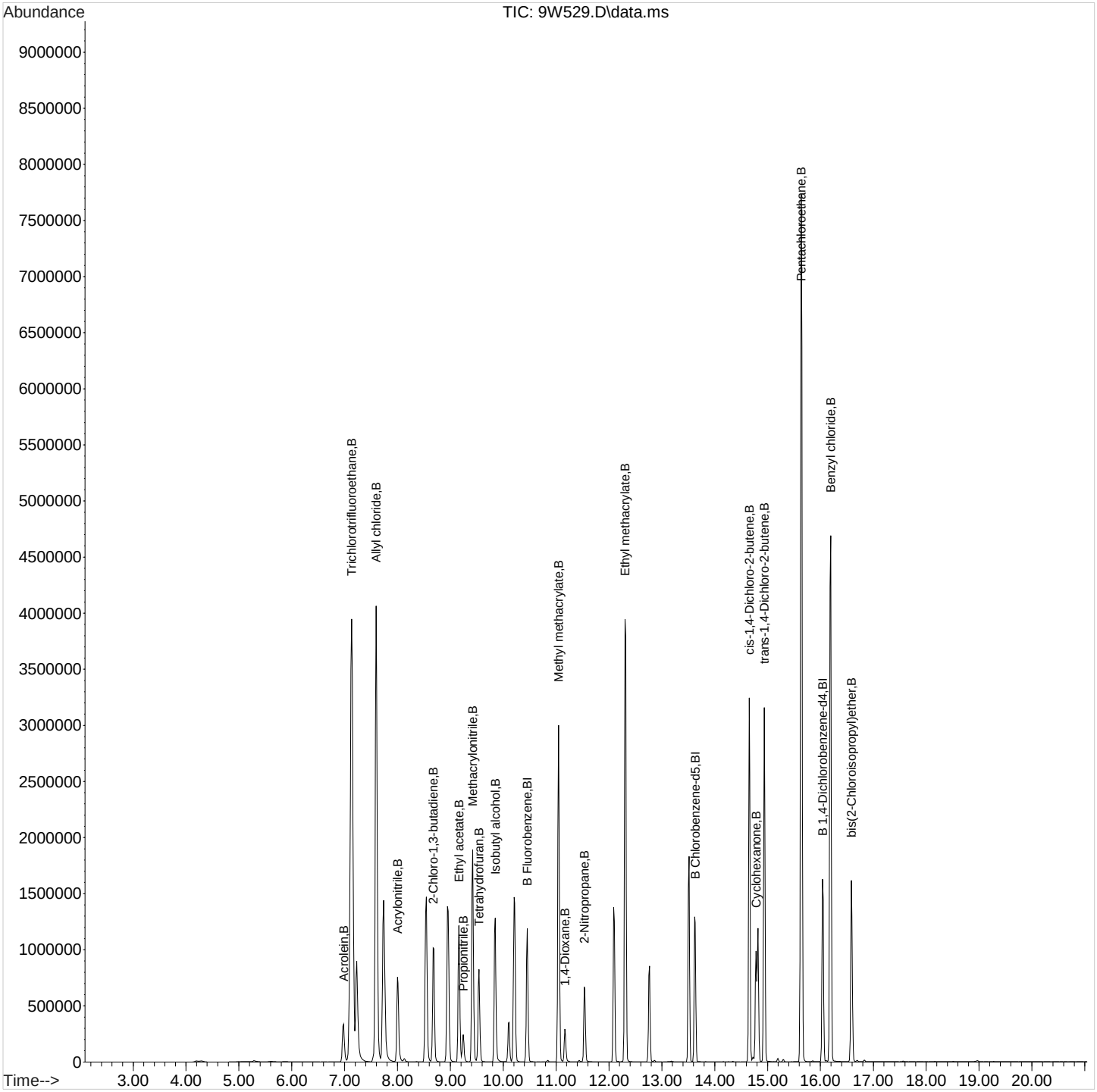

Continuing Calibration Summary

Client SDG: GEL425783

Instrument ID: VOA9.I

Injection Date: 17-JUN-17 01:41

Data File: 061617V9\9W533.D

Init. Cal. Date(s) 16-JUN-17 15:21 - 16-JUN-17 23:48

Lab Sample ID W9VM170616-25

Method: 061617V9\VOA9-8260C-061617.M

Quant Type ISTD

Method Update: 17-JUN-17 13:36

	Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type
S	1,2-Dichloroethane-d4	0.2466	0.2461		.01		-0.20276	30		Averaged
S	Toluene-d8	1.1271	1.12846		.01		0.12066	30		Averaged
S	Bromofluorobenzene	0.7553	0.73775		.01		-2.32358	30		Averaged
	Acrolein	0.0347	0.03557		.01		2.5072	30		Averaged
	Allyl chloride	0.3317	0.3095		.01		-6.69279	30		Averaged
	Acrylonitrile	0.0685	0.06863		.01		0.18978	30		Averaged
	2-Chloro-1,3-butadiene	0.3245	0.27739		.01		-14.51772	30		Averaged
	Propionitrile	0.0249	0.02489		.01		-0.04016	30		Averaged
	Methacrylonitrile	0.096	0.096		.01		0	30		Averaged
	Isobutyl alcohol	0.0064	0.00642		.01		0.3125	30		Averaged
	Methyl methacrylate	0.1207	0.11938		.01		-1.09362	30		Averaged
	Ethyl methacrylate	0.2954	0.28816		.01		-2.45091	30		Averaged
	trans-1,4-Dichloro-2-butene	0.1294	0.11114		.01		-14.11128	30		Averaged

July 17, 2017

Quantitation Report
GEL Laboratories, LLC

RY 06/17/2017

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W533.D
Acq On : 17 Jun 2017 01:41
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-25|ICV|1|VOA|1|VOA8260BL|
Misc : GEL 5mL n/a MIX[B]0412-08C+0526-08A
ALS Vial : 33 Sample Multiplier: 1

EM 06/17/2017

Quant Time: Jun 17 13:37:49 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	Dev(Min)
Internal Standards								
1) Fluorobenzene	96	10.453	10.454	1.000	1264496	50.00	ug/L	0.00
43) Chlorobenzene-d5	117	13.632	13.632	1.000	996681	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	624734	50.00	ug/L	0.00
84) B Fluorobenzene	96	10.453	10.454	1.000	1264496	50.00	ug/L	0.00
98) B Chlorobenzene-d5	117	13.632	13.632	1.000	996681	50.00	ug/L	0.00
100) B 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	624734	50.00	ug/L	0.00
System Monitoring Compounds								Dev(Min)
30) 1,2-Dichloroethane-d4	65	10.098	10.098	0.966	311187	49.89	ug/L	0.00
45) Toluene-d8	98	12.090	12.090	0.887	1124712	50.06	ug/L	0.00
63) Bromofluorobenzene	95	14.817	14.817	0.924	460896	48.84	ug/L	0.00

Target Compounds	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	QValue
2) Dichlorodifluoromethane		0.000	4.672	0.000	0	N.D.		
3) Chloromethane		4.975	5.011	0.476	0m	N.D.	d	
4) Vinyl chloride		0.000	5.260	0.000	0	N.D.		
5) Bromomethane		5.615	5.852	0.537	0m	N.D.	d	
6) Chloroethane		0.000	6.007	0.000	0	N.D.		
7) Trichlorofluoromethane		6.422	6.410	0.614	0m	N.D.	d	
8) Ethyl ether		0.000	6.766	0.000	0	N.D.		
9) Acetone		7.121	7.157	0.681	0m	N.D.	d	
10) 1,1-Dichloroethylene		7.133	7.157	0.682	0m	N.D.	d	
11) Iodomethane		7.406	7.418	0.708	0m	N.D.	d	
12) Acetonitrile		7.596	7.513	0.727	0m	N.D.	d	
13) Methyl acetate		7.548	7.548	0.722	0m	N.D.	d	
14) Carbon disulfide		7.596	7.548	0.727	0m	N.D.	d	
15) Methylene chloride		7.738	7.738	0.740	0m	N.D.	d	
16) tert-Butyl methyl ether		8.046	8.034	0.770	0m	N.D.	d	
17) trans-1,2-Dichloroethy...		8.082	8.082	0.773	0m	N.D.	d	
18) Hexane		8.354	8.355	0.799	0m	N.D.	d	
19) Vinyl acetate		8.544	8.521	0.817	0m	N.D.	d	
20) 1,1-Dichloroethane		8.675	8.580	0.830	0m	N.D.	d	
21) 2-Butanone		9.161	9.161	0.876	0m	N.D.	d	
22) cis-1,2-Dichloroethylene		9.161	9.220	0.876	0m	N.D.	d	
23) 2,2-Dichloropropane		0.000	9.244	0.000	0	N.D.		
24) Bromochloromethane		0.000	9.493	0.000	0	N.D.		
25) Chloroform		9.517	9.529	0.910	0m	N.D.	d	
26) 1,1,1-Trichloroethane		0.000	9.801	0.000	0	N.D.		
27) Cyclohexane		9.849	9.896	0.942	0m	N.D.	d	
28) 1,1-Dichloropropene		0.000	9.956	0.000	0	N.D.		
29) Carbon tetrachloride		0.000	10.003	0.000	0	N.D.		
31) 1,2-Dichloroethane		10.193	10.181	0.975	0m	N.D.	d	
32) Benzene		10.204	10.205	0.976	0m	N.D.	d	
33) Cyclohexene		0.000	10.311	0.000	0	N.D.		
34) n-Butyl alcohol		10.536	10.537	1.008	0m	N.D.	d	
35) Trichloroethylene		10.845	10.833	1.037	0m	N.D.	d	
36) 2-Pentanone		11.046	10.916	1.057	0m	N.D.	d	
37) 1,2-Dichloropropane		0.000	11.094	0.000	0	N.D.		
38) Methylcyclohexane		11.046	11.082	1.057	0m	N.D.	d	
39) Dibromomethane		0.000	11.224	0.000	0	N.D.		

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W533.D
Acq On : 17 Jun 2017 01:41
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-25|ICV|1|VOA|1|VOA8260BL|
Misc : GEL 5mL n/a MIX[B]0412-08C+0526-08A
ALS Vial : 33 Sample Multiplier: 1

Quant Time: Jun 17 13:37:49 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	
40) Bromodichloromethane		0.000	11.331	0.000	0	N.D.		
41) 2-Chloroethylvinyl ether		0.000	11.545	0.000	0	N.D.		
42) cis-1,3-Dichloropropylene		11.782	11.782	1.127	0m	N.D.	d	
44) 4-Methyl-2-pentanone		11.876	11.865	0.871	0m	N.D.	d	
46) Toluene		12.173	12.173	0.893	0m	N.D.	d	
47) trans-1,3-Dichloroprop...		12.327	12.315	0.904	0m	N.D.	d	
48) 1,1,2-Trichloroethane		0.000	12.541	0.000	0	N.D.		
49) 2-Hexanone		12.718	12.719	0.933	0m	N.D.	d	
50) 1,3-Dichloropropane		12.742	12.742	0.935	0m	N.D.	d	
51) Tetrachloroethylene		12.766	12.766	0.936	0m	N.D.	d	
52) Dibromochloromethane		0.000	13.003	0.000	0	N.D.		
53) 1,2-Dibromoethane		13.181	13.181	0.967	0m	N.D.	d	
54) Chlorobenzene		13.655	13.655	1.002	0m	N.D.	d	
55) 1,1,1,2-Tetrachloroethane		13.714	13.715	1.006	0m	N.D.	d	
56) Ethylbenzene		13.714	13.715	1.006	0m	N.D.	d	
57) m,p-Xylenes		13.821	13.821	1.014	0m	N.D.	d	
58) o-Xylene		14.260	14.260	1.046	0m	N.D.	d	
59) Styrene		14.260	14.260	1.046	0m	N.D.	d	
61) Bromoform		0.000	14.533	0.000	0	N.D.		
62) Isopropylbenzene		14.616	14.616	0.911	0m	N.D.	d	
64) 1,1,2,2-Tetrachloroethane		14.889	14.889	0.928	0m	N.D.	d	
65) 1,2,3-Trichloropropane		0.000	14.983	0.000	0	N.D.		
66) Bromobenzene		15.031	15.031	0.937	0m	N.D.	d	
67) n-Propylbenzene		15.043	15.043	0.938	0m	N.D.	d	
68) 1,3,5-Trimethylbenzene		15.185	15.185	0.947	0m	N.D.	d	
69) 2-Chlorotoluene		15.197	15.197	0.948	0m	N.D.	d	
70) 4-Chlorotoluene		15.292	15.292	0.953	0m	N.D.	d	
71) tert-Butylbenzene		15.564	15.565	0.970	0m	N.D.	d	
72) 1,2,4-Trimethylbenzene		15.600	15.600	0.973	0m	N.D.	d	
73) sec-Butylbenzene		15.790	15.790	0.984	0m	N.D.	d	
74) 4-Isopropyltoluene		15.908	15.908	0.992	0m	N.D.	d	
75) 1,3-Dichlorobenzene		15.991	15.991	0.997	0m	N.D.	d	
76) 1,4-Dichlorobenzene		16.074	16.074	1.002	0m	N.D.	d	
77) n-Butylbenzene		16.359	16.359	1.020	0m	N.D.	d	
78) 1,2-Dichlorobenzene		16.513	16.513	1.030	0m	N.D.	d	
79) 1,2-Dibromo-3-chloropr...		17.414	17.415	1.086	0m	N.D.	d	
80) 1,2,4-Trichlorobenzene		18.505	18.505	1.154	0m	N.D.	d	
81) Hexachlorobutadiene		18.683	18.683	1.165	0m	N.D.	d	
82) Naphthalene		18.920	18.921	1.180	0m	N.D.	d	
83) 1,2,3-Trichlorobenzene		19.276	19.276	1.202	0m	N.D.	d	
85) Acrolein	56	6.967	6.979	0.666	224870	256.46	ug/L	99
86) Trichlorotrifluoroethane	85	7.121	7.133	0.681	650710	240.24	ug/L	99
87) Allyl chloride	41	7.596	7.596	0.727	1956810	233.29	ug/L	99
88) Acrylonitrile	53	7.999	7.999	0.765	433912	250.41	ug/L	100
89) 2-Chloro-1,3-butadiene	53	8.675	8.675	0.830	350762	42.74	ug/L	99
90) Ethyl acetate	43	9.161	9.161	0.876	995959	262.34	ug/L	100
91) Propionitrile	54	9.244	9.244	0.884	157389	249.73	ug/L	98
92) Methacrylonitrile	41	9.422	9.422	0.901	606946	250.06	ug/L	99
93) Tetrahydrofuran	42	9.540	9.540	0.913	322206	241.35	ug/L	99
94) Isobutyl alcohol	41	9.849	9.849	0.942	405749	2499.10	ug/L	100
95) Methyl methacrylate	69	11.046	11.046	1.057	754759	247.17	ug/L	99
96) 1,4-Dioxane	88	11.165	11.165	1.068	134709	2424.89	ug/L	100

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W533.D
Acq On : 17 Jun 2017 01:41
Operator : RXY1
InstName : VOA9
Sample : |W9VM170616-25|ICV|1|VOA|1|VOA8260BL|
Misc : GEL 5mL n/a MIX[B]0412-08C+0526-08A
ALS Vial : 33 Sample Multiplier: 1

Quant Time: Jun 17 13:37:49 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

	Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	
97)	2-Nitropropane	43	11.533	11.544	1.103	321520	288.18	ug/L	99
99)	Ethyl methacrylate	69	12.303	12.303	0.903	1436004	243.87	ug/L	99
101)	cis-1,4-Dichloro-2-butene	53	14.651	14.651	0.913	445474	252.75	ug/L	99
102)	Cyclohexanone	42	14.782	14.782	0.922	147002	1110.89	ug/L	95
103)	trans-1,4-Dichloro-2-b...	53	14.936	14.936	0.931	347151	214.74	ug/L	98
104)	Pentachloroethane	167	15.636	15.636	0.975	1145822	250.89	ug/L	99
105)	Benzyl chloride	91	16.193	16.193	1.010	2341563	238.75	ug/L	100
106)	bis(2-Chloroisopropyl)...	45	16.584	16.584	1.034	717221	265.07	ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed
(A) = Over the calibration range (d) = deleted

Quantitation Report
GEL Laboratories, LLC

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Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W533.D
Acq On    : 17 Jun 2017  01:41
Operator  : RXY1
InstName  : VOA9
Sample    : |W9VM170616-25|ICV|1|VOA|1|VOA8260BL|
Misc      : GEL 5mL n/a MIX[B]0412-08C+0526-08A
ALS Vial  : 33   Sample Multiplier: 1

Quant Time: Jun 17 13:37:49 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title  : Volatile Organics 8260B                    SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE
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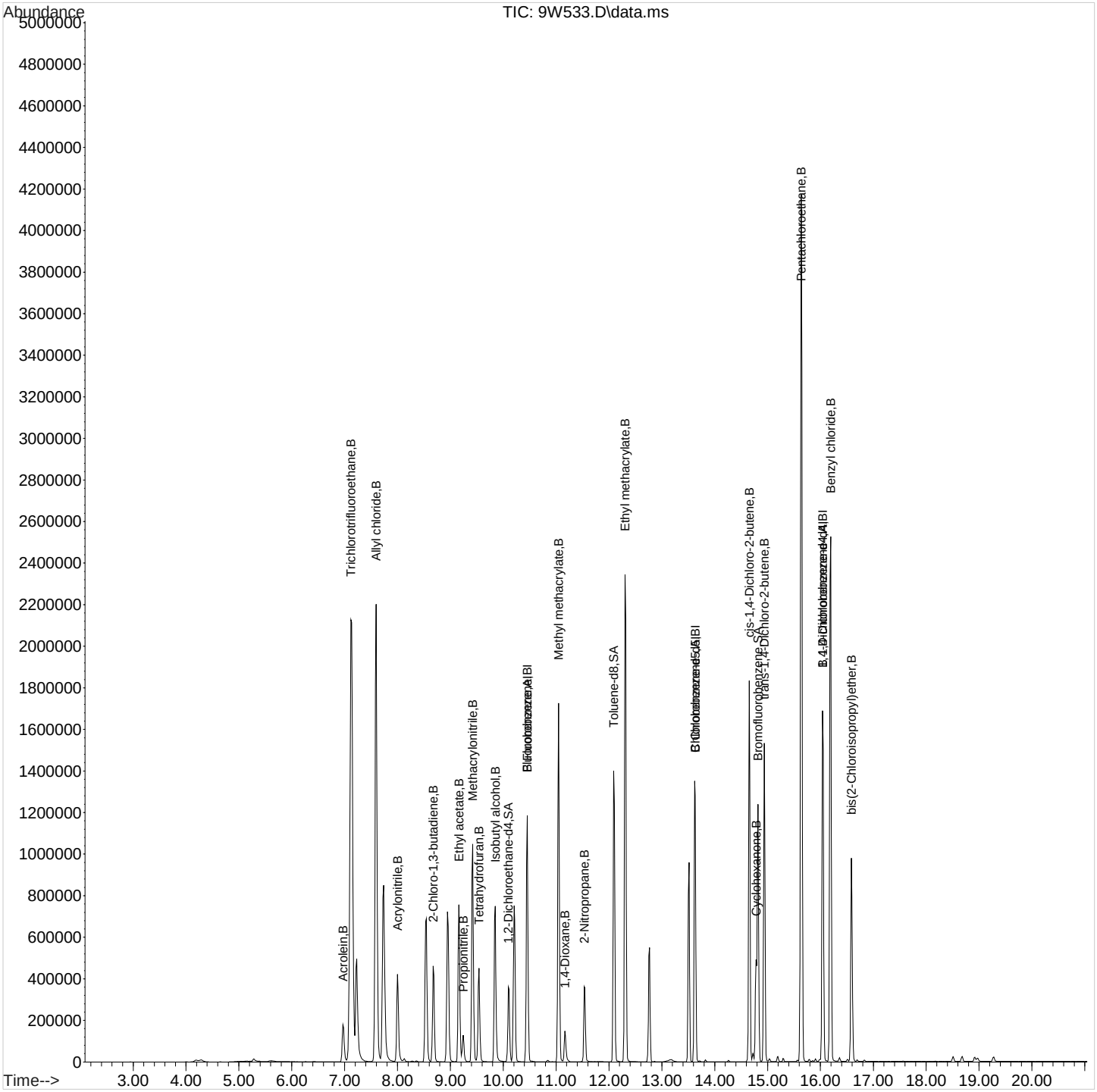

Continuing Calibration Summary

Client SDG: GEL425783

Instrument ID: VOA9.I

Injection Date: 27-JUN-17 10:48

Data File: 062717V9\9Y203.D

Init. Cal. Date(s) 16-JUN-17 15:21 - 16-JUN-17 23:48

Lab Sample ID W9VM170627-02

Method: 061617V9\VOA9-8260C-061617.M

Quant Type ISTD

Method Update: 17-JUN-17 13:36

	Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type
S	1,2-Dichloroethane-d4	0.2466	0.23177		.01		-6.01379	20		Averaged
S	Toluene-d8	1.1271	1.14778		.01		1.8348	20		Averaged
S	Bromofluorobenzene	0.7553	0.79987		.01		5.90097	20		Averaged
	Dichlorodifluoromethane	0.2743	0.2614		.01		-4.70288	20		Averaged
	Chloromethane	0.2639	0.29525		.1		11.8795	20		Averaged
	Vinyl chloride	0.2846	0.29911		.01		5.09838	20		Averaged
	Bromomethane	0.2459	0.25369		.01		3.16795	20		Averaged
	Chloroethane	0.2249	0.24313		.01		8.10582	20		Averaged
	Trichlorofluoromethane	0.4003	0.4009		.01		0.14989	20		Averaged
	Acetone	0.0629	0.06862		.01		9.0938	20		Averaged
	1,1-Dichloroethylene	0.3907	0.41045		.01		5.05503	20		Averaged
	Iodomethane	0.4445	0.42165		.01		-5.14061	20		Averaged
	Acetonitrile	0.0239	0.02598		.01		8.70293	20		Averaged
	Carbon disulfide	0.7761	0.79632		.01		2.60533	20		Averaged
	Methylene chloride	0.2652	0.28552		.01		7.66214	20		Averaged
	trans-1,2-Dichloroethylene	0.3572	0.37564		.01		5.16237	20		Averaged
	Vinyl acetate	0.3128	0.35806		.01		14.46931	20		Averaged
	1,1-Dichloroethane	0.4305	0.45251		.1		5.11266	20		Averaged
	2-Butanone	0.0844	0.09344		.01		10.7109	20		Averaged
	cis-1,2-Dichloroethylene	0.3895	0.40183		.01		3.1656	20		Averaged
	Chloroform	0.4086	0.40829		.01		-0.07587	20		Averaged
	1,1,1-Trichloroethane	0.3867	0.3926		.01		1.52573	20		Averaged
	Carbon tetrachloride	0.3314	0.33744		.01		1.82257	20		Averaged
	1,2-Dichloroethane	0.2755	0.26239		.01		-4.75862	20		Averaged
	Benzene	0.9176	0.95722		.01		4.31779	20		Averaged
	Trichloroethylene	0.2402	0.24003		.01		-0.07077	20		Averaged
	1,2-Dichloropropane	0.2142	0.23246		.01		8.52474	20		Averaged
	Dibromomethane	0.121	0.12607		.01		4.19008	20		Averaged
	Bromodichloromethane	0.2677	0.28755		.01		7.41502	20		Averaged
	cis-1,3-Dichloropropylene	0.3353	0.3775		.01		12.58574	20		Averaged
	4-Methyl-2-pentanone	0.0873	0.09818		.01		12.46277	20		Averaged
	Toluene	1.2062	1.25255		.01		3.84265	20		Averaged
	trans-1,3-Dichloropropylene	0.365	0.41183		.01		12.83014	20		Averaged
	1,1,2-Trichloroethane	0.1901	0.20694		.01		8.8585	20		Averaged
	2-Hexanone	0.166	0.18527		.01		11.60843	20		Averaged
	Tetrachloroethylene	0.296	0.2813		.01		-4.96622	20		Averaged
	Dibromochloromethane	0.2473	0.27251		.01		10.1941	20		Averaged

Continuing Calibration Summary

Instrument ID: VOA9.I **Injection Date:** 27-JUN-17 10:48

Data File: 062717V9\9Y203.D **Init. Cal. Date(s)** 16-JUN-17 15:21 16-JUN-17 23:48

Lab Sample ID W9VM170627-02 **Method:** 061617V9\VOA9-8260C-061617.M

Quant Type ISTD

Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type
1,2-Dibromoethane	0.2359	0.24834		.01		5.27342	20		Averaged
Chlorobenzene	0.8437	0.85898		.3		1.81107	20		Averaged
1,1,1,2-Tetrachloroethane	0.3005	0.30698		.01		2.15641	20		Averaged
Ethylbenzene	1.3813	1.42474		.01		3.14486	20		Averaged
m,p-Xylenes	0.5574	0.5953		.01		6.79943	20		Averaged
o-Xylene	0.5778	0.6057		.01		4.82866	20		Averaged
Styrene	0.894	0.9499		.01		6.2528	20		Averaged
Bromoform	0.2802	0.32689		.1		16.6631	20		Averaged
1,1,2,2-Tetrachloroethane	0.5202	0.60142		.3		15.61323	20		Averaged
1,2,3-Trichloropropane	0.1525	0.16269		.01		6.68197	20		Averaged
1,4-Dichlorobenzene	1.3761	1.39162		.01		1.12783	20		Averaged
1,2-Dibromo-3-chloropropane	0.1195	0.13041		.01		9.12971	20		Averaged

July 17, 2017

Quantitation Report
GEL Laboratories, LLC

RY 06/28/2017

Data Path : C:\msdchem\1\DATA\062717V9\
Data File : 9Y203.D
Acq On : 27 Jun 2017 10:48
Operator : RXY1
InstName : VOA9
Sample : |W9VM170627-02|CCV|1|VOA|1|VOA8260BL|
Misc : GEL 5mL n/a MIX[A]0125-08F+0504-07K+0330-09B
ALS Vial : 3 Sample Multiplier: 1

EM 07/06/2017

Quant Time: Jun 27 11:56:46 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	Dev(Min)
Internal Standards								
1) Fluorobenzene	96	10.453	10.454	1.000	1331359	50.00	ug/L	0.00
43) Chlorobenzene-d5	117	13.632	13.632	1.000	1026201	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	601067	50.00	ug/L	0.00
84) B Fluorobenzene	96	10.453	10.454	1.000	1331359	50.00	ug/L	0.00
98) B Chlorobenzene-d5	117	13.632	13.632	1.000	1026201	50.00	ug/L	0.00
100) B 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	601067	50.00	ug/L	0.00
System Monitoring Compounds								Dev(Min)
30) 1,2-Dichloroethane-d4	65	10.098	10.098	0.966	308570	46.99	ug/L	0.00
45) Toluene-d8	98	12.090	12.090	0.887	1177856	50.92	ug/L	0.00
63) Bromofluorobenzene	95	14.817	14.817	0.924	480774	52.95	ug/L	0.00

Target Compounds	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	QValue
2) Dichlorodifluoromethane	85	4.657	4.672	0.446	348018	47.64	ug/L	99
3) Chloromethane	50	5.010	5.011	0.479	393088	55.95	ug/L	100
4) Vinyl chloride	62	5.259	5.260	0.503	398219	52.55	ug/L	100
5) Bromomethane	94	5.852	5.852	0.560	337752	51.59	ug/L	99
6) Chloroethane	64	6.007	6.007	0.575	323694	54.04	ug/L	99
7) Trichlorofluoromethane	101	6.445	6.410	0.617	533748	50.08	ug/L	100
8) Ethyl ether	59	6.754	6.766	0.646	264318	53.69	ug/L	97
9) Acetone	43	7.145	7.157	0.683	456774	272.77	ug/L	95
10) 1,1-Dichloroethylene	61	7.157	7.157	0.685	546456	52.52	ug/L	100
11) Iodomethane	142	7.418	7.418	0.710	2806853	237.15	ug/L	100
12) Acetonitrile	41	7.513	7.513	0.719	864672	1359.18	ug/L	98
13) Methyl acetate	43	7.548	7.548	0.722	849950	237.76	ug/L	99
14) Carbon disulfide	76	7.548	7.548	0.722	5300915	256.52	ug/L	100
15) Methylene chloride	84	7.738	7.738	0.740	380130	53.84	ug/L	97
16) tert-Butyl methyl ether	73	8.034	8.034	0.769	850460	50.37	ug/L	97
17) trans-1,2-Dichloroethy...	61	8.082	8.082	0.773	500111	52.59	ug/L	99
18) Hexane	57	8.354	8.355	0.799	511591	58.51	ug/L	96
19) Vinyl acetate	43	8.521	8.521	0.815	2383531	286.16	ug/L	100
20) 1,1-Dichloroethane	63	8.568	8.580	0.820	602454	52.55	ug/L	100
21) 2-Butanone	43	9.161	9.161	0.876	622009	276.80	ug/L	99
22) cis-1,2-Dichloroethylene	61	9.208	9.220	0.881	534976	51.59	ug/L	100
23) 2,2-Dichloropropane	77	9.244	9.244	0.884	522167	51.88	ug/L	99
24) Bromochloromethane	128	9.493	9.493	0.908	160852	48.95	ug/L	91
25) Chloroform	83	9.528	9.529	0.912	543578	49.96	ug/L	99
26) 1,1,1-Trichloroethane	97	9.801	9.801	0.938	522692	50.76	ug/L	100
27) Cyclohexane	56	9.896	9.896	0.947	667356	56.50	ug/L	96
28) 1,1-Dichloropropene	75	9.955	9.956	0.952	436283	51.91	ug/L	96
29) Carbon tetrachloride	117	9.991	10.003	0.956	449255	50.91	ug/L	100
31) 1,2-Dichloroethane	62	10.181	10.181	0.974	349340	47.62	ug/L	100
32) Benzene	78	10.204	10.205	0.976	1274405	52.16	ug/L	100
33) Cyclohexene	67	10.311	10.311	0.986	642688	54.40	ug/L	99
34) n-Butyl alcohol	41	10.536	10.537	1.008	525658	5522.30	ug/L	98
35) Trichloroethylene	95	10.833	10.833	1.036	319560	49.97	ug/L	98
36) 2-Pentanone	43	10.916	10.916	1.044	917358	284.41	ug/L	99
37) 1,2-Dichloropropane	63	11.094	11.094	1.061	309485	54.25	ug/L	99
38) Methylcyclohexane	83	11.082	11.082	1.060	667857	53.48	ug/L	98
39) Dibromomethane	93	11.224	11.224	1.074	167841	52.10	ug/L	94

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\062717V9\
Data File : 9Y203.D
Acq On : 27 Jun 2017 10:48
Operator : RXY1
InstName : VOA9
Sample : |W9VM170627-02|CCV|1|VOA|1|VOA8260BL|
Misc : GEL 5mL n/a MIX[A]0125-08F+0504-07K+0330-09B
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 27 11:56:46 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

	Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units		
40)	Bromodichloromethane	83	11.331	11.331	1.084	382830	53.71	ug/L		99
41)	2-Chloroethylvinyl ether	63	11.544	11.545	1.104	821628	273.05	ug/L		98
42)	cis-1,3-Dichloropropylene	75	11.782	11.782	1.127	502585	56.29	ug/L		97
44)	4-Methyl-2-pentanone	58	11.865	11.865	0.870	503763	281.26	ug/L		97
46)	Toluene	91	12.173	12.173	0.893	1285373	51.92	ug/L		100
47)	trans-1,3-Dichloroprop...	75	12.315	12.315	0.903	422621	56.41	ug/L		98
48)	1,1,2-Trichloroethane	83	12.541	12.541	0.920	212366	54.42	ug/L		98
49)	2-Hexanone	43	12.718	12.719	0.933	950597	278.99	ug/L		99
50)	1,3-Dichloropropane	76	12.742	12.742	0.935	415802	52.81	ug/L		93
51)	Tetrachloroethylene	164	12.766	12.766	0.936	288668	47.51	ug/L		96
52)	Dibromochloromethane	129	13.003	13.003	0.954	279654	55.10	ug/L		99
53)	1,2-Dibromoethane	107	13.181	13.181	0.967	254850	52.65	ug/L		99
54)	Chlorobenzene	112	13.655	13.655	1.002	881482	50.90	ug/L		98
55)	1,1,1,2-Tetrachloroethane	131	13.715	13.715	1.006	315027	51.08	ug/L		98
56)	Ethylbenzene	91	13.715	13.715	1.006	1462074	51.57	ug/L		100
57)	m,p-Xylenes	106	13.821	13.821	1.014	1221795	106.80	ug/L		99
58)	o-Xylene	106	14.260	14.260	1.046	621574	52.41	ug/L		100
59)	Styrene	104	14.260	14.260	1.046	974793	53.13	ug/L		99
61)	Bromoform	173	14.533	14.533	0.906	196480	58.33	ug/L		100
62)	Isopropylbenzene	105	14.616	14.616	0.911	1606666	54.33	ug/L		100
64)	1,1,2,2-Tetrachloroethane	83	14.889	14.889	0.928	361496	57.80	ug/L		100
65)	1,2,3-Trichloropropane	110	14.983	14.983	0.934	97787	53.32	ug/L	#	82
66)	Bromobenzene	156	15.031	15.031	0.937	424628	50.12	ug/L		94
67)	n-Propylbenzene	91	15.043	15.043	0.938	1864967	53.83	ug/L		99
68)	1,3,5-Trimethylbenzene	105	15.185	15.185	0.947	1341957	52.90	ug/L		100
69)	2-Chlorotoluene	126	15.197	15.197	0.948	412759	52.69	ug/L		96
70)	4-Chlorotoluene	91	15.292	15.292	0.953	1195758	54.01	ug/L		98
71)	tert-Butylbenzene	134	15.564	15.565	0.970	314129	54.13	ug/L		99
72)	1,2,4-Trimethylbenzene	105	15.600	15.600	0.973	1371453	52.73	ug/L		99
73)	sec-Butylbenzene	105	15.790	15.790	0.984	1859160	54.27	ug/L		99
74)	4-Isopropyltoluene	119	15.908	15.908	0.992	1618297	53.05	ug/L		100
75)	1,3-Dichlorobenzene	146	15.991	15.991	0.997	850381	50.13	ug/L		99
76)	1,4-Dichlorobenzene	146	16.074	16.074	1.002	836456	50.56	ug/L		99
77)	n-Butylbenzene	91	16.359	16.359	1.020	1510735	54.26	ug/L		99
78)	1,2-Dichlorobenzene	146	16.513	16.513	1.030	799966	50.11	ug/L		99
79)	1,2-Dibromo-3-chloropr...	157	17.414	17.415	1.086	78387	54.55	ug/L		97
80)	1,2,4-Trichlorobenzene	180	18.505	18.505	1.154	648052	47.01	ug/L		100
81)	Hexachlorobutadiene	225	18.683	18.683	1.165	425878	44.72	ug/L		100
82)	Naphthalene	128	18.909	18.921	1.179	1249237	52.01	ug/L		100
83)	1,2,3-Trichlorobenzene	180	19.276	19.276	1.202	586685	47.13	ug/L		99
85)	Acrolein		0.000	6.979	0.000	0	N.D.			
86)	Trichlorotrifluoroethane		7.121	7.133	0.681	0m	N.D.	d		
87)	Allyl chloride		7.513	7.596	0.719	0m	N.D.	d		
88)	Acrylonitrile		8.034	7.999	0.769	0m	N.D.	d		
89)	2-Chloro-1,3-butadiene		8.675	8.675	0.830	0m	N.D.	d		
90)	Ethyl acetate		9.161	9.161	0.876	0m	N.D.	d		
91)	Propionitrile		9.161	9.244	0.876	0m	N.D.	d		
92)	Methacrylonitrile		9.517	9.422	0.910	0m	N.D.	d		
93)	Tetrahydrofuran		9.528	9.540	0.912	0m	N.D.	d		
94)	Isobutyl alcohol		9.896	9.849	0.947	0m	N.D.	d		
95)	Methyl methacrylate		11.082	11.046	1.060	0m	N.D.	d		
96)	1,4-Dioxane		11.224	11.165	1.074	0m	N.D.	d		

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\062717V9\
Data File : 9Y203.D
Acq On : 27 Jun 2017 10:48
Operator : RXY1
InstName : VOA9
Sample : |W9VM170627-02|CCV|1|VOA|1|VOA8260BL|
Misc : GEL 5mL n/a MIX[A]0125-08F+0504-07K+0330-09B
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 27 11:56:46 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

	Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units
97)	2-Nitropropane		11.544	11.544	1.104	0m	N.D.	d
99)	Ethyl methacrylate		12.244	12.303	0.898	0m	N.D.	d
101)	cis-1,4-Dichloro-2-butene		14.616	14.651	0.911	0m	N.D.	d
102)	Cyclohexanone		14.545	14.782	0.907	0m	N.D.	d
103)	trans-1,4-Dichloro-2-b...		15.031	14.936	0.937	0m	N.D.	d
104)	Pentachloroethane		15.636	15.636	0.975	0m	N.D.	d
105)	Benzyl chloride		16.193	16.193	1.010	0m	N.D.	d
106)	bis(2-Chloroisopropyl)...		16.608	16.584	1.035	0m	N.D.	d

(#) = qualifier out of range (m) = manual integration (+) = signals summed
(A) = Over the calibration range (d) = deleted

Quantitation Report
GEL Laboratories, LLC

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Data Path : C:\msdchem\1\DATA\062717V9\
Data File : 9Y203.D
Acq On    : 27 Jun 2017  10:48
Operator  : RXY1
InstName  : VOA9
Sample    : |W9VM170627-02|CCV|1|VOA|1|VOA8260BL|
Misc      : GEL 5mL n/a MIX[A]0125-08F+0504-07K+0330-09B
ALS Vial  : 3   Sample Multiplier: 1

Quant Time: Jun 27 11:56:46 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title  : Volatile Organics 8260B                    SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE
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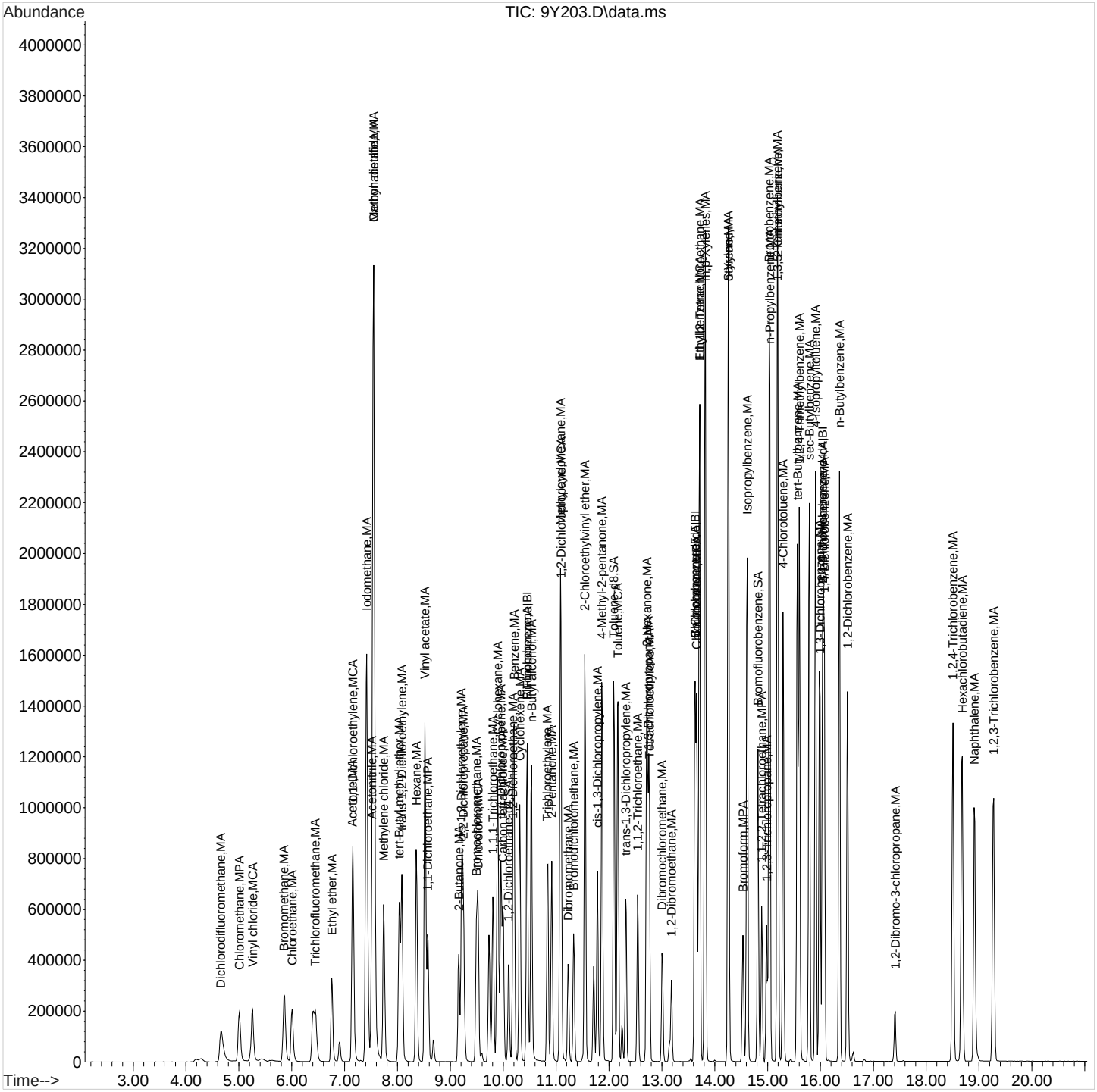

Continuing Calibration Summary

Client SDG: GEL425783

Instrument ID: VOA9.I

Injection Date: 27-JUN-17 11:46

Data File: 062717V9\9Y205.D

Init. Cal. Date(s) 16-JUN-17 15:21 - 16-JUN-17 23:48

Lab Sample ID W9VM170627-04

Method: 061617V9\VOA9-8260C-061617.M

Quant Type ISTD

Method Update: 17-JUN-17 13:36

	Compound	AVERF / Amount	RF CCV	Nominal CCV	Min RF	RF Q	%D / %Drift	Max	Drift Q	Curve Type
S	1,2-Dichloroethane-d4	0.2466	0.23216		.01		-5.85564	20		Averaged
S	Toluene-d8	1.1271	1.15324		.01		2.31923	20		Averaged
S	Bromofluorobenzene	0.7553	0.801		.01		6.05058	20		Averaged
	Acrolein	0.0347	0.03495		.01		0.72046	20		Averaged
	Allyl chloride	0.3317	0.33388		.01		0.65722	20		Averaged
	Acrylonitrile	0.0685	0.06803		.01		-0.68613	20		Averaged
	2-Chloro-1,3-butadiene	0.3245	0.32405		.01		-0.13867	20		Averaged
	Propionitrile	0.0249	0.02442		.01		-1.92771	20		Averaged
	Methacrylonitrile	0.096	0.09259		.01		-3.55208	20		Averaged
	Isobutyl alcohol	0.0064	0.00583		.01		-8.90625	20		Averaged
	Methyl methacrylate	0.1207	0.11845		.01		-1.86413	20		Averaged
	Ethyl methacrylate	0.2954	0.29631		.01		0.30806	20		Averaged
	trans-1,4-Dichloro-2-butene	0.1294	0.1376		.01		6.33694	20		Averaged

July 17, 2017

Quantitation Report
GEL Laboratories, LLC

RY 06/28/2017

EM 07/06/2017

Data Path : C:\msdchem\1\DATA\062717V9\
Data File : 9Y205.D
Acq On : 27 Jun 2017 11:46
Operator : RXY1
InstName : VOA9
Sample : |W9VM170627-04|CCV|1|VOA|1|VOA8260BL|
Misc : GEL 5mL n/a MIX[B]0612-06E+0526-06F
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 27 12:16:14 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	Dev(Min)
Internal Standards								
1) Fluorobenzene	96	10.453	10.454	1.000	1438698	50.00	ug/L	0.00
43) Chlorobenzene-d5	117	13.631	13.632	1.000	1102747	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	652540	50.00	ug/L	0.00
84) B Fluorobenzene	96	10.453	10.454	1.000	1438698	50.00	ug/L	0.00
98) B Chlorobenzene-d5	117	13.631	13.632	1.000	1102747	50.00	ug/L	0.00
100) B 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	652540	50.00	ug/L	0.00
System Monitoring Compounds								Dev(Min)
30) 1,2-Dichloroethane-d4	65	10.098	10.098	0.966	334011	47.07	ug/L	0.00
45) Toluene-d8	98	12.090	12.090	0.887	1271737	51.16	ug/L	0.00
63) Bromofluorobenzene	95	14.817	14.817	0.924	522686	53.02	ug/L	0.00

Target Compounds	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	QValue
2) Dichlorodifluoromethane		0.000	4.672	0.000	0	N.D.		
3) Chloromethane		4.987	5.011	0.477	0m	N.D.	d	
4) Vinyl chloride		0.000	5.260	0.000	0	N.D.		
5) Bromomethane		0.000	5.852	0.000	0	N.D.		
6) Chloroethane		0.000	6.007	0.000	0	N.D.		
7) Trichlorofluoromethane		6.398	6.410	0.612	0m	N.D.	d	
8) Ethyl ether		0.000	6.766	0.000	0	N.D.		
9) Acetone		7.121	7.157	0.681	0m	N.D.	d	
10) 1,1-Dichloroethylene		7.133	7.157	0.682	0m	N.D.	d	
11) Iodomethane		7.406	7.418	0.708	0m	N.D.	d	
12) Acetonitrile		7.595	7.513	0.727	0m	N.D.	d	
13) Methyl acetate		7.548	7.548	0.722	0m	N.D.	d	
14) Carbon disulfide		7.595	7.548	0.727	0m	N.D.	d	
15) Methylene chloride		7.738	7.738	0.740	0m	N.D.	d	
16) tert-Butyl methyl ether		8.034	8.034	0.769	0m	N.D.	d	
17) trans-1,2-Dichloroethy...		8.082	8.082	0.773	0m	N.D.	d	
18) Hexane		8.366	8.355	0.800	0m	N.D.	d	
19) Vinyl acetate		8.532	8.521	0.816	0m	N.D.	d	
20) 1,1-Dichloroethane		8.675	8.580	0.830	0m	N.D.	d	
21) 2-Butanone		9.161	9.161	0.876	0m	N.D.	d	
22) cis-1,2-Dichloroethylene		9.161	9.220	0.876	0m	N.D.	d	
23) 2,2-Dichloropropane		0.000	9.244	0.000	0	N.D.		
24) Bromochloromethane		0.000	9.493	0.000	0	N.D.		
25) Chloroform		9.528	9.529	0.912	0m	N.D.	d	
26) 1,1,1-Trichloroethane		0.000	9.801	0.000	0	N.D.		
27) Cyclohexane		9.849	9.896	0.942	0m	N.D.	d	
28) 1,1-Dichloropropene		9.967	9.956	0.953	0m	N.D.	d	
29) Carbon tetrachloride		0.000	10.003	0.000	0	N.D.		
31) 1,2-Dichloroethane		10.192	10.181	0.975	0m	N.D.	d	
32) Benzene		10.204	10.205	0.976	0m	N.D.	d	
33) Cyclohexene		10.311	10.311	0.986	0m	N.D.	d	
34) n-Butyl alcohol		10.548	10.537	1.009	0m	N.D.	d	
35) Trichloroethylene		10.845	10.833	1.037	0m	N.D.	d	
36) 2-Pentanone		10.928	10.916	1.045	0m	N.D.	d	
37) 1,2-Dichloropropane		0.000	11.094	0.000	0	N.D.		
38) Methylcyclohexane		11.046	11.082	1.057	0m	N.D.	d	
39) Dibromomethane		11.236	11.224	1.075	0m	N.D.	d	

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\062717V9\
Data File : 9Y205.D
Acq On : 27 Jun 2017 11:46
Operator : RXY1
InstName : VOA9
Sample : |W9VM170627-04|CCV|1|VOA|1|VOA8260BL|
Misc : GEL 5mL n/a MIX[B]0612-06E+0526-06F
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 27 12:16:14 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	
40) Bromodichloromethane		0.000	11.331	0.000	0	N.D.		
41) 2-Chloroethylvinyl ether		0.000	11.545	0.000	0	N.D.		
42) cis-1,3-Dichloropropylene		11.781	11.782	1.127	0m	N.D.	d	
44) 4-Methyl-2-pentanone		11.876	11.865	0.871	0m	N.D.	d	
46) Toluene		12.173	12.173	0.893	0m	N.D.	d	
47) trans-1,3-Dichloroprop...		12.327	12.315	0.904	0m	N.D.	d	
48) 1,1,2-Trichloroethane		0.000	12.541	0.000	0	N.D.		
49) 2-Hexanone		12.718	12.719	0.933	0m	N.D.	d	
50) 1,3-Dichloropropane		12.742	12.742	0.935	0m	N.D.	d	
51) Tetrachloroethylene		12.766	12.766	0.936	0m	N.D.	d	
52) Dibromochloromethane		0.000	13.003	0.000	0	N.D.		
53) 1,2-Dibromoethane		13.181	13.181	0.967	0m	N.D.	d	
54) Chlorobenzene		13.655	13.655	1.002	0m	N.D.	d	
55) 1,1,1,2-Tetrachloroethane		13.714	13.715	1.006	0m	N.D.	d	
56) Ethylbenzene		13.714	13.715	1.006	0m	N.D.	d	
57) m,p-Xylenes		13.821	13.821	1.014	0m	N.D.	d	
58) o-Xylene		14.260	14.260	1.046	0m	N.D.	d	
59) Styrene		14.260	14.260	1.046	0m	N.D.	d	
61) Bromoform		14.533	14.533	0.906	0m	N.D.	d	
62) Isopropylbenzene		14.616	14.616	0.911	0m	N.D.	d	
64) 1,1,2,2-Tetrachloroethane		14.888	14.889	0.928	0m	N.D.	d	
65) 1,2,3-Trichloropropane		0.000	14.983	0.000	0	N.D.		
66) Bromobenzene		15.031	15.031	0.937	0m	N.D.	d	
67) n-Propylbenzene		15.043	15.043	0.938	0m	N.D.	d	
68) 1,3,5-Trimethylbenzene		15.185	15.185	0.947	0m	N.D.	d	
69) 2-Chlorotoluene		15.197	15.197	0.948	0m	N.D.	d	
70) 4-Chlorotoluene		15.292	15.292	0.953	0m	N.D.	d	
71) tert-Butylbenzene		15.564	15.565	0.970	0m	N.D.	d	
72) 1,2,4-Trimethylbenzene		15.600	15.600	0.973	0m	N.D.	d	
73) sec-Butylbenzene		15.790	15.790	0.984	0m	N.D.	d	
74) 4-Isopropyltoluene		15.908	15.908	0.992	0m	N.D.	d	
75) 1,3-Dichlorobenzene		15.991	15.991	0.997	0m	N.D.	d	
76) 1,4-Dichlorobenzene		16.074	16.074	1.002	0m	N.D.	d	
77) n-Butylbenzene		16.359	16.359	1.020	0m	N.D.	d	
78) 1,2-Dichlorobenzene		16.513	16.513	1.030	0m	N.D.	d	
79) 1,2-Dibromo-3-chloropr...		17.414	17.415	1.086	0m	N.D.	d	
80) 1,2,4-Trichlorobenzene		18.505	18.505	1.154	0m	N.D.	d	
81) Hexachlorobutadiene		18.683	18.683	1.165	0m	N.D.	d	
82) Naphthalene		18.920	18.921	1.180	0m	N.D.	d	
83) 1,2,3-Trichlorobenzene		19.276	19.276	1.202	0m	N.D.	d	
85) Acrolein	56	6.967	6.979	0.666	251381	251.98	ug/L	98
86) Trichlorotrifluoroethane	85	7.121	7.133	0.681	740504	240.29	ug/L	97
87) Allyl chloride	41	7.595	7.596	0.727	2401790	251.67	ug/L	94
88) Acrylonitrile	53	7.999	7.999	0.765	489357	248.22	ug/L	99
89) 2-Chloro-1,3-butadiene	53	8.675	8.675	0.830	466209	49.93	ug/L	97
90) Ethyl acetate	43	9.161	9.161	0.876	1032330	239.00	ug/L	99
91) Propionitrile	54	9.244	9.244	0.884	175652	244.96	ug/L	99
92) Methacrylonitrile	41	9.422	9.422	0.901	666077	241.19	ug/L	97
93) Tetrahydrofuran	42	9.540	9.540	0.913	367691	242.07	ug/L	98
94) Isobutyl alcohol	41	9.849	9.849	0.942	419355	2270.16	ug/L	95
95) Methyl methacrylate	69	11.046	11.046	1.057	852058	245.24	ug/L	98
96) 1,4-Dioxane	88	11.165	11.165	1.068	144853	2291.77	ug/L	98

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\062717V9\
Data File : 9Y205.D
Acq On : 27 Jun 2017 11:46
Operator : RXY1
InstName : VOA9
Sample : |W9VM170627-04|CCV|1|VOA|1|VOA8260BL|
Misc : GEL 5mL n/a MIX[B]0612-06E+0526-06F
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 27 12:16:14 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

	Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	
97)	2-Nitropropane	43	11.532	11.544	1.103	322204	253.83	ug/L	99
99)	Ethyl methacrylate	69	12.303	12.303	0.903	1633795	250.77	ug/L	98
101)	cis-1,4-Dichloro-2-butene	53	14.651	14.651	0.913	497885	270.45	ug/L	97
102)	Cyclohexanone	42	14.782	14.782	0.922	149804	1083.82	ug/L	94
103)	trans-1,4-Dichloro-2-b...	53	14.936	14.936	0.931	448933	265.86	ug/L	92
104)	Pentachloroethane	167	15.636	15.636	0.975	1292674	270.99	ug/L	99
105)	Benzyl chloride	91	16.193	16.193	1.010	3209415	313.29	ug/L	100
106)	bis(2-Chloroisopropyl)...	45	16.584	16.584	1.034	771232	272.89	ug/L	94

(#) = qualifier out of range (m) = manual integration (+) = signals summed
(A) = Over the calibration range (d) = deleted

Quantitation Report
GEL Laboratories, LLC

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Data Path : C:\msdchem\1\DATA\062717V9\
Data File : 9Y205.D
Acq On    : 27 Jun 2017  11:46
Operator  : RXY1
InstName  : VOA9
Sample    : |W9VM170627-04|CCV|1|VOA|1|VOA8260BL|
Misc      : GEL 5mL n/a MIX[B]0612-06E+0526-06F
ALS Vial  : 5   Sample Multiplier: 1

Quant Time: Jun 27 12:16:14 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title  : Volatile Organics 8260B                    SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE
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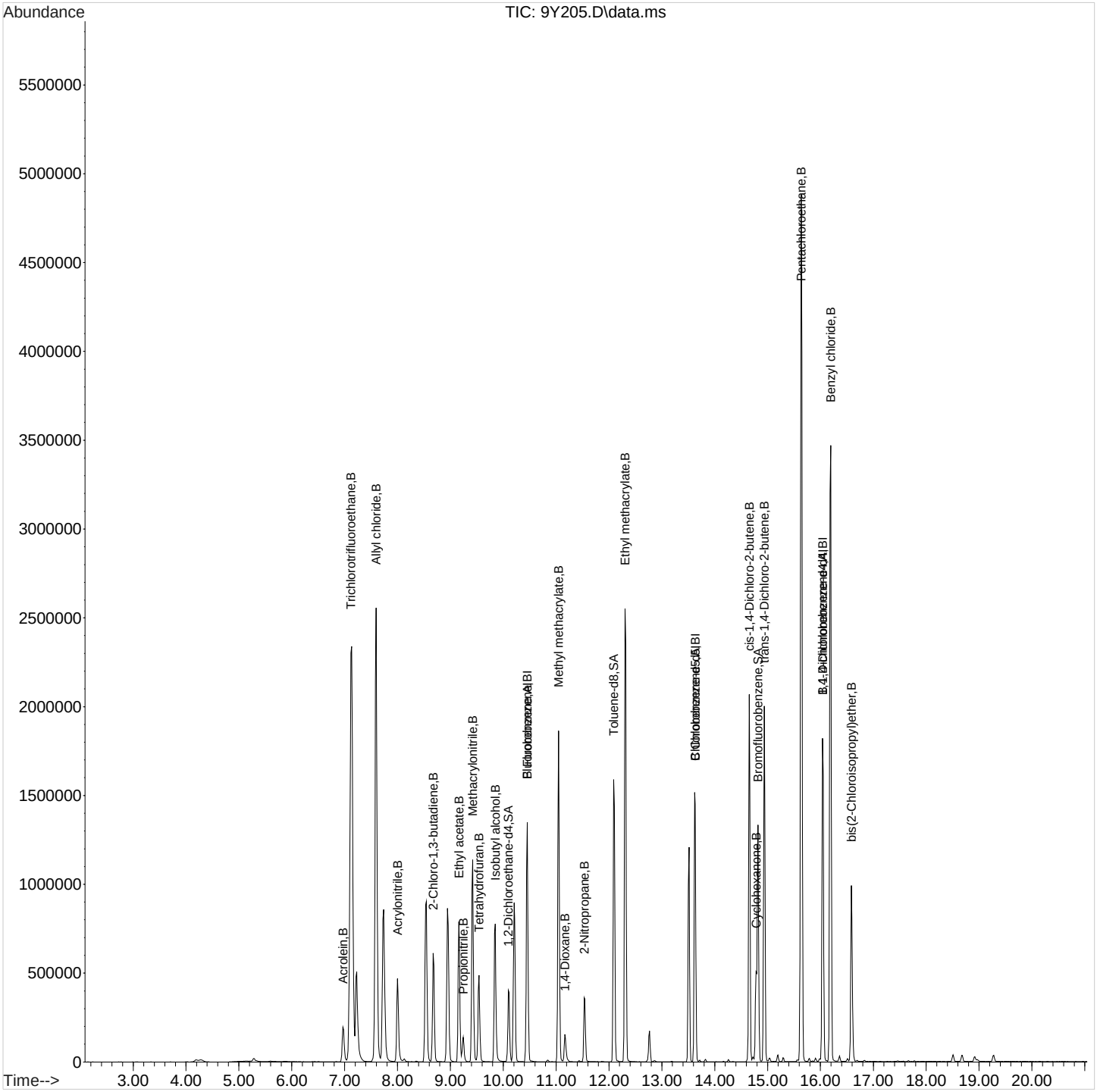


Quality Control Data

July 17, 2017

Tune Report
GEL Laboratories, LLC

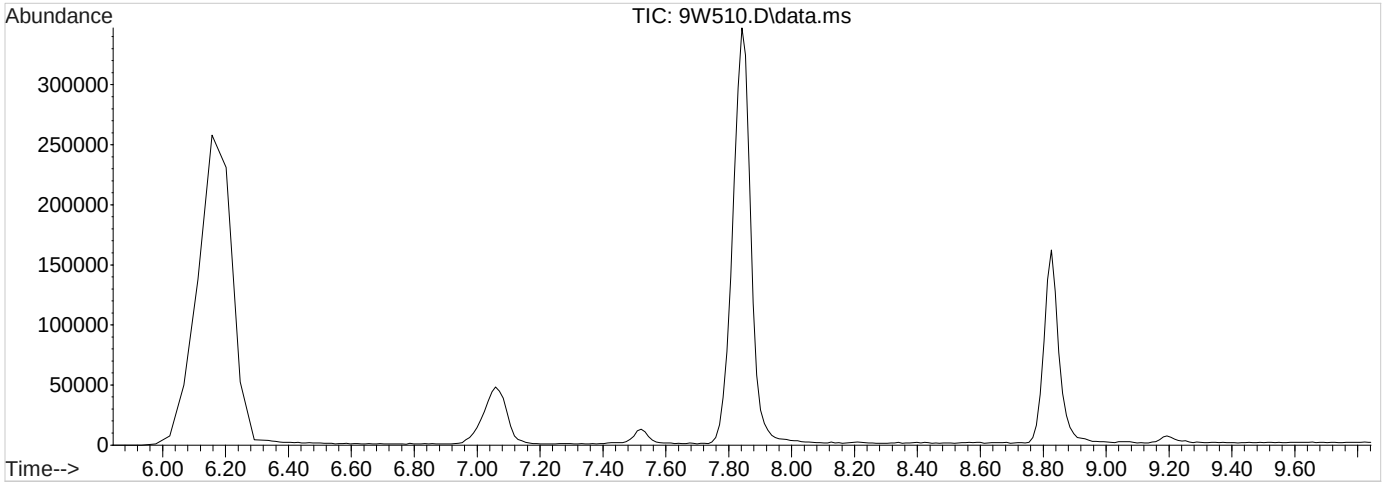
RY 06/17/2017

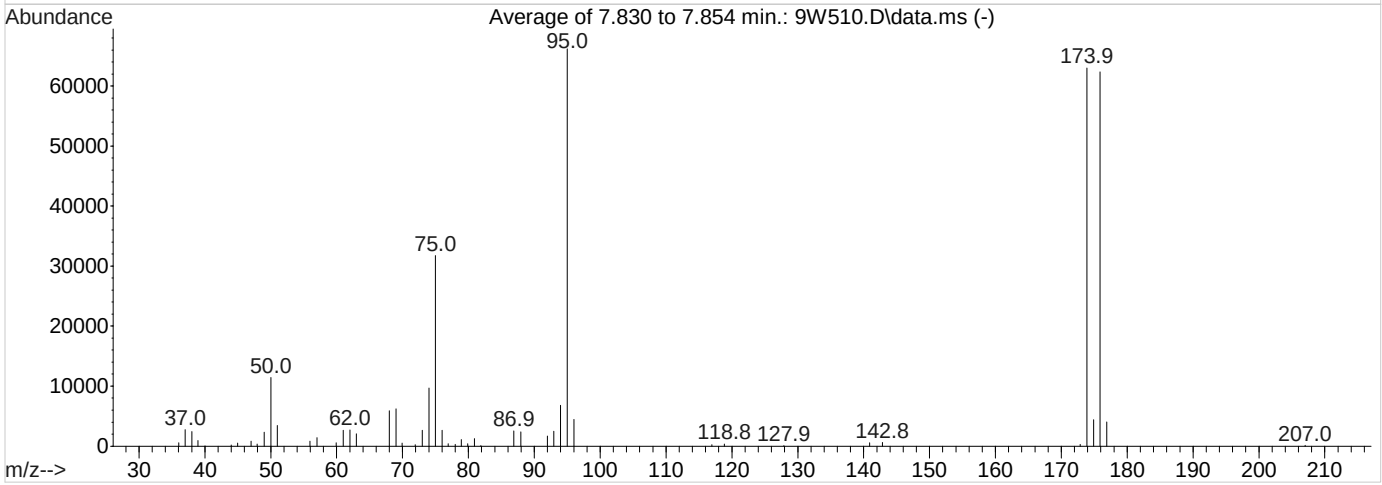
GEL 06/17/2017

Data Path : C:\msdchem\1\DATA\061617V9\
Data File : 9W510.D
Acq On : 16 Jun 2017 14:55
Operator : RXY1
Sample : |IVM170528-01|BFB|1|VOA|1|VOA8260BL|
Misc : GEL 5mL n/a
ALS Vial : 10 Sample Multiplier: 1

Integration File:

Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Title : Volatile Organics 8260B SubList :
Last Update : Sat Jun 17 13:36:41 2017





AutoFind: Scans 222, 223, 224; Background Corrected with Scan 212

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.3	11464	PASS
75	95	30	60	48.0	31776	PASS
95	95	100	100	100.0	66221	PASS
96	95	5	9	6.7	4439	PASS
173	174	0.00	2	0.5	294	PASS
174	95	50	100	95.2	63029	PASS
175	174	5	9	6.9	4378	PASS
176	174	95	101	98.9	62365	PASS
177	176	5	9	6.5	4051	PASS

This report evaluates the Rel Abn% as passing only if it is greater than the Lower Limit and lower than the Upper Limit.

July 17, 2017

Tune Report
GEL Laboratories, LLC

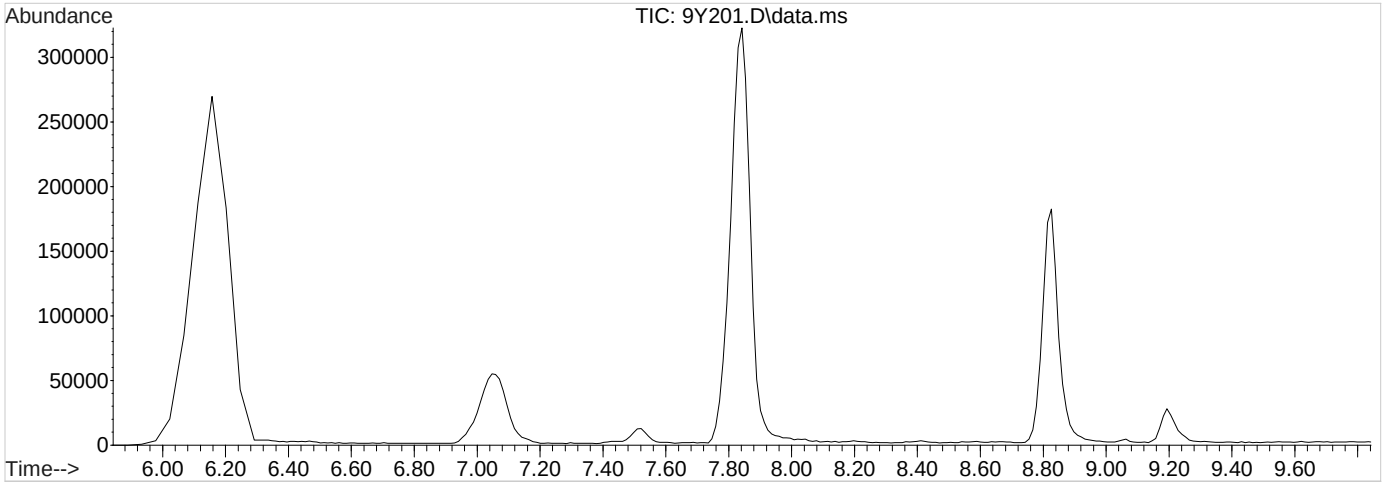
RY
06/28/2017

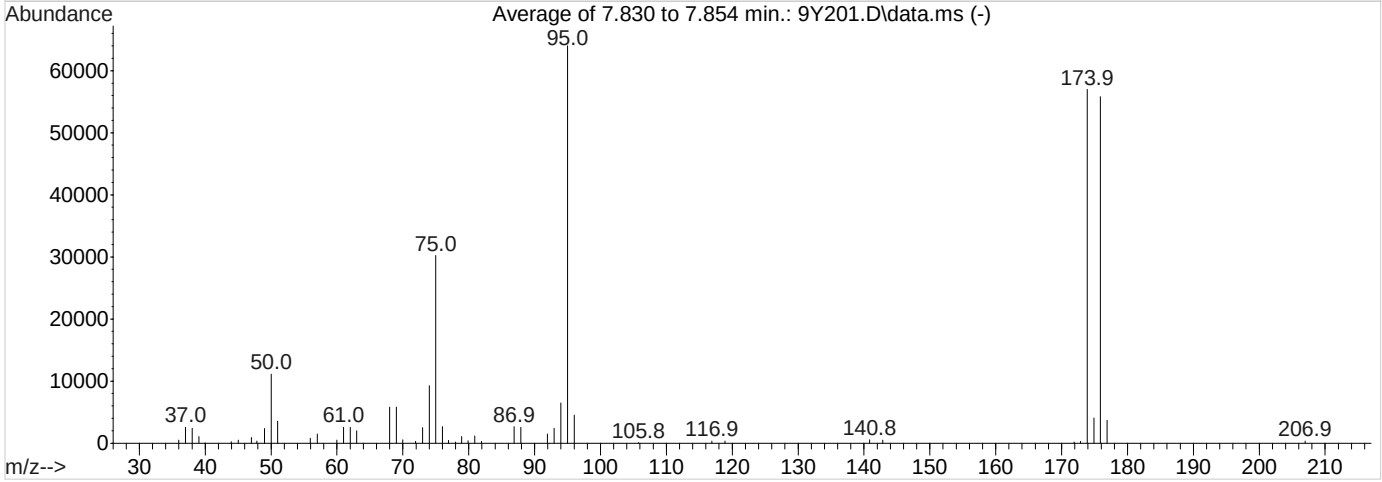
EM
07/06/2017

Data Path : C:\msdchem\1\DATA\062717V9\
Data File : 9Y201.D
Acq On : 27 Jun 2017 09:53
Operator : RXY1
Sample : |IVM170528-01|BFB|1|VOA|1|VOA8260BL|
Misc : GEL 5mL n/a
ALS Vial : 1 Sample Multiplier: 1

Integration File:

Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Title : Volatile Organics 8260B SubList :
Last Update : Sat Jun 17 13:36:41 2017





AutoFind: Scans 222, 223, 224; Background Corrected with Scan 211

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.3	11100	PASS
75	95	30	60	47.2	30216	PASS
95	95	100	100	100.0	64029	PASS
96	95	5	9	7.1	4537	PASS
173	174	0.00	2	0.5	298	PASS
174	95	50	100	89.0	57013	PASS
175	174	5	9	7.1	4030	PASS
176	174	95	101	97.9	55800	PASS
177	176	5	9	6.6	3697	PASS

This report evaluates the Rel Abn% as passing only if it is greater than the Lower Limit and lower than the Upper Limit.

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**GEL425783**			**Matrix:**	**WATER**
Lab Sample ID:	**1203818381**				
Client Sample:	**QC for batch 1676993**	**Client:**	**CPRC001**	**Project:**	**QC**
Client ID:	**MB for batch 1676993**	**Method:**	**SW846 8260C**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1676993**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**06/27/2017 12:42**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**06/27/2017 12:42**				
Data File:	**062717V9\9Y207B.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
79-01-6	Trichloroethylene	U	0.300	ug/L	0.300	2.00	1.00
630-20-6	1,1,1,2-Tetrachloroethane	U	0.300	ug/L	0.300	2.00	1.7
56-23-5	Carbon tetrachloride	U	0.300	ug/L	0.300	2.00	3.00
106-46-7	1,4-Dichlorobenzene	U	0.300	ug/L	0.300	2.00	4.00
100-41-4	Ethylbenzene	U	0.300	ug/L	0.300	2.00	4.00
71-55-6	1,1,1-Trichloroethane	U	0.300	ug/L	0.300	2.00	5.00
79-34-5	1,1,2,2-Tetrachloroethane	U	0.300	ug/L	0.300	2.00	5.00
79-00-5	1,1,2-Trichloroethane	U	0.300	ug/L	0.300	2.00	5.00
96-18-4	1,2,3-Trichloropropane	U	0.300	ug/L	0.300	2.00	5.00
96-12-8	1,2-Dibromo-3-chloropropane	U	0.500	ug/L	0.500	2.00	5.00
106-93-4	1,2-Dibromoethane	U	0.300	ug/L	0.300	2.00	5.00
107-06-2	1,2-Dichloroethane	U	0.300	ug/L	0.300	2.00	5.00
78-87-5	1,2-Dichloropropane	U	0.300	ug/L	0.300	2.00	5.00
71-43-2	Benzene	U	0.300	ug/L	0.300	2.00	5.00
75-27-4	Bromodichloromethane	U	0.300	ug/L	0.300	2.00	5.00
75-25-2	Bromoform	U	0.300	ug/L	0.300	2.00	5.00
75-15-0	Carbon disulfide	U	1.60	ug/L	1.60	10.0	5.00
108-90-7	Chlorobenzene	U	0.300	ug/L	0.300	2.00	5.00
67-66-3	Chloroform	U	0.300	ug/L	0.300	2.00	5.00
124-48-1	Dibromochloromethane	U	0.300	ug/L	0.300	2.00	5.00
75-09-2	Methylene chloride	J	2.38	ug/L	1.60	5.00	5.00
100-42-5	Styrene	U	0.300	ug/L	0.300	2.00	5.00
127-18-4	Tetrachloroethylene	U	0.300	ug/L	0.300	2.00	5.00
108-88-3	Toluene	U	0.300	ug/L	0.300	2.00	5.00
156-59-2	cis-1,2-Dichloroethylene	U	0.300	ug/L	0.300	2.00	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	0.300	ug/L	0.300	2.00	5.00
156-60-5	trans-1,2-Dichloroethylene	U	0.300	ug/L	0.300	2.00	5.00
10061-02-6	trans-1,3-Dichloropropylene	U	0.300	ug/L	0.300	2.00	5.00
75-34-3	1,1-Dichloroethane	U	0.300	ug/L	0.300	2.00	10.0
75-35-4	1,1-Dichloroethylene	U	0.300	ug/L	0.300	2.00	10.0
78-93-3	2-Butanone	U	3.00	ug/L	3.00	10.0	10.0
126-99-8	2-Chloro-1,3-butadiene	U	0.300	ug/L	0.300	2.00	10.0
108-10-1	4-Methyl-2-pentanone	U	3.00	ug/L	3.00	10.0	10.0
107-05-1	Allyl chloride	U	3.00	ug/L	3.00	10.0	10.0
74-83-9	Bromomethane	U	0.300	ug/L	0.300	2.00	10.0
75-00-3	Chloroethane	U	0.300	ug/L	0.300	2.00	10.0
74-87-3	Chloromethane	U	0.300	ug/L	0.300	2.00	10.0
74-95-3	Dibromomethane	U	0.300	ug/L	0.300	2.00	10.0

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**GEL425783**			**Matrix:**	**WATER**
Lab Sample ID:	**1203818381**				
Client Sample:	**QC for batch 1676993**	**Client:**	**CPRC001**	**Project:**	**QC**
Client ID:	**MB for batch 1676993**	**Method:**	**SW846 8260C**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1676993**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**06/27/2017 12:42**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**06/27/2017 12:42**				
Data File:	**062717V9\9Y207B.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
75-71-8	Dichlorodifluoromethane	U	0.300	ug/L	0.300	2.00	10.0
97-63-2	Ethyl methacrylate	U	3.00	ug/L	3.00	10.0	10.0
74-88-4	Iodomethane	U	3.00	ug/L	3.00	10.0	10.0
126-98-7	Methacrylonitrile	U	3.00	ug/L	3.00	10.0	10.0
80-62-6	Methyl methacrylate	U	3.00	ug/L	3.00	10.0	10.0
107-12-0	Propionitrile	U	3.00	ug/L	3.00	10.0	10.0
75-69-4	Trichlorofluoromethane	U	0.300	ug/L	0.300	2.00	10.0
75-01-4	Vinyl chloride	U	0.300	ug/L	0.300	2.00	10.0
1330-20-7	Xylenes (total)	U	0.300	ug/L	0.300	6.00	10.0
591-78-6	2-Hexanone	U	3.00	ug/L	3.00	10.0	20.0
67-64-1	Acetone	U	3.00	ug/L	3.00	10.0	20.0
108-05-4	Vinyl acetate	U	1.60	ug/L	1.60	5.00	50.0
110-57-6	trans-1,4-Dichloro-2-butene	U	1.50	ug/L	1.50	10.0	50.0
75-05-8	Acetonitrile	U	16.7	ug/L	16.7	50.0	100
107-02-8	Acrolein	U	3.00	ug/L	3.00	10.0	100
107-13-1	Acrylonitrile	U	3.00	ug/L	3.00	10.0	100
78-83-1	Isobutyl alcohol	U	33.0	ug/L	33.0	100	500

July 17, 2017

Quantitation Report
GEL Laboratories, LLC

RY 06/28/2017

EM 07/06/2017

Data Path : C:\msdchem\1\DATA\062717V9\
Data File : 9Y207B.D
Acq On : 27 Jun 2017 12:42
Operator : RXY1
InstName : VOA9
Sample : |1203818381|1676993|1|VOA|1|VOA8260CL|
Misc : GEL 5mL n/a
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 28 11:21:09 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	Dev(Min)
Internal Standards								
1) Fluorobenzene	96	10.453	10.454	1.000	1366505	50.00	ug/L	0.00
43) Chlorobenzene-d5	117	13.631	13.632	1.000	1029771	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	596401	50.00	ug/L	0.00
84) B Fluorobenzene	96	10.453	10.454	1.000	1366505	50.00	ug/L	0.00
98) B Chlorobenzene-d5	117	13.631	13.632	1.000	1029771	50.00	ug/L	0.00
100) B 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	596401	50.00	ug/L	0.00
System Monitoring Compounds								Dev(Min)
30) 1,2-Dichloroethane-d4	65	10.098	10.098	0.966	326499	48.44	ug/L	0.00
45) Toluene-d8	98	12.090	12.090	0.887	1191758	51.34	ug/L	0.00
63) Bromofluorobenzene	95	14.817	14.817	0.924	483715	53.69	ug/L	0.00

Compound	Amount	Range	Recovery
30) 1,2-Dichloroethane-d4	50.000	70 - 130	97%
45) Toluene-d8	50.000	70 - 130	103%
63) Bromofluorobenzene	50.000	70 - 130	107%

Target Compounds	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	QValue
2) Dichlorodifluoromethane		0.000	4.672	0.000	0	N.D.		
3) Chloromethane		0.000	5.011	0.000	0	N.D.		
4) Vinyl chloride		0.000	5.260	0.000	0	N.D.		
5) Bromomethane		0.000	5.852	0.000	0	N.D.		
6) Chloroethane		0.000	6.007	0.000	0	N.D.		
7) Trichlorofluoromethane		0.000	6.410	0.000	0	N.D.		
8) Ethyl ether		0.000	6.766	0.000	0	N.D.		
9) Acetone	43	7.169	7.157	0.686	639	N.D.		
10) 1,1-Dichloroethylene		0.000	7.157	0.000	0	N.D.		
11) Iodomethane		0.000	7.418	0.000	0	N.D.		
12) Acetonitrile	41	7.595	7.513	0.727	2591	N.D.		
13) Methyl acetate		0.000	7.548	0.000	0	N.D.		
14) Carbon disulfide	76	7.548	7.548	0.722	1786	N.D.		
15) Methylene chloride	84	7.738	7.738	0.740	17228	2.38	ug/L	97
16) tert-Butyl methyl ether		0.000	8.034	0.000	0	N.D.		
17) trans-1,2-Dichloroethy...		0.000	8.082	0.000	0	N.D.		
18) Hexane	57	8.354	8.355	0.799	1153	N.D.		
19) Vinyl acetate	43	8.544	8.521	0.817	492	N.D.		
20) 1,1-Dichloroethane		0.000	8.580	0.000	0	N.D.		
21) 2-Butanone	43	9.173	9.161	0.877	1365	N.D.		
22) cis-1,2-Dichloroethylene		0.000	9.220	0.000	0	N.D.		
23) 2,2-Dichloropropane		0.000	9.244	0.000	0	N.D.		
24) Bromochloromethane		0.000	9.493	0.000	0	N.D.		
25) Chloroform		0.000	9.529	0.000	0	N.D.		
26) 1,1,1-Trichloroethane		0.000	9.801	0.000	0	N.D.		
27) Cyclohexane		0.000	9.896	0.000	0	N.D.		
28) 1,1-Dichloropropene		0.000	9.956	0.000	0	N.D.		
29) Carbon tetrachloride		0.000	10.003	0.000	0	N.D.		
31) 1,2-Dichloroethane		0.000	10.181	0.000	0	N.D.		
32) Benzene	78	10.216	10.205	0.977	446	N.D.		
33) Cyclohexene		0.000	10.311	0.000	0	N.D.		
34) n-Butyl alcohol		0.000	10.537	0.000	0	N.D.		
35) Trichloroethylene		0.000	10.833	0.000	0	N.D.		

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\062717V9\
Data File : 9Y207B.D
Acq On : 27 Jun 2017 12:42
Operator : RXY1
InstName : VOA9
Sample : |1203818381|1676993|1|VOA|1|VOA8260CL|
Misc : GEL 5mL n/a
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 28 11:21:09 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

	Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	
36)	2-Pentanone		0.000	10.916	0.000	0	N.D.		
37)	1,2-Dichloropropane		0.000	11.094	0.000	0	N.D.		
38)	Methylcyclohexane		0.000	11.082	0.000	0	N.D.		
39)	Dibromomethane		0.000	11.224	0.000	0	N.D.		
40)	Bromodichloromethane		0.000	11.331	0.000	0	N.D.		
41)	2-Chloroethylvinyl ether		0.000	11.545	0.000	0	N.D.		
42)	cis-1,3-Dichloropropylene		0.000	11.782	0.000	0	N.D.		
44)	4-Methyl-2-pentanone		0.000	11.865	0.000	0	N.D.		
46)	Toluene	91	12.173	12.173	0.893	843	N.D.		
47)	trans-1,3-Dichloroprop...		0.000	12.315	0.000	0	N.D.		
48)	1,1,2-Trichloroethane		0.000	12.541	0.000	0	N.D.		
49)	2-Hexanone	43	12.742	12.719	0.935	362	N.D.		
50)	1,3-Dichloropropane		0.000	12.742	0.000	0	N.D.		
51)	Tetrachloroethylene		0.000	12.766	0.000	0	N.D.		
52)	Dibromochloromethane		0.000	13.003	0.000	0	N.D.		
53)	1,2-Dibromoethane		0.000	13.181	0.000	0	N.D.		
54)	Chlorobenzene	112	13.667	13.655	1.003	990	N.D.		
55)	1,1,1,2-Tetrachloroethane		0.000	13.715	0.000	0	N.D.		
56)	Ethylbenzene	91	13.714	13.715	1.006	1186	N.D.		
57)	m,p-Xylenes	106	13.821	13.821	1.014	1427	N.D.		
58)	o-Xylene		0.000	14.260	0.000	0	N.D.		
59)	Styrene	104	14.272	14.260	1.047	569	N.D.		
61)	Bromoform		0.000	14.533	0.000	0	N.D.		
62)	Isopropylbenzene	105	14.616	14.616	0.911	879	N.D.		
64)	1,1,2,2-Tetrachloroethane		0.000	14.889	0.000	0	N.D.		
65)	1,2,3-Trichloropropane		0.000	14.983	0.000	0	N.D.		
66)	Bromobenzene	156	15.031	15.031	0.937	523	N.D.		
67)	n-Propylbenzene	91	15.043	15.043	0.938	1630	N.D.		
68)	1,3,5-Trimethylbenzene	105	15.185	15.185	0.947	935	N.D.		
69)	2-Chlorotoluene	126	15.197	15.197	0.948	181	N.D.		
70)	4-Chlorotoluene	91	15.304	15.292	0.954	1854	N.D.		
71)	tert-Butylbenzene		0.000	15.565	0.000	0	N.D.		
72)	1,2,4-Trimethylbenzene	105	15.600	15.600	0.973	1305	N.D.		
73)	sec-Butylbenzene	105	15.790	15.790	0.984	1792	N.D.		
74)	4-Isopropyltoluene	119	15.908	15.908	0.992	1676	N.D.		
75)	1,3-Dichlorobenzene	146	15.991	15.991	0.997	1849	N.D.		
76)	1,4-Dichlorobenzene	146	16.074	16.074	1.002	2705	N.D.		
77)	n-Butylbenzene	91	16.359	16.359	1.020	2792	N.D.		
78)	1,2-Dichlorobenzene	146	16.513	16.513	1.030	1999	N.D.		
79)	1,2-Dibromo-3-chloropr...		0.000	17.415	0.000	0	N.D.		
80)	1,2,4-Trichlorobenzene	180	18.505	18.505	1.154	3709	N.D.		
81)	Hexachlorobutadiene	225	18.683	18.683	1.165	3284	0.35	ug/L	89
82)	Naphthalene	128	18.920	18.921	1.180	5875	N.D.		
83)	1,2,3-Trichlorobenzene	180	19.276	19.276	1.202	3712	N.D.		
85)	Acrolein		0.000	6.979	0.000	0	N.D.		
86)	Trichlorotrifluoroethane		0.000	7.133	0.000	0	N.D.		
87)	Allyl chloride	41	7.595	7.596	0.727	2591	N.D.		
88)	Acrylonitrile	53	8.011	7.999	0.766	1622	N.D.		
89)	2-Chloro-1,3-butadiene		0.000	8.675	0.000	0	N.D.		
90)	Ethyl acetate	43	9.173	9.161	0.877	1365	N.D.		
91)	Propionitrile		0.000	9.244	0.000	0	N.D.		
92)	Methacrylonitrile	41	9.434	9.422	0.902	1040	N.D.		

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\062717V9\
Data File : 9Y207B.D
Acq On : 27 Jun 2017 12:42
Operator : RXY1
InstName : VOA9
Sample : |1203818381|1676993|1|VOA|1|VOA8260CL|
Misc : GEL 5mL n/a
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 28 11:21:09 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

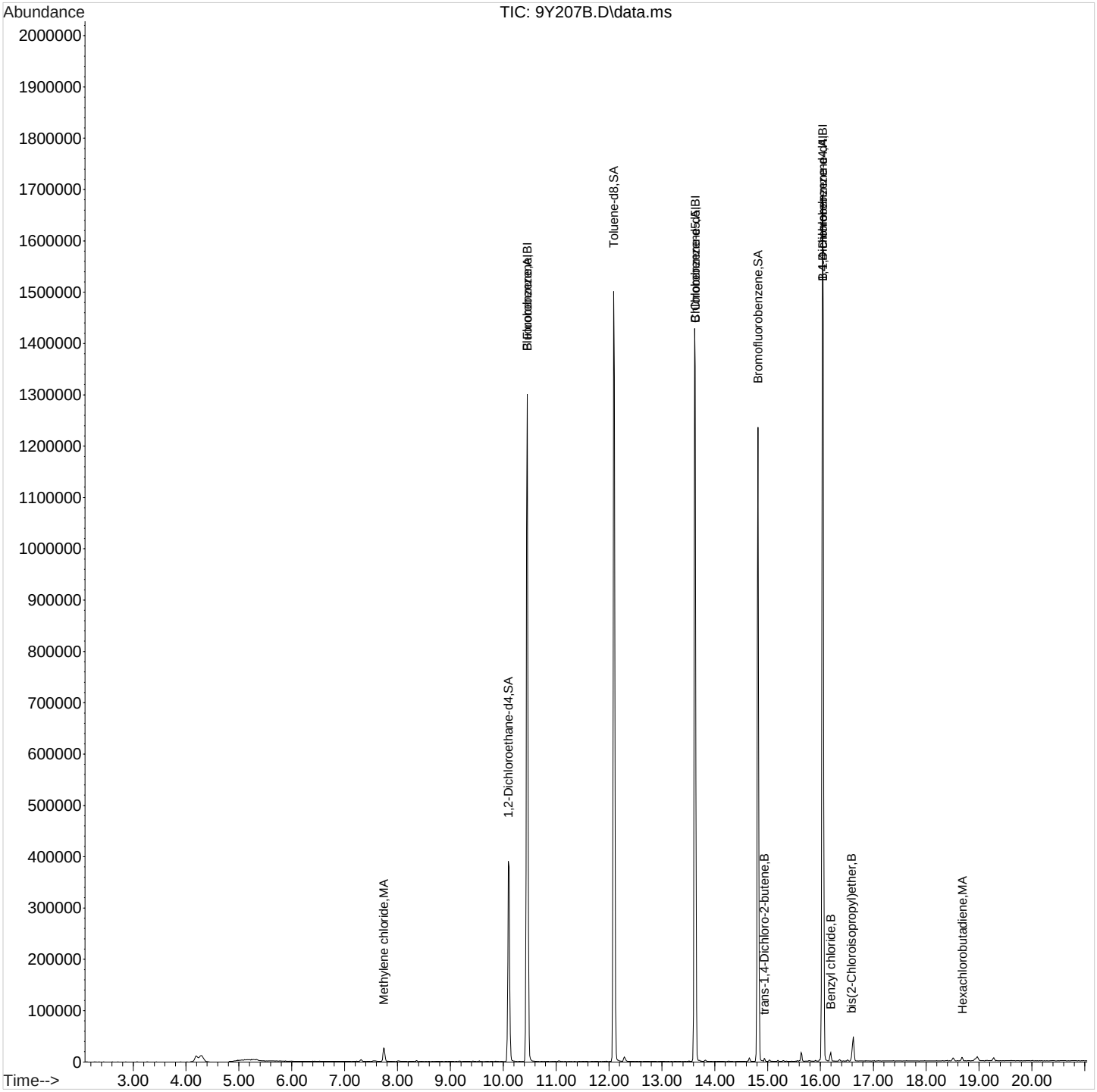
	Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	
93)	Tetrahydrofuran	42	9.540	9.540	0.913	770	N.D.		
94)	Isobutyl alcohol		0.000	9.849	0.000	0	N.D.		
95)	Methyl methacrylate	69	11.058	11.046	1.058	1764	N.D.		
96)	1,4-Dioxane		0.000	11.165	0.000	0	N.D.		
97)	2-Nitropropane		0.000	11.544	0.000	0	N.D.		
99)	Ethyl methacrylate	69	12.315	12.303	0.903	3053	N.D.		
101)	cis-1,4-Dichloro-2-butene	53	14.651	14.651	0.913	1552	N.D.		
102)	Cyclohexanone	42	14.782	14.782	0.922	524	N.D.		
103)	trans-1,4-Dichloro-2-b...	53	14.936	14.936	0.931	1895	1.23	ug/L	74
104)	Pentachloroethane	167	15.636	15.636	0.975	3769	N.D.		
105)	Benzyl chloride	91	16.193	16.193	1.010	16375	1.75	ug/L	91
106)	bis(2-Chloroisopropyl)...	45	16.584	16.584	1.034	7351	2.85	ug/L	73

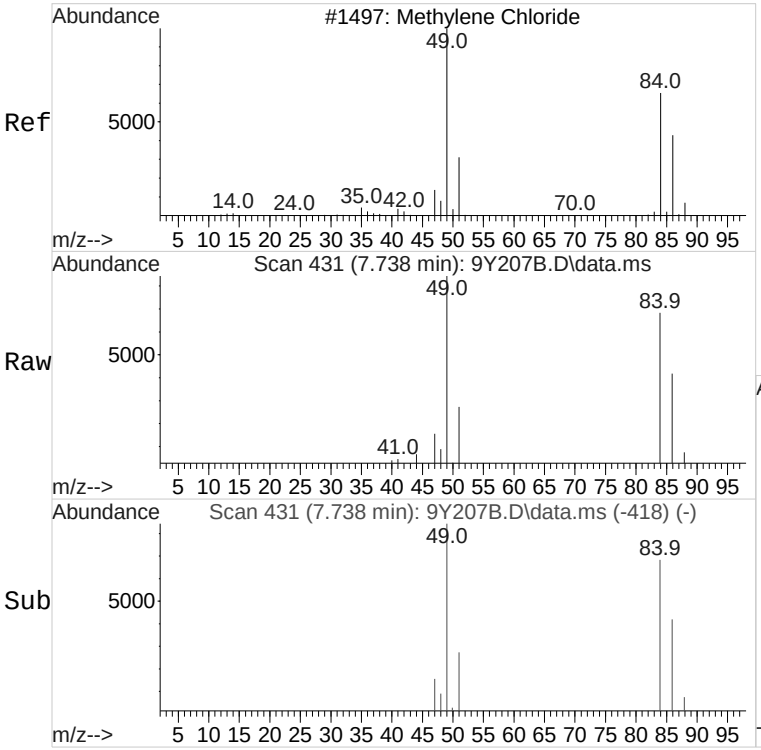
(#) = qualifier out of range (m) = manual integration (+) = signals summed
(A) = Over the calibration range (d) = deleted

Quantitation Report
GEL Laboratories, LLC

```
Data Path : C:\msdchem\1\DATA\062717V9\
Data File : 9Y207B.D
Acq On    : 27 Jun 2017  12:42
Operator  : RXY1
InstName  : VOA9
Sample    : |1203818381|1676993|1|VOA|1|VOA8260CL|
Misc      : GEL 5mL n/a
ALS Vial  : 7   Sample Multiplier: 1

Quant Time: Jun 28 11:21:09 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title  : Volatile Organics 8260B                    SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE
```

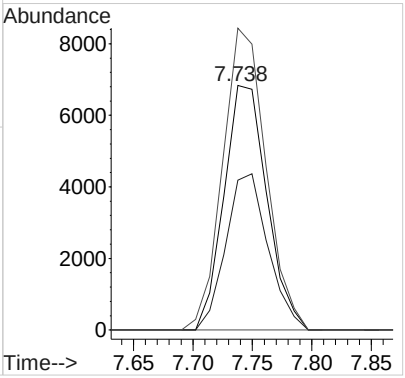


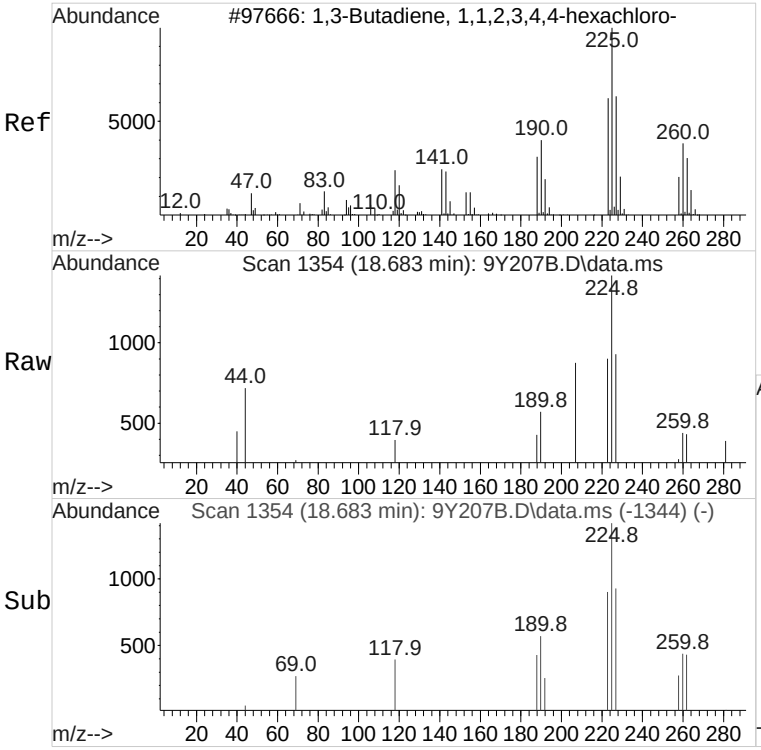


#15
Methylene chloride
Concen: 2.38 ug/L
RT: 7.738 min Scan# 431
Delta R.T. -0.000 min
Lab File: 9Y207B.D
Acq: 27 Jun 2017 12:42

Tgt Ion: 84 Resp: 17228

Ion	Ratio	Lower	Upper
84	100		
86	62.8	34.4	94.4
49	124.3	91.1	151.1

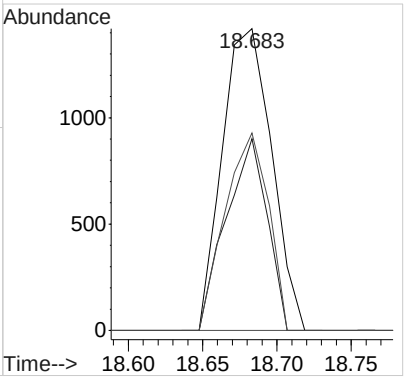


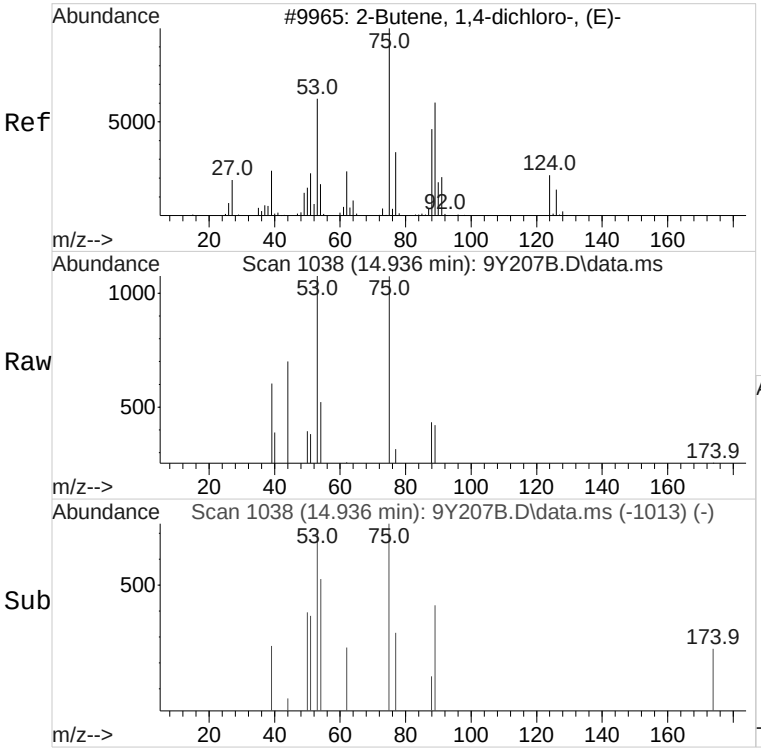


#81
Hexachlorobutadiene
Concen: 0.35 ug/L
RT: 18.683 min Scan# 1354
Delta R.T. 0.000 min
Lab File: 9Y207B.D
Acq: 27 Jun 2017 12:42

Tgt Ion:225 Resp: 3284

Ion	Ratio	Lower	Upper
225	100		
223	52.6	31.9	91.9
227	57.5	35.2	95.2

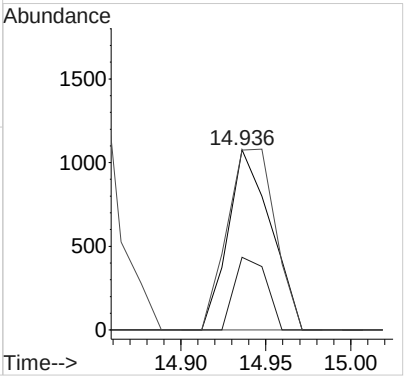


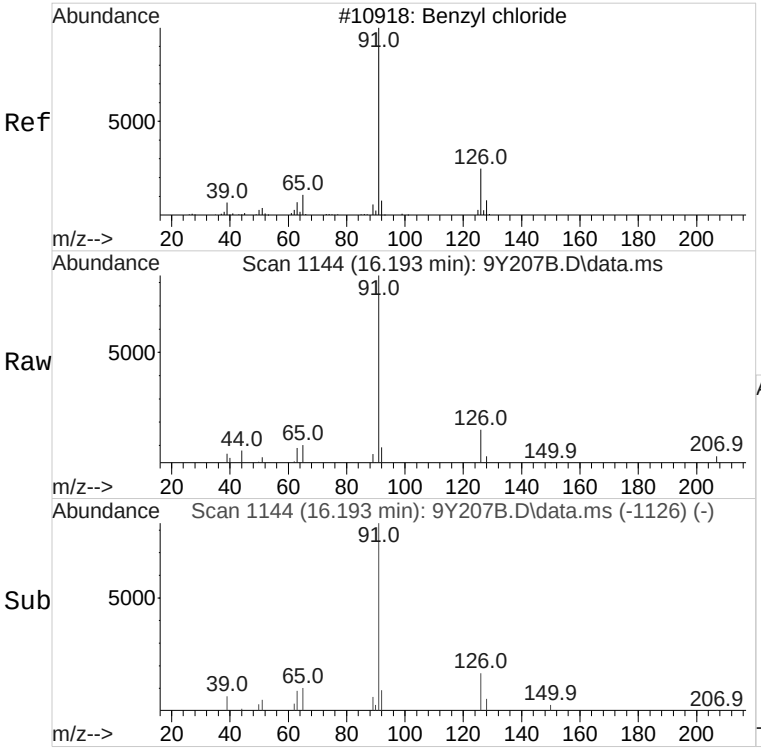


#103
trans-1,4-Dichloro-2-butene
Concen: 1.23 ug/L
RT: 14.936 min Scan# 1038
Delta R.T. -0.000 min
Lab File: 9Y207B.D
Acq: 27 Jun 2017 12:42

Tgt Ion: 53 Resp: 1895

Ion	Ratio	Lower	Upper
53	100		
88	30.5	26.3	86.3
75	112.8	110.1	170.1

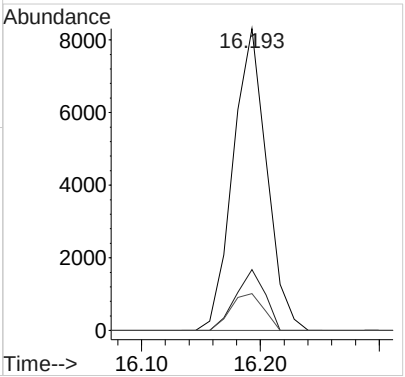


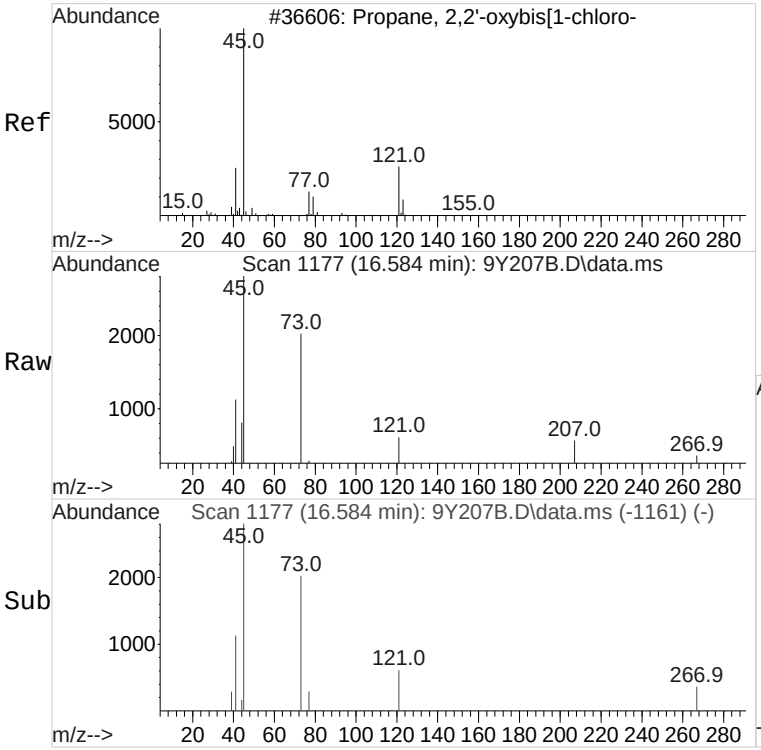


#105
Benzyl chloride
Concen: 1.75 ug/L
RT: 16.193 min Scan# 1144
Delta R.T. -0.000 min
Lab File: 9Y207B.D
Acq: 27 Jun 2017 12:42

Tgt Ion: 91 Resp: 16375

Ion	Ratio	Lower	Upper
91	100		
126	17.6	0.0	53.9
65	12.1	0.0	42.3

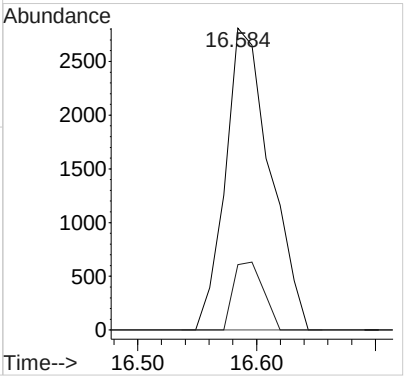




#106
bis(2-Chloroisopropyl)ether
Concen: 2.85 ug/L
RT: 16.584 min Scan# 1177
Delta R.T. 0.000 min
Lab File: 9Y207B.D
Acq: 27 Jun 2017 12:42

Tgt Ion: 45 Resp: 7351

Ion	Ratio	Lower	Upper
45	100		
121	15.1	0.0	59.6



Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**GEL425783**			**Matrix:**	**WATER**
Lab Sample ID:	**1203818383**				
Client Sample:	**QC for batch 1676993**	**Client:**	**CPRC001**	**Project:**	**QC**
Client ID:	**LCS for batch 1676993**	**Method:**	**SW846 8260C**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1676993**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**06/27/2017 11:17**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**06/27/2017 11:17**				
Data File:	**062717V9\9Y204L.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
79-01-6	Trichloroethylene		51.2	ug/L	0.300	2.00	1.00
630-20-6	1,1,1,2-Tetrachloroethane		53.8	ug/L	0.300	2.00	1.7
56-23-5	Carbon tetrachloride		49.4	ug/L	0.300	2.00	3.00
106-46-7	1,4-Dichlorobenzene		51.3	ug/L	0.300	2.00	4.00
100-41-4	Ethylbenzene		52.0	ug/L	0.300	2.00	4.00
71-55-6	1,1,1-Trichloroethane		48.8	ug/L	0.300	2.00	5.00
79-34-5	1,1,2,2-Tetrachloroethane		56.7	ug/L	0.300	2.00	5.00
79-00-5	1,1,2-Trichloroethane		55.4	ug/L	0.300	2.00	5.00
96-18-4	1,2,3-Trichloropropane		52.7	ug/L	0.300	2.00	5.00
96-12-8	1,2-Dibromo-3-chloropropane		54.3	ug/L	0.500	2.00	5.00
106-93-4	1,2-Dibromoethane		53.6	ug/L	0.300	2.00	5.00
107-06-2	1,2-Dichloroethane		48.3	ug/L	0.300	2.00	5.00
78-87-5	1,2-Dichloropropane		53.7	ug/L	0.300	2.00	5.00
71-43-2	Benzene		52.2	ug/L	0.300	2.00	5.00
75-27-4	Bromodichloromethane		53.3	ug/L	0.300	2.00	5.00
75-25-2	Bromoform		58.0	ug/L	0.300	2.00	5.00
75-15-0	Carbon disulfide		247	ug/L	1.60	10.0	5.00
108-90-7	Chlorobenzene		51.9	ug/L	0.300	2.00	5.00
67-66-3	Chloroform		50.1	ug/L	0.300	2.00	5.00
124-48-1	Dibromochloromethane		56.3	ug/L	0.300	2.00	5.00
75-09-2	Methylene chloride	B	53.6	ug/L	1.60	5.00	5.00
100-42-5	Styrene		54.0	ug/L	0.300	2.00	5.00
127-18-4	Tetrachloroethylene		48.0	ug/L	0.300	2.00	5.00
108-88-3	Toluene		52.9	ug/L	0.300	2.00	5.00
156-59-2	cis-1,2-Dichloroethylene		52.7	ug/L	0.300	2.00	5.00
10061-01-5	cis-1,3-Dichloropropylene		54.7	ug/L	0.300	2.00	5.00
156-60-5	trans-1,2-Dichloroethylene		53.5	ug/L	0.300	2.00	5.00
10061-02-6	trans-1,3-Dichloropropylene		57.0	ug/L	0.300	2.00	5.00
75-34-3	1,1-Dichloroethane		53.5	ug/L	0.300	2.00	10.0
75-35-4	1,1-Dichloroethylene		51.0	ug/L	0.300	2.00	10.0
78-93-3	2-Butanone		265	ug/L	3.00	10.0	10.0
126-99-8	2-Chloro-1,3-butadiene	U	0.300	ug/L	0.300	2.00	10.0
108-10-1	4-Methyl-2-pentanone		270	ug/L	3.00	10.0	10.0
107-05-1	Allyl chloride	U	3.00	ug/L	3.00	10.0	10.0
74-83-9	Bromomethane		42.4	ug/L	0.300	2.00	10.0
75-00-3	Chloroethane		46.1	ug/L	0.300	2.00	10.0
74-87-3	Chloromethane		46.7	ug/L	0.300	2.00	10.0
74-95-3	Dibromomethane		51.2	ug/L	0.300	2.00	10.0

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**GEL425783**			**Matrix:**	**WATER**
Lab Sample ID:	**1203818383**				
Client Sample:	**QC for batch 1676993**	**Client:**	**CPRC001**	**Project:**	**QC**
Client ID:	**LCS for batch 1676993**	**Method:**	**SW846 8260C**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1676993**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**06/27/2017 11:17**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**06/27/2017 11:17**				
Data File:	**062717V9\9Y204L.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
75-71-8	Dichlorodifluoromethane		36.6	ug/L	0.300	2.00	10.0
97-63-2	Ethyl methacrylate	U	3.00	ug/L	3.00	10.0	10.0
74-88-4	Iodomethane		228	ug/L	3.00	10.0	10.0
126-98-7	Methacrylonitrile	U	3.00	ug/L	3.00	10.0	10.0
80-62-6	Methyl methacrylate	U	3.00	ug/L	3.00	10.0	10.0
107-12-0	Propionitrile	U	3.00	ug/L	3.00	10.0	10.0
75-69-4	Trichlorofluoromethane		41.7	ug/L	0.300	2.00	10.0
75-01-4	Vinyl chloride		44.3	ug/L	0.300	2.00	10.0
1330-20-7	Xylenes (total)		162	ug/L	0.300	6.00	10.0
591-78-6	2-Hexanone		269	ug/L	3.00	10.0	20.0
67-64-1	Acetone		252	ug/L	3.00	10.0	20.0
108-05-4	Vinyl acetate		234	ug/L	1.60	5.00	50.0
110-57-6	trans-1,4-Dichloro-2-butene	U	1.50	ug/L	1.50	10.0	50.0
75-05-8	Acetonitrile		1290	ug/L	16.7	50.0	100
107-02-8	Acrolein	U	3.00	ug/L	3.00	10.0	100
107-13-1	Acrylonitrile	U	3.00	ug/L	3.00	10.0	100
78-83-1	Isobutyl alcohol	U	33.0	ug/L	33.0	100	500

July 17, 2017

Quantitation Report
GEL Laboratories, LLC

RY 06/28/2017

EM 07/06/2017

Data Path : C:\msdchem\1\DATA\062717V9\
Data File : 9Y204L.D
Acq On : 27 Jun 2017 11:17
Operator : RXY1
InstName : VOA9
Sample : |1203818383|1676993|1|VOA|1|VOA8260CL|
Misc : GEL 5mL n/a MIX[A]0503-01G+0504-10G+0620-
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 28 11:22:12 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	Dev(Min)
Internal Standards								
1) Fluorobenzene	96	10.454	10.454	1.000	1384884	50.00	ug/L	0.00
43) Chlorobenzene-d5	117	13.632	13.632	1.000	1044174	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	616439	50.00	ug/L	0.00
84) B Fluorobenzene	96	10.454	10.454	1.000	1384884	50.00	ug/L	0.00
98) B Chlorobenzene-d5	117	13.632	13.632	1.000	1044174	50.00	ug/L	0.00
100) B 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	616439	50.00	ug/L	0.00
System Monitoring Compounds								Dev(Min)
30) 1,2-Dichloroethane-d4	65	10.098	10.098	0.966	321227	47.03	ug/L	0.00
45) Toluene-d8	98	12.090	12.090	0.887	1211535	51.47	ug/L	0.00
63) Bromofluorobenzene	95	14.818	14.817	0.924	491428	52.77	ug/L	0.00

Compound	Amount	Range	Recovery
30) 1,2-Dichloroethane-d4	50.000	70 - 130	94%
45) Toluene-d8	50.000	70 - 130	103%
63) Bromofluorobenzene	50.000	70 - 130	106%

Target Compounds	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	QValue
2) Dichlorodifluoromethane	85	4.672	4.672	0.447	277810	36.56	ug/L	100
3) Chloromethane	50	5.011	5.011	0.479	341043	46.66	ug/L	100
4) Vinyl chloride	62	5.260	5.260	0.503	348858	44.25	ug/L	99
5) Bromomethane	94	5.864	5.852	0.561	288405	42.35	ug/L	99
6) Chloroethane	64	6.007	6.007	0.575	287306	46.11	ug/L	99
7) Trichlorofluoromethane	101	6.445	6.410	0.617	462582	41.72	ug/L	100
8) Ethyl ether	59	6.766	6.766	0.647	244241	47.70	ug/L	98
9) Acetone	43	7.157	7.157	0.685	438236	251.59	ug/L	95
10) 1,1-Dichloroethylene	61	7.157	7.157	0.685	551885	50.99	ug/L	100
11) Iodomethane	142	7.418	7.418	0.710	2803982	227.75	ug/L	99
12) Acetonitrile	41	7.525	7.513	0.720	852276	1287.91	ug/L	97
13) Methyl acetate	43	7.548	7.548	0.722	896321	241.04	ug/L	100
14) Carbon disulfide	76	7.548	7.548	0.722	5314543	247.24	ug/L	100
15) Methylene chloride	84	7.750	7.738	0.741	393332	53.55	ug/L	99
16) tert-Butyl methyl ether	73	8.034	8.034	0.769	889601	50.65	ug/L	98
17) trans-1,2-Dichloroethy...	61	8.082	8.082	0.773	528716	53.45	ug/L	99
18) Hexane	57	8.355	8.355	0.799	310184	34.10	ug/L	96
19) Vinyl acetate	43	8.521	8.521	0.815	2028701	234.15	ug/L	99
20) 1,1-Dichloroethane	63	8.580	8.580	0.821	638338	53.53	ug/L	100
21) 2-Butanone	43	9.161	9.161	0.876	620364	265.40	ug/L	100
22) cis-1,2-Dichloroethylene	61	9.220	9.220	0.882	568683	52.72	ug/L	99
23) 2,2-Dichloropropane	77	9.244	9.244	0.884	530440	50.67	ug/L	97
24) Bromochloromethane	128	9.493	9.493	0.908	170875	49.99	ug/L	93
25) Chloroform	83	9.529	9.529	0.912	566858	50.08	ug/L	99
26) 1,1,1-Trichloroethane	97	9.801	9.801	0.938	522470	48.78	ug/L	99
27) Cyclohexane	56	9.896	9.896	0.947	662720	53.94	ug/L	97
28) 1,1-Dichloropropene	75	9.956	9.956	0.952	440142	50.35	ug/L	96
29) Carbon tetrachloride	117	10.003	10.003	0.957	453054	49.35	ug/L	100
31) 1,2-Dichloroethane	62	10.181	10.181	0.974	368694	48.31	ug/L	99
32) Benzene	78	10.205	10.205	0.976	1327199	52.22	ug/L	100
33) Cyclohexene	67	10.311	10.311	0.986	649560	52.85	ug/L	99
34) n-Butyl alcohol	41	10.537	10.537	1.008	510147	5152.22	ug/L	97
35) Trichloroethylene	95	10.845	10.833	1.037	340414	51.17	ug/L	97

Quantization Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\062717V9\
Data File : 9Y204L.D
Acq On : 27 Jun 2017 11:17
Operator : RXY1
InstName : VOA9
Sample : |1203818383|1676993|1|VOA|1|VOA8260CL|
Misc : GEL 5mL n/a MIX[A]0503-01G+0504-10G+0620-
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 28 11:22:12 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

	Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units		
36)	2-Pentanone	43	10.916	10.916	1.044	700775	208.87	ug/L		99
37)	1,2-Dichloropropane	63	11.094	11.094	1.061	318675	53.71	ug/L		100
38)	Methylcyclohexane	83	11.082	11.082	1.060	669334	51.53	ug/L		98
39)	Dibromomethane	93	11.224	11.224	1.074	171556	51.20	ug/L		94
40)	Bromodichloromethane	83	11.331	11.331	1.084	395329	53.32	ug/L		99
41)	2-Chloroethylvinyl ether	63	11.545	11.545	1.104	613748	196.08	ug/L		98
42)	cis-1,3-Dichloropropylene	75	11.782	11.782	1.127	508285	54.73	ug/L		96
44)	4-Methyl-2-pentanone	58	11.865	11.865	0.870	492417	270.20	ug/L		96
46)	Toluene	91	12.173	12.173	0.893	1331767	52.87	ug/L		100
47)	trans-1,3-Dichloroprop...	75	12.315	12.315	0.903	434187	56.96	ug/L		98
48)	1,1,2-Trichloroethane	83	12.541	12.541	0.920	219863	55.37	ug/L		98
49)	2-Hexanone	43	12.719	12.719	0.933	931268	268.61	ug/L		99
50)	1,3-Dichloropropane	76	12.742	12.742	0.935	422870	52.78	ug/L		92
51)	Tetrachloroethylene	164	12.766	12.766	0.936	296988	48.04	ug/L		96
52)	Dibromochloromethane	129	13.003	13.003	0.954	290460	56.25	ug/L		99
53)	1,2-Dibromoethane	107	13.181	13.181	0.967	263809	53.56	ug/L		100
54)	Chlorobenzene	112	13.655	13.655	1.002	913947	51.87	ug/L		98
55)	1,1,1,2-Tetrachloroethane	131	13.715	13.715	1.006	337682	53.81	ug/L		99
56)	Ethylbenzene	91	13.715	13.715	1.006	1499783	51.99	ug/L		100
57)	m,p-Xylenes	106	13.821	13.821	1.014	1267118	108.86	ug/L		99
58)	o-Xylene	106	14.260	14.260	1.046	640873	53.11	ug/L		100
59)	Styrene	104	14.260	14.260	1.046	1008580	54.02	ug/L		100
61)	Bromoform	173	14.533	14.533	0.906	200341	57.99	ug/L		100
62)	Isopropylbenzene	105	14.616	14.616	0.911	1669089	55.03	ug/L		100
64)	1,1,2,2-Tetrachloroethane	83	14.889	14.889	0.928	363658	56.70	ug/L		99
65)	1,2,3-Trichloropropane	110	14.984	14.983	0.934	99029	52.65	ug/L	#	79
66)	Bromobenzene	156	15.031	15.031	0.937	436325	50.22	ug/L		94
67)	n-Propylbenzene	91	15.043	15.043	0.938	1889465	53.18	ug/L		99
68)	1,3,5-Trimethylbenzene	105	15.185	15.185	0.947	1410816	54.23	ug/L		100
69)	2-Chlorotoluene	126	15.197	15.197	0.948	429890	53.50	ug/L		97
70)	4-Chlorotoluene	91	15.292	15.292	0.953	1221448	53.79	ug/L		99
71)	tert-Butylbenzene	134	15.565	15.565	0.970	328859	55.26	ug/L		99
72)	1,2,4-Trimethylbenzene	105	15.600	15.600	0.973	1438092	53.91	ug/L		90
73)	sec-Butylbenzene	105	15.790	15.790	0.984	1929548	54.92	ug/L		99
74)	4-Isopropyltoluene	119	15.908	15.908	0.992	1695611	54.20	ug/L		100
75)	1,3-Dichlorobenzene	146	15.991	15.991	0.997	880315	50.60	ug/L		99
76)	1,4-Dichlorobenzene	146	16.075	16.074	1.002	869676	51.26	ug/L		99
77)	n-Butylbenzene	91	16.359	16.359	1.020	1548168	54.22	ug/L		99
78)	1,2-Dichlorobenzene	146	16.513	16.513	1.030	837371	51.14	ug/L		99
79)	1,2-Dibromo-3-chloropr...	157	17.415	17.415	1.086	79987	54.27	ug/L		97
80)	1,2,4-Trichlorobenzene	180	18.505	18.505	1.154	698106	49.37	ug/L		99
81)	Hexachlorobutadiene	225	18.683	18.683	1.165	447453	45.81	ug/L		100
82)	Naphthalene	128	18.909	18.921	1.179	1345990	54.64	ug/L		100
83)	1,2,3-Trichlorobenzene	180	19.276	19.276	1.202	629352	49.29	ug/L		99
85)	Acrolein		6.908	6.979	0.661	0m	N.D.	d		
86)	Trichlorotrifluoroethane		7.133	7.133	0.682	0m	N.D.	d		
87)	Allyl chloride		7.525	7.596	0.720	0m	N.D.	d		
88)	Acrylonitrile		8.034	7.999	0.769	0m	N.D.	d		
89)	2-Chloro-1,3-butadiene		8.687	8.675	0.831	0m	N.D.	d		
90)	Ethyl acetate		9.161	9.161	0.876	0m	N.D.	d		
91)	Propionitrile		9.161	9.244	0.876	0m	N.D.	d		
92)	Methacrylonitrile		9.517	9.422	0.910	0m	N.D.	d		

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\062717V9\
Data File : 9Y204L.D
Acq On : 27 Jun 2017 11:17
Operator : RXY1
InstName : VOA9
Sample : |1203818383|1676993|1|VOA|1|VOA8260CL|
Misc : GEL 5mL n/a MIX[A]0503-01G+0504-10G+0620-
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 28 11:22:12 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

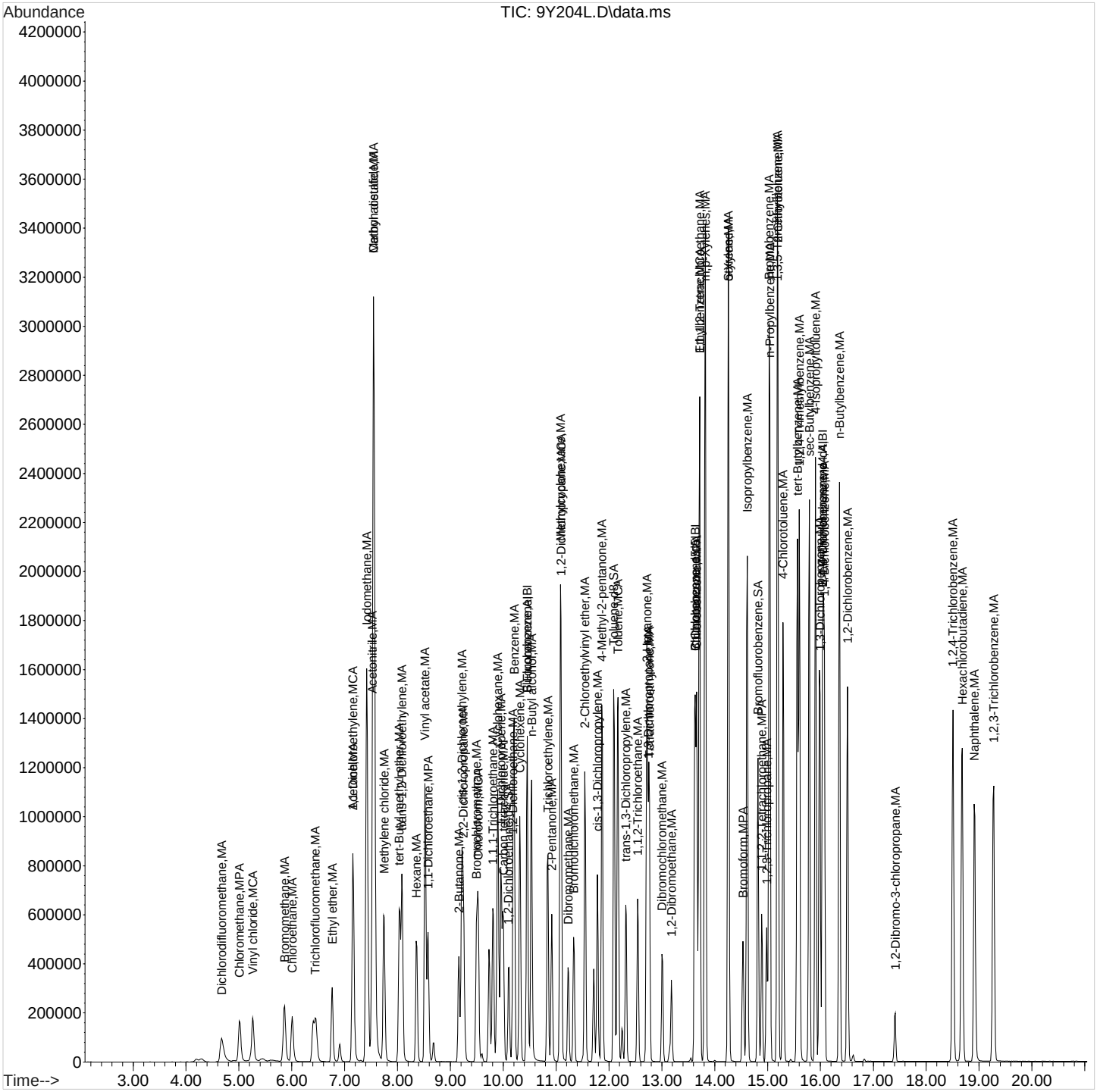
	Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units
93)	Tetrahydrofuran		9.529	9.540	0.912	0m	N.D.	d
94)	Isobutyl alcohol		9.896	9.849	0.947	0m	N.D.	d
95)	Methyl methacrylate		11.082	11.046	1.060	0m	N.D.	d
96)	1,4-Dioxane		11.224	11.165	1.074	0m	N.D.	d
97)	2-Nitropropane		11.545	11.544	1.104	0m	N.D.	d
99)	Ethyl methacrylate		12.244	12.303	0.898	0m	N.D.	d
101)	cis-1,4-Dichloro-2-butene		14.616	14.651	0.911	0m	N.D.	d
102)	Cyclohexanone		14.545	14.782	0.907	0m	N.D.	d
103)	trans-1,4-Dichloro-2-b...		15.031	14.936	0.937	0m	N.D.	d
104)	Pentachloroethane		15.636	15.636	0.975	0m	N.D.	d
105)	Benzyl chloride		16.193	16.193	1.010	0m	N.D.	d
106)	bis(2-Chloroisopropyl)...		16.620	16.584	1.036	0m	N.D.	d

(#) = qualifier out of range (m) = manual integration (+) = signals summed
(A) = Over the calibration range (d) = deleted

Quantitation Report
GEL Laboratories, LLC

```
Data Path : C:\msdchem\1\DATA\062717V9\
Data File : 9Y204L.D
Acq On    : 27 Jun 2017  11:17
Operator  : RXY1
InstName  : VOA9
Sample    : |1203818383|1676993|1|VOA|1|VOA8260CL|
Misc      : GEL 5mL n/a MIX[A]0503-01G+0504-10G+0620-
ALS Vial  : 4   Sample Multiplier: 1

Quant Time: Jun 28 11:22:12 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title  : Volatile Organics 8260B                    SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE
```



Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**GEL425783**	**Date Collected:**	**06/16/2017 09:36**	**Matrix:**	**WATER**
Lab Sample ID:	**1203818384**	**Date Received:**	**06/17/2017 09:10**		
Client Sample:	**QC for batch 1676993**	**Client:**	**CPRC001**	**Project:**	**QC**
Client ID:	**B39NN0PS**	**Method:**	**SW846 8260C**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1676993**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**06/27/2017 21:16**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**06/27/2017 21:16**				
Data File:	**062717V9\9Y225.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
79-01-6	Trichloroethylene		49.4	ug/L	0.300	2.00	1.00
630-20-6	1,1,1,2-Tetrachloroethane		53.5	ug/L	0.300	2.00	1.7
56-23-5	Carbon tetrachloride		50.1	ug/L	0.300	2.00	3.00
106-46-7	1,4-Dichlorobenzene		48.5	ug/L	0.300	2.00	4.00
100-41-4	Ethylbenzene		51.4	ug/L	0.300	2.00	4.00
71-55-6	1,1,1-Trichloroethane		49.2	ug/L	0.300	2.00	5.00
79-34-5	1,1,2,2-Tetrachloroethane		55.4	ug/L	0.300	2.00	5.00
79-00-5	1,1,2-Trichloroethane		54.3	ug/L	0.300	2.00	5.00
96-18-4	1,2,3-Trichloropropane		52.1	ug/L	0.300	2.00	5.00
96-12-8	1,2-Dibromo-3-chloropropane		51.8	ug/L	0.500	2.00	5.00
106-93-4	1,2-Dibromoethane		52.0	ug/L	0.300	2.00	5.00
107-06-2	1,2-Dichloroethane		47.7	ug/L	0.300	2.00	5.00
78-87-5	1,2-Dichloropropane		52.6	ug/L	0.300	2.00	5.00
71-43-2	Benzene		50.9	ug/L	0.300	2.00	5.00
75-27-4	Bromodichloromethane		52.7	ug/L	0.300	2.00	5.00
75-25-2	Bromoform		54.2	ug/L	0.300	2.00	5.00
75-15-0	Carbon disulfide		250	ug/L	1.60	10.0	5.00
108-90-7	Chlorobenzene		51.2	ug/L	0.300	2.00	5.00
67-66-3	Chloroform		49.5	ug/L	0.300	2.00	5.00
124-48-1	Dibromochloromethane		54.7	ug/L	0.300	2.00	5.00
75-09-2	Methylene chloride	B	51.1	ug/L	1.60	5.00	5.00
100-42-5	Styrene		52.9	ug/L	0.300	2.00	5.00
127-18-4	Tetrachloroethylene		47.9	ug/L	0.300	2.00	5.00
108-88-3	Toluene		52.1	ug/L	0.300	2.00	5.00
156-59-2	cis-1,2-Dichloroethylene		51.9	ug/L	0.300	2.00	5.00
10061-01-5	cis-1,3-Dichloropropylene		51.1	ug/L	0.300	2.00	5.00
156-60-5	trans-1,2-Dichloroethylene		52.0	ug/L	0.300	2.00	5.00
10061-02-6	trans-1,3-Dichloropropylene		54.9	ug/L	0.300	2.00	5.00
75-34-3	1,1-Dichloroethane		52.4	ug/L	0.300	2.00	10.0
75-35-4	1,1-Dichloroethylene		49.4	ug/L	0.300	2.00	10.0
78-93-3	2-Butanone		226	ug/L	3.00	10.0	10.0
126-99-8	2-Chloro-1,3-butadiene	U	0.300	ug/L	0.300	2.00	10.0
108-10-1	4-Methyl-2-pentanone		260	ug/L	3.00	10.0	10.0
107-05-1	Allyl chloride	U	3.00	ug/L	3.00	10.0	10.0
74-83-9	Bromomethane		50.2	ug/L	0.300	2.00	10.0
75-00-3	Chloroethane		49.6	ug/L	0.300	2.00	10.0
74-87-3	Chloromethane		50.2	ug/L	0.300	2.00	10.0
74-95-3	Dibromomethane		49.7	ug/L	0.300	2.00	10.0

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**GEL425783**	**Date Collected:**	**06/16/2017 09:36**	**Matrix:**	**WATER**
Lab Sample ID:	**1203818384**	**Date Received:**	**06/17/2017 09:10**		
Client Sample:	**QC for batch 1676993**	**Client:**	**CPRC001**	**Project:**	**QC**
Client ID:	**B39NN0PS**	**Method:**	**SW846 8260C**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1676993**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**06/27/2017 21:16**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**06/27/2017 21:16**				
Data File:	**062717V9\9Y225.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
75-71-8	Dichlorodifluoromethane		42.1	ug/L	0.300	2.00	10.0
97-63-2	Ethyl methacrylate	U	3.00	ug/L	3.00	10.0	10.0
74-88-4	Iodomethane		224	ug/L	3.00	10.0	10.0
126-98-7	Methacrylonitrile	U	3.00	ug/L	3.00	10.0	10.0
80-62-6	Methyl methacrylate	U	3.00	ug/L	3.00	10.0	10.0
107-12-0	Propionitrile	U	3.00	ug/L	3.00	10.0	10.0
75-69-4	Trichlorofluoromethane		45.9	ug/L	0.300	2.00	10.0
75-01-4	Vinyl chloride		47.7	ug/L	0.300	2.00	10.0
1330-20-7	Xylenes (total)		159	ug/L	0.300	6.00	10.0
591-78-6	2-Hexanone		225	ug/L	3.00	10.0	20.0
67-64-1	Acetone		199	ug/L	3.00	10.0	20.0
108-05-4	Vinyl acetate		247	ug/L	1.60	5.00	50.0
110-57-6	trans-1,4-Dichloro-2-butene	U	1.50	ug/L	1.50	10.0	50.0
75-05-8	Acetonitrile		1310	ug/L	16.7	50.0	100
107-02-8	Acrolein	U	3.00	ug/L	3.00	10.0	100
107-13-1	Acrylonitrile	U	3.00	ug/L	3.00	10.0	100
78-83-1	Isobutyl alcohol	U	33.0	ug/L	33.0	100	500

July 17, 2017

Quantitation Report
GEL Laboratories, LLC

RY 06/28/2017

EM 07/06/2017

Data Path : C:\msdchem\1\DATA\062717V9\
Data File : 9Y225.D
Acq On : 27 Jun 2017 21:16
Operator : RXY1
InstName : VOA9
Sample : |1203818384|1676993|1|VOA|1|VOA8260CL|
Misc : CPRC 5mL pH<2 MIX[A] MS 425725004
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jun 28 11:13:15 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	Dev(Min)
Internal Standards								
1) Fluorobenzene	96	10.453	10.454	1.000	1248718	50.00	ug/L	0.00
43) Chlorobenzene-d5	117	13.632	13.632	1.000	938846	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	570969	50.00	ug/L	0.00
84) B Fluorobenzene	96	10.453	10.454	1.000	1248718	50.00	ug/L	0.00
98) B Chlorobenzene-d5	117	13.632	13.632	1.000	938846	50.00	ug/L	0.00
100) B 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	570969	50.00	ug/L	0.00
System Monitoring Compounds								Dev(Min)
30) 1,2-Dichloroethane-d4	65	10.098	10.098	0.966	295184	47.93	ug/L	0.00
45) Toluene-d8	98	12.090	12.090	0.887	1086298	51.33	ug/L	0.00
63) Bromofluorobenzene	95	14.817	14.817	0.924	439815	50.99	ug/L	0.00

Compound	Amount	Range	Recovery
30) 1,2-Dichloroethane-d4	50.000	70 - 130	96%
45) Toluene-d8	50.000	70 - 130	103%
63) Bromofluorobenzene	50.000	70 - 130	102%

Target Compounds	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	QValue
2) Dichlorodifluoromethane	85	4.672	4.672	0.447	288133	42.06	ug/L	100
3) Chloromethane	50	5.010	5.011	0.479	330751	50.19	ug/L	99
4) Vinyl chloride	62	5.259	5.260	0.503	339087	47.71	ug/L	99
5) Bromomethane	94	5.864	5.852	0.561	308335	50.21	ug/L	99
6) Chloroethane	64	6.006	6.007	0.575	278613	49.59	ug/L	99
7) Trichlorofluoromethane	101	6.445	6.410	0.617	459014	45.91	ug/L	100
8) Ethyl ether	59	6.754	6.766	0.646	227855	49.35	ug/L	97
9) Acetone	43	7.145	7.157	0.683	313203	199.41	ug/L	97
10) 1,1-Dichloroethylene	61	7.157	7.157	0.685	482400	49.43	ug/L	100
11) Iodomethane	142	7.418	7.418	0.710	2487537	224.08	ug/L	100
12) Acetonitrile	41	7.513	7.513	0.719	779371	1306.17	ug/L	98
13) Methyl acetate	43	7.548	7.548	0.722	811721	242.09	ug/L	99
14) Carbon disulfide	76	7.548	7.548	0.722	4844338	249.94	ug/L	100
15) Methylene chloride	84	7.738	7.738	0.740	338616	51.13	ug/L	98
16) tert-Butyl methyl ether	73	8.034	8.034	0.769	745054	47.04	ug/L	98
17) trans-1,2-Dichloroethy...	61	8.082	8.082	0.773	464225	52.04	ug/L	99
18) Hexane		0.000	8.355	0.000	0m	N.D.	d	
19) Vinyl acetate	43	8.520	8.521	0.815	1929193	246.94	ug/L	98
20) 1,1-Dichloroethane	63	8.580	8.580	0.821	562854	52.35	ug/L	100
21) 2-Butanone	43	9.161	9.161	0.876	477126	226.38	ug/L	99
22) cis-1,2-Dichloroethylene	61	9.220	9.220	0.882	504631	51.88	ug/L	99
23) 2,2-Dichloropropane	77	9.244	9.244	0.884	464177	49.17	ug/L	100
24) Bromochloromethane	128	9.493	9.493	0.908	148780	48.27	ug/L	92
25) Chloroform	83	9.528	9.529	0.912	504627	49.45	ug/L	100
26) 1,1,1-Trichloroethane	97	9.801	9.801	0.938	475337	49.22	ug/L	99
27) Cyclohexane	56	9.896	9.896	0.947	585346	52.84	ug/L	96
28) 1,1-Dichloropropene	75	9.955	9.956	0.952	386872	49.08	ug/L	97
29) Carbon tetrachloride	117	10.003	10.003	0.957	414383	50.06	ug/L	99
31) 1,2-Dichloroethane	62	10.181	10.181	0.974	328409	47.72	ug/L	100
32) Benzene	78	10.204	10.205	0.976	1166663	50.91	ug/L	100
33) Cyclohexene	67	10.311	10.311	0.986	566685	51.14	ug/L	100
34) n-Butyl alcohol	41	10.536	10.537	1.008	482699	5406.60	ug/L	98
35) Trichloroethylene	95	10.845	10.833	1.037	296130	49.37	ug/L	98

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\062717V9\
Data File : 9Y225.D
Acq On : 27 Jun 2017 21:16
Operator : RXY1
InstName : VOA9
Sample : |1203818384|1676993|1|VOA|1|VOA8260CL|
Misc : CPRC 5mL pH<2 MIX[A] MS 425725004
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jun 28 11:13:15 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	
36) 2-Pentanone		0.000	10.916	0.000	0	N.D.		
37) 1,2-Dichloropropane	63	11.094	11.094	1.061	281489	52.61	ug/L	100
38) Methylcyclohexane	83	11.082	11.082	1.060	598918	51.13	ug/L	98
39) Dibromomethane	93	11.224	11.224	1.074	150128	49.69	ug/L	93
40) Bromodichloromethane	83	11.331	11.331	1.084	352515	52.73	ug/L	100
41) 2-Chloroethylvinyl ether		0.000	11.545	0.000	0	N.D.		
42) cis-1,3-Dichloropropylene	75	11.782	11.782	1.127	427702	51.08	ug/L	98
44) 4-Methyl-2-pentanone	58	11.865	11.865	0.870	426682	260.39	ug/L	99
46) Toluene	91	12.173	12.173	0.893	1179990	52.10	ug/L	99
47) trans-1,3-Dichloroprop...	75	12.327	12.315	0.904	376199	54.89	ug/L	98
48) 1,1,2-Trichloroethane	83	12.541	12.541	0.920	193711	54.26	ug/L	99
49) 2-Hexanone	43	12.718	12.719	0.933	701323	224.98	ug/L	99
50) 1,3-Dichloropropane	76	12.742	12.742	0.935	382868	53.15	ug/L	88
51) Tetrachloroethylene	164	12.766	12.766	0.936	266198	47.89	ug/L	96
52) Dibromochloromethane	129	13.003	13.003	0.954	254136	54.73	ug/L	99
53) 1,2-Dibromoethane	107	13.181	13.181	0.967	230462	52.04	ug/L	99
54) Chlorobenzene	112	13.655	13.655	1.002	811559	51.23	ug/L	99
55) 1,1,1,2-Tetrachloroethane	131	13.715	13.715	1.006	301974	53.52	ug/L	98
56) Ethylbenzene	91	13.715	13.715	1.006	1333900	51.43	ug/L	100
57) m,p-Xylenes	106	13.821	13.821	1.014	1116098	106.64	ug/L	100
58) o-Xylene	106	14.260	14.260	1.046	567335	52.29	ug/L	99
59) Styrene	104	14.260	14.260	1.046	888688	52.94	ug/L	100
61) Bromoform	173	14.533	14.533	0.906	173292	54.16	ug/L	99
62) Isopropylbenzene	105	14.616	14.616	0.911	1462658	52.07	ug/L	100
64) 1,1,2,2-Tetrachloroethane	83	14.889	14.889	0.928	328892	55.36	ug/L	100
65) 1,2,3-Trichloropropane	110	14.983	14.983	0.934	90689	52.06	ug/L #	84
66) Bromobenzene	156	15.031	15.031	0.937	388204	48.24	ug/L	94
67) n-Propylbenzene	91	15.043	15.043	0.938	1703346	51.76	ug/L	99
68) 1,3,5-Trimethylbenzene	105	15.185	15.185	0.947	1265107	52.50	ug/L	100
69) 2-Chlorotoluene	126	15.197	15.197	0.948	378904	50.91	ug/L	95
70) 4-Chlorotoluene	91	15.292	15.292	0.953	1080504	51.37	ug/L	99
71) tert-Butylbenzene	134	15.564	15.565	0.970	294346	53.40	ug/L	99
72) 1,2,4-Trimethylbenzene	105	15.600	15.600	0.973	1292584	52.32	ug/L	99
73) sec-Butylbenzene	105	15.790	15.790	0.984	1762889	54.17	ug/L	99
74) 4-Isopropyltoluene	119	15.908	15.908	0.992	1522212	52.53	ug/L	99
75) 1,3-Dichlorobenzene	146	15.979	15.991	0.996	775119	48.10	ug/L	99
76) 1,4-Dichlorobenzene	146	16.074	16.074	1.002	762538	48.53	ug/L	99
77) n-Butylbenzene	91	16.359	16.359	1.020	1388206	52.49	ug/L	99
78) 1,2-Dichlorobenzene	146	16.513	16.513	1.030	740972	48.86	ug/L	99
79) 1,2-Dibromo-3-chloropr...	157	17.414	17.415	1.086	70745	51.82	ug/L	96
80) 1,2,4-Trichlorobenzene	180	18.505	18.505	1.154	582758	44.50	ug/L	99
81) Hexachlorobutadiene	225	18.683	18.683	1.165	400484	44.27	ug/L	99
82) Naphthalene	128	18.909	18.921	1.179	1155281	50.63	ug/L	100
83) 1,2,3-Trichlorobenzene	180	19.276	19.276	1.202	534321	45.18	ug/L	99
85) Acrolein		0.000	6.979	0.000	0	N.D.		
86) Trichlorotrifluoroethane		0.000	7.133	0.000	0	N.D.		
87) Allyl chloride		7.513	7.596	0.719	0m	N.D. d		
88) Acrylonitrile		8.034	7.999	0.769	0m	N.D. d		
89) 2-Chloro-1,3-butadiene		0.000	8.675	0.000	0	N.D.		
90) Ethyl acetate		9.161	9.161	0.876	0m	N.D. d		
91) Propionitrile		9.149	9.244	0.875	0m	N.D. d		
92) Methacrylonitrile		9.244	9.422	0.884	0m	N.D. d		

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\062717V9\
Data File : 9Y225.D
Acq On : 27 Jun 2017 21:16
Operator : RXY1
InstName : VOA9
Sample : |1203818384|1676993|1|VOA|1|VOA8260CL|
Misc : CPRC 5mL pH<2 MIX[A] MS 425725004
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jun 28 11:13:15 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

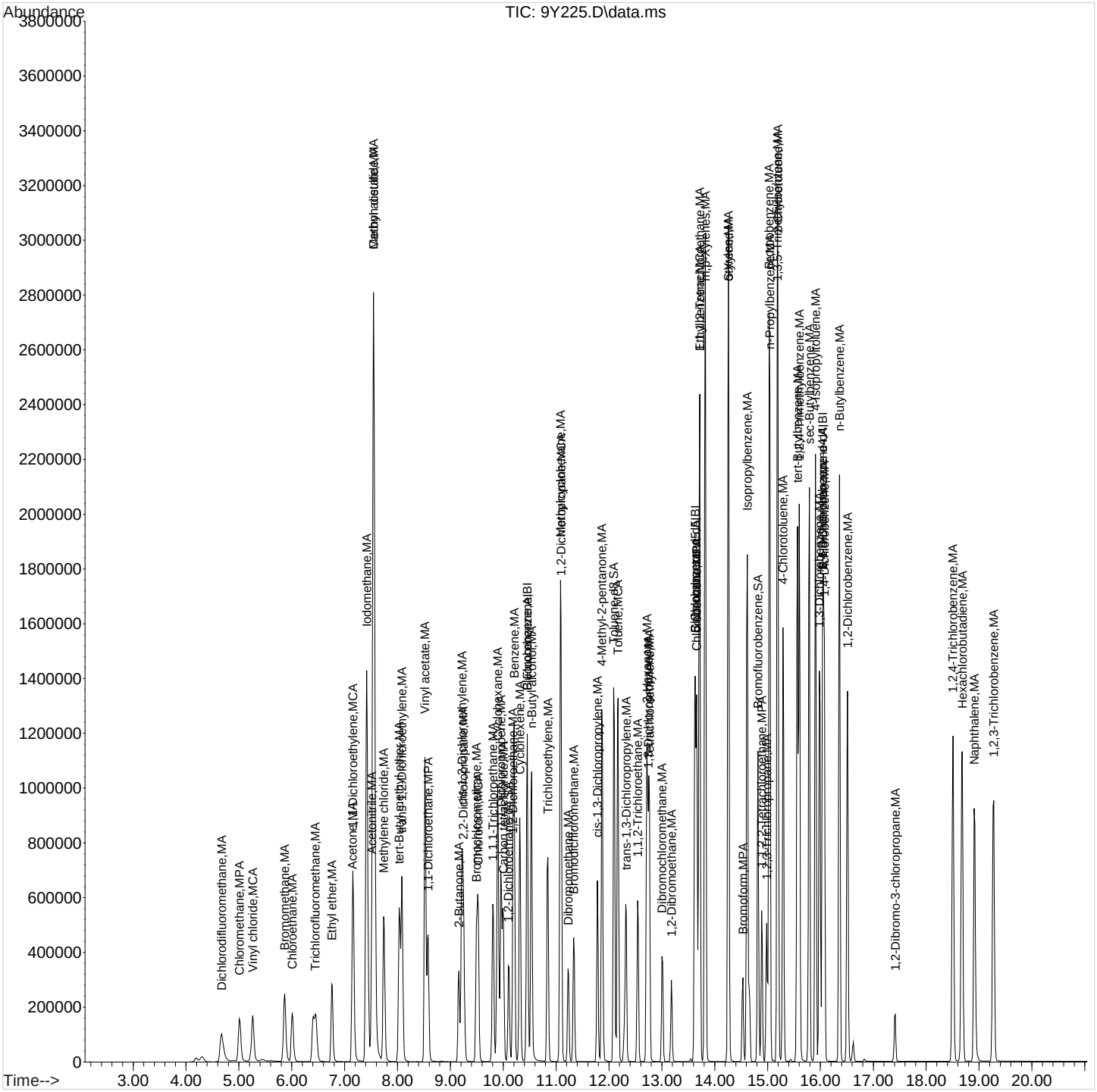
Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units
93) Tetrahydrofuran		9.517	9.540	0.910	0m	N.D.	d
94) Isobutyl alcohol		9.896	9.849	0.947	0m	N.D.	d
95) Methyl methacrylate		11.082	11.046	1.060	0m	N.D.	d
96) 1,4-Dioxane		11.224	11.165	1.074	0m	N.D.	d
97) 2-Nitropropane		0.000	11.544	0.000	0	N.D.	
99) Ethyl methacrylate		12.303	12.303	0.903	0m	N.D.	d
101) cis-1,4-Dichloro-2-butene		14.616	14.651	0.911	0m	N.D.	d
102) Cyclohexanone		14.604	14.782	0.911	0m	N.D.	d
103) trans-1,4-Dichloro-2-b...		15.031	14.936	0.937	0m	N.D.	d
104) Pentachloroethane		15.636	15.636	0.975	0m	N.D.	d
105) Benzyl chloride		16.193	16.193	1.010	0m	N.D.	d
106) bis(2-Chloroisopropyl)...		16.608	16.584	1.035	0m	N.D.	d

(#) = qualifier out of range (m) = manual integration (+) = signals summed
(A) = Over the calibration range (d) = deleted

Quantitation Report
GEL Laboratories, LLC

```
Data Path : C:\msdchem\1\DATA\062717V9\
Data File : 9Y225.D
Acq On    : 27 Jun 2017  21:16
Operator  : RXY1
InstName  : VOA9
Sample    : |1203818384|1676993|1|VOA|1|VOA8260CL|
Misc      : CPRC 5mL pH<2 MIX[A] MS 425725004
ALS Vial  : 25   Sample Multiplier: 1

Quant Time: Jun 28 11:13:15 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title  : Volatile Organics 8260B                    SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE
```



Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**GEL425783**	**Date Collected:**	**06/16/2017 09:36**	**Matrix:**	**WATER**
Lab Sample ID:	**1203818385**	**Date Received:**	**06/17/2017 09:10**		
Client Sample:	**QC for batch 1676993**	**Client:**	**CPRC001**	**Project:**	**QC**
Client ID:	**B39NN0PSD**	**Method:**	**SW846 8260C**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1676993**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**06/27/2017 21:45**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**06/27/2017 21:45**				
Data File:	**062717V9\9Y226.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
79-01-6	Trichloroethylene		52.5	ug/L	0.300	2.00	1.00
630-20-6	1,1,1,2-Tetrachloroethane		55.3	ug/L	0.300	2.00	1.7
56-23-5	Carbon tetrachloride		52.6	ug/L	0.300	2.00	3.00
106-46-7	1,4-Dichlorobenzene		51.3	ug/L	0.300	2.00	4.00
100-41-4	Ethylbenzene		53.2	ug/L	0.300	2.00	4.00
71-55-6	1,1,1-Trichloroethane		52.1	ug/L	0.300	2.00	5.00
79-34-5	1,1,2,2-Tetrachloroethane		59.6	ug/L	0.300	2.00	5.00
79-00-5	1,1,2-Trichloroethane		56.8	ug/L	0.300	2.00	5.00
96-18-4	1,2,3-Trichloropropane		55.0	ug/L	0.300	2.00	5.00
96-12-8	1,2-Dibromo-3-chloropropane		57.3	ug/L	0.500	2.00	5.00
106-93-4	1,2-Dibromoethane		55.5	ug/L	0.300	2.00	5.00
107-06-2	1,2-Dichloroethane		49.8	ug/L	0.300	2.00	5.00
78-87-5	1,2-Dichloropropane		55.7	ug/L	0.300	2.00	5.00
71-43-2	Benzene		53.5	ug/L	0.300	2.00	5.00
75-27-4	Bromodichloromethane		55.6	ug/L	0.300	2.00	5.00
75-25-2	Bromoform		59.6	ug/L	0.300	2.00	5.00
75-15-0	Carbon disulfide		259	ug/L	1.60	10.0	5.00
108-90-7	Chlorobenzene		53.5	ug/L	0.300	2.00	5.00
67-66-3	Chloroform		51.8	ug/L	0.300	2.00	5.00
124-48-1	Dibromochloromethane		57.8	ug/L	0.300	2.00	5.00
75-09-2	Methylene chloride	B	54.3	ug/L	1.60	5.00	5.00
100-42-5	Styrene		55.3	ug/L	0.300	2.00	5.00
127-18-4	Tetrachloroethylene		48.9	ug/L	0.300	2.00	5.00
108-88-3	Toluene		53.4	ug/L	0.300	2.00	5.00
156-59-2	cis-1,2-Dichloroethylene		54.8	ug/L	0.300	2.00	5.00
10061-01-5	cis-1,3-Dichloropropylene		55.2	ug/L	0.300	2.00	5.00
156-60-5	trans-1,2-Dichloroethylene		55.2	ug/L	0.300	2.00	5.00
10061-02-6	trans-1,3-Dichloropropylene		57.5	ug/L	0.300	2.00	5.00
75-34-3	1,1-Dichloroethane		55.2	ug/L	0.300	2.00	10.0
75-35-4	1,1-Dichloroethylene		52.3	ug/L	0.300	2.00	10.0
78-93-3	2-Butanone		249	ug/L	3.00	10.0	10.0
126-99-8	2-Chloro-1,3-butadiene	U	0.300	ug/L	0.300	2.00	10.0
108-10-1	4-Methyl-2-pentanone		274	ug/L	3.00	10.0	10.0
107-05-1	Allyl chloride	U	3.00	ug/L	3.00	10.0	10.0
74-83-9	Bromomethane		54.2	ug/L	0.300	2.00	10.0
75-00-3	Chloroethane		55.7	ug/L	0.300	2.00	10.0
74-87-3	Chloromethane		56.9	ug/L	0.300	2.00	10.0
74-95-3	Dibromomethane		53.2	ug/L	0.300	2.00	10.0

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**GEL425783**	**Date Collected:**	**06/16/2017 09:36**	**Matrix:**	**WATER**
Lab Sample ID:	**1203818385**	**Date Received:**	**06/17/2017 09:10**		
Client Sample:	**QC for batch 1676993**	**Client:**	**CPRC001**	**Project:**	**QC**
Client ID:	**B39NN0PSD**	**Method:**	**SW846 8260C**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1676993**	**Inst:**	**VOA9.I**	**Dilution:**	**1**
Run Date:	**06/27/2017 21:45**	**Analyst:**	**RXY1**	**Purge Vol:**	**5 mL**
Prep Date:	**06/27/2017 21:45**				
Data File:	**062717V9\9Y226.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	RDL
75-71-8	Dichlorodifluoromethane		46.8	ug/L	0.300	2.00	10.0
97-63-2	Ethyl methacrylate	U	3.00	ug/L	3.00	10.0	10.0
74-88-4	Iodomethane		238	ug/L	3.00	10.0	10.0
126-98-7	Methacrylonitrile	U	3.00	ug/L	3.00	10.0	10.0
80-62-6	Methyl methacrylate	U	3.00	ug/L	3.00	10.0	10.0
107-12-0	Propionitrile	U	3.00	ug/L	3.00	10.0	10.0
75-69-4	Trichlorofluoromethane		51.5	ug/L	0.300	2.00	10.0
75-01-4	Vinyl chloride		55.0	ug/L	0.300	2.00	10.0
1330-20-7	Xylenes (total)		165	ug/L	0.300	6.00	10.0
591-78-6	2-Hexanone		239	ug/L	3.00	10.0	20.0
67-64-1	Acetone		216	ug/L	3.00	10.0	20.0
108-05-4	Vinyl acetate		272	ug/L	1.60	5.00	50.0
110-57-6	trans-1,4-Dichloro-2-butene	U	1.50	ug/L	1.50	10.0	50.0
75-05-8	Acetonitrile		1410	ug/L	16.7	50.0	100
107-02-8	Acrolein	U	3.00	ug/L	3.00	10.0	100
107-13-1	Acrylonitrile	U	3.00	ug/L	3.00	10.0	100
78-83-1	Isobutyl alcohol	U	33.0	ug/L	33.0	100	500

July 17, 2017

Quantitation Report
GEL Laboratories, LLC

RY 06/28/2017

EM 07/06/2017

Data Path : C:\msdchem\1\DATA\062717V9\
Data File : 9Y226.D
Acq On : 27 Jun 2017 21:45
Operator : RXY1
InstName : VOA9
Sample : |1203818385|1676993|1|VOA|1|VOA8260CL|
Misc : CPRC 5mL pH<2 MIX[A] MSD 425725004
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Jun 28 11:13:32 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	Dev(Min)
Internal Standards								
1) Fluorobenzene	96	10.454	10.454	1.000	1247388	50.00	ug/L	0.00
43) Chlorobenzene-d5	117	13.632	13.632	1.000	969825	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	581069	50.00	ug/L	0.00
84) B Fluorobenzene	96	10.454	10.454	1.000	1247388	50.00	ug/L	0.00
98) B Chlorobenzene-d5	117	13.632	13.632	1.000	969825	50.00	ug/L	0.00
100) B 1,4-Dichlorobenzene-d4	152	16.039	16.039	1.000	581069	50.00	ug/L	0.00
System Monitoring Compounds								Dev(Min)
30) 1,2-Dichloroethane-d4	65	10.098	10.098	0.966	288776	46.94	ug/L	0.00
45) Toluene-d8	98	12.090	12.090	0.887	1099776	50.31	ug/L	0.00
63) Bromofluorobenzene	95	14.818	14.817	0.924	454298	51.76	ug/L	0.00

Compound	Amount	Range	Recovery
30) 1,2-Dichloroethane-d4	50.000	70 - 130	94%
45) Toluene-d8	50.000	70 - 130	101%
63) Bromofluorobenzene	50.000	70 - 130	104%

Target Compounds	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	QValue
2) Dichlorodifluoromethane	85	4.672	4.672	0.447	320221	46.79	ug/L	100
3) Chloromethane	50	5.011	5.011	0.479	374460	56.88	ug/L	100
4) Vinyl chloride	62	5.260	5.260	0.503	390222	54.96	ug/L	99
5) Bromomethane	94	5.864	5.852	0.561	332639	54.23	ug/L	100
6) Chloroethane	64	6.007	6.007	0.575	312711	55.72	ug/L	99
7) Trichlorofluoromethane	101	6.410	6.410	0.613	514044	51.47	ug/L	100
8) Ethyl ether	59	6.754	6.766	0.646	252822	54.81	ug/L	98
9) Acetone	43	7.145	7.157	0.684	338548	215.78	ug/L	96
10) 1,1-Dichloroethylene	61	7.157	7.157	0.685	510081	52.33	ug/L	99
11) Iodomethane	142	7.418	7.418	0.710	2637107	237.81	ug/L	100
12) Acetonitrile	41	7.513	7.513	0.719	840385	1409.93	ug/L	98
13) Methyl acetate	43	7.548	7.548	0.722	869915	259.72	ug/L	100
14) Carbon disulfide	76	7.548	7.548	0.722	5019191	259.23	ug/L	100
15) Methylene chloride	84	7.738	7.738	0.740	359259	54.30	ug/L	97
16) tert-Butyl methyl ether	73	8.034	8.034	0.769	823501	52.05	ug/L	98
17) trans-1,2-Dichloroethy...	61	8.082	8.082	0.773	492091	55.23	ug/L	99
18) Hexane		0.000	8.355	0.000	0m	N.D.	d	
19) Vinyl acetate	43	8.521	8.521	0.815	2118812	271.50	ug/L	99
20) 1,1-Dichloroethane	63	8.580	8.580	0.821	592738	55.19	ug/L	99
21) 2-Butanone	43	9.161	9.161	0.876	523424	248.61	ug/L	99
22) cis-1,2-Dichloroethylene	61	9.208	9.220	0.881	532573	54.81	ug/L	99
23) 2,2-Dichloropropane	77	9.244	9.244	0.884	494929	52.48	ug/L	97
24) Bromochloromethane	128	9.493	9.493	0.908	157908	51.29	ug/L	93
25) Chloroform	83	9.529	9.529	0.912	528294	51.82	ug/L	100
26) 1,1,1-Trichloroethane	97	9.801	9.801	0.938	502525	52.09	ug/L	99
27) Cyclohexane	56	9.896	9.896	0.947	626262	56.59	ug/L	97
28) 1,1-Dichloropropene	75	9.956	9.956	0.952	409440	52.00	ug/L	96
29) Carbon tetrachloride	117	10.003	10.003	0.957	434614	52.56	ug/L	100
31) 1,2-Dichloroethane	62	10.181	10.181	0.974	342115	49.77	ug/L	100
32) Benzene	78	10.205	10.205	0.976	1225712	53.54	ug/L	100
33) Cyclohexene	67	10.311	10.311	0.986	602849	54.46	ug/L	99
34) n-Butyl alcohol	41	10.537	10.537	1.008	525378	5890.91	ug/L	99
35) Trichloroethylene	95	10.833	10.833	1.036	314763	52.53	ug/L	97

Quantization Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\062717V9\
Data File : 9Y226.D
Acq On : 27 Jun 2017 21:45
Operator : RXY1
InstName : VOA9
Sample : |1203818385|1676993|1|VOA|1|VOA8260CL|
Misc : CPRC 5mL pH<2 MIX[A] MSD 425725004
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Jun 28 11:13:32 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units	
36) 2-Pentanone		0.000	10.916	0.000	0m	N.D. d		
37) 1,2-Dichloropropane	63	11.094	11.094	1.061	297593	55.68	ug/L	100
38) Methylcyclohexane	83	11.082	11.082	1.060	640050	54.70	ug/L	99
39) Dibromomethane	93	11.224	11.224	1.074	160616	53.22	ug/L	94
40) Bromodichloromethane	83	11.331	11.331	1.084	371121	55.57	ug/L	99
41) 2-Chloroethylvinyl ether		0.000	11.545	0.000	0	N.D.		
42) cis-1,3-Dichloropropylene	75	11.782	11.782	1.127	461344	55.15	ug/L	98
44) 4-Methyl-2-pentanone	58	11.865	11.865	0.870	463137	273.61	ug/L	98
46) Toluene	91	12.173	12.173	0.893	1249122	53.39	ug/L	100
47) trans-1,3-Dichloroprop...	75	12.315	12.315	0.903	407032	57.49	ug/L	97
48) 1,1,2-Trichloroethane	83	12.541	12.541	0.920	209449	56.80	ug/L	98
49) 2-Hexanone	43	12.719	12.719	0.933	768789	238.75	ug/L	99
50) 1,3-Dichloropropane	76	12.742	12.742	0.935	406390	54.62	ug/L	88
51) Tetrachloroethylene	164	12.766	12.766	0.936	280684	48.88	ug/L	96
52) Dibromochloromethane	129	13.003	13.003	0.954	277146	57.78	ug/L	100
53) 1,2-Dibromoethane	107	13.181	13.181	0.967	253841	55.49	ug/L	99
54) Chlorobenzene	112	13.655	13.655	1.002	875714	53.51	ug/L	99
55) 1,1,1,2-Tetrachloroethane	131	13.715	13.715	1.006	322279	55.30	ug/L	99
56) Ethylbenzene	91	13.715	13.715	1.006	1426339	53.24	ug/L	100
57) m,p-Xylenes	106	13.821	13.821	1.014	1198434	110.85	ug/L	100
58) o-Xylene	106	14.260	14.260	1.046	606155	54.08	ug/L	100
59) Styrene	104	14.260	14.260	1.046	958990	55.30	ug/L	99
61) Bromoform	173	14.533	14.533	0.906	194098	59.61	ug/L	100
62) Isopropylbenzene	105	14.616	14.616	0.911	1575781	55.12	ug/L	100
64) 1,1,2,2-Tetrachloroethane	83	14.889	14.889	0.928	360090	59.56	ug/L	99
65) 1,2,3-Trichloropropane	110	14.984	14.983	0.934	97568	55.03	ug/L #	82
66) Bromobenzene	156	15.031	15.031	0.937	423520	51.71	ug/L	95
67) n-Propylbenzene	91	15.043	15.043	0.938	1837629	54.87	ug/L	99
68) 1,3,5-Trimethylbenzene	105	15.185	15.185	0.947	1353484	55.19	ug/L	100
69) 2-Chlorotoluene	126	15.197	15.197	0.948	408196	53.90	ug/L	96
70) 4-Chlorotoluene	91	15.292	15.292	0.953	1155657	53.99	ug/L	99
71) tert-Butylbenzene	134	15.565	15.565	0.970	311238	55.48	ug/L	100
72) 1,2,4-Trimethylbenzene	105	15.600	15.600	0.973	1381458	54.94	ug/L	91
73) sec-Butylbenzene	105	15.790	15.790	0.984	1870562	56.48	ug/L	99
74) 4-Isopropyltoluene	119	15.908	15.908	0.992	1630900	55.31	ug/L	99
75) 1,3-Dichlorobenzene	146	15.992	15.991	0.997	833804	50.85	ug/L	99
76) 1,4-Dichlorobenzene	146	16.075	16.074	1.002	820199	51.29	ug/L	99
77) n-Butylbenzene	91	16.359	16.359	1.020	1487263	55.26	ug/L	99
78) 1,2-Dichlorobenzene	146	16.513	16.513	1.030	798559	51.74	ug/L	99
79) 1,2-Dibromo-3-chloropr...	157	17.415	17.415	1.086	79529	57.25	ug/L	97
80) 1,2,4-Trichlorobenzene	180	18.506	18.505	1.154	629209	47.21	ug/L	100
81) Hexachlorobutadiene	225	18.683	18.683	1.165	430928	46.81	ug/L	99
82) Naphthalene	128	18.909	18.921	1.179	1279160	55.09	ug/L	100
83) 1,2,3-Trichlorobenzene	180	19.276	19.276	1.202	575364	47.81	ug/L	99
85) Acrolein		0.000	6.979	0.000	0	N.D.		
86) Trichlorotrifluoroethane		0.000	7.133	0.000	0	N.D.		
87) Allyl chloride		7.513	7.596	0.719	0m	N.D. d		
88) Acrylonitrile		8.034	7.999	0.769	0m	N.D. d		
89) 2-Chloro-1,3-butadiene		0.000	8.675	0.000	0	N.D.		
90) Ethyl acetate		9.161	9.161	0.876	0m	N.D. d		
91) Propionitrile		9.161	9.244	0.876	0m	N.D. d		
92) Methacrylonitrile		9.244	9.422	0.884	0m	N.D. d		

Quantitation Report
GEL Laboratories, LLC

Data Path : C:\msdchem\1\DATA\062717V9\
Data File : 9Y226.D
Acq On : 27 Jun 2017 21:45
Operator : RXY1
InstName : VOA9
Sample : |1203818385|1676993|1|VOA|1|VOA8260CL|
Misc : CPRC 5mL pH<2 MIX[A] MSD 425725004
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Jun 28 11:13:32 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title : Volatile Organics 8260B SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE

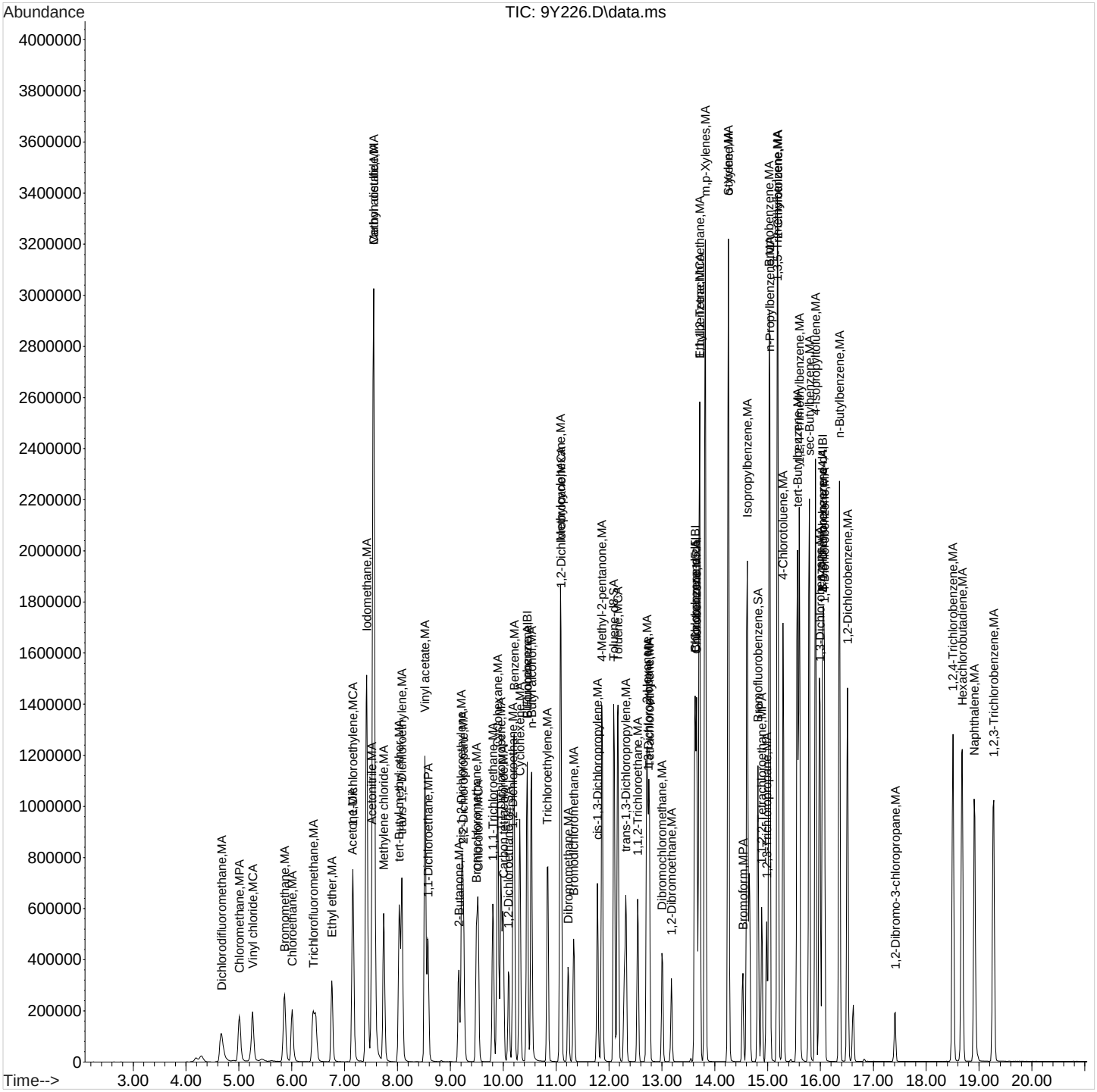
Compound	QIon	R.T.	Exp RT	Rel RT	Response	Conc	Units
93) Tetrahydrofuran		9.529	9.540	0.912	0m	N.D.	d
94) Isobutyl alcohol		9.896	9.849	0.947	0m	N.D.	d
95) Methyl methacrylate		11.082	11.046	1.060	0m	N.D.	d
96) 1,4-Dioxane		11.224	11.165	1.074	0m	N.D.	d
97) 2-Nitropropane		0.000	11.544	0.000	0	N.D.	
99) Ethyl methacrylate		12.327	12.303	0.904	0m	N.D.	d
101) cis-1,4-Dichloro-2-butene		14.616	14.651	0.911	0m	N.D.	d
102) Cyclohexanone		14.604	14.782	0.911	0m	N.D.	d
103) trans-1,4-Dichloro-2-b...		15.031	14.936	0.937	0m	N.D.	d
104) Pentachloroethane		15.636	15.636	0.975	0m	N.D.	d
105) Benzyl chloride		16.193	16.193	1.010	0m	N.D.	d
106) bis(2-Chloroisopropyl)...		16.608	16.584	1.035	0m	N.D.	d

(#) = qualifier out of range (m) = manual integration (+) = signals summed
(A) = Over the calibration range (d) = deleted

Quantitation Report
GEL Laboratories, LLC

```
Data Path : C:\msdchem\1\DATA\062717V9\
Data File : 9Y226.D
Acq On    : 27 Jun 2017  21:45
Operator  : RXY1
InstName  : VOA9
Sample    : |1203818385|1676993|1|VOA|1|VOA8260CL|
Misc      : CPRC 5mL pH<2 MIX[A] MSD 425725004
ALS Vial  : 26   Sample Multiplier: 1

Quant Time: Jun 28 11:13:32 2017
Quant Method : C:\msdchem\1\DATA\061617V9\VOA9-8260C-061617.M
Quant Title  : Volatile Organics 8260B                    SubList :
QLast Update : Sat Jun 17 13:36:41 2017
Response via : Initial Calibration
Integrator: RTE
```



Miscellaneous

GEL Laboratories, LLC.
Revision:03/22/07

ORGANIC RUN LOG - INSTRUMENT ID#VOA9

July 17, 2017

RY 06/17/2017

EM 06/28/2017

Date: 6/16/2017 Method 8260B&C/6200/624 Operator: RXY1

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY: Log VO-M-021 PAGE #06

Daily Instrument Readings:

Multiplier Voltage: 1918

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 6/16/2017

NaHSO4 lot # N/A

Cl test lot # N/A

Sequence Number: 061617V9

Daily Standard Solution ID#		Blk/ Smpl	CCV	MS/ LCS	BFB
IS	UVM170303-01	1	1	1	
SS	UVM170302-02	1	1	1	
BFB	IVM170528-01				1

Volume Added for Purge (ul)

Purge Amount

5ml	Water Purge Vol:
N/A	Soil Purge Wt.
N/A	Mid level ext. MeOH Vol:
N/A	ul
N/A	Methanol Lot #
X	Heated Purge

Date	Analysis Time	Data File	Lab Sample ID	Client	Batch #	Wt.(g) or Vol(ml/ul)	Dil. Factor	pH	AS Slot #	Matrix w or s	Analyst	Cl test (Y/N)	Acceptable(O/X)	Comments
6/16/2017	10:28	9W501.D	IVM170528-01	GEL	BFB	5mL	1	n/a	1	w	RXY1	N/A	X	
6/16/2017	10:55	9W502.D	W9VM170616-01	GEL	QCCHK	5mL	1	n/a	2	w	RXY1	N/A	X	MIX[A]0503-01E+0504-10D+061
6/16/2017	11:24	9W503.D	W9VM170616-02	GEL	CCV	5mL	1	n/a	3	w	RXY1	N/A	X	MIX[A]0125-08E+0504-07I+030
6/16/2017	11:52	9W504.D	W9VM170616-03	GEL	LCS	5mL	1	n/a	4	w	RXY1	N/A	X	MIX[A]0503-01E+0504-10D+061
6/16/2017	12:21	9W505.D	W9VM170616-04	GEL	CCV	5mL	1	n/a	5	w	RXY1	N/A	X	MIX[B]0412-06I+0526-06E
6/16/2017	13:03	9W506.D	12038-----	GEL	BLANK	5mL	1	n/a	6	w	RXY1	N/A	X	
6/16/2017	13:32	9W507.D	12038-----	GEL	BLANK	5mL	1	n/a	7	w	RXY1	N/A	X	
6/16/2017	14:00	9W508.D	12038-----	GEL	BLANK	5mL	1	n/a	8	w	RXY1	N/A	X	
6/16/2017	14:28	9W509.D	12038-----	GEL	BLANK	5mL	1	n/a	9	w	RXY1	N/A	X	See NEW ICAL Below
6/16/2017	**14:55**	9W510.D	IVM170528-01	GEL	BFB	5mL	1	n/a	10	w/s	RXY1	N/A	O	
6/16/2017	15:21	9W511.D	W9VM170616-05	GEL50	ICAL	5mL	1	n/a	11	w	RXY1	N/A	O	MIX[A] UVM170509-07B + UVM170606-07B + UVM170330-07C
6/16/2017	15:49	9W512.D	W9VM170616-06	GEL80	ICAL	5mL	1	n/a	12	w	RXY1	N/A	O	MIX[A] UVM170509-08B + UVM170606-08B + UVM170330-08C
6/16/2017	16:18	9W513.D	W9VM170616-07	GEL100	ICAL	5mL	1	n/a	13	w	RXY1	N/A	O	MIX[A] UVM170509-08B + UVM170606-08B + UVM170330-08C
6/16/2017	16:46	9W514.D	12038-----	GEL	BLANK	5mL	1	n/a	14	w	RXY1	N/A	X	Instrument blank
6/16/2017	17:14	9W515.D	W9VM170616-08	GEL.5	ICAL	5mL	1	n/a	15	w	RXY1	N/A	O	MIX[A] UVM170509-01B + UVM170606-01B
6/16/2017	17:42	9W516.D	W9VM170616-09	GEL1	ICAL	5mL	1	n/a	16	w	RXY1	N/A	O	MIX[A] UVM170509-03B + UVM170606-02B
6/16/2017	18:10	9W517.D	W9VM170616-10	GEL2	ICAL	5mL	1	n/a	17	w	RXY1	N/A	O	MIX[A] UVM170509-03B + UVM170606-03B + UVM170330-03C
6/16/2017	18:38	9W518.D	W9VM170616-11	GEL5	ICAL	5mL	1	n/a	18	w	RXY1	N/A	O	MIX[A] UVM170509-04B + UVM170606-04B + UVM170330-04C
6/16/2017	19:07	9W519.D	W9VM170616-12	GEL10	ICAL	5mL	1	n/a	19	w	RXY1	N/A	O	MIX[A] UVM170509-05B + UVM170606-05B + UVM170330-05C
6/16/2017	19:35	9W520.D	W9VM170616-13	GEL20	ICAL	5mL	1	n/a	20	w	RXY1	N/A	O	MIX[A] UVM170509-07B + UVM170606-06B + UVM170330-06C
6/16/2017	20:03	9W521.D	W9VM170616-14	GEL	ICV	5mL	1	n/a	21	w	RXY1	N/A	O	MIX[A] UVM170503-01E + UVM170504-10D + IVM170615-01 + UVM170330-09A
6/16/2017	20:32	9W522.D	W9VM170616-15	GEL5	ICAL	5mL	1	n/a	22	w	RXY1	N/A	O	MIX[B] UVM170612-01A + UVM170526-01A
6/16/2017	21:00	9W523.D	W9VM170616-16	GEL10	ICAL	5mL	1	n/a	23	w	RXY1	N/A	O	MIX[B] UVM170612-02A + UVM170526-02A
6/16/2017	21:28	9W524.D	W9VM170616-17	GEL25	ICAL	5mL	1	n/a	24	w	RXY1	N/A	O	MIX[B] UVM170612-03A + UVM170526-03A
6/16/2017	21:56	9W525.D	W9VM170616-18	GEL50	ICAL	5mL	1	n/a	25	w	RXY1	N/A	O	MIX[B] UVM170612-04A + UVM170526-04A
6/16/2017	22:24	9W526.D	W9VM170616-19	GEL100	ICAL	5mL	1	n/a	26	w	RXY1	N/A	O	MIX[B] UVM170612-05A + UVM170526-05A
6/16/2017	22:52	9W527.D	W9VM170616-20	GEL250	ICAL	5mL	1	n/a	27	w	RXY1	N/A	O	MIX[B] UVM170612-06A + UVM170526-06A
6/16/2017	23:21	9W528.D	W9VM170616-21	GEL300	ICAL	5mL	1	n/a	28	w	RXY1	N/A	O	MIX[B] UVM170612-07A + UVM170526-07A
6/16/2017	23:48	9W529.D	W9VM170616-22	GEL500	ICAL	5mL	1	n/a	29	w	RXY1	N/A	O	MIX[B] UVM170612-07A + UVM170526-07A
6/17/2017	0:17	9W530.D	12038-----	GEL	BLANK	5mL	1	n/a	30	w	RXY1	N/A	O	Instrument blank
6/17/2017	0:45	9W531.D	W9VM170616-23	GEL	ICV	5mL	1	n/a	31	w	RXY1	N/A	X	MIX[B] UVM170412-08C + UVM170526-08A
6/17/2017	1:12	9W532.D	W9VM170616-24	GEL	LCS	5mL	1	n/a	32	w	RXY1	N/A	X	MIX[A] UVM170503-01E + UVM170504-10D + IVM170615-01 + UVM170330-09A
6/17/2017	1:41	9W533.D	W9VM170616-25	GEL	ICV	5mL	1	n/a	33	w	RXY1	N/A	O	MIX[B] UVM170412-08C + UVM170526-08A
6/17/2017	2:09	9W534.D	12038-----	GEL	BLANK	5mL	1	n/a	34	w	RXY1	N/A	X	Instrument blank

GEL Laboratories, LLC.
Revision:03/22/07

ORGANIC RUN LOG - INSTRUMENT ID#VOA9

July 17, 2017

RY 06/28/2017

EM 07/06/2017

Date: 6/27/2017 Method 8260B/6200/624 Operator: RXY1

HARDWARE CONFIGURATION & METHOD CONDITIONS SUMMARY: Log VO-M-021 PAGE #06

Daily Instrument Readings:

Multiplier Voltage: 1918

CALIBRATION & CC INFORMATION:

Initial Calibration Date: 6/16/2017

NaHSO4 lot # N/A

Cl test lot # 64312

Sequence Number: 062717V9

Daily Standard Solution ID#		Volume Added for Purge (ul) Blk/ Smpl	CCV	MS/ LCS	BFB
CCV	W9VM170627-02		5 uL ea.		
IS	UVM170609-01	1	1	1	
SS	UVM170302-02	1	1	1	
LCS/MS	W9VM170627-03			5 uL ea.	
BFB	IVM170528-01				1
SHORT	W9VM170627-04		5 uL ea.		
QCCHK	W9VM170627-01		2 uL ea.	2 uL ea.	

Purge Amount	
5ml	Water Purge Vol:
N/A	Soil Purge Wt.
N/A	Mid level ext. MeOH Vol:
N/A	ul
N/A	Methanol Lot #
X	Heated Purge

Analysis Date Time	Data File	Lab Sample ID	Client	Batch #	Wt.(g) or Vol(ml/ul)	Dil. Factor	pH	AS Slot #	Matrix w or s	Analyst	Cl test (Y/N)	Acceptable(O/X)	Comments
6/27/2017 9:53	9Y201.D	IVM170528-01	GEL	BFB	5mL	1	n/a	1	w	RXY1	N/A	O	
6/27/2017 10:20	9Y202.D	W9VM170627-01	GEL	QCCHK/LCS	5mL	1	n/a	2	w	RXY1	N/A	O	MIX[A] UVM170503-01G + UVM170504-10G + IVM170623-01
6/27/2017 10:48	9Y203.D	W9VM170627-02	GEL	CCV	5mL	1	n/a	3	w	RXY1	N/A	O	MIX[A] UVM170125-08F + UVM170504-07K + UVM170330-09B
6/27/2017 11:17	9Y204.D	W9VM170627-03	GEL	LCS	5mL	1	n/a	4	w	RXY1	N/A	O	MIX[A] UVM170503-01G + UVM170504-10G + IVM170620-01 + UVM170330-09B
6/27/2017 11:46	9Y205.D	W9VM170627-04	GEL	CCV	5mL	1	n/a	5	w	RXY1	N/A	O	MIX[B] UVM170612-06E + UVM170526-06F
6/27/2017 12:14	9Y206.D	W9VM170627-05	GEL	LCS	5mL	1	n/a	6	w	RXY1	N/A	X	MIX[B] UVM170412-08D + UVM170526-08C
6/27/2017 12:42	9Y207.D	12038-----	GEL	BLANK	5mL	1	n/a	7	w	RXY1	N/A	O	Methylene chloride > RL for 624 samples
6/27/2017 13:11	9Y208.D	425603008	CPRC	1676993	5mL	1	pH<2	8	w	RXY1	N	O	
6/27/2017 13:40	9Y209.D	425603010	CPRC	1676993	5mL	1	pH<2	9	w	RXY1	N	O	
6/27/2017 14:09	9Y210.D	425603011	CPRC	1676993	5mL	1	pH<2	10	w	RXY1	N	O	
6/27/2017 14:38	9Y211.D	425607001	CPRC	1676993	5mL	1	pH<2	11	w	RXY1	N	O	
6/27/2017 15:06	9Y212.D	425725001	CPRC	1676993	5mL	1	pH<2	12	w	RXY1	N	O	
6/27/2017 15:35	9Y213.D	425725004	CPRC	1676993	5mL	1	pH<2	13	w	RXY1	N	O	
6/27/2017 16:03	9Y214.D	425726001	CPRC	1676993	5mL	1	pH<2	14	w	RXY1	N	O	
6/27/2017 16:32	9Y215.D	425780001	CPRC	1676993	5mL	1	pH<2	15	w	RXY1	N	O	
6/27/2017 17:01	9Y216.D	425783002	CPRC	1676993	5mL	1	pH<2	16	w	RXY1	N	O	
6/27/2017 17:29	9Y217.D	425893001	CPRC	1676993	5mL	1	pH<2	17	w	RXY1	N	O	
6/27/2017 17:57	9Y218.D	425894002	CPRC	1676993	5mL	1	pH<2	18	w	RXY1	N	O	
6/27/2017 18:25	9Y219.D	12038-----	GEL	BLANK	5mL	1	n/a	19	w	RXY1	N/A	O	**MB for 624 samples only**
6/27/2017 18:53	9Y220.D	426230012	VVVC	1677361	1mL	5	pH=7	20	w	RXY1	N	O	SC 624
6/27/2017 19:22	9Y221.D	426230007	VVVC	1677361	25uL	200	pH=9	21	w	RXY1	N	O	SC 624
6/27/2017 19:50	9Y222.D	426230010	VVVC	1677361	20uL	250	pH=11	22	w	RXY1	N	O	SC 624
6/27/2017 20:18	9Y223.D	426230006	VVVC	1677361	5uL	1000	pH<2	23	w	RXY1	N	O	SC 624
6/27/2017 20:48	9Y224.D	426230009	VVVC	1677361	1uL	5000	pH=7	24	w	RXY1	N	O	SC 624
6/27/2017 21:16	9Y225.D	1203818384	CPRC	1676993	5mL	1	pH<2	25	w	RXY1	N	O	MIX[A] MS 425725004
6/27/2017 21:45	9Y226.D	1203818385	CPRC	1676993	5mL	1	pH<2	26	w	RXY1	N	O	MIX[A] MSD 425725004
6/27/2017 22:13	9Y227.D	12038-----	GEL	BLANK	5mL	1	n/a	27	w	RXY1	N/A	X	Instrument blank

Standard Logbook

Serial ID:	UVM170302-01	**Open/Reference Date:**	02-MAR-17	**Catalog Number :**	CUS-13541
Name:	8260 INTERNALS	**Received:**	02-MAR-17	**Lot Number :**	AU-01098
Type:	Source Material	**Expires:**	02-SEP-17	**Solvent :**	Methanol
Employee:	Kelle Bellamy				
Supplier:	Ultra Scientific				
Description:	8260 Internal Std @ 250PPM				
Comments:	None				

Analyte	Concentration	Analyte	Concentration
1,4-Dichlorobenzene-d4	250 mg/L	Chlorobenzene-d5	250 mg/L
Fluorobenzene	250 mg/L		

Standard Logbook

Serial ID:	UVM170609-01	**Open/Reference Date:**	26-JUN-17	**Catalog Number :**	CUS-13541
Name:	8260 INTERNALS	**Received:**	09-JUN-17	**Lot Number :**	AU-01098
Type:	Source Material	**Expires:**	26-DEC-17	**Solvent :**	Methanol
Employee:	Vanny Yib				
Supplier:	Ultra Scientific				
Description:	8260 Internal Std @ 250PPM				
Comments:	None				

Analyte	Concentration	Analyte	Concentration
1,4-Dichlorobenzene-d4	250 mg/L	Chlorobenzene-d5	250 mg/L
Fluorobenzene	250 mg/L		

Standard Logbook

Serial ID:	UVM170106-02E	**Open/Reference Date:**	30-MAY-17	**Catalog Number :**	70074
Name:	2-Chloroethylvinyl ether	**Received:**	06-JAN-17	**Lot Number :**	110316
Type:	Source Material	**Expires:**	29-JUN-17	**Solvent :**	MeOH
Employee:	James Pressley	**Verified:**	30-MAY-17		
Supplier:	Absolute Standard				
Description:	2-Chloroethylvinyl ether 1000ppm				
Comments:	None				

Analyte	Concentration	Analyte	Concentration
2-Chloroethylvinyl ether	1000 mg/L		

Serial ID:	UVM170125-08F	**Open/Reference Date:**	24-JUN-17	**Catalog Number :**	CUS-13539-7
Name:	8260 CCAL LONG	**Received:**	25-JAN-17	**Lot Number :**	AU-01077
Type:	Source Material	**Expires:**	24-JUL-17		
Employee:	James Pressley	**Verified:**	24-JUN-17		
Supplier:	Ultra Scientific				
Description:	8260 CCAL SET 50.0PPM				
Comments:	None				

Analyte	Concentration	Analyte	Concentration
1,1,1,2-Tetrachloroethane	50 mg/L	1,1,1-Trichloroethane	50 mg/L
1,1,2,2-Tetrachloroethane	50 mg/L	1,1,2-Trichloroethane	50 mg/L
1,1-Dichloroethane	50 mg/L	1,1-Dichloroethylene	50 mg/L
1,1-Dichloropropene	50 mg/L	1,2,3-Trichlorobenzene	50 mg/L
1,2,3-Trichloropropane	50 mg/L	1,2,4-Trichlorobenzene	50 mg/L
1,2,4-Trimethylbenzene	50 mg/L	1,2-Dibromo-3-chloropropane	50 mg/L
1,2-Dibromoethane	50 mg/L	1,2-Dichlorobenzene	50 mg/L
1,2-Dichloroethane	50 mg/L	1,2-Dichloroethylene (total)	100 mg/L
1,2-Dichloropropane	50 mg/L	1,3,5-Trimethylbenzene	50 mg/L
1,3-Dichlorobenzene	50 mg/L	1,3-Dichloropropane	50 mg/L
1,3-Dichloropropylene	50 mg/L	1,4-Dichlorobenzene	50 mg/L
2,2-Dichloropropane	50 mg/L	2-Butanone	250 mg/L
2-Chlorotoluene	50 mg/L	2-Hexanone	250 mg/L
4-Chlorotoluene	50 mg/L	4-Isopropyltoluene	50 mg/L
4-Methyl-2-pentanone	250 mg/L	Acetone	250 mg/L
Acetonitrile	1250 mg/L	Benzene	50 mg/L
Bromobenzene	50 mg/L	Bromochloromethane	50 mg/L
Bromodichloromethane	50 mg/L	Bromoform	50 mg/L
Carbon disulfide	250 mg/L	Carbon tetrachloride	50 mg/L
Chlorobenzene	50 mg/L	Chloroform	50 mg/L
Cyclohexane	50 mg/L	Cyclohexene	50 mg/L
Dibromochloromethane	50 mg/L	Dibromomethane	50 mg/L
Ethylbenzene	50 mg/L	Hexachlorobutadiene	50 mg/L
Iodomethane	250 mg/L	Isopropylbenzene	50 mg/L
Methyl acetate	250 mg/L	Methylcyclohexane	50 mg/L
Methylene chloride	50 mg/L	Naphthalene	50 mg/L

Analyte	Concentration	Analyte	Concentration
Styrene	50 mg/L	Tetrachloroethylene	50 mg/L
Toluene	50 mg/L	Trichloroethylene	50 mg/L
Xylenes (total)	150 mg/L	cis-1,2-Dichloroethylene	50 mg/L
cis-1,3-Dichloropropylene	50 mg/L	m,p-Xylenes	100 mg/L
n-Butyl alcohol	5000 mg/L	n-Butylbenzene	50 mg/L
n-Propylbenzene	50 mg/L	o-Xylene	50 mg/L
sec-Butylbenzene	50 mg/L	tert-Butyl methyl ether	50 mg/L
tert-Butylbenzene	50 mg/L	trans-1,2-Dichloroethylene	50 mg/L
trans-1,3-Dichloropropylene	50 mg/L		

Serial ID: UVM170302-02 **Open/Reference Date:** 12-MAY-17 **Catalog Number :** CUS-13537
Name: 8260 SURR **Received:** 02-MAR-17 **Lot Number :** AU-01070
Type: Source Material **Expires:** 12-NOV-17
Employee: James Pressley **Verified:** 12-MAY-17
Supplier: Ultra Scientific
Description: 8260 Surrogates @ 250PPM
Comments: None

Analyte	Concentration	Analyte	Concentration
1,2-Dichloroethane-d4	250 mg/L	Bromofluorobenzene	250 mg/L
Toluene-d8	250 mg/L		

Serial ID: UVM170303-02 **Open/Reference Date:** 26-JUN-17 **Catalog Number :** CUS-13537
Name: 8260 SURR **Received:** 03-MAR-17 **Lot Number :** AU-01070
Type: Source Material **Expires:** 26-DEC-17
Employee: Vanny Yib
Supplier: Ultra Scientific
Description: 8260 Surrogates @ 250PPM
Comments: None

Analyte	Concentration	Analyte	Concentration
1,2-Dichloroethane-d4	250 mg/L	Bromofluorobenzene	250 mg/L
Toluene-d8	250 mg/L		

Serial ID: UVM170330-03C **Open/Reference Date:** 31-MAY-17 **Lot Number :** 282119
Name: Hexane-PLUS ICAL **Received:** 30-MAR-17 **Solvent :** Methanol
Type: Source Material **Expires:** 30-JUN-17
Employee: Vanny Yib
Supplier: O2SI
Description: Hexane-PLUS 2.0ppm
Comments: None

Analyte	Concentration	Analyte	Concentration
2-Pentanone	10 mg/L	Hexane	2 mg/L

Standard Logbook

Serial ID: UVM170330-04C **Open/Reference Date:** 31-MAY-17 **Lot Number :** 282120
Name: Hexane-PLUS ICAL **Received:** 30-MAR-17 **Solvent :** Methanol
Type: Source Material **Expires:** 30-JUN-17
Employee: Vanny Yib
Supplier: O2SI
Description: Hexane-PLUS 5.0ppm
Comments: None

Analyte	Concentration	Analyte	Concentration
2-Pentanone	25 mg/L	Hexane	5 mg/L

Serial ID: UVM170330-05C **Open/Reference Date:** 31-MAY-17 **Lot Number :** 282121
Name: Hexane-PLUS ICAL **Received:** 30-MAR-17 **Solvent :** Methanol
Type: Source Material **Expires:** 30-JUN-17
Employee: Vanny Yib
Supplier: O2SI
Description: Hexane-PLUS 10ppm
Comments: None

Analyte	Concentration	Analyte	Concentration
2-Pentanone	50 mg/L	Hexane	10 mg/L

Serial ID: UVM170330-06C **Open/Reference Date:** 31-MAY-17 **Lot Number :** 282122
Name: Hexane-PLUS ICAL **Received:** 30-MAR-17 **Solvent :** Methanol
Type: Source Material **Expires:** 30-JUN-17
Employee: Vanny Yib
Supplier: O2SI
Description: Hexane-PLUS 20ppm
Comments: None

Analyte	Concentration	Analyte	Concentration
2-Pentanone	100 mg/L	Hexane	20 mg/L

Serial ID: UVM170330-07C **Open/Reference Date:** 31-MAY-17 **Lot Number :** 282123
Name: Hexane-PLUS ICAL **Received:** 30-MAR-17 **Solvent :** Methanol
Type: Source Material **Expires:** 30-JUN-17
Employee: Vanny Yib
Supplier: O2SI
Description: Hexane-PLUS 50ppm
Comments: None

Analyte	Concentration	Analyte	Concentration
2-Pentanone	250 mg/L	Hexane	50 mg/L

Serial ID: UVM170330-08C **Open/Reference Date:** 31-MAY-17 **Lot Number :** 282124
Name: Hexane-PLUS ICAL **Received:** 30-MAR-17 **Solvent :** Methanol
Type: Source Material **Expires:** 30-JUN-17
Employee: Vanny Yib
Supplier: O2SI
Description: Hexane-PLUS 100ppm
Comments: None

Analyte	Concentration	Analyte	Concentration
2-Pentanone	500 mg/L	Hexane	100 mg/L

Serial ID: UVM170330-09A **Open/Reference Date:** 16-JUN-17 **Lot Number :** 273337
Name: Hexane-PLUS SPIKE **Received:** 30-MAR-17 **Solvent :** Methanol
Type: Source Material **Expires:** 28-JUN-17
Employee: Ramona Yarbrough
Supplier: O2SI
Description: Hexane-PLUS LCS 50ppm
Comments: None

Analyte	Concentration	Analyte	Concentration
2-Pentanone	250 mg/L	Hexane	50 mg/L

Serial ID: UVM170330-09B **Open/Reference Date:** 27-JUN-17 **Lot Number :** 273337
Name: Hexane-PLUS SPIKE **Received:** 30-MAR-17 **Solvent :** Methanol
Type: Source Material **Expires:** 27-JUL-17
Employee: Ramona Yarbrough
Supplier: O2SI
Description: Hexane-PLUS LCS 50ppm
Comments: None

Analyte	Concentration	Analyte	Concentration
2-Pentanone	250 mg/L	Hexane	50 mg/L

Serial ID: UVM170412-08C **Open/Reference Date:** 05-JUN-17 **Aliquot :** 5 uL
Name: 8260 SHORT LCS **Received:** 12-APR-17 **Lot Number :** 304262
Type: Source Material **Expires:** 28-JUN-17
Employee: Vanny Yib
Supplier: O2SI
Description: 8260 Short LCS 250PPM + Oxygenates
Comments: None

Analyte	Concentration	Analyte	Concentration
1,4-Dioxane	2500 mg/L	1-Chlorohexane	50 mg/L
2-Chloro-1,3-butadiene	50 mg/L	2-Nitropropane	250 mg/L
Acrylonitrile	250 mg/L	Allyl chloride	250 mg/L
Benzyl chloride	250 mg/L	Ethyl acetate	250 mg/L

Analyte	Concentration	Analyte	Concentration
Ethyl methacrylate	250 mg/L	Ethyl tert-butyl ether	50 mg/L
Isobutyl alcohol	2500 mg/L	Isopropyl Alcohol	2500 mg/L
Isopropyl ether	50 mg/L	Methacrylonitrile	250 mg/L
Methyl methacrylate	250 mg/L	Methyl tert-amyl ether	50 mg/L
Pentachloroethane	250 mg/L	Propionitrile	250 mg/L
Tetrahydrofuran	250 mg/L	Trichlorotrifluoroethane	250 mg/L
bis(2-Chloro-1-methylethyl)ether	250 mg/L	cis-1,4-Dichloro-2-butene	250 mg/L
tert-Butyl Alcohol	2500 mg/L	trans-1,4-Dichloro-2-butene	250 mg/L

Serial ID: UVM170502-01A **Open/Reference Date:** 20-JUN-17 **Catalog Number :** 70074
Name: 2-Chloroethylvinyl ether **Received:** 02-MAY-17 **Lot Number :** 110316
Type: Source Material **Expires:** 20-JUL-17 **Solvent :** MeOH
Employee: Ramona Yarbrough
Supplier: Absolute Standard
Description: 2-Chloroethylvinyl ether 1000ppm
Comments: None

Analyte	Concentration	Analyte	Concentration
2-Chloroethylvinyl ether	1000 mg/L		

Serial ID: UVM170503-01E **Open/Reference Date:** 12-JUN-17 **Lot Number :** AU-01147
Name: 8260/624 SPIKE-AB **Received:** 03-MAY-17
Type: Source Material **Expires:** 20-JUN-17
Employee: Patrick Yib
Supplier: Ultra Scientific
Description: 8260 LCS Solution Mix A
Comments: None

Analyte	Concentration	Analyte	Concentration
1,1,1,2-Tetrachloroethane	50 ug/mL	1,1,1-Trichloroethane	50 ug/mL
1,1,2,2-Tetrachloroethane	50 ug/mL	1,1,2-Trichloroethane	50 ug/mL
1,1-Dichloroethane	50 ug/mL	1,1-Dichloroethylene	50 ug/mL
1,1-Dichloropropene	50 ug/mL	1,2,3-Trichlorobenzene	50 ug/mL
1,2,3-Trichloropropane	50 ug/mL	1,2,4-Trichlorobenzene	50 ug/mL
1,2,4-Trimethylbenzene	50 ug/mL	1,2-Dibromo-3-chloropropane	50 ug/mL
1,2-Dibromoethane	50 ug/mL	1,2-Dichlorobenzene	50 ug/mL
1,2-Dichloroethane	50 ug/mL	1,2-Dichloroethylene (total)	100 ug/mL
1,2-Dichloropropane	50 ug/mL	1,3,5-Trimethylbenzene	50 ug/mL
1,3-Dichlorobenzene	50 ug/mL	1,3-Dichloropropane	50 ug/mL
1,3-Dichloropropylene	100 ug/mL	1,4-Dichlorobenzene	50 ug/mL
2,2-Dichloropropane	50 ug/mL	2-Butanone	250 ug/mL
2-Chlorotoluene	50 ug/mL	2-Hexanone	250 ug/mL
4-Chlorotoluene	50 ug/mL	4-Isopropyltoluene	50 ug/mL
4-Methyl-2-pentanone	250 ug/mL	Acetone	250 ug/mL

Analyte	Concentration	Analyte	Concentration
Acetonitrile	1250 ug/mL	Benzene	50 ug/mL
Bromobenzene	50 ug/mL	Bromochloromethane	50 ug/mL
Bromodichloromethane	50 ug/mL	Bromoform	50 ug/mL
Carbon disulfide	250 ug/mL	Carbon tetrachloride	50 ug/mL
Chlorobenzene	50 ug/mL	Chloroform	50 ug/mL
Cyclohexane	50 ug/mL	Cyclohexene	50 ug/mL
Dibromochloromethane	50 ug/mL	Dibromomethane	50 ug/mL
Ethylbenzene	50 ug/mL	Hexachlorobutadiene	50 ug/mL
Iodomethane	250 ug/mL	Isopropylbenzene	50 ug/mL
Methyl acetate	250 ug/mL	Methylcyclohexane	50 ug/mL
Methylene chloride	50 ug/mL	Naphthalene	50 ug/mL
Styrene	50 ug/mL	Tetrachloroethylene	50 ug/mL
Toluene	50 ug/mL	Trichloroethylene	50 ug/mL
Xylenes (total)	150 ug/mL	cis-1,2-Dichloroethylene	50 ug/mL
cis-1,3-Dichloropropylene	50 ug/mL	m,p-Xylenes	100 ug/mL
n-Butyl alcohol	5000 ug/mL	n-Butylbenzene	50 ug/mL
n-Propylbenzene	50 ug/mL	o-Xylene	50 ug/mL
sec-Butylbenzene	50 ug/mL	tert-Butyl methyl ether	50 ug/mL
tert-Butylbenzene	50 ug/mL	trans-1,2-Dichloroethylene	50 ug/mL
trans-1,3-Dichloropropylene	50 ug/mL		

Serial ID: UVM170503-01G **Open/Reference Date:** 23-JUN-17 **Lot Number :** AU-01147
Name: 8260/624 SPIKE-AB **Received:** 03-MAY-17
Type: Source Material **Expires:** 23-JUL-17
Employee: Vanny Yib
Supplier: Ultra Scientific
Description: 8260 LCS Solution Mix A
Comments: None

Analyte	Concentration	Analyte	Concentration
1,1,1,2-Tetrachloroethane	50 ug/mL	1,1,1-Trichloroethane	50 ug/mL
1,1,2,2-Tetrachloroethane	50 ug/mL	1,1,2-Trichloroethane	50 ug/mL
1,1-Dichloroethane	50 ug/mL	1,1-Dichloroethylene	50 ug/mL
1,1-Dichloropropene	50 ug/mL	1,2,3-Trichlorobenzene	50 ug/mL
1,2,3-Trichloropropane	50 ug/mL	1,2,4-Trichlorobenzene	50 ug/mL
1,2,4-Trimethylbenzene	50 ug/mL	1,2-Dibromo-3-chloropropane	50 ug/mL
1,2-Dibromoethane	50 ug/mL	1,2-Dichlorobenzene	50 ug/mL
1,2-Dichloroethane	50 ug/mL	1,2-Dichloroethylene (total)	100 ug/mL
1,2-Dichloropropane	50 ug/mL	1,3,5-Trimethylbenzene	50 ug/mL
1,3-Dichlorobenzene	50 ug/mL	1,3-Dichloropropane	50 ug/mL
1,3-Dichloropropylene	100 ug/mL	1,4-Dichlorobenzene	50 ug/mL
2,2-Dichloropropane	50 ug/mL	2-Butanone	250 ug/mL
2-Chlorotoluene	50 ug/mL	2-Hexanone	250 ug/mL
4-Chlorotoluene	50 ug/mL	4-Isopropyltoluene	50 ug/mL
4-Methyl-2-pentanone	250 ug/mL	Acetone	250 ug/mL

Analyte	Concentration	Analyte	Concentration
Acetonitrile	1250 ug/mL	Benzene	50 ug/mL
Bromobenzene	50 ug/mL	Bromochloromethane	50 ug/mL
Bromodichloromethane	50 ug/mL	Bromoform	50 ug/mL
Carbon disulfide	250 ug/mL	Carbon tetrachloride	50 ug/mL
Chlorobenzene	50 ug/mL	Chloroform	50 ug/mL
Cyclohexane	50 ug/mL	Cyclohexene	50 ug/mL
Dibromochloromethane	50 ug/mL	Dibromomethane	50 ug/mL
Ethylbenzene	50 ug/mL	Hexachlorobutadiene	50 ug/mL
Iodomethane	250 ug/mL	Isopropylbenzene	50 ug/mL
Methyl acetate	250 ug/mL	Methylcyclohexane	50 ug/mL
Methylene chloride	50 ug/mL	Naphthalene	50 ug/mL
Styrene	50 ug/mL	Tetrachloroethylene	50 ug/mL
Toluene	50 ug/mL	Trichloroethylene	50 ug/mL
Xylenes (total)	150 ug/mL	cis-1,2-Dichloroethylene	50 ug/mL
cis-1,3-Dichloropropylene	50 ug/mL	m,p-Xylenes	100 ug/mL
n-Butyl alcohol	5000 ug/mL	n-Butylbenzene	50 ug/mL
n-Propylbenzene	50 ug/mL	o-Xylene	50 ug/mL
sec-Butylbenzene	50 ug/mL	tert-Butyl methyl ether	50 ug/mL
tert-Butylbenzene	50 ug/mL	trans-1,2-Dichloroethylene	50 ug/mL
trans-1,3-Dichloropropylene	50 ug/mL		

Serial ID: UVM170504-07K **Open/Reference Date:** 26-JUN-17 **Lot Number :** AU-01144
Name: 8260 CCAL GASES **Received:** 04-MAY-17 **Solvent :** Methanol
Type: Source Material **Expires:** 03-JUL-17
Employee: Ramona Yarbrough
Supplier: Ultra Scientific
Description: 8260 CCAL GASES 50PPM
Comments: None

Analyte	Concentration	Analyte	Concentration
2-Chloroethylvinyl ether	250 mg/L	Bromomethane	50 mg/L
Chloroethane	50 mg/L	Chloromethane	50 mg/L
Dichlorodifluoromethane	50 mg/L	Ethyl ether	50 mg/L
Trichlorofluoromethane	50 mg/L	Vinyl acetate	250 mg/L
Vinyl chloride	50 mg/L		

Serial ID: UVM170504-10D **Open/Reference Date:** 13-JUN-17 **Catalog Number :** CUS-13538-2
Name: 8260 Gas Spike MIx **Received:** 04-MAY-17 **Lot Number :** AU-01148
Type: Source Material **Expires:** 20-JUN-17 **Solvent :** Methanol
Employee: James Pressley **Verified:** 13-JUN-17
Supplier: Ultra Scientific
Description: Gas Spike Mix 50mg/L Mix A
Comments: None

Analyte	Concentration	Analyte	Concentration

Analyte	Concentration	Analyte	Concentration
Bromomethane	50 mg/L	Chloroethane	50 mg/L
Chloromethane	50 mg/L	Dichlorodifluoromethane	50 mg/L
Ethyl ether	50 mg/L	Trichlorofluoromethane	50 mg/L
Vinyl acetate	250 mg/L	Vinyl chloride	50 mg/L

Serial ID: UVM170504-10G **Open/Reference Date:** 23-JUN-17 **Catalog Number :** CUS-13538-2
Name: 8260 Gas Spike MIx **Received:** 04-MAY-17 **Lot Number :** AU-01148
Type: Source Material **Expires:** 30-JUN-17 **Solvent :** Methanol
Employee: Vanny Yib
Supplier: Ultra Scientific
Description: Gas Spike Mix 50mg/L Mix A
Comments: None

Analyte	Concentration	Analyte	Concentration
Bromomethane	50 mg/L	Chloroethane	50 mg/L
Chloromethane	50 mg/L	Dichlorodifluoromethane	50 mg/L
Ethyl ether	50 mg/L	Trichlorofluoromethane	50 mg/L
Vinyl acetate	250 mg/L	Vinyl chloride	50 mg/L

Serial ID: UVM170509-03B **Open/Reference Date:** 09-JUN-17 **Catalog Number :** CUS-13539-3
Name: 8260 ICAL LONG **Received:** 09-MAY-17 **Lot Number :** AU-01073
Type: Source Material **Expires:** 09-JUL-17
Employee: James Pressley **Verified:** 09-JUN-17
Supplier: Ultra Scientific
Description: 8260 ICAL SET 2.0PPM
Comments: None

Analyte	Concentration	Analyte	Concentration
1,1,1,2-Tetrachloroethane	2 mg/L	1,1,1-Trichloroethane	2 mg/L
1,1,2,2-Tetrachloroethane	2 mg/L	1,1,2-Trichloroethane	2 mg/L
1,1-Dichloroethane	2 mg/L	1,1-Dichloroethylene	2 mg/L
1,1-Dichloropropene	2 mg/L	1,2,3-Trichlorobenzene	2 mg/L
1,2,3-Trichloropropane	2 mg/L	1,2,4-Trichlorobenzene	2 mg/L
1,2,4-Trimethylbenzene	2 mg/L	1,2-Dibromo-3-chloropropane	2 mg/L
1,2-Dibromoethane	2 mg/L	1,2-Dichlorobenzene	2 mg/L
1,2-Dichloroethane	2 mg/L	1,2-Dichloroethylene (total)	4 mg/L
1,2-Dichloropropane	2 mg/L	1,3,5-Trimethylbenzene	2 mg/L
1,3-Dichlorobenzene	2 mg/L	1,3-Dichloropropane	2 mg/L
1,4-Dichlorobenzene	2 mg/L	2,2-Dichloropropane	2 mg/L
2-Butanone	10 mg/L	2-Chlorotoluene	2 mg/L
2-Hexanone	10 mg/L	4-Chlorotoluene	2 mg/L
4-Isopropyltoluene	2 mg/L	4-Methyl-2-pentanone	10 mg/L
Acetone	10 mg/L	Acetonitrile	50 mg/L
Benzene	2 mg/L	Bromobenzene	2 mg/L

Analyte	Concentration	Analyte	Concentration
Bromochloromethane	2 mg/L	Bromodichloromethane	2 mg/L
Bromoform	2 mg/L	Carbon disulfide	10 mg/L
Carbon tetrachloride	2 mg/L	Chlorobenzene	2 mg/L
Chloroform	2 mg/L	Cyclohexane	2 mg/L
Cyclohexene	2 mg/L	Dibromochloromethane	2 mg/L
Dibromomethane	2 mg/L	Ethylbenzene	2 mg/L
Hexachlorobutadiene	2 mg/L	Iodomethane	10 mg/L
Isopropylbenzene	2 mg/L	Methyl acetate	10 mg/L
Methylcyclohexane	2 mg/L	Methylene chloride	2 mg/L
Naphthalene	2 mg/L	Styrene	2 mg/L
Tetrachloroethylene	2 mg/L	Toluene	2 mg/L
Trichloroethylene	2 mg/L	Xylenes (total)	6 mg/L
cis-1,2-Dichloroethylene	2 mg/L	cis-1,3-Dichloropropylene	2 mg/L
m,p-Xylenes	4 mg/L	n-Butyl alcohol	200 mg/L
n-Butylbenzene	2 mg/L	n-Propylbenzene	2 mg/L
o-Xylene	2 mg/L	sec-Butylbenzene	2 mg/L
tert-Butyl methyl ether	2 mg/L	tert-Butylbenzene	2 mg/L
trans-1,2-Dichloroethylene	2 mg/L	trans-1,3-Dichloropropylene	2 mg/L

Serial ID: UVM170509-04B
Name: 8260 ICAL LONG
Type: Source Material
Employee: James Pressley
Supplier: Ultra Scientific
Description: 8260 ICAL SET 5.0PPM
Comments: None

Open/Reference Date: 09-JUN-17
Received: 09-MAY-17
Expires: 01-JUL-17
Verified: 09-JUN-17

Catalog Number : CUS-13539-4
Lot Number : AU-01074

Analyte	Concentration	Analyte	Concentration
1,1,1,2-Tetrachloroethane	5 mg/L	1,1,1-Trichloroethane	5 mg/L
1,1,2,2-Tetrachloroethane	5 mg/L	1,1,2-Trichloroethane	5 mg/L
1,1-Dichloroethane	5 mg/L	1,1-Dichloroethylene	5 mg/L
1,1-Dichloropropene	5 mg/L	1,2,3-Trichlorobenzene	5 mg/L
1,2,3-Trichloropropane	5 mg/L	1,2,4-Trichlorobenzene	5 mg/L
1,2,4-Trimethylbenzene	5 mg/L	1,2-Dibromo-3-chloropropane	5 mg/L
1,2-Dibromoethane	5 mg/L	1,2-Dichlorobenzene	5 mg/L
1,2-Dichloroethane	5 mg/L	1,2-Dichloroethylene (total)	10 mg/L
1,2-Dichloropropane	5 mg/L	1,3,5-Trimethylbenzene	5 mg/L
1,3-Dichlorobenzene	5 mg/L	1,3-Dichloropropane	5 mg/L
1,4-Dichlorobenzene	5 mg/L	2,2-Dichloropropane	5 mg/L
2-Butanone	25 mg/L	2-Chlorotoluene	5 mg/L
2-Hexanone	25 mg/L	4-Chlorotoluene	5 mg/L
4-Isopropyltoluene	5 mg/L	4-Methyl-2-pentanone	25 mg/L
Acetone	25 mg/L	Acetonitrile	125 mg/L
Benzene	5 mg/L	Bromobenzene	5 mg/L
Bromochloromethane	5 mg/L	Bromodichloromethane	5 mg/L

Analyte	Concentration	Analyte	Concentration
Bromoform	5 mg/L	Carbon disulfide	25 mg/L
Carbon tetrachloride	5 mg/L	Chlorobenzene	5 mg/L
Chloroform	5 mg/L	Cyclohexane	5 mg/L
Cyclohexene	5 mg/L	Dibromochloromethane	5 mg/L
Dibromomethane	5 mg/L	Ethylbenzene	5 mg/L
Hexachlorobutadiene	5 mg/L	Iodomethane	25 mg/L
Isopropylbenzene	5 mg/L	Methyl acetate	25 mg/L
Methylcyclohexane	5 mg/L	Methylene chloride	5 mg/L
Naphthalene	5 mg/L	Styrene	5 mg/L
Tetrachloroethylene	5 mg/L	Toluene	5 mg/L
Trichloroethylene	5 mg/L	Xylenes (total)	15 mg/L
cis-1,2-Dichloroethylene	5 mg/L	cis-1,3-Dichloropropylene	5 mg/L
m,p-Xylenes	10 mg/L	n-Butyl alcohol	500 mg/L
n-Butylbenzene	5 mg/L	n-Propylbenzene	5 mg/L
o-Xylene	5 mg/L	sec-Butylbenzene	5 mg/L
tert-Butyl methyl ether	5 mg/L	tert-Butylbenzene	5 mg/L
trans-1,2-Dichloroethylene	5 mg/L	trans-1,3-Dichloropropylene	5 mg/L

Serial ID: UVM170509-05B
Name: 8260 ICAL LONG
Type: Source Material
Employee: James Pressley
Supplier: Ultra Scientific
Description: 8260 ICAL SET 10.0PPM
Comments: None

Open/Reference Date: 09-JUN-17
Received: 09-MAY-17
Expires: 09-JUL-17
Verified: 09-JUN-17

Catalog Number : CUS-13539-5
Lot Number : AU-01075

Analyte	Concentration	Analyte	Concentration
1,1,1,2-Tetrachloroethane	10 mg/L	1,1,1-Trichloroethane	10 mg/L
1,1,2,2-Tetrachloroethane	10 mg/L	1,1,2-Trichloroethane	10 mg/L
1,1-Dichloroethane	10 mg/L	1,1-Dichloroethylene	10 mg/L
1,1-Dichloropropene	10 mg/L	1,2,3-Trichlorobenzene	10 mg/L
1,2,3-Trichloropropane	10 mg/L	1,2,4-Trichlorobenzene	10 mg/L
1,2,4-Trimethylbenzene	10 mg/L	1,2-Dibromo-3-chloropropane	10 mg/L
1,2-Dibromoethane	10 mg/L	1,2-Dichlorobenzene	10 mg/L
1,2-Dichloroethane	10 mg/L	1,2-Dichloroethylene (total)	20 mg/L
1,2-Dichloropropane	10 mg/L	1,3,5-Trimethylbenzene	10 mg/L
1,3-Dichlorobenzene	10 mg/L	1,3-Dichloropropane	10 mg/L
1,4-Dichlorobenzene	10 mg/L	2,2-Dichloropropane	10 mg/L
2-Butanone	50 mg/L	2-Chlorotoluene	10 mg/L
2-Hexanone	50 mg/L	4-Chlorotoluene	10 mg/L
4-Isopropyltoluene	10 mg/L	4-Methyl-2-pentanone	50 mg/L
Acetone	50 mg/L	Acetonitrile	250 mg/L
Benzene	10 mg/L	Bromobenzene	10 mg/L
Bromochloromethane	10 mg/L	Bromodichloromethane	10 mg/L
Bromoform	10 mg/L	Carbon disulfide	50 mg/L

Analyte	Concentration	Analyte	Concentration
Carbon tetrachloride	10 mg/L	Chlorobenzene	10 mg/L
Chloroform	10 mg/L	Cyclohexane	10 mg/L
Cyclohexene	10 mg/L	Dibromochloromethane	10 mg/L
Dibromomethane	10 mg/L	Ethylbenzene	10 mg/L
Hexachlorobutadiene	10 mg/L	Iodomethane	50 mg/L
Isopropylbenzene	10 mg/L	Methyl acetate	50 mg/L
Methylcyclohexane	10 mg/L	Methylene chloride	10 mg/L
Naphthalene	10 mg/L	Styrene	10 mg/L
Tetrachloroethylene	10 mg/L	Toluene	10 mg/L
Trichloroethylene	10 mg/L	Xylenes (total)	30 mg/L
cis-1,2-Dichloroethylene	10 mg/L	cis-1,3-Dichloropropylene	10 mg/L
m,p-Xylenes	20 mg/L	n-Butyl alcohol	1000 mg/L
n-Butylbenzene	10 mg/L	n-Propylbenzene	10 mg/L
o-Xylene	10 mg/L	sec-Butylbenzene	10 mg/L
tert-Butyl methyl ether	10 mg/L	tert-Butylbenzene	10 mg/L
trans-1,2-Dichloroethylene	10 mg/L	trans-1,3-Dichloropropylene	10 mg/L

Serial ID: UVM170509-07B
Open/Reference Date: 09-JUN-17
Catalog Number : CUS-13539-7
Name: 8260 ICAL LONG
Received: 09-MAY-17
Lot Number : AU-01077
Type: Source Material
Expires: 09-JUL-17
Employee: James Pressley
Verified: 09-JUN-17
Supplier: Ultra Scientific
Description: 8260 ICAL SET 50.0PPM
Comments: None

Analyte	Concentration	Analyte	Concentration
1,1,1,2-Tetrachloroethane	50 mg/L	1,1,1-Trichloroethane	50 mg/L
1,1,2,2-Tetrachloroethane	50 mg/L	1,1,2-Trichloroethane	50 mg/L
1,1-Dichloroethane	50 mg/L	1,1-Dichloroethylene	50 mg/L
1,1-Dichloropropene	50 mg/L	1,2,3-Trichlorobenzene	50 mg/L
1,2,3-Trichloropropane	50 mg/L	1,2,4-Trichlorobenzene	50 mg/L
1,2,4-Trimethylbenzene	50 mg/L	1,2-Dibromo-3-chloropropane	50 mg/L
1,2-Dibromoethane	50 mg/L	1,2-Dichlorobenzene	50 mg/L
1,2-Dichloroethane	50 mg/L	1,2-Dichloroethylene (total)	100 mg/L
1,2-Dichloropropane	50 mg/L	1,3,5-Trimethylbenzene	50 mg/L
1,3-Dichlorobenzene	50 mg/L	1,3-Dichloropropane	50 mg/L
1,3-Dichloropropylene	50 mg/L	1,4-Dichlorobenzene	50 mg/L
2,2-Dichloropropane	50 mg/L	2-Butanone	250 mg/L
2-Chlorotoluene	50 mg/L	2-Hexanone	250 mg/L
4-Chlorotoluene	50 mg/L	4-Isopropyltoluene	50 mg/L
4-Methyl-2-pentanone	250 mg/L	Acetone	250 mg/L
Acetonitrile	1250 mg/L	Benzene	50 mg/L
Bromobenzene	50 mg/L	Bromochloromethane	50 mg/L
Bromodichloromethane	50 mg/L	Bromoform	50 mg/L
Carbon disulfide	250 mg/L	Carbon tetrachloride	50 mg/L

Analyte	Concentration	Analyte	Concentration
Chlorobenzene	50 mg/L	Chloroform	50 mg/L
Cyclohexane	50 mg/L	Cyclohexene	50 mg/L
Dibromochloromethane	50 mg/L	Dibromomethane	50 mg/L
Ethylbenzene	50 mg/L	Hexachlorobutadiene	50 mg/L
Iodomethane	250 mg/L	Isopropylbenzene	50 mg/L
Methyl acetate	250 mg/L	Methylcyclohexane	50 mg/L
Methylene chloride	50 mg/L	Naphthalene	50 mg/L
Styrene	50 mg/L	Tetrachloroethylene	50 mg/L
Toluene	50 mg/L	Trichloroethylene	50 mg/L
Xylenes (total)	150 mg/L	cis-1,2-Dichloroethylene	50 mg/L
cis-1,3-Dichloropropylene	50 mg/L	m,p-Xylenes	100 mg/L
n-Butyl alcohol	5000 mg/L	n-Butylbenzene	50 mg/L
n-Propylbenzene	50 mg/L	o-Xylene	50 mg/L
sec-Butylbenzene	50 mg/L	tert-Butyl methyl ether	50 mg/L
tert-Butylbenzene	50 mg/L	trans-1,2-Dichloroethylene	50 mg/L
trans-1,3-Dichloropropylene	50 mg/L		

Serial ID: UVM170509-08B
Name: 8260 ICAL LONG
Type: Source Material
Employee: James Pressley
Supplier: Ultra Scientific
Description: 8260 ICAL SET 100PPM
Comments: None

Open/Reference Date: 09-JUN-17
Received: 09-MAY-17
Expires: 09-JUL-17
Verified: 09-JUN-17

Catalog Number : CUS-13539-8
Lot Number : AU-01078

Analyte	Concentration	Analyte	Concentration
1,1,1,2-Tetrachloroethane	100 mg/L	1,1,1-Trichloroethane	100 mg/L
1,1,2,2-Tetrachloroethane	100 mg/L	1,1,2-Trichloroethane	100 mg/L
1,1-Dichloroethane	100 mg/L	1,1-Dichloroethylene	100 mg/L
1,1-Dichloropropene	100 mg/L	1,2,3-Trichlorobenzene	100 mg/L
1,2,3-Trichloropropane	100 mg/L	1,2,4-Trichlorobenzene	100 mg/L
1,2,4-Trimethylbenzene	100 mg/L	1,2-Dibromo-3-chloropropane	100 mg/L
1,2-Dibromoethane	100 mg/L	1,2-Dichlorobenzene	100 mg/L
1,2-Dichloroethane	100 mg/L	1,2-Dichloroethylene (total)	200 mg/L
1,2-Dichloropropane	100 mg/L	1,3,5-Trimethylbenzene	100 mg/L
1,3-Dichlorobenzene	100 mg/L	1,3-Dichloropropane	100 mg/L
1,4-Dichlorobenzene	100 mg/L	2,2-Dichloropropane	100 mg/L
2-Butanone	500 mg/L	2-Chlorotoluene	100 mg/L
2-Hexanone	500 mg/L	4-Chlorotoluene	100 mg/L
4-Isopropyltoluene	100 mg/L	4-Methyl-2-pentanone	500 mg/L
Acetone	500 mg/L	Acetonitrile	2500 mg/L
Benzene	100 mg/L	Bromobenzene	100 mg/L
Bromochloromethane	100 mg/L	Bromodichloromethane	100 mg/L
Bromoform	100 mg/L	Carbon disulfide	500 mg/L
Carbon tetrachloride	100 mg/L	Chlorobenzene	100 mg/L

Analyte	Concentration	Analyte	Concentration
Chloroform	100 mg/L	Cyclohexane	100 mg/L
Cyclohexene	100 mg/L	Dibromochloromethane	100 mg/L
Dibromomethane	100 mg/L	Ethylbenzene	100 mg/L
Hexachlorobutadiene	100 mg/L	Iodomethane	500 mg/L
Isopropylbenzene	100 mg/L	Methyl acetate	500 mg/L
Methylcyclohexane	100 mg/L	Methylene chloride	100 mg/L
Naphthalene	100 mg/L	Styrene	100 mg/L
Tetrachloroethylene	100 mg/L	Toluene	100 mg/L
Trichloroethylene	100 mg/L	Xylenes (total)	300 mg/L
cis-1,2-Dichloroethylene	100 mg/L	cis-1,3-Dichloropropylene	100 mg/L
m,p-Xylenes	200 mg/L	n-Butyl alcohol	10000 mg/L
n-Butylbenzene	100 mg/L	n-Propylbenzene	100 mg/L
o-Xylene	100 mg/L	sec-Butylbenzene	100 mg/L
tert-Butyl methyl ether	100 mg/L	tert-Butylbenzene	100 mg/L
trans-1,2-Dichloroethylene	100 mg/L	trans-1,3-Dichloropropylene	100 mg/L

Serial ID: UVM170526-01A **Open/Reference Date:** 31-MAY-17 **Lot Number :** 309193
Name: 8260 ICAL CYCLOHEX **Received:** 26-MAY-17 **Solvent :** Methanol
Type: Source Material **Expires:** 30-JUN-17
Employee: James Pressley **Verified:** 31-MAY-17
Supplier: O2SI
Description: ICAL Acrolein 5ppm/Cyclohexanone 25PPM
Comments: None

Analyte	Concentration	Analyte	Concentration
Acrolein	5 mg/L	Cyclohexanone	25 mg/L

Serial ID: UVM170526-02A **Open/Reference Date:** 31-MAY-17 **Lot Number :** 309192
Name: 8260 ICAL CYCLOHEX **Received:** 26-MAY-17 **Solvent :** Methanol
Type: Source Material **Expires:** 30-JUN-17
Employee: James Pressley **Verified:** 31-MAY-17
Supplier: O2SI
Description: ICAL Acrolein 10ppm/Cyclohexanone 50ppm
Comments: None

Analyte	Concentration	Analyte	Concentration
Acrolein	10 mg/L	Cyclohexanone	50 mg/L

Serial ID: UVM170526-03A **Open/Reference Date:** 31-MAY-17 **Lot Number :** 309191
Name: 8260 ICAL CYCLOHEX **Received:** 26-MAY-17 **Solvent :** Methanol
Type: Source Material **Expires:** 30-JUN-17
Employee: James Pressley **Verified:** 31-MAY-17
Supplier: O2SI
Description: ICAL Acrolein 25ppm/Cyclohexanone 125ppm

Comments: None

Analyte	Concentration	Analyte	Concentration
Acrolein	25 mg/L	Cyclohexanone	125 mg/L

Serial ID: UVM170526-04A **Open/Reference Date:** 31-MAY-17 **Lot Number :** 309190
Name: 8260 ICAL CYCLOHEX **Received:** 26-MAY-17 **Solvent :** Methanol
Type: Source Material **Expires:** 30-JUN-17
Employee: James Pressley **Verified:** 31-MAY-17
Supplier: O2SI
Description: ICAL Acrolein 50ppm/Cyclohexanone 250ppm
Comments: None

Analyte	Concentration	Analyte	Concentration
Acrolein	50 mg/L	Cyclohexanone	250 mg/L

Serial ID: UVM170526-05A **Open/Reference Date:** 31-MAY-17 **Lot Number :** 309189
Name: 8260 ICAL CYCLOHEX **Received:** 26-MAY-17 **Solvent :** Methanol
Type: Source Material **Expires:** 30-JUN-17
Employee: James Pressley **Verified:** 31-MAY-17
Supplier: O2SI
Description: ICAL Acrolein 100ppm/Cyclohexanone 500ppm
Comments: None

Analyte	Concentration	Analyte	Concentration
Acrolein	100 mg/L	Cyclohexanone	500 mg/L

Serial ID: UVM170526-06A **Open/Reference Date:** 31-MAY-17 **Lot Number :** 309188
Name: 8260 ICAL CYCLOHEX **Received:** 26-MAY-17 **Solvent :** Methanol
Type: Source Material **Expires:** 30-JUN-17
Employee: James Pressley **Verified:** 31-MAY-17
Supplier: O2SI
Description: ICAL Acrolein 250ppm/Cyclohexanone 1250ppm
Comments: None

Analyte	Concentration	Analyte	Concentration
Acrolein	250 mg/L	Cyclohexanone	1250 mg/L

Serial ID: UVM170526-06F **Open/Reference Date:** 22-JUN-17 **Lot Number :** 309188
Name: 8260 CCAL CYCLOHEX **Received:** 26-MAY-17 **Solvent :** Methanol
Type: Source Material **Expires:** 06-JUL-17
Employee: James Pressley **Verified:** 22-JUN-17
Supplier: O2SI
Description: CCAL Acrolein 250ppm/Cyclohexanone 1250ppm
Comments: None

Analyte	Concentration	Analyte	Concentration
Acrolein	250 mg/L	Cyclohexanone	1250 mg/L

Serial ID: UVM170526-07A **Open/Reference Date:** 31-MAY-17 **Lot Number :** 309186
Name: 8260 ICAL CYCLOHEX **Received:** 26-MAY-17 **Solvent :** Methanol
Type: Source Material **Expires:** 30-JUN-17
Employee: James Pressley **Verified:** 31-MAY-17
Supplier: O2SI
Description: ICAL Acrolein 500ppm/Cyclohexanone 2500ppm
Comments: None

Analyte	Concentration	Analyte	Concentration
Acrolein	500 mg/L	Cyclohexanone	2500 mg/L

Serial ID: UVM170526-08A **Open/Reference Date:** 08-JUN-17 **Lot Number :** 309197
Name: 8260 CYCLOHEX LCS **Received:** 26-MAY-17 **Solvent :** Methanol
Type: Source Material **Expires:** 20-JUN-17
Employee: Ramona Yarbrough
Supplier: O2SI
Description: Acrolein/Cyclohexanone LCS 250/1250ppm
Comments: None

Analyte	Concentration	Analyte	Concentration
Acrolein	250 mg/L	Cyclohexanone	1250 mg/L

Serial ID: UVM170606-03B **Open/Reference Date:** 16-JUN-17 **Lot Number :** AU-01139
Name: 8260 ICAL GASES **Received:** 06-JUN-17 **Solvent :** Methanol
Type: Source Material **Expires:** 23-JUN-17
Employee: Vanny Yib
Supplier: Ultra Scientific
Description: 8260 ICAL GASES 2.0PPM
Comments: None

Analyte	Concentration	Analyte	Concentration
2-Chloroethylvinyl ether	10 mg/L	Bromomethane	2 mg/L
Chloroethane	2 mg/L	Chloromethane	2 mg/L
Dichlorodifluoromethane	2 mg/L	Ethyl ether	2 mg/L
Trichlorofluoromethane	2 mg/L	Vinyl acetate	10 mg/L
Vinyl chloride	2 mg/L		

Serial ID: UVM170606-04B **Open/Reference Date:** 16-JUN-17 **Lot Number :** AU-01138
Name: 8260 ICAL GASES **Received:** 06-JUN-17 **Solvent :** Methanol
Type: Source Material **Expires:** 23-JUN-17
Employee: Vanny Yib
Supplier: Ultra Scientific

Description: 8260 ICAL GASES 5.0PPM
Comments: None

Analyte	Concentration	Analyte	Concentration
2-Chloroethylvinyl ether	25 mg/L	Bromomethane	5 mg/L
Chloroethane	5 mg/L	Chloromethane	5 mg/L
Dichlorodifluoromethane	5 mg/L	Ethyl ether	5 mg/L
Trichlorofluoromethane	5 mg/L	Vinyl acetate	25 mg/L
Vinyl chloride	5 mg/L		

Serial ID: UVM170606-05B **Open/Reference Date:** 16-JUN-17 **Lot Number :** AU-01146
Name: 8260 ICAL GASES **Received:** 06-JUN-17 **Solvent :** Methanol
Type: Source Material **Expires:** 23-JUN-17
Employee: Vanny Yib
Supplier: Ultra Scientific
Description: 8260 ICAL GASES 10PPM
Comments: None

Analyte	Concentration	Analyte	Concentration
2-Chloroethylvinyl ether	50 mg/L	Bromomethane	10 mg/L
Chloroethane	10 mg/L	Chloromethane	10 mg/L
Dichlorodifluoromethane	10 mg/L	Ethyl ether	10 mg/L
Trichlorofluoromethane	10 mg/L	Vinyl acetate	50 mg/L
Vinyl chloride	10 mg/L		

Serial ID: UVM170606-06B **Open/Reference Date:** 16-JUN-17 **Lot Number :** AU-01145
Name: 8260 ICAL GASES **Received:** 06-JUN-17 **Solvent :** Methanol
Type: Source Material **Expires:** 23-JUN-17
Employee: Vanny Yib
Supplier: Ultra Scientific
Description: 8260 ICAL GASES 20PPM
Comments: None

Analyte	Concentration	Analyte	Concentration
2-Chloroethylvinyl ether	100 mg/L	Bromomethane	20 mg/L
Chloroethane	20 mg/L	Chloromethane	20 mg/L
Dichlorodifluoromethane	20 mg/L	Ethyl ether	20 mg/L
Trichlorofluoromethane	20 mg/L	Vinyl acetate	100 mg/L
Vinyl chloride	20 mg/L		

Serial ID: UVM170606-07B **Open/Reference Date:** 16-JUN-17 **Lot Number :** AU-01144
Name: 8260 ICAL GASES **Received:** 06-JUN-17 **Solvent :** Methanol
Type: Source Material **Expires:** 23-JUN-17
Employee: Vanny Yib
Supplier: Ultra Scientific
Description: 8260 ICAL GASES 50PPM

Comments: None

Analyte	Concentration	Analyte	Concentration
2-Chloroethylvinyl ether	250 mg/L	Bromomethane	50 mg/L
Chloroethane	50 mg/L	Chloromethane	50 mg/L
Dichlorodifluoromethane	50 mg/L	Ethyl ether	50 mg/L
Trichlorofluoromethane	50 mg/L	Vinyl acetate	250 mg/L
Vinyl chloride	50 mg/L		

Serial ID: UVM170606-08B **Open/Reference Date:** 16-JUN-17 **Lot Number :** AU-01143
Name: 8260 ICAL GASES **Received:** 06-JUN-17 **Solvent :** Methanol
Type: Source Material **Expires:** 23-JUN-17
Employee: Vanny Yib
Supplier: Ultra Scientific
Description: 8260 ICAL GASES 100PPM
Comments: None

Analyte	Concentration	Analyte	Concentration
2-Chloroethylvinyl ether	500 mg/L	Bromomethane	100 mg/L
Chloroethane	100 mg/L	Chloromethane	100 mg/L
Dichlorodifluoromethane	100 mg/L	Ethyl ether	100 mg/L
Trichlorofluoromethane	100 mg/L	Vinyl acetate	500 mg/L
Vinyl chloride	100 mg/L		

Serial ID: UVM170612-01A **Open/Reference Date:** 12-JUN-17 **Lot Number :** 310684
Name: 8260 ICAL SHORT **Received:** 12-JUN-17
Type: Source Material **Expires:** 12-JUL-17
Employee: Patrick Yib
Supplier: O2SI
Description: 8260 Short ICAL 5.0PPM + Oxygenates
Comments: None

Analyte	Concentration	Analyte	Concentration
1,4-Dioxane	50 mg/L	1-Chlorohexane	1 mg/L
2-Chloro-1,3-butadiene	1 mg/L	2-Nitropropane	5 mg/L
Acrylonitrile	5 mg/L	Allyl chloride	5 mg/L
Benzyl chloride	5 mg/L	Ethyl acetate	5 mg/L
Ethyl methacrylate	5 mg/L	Ethyl tert-butyl ether	1 mg/L
Isobutyl alcohol	50 mg/L	Isopropyl Alcohol	50 mg/L
Isopropyl ether	1 mg/L	Methacrylonitrile	5 mg/L
Methyl methacrylate	5 mg/L	Methyl tert-amyl ether	1 mg/L
Pentachloroethane	5 mg/L	Propionitrile	5 mg/L
Tetrahydrofuran	5 mg/L	Trichlorotrifluoroethane	5 mg/L
bis(2-Chloro-1-methylethyl)ether	5 mg/L	cis-1,4-Dichloro-2-butene	5 mg/L
tert-Butyl Alcohol	50 mg/L	trans-1,4-Dichloro-2-butene	5 mg/L

Serial ID: UVM170612-02A **Open/Reference Date:** 12-JUN-17 **Lot Number :** 310683
Name: 8260 ICAL SHORT **Received:** 12-JUN-17
Type: Source Material **Expires:** 12-JUL-17
Employee: Patrick Yib
Supplier: O2SI
Description: 8260 Short ICAL 10.0PPM + Oxygenates
Comments: None

Analyte	Concentration	Analyte	Concentration
1,4-Dioxane	100 mg/L	1-Chlorohexane	2 mg/L
2-Chloro-1,3-butadiene	2 mg/L	2-Nitropropane	10 mg/L
Acrylonitrile	10 mg/L	Allyl chloride	10 mg/L
Benzyl chloride	10 mg/L	Ethyl acetate	10 mg/L
Ethyl methacrylate	10 mg/L	Ethyl tert-butyl ether	2 mg/L
Isobutyl alcohol	100 mg/L	Isopropyl Alcohol	100 mg/L
Isopropyl ether	2 mg/L	Methacrylonitrile	10 mg/L
Methyl methacrylate	10 mg/L	Methyl tert-amyl ether	2 mg/L
Pentachloroethane	10 mg/L	Propionitrile	10 mg/L
Tetrahydrofuran	10 mg/L	Trichlorotrifluoroethane	10 mg/L
bis(2-Chloro-1-methylethyl)ether	10 mg/L	cis-1,4-Dichloro-2-butene	10 mg/L
tert-Butyl Alcohol	100 mg/L	trans-1,4-Dichloro-2-butene	10 mg/L

Serial ID: UVM170612-03A **Open/Reference Date:** **Lot Number :** 310682
Name: 8260 ICAL SHORT **Received:** 12-JUN-17
Type: Source Material **Expires:** 12-JUL-17
Employee: Patrick Yib
Supplier: O2SI
Description: 8260 Short ICAL 25.0PPM + Oxygenates
Comments: None

Analyte	Concentration	Analyte	Concentration
1,4-Dioxane	250 mg/L	1-Chlorohexane	5 mg/L
2-Chloro-1,3-butadiene	5 mg/L	2-Nitropropane	25 mg/L
Acrylonitrile	25 mg/L	Allyl chloride	25 mg/L
Benzyl chloride	25 mg/L	Ethyl acetate	25 mg/L
Ethyl methacrylate	25 mg/L	Ethyl tert-butyl ether	5 mg/L
Isobutyl alcohol	250 mg/L	Isopropyl Alcohol	250 mg/L
Isopropyl ether	5 mg/L	Methacrylonitrile	25 mg/L
Methyl methacrylate	25 mg/L	Methyl tert-amyl ether	5 mg/L
Pentachloroethane	25 mg/L	Propionitrile	25 mg/L
Tetrahydrofuran	25 mg/L	Trichlorotrifluoroethane	25 mg/L
bis(2-Chloro-1-methylethyl)ether	25 mg/L	cis-1,4-Dichloro-2-butene	25 mg/L
tert-Butyl Alcohol	250 mg/L	trans-1,4-Dichloro-2-butene	25 mg/L

Serial ID: UVM170612-04A **Open/Reference Date:** 12-JUN-17 **Lot Number :** 310681
Name: 8260 ICAL SHORT **Received:** 12-JUN-17
Type: Source Material **Expires:** 12-JUL-17
Employee: Patrick Yib
Supplier: O2SI
Description: 8260 Short ICAL 50.0PPM + Oxygenates
Comments: None

Analyte	Concentration	Analyte	Concentration
1,4-Dioxane	500 mg/L	1-Chlorohexane	10 mg/L
2-Chloro-1,3-butadiene	10 mg/L	2-Nitropropane	50 mg/L
Acrylonitrile	50 mg/L	Allyl chloride	50 mg/L
Benzyl chloride	50 mg/L	Ethyl acetate	50 mg/L
Ethyl methacrylate	50 mg/L	Ethyl tert-butyl ether	10 mg/L
Isobutyl alcohol	500 mg/L	Isopropyl Alcohol	500 mg/L
Isopropyl ether	10 mg/L	Methacrylonitrile	50 mg/L
Methyl methacrylate	50 mg/L	Methyl tert-amyl ether	10 mg/L
Pentachloroethane	50 mg/L	Propionitrile	50 mg/L
Tetrahydrofuran	50 mg/L	Trichlorotrifluoroethane	50 mg/L
bis(2-Chloro-1-methylethyl)ether	50 mg/L	cis-1,4-Dichloro-2-butene	50 mg/L
tert-Butyl Alcohol	500 mg/L	trans-1,4-Dichloro-2-butene	50 mg/L

Serial ID: UVM170612-05A **Open/Reference Date:** 12-JUN-17 **Lot Number :** 310680
Name: 8260 ICAL SHORT **Received:** 12-JUN-17
Type: Source Material **Expires:** 12-JUL-17
Employee: Patrick Yib
Supplier: O2SI
Description: 8260 Short ICAL 100PPM + Oxygenates
Comments: None

Analyte	Concentration	Analyte	Concentration
1,4-Dioxane	1000 mg/L	1-Chlorohexane	20 mg/L
2-Chloro-1,3-butadiene	20 mg/L	2-Nitropropane	100 mg/L
Acrylonitrile	100 mg/L	Allyl chloride	100 mg/L
Benzyl chloride	100 mg/L	Ethyl acetate	100 mg/L
Ethyl methacrylate	100 mg/L	Ethyl tert-butyl ether	20 mg/L
Isobutyl alcohol	1000 mg/L	Isopropyl Alcohol	1000 mg/L
Isopropyl ether	20 mg/L	Methacrylonitrile	100 mg/L
Methyl methacrylate	100 mg/L	Methyl tert-amyl ether	100 mg/L
Pentachloroethane	100 mg/L	Propionitrile	100 mg/L
Tetrahydrofuran	100 mg/L	Trichlorotrifluoroethane	100 mg/L
bis(2-Chloro-1-methylethyl)ether	100 mg/L	cis-1,4-Dichloro-2-butene	100 mg/L
tert-Butyl Alcohol	1000 mg/L	trans-1,4-Dichloro-2-butene	100 mg/L

Serial ID: UVM170612-06A **Open/Reference Date:** 12-JUN-17 **Lot Number :** 310679
Name: 8260 ICAL SHORT **Received:** 12-JUN-17
Type: Source Material **Expires:** 12-JUL-17
Employee: Patrick Yib
Supplier: O2SI
Description: 8260 Short ICAL 250PPM + Oxygenates
Comments: None

Analyte	Concentration	Analyte	Concentration
1,4-Dioxane	2500 mg/L	1-Chlorohexane	50 mg/L
2-Chloro-1,3-butadiene	50 mg/L	2-Nitropropane	250 mg/L
Acrylonitrile	250 mg/L	Allyl chloride	250 mg/L
Benzyl chloride	250 mg/L	Ethyl acetate	250 mg/L
Ethyl methacrylate	250 mg/L	Ethyl tert-butyl ether	50 mg/L
Isobutyl alcohol	2500 mg/L	Isopropyl Alcohol	2500 mg/L
Isopropyl ether	50 mg/L	Methacrylonitrile	250 mg/L
Methyl methacrylate	250 mg/L	Methyl tert-amyl ether	50 mg/L
Pentachloroethane	250 mg/L	Propionitrile	250 mg/L
Tetrahydrofuran	250 mg/L	Trichlorotrifluoroethane	250 mg/L
bis(2-Chloro-1-methylethyl)ether	250 mg/L	cis-1,4-Dichloro-2-butene	250 mg/L
tert-Butyl Alcohol	2500 mg/L	trans-1,4-Dichloro-2-butene	250 mg/L

Serial ID: UVM170612-06E **Open/Reference Date:** 14-JUN-17 **Lot Number :** 310679
Name: 8260 CCAL SHORT **Received:** 12-JUN-17
Type: Source Material **Expires:** 14-JUL-17
Employee: James Pressley **Verified:** 14-JUN-17
Supplier: O2SI
Description: 8260 Short CCAL 250PPM + Oxygenates
Comments: None

Analyte	Concentration	Analyte	Concentration
1,4-Dioxane	2500 mg/L	1-Chlorohexane	50 mg/L
2-Chloro-1,3-butadiene	50 mg/L	2-Nitropropane	250 mg/L
Acrylonitrile	250 mg/L	Allyl chloride	250 mg/L
Benzyl chloride	250 mg/L	Ethyl acetate	250 mg/L
Ethyl methacrylate	250 mg/L	Ethyl tert-butyl ether	50 mg/L
Isobutyl alcohol	2500 mg/L	Isopropyl Alcohol	2500 mg/L
Isopropyl ether	50 mg/L	Methacrylonitrile	250 mg/L
Methyl methacrylate	250 mg/L	Methyl tert-amyl ether	50 mg/L
Pentachloroethane	250 mg/L	Propionitrile	250 mg/L
Tetrahydrofuran	250 mg/L	Trichlorotrifluoroethane	250 mg/L
bis(2-Chloro-1-methylethyl)ether	250 mg/L	cis-1,4-Dichloro-2-butene	250 mg/L
tert-Butyl Alcohol	2500 mg/L	trans-1,4-Dichloro-2-butene	250 mg/L

Serial ID: UVM170612-07A **Open/Reference Date:** 12-JUN-17 **Lot Number :** 310678
Name: 8260 ICAL SHORT **Received:** 12-JUN-17
Type: Source Material **Expires:** 12-JUL-17
Employee: Patrick Yib
Supplier: O2SI
Description: 8260 Short ICAL 500PPM +Oxygenates
Comments: None

Analyte	Concentration	Analyte	Concentration
1,4-Dioxane	5000 mg/L	1-Chlorohexane	100 mg/L
2-Chloro-1,3-butadiene	100 mg/L	2-Nitropropane	500 mg/L
Acrylonitrile	500 mg/L	Allyl chloride	500 mg/L
Benzyl chloride	500 mg/L	Ethyl acetate	500 mg/L
Ethyl methacrylate	500 mg/L	Ethyl tert-butyl ether	100 mg/L
Isobutyl alcohol	5000 mg/L	Isopropyl Alcohol	5000 mg/L
Isopropyl ether	100 mg/L	Methacrylonitrile	500 mg/L
Methyl methacrylate	500 mg/L	Methyl tert-amyl ether	100 mg/L
Pentachloroethane	500 mg/L	Propionitrile	500 mg/L
Tetrahydrofuran	500 mg/L	Trichlorotrifluoroethane	500 mg/L
bis(2-Chloro-1-methylethyl)ether	500 mg/L	cis-1,4-Dichloro-2-butene	500 mg/L
tert-Butyl Alcohol	5000 mg/L	trans-1,4-Dichloro-2-butene	500 mg/L

Serial ID: IVM170528-01 **Open/Reference Date:** 28-MAY-17 **Lot Number :** 15120134
Name: BFB spike **Received:** 28-MAY-17 **Solvent :** Methanol
Type: Intermediate **Expires:** 27-JUN-17
Employee: Ramona Yarbrough
Supplier: Ultra Scientific
Description: BFB 50ppm
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170302-02	1,2-Dichloroethane-d4	250 mg/L	200 uL	1 mL	50 mg/L
UVM170302-02	Bromofluorobenzene	250 mg/L	200 uL	1 mL	50 mg/L
UVM170302-02	Toluene-d8	250 mg/L	200 uL	1 mL	50 mg/L

Serial ID: IVM170615-01 **Open/Reference Date:** 15-JUN-17 **Lot Number :** 15120134
Name: 2-CLEVE SPIKE **Received:** 15-JUN-17 **Solvent :** Methanol
Type: Intermediate **Expires:** 22-JUN-17
Employee: Vanny Yib
Supplier: Absolute Standard
Description: 2-Chloroethylvinyl ether 250ppm
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170106-02E	2-Chloroethylvinyl ether	1000 mg/L	250 uL	1 mL	250 mg/L

Standard Logbook

Serial ID: IVM170620-01 **Open/Reference Date:** 20-JUN-17 **Lot Number :** 15120134
Name: 2-CLEVE SPIKE **Received:** 20-JUN-17 **Solvent :** Methanol
Type: Intermediate **Expires:** 27-JUN-17
Employee: Ramona Yarbrough
Supplier: Absolute Standard
Description: 2-Chloroethylvinyl ether 250ppm
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170502-01A	2-Chloroethylvinyl ether	1000 mg/L	250 uL	1 mL	250 mg/L

Serial ID: W9VM170616-05 **Open/Reference Date:** 16-JUN-17 **Solvent :** water
Name: 8260 Mix A Level 6 **Received:** 16-JUN-17
Type: Working **Expires:** 17-JUN-17
Employee: Ramona Yarbrough
Supplier: Ultra Scientific
Description: 8260 Mix A Level 6 50 ug/L
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170330-07C	2-Pentanone	250 mg/L	5 uL	5 mL	250 ug/L
UVM170330-07C	Hexane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	1,1,1,2-Tetrachloroethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	1,1,1-Trichloroethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	1,1,2,2-Tetrachloroethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	1,1,2-Trichloroethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	1,1-Dichloroethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	1,1-Dichloroethylene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	1,1-Dichloropropene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	1,2,3-Trichlorobenzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	1,2,3-Trichloropropane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	1,2,4-Trichlorobenzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	1,2,4-Trimethylbenzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	1,2-Dibromo-3-chloropropane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	1,2-Dibromoethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	1,2-Dichlorobenzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	1,2-Dichloroethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	1,2-Dichloroethylene (total)	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-07B	1,2-Dichloropropane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	1,3,5-Trimethylbenzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	1,3-Dichlorobenzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	1,3-Dichloropropane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	1,3-Dichloropropylene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	1,4-Dichlorobenzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	2,2-Dichloropropane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	2-Butanone	250 mg/L	5 uL	5 mL	250 ug/L
UVM170509-07B	2-Chlorotoluene	50 mg/L	5 uL	5 mL	50 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170509-07B	2-Hexanone	250 mg/L	5 uL	5 mL	250 ug/L
UVM170509-07B	4-Chlorotoluene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	4-Isopropyltoluene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	4-Methyl-2-pentanone	250 mg/L	5 uL	5 mL	250 ug/L
UVM170509-07B	Acetone	250 mg/L	5 uL	5 mL	250 ug/L
UVM170509-07B	Acetonitrile	1250 mg/L	5 uL	5 mL	1250 ug/L
UVM170509-07B	Benzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	Bromobenzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	Bromochloromethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	Bromodichloromethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	Bromoform	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	Carbon disulfide	250 mg/L	5 uL	5 mL	250 ug/L
UVM170509-07B	Carbon tetrachloride	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	Chlorobenzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	Chloroform	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	Cyclohexane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	Cyclohexene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	Dibromochloromethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	Dibromomethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	Ethylbenzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	Hexachlorobutadiene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	Iodomethane	250 mg/L	5 uL	5 mL	250 ug/L
UVM170509-07B	Isopropylbenzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	Methyl acetate	250 mg/L	5 uL	5 mL	250 ug/L
UVM170509-07B	Methylcyclohexane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	Methylene chloride	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	Naphthalene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	Styrene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	Tetrachloroethylene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	Toluene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	Trichloroethylene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	Xylenes (total)	150 mg/L	5 uL	5 mL	150 ug/L
UVM170509-07B	cis-1,2-Dichloroethylene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	cis-1,3-Dichloropropylene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	m,p-Xylenes	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-07B	n-Butyl alcohol	5000 mg/L	5 uL	5 mL	5000 ug/L
UVM170509-07B	n-Butylbenzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	n-Propylbenzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	o-Xylene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	sec-Butylbenzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	tert-Butyl methyl ether	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	tert-Butylbenzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	trans-1,2-Dichloroethylene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-07B	trans-1,3-Dichloropropylene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170606-07B	2-Chloroethylvinyl ether	250 mg/L	5 uL	5 mL	250 ug/L
UVM170606-07B	Bromomethane	50 mg/L	5 uL	5 mL	50 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170606-07B	Chloroethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170606-07B	Chloromethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170606-07B	Dichlorodifluoromethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170606-07B	Ethyl ether	50 mg/L	5 uL	5 mL	50 ug/L
UVM170606-07B	Trichlorofluoromethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170606-07B	Vinyl acetate	250 mg/L	5 uL	5 mL	250 ug/L
UVM170606-07B	Vinyl chloride	50 mg/L	5 uL	5 mL	50 ug/L

Serial ID: W9VM170616-06 **Open/Reference Date:** 16-JUN-17 **Solvent :** water
Name: 8260 Mix A Level 9 **Received:** 16-JUN-17
Type: Working **Expires:** 17-JUN-17
Employee: Ramona Yarbrough
Supplier: Ultra Scientific
Description: 8260 Mix A Level 9 80 ug/L
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170330-08C	2-Pentanone	500 mg/L	4 uL	5 mL	400 ug/L
UVM170330-08C	Hexane	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	1,1,1,2-Tetrachloroethane	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	1,1,1-Trichloroethane	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	1,1,2,2-Tetrachloroethane	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	1,1,2-Trichloroethane	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	1,1-Dichloroethane	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	1,1-Dichloroethylene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	1,1-Dichloropropene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	1,2,3-Trichlorobenzene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	1,2,3-Trichloropropane	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	1,2,4-Trichlorobenzene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	1,2,4-Trimethylbenzene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	1,2-Dibromo-3-chloropropane	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	1,2-Dibromoethane	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	1,2-Dichlorobenzene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	1,2-Dichloroethane	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	1,2-Dichloroethylene (total)	200 mg/L	4 uL	5 mL	160 ug/L
UVM170509-08B	1,2-Dichloropropane	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	1,3,5-Trimethylbenzene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	1,3-Dichlorobenzene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	1,3-Dichloropropane	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	1,4-Dichlorobenzene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	2,2-Dichloropropane	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	2-Butanone	500 mg/L	4 uL	5 mL	400 ug/L
UVM170509-08B	2-Chlorotoluene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	2-Hexanone	500 mg/L	4 uL	5 mL	400 ug/L
UVM170509-08B	4-Chlorotoluene	100 mg/L	4 uL	5 mL	80 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170509-08B	4-Isopropyltoluene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	4-Methyl-2-pentanone	500 mg/L	4 uL	5 mL	400 ug/L
UVM170509-08B	Acetone	500 mg/L	4 uL	5 mL	400 ug/L
UVM170509-08B	Acetonitrile	2500 mg/L	4 uL	5 mL	2000 ug/L
UVM170509-08B	Benzene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	Bromobenzene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	Bromochloromethane	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	Bromodichloromethane	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	Bromoform	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	Carbon disulfide	500 mg/L	4 uL	5 mL	400 ug/L
UVM170509-08B	Carbon tetrachloride	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	Chlorobenzene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	Chloroform	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	Cyclohexane	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	Cyclohexene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	Dibromochloromethane	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	Dibromomethane	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	Ethylbenzene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	Hexachlorobutadiene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	Iodomethane	500 mg/L	4 uL	5 mL	400 ug/L
UVM170509-08B	Isopropylbenzene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	Methyl acetate	500 mg/L	4 uL	5 mL	400 ug/L
UVM170509-08B	Methylcyclohexane	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	Methylene chloride	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	Naphthalene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	Styrene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	Tetrachloroethylene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	Toluene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	Trichloroethylene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	Xylenes (total)	300 mg/L	4 uL	5 mL	240 ug/L
UVM170509-08B	cis-1,2-Dichloroethylene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	cis-1,3-Dichloropropylene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	m,p-Xylenes	200 mg/L	4 uL	5 mL	160 ug/L
UVM170509-08B	n-Butyl alcohol	10000 mg/L	4 uL	5 mL	8000 ug/L
UVM170509-08B	n-Butylbenzene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	n-Propylbenzene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	o-Xylene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	sec-Butylbenzene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	tert-Butyl methyl ether	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	tert-Butylbenzene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	trans-1,2-Dichloroethylene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170509-08B	trans-1,3-Dichloropropylene	100 mg/L	4 uL	5 mL	80 ug/L
UVM170606-08B	2-Chloroethylvinyl ether	500 mg/L	4 uL	5 mL	400 ug/L
UVM170606-08B	Bromomethane	100 mg/L	4 uL	5 mL	80 ug/L
UVM170606-08B	Chloroethane	100 mg/L	4 uL	5 mL	80 ug/L
UVM170606-08B	Chloromethane	100 mg/L	4 uL	5 mL	80 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170606-08B	Dichlorodifluoromethane	100 mg/L	4 uL	5 mL	80 ug/L
UVM170606-08B	Ethyl ether	100 mg/L	4 uL	5 mL	80 ug/L
UVM170606-08B	Trichlorofluoromethane	100 mg/L	4 uL	5 mL	80 ug/L
UVM170606-08B	Vinyl acetate	500 mg/L	4 uL	5 mL	400 ug/L
UVM170606-08B	Vinyl chloride	100 mg/L	4 uL	5 mL	80 ug/L

Serial ID: W9VM170616-07 **Open/Reference Date:** 16-JUN-17 **Solvent :** water
Name: 8260 Mix A Level 7 **Received:** 16-JUN-17
Type: Working **Expires:** 17-JUN-17
Employee: Ramona Yarbrough
Supplier: Ultra Scientific
Description: 8260 Mix A Level 7 100 ug/L
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170330-08C	2-Pentanone	500 mg/L	5 uL	5 mL	500 ug/L
UVM170330-08C	Hexane	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	1,1,1,2-Tetrachloroethane	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	1,1,1-Trichloroethane	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	1,1,2,2-Tetrachloroethane	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	1,1,2-Trichloroethane	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	1,1-Dichloroethane	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	1,1-Dichloroethylene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	1,1-Dichloropropene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	1,2,3-Trichlorobenzene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	1,2,3-Trichloropropane	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	1,2,4-Trichlorobenzene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	1,2,4-Trimethylbenzene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	1,2-Dibromo-3-chloropropane	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	1,2-Dibromoethane	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	1,2-Dichlorobenzene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	1,2-Dichloroethane	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	1,2-Dichloroethylene (total)	200 mg/L	5 uL	5 mL	200 ug/L
UVM170509-08B	1,2-Dichloropropane	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	1,3,5-Trimethylbenzene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	1,3-Dichlorobenzene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	1,3-Dichloropropane	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	1,4-Dichlorobenzene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	2,2-Dichloropropane	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	2-Butanone	500 mg/L	5 uL	5 mL	500 ug/L
UVM170509-08B	2-Chlorotoluene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	2-Hexanone	500 mg/L	5 uL	5 mL	500 ug/L
UVM170509-08B	4-Chlorotoluene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	4-Isopropyltoluene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	4-Methyl-2-pentanone	500 mg/L	5 uL	5 mL	500 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170509-08B	Acetone	500 mg/L	5 uL	5 mL	500 ug/L
UVM170509-08B	Acetonitrile	2500 mg/L	5 uL	5 mL	2500 ug/L
UVM170509-08B	Benzene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	Bromobenzene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	Bromochloromethane	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	Bromodichloromethane	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	Bromoform	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	Carbon disulfide	500 mg/L	5 uL	5 mL	500 ug/L
UVM170509-08B	Carbon tetrachloride	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	Chlorobenzene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	Chloroform	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	Cyclohexane	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	Cyclohexene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	Dibromochloromethane	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	Dibromomethane	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	Ethylbenzene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	Hexachlorobutadiene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	Iodomethane	500 mg/L	5 uL	5 mL	500 ug/L
UVM170509-08B	Isopropylbenzene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	Methyl acetate	500 mg/L	5 uL	5 mL	500 ug/L
UVM170509-08B	Methylcyclohexane	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	Methylene chloride	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	Naphthalene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	Styrene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	Tetrachloroethylene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	Toluene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	Trichloroethylene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	Xylenes (total)	300 mg/L	5 uL	5 mL	300 ug/L
UVM170509-08B	cis-1,2-Dichloroethylene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	cis-1,3-Dichloropropylene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	m,p-Xylenes	200 mg/L	5 uL	5 mL	200 ug/L
UVM170509-08B	n-Butyl alcohol	10000 mg/L	5 uL	5 mL	10000 ug/L
UVM170509-08B	n-Butylbenzene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	n-Propylbenzene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	o-Xylene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	sec-Butylbenzene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	tert-Butyl methyl ether	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	tert-Butylbenzene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	trans-1,2-Dichloroethylene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170509-08B	trans-1,3-Dichloropropylene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170606-08B	2-Chloroethylvinyl ether	500 mg/L	5 uL	5 mL	500 ug/L
UVM170606-08B	Bromomethane	100 mg/L	5 uL	5 mL	100 ug/L
UVM170606-08B	Chloroethane	100 mg/L	5 uL	5 mL	100 ug/L
UVM170606-08B	Chloromethane	100 mg/L	5 uL	5 mL	100 ug/L
UVM170606-08B	Dichlorodifluoromethane	100 mg/L	5 uL	5 mL	100 ug/L
UVM170606-08B	Ethyl ether	100 mg/L	5 uL	5 mL	100 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170606-08B	Trichlorofluoromethane	100 mg/L	5 uL	5 mL	100 ug/L
UVM170606-08B	Vinyl acetate	500 mg/L	5 uL	5 mL	500 ug/L
UVM170606-08B	Vinyl chloride	100 mg/L	5 uL	5 mL	100 ug/L

Serial ID: W9VM170616-10 **Open/Reference Date:** 16-JUN-17 **Solvent :** water
Name: 8260 Mix A Level 2 **Received:** 16-JUN-17
Type: Working **Expires:** 17-JUN-17
Employee: Ramona Yarbrough
Supplier: Ultra Scientific
Description: 8260 Mix A Level 2 2.0 ug/L
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170330-03C	2-Pentanone	10 mg/L	5 uL	5 mL	10 ug/L
UVM170330-03C	Hexane	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	1,1,1,2-Tetrachloroethane	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	1,1,1-Trichloroethane	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	1,1,2,2-Tetrachloroethane	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	1,1,2-Trichloroethane	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	1,1-Dichloroethane	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	1,1-Dichloroethylene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	1,1-Dichloropropene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	1,2,3-Trichlorobenzene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	1,2,3-Trichloropropane	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	1,2,4-Trichlorobenzene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	1,2,4-Trimethylbenzene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	1,2-Dibromo-3-chloropropane	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	1,2-Dibromoethane	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	1,2-Dichlorobenzene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	1,2-Dichloroethane	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	1,2-Dichloroethylene (total)	4 mg/L	5 uL	5 mL	4 ug/L
UVM170509-03B	1,2-Dichloropropane	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	1,3,5-Trimethylbenzene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	1,3-Dichlorobenzene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	1,3-Dichloropropane	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	1,4-Dichlorobenzene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	2,2-Dichloropropane	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	2-Butanone	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-03B	2-Chlorotoluene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	2-Hexanone	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-03B	4-Chlorotoluene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	4-Isopropyltoluene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	4-Methyl-2-pentanone	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-03B	Acetone	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-03B	Acetonitrile	50 mg/L	5 uL	5 mL	50 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170509-03B	Benzene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	Bromobenzene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	Bromochloromethane	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	Bromodichloromethane	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	Bromoform	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	Carbon disulfide	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-03B	Carbon tetrachloride	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	Chlorobenzene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	Chloroform	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	Cyclohexane	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	Cyclohexene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	Dibromochloromethane	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	Dibromomethane	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	Ethylbenzene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	Hexachlorobutadiene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	Iodomethane	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-03B	Isopropylbenzene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	Methyl acetate	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-03B	Methylcyclohexane	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	Methylene chloride	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	Naphthalene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	Styrene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	Tetrachloroethylene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	Toluene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	Trichloroethylene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	Xylenes (total)	6 mg/L	5 uL	5 mL	6 ug/L
UVM170509-03B	cis-1,2-Dichloroethylene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	cis-1,3-Dichloropropylene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	m,p-Xylenes	4 mg/L	5 uL	5 mL	10 ug/L
UVM170509-03B	n-Butyl alcohol	200 mg/L	5 uL	5 mL	200 ug/L
UVM170509-03B	n-Butylbenzene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	n-Propylbenzene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	o-Xylene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	sec-Butylbenzene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	tert-Butyl methyl ether	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	tert-Butylbenzene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	trans-1,2-Dichloroethylene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170509-03B	trans-1,3-Dichloropropylene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170606-03B	2-Chloroethylvinyl ether	10 mg/L	5 uL	5 mL	10 ug/L
UVM170606-03B	Bromomethane	2 mg/L	5 uL	5 mL	2 ug/L
UVM170606-03B	Chloroethane	2 mg/L	5 uL	5 mL	2 ug/L
UVM170606-03B	Chloromethane	2 mg/L	5 uL	5 mL	2 ug/L
UVM170606-03B	Dichlorodifluoromethane	2 mg/L	5 uL	5 mL	2 ug/L
UVM170606-03B	Ethyl ether	2 mg/L	5 uL	5 mL	2 ug/L
UVM170606-03B	Trichlorofluoromethane	2 mg/L	5 uL	5 mL	2 ug/L
UVM170606-03B	Vinyl acetate	10 mg/L	5 uL	5 mL	10 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170606-03B	Vinyl chloride	2 mg/L	5 uL	5 mL	2 ug/L

Serial ID: W9VM170616-11 **Open/Reference Date:** 16-JUN-17 **Solvent :** water
Name: 8260 Mix A Level 3 **Received:** 16-JUN-17
Type: Working **Expires:** 17-JUN-17
Employee: Ramona Yarbrough
Supplier: Ultra Scientific
Description: 8260 Mix A Level 3 5.0 ug/L
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170330-04C	2-Pentanone	25 mg/L	5 uL	5 mL	25 ug/L
UVM170330-04C	Hexane	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	1,1,1,2-Tetrachloroethane	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	1,1,1-Trichloroethane	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	1,1,2,2-Tetrachloroethane	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	1,1,2-Trichloroethane	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	1,1-Dichloroethane	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	1,1-Dichloroethylene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	1,1-Dichloropropene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	1,2,3-Trichlorobenzene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	1,2,3-Trichloropropane	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	1,2,4-Trichlorobenzene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	1,2,4-Trimethylbenzene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	1,2-Dibromo-3-chloropropane	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	1,2-Dibromoethane	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	1,2-Dichlorobenzene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	1,2-Dichloroethane	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	1,2-Dichloroethylene (total)	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-04B	1,2-Dichloropropane	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	1,3,5-Trimethylbenzene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	1,3-Dichlorobenzene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	1,3-Dichloropropane	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	1,4-Dichlorobenzene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	2,2-Dichloropropane	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	2-Butanone	25 mg/L	5 uL	5 mL	25 ug/L
UVM170509-04B	2-Chlorotoluene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	2-Hexanone	25 mg/L	5 uL	5 mL	25 ug/L
UVM170509-04B	4-Chlorotoluene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	4-Isopropyltoluene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	4-Methyl-2-pentanone	25 mg/L	5 uL	5 mL	25 ug/L
UVM170509-04B	Acetone	25 mg/L	5 uL	5 mL	25 ug/L
UVM170509-04B	Acetonitrile	125 mg/L	5 uL	5 mL	125 ug/L
UVM170509-04B	Benzene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	Bromobenzene	5 mg/L	5 uL	5 mL	5 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170509-04B	Bromochloromethane	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	Bromodichloromethane	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	Bromoform	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	Carbon disulfide	25 mg/L	5 uL	5 mL	25 ug/L
UVM170509-04B	Carbon tetrachloride	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	Chlorobenzene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	Chloroform	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	Cyclohexane	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	Cyclohexene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	Dibromochloromethane	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	Dibromomethane	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	Ethylbenzene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	Hexachlorobutadiene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	Iodomethane	25 mg/L	5 uL	5 mL	25 ug/L
UVM170509-04B	Isopropylbenzene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	Methyl acetate	25 mg/L	5 uL	5 mL	25 ug/L
UVM170509-04B	Methylcyclohexane	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	Methylene chloride	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	Naphthalene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	Styrene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	Tetrachloroethylene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	Toluene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	Trichloroethylene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	Xylenes (total)	15 mg/L	5 uL	5 mL	15 ug/L
UVM170509-04B	cis-1,2-Dichloroethylene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	cis-1,3-Dichloropropylene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	m,p-Xylenes	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-04B	n-Butyl alcohol	500 mg/L	5 uL	5 mL	500 ug/L
UVM170509-04B	n-Butylbenzene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	n-Propylbenzene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	o-Xylene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	sec-Butylbenzene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	tert-Butyl methyl ether	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	tert-Butylbenzene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	trans-1,2-Dichloroethylene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170509-04B	trans-1,3-Dichloropropylene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170606-04B	2-Chloroethylvinyl ether	25 mg/L	5 uL	5 mL	25 ug/L
UVM170606-04B	Bromomethane	5 mg/L	5 uL	5 mL	5 ug/L
UVM170606-04B	Chloroethane	5 mg/L	5 uL	5 mL	5 ug/L
UVM170606-04B	Chloromethane	5 mg/L	5 uL	5 mL	5 ug/L
UVM170606-04B	Dichlorodifluoromethane	5 mg/L	5 uL	5 mL	5 ug/L
UVM170606-04B	Ethyl ether	5 mg/L	5 uL	5 mL	5 ug/L
UVM170606-04B	Trichlorofluoromethane	5 mg/L	5 uL	5 mL	5 ug/L
UVM170606-04B	Vinyl acetate	25 mg/L	5 uL	5 mL	25 ug/L
UVM170606-04B	Vinyl chloride	5 mg/L	5 uL	5 mL	5 ug/L

Standard Logbook

Serial ID: W9VM170616-12 **Open/Reference Date:** 16-JUN-17 **Solvent :** water
Name: 8260 Mix A Level 4 **Received:** 16-JUN-17
Type: Working **Expires:** 17-JUN-17
Employee: Ramona Yarbrough
Supplier: Ultra Scientific
Description: 8260 Mix A Level 4 10 ug/L
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170330-05C	2-Pentanone	50 mg/L	5 uL	5 mL	50 ug/L
UVM170330-05C	Hexane	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	1,1,1,2-Tetrachloroethane	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	1,1,1-Trichloroethane	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	1,1,2,2-Tetrachloroethane	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	1,1,2-Trichloroethane	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	1,1-Dichloroethane	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	1,1-Dichloroethylene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	1,1-Dichloropropene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	1,2,3-Trichlorobenzene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	1,2,3-Trichloropropane	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	1,2,4-Trichlorobenzene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	1,2,4-Trimethylbenzene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	1,2-Dibromo-3-chloropropane	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	1,2-Dibromoethane	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	1,2-Dichlorobenzene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	1,2-Dichloroethane	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	1,2-Dichloroethylene (total)	20 mg/L	5 uL	5 mL	20 ug/L
UVM170509-05B	1,2-Dichloropropane	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	1,3,5-Trimethylbenzene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	1,3-Dichlorobenzene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	1,3-Dichloropropane	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	1,4-Dichlorobenzene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	2,2-Dichloropropane	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	2-Butanone	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-05B	2-Chlorotoluene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	2-Hexanone	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-05B	4-Chlorotoluene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	4-Isopropyltoluene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	4-Methyl-2-pentanone	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-05B	Acetone	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-05B	Acetonitrile	250 mg/L	5 uL	5 mL	250 ug/L
UVM170509-05B	Benzene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	Bromobenzene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	Bromochloromethane	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	Bromodichloromethane	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	Bromoform	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	Carbon disulfide	50 mg/L	5 uL	5 mL	50 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170509-05B	Carbon tetrachloride	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	Chlorobenzene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	Chloroform	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	Cyclohexane	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	Cyclohexene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	Dibromochloromethane	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	Dibromomethane	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	Ethylbenzene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	Hexachlorobutadiene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	Iodomethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-05B	Isopropylbenzene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	Methyl acetate	50 mg/L	5 uL	5 mL	50 ug/L
UVM170509-05B	Methylcyclohexane	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	Methylene chloride	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	Naphthalene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	Styrene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	Tetrachloroethylene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	Toluene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	Trichloroethylene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	Xylenes (total)	30 mg/L	5 uL	5 mL	30 ug/L
UVM170509-05B	cis-1,2-Dichloroethylene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	cis-1,3-Dichloropropylene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	m,p-Xylenes	20 mg/L	5 uL	5 mL	20 ug/L
UVM170509-05B	n-Butyl alcohol	1000 mg/L	5 uL	5 mL	1000 ug/L
UVM170509-05B	n-Butylbenzene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	n-Propylbenzene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	o-Xylene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	sec-Butylbenzene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	tert-Butyl methyl ether	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	tert-Butylbenzene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	trans-1,2-Dichloroethylene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170509-05B	trans-1,3-Dichloropropylene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170606-05B	2-Chloroethylvinyl ether	50 mg/L	5 uL	5 mL	50 ug/L
UVM170606-05B	Bromomethane	10 mg/L	5 uL	5 mL	10 ug/L
UVM170606-05B	Chloroethane	10 mg/L	5 uL	5 mL	10 ug/L
UVM170606-05B	Chloromethane	10 mg/L	5 uL	5 mL	10 ug/L
UVM170606-05B	Dichlorodifluoromethane	10 mg/L	5 uL	5 mL	10 mg/L
UVM170606-05B	Ethyl ether	10 mg/L	5 uL	5 mL	10 ug/L
UVM170606-05B	Trichlorofluoromethane	10 mg/L	5 uL	5 mL	10 ug/L
UVM170606-05B	Vinyl acetate	50 mg/L	5 uL	5 mL	50 ug/L
UVM170606-05B	Vinyl chloride	10 mg/L	5 uL	5 mL	10 ug/L

Standard Logbook

Serial ID: W9VM170616-13 **Open/Reference Date:** 16-JUN-17 **Solvent :** water
Name: 8260 Mix A Level 5 **Received:** 16-JUN-17
Type: Working **Expires:** 17-JUN-17
Employee: Ramona Yarbrough
Supplier: Ultra Scientific
Description: 8260 Mix A Level 5 20 ug/L
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170330-06C	2-Pentanone	100 mg/L	5 uL	5 mL	100 ug/L
UVM170330-06C	Hexane	20 mg/L	5 uL	5 mL	20 ug/L
UVM170509-07B	1,1,1,2-Tetrachloroethane	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	1,1,1-Trichloroethane	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	1,1,2,2-Tetrachloroethane	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	1,1,2-Trichloroethane	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	1,1-Dichloroethane	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	1,1-Dichloroethylene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	1,1-Dichloropropene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	1,2,3-Trichlorobenzene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	1,2,3-Trichloropropane	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	1,2,4-Trichlorobenzene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	1,2,4-Trimethylbenzene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	1,2-Dibromo-3-chloropropane	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	1,2-Dibromoethane	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	1,2-Dichlorobenzene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	1,2-Dichloroethane	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	1,2-Dichloroethylene (total)	100 mg/L	2 uL	5 mL	40 ug/L
UVM170509-07B	1,2-Dichloropropane	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	1,3,5-Trimethylbenzene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	1,3-Dichlorobenzene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	1,3-Dichloropropane	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	1,4-Dichlorobenzene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	2,2-Dichloropropane	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	2-Butanone	250 mg/L	2 uL	5 mL	100 ug/L
UVM170509-07B	2-Chlorotoluene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	2-Hexanone	250 mg/L	2 uL	5 mL	100 ug/L
UVM170509-07B	4-Chlorotoluene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	4-Isopropyltoluene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	4-Methyl-2-pentanone	250 mg/L	2 uL	5 mL	100 ug/L
UVM170509-07B	Acetone	250 mg/L	2 uL	5 mL	100 ug/L
UVM170509-07B	Acetonitrile	1250 mg/L	2 uL	5 mL	500 ug/L
UVM170509-07B	Benzene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	Bromobenzene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	Bromochloromethane	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	Bromodichloromethane	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	Bromoform	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	Carbon disulfide	250 mg/L	2 uL	5 mL	100 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170509-07B	Carbon tetrachloride	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	Chlorobenzene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	Chloroform	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	Cyclohexane	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	Cyclohexene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	Dibromochloromethane	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	Dibromomethane	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	Ethylbenzene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	Hexachlorobutadiene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	Iodomethane	250 mg/L	2 uL	5 mL	100 ug/L
UVM170509-07B	Isopropylbenzene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	Methyl acetate	250 mg/L	2 uL	5 mL	100 ug/L
UVM170509-07B	Methylcyclohexane	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	Methylene chloride	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	Naphthalene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	Styrene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	Tetrachloroethylene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	Toluene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	Trichloroethylene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	Xylenes (total)	150 mg/L	2 uL	5 mL	60 ug/L
UVM170509-07B	cis-1,2-Dichloroethylene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	cis-1,3-Dichloropropylene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	m,p-Xylenes	100 mg/L	2 uL	5 mL	40 ug/L
UVM170509-07B	n-Butyl alcohol	5000 mg/L	2 uL	5 mL	2000 ug/L
UVM170509-07B	n-Butylbenzene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	n-Propylbenzene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	o-Xylene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	sec-Butylbenzene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	tert-Butyl methyl ether	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	tert-Butylbenzene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	trans-1,2-Dichloroethylene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170509-07B	trans-1,3-Dichloropropylene	50 mg/L	2 uL	5 mL	20 ug/L
UVM170606-06B	2-Chloroethylvinyl ether	100 mg/L	5 uL	5 mL	100 ug/L
UVM170606-06B	Bromomethane	20 mg/L	5 uL	5 mL	20 ug/L
UVM170606-06B	Chloroethane	20 mg/L	5 uL	5 mL	20 ug/L
UVM170606-06B	Chloromethane	20 mg/L	5 uL	5 mL	20 ug/L
UVM170606-06B	Dichlorodifluoromethane	20 mg/L	5 uL	5 mL	20 ug/L
UVM170606-06B	Ethyl ether	20 mg/L	5 uL	5 mL	20 ug/L
UVM170606-06B	Trichlorofluoromethane	20 mg/L	5 uL	5 mL	20 ug/L
UVM170606-06B	Vinyl acetate	100 mg/L	5 uL	5 mL	100 ug/L
UVM170606-06B	Vinyl chloride	20 mg/L	5 uL	5 mL	20 ug/L

Standard Logbook

Serial ID: W9VM170616-14 **Open/Reference Date:** 16-JUN-17 **Solvent :** water
Name: 8260 Mix A ICV **Received:** 16-JUN-17
Type: Working **Expires:** 17-JUN-17
Employee: Ramona Yarbrough
Supplier: Ultra Scientific
Description: 8260 Mix A ICV
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
IVM170615-01	2-Chloroethylvinyl ether	250 mg/L	5 uL	5 mL	250 ug/L
UVM170330-09A	2-Pentanone	250 mg/L	5 uL	5 mL	250 ug/L
UVM170330-09A	Hexane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170503-01E	1,1,1,2-Tetrachloroethane	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	1,1,1-Trichloroethane	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	1,1,2,2-Tetrachloroethane	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	1,1,2-Trichloroethane	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	1,1-Dichloroethane	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	1,1-Dichloroethylene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	1,1-Dichloropropene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	1,2,3-Trichlorobenzene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	1,2,3-Trichloropropane	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	1,2,4-Trichlorobenzene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	1,2,4-Trimethylbenzene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	1,2-Dibromo-3-chloropropane	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	1,2-Dibromoethane	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	1,2-Dichlorobenzene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	1,2-Dichloroethane	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	1,2-Dichloroethylene (total)	100 ug/mL	5 uL	5 mL	100 ug/L
UVM170503-01E	1,2-Dichloropropane	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	1,3,5-Trimethylbenzene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	1,3-Dichlorobenzene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	1,3-Dichloropropane	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	1,3-Dichloropropylene	100 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	1,4-Dichlorobenzene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	2,2-Dichloropropane	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	2-Butanone	250 ug/mL	5 uL	5 mL	250 ug/L
UVM170503-01E	2-Chlorotoluene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	2-Hexanone	250 ug/mL	5 uL	5 mL	250 ug/L
UVM170503-01E	4-Chlorotoluene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	4-Isopropyltoluene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	4-Methyl-2-pentanone	250 ug/mL	5 uL	5 mL	250 ug/L
UVM170503-01E	Acetone	250 ug/mL	5 uL	5 mL	250 ug/L
UVM170503-01E	Acetonitrile	1250 ug/mL	5 uL	5 mL	1250 ug/L
UVM170503-01E	Benzene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	Bromobenzene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	Bromochloromethane	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	Bromodichloromethane	50 ug/mL	5 uL	5 mL	50 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170503-01E	Bromoform	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	Carbon disulfide	250 ug/mL	5 uL	5 mL	250 ug/L
UVM170503-01E	Carbon tetrachloride	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	Chlorobenzene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	Chloroform	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	Cyclohexane	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	Cyclohexene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	Dibromochloromethane	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	Dibromomethane	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	Ethylbenzene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	Hexachlorobutadiene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	Iodomethane	250 ug/mL	5 uL	5 mL	250 ug/L
UVM170503-01E	Isopropylbenzene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	Methyl acetate	250 ug/mL	5 uL	5 mL	250 ug/L
UVM170503-01E	Methylcyclohexane	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	Methylene chloride	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	Naphthalene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	Styrene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	Tetrachloroethylene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	Toluene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	Trichloroethylene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	Xylenes (total)	150 ug/mL	5 uL	5 mL	150 ug/L
UVM170503-01E	cis-1,2-Dichloroethylene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	cis-1,3-Dichloropropylene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	m,p-Xylenes	100 ug/mL	5 uL	5 mL	100 ug/L
UVM170503-01E	n-Butyl alcohol	5000 ug/mL	5 uL	5 mL	5000 ug/L
UVM170503-01E	n-Butylbenzene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	n-Propylbenzene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	o-Xylene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	sec-Butylbenzene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	tert-Butyl methyl ether	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	tert-Butylbenzene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	trans-1,2-Dichloroethylene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170503-01E	trans-1,3-Dichloropropylene	50 ug/mL	5 uL	5 mL	50 ug/L
UVM170504-10D	Bromomethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170504-10D	Chloroethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170504-10D	Chloromethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170504-10D	Dichlorodifluoromethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170504-10D	Ethyl ether	50 mg/L	5 uL	5 mL	50 ug/L
UVM170504-10D	Trichlorofluoromethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170504-10D	Vinyl acetate	250 mg/L	5 uL	5 mL	250 ug/L
UVM170504-10D	Vinyl chloride	50 mg/L	5 uL	5 mL	50 ug/L

Serial ID: W9VM170616-15 **Open/Reference Date:** 16-JUN-17 **Solvent :** water
Name: 8260 Mix B Level 1 **Received:** 16-JUN-17
Type: Working **Expires:** 17-JUN-17
Employee: Ramona Yarbrough
Supplier: O2SI, Absolute
Description: 8260 Mix B Level 1 5 ug/L
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170526-01A	Acrolein	5 mg/L	5 uL	5 mL	5 ug/L
UVM170526-01A	Cyclohexanone	25 mg/L	5 uL	5 mL	25 ug/L
UVM170612-01A	1,4-Dioxane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170612-01A	1-Chlorohexane	1 mg/L	5 uL	5 mL	1 ug/L
UVM170612-01A	2-Chloro-1,3-butadiene	1 mg/L	5 uL	5 mL	1 ug/L
UVM170612-01A	2-Nitropropane	5 mg/L	5 uL	5 mL	5 ug/L
UVM170612-01A	Acrylonitrile	5 mg/L	5 uL	5 mL	5 ug/L
UVM170612-01A	Allyl chloride	5 mg/L	5 uL	5 mL	5 ug/L
UVM170612-01A	Benzyl chloride	5 mg/L	5 uL	5 mL	5 ug/L
UVM170612-01A	Ethyl acetate	5 mg/L	5 uL	5 mL	5 ug/L
UVM170612-01A	Ethyl methacrylate	5 mg/L	5 uL	5 mL	5 ug/L
UVM170612-01A	Ethyl tert-butyl ether	1 mg/L	5 uL	5 mL	1 ug/L
UVM170612-01A	Isobutyl alcohol	50 mg/L	5 uL	5 mL	50 ug/L
UVM170612-01A	Isopropyl Alcohol	50 mg/L	5 uL	5 mL	50 ug/L
UVM170612-01A	Isopropyl ether	1 mg/L	5 uL	5 mL	1 ug/L
UVM170612-01A	Methacrylonitrile	5 mg/L	5 uL	5 mL	5 ug/L
UVM170612-01A	Methyl methacrylate	5 mg/L	5 uL	5 mL	5 ug/L
UVM170612-01A	Methyl tert-amyl ether	1 mg/L	5 uL	5 mL	1 ug/L
UVM170612-01A	Pentachloroethane	5 mg/L	5 uL	5 mL	5 ug/L
UVM170612-01A	Propionitrile	5 mg/L	5 uL	5 mL	5 ug/L
UVM170612-01A	Tetrahydrofuran	5 mg/L	5 uL	5 mL	5 ug/L
UVM170612-01A	Trichlorotrifluoroethane	5 mg/L	5 uL	5 mL	5 ug/L
UVM170612-01A	bis(2-Chloro-1-methylethyl)ethe	5 mg/L	5 uL	5 mL	5 ug/L
UVM170612-01A	cis-1,4-Dichloro-2-butene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170612-01A	tert-Butyl Alcohol	50 mg/L	5 uL	5 mL	50 ug/L
UVM170612-01A	trans-1,4-Dichloro-2-butene	5 mg/L	5 uL	5 mL	5 ug/L

Serial ID: W9VM170616-16 **Open/Reference Date:** 16-JUN-17 **Solvent :** water
Name: 8260 Mix B Level 2 **Received:** 16-JUN-17
Type: Working **Expires:** 17-JUN-17
Employee: Ramona Yarbrough
Supplier: O2SI, Absolute
Description: 8260 Mix B Level 2 10 ug/L
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170526-02A	Acrolein	10 mg/L	5 uL	5 mL	10 ug/L
UVM170526-02A	Cyclohexanone	50 mg/L	5 uL	5 mL	50 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170612-02A	1,4-Dioxane	100 mg/L	5 uL	5 mL	100 ug/L
UVM170612-02A	1-Chlorohexane	2 mg/L	5 uL	5 mL	2 ug/L
UVM170612-02A	2-Chloro-1,3-butadiene	2 mg/L	5 uL	5 mL	2 ug/L
UVM170612-02A	2-Nitropropane	10 mg/L	5 uL	5 mL	10 ug/L
UVM170612-02A	Acrylonitrile	10 mg/L	5 uL	5 mL	10 ug/L
UVM170612-02A	Allyl chloride	10 mg/L	5 uL	5 mL	10 ug/L
UVM170612-02A	Benzyl chloride	10 mg/L	5 uL	5 mL	10 ug/L
UVM170612-02A	Ethyl acetate	10 mg/L	5 uL	5 mL	10 ug/L
UVM170612-02A	Ethyl methacrylate	10 mg/L	5 uL	5 mL	10 ug/L
UVM170612-02A	Ethyl tert-butyl ether	2 mg/L	5 uL	5 mL	2 ug/L
UVM170612-02A	Isobutyl alcohol	100 mg/L	5 uL	5 mL	100 ug/L
UVM170612-02A	Isopropyl Alcohol	100 mg/L	5 uL	5 mL	100 ug/L
UVM170612-02A	Isopropyl ether	2 mg/L	5 uL	5 mL	2 ug/L
UVM170612-02A	Methacrylonitrile	10 mg/L	5 uL	5 mL	10 ug/L
UVM170612-02A	Methyl methacrylate	10 mg/L	5 uL	5 mL	10 ug/L
UVM170612-02A	Methyl tert-amyl ether	2 mg/L	5 uL	5 mL	2 ug/L
UVM170612-02A	Pentachloroethane	10 mg/L	5 uL	5 mL	10 ug/L
UVM170612-02A	Propionitrile	10 mg/L	5 uL	5 mL	10 ug/L
UVM170612-02A	Tetrahydrofuran	10 mg/L	5 uL	5 mL	10 ug/L
UVM170612-02A	Trichlorotrifluoroethane	10 mg/L	5 uL	5 mL	10 ug/L
UVM170612-02A	bis(2-Chloro-1-methylethyl)ethe	10 mg/L	5 uL	5 mL	10 ug/L
UVM170612-02A	cis-1,4-Dichloro-2-butene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170612-02A	tert-Butyl Alcohol	100 mg/L	5 uL	5 mL	100 ug/L
UVM170612-02A	trans-1,4-Dichloro-2-butene	10 mg/L	5 uL	5 mL	10 ug/L

Serial ID: W9VM170616-17 **Open/Reference Date:** 16-JUN-17 **Solvent :** water
Name: 8260 Mix B Level 3 **Received:** 16-JUN-17
Type: Working **Expires:** 17-JUN-17
Employee: Ramona Yarbrough
Supplier: O2SI, Absolute
Description: 8260 Mix B Level 3 25 ug/L
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170526-03A	Acrolein	25 mg/L	5 uL	5 mL	25 ug/L
UVM170526-03A	Cyclohexanone	125 mg/L	5 uL	5 mL	125 ug/L
UVM170612-03A	1,4-Dioxane	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-03A	1-Chlorohexane	5 mg/L	5 uL	5 mL	5 ug/L
UVM170612-03A	2-Chloro-1,3-butadiene	5 mg/L	5 uL	5 mL	5 ug/L
UVM170612-03A	2-Nitropropane	25 mg/L	5 uL	5 mL	25 ug/L
UVM170612-03A	Acrylonitrile	25 mg/L	5 uL	5 mL	25 ug/L
UVM170612-03A	Allyl chloride	25 mg/L	5 uL	5 mL	25 ug/L
UVM170612-03A	Benzyl chloride	25 mg/L	5 uL	5 mL	25 ug/L
UVM170612-03A	Ethyl acetate	25 mg/L	5 uL	5 mL	25 ug/L
UVM170612-03A	Ethyl methacrylate	25 mg/L	5 uL	5 mL	25 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170612-03A	Ethyl tert-butyl ether	5 mg/L	5 uL	5 mL	5 ug/L
UVM170612-03A	Isobutyl alcohol	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-03A	Isopropyl Alcohol	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-03A	Isopropyl ether	5 mg/L	5 uL	5 mL	5 ug/L
UVM170612-03A	Methacrylonitrile	25 mg/L	5 uL	5 mL	25 ug/L
UVM170612-03A	Methyl methacrylate	25 mg/L	5 uL	5 mL	25 ug/L
UVM170612-03A	Methyl tert-amyl ether	5 mg/L	5 uL	5 mL	5 ug/L
UVM170612-03A	Pentachloroethane	25 mg/L	5 uL	5 mL	25 ug/L
UVM170612-03A	Propionitrile	25 mg/L	5 uL	5 mL	25 ug/L
UVM170612-03A	Tetrahydrofuran	25 mg/L	5 uL	5 mL	25 ug/L
UVM170612-03A	Trichlorotrifluoroethane	25 mg/L	5 uL	5 mL	25 ug/L
UVM170612-03A	bis(2-Chloro-1-methylethyl)ethe	25 mg/L	5 uL	5 mL	25 ug/L
UVM170612-03A	cis-1,4-Dichloro-2-butene	25 mg/L	5 uL	5 mL	25 ug/L
UVM170612-03A	tert-Butyl Alcohol	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-03A	trans-1,4-Dichloro-2-butene	25 mg/L	5 uL	5 mL	25 ug/L

Serial ID: W9VM170616-18 **Open/Reference Date:** 16-JUN-17 **Solvent :** water
Name: 8260 Mix B Level 4 **Received:** 16-JUN-17
Type: Working **Expires:** 17-JUN-17
Employee: Ramona Yarbrough
Supplier: O2SI, Absolute
Description: 8260 Mix B Level 4 50 ug/L
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170526-04A	Acrolein	50 mg/L	5 uL	5 mL	50 ug/L
UVM170526-04A	Cyclohexanone	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-04A	1,4-Dioxane	500 mg/L	5 uL	5 mL	500 ug/L
UVM170612-04A	1-Chlorohexane	10 mg/L	5 uL	5 mL	10 ug/L
UVM170612-04A	2-Chloro-1,3-butadiene	10 mg/L	5 uL	5 mL	10 ug/L
UVM170612-04A	2-Nitropropane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170612-04A	Acrylonitrile	50 mg/L	5 uL	5 mL	50 ug/L
UVM170612-04A	Allyl chloride	50 mg/L	5 uL	5 mL	50 ug/L
UVM170612-04A	Benzyl chloride	50 mg/L	5 uL	5 mL	50 ug/L
UVM170612-04A	Ethyl acetate	50 mg/L	5 uL	5 mL	50 ug/L
UVM170612-04A	Ethyl methacrylate	50 mg/L	5 uL	5 mL	50 ug/L
UVM170612-04A	Ethyl tert-butyl ether	10 mg/L	5 uL	5 mL	10 ug/L
UVM170612-04A	Isobutyl alcohol	500 mg/L	5 uL	5 mL	500 ug/L
UVM170612-04A	Isopropyl Alcohol	500 mg/L	5 uL	5 mL	500 ug/L
UVM170612-04A	Isopropyl ether	10 mg/L	5 uL	5 mL	10 ug/L
UVM170612-04A	Methacrylonitrile	50 mg/L	5 uL	5 mL	50 ug/L
UVM170612-04A	Methyl methacrylate	50 mg/L	5 uL	5 mL	50 ug/L
UVM170612-04A	Methyl tert-amyl ether	10 mg/L	5 uL	5 mL	10 ug/L
UVM170612-04A	Pentachloroethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170612-04A	Propionitrile	50 mg/L	5 uL	5 mL	50 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170612-04A	Tetrahydrofuran	50 mg/L	5 uL	5 mL	50 ug/L
UVM170612-04A	Trichlorotrifluoroethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170612-04A	bis(2-Chloro-1-methylethyl)ethe	50 mg/L	5 uL	5 mL	50 ug/L
UVM170612-04A	cis-1,4-Dichloro-2-butene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170612-04A	tert-Butyl Alcohol	500 mg/L	5 uL	5 mL	500 ug/L
UVM170612-04A	trans-1,4-Dichloro-2-butene	50 mg/L	5 uL	5 mL	50 ug/L

Serial ID: W9VM170616-19 **Open/Reference Date:** 16-JUN-17 **Solvent :** water
Name: 8260 Mix B Level 5 **Received:** 16-JUN-17
Type: Working **Expires:** 17-JUN-17
Employee: Ramona Yarbrough
Supplier: O2SI, Absolute
Description: 8260 Mix B Level 5 100 ug/L
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170526-05A	Acrolein	100 mg/L	5 uL	5 mL	100 ug/L
UVM170526-05A	Cyclohexanone	500 mg/L	5 uL	5 mL	500 ug/L
UVM170612-05A	1,4-Dioxane	1000 mg/L	5 uL	5 mL	1000 ug/L
UVM170612-05A	1-Chlorohexane	20 mg/L	5 uL	5 mL	20 ug/L
UVM170612-05A	2-Chloro-1,3-butadiene	20 mg/L	5 uL	5 mL	20 ug/L
UVM170612-05A	2-Nitropropane	100 mg/L	5 uL	5 mL	100 ug/L
UVM170612-05A	Acrylonitrile	100 mg/L	5 uL	5 mL	100 ug/L
UVM170612-05A	Allyl chloride	100 mg/L	5 uL	5 mL	100 ug/L
UVM170612-05A	Benzyl chloride	100 mg/L	5 uL	5 mL	100 ug/L
UVM170612-05A	Ethyl acetate	100 mg/L	5 uL	5 mL	100 ug/L
UVM170612-05A	Ethyl methacrylate	100 mg/L	5 uL	5 mL	100 ug/L
UVM170612-05A	Ethyl tert-butyl ether	20 mg/L	5 uL	5 mL	20 ug/L
UVM170612-05A	Isobutyl alcohol	1000 mg/L	5 uL	5 mL	1000 ug/L
UVM170612-05A	Isopropyl Alcohol	1000 mg/L	5 uL	5 mL	1000 ug/L
UVM170612-05A	Isopropyl ether	20 mg/L	5 uL	5 mL	100 ug/L
UVM170612-05A	Methacrylonitrile	100 mg/L	5 uL	5 mL	100 ug/L
UVM170612-05A	Methyl methacrylate	100 mg/L	5 uL	5 mL	100 ug/L
UVM170612-05A	Methyl tert-amyl ether	100 mg/L	5 uL	5 mL	20 ug/L
UVM170612-05A	Pentachloroethane	100 mg/L	5 uL	5 mL	100 ug/L
UVM170612-05A	Propionitrile	100 mg/L	5 uL	5 mL	100 ug/L
UVM170612-05A	Tetrahydrofuran	100 mg/L	5 uL	5 mL	100 ug/L
UVM170612-05A	Trichlorotrifluoroethane	100 mg/L	5 uL	5 mL	100 ug/L
UVM170612-05A	bis(2-Chloro-1-methylethyl)ethe	100 mg/L	5 uL	5 mL	100 ug/L
UVM170612-05A	cis-1,4-Dichloro-2-butene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170612-05A	tert-Butyl Alcohol	1000 mg/L	5 uL	5 mL	1000 ug/L
UVM170612-05A	trans-1,4-Dichloro-2-butene	100 mg/L	5 uL	5 mL	100 ug/L

Serial ID: W9VM170616-20 **Open/Reference Date:** 16-JUN-17 **Solvent :** water
Name: 8260 Mix B Level 6 **Received:** 16-JUN-17
Type: Working **Expires:** 17-JUN-17
Employee: Ramona Yarbrough
Supplier: O2SI, Absolute
Description: 8260 Mix B Level 6 250 ug/L
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170526-06A	Acrolein	250 mg/L	5 uL	5 mL	250 ug/L
UVM170526-06A	Cyclohexanone	1250 mg/L	5 uL	5 mL	1250 ug/L
UVM170612-06A	1,4-Dioxane	2500 mg/L	5 uL	5 mL	2500 ug/L
UVM170612-06A	1-Chlorohexane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170612-06A	2-Chloro-1,3-butadiene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170612-06A	2-Nitropropane	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-06A	Acrylonitrile	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-06A	Allyl chloride	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-06A	Benzyl chloride	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-06A	Ethyl acetate	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-06A	Ethyl methacrylate	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-06A	Ethyl tert-butyl ether	50 mg/L	5 uL	5 mL	50 ug/L
UVM170612-06A	Isobutyl alcohol	2500 mg/L	5 uL	5 mL	2500 ug/L
UVM170612-06A	Isopropyl Alcohol	2500 mg/L	5 uL	5 mL	2500 ug/L
UVM170612-06A	Isopropyl ether	50 mg/L	5 uL	5 mL	50 ug/L
UVM170612-06A	Methacrylonitrile	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-06A	Methyl methacrylate	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-06A	Methyl tert-amyl ether	50 mg/L	5 uL	5 mL	50 ug/L
UVM170612-06A	Pentachloroethane	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-06A	Propionitrile	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-06A	Tetrahydrofuran	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-06A	Trichlorotrifluoroethane	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-06A	bis(2-Chloro-1-methylethyl)ethe	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-06A	cis-1,4-Dichloro-2-butene	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-06A	tert-Butyl Alcohol	2500 mg/L	5 uL	5 mL	2500 ug/L
UVM170612-06A	trans-1,4-Dichloro-2-butene	250 mg/L	5 uL	5 mL	250 ug/L

Serial ID: W9VM170616-21 **Open/Reference Date:** 16-JUN-17 **Solvent :** water
Name: 8260 Mix B Level 9 **Received:** 16-JUN-17
Type: Working **Expires:** 17-JUN-17
Employee: Ramona Yarbrough
Supplier: O2SI, Absolute
Description: 8260 Mix B Level 9 300 ug/L
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170526-07A	Acrolein	500 mg/L	3 uL	5 mL	300 ug/L
UVM170526-07A	Cyclohexanone	2500 mg/L	3 uL	5 mL	1500 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170612-07A	1,4-Dioxane	5000 mg/L	3 uL	5 mL	3000 ug/L
UVM170612-07A	1-Chlorohexane	100 mg/L	3 uL	5 mL	60 ug/L
UVM170612-07A	2-Chloro-1,3-butadiene	100 mg/L	3 uL	5 mL	60 ug/L
UVM170612-07A	2-Nitropropane	500 mg/L	3 uL	5 mL	300 ug/L
UVM170612-07A	Acrylonitrile	500 mg/L	3 uL	5 mL	300 ug/L
UVM170612-07A	Allyl chloride	500 mg/L	3 uL	5 mL	300 ug/L
UVM170612-07A	Benzyl chloride	500 mg/L	3 uL	5 mL	300 ug/L
UVM170612-07A	Ethyl acetate	500 mg/L	3 uL	5 mL	300 ug/L
UVM170612-07A	Ethyl methacrylate	500 mg/L	3 uL	5 mL	300 ug/L
UVM170612-07A	Ethyl tert-butyl ether	100 mg/L	3 uL	5 mL	60 ug/L
UVM170612-07A	Isobutyl alcohol	5000 mg/L	3 uL	5 mL	3000 ug/L
UVM170612-07A	Isopropyl Alcohol	5000 mg/L	3 uL	5 mL	3000 ug/L
UVM170612-07A	Isopropyl ether	100 mg/L	3 uL	5 mL	60 ug/L
UVM170612-07A	Methacrylonitrile	500 mg/L	3 uL	5 mL	300 ug/L
UVM170612-07A	Methyl methacrylate	500 mg/L	3 uL	5 mL	300 ug/L
UVM170612-07A	Methyl tert-amyl ether	100 mg/L	3 uL	5 mL	60 ug/L
UVM170612-07A	Pentachloroethane	500 mg/L	3 uL	5 mL	300 ug/L
UVM170612-07A	Propionitrile	500 mg/L	3 uL	5 mL	300 ug/L
UVM170612-07A	Tetrahydrofuran	500 mg/L	3 uL	5 mL	300 ug/L
UVM170612-07A	Trichlorotrifluoroethane	500 mg/L	3 uL	5 mL	300 ug/L
UVM170612-07A	bis(2-Chloro-1-methylethyl)ethe	500 mg/L	3 uL	5 mL	300 ug/L
UVM170612-07A	cis-1,4-Dichloro-2-butene	500 mg/L	3 uL	5 mL	300 ug/L
UVM170612-07A	tert-Butyl Alcohol	5000 mg/L	3 uL	5 mL	3000 ug/L
UVM170612-07A	trans-1,4-Dichloro-2-butene	500 mg/L	3 uL	5 mL	300 ug/L

Serial ID: W9VM170616-22 **Open/Reference Date:** 16-JUN-17 **Solvent :** water
Name: 8260 Mix B Level 7 **Received:** 16-JUN-17
Type: Working **Expires:** 17-JUN-17
Employee: Ramona Yarbrough
Supplier: O2SI, Absolute
Description: 8260 Mix B Level 7 500 ug/L
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170526-07A	Acrolein	500 mg/L	5 uL	5 mL	500 ug/L
UVM170526-07A	Cyclohexanone	2500 mg/L	5 uL	5 mL	2500 ug/L
UVM170612-07A	1,4-Dioxane	5000 mg/L	5 uL	5 mL	5000 ug/L
UVM170612-07A	1-Chlorohexane	100 mg/L	5 uL	5 mL	100 ug/L
UVM170612-07A	2-Chloro-1,3-butadiene	100 mg/L	5 uL	5 mL	100 ug/L
UVM170612-07A	2-Nitropropane	500 mg/L	5 uL	5 mL	500 ug/L
UVM170612-07A	Acrylonitrile	500 mg/L	5 uL	5 mL	500 ug/L
UVM170612-07A	Allyl chloride	500 mg/L	5 uL	5 mL	500 ug/L
UVM170612-07A	Benzyl chloride	500 mg/L	5 uL	5 mL	500 ug/L
UVM170612-07A	Ethyl acetate	500 mg/L	5 uL	5 mL	500 ug/L
UVM170612-07A	Ethyl methacrylate	500 mg/L	5 uL	5 mL	500 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170612-07A	Ethyl tert-butyl ether	100 mg/L	5 uL	5 mL	100 ug/L
UVM170612-07A	Isobutyl alcohol	5000 mg/L	5 uL	5 mL	5000 ug/L
UVM170612-07A	Isopropyl Alcohol	5000 mg/L	5 uL	5 mL	5000 ug/L
UVM170612-07A	Isopropyl ether	100 mg/L	5 uL	5 mL	100 ug/L
UVM170612-07A	Methacrylonitrile	500 mg/L	5 uL	5 mL	500 ug/L
UVM170612-07A	Methyl methacrylate	500 mg/L	5 uL	5 mL	500 ug/L
UVM170612-07A	Methyl tert-amyl ether	100 mg/L	5 uL	5 mL	100 ug/L
UVM170612-07A	Pentachloroethane	500 mg/L	5 uL	5 mL	500 ug/L
UVM170612-07A	Propionitrile	500 mg/L	5 uL	5 mL	500 ug/L
UVM170612-07A	Tetrahydrofuran	500 mg/L	5 uL	5 mL	500 ug/L
UVM170612-07A	Trichlorotrifluoroethane	500 mg/L	5 uL	5 mL	500 ug/L
UVM170612-07A	bis(2-Chloro-1-methylethyl)ethe	500 mg/L	5 uL	5 mL	500 ug/L
UVM170612-07A	cis-1,4-Dichloro-2-butene	500 mg/L	5 uL	5 mL	500 ug/L
UVM170612-07A	tert-Butyl Alcohol	5000 mg/L	5 uL	5 mL	5000 ug/L
UVM170612-07A	trans-1,4-Dichloro-2-butene	500 mg/L	5 uL	5 mL	500 ug/L

Serial ID: W9VM170616-25 **Open/Reference Date:** 16-JUN-17 **Solvent :** water
Name: 8260 Mix B ICV **Received:** 16-JUN-17
Type: Working **Expires:** 17-JUN-17
Employee: Ramona Yarbrough
Supplier: O2SI, Absolute
Description: 8260 Mix B ICV Short + Oxy/Freons
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170412-08C	1,4-Dioxane	2500 mg/L	5 uL	5 mL	2500 ug/L
UVM170412-08C	1-Chlorohexane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170412-08C	2-Chloro-1,3-butadiene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170412-08C	2-Nitropropane	250 mg/L	5 uL	5 mL	250 ug/L
UVM170412-08C	Acrylonitrile	250 mg/L	5 uL	5 mL	250 ug/L
UVM170412-08C	Allyl chloride	250 mg/L	5 uL	5 mL	250 ug/L
UVM170412-08C	Benzyl chloride	250 mg/L	5 uL	5 mL	250 ug/L
UVM170412-08C	Ethyl acetate	250 mg/L	5 uL	5 mL	250 ug/L
UVM170412-08C	Ethyl methacrylate	250 mg/L	5 uL	5 mL	250 ug/L
UVM170412-08C	Ethyl tert-butyl ether	50 mg/L	5 uL	5 mL	50 ug/L
UVM170412-08C	Isobutyl alcohol	2500 mg/L	5 uL	5 mL	2500 ug/L
UVM170412-08C	Isopropyl Alcohol	2500 mg/L	5 uL	5 mL	2500 ug/L
UVM170412-08C	Isopropyl ether	50 mg/L	5 uL	5 mL	50 ug/L
UVM170412-08C	Methacrylonitrile	250 mg/L	5 uL	5 mL	250 ug/L
UVM170412-08C	Methyl methacrylate	250 mg/L	5 uL	5 mL	250 ug/L
UVM170412-08C	Methyl tert-amyl ether	50 mg/L	5 uL	5 mL	50 ug/L
UVM170412-08C	Pentachloroethane	250 mg/L	5 uL	5 mL	250 ug/L
UVM170412-08C	Propionitrile	250 mg/L	5 uL	5 mL	250 ug/L
UVM170412-08C	Tetrahydrofuran	250 mg/L	5 uL	5 mL	250 ug/L
UVM170412-08C	Trichlorotrifluoroethane	250 mg/L	5 uL	5 mL	250 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170412-08C	bis(2-Chloro-1-methylethyl)ethe	250 mg/L	5 uL	5 mL	250 ug/L
UVM170412-08C	cis-1,4-Dichloro-2-butene	250 mg/L	5 uL	5 mL	250 ug/L
UVM170412-08C	tert-Butyl Alcohol	2500 mg/L	5 uL	5 mL	2500 ug/L
UVM170412-08C	trans-1,4-Dichloro-2-butene	250 mg/L	5 uL	5 mL	250 ug/L
UVM170526-08A	Acrolein	250 mg/L	5 uL	5 mL	250 ug/L
UVM170526-08A	Cyclohexanone	1250 mg/L	5 uL	5 mL	1250 ug/L

Serial ID: W9VM170627-02 **Open/Reference Date:** 27-JUN-17 **Solvent :** water
Name: 8260 Mix A CCV **Received:** 27-JUN-17
Type: Working **Expires:** 28-JUN-17
Employee: Ramona Yarbrough
Supplier: Ultra Scientific
Description: 8260 Mix A CCV + HEXANE
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170125-08F	1,1,1,2-Tetrachloroethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	1,1,1-Trichloroethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	1,1,2,2-Tetrachloroethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	1,1,2-Trichloroethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	1,1-Dichloroethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	1,1-Dichloroethylene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	1,1-Dichloropropene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	1,2,3-Trichlorobenzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	1,2,3-Trichloropropane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	1,2,4-Trichlorobenzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	1,2,4-Trimethylbenzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	1,2-Dibromo-3-chloropropane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	1,2-Dibromoethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	1,2-Dichlorobenzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	1,2-Dichloroethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	1,2-Dichloroethylene (total)	100 mg/L	5 uL	5 mL	100 ug/L
UVM170125-08F	1,2-Dichloropropane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	1,3,5-Trimethylbenzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	1,3-Dichlorobenzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	1,3-Dichloropropane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	1,3-Dichloropropylene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	1,4-Dichlorobenzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	2,2-Dichloropropane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	2-Butanone	250 mg/L	5 uL	5 mL	250 ug/L
UVM170125-08F	2-Chlorotoluene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	2-Hexanone	250 mg/L	5 uL	5 mL	250 ug/L
UVM170125-08F	4-Chlorotoluene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	4-Isopropyltoluene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	4-Methyl-2-pentanone	250 mg/L	5 uL	5 mL	250 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170125-08F	Acetone	250 mg/L	5 uL	5 mL	250 ug/L
UVM170125-08F	Acetonitrile	1250 mg/L	5 uL	5 mL	1250 ug/L
UVM170125-08F	Benzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	Bromobenzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	Bromochloromethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	Bromodichloromethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	Bromoform	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	Carbon disulfide	250 mg/L	5 uL	5 mL	250 ug/L
UVM170125-08F	Carbon tetrachloride	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	Chlorobenzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	Chloroform	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	Cyclohexane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	Cyclohexene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	Dibromochloromethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	Dibromomethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	Ethylbenzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	Hexachlorobutadiene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	Iodomethane	250 mg/L	5 uL	5 mL	250 ug/L
UVM170125-08F	Isopropylbenzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	Methyl acetate	250 mg/L	5 uL	5 mL	250 ug/L
UVM170125-08F	Methylcyclohexane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	Methylene chloride	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	Naphthalene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	Styrene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	Tetrachloroethylene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	Toluene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	Trichloroethylene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	Xylenes (total)	150 mg/L	5 uL	5 mL	150 ug/L
UVM170125-08F	cis-1,2-Dichloroethylene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	cis-1,3-Dichloropropylene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	m,p-Xylenes	100 mg/L	5 uL	5 mL	100 ug/L
UVM170125-08F	n-Butyl alcohol	5000 mg/L	5 uL	5 mL	5000 ug/L
UVM170125-08F	n-Butylbenzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	n-Propylbenzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	o-Xylene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	sec-Butylbenzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	tert-Butyl methyl ether	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	tert-Butylbenzene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	trans-1,2-Dichloroethylene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170125-08F	trans-1,3-Dichloropropylene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170330-09B	2-Pentanone	250 mg/L	5 uL	5 mL	250 ug/L
UVM170330-09B	Hexane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170504-07K	2-Chloroethylvinyl ether	250 mg/L	5 uL	5 mL	250 ug/L
UVM170504-07K	Bromomethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170504-07K	Chloroethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170504-07K	Chloromethane	50 mg/L	5 uL	5 mL	50 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170504-07K	Dichlorodifluoromethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170504-07K	Ethyl ether	50 mg/L	5 uL	5 mL	50 ug/L
UVM170504-07K	Trichlorofluoromethane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170504-07K	Vinyl acetate	250 mg/L	5 uL	5 mL	250 ug/L
UVM170504-07K	Vinyl chloride	50 mg/L	5 uL	5 mL	50 ug/L

Serial ID: W9VM170627-04 **Open/Reference Date:** 27-JUN-17 **Solvent :** water
Name: 8260 Mix B CCV **Received:** 27-JUN-17
Type: Working **Expires:** 28-JUN-17
Employee: Ramona Yarbrough
Supplier: O2SI, Absolute
Description: 8260 Mix B CCV 250 ug/L
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UVM170526-06F	Acrolein	250 mg/L	5 uL	5 mL	250 ug/L
UVM170526-06F	Cyclohexanone	1250 mg/L	5 uL	5 mL	1250 ug/L
UVM170612-06E	1,4-Dioxane	2500 mg/L	5 uL	5 mL	2500 ug/L
UVM170612-06E	1-Chlorohexane	50 mg/L	5 uL	5 mL	50 ug/L
UVM170612-06E	2-Chloro-1,3-butadiene	50 mg/L	5 uL	5 mL	50 ug/L
UVM170612-06E	2-Nitropropane	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-06E	Acrylonitrile	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-06E	Allyl chloride	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-06E	Benzyl chloride	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-06E	Ethyl acetate	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-06E	Ethyl methacrylate	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-06E	Ethyl tert-butyl ether	50 mg/L	5 uL	5 mL	50 ug/L
UVM170612-06E	Isobutyl alcohol	2500 mg/L	5 uL	5 mL	2500 ug/L
UVM170612-06E	Isopropyl Alcohol	2500 mg/L	5 uL	5 mL	2500 ug/L
UVM170612-06E	Isopropyl ether	50 mg/L	5 uL	5 mL	50 ug/L
UVM170612-06E	Methacrylonitrile	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-06E	Methyl methacrylate	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-06E	Methyl tert-amyl ether	50 mg/L	5 uL	5 mL	50 ug/L
UVM170612-06E	Pentachloroethane	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-06E	Propionitrile	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-06E	Tetrahydrofuran	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-06E	Trichlorotrifluoroethane	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-06E	bis(2-Chloro-1-methylethyl)ethe	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-06E	cis-1,4-Dichloro-2-butene	250 mg/L	5 uL	5 mL	250 ug/L
UVM170612-06E	tert-Butyl Alcohol	2500 mg/L	5 uL	5 mL	2500 ug/L
UVM170612-06E	trans-1,4-Dichloro-2-butene	250 mg/L	5 uL	5 mL	250 ug/L

Metals Analysis

Case Narrative

Metals
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL425783
Work Order #: 425783

Product: **Determination of Metals by ICP-MS**
Analytical Method: SW846 3005A/6020B
Analytical Procedure: GL-MA-E-014 REV# 30
Analytical Batches: 1675724 and 1681503

Preparation Method: SW846 3005A
Preparation Procedure: GL-MA-E-006 REV# 13
Preparation Batches: 1675723 and 1681502

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
425783003	B39T93
425783004	B39T90
1203815377	Method Blank (MB)**ICP-MS**
1203828900	Method Blank (MB)**ICP-MS**
1203815378	Laboratory Control Sample (LCS)
1203828901	Laboratory Control Sample (LCS)
1203815381	425780001(NonSDGL) Serial Dilution (SD)
1203828904	425780001(NonSDGL) Serial Dilution (SD)
1203815379	425780001(NonSDGS) Matrix Spike (MS)
1203828902	425780001(NonSDGS) Matrix Spike (MS)
1203815380	425780001(NonSDGSD) Matrix Spike Duplicate (MSD)
1203828903	425780001(NonSDGSD) Matrix Spike Duplicate (MSD)

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

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Calibration Information

ICSA/ICSAB Statement
For the ICP-MS analysis, the ICSA solution contains analyte concentrations which are verified trace impurities indigenous to the purchased standard.

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

CPRC001 CH2MHill Plateau Remediation Company

Client SDG: GEL425783 GEL Work Order: 425783

The Qualifiers in this report are defined as follows:

* Duplicate analysis not within control limits

B The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).

D Results are reported from a diluted aliquot of sample.

N Spike Sample recovery is outside control limits.

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

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: Kristen Mizzell **Name: Kristen Mizzell**

Date: 17 JUL 2017 **Title: Analyst I**

Sample Data Summary

METALS
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INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL425783 **CONTRACT:** CPRC0S17006 **METHOD TYPE:** SW846

SAMPLE ID: 425783003 **BASIS:** As Received **DATE COLLECTED** 16−JUN−17

CLIENT ID: B39T93 **LEVEL:** Low **DATE RECEIVED** 20−JUN−17

MATRIX: WATER **%SOLIDS:** 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	19.3	ug/L	U	19.3	50	50	1	MS	BAJ	07/07/17 19:15	170707−1	1675724
7440−36−0	Antimony	1	ug/L	U	1	3	3	1	MS	BAJ	07/10/17 14:13	170710−2	1675724
7440−38−2	Arsenic	4.47	ug/L	B	2	5	5	1	MS	BAJ	07/07/17 19:15	170707−1	1675724
7440−39−3	Barium	43.9	ug/L		0.67	2	2	1	MS	BAJ	07/07/17 19:15	170707−1	1675724
7440−41−7	Beryllium	0.20	ug/L	U	0.2	0.5	0.5	1	MS	SKJ	07/11/17 13:41	170711−3	1675724
7440−43−9	Cadmium	0.30	ug/L	U	0.3	1	1	1	MS	BAJ	07/07/17 19:15	170707−1	1675724
7440−47−3	Chromium	17.9	ug/L		3	10	10	1	MS	SKJ	07/13/17 09:03	170712−4	1681503
7440−48−4	Cobalt	0.30	ug/L	U	0.3	1	1	1	MS	BAJ	07/07/17 19:15	170707−1	1675724
7440−50−8	Copper	1.9	ug/L		0.3	1	1	1	MS	BAJ	07/07/17 19:15	170707−1	1675724
7439−92−1	Lead	0.50	ug/L	U	0.5	2	2	1	MS	BAJ	07/07/17 19:15	170707−1	1675724
7439−96−5	Manganese	6.78	ug/L		1	5	5	1	MS	BAJ	07/07/17 19:15	170707−1	1675724
7439−98−7	Molybdenum	9.98	ug/L		0.2	0.5	0.5	1	MS	BAJ	07/07/17 19:15	170707−1	1675724
7440−02−0	Nickel	0.784	ug/L	B	0.6	2	2	1	MS	SKJ	07/13/17 09:03	170712−4	1681503
7782−49−2	Selenium	3.77	ug/L	B	2	5	5	1	MS	BAJ	07/07/17 19:15	170707−1	1675724
7440−22−4	Silver	0.30	ug/L	U	0.3	1	1	1	MS	BAJ	07/07/17 19:15	170707−1	1675724
7440−24−6	Strontium	124	ug/L		2	10	10	1	MS	BAJ	07/07/17 19:15	170707−1	1675724
7440−28−0	Thallium	0.60	ug/L	U	0.6	2	2	1	MS	BAJ	07/07/17 19:15	170707−1	1675724
7440−29−1	Thorium	0.70	ug/L	U	0.7	2	2	1	MS	BAJ	07/07/17 19:15	170707−1	1675724
7440−31−5	Tin	1	ug/L	U	1	5	5	1	MS	BAJ	07/07/17 19:15	170707−1	1675724
7440−61−1	Uranium	1.42	ug/L		0.067	0.2	0.2	1	MS	BAJ	07/07/17 19:15	170707−1	1675724
7440−66−6	Zinc	3.3	ug/L	U	3.3	10	10	1	MS	BAJ	07/07/17 19:15	170707−1	1675724

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1675724	1675723	SW846 3005A	50	mL	50	mL	06/20/17	CXW4
1681503	1681502	SW846 3005A	25	mL	25	mL	07/11/17	CXW4

***Analytical Methods:**

MS **SW846 3005A/6020B**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL425783 **CONTRACT:** CPRC0S17006 **METHOD TYPE:** SW846

SAMPLE ID: 425783004 **BASIS:** As Received **DATE COLLECTED** 16−JUN−17

CLIENT ID: B39T90 **LEVEL:** Low **DATE RECEIVED** 20−JUN−17

MATRIX: WATER **%SOLIDS:** 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	52.1	ug/L		19.3	50	50	1	MS	BAJ	07/07/17 19:19	170707−1	1675724
7440−36−0	Antimony	1	ug/L	U	1	3	3	1	MS	BAJ	07/10/17 14:15	170710−2	1675724
7440−38−2	Arsenic	4.45	ug/L	B	2	5	5	1	MS	BAJ	07/07/17 19:19	170707−1	1675724
7440−39−3	Barium	43.2	ug/L		0.67	2	2	1	MS	BAJ	07/07/17 19:19	170707−1	1675724
7440−41−7	Beryllium	0.20	ug/L	U	0.2	0.5	0.5	1	MS	SKJ	07/11/17 13:43	170711−3	1675724
7440−43−9	Cadmium	0.30	ug/L	U	0.3	1	1	1	MS	BAJ	07/07/17 19:19	170707−1	1675724
7440−47−3	Chromium	19.4	ug/L		3	10	10	1	MS	SKJ	07/13/17 09:05	170712−4	1681503
7440−48−4	Cobalt	0.30	ug/L	U	0.3	1	1	1	MS	BAJ	07/07/17 19:19	170707−1	1675724
7440−50−8	Copper	2.31	ug/L		0.3	1	1	1	MS	BAJ	07/07/17 19:19	170707−1	1675724
7439−92−1	Lead	0.50	ug/L	U	0.5	2	2	1	MS	BAJ	07/07/17 19:19	170707−1	1675724
7439−96−5	Manganese	16.9	ug/L		1	5	5	1	MS	BAJ	07/07/17 19:19	170707−1	1675724
7439−98−7	Molybdenum	9.9	ug/L		0.2	0.5	0.5	1	MS	BAJ	07/07/17 19:19	170707−1	1675724
7440−02−0	Nickel	1.09	ug/L	B	0.6	2	2	1	MS	SKJ	07/13/17 09:05	170712−4	1681503
7782−49−2	Selenium	3.91	ug/L	B	2	5	5	1	MS	BAJ	07/07/17 19:19	170707−1	1675724
7440−22−4	Silver	0.30	ug/L	U	0.3	1	1	1	MS	BAJ	07/07/17 19:19	170707−1	1675724
7440−24−6	Strontium	126	ug/L		2	10	10	1	MS	BAJ	07/07/17 19:19	170707−1	1675724
7440−28−0	Thallium	0.60	ug/L	U	0.6	2	2	1	MS	BAJ	07/07/17 19:19	170707−1	1675724
7440−29−1	Thorium	0.70	ug/L	U	0.7	2	2	1	MS	BAJ	07/07/17 19:19	170707−1	1675724
7440−31−5	Tin	1	ug/L	U	1	5	5	1	MS	BAJ	07/07/17 19:19	170707−1	1675724
7440−61−1	Uranium	1.42	ug/L		0.067	0.2	0.2	1	MS	BAJ	07/07/17 19:19	170707−1	1675724
7440−66−6	Zinc	3.3	ug/L	B	3.3	10	10	1	MS	BAJ	07/07/17 19:19	170707−1	1675724

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1675724	1675723	SW846 3005A	50	mL	50	mL	06/20/17	CXW4
1681503	1681502	SW846 3005A	25	mL	25	mL	07/11/17	CXW4

***Analytical Methods:**

MS **SW846 3005A/6020B**

Quality Control Summary

METALS
−2a−
Initial and Continuing Calibration Verification

SDG No: GEL425783

Contract: CPRC0S17006 **Lab Code:** GEL

Instrument ID: ICPMS12,ICPMS7

Sample ID	Analyte	Result	Units	True Value	Units	% Recovery	Acceptance Window (%R)	M*	Analysis Date/Time	Run Number
ICV01										
	Aluminum	5040	ug/L	5050	ug/L	99.9	90.0 − 110.0	MS	07−JUL−17 17:38	170707−1
	Arsenic	48.4	ug/L	50	ug/L	96.9	90.0 − 110.0	MS	07−JUL−17 17:38	170707−1
	Barium	48.9	ug/L	50	ug/L	97.8	90.0 − 110.0	MS	07−JUL−17 17:38	170707−1
	Cadmium	50.3	ug/L	50	ug/L	100.7	90.0 − 110.0	MS	07−JUL−17 17:38	170707−1
	Cobalt	50.6	ug/L	50	ug/L	101.1	90.0 − 110.0	MS	07−JUL−17 17:38	170707−1
	Copper	52.4	ug/L	50	ug/L	104.8	90.0 − 110.0	MS	07−JUL−17 17:38	170707−1
	Lead	49.4	ug/L	50	ug/L	98.8	90.0 − 110.0	MS	07−JUL−17 17:38	170707−1
	Manganese	49.6	ug/L	50	ug/L	99.2	90.0 − 110.0	MS	07−JUL−17 17:38	170707−1
	Molybdenum	48.7	ug/L	50	ug/L	97.5	90.0 − 110.0	MS	07−JUL−17 17:38	170707−1
	Selenium	51.4	ug/L	50	ug/L	102.9	90.0 − 110.0	MS	07−JUL−17 17:38	170707−1
	Silver	49.1	ug/L	50	ug/L	98.1	90.0 − 110.0	MS	07−JUL−17 17:38	170707−1
	Strontium	48.9	ug/L	50	ug/L	97.7	90.0 − 110.0	MS	07−JUL−17 17:38	170707−1
	Thallium	48.9	ug/L	50	ug/L	97.9	90.0 − 110.0	MS	07−JUL−17 17:38	170707−1
	Thorium	48.9	ug/L	50	ug/L	97.8	90.0 − 110.0	MS	07−JUL−17 17:38	170707−1
	Tin	49.9	ug/L	50	ug/L	99.8	90.0 − 110.0	MS	07−JUL−17 17:38	170707−1
	Uranium	48	ug/L	50	ug/L	95.9	90.0 − 110.0	MS	07−JUL−17 17:38	170707−1
	Zinc	49.5	ug/L	50	ug/L	99	90.0 − 110.0	MS	07−JUL−17 17:38	170707−1
	Antimony	49.5	ug/L	50	ug/L	98.9	90.0 − 110.0	MS	10−JUL−17 13:44	170710−2
	Beryllium	52.1	ug/L	50	ug/L	104.2	90.0 − 110.0	MS	11−JUL−17 12:57	170711−3
	Chromium	51.2	ug/L	50	ug/L	102.4	90.0 − 110.0	MS	13−JUL−17 08:32	170712−4
	Nickel	51.8	ug/L	50	ug/L	103.7	90.0 − 110.0	MS	13−JUL−17 08:32	170712−4
	Chromium	50.9	ug/L	50	ug/L	101.8	90.0 − 110.0	MS	13−JUL−17 13:16	170713−5
CCV01										
	Aluminum	5190	ug/L	5050	ug/L	102.8	90.0 − 110.0	MS	07−JUL−17 17:54	170707−1
	Arsenic	48	ug/L	50	ug/L	95.9	90.0 − 110.0	MS	07−JUL−17 17:54	170707−1
	Barium	49.7	ug/L	50	ug/L	99.5	90.0 − 110.0	MS	07−JUL−17 17:54	170707−1
	Cadmium	49.6	ug/L	50	ug/L	99.3	90.0 − 110.0	MS	07−JUL−17 17:54	170707−1
	Cobalt	48.9	ug/L	50	ug/L	97.8	90.0 − 110.0	MS	07−JUL−17 17:54	170707−1
	Copper	51.2	ug/L	50	ug/L	102.5	90.0 − 110.0	MS	07−JUL−17 17:54	170707−1
	Lead	49.5	ug/L	50	ug/L	99	90.0 − 110.0	MS	07−JUL−17 17:54	170707−1
	Manganese	50.2	ug/L	50	ug/L	100.5	90.0 − 110.0	MS	07−JUL−17 17:54	170707−1

METALS
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Initial and Continuing Calibration Verification

SDG No: GEL425783

Contract: CPRC0S17006 **Lab Code:** GEL

Instrument ID: ICPMS12,ICPMS7

Sample ID	Analyte	Result	Units	True Value	Units	% Recovery	Acceptance Window (%R)	M*	Analysis Date/Time	Run Number
	Molybdenum	48.2	ug/L	50	ug/L	96.5	90.0 − 110.0	MS	07−JUL−17 17:54	170707−1
	Selenium	50.6	ug/L	50	ug/L	101.3	90.0 − 110.0	MS	07−JUL−17 17:54	170707−1
	Silver	48.9	ug/L	50	ug/L	97.8	90.0 − 110.0	MS	07−JUL−17 17:54	170707−1
	Strontium	49.3	ug/L	50	ug/L	98.7	90.0 − 110.0	MS	07−JUL−17 17:54	170707−1
	Thallium	48.8	ug/L	50	ug/L	97.6	90.0 − 110.0	MS	07−JUL−17 17:54	170707−1
	Thorium	48.2	ug/L	50	ug/L	96.4	90.0 − 110.0	MS	07−JUL−17 17:54	170707−1
	Tin	49.4	ug/L	50	ug/L	98.8	90.0 − 110.0	MS	07−JUL−17 17:54	170707−1
	Uranium	47.8	ug/L	50	ug/L	95.5	90.0 − 110.0	MS	07−JUL−17 17:54	170707−1
	Zinc	50.5	ug/L	50	ug/L	100.9	90.0 − 110.0	MS	07−JUL−17 17:54	170707−1
	Antimony	47	ug/L	50	ug/L	93.9	90.0 − 110.0	MS	10−JUL−17 13:52	170710−2
	Beryllium	53.2	ug/L	50	ug/L	106.4	90.0 − 110.0	MS	11−JUL−17 13:04	170711−3
	Chromium	51.6	ug/L	50	ug/L	103.2	90.0 − 110.0	MS	13−JUL−17 08:41	170712−4
	Nickel	52.6	ug/L	50	ug/L	105.2	90.0 − 110.0	MS	13−JUL−17 08:41	170712−4
	Chromium	51.8	ug/L	50	ug/L	103.6	90.0 − 110.0	MS	13−JUL−17 13:23	170713−5
CCV02										
	Aluminum	5200	ug/L	5050	ug/L	103	90.0 − 110.0	MS	07−JUL−17 18:04	170707−1
	Arsenic	47.9	ug/L	50	ug/L	95.9	90.0 − 110.0	MS	07−JUL−17 18:04	170707−1
	Barium	49	ug/L	50	ug/L	97.9	90.0 − 110.0	MS	07−JUL−17 18:04	170707−1
	Cadmium	50.3	ug/L	50	ug/L	100.6	90.0 − 110.0	MS	07−JUL−17 18:04	170707−1
	Cobalt	50.4	ug/L	50	ug/L	100.7	90.0 − 110.0	MS	07−JUL−17 18:04	170707−1
	Copper	50.6	ug/L	50	ug/L	101.2	90.0 − 110.0	MS	07−JUL−17 18:04	170707−1
	Lead	49.1	ug/L	50	ug/L	98.2	90.0 − 110.0	MS	07−JUL−17 18:04	170707−1
	Manganese	50.9	ug/L	50	ug/L	101.7	90.0 − 110.0	MS	07−JUL−17 18:04	170707−1
	Molybdenum	48.8	ug/L	50	ug/L	97.6	90.0 − 110.0	MS	07−JUL−17 18:04	170707−1
	Selenium	49.7	ug/L	50	ug/L	99.4	90.0 − 110.0	MS	07−JUL−17 18:04	170707−1
	Silver	48.2	ug/L	50	ug/L	96.5	90.0 − 110.0	MS	07−JUL−17 18:04	170707−1
	Strontium	48.4	ug/L	50	ug/L	96.8	90.0 − 110.0	MS	07−JUL−17 18:04	170707−1
	Thallium	49	ug/L	50	ug/L	98.1	90.0 − 110.0	MS	07−JUL−17 18:04	170707−1
	Thorium	50.2	ug/L	50	ug/L	100.4	90.0 − 110.0	MS	07−JUL−17 18:04	170707−1
	Tin	49.8	ug/L	50	ug/L	99.6	90.0 − 110.0	MS	07−JUL−17 18:04	170707−1
	Uranium	48.2	ug/L	50	ug/L	96.3	90.0 − 110.0	MS	07−JUL−17 18:04	170707−1

METALS
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Initial and Continuing Calibration Verification

SDG No: GEL425783

Contract: CPRC0S17006 **Lab Code:** GEL

Instrument ID: ICPMS12,ICPMS7

Sample ID	Analyte	Result	Units	True Value	Units	% Recovery	Acceptance Window (%R)	M*	Analysis Date/Time	Run Number
	Zinc	50.1	ug/L	50	ug/L	100.1	90.0 − 110.0	MS	07−JUL−17 18:04	170707−1
	Antimony	52.5	ug/L	50	ug/L	105	90.0 − 110.0	MS	10−JUL−17 14:02	170710−2
	Beryllium	53.5	ug/L	50	ug/L	107	90.0 − 110.0	MS	11−JUL−17 13:24	170711−3
	Chromium	51.1	ug/L	50	ug/L	102.2	90.0 − 110.0	MS	13−JUL−17 08:57	170712−4
	Nickel	51.8	ug/L	50	ug/L	103.5	90.0 − 110.0	MS	13−JUL−17 08:57	170712−4
	Chromium	51	ug/L	50	ug/L	102	90.0 − 110.0	MS	13−JUL−17 13:28	170713−5
CCV03										
	Aluminum	5320	ug/L	5050	ug/L	105.3	90.0 − 110.0	MS	07−JUL−17 18:43	170707−1
	Arsenic	48.7	ug/L	50	ug/L	97.4	90.0 − 110.0	MS	07−JUL−17 18:43	170707−1
	Barium	49.1	ug/L	50	ug/L	98.3	90.0 − 110.0	MS	07−JUL−17 18:43	170707−1
	Cadmium	50.7	ug/L	50	ug/L	101.3	90.0 − 110.0	MS	07−JUL−17 18:43	170707−1
	Cobalt	49.7	ug/L	50	ug/L	99.4	90.0 − 110.0	MS	07−JUL−17 18:43	170707−1
	Copper	50.9	ug/L	50	ug/L	101.8	90.0 − 110.0	MS	07−JUL−17 18:43	170707−1
	Lead	48.4	ug/L	50	ug/L	96.8	90.0 − 110.0	MS	07−JUL−17 18:43	170707−1
	Manganese	49.9	ug/L	50	ug/L	99.9	90.0 − 110.0	MS	07−JUL−17 18:43	170707−1
	Molybdenum	48.4	ug/L	50	ug/L	96.7	90.0 − 110.0	MS	07−JUL−17 18:43	170707−1
	Selenium	50.8	ug/L	50	ug/L	101.7	90.0 − 110.0	MS	07−JUL−17 18:43	170707−1
	Silver	49.6	ug/L	50	ug/L	99.2	90.0 − 110.0	MS	07−JUL−17 18:43	170707−1
	Strontium	48.2	ug/L	50	ug/L	96.4	90.0 − 110.0	MS	07−JUL−17 18:43	170707−1
	Thallium	47.6	ug/L	50	ug/L	95.3	90.0 − 110.0	MS	07−JUL−17 18:43	170707−1
	Thorium	47.8	ug/L	50	ug/L	95.5	90.0 − 110.0	MS	07−JUL−17 18:43	170707−1
	Tin	50.3	ug/L	50	ug/L	100.5	90.0 − 110.0	MS	07−JUL−17 18:43	170707−1
	Uranium	46.9	ug/L	50	ug/L	93.8	90.0 − 110.0	MS	07−JUL−17 18:43	170707−1
	Zinc	51.8	ug/L	50	ug/L	103.6	90.0 − 110.0	MS	07−JUL−17 18:43	170707−1
	Antimony	49.7	ug/L	50	ug/L	99.3	90.0 − 110.0	MS	10−JUL−17 14:17	170710−2
	Beryllium	52.9	ug/L	50	ug/L	105.8	90.0 − 110.0	MS	11−JUL−17 13:37	170711−3
	Chromium	51.1	ug/L	50	ug/L	102.2	90.0 − 110.0	MS	13−JUL−17 09:06	170712−4
	Nickel	51.3	ug/L	50	ug/L	102.7	90.0 − 110.0	MS	13−JUL−17 09:06	170712−4
	Chromium	51.4	ug/L	50	ug/L	102.8	90.0 − 110.0	MS	13−JUL−17 13:41	170713−5
CCV04										
	Aluminum	5290	ug/L	5050	ug/L	104.7	90.0 − 110.0	MS	07−JUL−17 19:22	170707−1

METALS
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Initial and Continuing Calibration Verification

SDG No: GEL425783

Contract: CPRC0S17006 **Lab Code:** GEL

Instrument ID: ICPMS12,ICPMS7

Sample ID	Analyte	Result	Units	True Value	Units	% Recovery	Acceptance Window (%R)	M*	Analysis Date/Time	Run Number
	Arsenic	47.1	ug/L	50	ug/L	94.2	90.0 − 110.0	MS	07−JUL−17 19:22	170707−1
	Barium	49.9	ug/L	50	ug/L	99.9	90.0 − 110.0	MS	07−JUL−17 19:22	170707−1
	Cadmium	50.6	ug/L	50	ug/L	101.3	90.0 − 110.0	MS	07−JUL−17 19:22	170707−1
	Cobalt	50	ug/L	50	ug/L	100.1	90.0 − 110.0	MS	07−JUL−17 19:22	170707−1
	Copper	51.2	ug/L	50	ug/L	102.4	90.0 − 110.0	MS	07−JUL−17 19:22	170707−1
	Lead	49.8	ug/L	50	ug/L	99.6	90.0 − 110.0	MS	07−JUL−17 19:22	170707−1
	Manganese	51.6	ug/L	50	ug/L	103.2	90.0 − 110.0	MS	07−JUL−17 19:22	170707−1
	Molybdenum	49.9	ug/L	50	ug/L	99.7	90.0 − 110.0	MS	07−JUL−17 19:22	170707−1
	Selenium	48.8	ug/L	50	ug/L	97.6	90.0 − 110.0	MS	07−JUL−17 19:22	170707−1
	Silver	49.9	ug/L	50	ug/L	99.9	90.0 − 110.0	MS	07−JUL−17 19:22	170707−1
	Strontium	50.1	ug/L	50	ug/L	100.3	90.0 − 110.0	MS	07−JUL−17 19:22	170707−1
	Thallium	48.8	ug/L	50	ug/L	97.7	90.0 − 110.0	MS	07−JUL−17 19:22	170707−1
	Thorium	49.1	ug/L	50	ug/L	98.2	90.0 − 110.0	MS	07−JUL−17 19:22	170707−1
	Tin	51.6	ug/L	50	ug/L	103.2	90.0 − 110.0	MS	07−JUL−17 19:22	170707−1
	Uranium	48.5	ug/L	50	ug/L	97	90.0 − 110.0	MS	07−JUL−17 19:22	170707−1
	Zinc	47.9	ug/L	50	ug/L	95.7	90.0 − 110.0	MS	07−JUL−17 19:22	170707−1
	Beryllium	53	ug/L	50	ug/L	106	90.0 − 110.0	MS	11−JUL−17 13:44	170711−3

***Analytical Methods:**

MS SW846 3005A/6020B

METALS
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CRDL Standard for ICP & ICPMS

SDG No: GEL425783

Contract: CPRC0S17006 **Lab Code:** GEL

Instrument ID: ICPMS12,ICPMS7

Sample ID	Analyte	Result	Units	True Value	Units	% Recovery	Advisory Limits (%R)	M*	Analysis Date/Time	Run Number
CRDL01										
	Aluminum	56	ug/L	50	ug/L	112	80.0 − 120.0	MS	07−JUL−17 17:44	170707−1
	Arsenic	4.7	ug/L	5	ug/L	94.1	80.0 − 120.0	MS	07−JUL−17 17:44	170707−1
	Barium	2.05	ug/L	2	ug/L	102.3	80.0 − 120.0	MS	07−JUL−17 17:44	170707−1
	Cadmium	1.04	ug/L	1	ug/L	103.6	80.0 − 120.0	MS	07−JUL−17 17:44	170707−1
	Cobalt	1.08	ug/L	1	ug/L	107.6	80.0 − 120.0	MS	07−JUL−17 17:44	170707−1
	Copper	1.11	ug/L	1	ug/L	110.6	80.0 − 120.0	MS	07−JUL−17 17:44	170707−1
	Lead	2.03	ug/L	2	ug/L	101.5	80.0 − 120.0	MS	07−JUL−17 17:44	170707−1
	Manganese	5.39	ug/L	5	ug/L	107.7	80.0 − 120.0	MS	07−JUL−17 17:44	170707−1
	Molybdenum	.499	ug/L	.5	ug/L	99.8	80.0 − 120.0	MS	07−JUL−17 17:44	170707−1
	Selenium	5.23	ug/L	5	ug/L	104.5	80.0 − 120.0	MS	07−JUL−17 17:44	170707−1
	Silver	1.02	ug/L	1	ug/L	101.8	80.0 − 120.0	MS	07−JUL−17 17:44	170707−1
	Strontium	10.1	ug/L	10	ug/L	101.4	80.0 − 120.0	MS	07−JUL−17 17:44	170707−1
	Thallium	1.96	ug/L	2	ug/L	98	80.0 − 120.0	MS	07−JUL−17 17:44	170707−1
	Uranium	.195	ug/L	.2	ug/L	97.5	80.0 − 120.0	MS	07−JUL−17 17:44	170707−1
	Zinc	10.3	ug/L	10	ug/L	102.6	80.0 − 120.0	MS	07−JUL−17 17:44	170707−1
	Tin	5	ug/L	5	ug/L	99.9	80.0 − 120.0	MS	07−JUL−17 17:44	170707−1
	Thorium	1.9	ug/L	2	ug/L	94.8	80.0 − 120.0	MS	07−JUL−17 17:44	170707−1
	Antimony	2.41	ug/L	3	ug/L	80.3	80.0 − 120.0	MS	10−JUL−17 13:47	170710−2
	Beryllium	.528	ug/L	.5	ug/L	105.6	80.0 − 120.0	MS	11−JUL−17 13:00	170711−3
	Chromium	10.5	ug/L	10	ug/L	105.1	80.0 − 120.0	MS	13−JUL−17 08:36	170712−4
	Nickel	2.11	ug/L	2	ug/L	105.6	80.0 − 120.0	MS	13−JUL−17 08:36	170712−4
	Chromium	10.3	ug/L	10	ug/L	102.8	80.0 − 120.0	MS	13−JUL−17 13:19	170713−5

***Analytical Methods:**

MS **SW846 3005A/6020B**

Metals
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Initial and Continuing Calibration Blank Summary

SDG No.: GEL425783

Contract: CPRC0S17006

Lab Code: GEL

Sample ID	Analyte	Result ug/L	Acceptance	Conc Qual	MDL	RDL	Matrix	M*	Analysis Date/Time	Run
ICB01										
	Aluminum	19.3	+/−25	U	19.3	50.0	LIQ	MS	07−JUL−17 17:41	170707−1
	Arsenic	2.0	+/−2.5	U	2.0	5.0	LIQ	MS	07−JUL−17 17:41	170707−1
	Barium	0.67	+/−1	U	0.67	2.0	LIQ	MS	07−JUL−17 17:41	170707−1
	Cadmium	0.3	+/−.5	U	0.3	1.0	LIQ	MS	07−JUL−17 17:41	170707−1
	Cobalt	0.3	+/−.5	U	0.3	1.0	LIQ	MS	07−JUL−17 17:41	170707−1
	Copper	0.3	+/−.5	U	0.3	1.0	LIQ	MS	07−JUL−17 17:41	170707−1
	Lead	0.5	+/−1	U	0.5	2.0	LIQ	MS	07−JUL−17 17:41	170707−1
	Manganese	1.0	+/−2.5	U	1.0	5.0	LIQ	MS	07−JUL−17 17:41	170707−1
	Molybdenum	0.2	+/−.25	U	0.2	0.5	LIQ	MS	07−JUL−17 17:41	170707−1
	Selenium	2.0	+/−2.5	U	2.0	5.0	LIQ	MS	07−JUL−17 17:41	170707−1
	Silver	0.3	+/−.5	U	0.3	1.0	LIQ	MS	07−JUL−17 17:41	170707−1
	Strontium	2.0	+/−5	U	2.0	10.0	LIQ	MS	07−JUL−17 17:41	170707−1
	Thallium	0.6	+/−1	U	0.6	2.0	LIQ	MS	07−JUL−17 17:41	170707−1
	Thorium	0.7	+/−1	U	0.7	2.0	LIQ	MS	07−JUL−17 17:41	170707−1
	Tin	1.0	+/−2.5	U	1.0	5.0	LIQ	MS	07−JUL−17 17:41	170707−1
	Uranium	0.067	+/−.1	U	0.067	0.2	LIQ	MS	07−JUL−17 17:41	170707−1
	Zinc	3.3	+/−5	U	3.3	10.0	LIQ	MS	07−JUL−17 17:41	170707−1
	Antimony	1.0	+/−1.5	U	1.0	3.0	LIQ	MS	10−JUL−17 13:46	170710−2
	Beryllium	0.2	+/−.25	U	0.2	0.5	LIQ	MS	11−JUL−17 12:58	170711−3
	Chromium	3.0	+/−5	U	3.0	10.0	LIQ	MS	13−JUL−17 08:34	170712−4
	Nickel	0.6	+/−1	U	0.6	2.0	LIQ	MS	13−JUL−17 08:34	170712−4
	Chromium	3.0	+/−5	U	3.0	10.0	LIQ	MS	13−JUL−17 13:17	170713−5
CCB01										
	Aluminum	19.3	+/−50	U	19.3	50.0	LIQ	MS	07−JUL−17 17:57	170707−1
	Arsenic	2.0	+/−5	U	2.0	5.0	LIQ	MS	07−JUL−17 17:57	170707−1
	Barium	0.67	+/−2	U	0.67	2.0	LIQ	MS	07−JUL−17 17:57	170707−1
	Cadmium	0.3	+/−1	U	0.3	1.0	LIQ	MS	07−JUL−17 17:57	170707−1
	Cobalt	0.3	+/−1	U	0.3	1.0	LIQ	MS	07−JUL−17 17:57	170707−1
	Copper	0.3	+/−1	U	0.3	1.0	LIQ	MS	07−JUL−17 17:57	170707−1
	Lead	0.5	+/−2	U	0.5	2.0	LIQ	MS	07−JUL−17 17:57	170707−1
	Manganese	1.0	+/−5	U	1.0	5.0	LIQ	MS	07−JUL−17 17:57	170707−1

Metals
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Initial and Continuing Calibration Blank Summary

SDG No.: GEL425783

Contract: CPRC0S17006

Lab Code: GEL

Sample ID	Analyte	Result ug/L	Acceptance	Conc Qual	MDL	RDL	Matrix	M*	Analysis Date/Time	Run
	Molybdenum	0.2	+/−.5	U	0.2	0.5	LIQ	MS	07−JUL−17 17:57	170707−1
	Selenium	2.0	+/−5	U	2.0	5.0	LIQ	MS	07−JUL−17 17:57	170707−1
	Silver	0.3	+/−1	U	0.3	1.0	LIQ	MS	07−JUL−17 17:57	170707−1
	Strontium	2.0	+/−10	U	2.0	10.0	LIQ	MS	07−JUL−17 17:57	170707−1
	Thallium	0.6	+/−2	U	0.6	2.0	LIQ	MS	07−JUL−17 17:57	170707−1
	Thorium	0.7	+/−2	U	0.7	2.0	LIQ	MS	07−JUL−17 17:57	170707−1
	Tin	1.0	+/−5	U	1.0	5.0	LIQ	MS	07−JUL−17 17:57	170707−1
	Uranium	0.067	+/−.2	U	0.067	0.2	LIQ	MS	07−JUL−17 17:57	170707−1
	Zinc	3.3	+/−10	U	3.3	10.0	LIQ	MS	07−JUL−17 17:57	170707−1
	Antimony	1.0	+/−3	U	1.0	3.0	LIQ	MS	10−JUL−17 13:53	170710−2
	Beryllium	0.2	+/−.5	U	0.2	0.5	LIQ	MS	11−JUL−17 13:06	170711−3
	Chromium	3.0	+/−10	U	3.0	10.0	LIQ	MS	13−JUL−17 08:43	170712−4
	Nickel	0.6	+/−2	U	0.6	2.0	LIQ	MS	13−JUL−17 08:43	170712−4
	Chromium	3.0	+/−10	U	3.0	10.0	LIQ	MS	13−JUL−17 13:25	170713−5
CCB02										
	Aluminum	19.3	+/−50	U	19.3	50.0	LIQ	MS	07−JUL−17 18:07	170707−1
	Arsenic	2.0	+/−5	U	2.0	5.0	LIQ	MS	07−JUL−17 18:07	170707−1
	Barium	0.67	+/−2	U	0.67	2.0	LIQ	MS	07−JUL−17 18:07	170707−1
	Cadmium	0.3	+/−1	U	0.3	1.0	LIQ	MS	07−JUL−17 18:07	170707−1
	Cobalt	0.3	+/−1	U	0.3	1.0	LIQ	MS	07−JUL−17 18:07	170707−1
	Copper	0.3	+/−1	U	0.3	1.0	LIQ	MS	07−JUL−17 18:07	170707−1
	Lead	0.5	+/−2	U	0.5	2.0	LIQ	MS	07−JUL−17 18:07	170707−1
	Manganese	1.0	+/−5	U	1.0	5.0	LIQ	MS	07−JUL−17 18:07	170707−1
	Molybdenum	0.2	+/−.5	U	0.2	0.5	LIQ	MS	07−JUL−17 18:07	170707−1
	Selenium	2.0	+/−5	U	2.0	5.0	LIQ	MS	07−JUL−17 18:07	170707−1
	Silver	0.3	+/−1	U	0.3	1.0	LIQ	MS	07−JUL−17 18:07	170707−1
	Strontium	2.0	+/−10	U	2.0	10.0	LIQ	MS	07−JUL−17 18:07	170707−1
	Thallium	0.6	+/−2	U	0.6	2.0	LIQ	MS	07−JUL−17 18:07	170707−1
	Thorium	0.7	+/−2	U	0.7	2.0	LIQ	MS	07−JUL−17 18:07	170707−1
	Tin	1.0	+/−5	U	1.0	5.0	LIQ	MS	07−JUL−17 18:07	170707−1
	Uranium	0.075	+/−.2	B	0.067	0.2	LIQ	MS	07−JUL−17 18:07	170707−1

Metals
−3a−
Initial and Continuing Calibration Blank Summary

SDG No.: GEL425783

Contract: CPRC0S17006

Lab Code: GEL

Sample ID	Analyte	Result ug/L	Acceptance	Conc Qual	MDL	RDL	Matrix	M*	Analysis Date/Time	Run
	Zinc	3.3	+/−10	U	3.3	10.0	LIQ	MS	07−JUL−17 18:07	170707−1
	Antimony	1.0	+/−3	U	1.0	3.0	LIQ	MS	10−JUL−17 14:04	170710−2
	Beryllium	0.2	+/−.5	U	0.2	0.5	LIQ	MS	11−JUL−17 13:26	170711−3
	Chromium	3.0	+/−10	U	3.0	10.0	LIQ	MS	13−JUL−17 08:59	170712−4
	Nickel	0.6	+/−2	U	0.6	2.0	LIQ	MS	13−JUL−17 08:59	170712−4
	Chromium	3.0	+/−10	U	3.0	10.0	LIQ	MS	13−JUL−17 13:29	170713−5
CCB03										
	Aluminum	19.3	+/−50	U	19.3	50.0	LIQ	MS	07−JUL−17 18:46	170707−1
	Arsenic	2.0	+/−5	U	2.0	5.0	LIQ	MS	07−JUL−17 18:46	170707−1
	Barium	0.67	+/−2	U	0.67	2.0	LIQ	MS	07−JUL−17 18:46	170707−1
	Cadmium	0.3	+/−1	U	0.3	1.0	LIQ	MS	07−JUL−17 18:46	170707−1
	Cobalt	0.3	+/−1	U	0.3	1.0	LIQ	MS	07−JUL−17 18:46	170707−1
	Copper	0.3	+/−1	U	0.3	1.0	LIQ	MS	07−JUL−17 18:46	170707−1
	Lead	0.5	+/−2	U	0.5	2.0	LIQ	MS	07−JUL−17 18:46	170707−1
	Manganese	1.0	+/−5	U	1.0	5.0	LIQ	MS	07−JUL−17 18:46	170707−1
	Molybdenum	0.2	+/−.5	U	0.2	0.5	LIQ	MS	07−JUL−17 18:46	170707−1
	Selenium	2.0	+/−5	U	2.0	5.0	LIQ	MS	07−JUL−17 18:46	170707−1
	Silver	0.3	+/−1	U	0.3	1.0	LIQ	MS	07−JUL−17 18:46	170707−1
	Strontium	2.0	+/−10	U	2.0	10.0	LIQ	MS	07−JUL−17 18:46	170707−1
	Thallium	0.6	+/−2	U	0.6	2.0	LIQ	MS	07−JUL−17 18:46	170707−1
	Thorium	0.7	+/−2	U	0.7	2.0	LIQ	MS	07−JUL−17 18:46	170707−1
	Tin	1.0	+/−5	U	1.0	5.0	LIQ	MS	07−JUL−17 18:46	170707−1
	Uranium	0.067	+/−.2	U	0.067	0.2	LIQ	MS	07−JUL−17 18:46	170707−1
	Zinc	3.3	+/−10	U	3.3	10.0	LIQ	MS	07−JUL−17 18:46	170707−1
	Antimony	1.0	+/−3	U	1.0	3.0	LIQ	MS	10−JUL−17 14:18	170710−2
	Beryllium	0.2	+/−.5	U	0.2	0.5	LIQ	MS	11−JUL−17 13:39	170711−3
	Chromium	3.0	+/−10	U	3.0	10.0	LIQ	MS	13−JUL−17 09:08	170712−4
	Nickel	0.6	+/−2	U	0.6	2.0	LIQ	MS	13−JUL−17 09:08	170712−4
	Chromium	3.0	+/−10	U	3.0	10.0	LIQ	MS	13−JUL−17 13:43	170713−5
CCB04										
	Aluminum	19.3	+/−50	U	19.3	50.0	LIQ	MS	07−JUL−17 19:25	170707−1

Metals
−3a−
Initial and Continuing Calibration Blank Summary

SDG No.: GEL425783

Contract: CPRC0S17006

Lab Code: GEL

Sample ID	Analyte	Result ug/L	Acceptance	Conc Qual	MDL	RDL	Matrix	M*	Analysis Date/Time	Run
	Arsenic	2.0	+/−5	U	2.0	5.0	LIQ	MS	07−JUL−17 19:25	170707−1
	Barium	0.67	+/−2	U	0.67	2.0	LIQ	MS	07−JUL−17 19:25	170707−1
	Cadmium	0.3	+/−1	U	0.3	1.0	LIQ	MS	07−JUL−17 19:25	170707−1
	Cobalt	0.3	+/−1	U	0.3	1.0	LIQ	MS	07−JUL−17 19:25	170707−1
	Copper	0.3	+/−1	U	0.3	1.0	LIQ	MS	07−JUL−17 19:25	170707−1
	Lead	0.5	+/−2	U	0.5	2.0	LIQ	MS	07−JUL−17 19:25	170707−1
	Manganese	1.0	+/−5	U	1.0	5.0	LIQ	MS	07−JUL−17 19:25	170707−1
	Molybdenum	0.2	+/−.5	U	0.2	0.5	LIQ	MS	07−JUL−17 19:25	170707−1
	Selenium	2.0	+/−5	U	2.0	5.0	LIQ	MS	07−JUL−17 19:25	170707−1
	Silver	0.3	+/−1	U	0.3	1.0	LIQ	MS	07−JUL−17 19:25	170707−1
	Strontium	2.0	+/−10	U	2.0	10.0	LIQ	MS	07−JUL−17 19:25	170707−1
	Thallium	0.6	+/−2	U	0.6	2.0	LIQ	MS	07−JUL−17 19:25	170707−1
	Thorium	0.7	+/−2	U	0.7	2.0	LIQ	MS	07−JUL−17 19:25	170707−1
	Tin	1.0	+/−5	U	1.0	5.0	LIQ	MS	07−JUL−17 19:25	170707−1
	Uranium	0.067	+/−.2	U	0.067	0.2	LIQ	MS	07−JUL−17 19:25	170707−1
	Zinc	3.3	+/−10	U	3.3	10.0	LIQ	MS	07−JUL−17 19:25	170707−1
	Beryllium	0.2	+/−.5	U	0.2	0.5	LIQ	MS	11−JUL−17 13:46	170711−3

***Analytical Methods:**

MS **SW846 3005A/6020B**

METALS
−4−
Interference Check Sample

SDG No: GEL425783

Contract: CPRC0S17006 **Lab Code:** GEL

Instrument: ICPMS12

Sample ID	Analyte	Result	Units	True Value	Units	% Recovery	Acceptance Window (%R)	Analysis Date/Time	Run Number
ICSA01									
	Aluminum	118000	ug/L	100000	ug/L	118	80.0 − 120.0	07−JUL−17 17:47	170707−1
	Arsenic	0.312	ug/L					07−JUL−17 17:47	170707−1
	Barium	2.68	ug/L					07−JUL−17 17:47	170707−1
	Cadmium	0.992	ug/L					07−JUL−17 17:47	170707−1
	Cobalt	0.165	ug/L					07−JUL−17 17:47	170707−1
	Copper	0.348	ug/L					07−JUL−17 17:47	170707−1
	Lead	0.502	ug/L					07−JUL−17 17:47	170707−1
	Manganese	8.35	ug/L					07−JUL−17 17:47	170707−1
	Molybdenum	1960	ug/L	2000	ug/L	97.9	80.0 − 120.0	07−JUL−17 17:47	170707−1
	Selenium	0.298	ug/L					07−JUL−17 17:47	170707−1
	Silver	0.725	ug/L					07−JUL−17 17:47	170707−1
	Strontium	2.74	ug/L					07−JUL−17 17:47	170707−1
	Thallium	0.021	ug/L					07−JUL−17 17:47	170707−1
	Thorium	0.253	ug/L					07−JUL−17 17:47	170707−1
	Tin	0.201	ug/L					07−JUL−17 17:47	170707−1
	Uranium	0.007	ug/L					07−JUL−17 17:47	170707−1
	Zinc	3.37	ug/L					07−JUL−17 17:47	170707−1
ICSAB01									
	Aluminum	118000	ug/L	100000	ug/L	118	80.0 − 120.0	07−JUL−17 17:51	170707−1
	Arsenic	20.8	ug/L	20	ug/L	104	80.0 − 120.0	07−JUL−17 17:51	170707−1
	Barium	25.6	ug/L	22.22	ug/L	115	80.0 − 120.0	07−JUL−17 17:51	170707−1
	Cadmium	18.0	ug/L	21.02	ug/L	85.5	80.0 − 120.0	07−JUL−17 17:51	170707−1
	Cobalt	20.6	ug/L	20.21	ug/L	102	80.0 − 120.0	07−JUL−17 17:51	170707−1
	Copper	19.1	ug/L	21.89	ug/L	87.3	80.0 − 120.0	07−JUL−17 17:51	170707−1
	Lead	21.8	ug/L	20.42	ug/L	107	80.0 − 120.0	07−JUL−17 17:51	170707−1
	Manganese	27.9	ug/L	23.67	ug/L	118	80.0 − 120.0	07−JUL−17 17:51	170707−1
	Molybdenum	1910	ug/L	2000	ug/L	95.4	80.0 − 120.0	07−JUL−17 17:51	170707−1
	Selenium	19.8	ug/L	20	ug/L	98.8	80.0 − 120.0	07−JUL−17 17:51	170707−1
	Silver	17.3	ug/L	20.66	ug/L	83.5	80.0 − 120.0	07−JUL−17 17:51	170707−1
	Strontium	21.4	ug/L	22.56	ug/L	95	80.0 − 120.0	07−JUL−17 17:51	170707−1

METALS
−4−
Interference Check Sample

SDG No: GEL425783

Contract: CPRC0S17006 **Lab Code:** GEL

Sample ID	Analyte	Result	Units	True Value	Units	% Recovery	Acceptance Window (%R)	Analysis Date/Time	Run Number
	Thallium	20.9	ug/L	20	ug/L	104	80.0 − 120.0	07−JUL−17 17:51	170707−1
	Thorium	21.9	ug/L	20.49	ug/L	107	80.0 − 120.0	07−JUL−17 17:51	170707−1
	Tin	18.9	ug/L	20.48	ug/L	92.1	80.0 − 120.0	07−JUL−17 17:51	170707−1
	Uranium	23.0	ug/L	20.04	ug/L	115	80.0 − 120.0	07−JUL−17 17:51	170707−1
	Zinc	22.2	ug/L	23.21	ug/L	95.5	80.0 − 120.0	07−JUL−17 17:51	170707−1

METALS
−4−
Interference Check Sample

SDG No: GEL425783

Contract: CPRC0S17006 **Lab Code:** GEL

Instrument: ICPMS12

Sample ID	Analyte	Result	Units	True Value	Units	% Recovery	Acceptance Window (%R)	Analysis Date/Time	Run Number
ICSA01									
	Antimony	0.125	ug/L					10−JUL−17 13:49	170710−2
ICSAB01									
	Antimony	19.0	ug/L	20	ug/L	94.8	80.0 − 120.0	10−JUL−17 13:50	170710−2

METALS
−4−
Interference Check Sample

SDG No: GEL425783

Contract: CPRC0S17006 **Lab Code:** GEL

Instrument: ICPMS7

Sample ID	Analyte	Result	Units	True Value	Units	% Recovery	Acceptance Window (%R)	Analysis Date/Time	Run Number
ICSA01									
	Beryllium	0.036	ug/L					11−JUL−17 13:01	170711−3
ICSAB01									
	Beryllium	18.4	ug/L	20	ug/L	91.9	80.0 − 120.0	11−JUL−17 13:03	170711−3

METALS
−4−
Interference Check Sample

SDG No: GEL425783

Contract: CPRC0S17006 **Lab Code:** GEL

Instrument: ICPMS7

Sample ID	Analyte	Result	Units	True Value	Units	% Recovery	Acceptance Window (%R)	Analysis Date/Time	Run Number
ICSA01									
	Chromium	2.67	ug/L					13−JUL−17 08:38	170712−4
	Nickel	2.01	ug/L					13−JUL−17 08:38	170712−4
ICSAB01									
	Chromium	22.6	ug/L	21.24	ug/L	107	80.0 − 120.0	13−JUL−17 08:39	170712−4
	Nickel	21.2	ug/L	21.05	ug/L	101	80.0 − 120.0	13−JUL−17 08:39	170712−4

METALS
−4−
Interference Check Sample

SDG No: GEL425783

Contract: CPRC0S17006 **Lab Code:** GEL

Instrument: ICPMS7

Sample ID	Analyte	Result	Units	True Value	Units	% Recovery	Acceptance Window (%R)	Analysis Date/Time	Run Number
ICSA01									
	Chromium	2.28	ug/L					13−JUL−17 13:20	170713−5
ICSAB01									
	Chromium	22.0	ug/L	21.24	ug/L	104	80.0 − 120.0	13−JUL−17 13:22	170713−5

METALS
−13−
SAMPLE PREPARATION SUMMARY

SDG No: GEL425783 **Method Type:** MS

Contract: CPRC0S17006 **Lab Code:** GEL

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size	Final Sample Volume	Percent Solids
Batch Number 1675723							
1203815377	MB for batch 1675723	MB	W	20−JUN−17	50mL	50mL	
1203815378	LCS for batch 1675723	LCS	W	20−JUN−17	50mL	50mL	
1203815379	B39NL4S	MS	W	20−JUN−17	50mL	50mL	
1203815380	B39NL4SD	MSD	W	20−JUN−17	50mL	50mL	
425783003	B39T93	SAMPLE	W	20−JUN−17	50mL	50mL	
425783004	B39T90	SAMPLE	W	20−JUN−17	50mL	50mL	
Batch Number 1681502							
1203828900	MB for batch 1681502	MB	W	11−JUL−17	25mL	25mL	
1203828901	LCS for batch 1681502	LCS	W	11−JUL−17	25mL	25mL	
1203828902	B39NL4S	MS	W	11−JUL−17	25mL	25mL	
1203828903	B39NL4SD	MSD	W	11−JUL−17	25mL	25mL	
425783003	B39T93	SAMPLE	W	11−JUL−17	25mL	25mL	
425783004	B39T90	SAMPLE	W	11−JUL−17	25mL	25mL	

Metals
−14−
Analysis Run Log

Contract: CPRC0S17006

Lab Code : GEL **Client Sdg:** GEL425783

Inst Name: ICPMS7 **Instrument Type:** MS

Start Date: 11−JUL−17 **End Date:** 11−JUL−17 **Data File:** 170711−3

Samp ID	D/F	Run Time	Al	Sb	As	Ba	Be	Cd	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Ag	Sr	Tl	Th	Sn	U	Zn
S0.0	1	12:53:15					X																
S10	1	12:54:41					X																
S100	1	12:56:07					X																
ICV01	1	12:57:32					X																
ICB01	1	12:58:58					X																
CRDL01	1	13:00:24					X																
ICSA01	1	13:01:50					X																
ICSAB01	1	13:03:15					X																
CCV01	1	13:04:42					X																
CCB01	1	13:06:08					X																
ZZZZZZ	1	13:07:34																					
ZZZZZZ	1	13:09:00																					
ZZZZZZ	1	13:10:25																					
ZZZZZZ	1	13:11:51																					
ZZZZZZ	1	13:13:16																					
ZZZZZZ	1	13:14:42																					
ZZZZZZ	5	13:16:07																					
CCV	1	13:17:35					X																
CCB	1	13:19:00					X																
ZZZZZZ	1	13:20:27																					
ZZZZZZ	1	13:21:53																					
ZZZZZZ	1	13:23:18																					
CCV02	1	13:24:46					X																
CCB02	1	13:26:12					X																
1203815377	1	13:27:39					X																
1203815378	1	13:29:05					X																
ZZZZZZ	1	13:30:30																					
1203815379	1	13:31:56					X																
1203815380	1	13:33:21					X																
ZZZZZZ	1	13:34:47																					
1203815381	5	13:36:12					X																
CCV03	1	13:37:40					X																
CCB03	1	13:39:06					X																
ZZZZZZ	1	13:40:33																					
425783003	1	13:41:59					X																
425783004	1	13:43:24					X																
CCV04	1	13:44:52					X																
CCB04	1	13:46:18					X																

Metals
−14−
Analysis Run Log

Contract: CPRC0S17006

Lab Code : GEL **Client Sdg:** GEL425783

Inst Name: ICPMS7 **Instrument Type:** MS

Start Date: 13−JUL−17 **End Date:** 13−JUL−17 **Data File:** 170712−4

Samp ID	D/F	Run Time	Al	Sb	As	Ba	Be	Cd	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Ag	Sr	Tl	Th	Sn	U	Zn
S0.0	1	08:27:15							X						X								
S10	1	08:29:05							X						X								
S100	1	08:30:52							X						X								
ICV01	1	08:32:40							X						X								
ICB01	1	08:34:27							X						X								
CRDL01	1	08:36:15							X						X								
ICSA01	1	08:38:02							X						X								
ICSAB01	1	08:39:49							X						X								
CCV01	1	08:41:39							X						X								
CCB01	1	08:43:29							X						X								
1203828900	1	08:45:19													X								
1203828901	1	08:47:07													X								
ZZZZZZ	1	08:48:54																					
1203828902	1	08:50:41													X								
1203828903	1	08:52:28													X								
ZZZZZZ	1	08:54:16																					
1203828904	5	08:56:03													X								
CCV02	1	08:57:53							X						X								
CCB02	1	08:59:43							X						X								
ZZZZZZ	1	09:01:33																					
425783003	1	09:03:20							X						X								
425783004	1	09:05:07							X						X								
CCV03	1	09:06:57							X						X								
CCB03	1	09:08:47							X						X								

Metals
−14−
Analysis Run Log

Contract: CPRC0S17006

Lab Code : GEL **Client Sdg:** GEL425783

Inst Name: ICPMS7 **Instrument Type:** MS

Start Date: 13−JUL−17 **End Date:** 13−JUL−17 **Data File:** 170713−5

Samp ID	D/F	Run Time	Al	Sb	As	Ba	Be	Cd	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Ag	Sr	Tl	Th	Sn	U	Zn
S0.0	1	13:11:52							X														
S10	1	13:13:21							X														
S100	1	13:14:49							X														
ICV01	1	13:16:18							X														
ICB01	1	13:17:47							X														
CRDL01	1	13:19:16							X														
ICSA01	1	13:20:45							X														
ICSAB01	1	13:22:14							X														
CCV01	1	13:23:43							X														
CCB01	1	13:25:12							X														
LR01	1	13:26:42							X														
CCV02	1	13:28:12							X														
CCB02	1	13:29:41							X														
1203828900	1	13:31:11							X														
1203828901	1	13:32:40							X														
ZZZZZZ	1	13:34:08																					
1203828902	1	13:35:37							X														
1203828903	1	13:37:06							X														
ZZZZZZ	1	13:38:34																					
1203828904	5	13:40:03							X														
CCV03	1	13:41:34							X														
CCB03	1	13:43:03							X														

Metals
−14−
Analysis Run Log

Contract: CPRC0S17006

Lab Code : GEL

Client Sdg: GEL425783

Inst Name: ICPMS12

Instrument Type: MS

Start Date: 07−JUL−17

End Date: 07−JUL−17

Data File: 170707−1

Samp ID	D/F	Run Time	Al	Sb	As	Ba	Be	Cd	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Ag	Sr	Tl	Th	Sn	U	Zn
S0.0	1	17:28:31	X		X	X		X		X	X	X	X	X		X	X	X	X	X	X	X	X
S10	1	17:31:45	X		X	X		X		X	X	X	X	X		X	X	X	X	X	X	X	X
S100	1	17:35:00	X		X	X		X		X	X	X	X	X		X	X	X	X	X	X	X	X
ICV01	1	17:38:14	X		X	X		X		X	X	X	X	X		X	X	X	X	X	X	X	X
ICB01	1	17:41:29	X		X	X		X		X	X	X	X	X		X	X	X	X	X	X	X	X
CRDL01	1	17:44:44	X		X	X		X		X	X	X	X	X		X	X	X	X	X	X	X	X
ICSA01	1	17:47:59	X		X	X		X		X	X	X	X	X		X	X	X	X	X	X	X	X
ICSAB01	1	17:51:13	X		X	X		X		X	X	X	X	X		X	X	X	X	X	X	X	X
CCV01	1	17:54:28	X		X	X		X		X	X	X	X	X		X	X	X	X	X	X	X	X
CCB01	1	17:57:43	X		X	X		X		X	X	X	X	X		X	X	X	X	X	X	X	X
LR01	1	18:00:59	X		X	X		X		X	X	X	X	X		X	X	X	X	X	X	X	X
CCV02	1	18:04:14	X		X	X		X		X	X	X	X	X		X	X	X	X	X	X	X	X
CCB02	1	18:07:30	X		X	X		X		X	X	X	X	X		X	X	X	X	X	X	X	X
ZZZZZZ	1	18:10:45																					
ZZZZZZ	1	18:14:00																					
ZZZZZZ	1	18:17:16																					
ZZZZZZ	1	18:20:30																					
ZZZZZZ	1	18:23:45																					
ZZZZZZ	1	18:27:00																					
ZZZZZZ	5	18:30:15																					
ZZZZZZ	1	18:33:31																					
ZZZZZZ	1	18:36:46																					
ZZZZZZ	1	18:40:01																					
CCV03	1	18:43:17	X		X	X		X		X	X	X	X	X		X	X	X	X	X	X	X	X
CCB03	1	18:46:32	X		X	X		X		X	X	X	X	X		X	X	X	X	X	X	X	X
1203815377	1	18:49:48	X		X	X		X		X	X	X	X	X		X	X	X	X	X	X	X	X
1203815378	1	18:53:03	X		X	X		X		X	X	X	X	X		X	X	X	X	X	X	X	X
ZZZZZZ	1	18:56:18																					
1203815379	1	18:59:33	X		X	X		X		X	X	X	X	X		X	X	X	X	X	X	X	X
1203815380	1	19:02:48	X		X	X		X		X	X	X	X	X		X	X	X	X	X	X	X	X
ZZZZZZ	1	19:06:03																					
1203815381	5	19:09:18	X		X	X		X		X	X	X	X	X		X	X	X	X	X	X	X	X
ZZZZZZ	1	19:12:33																					
425783003	1	19:15:49	X		X	X		X		X	X	X	X	X		X	X	X	X	X	X	X	X
425783004	1	19:19:04	X		X	X		X		X	X	X	X	X		X	X	X	X	X	X	X	X
CCV04	1	19:22:20	X		X	X		X		X	X	X	X	X		X	X	X	X	X	X	X	X
CCB04	1	19:25:35	X		X	X		X		X	X	X	X	X		X	X	X	X	X	X	X	X

Metals
−14−
Analysis Run Log

Contract: CPRC0S17006

Lab Code : GEL

Client Sdg: GEL425783

Inst Name: ICPMS12

Instrument Type: MS

Start Date: 10−JUL−17

End Date: 10−JUL−17

Data File: 170710−2

Samp ID	D/F	Run Time	Al	Sb	As	Ba	Be	Cd	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Ag	Sr	Tl	Th	Sn	U	Zn
S0.0	1	13:39:36		X																			
S10	1	13:41:11		X																			
S100	1	13:42:46		X																			
ICV01	1	13:44:23		X																			
ICB01	1	13:46:00		X																			
CRDL01	1	13:47:34		X																			
ICSA01	1	13:49:08		X																			
ICSAB01	1	13:50:42		X																			
CCV01	1	13:52:18		X																			
CCB01	1	13:53:54		X																			
ZZZZZZ	1	13:55:35																					
ZZZZZZ	1	13:57:09																					
1203815377	1	13:59:40		X																			
1203815378	1	14:01:14		X																			
CCV02	1	14:02:50		X																			
CCB02	1	14:04:27		X																			
ZZZZZZ	1	14:06:02																					
1203815379	1	14:07:37		X																			
1203815380	1	14:09:11		X																			
1203815381	5	14:10:47		X																			
ZZZZZZ	1	14:12:21																					
425783003	1	14:13:56		X																			
425783004	1	14:15:31		X																			
CCV03	1	14:17:06		X																			
CCB03	1	14:18:43		X																			

Standards

METALS
−10−
Instrument Detection Limits

SDG NO. GEL425783

Contract: CPRC0S17006 **Lab Code: GEL** **MDL Effective Date:** 16−APR−17

Instrument(s):	**Verified on:**
ICPMS7	N/A
ICPMS12	N/A

ICP/MS	Analyte	Wavelength (nm)	MDL ug/L	RDL ug/L
LIQUID	Aluminum		19.3	50.0
	Antimony		1.0	3.0
	Arsenic		2.0	5.0
	Barium		0.67	2.0
	Beryllium		0.2	0.5
	Cadmium		0.3	1.0
	Chromium		3.0	10.0
	Cobalt		0.3	1.0
	Copper		0.3	1.0
	Lead		0.5	2.0
	Manganese		1.0	5.0
	Molybdenum		0.2	0.5
	Nickel		0.6	2.0
	Selenium		2.0	5.0
	Silver		0.3	1.0
	Strontium		2.0	10.0
	Thallium		0.6	2.0
	Thorium		0.7	2.0
	Tin		1.0	5.0
	Uranium		0.067	0.2
	Zinc		3.3	10.0

METALS
−12−
Linear Ranges

SDG NO. GEL425783

Contract: CPRC0S17006 **Lab Code: GEL**

Instrument ID ICPMS7

Analyte	Integration Time (msec)	LDR	Units	Effective Date
Aluminum	1	50000	ug/L	02−NOV−16
Antimony	1000	250	ug/L	02−NOV−16
Arsenic	1000	1000	ug/L	02−NOV−16
Barium	1000	1000	ug/L	02−NOV−16
Beryllium	1000	1000	ug/L	02−NOV−16
Cadmium	1000	1000	ug/L	02−NOV−16
Chromium	1000	1000	ug/L	02−NOV−16
Cobalt	1000	1000	ug/L	02−NOV−16
Copper	1000	1000	ug/L	02−NOV−16
Lead	1000	5000	ug/L	02−NOV−16
Manganese	1000	1000	ug/L	02−NOV−16
Molybdenum	1000	1000	ug/L	02−NOV−16
Nickel	1000	1000	ug/L	02−NOV−16
Selenium	1000	500	ug/L	02−NOV−16
Silver	1000	250	ug/L	02−NOV−16
Strontium	1000	1000	ug/L	02−NOV−16
Thallium	1000	500	ug/L	02−NOV−16
Thorium	1000	2500	ug/L	02−NOV−16
Tin	1000	1000	ug/L	02−NOV−16
Uranium	1000	5000	ug/L	02−NOV−16
Zinc	1000	2500	ug/L	02−NOV−16

METALS
−12−
Linear Ranges

SDG NO. GEL425783

Contract: CPRC0S17006 **Lab Code: GEL**

Instrument ID ICPMS12

Analyte	Integration Time (msec)	LDR	Units	Effective Date
Uranium	1000	5000	ug/L	02−NOV−16
Zinc	1000	2500	ug/L	02−NOV−16
Aluminum	1	50000	ug/L	02−NOV−16
Antimony	1000	250	ug/L	02−NOV−16
Arsenic	1000	1000	ug/L	02−NOV−16
Barium	1000	1000	ug/L	02−NOV−16
Beryllium	1000	1000	ug/L	02−NOV−16
Cadmium	1000	1000	ug/L	02−NOV−16
Chromium	1000	1000	ug/L	02−NOV−16
Cobalt	1000	1000	ug/L	02−NOV−16
Copper	1000	1000	ug/L	02−NOV−16
Lead	1000	5000	ug/L	02−NOV−16
Manganese	1000	1000	ug/L	02−NOV−16
Molybdenum	1000	1000	ug/L	02−NOV−16
Nickel	1000	1000	ug/L	02−NOV−16
Selenium	1000	500	ug/L	02−NOV−16
Silver	1000	250	ug/L	02−NOV−16
Strontium	1000	1000	ug/L	02−NOV−16
Thallium	1000	500	ug/L	02−NOV−16
Thorium	1000	2500	ug/L	02−NOV−16
Tin	1000	1000	ug/L	02−NOV−16

Raw Data

ICPMS #12 Daily Performance

Sample ID: Sample
Sample Date/Time: Friday, July 07, 2017 11:59:14
Sample Description:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\Daily 2.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\Default\Sample.7890
Mass Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\default2.tun
Dual Detector Mode: Pulse
Acquisition Date/Time&Time Zone: Friday, July 07, 2017 11:59:14 Eastern Daylight Time
Number of Replicates: 5

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD
	Be	9.0	61391.1	61391.091	688.726	1.1
	Mg	24.0	288575.6	288575.642	2569.611	0.9
	Co	58.9	128695.9	128695.893	1904.119	1.5
	Rh	102.9	95524.5	95524.547	1783.280	1.9
	In	114.9	293150.4	293150.387	2600.949	0.9
	Pb	208.0	168666.5	168666.523	904.317	0.5
>	Ba	137.9	253968.9	253968.855	1971.562	0.8
	Ba++	69.0	6311.4	0.025	0.000	1.1
>	Ce	139.9	295325.1	295325.059	1327.094	0.4
	CeO	155.9	7042.9	0.024	0.000	0.9
	Bkgd	220.0	0.1	0.050	0.112	223.6

Current Conditions

C Val	Description
0.93	Nebulizer Gas Flow STD/KED [NEB]
1.20	Auxiliary Gas Flow
18.00	Plasma Gas Flow
-12.00	Deflector Voltage
1600.00	ICP RF Power
-1525.00	Analog Stage Voltage
800.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-16.00	Cell Rod Offset STD [CRO]
8.00	Discriminator Threshold
-8.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.45	RPq
0.96	DRC Mode NEB
-9.00	DRC Mode QRO
-2.00	DRC Mode CRO
-7.00	DRC Mode Cell Entrance/Exit Voltage
0.60	Cell Gas A
200.00	Axial Field Voltage
-16.00	KED Mode CRO
-12.50	KED Mode QRO
-5.00	KED Mode Cell Entrance Voltage
-31.00	KED Mode Cell Exit Voltage
3.00	KED Cell Gas A
0.00	KED RPa
0.25	KED RPq
475.00	KED Mode Axial Field Voltage

Current Autolens Data

Analyte	Mass	Num of Pts	DAC Value	Maximum Intensity
Be	9.012	41	-14.5	37467.1
Mg	23.985	41	-14.5	115035.3
In	114.904	41	-11.0	19032.7
Ce	139.905	41	-9.5	21586.3
Pb	207.977	41	-5.5	31651.0
U	238.050	41	-4.5	71164.8

ICPMS #12 Instrument Tuning Report

Analyte	Exact Mass	Meas. Mass	Mass DAC	Res DAC	Meas. Pk. Width
Be	9.0	9.0	1639	2065	0.664
Mg	24.0	24.0	4623	2065	0.640
Mg	25.0	25.0	4824	2065	0.673
Mg	26.0	26.0	5014	2065	0.662
Co	58.9	59.0	11605	2065	0.658
Rh	102.9	102.9	20389	2065	0.660
In	114.9	114.9	22788	2070	0.633
Ce	139.9	139.9	27784	2072	0.639
Pb	206.0	206.0	40989	2065	0.760
Pb	207.0	207.0	41189	2065	0.750
Pb	208.0	208.0	41389	2065	0.754
U	238.1	238.1	47408	2068	0.728

ICPMS #12 - Summary Report

Sample ID: Cal Blank
Sample Date/Time: Friday, July 07, 2017 17:28:31
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170705\Cal Blank.596

Concentration Results

Summary

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7		ug/L		20.667	
Be	9		ug/L		2.667	
B	11		ug/L		1066.707	
Na	23		ug/L		36854.823	
Mg	24		ug/L		1245.388	
Al	27		ug/L		1494.078	
P	31		ug/L		424.006	
K	39		ug/L		12851.804	
Ca	44		ug/L		458.674	
>Sc	45		ug/L		523810.802	
Ti	47		ug/L		18.333	
V	51		ug/L		6839.637	
Cr	52		ug/L		530.010	
Cr	53		ug/L		2547.561	
Mn	55		ug/L		110.000	
Fe	57		ug/L		76.667	
Co	59		ug/L		9.333	
Ni	60		ug/L		29.333	
Cu	63		ug/L		49.333	
Cu	65		ug/L		38.667	
Zn	66		ug/L		70.667	
Zn	67		ug/L		19.333	
Zn	68		ug/L		62.000	
>Ge	74		ug/L		217859.424	
As	75		ug/L		191.894	
Se	77		ug/L		112.000	
Se	78		ug/L		69.179	
Se	82		ug/L		54.445	
Kr	83		ug/L		31.333	
Sr	88		ug/L		308.670	
Zr	90		ug/L		147.334	
Mo	98		ug/L		32.685	
Ag	107		ug/L		4.667	
Cd	111		ug/L		4.000	
Cd	114		ug/L		4.585	
>In	115		ug/L		241146.263	
Sn	120		ug/L		195.284	
Sb	121		ug/L		166.668	
Sb	123		ug/L		92.830	
Ba	135		ug/L		8.667	
Ba	137		ug/L		18.667	
>Lu	175		ug/L		812996.933	
Tl	205		ug/L		240.002	
Pb	208		ug/L		166.667	
Th	232		ug/L		1299.393	
U	238		ug/L		21.000	

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Li	7	Linear Thru Zero	
Be	9	Linear Thru Zero	
B	11	Linear Thru Zero	1.0000
Na	23	Linear Thru Zero	
Mg	24	Linear Thru Zero	
Al	27	Linear Thru Zero	
P	31	Linear Thru Zero	
K	39	Linear Thru Zero	
Ca	44	Linear Thru Zero	
Sc	45	Linear Thru Zero	
Ti	47	Linear Thru Zero	
V	51	Linear Thru Zero	
Cr	52	Linear Thru Zero	
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	
Fe	57	Linear Thru Zero	
Co	59	Linear Thru Zero	
Ni	60	Linear Thru Zero	
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	
Zn	66	Linear Thru Zero	
Zn	67	Linear Thru Zero	
Zn	68	Linear Thru Zero	
Ge	74	Linear Thru Zero	
As	75	Linear Thru Zero	
Se	77	Linear Thru Zero	
Se	78	Linear Thru Zero	
Se	82	Linear Thru Zero	
Kr	83	Linear Thru Zero	
Sr	88	Linear Thru Zero	
Zr	90	Linear Thru Zero	
Mo	98	Linear Thru Zero	
Ag	107	Linear Thru Zero	
Cd	111	Linear Thru Zero	
Cd	114	Linear Thru Zero	
In	115	Linear Thru Zero	
Sn	120	Linear Thru Zero	
Sb	121	Linear Thru Zero	
Sb	123	Linear Thru Zero	
Ba	135	Linear Thru Zero	
Ba	137	Linear Thru Zero	
Lu	175	Linear Thru Zero	
Tl	205	Linear Thru Zero	
Pb	208	Linear Thru Zero	
Th	232	Linear Thru Zero	
U	238	Linear Thru Zero	

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Li	7					
	Be	9					
	B	11					
	Na	23					
	Mg	24					
	Al	27					
	P	31					
	K	39					
	Ca	44					
>	Sc	45					
	Ti	47					
	V	51					
	Cr	52					
	Cr	53					
	Mn	55					
	Fe	57					
	Co	59					
	Ni	60					
	Cu	63					
	Cu	65					
	Zn	66					
	Zn	67					
	Zn	68					
>	Ge	74					
	As	75					
	Se	77					
	Se	78					
	Se	82					
	Kr	83					
	Sr	88					
	Zr	90					
	Mo	98					
	Ag	107					
	Cd	111					
	Cd	114					
>	In	115					
	Sn	120					
	Sb	121					
	Sb	123					
	Ba	135					
	Ba	137					
>	Lu	175					
	Tl	205					
	Pb	208					
	Th	232					
	U	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Friday, July 07, 2017 17:31:45
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170705\Standard 1.597

Concentration Results

Summary

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	**10.000**	**ug/L**	4.442	13053.299	0.024
Be	9	**10.000**	**ug/L**	0.492	4216.623	0.008
B	11	**20.000**	**ug/L**	1.281	6623.536	0.010
Na	23	**1000.000**	**ug/L**	6.419	1172912.195	2.092
Mg	24	**1000.000**	**ug/L**	1.133	552020.428	1.014
Al	27	**1000.000**	**ug/L**	3.513	449597.188	0.825
P	31	**1000.000**	**ug/L**	6.202	30888.722	0.056
K	39	**1000.000**	**ug/L**	2.711	494570.034	0.886
Ca	44	**1000.000**	**ug/L**	3.252	19421.194	0.035
>Sc	45		**ug/L**		543006.639	543006.639
Ti	47	**10.000**	**ug/L**	7.075	886.361	0.002
V	51	**10.000**	**ug/L**	1.593	31033.011	0.044
Cr	52	**10.000**	**ug/L**	5.196	28543.171	0.052
Cr	53		**ug/L**		6714.912	0.008
Mn	55	**10.000**	**ug/L**	4.747	20584.159	0.038
Fe	57	**1000.000**	**ug/L**	4.153	59205.791	0.109
Co	59	**10.000**	**ug/L**	2.370	41659.336	0.077
Ni	60	**10.000**	**ug/L**	1.430	11012.910	0.020
Cu	63		**ug/L**		28551.840	0.053
Cu	65	**10.000**	**ug/L**	5.103	12767.706	0.023
Zn	66	**10.000**	**ug/L**	2.715	3667.138	0.016
Zn	67		**ug/L**		590.679	0.002
Zn	68		**ug/L**		2599.570	0.011
>Ge	74		**ug/L**		230224.288	230224.288
As	75	**10.000**	**ug/L**	2.831	2183.430	0.009
Se	77		**ug/L**		215.335	0.000
Se	78	**10.000**	**ug/L**	2.426	370.169	0.001
Se	82		**ug/L**		200.890	0.001
Kr	83		**ug/L**		34.000	0.000
Sr	88	**10.000**	**ug/L**	3.001	19840.439	0.078
Zr	90	**10.000**	**ug/L**	1.566	22473.000	0.089
Mo	98	**10.000**	**ug/L**	2.606	13914.336	0.055
Ag	107	**10.000**	**ug/L**	3.064	35062.989	0.140
Cd	111	**10.000**	**ug/L**	1.118	5430.365	0.022
Cd	114		**ug/L**		14585.280	0.058
>In	115		**ug/L**		251053.648	251053.648
Sn	120	**10.000**	**ug/L**	1.589	26047.007	0.103
Sb	121	**10.000**	**ug/L**	2.826	16903.337	0.067
Sb	123		**ug/L**		13245.641	0.052
Ba	135		**ug/L**		5244.963	0.006
Ba	137	**10.000**	**ug/L**	1.659	9196.960	0.011
>Lu	175		**ug/L**		850793.085	850793.085
Tl	205	**10.000**	**ug/L**	0.891	156609.094	0.184
Pb	208	**10.000**	**ug/L**	1.521	202121.005	0.237
Th	232	**10.000**	**ug/L**	1.603	202169.211	0.236
U	238	**10.000**	**ug/L**	0.437	224907.269	0.264

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Li	7	Linear Thru Zero	1.0000
Be	9	Linear Thru Zero	1.0000
B	11	Linear Thru Zero	1.0000
Na	23	Linear Thru Zero	1.0000
Mg	24	Linear Thru Zero	1.0000
Al	27	Linear Thru Zero	1.0000
P	31	Linear Thru Zero	1.0000
K	39	Linear Thru Zero	1.0000
Ca	44	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Ti	47	Linear Thru Zero	1.0000
V	51	Linear Thru Zero	1.0000
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000
Zn	66	Linear Thru Zero	1.0000
Zn	67	Linear Thru Zero	
Zn	68	Linear Thru Zero	
Ge	74	Linear Thru Zero	
As	75	Linear Thru Zero	1.0000
Se	77	Linear Thru Zero	
Se	78	Linear Thru Zero	1.0000
Se	82	Linear Thru Zero	
Kr	83	Linear Thru Zero	
Sr	88	Linear Thru Zero	1.0000
Zr	90	Linear Thru Zero	1.0000
Mo	98	Linear Thru Zero	1.0000
Ag	107	Linear Thru Zero	1.0000
Cd	111	Linear Thru Zero	1.0000
Cd	114	Linear Thru Zero	
In	115	Linear Thru Zero	
Sn	120	Linear Thru Zero	1.0000
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	
Ba	135	Linear Thru Zero	
Ba	137	Linear Thru Zero	1.0000
Lu	175	Linear Thru Zero	
Tl	205	Linear Thru Zero	1.0000
Pb	208	Linear Thru Zero	1.0000
Th	232	Linear Thru Zero	1.0000
U	238	Linear Thru Zero	1.0000

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Li	7					
	Be	9					
	B	11					
	Na	23					
	Mg	24					
	Al	27					
	P	31					
	K	39					
	Ca	44					
>	Sc	45					
	Ti	47					
	V	51					
	Cr	52					
	Cr	53					
	Mn	55					
	Fe	57					
	Co	59					
	Ni	60					
	Cu	63					
	Cu	65					
	Zn	66					
	Zn	67					
	Zn	68					
>	Ge	74					
	As	75					
	Se	77					
	Se	78					
	Se	82					
	Kr	83					
	Sr	88					
	Zr	90					
	Mo	98					
	Ag	107					
	Cd	111					
	Cd	114					
>	In	115					
	Sn	120					
	Sb	121					
	Sb	123					
	Ba	135					
	Ba	137					
>	Lu	175					
	Tl	205					
	Pb	208					
	Th	232					
	U	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Friday, July 07, 2017 17:35:00
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170705\Standard 2.598

Concentration Results

Summary

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	**99.943**	**ug/L**	3.004	121885.872	0.227
Be	9	**99.947**	**ug/L**	1.492	39548.675	0.074
B	11	**199.948**	**ug/L**	3.313	54231.440	0.099
Na	23	**9994.409**	**ug/L**	4.658	10666368.787	19.800
Mg	24	**9989.924**	**ug/L**	2.406	4945633.303	9.206
Al	27	**9993.293**	**ug/L**	1.305	4149208.600	7.724
P	31	**9995.826**	**ug/L**	3.001	289588.333	0.539
K	39	**9996.979**	**ug/L**	1.933	4630182.434	8.598
Ca	44	**9998.374**	**ug/L**	5.140	184821.090	0.343
>Sc	45		**ug/L**		537005.823	537005.823
Ti	47	**99.983**	**ug/L**	1.215	8444.829	0.016
V	51	**99.934**	**ug/L**	2.067	229047.833	0.414
Cr	52	**99.957**	**ug/L**	2.952	266057.876	0.495
Cr	53		**ug/L**		34162.142	0.059
Mn	55	**99.986**	**ug/L**	0.623	199909.147	0.372
Fe	57	**9996.639**	**ug/L**	1.657	565914.459	1.054
Co	59	**99.956**	**ug/L**	2.526	394400.313	0.735
Ni	60	**99.937**	**ug/L**	1.235	102149.241	0.190
Cu	63		**ug/L**		263401.410	0.490
Cu	65	**99.941**	**ug/L**	1.343	118966.802	0.221
Zn	66	**99.949**	**ug/L**	2.633	32482.895	0.148
Zn	67		**ug/L**		5288.979	0.024
Zn	68		**ug/L**		23905.319	0.109
>Ge	74		**ug/L**		218382.094	218382.094
As	75	**100.032**	**ug/L**	1.913	19604.620	0.089
Se	77		**ug/L**		936.697	0.004
Se	78	**100.008**	**ug/L**	0.843	2911.180	0.013
Se	82		**ug/L**		1430.961	0.006
Kr	83		**ug/L**		36.667	0.000
Sr	88	**100.016**	**ug/L**	1.825	192138.220	0.791
Zr	90	**100.019**	**ug/L**	1.203	220071.485	0.907
Mo	98	**100.017**	**ug/L**	1.926	136481.631	0.563
Ag	107	**99.963**	**ug/L**	0.699	326772.716	1.347
Cd	111	**99.977**	**ug/L**	2.368	51265.832	0.211
Cd	114		**ug/L**		136247.327	0.562
>In	115		**ug/L**		242607.418	242607.418
Sn	120	**99.998**	**ug/L**	0.887	249491.716	1.028
Sb	121	**100.017**	**ug/L**	2.846	164670.461	0.678
Sb	123		**ug/L**		133749.450	0.551
Ba	135		**ug/L**		52842.229	0.064
Ba	137	**100.022**	**ug/L**	1.531	90809.075	0.110
>Lu	175		**ug/L**		822714.588	822714.588
Tl	205	**100.007**	**ug/L**	2.362	1522083.597	1.850
Pb	208	**99.990**	**ug/L**	1.347	1933443.634	2.350
Th	232	**100.068**	**ug/L**	1.533	2086581.160	2.535
U	238	**100.019**	**ug/L**	0.796	2217324.683	2.695

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Li	7	Linear Thru Zero	1.0000
Be	9	Linear Thru Zero	1.0000
B	11	Linear Thru Zero	1.0000
Na	23	Linear Thru Zero	1.0000
Mg	24	Linear Thru Zero	0.9999
Al	27	Linear Thru Zero	1.0000
P	31	Linear Thru Zero	1.0000
K	39	Linear Thru Zero	1.0000
Ca	44	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Ti	47	Linear Thru Zero	1.0000
V	51	Linear Thru Zero	1.0000
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000
Zn	66	Linear Thru Zero	1.0000
Zn	67	Linear Thru Zero	
Zn	68	Linear Thru Zero	
Ge	74	Linear Thru Zero	
As	75	Linear Thru Zero	1.0000
Se	77	Linear Thru Zero	
Se	78	Linear Thru Zero	1.0000
Se	82	Linear Thru Zero	
Kr	83	Linear Thru Zero	
Sr	88	Linear Thru Zero	1.0000
Zr	90	Linear Thru Zero	1.0000
Mo	98	Linear Thru Zero	1.0000
Ag	107	Linear Thru Zero	1.0000
Cd	111	Linear Thru Zero	1.0000
Cd	114	Linear Thru Zero	
In	115	Linear Thru Zero	
Sn	120	Linear Thru Zero	1.0000
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	
Ba	135	Linear Thru Zero	
Ba	137	Linear Thru Zero	1.0000
Lu	175	Linear Thru Zero	
Tl	205	Linear Thru Zero	1.0000
Pb	208	Linear Thru Zero	1.0000
Th	232	Linear Thru Zero	1.0000
U	238	Linear Thru Zero	1.0000

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Li	7					
	Be	9					
	B	11					
	Na	23					
	Mg	24					
	Al	27					
	P	31					
	K	39					
	Ca	44					
>	Sc	45					
	Ti	47					
	V	51					
	Cr	52					
	Cr	53					
	Mn	55					
	Fe	57					
	Co	59					
	Ni	60					
	Cu	63					
	Cu	65					
	Zn	66					
	Zn	67					
	Zn	68					
>	Ge	74					
	As	75					
	Se	77					
	Se	78					
	Se	82					
	Kr	83					
	Sr	88					
	Zr	90					
	Mo	98					
	Ag	107					
	Cd	111					
	Cd	114					
>	In	115					
	Sn	120					
	Sb	121					
	Sb	123					
	Ba	135					
	Ba	137					
>	Lu	175					
	Tl	205					
	Pb	208					
	Th	232					
	U	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Friday, July 07, 2017 17:38:14
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170705\QC Std 1.599

Concentration Results

Summary

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	**52.604**	**ug/L**	4.437	63444.628	0.119
Be	9	**50.952**	**ug/L**	2.324	19947.261	0.038
B	11	**99.240**	**ug/L**	2.530	27168.480	0.049
Na	23	**5012.651**	**ug/L**	2.018	5311089.571	9.930
Mg	24	**4975.154**	**ug/L**	4.287	2436548.489	4.585
Al	27	**5043.644**	**ug/L**	4.414	2071446.108	3.899
P	31	**4993.963**	**ug/L**	2.452	143326.208	0.269
K	39	**4907.647**	**ug/L**	0.970	2255075.380	4.221
Ca	44	**4846.412**	**ug/L**	3.906	88869.112	0.166
>Sc	45		**ug/L**		531179.569	531179.569
Ti	47	**48.406**	**ug/L**	0.957	4053.909	0.008
V	51	**50.634**	**ug/L**	3.230	118180.186	0.210
Cr	52	**51.329**	**ug/L**	1.531	135419.615	0.254
Cr	53		**ug/L**		19100.761	0.031
Mn	55	**49.615**	**ug/L**	1.779	98181.733	0.185
Fe	57	**5063.474**	**ug/L**	4.536	283458.833	0.534
Co	59	**50.560**	**ug/L**	2.374	197392.832	0.372
Ni	60	**51.154**	**ug/L**	0.464	51736.196	0.097
Cu	63		**ug/L**		135972.056	0.256
Cu	65	**52.375**	**ug/L**	0.433	61685.605	0.116
Zn	66	**49.507**	**ug/L**	3.683	16145.124	0.074
Zn	67		**ug/L**		2784.271	0.013
Zn	68		**ug/L**		12443.423	0.057
>Ge	74		**ug/L**		218648.753	218648.753
As	75	**48.436**	**ug/L**	1.072	9604.409	0.043
Se	77		**ug/L**		508.009	0.002
Se	78	**51.443**	**ug/L**	1.297	1533.108	0.007
Se	82		**ug/L**		774.243	0.003
Kr	83		**ug/L**		32.000	0.000
Sr	88	**48.862**	**ug/L**	2.106	95576.026	0.386
Zr	90	**48.026**	**ug/L**	2.360	107509.038	0.435
Mo	98	**48.737**	**ug/L**	3.717	67622.844	0.274
Ag	107	**49.069**	**ug/L**	2.900	163045.159	0.661
Cd	111	**50.334**	**ug/L**	0.625	26251.438	0.106
Cd	114		**ug/L**		69206.123	0.281
>In	115		**ug/L**		246716.155	246716.155
Sn	120	**49.893**	**ug/L**	3.199	126631.436	0.513
Sb	121	**43.993**	**ug/L**	3.564	73776.958	0.298
Sb	123		**ug/L**		60695.143	0.246
Ba	135		**ug/L**		26004.988	0.031
Ba	137	**48.882**	**ug/L**	1.302	45377.962	0.054
>Lu	175		**ug/L**		840988.576	840988.576
Tl	205	**48.938**	**ug/L**	1.393	761670.401	0.905
Pb	208	**49.403**	**ug/L**	1.735	976635.793	1.161
Th	232	**48.876**	**ug/L**	1.342	1042578.482	1.238
U	238	**47.951**	**ug/L**	1.294	1086700.751	1.292

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Li	7	Linear Thru Zero	1.0000
Be	9	Linear Thru Zero	1.0000
B	11	Linear Thru Zero	1.0000
Na	23	Linear Thru Zero	1.0000
Mg	24	Linear Thru Zero	0.9999
Al	27	Linear Thru Zero	1.0000
P	31	Linear Thru Zero	1.0000
K	39	Linear Thru Zero	1.0000
Ca	44	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Ti	47	Linear Thru Zero	1.0000
V	51	Linear Thru Zero	1.0000
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000
Zn	66	Linear Thru Zero	1.0000
Zn	67	Linear Thru Zero	
Zn	68	Linear Thru Zero	
Ge	74	Linear Thru Zero	
As	75	Linear Thru Zero	1.0000
Se	77	Linear Thru Zero	
Se	78	Linear Thru Zero	1.0000
Se	82	Linear Thru Zero	
Kr	83	Linear Thru Zero	
Sr	88	Linear Thru Zero	1.0000
Zr	90	Linear Thru Zero	1.0000
Mo	98	Linear Thru Zero	1.0000
Ag	107	Linear Thru Zero	1.0000
Cd	111	Linear Thru Zero	1.0000
Cd	114	Linear Thru Zero	
In	115	Linear Thru Zero	
Sn	120	Linear Thru Zero	1.0000
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	
Ba	135	Linear Thru Zero	
Ba	137	Linear Thru Zero	1.0000
Lu	175	Linear Thru Zero	
Tl	205	Linear Thru Zero	1.0000
Pb	208	Linear Thru Zero	1.0000
Th	232	Linear Thru Zero	1.0000
U	238	Linear Thru Zero	1.0000

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Li	7	105.207				
	Be	9	101.905				
	B	11	99.240				
	Na	23	100.253				
	Mg	24	99.503				
	Al	27	99.874				
	P	31	99.879				
	K	39	98.153				
	Ca	44	96.928				
>	Sc	45		101.41			
	Ti	47	96.811				
	V	51	101.268				
	Cr	52	102.659				
	Cr	53					
	Mn	55	99.231				
	Fe	57	101.269				
	Co	59	101.121				
	Ni	60	102.309				
	Cu	63					
	Cu	65	104.749				
	Zn	66	99.014				
	Zn	67					
	Zn	68					
>	Ge	74		100.36			
	As	75	96.871				
	Se	77					
	Se	78	102.886				
	Se	82					
	Kr	83					
	Sr	88	97.723				
	Zr	90	96.053				
	Mo	98	97.474				
	Ag	107	98.138				
	Cd	111	100.667				
	Cd	114					
>	In	115		102.31			
	Sn	120	99.786				
	Sb	121	87.985				
	Sb	123					
	Ba	135					
	Ba	137	97.764				
>	Lu	175		103.44			
	Tl	205	97.877				
	Pb	208	98.807				
	Th	232	97.753				
	U	238	95.903				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Sb	121	ICV is out of limits (+/- 10%)

QC Action

QC Action Line: Continue

ICPMS #12 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Friday, July 07, 2017 17:41:29
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170705\QC Std 2.600

Concentration Results

Summary

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	**0.026**	**ug/L**	23.059	52.000	0.000
Be	9	**0.006**	**ug/L**	5.540	5.000	0.000
B	11	**3.357**	**ug/L**	24.590	1955.468	0.002
Na	23	**0.232**	**ug/L**	499.545	37494.476	0.000
Mg	24	**0.289**	**ug/L**	104.009	1398.069	0.000
Al	27	**0.609**	**ug/L**	51.057	1758.108	0.000
P	31	**-1.088**	**ug/L**	195.044	397.339	-0.000
K	39	**1.537**	**ug/L**	22.048	13697.233	0.001
Ca	44	**0.006**	**ug/L**	33404.757	464.008	0.000
>Sc	45		**ug/L**		529736.423	529736.423
Ti	47	**-0.098**	**ug/L**	33.563	10.333	-0.000
V	51	**-0.100**	**ug/L**	137.763	6691.567	-0.000
Cr	52	**0.014**	**ug/L**	211.282	572.012	0.000
Cr	53		**ug/L**		2520.889	-0.000
Mn	55	**0.001**	**ug/L**	1151.563	112.667	0.000
Fe	57	**1.224**	**ug/L**	50.128	145.334	0.000
Co	59	**0.003**	**ug/L**	106.022	20.667	0.000
Ni	60	**0.005**	**ug/L**	62.467	34.667	0.000
Cu	63		**ug/L**		98.000	0.000
Cu	65	**-0.003**	**ug/L**	182.586	35.333	-0.000
Zn	66	**0.018**	**ug/L**	219.721	78.000	0.000
Zn	67		**ug/L**		24.000	0.000
Zn	68		**ug/L**		49.333	-0.000
>Ge	74		**ug/L**		222210.755	222210.755
As	75	**-0.054**	**ug/L**	178.273	184.721	-0.000
Se	77		**ug/L**		111.334	-0.000
Se	78	**0.039**	**ug/L**	433.137	71.753	0.000
Se	82		**ug/L**		54.667	-0.000
Kr	83		**ug/L**		30.000	-0.000
Sr	88	**0.006**	**ug/L**	296.512	330.004	0.000
Zr	90	**0.014**	**ug/L**	72.498	182.668	0.000
Mo	98	**0.024**	**ug/L**	45.106	67.717	0.000
Ag	107	**0.003**	**ug/L**	49.992	16.000	0.000
Cd	111	**0.001**	**ug/L**	568.317	4.667	0.000
Cd	114		**ug/L**		11.950	0.000
>In	115		**ug/L**		248215.263	248215.263
Sn	120	**0.060**	**ug/L**	13.561	354.629	0.001
Sb	121	**0.167**	**ug/L**	24.014	453.341	0.001
Sb	123		**ug/L**		332.918	0.001
Ba	135		**ug/L**		10.000	0.000
Ba	137	**0.002**	**ug/L**	487.611	21.333	0.000
>Lu	175		**ug/L**		840098.750	840098.750
Tl	205	**0.096**	**ug/L**	28.493	1736.110	0.002
Pb	208	**0.006**	**ug/L**	39.420	296.668	0.000
Th	232	**0.195**	**ug/L**	34.532	5505.115	0.005
U	238	**0.007**	**ug/L**	23.976	182.335	0.000

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Li	7	Linear Thru Zero	1.0000
Be	9	Linear Thru Zero	1.0000
B	11	Linear Thru Zero	1.0000
Na	23	Linear Thru Zero	1.0000
Mg	24	Linear Thru Zero	0.9999
Al	27	Linear Thru Zero	1.0000
P	31	Linear Thru Zero	1.0000
K	39	Linear Thru Zero	1.0000
Ca	44	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Ti	47	Linear Thru Zero	1.0000
V	51	Linear Thru Zero	1.0000
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000
Zn	66	Linear Thru Zero	1.0000
Zn	67	Linear Thru Zero	
Zn	68	Linear Thru Zero	
Ge	74	Linear Thru Zero	
As	75	Linear Thru Zero	1.0000
Se	77	Linear Thru Zero	
Se	78	Linear Thru Zero	1.0000
Se	82	Linear Thru Zero	
Kr	83	Linear Thru Zero	
Sr	88	Linear Thru Zero	1.0000
Zr	90	Linear Thru Zero	1.0000
Mo	98	Linear Thru Zero	1.0000
Ag	107	Linear Thru Zero	1.0000
Cd	111	Linear Thru Zero	1.0000
Cd	114	Linear Thru Zero	
In	115	Linear Thru Zero	
Sn	120	Linear Thru Zero	1.0000
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	
Ba	135	Linear Thru Zero	
Ba	137	Linear Thru Zero	1.0000
Lu	175	Linear Thru Zero	
Tl	205	Linear Thru Zero	1.0000
Pb	208	Linear Thru Zero	1.0000
Th	232	Linear Thru Zero	1.0000
U	238	Linear Thru Zero	1.0000

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Li	7					
	Be	9					
	B	11					
	Na	23					
	Mg	24					
	Al	27					
	P	31					
	K	39					
	Ca	44					
>	Sc	45		101.13			
	Ti	47					
	V	51					
	Cr	52					
	Cr	53					
	Mn	55					
	Fe	57					
	Co	59					
	Ni	60					
	Cu	63					
	Cu	65					
	Zn	66					
	Zn	67					
	Zn	68					
>	Ge	74		102.00			
	As	75					
	Se	77					
	Se	78					
	Se	82					
	Kr	83					
	Sr	88					
	Zr	90					
	Mo	98					
	Ag	107					
	Cd	111					
	Cd	114					
>	In	115		102.93			
	Sn	120					
	Sb	121					
	Sb	123					
	Ba	135					
	Ba	137					
>	Lu	175		103.33			
	Tl	205					
	Pb	208					
	Th	232					
	U	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Friday, July 07, 2017 17:44:44
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170705\QC Std 3.601

Concentration Results

Summary

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	**11.036**	**ug/L**	1.077	13150.050	0.025
Be	9	**0.527**	**ug/L**	4.375	206.001	0.000
B	11	**17.067**	**ug/L**	0.329	5492.389	0.008
Na	23	**267.652**	**ug/L**	2.961	314571.792	0.530
Mg	24	**34.361**	**ug/L**	1.484	17833.126	0.032
Al	27	**55.995**	**ug/L**	5.748	24169.808	0.043
P	31	**47.391**	**ug/L**	3.173	1761.442	0.003
K	39	**327.271**	**ug/L**	3.055	160306.932	0.281
Ca	44	**231.862**	**ug/L**	3.237	4630.751	0.008
>Sc	45		**ug/L**		523841.833	523841.833
Ti	47	**9.787**	**ug/L**	2.231	823.024	0.002
V	51	**10.676**	**ug/L**	4.303	29982.792	0.044
Cr	52	**10.916**	**ug/L**	1.751	28819.711	0.054
Cr	53		**ug/L**		5803.848	0.006
Mn	55	**5.387**	**ug/L**	2.842	10609.272	0.020
Fe	57	**105.863**	**ug/L**	1.648	5922.561	0.011
Co	59	**1.076**	**ug/L**	1.696	4152.604	0.008
Ni	60	**2.264**	**ug/L**	5.970	2285.517	0.004
Cu	63		**ug/L**		2858.286	0.005
Cu	65	**1.106**	**ug/L**	0.979	1322.728	0.002
Zn	66	**10.262**	**ug/L**	1.910	3534.437	0.015
Zn	67		**ug/L**		515.343	0.002
Zn	68		**ug/L**		2486.883	0.011
>Ge	74		**ug/L**		227040.093	227040.093
As	75	**4.704**	**ug/L**	3.905	1148.999	0.004
Se	77		**ug/L**		134.001	0.000
Se	78	**5.226**	**ug/L**	4.489	226.442	0.001
Se	82		**ug/L**		121.112	0.000
Kr	83		**ug/L**		29.333	-0.000
Sr	88	**10.140**	**ug/L**	0.503	20396.551	0.080
Zr	90	**9.010**	**ug/L**	6.171	20607.556	0.082
Mo	98	**0.499**	**ug/L**	3.848	736.475	0.003
Ag	107	**1.018**	**ug/L**	1.487	3440.414	0.014
Cd	111	**1.036**	**ug/L**	3.618	552.677	0.002
Cd	114		**ug/L**		1458.543	0.006
>In	115		**ug/L**		250471.431	250471.431
Sn	120	**4.995**	**ug/L**	2.197	13057.898	0.051
Sb	121	**2.760**	**ug/L**	7.817	4860.830	0.019
Sb	123		**ug/L**		4099.920	0.016
Ba	135		**ug/L**		1072.707	0.001
Ba	137	**2.045**	**ug/L**	3.410	1922.796	0.002
>Lu	175		**ug/L**		843831.263	843831.263
Tl	205	**1.960**	**ug/L**	2.943	30834.575	0.036
Pb	208	**2.029**	**ug/L**	1.923	40401.077	0.048
Th	232	**1.896**	**ug/L**	9.126	41836.033	0.048
U	238	**0.195**	**ug/L**	1.265	4452.027	0.005

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Li	7	Linear Thru Zero	1.0000
Be	9	Linear Thru Zero	1.0000
B	11	Linear Thru Zero	1.0000
Na	23	Linear Thru Zero	1.0000
Mg	24	Linear Thru Zero	0.9999
Al	27	Linear Thru Zero	1.0000
P	31	Linear Thru Zero	1.0000
K	39	Linear Thru Zero	1.0000
Ca	44	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Ti	47	Linear Thru Zero	1.0000
V	51	Linear Thru Zero	1.0000
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000
Zn	66	Linear Thru Zero	1.0000
Zn	67	Linear Thru Zero	
Zn	68	Linear Thru Zero	
Ge	74	Linear Thru Zero	
As	75	Linear Thru Zero	1.0000
Se	77	Linear Thru Zero	
Se	78	Linear Thru Zero	1.0000
Se	82	Linear Thru Zero	
Kr	83	Linear Thru Zero	
Sr	88	Linear Thru Zero	1.0000
Zr	90	Linear Thru Zero	1.0000
Mo	98	Linear Thru Zero	1.0000
Ag	107	Linear Thru Zero	1.0000
Cd	111	Linear Thru Zero	1.0000
Cd	114	Linear Thru Zero	
In	115	Linear Thru Zero	
Sn	120	Linear Thru Zero	1.0000
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	
Ba	135	Linear Thru Zero	
Ba	137	Linear Thru Zero	1.0000
Lu	175	Linear Thru Zero	
Tl	205	Linear Thru Zero	1.0000
Pb	208	Linear Thru Zero	1.0000
Th	232	Linear Thru Zero	1.0000
U	238	Linear Thru Zero	1.0000

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Li	7	110.358				
	Be	9	105.336				
	B	11	113.782				
	Na	23	107.061				
	Mg	24	114.536				
	Al	27	111.991				
	P	31	94.781				
	K	39	109.090				
	Ca	44	115.931				
>	Sc	45		100.01			
	Ti	47	97.874				
	V	51	106.758				
	Cr	52	109.160				
	Cr	53					
	Mn	55	107.741				
	Fe	57	105.863				
	Co	59	107.630				
	Ni	60	113.182				
	Cu	63					
	Cu	65	110.630				
	Zn	66	102.618				
	Zn	67					
	Zn	68					
>	Ge	74		104.21			
	As	75	94.074				
	Se	77					
	Se	78	104.513				
	Se	82					
	Kr	83					
	Sr	88	101.401				
	Zr	90	90.099				
	Mo	98	99.738				
	Ag	107	101.794				
	Cd	111	103.609				
	Cd	114					
>	In	115		103.87			
	Sn	120	99.890				
	Sb	121	92.012				
	Sb	123					
	Ba	135					
	Ba	137	102.241				
>	Lu	175		103.79			
	Tl	205	97.999				
	Pb	208	101.435				
	Th	232	94.812				
	U	238	97.428				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Friday, July 07, 2017 17:47:59
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170705\QC Std 4.602

Concentration Results

Summary

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	**0.075**	ug/L	3.827	88.667	0.000
Be	9	**0.029**	ug/L	35.085	11.333	0.000
B	11	**5.566**	ug/L	8.587	2022.810	0.003
Na	23	**113133.934**	ug/L	4.224	94538193.486	224.125
Mg	24	**113069.348**	ug/L	4.263	43931135.764	104.199
Al	27	**118020.348**	ug/L	6.829	38445430.761	91.224
P	31	**101585.719**	ug/L	4.020	2308322.917	5.474
K	39	**112228.710**	ug/L	6.346	40691165.959	96.528
Ca	44	**105666.875**	ug/L	5.217	1530309.035	3.630
>Sc	45		ug/L		421914.561	421914.561
Ti	47	**2208.213**	ug/L	4.420	146121.335	0.347
V	51	**-0.057**	ug/L	159.703	5407.690	-0.000
Cr	52	**0.796**	ug/L	2.382	2086.819	0.004
Cr	53		ug/L		2740.263	0.002
Mn	55	**8.348**	ug/L	5.129	13183.416	0.031
Fe	57	**103484.202**	ug/L	4.257	4599424.989	10.909
Co	59	**0.165**	ug/L	7.160	520.010	0.001
Ni	60	**0.747**	ug/L	3.464	623.347	0.001
Cu	63		ug/L		707.351	0.002
Cu	65	**0.348**	ug/L	11.237	356.004	0.001
Zn	66	**3.365**	ug/L	3.178	921.363	0.005
Zn	67		ug/L		150.001	0.001
Zn	68		ug/L		616.013	0.003
>Ge	74		ug/L		173113.325	173113.325
As	75	**0.312**	ug/L	16.143	200.387	0.000
Se	77		ug/L		128.001	0.000
Se	78	**0.298**	ug/L	39.482	61.654	0.000
Se	82		ug/L		50.667	0.000
Kr	83		ug/L		42.000	0.000
Sr	88	**2.736**	ug/L	0.794	5032.887	0.022
Zr	90	**0.397**	ug/L	18.689	925.364	0.004
Mo	98	**1958.722**	ug/L	2.833	2420371.587	11.016
Ag	107	**0.725**	ug/L	6.419	2150.829	0.010
Cd	111	**0.992**	ug/L	1.654	464.674	0.002
Cd	114		ug/L		1048.200	0.005
>In	115		ug/L		219743.833	219743.833
Sn	120	**0.201**	ug/L	2.448	631.980	0.002
Sb	121	**-0.004**	ug/L	186.634	146.667	-0.000
Sb	123		ug/L		126.332	0.000
Ba	135		ug/L		1063.373	0.002
Ba	137	**2.677**	ug/L	5.355	1875.457	0.003
>Lu	175		ug/L		630522.237	630522.237
Tl	205	**0.021**	ug/L	25.064	437.340	0.000
Pb	208	**0.502**	ug/L	0.655	7563.457	0.012
Th	232	**0.253**	ug/L	17.616	5062.912	0.006
U	238	**0.007**	ug/L	24.257	140.334	0.000

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Li	7	Linear Thru Zero	1.0000
Be	9	Linear Thru Zero	1.0000
B	11	Linear Thru Zero	1.0000
Na	23	Linear Thru Zero	1.0000
Mg	24	Linear Thru Zero	0.9999
Al	27	Linear Thru Zero	1.0000
P	31	Linear Thru Zero	1.0000
K	39	Linear Thru Zero	1.0000
Ca	44	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Ti	47	Linear Thru Zero	1.0000
V	51	Linear Thru Zero	1.0000
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000
Zn	66	Linear Thru Zero	1.0000
Zn	67	Linear Thru Zero	
Zn	68	Linear Thru Zero	
Ge	74	Linear Thru Zero	
As	75	Linear Thru Zero	1.0000
Se	77	Linear Thru Zero	
Se	78	Linear Thru Zero	1.0000
Se	82	Linear Thru Zero	
Kr	83	Linear Thru Zero	
Sr	88	Linear Thru Zero	1.0000
Zr	90	Linear Thru Zero	1.0000
Mo	98	Linear Thru Zero	1.0000
Ag	107	Linear Thru Zero	1.0000
Cd	111	Linear Thru Zero	1.0000
Cd	114	Linear Thru Zero	
In	115	Linear Thru Zero	
Sn	120	Linear Thru Zero	1.0000
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	
Ba	135	Linear Thru Zero	
Ba	137	Linear Thru Zero	1.0000
Lu	175	Linear Thru Zero	
Tl	205	Linear Thru Zero	1.0000
Pb	208	Linear Thru Zero	1.0000
Th	232	Linear Thru Zero	1.0000
U	238	Linear Thru Zero	1.0000

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Li	7					
	Be	9					
	B	11					
	Na	23	113.134				
	Mg	24	113.069				
	Al	27	118.020				
	P	31	101.586				
	K	39	112.229				
	Ca	44	105.667				
>	Sc	45		80.55			
	Ti	47	110.411				
	V	51					
	Cr	52	64.155				
	Cr	53					
	Mn	55	227.474				
	Fe	57	103.484				
	Co	59	77.200				
	Ni	60	71.353				
	Cu	63					
	Cu	65	18.422				
	Zn	66	104.825				
	Zn	67					
	Zn	68					
>	Ge	74		79.46			
	As	75					
	Se	77					
	Se	78					
	Se	82					
	Kr	83					
	Sr	88	106.858				
	Zr	90	28.125				
	Mo	98	97.936				
	Ag	107	109.747				
	Cd	111	97.394				
	Cd	114					
>	In	115		91.12			
	Sn	120	42.336				
	Sb	121					
	Sb	123					
	Ba	135					
	Ba	137	120.564				
>	Lu	175		77.56			
	Tl	205					
	Pb	208	118.598				
	Th	232	51.616				
	U	238	20.803				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Friday, July 07, 2017 17:51:13
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170705\QC Std 5.603

Concentration Results

Summary

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	**21.651**	ug/L	3.097	21296.532	0.049
Be	9	**19.822**	ug/L	3.869	6322.066	0.015
B	11	**22.739**	ug/L	1.751	5753.158	0.011
Na	23	**108672.055**	ug/L	2.125	93203690.907	215.286
Mg	24	**109015.744**	ug/L	3.397	43476769.739	100.463
Al	27	**117506.147**	ug/L	3.714	39304736.313	90.827
P	31	**99768.605**	ug/L	4.345	2326858.244	5.376
K	39	**109723.978**	ug/L	6.870	40835043.957	94.373
Ca	44	**101828.000**	ug/L	2.172	1514137.517	3.498
>Sc	45		ug/L		432860.225	432860.225
Ti	47	**2152.101**	ug/L	4.246	146156.913	0.338
V	51	**22.117**	ug/L	1.773	45259.582	0.092
Cr	52	**21.934**	ug/L	3.636	47395.850	0.109
Cr	53		ug/L		8405.139	0.015
Mn	55	**27.922**	ug/L	6.309	45039.003	0.104
Fe	57	**100312.679**	ug/L	2.686	4576272.018	10.575
Co	59	**20.568**	ug/L	1.812	65426.165	0.151
Ni	60	**20.546**	ug/L	2.850	16944.044	0.039
Cu	63		ug/L		40124.939	0.093
Cu	65	**19.103**	ug/L	3.308	18348.446	0.042
Zn	66	**22.156**	ug/L	4.531	5771.166	0.033
Zn	67		ug/L		890.028	0.005
Zn	68		ug/L		4061.244	0.023
>Ge	74		ug/L		173724.693	173724.693
As	75	**20.748**	ug/L	0.136	3356.556	0.018
Se	77		ug/L		249.336	0.001
Se	78	**19.762**	ug/L	2.342	501.860	0.003
Se	82		ug/L		269.336	0.001
Kr	83		ug/L		48.667	0.000
Sr	88	**21.432**	ug/L	1.983	38593.420	0.169
Zr	90	**16.916**	ug/L	1.338	34801.674	0.153
Mo	98	**1907.135**	ug/L	1.654	2424904.355	10.726
Ag	107	**17.249**	ug/L	1.311	52548.479	0.232
Cd	111	**17.974**	ug/L	1.836	8593.251	0.038
Cd	114		ug/L		22621.271	0.100
>In	115		ug/L		226083.533	226083.533
Sn	120	**18.865**	ug/L	2.286	44010.277	0.194
Sb	121	**17.211**	ug/L	3.211	26544.663	0.117
Sb	123		ug/L		21548.667	0.095
Ba	135		ug/L		10389.112	0.016
Ba	137	**25.621**	ug/L	3.751	18172.889	0.028
>Lu	175		ug/L		642533.810	642533.810
Tl	205	**20.873**	ug/L	2.031	248268.791	0.386
Pb	208	**21.791**	ug/L	2.096	329160.858	0.512
Th	232	**21.850**	ug/L	3.627	356558.917	0.554
U	238	**23.036**	ug/L	2.836	398774.557	0.621

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Li	7	Linear Thru Zero	1.0000
Be	9	Linear Thru Zero	1.0000
B	11	Linear Thru Zero	1.0000
Na	23	Linear Thru Zero	1.0000
Mg	24	Linear Thru Zero	0.9999
Al	27	Linear Thru Zero	1.0000
P	31	Linear Thru Zero	1.0000
K	39	Linear Thru Zero	1.0000
Ca	44	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Ti	47	Linear Thru Zero	1.0000
V	51	Linear Thru Zero	1.0000
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000
Zn	66	Linear Thru Zero	1.0000
Zn	67	Linear Thru Zero	
Zn	68	Linear Thru Zero	
Ge	74	Linear Thru Zero	
As	75	Linear Thru Zero	1.0000
Se	77	Linear Thru Zero	
Se	78	Linear Thru Zero	1.0000
Se	82	Linear Thru Zero	
Kr	83	Linear Thru Zero	
Sr	88	Linear Thru Zero	1.0000
Zr	90	Linear Thru Zero	1.0000
Mo	98	Linear Thru Zero	1.0000
Ag	107	Linear Thru Zero	1.0000
Cd	111	Linear Thru Zero	1.0000
Cd	114	Linear Thru Zero	
In	115	Linear Thru Zero	
Sn	120	Linear Thru Zero	1.0000
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	
Ba	135	Linear Thru Zero	
Ba	137	Linear Thru Zero	1.0000
Lu	175	Linear Thru Zero	
Tl	205	Linear Thru Zero	1.0000
Pb	208	Linear Thru Zero	1.0000
Th	232	Linear Thru Zero	1.0000
U	238	Linear Thru Zero	1.0000

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Li	7	108.256				
	Be	9	99.110				
	B	11	113.697				
	Na	23	108.672				
	Mg	24	109.016				
	Al	27	117.506				
	P	31	99.769				
	K	39	109.724				
	Ca	44	101.828				
>	Sc	45		82.64			
	Ti	47	107.605				
	V	51	110.584				
	Cr	52	103.268				
	Cr	53					
	Mn	55	117.963				
	Fe	57	100.313				
	Co	59	101.749				
	Ni	60	97.619				
	Cu	63					
	Cu	65	87.266				
	Zn	66	95.458				
	Zn	67					
	Zn	68					
>	Ge	74		79.74			
	As	75	103.738				
	Se	77					
	Se	78	98.812				
	Se	82					
	Kr	83					
	Sr	88	94.998				
	Zr	90	79.011				
	Mo	98	95.357				
	Ag	107	83.486				
	Cd	111	85.513				
	Cd	114					
>	In	115		93.75			
	Sn	120	92.137				
	Sb	121	86.053				
	Sb	123					
	Ba	135					
	Ba	137	115.305				
>	Lu	175		79.03			
	Tl	205	104.364				
	Pb	208	106.698				
	Th	232	106.634				
	U	238	114.977				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Zr	90	ICSAB is out of limits

QC Action

QC Action Line: Continue

ICPMS #12 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 07, 2017 17:54:28
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170705\QC Std 6.604

Concentration Results

Summary

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	**51.078**	**ug/L**	7.949	63510.454	0.116
Be	9	**50.984**	**ug/L**	2.984	20582.486	0.038
B	11	**94.768**	**ug/L**	3.580	26818.501	0.047
Na	23	**4910.258**	**ug/L**	0.888	5370229.702	9.728
Mg	24	**5158.334**	**ug/L**	2.707	2605296.403	4.754
Al	27	**5190.568**	**ug/L**	6.536	2198453.032	4.012
P	31	**4869.009**	**ug/L**	3.298	144189.220	0.262
K	39	**4957.074**	**ug/L**	4.432	2348949.985	4.264
Ca	44	**4839.712**	**ug/L**	4.189	91530.407	0.166
>Sc	45		**ug/L**		548045.018	548045.018
Ti	47	**50.791**	**ug/L**	5.833	4383.339	0.008
V	51	**50.028**	**ug/L**	2.424	120578.219	0.207
Cr	52	**51.576**	**ug/L**	3.446	140365.368	0.255
Cr	53		**ug/L**		18996.624	0.030
Mn	55	**50.236**	**ug/L**	4.804	102488.518	0.187
Fe	57	**4989.322**	**ug/L**	1.388	288258.834	0.526
Co	59	**48.922**	**ug/L**	2.486	196956.428	0.360
Ni	60	**50.645**	**ug/L**	7.205	52787.490	0.096
Cu	63		**ug/L**		139271.775	0.254
Cu	65	**51.240**	**ug/L**	2.045	62242.637	0.114
Zn	66	**50.467**	**ug/L**	2.533	17040.825	0.075
Zn	67		**ug/L**		2854.952	0.013
Zn	68		**ug/L**		12682.296	0.056
>Ge	74		**ug/L**		226423.935	226423.935
As	75	**47.958**	**ug/L**	2.068	9848.680	0.043
Se	77		**ug/L**		536.677	0.002
Se	78	**50.625**	**ug/L**	3.583	1562.978	0.007
Se	82		**ug/L**		790.244	0.003
Kr	83		**ug/L**		32.000	-0.000
Sr	88	**49.327**	**ug/L**	3.369	99969.290	0.390
Zr	90	**47.084**	**ug/L**	2.149	109238.090	0.427
Mo	98	**48.227**	**ug/L**	1.511	69373.052	0.271
Ag	107	**48.898**	**ug/L**	2.422	168399.421	0.659
Cd	111	**49.633**	**ug/L**	1.171	26823.160	0.105
Cd	114		**ug/L**		71850.286	0.281
>In	115		**ug/L**		255655.357	255655.357
Sn	120	**49.388**	**ug/L**	1.581	129938.208	0.508
Sb	121	**44.831**	**ug/L**	1.245	77885.081	0.304
Sb	123		**ug/L**		63064.988	0.246
Ba	135		**ug/L**		26582.044	0.031
Ba	137	**49.731**	**ug/L**	3.359	47134.312	0.055
>Lu	175		**ug/L**		858907.521	858907.521
Tl	205	**48.781**	**ug/L**	1.881	775289.687	0.903
Pb	208	**49.500**	**ug/L**	1.317	999351.152	1.163
Th	232	**48.203**	**ug/L**	1.465	1050047.149	1.221
U	238	**47.753**	**ug/L**	1.544	1105140.096	1.287

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Li	7	Linear Thru Zero	1.0000
Be	9	Linear Thru Zero	1.0000
B	11	Linear Thru Zero	1.0000
Na	23	Linear Thru Zero	1.0000
Mg	24	Linear Thru Zero	0.9999
Al	27	Linear Thru Zero	1.0000
P	31	Linear Thru Zero	1.0000
K	39	Linear Thru Zero	1.0000
Ca	44	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Ti	47	Linear Thru Zero	1.0000
V	51	Linear Thru Zero	1.0000
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000
Zn	66	Linear Thru Zero	1.0000
Zn	67	Linear Thru Zero	
Zn	68	Linear Thru Zero	
Ge	74	Linear Thru Zero	
As	75	Linear Thru Zero	1.0000
Se	77	Linear Thru Zero	
Se	78	Linear Thru Zero	1.0000
Se	82	Linear Thru Zero	
Kr	83	Linear Thru Zero	
Sr	88	Linear Thru Zero	1.0000
Zr	90	Linear Thru Zero	1.0000
Mo	98	Linear Thru Zero	1.0000
Ag	107	Linear Thru Zero	1.0000
Cd	111	Linear Thru Zero	1.0000
Cd	114	Linear Thru Zero	
In	115	Linear Thru Zero	
Sn	120	Linear Thru Zero	1.0000
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	
Ba	135	Linear Thru Zero	
Ba	137	Linear Thru Zero	1.0000
Lu	175	Linear Thru Zero	
Tl	205	Linear Thru Zero	1.0000
Pb	208	Linear Thru Zero	1.0000
Th	232	Linear Thru Zero	1.0000
U	238	Linear Thru Zero	1.0000

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Li	7	102.155				
	Be	9	101.969				
	B	11	94.768				
	Na	23	98.205				
	Mg	24	103.167				
	Al	27	102.784				
	P	31	97.380				
	K	39	99.141				
	Ca	44	96.794				
>	Sc	45		104.63			
	Ti	47	101.581				
	V	51	100.056				
	Cr	52	103.152				
	Cr	53					
	Mn	55	100.473				
	Fe	57	99.786				
	Co	59	97.843				
	Ni	60	101.290				
	Cu	63					
	Cu	65	102.481				
	Zn	66	100.934				
	Zn	67					
	Zn	68					
>	Ge	74		103.93			
	As	75	95.917				
	Se	77					
	Se	78	101.251				
	Se	82					
	Kr	83					
	Sr	88	98.654				
	Zr	90	94.167				
	Mo	98	96.454				
	Ag	107	97.797				
	Cd	111	99.266				
	Cd	114					
>	In	115		106.02			
	Sn	120	98.776				
	Sb	121	89.661				
	Sb	123					
	Ba	135					
	Ba	137	99.463				
>	Lu	175		105.65			
	Tl	205	97.562				
	Pb	208	99.000				
	Th	232	96.406				
	U	238	95.507				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Sb	121	CCV is out of limits (+/- 10%)

QC Action

QC Action Line: Continue

ICPMS #12 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 07, 2017 17:57:43
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170705\QC Std 7.605

Concentration Results

Summary

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	**0.001**	**ug/L**	465.805	22.667	0.000
Be	9	**0.001**	**ug/L**	711.569	3.000	0.000
B	11	**2.254**	**ug/L**	12.956	1706.769	0.001
Na	23	**1.726**	**ug/L**	80.807	39896.308	0.003
Mg	24	**1.992**	**ug/L**	14.935	2276.848	0.002
Al	27	**1.952**	**ug/L**	13.215	2358.195	0.002
P	31	**-0.462**	**ug/L**	391.996	424.006	-0.000
K	39	**5.795**	**ug/L**	28.253	15979.624	0.005
Ca	44	**1.965**	**ug/L**	86.723	510.009	0.000
>Sc	45		**ug/L**		541217.286	541217.286
Ti	47	**0.070**	**ug/L**	71.885	25.000	0.000
V	51	**0.156**	**ug/L**	130.398	7405.253	0.001
Cr	52	**0.031**	**ug/L**	39.048	628.681	0.000
Cr	53		**ug/L**		2817.611	0.000
Mn	55	**0.006**	**ug/L**	81.510	126.001	0.000
Fe	57	**3.566**	**ug/L**	27.152	282.670	0.000
Co	59	**-0.001**	**ug/L**	240.377	7.333	-0.000
Ni	60	**0.005**	**ug/L**	311.444	36.000	0.000
Cu	63		**ug/L**		73.334	0.000
Cu	65	**-0.001**	**ug/L**	2007.128	39.333	-0.000
Zn	66	**0.126**	**ug/L**	82.407	116.000	0.000
Zn	67		**ug/L**		28.667	0.000
Zn	68		**ug/L**		78.000	0.000
>Ge	74		**ug/L**		227496.986	227496.986
As	75	**-0.088**	**ug/L**	18.746	182.583	-0.000
Se	77		**ug/L**		96.667	-0.000
Se	78	**0.146**	**ug/L**	178.431	76.666	0.000
Se	82		**ug/L**		45.556	-0.000
Kr	83		**ug/L**		30.667	-0.000
Sr	88	**-0.003**	**ug/L**	872.181	319.337	-0.000
Zr	90	**-0.001**	**ug/L**	1014.407	154.001	-0.000
Mo	98	**0.121**	**ug/L**	17.083	208.385	0.001
Ag	107	**0.003**	**ug/L**	31.715	15.333	0.000
Cd	111	**0.007**	**ug/L**	95.279	8.000	0.000
Cd	114		**ug/L**		6.368	0.000
>In	115		**ug/L**		254271.247	254271.247
Sn	120	**0.052**	**ug/L**	18.938	340.628	0.001
Sb	121	**0.119**	**ug/L**	97.541	380.006	0.001
Sb	123		**ug/L**		332.918	0.001
Ba	135		**ug/L**		16.000	0.000
Ba	137	**0.004**	**ug/L**	62.739	23.333	0.000
>Lu	175		**ug/L**		836003.013	836003.013
Tl	205	**0.083**	**ug/L**	31.946	1533.420	0.002
Pb	208	**0.003**	**ug/L**	57.325	238.667	0.000
Th	232	**0.102**	**ug/L**	34.172	3508.445	0.003
U	238	**0.004**	**ug/L**	18.676	122.001	0.000

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Li	7	Linear Thru Zero	1.0000
Be	9	Linear Thru Zero	1.0000
B	11	Linear Thru Zero	1.0000
Na	23	Linear Thru Zero	1.0000
Mg	24	Linear Thru Zero	0.9999
Al	27	Linear Thru Zero	1.0000
P	31	Linear Thru Zero	1.0000
K	39	Linear Thru Zero	1.0000
Ca	44	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Ti	47	Linear Thru Zero	1.0000
V	51	Linear Thru Zero	1.0000
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000
Zn	66	Linear Thru Zero	1.0000
Zn	67	Linear Thru Zero	
Zn	68	Linear Thru Zero	
Ge	74	Linear Thru Zero	
As	75	Linear Thru Zero	1.0000
Se	77	Linear Thru Zero	
Se	78	Linear Thru Zero	1.0000
Se	82	Linear Thru Zero	
Kr	83	Linear Thru Zero	
Sr	88	Linear Thru Zero	1.0000
Zr	90	Linear Thru Zero	1.0000
Mo	98	Linear Thru Zero	1.0000
Ag	107	Linear Thru Zero	1.0000
Cd	111	Linear Thru Zero	1.0000
Cd	114	Linear Thru Zero	
In	115	Linear Thru Zero	
Sn	120	Linear Thru Zero	1.0000
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	
Ba	135	Linear Thru Zero	
Ba	137	Linear Thru Zero	1.0000
Lu	175	Linear Thru Zero	
Tl	205	Linear Thru Zero	1.0000
Pb	208	Linear Thru Zero	1.0000
Th	232	Linear Thru Zero	1.0000
U	238	Linear Thru Zero	1.0000

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Li	7					
	Be	9					
	B	11					
	Na	23					
	Mg	24					
	Al	27					
	P	31					
	K	39					
	Ca	44					
>	Sc	45		103.32			
	Ti	47					
	V	51					
	Cr	52					
	Cr	53					
	Mn	55					
	Fe	57					
	Co	59					
	Ni	60					
	Cu	63					
	Cu	65					
	Zn	66					
	Zn	67					
	Zn	68					
>	Ge	74		104.42			
	As	75					
	Se	77					
	Se	78					
	Se	82					
	Kr	83					
	Sr	88					
	Zr	90					
	Mo	98					
	Ag	107					
	Cd	111					
	Cd	114					
>	In	115		105.44			
	Sn	120					
	Sb	121					
	Sb	123					
	Ba	135					
	Ba	137					
>	Lu	175		102.83			
	Tl	205					
	Pb	208					
	Th	232					
	U	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: QC Std 10
Sample Date/Time: Friday, July 07, 2017 18:00:59
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170705\QC Std 10.606

Concentration Results

Summary

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	**1049.568**	ug/L	1.410	1144096.408	2.384
Be	9	**942.244**	ug/L	2.652	333192.012	0.694
B	11	**4.849**	ug/L	1.266	2129.492	0.002
Na	23	**51532.979**	ug/L	1.495	49042492.919	102.090
Mg	24	**50123.942**	ug/L	3.739	22166556.610	46.192
Al	27	**49735.566**	ug/L	2.458	18450714.093	38.443
P	31	**24444.476**	ug/L	3.662	632425.510	1.317
K	39	**51004.759**	ug/L	1.963	21067344.898	43.869
Ca	44	**50959.005**	ug/L	2.203	840476.449	1.750
>Sc	45		ug/L		480005.056	480005.056
Ti	47	**10.807**	ug/L	2.410	831.024	0.002
V	51	**1038.902**	ug/L	3.229	2069361.054	4.299
Cr	52	**1038.785**	ug/L	4.063	2466716.459	5.139
Cr	53		ug/L		289779.018	0.599
Mn	55	**970.440**	ug/L	3.195	1733008.174	3.611
Fe	57	**50069.420**	ug/L	0.916	2533412.967	5.278
Co	59	**967.927**	ug/L	3.249	3413422.563	7.113
Ni	60	**961.426**	ug/L	3.882	877966.888	1.830
Cu	63		ug/L		2229279.322	4.645
Cu	65	**954.252**	ug/L	1.033	1014884.516	2.114
Zn	66	**2408.542**	ug/L	2.530	678526.607	3.577
Zn	67		ug/L		104267.176	0.550
Zn	68		ug/L		480586.692	2.534
>Ge	74		ug/L		189724.566	189724.566
As	75	**980.563**	ug/L	2.900	165456.240	0.872
Se	77		ug/L		3745.158	0.019
Se	78	**498.247**	ug/L	2.729	12356.788	0.065
Se	82		ug/L		6087.075	0.032
Kr	83		ug/L		31.333	0.000
Sr	88	**1039.542**	ug/L	3.939	1752086.151	8.217
Zr	90	**500.812**	ug/L	3.003	967968.214	4.539
Mo	98	**1057.641**	ug/L	2.022	1268379.325	5.948
Ag	107	**240.042**	ug/L	2.127	689665.350	3.234
Cd	111	**1000.844**	ug/L	1.867	451111.924	2.116
Cd	114		ug/L		1193907.850	5.600
>In	115		ug/L		213269.601	213269.601
Sn	120	**1057.938**	ug/L	2.536	2318256.201	10.872
Sb	121	**238.383**	ug/L	3.518	344806.822	1.616
Sb	123		ug/L		280634.769	1.315
Ba	135		ug/L		477886.688	0.637
Ba	137	**1022.884**	ug/L	1.552	846178.171	1.129
>Lu	175		ug/L		749802.695	749802.695
Tl	205	**476.955**	ug/L	1.879	6615661.541	8.824
Pb	208	**4858.357**	ug/L	2.589	85603419.799	114.193
Th	232	**2573.918**	ug/L	2.187	48881462.690	65.203
U	238	**5119.988**	ug/L	1.981	103435463.752	137.974

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Li	7	Linear Thru Zero	1.0000
Be	9	Linear Thru Zero	1.0000
B	11	Linear Thru Zero	1.0000
Na	23	Linear Thru Zero	1.0000
Mg	24	Linear Thru Zero	0.9999
Al	27	Linear Thru Zero	1.0000
P	31	Linear Thru Zero	1.0000
K	39	Linear Thru Zero	1.0000
Ca	44	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Ti	47	Linear Thru Zero	1.0000
V	51	Linear Thru Zero	1.0000
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000
Zn	66	Linear Thru Zero	1.0000
Zn	67	Linear Thru Zero	
Zn	68	Linear Thru Zero	
Ge	74	Linear Thru Zero	
As	75	Linear Thru Zero	1.0000
Se	77	Linear Thru Zero	
Se	78	Linear Thru Zero	1.0000
Se	82	Linear Thru Zero	
Kr	83	Linear Thru Zero	
Sr	88	Linear Thru Zero	1.0000
Zr	90	Linear Thru Zero	1.0000
Mo	98	Linear Thru Zero	1.0000
Ag	107	Linear Thru Zero	1.0000
Cd	111	Linear Thru Zero	1.0000
Cd	114	Linear Thru Zero	
In	115	Linear Thru Zero	
Sn	120	Linear Thru Zero	1.0000
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	
Ba	135	Linear Thru Zero	
Ba	137	Linear Thru Zero	1.0000
Lu	175	Linear Thru Zero	
Tl	205	Linear Thru Zero	1.0000
Pb	208	Linear Thru Zero	1.0000
Th	232	Linear Thru Zero	1.0000
U	238	Linear Thru Zero	1.0000

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Li	7	104.957				
	Be	9	94.224				
	B	11					
	Na	23	103.066				
	Mg	24	100.248				
	Al	27	99.471				
	P	31	97.778				
	K	39	102.010				
	Ca	44	101.918				
>	Sc	45		91.64			
	Ti	47					
	V	51	103.890				
	Cr	52	103.878				
	Cr	53					
	Mn	55	97.044				
	Fe	57	100.139				
	Co	59	96.793				
	Ni	60	96.143				
	Cu	63					
	Cu	65	95.425				
	Zn	66	96.342				
	Zn	67					
	Zn	68					
>	Ge	74		87.09			
	As	75	98.056				
	Se	77					
	Se	78	99.649				
	Se	82					
	Kr	83					
	Sr	88	103.954				
	Zr	90	100.162				
	Mo	98	105.764				
	Ag	107	96.017				
	Cd	111	100.084				
	Cd	114					
>	In	115		88.44			
	Sn	120	105.794				
	Sb	121	95.353				
	Sb	123					
	Ba	135					
	Ba	137	102.288				
>	Lu	175		92.23			
	Tl	205	95.391				
	Pb	208	97.167				
	Th	232	102.957				
	U	238	102.400				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: QC Std 11
Sample Date/Time: Friday, July 07, 2017 18:04:14
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170705\QC Std 11.607

Concentration Results

Summary

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	**50.117**	**ug/L**	3.009	62815.832	0.114
Be	9	**49.635**	**ug/L**	2.972	20178.242	0.037
B	11	**93.669**	**ug/L**	2.107	26706.277	0.046
Na	23	**4897.502**	**ug/L**	0.950	5392509.504	9.702
Mg	24	**5089.396**	**ug/L**	2.995	2588658.541	4.690
Al	27	**5199.250**	**ug/L**	2.913	2218672.856	4.019
P	31	**4842.175**	**ug/L**	3.728	144412.992	0.261
K	39	**4967.278**	**ug/L**	2.734	2371586.815	4.272
Ca	44	**4856.300**	**ug/L**	4.896	92477.192	0.167
>Sc	45		**ug/L**		551854.474	551854.474
Ti	47	**49.325**	**ug/L**	2.488	4289.977	0.008
V	51	**49.183**	**ug/L**	3.427	119464.817	0.204
Cr	52	**50.422**	**ug/L**	1.449	138201.284	0.249
Cr	53		**ug/L**		18823.062	0.029
Mn	55	**50.857**	**ug/L**	5.300	104486.408	0.189
Fe	57	**4894.622**	**ug/L**	2.673	284766.524	0.516
Co	59	**50.351**	**ug/L**	3.529	204172.407	0.370
Ni	60	**50.778**	**ug/L**	5.353	53323.427	0.097
Cu	63		**ug/L**		137713.980	0.250
Cu	65	**50.621**	**ug/L**	1.818	61925.937	0.112
Zn	66	**50.070**	**ug/L**	1.843	16983.429	0.074
Zn	67		**ug/L**		2830.281	0.012
Zn	68		**ug/L**		12613.567	0.055
>Ge	74		**ug/L**		227350.309	227350.309
As	75	**47.943**	**ug/L**	1.258	9887.089	0.043
Se	77		**ug/L**		542.010	0.002
Se	78	**49.697**	**ug/L**	3.075	1542.178	0.006
Se	82		**ug/L**		770.465	0.003
Kr	83		**ug/L**		40.667	0.000
Sr	88	**48.388**	**ug/L**	2.862	97344.574	0.382
Zr	90	**48.069**	**ug/L**	1.445	110689.847	0.436
Mo	98	**48.800**	**ug/L**	2.253	69656.014	0.274
Ag	107	**48.223**	**ug/L**	1.442	164853.154	0.650
Cd	111	**50.279**	**ug/L**	2.378	26964.760	0.106
Cd	114		**ug/L**		71276.860	0.281
>In	115		**ug/L**		253739.633	253739.633
Sn	120	**49.799**	**ug/L**	1.942	130029.063	0.512
Sb	121	**45.082**	**ug/L**	6.632	77677.579	0.306
Sb	123		**ug/L**		63272.981	0.249
Ba	135		**ug/L**		26784.431	0.031
Ba	137	**48.969**	**ug/L**	1.701	46342.388	0.054
>Lu	175		**ug/L**		857605.651	857605.651
Tl	205	**49.031**	**ug/L**	4.697	777467.500	0.907
Pb	208	**49.078**	**ug/L**	2.821	988886.040	1.154
Th	232	**50.192**	**ug/L**	2.600	1091392.714	1.271
U	238	**48.166**	**ug/L**	3.108	1112463.995	1.298

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Li	7	Linear Thru Zero	1.0000
Be	9	Linear Thru Zero	1.0000
B	11	Linear Thru Zero	1.0000
Na	23	Linear Thru Zero	1.0000
Mg	24	Linear Thru Zero	0.9999
Al	27	Linear Thru Zero	1.0000
P	31	Linear Thru Zero	1.0000
K	39	Linear Thru Zero	1.0000
Ca	44	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Ti	47	Linear Thru Zero	1.0000
V	51	Linear Thru Zero	1.0000
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000
Zn	66	Linear Thru Zero	1.0000
Zn	67	Linear Thru Zero	
Zn	68	Linear Thru Zero	
Ge	74	Linear Thru Zero	
As	75	Linear Thru Zero	1.0000
Se	77	Linear Thru Zero	
Se	78	Linear Thru Zero	1.0000
Se	82	Linear Thru Zero	
Kr	83	Linear Thru Zero	
Sr	88	Linear Thru Zero	1.0000
Zr	90	Linear Thru Zero	1.0000
Mo	98	Linear Thru Zero	1.0000
Ag	107	Linear Thru Zero	1.0000
Cd	111	Linear Thru Zero	1.0000
Cd	114	Linear Thru Zero	
In	115	Linear Thru Zero	
Sn	120	Linear Thru Zero	1.0000
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	
Ba	135	Linear Thru Zero	
Ba	137	Linear Thru Zero	1.0000
Lu	175	Linear Thru Zero	
Tl	205	Linear Thru Zero	1.0000
Pb	208	Linear Thru Zero	1.0000
Th	232	Linear Thru Zero	1.0000
U	238	Linear Thru Zero	1.0000

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Li	7	100.235				
	Be	9	99.270				
	B	11	93.669				
	Na	23	97.950				
	Mg	24	101.788				
	Al	27	102.955				
	P	31	96.844				
	K	39	99.346				
	Ca	44	97.126				
>	Sc	45		105.35			
	Ti	47	98.650				
	V	51	98.366				
	Cr	52	100.844				
	Cr	53					
	Mn	55	101.713				
	Fe	57	97.892				
	Co	59	100.703				
	Ni	60	101.556				
	Cu	63					
	Cu	65	101.241				
	Zn	66	100.140				
	Zn	67					
	Zn	68					
>	Ge	74		104.36			
	As	75	95.886				
	Se	77					
	Se	78	99.394				
	Se	82					
	Kr	83					
	Sr	88	96.776				
	Zr	90	96.138				
	Mo	98	97.600				
	Ag	107	96.446				
	Cd	111	100.558				
	Cd	114					
>	In	115		105.22			
	Sn	120	99.599				
	Sb	121	90.163				
	Sb	123					
	Ba	135					
	Ba	137	97.938				
>	Lu	175		105.49			
	Tl	205	98.062				
	Pb	208	98.156				
	Th	232	100.385				
	U	238	96.331				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: QC Std 12
Sample Date/Time: Friday, July 07, 2017 18:07:30
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170705\QC Std 12.608

Concentration Results

Summary

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	**0.090**	**ug/L**	23.144	133.334	0.000
Be	9	**0.025**	**ug/L**	55.940	13.000	0.000
B	11	**2.255**	**ug/L**	25.394	1728.105	0.001
Na	23	**0.861**	**ug/L**	88.821	39515.252	0.002
Mg	24	**1.214**	**ug/L**	9.712	1916.795	0.001
Al	27	**1.171**	**ug/L**	12.899	2060.149	0.001
P	31	**-1.462**	**ug/L**	92.024	400.672	-0.000
K	39	**3.826**	**ug/L**	19.151	15260.151	0.003
Ca	44	**0.347**	**ug/L**	107.798	486.675	0.000
>Sc	45		**ug/L**		548399.193	548399.193
Ti	47	**-0.064**	**ug/L**	119.995	13.667	-0.000
V	51	**-0.356**	**ug/L**	15.626	6353.413	-0.001
Cr	52	**0.058**	**ug/L**	16.700	711.351	0.000
Cr	53		**ug/L**		2574.232	-0.000
Mn	55	**0.010**	**ug/L**	132.670	136.001	0.000
Fe	57	**1.749**	**ug/L**	10.311	181.334	0.000
Co	59	**0.015**	**ug/L**	14.228	70.000	0.000
Ni	60	**0.013**	**ug/L**	104.817	44.000	0.000
Cu	63		**ug/L**		162.668	0.000
Cu	65	**0.020**	**ug/L**	50.799	65.333	0.000
Zn	66	**0.030**	**ug/L**	68.643	84.667	0.000
Zn	67		**ug/L**		25.333	0.000
Zn	68		**ug/L**		71.334	0.000
>Ge	74		**ug/L**		229351.975	229351.975
As	75	**-0.044**	**ug/L**	241.644	192.918	-0.000
Se	77		**ug/L**		95.334	-0.000
Se	78	**0.056**	**ug/L**	89.574	74.501	0.000
Se	82		**ug/L**		51.556	-0.000
Kr	83		**ug/L**		27.333	-0.000
Sr	88	**0.018**	**ug/L**	60.977	363.338	0.000
Zr	90	**0.040**	**ug/L**	10.006	248.669	0.000
Mo	98	**0.100**	**ug/L**	5.127	178.311	0.001
Ag	107	**0.009**	**ug/L**	24.099	36.000	0.000
Cd	111	**0.021**	**ug/L**	11.000	15.333	0.000
Cd	114		**ug/L**		25.704	0.000
>In	115		**ug/L**		255772.817	255772.817
Sn	120	**0.262**	**ug/L**	9.004	896.661	0.003
Sb	121	**0.390**	**ug/L**	12.823	853.359	0.003
Sb	123		**ug/L**		653.014	0.002
Ba	135		**ug/L**		14.667	0.000
Ba	137	**0.003**	**ug/L**	200.777	22.000	0.000
>Lu	175		**ug/L**		842996.473	842996.473
Tl	205	**0.118**	**ug/L**	29.378	2088.159	0.002
Pb	208	**0.084**	**ug/L**	19.503	1846.048	0.002
Th	232	**0.378**	**ug/L**	14.484	9425.140	0.010
U	238	**0.075**	**ug/L**	19.535	1717.439	0.002

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Li	7	Linear Thru Zero	1.0000
Be	9	Linear Thru Zero	1.0000
B	11	Linear Thru Zero	1.0000
Na	23	Linear Thru Zero	1.0000
Mg	24	Linear Thru Zero	0.9999
Al	27	Linear Thru Zero	1.0000
P	31	Linear Thru Zero	1.0000
K	39	Linear Thru Zero	1.0000
Ca	44	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Ti	47	Linear Thru Zero	1.0000
V	51	Linear Thru Zero	1.0000
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000
Zn	66	Linear Thru Zero	1.0000
Zn	67	Linear Thru Zero	
Zn	68	Linear Thru Zero	
Ge	74	Linear Thru Zero	
As	75	Linear Thru Zero	1.0000
Se	77	Linear Thru Zero	
Se	78	Linear Thru Zero	1.0000
Se	82	Linear Thru Zero	
Kr	83	Linear Thru Zero	
Sr	88	Linear Thru Zero	1.0000
Zr	90	Linear Thru Zero	1.0000
Mo	98	Linear Thru Zero	1.0000
Ag	107	Linear Thru Zero	1.0000
Cd	111	Linear Thru Zero	1.0000
Cd	114	Linear Thru Zero	
In	115	Linear Thru Zero	
Sn	120	Linear Thru Zero	1.0000
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	
Ba	135	Linear Thru Zero	
Ba	137	Linear Thru Zero	1.0000
Lu	175	Linear Thru Zero	
Tl	205	Linear Thru Zero	1.0000
Pb	208	Linear Thru Zero	1.0000
Th	232	Linear Thru Zero	1.0000
U	238	Linear Thru Zero	1.0000

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Li	7					
	Be	9					
	B	11					
	Na	23					
	Mg	24					
	Al	27					
	P	31					
	K	39					
	Ca	44					
>	Sc	45		104.69			
	Ti	47					
	V	51					
	Cr	52					
	Cr	53					
	Mn	55					
	Fe	57					
	Co	59					
	Ni	60					
	Cu	63					
	Cu	65					
	Zn	66					
	Zn	67					
	Zn	68					
>	Ge	74		105.28			
	As	75					
	Se	77					
	Se	78					
	Se	82					
	Kr	83					
	Sr	88					
	Zr	90					
	Mo	98					
	Ag	107					
	Cd	111					
	Cd	114					
>	In	115		106.07			
	Sn	120					
	Sb	121					
	Sb	123					
	Ba	135					
	Ba	137					
>	Lu	175		103.69			
	Tl	205					
	Pb	208					
	Th	232					
	U	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: QC Std 13
Sample Date/Time: Friday, July 07, 2017 18:43:17
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170705\QC Std 13.619

Concentration Results

Summary

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	**52.142**	ug/L	3.457	64483.418	0.118
Be	9	**51.171**	ug/L	4.338	20508.044	0.038
B	11	**95.684**	ug/L	4.629	26867.915	0.047
Na	23	**4889.866**	ug/L	2.926	5308364.201	9.687
Mg	24	**5123.027**	ug/L	2.630	2569928.835	4.721
Al	27	**5319.632**	ug/L	1.140	2239544.187	4.112
P	31	**4831.193**	ug/L	4.664	142001.729	0.260
K	39	**5082.901**	ug/L	4.438	2391122.259	4.372
Ca	44	**4701.742**	ug/L	4.950	88302.830	0.161
>Sc	45		ug/L		544409.584	544409.584
Ti	47	**49.548**	ug/L	3.940	4248.965	0.008
V	51	**49.734**	ug/L	5.578	119030.235	0.206
Cr	52	**50.512**	ug/L	2.900	136512.538	0.250
Cr	53		ug/L		19588.092	0.031
Mn	55	**49.930**	ug/L	3.771	101173.023	0.186
Fe	57	**4810.687**	ug/L	5.001	275829.754	0.507
Co	59	**49.675**	ug/L	2.522	198717.315	0.365
Ni	60	**51.157**	ug/L	6.336	52962.764	0.097
Cu	63		ug/L		137302.832	0.252
Cu	65	**50.883**	ug/L	4.534	61353.475	0.113
Zn	66	**51.787**	ug/L	5.190	17059.519	0.077
Zn	67		ug/L		2758.933	0.012
Zn	68		ug/L		12557.518	0.057
>Ge	74		ug/L		221045.660	221045.660
As	75	**48.705**	ug/L	2.388	9760.090	0.043
Se	77		ug/L		544.010	0.002
Se	78	**50.824**	ug/L	3.898	1531.302	0.007
Se	82		ug/L		776.243	0.003
Kr	83		ug/L		30.000	-0.000
Sr	88	**48.212**	ug/L	1.496	95614.289	0.381
Zr	90	**48.469**	ug/L	3.404	109975.769	0.439
Mo	98	**48.345**	ug/L	1.635	68025.551	0.272
Ag	107	**49.574**	ug/L	1.685	167045.972	0.668
Cd	111	**50.653**	ug/L	1.859	26781.092	0.107
Cd	114		ug/L		70823.049	0.283
>In	115		ug/L		250081.133	250081.133
Sn	120	**50.263**	ug/L	2.289	129355.747	0.517
Sb	121	**44.715**	ug/L	1.542	75988.240	0.303
Sb	123		ug/L		63158.737	0.252
Ba	135		ug/L		26701.599	0.032
Ba	137	**49.136**	ug/L	4.851	45897.660	0.054
>Lu	175		ug/L		846706.231	846706.231
Tl	205	**47.627**	ug/L	2.415	746093.568	0.881
Pb	208	**48.381**	ug/L	3.057	962629.949	1.137
Th	232	**47.749**	ug/L	3.781	1025022.532	1.210
U	238	**46.910**	ug/L	3.059	1069970.195	1.264

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Li	7	Linear Thru Zero	1.0000
Be	9	Linear Thru Zero	1.0000
B	11	Linear Thru Zero	1.0000
Na	23	Linear Thru Zero	1.0000
Mg	24	Linear Thru Zero	0.9999
Al	27	Linear Thru Zero	1.0000
P	31	Linear Thru Zero	1.0000
K	39	Linear Thru Zero	1.0000
Ca	44	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Ti	47	Linear Thru Zero	1.0000
V	51	Linear Thru Zero	1.0000
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000
Zn	66	Linear Thru Zero	1.0000
Zn	67	Linear Thru Zero	
Zn	68	Linear Thru Zero	
Ge	74	Linear Thru Zero	
As	75	Linear Thru Zero	1.0000
Se	77	Linear Thru Zero	
Se	78	Linear Thru Zero	1.0000
Se	82	Linear Thru Zero	
Kr	83	Linear Thru Zero	
Sr	88	Linear Thru Zero	1.0000
Zr	90	Linear Thru Zero	1.0000
Mo	98	Linear Thru Zero	1.0000
Ag	107	Linear Thru Zero	1.0000
Cd	111	Linear Thru Zero	1.0000
Cd	114	Linear Thru Zero	
In	115	Linear Thru Zero	
Sn	120	Linear Thru Zero	1.0000
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	
Ba	135	Linear Thru Zero	
Ba	137	Linear Thru Zero	1.0000
Lu	175	Linear Thru Zero	
Tl	205	Linear Thru Zero	1.0000
Pb	208	Linear Thru Zero	1.0000
Th	232	Linear Thru Zero	1.0000
U	238	Linear Thru Zero	1.0000

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Li	7	104.284				
	Be	9	102.341				
	B	11	95.684				
	Na	23	97.797				
	Mg	24	102.461				
	Al	27	105.339				
	P	31	96.624				
	K	39	101.658				
	Ca	44	94.035				
>	Sc	45		103.93			
	Ti	47	99.096				
	V	51	99.468				
	Cr	52	101.025				
	Cr	53					
	Mn	55	99.860				
	Fe	57	96.214				
	Co	59	99.349				
	Ni	60	102.313				
	Cu	63					
	Cu	65	101.767				
	Zn	66	103.573				
	Zn	67					
	Zn	68					
>	Ge	74		101.46			
	As	75	97.411				
	Se	77					
	Se	78	101.648				
	Se	82					
	Kr	83					
	Sr	88	96.424				
	Zr	90	96.937				
	Mo	98	96.691				
	Ag	107	99.148				
	Cd	111	101.307				
	Cd	114					
>	In	115		103.71			
	Sn	120	100.527				
	Sb	121	89.430				
	Sb	123					
	Ba	135					
	Ba	137	98.271				
>	Lu	175		104.15			
	Tl	205	95.254				
	Pb	208	96.761				
	Th	232	95.498				
	U	238	93.820				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 13	Sb	121	

QC Action

QC Action Line: Continue

ICPMS #12 - Summary Report

Sample ID: QC Std 15
Sample Date/Time: Friday, July 07, 2017 18:46:32
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170705\QC Std 15.620

Concentration Results

Summary

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	**0.007**	**ug/L**	169.726	29.333	0.000
Be	9	**0.001**	**ug/L**	467.077	3.333	0.000
B	11	**2.160**	**ug/L**	3.045	1695.434	0.001
Na	23	**-0.527**	**ug/L**	408.686	37777.896	-0.001
Mg	24	**0.553**	**ug/L**	5.232	1576.754	0.001
Al	27	**0.264**	**ug/L**	86.860	1666.097	0.000
P	31	**-2.558**	**ug/L**	24.274	366.671	-0.000
K	39	**3.560**	**ug/L**	58.628	15039.916	0.003
Ca	44	**0.083**	**ug/L**	4996.513	477.341	0.000
>Sc	45		**ug/L**		546046.222	546046.222
Ti	47	**-0.082**	**ug/L**	43.084	12.000	-0.000
V	51	**0.280**	**ug/L**	52.569	7752.103	0.001
Cr	52	**0.023**	**ug/L**	15.725	613.347	0.000
Cr	53		**ug/L**		2994.314	0.001
Mn	55	**0.010**	**ug/L**	66.569	134.667	0.000
Fe	57	**0.608**	**ug/L**	40.324	115.334	0.000
Co	59	**0.004**	**ug/L**	56.324	24.000	0.000
Ni	60	**-0.004**	**ug/L**	251.043	26.667	-0.000
Cu	63		**ug/L**		78.000	0.000
Cu	65	**-0.002**	**ug/L**	309.196	38.000	-0.000
Zn	66	**-0.017**	**ug/L**	344.735	68.667	-0.000
Zn	67		**ug/L**		28.000	0.000
Zn	68		**ug/L**		56.000	-0.000
>Ge	74		**ug/L**		229744.072	229744.072
As	75	**-0.016**	**ug/L**	449.041	198.882	-0.000
Se	77		**ug/L**		118.667	0.000
Se	78	**0.103**	**ug/L**	202.164	76.083	0.000
Se	82		**ug/L**		52.889	-0.000
Kr	83		**ug/L**		36.667	0.000
Sr	88	**0.000**	**ug/L**	1896.007	328.670	0.000
Zr	90	**0.007**	**ug/L**	186.176	174.001	0.000
Mo	98	**0.019**	**ug/L**	58.996	61.571	0.000
Ag	107	**0.003**	**ug/L**	3.973	14.000	0.000
Cd	111	**0.001**	**ug/L**	524.229	4.667	0.000
Cd	114		**ug/L**		8.029	0.000
>In	115		**ug/L**		256290.186	256290.186
Sn	120	**0.041**	**ug/L**	22.008	315.320	0.000
Sb	121	**0.229**	**ug/L**	16.056	573.345	0.002
Sb	123		**ug/L**		393.171	0.001
Ba	135		**ug/L**		15.333	0.000
Ba	137	**-0.001**	**ug/L**	458.066	18.000	-0.000
>Lu	175		**ug/L**		835758.822	835758.822
Tl	205	**0.072**	**ug/L**	35.338	1365.402	0.001
Pb	208	**0.006**	**ug/L**	13.268	291.334	0.000
Th	232	**0.170**	**ug/L**	19.614	4932.198	0.004
U	238	**0.005**	**ug/L**	25.941	143.001	0.000

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Li	7	Linear Thru Zero	1.0000
Be	9	Linear Thru Zero	1.0000
B	11	Linear Thru Zero	1.0000
Na	23	Linear Thru Zero	1.0000
Mg	24	Linear Thru Zero	0.9999
Al	27	Linear Thru Zero	1.0000
P	31	Linear Thru Zero	1.0000
K	39	Linear Thru Zero	1.0000
Ca	44	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Ti	47	Linear Thru Zero	1.0000
V	51	Linear Thru Zero	1.0000
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000
Zn	66	Linear Thru Zero	1.0000
Zn	67	Linear Thru Zero	
Zn	68	Linear Thru Zero	
Ge	74	Linear Thru Zero	
As	75	Linear Thru Zero	1.0000
Se	77	Linear Thru Zero	
Se	78	Linear Thru Zero	1.0000
Se	82	Linear Thru Zero	
Kr	83	Linear Thru Zero	
Sr	88	Linear Thru Zero	1.0000
Zr	90	Linear Thru Zero	1.0000
Mo	98	Linear Thru Zero	1.0000
Ag	107	Linear Thru Zero	1.0000
Cd	111	Linear Thru Zero	1.0000
Cd	114	Linear Thru Zero	
In	115	Linear Thru Zero	
Sn	120	Linear Thru Zero	1.0000
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	
Ba	135	Linear Thru Zero	
Ba	137	Linear Thru Zero	1.0000
Lu	175	Linear Thru Zero	
Tl	205	Linear Thru Zero	1.0000
Pb	208	Linear Thru Zero	1.0000
Th	232	Linear Thru Zero	1.0000
U	238	Linear Thru Zero	1.0000

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Li	7					
	Be	9					
	B	11					
	Na	23					
	Mg	24					
	Al	27					
	P	31					
	K	39					
	Ca	44					
>	Sc	45		104.24			
	Ti	47					
	V	51					
	Cr	52					
	Cr	53					
	Mn	55					
	Fe	57					
	Co	59					
	Ni	60					
	Cu	63					
	Cu	65					
	Zn	66					
	Zn	67					
	Zn	68					
>	Ge	74		105.46			
	As	75					
	Se	77					
	Se	78					
	Se	82					
	Kr	83					
	Sr	88					
	Zr	90					
	Mo	98					
	Ag	107					
	Cd	111					
	Cd	114					
>	In	115		106.28			
	Sn	120					
	Sb	121					
	Sb	123					
	Ba	135					
	Ba	137					
>	Lu	175		102.80			
	Tl	205					
	Pb	208					
	Th	232					
	U	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: 1203815377
Sample Date/Time: Friday, July 07, 2017 18:49:48
Sample Type: Sample
Sample Description: CPRC 6020B MB
Number of Replicates: 3
Batch ID: 1675724|1|baj
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170705\1203815377.621

Concentration Results

Summary

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	**0.029**	**ug/L**	21.814	60.000	0.000
Be	9	**-0.001**	**ug/L**	140.534	2.333	-0.000
B	11	**2.166**	**ug/L**	26.421	1762.109	0.001
Na	23	**57.313**	**ug/L**	8.289	104303.432	0.114
Mg	24	**7.886**	**ug/L**	4.833	5473.716	0.007
Al	27	**3.720**	**ug/L**	23.742	3239.701	0.003
P	31	**0.919**	**ug/L**	73.808	488.675	0.000
K	39	**6.433**	**ug/L**	46.239	17031.485	0.006
Ca	44	**40.526**	**ug/L**	14.135	1285.391	0.001
>Sc	45		**ug/L**		568328.080	568328.080
Ti	47	**-0.069**	**ug/L**	20.446	13.667	-0.000
V	51	**3.953**	**ug/L**	14.166	16669.727	0.016
Cr	52	**0.170**	**ug/L**	20.021	1049.372	0.001
Cr	53		**ug/L**		6230.029	0.006
Mn	55	**0.082**	**ug/L**	16.993	292.003	0.000
Fe	57	**3.041**	**ug/L**	9.467	266.003	0.000
Co	59	**0.003**	**ug/L**	14.262	23.333	0.000
Ni	60	**0.046**	**ug/L**	29.480	81.334	0.000
Cu	63		**ug/L**		166.668	0.000
Cu	65	**0.015**	**ug/L**	16.382	61.333	0.000
Zn	66	**0.347**	**ug/L**	4.070	197.335	0.001
Zn	67		**ug/L**		47.333	0.000
Zn	68		**ug/L**		129.334	0.000
>Ge	74		**ug/L**		235109.778	235109.778
As	75	**1.143**	**ug/L**	28.709	445.432	0.001
Se	77		**ug/L**		302.003	0.001
Se	78	**0.026**	**ug/L**	668.817	75.457	0.000
Se	82		**ug/L**		67.778	0.000
Kr	83		**ug/L**		35.333	0.000
Sr	88	**0.226**	**ug/L**	8.794	806.690	0.002
Zr	90	**0.018**	**ug/L**	60.952	202.001	0.000
Mo	98	**0.005**	**ug/L**	32.464	43.059	0.000
Ag	107	**0.001**	**ug/L**	135.327	7.333	0.000
Cd	111	**0.007**	**ug/L**	110.890	8.000	0.000
Cd	114		**ug/L**		6.662	0.000
>In	115		**ug/L**		262709.826	262709.826
Sn	120	**0.103**	**ug/L**	17.115	492.633	0.001
Sb	121	**0.434**	**ug/L**	7.199	953.365	0.003
Sb	123		**ug/L**		706.266	0.002
Ba	135		**ug/L**		22.000	0.000
Ba	137	**0.030**	**ug/L**	38.680	47.333	0.000
>Lu	175		**ug/L**		850606.589	850606.589
Tl	205	**0.007**	**ug/L**	41.301	366.005	0.000
Pb	208	**0.010**	**ug/L**	17.032	370.669	0.000
Th	232	**0.133**	**ug/L**	14.306	4225.296	0.003
U	238	**0.002**	**ug/L**	47.909	71.334	0.000

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Li	7	Linear Thru Zero	1.0000
Be	9	Linear Thru Zero	1.0000
B	11	Linear Thru Zero	1.0000
Na	23	Linear Thru Zero	1.0000
Mg	24	Linear Thru Zero	0.9999
Al	27	Linear Thru Zero	1.0000
P	31	Linear Thru Zero	1.0000
K	39	Linear Thru Zero	1.0000
Ca	44	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Ti	47	Linear Thru Zero	1.0000
V	51	Linear Thru Zero	1.0000
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000
Zn	66	Linear Thru Zero	1.0000
Zn	67	Linear Thru Zero	
Zn	68	Linear Thru Zero	
Ge	74	Linear Thru Zero	
As	75	Linear Thru Zero	1.0000
Se	77	Linear Thru Zero	
Se	78	Linear Thru Zero	1.0000
Se	82	Linear Thru Zero	
Kr	83	Linear Thru Zero	
Sr	88	Linear Thru Zero	1.0000
Zr	90	Linear Thru Zero	1.0000
Mo	98	Linear Thru Zero	1.0000
Ag	107	Linear Thru Zero	1.0000
Cd	111	Linear Thru Zero	1.0000
Cd	114	Linear Thru Zero	
In	115	Linear Thru Zero	
Sn	120	Linear Thru Zero	1.0000
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	
Ba	135	Linear Thru Zero	
Ba	137	Linear Thru Zero	1.0000
Lu	175	Linear Thru Zero	
Tl	205	Linear Thru Zero	1.0000
Pb	208	Linear Thru Zero	1.0000
Th	232	Linear Thru Zero	1.0000
U	238	Linear Thru Zero	1.0000

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Li	7					
	Be	9					
	B	11					
	Na	23					
	Mg	24					
	Al	27					
	P	31					
	K	39					
	Ca	44					
>	Sc	45		108.50			
	Ti	47					
	V	51					
	Cr	52					
	Cr	53					
	Mn	55					
	Fe	57					
	Co	59					
	Ni	60					
	Cu	63					
	Cu	65					
	Zn	66					
	Zn	67					
	Zn	68					
>	Ge	74		107.92			
	As	75					
	Se	77					
	Se	78					
	Se	82					
	Kr	83					
	Sr	88					
	Zr	90					
	Mo	98					
	Ag	107					
	Cd	111					
	Cd	114					
>	In	115		108.94			
	Sn	120					
	Sb	121					
	Sb	123					
	Ba	135					
	Ba	137					
>	Lu	175		104.63			
	Tl	205					
	Pb	208					
	Th	232					
	U	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: 1203815378
Sample Date/Time: Friday, July 07, 2017 18:53:03
Sample Type: Sample
Sample Description: CPRC 6020B LCS
Number of Replicates: 3
Batch ID: 1675724|1|baj
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170705\1203815378.622

Concentration Results

Summary

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	**57.498**	**ug/L**	1.073	75616.990	0.131
Be	9	**61.208**	**ug/L**	2.528	26106.841	0.045
B	11	**104.022**	**ug/L**	2.489	30979.559	0.051
Na	23	**2309.821**	**ug/L**	3.942	2688251.288	4.576
Mg	24	**2278.101**	**ug/L**	5.459	1215594.037	2.099
Al	27	**2204.682**	**ug/L**	3.504	988280.672	1.704
P	31	**2094.430**	**ug/L**	5.714	65734.305	0.113
K	39	**2084.133**	**ug/L**	4.912	1052533.479	1.793
Ca	44	**2184.627**	**ug/L**	8.422	43886.118	0.075
>Sc	45		**ug/L**		578975.518	578975.518
Ti	47	**50.858**	**ug/L**	4.392	4637.753	0.008
V	51	**55.321**	**ug/L**	3.564	140008.804	0.229
Cr	52	**50.329**	**ug/L**	1.601	144712.013	0.249
Cr	53		**ug/L**		25178.171	0.039
Mn	55	**50.079**	**ug/L**	3.859	107936.944	0.186
Fe	57	**2010.893**	**ug/L**	1.669	122782.138	0.212
Co	59	**51.889**	**ug/L**	6.655	220641.797	0.381
Ni	60	**53.644**	**ug/L**	4.922	59081.958	0.102
Cu	63		**ug/L**		148000.029	0.256
Cu	65	**53.125**	**ug/L**	3.484	68154.881	0.118
Zn	66	**50.410**	**ug/L**	1.395	17940.592	0.075
Zn	67		**ug/L**		3067.663	0.013
Zn	68		**ug/L**		13124.694	0.055
>Ge	74		**ug/L**		238602.894	238602.894
As	75	**52.619**	**ug/L**	0.710	11368.458	0.047
Se	77		**ug/L**		826.024	0.003
Se	78	**51.904**	**ug/L**	1.728	1687.241	0.007
Se	82		**ug/L**		875.138	0.003
Kr	83		**ug/L**		41.333	0.000
Sr	88	**49.455**	**ug/L**	4.418	104383.351	0.391
Zr	90	**50.016**	**ug/L**	3.726	120842.332	0.453
Mo	98	**49.116**	**ug/L**	5.038	73546.406	0.276
Ag	107	**52.988**	**ug/L**	2.329	190109.332	0.714
Cd	111	**51.794**	**ug/L**	5.402	29137.028	0.109
Cd	114		**ug/L**		77912.115	0.293
>In	115		**ug/L**		266386.988	266386.988
Sn	120	**50.940**	**ug/L**	4.306	139544.189	0.523
Sb	121	**47.542**	**ug/L**	4.149	86025.141	0.322
Sb	123		**ug/L**		69876.090	0.262
Ba	135		**ug/L**		28527.123	0.032
Ba	137	**50.592**	**ug/L**	3.105	49226.009	0.056
>Lu	175		**ug/L**		881789.317	881789.317
Tl	205	**46.292**	**ug/L**	2.788	755280.132	0.856
Pb	208	**48.869**	**ug/L**	2.506	1012727.995	1.149
Th	232	**47.498**	**ug/L**	4.392	1061896.175	1.203
U	238	**47.415**	**ug/L**	2.213	1126478.080	1.278

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Li	7	Linear Thru Zero	1.0000
Be	9	Linear Thru Zero	1.0000
B	11	Linear Thru Zero	1.0000
Na	23	Linear Thru Zero	1.0000
Mg	24	Linear Thru Zero	0.9999
Al	27	Linear Thru Zero	1.0000
P	31	Linear Thru Zero	1.0000
K	39	Linear Thru Zero	1.0000
Ca	44	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Ti	47	Linear Thru Zero	1.0000
V	51	Linear Thru Zero	1.0000
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000
Zn	66	Linear Thru Zero	1.0000
Zn	67	Linear Thru Zero	
Zn	68	Linear Thru Zero	
Ge	74	Linear Thru Zero	
As	75	Linear Thru Zero	1.0000
Se	77	Linear Thru Zero	
Se	78	Linear Thru Zero	1.0000
Se	82	Linear Thru Zero	
Kr	83	Linear Thru Zero	
Sr	88	Linear Thru Zero	1.0000
Zr	90	Linear Thru Zero	1.0000
Mo	98	Linear Thru Zero	1.0000
Ag	107	Linear Thru Zero	1.0000
Cd	111	Linear Thru Zero	1.0000
Cd	114	Linear Thru Zero	
In	115	Linear Thru Zero	
Sn	120	Linear Thru Zero	1.0000
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	
Ba	135	Linear Thru Zero	
Ba	137	Linear Thru Zero	1.0000
Lu	175	Linear Thru Zero	
Tl	205	Linear Thru Zero	1.0000
Pb	208	Linear Thru Zero	1.0000
Th	232	Linear Thru Zero	1.0000
U	238	Linear Thru Zero	1.0000

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Li	7					
	Be	9					
	B	11					
	Na	23					
	Mg	24					
	Al	27					
	P	31					
	K	39					
	Ca	44					
>	Sc	45		110.53			
	Ti	47					
	V	51					
	Cr	52					
	Cr	53					
	Mn	55					
	Fe	57					
	Co	59					
	Ni	60					
	Cu	63					
	Cu	65					
	Zn	66					
	Zn	67					
	Zn	68					
>	Ge	74		109.52			
	As	75					
	Se	77					
	Se	78					
	Se	82					
	Kr	83					
	Sr	88					
	Zr	90					
	Mo	98					
	Ag	107					
	Cd	111					
	Cd	114					
>	In	115		110.47			
	Sn	120					
	Sb	121					
	Sb	123					
	Ba	135					
	Ba	137					
>	Lu	175		108.46			
	Tl	205					
	Pb	208					
	Th	232					
	U	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: 1203815379
Sample Date/Time: Friday, July 07, 2017 18:59:33
Sample Type: Sample
Sample Description: CPRC 6020B MS
Number of Replicates: 3
Batch ID: 1675724|1|baj
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170705\1203815379.624

Concentration Results

Summary

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	**61.263**	**ug/L**	4.875	78166.611	0.139
Be	9	**56.781**	**ug/L**	3.538	23510.332	0.042
B	11	**107.443**	**ug/L**	3.627	31036.368	0.053
Na	23	**22062.677**	**ug/L**	3.233	24599955.409	43.708
Mg	24	**19185.196**	**ug/L**	4.752	9931258.249	17.680
Al	27	**2188.164**	**ug/L**	3.448	952039.622	1.691
P	31	**2045.045**	**ug/L**	7.546	62292.937	0.110
K	39	**9842.235**	**ug/L**	1.466	4772940.356	8.465
Ca	44	**54259.164**	**ug/L**	8.732	1046163.777	1.864
>Sc	45		**ug/L**		562424.198	562424.198
Ti	47	**50.429**	**ug/L**	3.942	4466.031	0.008
V	51	**76.250**	**ug/L**	5.104	184536.951	0.316
Cr	52	**72.428**	**ug/L**	7.365	201679.741	0.358
Cr	53		**ug/L**		29797.056	0.048
Mn	55	**50.663**	**ug/L**	4.703	106002.502	0.189
Fe	57	**2042.180**	**ug/L**	8.036	120880.371	0.215
Co	59	**49.770**	**ug/L**	4.651	205481.878	0.366
Ni	60	**74.982**	**ug/L**	5.176	80167.005	0.143
Cu	63		**ug/L**		136317.582	0.243
Cu	65	**50.197**	**ug/L**	4.102	62526.558	0.111
Zn	66	**49.186**	**ug/L**	2.518	16257.916	0.073
Zn	67		**ug/L**		2938.970	0.013
Zn	68		**ug/L**		12787.055	0.057
>Ge	74		**ug/L**		221567.717	221567.717
As	75	**61.494**	**ug/L**	2.036	12304.071	0.055
Se	77		**ug/L**		756.687	0.003
Se	78	**55.512**	**ug/L**	0.727	1670.900	0.007
Se	82		**ug/L**		850.914	0.004
Kr	83		**ug/L**		39.333	0.000
Sr	88	**330.706**	**ug/L**	3.071	636286.903	2.614
Zr	90	**50.652**	**ug/L**	4.443	111820.012	0.459
Mo	98	**53.429**	**ug/L**	2.753	73152.974	0.300
Ag	107	**50.378**	**ug/L**	4.115	165118.208	0.679
Cd	111	**51.014**	**ug/L**	2.756	26240.746	0.108
Cd	114		**ug/L**		69067.428	0.284
>In	115		**ug/L**		243421.328	243421.328
Sn	120	**52.028**	**ug/L**	3.293	130276.000	0.535
Sb	121	**49.063**	**ug/L**	2.618	81116.313	0.333
Sb	123		**ug/L**		66507.221	0.273
Ba	135		**ug/L**		47613.892	0.057
Ba	137	**89.925**	**ug/L**	1.389	83385.369	0.099
>Lu	175		**ug/L**		840163.632	840163.632
Tl	205	**44.850**	**ug/L**	2.077	697347.564	0.830
Pb	208	**46.748**	**ug/L**	1.146	923286.812	1.099
Th	232	**46.932**	**ug/L**	1.188	1000133.569	1.189
U	238	**50.255**	**ug/L**	0.680	1137826.546	1.354

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Li	7	Linear Thru Zero	1.0000
Be	9	Linear Thru Zero	1.0000
B	11	Linear Thru Zero	1.0000
Na	23	Linear Thru Zero	1.0000
Mg	24	Linear Thru Zero	0.9999
Al	27	Linear Thru Zero	1.0000
P	31	Linear Thru Zero	1.0000
K	39	Linear Thru Zero	1.0000
Ca	44	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Ti	47	Linear Thru Zero	1.0000
V	51	Linear Thru Zero	1.0000
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000
Zn	66	Linear Thru Zero	1.0000
Zn	67	Linear Thru Zero	
Zn	68	Linear Thru Zero	
Ge	74	Linear Thru Zero	
As	75	Linear Thru Zero	1.0000
Se	77	Linear Thru Zero	
Se	78	Linear Thru Zero	1.0000
Se	82	Linear Thru Zero	
Kr	83	Linear Thru Zero	
Sr	88	Linear Thru Zero	1.0000
Zr	90	Linear Thru Zero	1.0000
Mo	98	Linear Thru Zero	1.0000
Ag	107	Linear Thru Zero	1.0000
Cd	111	Linear Thru Zero	1.0000
Cd	114	Linear Thru Zero	
In	115	Linear Thru Zero	
Sn	120	Linear Thru Zero	1.0000
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	
Ba	135	Linear Thru Zero	
Ba	137	Linear Thru Zero	1.0000
Lu	175	Linear Thru Zero	
Tl	205	Linear Thru Zero	1.0000
Pb	208	Linear Thru Zero	1.0000
Th	232	Linear Thru Zero	1.0000
U	238	Linear Thru Zero	1.0000

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Li	7					
	Be	9					
	B	11					
	Na	23					
	Mg	24					
	Al	27					
	P	31					
	K	39					
	Ca	44					
>	Sc	45		107.37			
	Ti	47					
	V	51					
	Cr	52					
	Cr	53					
	Mn	55					
	Fe	57					
	Co	59					
	Ni	60					
	Cu	63					
	Cu	65					
	Zn	66					
	Zn	67					
	Zn	68					
>	Ge	74		101.70			
	As	75					
	Se	77					
	Se	78					
	Se	82					
	Kr	83					
	Sr	88					
	Zr	90					
	Mo	98					
	Ag	107					
	Cd	111					
	Cd	114					
>	In	115		100.94			
	Sn	120					
	Sb	121					
	Sb	123					
	Ba	135					
	Ba	137					
>	Lu	175		103.34			
	Tl	205					
	Pb	208					
	Th	232					
	U	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ca 44 Upper, S, EE	Ca	44	Sample is out of limits (over linear range)

QC Action

QC Action Line: Continue

ICPMS #12 - Summary Report

Sample ID: 1203815380
Sample Date/Time: Friday, July 07, 2017 19:02:48
Sample Type: Sample
Sample Description: CPRC 6020B MSD
Number of Replicates: 3
Batch ID: 1675724|1|baj
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170705\1203815380.625

Concentration Results

Summary

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	**64.258**	**ug/L**	8.216	80308.396	0.146
Be	9	**56.575**	**ug/L**	5.273	22943.424	0.042
B	11	**112.794**	**ug/L**	5.128	31847.481	0.056
Na	23	**21850.223**	**ug/L**	3.905	23864787.720	43.287
Mg	24	**18877.297**	**ug/L**	3.226	9578784.820	17.396
Al	27	**2112.460**	**ug/L**	4.887	900220.398	1.633
P	31	**2205.319**	**ug/L**	2.971	65854.115	0.119
K	39	**9600.243**	**ug/L**	7.447	4556671.563	8.257
Ca	44	**54358.778**	**ug/L**	1.898	1028481.449	1.867
>Sc	45		**ug/L**		550679.594	550679.594
Ti	47	**50.595**	**ug/L**	5.974	4388.675	0.008
V	51	**77.664**	**ug/L**	3.974	184068.530	0.321
Cr	52	**101.976**	**ug/L**	2.764	278352.845	0.505
Cr	53		**ug/L**		38843.419	0.066
Mn	55	**55.020**	**ug/L**	2.379	112829.190	0.205
Fe	57	**2121.362**	**ug/L**	3.083	123177.479	0.224
Co	59	**48.759**	**ug/L**	3.534	197259.022	0.358
Ni	60	**88.944**	**ug/L**	4.718	93185.780	0.169
Cu	63		**ug/L**		143138.957	0.260
Cu	65	**51.827**	**ug/L**	4.111	63246.411	0.115
Zn	66	**51.068**	**ug/L**	4.003	16313.979	0.076
Zn	67		**ug/L**		2890.959	0.013
Zn	68		**ug/L**		12850.444	0.060
>Ge	74		**ug/L**		214292.426	214292.426
As	75	**62.230**	**ug/L**	3.531	12035.305	0.055
Se	77		**ug/L**		758.020	0.003
Se	78	**55.285**	**ug/L**	3.721	1608.913	0.007
Se	82		**ug/L**		800.467	0.003
Kr	83		**ug/L**		38.667	0.000
Sr	88	**328.036**	**ug/L**	4.246	616369.793	2.593
Zr	90	**51.742**	**ug/L**	4.993	111554.613	0.469
Mo	98	**53.791**	**ug/L**	6.787	71870.286	0.303
Ag	107	**50.340**	**ug/L**	3.801	161186.409	0.678
Cd	111	**51.371**	**ug/L**	7.715	25783.944	0.109
Cd	114		**ug/L**		69569.164	0.293
>In	115		**ug/L**		237804.799	237804.799
Sn	120	**52.450**	**ug/L**	3.599	128271.891	0.539
Sb	121	**50.496**	**ug/L**	5.900	81491.896	0.342
Sb	123		**ug/L**		66741.384	0.281
Ba	135		**ug/L**		46039.401	0.056
Ba	137	**89.950**	**ug/L**	6.601	81367.870	0.099
>Lu	175		**ug/L**		820899.620	820899.620
Tl	205	**45.293**	**ug/L**	5.657	687243.082	0.838
Pb	208	**46.928**	**ug/L**	4.532	904676.438	1.103
Th	232	**48.109**	**ug/L**	5.692	1000424.030	1.219
U	238	**50.609**	**ug/L**	5.697	1118090.823	1.364

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Li	7	Linear Thru Zero	1.0000
Be	9	Linear Thru Zero	1.0000
B	11	Linear Thru Zero	1.0000
Na	23	Linear Thru Zero	1.0000
Mg	24	Linear Thru Zero	0.9999
Al	27	Linear Thru Zero	1.0000
P	31	Linear Thru Zero	1.0000
K	39	Linear Thru Zero	1.0000
Ca	44	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Ti	47	Linear Thru Zero	1.0000
V	51	Linear Thru Zero	1.0000
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000
Zn	66	Linear Thru Zero	1.0000
Zn	67	Linear Thru Zero	
Zn	68	Linear Thru Zero	
Ge	74	Linear Thru Zero	
As	75	Linear Thru Zero	1.0000
Se	77	Linear Thru Zero	
Se	78	Linear Thru Zero	1.0000
Se	82	Linear Thru Zero	
Kr	83	Linear Thru Zero	
Sr	88	Linear Thru Zero	1.0000
Zr	90	Linear Thru Zero	1.0000
Mo	98	Linear Thru Zero	1.0000
Ag	107	Linear Thru Zero	1.0000
Cd	111	Linear Thru Zero	1.0000
Cd	114	Linear Thru Zero	
In	115	Linear Thru Zero	
Sn	120	Linear Thru Zero	1.0000
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	
Ba	135	Linear Thru Zero	
Ba	137	Linear Thru Zero	1.0000
Lu	175	Linear Thru Zero	
Tl	205	Linear Thru Zero	1.0000
Pb	208	Linear Thru Zero	1.0000
Th	232	Linear Thru Zero	1.0000
U	238	Linear Thru Zero	1.0000

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Li	7					
	Be	9					
	B	11					
	Na	23					
	Mg	24					
	Al	27					
	P	31					
	K	39					
	Ca	44					
>	Sc	45		105.13			
	Ti	47					
	V	51					
	Cr	52					
	Cr	53					
	Mn	55					
	Fe	57					
	Co	59					
	Ni	60					
	Cu	63					
	Cu	65					
	Zn	66					
	Zn	67					
	Zn	68					
>	Ge	74		98.36			
	As	75					
	Se	77					
	Se	78					
	Se	82					
	Kr	83					
	Sr	88					
	Zr	90					
	Mo	98					
	Ag	107					
	Cd	111					
	Cd	114					
>	In	115		98.61			
	Sn	120					
	Sb	121					
	Sb	123					
	Ba	135					
	Ba	137					
>	Lu	175		100.97			
	Tl	205					
	Pb	208					
	Th	232					
	U	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ca 44 Upper, S, EE	Ca	44	Sample is out of limits (over linear range)

QC Action

QC Action Line: Continue

ICPMS #12 - Summary Report

Sample ID: 1203815381
Sample Date/Time: Friday, July 07, 2017 19:09:18
Sample Type: Sample
Sample Description: CPRC 6020B SDILT
Number of Replicates: 3
Batch ID: 1675724|5|baj
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170705\1203815381.627

Concentration Results

Summary

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	**1.369**	**ug/L**	3.142	1702.768	0.003
Be	9	**0.007**	**ug/L**	79.745	5.667	0.000
B	11	**4.640**	**ug/L**	7.753	2342.192	0.002
Na	23	**3800.630**	**ug/L**	2.901	4107458.220	7.529
Mg	24	**3438.664**	**ug/L**	4.697	1713646.288	3.169
Al	27	**2.227**	**ug/L**	18.937	2469.547	0.002
P	31	**2.125**	**ug/L**	51.821	499.342	0.000
K	39	**1523.965**	**ug/L**	5.055	721534.131	1.311
Ca	44	**10601.675**	**ug/L**	0.576	197403.353	0.364
>Sc	45		**ug/L**		540809.049	540809.049
Ti	47	**0.014**	**ug/L**	507.916	20.000	0.000
V	51	**5.843**	**ug/L**	7.819	20115.489	0.024
Cr	52	**2.255**	**ug/L**	6.412	6573.513	0.011
Cr	53		**ug/L**		4552.059	0.004
Mn	55	**0.394**	**ug/L**	2.770	906.029	0.001
Fe	57	**12.759**	**ug/L**	9.870	806.023	0.001
Co	59	**0.035**	**ug/L**	21.641	150.001	0.000
Ni	60	**4.481**	**ug/L**	6.311	4636.753	0.009
Cu	63		**ug/L**		762.020	0.001
Cu	65	**0.271**	**ug/L**	10.734	365.338	0.001
Zn	66	**1.522**	**ug/L**	7.386	586.012	0.002
Zn	67		**ug/L**		144.667	0.001
Zn	68		**ug/L**		536.677	0.002
>Ge	74		**ug/L**		226976.953	226976.953
As	75	**1.633**	**ug/L**	14.981	528.389	0.001
Se	77		**ug/L**		165.334	0.000
Se	78	**0.589**	**ug/L**	27.232	89.376	0.000
Se	82		**ug/L**		53.111	-0.000
Kr	83		**ug/L**		38.000	0.000
Sr	88	**52.498**	**ug/L**	0.860	104271.177	0.415
Zr	90	**0.117**	**ug/L**	38.340	418.673	0.001
Mo	98	**0.419**	**ug/L**	9.610	624.397	0.002
Ag	107	**0.003**	**ug/L**	84.060	16.000	0.000
Cd	111	**0.010**	**ug/L**	47.418	9.333	0.000
Cd	114		**ug/L**		20.107	0.000
>In	115		**ug/L**		250527.145	250527.145
Sn	120	**0.035**	**ug/L**	16.609	293.952	0.000
Sb	121	**0.186**	**ug/L**	61.340	486.676	0.001
Sb	123		**ug/L**		359.501	0.001
Ba	135		**ug/L**		4119.927	0.005
Ba	137	**7.769**	**ug/L**	4.760	7195.147	0.009
>Lu	175		**ug/L**		837217.127	837217.127
Tl	205	**0.032**	**ug/L**	24.260	750.020	0.001
Pb	208	**0.012**	**ug/L**	11.566	410.669	0.000
Th	232	**0.392**	**ug/L**	26.845	9648.708	0.010
U	238	**0.445**	**ug/L**	1.322	10054.204	0.012

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Li	7	Linear Thru Zero	1.0000
Be	9	Linear Thru Zero	1.0000
B	11	Linear Thru Zero	1.0000
Na	23	Linear Thru Zero	1.0000
Mg	24	Linear Thru Zero	0.9999
Al	27	Linear Thru Zero	1.0000
P	31	Linear Thru Zero	1.0000
K	39	Linear Thru Zero	1.0000
Ca	44	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Ti	47	Linear Thru Zero	1.0000
V	51	Linear Thru Zero	1.0000
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000
Zn	66	Linear Thru Zero	1.0000
Zn	67	Linear Thru Zero	
Zn	68	Linear Thru Zero	
Ge	74	Linear Thru Zero	
As	75	Linear Thru Zero	1.0000
Se	77	Linear Thru Zero	
Se	78	Linear Thru Zero	1.0000
Se	82	Linear Thru Zero	
Kr	83	Linear Thru Zero	
Sr	88	Linear Thru Zero	1.0000
Zr	90	Linear Thru Zero	1.0000
Mo	98	Linear Thru Zero	1.0000
Ag	107	Linear Thru Zero	1.0000
Cd	111	Linear Thru Zero	1.0000
Cd	114	Linear Thru Zero	
In	115	Linear Thru Zero	
Sn	120	Linear Thru Zero	1.0000
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	
Ba	135	Linear Thru Zero	
Ba	137	Linear Thru Zero	1.0000
Lu	175	Linear Thru Zero	
Tl	205	Linear Thru Zero	1.0000
Pb	208	Linear Thru Zero	1.0000
Th	232	Linear Thru Zero	1.0000
U	238	Linear Thru Zero	1.0000

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Li	7					
	Be	9					
	B	11					
	Na	23					
	Mg	24					
	Al	27					
	P	31					
	K	39					
	Ca	44					
>	Sc	45		103.25			
	Ti	47					
	V	51					
	Cr	52					
	Cr	53					
	Mn	55					
	Fe	57					
	Co	59					
	Ni	60					
	Cu	63					
	Cu	65					
	Zn	66					
	Zn	67					
	Zn	68					
>	Ge	74		104.19			
	As	75					
	Se	77					
	Se	78					
	Se	82					
	Kr	83					
	Sr	88					
	Zr	90					
	Mo	98					
	Ag	107					
	Cd	111					
	Cd	114					
>	In	115		103.89			
	Sn	120					
	Sb	121					
	Sb	123					
	Ba	135					
	Ba	137					
>	Lu	175		102.98			
	Tl	205					
	Pb	208					
	Th	232					
	U	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: 425783003
Sample Date/Time: Friday, July 07, 2017 19:15:49
Sample Type: Sample
Sample Description: CPRC 6020B
Number of Replicates: 3
Batch ID: 1675724|1|baj
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170705\425783003.629

Concentration Results

Summary

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	**3.645**	**ug/L**	2.621	4640.754	0.008
Be	9	**-0.002**	**ug/L**	8.646	2.000	-0.000
B	11	**21.223**	**ug/L**	6.567	6992.378	0.011
Na	23	**13350.743**	**ug/L**	4.154	14788937.810	26.449
Mg	24	**9767.976**	**ug/L**	4.581	5020776.725	9.002
Al	27	**8.505**	**ug/L**	7.422	5258.302	0.007
P	31	**36.628**	**ug/L**	10.555	1550.751	0.002
K	39	**3812.905**	**ug/L**	4.527	1842504.253	3.279
Ca	44	**26200.397**	**ug/L**	7.776	501918.390	0.900
>Sc	45		**ug/L**		558244.330	558244.330
Ti	47	**0.333**	**ug/L**	61.897	48.667	0.000
V	51	**29.069**	**ug/L**	6.036	74341.661	0.120
Cr	52	**20.134**	**ug/L**	3.159	56139.459	0.100
Cr	53		**ug/L**		12553.514	0.018
Mn	55	**6.776**	**ug/L**	7.029	14168.362	0.025
Fe	57	**13.757**	**ug/L**	6.856	890.028	0.001
Co	59	**0.141**	**ug/L**	9.443	586.679	0.001
Ni	60	**0.399**	**ug/L**	2.753	455.341	0.001
Cu	63		**ug/L**		5182.273	0.009
Cu	65	**1.903**	**ug/L**	7.971	2390.200	0.004
Zn	66	**2.479**	**ug/L**	3.657	881.361	0.004
Zn	67		**ug/L**		355.338	0.002
Zn	68		**ug/L**		1349.397	0.006
>Ge	74		**ug/L**		220058.479	220058.479
As	75	**4.474**	**ug/L**	8.325	1067.824	0.004
Se	77		**ug/L**		315.337	0.001
Se	78	**3.771**	**ug/L**	3.427	177.829	0.000
Se	82		**ug/L**		121.778	0.000
Kr	83		**ug/L**		40.667	0.000
Sr	88	**124.454**	**ug/L**	2.289	241134.929	0.984
Zr	90	**0.060**	**ug/L**	21.114	282.003	0.001
Mo	98	**9.982**	**ug/L**	4.404	13770.519	0.056
Ag	107	**0.010**	**ug/L**	14.833	37.333	0.000
Cd	111	**0.010**	**ug/L**	39.190	9.333	0.000
Cd	114		**ug/L**		9.382	0.000
>In	115		**ug/L**		244878.756	244878.756
Sn	120	**0.084**	**ug/L**	8.842	409.904	0.001
Sb	121	**0.473**	**ug/L**	15.656	953.365	0.003
Sb	123		**ug/L**		659.008	0.002
Ba	135		**ug/L**		21898.104	0.027
Ba	137	**43.892**	**ug/L**	3.983	39111.487	0.048
>Lu	175		**ug/L**		807588.052	807588.052
Tl	205	**0.008**	**ug/L**	26.333	358.004	0.000
Pb	208	**0.020**	**ug/L**	14.150	548.004	0.000
Th	232	**0.103**	**ug/L**	11.268	3399.740	0.003
U	238	**1.421**	**ug/L**	2.633	30946.151	0.038

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Li	7	Linear Thru Zero	1.0000
Be	9	Linear Thru Zero	1.0000
B	11	Linear Thru Zero	1.0000
Na	23	Linear Thru Zero	1.0000
Mg	24	Linear Thru Zero	0.9999
Al	27	Linear Thru Zero	1.0000
P	31	Linear Thru Zero	1.0000
K	39	Linear Thru Zero	1.0000
Ca	44	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Ti	47	Linear Thru Zero	1.0000
V	51	Linear Thru Zero	1.0000
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000
Zn	66	Linear Thru Zero	1.0000
Zn	67	Linear Thru Zero	
Zn	68	Linear Thru Zero	
Ge	74	Linear Thru Zero	
As	75	Linear Thru Zero	1.0000
Se	77	Linear Thru Zero	
Se	78	Linear Thru Zero	1.0000
Se	82	Linear Thru Zero	
Kr	83	Linear Thru Zero	
Sr	88	Linear Thru Zero	1.0000
Zr	90	Linear Thru Zero	1.0000
Mo	98	Linear Thru Zero	1.0000
Ag	107	Linear Thru Zero	1.0000
Cd	111	Linear Thru Zero	1.0000
Cd	114	Linear Thru Zero	
In	115	Linear Thru Zero	
Sn	120	Linear Thru Zero	1.0000
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	
Ba	135	Linear Thru Zero	
Ba	137	Linear Thru Zero	1.0000
Lu	175	Linear Thru Zero	
Tl	205	Linear Thru Zero	1.0000
Pb	208	Linear Thru Zero	1.0000
Th	232	Linear Thru Zero	1.0000
U	238	Linear Thru Zero	1.0000

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Li	7					
	Be	9					
	B	11					
	Na	23					
	Mg	24					
	Al	27					
	P	31					
	K	39					
	Ca	44					
>	Sc	45		106.57			
	Ti	47					
	V	51					
	Cr	52					
	Cr	53					
	Mn	55					
	Fe	57					
	Co	59					
	Ni	60					
	Cu	63					
	Cu	65					
	Zn	66					
	Zn	67					
	Zn	68					
>	Ge	74		101.01			
	As	75					
	Se	77					
	Se	78					
	Se	82					
	Kr	83					
	Sr	88					
	Zr	90					
	Mo	98					
	Ag	107					
	Cd	111					
	Cd	114					
>	In	115		101.55			
	Sn	120					
	Sb	121					
	Sb	123					
	Ba	135					
	Ba	137					
>	Lu	175		99.33			
	Tl	205					
	Pb	208					
	Th	232					
	U	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: 425783004
Sample Date/Time: Friday, July 07, 2017 19:19:04
Sample Type: Sample
Sample Description: CPRC 6020B
Number of Replicates: 3
Batch ID: 1675724|1|baj
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170705\425783004.630

Concentration Results

Summary

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	**4.206**	**ug/L**	3.920	5176.271	0.010
Be	9	**0.007**	**ug/L**	118.516	5.333	0.000
B	11	**22.784**	**ug/L**	4.042	7186.475	0.011
Na	23	**14283.156**	**ug/L**	1.461	15313635.363	28.296
Mg	24	**10049.623**	**ug/L**	2.763	4999690.943	9.261
Al	27	**52.127**	**ug/L**	4.919	23276.292	0.040
P	31	**40.384**	**ug/L**	2.363	1611.424	0.002
K	39	**4003.955**	**ug/L**	3.822	1871537.696	3.444
Ca	44	**27916.739**	**ug/L**	3.105	517964.556	0.959
>Sc	45		**ug/L**		539779.714	539779.714
Ti	47	**2.461**	**ug/L**	8.079	227.335	0.000
V	51	**32.099**	**ug/L**	4.472	78707.646	0.133
Cr	52	**20.738**	**ug/L**	0.546	55929.288	0.103
Cr	53		**ug/L**		13797.329	0.021
Mn	55	**16.868**	**ug/L**	1.774	34001.112	0.063
Fe	57	**127.879**	**ug/L**	1.988	7354.560	0.013
Co	59	**0.087**	**ug/L**	12.016	356.671	0.001
Ni	60	**0.607**	**ug/L**	0.953	654.015	0.001
Cu	63		**ug/L**		5907.889	0.011
Cu	65	**2.306**	**ug/L**	0.820	2798.274	0.005
Zn	66	**3.300**	**ug/L**	8.028	1172.048	0.005
Zn	67		**ug/L**		432.673	0.002
Zn	68		**ug/L**		1534.082	0.007
>Ge	74		**ug/L**		224412.065	224412.065
As	75	**4.448**	**ug/L**	5.433	1084.420	0.004
Se	77		**ug/L**		318.670	0.001
Se	78	**3.908**	**ug/L**	8.104	185.307	0.001
Se	82		**ug/L**		116.445	0.000
Kr	83		**ug/L**		44.667	0.000
Sr	88	**126.296**	**ug/L**	2.351	246394.788	0.998
Zr	90	**0.105**	**ug/L**	8.967	384.672	0.001
Mo	98	**9.900**	**ug/L**	1.756	13758.954	0.056
Ag	107	**0.043**	**ug/L**	19.280	149.334	0.001
Cd	111	**0.002**	**ug/L**	243.347	5.333	0.000
Cd	114		**ug/L**		6.001	0.000
>In	115		**ug/L**		246595.405	246595.405
Sn	120	**0.125**	**ug/L**	25.084	515.925	0.001
Sb	121	**0.333**	**ug/L**	8.871	726.685	0.002
Sb	123		**ug/L**		525.837	0.002
Ba	135		**ug/L**		23248.237	0.028
Ba	137	**43.180**	**ug/L**	0.715	39253.192	0.048
>Lu	175		**ug/L**		823521.715	823521.715
Tl	205	**0.008**	**ug/L**	21.773	361.338	0.000
Pb	208	**0.057**	**ug/L**	7.073	1269.356	0.001
Th	232	**0.079**	**ug/L**	7.464	2971.643	0.002
U	238	**1.421**	**ug/L**	1.806	31539.778	0.038

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Li	7	Linear Thru Zero	1.0000
Be	9	Linear Thru Zero	1.0000
B	11	Linear Thru Zero	1.0000
Na	23	Linear Thru Zero	1.0000
Mg	24	Linear Thru Zero	0.9999
Al	27	Linear Thru Zero	1.0000
P	31	Linear Thru Zero	1.0000
K	39	Linear Thru Zero	1.0000
Ca	44	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Ti	47	Linear Thru Zero	1.0000
V	51	Linear Thru Zero	1.0000
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000
Zn	66	Linear Thru Zero	1.0000
Zn	67	Linear Thru Zero	
Zn	68	Linear Thru Zero	
Ge	74	Linear Thru Zero	
As	75	Linear Thru Zero	1.0000
Se	77	Linear Thru Zero	
Se	78	Linear Thru Zero	1.0000
Se	82	Linear Thru Zero	
Kr	83	Linear Thru Zero	
Sr	88	Linear Thru Zero	1.0000
Zr	90	Linear Thru Zero	1.0000
Mo	98	Linear Thru Zero	1.0000
Ag	107	Linear Thru Zero	1.0000
Cd	111	Linear Thru Zero	1.0000
Cd	114	Linear Thru Zero	
In	115	Linear Thru Zero	
Sn	120	Linear Thru Zero	1.0000
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	
Ba	135	Linear Thru Zero	
Ba	137	Linear Thru Zero	1.0000
Lu	175	Linear Thru Zero	
Tl	205	Linear Thru Zero	1.0000
Pb	208	Linear Thru Zero	1.0000
Th	232	Linear Thru Zero	1.0000
U	238	Linear Thru Zero	1.0000

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Li	7					
	Be	9					
	B	11					
	Na	23					
	Mg	24					
	Al	27					
	P	31					
	K	39					
	Ca	44					
>	Sc	45		103.05			
	Ti	47					
	V	51					
	Cr	52					
	Cr	53					
	Mn	55					
	Fe	57					
	Co	59					
	Ni	60					
	Cu	63					
	Cu	65					
	Zn	66					
	Zn	67					
	Zn	68					
>	Ge	74		103.01			
	As	75					
	Se	77					
	Se	78					
	Se	82					
	Kr	83					
	Sr	88					
	Zr	90					
	Mo	98					
	Ag	107					
	Cd	111					
	Cd	114					
>	In	115		102.26			
	Sn	120					
	Sb	121					
	Sb	123					
	Ba	135					
	Ba	137					
>	Lu	175		101.29			
	Tl	205					
	Pb	208					
	Th	232					
	U	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: QC Std 13
Sample Date/Time: Friday, July 07, 2017 19:22:20
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170705\QC Std 13.631

Concentration Results

Summary

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	**54.136**	**ug/L**	6.889	64820.931	0.123
Be	9	**52.939**	**ug/L**	3.771	20570.801	0.039
B	11	**99.488**	**ug/L**	7.943	27026.926	0.049
Na	23	**5086.765**	**ug/L**	4.965	5349524.285	10.077
Mg	24	**5231.391**	**ug/L**	2.820	2543879.878	4.821
Al	27	**5288.482**	**ug/L**	5.021	2156571.751	4.088
P	31	**5018.130**	**ug/L**	1.944	143055.590	0.270
K	39	**4957.704**	**ug/L**	5.573	2260807.533	4.264
Ca	44	**4796.993**	**ug/L**	4.234	87335.533	0.165
>Sc	45		**ug/L**		527607.475	527607.475
Ti	47	**49.168**	**ug/L**	7.119	4084.918	0.008
V	51	**51.787**	**ug/L**	6.192	119839.635	0.214
Cr	52	**51.255**	**ug/L**	2.374	134277.469	0.254
Cr	53		**ug/L**		19451.936	0.032
Mn	55	**51.606**	**ug/L**	1.088	101426.952	0.192
Fe	57	**4987.693**	**ug/L**	7.958	277116.944	0.526
Co	59	**50.029**	**ug/L**	4.100	193880.021	0.368
Ni	60	**52.098**	**ug/L**	6.485	52286.961	0.099
Cu	63		**ug/L**		132180.986	0.251
Cu	65	**51.212**	**ug/L**	5.537	59855.880	0.113
Zn	66	**47.869**	**ug/L**	3.239	15958.924	0.071
Zn	67		**ug/L**		2758.934	0.012
Zn	68		**ug/L**		12253.925	0.055
>Ge	74		**ug/L**		223366.392	223366.392
As	75	**47.077**	**ug/L**	2.825	9540.025	0.042
Se	77		**ug/L**		528.010	0.002
Se	78	**48.802**	**ug/L**	2.356	1489.320	0.006
Se	82		**ug/L**		753.575	0.003
Kr	83		**ug/L**		38.000	0.000
Sr	88	**50.133**	**ug/L**	0.536	94759.270	0.396
Zr	90	**49.223**	**ug/L**	5.611	106457.142	0.446
Mo	98	**49.860**	**ug/L**	2.710	66872.560	0.280
Ag	107	**49.930**	**ug/L**	1.553	160342.846	0.673
Cd	111	**50.638**	**ug/L**	3.760	25511.440	0.107
Cd	114		**ug/L**		69406.848	0.291
>In	115		**ug/L**		238348.960	238348.960
Sn	120	**51.587**	**ug/L**	1.967	126538.649	0.530
Sb	121	**46.135**	**ug/L**	4.171	74715.033	0.313
Sb	123		**ug/L**		60735.209	0.254
Ba	135		**ug/L**		26134.552	0.032
Ba	137	**49.923**	**ug/L**	2.872	45280.326	0.055
>Lu	175		**ug/L**		821863.681	821863.681
Tl	205	**48.840**	**ug/L**	3.300	742662.686	0.904
Pb	208	**49.800**	**ug/L**	2.730	961957.676	1.171
Th	232	**49.075**	**ug/L**	4.909	1022696.302	1.243
U	238	**48.515**	**ug/L**	2.159	1074311.160	1.307

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Li	7	Linear Thru Zero	1.0000
Be	9	Linear Thru Zero	1.0000
B	11	Linear Thru Zero	1.0000
Na	23	Linear Thru Zero	1.0000
Mg	24	Linear Thru Zero	0.9999
Al	27	Linear Thru Zero	1.0000
P	31	Linear Thru Zero	1.0000
K	39	Linear Thru Zero	1.0000
Ca	44	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Ti	47	Linear Thru Zero	1.0000
V	51	Linear Thru Zero	1.0000
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000
Zn	66	Linear Thru Zero	1.0000
Zn	67	Linear Thru Zero	
Zn	68	Linear Thru Zero	
Ge	74	Linear Thru Zero	
As	75	Linear Thru Zero	1.0000
Se	77	Linear Thru Zero	
Se	78	Linear Thru Zero	1.0000
Se	82	Linear Thru Zero	
Kr	83	Linear Thru Zero	
Sr	88	Linear Thru Zero	1.0000
Zr	90	Linear Thru Zero	1.0000
Mo	98	Linear Thru Zero	1.0000
Ag	107	Linear Thru Zero	1.0000
Cd	111	Linear Thru Zero	1.0000
Cd	114	Linear Thru Zero	
In	115	Linear Thru Zero	
Sn	120	Linear Thru Zero	1.0000
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	
Ba	135	Linear Thru Zero	
Ba	137	Linear Thru Zero	1.0000
Lu	175	Linear Thru Zero	
Tl	205	Linear Thru Zero	1.0000
Pb	208	Linear Thru Zero	1.0000
Th	232	Linear Thru Zero	1.0000
U	238	Linear Thru Zero	1.0000

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Li	7	108.271				
	Be	9	105.879				
	B	11	99.488				
	Na	23	101.735				
	Mg	24	104.628				
	Al	27	104.722				
	P	31	100.363				
	K	39	99.154				
	Ca	44	95.940				
>	Sc	45		100.72			
	Ti	47	98.335				
	V	51	103.574				
	Cr	52	102.509				
	Cr	53					
	Mn	55	103.213				
	Fe	57	99.754				
	Co	59	100.058				
	Ni	60	104.197				
	Cu	63					
	Cu	65	102.424				
	Zn	66	95.737				
	Zn	67					
	Zn	68					
>	Ge	74		102.53			
	As	75	94.154				
	Se	77					
	Se	78	97.604				
	Se	82					
	Kr	83					
	Sr	88	100.266				
	Zr	90	98.446				
	Mo	98	99.720				
	Ag	107	99.860				
	Cd	111	101.275				
	Cd	114					
>	In	115		98.84			
	Sn	120	103.174				
	Sb	121	92.269				
	Sb	123					
	Ba	135					
	Ba	137	99.845				
>	Lu	175		101.09			
	Tl	205	97.679				
	Pb	208	99.600				
	Th	232	98.150				
	U	238	97.029				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: QC Std 15
Sample Date/Time: Friday, July 07, 2017 19:25:35
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170705\QC Std 15.632

Concentration Results

Summary

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	**0.009**	**ug/L**	51.712	32.000	0.000
Be	9	**0.005**	**ug/L**	62.919	4.667	0.000
B	11	**2.548**	**ug/L**	7.257	1746.107	0.001
Na	23	**0.470**	**ug/L**	431.574	37697.699	0.001
Mg	24	**0.518**	**ug/L**	44.187	1509.413	0.000
Al	27	**0.270**	**ug/L**	90.120	1618.092	0.000
P	31	**-3.274**	**ug/L**	20.654	334.671	-0.000
K	39	**3.462**	**ug/L**	44.512	14549.405	0.003
Ca	44	**-1.741**	**ug/L**	128.320	432.007	-0.000
>Sc	45		**ug/L**		529619.513	529619.513
Ti	47	**-0.091**	**ug/L**	55.320	11.000	-0.000
V	51	**1.262**	**ug/L**	14.832	9667.937	0.005
Cr	52	**0.030**	**ug/L**	34.365	612.680	0.000
Cr	53		**ug/L**		3750.492	0.002
Mn	55	**0.011**	**ug/L**	69.462	132.001	0.000
Fe	57	**0.620**	**ug/L**	75.589	111.334	0.000
Co	59	**0.002**	**ug/L**	133.520	18.000	0.000
Ni	60	**-0.004**	**ug/L**	96.363	25.333	-0.000
Cu	63		**ug/L**		69.334	0.000
Cu	65	**-0.004**	**ug/L**	46.457	34.000	-0.000
Zn	66	**0.040**	**ug/L**	100.707	84.000	0.000
Zn	67		**ug/L**		24.000	0.000
Zn	68		**ug/L**		49.333	-0.000
>Ge	74		**ug/L**		218815.833	218815.833
As	75	**-0.064**	**ug/L**	196.845	180.227	-0.000
Se	77		**ug/L**		108.667	-0.000
Se	78	**0.134**	**ug/L**	36.597	73.312	0.000
Se	82		**ug/L**		50.445	-0.000
Kr	83		**ug/L**		31.333	-0.000
Sr	88	**-0.003**	**ug/L**	318.460	308.670	-0.000
Zr	90	**0.010**	**ug/L**	122.249	173.334	0.000
Mo	98	**0.022**	**ug/L**	22.158	63.790	0.000
Ag	107	**0.004**	**ug/L**	105.568	18.000	0.000
Cd	111	**-0.001**	**ug/L**	317.849	3.333	-0.000
Cd	114		**ug/L**		7.435	0.000
>In	115		**ug/L**		245789.128	245789.128
Sn	120	**0.031**	**ug/L**	37.850	276.593	0.000
Sb	121	**0.182**	**ug/L**	16.376	473.341	0.001
Sb	123		**ug/L**		385.917	0.001
Ba	135		**ug/L**		14.667	0.000
Ba	137	**-0.006**	**ug/L**	184.275	13.333	-0.000
>Lu	175		**ug/L**		811713.764	811713.764
Tl	205	**0.073**	**ug/L**	32.075	1341.400	0.001
Pb	208	**0.004**	**ug/L**	20.282	239.334	0.000
Th	232	**0.201**	**ug/L**	33.196	5450.422	0.005
U	238	**0.005**	**ug/L**	23.822	128.667	0.000

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Li	7	Linear Thru Zero	1.0000
Be	9	Linear Thru Zero	1.0000
B	11	Linear Thru Zero	1.0000
Na	23	Linear Thru Zero	1.0000
Mg	24	Linear Thru Zero	0.9999
Al	27	Linear Thru Zero	1.0000
P	31	Linear Thru Zero	1.0000
K	39	Linear Thru Zero	1.0000
Ca	44	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Ti	47	Linear Thru Zero	1.0000
V	51	Linear Thru Zero	1.0000
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000
Zn	66	Linear Thru Zero	1.0000
Zn	67	Linear Thru Zero	
Zn	68	Linear Thru Zero	
Ge	74	Linear Thru Zero	
As	75	Linear Thru Zero	1.0000
Se	77	Linear Thru Zero	
Se	78	Linear Thru Zero	1.0000
Se	82	Linear Thru Zero	
Kr	83	Linear Thru Zero	
Sr	88	Linear Thru Zero	1.0000
Zr	90	Linear Thru Zero	1.0000
Mo	98	Linear Thru Zero	1.0000
Ag	107	Linear Thru Zero	1.0000
Cd	111	Linear Thru Zero	1.0000
Cd	114	Linear Thru Zero	
In	115	Linear Thru Zero	
Sn	120	Linear Thru Zero	1.0000
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	
Ba	135	Linear Thru Zero	
Ba	137	Linear Thru Zero	1.0000
Lu	175	Linear Thru Zero	
Tl	205	Linear Thru Zero	1.0000
Pb	208	Linear Thru Zero	1.0000
Th	232	Linear Thru Zero	1.0000
U	238	Linear Thru Zero	1.0000

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Li	7					
	Be	9					
	B	11					
	Na	23					
	Mg	24					
	Al	27					
	P	31					
	K	39					
	Ca	44					
>	Sc	45		101.11			
	Ti	47					
	V	51					
	Cr	52					
	Cr	53					
	Mn	55					
	Fe	57					
	Co	59					
	Ni	60					
	Cu	63					
	Cu	65					
	Zn	66					
	Zn	67					
	Zn	68					
>	Ge	74		100.44			
	As	75					
	Se	77					
	Se	78					
	Se	82					
	Kr	83					
	Sr	88					
	Zr	90					
	Mo	98					
	Ag	107					
	Cd	111					
	Cd	114					
>	In	115		101.93			
	Sn	120					
	Sb	121					
	Sb	123					
	Ba	135					
	Ba	137					
>	Lu	175		99.84			
	Tl	205					
	Pb	208					
	Th	232					
	U	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 Daily Performance

Sample ID: Sample
Sample Date/Time: Monday, July 10, 2017 12:28:18
Sample Description:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\Daily 2.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\Default\Sample.7896
Mass Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\default2.tun
Dual Detector Mode: Pulse
Acquisition Date/Time&Time Zone: Monday, July 10, 2017 12:28:18 Eastern Daylight Time
Number of Replicates: 5

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD
	Be	9.0	69691.2	69691.233	463.478	0.7
	Mg	24.0	318216.9	318216.899	1584.032	0.5
	Co	58.9	153046.9	153046.855	1425.632	0.9
	Rh	102.9	101154.0	101154.024	667.650	0.7
	In	114.9	315201.9	315201.870	2238.149	0.7
	Pb	208.0	180977.8	180977.808	857.022	0.5
>	Ba	137.9	284925.0	284925.014	1213.566	0.4
	Ba++	69.0	7809.5	0.027	0.000	1.4
>	Ce	139.9	330959.2	330959.230	2642.961	0.8
	CeO	155.9	8531.4	0.026	0.001	3.6
	Bkgd	220.0	0.4	0.400	0.137	34.2

Current Conditions

C Val	Description
0.93	Nebulizer Gas Flow STD/KED [NEB]
1.20	Auxiliary Gas Flow
18.00	Plasma Gas Flow
-12.00	Deflector Voltage
1600.00	ICP RF Power
-1525.00	Analog Stage Voltage
800.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-16.00	Cell Rod Offset STD [CRO]
8.00	Discriminator Threshold
-8.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.45	RPq
0.96	DRC Mode NEB
-9.00	DRC Mode QRO
-2.00	DRC Mode CRO
-7.00	DRC Mode Cell Entrance/Exit Voltage
0.60	Cell Gas A
200.00	Axial Field Voltage
-16.00	KED Mode CRO
-12.50	KED Mode QRO
-5.00	KED Mode Cell Entrance Voltage
-31.00	KED Mode Cell Exit Voltage
3.00	KED Cell Gas A
0.00	KED RPa
0.25	KED RPq
475.00	KED Mode Axial Field Voltage

Current Autolens Data

Analyte	Mass	Num of Pts	DAC Value	Maximum Intensity
Be	9.012	41	-14.5	49519.7
Mg	23.985	41	-14.5	138134.6
In	114.904	41	-11.5	22904.3
Ce	139.905	41	-10.0	21384.0
Pb	207.977	41	-6.0	33108.3
U	238.050	41	-6.0	69838.3

ICPMS #12 Instrument Tuning Report

Analyte	Exact Mass	Meas. Mass	Mass DAC	Res DAC	Meas. Pk. Width
Be	9.0	9.0	1641	2065	0.668
Mg	24.0	24.0	4621	2065	0.652
Mg	25.0	25.0	4821	2065	0.670
Mg	26.0	26.0	5012	2065	0.660
Co	58.9	58.9	11603	2065	0.651
Rh	102.9	102.9	20392	2065	0.660
In	114.9	114.9	22792	2070	0.629
Ce	139.9	139.9	27787	2072	0.638
Pb	206.0	206.0	40989	2065	0.764
Pb	207.0	207.0	41188	2065	0.760
Pb	208.0	208.0	41388	2065	0.761
U	238.1	238.1	47412	2068	0.705

ICPMS #12 - Summary Report

Sample ID: Cal Blank
Sample Date/Time: Monday, July 10, 2017 13:39:36
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b 0710.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170710\Cal Blank.006

Concentration Results

Summary

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9		ug/L		3.667	
>Sc	45		ug/L		795031.734	
Mn	55		ug/L		212.002	
Sr	88		ug/L		335.337	
>In	115		ug/L		267844.570	
Sb	121		ug/L		133.334	
Sb	123		ug/L		119.161	

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	
Sc	45	Linear Thru Zero	
Mn	55	Linear Thru Zero	
Sr	88	Linear Thru Zero	
In	115	Linear Thru Zero	
Sb	121	Linear Thru Zero	
Sb	123	Linear Thru Zero	

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Be	9					
>	Sc	45					
	Mn	55					
	Sr	88					
>	In	115					
	Sb	121					
	Sb	123					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Monday, July 10, 2017 13:41:11
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b 0710.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170710\Standard 1.007

Concentration Results

Summary

Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9	**10.000**	**ug/L**	1.964	3423.077	0.004
>Sc	45		**ug/L**		852111.868	852111.868
Mn	55	**10.000**	**ug/L**	0.399	24454.246	0.028
Sr	88	**10.000**	**ug/L**	3.692	20092.791	0.073
>In	115		**ug/L**		270159.476	270159.476
Sb	121	**10.000**	**ug/L**	4.328	16462.831	0.060
Sb	123		**ug/L**		13739.109	0.050

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Sr	88	Linear Thru Zero	1.0000
In	115	Linear Thru Zero	
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Be	9					
>	Sc	45					
	Mn	55					
	Sr	88					
>	In	115					
	Sb	121					
	Sb	123					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Monday, July 10, 2017 13:42:46
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b 0710.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170710\Standard 2.008

Concentration Results

Summary

Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9	**100.056**	**ug/L**	6.127	32352.274	0.043
>Sc	45		**ug/L**		761679.580	761679.580
Mn	55	**100.058**	**ug/L**	5.850	229883.575	0.302
Sr	88	**100.034**	**ug/L**	3.683	192627.473	0.758
>In	115		**ug/L**		254001.389	254001.389
Sb	121	**99.999**	**ug/L**	5.081	153271.725	0.603
Sb	123		**ug/L**		124816.491	0.491

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Sr	88	Linear Thru Zero	1.0000
In	115	Linear Thru Zero	
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Be	9					
>	Sc	45					
	Mn	55					
	Sr	88					
>	In	115					
	Sb	121					
	Sb	123					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Monday, July 10, 2017 13:44:23
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b 0710.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170710\QC Std 1.009

Concentration Results

Summary

	Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
	Be	9	**52.655**	**ug/L**	2.849	17811.432	0.022
>	Sc	45		**ug/L**		795934.327	795934.327
	Mn	55	**51.624**	**ug/L**	1.644	124180.092	0.156
	Sr	88	**53.817**	**ug/L**	4.131	103814.946	0.408
>	In	115		**ug/L**		253949.998	253949.998
	Sb	121	**49.468**	**ug/L**	1.091	75921.219	0.298
	Sb	123		**ug/L**		61378.343	0.241

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Sr	88	Linear Thru Zero	1.0000
In	115	Linear Thru Zero	
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	

QC Calculated Values

	Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
		Be	9	105.309				
>		Sc	45		100.11			
		Mn	55	103.248				
		Sr	88	107.634				
>		In	115		94.81			
		Sb	121	98.936				
		Sb	123					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Monday, July 10, 2017 13:46:00
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b 0710.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170710\QC Std 2.010

Concentration Results

Summary

	Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
	Be	9	**0.003**	**ug/L**	158.426	4.667	0.000
>	Sc	45		**ug/L**		806252.563	806252.563
	Mn	55	**-0.019**	**ug/L**	67.726	167.334	-0.000
	Sr	88	**-0.001**	**ug/L**	1530.295	336.004	-0.000
>	In	115		**ug/L**		269298.407	269298.407
	Sb	121	**0.147**	**ug/L**	32.944	373.338	0.001
	Sb	123		**ug/L**		306.670	0.001

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Sr	88	Linear Thru Zero	1.0000
In	115	Linear Thru Zero	
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	

QC Calculated Values

	Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
		Be	9					
>		Sc	45		101.41			
		Mn	55					
		Sr	88					
>		In	115		100.54			
		Sb	121					
		Sb	123					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Monday, July 10, 2017 13:47:34
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b 0710.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170710\QC Std 3.011

Concentration Results

Summary

Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9	**0.518**	**ug/L**	8.539	185.335	0.000
>Sc	45		**ug/L**		826719.224	826719.224
Mn	55	**4.911**	**ug/L**	3.406	12461.433	0.015
Sr	88	**9.894**	**ug/L**	3.682	20598.176	0.075
>In	115		**ug/L**		270507.326	270507.326
Sb	121	**2.408**	**ug/L**	16.657	4060.586	0.015
Sb	123		**ug/L**		3773.000	0.014

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Sr	88	Linear Thru Zero	1.0000
In	115	Linear Thru Zero	
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Be	9	103.516				
>	Sc	45		103.99			
	Mn	55	98.221				
	Sr	88	98.943				
>	In	115		100.99			
	Sb	121	80.254				
	Sb	123					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Monday, July 10, 2017 13:49:08
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b 0710.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170710\QC Std 4.012

Concentration Results

Summary

	Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
	Be	9	**0.027**	**ug/L**	11.339	10.000	0.000
>	Sc	45		**ug/L**		620137.811	620137.811
	Mn	55	**7.680**	**ug/L**	5.554	14526.054	0.023
	Sr	88	**2.610**	**ug/L**	1.613	4809.476	0.020
>	In	115		**ug/L**		228818.019	228818.019
	Sb	121	**0.125**	**ug/L**	18.022	286.670	0.001
	Sb	123		**ug/L**		125.828	0.000

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Sr	88	Linear Thru Zero	1.0000
In	115	Linear Thru Zero	
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	

QC Calculated Values

	Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
		Be	9					
>		Sc	45		78.00			
		Mn	55	209.263				
		Sr	88	101.964				
>		In	115		85.43			
		Sb	121					
		Sb	123					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Monday, July 10, 2017 13:50:42
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b 0710.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170710\QC Std 5.013

Concentration Results

Summary

	Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
	Be	9	**20.248**	**ug/L**	6.841	5271.306	0.009
>	Sc	45		**ug/L**		613250.158	613250.158
	Mn	55	**28.947**	**ug/L**	8.155	53619.888	0.087
	Sr	88	**22.109**	**ug/L**	4.205	38574.683	0.167
>	In	115		**ug/L**		228864.066	228864.066
	Sb	121	**18.950**	**ug/L**	7.737	26257.506	0.114
	Sb	123		**ug/L**		20440.442	0.089

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Sr	88	Linear Thru Zero	1.0000
In	115	Linear Thru Zero	
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Be	9	101.240				
>	Sc	45		77.14			
	Mn	55	122.294				
	Sr	88	98.000				
>	In	115		85.45			
	Sb	121	94.749				
	Sb	123					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Mn	55	ICSAB is out of limits

QC Action

QC Action Line: Continue

ICPMS #12 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, July 10, 2017 13:52:18
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b 0710.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170710\QC Std 6.014

Concentration Results

Summary

	Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
	Be	9	**51.714**	**ug/L**	3.712	17970.297	0.022
>	Sc	45		**ug/L**		818036.842	818036.842
	Mn	55	**50.588**	**ug/L**	3.469	124993.105	0.153
	Sr	88	**51.297**	**ug/L**	0.618	104311.451	0.388
>	In	115		**ug/L**		267659.235	267659.235
	Sb	121	**46.950**	**ug/L**	1.924	75954.757	0.283
	Sb	123		**ug/L**		63741.894	0.238

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Sr	88	Linear Thru Zero	1.0000
In	115	Linear Thru Zero	
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	

QC Calculated Values

	Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
		Be	9	103.428				
>		Sc	45		102.89			
		Mn	55	101.177				
		Sr	88	102.594				
>		In	115		99.93			
		Sb	121	93.901				
		Sb	123					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, July 10, 2017 13:53:54
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b 0710.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170710\QC Std 7.015

Concentration Results

Summary

	Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
	Be	9	**-0.000**	**ug/L**	2769.381	3.667	-0.000
>	Sc	45		**ug/L**		810878.849	810878.849
	Mn	55	**-0.020**	**ug/L**	40.769	166.668	-0.000
	Sr	88	**0.012**	**ug/L**	65.763	365.338	0.000
>	In	115		**ug/L**		272590.710	272590.710
	Sb	121	**0.135**	**ug/L**	56.491	360.005	0.001
	Sb	123		**ug/L**		271.658	0.001

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Sr	88	Linear Thru Zero	1.0000
In	115	Linear Thru Zero	
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Be	9					
>	Sc	45		101.99			
	Mn	55					
	Sr	88					
>	In	115		101.77			
	Sb	121					
	Sb	123					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: 1203815377
Sample Date/Time: Monday, July 10, 2017 13:59:40
Sample Type: Sample
Sample Description: CPRC 6020B MB
Number of Replicates: 3
Batch ID: 1675724|1|baj
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b 0710.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170710\1203815377.018

Concentration Results

Summary

	Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
	Be	9	**-0.006**	**ug/L**	50.262	1.667	-0.000
>	Sc	45		**ug/L**		832291.676	832291.676
	Mn	55	**0.086**	**ug/L**	21.943	436.007	0.000
	Sr	88	**0.241**	**ug/L**	5.724	860.693	0.002
>	In	115		**ug/L**		279449.186	279449.186
	Sb	121	**0.139**	**ug/L**	21.079	373.338	0.001
	Sb	123		**ug/L**		325.831	0.001

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Sr	88	Linear Thru Zero	1.0000
In	115	Linear Thru Zero	
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Be	9					
>	Sc	45		104.69			
	Mn	55					
	Sr	88					
>	In	115		104.33			
	Sb	121					
	Sb	123					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: 1203815378
Sample Date/Time: Monday, July 10, 2017 14:01:14
Sample Type: Sample
Sample Description: CPRC 6020B LCS
Number of Replicates: 3
Batch ID: 1675724|1|baj
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b 0710.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170710\1203815378.019

Concentration Results

Summary

Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9	**64.531**	**ug/L**	3.903	24350.407	0.027
>Sc	45		**ug/L**		888191.023	888191.023
Mn	55	**54.127**	**ug/L**	3.800	145219.895	0.163
Sr	88	**55.334**	**ug/L**	2.026	119581.845	0.419
>In	115		**ug/L**		284548.348	284548.348
Sb	121	**51.485**	**ug/L**	1.177	88540.294	0.311
Sb	123		**ug/L**		73723.272	0.259

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Sr	88	Linear Thru Zero	1.0000
In	115	Linear Thru Zero	
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Be	9					
>	Sc	45		111.72			
	Mn	55					
	Sr	88					
>	In	115		106.24			
	Sb	121					
	Sb	123					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: QC Std 13
Sample Date/Time: Monday, July 10, 2017 14:02:50
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b 0710.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170710\QC Std 13.020

Concentration Results

Summary

	Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
	Be	9	**55.918**	**ug/L**	2.706	18426.543	0.024
>	Sc	45		**ug/L**		775353.285	775353.285
	Mn	55	**54.516**	**ug/L**	1.006	127762.959	0.165
	Sr	88	**57.182**	**ug/L**	3.783	109793.675	0.433
>	In	115		**ug/L**		252978.230	252978.230
	Sb	121	**52.498**	**ug/L**	6.165	80171.182	0.317
	Sb	123		**ug/L**		67686.665	0.267

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Sr	88	Linear Thru Zero	1.0000
In	115	Linear Thru Zero	
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	

QC Calculated Values

	Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
		Be	9	111.837				
>		Sc	45		97.52			
		Mn	55	109.031				
		Sr	88	114.364				
>		In	115		94.45			
		Sb	121	104.996				
		Sb	123					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 13	Be	9	
QC Std 13	Sr	88	

QC Action

QC Action Line: Continue

ICPMS #12 - Summary Report

Sample ID: QC Std 15
Sample Date/Time: Monday, July 10, 2017 14:04:27
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b 0710.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170710\QC Std 15.021

Concentration Results

Summary

	Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
	Be	9	**0.009**	**ug/L**	82.981	7.000	0.000
>	Sc	45		**ug/L**		817610.576	817610.576
	Mn	55	**-0.016**	**ug/L**	30.265	177.334	-0.000
	Sr	88	**0.014**	**ug/L**	141.060	361.338	0.000
>	In	115		**ug/L**		266262.282	266262.282
	Sb	121	**0.096**	**ug/L**	38.234	286.670	0.001
	Sb	123		**ug/L**		333.337	0.001

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Sr	88	Linear Thru Zero	1.0000
In	115	Linear Thru Zero	
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Be	9					
>	Sc	45		102.84			
	Mn	55					
	Sr	88					
>	In	115		99.41			
	Sb	121					
	Sb	123					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: 1203815379
Sample Date/Time: Monday, July 10, 2017 14:07:37
Sample Type: Sample
Sample Description: CPRC 6020B MS
Number of Replicates: 3
Batch ID: 1675724|1|baj
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b 0710.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170710\1203815379.023

Concentration Results

Summary

	Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
	Be	9	**60.327**	**ug/L**	2.164	20862.895	0.026
>	Sc	45		**ug/L**		813442.770	813442.770
	Mn	55	**54.775**	**ug/L**	3.183	134661.335	0.165
	Sr	88	**364.940**	**ug/L**	5.658	694891.386	2.764
>	In	115		**ug/L**		251572.066	251572.066
	Sb	121	**53.393**	**ug/L**	0.782	81163.312	0.322
	Sb	123		**ug/L**		68911.679	0.274

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Sr	88	Linear Thru Zero	1.0000
In	115	Linear Thru Zero	
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Be	9					
>	Sc	45		102.32			
	Mn	55					
	Sr	88					
>	In	115		93.92			
	Sb	121					
	Sb	123					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: 1203815380
Sample Date/Time: Monday, July 10, 2017 14:09:11
Sample Type: Sample
Sample Description: CPRC 6020B MSD
Number of Replicates: 3
Batch ID: 1675724|1|baj
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b 0710.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170710\1203815380.024

Concentration Results

Summary

	Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
	Be	9	**60.938**	**ug/L**	3.282	21388.333	0.026
>	Sc	45		**ug/L**		826029.648	826029.648
	Mn	55	**58.362**	**ug/L**	0.506	145695.446	0.176
	Sr	88	**366.175**	**ug/L**	1.616	708979.364	2.773
>	In	115		**ug/L**		255572.026	255572.026
	Sb	121	**54.866**	**ug/L**	1.329	84737.299	0.331
	Sb	123		**ug/L**		66955.827	0.262

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Sr	88	Linear Thru Zero	1.0000
In	115	Linear Thru Zero	
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	

QC Calculated Values

	Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
		Be	9					
>		Sc	45		103.90			
		Mn	55					
		Sr	88					
>		In	115		95.42			
		Sb	121					
		Sb	123					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: 1203815381
Sample Date/Time: Monday, July 10, 2017 14:10:47
Sample Type: Sample
Sample Description: CPRC 6020B SDILT
Number of Replicates: 3
Batch ID: 1675724|5|baj
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b 0710.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170710\1203815381.025

Concentration Results

Summary

Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9	**-0.001**	**ug/L**	920.973	3.333	-0.000
>Sc	45		**ug/L**		794087.961	794087.961
Mn	55	**0.425**	**ug/L**	1.302	1230.720	0.001
Sr	88	**59.028**	**ug/L**	2.201	117886.416	0.447
>In	115		**ug/L**		263066.487	263066.487
Sb	121	**0.090**	**ug/L**	40.801	273.336	0.001
Sb	123		**ug/L**		199.162	0.000

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Sr	88	Linear Thru Zero	1.0000
In	115	Linear Thru Zero	
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Be	9					
>	Sc	45		99.88			
	Mn	55					
	Sr	88					
>	In	115		98.22			
	Sb	121					
	Sb	123					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: 425783003
Sample Date/Time: Monday, July 10, 2017 14:13:56
Sample Type: Sample
Sample Description: CPRC 6020B
Number of Replicates: 3
Batch ID: 1675724|1|baj
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b 0710.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170710\425783003.027

Concentration Results

Summary

Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9	**0.000**	**ug/L**	764.139	4.000	0.000
>Sc	45		**ug/L**		839746.248	839746.248
Mn	55	**7.253**	**ug/L**	1.741	18607.454	0.022
Sr	88	**144.835**	**ug/L**	1.118	284315.517	1.097
>In	115		**ug/L**		258930.245	258930.245
Sb	121	**0.455**	**ug/L**	7.939	840.025	0.003
Sb	123		**ug/L**		652.509	0.002

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Sr	88	Linear Thru Zero	1.0000
In	115	Linear Thru Zero	
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Be	9					
>	Sc	45		105.62			
	Mn	55					
	Sr	88					
>	In	115		96.67			
	Sb	121					
	Sb	123					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: 425783004
Sample Date/Time: Monday, July 10, 2017 14:15:31
Sample Type: Sample
Sample Description: CPRC 6020B
Number of Replicates: 3
Batch ID: 1675724|1|baj
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b 0710.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170710\425783004.028

Concentration Results

Summary

Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9	**-0.000**	**ug/L**	466.957	3.667	-0.000
>Sc	45		**ug/L**		822526.772	822526.772
Mn	55	**18.558**	**ug/L**	2.393	46278.853	0.056
Sr	88	**138.969**	**ug/L**	3.848	276066.620	1.052
>In	115		**ug/L**		262135.625	262135.625
Sb	121	**0.269**	**ug/L**	49.076	553.345	0.002
Sb	123		**ug/L**		460.008	0.001

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Sr	88	Linear Thru Zero	1.0000
In	115	Linear Thru Zero	
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Be	9					
>	Sc	45		103.46			
	Mn	55					
	Sr	88					
>	In	115		97.87			
	Sb	121					
	Sb	123					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: QC Std 13
Sample Date/Time: Monday, July 10, 2017 14:17:06
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b 0710.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170710\QC Std 13.029

Concentration Results

Summary

Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9	**54.841**	**ug/L**	3.591	18858.774	0.023
>Sc	45		**ug/L**		809594.053	809594.053
Mn	55	**53.231**	**ug/L**	5.904	130060.174	0.161
Sr	88	**53.667**	**ug/L**	2.409	107666.232	0.406
>In	115		**ug/L**		264188.442	264188.442
Sb	121	**49.658**	**ug/L**	2.350	79279.490	0.300
Sb	123		**ug/L**		63567.026	0.240

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Sr	88	Linear Thru Zero	1.0000
In	115	Linear Thru Zero	
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Be	9	109.681				
>	Sc	45		101.83			
	Mn	55	106.461				
	Sr	88	107.335				
>	In	115		98.63			
	Sb	121	99.316				
	Sb	123					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #12 - Summary Report

Sample ID: QC Std 15
Sample Date/Time: Monday, July 10, 2017 14:18:43
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\6020b 0710.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\170710\QC Std 15.030

Concentration Results

Summary

	Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
	Be	9	**0.009**	**ug/L**	65.589	6.667	0.000
>	Sc	45		**ug/L**		801117.248	801117.248
	Mn	55	**-0.013**	**ug/L**	84.366	183.335	-0.000
	Sr	88	**0.022**	**ug/L**	43.710	381.338	0.000
>	In	115		**ug/L**		268950.902	268950.902
	Sb	121	**0.152**	**ug/L**	41.629	380.005	0.001
	Sb	123		**ug/L**		298.325	0.001

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Sr	88	Linear Thru Zero	1.0000
In	115	Linear Thru Zero	
Sb	121	Linear Thru Zero	1.0000
Sb	123	Linear Thru Zero	

QC Calculated Values

Inte	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Reco	Dilution % D	Duplicate Rel. % Difference
	Be	9					
>	Sc	45		100.77			
	Mn	55					
	Sr	88					
>	In	115		100.41			
	Sb	121					
	Sb	123					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC action taken

ICPMS #7 Daily Performance Report

Sample ID: Sample
Sample Date/Time: Tuesday, July 11, 2017 10:39:02
Sample Description:
Method File: daily2.mth
Dataset File: C:\Elandata\Dataset\default\Sample.15270
Tuning File: C:\Elandata\Tuning\default2.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Dual Detector Mode: Pulse
Acq. Dead Time(ns): 55
Current Dead Time (ns): 55

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD
	Be	9.0	2294.7	2294.750	16.316	0.7
	Mg	24.0	12549.9	12549.858	174.150	1.4
	Co	58.9	27376.6	27376.561	225.273	0.8
	Rh	102.9	52507.6	52507.612	495.849	0.9
	In	114.9	75620.6	75620.625	515.129	0.7
	Pb	208.0	57685.3	57685.263	755.486	1.3
⌈>	Ba	137.9	63567.9	63567.906	356.899	0.6
⌊	Ba++	69.0	1503.9	0.024	0.001	3.5
⌈>	Ce	139.9	75123.9	75123.943	703.573	0.9
⌊	CeO	155.9	1609.1	0.021	0.001	4.1
	Bkgd	220.0	9.7	9.700	1.789	18.4

Current Optimization File Data

Current Value	Description
1.07	Nebulizer Gas Flow
6.75	Lens Voltage
1000.00	ICP RF Power
-1887.00	Analog Stage Voltage
1200.00	Pulse Stage Voltage
150.00	Discriminator Threshold
-3.00	AC Rod Offset

Current Autolens Data

Analyte	Mass	Num of Pts	DAC Value	Maximum Intensity
Be	9	21	7.0	2382.3
Co	59	21	7.5	24836.9
In	115	21	8.5	70594.0

Instrument #7 Tuning Report

File Name: Default2.tun
File Path: C:\Elandata\Tuning\Default2.tun

Analyte	Exact Mass	Meas. Mass	Mass DAC	Res. DAC	Meas. Pk. Width
He	3.0	3.1	586	2060	0.578
Be	9.0	9.0	2035	2040	0.636
Mg	24.0	24.0	5687	2090	0.437
Mg	25.0	25.0	5935	2060	0.481
Mg	26.0	26.0	6171	2060	0.559
Co	58.9	59.0	14189	2050	0.571
Rh	102.9	102.9	24887	2030	0.604
In	114.9	114.9	27819	2030	0.618
Ce	139.9	140.0	33894	2020	0.603
Pb	206.0	206.0	49966	1990	0.592
Pb	207.0	207.0	50229	1990	0.655
Pb	208.0	208.0	50438	1990	0.628
U	238.1	238.0	57775	1960	0.716

ICPMS#7 - Summary Report

Sample ID: Blank
Sample Date/Time: Tuesday, July 11, 2017 12:53:15
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b be.mth
Dataset File: C:\Elandata\DataSet\170711\Blank.058

Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9		ug/L		7	
Sc	45		ug/L		1319443	

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Simple Linear	
Sc	45	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Be	9					
Sc	45					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Tuesday, July 11, 2017 12:54:41
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b be.mth
Dataset File: C:\Elandata\DataSet\170711\Standard 1.059

Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9	**10.000**	**ug/L**	3.876	1997	0.001
Sc	45		**ug/L**		1333802	1333801.910

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Be	9					
Sc	45					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Tuesday, July 11, 2017 12:56:07
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b be.mth
Dataset File: C:\Elandata\DataSet\170711\Standard 2.060

Concentration Results

Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9	**99.974**	**ug/L**	0.969	19399	0.015
Sc	45		**ug/L**		1334442	1334442.469

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Be	9					
Sc	45					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Tuesday, July 11, 2017 12:57:32
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b be.mth
Dataset File: C:\Elandata\DataSet\170711\QC Std 1.061

Concentration Results

Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9	**52.076**	**ug/L**	0.804	9862	0.008
Sc	45		**ug/L**		1301961	1301961.256

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Be	9	104.152				
Sc	45		98.7			

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Tuesday, July 11, 2017 12:58:58
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b be.mth
Dataset File: C:\Elandata\DataSet\170711\QC Std 2.062

Concentration Results

Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9	**0.002**	**ug/L**	535.173	7	0.000
Sc	45		**ug/L**		1242444	1242443.784

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Be	9					
Sc	45		94.2			

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Tuesday, July 11, 2017 13:00:24
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b be.mth
Dataset File: C:\Elandata\DataSet\170711\QC Std 3.063

Concentration Results

Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9	**0.528**	**ug/L**	10.307	105	0.000
Sc	45		**ug/L**		1283400	1283399.709

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Be	9	105.616				
Sc	45		97.3			

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Tuesday, July 11, 2017 13:01:50
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b be.mth
Dataset File: C:\Elandata\DataSet\170711\QC Std 4.064

Concentration Results

Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9	**0.036**	**ug/L**	49.715	14	0.000
Sc	45		**ug/L**		1320167	1320167.034

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Be	9					
Sc	45		100.1			

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Tuesday, July 11, 2017 13:03:15
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b be.mth
Dataset File: C:\Elandata\DataSet\170711\QC Std 5.065

Concentration Results

Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9	**18.373**	**ug/L**	3.683	3497	0.003
Sc	45		**ug/L**		1306872	1306871.537

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Be	9	91.865				
Sc	45		99.0			

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 11, 2017 13:04:42
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b be.mth
Dataset File: C:\Elandata\DataSet\170711\QC Std 6.066

Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9	**53.195**	**ug/L**	0.373	9856	0.008
Sc	45		**ug/L**		1273796	1273796.044

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Be	9	106.389				
Sc	45		96.5			

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 11, 2017 13:06:08
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b be.mth
Dataset File: C:\Elandata\DataSet\170711\QC Std 7.067

Concentration Results

Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9	**0.020**	**ug/L**	46.511	10	0.000
Sc	45		**ug/L**		1247194	1247193.678

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Be	9					
Sc	45		94.5			

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 13
Sample Date/Time: Tuesday, July 11, 2017 13:24:46
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b be.mth
Dataset File: C:\Elandata\DataSet\170711\QC Std 13.080

Concentration Results

Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9	**53.484**	**ug/L**	0.281	9242	0.008
Sc	45		**ug/L**		1187942	1187942.217

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Be	9	106.967				
Sc	45		90.0			

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 15
Sample Date/Time: Tuesday, July 11, 2017 13:26:12
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b be.mth
Dataset File: C:\Elandata\DataSet\170711\QC Std 15.081

Concentration Results

Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9	**0.022**	**ug/L**	28.361	10	0.000
Sc	45		**ug/L**		1170332	1170331.519

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Be	9					
Sc	45		88.7			

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: 1203815377
Sample Date/Time: Tuesday, July 11, 2017 13:27:39
Sample Type: Sample
Sample Description: QC A 0520 MB
Number of Replicates: 3
Batch ID: 1675724|1|skj
Method File: C:\Elandata\Method\6020b be.mth
Dataset File: C:\Elandata\DataSet\170711\1203815377.082

Concentration Results

Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9	**0.003**	**ug/L**	363.256	6	0.000
Sc	45		**ug/L**		1140213	1140212.906

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Be	9					
Sc	45		86.4			

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: 1203815378
Sample Date/Time: Tuesday, July 11, 2017 13:29:05
Sample Type: Sample
Sample Description: QC A 0520 LCS
Number of Replicates: 3
Batch ID: 1675724|1|skj
Method File: C:\Elandata\Method\6020b be.mth
Dataset File: C:\Elandata\DataSet\170711\1203815378.083

Concentration Results

Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9	**59.493**	**ug/L**	0.844	9938	0.009
Sc	45		**ug/L**		1148518	1148518.399

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Be	9					
Sc	45		87.0			

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: 1203815379
Sample Date/Time: Tuesday, July 11, 2017 13:31:56
Sample Type: Sample
Sample Description: QC A 0520 MS
Number of Replicates: 3
Batch ID: 1675724|1|skj
Method File: C:\Elandata\Method\6020b be.mth
Dataset File: C:\Elandata\DataSet\170711\1203815379.085

Concentration Results

Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9	**59.054**	**ug/L**	1.346	9740	0.009
Sc	45		**ug/L**		1133945	1133945.169

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Be	9					
Sc	45		85.9			

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: 1203815380
Sample Date/Time: Tuesday, July 11, 2017 13:33:21
Sample Type: Sample
Sample Description: QC A 0520 MSD
Number of Replicates: 3
Batch ID: 1675724|1|skj
Method File: C:\Elandata\Method\6020b be.mth
Dataset File: C:\Elandata\DataSet\170711\1203815380.086

Concentration Results

Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9	**59.948**	**ug/L**	1.082	10157	0.009
Sc	45		**ug/L**		1164938	1164937.875

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Be	9					
Sc	45		88.3			

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: 1203815381
Sample Date/Time: Tuesday, July 11, 2017 13:36:12
Sample Type: Sample
Sample Description: QC A 0520 SDILT
Number of Replicates: 3
Batch ID: 1675724|5|skj
Method File: C:\Elandata\Method\6020b be.mth
Dataset File: C:\Elandata\DataSet\170711\1203815381.088

Concentration Results

Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9	**-0.003**	**ug/L**	105.344	5	-0.000
Sc	45		**ug/L**		1168228	1168227.905

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Be	9					
Sc	45		88.5			

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 13
Sample Date/Time: Tuesday, July 11, 2017 13:37:40
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b be.mth
Dataset File: C:\Elandata\DataSet\170711\QC Std 13.089

Concentration Results

Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9	**52.888**	**ug/L**	1.170	9265	0.008
Sc	45		**ug/L**		1204358	1204358.180

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Be	9	105.775				
Sc	45		91.3			

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 15
Sample Date/Time: Tuesday, July 11, 2017 13:39:06
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b be.mth
Dataset File: C:\Elandata\DataSet\170711\QC Std 15.090

Concentration Results

Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9	**0.010**	**ug/L**	177.999	8	0.000
Sc	45		**ug/L**		1181724	1181723.523

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Be	9					
Sc	45		89.6			

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: 425783003
Sample Date/Time: Tuesday, July 11, 2017 13:41:59
Sample Type: Sample
Sample Description: CPRC 0520
Number of Replicates: 3
Batch ID: 1675724|1|skj
Method File: C:\Elandata\Method\6020b be.mth
Dataset File: C:\Elandata\DataSet\170711\425783003.092

Concentration Results

Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9	**0.012**	**ug/L**	77.586	8	0.000
Sc	45		**ug/L**		1117511	1117510.984

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Be	9					
Sc	45		84.7			

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: 425783004
Sample Date/Time: Tuesday, July 11, 2017 13:43:24
Sample Type: Sample
Sample Description: CPRC 0520
Number of Replicates: 3
Batch ID: 1675724|1|skj
Method File: C:\Elandata\Method\6020b be.mth
Dataset File: C:\Elandata\DataSet\170711\425783004.093

Concentration Results

Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9	**0.024**	**ug/L**	51.882	10	0.000
Sc	45		**ug/L**		1139867	1139867.134

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Be	9					
Sc	45		86.4			

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 13
Sample Date/Time: Tuesday, July 11, 2017 13:44:52
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b be.mth
Dataset File: C:\Elandata\DataSet\170711\QC Std 13.094

Concentration Results

Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9	**53.018**	**ug/L**	0.261	9415	0.008
Sc	45		**ug/L**		1220891	1220891.225

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Be	9	106.035				
Sc	45		92.5			

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 15
Sample Date/Time: Tuesday, July 11, 2017 13:46:18
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b be.mth
Dataset File: C:\Elandata\DataSet\170711\QC Std 15.095

Concentration Results

Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Be	9	**0.016**	**ug/L**	129.034	9	0.000
Sc	45		**ug/L**		1226077	1226076.753

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Be	9	Linear Thru Zero	1.0000
Sc	45	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Be	9					
Sc	45		92.9			

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS #7 Daily Performance Report

Sample ID: Sample
Sample Date/Time: Wednesday, July 12, 2017 11:07:03
Sample Description:
Method File: C:\Elandata\Method\daily2.mth
Dataset File: C:\Elandata\Dataset\default\Sample.15277
Tuning File: C:\Elandata\Tuning\default2.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Dual Detector Mode: Pulse
Acq. Dead Time(ns): 55
Current Dead Time (ns): 55

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD
	Be	9.0	3004.6	3004.637	40.334	1.3
	Mg	24.0	17528.5	17528.484	187.570	1.1
	Co	58.9	39397.2	39397.188	320.525	0.8
	Rh	102.9	72877.6	72877.553	384.116	0.5
	In	114.9	96276.5	96276.541	3120.451	3.2
	Pb	208.0	70401.0	70400.965	672.500	1.0
⌈>	Ba	137.9	80090.0	80089.965	792.644	1.0
⌊	Ba++	69.0	2048.6	0.026	0.000	1.8
⌈>	Ce	139.9	96731.7	96731.745	851.213	0.9
⌊	CeO	155.9	2108.0	0.022	0.001	3.7
	Bkgd	220.0	5.7	5.700	0.975	17.1

Current Optimization File Data

Current Value	Description
1.07	Nebulizer Gas Flow
7.00	Lens Voltage
1000.00	ICP RF Power
-1887.00	Analog Stage Voltage
1200.00	Pulse Stage Voltage
150.00	Discriminator Threshold
-3.00	AC Rod Offset

Current Autolens Data

Analyte	Mass	Num of Pts	DAC Value	Maximum Intensity
Be	9	21	8.0	3040.5
Co	59	21	8.5	39636.2
In	115	21	9.5	100588.4

Instrument #7 Tuning Report

File Name: Default2.tun
File Path: C:\Elandata\Tuning\Default2.tun

Analyte	Exact Mass	Meas. Mass	Mass DAC	Res. DAC	Meas. Pk. Width
He	3.0	3.0	588	2060	0.621
Be	9.0	9.0	2028	2040	0.675
Mg	24.0	24.0	5681	2090	0.496
Mg	25.0	25.0	5929	2060	0.521
Mg	26.0	26.0	6179	2060	0.582
Co	58.9	58.9	14185	2050	0.587
Rh	102.9	102.9	24883	2030	0.618
In	114.9	114.9	27816	2030	0.640
Ce	139.9	139.9	33890	2020	0.623
Pb	206.0	206.0	49966	1990	0.639
Pb	207.0	207.0	50227	1990	0.708
Pb	208.0	208.0	50436	1990	0.671
U	238.1	238.1	57774	1960	0.755

ICPMS#7 - Summary Report

Sample ID: Blank
Sample Date/Time: Thursday, July 13, 2017 08:27:15
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b cr ni.mth
Dataset File: C:\Elandata\DataSet\170712\Blank.281

Concentration Results

	Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
>	Sc	45		ug/L		1096464	
	Cr	52		ug/L		-3498	
	Cr	53		ug/L		55995	
	Mn	55		ug/L		524	
	Fe	57		ug/L		2101	
	Co	59		ug/L		51	
	Ni	60		ug/L		44	
	Cu	63		ug/L		49	
	Cu	65		ug/L		31	

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	
Fe	57	Linear Thru Zero	
Co	59	Linear Thru Zero	
Ni	60	Linear Thru Zero	
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Sc	45					
Cr	52					
Cr	53					
Mn	55					
Fe	57					
Co	59					
Ni	60					
Cu	63					
Cu	65					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Thursday, July 13, 2017 08:29:05
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b cr ni.mth
Dataset File: C:\Elandata\DataSet\170712\Standard 1.282

Concentration Results

	Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
>	Sc	45		**ug/L**		1102264	1102264.213
	Cr	52	**10.000**	**ug/L**	1.668	14539	0.016
	Cr	53		**ug/L**		57294	0.001
	Mn	55	**10.000**	**ug/L**	1.543	31773	0.028
	Fe	57	**1000.000**	**ug/L**	1.586	65711	0.058
	Co	59	**10.000**	**ug/L**	1.451	21937	0.020
	Ni	60	**10.000**	**ug/L**	1.781	4489	0.004
	Cu	63		**ug/L**		10160	0.009
	Cu	65	**10.000**	**ug/L**	1.654	4874	0.004

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
> Sc	45					
Cr	52					
Cr	53					
Mn	55					
Fe	57					
Co	59					
Ni	60					
Cu	63					
Cu	65					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Thursday, July 13, 2017 08:30:52
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b cr ni.mth
Dataset File: C:\Elandata\DataSet\170712\Standard 2.283

Concentration Results

	Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
>	Sc	45		**ug/L**		1104807	1104806.945
	Cr	52	**99.976**	**ug/L**	1.205	173057	0.160
	Cr	53		**ug/L**		71265	0.013
	Mn	55	**99.971**	**ug/L**	0.940	304675	0.275
	Fe	57	**9996.273**	**ug/L**	1.107	616480	0.556
	Co	59	**99.963**	**ug/L**	1.087	211511	0.191
	Ni	60	**99.977**	**ug/L**	1.602	43586	0.039
	Cu	63		**ug/L**		98587	0.089
	Cu	65	**99.966**	**ug/L**	1.311	46951	0.042

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
> Sc	45					
Cr	52					
Cr	53					
Mn	55					
Fe	57					
Co	59					
Ni	60					
Cu	63					
Cu	65					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Thursday, July 13, 2017 08:32:40
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b cr ni.mth
Dataset File: C:\Elandata\DataSet\170712\QC Std 1.284

Concentration Results

	Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
>	Sc	45		**ug/L**		1097975	1097974.532
	Cr	52	**51.202**	**ug/L**	0.676	86379	0.082
	Cr	53		**ug/L**		62064	0.005
	Mn	55	**51.403**	**ug/L**	0.705	155953	0.142
	Fe	57	**5099.543**	**ug/L**	0.058	313595	0.284
	Co	59	**50.578**	**ug/L**	0.565	106387	0.097
	Ni	60	**51.842**	**ug/L**	0.141	22484	0.020
	Cu	63		**ug/L**		50971	0.046
	Cu	65	**52.139**	**ug/L**	1.053	24351	0.022

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
> Sc	45			100.1		
Cr	52	102.403				
Cr	53					
Mn	55	102.807				
Fe	57	101.991				
Co	59	101.156				
Ni	60	103.684				
Cu	63					
Cu	65	104.277				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Thursday, July 13, 2017 08:34:27
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b cr ni.mth
Dataset File: C:\Elandata\DataSet\170712\QC Std 2.285

Concentration Results

	Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
>	Sc	45		**ug/L**		1051180	1051180.409
	Cr	52	**-0.040**	**ug/L**	100.135	-3420	-0.000
	Cr	53		**ug/L**		52889	-0.001
	Mn	55	**-0.002**	**ug/L**	72.062	497	-0.000
	Fe	57	**2.342**	**ug/L**	35.433	2151	0.000
	Co	59	**-0.001**	**ug/L**	347.361	47	-0.000
	Ni	60	**0.016**	**ug/L**	44.578	49	0.000
	Cu	63		**ug/L**		49	0.000
	Cu	65	**0.006**	**ug/L**	98.388	32	0.000

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
> Sc	45			95.9		
Cr	52					
Cr	53					
Mn	55					
Fe	57					
Co	59					
Ni	60					
Cu	63					
Cu	65					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Thursday, July 13, 2017 08:36:15
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b cr ni.mth
Dataset File: C:\Elandata\DataSet\170712\QC Std 3.286

Concentration Results

	Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
>	Sc	45		**ug/L**		1074238	1074237.554
	Cr	52	**10.512**	**ug/L**	0.776	14626	0.017
	Cr	53		**ug/L**		55444	0.001
	Mn	55	**5.309**	**ug/L**	1.315	16218	0.015
	Fe	57	**105.717**	**ug/L**	0.794	8376	0.006
	Co	59	**1.061**	**ug/L**	0.288	2232	0.002
	Ni	60	**2.111**	**ug/L**	3.088	937	0.001
	Cu	63		**ug/L**		1851	0.002
	Cu	65	**1.846**	**ug/L**	2.133	872	0.001

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
> Sc	45			98.0		
Cr	52	105.115				
Cr	53					
Mn	55	106.179				
Fe	57	105.717				
Co	59	106.078				
Ni	60	105.562				
Cu	63					
Cu	65	184.561				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Cu	65	CRDL is out of limits

QC Action

QC Action Line: Continue

ICPMS#7 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Thursday, July 13, 2017 08:38:02
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b cr ni.mth
Dataset File: C:\Elandata\DataSet\170712\QC Std 4.287

Concentration Results

	Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
>	Sc	45		**ug/L**		1115067	1115066.691
	Cr	52	**2.665**	**ug/L**	2.714	1195	0.004
	Cr	53		**ug/L**		40469	-0.015
	Mn	55	**0.782**	**ug/L**	1.825	2933	0.002
	Fe	57	**97940.815**	**ug/L**	0.665	6077633	5.449
	Co	59	**0.326**	**ug/L**	0.958	747	0.001
	Ni	60	**2.009**	**ug/L**	4.552	928	0.001
	Cu	63		**ug/L**		1976	0.002
	Cu	65	**2.328**	**ug/L**	3.432	1134	0.001

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
> Sc	45			101.7		
Cr	52	214.939				
Cr	53					
Mn	55	21.298				
Fe	57	97.941				
Co	59	152.220				
Ni	60	191.847				
Cu	63					
Cu	65	123.152				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Thursday, July 13, 2017 08:39:49
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b cr ni.mth
Dataset File: C:\Elandata\DataSet\170712\QC Std 5.288

Concentration Results

	Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
>	Sc	45		**ug/L**		1107415	1107414.532
	Cr	52	**22.630**	**ug/L**	0.346	36534	0.036
	Cr	53		**ug/L**		44326	-0.011
	Mn	55	**20.706**	**ug/L**	0.804	63679	0.057
	Fe	57	**98466.168**	**ug/L**	0.728	6068465	5.478
	Co	59	**20.206**	**ug/L**	0.524	42898	0.039
	Ni	60	**21.203**	**ug/L**	1.095	9301	0.008
	Cu	63		**ug/L**		20295	0.018
	Cu	65	**20.972**	**ug/L**	2.394	9898	0.009

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
> Sc	45			101.0		
Cr	52	106.542				
Cr	53					
Mn	55	87.477				
Fe	57	98.466				
Co	59	99.960				
Ni	60	100.741				
Cu	63					
Cu	65	99.924				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 13, 2017 08:41:39
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b cr ni.mth
Dataset File: C:\Elandata\DataSet\170712\QC Std 6.289

Concentration Results

	Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
>	Sc	45		**ug/L**		1053273	1053272.838
	Cr	52	**51.573**	**ug/L**	0.662	83483	0.082
	Cr	53		**ug/L**		58652	0.005
	Mn	55	**51.900**	**ug/L**	0.921	151035	0.143
	Fe	57	**5150.952**	**ug/L**	2.249	303796	0.287
	Co	59	**51.502**	**ug/L**	1.310	103909	0.099
	Ni	60	**52.585**	**ug/L**	1.677	21875	0.021
	Cu	63		**ug/L**		49348	0.047
	Cu	65	**52.327**	**ug/L**	0.824	23444	0.022

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
> Sc	45			96.1		
Cr	52	103.145				
Cr	53					
Mn	55	103.799				
Fe	57	103.019				
Co	59	103.004				
Ni	60	105.170				
Cu	63					
Cu	65	104.654				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 13, 2017 08:43:29
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b cr ni.mth
Dataset File: C:\Elandata\DataSet\170712\QC Std 7.290

Concentration Results

	Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
>	Sc	45		**ug/L**		1036683	1036683.288
	Cr	52	**-0.130**	**ug/L**	97.076	-3521	-0.000
	Cr	53		**ug/L**		51115	-0.002
	Mn	55	**0.004**	**ug/L**	246.479	509	0.000
	Fe	57	**7.501**	**ug/L**	4.290	2419	0.000
	Co	59	**-0.003**	**ug/L**	236.133	43	-0.000
	Ni	60	**0.016**	**ug/L**	90.791	48	0.000
	Cu	63		**ug/L**		55	0.000
	Cu	65	**0.031**	**ug/L**	51.835	43	0.000

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
>	Sc	45			94.5		
	Cr	52					
	Cr	53					
	Mn	55					
	Fe	57					
	Co	59					
	Ni	60					
	Cu	63					
	Cu	65					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: 1203828900
Sample Date/Time: Thursday, July 13, 2017 08:45:19
Sample Type: Sample
Sample Description: QC A 0520 MB
Number of Replicates: 3
Batch ID: 1681503|1|skj
Method File: C:\Elandata\Method\6020b cr ni.mth
Dataset File: C:\Elandata\DataSet\170712\1203828900.291

Concentration Results

	Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
>	Sc	45		**ug/L**		987542	987541.630
	Cr	52	**-2.359**	**ug/L**	1.683	-6875	-0.004
	Cr	53		**ug/L**		84708	0.035
	Mn	55	**0.158**	**ug/L**	3.068	902	0.000
	Fe	57	**13.265**	**ug/L**	5.660	2621	0.001
	Co	59	**0.000**	**ug/L**	22497.910	46	0.000
	Ni	60	**0.033**	**ug/L**	8.010	53	0.000
	Cu	63		**ug/L**		76	0.000
	Cu	65	**0.080**	**ug/L**	14.136	61	0.000

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
> Sc	45			90.1		
Cr	52					
Cr	53					
Mn	55					
Fe	57					
Co	59					
Ni	60					
Cu	63					
Cu	65					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: 1203828901
Sample Date/Time: Thursday, July 13, 2017 08:47:07
Sample Type: Sample
Sample Description: QC A 0520 LCS
Number of Replicates: 3
Batch ID: 1681503|1|skj
Method File: C:\Elandata\Method\6020b cr ni.mth
Dataset File: C:\Elandata\DataSet\170712\1203828901.292

Concentration Results

	Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
>	Sc	45		**ug/L**		990427	990427.383
	Cr	52	**46.857**	**ug/L**	1.064	71035	0.075
	Cr	53		**ug/L**		100038	0.050
	Mn	55	**50.317**	**ug/L**	0.735	137710	0.139
	Fe	57	**2010.101**	**ug/L**	0.951	112650	0.112
	Co	59	**49.891**	**ug/L**	0.866	94661	0.096
	Ni	60	**50.311**	**ug/L**	1.227	19685	0.020
	Cu	63		**ug/L**		45089	0.045
	Cu	65	**50.975**	**ug/L**	0.497	21476	0.022

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
>	Sc	45			90.3		
	Cr	52					
	Cr	53					
	Mn	55					
	Fe	57					
	Co	59					
	Ni	60					
	Cu	63					
	Cu	65					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: 1203828902
Sample Date/Time: Thursday, July 13, 2017 08:50:41
Sample Type: Sample
Sample Description: QC A 0520 MS
Number of Replicates: 3
Batch ID: 1681503|1|skj
Method File: C:\Elandata\Method\6020b cr ni.mth
Dataset File: C:\Elandata\DataSet\170712\1203828902.294

Concentration Results

	Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
>	Sc	45		**ug/L**		944713	944713.067
	Cr	52	**182.187**	**ug/L**	0.760	272183	0.291
	Cr	53		**ug/L**		114520	0.070
	Mn	55	**62.785**	**ug/L**	0.310	163799	0.173
	Fe	57	**2601.149**	**ug/L**	0.517	138518	0.145
	Co	59	**50.096**	**ug/L**	0.741	90658	0.096
	Ni	60	**127.090**	**ug/L**	1.381	47364	0.050
	Cu	63		**ug/L**		50973	0.054
	Cu	65	**60.071**	**ug/L**	0.857	24138	0.026

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
> Sc	45			86.2		
Cr	52					
Cr	53					
Mn	55					
Fe	57					
Co	59					
Ni	60					
Cu	63					
Cu	65					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: 1203828903
Sample Date/Time: Thursday, July 13, 2017 08:52:28
Sample Type: Sample
Sample Description: QC A 0520 MSD
Number of Replicates: 3
Batch ID: 1681503|1|skj
Method File: C:\Elandata\Method\6020b cr ni.mth
Dataset File: C:\Elandata\DataSet\170712\1203828903.295

Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Sc	45		ug/L		921771	921771.211
Cr	52	**184.332**	ug/L	1.384	268678	0.295
Cr	53		ug/L		113576	0.072
Mn	55	**60.979**	ug/L	1.490	155205	0.168
Fe	57	**2556.998**	ug/L	1.124	132869	0.142
Co	59	**48.721**	ug/L	2.140	86011	0.093
Ni	60	**123.936**	ug/L	1.567	45065	0.049
Cu	63		ug/L		48764	0.053
Cu	65	**59.416**	ug/L	0.786	23292	0.025

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Sc	45			84.1		
Cr	52					
Cr	53					
Mn	55					
Fe	57					
Co	59					
Ni	60					
Cu	63					
Cu	65					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: 1203828904
Sample Date/Time: Thursday, July 13, 2017 08:56:03
Sample Type: Sample
Sample Description: QC A 0520 SDILT
Number of Replicates: 3
Batch ID: 1681503|5|skj
Method File: C:\Elandata\Method\6020b cr ni.mth
Dataset File: C:\Elandata\DataSet\170712\1203828904.297

Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Sc	45		ug/L		921286	921286.387
Cr	52	**25.211**	ug/L	0.388	34196	0.040
Cr	53		ug/L		60981	0.015
Mn	55	**2.335**	ug/L	0.513	6366	0.006
Fe	57	**116.623**	ug/L	1.961	7742	0.006
Co	59	**0.262**	ug/L	7.885	505	0.001
Ni	60	**15.210**	ug/L	2.062	5561	0.006
Cu	63		ug/L		1866	0.002
Cu	65	**2.264**	ug/L	2.889	912	0.001

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Sc	45			84.0		
Cr	52					
Cr	53					
Mn	55					
Fe	57					
Co	59					
Ni	60					
Cu	63					
Cu	65					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 13
Sample Date/Time: Thursday, July 13, 2017 08:57:53
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b cr ni.mth
Dataset File: C:\Elandata\DataSet\170712\QC Std 13.298

Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Sc	45		ug/L		952327	952327.200
Cr	52	**51.074**	ug/L	0.667	74725	0.082
Cr	53		ug/L		58558	0.010
Mn	55	**51.523**	ug/L	0.425	135579	0.142
Fe	57	**5082.216**	ug/L	0.924	271074	0.283
Co	59	**50.493**	ug/L	1.055	92117	0.097
Ni	60	**51.759**	ug/L	1.165	19470	0.020
Cu	63		ug/L		43665	0.046
Cu	65	**51.509**	ug/L	0.278	20866	0.022

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Sc	45			86.9		
Cr	52	102.147				
Cr	53					
Mn	55	103.045				
Fe	57	101.644				
Co	59	100.987				
Ni	60	103.518				
Cu	63					
Cu	65	103.017				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 15
Sample Date/Time: Thursday, July 13, 2017 08:59:43
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b cr ni.mth
Dataset File: C:\Elandata\DataSet\170712\QC Std 15.299

Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Sc	45		ug/L		929513	929513.378
Cr	52	**0.052**	ug/L	172.401	-2888	0.000
Cr	53		ug/L		49510	0.002
Mn	55	**0.017**	ug/L	44.180	488	0.000
Fe	57	**1.144**	ug/L	34.951	1840	0.000
Co	59	**-0.001**	ug/L	414.261	41	-0.000
Ni	60	**-0.001**	ug/L	1809.231	37	-0.000
Cu	63		ug/L		50	0.000
Cu	65	**0.009**	ug/L	104.934	30	0.000

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Sc	45			84.8		
Cr	52					
Cr	53					
Mn	55					
Fe	57					
Co	59					
Ni	60					
Cu	63					
Cu	65					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: 425783003
Sample Date/Time: Thursday, July 13, 2017 09:03:20
Sample Type: Sample
Sample Description: CPRC 0520
Number of Replicates: 3
Batch ID: 1681503|1|skj
Method File: C:\Elandata\Method\6020b cr ni.mth
Dataset File: C:\Elandata\DataSet\170712\425783003.301

Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Sc	45		ug/L		902452	902451.858
Cr	52	**17.858**	ug/L	1.598	22890	0.029
Cr	53		ug/L		78825	0.036
Mn	55	**6.586**	ug/L	0.947	16798	0.018
Fe	57	**42.615**	ug/L	3.355	3868	0.002
Co	59	**0.165**	ug/L	7.705	327	0.000
Ni	60	**0.784**	ug/L	9.008	315	0.000
Cu	63		ug/L		2297	0.002
Cu	65	**3.000**	ug/L	20.545	1177	0.001

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Sc	45			82.3		
Cr	52					
Cr	53					
Mn	55					
Fe	57					
Co	59					
Ni	60					
Cu	63					
Cu	65					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: 425783004
Sample Date/Time: Thursday, July 13, 2017 09:05:07
Sample Type: Sample
Sample Description: CPRC 0520
Number of Replicates: 3
Batch ID: 1681503|1|skj
Method File: C:\Elandata\Method\6020b cr ni.mth
Dataset File: C:\Elandata\DataSet\170712\425783004.302

Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Sc	45		ug/L		898754	898754.430
Cr	52	**19.392**	ug/L	1.497	24996	0.031
Cr	53		ug/L		82882	0.041
Mn	55	**21.188**	ug/L	1.473	52869	0.058
Fe	57	**243.235**	ug/L	0.763	13883	0.014
Co	59	**0.150**	ug/L	9.740	299	0.000
Ni	60	**1.091**	ug/L	7.675	423	0.000
Cu	63		ug/L		2258	0.002
Cu	65	**2.562**	ug/L	5.099	1003	0.001

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Sc	45			82.0		
Cr	52					
Cr	53					
Mn	55					
Fe	57					
Co	59					
Ni	60					
Cu	63					
Cu	65					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 13
Sample Date/Time: Thursday, July 13, 2017 09:06:57
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b cr ni.mth
Dataset File: C:\Elandata\DataSet\170712\QC Std 13.303

Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Sc	45		ug/L		952981	952981.164
Cr	52	**51.074**	ug/L	1.056	74778	0.082
Cr	53		ug/L		61141	0.013
Mn	55	**51.058**	ug/L	0.400	134452	0.141
Fe	57	**5080.095**	ug/L	0.721	271152	0.283
Co	59	**50.620**	ug/L	1.034	92415	0.097
Ni	60	**51.332**	ug/L	1.957	19324	0.020
Cu	63		ug/L		43511	0.046
Cu	65	**50.882**	ug/L	0.633	20627	0.022

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Sc	45			86.9		
Cr	52	102.147				
Cr	53					
Mn	55	102.116				
Fe	57	101.602				
Co	59	101.240				
Ni	60	102.663				
Cu	63					
Cu	65	101.763				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 15
Sample Date/Time: Thursday, July 13, 2017 09:08:47
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b cr ni.mth
Dataset File: C:\Elandata\DataSet\170712\QC Std 15.304

Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Sc	45		ug/L		948725	948724.876
Cr	52	**0.117**	ug/L	177.991	-2848	0.000
Cr	53		ug/L		51378	0.003
Mn	55	**0.010**	ug/L	33.270	481	0.000
Fe	57	**2.387**	ug/L	59.164	1944	0.000
Co	59	**0.007**	ug/L	23.680	57	0.000
Ni	60	**0.018**	ug/L	43.695	45	0.000
Cu	63		ug/L		53	0.000
Cu	65	**0.013**	ug/L	27.036	32	0.000

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	
Mn	55	Linear Thru Zero	1.0000
Fe	57	Linear Thru Zero	1.0000
Co	59	Linear Thru Zero	1.0000
Ni	60	Linear Thru Zero	1.0000
Cu	63	Linear Thru Zero	
Cu	65	Linear Thru Zero	1.0000

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Sc	45			86.5		
Cr	52					
Cr	53					
Mn	55					
Fe	57					
Co	59					
Ni	60					
Cu	63					
Cu	65					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS #7 Daily Performance Report

Sample ID: Sample
Sample Date/Time: Thursday, July 13, 2017 11:26:45
Sample Description:
Method File: C:\Elandata\Method\daily2.mth
Dataset File: C:\Elandata\Dataset\default\Sample.15280
Tuning File: C:\Elandata\Tuning\default2.tun
Optimization File: C:\Elandata\Optimize\Default.dac
Dual Detector Mode: Pulse
Acq. Dead Time(ns): 55
Current Dead Time (ns): 55

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD
	Be	9.0	2709.7	2709.744	21.365	0.8
	Mg	24.0	19227.3	19227.312	145.938	0.8
	Co	58.9	38378.0	38378.050	534.852	1.4
	Rh	102.9	73091.1	73091.063	538.268	0.7
	In	114.9	98256.6	98256.585	1066.369	1.1
	Pb	208.0	80099.6	80099.565	911.399	1.1
⌈>	Ba	137.9	82905.7	82905.707	378.454	0.5
⌊	Ba++	69.0	1868.4	0.023	0.001	3.1
⌈>	Ce	139.9	100159.6	100159.598	1213.048	1.2
⌊	CeO	155.9	2001.6	0.020	0.001	4.2
	Bkgd	220.0	5.8	5.800	1.924	33.2

Current Optimization File Data

Current Value	Description
1.07	Nebulizer Gas Flow
7.00	Lens Voltage
1000.00	ICP RF Power
-1887.00	Analog Stage Voltage
1200.00	Pulse Stage Voltage
150.00	Discriminator Threshold
-3.00	AC Rod Offset

Current Autolens Data

Analyte	Mass	Num of Pts	DAC Value	Maximum Intensity
Be	9	21	8.0	3026.5
Co	59	21	8.5	38431.1
In	115	21	10.0	97994.3

Instrument #7 Tuning Report

File Name: Default2.tun
File Path: C:\Elandata\Tuning\Default2.tun

Analyte	Exact Mass	Meas. Mass	Mass DAC	Res. DAC	Meas. Pk. Width
He	3.0	3.0	580	2060	0.618
Be	9.0	9.0	2019	2040	0.674
Mg	24.0	24.0	5678	2090	0.479
Mg	25.0	24.9	5914	2060	0.519
Mg	26.0	26.0	6177	2060	0.575
Co	58.9	58.9	14183	2050	0.581
Rh	102.9	102.9	24887	2030	0.615
In	114.9	114.9	27821	2030	0.639
Ce	139.9	139.9	33894	2020	0.625
Pb	206.0	206.0	49966	1990	0.644
Pb	207.0	207.0	50226	1990	0.710
Pb	208.0	208.0	50435	1990	0.665
U	238.1	238.0	57767	1960	0.753

ICPMS#7 - Summary Report

Sample ID: Blank
Sample Date/Time: Thursday, July 13, 2017 13:11:52
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b cr.mth
Dataset File: C:\Elandata\DataSet\170713\Blank.061

Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Sc	45		ug/L		1789259	
Cr	52		ug/L		-1237	
Cr	53		ug/L		72767	

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Simple Linear	
Cr	52	Simple Linear	
Cr	53	Simple Linear	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Sc	45					
Cr	52					
Cr	53					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Thursday, July 13, 2017 13:13:21
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b cr.mth
Dataset File: C:\Elandata\DataSet\170713\Standard 1.062

Concentration Results

	Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
>	Sc	45		**ug/L**		1816601	1816601.378
	Cr	52	**10.000**	**ug/L**	2.912	27561	0.016
	Cr	53		**ug/L**		75402	0.001

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
>	Sc	45					
	Cr	52					
	Cr	53					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Thursday, July 13, 2017 13:14:49
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b cr.mth
Dataset File: C:\Elandata\DataSet\170713\Standard 2.063

Concentration Results

	Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
>	Sc	45		**ug/L**		1785140	1785140.246
	Cr	52	**99.973**	**ug/L**	0.932	274539	0.154
	Cr	53		**ug/L**		100239	0.015

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
>	Sc	45					
	Cr	52					
	Cr	53					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Thursday, July 13, 2017 13:16:18
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b cr.mth
Dataset File: C:\Elandata\DataSet\170713\QC Std 1.064

Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Sc	45		ug/L		1781197	1781196.838
Cr	52	**50.875**	ug/L	0.112	138800	0.079
Cr	53		ug/L		84831	0.007

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Sc	45		99.5			
Cr	52	101.750				
Cr	53					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Thursday, July 13, 2017 13:17:47
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b cr.mth
Dataset File: C:\Elandata\DataSet\170713\QC Std 2.065

Concentration Results

	Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
>	Sc	45		ug/L		1782684	1782684.373
	Cr	52	-0.262	ug/L	4.385	-1954	-0.000
	Cr	53		ug/L		69830	-0.001

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
>	Sc	45		99.6			
	Cr	52					
	Cr	53					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Thursday, July 13, 2017 13:19:16
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b cr.mth
Dataset File: C:\Elandata\DataSet\170713\QC Std 3.066

Concentration Results

	Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
>	Sc	45		ug/L		1791269	1791268.945
	Cr	52	**10.275**	ug/L	2.227	27203	0.016
	Cr	53		ug/L		75205	0.001

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
>	Sc	45		100.1			
	Cr	52	102.746				
	Cr	53					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Thursday, July 13, 2017 13:20:45
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b cr.mth
Dataset File: C:\Elandata\DataSet\170713\QC Std 4.067

Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Sc	45		ug/L		1675182	1675181.503
Cr	52	**2.281**	ug/L	1.898	4747	0.004
Cr	53		ug/L		57103	-0.007

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Sc	45		93.6			
Cr	52	183.965				
Cr	53					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Thursday, July 13, 2017 13:22:14
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b cr.mth
Dataset File: C:\Elandata\DataSet\170713\QC Std 5.068

Concentration Results

	Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
>	Sc	45		**ug/L**		1669028	1669027.706
	Cr	52	**22.012**	**ug/L**	0.179	55619	0.034
	Cr	53		**ug/L**		63835	-0.002

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
>	Sc	45		93.3			
	Cr	52	103.636				
	Cr	53					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 13, 2017 13:23:43
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b cr.mth
Dataset File: C:\Elandata\DataSet\170713\QC Std 6.069

Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Sc	45		ug/L		1731394	1731394.441
Cr	52	**51.808**	ug/L	0.236	137415	0.080
Cr	53		ug/L		82198	0.007

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Sc	45		96.8			
Cr	52	103.615				
Cr	53					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 13, 2017 13:25:12
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b cr.mth
Dataset File: C:\Elandata\DataSet\170713\QC Std 7.070

Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Sc	45		ug/L		1733767	1733766.701
Cr	52	-0.363	ug/L	29.800	-2170	-0.001
Cr	53		ug/L		68806	-0.001

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Sc	45		96.9			
Cr	52					
Cr	53					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 10
Sample Date/Time: Thursday, July 13, 2017 13:26:42
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b cr.mth
Dataset File: C:\Elandata\DataSet\170713\QC Std 10.071

Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Sc	45		ug/L		1680911	1680910.743
Cr	52	**973.878**	ug/L	0.564	2528416	1.505
Cr	53		ug/L		364084	0.176

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Sc	45		93.9			
Cr	52	97.388				
Cr	53					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 11
Sample Date/Time: Thursday, July 13, 2017 13:28:12
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b cr.mth
Dataset File: C:\Elandata\DataSet\170713\QC Std 11.072

Concentration Results

	Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
>	Sc	45		**ug/L**		1726757	1726756.771
	Cr	52	**50.997**	**ug/L**	1.321	134874	0.079
	Cr	53		**ug/L**		83012	0.007

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
>	Sc	45		96.5			
	Cr	52	101.994				
	Cr	53					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 12
Sample Date/Time: Thursday, July 13, 2017 13:29:41
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b cr.mth
Dataset File: C:\Elandata\DataSet\170713\QC Std 12.073

Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Sc	45		ug/L		1730302	1730302.135
Cr	52	-0.334	ug/L	16.267	-2089	-0.001
Cr	53		ug/L		69161	-0.001

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Sc	45		96.7			
Cr	52					
Cr	53					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: 1203828900
Sample Date/Time: Thursday, July 13, 2017 13:31:11
Sample Type: Sample
Sample Description: QC A 0520 MB
Number of Replicates: 3
Batch ID: 1681503|1|skj
Method File: C:\Elandata\Method\6020b cr.mth
Dataset File: C:\Elandata\DataSet\170713\1203828900.074

Concentration Results

	Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
>	Sc	45		ug/L		1695995	1695994.592
	Cr	52	-1.882	ug/L	10.674	-6104	-0.003
	Cr	53		ug/L		128909	0.035

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
>	Sc	45		94.8			
	Cr	52					
	Cr	53					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: 1203828901
Sample Date/Time: Thursday, July 13, 2017 13:32:40
Sample Type: Sample
Sample Description: QC A 0520 LCS
Number of Replicates: 3
Batch ID: 1681503|1|skj
Method File: C:\Elandata\Method\6020b cr.mth
Dataset File: C:\Elandata\DataSet\170713\1203828901.075

Concentration Results

	Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
>	Sc	45		**ug/L**		1716344	1716343.975
	Cr	52	**48.543**	**ug/L**	1.169	127558	0.075
	Cr	53		**ug/L**		150190	0.047

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
>	Sc	45		95.9			
	Cr	52					
	Cr	53					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: 1203828902
Sample Date/Time: Thursday, July 13, 2017 13:35:37
Sample Type: Sample
Sample Description: QC A 0520 MS
Number of Replicates: 3
Batch ID: 1681503|1|skj
Method File: C:\Elandata\Method\6020b cr.mth
Dataset File: C:\Elandata\DataSet\170713\1203828902.077

Concentration Results

	Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
>	Sc	45		**ug/L**		1670797	1670796.763
	Cr	52	**188.059**	**ug/L**	0.837	484378	0.291
	Cr	53		**ug/L**		190162	0.073

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
>	Sc	45			93.4		
	Cr	52					
	Cr	53					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: 1203828903
Sample Date/Time: Thursday, July 13, 2017 13:37:06
Sample Type: Sample
Sample Description: QC A 0520 MSD
Number of Replicates: 3
Batch ID: 1681503|1|skj
Method File: C:\Elandata\Method\6020b cr.mth
Dataset File: C:\Elandata\DataSet\170713\1203828903.078

Concentration Results

	Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
>	Sc	45		**ug/L**		1678442	1678441.643
	Cr	52	**188.299**	**ug/L**	0.748	487234	0.291
	Cr	53		**ug/L**		191870	0.074

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
>	Sc	45		93.8			
	Cr	52					
	Cr	53					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: 1203828904
Sample Date/Time: Thursday, July 13, 2017 13:40:03
Sample Type: Sample
Sample Description: QC A 0520 SDILT
Number of Replicates: 3
Batch ID: 1681503|5|skj
Method File: C:\Elandata\Method\6020b cr.mth
Dataset File: C:\Elandata\DataSet\170713\1203828904.080

Concentration Results

Analyte	Mass	**Conc. Mean**	**Report Unit**	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Sc	45		**ug/L**		1669040	1669039.930
Cr	52	**25.842**	**ug/L**	1.459	65489	0.040
Cr	53		**ug/L**		97896	0.018

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Sc	45			93.3		
Cr	52					
Cr	53					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 13
Sample Date/Time: Thursday, July 13, 2017 13:41:34
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b cr.mth
Dataset File: C:\Elandata\DataSet\170713\QC Std 13.081

Concentration Results

	Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
>	Sc	45		**ug/L**		1702225	1702225.076
	Cr	52	**51.400**	**ug/L**	1.071	134020	0.079
	Cr	53		**ug/L**		89302	0.012

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
>	Sc	45			95.1		
	Cr	52	102.800				
	Cr	53					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

ICPMS#7 - Summary Report

Sample ID: QC Std 15
Sample Date/Time: Thursday, July 13, 2017 13:43:03
Sample Type: Sample
Sample Description:
Number of Replicates: 3
Batch ID:
Method File: C:\Elandata\Method\6020b cr.mth
Dataset File: C:\Elandata\DataSet\170713\QC Std 15.082

Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Sc	45		ug/L		1668577	1668576.947
Cr	52	-0.497	ug/L	23.783	-2435	-0.001
Cr	53		ug/L		73896	0.004

Calibration

Analyte	Mass	Curve Type	Correlation Coefficient
Sc	45	Linear Thru Zero	
Cr	52	Linear Thru Zero	1.0000
Cr	53	Linear Thru Zero	

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Sc	45			93.3		
Cr	52					
Cr	53					

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

QC Action

QC Action Line: No QC out of limits detected

Miscellaneous

Prep Logbook

July 17, 2017

Acid Digestion of Total Recoverable or Dissolved Metals in Surface and Groundwater Samples for Analysis by ICP or ICP-MS

Batch ID: **1675723**
Analyst: Clyde Wright
Method: SW846 3005A
Lab SOP: GL-MA-E-006 REV# 13
Instrument: Metals Manual Instrument

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units
LCS	1203815378	ICP-MS spiking soluiton A	UI2538863-A	.25	mL
LCS	1203815378	ICP-MS spiking solution B	UI2538868-B	.25	mL
MS	1203815379	ICP-MS spiking soluiton A	UI2538863-A	.25	mL
MS	1203815379	ICP-MS spiking solution B	UI2538868-B	.25	mL
MSD	1203815380	ICP-MS spiking soluiton A	UI2538863-A	.25	mL
MSD	1203815380	ICP-MS spiking solution B	UI2538868-B	.25	mL

Sample ID	Prep Date	Matrix	Initial Volume (mL)	Final Volume (mL)	Prep Factor (mL/mL)	pH Check
1203815377 MB	20-JUN-2017 17:10:12	Water	50	50	1	<2
1203815378 LCS	20-JUN-2017 17:10:12	Water	50	50	1	<2
425780001	20-JUN-2017 17:10:12	Water	50	50	1	<2
1203815381 SDILT (425780001)	20-JUN-2017 17:10:12	Water	50	50	1	<2
1203815379 MS (425780001)	20-JUN-2017 17:10:12	Water	50	50	1	<2
1203815380 MSD (425780001)	20-JUN-2017 17:10:12	Water	50	50	1	<2
425780002	20-JUN-2017 17:10:12	Water	50	50	1	<2
425783003	20-JUN-2017 17:10:12	Water	50	50	1	<2
425783004	20-JUN-2017 17:10:12	Water	50	50	1	<2

Reagent/Solvent Lot ID	Description	Amount
2534820	Concentrated Nitric Acid	1 mL
2546348	HYDROCHLORIC ACID	2.5 mL

Comments:
Block Temperature (90-95C): 91 C
Temperature within limits (Y/N)?: Y
Thermometer ID: 89095-622
Hot Block ID: 11

Prep Logbook

July 17, 2017

Acid Digestion of Total Recoverable or Dissolved Metals in Surface and Groundwater Samples for Analysis by ICP or ICP-MS

Batch ID: **1681502**
Analyst: Clyde Wright
Method: SW846 3005A
Lab SOP: GL-MA-E-006 REV# 13
Instrument: Metals Manual Instrument

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units
LCS	1203828901	ICP-MS spiking soluiton A	UI2551636-A	.125	mL
LCS	1203828901	ICP-MS spiking solution B	UI2551638-B	.125	mL
MS	1203828902	ICP-MS spiking soluiton A	UI2551636-A	.125	mL
MS	1203828902	ICP-MS spiking solution B	UI2551638-B	.125	mL
MSD	1203828903	ICP-MS spiking soluiton A	UI2551636-A	.125	mL
MSD	1203828903	ICP-MS spiking solution B	UI2551638-B	.125	mL

Sample ID	Prep Date	Matrix	Initial Volume (mL)	Final Volume (mL)	Prep Factor (mL/mL)	pH Check
1203828900 MB	11-JUL-2017 18:51:34	Water	25	25	1	<2
1203828901 LCS	11-JUL-2017 18:51:34	Water	25	25	1	<2
425780001 - 2	11-JUL-2017 18:51:34	Water	25	25	1	<2
1203828904 - 2 SDILT (425780001)	11-JUL-2017 18:51:34	Water	25	25	1	<2
1203828902 - 2 MS (425780001)	11-JUL-2017 18:51:34	Water	25	25	1	<2
1203828903 - 2 MSD (425780001)	11-JUL-2017 18:51:34	Water	25	25	1	<2
425780002 - 2	11-JUL-2017 18:51:34	Water	25	25	1	<2
425783003 - 2	11-JUL-2017 18:51:34	Water	25	25	1	<2
425783004 - 2	11-JUL-2017 18:51:34	Water	25	25	1	<2

Reagent/Solvent Lot ID	Description	Amount
170606	Concentrated Nitric Acid	.5 mL
2556599	HYDROCHLORIC ACID	1.25 mL

Comments:
Block Temperature (90-95C): 94 C
Temperature within limits (Y/N)?: Y
Thermometer ID: 118840
Hot Block ID: 9

Serial ID:	UI170103-09	**Open/Reference Date:**	03-JAN-17	**Amount :**	250 mL
Name:	ICP-MS CRDL Master #1	**Received:**	03-JAN-17	**Catalog Number :**	160044-13-02
Type:	Source Material	**Expires:**	03-JAN-18	**Lot Number :**	1099963
Employee:	Paul Boyd			**Solvent :**	+/- 0.5% IN 2% HNO3
Supplier:	02SI				
Description:	ICPMS CRDL Master Soln #1				
Comments:	None				

Analyte	Concentration	Analyte	Concentration
Aluminum	50 mg/L	Arsenic	5 mg/L
Barium	2 mg/L	Beryllium	.5 mg/L
Boron	15 mg/L	Cadmium	1 mg/L
Calcium	200 mg/L	Chromium	30 mg/L
Cobalt	1 mg/L	Copper	1 mg/L
Iron	100 mg/L	Lead	2 mg/L
Lithium	10 mg/L	Magnesium	30 mg/L
Manganese	5 mg/L	Nickel	2 mg/L
Phosphorous	50 mg/L	Potassium	300 mg/L
Selenium	5 mg/L	Sodium	250 mg/L
Strontium	10 mg/L	Thallium	2 mg/L
Thorium	2 mg/L	Uranium	.2 mg/L
Vanadium	10 mg/L	Zinc	10 mg/L

Serial ID:	UI170103-10	**Open/Reference Date:**	03-JAN-17	**Amount :**	250 mL
Name:	ICP-MS CRDL Master #2	**Received:**	03-JAN-17	**Catalog Number :**	160044-11-02
Type:	Source Material	**Expires:**	03-JAN-18	**Lot Number :**	1100012
Employee:	Paul Boyd			**Solvent :**	+/- 0.5% IN 2% HNO3
Supplier:	02SI				
Description:	ICPMS CRDL Soln #2				
Comments:	None				

Analyte	Concentration	Analyte	Concentration
Antimony	3 mg/L	Molybdenum	.5 mg/L
Silver	1 mg/L	Tin	5 mg/L
Titanium	10 mg/L	Tungsten	5 mg/L
Zirconium	2 mg/L		

Serial ID:	UI170201-07	**Open/Reference Date:**	01-FEB-17	**Amount :**	250 mL
Name:	ICP-MS ICV/CCV Master B	**Received:**	01-FEB-17	**Catalog Number :**	162974-01-02
Type:	Source Material	**Expires:**	01-FEB-18	**Lot Number :**	1100633
Employee:	Paul Boyd			**Solvent :**	+/- 0.5% in 5% HNO3 100 cm2
Supplier:	02SI				
Description:	ICPMS ICV/CCV Soln B - 20ppm				
Comments:	None				

Analyte	Concentration	Analyte	Concentration

Analyte	Concentration	Analyte	Concentration
Arsenic	20 mg/L	Barium	20 mg/L
Beryllium	20 mg/L	Boron	40 mg/L
Cadmium	20 mg/L	Chromium	20 mg/L
Cobalt	20 mg/L	Copper	20 mg/L
Lead	20 mg/L	Lithium	20 mg/L
Manganese	20 mg/L	Nickel	20 mg/L
Selenium	20 mg/L	Strontium	20 mg/L
Thallium	20 mg/L	Thorium	20 mg/L
Uranium	20 mg/L	Vanadium	20 mg/L
Zinc	20 mg/L		

Serial ID: UI170201-08 **Open/Reference Date:** 01-FEB-17 **Amount :** 250 mL
Name: ICP-MS ICV/CCV Master C **Received:** 01-FEB-17 **Catalog Number :** 160054-03-02
Type: Source Material **Expires:** 01-FEB-18 **Lot Number :** 1100654
Employee: Paul Boyd **Solvent :** +/- 0.5% in 5% HNO3 100 cm2
Supplier: 02SI
Description: ICPMS ICV/CCV Soln C - 20ppm
Comments: None

Analyte	Concentration	Analyte	Concentration
Antimony	20 mg/L	Molybdenum	20 mg/L
Silver	20 mg/L	Tin	20 mg/L
Titanium	20 mg/L	Tungsten	20 mg/L
Zirconium	20 mg/L		

Serial ID: UI170201-09 **Open/Reference Date:** 01-FEB-17 **Amount :** 250 mL
Name: ICP-MS ICV/CCV Master A **Received:** 01-FEB-17 **Catalog Number :** 160055-01-02
Type: Source Material **Expires:** 01-FEB-18 **Lot Number :** 1100617
Employee: Paul Boyd **Solvent :** +/- 0.5% in 5% HNO3 100 cm2
Supplier: 02SI
Description: ICPMS ICV/CCV SOLN A - 2000ppm
Comments: None

Analyte	Concentration	Analyte	Concentration
Aluminum	2020 mg/L	Calcium	2000 mg/L
Iron	2000 mg/L	Magnesium	2000 mg/L
Phosphorous	2000 mg/L	Potassium	2000 mg/L
Sodium	2000 mg/L		

Serial ID: UI170220-11 **Open/Reference Date:** 20-FEB-17 **Amount :** 1000 mL
Name: ICP-MS ICSA Master A **Received:** 20-FEB-17 **Catalog Number :** 160013-01-01L
Type: Source Material **Expires:** 20-FEB-18 **Lot Number :** 1095959
Employee: Paul Boyd **Solvent :** 2% HNO3
Supplier: 02SI

Description: ICP-MS ICSA Master A
Comments: None

Analyte	Concentration	Analyte	Concentration
Aluminum	1000 mg/L	Calcium	1000 mg/L
Carbon	2000 mg/L	Chloride	10000 mg/L
Iron	1000 mg/L	Magnesium	1000 mg/L
Molybdenum	20 mg/L	Phosphorous	1000 mg/L
Potassium	1000 mg/L	Sodium	1000 mg/L
Sulfur	1000 mg/L	Titanium	20 mg/L

Serial ID: UI170307-12
Name: ICP-MS ICSAB Master B
Type: Source Material
Employee: Paul Boyd
Supplier: 02SI
Description: ICPMS ICSAB Master B
Comments: None

Open/Reference Date: 07-MAR-17
Received: 07-MAR-17
Expires: 07-MAR-18

Amount : 250 mL
Catalog Number : 160033-02-02
Lot Number : 1103440
Solvent : +/- 2.0% in 2% HNO3

Analyte	Concentration	Analyte	Concentration
Arsenic	2 mg/L	Barium	2 mg/L
Beryllium	2 mg/L	Boron	2 mg/L
Cadmium	2 mg/L	Chromium	2 mg/L
Cobalt	2 mg/L	Copper	2 mg/L
Lead	2 mg/L	Lithium	2 mg/L
Manganese	2 mg/L	Nickel	2 mg/L
Selenium	2 mg/L	Strontium	2 mg/L
Thallium	2 mg/L	Thorium	2 mg/L
Uranium	2 mg/L	Vanadium	2 mg/L
Zinc	2 mg/L		

Serial ID: UI170307-13
Name: ICP-MS ICSAB Master C
Type: Source Material
Employee: Paul Boyd
Supplier: 02SI
Description: ICPMS ICSAB Master C
Comments: None

Open/Reference Date: 07-MAR-17
Received: 07-MAR-17
Expires: 07-MAR-18

Amount : 250 mL
Catalog Number : 160033-03-02
Lot Number : 1103438
Solvent : +/- 2.0% in 2% HNO3 + tr HF

Analyte	Concentration	Analyte	Concentration
Antimony	2 mg/L	Silver	2 mg/L
Tin	2 mg/L	Tungsten	2 mg/L
Zirconium	2 mg/L		

Serial ID:	UI170521-03	**Open/Reference Date:**	21-MAY-17	**Catalog Number :**	060074-05-01
Name:	ICPMS Tungsten - 10mg/L S	**Received:**	21-MAY-17	**Lot Number :**	1107614
Type:	Source Material	**Expires:**	21-MAY-18	**Solvent :**	2% HNO3
Employee:	Paul Boyd				
Supplier:	O2SI				
Description:	ICPMS Tungsten standard SPIKE - 10mg/L				
Comments:	None				

Analyte	Concentration	Analyte	Concentration
Tungsten	10 mg/L		

Serial ID:	UI170521-60	**Open/Reference Date:**	21-MAY-17	**Amount :**	100 mL
Name:	ICPMS High Range Standar	**Received:**	21-MAY-17	**Catalog Number :**	160212-02-01
Type:	Source Material	**Expires:**	21-MAY-18	**Lot Number :**	1107730
Employee:	Paul Boyd			**Solvent :**	+/- 2% in 2%HNO3 + Tr HF
Supplier:	O2SI				
Description:	Linear Range Standard A				
Comments:	None				

Analyte	Concentration	Analyte	Concentration
Aluminum	5000 mg/L	Arsenic	100 mg/L
Barium	250 mg/L	Beryllium	100 mg/L
Cadmium	100 mg/L	Calcium	5000 mg/L
Chromium	100 mg/L	Cobalt	100 mg/L
Copper	100 mg/L	Iron	5000 mg/L
Lead	500 mg/L	Lithium	100 mg/L
Magnesium	5000 mg/L	Manganese	100 mg/L
Nickel	100 mg/L	Phosphorous	2500 mg/L
Potassium	5000 mg/L	Selenium	50 mg/L
Sodium	5000 mg/L	Strontium	100 mg/L
Thallium	50 mg/L	Thorium	250 mg/L
Uranium	500 mg/L	Vanadium	100 mg/L
Zinc	250 mg/L		

Serial ID:	UI170521-61	**Open/Reference Date:**	21-MAY-17	**Amount :**	100 mL
Name:	ICPMS High Range Standar	**Received:**	21-MAY-17	**Catalog Number :**	160212-02-01
Type:	Source Material	**Expires:**	21-MAY-18	**Lot Number :**	1107730
Employee:	Paul Boyd			**Solvent :**	2% in 2%HNO3 + Tr HF
Supplier:	O2SI				
Description:	Linear Range Standard B				
Comments:	None				

Analyte	Concentration	Analyte	Concentration
Antimony	25 mg/L	Molybdenum	100 mg/L
Silver	25 mg/L	Tin	100 mg/L
Tungsten	100 mg/L	Zirconium	50 mg/L

Serial ID: UI2538863-A **Open/Reference Date:** 19-APR-17 **Catalog Number :** 162950-01-03
Name: ICP-MS SPIKE A **Received:** 19-APR-17 **Lot Number :** 1106351
Type: Source Material **Expires:** 19-APR-18
Employee: Shanta Mack
Supplier: O2Si
Description: ICP-MS spiking soluiton A
Comments: None

Analyte	Concentration	Analyte	Concentration
Aluminum	400 mg/L	Arsenic	10 mg/L
Barium	10 mg/L	Beryllium	10 mg/L
Bismuth	10 mg/L	Boron	20 mg/L
Cadmium	10 mg/L	Calcium	400 mg/L
Cesium	10 mg/L	Chromium	10 mg/L
Cobalt	10 mg/L	Copper	10 mg/L
Iron	400 mg/L	Lithium	10 mg/L
Magnesium	400 mg/L	Manganese	10 mg/L
Nickel	10 mg/L	Phosphorous	400 mg/L
Potassium	400 mg/L	Rhenium	10 mg/L
Rhodium	10 mg/L	Selenium	10 mg/L
Sodium	400 mg/L	Strontium	10 mg/L
Thorium	10 mg/L	Uranium	10 mg/L
Uranium-235	.072 mg/L	Uranium-238	9.928 mg/L
Vanadium	10 mg/L	Zinc	10 mg/L

Serial ID: UI2538868-B **Open/Reference Date:** 19-APR-17 **Catalog Number :** 162950-01-03
Name: ICP-MS SPIKE B **Received:** 19-APR-17 **Lot Number :** 1106351
Type: Source Material **Expires:** 19-APR-18
Employee: Shanta Mack
Supplier: O2Si
Description: ICP-MS spiking solution B
Comments: None

Analyte	Concentration	Analyte	Concentration
Antimony	10 mg/L	Hafnium	10 mg/L
Lead	10 mg/L	Molybdenum	10 mg/L
Silver	10 mg/L	Tantalum	10 mg/L
Thallium	10 mg/L	Tin	10 mg/L
Titanium	10 mg/L	Tungsten	10 mg/L
Zirconium	10 mg/L		

Serial ID: UI2551636-A **Open/Reference Date:** 24-MAY-17 **Catalog Number :** 162950-01-03
Name: ICP-MS SPIKE A **Received:** 24-MAY-17 **Lot Number :** 1108243
Type: Source Material **Expires:** 24-MAY-18
Employee: Shanta Mack
Supplier: O2Si

Description: ICP-MS spiking soluiton A
Comments: None

Analyte	Concentration	Analyte	Concentration
Aluminum	400 mg/L	Arsenic	10 mg/L
Barium	10 mg/L	Beryllium	10 mg/L
Bismuth	10 mg/L	Boron	20 mg/L
Cadmium	10 mg/L	Calcium	400 mg/L
Cesium	10 mg/L	Chromium	10 mg/L
Cobalt	10 mg/L	Copper	10 mg/L
Iron	400 mg/L	Lithium	10 mg/L
Magnesium	400 mg/L	Manganese	10 mg/L
Nickel	10 mg/L	Phosphorous	400 mg/L
Potassium	400 mg/L	Rhenium	10 mg/L
Rhodium	10 mg/L	Selenium	10 mg/L
Sodium	400 mg/L	Strontium	10 mg/L
Thorium	10 mg/L	Uranium	10 mg/L
Uranium-235	.072 mg/L	Uranium-238	9.928 mg/L
Vanadium	10 mg/L	Zinc	10 mg/L

Serial ID: UI2551638-B **Open/Reference Date:** 24-MAY-17 **Catalog Number :** 162950-01-03
Name: ICP-MS SPIKE B **Received:** 24-MAY-17 **Lot Number :** 1108243
Type: Source Material **Expires:** 24-MAY-18
Employee: Shanta Mack
Supplier: O2Si
Description: ICP-MS spiking solution B
Comments: None

Analyte	Concentration	Analyte	Concentration
Antimony	10 mg/L	Hafnium	10 mg/L
Lead	10 mg/L	Molybdenum	10 mg/L
Silver	10 mg/L	Tantalum	10 mg/L
Thallium	10 mg/L	Tin	10 mg/L
Titanium	10 mg/L	Tungsten	10 mg/L
Zirconium	10 mg/L		

Serial ID: UMS170531-01 **Open/Reference Date:** 31-MAY-17 **Amount :** 250 mL
Name: ICPMSCalSPIKEB **Received:** 31-MAY-17 **Catalog Number :** ZGEL-100-250
Type: Source Material **Expires:** 30-MAY-18 **Lot Number :** 43-024CR
Employee: Paul Boyd
Supplier: SPEX
Description: ICPMS Calibration Standard Solution B
Comments: None

Analyte	Concentration	Analyte	Concentration
Arsenic	10 mg/L	Barium	10 mg/L

Analyte	Concentration	Analyte	Concentration
Beryllium	10 mg/L	Boron	20 mg/L
Cadmium	10 mg/L	Chromium	10 mg/L
Cobalt	10 mg/L	Copper	10 mg/L
Lead	10 mg/L	Lithium	10 mg/L
Manganese	10 mg/L	Nickel	10 mg/L
Selenium	10 mg/L	Silver	10 mg/L
Strontium	10 mg/L	Thallium	10 mg/L
Thorium	10 mg/L	Uranium	10 mg/L
Vanadium	10 mg/L	Zinc	10 mg/L

Serial ID: UMS170531-02 **Open/Reference Date:** 31-MAY-17 **Catalog Number :** ZGEL-102-250
Name: ICPMSCalSPIKEA **Received:** 31-MAY-17 **Lot Number :** 43-025CR
Type: Source Material **Expires:** 30-MAY-18
Employee: Paul Boyd
Supplier: SPEX
Description: ICPMS Calibration Standard Solution A
Comments: None

Analyte	Concentration	Analyte	Concentration
Aluminum	1000 mg/L	Calcium	1000 mg/L
Iron	1000 mg/L	Magnesium	1000 mg/L
Phosphorous	1000 mg/L	Potassium	1000 mg/L
Sodium	1000 mg/L		

Serial ID: UMS170531-03 **Open/Reference Date:** 31-MAY-17 **Amount :** 250 ml
Name: ICPMSCalSPIKEC **Received:** 31-MAY-17 **Catalog Number :** ZGEL-101-250
Type: Source Material **Expires:** 30-MAY-18 **Lot Number :** 43-026CR
Employee: Paul Boyd
Supplier: SPEX
Description: ICPMS Calibration Standard Solution C
Comments: None

Analyte	Concentration	Analyte	Concentration
Antimony	10 mg/L	Molybdenum	10 mg/L
Tin	10 mg/L	Titanium	10 mg/L
Zirconium	10 mg/L		

Serial ID: WMS170707-04 **Open/Reference Date:** 07-JUL-17 **Amount :** 50 mL
Name: ICPMS Cal Standard 100 **Received:** 07-JUL-17 **Balance Id :** 4025216
Type: Working **Expires:** 08-JUL-17 **Pipet Id :** 3541598
Employee: Paul Boyd **Solvent :** 2%HNO3/1%HCl -2564437
Supplier: GEL
Description: ICPMS Calibration Standard (100 ppb)
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170521-03	Tungsten	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Arsenic	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Barium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Beryllium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Boron	20 mg/L	5 mL	500 mL	200 ug/l
UMS170531-01	Cadmium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Chromium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Cobalt	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Copper	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Lead	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Lithium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Manganese	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Nickel	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Selenium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Silver	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Strontium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Thallium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Thorium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Uranium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Vanadium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Zinc	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-02	Aluminum	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-02	Calcium	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-02	Iron	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-02	Magnesium	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-02	Phosphorous	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-02	Potassium	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-02	Sodium	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-03	Antimony	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-03	Molybdenum	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-03	Tin	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-03	Titanium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-03	Zirconium	10 mg/L	5 mL	500 mL	100 ug/l

Serial ID: WMS170707-04A **Open/Reference Date:** 07-JUL-17 **Balance Id :** 4025216
Name: ICPMS Cal Standard 10 **Received:** 07-JUL-17 **Pipet Id :** 3541598
Type: Working **Expires:** 08-JUL-17 **Solvent :** 2%HNO3/1%HCl -2564437
Employee: Paul Boyd
Supplier: GEL
Description: ICPMS Calibration Standard (10 ppb)
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
WMS170707-04	Aluminum	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170707-04	Antimony	100 ug/l	50 mL	500 mL	10 ug/l

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
WMS170707-04	Arsenic	100 ug/l	50 mL	500 mL	10 ug/l
WMS170707-04	Barium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170707-04	Beryllium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170707-04	Boron	200 ug/l	50 mL	500 mL	20 ug/l
WMS170707-04	Cadmium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170707-04	Calcium	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170707-04	Chromium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170707-04	Cobalt	100 ug/l	50 mL	500 mL	10 ug/l
WMS170707-04	Copper	100 ug/l	50 mL	500 mL	10 ug/l
WMS170707-04	Iron	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170707-04	Lead	100 ug/l	50 mL	500 mL	10 ug/l
WMS170707-04	Lithium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170707-04	Magnesium	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170707-04	Manganese	100 ug/l	50 mL	500 mL	10 ug/l
WMS170707-04	Molybdenum	100 ug/l	50 mL	500 mL	10 ug/l
WMS170707-04	Nickel	100 ug/l	50 mL	500 mL	10 ug/l
WMS170707-04	Phosphorous	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170707-04	Potassium	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170707-04	Selenium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170707-04	Silver	100 ug/l	50 mL	500 mL	10 ug/l
WMS170707-04	Sodium	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170707-04	Strontium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170707-04	Thallium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170707-04	Thorium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170707-04	Tin	100 ug/l	50 mL	500 mL	10 ug/l
WMS170707-04	Titanium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170707-04	Tungsten	100 ug/l	50 mL	500 mL	10 ug/l
WMS170707-04	Uranium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170707-04	Vanadium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170707-04	Zinc	100 ug/l	50 mL	500 mL	10 ug/l
WMS170707-04	Zirconium	100 ug/l	50 mL	500 mL	10 ug/l

Serial ID: WMS170707-05 **Open/Reference Date:** 07-JUL-17 **Balance Id :** BAL216
Name: ICPMS ICV **Received:** 07-JUL-17 **Pipet Id :** 3541598
Type: Working **Expires:** 08-JUL-17 **Solvent :** 2%HNO3/1%HCl -2564437
Employee: Paul Boyd
Supplier: GEL
Description: ICPMS ICV
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170201-07	Arsenic	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Barium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Beryllium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Boron	40 mg/L	2.5 mL	1000 mL	100 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170201-07	Cadmium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Chromium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Cobalt	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Copper	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Lead	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Lithium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Manganese	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Nickel	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Selenium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Strontium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Thallium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Thorium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Uranium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Vanadium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Zinc	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Antimony	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Molybdenum	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Silver	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Tin	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Titanium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Tungsten	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Zirconium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-09	Aluminum	2020 mg/L	2.5 mL	1000 mL	5050 ug/L
UI170201-09	Calcium	2000 mg/L	2.5 mL	1000 mL	5000 ug/L
UI170201-09	Iron	2000 mg/L	2.5 mL	1000 mL	5000 ug/L
UI170201-09	Magnesium	2000 mg/L	2.5 mL	1000 mL	5000 ug/L
UI170201-09	Phosphorous	2000 mg/L	2.5 mL	1000 mL	5000 ug/L
UI170201-09	Potassium	2000 mg/L	2.5 mL	1000 mL	5000 ug/L
UI170201-09	Sodium	2000 mg/L	2.5 mL	1000 mL	5000 ug/L

Serial ID: WMS170707-06 **Open/Reference Date:** 07-JUL-17 **Balance Id :** BAL216
Name: ICPMS CRDL **Received:** 07-JUL-17 **Pipet Id :** 3820544
Type: Working **Expires:** 08-JUL-17 **Solvent :** 2%HNO3/1%HCl -2564437
Employee: Paul Boyd
Supplier: GEL
Description: ICPMS CRDL
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170103-09	Aluminum	50 mg/L	.5 mL	500 mL	30 ug/L
UI170103-09	Arsenic	5 mg/L	.5 mL	500 mL	5 ug/L
UI170103-09	Barium	2 mg/L	.5 mL	500 mL	2 ug/L
UI170103-09	Beryllium	.5 mg/L	.5 mL	500 mL	.5 ug/L
UI170103-09	Boron	15 mg/L	.5 mL	500 mL	15 ug/L
UI170103-09	Cadmium	1 mg/L	.5 mL	500 mL	1 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170103-09	Calcium	200 mg/L	.5 mL	500 mL	200 ug/L
UI170103-09	Chromium	30 mg/L	.5 mL	500 mL	10 ug/L
UI170103-09	Cobalt	1 mg/L	.5 mL	500 mL	1 ug/L
UI170103-09	Copper	1 mg/L	.5 mL	500 mL	1 ug/L
UI170103-09	Iron	100 mg/L	.5 mL	500 mL	100 ug/L
UI170103-09	Lead	2 mg/L	.5 mL	500 mL	2 ug/L
UI170103-09	Lithium	10 mg/L	.5 mL	500 mL	10 ug/L
UI170103-09	Magnesium	30 mg/L	.5 mL	500 mL	15 ug/L
UI170103-09	Manganese	5 mg/L	.5 mL	500 mL	5 ug/L
UI170103-09	Nickel	2 mg/L	.5 mL	500 mL	2 ug/L
UI170103-09	Phosphorous	50 mg/L	.5 mL	500 mL	50 ug/L
UI170103-09	Potassium	300 mg/L	.5 mL	500 mL	300 ug/L
UI170103-09	Selenium	5 mg/L	.5 mL	500 mL	5 ug/L
UI170103-09	Sodium	250 mg/L	.5 mL	500 mL	250 ug/L
UI170103-09	Strontium	10 mg/L	.5 mL	500 mL	10 ug/L
UI170103-09	Thallium	2 mg/L	.5 mL	500 mL	1 ug/L
UI170103-09	Thorium	2 mg/L	.5 mL	500 mL	1 ug/L
UI170103-09	Uranium	.2 mg/L	.5 mL	500 mL	.2 ug/L
UI170103-09	Vanadium	10 mg/L	.5 mL	500 mL	10 ug/L
UI170103-09	Zinc	10 mg/L	.5 mL	500 mL	10 ug/L
UI170103-10	Antimony	3 mg/L	.5 mL	500 mL	3 ug/L
UI170103-10	Molybdenum	.5 mg/L	.5 mL	500 mL	.5 ug/L
UI170103-10	Silver	1 mg/L	.5 mL	500 mL	1 ug/L
UI170103-10	Tin	5 mg/L	.5 mL	500 mL	5 ug/L
UI170103-10	Titanium	10 mg/L	.5 mL	500 mL	10 ug/L
UI170103-10	Tungsten	5 mg/L	.5 mL	500 mL	5 ug/L
UI170103-10	Zirconium	2 mg/L	.5 mL	500 mL	2 ug/L

Serial ID: WMS170707-07 **Open/Reference Date:** 07-JUL-17 **Balance Id :** BAL216
Name: ICPMS ICSA **Received:** 07-JUL-17 **Lot Number :** 1010773
Type: Working **Expires:** 08-JUL-17 **Pipet Id :** 3541598
Employee: Paul Boyd **Solvent :** 2%HNO3/1%HCl -2564437
Supplier: GEL
Description: ICPMS ICSA
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170220-11	Aluminum	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Calcium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Carbon	2000 mg/L	25 mL	250 mL	200000 ug/L
UI170220-11	Chloride	10000 mg/L	25 mL	250 mL	1000000 ug/L
UI170220-11	Iron	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Magnesium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Molybdenum	20 mg/L	25 mL	250 mL	2000 ug/L
UI170220-11	Phosphorous	1000 mg/L	25 mL	250 mL	100000 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170220-11	Potassium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Sodium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Sulfur	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Titanium	20 mg/L	25 mL	250 mL	2000 ug/L

Serial ID: WMS170707-08 **Open/Reference Date:** 07-JUL-17 **Balance Id :** BAL216
Name: ICPMS ICSAB **Received:** 07-JUL-17 **Pipet Id :** 1758088
Type: Working **Expires:** 08-JUL-17 **Solvent :** 2%HNO3/1%HCl -2564437
Employee: Paul Boyd
Supplier: GEL
Description: ICPMS ICSAB
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170220-11	Aluminum	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Calcium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Carbon	2000 mg/L	25 mL	250 mL	200000 ug/L
UI170220-11	Chloride	10000 mg/L	25 mL	250 mL	1000000 ug/L
UI170220-11	Iron	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Magnesium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Molybdenum	20 mg/L	25 mL	250 mL	2000 ug/L
UI170220-11	Phosphorous	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Potassium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Sodium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Sulfur	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Titanium	20 mg/L	25 mL	250 mL	2000 ug/L
UI170307-12	Arsenic	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Barium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Beryllium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Boron	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Cadmium	2 mg/L	2.5 mL	250 mL	20.2 ug/L
UI170307-12	Chromium	2 mg/L	2.5 mL	250 mL	22.2 ug/L
UI170307-12	Cobalt	2 mg/L	2.5 mL	250 mL	20.4 ug/L
UI170307-12	Copper	2 mg/L	2.5 mL	250 mL	23.4 ug/L
UI170307-12	Lead	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Lithium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Manganese	2 mg/L	2.5 mL	250 mL	22.7 ug/L
UI170307-12	Nickel	2 mg/L	2.5 mL	250 mL	22.4 ug/L
UI170307-12	Selenium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Strontium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Thallium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Thorium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Uranium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Vanadium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Zinc	2 mg/L	2.5 mL	250 mL	27 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170307-13	Antimony	2 mg/L	2.5 mL	250 mL	20.5 ug/L
UI170307-13	Silver	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-13	Tin	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-13	Tungsten	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-13	Zirconium	2 mg/L	2.5 mL	250 mL	20 ug/L

Serial ID: WMS170707-70 **Open/Reference Date:** 07-JUL-17 **Balance Id :** BAL216
Name: ICPMS LINEAR RANGE ST **Received:** 07-JUL-17 **Pipet Id :** 1758088
Type: Working **Expires:** 08-JUL-17 **Solvent :** 2%HNO3/1%HCl -2564437
Employee: Paul Boyd
Supplier: 02SI
Description: ICPMS LINEAR RANGE STANDARD
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170521-60	Aluminum	5000 mg/L	2.5 mL	250 mL	50000 ug/L
UI170521-60	Arsenic	100 mg/L	2.5 mL	250 mL	1000 ug/L
UI170521-60	Barium	250 mg/L	2.5 mL	250 mL	2500 ug/L
UI170521-60	Beryllium	100 mg/L	2.5 mL	250 mL	1000 ug/L
UI170521-60	Cadmium	100 mg/L	2.5 mL	250 mL	1000 ug/L
UI170521-60	Calcium	5000 mg/L	2.5 mL	250 mL	50000 ug/L
UI170521-60	Chromium	100 mg/L	2.5 mL	250 mL	1000 ug/L
UI170521-60	Cobalt	100 mg/L	2.5 mL	250 mL	1000 ug/L
UI170521-60	Copper	100 mg/L	2.5 mL	250 mL	1000 ug/L
UI170521-60	Iron	5000 mg/L	2.5 mL	250 mL	50000 ug/L
UI170521-60	Lead	500 mg/L	2.5 mL	250 mL	5000 ug/L
UI170521-60	Lithium	100 mg/L	2.5 mL	250 mL	1000 ug/L
UI170521-60	Magnesium	5000 mg/L	2.5 mL	250 mL	50000 ug/L
UI170521-60	Manganese	100 mg/L	2.5 mL	250 mL	1000 ug/L
UI170521-60	Nickel	100 mg/L	2.5 mL	250 mL	1000 ug/L
UI170521-60	Phosphorous	2500 mg/L	2.5 mL	250 mL	25000 ug/L
UI170521-60	Potassium	5000 mg/L	2.5 mL	250 mL	50000 ug/L
UI170521-60	Selenium	50 mg/L	2.5 mL	250 mL	500 ug/L
UI170521-60	Sodium	5000 mg/L	2.5 mL	250 mL	50000 ug/L
UI170521-60	Strontium	100 mg/L	2.5 mL	250 mL	1000 ug/L
UI170521-60	Thallium	50 mg/L	2.5 mL	250 mL	500 ug/L
UI170521-60	Thorium	250 mg/L	2.5 mL	250 mL	2500 ug/L
UI170521-60	Uranium	500 mg/L	2.5 mL	250 mL	5000 ug/L
UI170521-60	Vanadium	100 mg/L	2.5 mL	250 mL	1000 ug/L
UI170521-60	Zinc	250 mg/L	2.5 mL	250 mL	2500 ug/L
UI170521-61	Antimony	25 mg/L	2.5 mL	250 mL	250 ug/L
UI170521-61	Molybdenum	100 mg/L	2.5 mL	250 mL	1000 ug/L
UI170521-61	Silver	25 mg/L	2.5 mL	250 mL	250 ug/L
UI170521-61	Tin	100 mg/L	2.5 mL	250 mL	1000 ug/L
UI170521-61	Tungsten	100 mg/L	2.5 mL	250 mL	1000 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170521-61	Zirconium	50 mg/L	2.5 mL	250 mL	500 ug/L

Serial ID: WMS170710-04 **Open/Reference Date:** 10-JUL-17 **Amount :** 50 mL
Name: ICPMS Cal Standard 100 **Received:** 10-JUL-17 **Balance Id :** 4025216
Type: Working **Expires:** 11-JUL-17 **Pipet Id :** 3541598
Employee: Elizabeth Janssen **Solvent :** 2%HNO3/1%HCl -2569867
Supplier: GEL
Description: ICPMS Calibration Standard (100 ppb)
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170521-03	Tungsten	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Arsenic	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Barium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Beryllium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Boron	20 mg/L	5 mL	500 mL	200 ug/l
UMS170531-01	Cadmium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Chromium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Cobalt	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Copper	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Lead	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Lithium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Manganese	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Nickel	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Selenium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Silver	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Strontium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Thallium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Thorium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Uranium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Vanadium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Zinc	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-02	Aluminum	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-02	Calcium	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-02	Iron	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-02	Magnesium	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-02	Phosphorous	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-02	Potassium	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-02	Sodium	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-03	Antimony	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-03	Molybdenum	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-03	Tin	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-03	Titanium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-03	Zirconium	10 mg/L	5 mL	500 mL	100 ug/l

Standard Logbook

Serial ID: WMS170710-04A **Open/Reference Date:** 10-JUL-17 **Balance Id :** 4025216
Name: ICPMS Cal Standard 10 **Received:** 10-JUL-17 **Pipet Id :** 3541598
Type: Working **Expires:** 11-JUL-17 **Solvent :** 2%HNO3/1%HCl -2569867
Employee: Elizabeth Janssen
Supplier: GEL
Description: ICPMS Calibration Standard (10 ppb)
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
WMS170710-04	Aluminum	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170710-04	Antimony	100 ug/l	50 mL	500 mL	10 ug/l
WMS170710-04	Arsenic	100 ug/l	50 mL	500 mL	10 ug/l
WMS170710-04	Barium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170710-04	Beryllium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170710-04	Boron	200 ug/l	50 mL	500 mL	20 ug/l
WMS170710-04	Cadmium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170710-04	Calcium	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170710-04	Chromium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170710-04	Cobalt	100 ug/l	50 mL	500 mL	10 ug/l
WMS170710-04	Copper	100 ug/l	50 mL	500 mL	10 ug/l
WMS170710-04	Iron	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170710-04	Lead	100 ug/l	50 mL	500 mL	10 ug/l
WMS170710-04	Lithium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170710-04	Magnesium	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170710-04	Manganese	100 ug/l	50 mL	500 mL	10 ug/l
WMS170710-04	Molybdenum	100 ug/l	50 mL	500 mL	10 ug/l
WMS170710-04	Nickel	100 ug/l	50 mL	500 mL	10 ug/l
WMS170710-04	Phosphorous	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170710-04	Potassium	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170710-04	Selenium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170710-04	Silver	100 ug/l	50 mL	500 mL	10 ug/l
WMS170710-04	Sodium	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170710-04	Strontium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170710-04	Thallium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170710-04	Thorium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170710-04	Tin	100 ug/l	50 mL	500 mL	10 ug/l
WMS170710-04	Titanium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170710-04	Tungsten	100 ug/l	50 mL	500 mL	10 ug/l
WMS170710-04	Uranium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170710-04	Vanadium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170710-04	Zinc	100 ug/l	50 mL	500 mL	10 ug/l
WMS170710-04	Zirconium	100 ug/l	50 mL	500 mL	10 ug/l

Standard Logbook

Serial ID: WMS170710-05
Name: ICPMS ICV
Type: Working
Employee: Elizabeth Janssen
Supplier: GEL
Description: ICPMS ICV
Comments: None

Open/Reference Date: 10-JUL-17
Received: 10-JUL-17
Expires: 11-JUL-17

Balance Id : BAL216
Pipet Id : 3541598
Solvent : 2%HNO3/1%HCl -2569867

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170201-07	Arsenic	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Barium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Beryllium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Boron	40 mg/L	2.5 mL	1000 mL	100 ug/L
UI170201-07	Cadmium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Chromium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Cobalt	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Copper	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Lead	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Lithium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Manganese	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Nickel	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Selenium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Strontium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Thallium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Thorium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Uranium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Vanadium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Zinc	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Antimony	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Molybdenum	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Silver	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Tin	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Titanium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Tungsten	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Zirconium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-09	Aluminum	2020 mg/L	2.5 mL	1000 mL	5050 ug/L
UI170201-09	Calcium	2000 mg/L	2.5 mL	1000 mL	5000 ug/L
UI170201-09	Iron	2000 mg/L	2.5 mL	1000 mL	5000 ug/L
UI170201-09	Magnesium	2000 mg/L	2.5 mL	1000 mL	5000 ug/L
UI170201-09	Phosphorous	2000 mg/L	2.5 mL	1000 mL	5000 ug/L
UI170201-09	Potassium	2000 mg/L	2.5 mL	1000 mL	5000 ug/L
UI170201-09	Sodium	2000 mg/L	2.5 mL	1000 mL	5000 ug/L

Standard Logbook

Serial ID: WMS170710-06
Name: ICPMS CRDL
Type: Working
Employee: Elizabeth Janssen
Supplier: GEL
Description: ICPMS CRDL
Comments: None

Open/Reference Date: 10-JUL-17
Received: 10-JUL-17
Expires: 11-JUL-17

Balance Id : BAL216
Pipet Id : 3820544
Solvent : 2%HNO3/1%HCl -2569867

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170103-09	Aluminum	50 mg/L	.5 mL	500 mL	30 ug/L
UI170103-09	Arsenic	5 mg/L	.5 mL	500 mL	5 ug/L
UI170103-09	Barium	2 mg/L	.5 mL	500 mL	2 ug/L
UI170103-09	Beryllium	.5 mg/L	.5 mL	500 mL	.5 ug/L
UI170103-09	Boron	15 mg/L	.5 mL	500 mL	15 ug/L
UI170103-09	Cadmium	1 mg/L	.5 mL	500 mL	1 ug/L
UI170103-09	Calcium	200 mg/L	.5 mL	500 mL	200 ug/L
UI170103-09	Chromium	30 mg/L	.5 mL	500 mL	10 ug/L
UI170103-09	Cobalt	1 mg/L	.5 mL	500 mL	1 ug/L
UI170103-09	Copper	1 mg/L	.5 mL	500 mL	1 ug/L
UI170103-09	Iron	100 mg/L	.5 mL	500 mL	100 ug/L
UI170103-09	Lead	2 mg/L	.5 mL	500 mL	2 ug/L
UI170103-09	Lithium	10 mg/L	.5 mL	500 mL	10 ug/L
UI170103-09	Magnesium	30 mg/L	.5 mL	500 mL	15 ug/L
UI170103-09	Manganese	5 mg/L	.5 mL	500 mL	5 ug/L
UI170103-09	Nickel	2 mg/L	.5 mL	500 mL	2 ug/L
UI170103-09	Phosphorous	50 mg/L	.5 mL	500 mL	50 ug/L
UI170103-09	Potassium	300 mg/L	.5 mL	500 mL	300 ug/L
UI170103-09	Selenium	5 mg/L	.5 mL	500 mL	5 ug/L
UI170103-09	Sodium	250 mg/L	.5 mL	500 mL	250 ug/L
UI170103-09	Strontium	10 mg/L	.5 mL	500 mL	10 ug/L
UI170103-09	Thallium	2 mg/L	.5 mL	500 mL	1 ug/L
UI170103-09	Thorium	2 mg/L	.5 mL	500 mL	1 ug/L
UI170103-09	Uranium	.2 mg/L	.5 mL	500 mL	.2 ug/L
UI170103-09	Vanadium	10 mg/L	.5 mL	500 mL	10 ug/L
UI170103-09	Zinc	10 mg/L	.5 mL	500 mL	10 ug/L
UI170103-10	Antimony	3 mg/L	.5 mL	500 mL	3 ug/L
UI170103-10	Molybdenum	.5 mg/L	.5 mL	500 mL	.5 ug/L
UI170103-10	Silver	1 mg/L	.5 mL	500 mL	1 ug/L
UI170103-10	Tin	5 mg/L	.5 mL	500 mL	5 ug/L
UI170103-10	Titanium	10 mg/L	.5 mL	500 mL	10 ug/L
UI170103-10	Tungsten	5 mg/L	.5 mL	500 mL	5 ug/L
UI170103-10	Zirconium	2 mg/L	.5 mL	500 mL	2 ug/L

Serial ID:	WMS170710-07	**Open/Reference Date:**	10-JUL-17	**Balance Id :**	BAL216
Name:	ICPMS ICSA	**Received:**	10-JUL-17	**Lot Number :**	1010773
Type:	Working	**Expires:**	11-JUL-17	**Pipet Id :**	3541598
Employee:	Elizabeth Janssen			**Solvent :**	2%HNO3/1%HCl -2569867
Supplier:	GEL				
Description:	ICPMS ICSA				
Comments:	None				

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170220-11	Aluminum	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Calcium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Carbon	2000 mg/L	25 mL	250 mL	200000 ug/L
UI170220-11	Chloride	10000 mg/L	25 mL	250 mL	1000000 ug/L
UI170220-11	Iron	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Magnesium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Molybdenum	20 mg/L	25 mL	250 mL	2000 ug/L
UI170220-11	Phosphorous	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Potassium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Sodium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Sulfur	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Titanium	20 mg/L	25 mL	250 mL	2000 ug/L

Serial ID:	WMS170710-08	**Open/Reference Date:**	10-JUL-17	**Balance Id :**	BAL216
Name:	ICPMS ICSAB	**Received:**	10-JUL-17	**Pipet Id :**	1758088
Type:	Working	**Expires:**	11-JUL-17	**Solvent :**	2%HNO3/1%HCl -2569867
Employee:	Elizabeth Janssen				
Supplier:	GEL				
Description:	ICPMS ICSAB				
Comments:	None				

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170220-11	Aluminum	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Calcium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Carbon	2000 mg/L	25 mL	250 mL	200000 ug/L
UI170220-11	Chloride	10000 mg/L	25 mL	250 mL	1000000 ug/L
UI170220-11	Iron	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Magnesium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Molybdenum	20 mg/L	25 mL	250 mL	2000 ug/L
UI170220-11	Phosphorous	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Potassium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Sodium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Sulfur	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Titanium	20 mg/L	25 mL	250 mL	2000 ug/L
UI170307-12	Arsenic	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Barium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Beryllium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Boron	2 mg/L	2.5 mL	250 mL	20 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170307-12	Cadmium	2 mg/L	2.5 mL	250 mL	20.2 ug/L
UI170307-12	Chromium	2 mg/L	2.5 mL	250 mL	22.2 ug/L
UI170307-12	Cobalt	2 mg/L	2.5 mL	250 mL	20.4 ug/L
UI170307-12	Copper	2 mg/L	2.5 mL	250 mL	23.4 ug/L
UI170307-12	Lead	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Lithium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Manganese	2 mg/L	2.5 mL	250 mL	22.7 ug/L
UI170307-12	Nickel	2 mg/L	2.5 mL	250 mL	22.4 ug/L
UI170307-12	Selenium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Strontium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Thallium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Thorium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Uranium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Vanadium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Zinc	2 mg/L	2.5 mL	250 mL	27 ug/L
UI170307-13	Antimony	2 mg/L	2.5 mL	250 mL	20.5 ug/L
UI170307-13	Silver	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-13	Tin	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-13	Tungsten	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-13	Zirconium	2 mg/L	2.5 mL	250 mL	20 ug/L

Serial ID: WMS170711-04 **Open/Reference Date:** 11-JUL-17 **Amount :** 50 mL
Name: ICPMS Cal Standard 100 **Received:** 11-JUL-17 **Balance Id :** 4025216
Type: Working **Expires:** 12-JUL-17 **Pipet Id :** 3541598
Employee: Elizabeth Janssen **Solvent :** 2%HNO3/1%HCl -2569867
Supplier: GEL
Description: ICPMS Calibration Standard (100 ppb)
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170521-03	Tungsten	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Arsenic	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Barium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Beryllium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Boron	20 mg/L	5 mL	500 mL	200 ug/l
UMS170531-01	Cadmium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Chromium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Cobalt	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Copper	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Lead	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Lithium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Manganese	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Nickel	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Selenium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Silver	10 mg/L	5 mL	500 mL	100 ug/l

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UMS170531-01	Strontium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Thallium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Thorium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Uranium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Vanadium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Zinc	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-02	Aluminum	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-02	Calcium	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-02	Iron	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-02	Magnesium	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-02	Phosphorous	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-02	Potassium	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-02	Sodium	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-03	Antimony	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-03	Molybdenum	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-03	Tin	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-03	Titanium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-03	Zirconium	10 mg/L	5 mL	500 mL	100 ug/l

Serial ID: WMS170711-04A **Open/Reference Date:** 11-JUL-17 **Balance Id :** 4025216
Name: ICPMS Cal Standard 10 **Received:** 11-JUL-17 **Pipet Id :** 3541598
Type: Working **Expires:** 12-JUL-17 **Solvent :** 2%HNO3/1%HCl -2569867
Employee: Elizabeth Janssen
Supplier: GEL
Description: ICPMS Calibration Standard (10 ppb)
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
WMS170711-04	Aluminum	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170711-04	Antimony	100 ug/l	50 mL	500 mL	10 ug/l
WMS170711-04	Arsenic	100 ug/l	50 mL	500 mL	10 ug/l
WMS170711-04	Barium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170711-04	Beryllium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170711-04	Boron	200 ug/l	50 mL	500 mL	20 ug/l
WMS170711-04	Cadmium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170711-04	Calcium	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170711-04	Chromium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170711-04	Cobalt	100 ug/l	50 mL	500 mL	10 ug/l
WMS170711-04	Copper	100 ug/l	50 mL	500 mL	10 ug/l
WMS170711-04	Iron	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170711-04	Lead	100 ug/l	50 mL	500 mL	10 ug/l
WMS170711-04	Lithium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170711-04	Magnesium	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170711-04	Manganese	100 ug/l	50 mL	500 mL	10 ug/l
WMS170711-04	Molybdenum	100 ug/l	50 mL	500 mL	10 ug/l

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
WMS170711-04	Nickel	100 ug/l	50 mL	500 mL	10 ug/l
WMS170711-04	Phosphorous	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170711-04	Potassium	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170711-04	Selenium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170711-04	Silver	100 ug/l	50 mL	500 mL	10 ug/l
WMS170711-04	Sodium	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170711-04	Strontium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170711-04	Thallium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170711-04	Thorium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170711-04	Tin	100 ug/l	50 mL	500 mL	10 ug/l
WMS170711-04	Titanium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170711-04	Tungsten	100 ug/l	50 mL	500 mL	10 ug/l
WMS170711-04	Uranium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170711-04	Vanadium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170711-04	Zinc	100 ug/l	50 mL	500 mL	10 ug/l
WMS170711-04	Zirconium	100 ug/l	50 mL	500 mL	10 ug/l

Serial ID: WMS170711-05 **Open/Reference Date:** 11-JUL-17 **Balance Id :** BAL216
Name: ICPMS ICV **Received:** 11-JUL-17 **Pipet Id :** 3541598
Type: Working **Expires:** 12-JUL-17 **Solvent :** 2%HNO3/1%HCl -2569867
Employee: Elizabeth Janssen
Supplier: GEL
Description: ICPMS ICV
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170201-07	Arsenic	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Barium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Beryllium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Boron	40 mg/L	2.5 mL	1000 mL	100 ug/L
UI170201-07	Cadmium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Chromium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Cobalt	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Copper	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Lead	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Lithium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Manganese	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Nickel	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Selenium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Strontium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Thallium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Thorium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Uranium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Vanadium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Zinc	20 mg/L	2.5 mL	1000 mL	50 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170201-08	Antimony	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Molybdenum	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Silver	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Tin	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Titanium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Tungsten	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Zirconium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-09	Aluminum	2020 mg/L	2.5 mL	1000 mL	5050 ug/L
UI170201-09	Calcium	2000 mg/L	2.5 mL	1000 mL	5000 ug/L
UI170201-09	Iron	2000 mg/L	2.5 mL	1000 mL	5000 ug/L
UI170201-09	Magnesium	2000 mg/L	2.5 mL	1000 mL	5000 ug/L
UI170201-09	Phosphorous	2000 mg/L	2.5 mL	1000 mL	5000 ug/L
UI170201-09	Potassium	2000 mg/L	2.5 mL	1000 mL	5000 ug/L
UI170201-09	Sodium	2000 mg/L	2.5 mL	1000 mL	5000 ug/L

Serial ID: WMS170711-06 **Open/Reference Date:** 11-JUL-17 **Balance Id :** BAL216
Name: ICPMS CRDL **Received:** 11-JUL-17 **Pipet Id :** 3820544
Type: Working **Expires:** 12-JUL-17 **Solvent :** 2%HNO3/1%HCl -2569867
Employee: Elizabeth Janssen
Supplier: GEL
Description: ICPMS CRDL
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170103-09	Aluminum	50 mg/L	.5 mL	500 mL	30 ug/L
UI170103-09	Arsenic	5 mg/L	.5 mL	500 mL	5 ug/L
UI170103-09	Barium	2 mg/L	.5 mL	500 mL	2 ug/L
UI170103-09	Beryllium	.5 mg/L	.5 mL	500 mL	.5 ug/L
UI170103-09	Boron	15 mg/L	.5 mL	500 mL	15 ug/L
UI170103-09	Cadmium	1 mg/L	.5 mL	500 mL	1 ug/L
UI170103-09	Calcium	200 mg/L	.5 mL	500 mL	200 ug/L
UI170103-09	Chromium	30 mg/L	.5 mL	500 mL	10 ug/L
UI170103-09	Cobalt	1 mg/L	.5 mL	500 mL	1 ug/L
UI170103-09	Copper	1 mg/L	.5 mL	500 mL	1 ug/L
UI170103-09	Iron	100 mg/L	.5 mL	500 mL	100 ug/L
UI170103-09	Lead	2 mg/L	.5 mL	500 mL	2 ug/L
UI170103-09	Lithium	10 mg/L	.5 mL	500 mL	10 ug/L
UI170103-09	Magnesium	30 mg/L	.5 mL	500 mL	15 ug/L
UI170103-09	Manganese	5 mg/L	.5 mL	500 mL	5 ug/L
UI170103-09	Nickel	2 mg/L	.5 mL	500 mL	2 ug/L
UI170103-09	Phosphorous	50 mg/L	.5 mL	500 mL	50 ug/L
UI170103-09	Potassium	300 mg/L	.5 mL	500 mL	300 ug/L
UI170103-09	Selenium	5 mg/L	.5 mL	500 mL	5 ug/L
UI170103-09	Sodium	250 mg/L	.5 mL	500 mL	250 ug/L
UI170103-09	Strontium	10 mg/L	.5 mL	500 mL	10 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170103-09	Thallium	2 mg/L	.5 mL	500 mL	1 ug/L
UI170103-09	Thorium	2 mg/L	.5 mL	500 mL	1 ug/L
UI170103-09	Uranium	.2 mg/L	.5 mL	500 mL	.2 ug/L
UI170103-09	Vanadium	10 mg/L	.5 mL	500 mL	10 ug/L
UI170103-09	Zinc	10 mg/L	.5 mL	500 mL	10 ug/L
UI170103-10	Antimony	3 mg/L	.5 mL	500 mL	3 ug/L
UI170103-10	Molybdenum	.5 mg/L	.5 mL	500 mL	.5 ug/L
UI170103-10	Silver	1 mg/L	.5 mL	500 mL	1 ug/L
UI170103-10	Tin	5 mg/L	.5 mL	500 mL	5 ug/L
UI170103-10	Titanium	10 mg/L	.5 mL	500 mL	10 ug/L
UI170103-10	Tungsten	5 mg/L	.5 mL	500 mL	5 ug/L
UI170103-10	Zirconium	2 mg/L	.5 mL	500 mL	2 ug/L

Serial ID: WMS170711-07 **Open/Reference Date:** 11-JUL-17 **Balance Id :** BAL216
Name: ICPMS ICSA **Received:** 11-JUL-17 **Lot Number :** 1010773
Type: Working **Expires:** 12-JUL-17 **Pipet Id :** 3541598
Employee: Elizabeth Janssen **Solvent :** 2%HNO3/1%HCl -2569867
Supplier: GEL
Description: ICPMS ICSA
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170220-11	Aluminum	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Calcium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Carbon	2000 mg/L	25 mL	250 mL	200000 ug/L
UI170220-11	Chloride	10000 mg/L	25 mL	250 mL	1000000 ug/L
UI170220-11	Iron	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Magnesium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Molybdenum	20 mg/L	25 mL	250 mL	2000 ug/L
UI170220-11	Phosphorous	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Potassium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Sodium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Sulfur	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Titanium	20 mg/L	25 mL	250 mL	2000 ug/L

Serial ID: WMS170711-08 **Open/Reference Date:** 11-JUL-17 **Balance Id :** BAL216
Name: ICPMS ICSAB **Received:** 11-JUL-17 **Pipet Id :** 1758088
Type: Working **Expires:** 12-JUL-17 **Solvent :** 2%HNO3/1%HCl -2569867
Employee: Elizabeth Janssen
Supplier: GEL
Description: ICPMS ICSAB
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170220-11	Aluminum	1000 mg/L	25 mL	250 mL	100000 ug/L

Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170220-11	Calcium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Carbon	2000 mg/L	25 mL	250 mL	200000 ug/L
UI170220-11	Chloride	10000 mg/L	25 mL	250 mL	1000000 ug/L
UI170220-11	Iron	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Magnesium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Molybdenum	20 mg/L	25 mL	250 mL	2000 ug/L
UI170220-11	Phosphorous	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Potassium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Sodium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Sulfur	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Titanium	20 mg/L	25 mL	250 mL	2000 ug/L
UI170307-12	Arsenic	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Barium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Beryllium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Boron	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Cadmium	2 mg/L	2.5 mL	250 mL	20.2 ug/L
UI170307-12	Chromium	2 mg/L	2.5 mL	250 mL	22.2 ug/L
UI170307-12	Cobalt	2 mg/L	2.5 mL	250 mL	20.4 ug/L
UI170307-12	Copper	2 mg/L	2.5 mL	250 mL	23.4 ug/L
UI170307-12	Lead	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Lithium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Manganese	2 mg/L	2.5 mL	250 mL	22.7 ug/L
UI170307-12	Nickel	2 mg/L	2.5 mL	250 mL	22.4 ug/L
UI170307-12	Selenium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Strontium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Thallium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Thorium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Uranium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Vanadium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Zinc	2 mg/L	2.5 mL	250 mL	27 ug/L
UI170307-13	Antimony	2 mg/L	2.5 mL	250 mL	20.5 ug/L
UI170307-13	Silver	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-13	Tin	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-13	Tungsten	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-13	Zirconium	2 mg/L	2.5 mL	250 mL	20 ug/L

Serial ID: WMS170712-04
Open/Reference Date: 12-JUL-17
Amount : 50 mL
Name: ICPMS Cal Standard 100
Received: 12-JUL-17
Balance Id : 4025216
Type: Working
Expires: 13-JUL-17
Pipet Id : 3541598
Employee: Elizabeth Janssen
Solvent : 2%HNO3/1%HCl -2569867
Supplier: GEL
Description: ICPMS Calibration Standard (100 ppb)
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170521-03	Tungsten	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Arsenic	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Barium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Beryllium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Boron	20 mg/L	5 mL	500 mL	200 ug/l
UMS170531-01	Cadmium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Chromium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Cobalt	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Copper	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Lead	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Lithium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Manganese	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Nickel	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Selenium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Silver	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Strontium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Thallium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Thorium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Uranium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Vanadium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Zinc	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-02	Aluminum	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-02	Calcium	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-02	Iron	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-02	Magnesium	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-02	Phosphorous	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-02	Potassium	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-02	Sodium	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-03	Antimony	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-03	Molybdenum	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-03	Tin	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-03	Titanium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-03	Zirconium	10 mg/L	5 mL	500 mL	100 ug/l

Serial ID: WMS170712-04A **Open/Reference Date:** 12-JUL-17 **Balance Id :** 4025216
Name: ICPMS Cal Standard 10 **Received:** 12-JUL-17 **Pipet Id :** 3541598
Type: Working **Expires:** 13-JUL-17 **Solvent :** 2%HNO3/1%HCl -2569867
Employee: Elizabeth Janssen
Supplier: GEL
Description: ICPMS Calibration Standard (10 ppb)
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
WMS170712-04	Aluminum	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170712-04	Antimony	100 ug/l	50 mL	500 mL	10 ug/l

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
WMS170712-04	Arsenic	100 ug/l	50 mL	500 mL	10 ug/l
WMS170712-04	Barium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170712-04	Beryllium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170712-04	Boron	200 ug/l	50 mL	500 mL	20 ug/l
WMS170712-04	Cadmium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170712-04	Calcium	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170712-04	Chromium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170712-04	Cobalt	100 ug/l	50 mL	500 mL	10 ug/l
WMS170712-04	Copper	100 ug/l	50 mL	500 mL	10 ug/l
WMS170712-04	Iron	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170712-04	Lead	100 ug/l	50 mL	500 mL	10 ug/l
WMS170712-04	Lithium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170712-04	Magnesium	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170712-04	Manganese	100 ug/l	50 mL	500 mL	10 ug/l
WMS170712-04	Molybdenum	100 ug/l	50 mL	500 mL	10 ug/l
WMS170712-04	Nickel	100 ug/l	50 mL	500 mL	10 ug/l
WMS170712-04	Phosphorous	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170712-04	Potassium	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170712-04	Selenium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170712-04	Silver	100 ug/l	50 mL	500 mL	10 ug/l
WMS170712-04	Sodium	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170712-04	Strontium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170712-04	Thallium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170712-04	Thorium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170712-04	Tin	100 ug/l	50 mL	500 mL	10 ug/l
WMS170712-04	Titanium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170712-04	Tungsten	100 ug/l	50 mL	500 mL	10 ug/l
WMS170712-04	Uranium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170712-04	Vanadium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170712-04	Zinc	100 ug/l	50 mL	500 mL	10 ug/l
WMS170712-04	Zirconium	100 ug/l	50 mL	500 mL	10 ug/l

Serial ID: WMS170712-05 **Open/Reference Date:** 12-JUL-17 **Balance Id :** BAL216
Name: ICPMS ICV **Received:** 12-JUL-17 **Pipet Id :** 3541598
Type: Working **Expires:** 13-JUL-17 **Solvent :** 2%HNO3/1%HCl -2569867
Employee: Elizabeth Janssen
Supplier: GEL
Description: ICPMS ICV
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170201-07	Arsenic	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Barium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Beryllium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Boron	40 mg/L	2.5 mL	1000 mL	100 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170201-07	Cadmium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Chromium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Cobalt	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Copper	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Lead	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Lithium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Manganese	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Nickel	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Selenium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Strontium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Thallium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Thorium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Uranium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Vanadium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Zinc	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Antimony	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Molybdenum	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Silver	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Tin	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Titanium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Tungsten	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Zirconium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-09	Aluminum	2020 mg/L	2.5 mL	1000 mL	5050 ug/L
UI170201-09	Calcium	2000 mg/L	2.5 mL	1000 mL	5000 ug/L
UI170201-09	Iron	2000 mg/L	2.5 mL	1000 mL	5000 ug/L
UI170201-09	Magnesium	2000 mg/L	2.5 mL	1000 mL	5000 ug/L
UI170201-09	Phosphorous	2000 mg/L	2.5 mL	1000 mL	5000 ug/L
UI170201-09	Potassium	2000 mg/L	2.5 mL	1000 mL	5000 ug/L
UI170201-09	Sodium	2000 mg/L	2.5 mL	1000 mL	5000 ug/L

Serial ID: WMS170712-06 **Open/Reference Date:** 12-JUL-17 **Balance Id :** BAL216
Name: ICPMS CRDL **Received:** 12-JUL-17 **Pipet Id :** 3820544
Type: Working **Expires:** 13-JUL-17 **Solvent :** 2%HNO3/1%HCl -2569867
Employee: Elizabeth Janssen
Supplier: GEL
Description: ICPMS CRDL
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170103-09	Aluminum	50 mg/L	.5 mL	500 mL	30 ug/L
UI170103-09	Arsenic	5 mg/L	.5 mL	500 mL	5 ug/L
UI170103-09	Barium	2 mg/L	.5 mL	500 mL	2 ug/L
UI170103-09	Beryllium	.5 mg/L	.5 mL	500 mL	.5 ug/L
UI170103-09	Boron	15 mg/L	.5 mL	500 mL	15 ug/L
UI170103-09	Cadmium	1 mg/L	.5 mL	500 mL	1 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170103-09	Calcium	200 mg/L	.5 mL	500 mL	200 ug/L
UI170103-09	Chromium	30 mg/L	.5 mL	500 mL	10 ug/L
UI170103-09	Cobalt	1 mg/L	.5 mL	500 mL	1 ug/L
UI170103-09	Copper	1 mg/L	.5 mL	500 mL	1 ug/L
UI170103-09	Iron	100 mg/L	.5 mL	500 mL	100 ug/L
UI170103-09	Lead	2 mg/L	.5 mL	500 mL	2 ug/L
UI170103-09	Lithium	10 mg/L	.5 mL	500 mL	10 ug/L
UI170103-09	Magnesium	30 mg/L	.5 mL	500 mL	15 ug/L
UI170103-09	Manganese	5 mg/L	.5 mL	500 mL	5 ug/L
UI170103-09	Nickel	2 mg/L	.5 mL	500 mL	2 ug/L
UI170103-09	Phosphorous	50 mg/L	.5 mL	500 mL	50 ug/L
UI170103-09	Potassium	300 mg/L	.5 mL	500 mL	300 ug/L
UI170103-09	Selenium	5 mg/L	.5 mL	500 mL	5 ug/L
UI170103-09	Sodium	250 mg/L	.5 mL	500 mL	250 ug/L
UI170103-09	Strontium	10 mg/L	.5 mL	500 mL	10 ug/L
UI170103-09	Thallium	2 mg/L	.5 mL	500 mL	1 ug/L
UI170103-09	Thorium	2 mg/L	.5 mL	500 mL	1 ug/L
UI170103-09	Uranium	.2 mg/L	.5 mL	500 mL	.2 ug/L
UI170103-09	Vanadium	10 mg/L	.5 mL	500 mL	10 ug/L
UI170103-09	Zinc	10 mg/L	.5 mL	500 mL	10 ug/L
UI170103-10	Antimony	3 mg/L	.5 mL	500 mL	3 ug/L
UI170103-10	Molybdenum	.5 mg/L	.5 mL	500 mL	.5 ug/L
UI170103-10	Silver	1 mg/L	.5 mL	500 mL	1 ug/L
UI170103-10	Tin	5 mg/L	.5 mL	500 mL	5 ug/L
UI170103-10	Titanium	10 mg/L	.5 mL	500 mL	10 ug/L
UI170103-10	Tungsten	5 mg/L	.5 mL	500 mL	5 ug/L
UI170103-10	Zirconium	2 mg/L	.5 mL	500 mL	2 ug/L

Serial ID: WMS170712-07 **Open/Reference Date:** 12-JUL-17 **Balance Id :** BAL216
Name: ICPMS ICSA **Received:** 12-JUL-17 **Lot Number :** 1010773
Type: Working **Expires:** 13-JUL-17 **Pipet Id :** 3541598
Employee: Elizabeth Janssen **Solvent :** 2%HNO3/1%HCl -2569867
Supplier: GEL
Description: ICPMS ICSA
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170220-11	Aluminum	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Calcium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Carbon	2000 mg/L	25 mL	250 mL	200000 ug/L
UI170220-11	Chloride	10000 mg/L	25 mL	250 mL	1000000 ug/L
UI170220-11	Iron	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Magnesium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Molybdenum	20 mg/L	25 mL	250 mL	2000 ug/L
UI170220-11	Phosphorous	1000 mg/L	25 mL	250 mL	100000 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170220-11	Potassium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Sodium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Sulfur	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Titanium	20 mg/L	25 mL	250 mL	2000 ug/L

Serial ID: WMS170712-08 **Open/Reference Date:** 12-JUL-17 **Balance Id :** BAL216
Name: ICPMS ICSAB **Received:** 12-JUL-17 **Pipet Id :** 1758088
Type: Working **Expires:** 13-JUL-17 **Solvent :** 2%HNO3/1%HCl -2569867
Employee: Elizabeth Janssen
Supplier: GEL
Description: ICPMS ICSAB
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170220-11	Aluminum	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Calcium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Carbon	2000 mg/L	25 mL	250 mL	200000 ug/L
UI170220-11	Chloride	10000 mg/L	25 mL	250 mL	1000000 ug/L
UI170220-11	Iron	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Magnesium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Molybdenum	20 mg/L	25 mL	250 mL	2000 ug/L
UI170220-11	Phosphorous	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Potassium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Sodium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Sulfur	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Titanium	20 mg/L	25 mL	250 mL	2000 ug/L
UI170307-12	Arsenic	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Barium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Beryllium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Boron	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Cadmium	2 mg/L	2.5 mL	250 mL	20.2 ug/L
UI170307-12	Chromium	2 mg/L	2.5 mL	250 mL	22.2 ug/L
UI170307-12	Cobalt	2 mg/L	2.5 mL	250 mL	20.4 ug/L
UI170307-12	Copper	2 mg/L	2.5 mL	250 mL	23.4 ug/L
UI170307-12	Lead	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Lithium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Manganese	2 mg/L	2.5 mL	250 mL	22.7 ug/L
UI170307-12	Nickel	2 mg/L	2.5 mL	250 mL	22.4 ug/L
UI170307-12	Selenium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Strontium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Thallium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Thorium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Uranium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Vanadium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Zinc	2 mg/L	2.5 mL	250 mL	27 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170307-13	Antimony	2 mg/L	2.5 mL	250 mL	20.5 ug/L
UI170307-13	Silver	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-13	Tin	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-13	Tungsten	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-13	Zirconium	2 mg/L	2.5 mL	250 mL	20 ug/L

Serial ID: WMS170713-04 **Open/Reference Date:** 13-JUL-17 **Amount :** 50 mL
Name: ICPMS Cal Standard 100 **Received:** 13-JUL-17 **Balance Id :** 4025216
Type: Working **Expires:** 14-JUL-17 **Pipet Id :** 3541598
Employee: Paul Boyd **Solvent :** 2%HNO3/1%HCl -2569867
Supplier: GEL
Description: ICPMS Calibration Standard (100 ppb)
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170521-03	Tungsten	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Arsenic	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Barium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Beryllium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Boron	20 mg/L	5 mL	500 mL	200 ug/l
UMS170531-01	Cadmium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Chromium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Cobalt	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Copper	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Lead	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Lithium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Manganese	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Nickel	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Selenium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Silver	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Strontium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Thallium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Thorium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Uranium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Vanadium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-01	Zinc	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-02	Aluminum	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-02	Calcium	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-02	Iron	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-02	Magnesium	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-02	Phosphorous	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-02	Potassium	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-02	Sodium	1000 mg/L	5 mL	500 mL	10000 ug/l
UMS170531-03	Antimony	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-03	Molybdenum	10 mg/L	5 mL	500 mL	100 ug/l

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UMS170531-03	Tin	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-03	Titanium	10 mg/L	5 mL	500 mL	100 ug/l
UMS170531-03	Zirconium	10 mg/L	5 mL	500 mL	100 ug/l

Serial ID: WMS170713-04A **Open/Reference Date:** 13-JUL-17 **Balance Id :** 4025216
Name: ICPMS Cal Standard 10 **Received:** 13-JUL-17 **Pipet Id :** 3541598
Type: Working **Expires:** 14-JUL-17 **Solvent :** 2%HNO3/1%HCl -2569867
Employee: Paul Boyd
Supplier: GEL
Description: ICPMS Calibration Standard (10 ppb)
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
WMS170713-04	Aluminum	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170713-04	Antimony	100 ug/l	50 mL	500 mL	10 ug/l
WMS170713-04	Arsenic	100 ug/l	50 mL	500 mL	10 ug/l
WMS170713-04	Barium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170713-04	Beryllium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170713-04	Boron	200 ug/l	50 mL	500 mL	20 ug/l
WMS170713-04	Cadmium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170713-04	Calcium	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170713-04	Chromium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170713-04	Cobalt	100 ug/l	50 mL	500 mL	10 ug/l
WMS170713-04	Copper	100 ug/l	50 mL	500 mL	10 ug/l
WMS170713-04	Iron	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170713-04	Lead	100 ug/l	50 mL	500 mL	10 ug/l
WMS170713-04	Lithium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170713-04	Magnesium	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170713-04	Manganese	100 ug/l	50 mL	500 mL	10 ug/l
WMS170713-04	Molybdenum	100 ug/l	50 mL	500 mL	10 ug/l
WMS170713-04	Nickel	100 ug/l	50 mL	500 mL	10 ug/l
WMS170713-04	Phosphorous	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170713-04	Potassium	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170713-04	Selenium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170713-04	Silver	100 ug/l	50 mL	500 mL	10 ug/l
WMS170713-04	Sodium	10000 ug/l	50 mL	500 mL	1000 ug/l
WMS170713-04	Strontium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170713-04	Thallium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170713-04	Thorium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170713-04	Tin	100 ug/l	50 mL	500 mL	10 ug/l
WMS170713-04	Titanium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170713-04	Tungsten	100 ug/l	50 mL	500 mL	10 ug/l
WMS170713-04	Uranium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170713-04	Vanadium	100 ug/l	50 mL	500 mL	10 ug/l
WMS170713-04	Zinc	100 ug/l	50 mL	500 mL	10 ug/l

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
WMS170713-04	Zirconium	100 ug/l	50 mL	500 mL	10 ug/l

Serial ID: WMS170713-05
Name: ICPMS ICV
Type: Working
Employee: Paul Boyd
Supplier: GEL
Description: ICPMS ICV
Comments: None

Open/Reference Date: 13-JUL-17
Received: 13-JUL-17
Expires: 14-JUL-17

Balance Id : BAL216
Pipet Id : 3541598
Solvent : 2%HNO3/1%HCl -2569867

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170201-07	Arsenic	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Barium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Beryllium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Boron	40 mg/L	2.5 mL	1000 mL	100 ug/L
UI170201-07	Cadmium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Chromium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Cobalt	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Copper	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Lead	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Lithium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Manganese	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Nickel	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Selenium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Strontium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Thallium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Thorium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Uranium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Vanadium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-07	Zinc	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Antimony	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Molybdenum	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Silver	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Tin	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Titanium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Tungsten	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-08	Zirconium	20 mg/L	2.5 mL	1000 mL	50 ug/L
UI170201-09	Aluminum	2020 mg/L	2.5 mL	1000 mL	5050 ug/L
UI170201-09	Calcium	2000 mg/L	2.5 mL	1000 mL	5000 ug/L
UI170201-09	Iron	2000 mg/L	2.5 mL	1000 mL	5000 ug/L
UI170201-09	Magnesium	2000 mg/L	2.5 mL	1000 mL	5000 ug/L
UI170201-09	Phosphorous	2000 mg/L	2.5 mL	1000 mL	5000 ug/L
UI170201-09	Potassium	2000 mg/L	2.5 mL	1000 mL	5000 ug/L
UI170201-09	Sodium	2000 mg/L	2.5 mL	1000 mL	5000 ug/L

Standard Logbook

Serial ID: WMS170713-06
Name: ICPMS CRDL
Type: Working
Employee: Paul Boyd
Supplier: GEL
Description: ICPMS CRDL
Comments: None

Open/Reference Date: 13-JUL-17
Received: 13-JUL-17
Expires: 14-JUL-17

Balance Id : BAL216
Pipet Id : 3820544
Solvent : 2%HNO3/1%HCl -2569867

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170103-09	Aluminum	50 mg/L	.5 mL	500 mL	30 ug/L
UI170103-09	Arsenic	5 mg/L	.5 mL	500 mL	5 ug/L
UI170103-09	Barium	2 mg/L	.5 mL	500 mL	2 ug/L
UI170103-09	Beryllium	.5 mg/L	.5 mL	500 mL	.5 ug/L
UI170103-09	Boron	15 mg/L	.5 mL	500 mL	15 ug/L
UI170103-09	Cadmium	1 mg/L	.5 mL	500 mL	1 ug/L
UI170103-09	Calcium	200 mg/L	.5 mL	500 mL	200 ug/L
UI170103-09	Chromium	30 mg/L	.5 mL	500 mL	10 ug/L
UI170103-09	Cobalt	1 mg/L	.5 mL	500 mL	1 ug/L
UI170103-09	Copper	1 mg/L	.5 mL	500 mL	1 ug/L
UI170103-09	Iron	100 mg/L	.5 mL	500 mL	100 ug/L
UI170103-09	Lead	2 mg/L	.5 mL	500 mL	2 ug/L
UI170103-09	Lithium	10 mg/L	.5 mL	500 mL	10 ug/L
UI170103-09	Magnesium	30 mg/L	.5 mL	500 mL	15 ug/L
UI170103-09	Manganese	5 mg/L	.5 mL	500 mL	5 ug/L
UI170103-09	Nickel	2 mg/L	.5 mL	500 mL	2 ug/L
UI170103-09	Phosphorous	50 mg/L	.5 mL	500 mL	50 ug/L
UI170103-09	Potassium	300 mg/L	.5 mL	500 mL	300 ug/L
UI170103-09	Selenium	5 mg/L	.5 mL	500 mL	5 ug/L
UI170103-09	Sodium	250 mg/L	.5 mL	500 mL	250 ug/L
UI170103-09	Strontium	10 mg/L	.5 mL	500 mL	10 ug/L
UI170103-09	Thallium	2 mg/L	.5 mL	500 mL	1 ug/L
UI170103-09	Thorium	2 mg/L	.5 mL	500 mL	1 ug/L
UI170103-09	Uranium	.2 mg/L	.5 mL	500 mL	.2 ug/L
UI170103-09	Vanadium	10 mg/L	.5 mL	500 mL	10 ug/L
UI170103-09	Zinc	10 mg/L	.5 mL	500 mL	10 ug/L
UI170103-10	Antimony	3 mg/L	.5 mL	500 mL	3 ug/L
UI170103-10	Molybdenum	.5 mg/L	.5 mL	500 mL	.5 ug/L
UI170103-10	Silver	1 mg/L	.5 mL	500 mL	1 ug/L
UI170103-10	Tin	5 mg/L	.5 mL	500 mL	5 ug/L
UI170103-10	Titanium	10 mg/L	.5 mL	500 mL	10 ug/L
UI170103-10	Tungsten	5 mg/L	.5 mL	500 mL	5 ug/L
UI170103-10	Zirconium	2 mg/L	.5 mL	500 mL	2 ug/L

Serial ID: WMS170713-07 **Open/Reference Date:** 13-JUL-17 **Balance Id :** BAL216
Name: ICPMS ICSA **Received:** 13-JUL-17 **Lot Number :** 1010773
Type: Working **Expires:** 14-JUL-17 **Pipet Id :** 3541598
Employee: Paul Boyd **Solvent :** 2%HNO3/1%HCl -2569867
Supplier: GEL
Description: ICPMS ICSA
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170220-11	Aluminum	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Calcium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Carbon	2000 mg/L	25 mL	250 mL	200000 ug/L
UI170220-11	Chloride	10000 mg/L	25 mL	250 mL	1000000 ug/L
UI170220-11	Iron	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Magnesium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Molybdenum	20 mg/L	25 mL	250 mL	2000 ug/L
UI170220-11	Phosphorous	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Potassium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Sodium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Sulfur	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Titanium	20 mg/L	25 mL	250 mL	2000 ug/L

Serial ID: WMS170713-08 **Open/Reference Date:** 13-JUL-17 **Balance Id :** BAL216
Name: ICPMS ICSAB **Received:** 13-JUL-17 **Pipet Id :** 1758088
Type: Working **Expires:** 14-JUL-17 **Solvent :** 2%HNO3/1%HCl -2569867
Employee: Paul Boyd
Supplier: GEL
Description: ICPMS ICSAB
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170220-11	Aluminum	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Calcium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Carbon	2000 mg/L	25 mL	250 mL	200000 ug/L
UI170220-11	Chloride	10000 mg/L	25 mL	250 mL	1000000 ug/L
UI170220-11	Iron	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Magnesium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Molybdenum	20 mg/L	25 mL	250 mL	2000 ug/L
UI170220-11	Phosphorous	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Potassium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Sodium	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Sulfur	1000 mg/L	25 mL	250 mL	100000 ug/L
UI170220-11	Titanium	20 mg/L	25 mL	250 mL	2000 ug/L
UI170307-12	Arsenic	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Barium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Beryllium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Boron	2 mg/L	2.5 mL	250 mL	20 ug/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170307-12	Cadmium	2 mg/L	2.5 mL	250 mL	20.2 ug/L
UI170307-12	Chromium	2 mg/L	2.5 mL	250 mL	22.2 ug/L
UI170307-12	Cobalt	2 mg/L	2.5 mL	250 mL	20.4 ug/L
UI170307-12	Copper	2 mg/L	2.5 mL	250 mL	23.4 ug/L
UI170307-12	Lead	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Lithium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Manganese	2 mg/L	2.5 mL	250 mL	22.7 ug/L
UI170307-12	Nickel	2 mg/L	2.5 mL	250 mL	22.4 ug/L
UI170307-12	Selenium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Strontium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Thallium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Thorium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Uranium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Vanadium	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-12	Zinc	2 mg/L	2.5 mL	250 mL	27 ug/L
UI170307-13	Antimony	2 mg/L	2.5 mL	250 mL	20.5 ug/L
UI170307-13	Silver	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-13	Tin	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-13	Tungsten	2 mg/L	2.5 mL	250 mL	20 ug/L
UI170307-13	Zirconium	2 mg/L	2.5 mL	250 mL	20 ug/L

Serial ID: WMS170713-70 **Open/Reference Date:** 13-JUL-17 **Balance Id :** BAL216
Name: ICPMS LINEAR RANGE ST **Received:** 13-JUL-17 **Pipet Id :** 1758088
Type: Working **Expires:** 14-JUL-17 **Solvent :** 2%HNO3/1%HCl -2569867
Employee: Paul Boyd
Supplier: 02SI
Description: ICPMS LINEAR RANGE STANDARD
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170521-60	Aluminum	5000 mg/L	2.5 mL	250 mL	50000 ug/L
UI170521-60	Arsenic	100 mg/L	2.5 mL	250 mL	1000 ug/L
UI170521-60	Barium	250 mg/L	2.5 mL	250 mL	2500 ug/L
UI170521-60	Beryllium	100 mg/L	2.5 mL	250 mL	1000 ug/L
UI170521-60	Cadmium	100 mg/L	2.5 mL	250 mL	1000 ug/L
UI170521-60	Calcium	5000 mg/L	2.5 mL	250 mL	50000 ug/L
UI170521-60	Chromium	100 mg/L	2.5 mL	250 mL	1000 ug/L
UI170521-60	Cobalt	100 mg/L	2.5 mL	250 mL	1000 ug/L
UI170521-60	Copper	100 mg/L	2.5 mL	250 mL	1000 ug/L
UI170521-60	Iron	5000 mg/L	2.5 mL	250 mL	50000 ug/L
UI170521-60	Lead	500 mg/L	2.5 mL	250 mL	5000 ug/L
UI170521-60	Lithium	100 mg/L	2.5 mL	250 mL	1000 ug/L
UI170521-60	Magnesium	5000 mg/L	2.5 mL	250 mL	50000 ug/L
UI170521-60	Manganese	100 mg/L	2.5 mL	250 mL	1000 ug/L
UI170521-60	Nickel	100 mg/L	2.5 mL	250 mL	1000 ug/L

Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI170521-60	Phosphorous	2500 mg/L	2.5 mL	250 mL	25000 ug/L
UI170521-60	Potassium	5000 mg/L	2.5 mL	250 mL	50000 ug/L
UI170521-60	Selenium	50 mg/L	2.5 mL	250 mL	500 ug/L
UI170521-60	Sodium	5000 mg/L	2.5 mL	250 mL	50000 ug/L
UI170521-60	Strontium	100 mg/L	2.5 mL	250 mL	1000 ug/L
UI170521-60	Thallium	50 mg/L	2.5 mL	250 mL	500 ug/L
UI170521-60	Thorium	250 mg/L	2.5 mL	250 mL	2500 ug/L
UI170521-60	Uranium	500 mg/L	2.5 mL	250 mL	5000 ug/L
UI170521-60	Vanadium	100 mg/L	2.5 mL	250 mL	1000 ug/L
UI170521-60	Zinc	250 mg/L	2.5 mL	250 mL	2500 ug/L
UI170521-61	Antimony	25 mg/L	2.5 mL	250 mL	250 ug/L
UI170521-61	Molybdenum	100 mg/L	2.5 mL	250 mL	1000 ug/L
UI170521-61	Silver	25 mg/L	2.5 mL	250 mL	250 ug/L
UI170521-61	Tin	100 mg/L	2.5 mL	250 mL	1000 ug/L
UI170521-61	Tungsten	100 mg/L	2.5 mL	250 mL	1000 ug/L
UI170521-61	Zirconium	50 mg/L	2.5 mL	250 mL	500 ug/L

Serial ID: 160726-tclp
Name: I-HCL
Type: Reagent/Solvent
Employee: Edmund Frampton
Supplier: Fisher Scientific
Description: HYDROCHLORIC ACID
Comments: None

Open/Reference Date: 23-JUL-16
Received: 23-JUL-16
Expires: 23-JUL-18

Lot Number : 148589
Preservative_Id : 5 none

Serial ID: 170606
Name: I-HNO3
Type: Reagent/Solvent
Employee: Edmund Frampton
Supplier: MACRON
Description: Concentrated Nitric Acid
Comments: None

Open/Reference Date: 14-JUL-17
Received: 06-JUN-17
Expires: 14-JUL-19

Lot Number : 0000166088

Serial ID: 2534820
Name: I-HNO3
Type: Reagent/Solvent
Employee: Shanta Mack
Supplier: MACRON
Description: Concentrated Nitric Acid
Comments: None

Open/Reference Date: 06-APR-17
Received: 06-APR-17
Expires: 06-APR-19

Lot Number : 0000166088

Standard Logbook

Serial ID: 2546348 **Open/Reference Date:** 09-MAY-17 **Lot Number :** 168058
Name: I-HCL **Received:** 09-MAY-17
Type: Reagent/Solvent **Expires:** 09-MAY-19
Employee: Edmund Frampton
Supplier: FISHER SCIENTIFIC
Description: HYDROCHLORIC ACID
Comments: None

Serial ID: 2556599 **Open/Reference Date:** 06-JUN-17 **Lot Number :** 168058
Name: I-HCL **Received:** 06-JUN-17
Type: Reagent/Solvent **Expires:** 06-JUN-19
Employee: Edmund Frampton
Supplier: FISHER SCIENTIFIC
Description: HYDROCHLORIC ACID
Comments: None

Serial ID: 2564437 **Open/Reference Date:** 26-JUN-17 **Solvent :** Type I Water
Name: B-2%HNO3/1%HCl-ICPMS **Received:** 26-JUN-17
Type: Reagent/Solvent **Expires:** 09-JUL-17
Employee: Paul Boyd
Supplier: GEL
Description: 2%HNO3/1%HCl Solution (Type I Water)
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
160726-tclp	I-HCL	36.5-38.0	80 mL	8 l	N/A
2534820	I-HNO3	68.0-70.0%	160 mL	8 l	N/A

Serial ID: 2569867 **Open/Reference Date:** 10-JUL-17 **Solvent :** Type I Water
Name: B-2%HNO3/1%HCl-ICPMS **Received:** 10-JUL-17
Type: Reagent/Solvent **Expires:** 24-JUL-17
Employee: Paul Boyd
Supplier: GEL
Description: 2%HNO3/1%HCl Solution (Type I Water)
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
160726-tclp	I-HCL	36.5-38.0	80 mL	8 l	N/A
170606	I-HNO3	68.0-70.0%	160 mL	8 l	N/A

General Chem Analysis

Case Narrative

General Chemistry
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL425783
Work Order #: 425783

Product: **Ion Chromatography**
Analytical Method: 9056_ANIONS_IC
Analytical Procedure: GL-GC-E-086 REV# 25
Analytical Batch: 1675560

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
425783001	B39TT4
1203814957	Method Blank (MB)
1203814958	Laboratory Control Sample (LCS)
1203814959	425783001(B39TT4) Sample Duplicate (DUP)
1203814960	425783001(B39TT4) Post Spike (PS)

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

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Sample Dilutions
The following samples 1203814959 (B39TT4DUP), 1203814960 (B39TT4PS) and 425783001 (B39TT4) were diluted because target analyte concentrations exceeded the calibration range. Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range.

Analyte	425783 001
Sulfate	2X

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

CPRC001 CH2MHill Plateau Remediation Company

Client SDG: GEL425783 GEL Work Order: 425783

The Qualifiers in this report are defined as follows:

B The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).

D Results are reported from a diluted aliquot of sample.

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

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: Kristen Mizzell **Name: Kristen Mizzell**

Date: 26 JUN 2017 **Title: Analyst I**

Sample Data Summary

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

Certificate of Analysis

Report Date: June 26, 2017

Company :	CH2MHill Plateau Remediation Company
Address :	MSIN R3-50 CHPRC PO Box 1600 Richland, Washington 99352
Contact:	Mr. Scot Fitzgerald
Project:	CHPRC SAF S17-006

Client Sample ID:	B39TT4	Project:	CPRC0S17006
Sample ID:	425783001	Client ID:	CPRC001
Matrix:	WATER		
Collect Date:	19-JUN-17 11:44		
Receive Date:	20-JUN-17		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON "As Received"												
Chloride		2270	67.0	200	ug/L		1	MAR1	06/20/17	1033	1675560	1
Fluoride	B	349	33.0	500	ug/L		1					
Nitrate-N		1540	33.0	250	ug/L		1					
Nitrite-N	U	33.0	33.0	250	ug/L		1					
Sulfate	D	20000	266	800	ug/L		2	MAR1	06/20/17	1200	1675560	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	9056_ANIONS_IC	
2	9056_ANIONS_IC	

Notes:

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

Quality Control Summary

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

QC Summary

Report Date: June 26, 2017

CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington

Contact: **Mr. Scot Fitzgerald**

Workorder: **425783**

Parmname	NOM		Sample	Qual	QC	Units	RPD%		REC%	Range	Anlst	Date Time
Ion Chromatography												
Batch 1675560												
QC1203814959 425783001 DUP												
Chloride			2270		2270	ug/L	0.0617			(0%-20%)	MAR1	06/20/17 11:02
Fluoride		B	349	B	345	ug/L	1.04	^		(+/-500)		
Nitrate-N			1540		1520	ug/L	1.42			(0%-20%)		
Nitrite-N		U	33.0	U	33.0	ug/L	N/A					
Sulfate		D	20000	D	20100	ug/L	0.296			(0%-20%)		06/20/17 12:29
QC1203814958 LCS												
Chloride	5000				5240	ug/L			105	(80%-120%)		06/20/17 13:55
Fluoride	2500				2640	ug/L			106	(80%-120%)		
Nitrate-N	2500				2640	ug/L			106	(80%-120%)		
Nitrite-N	2500				2630	ug/L			105	(80%-120%)		
Sulfate	10000				10600	ug/L			106	(80%-120%)		
QC1203814957 MB												
Chloride				U	67.0	ug/L						06/20/17 13:27
Fluoride				U	33.0	ug/L						
Nitrate-N				U	33.0	ug/L						

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QC Summary

Workorder: **425783**

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Ion Chromatography											
Batch 1675560											
Nitrite-N				U	33.0	ug/L				MAR1	06/20/17 13:27
Sulfate				U	133	ug/L					
QC1203814960 425783001 PS											
Chloride	5.00		2.27		7.82	mg/L		111	(75%-125%)		06/20/17 11:31
Fluoride	2.50	B	0.349		3.09	mg/L		110	(75%-125%)		
Nitrate-N	2.50		1.54		4.36	mg/L		113	(75%-125%)		
Nitrite-N	2.50	U	0.00		2.68	mg/L		107	(75%-125%)		
Sulfate	10.0	D	10.0	D	21.5	mg/L		114	(75%-125%)		06/20/17 12:58

Notes:

The Qualifiers in this report are defined as follows:

- < Sample is below the EPA guidance level for Reactive Releasable Cyanide and/or Reactive Releasable Sulfide
- > Result greater than quantifiable range or greater than upper limit of the analysis range
- B The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).
- C Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.
- D Results are reported from a diluted aliquot of sample.
- N Spike Sample recovery is outside control limits.
- U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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QC Summary

Workorder: **425783**

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

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ 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.

Instrument QC Data Summary

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Report Run On: 26-JUN-2017 14:18

GEL Laboratories LLC
Contract: CPRC0S17006
SDG #: GEL425783

Ion Chromatography
Method: SW846 9056A
Instrument: Dionex ICS-3000 Ion Chromatograph (IC7)

Parmname: Chloride Concentration Units:ug/L

Sample Type	Run Date	Data File	Result	Nominal	Recovery	Limits	Within Limits
ICV	**20-JUN-2017 09:35:00**	**170620**	**5185.8**	**5000**	**104**	**(90%-110%)**	**Yes**
CCV	20-JUN-2017 14:24:00	170620	7857.2	7500	105	(90%-110%)	Yes

Sample Type	Run Date	Data File	Result	Limits	Within Limits
ICB	**20-JUN-2017 10:04:00**	**170620**	**0**	**200**	**Yes**
CCB	20-JUN-2017 14:53:00	170620	0	200	Yes

Parmname: Fluoride Concentration Units:ug/L

Sample Type	Run Date	Data File	Result	Nominal	Recovery	Limits	Within Limits
ICV	**20-JUN-2017 09:35:00**	**170620**	**2632.4**	**2500**	**105**	**(90%-110%)**	**Yes**
CCV	20-JUN-2017 14:24:00	170620	3981.7	3750	106	(90%-110%)	Yes

Sample Type	Run Date	Data File	Result	Limits	Within Limits
ICB	**20-JUN-2017 10:04:00**	**170620**	**0**	**500**	**Yes**
CCB	20-JUN-2017 14:53:00	170620	0	500	Yes

Parmname: Nitrate-N Concentration Units:ug/L

Sample Type	Run Date	Data File	Result	Nominal	Recovery	Limits	Within Limits
ICV	**20-JUN-2017 09:35:00**	**170620**	**2618.9**	**2500**	**105**	**(90%-110%)**	**Yes**
CCV	20-JUN-2017 14:24:00	170620	3992.1	3750	106	(90%-110%)	Yes

Sample Type	Run Date	Data File	Result	Limits	Within Limits
ICB	**20-JUN-2017 10:04:00**	**170620**	**0**	**250**	**Yes**
CCB	20-JUN-2017 14:53:00	170620	0	250	Yes

Parmname: Nitrite-N Concentration Units:ug/L

Sample Type	Run Date	Data File	Result	Nominal	Recovery	Limits	Within Limits
ICV	**20-JUN-2017 09:35:00**	**170620**	**2603.6**	**2500**	**104**	**(90%-110%)**	**Yes**
CCV	20-JUN-2017 14:24:00	170620	3957.8	3750	106	(90%-110%)	Yes

Sample Type	Run Date	Data File	Result	Limits	Within Limits
ICB	**20-JUN-2017 10:04:00**	**170620**	**0**	**250**	**Yes**
CCB	20-JUN-2017 14:53:00	170620	0	250	Yes

Parmname: Sulfate Concentration Units:ug/L

Sample Type	Run Date	Data File	Result	Nominal	Recovery	Limits	Within Limits

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Report Run On: 26-JUN-2017 14:18

GEL Laboratories LLC

Contract: CPRC0S17006

SDG #: GEL425783

Ion Chromatography

Method: SW846 9056A

Instrument: Dionex ICS-3000 Ion Chromatograph (IC7)

Parmname: Sulfate Concentration Units:ug/L

Sample Type	Run Date	Data File	Result	Nominal	Recovery	Limits	Within Limits
ICV	**20-JUN-2017 09:35:00**	**170620**	**10600.2**	**10000**	**106**	**(90%-110%)**	**Yes**
CCV	20-JUN-2017 14:24:00	170620	15891.7	15000	106	(90%-110%)	Yes

Sample Type	Run Date	Data File	Result	Limits	Within Limits
ICB	**20-JUN-2017 10:04:00**	**170620**	**0**	**500**	**Yes**
CCB	20-JUN-2017 14:53:00	170620	0	500	Yes

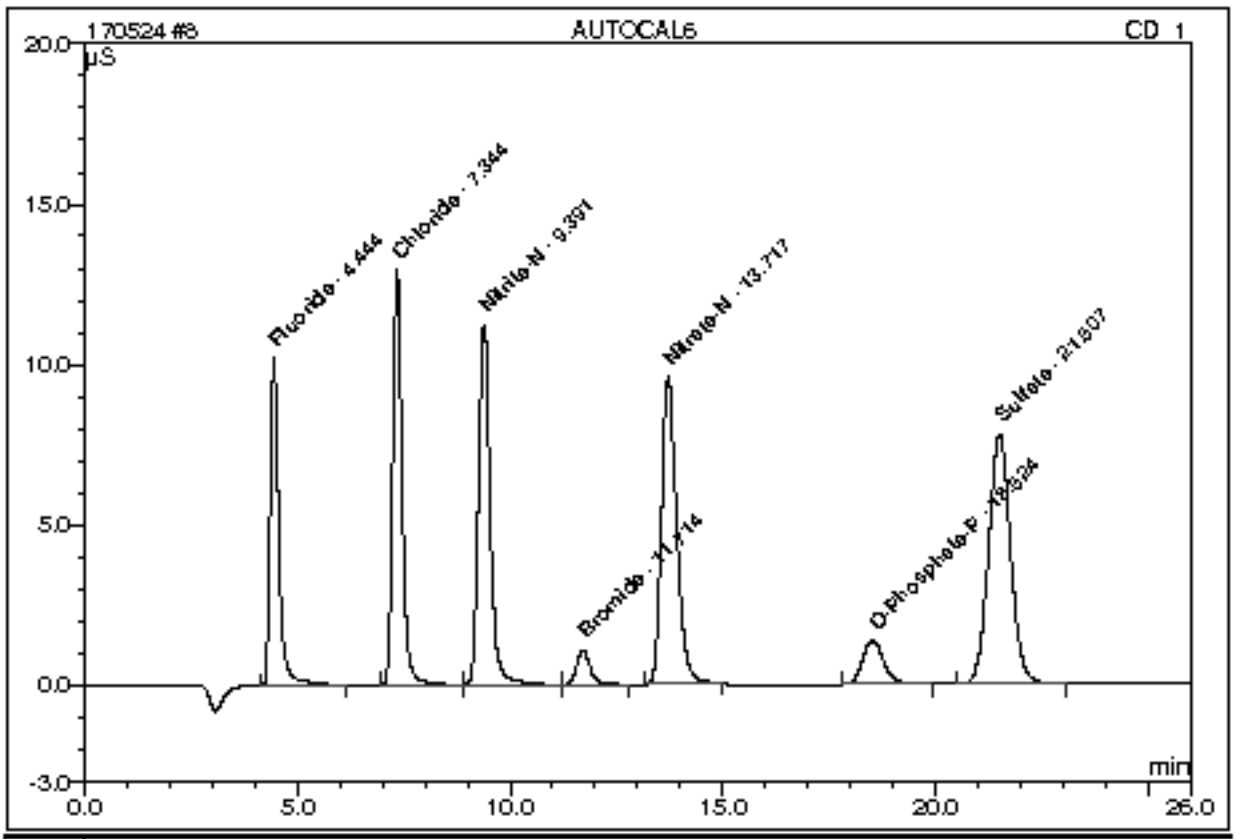
Ion Chromatography Raw Data

This is runlog for Sequence 170621.seq for IC7

Sample ID	Run Time	Batch	Dilution	Dataset	Analyst
BLK	05/24/17 11:35	1		170621	MAR1
ICAL-06	05/24/17 12:41	1		170621	MAR1
ICAL-05	05/24/17 13:10	1		170621	MAR1
ICAL-04	05/24/17 13:39	1		170621	MAR1
ICAL-03	05/24/17 14:08	1		170621	MAR1
ICAL-02	05/24/17 14:36	1		170621	MAR1
ICAL-01	05/24/17 15:05	1		170621	MAR1
ICAL-06	05/24/17 12:41	1		170621	MAR1
ICAL-05	05/24/17 13:10	1		170621	MAR1
ICAL-04	05/24/17 13:39	1		170621	MAR1
ICAL-03	05/24/17 14:08	1		170621	MAR1
ICAL-02	05/24/17 14:36	1		170621	MAR1
ICAL-01	05/24/17 15:05	1		170621	MAR1

8 AUTOCAL6

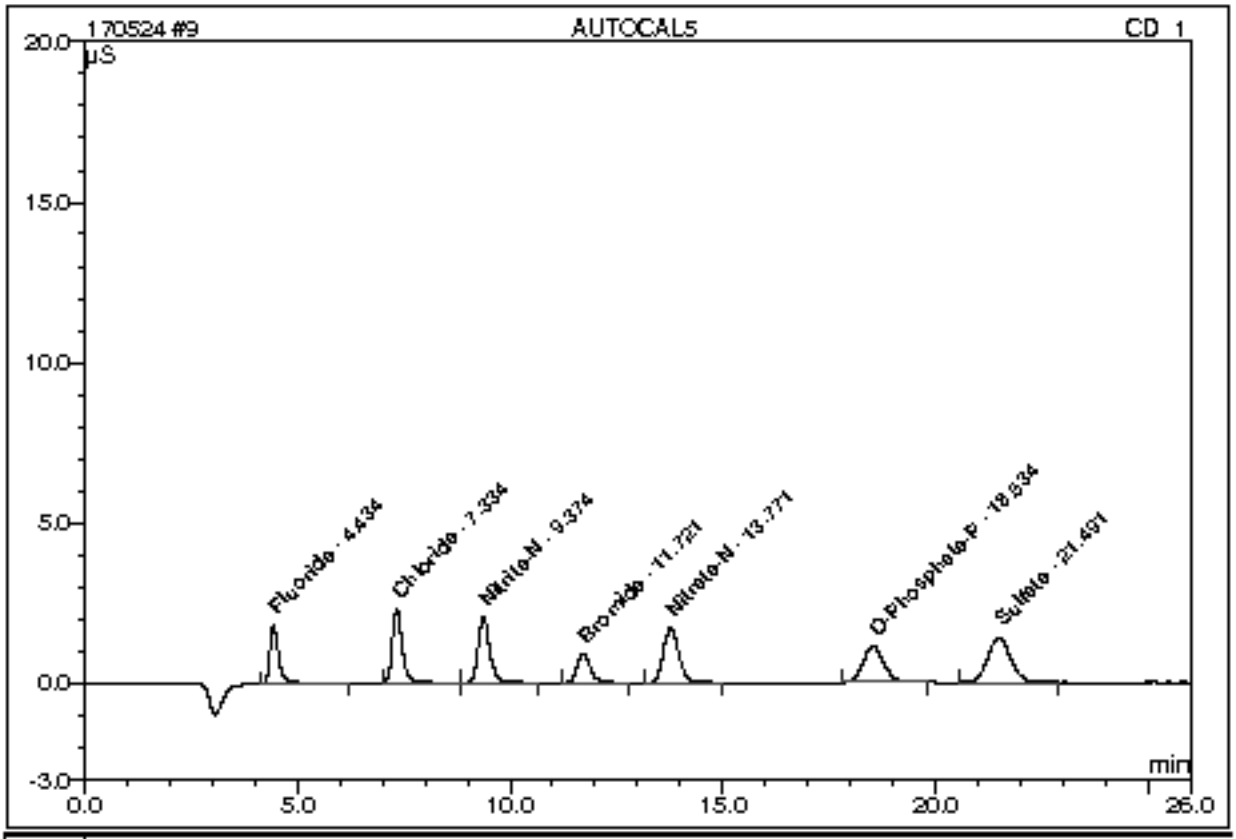
Sample Name:	AUTOCAL6	*Injection Volume:*	50.0
Vial Number:	2	*Channel:*	CD_1
Sample Type:	standard	*Dilution Factor:*	1.0000
Control Program:	AS23	*Sample Weight:*	1.0000
Quantit. Method:	170524an	*Sample Amount:*	1.0000
Recording Time:	5/24/2017 12:41	Analyst:	MAR1
Run Time (min):	26.00	Column:	AS23-002407; GL GCB086;300;9056



No.	Ret.Time min	Peak Name	Concentration mg/L	Amount mg/L	Modified?	Area µS*min	Rel.Area %
1	4.44	Fluoride	5.0000	5.0070		2.44380	12.79
2	7.34	Chloride	10.0000	10.0207		3.29505	17.24
3	9.39	Nitrite-N	5.0000	5.0125		3.56446	18.65
4	11.71	Bromide	3.0000	3.0166		0.39130	2.05
5	13.72	Nitrate-N	5.0000	5.0134		3.95590	20.70
6	18.52	O-Phosphate-P	3.0000	3.0215		0.77882	4.07
7	21.51	Sulfate	20.0000	20.0428		4.68478	24.51
Total:				51.1344	0.000	19.114	100.00

9 AUTOCAL5

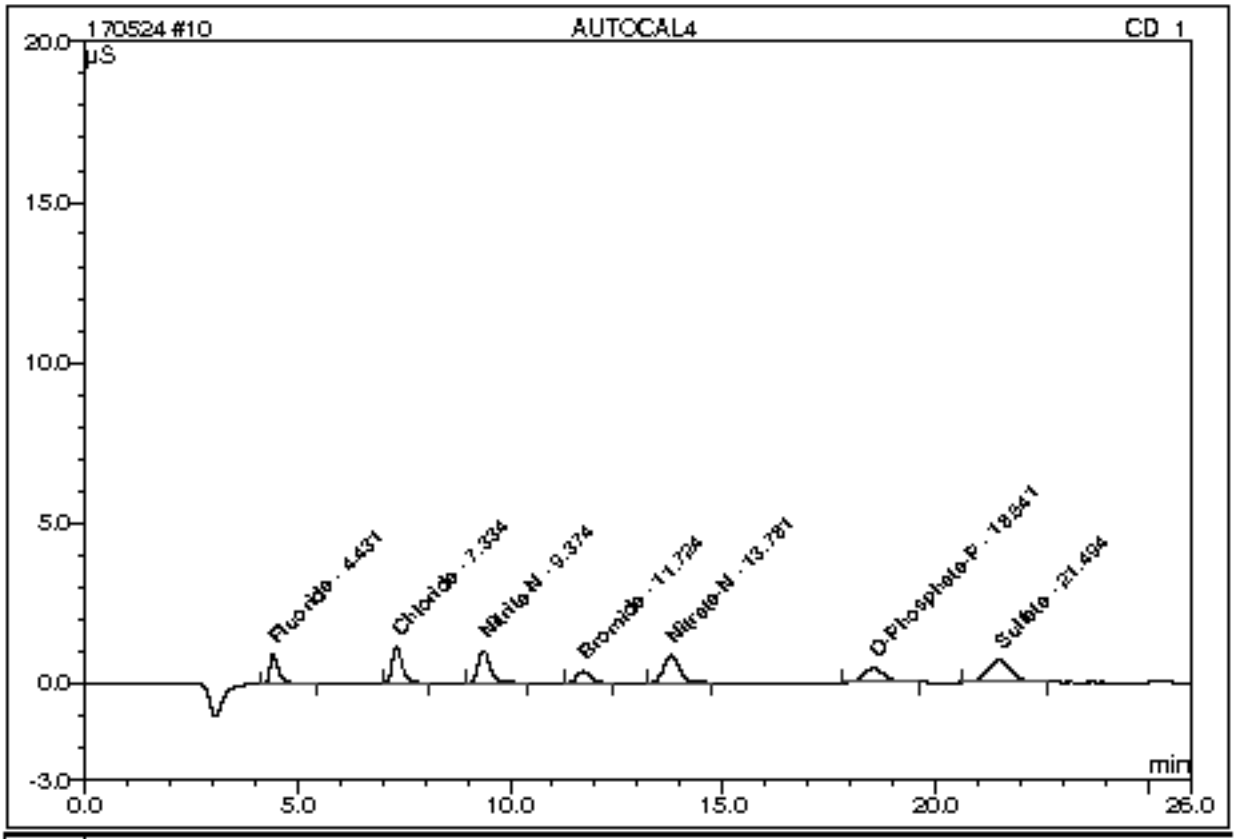
Sample Name:	AUTOCAL5	*Injection Volume:*	50.0
Vial Number:	3	*Channel:*	CD_1
Sample Type:	standard	*Dilution Factor:*	1.0000
Control Program:	AS23	*Sample Weight:*	1.0000
Quantit. Method:	170524an	*Sample Amount:*	1.0000
Recording Time:	5/24/2017 13:10	Analyst:	MAR1
Run Time (min):	26.00	Column:	AS23-002407; GL GCB086;300;9056



No.	Ret.Time min	Peak Name	Concentration mg/L	Amount mg/L	Modified?	Area µS*min	Rel.Area %
1	4.43	Fluoride	1.0000	0.9716		0.46917	10.93
2	7.33	Chloride	2.0000	1.9093		0.61527	14.34
3	9.37	Nitrite-N	1.0000	0.9389		0.65271	15.21
4	11.72	Bromide	2.5000	2.4916		0.32288	7.52
5	13.77	Nitrate-N	1.0000	0.9380		0.72179	16.82
6	18.53	O-Phosphate-P	2.5000	2.4790		0.63852	14.88
7	21.49	Sulfate	4.0000	3.7877		0.87068	20.29
Total:				13.5161	0.000	4.291	100.00

10 AUTOCAL4

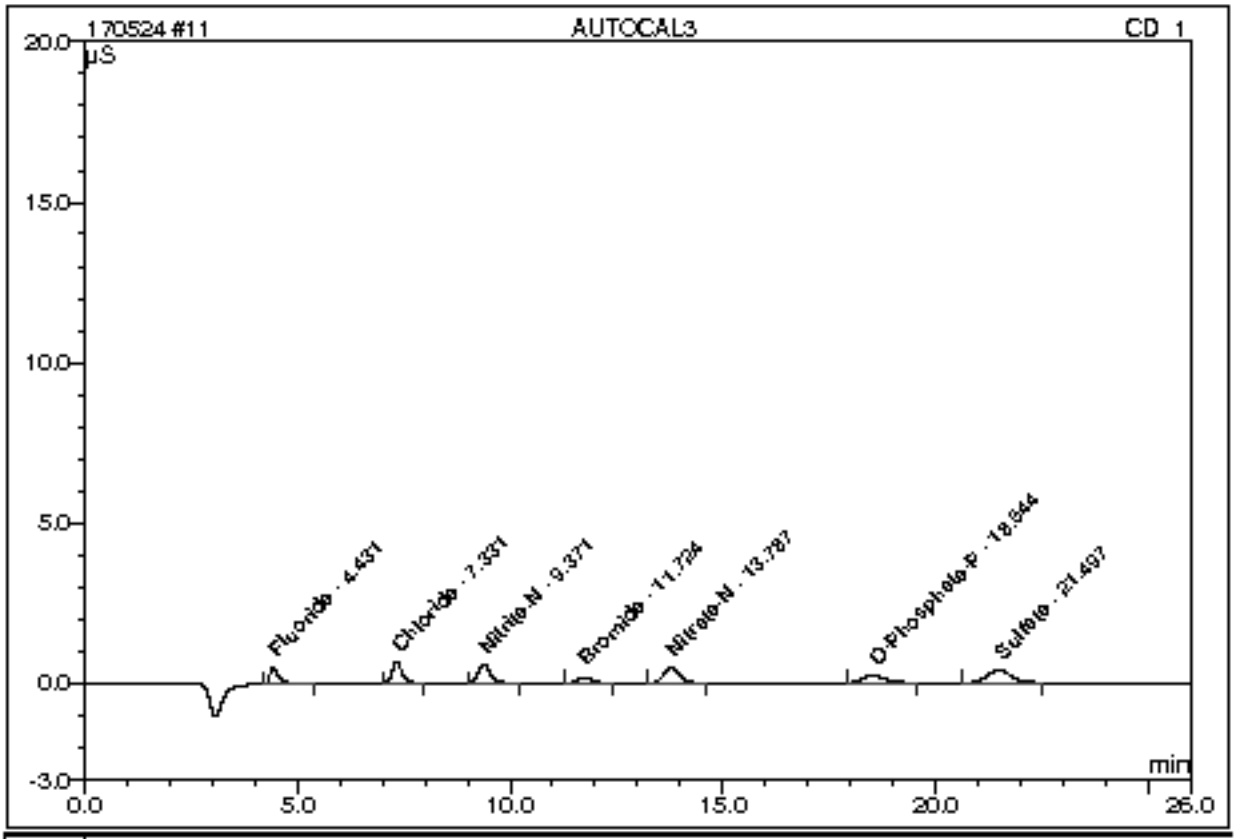
Sample Name:	AUTOCAL4	*Injection Volume:*	50.0
Vial Number:	4	*Channel:*	CD_1
Sample Type:	standard	*Dilution Factor:*	1.0000
Control Program:	AS23	*Sample Weight:*	1.0000
Quantit. Method:	170524an	*Sample Amount:*	1.0000
Recording Time:	5/24/2017 13:39	Analyst:	MAR1
Run Time (min):	26.00	Column:	AS23-002407; GL GCB086;300;9056



No.	Ret.Time min	Peak Name	Concentration mg/L	Amount mg/L	Modified?	Area µS*min	Rel.Area %
1	4.43	Fluoride	0.5000	0.4686		0.22303	11.16
2	7.33	Chloride	1.0000	0.9401		0.29507	14.76
3	9.37	Nitrite-N	0.5000	0.4780		0.32328	16.17
4	11.72	Bromide	1.0000	0.9673		0.12425	6.21
5	13.78	Nitrate-N	0.5000	0.4690		0.34956	17.48
6	18.54	O-Phosphate-P	1.0000	0.9846		0.25204	12.61
7	21.49	Sulfate	2.0000	1.9184		0.43208	21.61
Total:				6.2259	0.000	1.999	100.00

11 AUTOCAL3

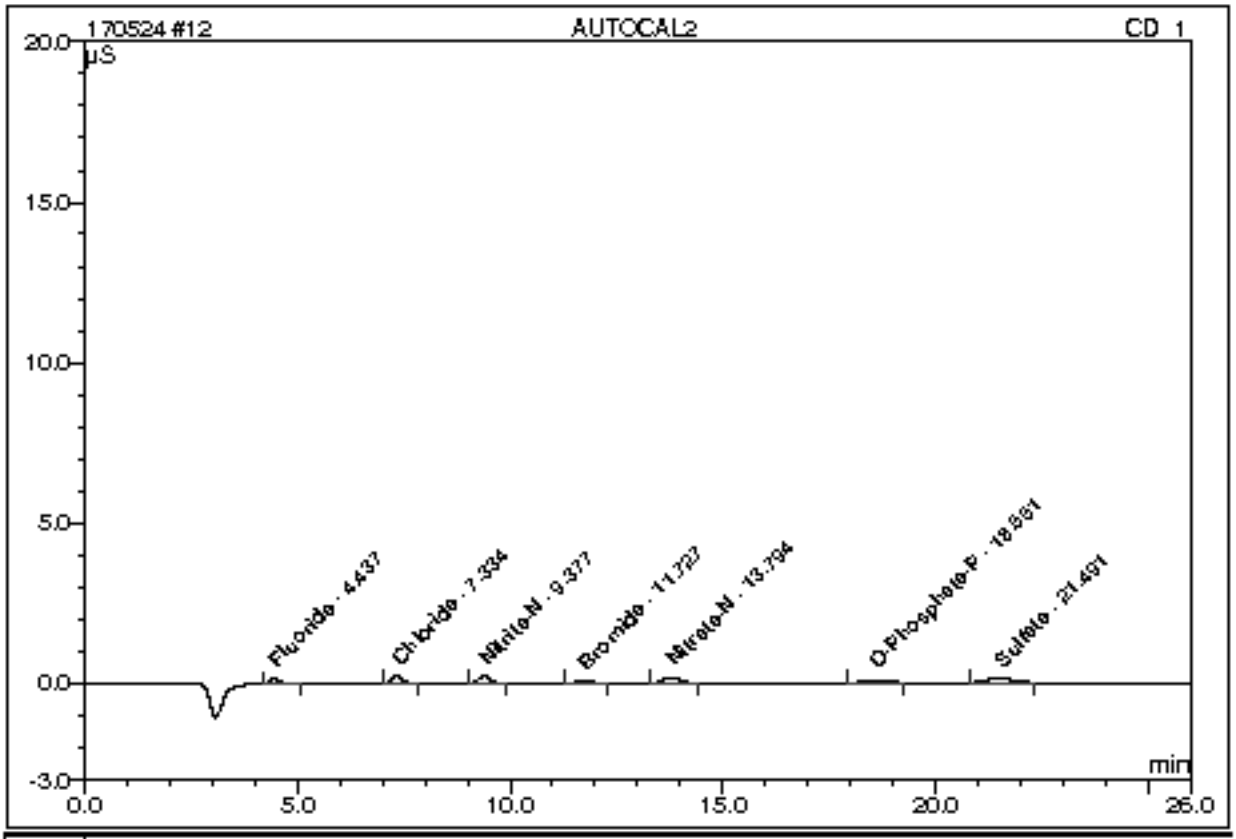
Sample Name:	AUTOCAL3	*Injection Volume:*	50.0
Vial Number:	5	*Channel:*	CD_1
Sample Type:	standard	*Dilution Factor:*	1.0000
Control Program:	AS23	*Sample Weight:*	1.0000
Quantit. Method:	170524an	*Sample Amount:*	1.0000
Recording Time:	5/24/2017 14:08	Analyst:	MAR1
Run Time (min):	26.00	Column:	AS23-002407; GL GCB086;300;9056



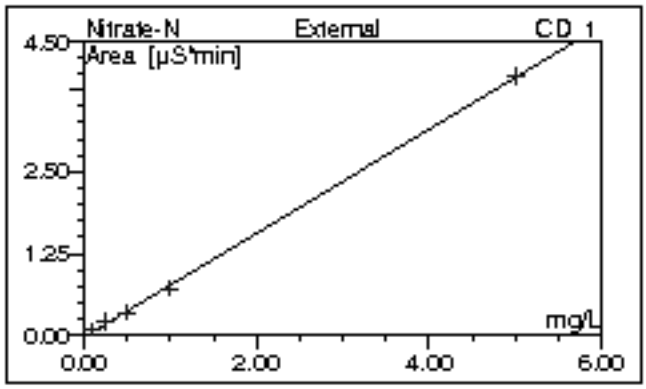
No.	Ret.Time min	Peak Name	Concentration mg/L	Amount mg/L	Modified?	Area µS*min	Rel.Area %
1	4.43	Fluoride	0.2500	0.2856		0.13347	11.76
2	7.33	Chloride	0.5000	0.5579		0.16883	14.87
3	9.37	Nitrite-N	0.2500	0.2847		0.18512	16.30
4	11.72	Bromide	0.5000	0.5059		0.06411	5.65
5	13.79	Nitrate-N	0.2500	0.2858		0.20421	17.99
6	18.54	O-Phosphate-P	0.5000	0.5078		0.12873	11.34
7	21.50	Sulfate	1.0000	1.1464		0.25094	22.10
Total:				3.5741	0.000	1.135	100.00

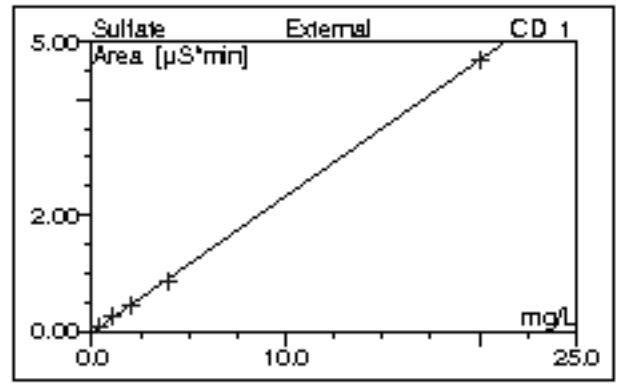
12 AUTOCAL2

Sample Name:	AUTOCAL2	*Injection Volume:*	50.0
Vial Number:	6	*Channel:*	CD_1
Sample Type:	standard	*Dilution Factor:*	1.0000
Control Program:	AS23	*Sample Weight:*	1.0000
Quantit. Method:	170524an	*Sample Amount:*	1.0000
Recording Time:	5/24/2017 14:36	Analyst:	MAR1
Run Time (min):	26.00	Column:	AS23-002407; GL GCB086;300;9056



No.	Ret.Time min	Peak Name	Concentration mg/L	Amount mg/L	Modified?	Area µS*min	Rel.Area %
1	4.44	Fluoride	0.1000	0.1045		0.04487	11.55
2	7.33	Chloride	0.2000	0.2250		0.05885	15.14
3	9.38	Nitrite-N	0.1000	0.1102		0.06037	15.53
4	11.73	Bromide	0.2000	0.2047		0.02486	6.40
5	13.79	Nitrate-N	0.1000	0.1153		0.06894	17.74
6	18.56	O-Phosphate-P	0.2000	0.1971		0.04840	12.46
7	21.49	Sulfate	0.4000	0.4278		0.08232	21.18
Total:				1.3847	0.000	0.389	100.00

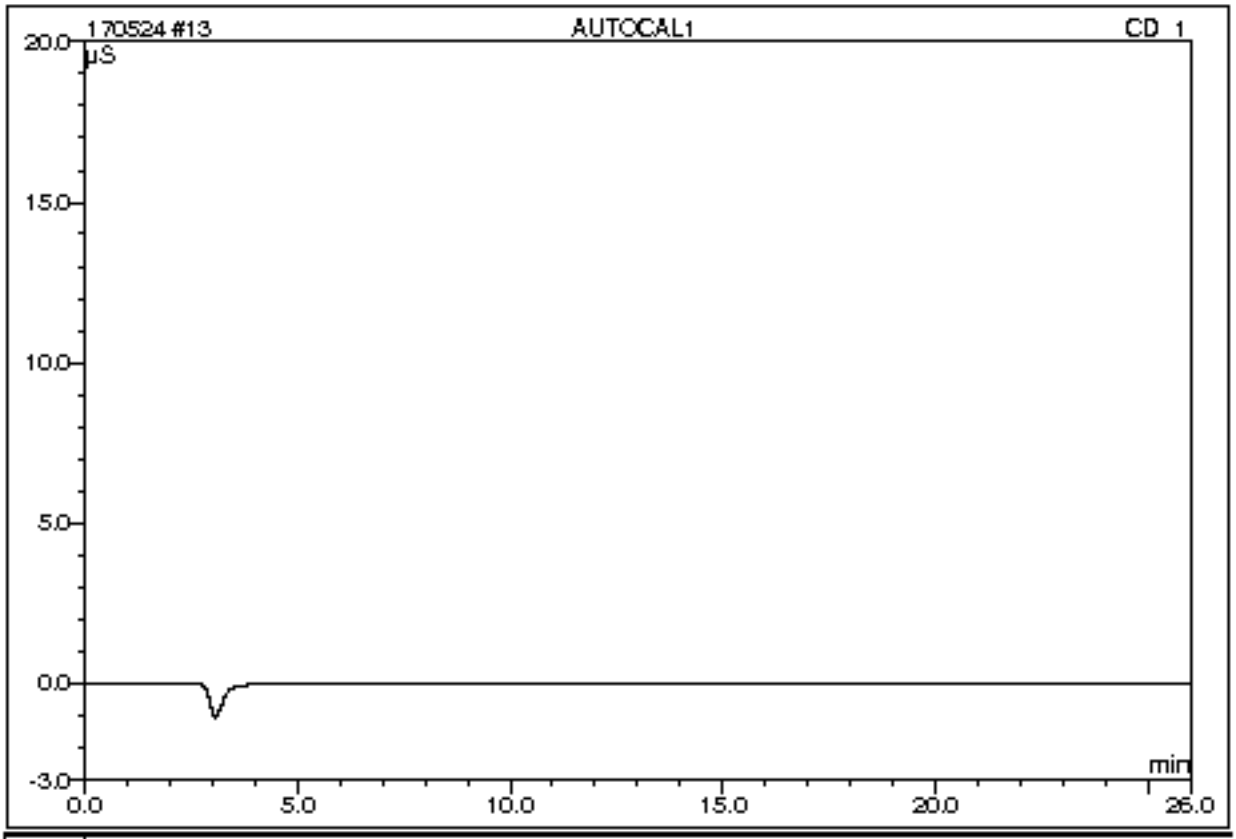




No. CD_1	Ret.Time CD_1 min	Peak Name CD_1	Cal.Type CD_1	Coeff.Det. CD_1 %	Offset CD_1	Slope CD_1	Curve CD_1
n.a.	n.a.	Fluoride	OLOff	99.9816	-0.0063	0.4893	0.0000
n.a.	n.a.	Chloride	OLOff	99.9761	-0.0155	0.3304	0.0000
n.a.	n.a.	Nitrite-N	OLOff	99.9666	-0.0184	0.7148	0.0000
n.a.	n.a.	Bromide	OLOff	99.9764	-0.0018	0.1303	0.0000
n.a.	n.a.	Nitrate-N	OLOff	99.9618	-0.0226	0.7936	0.0000
n.a.	n.a.	O-Phosphate-P	OLOff	99.9805	-0.0026	0.2586	0.0000
n.a.	n.a.	Sulfate	OLOff	99.9721	-0.0181	0.2346	0.0000
Average:				99.9736	-0.0122	0.4217	0.0000

13 AUTOCAL1

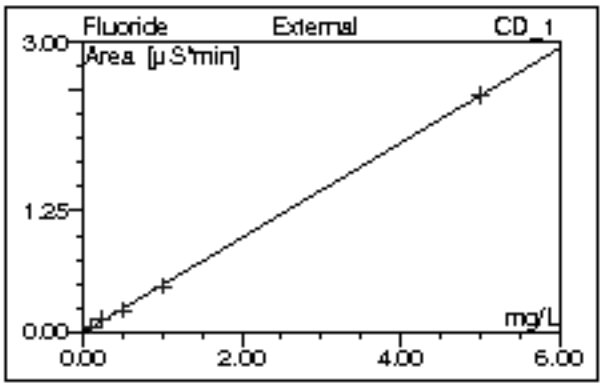
Sample Name:	AUTOCAL1	*Injection Volume:*	50.0
Vial Number:	7	*Channel:*	CD_1
Sample Type:	standard	*Dilution Factor:*	1.0000
Control Program:	AS23	*Sample Weight:*	1.0000
Quantif. Method:	170524an	*Sample Amount:*	1.0000
Recording Time:	5/24/2017 15:05	Analyst:	MAR1
Run Time (min):	26.00	Column:	AS23-002407; GL GCB086;300;9056

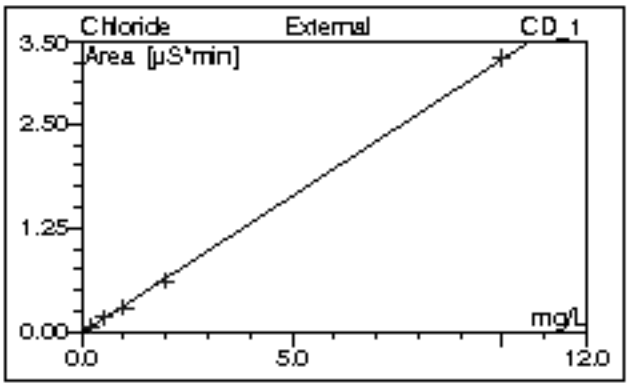


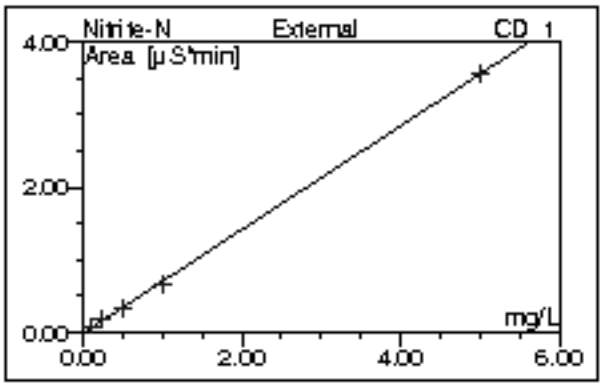
No.	Ret.Time min	Peak Name	Concentration mg/L	Amount mg/L	Modified?	Area µS*min	Rel.Area %
n.a.	n.a.	Fluoride	0.0000	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Chloride	0.0000	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Nitrite-N	0.0000	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Bromide	0.0000	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Nitrate-N	0.0000	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	O-Phosphate-P	0.0000	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Sulfate	0.0000	n.a.	n.a.	n.a.	n.a.
Total:				0.0000	0.000	0.000	0.00

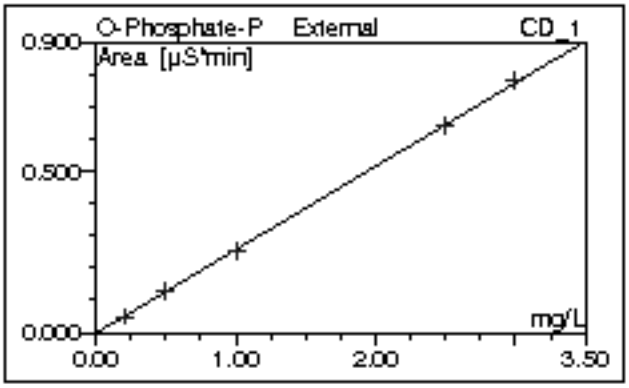
13 AUTOCAL1

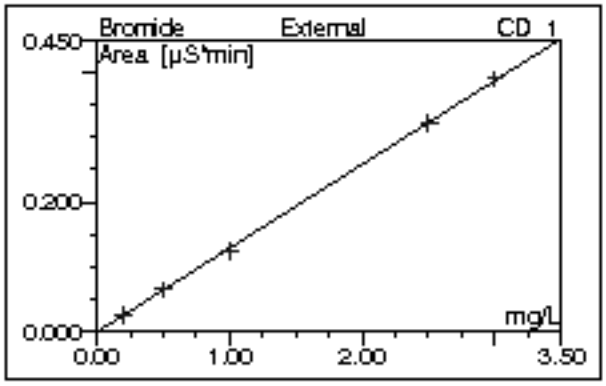
Sample Name:	AUTOCAL1	*Injection Volume:*	50.0
Vial Number:	7	*Channel:*	CD_1
Sample Type:	standard	*Dilution Factor:*	1.0000
Control Program:	AS23	*Sample Weight:*	1.0000
Quantit. Method:	170524an	*Sample Amount:*	1.0000
Recording Time:	5/24/2017 15:05	Analyst:	MAR1
Run Time (min):	26.00	Column:	AS23-161109030; GLGCB086;300;9056

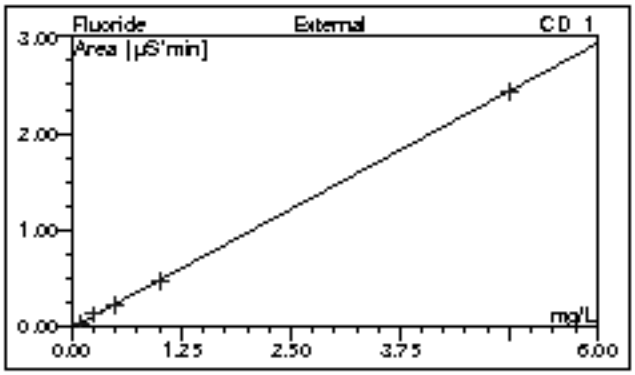












This is runlog for Sequence 170620.seq for IC7

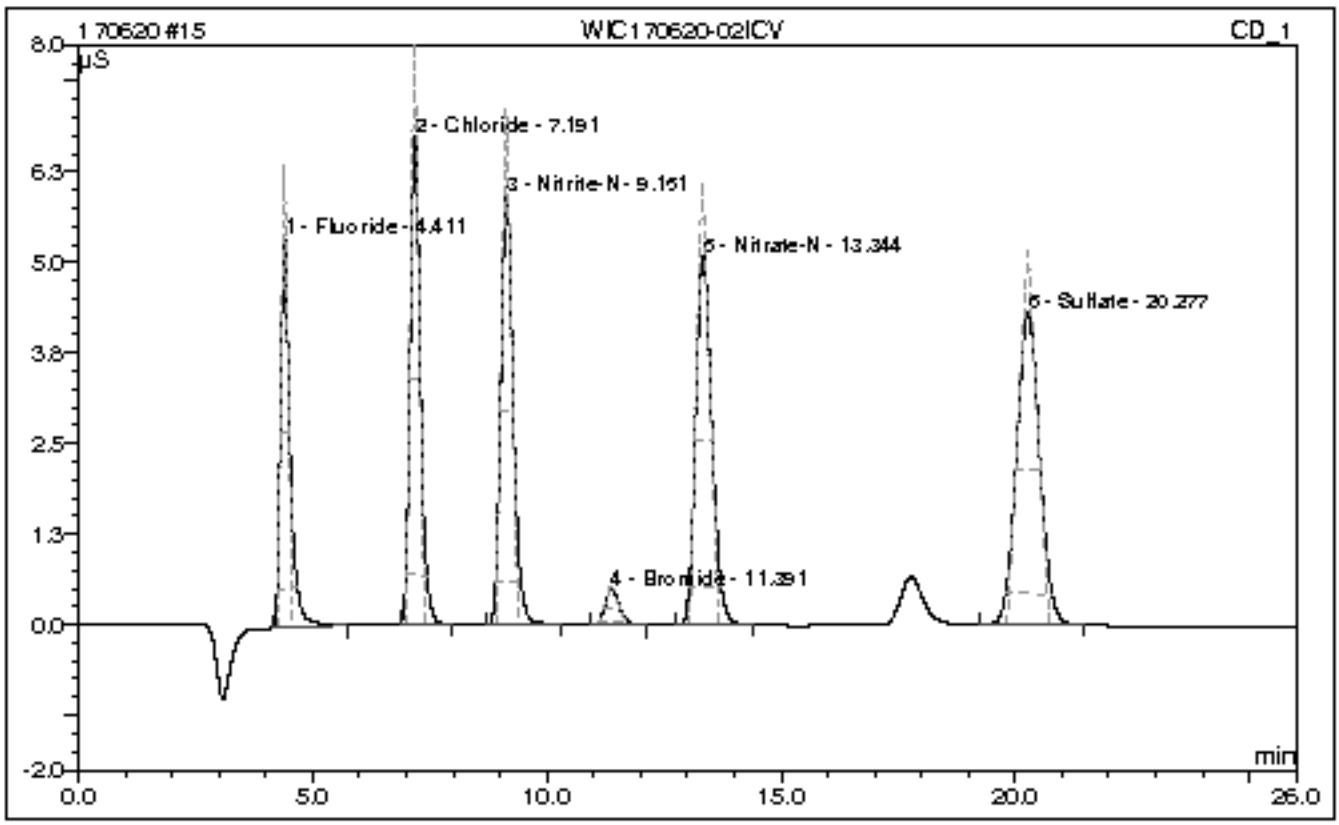
Sample ID	Run Time	Batch	Dilution	Dataset	Analyst
BLK	06/20/17 09:07		1	170620	MAR1
ICV	06/20/17 09:35		1	170620	MAR1
ICB	06/20/17 10:04		1	170620	MAR1
425783001	06/20/17 10:33	1675560	1	170620	MAR1
1203814959	06/20/17 11:02	1675560	1	170620	MAR1
1203814960	06/20/17 11:31	1675560	1	170620	MAR1
425783001	06/20/17 12:00	1675560	2	170620	MAR1
1203814959	06/20/17 12:29	1675560	2	170620	MAR1
1203814960	06/20/17 12:58	1675560	2	170620	MAR1
1203814957	06/20/17 13:27	1675560	1	170620	MAR1
1203814958	06/20/17 13:55	1675560	1	170620	MAR1
CVH	06/20/17 14:24		1	170620	MAR1
CCB	06/20/17 14:53		1	170620	MAR1
1203812846	06/20/17 15:22	1674676	1	170620	MAR1
1203812847	06/20/17 15:51	1674676	1	170620	MAR1
425535002	06/20/17 16:20	1674676	1	170620	MAR1
1203812848	06/20/17 16:49	1674676	1	170620	MAR1
1203812849	06/20/17 17:18	1674676	1	170620	MAR1
425535005	06/20/17 17:46	1674676	1	170620	MAR1
CCV	06/20/17 18:15		1	170620	MAR1
CCB	06/20/17 18:44		1	170620	MAR1
1203813219	06/20/17 19:13	1674816	1	170620	MAR1
1203813220	06/20/17 19:42	1674816	1	170620	MAR1
425662001	06/20/17 20:11	1674816	1	170620	MAR1
1203813221	06/20/17 20:40	1674816	1	170620	MAR1
1203813222	06/20/17 21:09	1674816	1	170620	MAR1
425662002	06/20/17 21:38	1674816	1	170620	MAR1
425662003	06/20/17 22:06	1674816	1	170620	MAR1

425662004	06/20/17 22:35	1674816	1	170620	MAR1
CVH	06/20/17 23:04		1	170620	MAR1
CCB	06/20/17 23:33		1	170620	MAR1

Operator:GEL Laboratories LLC Timebase:IC#7 Sequence:170620

15 WIC170620-02ICV

Sample Name:	WIC170620-02ICV	*Injection Volume:*	50.0
Vial Number:	2	*Channel:*	CD_1
Sample Type:	unknown	*Dilution Factor:*	1.0000
Control Program:	AS23	*Sample Weight:*	1.0000
Quantif. Method:	170524an	*Sample Amount:*	1.0000
Recording Time:	6/20/2017 9:35	Analyst:	MAR1
Run Time (min):	26.00	Column:	AS23-161109030; GLGCE086;300;9056



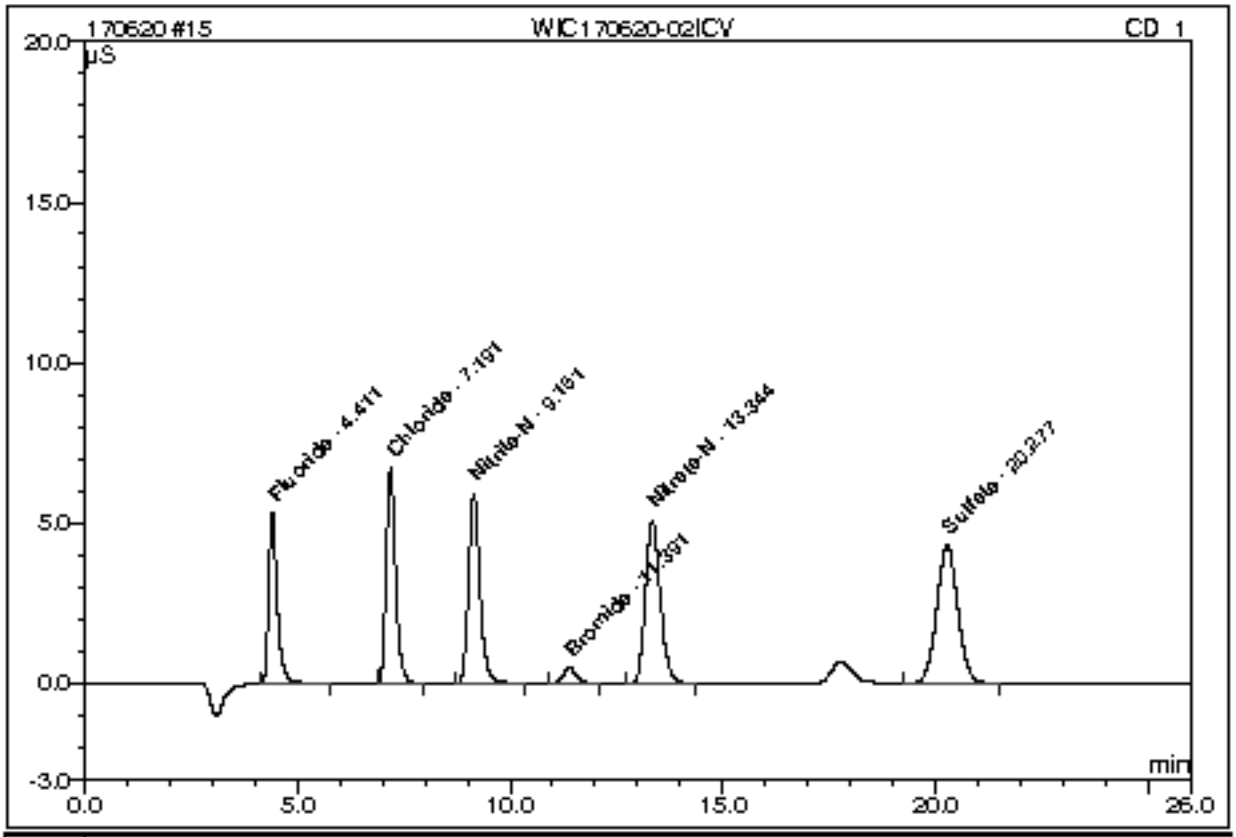
No.	Ret.Time min	Peakname min	Ret. Dev. (%) Lim: ± 10%	Type	Resol. (EP)	Asym. (EP)	Plates (EP)
1	4.411	Fluoride	-0.6	BMB	7.63	1.44	2628
2	7.191	Chloride	-2.0	BMB	4.55	1.23	5535
3	9.151	Nitrite-N	-2.4	BMB	4.33	1.19	5875
4	11.391	Bromide	-2.9	BMB	3.29	1.17	6647
5	13.344	Nitrate-N	-3.3	BMB	9.05	1.18	7135
n.a.	n.a.	O-Phosphate-P	n.a.	n.a.	n.a.	n.a.	n.a.
6	20.277	Sulfate	-5.6	BMB	n.a.	1.05	8033
Average:			-2.790		5.77	1.21	5976

Operator:GEL Laboratories LLC Timebase:IC#7 Sequence:170620

6/20/2017 10:04 AM

15 WIC170620-02ICV

Sample Name:	WIC170620-02ICV	*Injection Volume:*	50.0
Vial Number:	2	*Channel:*	CD_1
Sample Type:	unknown	*Dilution Factor:*	1.0000
Control Program:	AS23	*Sample Weight:*	1.0000
Quantit. Method:	170524an	*Sample Amount:*	1.0000
Recording Time:	6/20/2017 9:35	Analyst:	MAR1
Run Time (min):	26.00	Column:	AS23-002407; GL GCB086;300;9056



No.	Ret.Time min	Peak Name	Concentration mg/L	Amount mg/L	Modified?	Area µS*min	Rel.Area %
1	4.41	Fluoride	n.a.	2.6324		1.28187	13.46
2	7.19	Chloride	n.a.	5.1858		1.69774	17.83
3	9.15	Nitrite-N	n.a.	2.6036		1.84266	19.35
4	11.39	Bromide	n.a.	1.3480		0.17386	1.83
5	13.34	Nitrate-N	n.a.	2.6189		2.05569	21.59
n.a.	n.a.	O-Phosphate-P	n.a.	n.a.	n.a.	n.a.	n.a.
6	20.28	Sulfate	n.a.	10.6002		2.46918	25.93
Total:				24.9891	0.000	9.521	100.00

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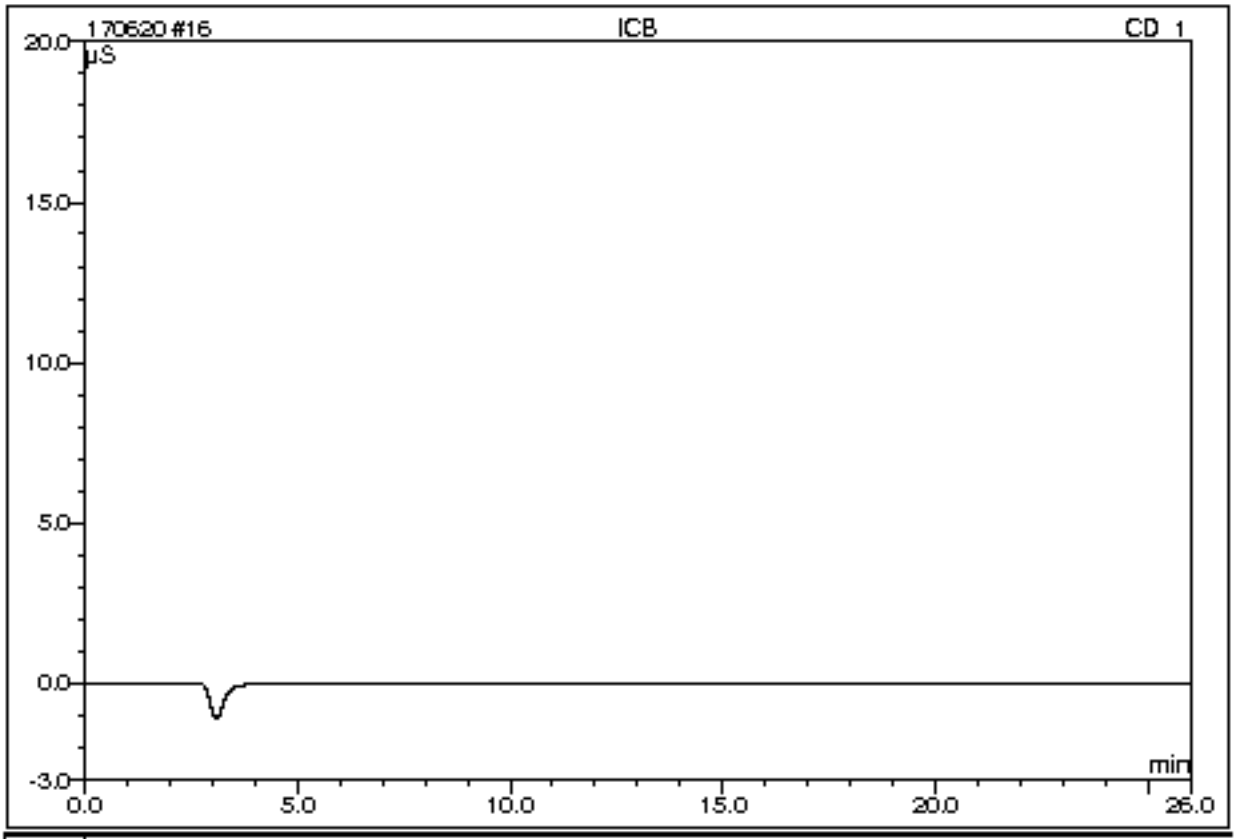
Version 6.80 SR7 Build 2528 (148369)

16 ICB

Sample Name:	ICB	*Injection Volume:*	50.0
Vial Number:	3	*Channel:*	CD_1
Sample Type:	unknown	*Dilution Factor:*	1.0000
Control Program:	AS23	*Sample Weight:*	1.0000
Quantif. Method:	170524an	*Sample Amount:*	1.0000
Recording Time:	6/20/2017 10:04	Analyst:	MAR1
Run Time (min):	26.00	Column:	AS23-002407; GL GCB086;300;9056



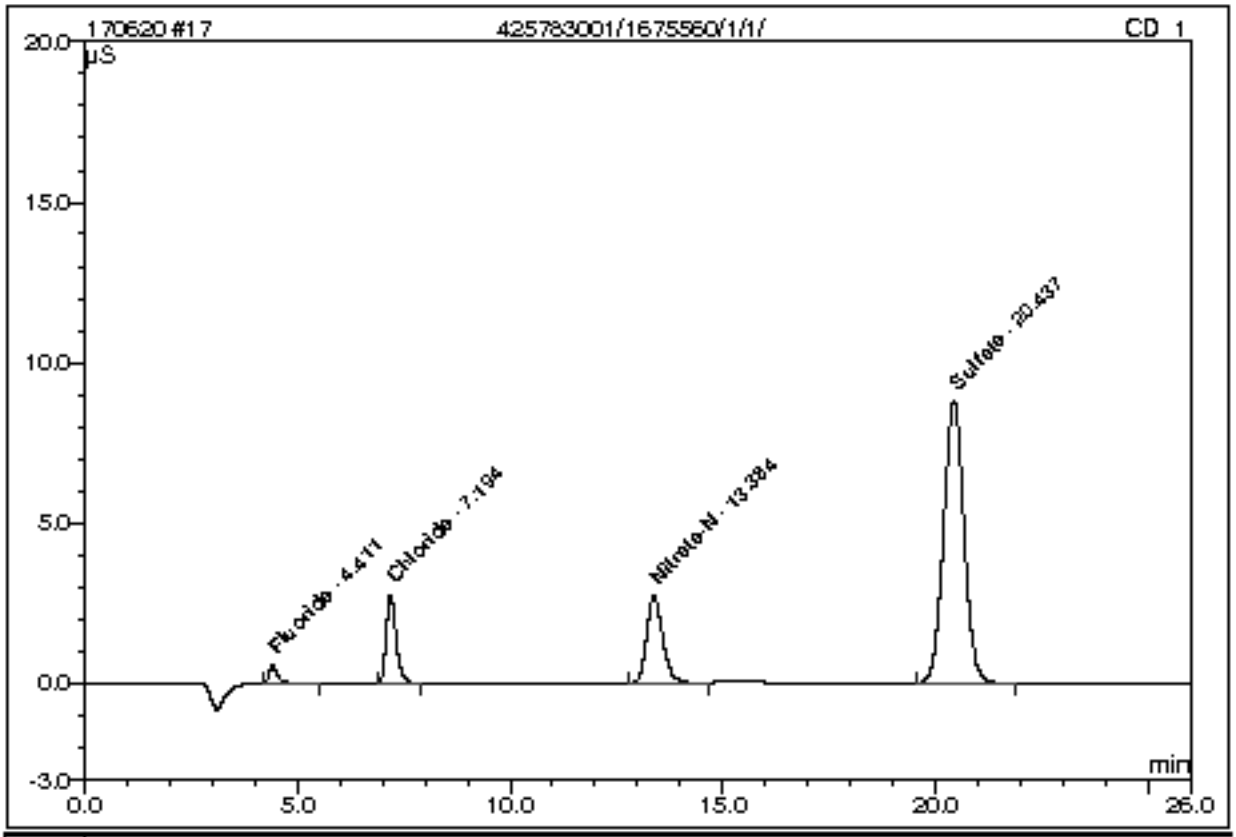
No.	Ret.Time min	Peak Name	Concentration mg/L	Amount mg/L	Modified?	Area µS*min	Rel.Area %
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Nitrite-N	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Nitrate-N	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	O-Phosphate-P	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	n.a.
Total:				0.0000	0.000	0.000	0.00

Operator:GEL Laboratories LLC Timebase:IC#7 Sequence:170620

6/20/2017 11:02 AM

17 425783001/1675560/1/1/

Sample Name:	425783001/1675560/1/1/	*Injection Volume:*	50.0
Vial Number:	4	*Channel:*	CD_1
Sample Type:	unknown	*Dilution Factor:*	1.0000
Control Program:	AS23	*Sample Weight:*	1.0000
Quantif. Method:	170524an	*Sample Amount:*	1.0000
Recording Time:	6/20/2017 10:33	Analyst:	MAR1
Run Time (min):	26.00	Column:	AS23-002407; GL GCB086;300;9056



No.	Ret.Time min	Peak Name	Concentration mg/L	Amount mg/L	Modified?	Area µS*min	Rel.Area %
1	4.41	Fluoride	n.a.	0.3490		0.16450	2.35
2	7.19	Chloride	n.a.	2.2692		0.73416	10.47
n.a.	n.a.	Nitrite-N	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.
3	13.38	Nitrate-N	n.a.	1.5367		1.19685	17.08
n.a.	n.a.	O-Phosphate-P	n.a.	n.a.	n.a.	n.a.	n.a.
4	20.44	Sulfate	n.a.	21.0175		4.91349	70.10
Total:				25.1722	0.000	7.009	100.00

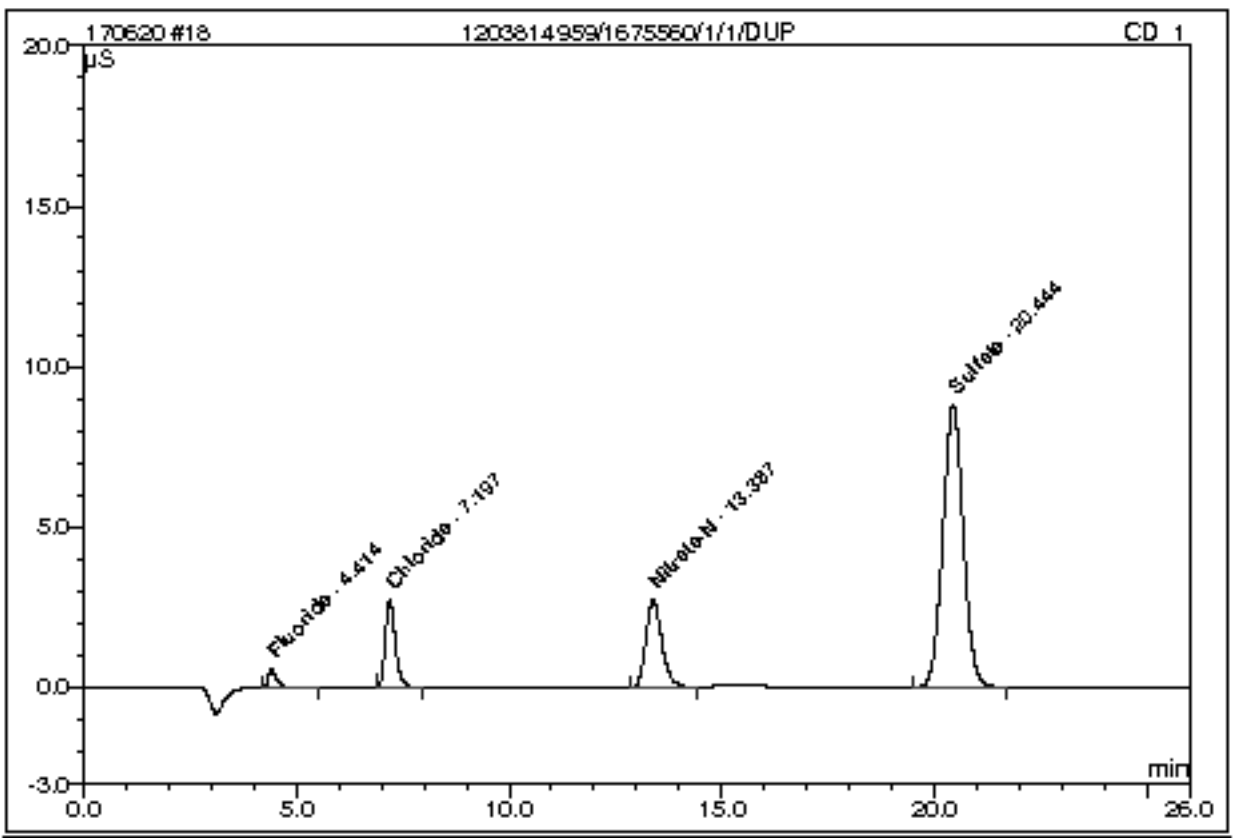
Chromeleon (c) Dionex 1996-2006
Version 6.80 SR7 Build 2528 (148369)

Operator:GEL Laboratories LLC Timebase:IC#7 Sequence:170620

6/20/2017 11:31 AM

18 1203814959/1675560/1/1/DUP

Sample Name:	1203814959/1675560/1/1/DUP	*Injection Volume:*	50.0
Vial Number:	5	*Channel:*	CD_1
Sample Type:	unknown	*Dilution Factor:*	1.0000
Control Program:	AS23	*Sample Weight:*	1.0000
Quantif. Method:	170524an	*Sample Amount:*	1.0000
Recording Time:	6/20/2017 11:02	Analyst:	MAR1
Run Time (min):	26.00	Column:	AS23-002407; GL GCB086;300;9056



No.	Ret.Time min	Peak Name	Concentration mg/L	Amount mg/L	Modified?	Area µS*min	Rel.Area %
1	4.41	Fluoride	n.a.	0.3454		0.16273	2.33
2	7.20	Chloride	n.a.	2.2706		0.73464	10.52
n.a.	n.a.	Nitrite-N	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.
3	13.39	Nitrate-N	n.a.	1.5150		1.17965	16.90
n.a.	n.a.	O-Phosphate-P	n.a.	n.a.	n.a.	n.a.	n.a.
4	20.44	Sulfate	n.a.	20.9817		4.90511	70.25
Total:				25.1127	0.000	6.982	100.00

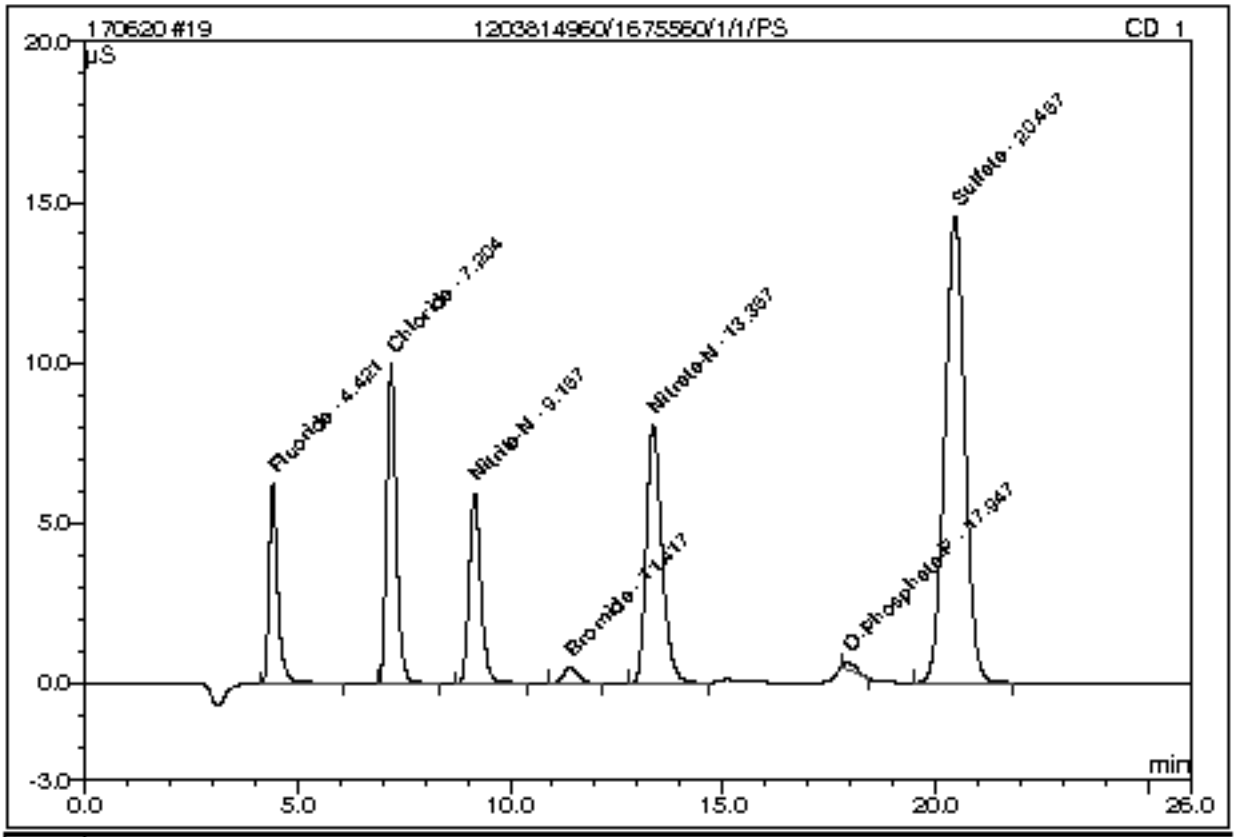
Chromeleon (c) Dionex 1996-2006
Version 6.80 SR7 Build 2528 (148369)

Operator:GEL Laboratories LLC Timebase:IC#7 Sequence:170620

6/20/2017 12:00 PM

19 1203814960/1675560/1/1/PS

Sample Name:	1203814960/1675560/1/1/PS	*Injection Volume:*	50.0
Vial Number:	6	*Channel:*	CD_1
Sample Type:	unknown	*Dilution Factor:*	1.0000
Control Program:	AS23	*Sample Weight:*	1.0000
Quantit. Method:	170524an	*Sample Amount:*	1.0000
Recording Time:	6/20/2017 11:31	Analyst:	MAR1
Run Time (min):	26.00	Column:	AS23-002407; GL GCB086;300;9056



No.	Ret.Time min	Peak Name	Concentration mg/L	Amount mg/L	Modified?	Area µS*min	Rel.Area %
1	4.42	Fluoride	n.a.	3.0931		1.50729	8.55
2	7.20	Chloride	n.a.	7.8219		2.56863	14.57
3	9.17	Nitrite-N	n.a.	2.6783		1.89599	10.75
4	11.42	Bromide	n.a.	1.4025		0.18096	1.03
5	13.37	Nitrate-N	n.a.	4.3635		3.44016	19.51
6	17.95	O-Phosphate-P	n.a.	0.2915		0.07280	0.41
7	20.47	Sulfate	n.a.	34.0331		7.96747	45.18
Total:				53.6838	0.000	17.633	100.00

GEL Report4/Integration

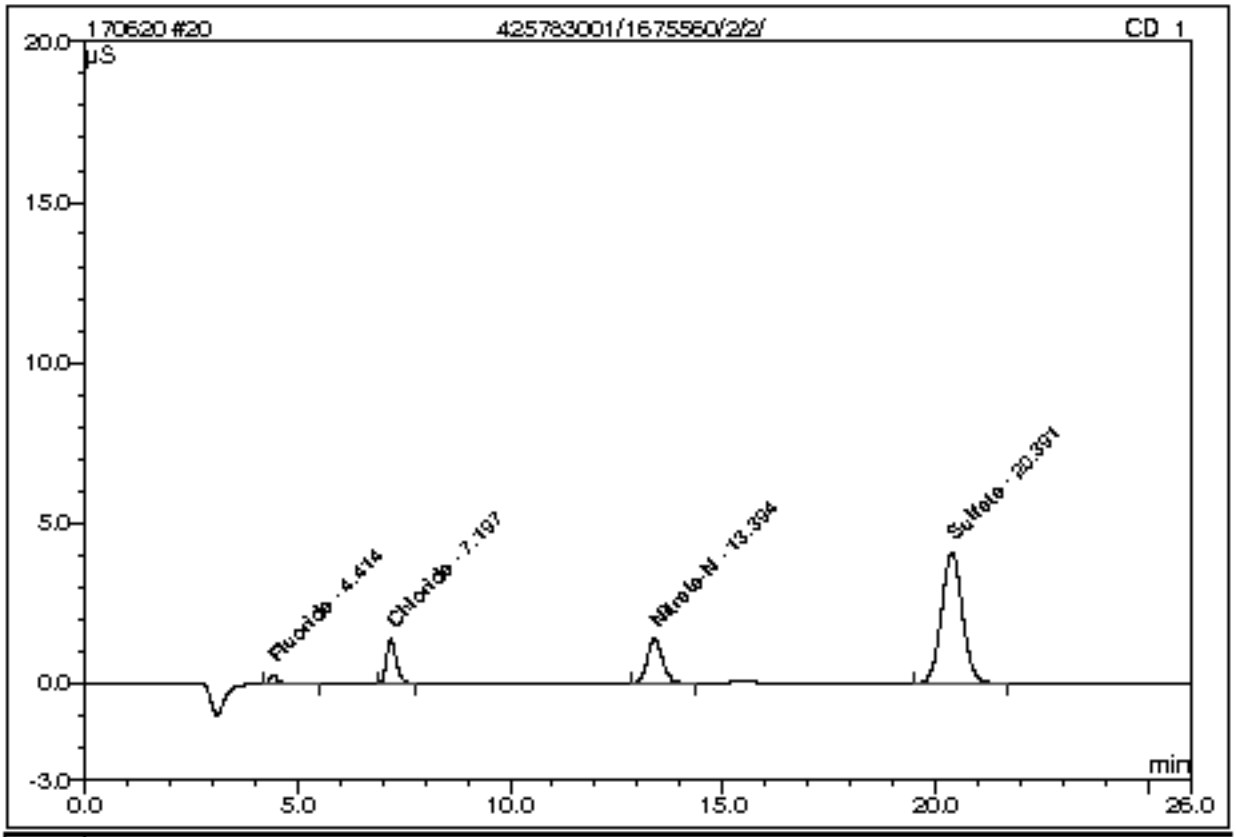
Chromeleon (c) Dionex 1996-2006
Version 6.80 SR7 Build 2528 (148369)

Operator:GEL Laboratories LLC Timebase:IC#7 Sequence:170620

6/20/2017 12:29 PM

20 425783001/1675560/2/2/

Sample Name:	425783001/1675560/2/2/	*Injection Volume:*	50.0
Vial Number:	7	*Channel:*	CD_1
Sample Type:	unknown	*Dilution Factor:*	1.0000
Control Program:	AS23	*Sample Weight:*	1.0000
Quantif. Method:	170524an	*Sample Amount:*	1.0000
Recording Time:	6/20/2017 12:00	Analyst:	MAR1
Run Time (min):	26.00	Column:	AS23-002407; GL GCB086;300;9056



No.	Ret.Time min	Peak Name	Concentration mg/L	Amount mg/L	Modified?	Area µS*min	Rel.Area %
1	4.41	Fluoride	n.a.	0.1864		0.08496	2.54
2	7.20	Chloride	n.a.	1.1301		0.35785	10.68
n.a.	n.a.	Nitrite-N	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.
3	13.39	Nitrate-N	n.a.	0.7543		0.57603	17.20
n.a.	n.a.	O-Phosphate-P	n.a.	n.a.	n.a.	n.a.	n.a.
4	20.39	Sulfate	n.a.	10.0094		2.33054	69.58
Total:				12.0802	0.000	3.349	100.00

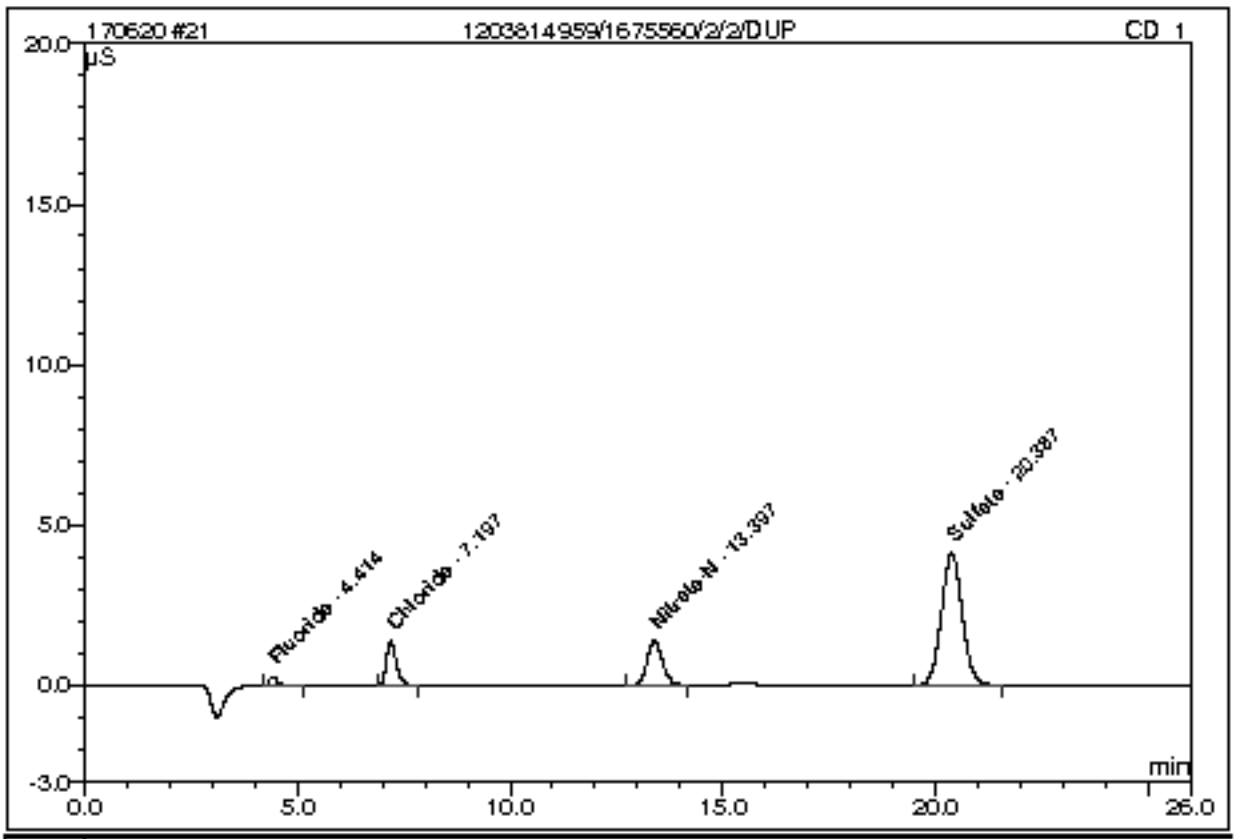
Chromeleon (c) Dionex 1996-2006
Version 6.80 SR7 Build 2528 (148369)

Operator:GEL Laboratories LLC Timebase:IC#7 Sequence:170620

6/20/2017 12:58 PM

21 1203814959/1675560/2/2/DUP

Sample Name:	1203814959/1675560/2/2/DUP	*Injection Volume:*	50.0
Vial Number:	8	*Channel:*	CD_1
Sample Type:	unknown	*Dilution Factor:*	1.0000
Control Program:	AS23	*Sample Weight:*	1.0000
Quantif. Method:	170524an	*Sample Amount:*	1.0000
Recording Time:	6/20/2017 12:29	Analyst:	MAR1
Run Time (min):	26.00	Column:	AS23-002407; GL GCB086;300;9056



No.	Ret.Time min	Peak Name	Concentration mg/L	Amount mg/L	Modified?	Area µS*min	Rel.Area %
1	4.41	Fluoride	n.a.	0.1663		0.07510	2.24
2	7.20	Chloride	n.a.	1.1354		0.35959	10.75
n.a.	n.a.	Nitrite-N	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.
3	13.40	Nitrate-N	n.a.	0.7514		0.57370	17.15
n.a.	n.a.	O-Phosphate-P	n.a.	n.a.	n.a.	n.a.	n.a.
4	20.39	Sulfate	n.a.	10.0391		2.33752	69.86
Total:				12.0921	0.000	3.346	100.00

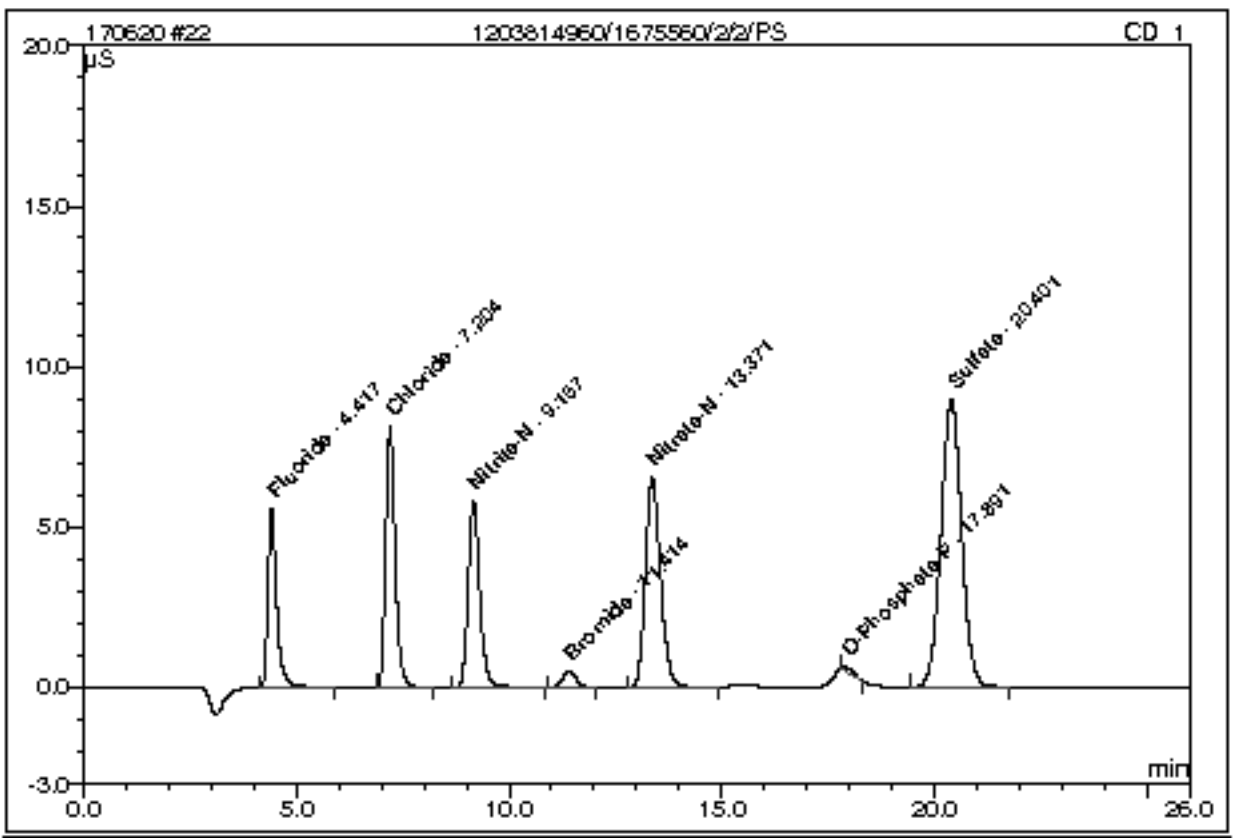
GEL Report4/Integration

Chromeleon (c) Dionex 1996-2006
Version 6.80 SR7 Build 2528 (148369)

Operator:GEL Laboratories LLC Timebase:IC#7 Sequence:170620

22 1203814960/1675560/2/2/PS

Sample Name:	1203814960/1675560/2/2/PS	*Injection Volume:*	50.0
Vial Number:	9	*Channel:*	CD_1
Sample Type:	unknown	*Dilution Factor:*	1.0000
Control Program:	AS23	*Sample Weight:*	1.0000
Quantit. Method:	170524an	*Sample Amount:*	1.0000
Recording Time:	6/20/2017 12:58	Analyst:	MAR1
Run Time (min):	26.00	Column:	AS23-002407; GL GCB086;300;9056

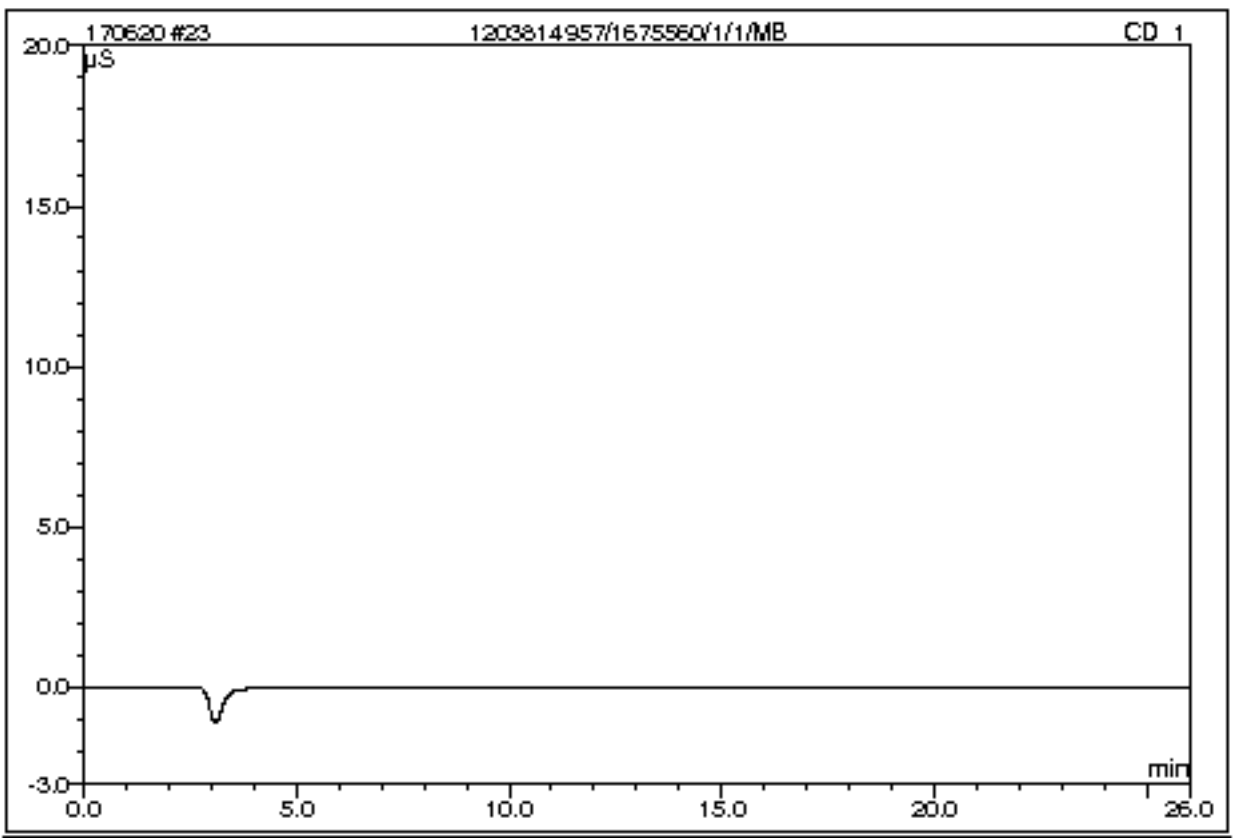


No.	Ret.Time min	Peak Name	Concentration mg/L	Amount mg/L	Modified?	Area µS*min	Rel.Area %
1	4.42	Fluoride	n.a.	2.7899		1.35894	10.28
2	7.20	Chloride	n.a.	6.3542		2.08375	15.76
3	9.17	Nitrite-N	n.a.	2.6116		1.84838	13.98
4	11.41	Bromide	n.a.	1.3514		0.17429	1.32
5	13.37	Nitrate-N	n.a.	3.4311		2.70019	20.42
6	17.89	O-Phosphate-P	n.a.	0.1728		0.04211	0.32
7	20.40	Sulfate	n.a.	21.4588		5.01704	37.94
Total:				38.1698	0.000	13.225	100.00

Operator:GEL Laboratories LLC Timebase:IC#7 Sequence:170620

23 1203814957/1675560/1/1/MB

Sample Name:	1203814957/1675560/1/1/MB	*Injection Volume:*	50.0
Vial Number:	10	*Channel:*	CD_1
Sample Type:	unknown	*Dilution Factor:*	1.0000
Control Program:	AS23	*Sample Weight:*	1.0000
Quantif. Method:	170524an	*Sample Amount:*	1.0000
Recording Time:	6/20/2017 13:27	Analyst:	MAR1
Run Time (min):	26.00	Column:	AS23-002407; GL GCB086;300;9056



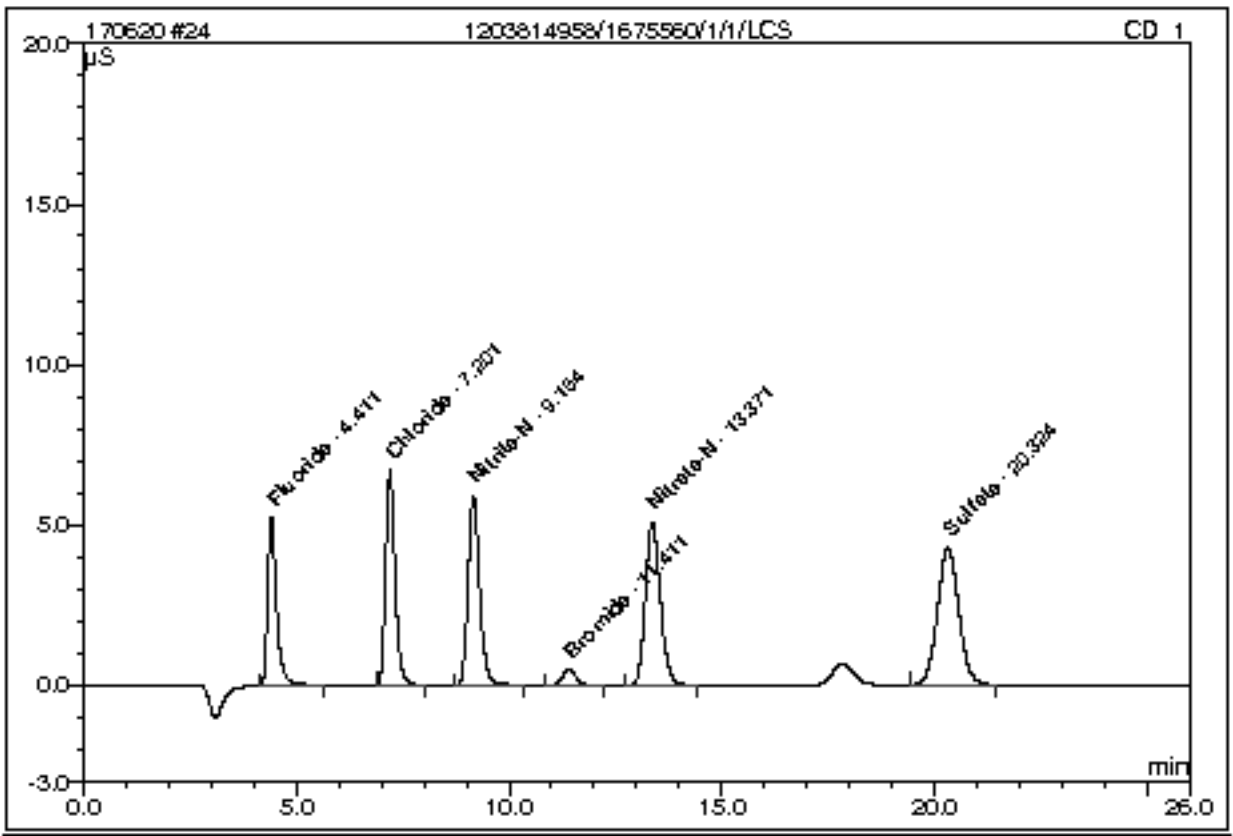
No.	Ret.Time min	Peak Name	Concentration mg/L	Amount mg/L	Modified?	Area µS*min	Rel.Area %
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Nitrite-N	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Nitrate-N	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	O-Phosphate-P	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	n.a.
Total:				0.0000	0.000	0.000	0.00

Chromeleon (c) Dionex 1996-2006
Version 6.80 SR7 Build 2528 (148369)

Operator:GEL Laboratories LLC Timebase:IC#7 Sequence:170620

24 1203814958/1675560/1/1/LCS

Sample Name:	1203814958/1675560/1/1/LCS	*Injection Volume:*	50.0
Vial Number:	11	*Channel:*	CD_1
Sample Type:	unknown	*Dilution Factor:*	1.0000
Control Program:	AS23	*Sample Weight:*	1.0000
Quantit. Method:	170524an	*Sample Amount:*	1.0000
Recording Time:	6/20/2017 13:55	Analyst:	MAR1
Run Time (min):	26.00	Column:	AS23-002407; GL GCB086;300;9056

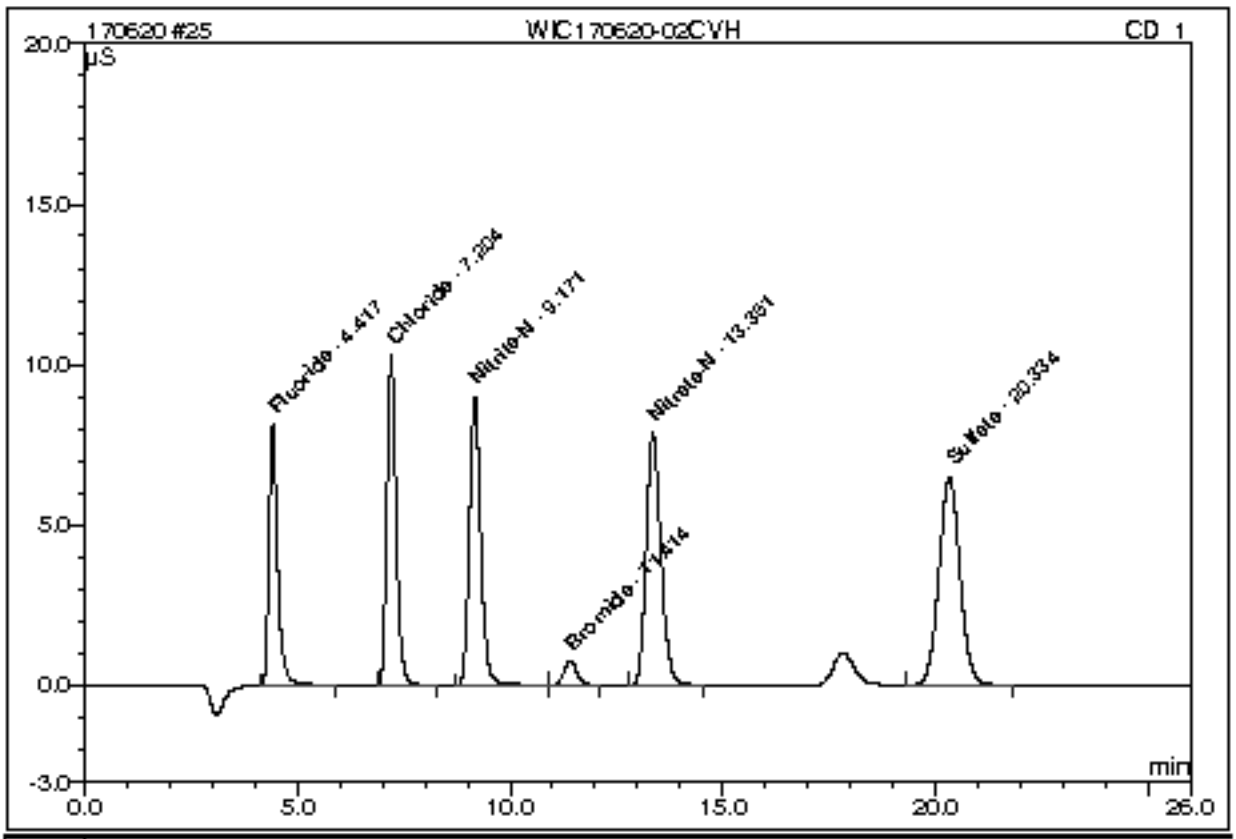


No.	Ret.Time min	Peak Name	Concentration mg/L	Amount mg/L	Modified?	Area µS*min	Rel.Area %
1	4.41	Fluoride	n.a.	2.6397		1.28540	13.40
2	7.20	Chloride	n.a.	5.2432		1.71669	17.89
3	9.16	Nitrite-N	n.a.	2.6326		1.86338	19.42
4	11.41	Bromide	n.a.	1.3664		0.17626	1.84
5	13.37	Nitrate-N	n.a.	2.6398		2.07226	21.60
n.a.	n.a.	O-Phosphate-P	n.a.	n.a.	n.a.	n.a.	n.a.
6	20.32	Sulfate	n.a.	10.6495		2.48074	25.86
Total:				25.1712	0.000	9.595	100.00

Operator:GEL Laboratories LLC Timebase:IC#7 Sequence:170620

25 WIC170620-02CVH

Sample Name:	WIC170620-02CVH	*Injection Volume:*	50.0
Vial Number:	12	*Channel:*	CD_1
Sample Type:	unknown	*Dilution Factor:*	1.0000
Control Program:	AS23	*Sample Weight:*	1.0000
Quantit. Method:	170524an	*Sample Amount:*	1.0000
Recording Time:	6/20/2017 14:24	Analyst:	MAR1
Run Time (min):	26.00	Column:	AS23-002407; GL GCB086;300;9056



No.	Ret.Time min	Peak Name	Concentration mg/L	Amount mg/L	Modified?	Area µS*min	Rel.Area %
1	4.42	Fluoride	n.a.	3.9817		1.94213	13.44
2	7.20	Chloride	n.a.	7.8572		2.58028	17.85
3	9.17	Nitrite-N	n.a.	3.9578		2.81061	19.45
4	11.41	Bromide	n.a.	2.0331		0.26313	1.82
5	13.36	Nitrate-N	n.a.	3.9921		3.14545	21.76
n.a.	n.a.	O-Phosphate-P	n.a.	n.a.	n.a.	n.a.	n.a.
6	20.33	Sulfate	n.a.	15.8917		3.71078	25.68
Total:				37.7137	0.000	14.452	100.00

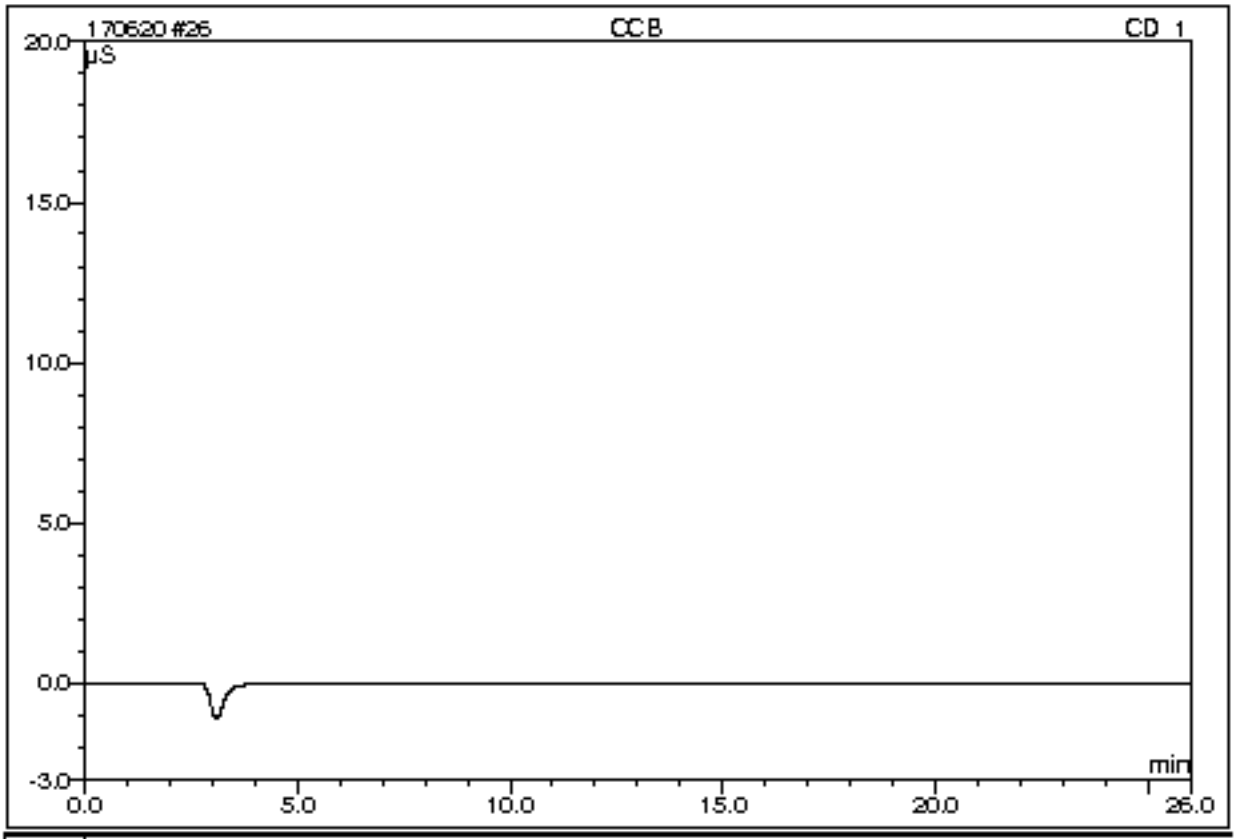
GEL Report4/Integration

Chromeleon (c) Dionex 1996-2006
Version 6.80 SR7 Build 2528 (148369)

Operator:GEL Laboratories LLC Timebase:IC#7 Sequence:170620

26 CCB

Sample Name:	CCB	*Injection Volume:*	50.0
Vial Number:	13	*Channel:*	CD_1
Sample Type:	unknown	*Dilution Factor:*	1.0000
Control Program:	AS23	*Sample Weight:*	1.0000
Quantif. Method:	170524an	*Sample Amount:*	1.0000
Recording Time:	6/20/2017 14:53	Analyst:	MAR1
Run Time (min):	26.00	Column:	AS23-002407; GL GCB086;300;9056



No.	Ret.Time min	Peak Name	Concentration mg/L	Amount mg/L	Modified?	Area µS*min	Rel.Area %
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Nitrite-N	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Nitrate-N	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	O-Phosphate-P	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	n.a.
Total:				0.0000	0.000	0.000	0.00

Serial ID: UIC170524-1 **Open/Reference Date:** 24-MAY-17 **Amount :** 100 mL
Name: IC 5 ANION STOCK STD 2 **Received:** 24-MAY-17 **Catalog Number :** GEL-ANION-7
Type: Source Material **Expires:** 24-JUN-17 **Lot Number :** M2-MEB656592
Employee: Mary Sherwood **Solvent :** H20
Supplier: INORGANIC VENTURE
Description: IC 5 Anion Stock Standard Mix - 2nd Source
Comments: None

Analyte	Concentration	Analyte	Concentration
Chloride	2000 mg/L	Fluoride	1000 mg/L
Nitrate	1000 mg/L	Nitrite	1000 mg/L
Sulfate	4000 mg/L		

Serial ID: UIC170524-2 **Open/Reference Date:** 24-MAY-17 **Amount :** 100 mL
Name: IC 5 ANION STOCK STD 1 **Received:** 24-MAY-17 **Catalog Number :** VGELSC-3A-100
Type: Source Material **Expires:** 24-JUN-17 **Lot Number :** 10-126JKS
Employee: Mary Sherwood **Solvent :** H2O
Supplier: SPEX CertiPrep
Description: IC 5 Anion Stock Standard Mix - 1st Source
Comments: None

Analyte	Concentration	Analyte	Concentration
Chloride	2000 mg/L	Fluoride	1000 mg/L
Nitrate	1000 mg/L	Nitrite	1000 mg/L
Sulfate	4000 mg/L		

Serial ID: UIC170524-3 **Open/Reference Date:** 24-MAY-17 **Amount :** 100 mL
Name: IC 2 ANION STOCK STD 1 **Received:** 24-MAY-17 **Catalog Number :** VGELSC-3D-100
Type: Source Material **Expires:** 24-JUN-17 **Lot Number :** 10-147JKS
Employee: Mary Sherwood **Solvent :** H20
Supplier: SPEX CertiPrep
Description: IC 2 Anion Stock Standard Mix - 1st Source
Comments: None

Analyte	Concentration	Analyte	Concentration
Bromide	500 mg/L	Ortho-phosphate	500 mg/L

Serial ID: UIC170524-4 **Open/Reference Date:** 24-MAY-17 **Amount :** 100 mL
Name: IC 2 ANION STOCK STD 2 **Received:** 24-MAY-17 **Catalog Number :** GEL-ANION-8
Type: Source Material **Expires:** 24-JUN-17 **Lot Number :** M2-MEB656593
Employee: Mary Sherwood **Solvent :** H20
Supplier: INORGANIC VENTURE
Description: IC 2 Anion Stock Standard Mix - 2nd Source
Comments: None

Analyte	Concentration	Analyte	Concentration

Analyte	Concentration	Analyte	Concentration
Bromide	500 mg/L	Ortho-phosphate	500 mg/L

Serial ID: UIC170524SPK **Open/Reference Date:** 24-MAY-17 **Amount :** 250 mL
Name: IC-STDSPIKE **Received:** 24-MAY-17 **Catalog Number :** GEL-ANION-4B
Type: Source Material **Expires:** 24-JUN-17 **Lot Number :** K2-MEB637089
Employee: Mary Sherwood **Solvent :** H2O
Supplier: Inorganic Ventures, Inc.
Description: Spiking Solution
Comments: None

Analyte	Concentration	Analyte	Concentration
Bromide	125 mg/L	Bromine	125 mg/L
Chloride	500 mg/L	Chlorine	500 mg/L
Fluoride	250 mg/L	Fluorine	250 mg/L
Nitrate	250 mg/L	Nitrite	250 mg/L
Ortho-phosphate	125 mg/L	Sulfate	1000 mg/L
Sulfur	333 mg/L		

Serial ID: IIC170524-01 **Open/Reference Date:** 24-MAY-17 **Aliquot :** 5 mL
Name: IC 2 ANION INT STD 1 **Received:** 24-MAY-17 **Pipet Id :** MAX
Type: Intermediate **Expires:** 26-MAY-17 **Solvent :** H20
Employee: Mary Sherwood
Supplier: LAB
Description: 8 A SOL. Br, O-P04----50.0PPM
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UIC170524-3	Bromide	500 mg/L	5 mL	50 mL	50 mg/L
UIC170524-3	O-Phosphate-P	500 mg/L	5 mL	50 mL	50 mg/L

Serial ID: IIC170524-02 **Open/Reference Date:** 24-MAY-17 **Aliquot :** 1 ml
Name: IC 5 ANION INT STD 1 **Received:** 24-MAY-17 **Solvent :** H20
Type: Intermediate **Expires:** 26-MAY-17
Employee: Mary Sherwood
Supplier: LAB
Description: F, N02, N03-10.0 PPM Cl-20.0 PPM S04-40.0 PPM
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UIC170524-2	Chloride	2000 mg/L	1 mL	100 mL	20 ug/mL
UIC170524-2	Fluoride	1000 mg/L	1 mL	100 mL	10 ug/mL
UIC170524-2	Nitrate-N	1000 mg/L	1 mL	100 mL	10 ug/mL
UIC170524-2	Nitrite-N	1000 mg/L	1 mL	100 mL	10 ug/mL
UIC170524-2	Sulfate	4000 mg/L	1 mL	100 mL	40 ug/mL

Standard Logbook

Serial ID: WIC170524-01STD **Open/Reference Date:** 24-MAY-17 **Pipet Id :** max
Name: ICAUTOCAL1 **Received:** 24-MAY-17 **Solvent :** DI WATER
Type: Working **Expires:** 26-MAY-17
Employee: Mary Sherwood
Supplier: GEL
Description: IC Seven Anion Calibration Standard #1 - DI Water
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
IIC170524-01	Bromide	50 mg/L	0 mL	100 mL	0 mg/L
IIC170524-01	O-Phosphate-P	50 mg/L	0 mL	100 mL	0 mg/L
IIC170524-02	Chloride	20 ug/mL	0 mL	100 mL	0 mg/L
IIC170524-02	Fluoride	10 ug/mL	0 mL	100 mL	0 mg/L
IIC170524-02	Nitrate-N	10 ug/mL	0 mL	100 mL	0 mg/L
IIC170524-02	Nitrite-N	10 ug/mL	0 mL	100 mL	0 mg/L
IIC170524-02	Sulfate	40 ug/mL	0 mL	100 mL	0 mg/L

Serial ID: WIC170524-02STD **Open/Reference Date:** 24-MAY-17 **Pipet Id :** MAX
Name: ICAUTOCAL2 **Received:** 24-MAY-17 **Solvent :** DI WATER
Type: Working **Expires:** 26-MAY-17
Employee: Mary Sherwood
Supplier: GEL
Description: IC Seven Anion Calibration Standard #2
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
IIC170524-01	Bromide	50 mg/L	.2 mL	50 mL	.2 mg/L
IIC170524-01	O-Phosphate-P	50 mg/L	.2 mL	50 mL	.2 mg/L
IIC170524-02	Chloride	20 ug/mL	.05 mL	50 mL	.2 mg/L
IIC170524-02	Fluoride	10 ug/mL	.05 mL	50 mL	.1 mg/L
IIC170524-02	Nitrate-N	10 ug/mL	.05 mL	50 mL	.1 mg/L
IIC170524-02	Nitrite-N	10 ug/mL	.05 mL	50 mL	.1 mg/L
IIC170524-02	Sulfate	40 ug/mL	.05 mL	50 mL	.4 mg/L

Serial ID: WIC170524-03STD **Open/Reference Date:** 24-MAY-17 **Pipet Id :** MAX
Name: ICAUTOCAL3 **Received:** 24-MAY-17 **Solvent :** DI WATER
Type: Working **Expires:** 26-MAY-17
Employee: Mary Sherwood
Supplier: GEL
Description: IC Seven Anion Calibration Standard #3
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
IIC170524-01	Bromide	50 mg/L	.5 mL	50 ml	.5 mg/L
IIC170524-01	O-Phosphate-P	50 mg/L	.5 mL	50 ml	.5 mg/L
IIC170524-02	Chloride	20 ug/mL	.15 mL	50 ml	.5 mg/L

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
IIC170524-02	Fluoride	10 ug/mL	.15 mL	50 ml	.25 mg/L
IIC170524-02	Nitrate-N	10 ug/mL	.15 mL	50 ml	.25 mg/L
IIC170524-02	Nitrite-N	10 ug/mL	.15 mL	50 ml	.25 mg/L
IIC170524-02	Sulfate	40 ug/mL	.15 mL	50 ml	1 mg/L

Serial ID: WIC170524-04STD **Open/Reference Date:** 24-MAY-17 **Pipet Id :** CALVIN
Name: ICAUTOCAL4 **Received:** 24-MAY-17 **Solvent :** DI WATER
Type: Working **Expires:** 26-MAY-17
Employee: Mary Sherwood
Supplier: GEL
Description: IC Seven Anion Calibration Standard #4
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
IIC170524-01	Bromide	50 mg/L	1 mL	50 mL	1 mg/L
IIC170524-01	O-Phosphate-P	50 mg/L	1 mL	50 mL	1 mg/L
IIC170524-02	Chloride	20 ug/mL	.25 mL	50 mL	1 mg/L
IIC170524-02	Fluoride	10 ug/mL	.25 mL	50 mL	.5 mg/L
IIC170524-02	Nitrate-N	10 ug/mL	.25 mL	50 mL	.5 mg/L
IIC170524-02	Nitrite-N	10 ug/mL	.25 mL	50 mL	.5 mg/L
IIC170524-02	Sulfate	40 ug/mL	.25 mL	50 mL	2 mg/L

Serial ID: WIC170524-05STD **Open/Reference Date:** 24-MAY-17 **Pipet Id :** CALVIN
Name: ICAUTOCAL5 **Received:** 24-MAY-17 **Solvent :** DI WATER
Type: Working **Expires:** 26-MAY-17
Employee: Mary Sherwood
Supplier: GEL
Description: IC Seven Anion Calibration Standard #5
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
IIC170524-01	Bromide	50 mg/L	2.5 mL	50 mL	2.5 mg/L
IIC170524-01	O-Phosphate-P	50 mg/L	2.5 mL	50 mL	2.5 mg/L
IIC170524-02	Chloride	20 ug/mL	.5 mL	50 mL	2 mg/L
IIC170524-02	Fluoride	10 ug/mL	.5 mL	50 mL	1 mg/L
IIC170524-02	Nitrate-N	10 ug/mL	.5 mL	50 mL	1 mg/L
IIC170524-02	Nitrite-N	10 ug/mL	.5 mL	50 mL	1 mg/L
IIC170524-02	Sulfate	40 ug/mL	.5 mL	50 mL	4 mg/L

Serial ID: WIC170524-06STD **Open/Reference Date:** 24-MAY-17 **Pipet Id :** MAX
Name: ICAUTOCAL6 **Received:** 24-MAY-17 **Solvent :** DI WATER
Type: Working **Expires:** 26-MAY-17
Employee: Mary Sherwood
Supplier: GEL

Description: IC Seven Anion Calibration Standard #6
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
IIC170524-01	Bromide	50 mg/L	6 mL	50 mL	3 mg/L
IIC170524-01	O-Phosphate-P	50 mg/L	6 mL	50 mL	3 mg/L
IIC170524-02	Chloride	20 ug/mL	5 mL	50 mL	10 mg/L
IIC170524-02	Fluoride	10 ug/mL	5 mL	50 mL	5 mg/L
IIC170524-02	Nitrate-N	10 ug/mL	5 mL	50 mL	5 mg/L
IIC170524-02	Nitrite-N	10 ug/mL	5 mL	50 mL	5 mg/L
IIC170524-02	Sulfate	40 ug/mL	5 mL	50 mL	20 mg/L

Serial ID: WIC170620-02CCV **Open/Reference Date:** 20-JUN-17
Name: IC-LCS/CCV **Received:** 20-JUN-17
Type: Working **Expires:** 22-JUN-17
Employee: Mary Sherwood
Supplier: GEL
Description: LCS Total Anion Working Standard - FIRST SOURCE
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UIC170524-2	Chloride	2000 mg/L	.5 mL	100 mL	5 mg/L
UIC170524-2	Fluoride	1000 mg/L	.5 mL	100 mL	2.5 mg/L
UIC170524-2	Nitrate-N	1000 mg/L	.5 mL	100 mL	2.5 mg/L
UIC170524-2	Nitrite-N	1000 mg/L	.5 mL	100 mL	2.5 mg/L
UIC170524-2	Sulfate	4000 mg/L	.5 mL	100 mL	10 mg/L
UIC170524-3	Bromide	500 mg/L	.5 mL	100 mL	1.25 mg/L
UIC170524-3	O-Phosphate-P	500 mg/L	.5 mL	100 mL	1.25 mg/L

Serial ID: WIC170620-02CVH **Open/Reference Date:** 20-JUN-17 **Balance Id :** B-001
Name: IC-CCVHIGH **Received:** 20-JUN-17 **Pipet Id :** IC-MAX2
Type: Working **Expires:** 22-JUN-17
Employee: Mary Sherwood
Supplier: GEL
Description: Total Anion Working Standard, High - 1st Source
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UIC170524-2	Chloride	2000 mg/L	375 uL	100 mL	7.5 mg/L
UIC170524-2	Fluoride	1000 mg/L	375 uL	100 mL	3.75 mg/L
UIC170524-2	Nitrate-N	1000 mg/L	375 uL	100 mL	3.75 mg/L
UIC170524-2	Nitrite-N	1000 mg/L	375 uL	100 mL	3.75 mg/L
UIC170524-2	Sulfate	4000 mg/L	375 uL	100 mL	15 mg/L
UIC170524-3	Bromide	500 mg/L	375 uL	100 mL	1.876 mg/L
UIC170524-3	O-Phosphate-P	500 mg/L	375 uL	100 mL	1.876 mg/L

Standard Logbook

Serial ID: WIC170620-02ICV **Open/Reference Date:** 20-JUN-17 **Pipet Id :** IC-MAX2
Name: IC-ICV **Received:** 20-JUN-17
Type: Working **Expires:** 22-JUN-17
Employee: Mary Sherwood
Supplier: GEL
Description: Total Anion Working ICV - 2nd Source
Comments: None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UIC170524-1	Chloride	2000 mg/L	250 uL	100 mL	5 mg/L
UIC170524-1	Fluoride	1000 mg/L	250 uL	100 mL	2.5 mg/L
UIC170524-1	Nitrate-N	1000 mg/L	250 uL	100 mL	2.5 mg/L
UIC170524-1	Nitrite-N	1000 mg/L	250 uL	100 mL	2.5 mg/L
UIC170524-1	Sulfate	4000 mg/L	250 uL	100 mL	10 mg/L
UIC170524-4	Bromide	500 mg/L	250 uL	100 mL	1.25 mg/L
UIC170524-4	O-Phosphate-P	500 mg/L	250 uL	100 mL	1.25 mg/L

Radiological Analysis

Case Narrative

Radiochemistry
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL425783
Work Order #: 425783

Product: **TC99_EIE_LSC: COMMON**
Analytical Method: TC99_EIE_LSC
Analytical Procedure: GL-RAD-A-059 REV# 5
Analytical Batch: 1675961

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
425783004	B39T90
1203815895	Method Blank (MB)
1203815896	425384006(B39TB7) Sample Duplicate (DUP)
1203815897	Laboratory Control Sample (LCS)

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

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Recounts
Sample 1203815897 (LCS) was recounted due to low recovery. The recount is reported.

Product: **TRITIUM_DIST_LSC: COMMON**
Analytical Method: TRITIUM_DIST_LSC
Analytical Procedure: GL-RAD-A-002 REV# 22
Analytical Batch: 1678920

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
425783002	B39T65
425783004	B39T90
1203822933	Method Blank (MB)
1203822934	425783002(B39T65) Sample Duplicate (DUP)
1203822935	425783002(B39T65) Matrix Spike (MS)
1203822936	Laboratory Control Sample (LCS)

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

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Miscellaneous Information

Additional Comments
The matrix spike, 1203822935 (B39T65MS), aliquot was reduced to conserve sample volume.

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

CPRC001 CH2MHill Plateau Remediation Company

Client SDG: GEL425783 GEL Work Order: 425783

The Qualifiers in this report are defined as follows:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

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: Heather M. McCarty **Name: Heather McCarty**

Date: 13 JUL 2017 **Title: Analyst II**

Sample Data Summary

Rad

Certificate of Analysis
Sample Summary

SDG Number:	**GEL425783**	**Client:**	**CPRC001**	**Project:**	**CPRC0S17006**
Lab Sample ID:	**425783002**	**Date Collected:**	**06/16/2017 14:50**	**Matrix:**	**WATER**
		Date Received:	**06/20/2017 09:00**		
Client ID:	**B39T65**			**Prep Basis:**	**"As Received"**
Batch ID:	**1678920**	**Method:**	**TRITIUM_DIST_LSC**	**SOP Ref:**	**GL-RAD-A-002**
Run Date:	**07/07/2017 12:00**	**Analyst:**	**BXM4**	**Instrument:**	**LSCSILVER**
Data File:	**T1678920.xls**	**Aliquot:**	**50 mL**	**Count Time:**	**50 min**
Prep Batch:	**1678920**	**Prep Method:**	**EPA 906.0 Modified**		
Prep Date:	**07/07/2017 08:43**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
10028-17-8	Tritium		21200	pCi/L	+/-656	4160	304	400

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

The MDC is a sample specific MDC.

Rad

Certificate of Analysis
Sample Summary

SDG Number:	**GEL425783**	**Client:**	**CPRC001**	**Project:**	**CPRC0S17006**
Lab Sample ID:	**425783004**	**Date Collected:**	**06/16/2017 13:04**	**Matrix:**	**WATER**
		Date Received:	**06/20/2017 09:00**		
Client ID:	**B39T90**			**Prep Basis:**	**"As Received"**
Batch ID:	**1675961**	**Method:**	**TC99_EIE_LSC**	**SOP Ref:**	**GL-RAD-A-059**
Run Date:	**07/04/2017 15:33**	**Analyst:**	**CXS7**	**Instrument:**	**LSCGREEN**
Data File:	**E1675961R.xls**	**Aliquot:**	**100 mL**	**Count Time:**	**20 min**
Prep Batch:	**1675961**	**Prep Method:**	**DOE EML HASL-300, Tc-02-**		
Prep Date:	**06/29/2017 13:52**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
14133-76-7	Technetium-99		2610	pCi/L	+/-69.3	298	38.3	50.0

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Technetium-99m Tracer	31200	33500	CPM	93.2	(30%-105%)

Comments:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

The MDC is a sample specific MDC.

Rad

Certificate of Analysis
Sample Summary

SDG Number:	**GEL425783**	**Client:**	**CPRC001**	**Project:**	**CPRC0S17006**
Lab Sample ID:	**425783004**	**Date Collected:**	**06/16/2017 13:04**	**Matrix:**	**WATER**
		Date Received:	**06/20/2017 09:00**		
Client ID:	**B39T90**			**Prep Basis:**	**"As Received"**
Batch ID:	**1678920**	**Method:**	**TRITIUM_DIST_LSC**	**SOP Ref:**	**GL-RAD-A-002**
Run Date:	**07/07/2017 12:52**	**Analyst:**	**BXM4**	**Instrument:**	**LSCSILVER**
Data File:	**T1678920.xls**	**Aliquot:**	**50 mL**	**Count Time:**	**50 min**
Prep Batch:	**1678920**	**Prep Method:**	**EPA 906.0 Modified**		
Prep Date:	**07/07/2017 08:43**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
10028-17-8	Tritium		4210	pCi/L	+/-329	878	302	400

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).
The MDC is a sample specific MDC.

Quality Control Summary

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

QC Summary

Report Date: July 13, 2017

Client : **CH2MHill Plateau Remediation Company**
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352

Contact: **Mr. Scot Fitzgerald**

Workorder: **425783**

Parmname	NOM	Sample	Qual	QC	Units	QC Criteria		Range	Analyst	Date Time
Rad Liquid Scintillation										
Batch 1675961										
QC1203815895 MB										
Technetium-99			U	-1.46	pCi/L				CXS7	07/04/1715:54
Uncert:				+/-23.2						
TPU:				+/-23.2						
**Technetium-99m Tracer	33500			29300	CPM	REC:	88	(30%-105%)		
QC1203815896 425384006 DUP										
Technetium-99	U	17.5	U	35.4	pCi/L					07/04/1716:16
Uncert:		+/-20.8		+/-25.1		RPD:	0	N/A		
TPU:		+/-20.9		+/-25.4		RER:	1.07	(0-2)		
**Technetium-99m Tracer	33500	33400		28900	CPM	REC:	86	(30%-105%)		
QC1203815897 LCS										
Technetium-99	861			713	pCi/L	REC:	83	(80%-120%)		07/05/1707:49
Uncert:				+/-52.0						
TPU:				+/-94.7						
**Technetium-99m Tracer	33500			26600	CPM	REC:	80	(30%-105%)		
Batch 1678920										
QC1203822933 MB										
Tritium			U	138	pCi/L				BXM4	07/08/1705:57
Uncert:				+/-180						
TPU:				+/-181						
QC1203822934 425783002 DUP										
Tritium		21200		20800	pCi/L					07/08/1706:49
Uncert:		+/-656		+/-652		RPD:	2	(0% - 20%)		
TPU:		+/-4160		+/-4070		RER:	0.147	(0-2)		
QC1203822935 425783002 MS										
Tritium	4480	21200		24900	pCi/L	REC:	81	(75%-125%)		07/08/1707:41
Uncert:		+/-656		+/-1030						
TPU:		+/-4160		+/-4920						
QC1203822936 LCS										
Tritium	2230			2270	pCi/L	REC:	102	(80%-120%)		07/08/1708:33
Uncert:				+/-270						
TPU:				+/-516						

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

- * Duplicate analysis not within control limits
- + Correlation coefficient for Method of Standard Additions (MSA) is < 0.995
- < Sample is below the EPA guidance level for Reactive Releasable Cyanide and/or Reactive Releasable Sulfide
- > Result greater than quantifiable range or greater than upper limit of the analysis range
- A The TIC is a suspected aldol-condensation product
- B The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).

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

QC Summary

Workorder: **425783**

Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date	Time

B	The analyte was detected in both the associated QC blank and in the sample.
B	The associated QC sample blank has a result >= 2X the MDA and, after corrections, result is >= MDA for this sample
C	Analyte has been confirmed by GC/MS analysis
C	Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.
D	Results are reported from a diluted aliquot of sample.
E	Concentration exceeds the calibration range of the instrument
E	Reported value is estimated due to interferences. See comment in narrative.
J	The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated
M	Duplicate precision not met.
N	Spike Sample recovery is outside control limits.
P	Aroclor target analyte with greater than 25% difference between column analyses.
S	Reported value determined by the Method of Standard Additions (MSA)
T	Spike and/or spike duplicate sample recovery is outside control limits.
U	Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
UX	Gamma Spectroscopy--Uncertain identification
W	Post-digestion spike recovery for GFAA out of control limit. Sample absorbency < 50% of spike absorbency.
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Z	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
o	Analyte failed to recover within LCS limits (0rganics only)

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

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

Liquid Scintillation Raw Data

Batch 1675961 Check-list

This check-list was completed on 06-JUL-17 by Lyndsey Pace
This batch was reviewed by Elizabeth Krouse on 06-JUL-17 and Lyndsey Pace on 06-JUL-17.

Batch ID: 1675961 **Product:** LSC99TCL **Description:** Technetium-99 GL-RAD-A-059

#	Criteria	Yes	No	Comments
Preparation Information				
1	Was the preservation correct for this analysis?	Yes		
2	Were any of the samples classified as radioactive?		No	
Internal Checklist Information				
3	Have client special requirements have been reviewed and met?	Yes		
4	Has a hit notification been completed?		No	
5	Have sample historical results been reviewed for this batch?	Yes		
6	Has an aliquot correction been completed for this batch?		No	
7	Are instrument source checks within limits?	Yes		
Technical Information				
8	Were all the samples prepared/analyzed within the required holding time period?	Yes		
9	Were all tracer/carrier recoveries within the required acceptance limits?	Yes		
Quality Control (QC) Information				
10	Did all QC samples meet the required acceptance limits?	Yes		
11	Has the method required detection limit been met?	Yes		
Miscellaneous Information				
12	Are sample-specific MDA/MDC calculated and reported?	Yes		

Prep Logbook

CPRC 7/12/17 20

The Determination of Technetium-99 Using Analytical Grade 1X8 Resin

Batch ID: **1675961**
Analyst: Christina Sanchez (CXS7)
Method: DOE EML HASL-300, Tc-02-RC Modified
Lab SOP: GL-RAD-A-059 REV# 5
Instrument: LSC-33010896

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units
LCS	1203815897	Technetium-99 SPIKE	1621-B	.1	mL

Sample ID	Prep Date	Aliquot (mL)
425384005	29-JUN-2017 13:52	100
425384006	29-JUN-2017 13:52	100
425451001	29-JUN-2017 13:52	100
425451002	29-JUN-2017 13:52	100
425451003	29-JUN-2017 13:52	100
425454001	29-JUN-2017 13:52	100
425454002	29-JUN-2017 13:52	100
425454003	29-JUN-2017 13:52	100
425529001	29-JUN-2017 13:52	100
425529002	29-JUN-2017 13:52	100
425606001	29-JUN-2017 13:52	100
425727001	29-JUN-2017 13:52	100
425783004	29-JUN-2017 13:52	100
1203815895 MB	29-JUN-2017 13:52	100
1203815896 DUP (425384006)	29-JUN-2017 13:52	100
1203815897 LCS	29-JUN-2017 13:52	100

Reagent/Solvent Lot ID	Description	Amount
2525916.30	Hydrogen Peroxide 30% ACS Reagent	2 mL
2533150	Quenching Agent	20 uL
2534431	RL-0.1M Hydrochloric Acid	10 mL
2539268	RL-0.01M Nitric Acid	5 mL
2545604	Ecoscint GL Scintilation Solution	15 mL
2565047	RL-0.1M Nitric Acid	5 mL
TC2158-A	tracer	.5 mL

Comments:
Spike Pipet ID: RAD-LSC-2272418
Tracer Pipet ID: RAD-LSC-4099802

July 17, 2017

E1675961R

Technetium-99 Liquid

Filename : TC99.XLS
File type : Excel
Version # : 1.2.16

Tracer S/N : TC2158-A
Tracer Exp Date : 6/30/2017
Tracer Volume Added: 0.50

Batch : 1675961
Analyst : CHR02061
Prep Date : 6/29/2017
Tc-99 Method Uncertainty : 0.0556

Procedure Code : LSC99TCL
Parmname : Technetium-99
Required MDA : 50 pCi/L
Tc-99 Abundance : 1.00
Halflife of Tc-99 : 211100 years

Geometry:
15mL Ecoscint GL/5mL DI H2O/AG 1x8 Resin

Samp Sample Characteristics					Tracer Calculations					
Pos.	Sample ID	Sample Aliquot L	Sample Aliquot StDev. L	Sample Date/Time	Tracer Ref. Activity (CPM)	Tracer Ref. Count Uncertainty (%)	Tracer Samp. Activity (CPM)	Tracer Samp. Count Uncertainty (%)	Tracer Aliquot (mL)	Tracer Aliquot StDev. (mL)
1	425384005.1	0.1000	1.1370E-05	6/13/2017 9:06	33476	0.95%	32159	0.95%	0.5	0.001000
2	425384006.1	0.1000	1.1370E-05	6/13/2017 10:45	33476	0.95%	33440	0.93%	0.5	0.001000
3	425451001.1	0.1000	1.1370E-05	6/13/2017 8:50	33476	0.95%	30285	0.95%	0.5	0.001000
4	425451002.1	0.1000	1.1370E-05	6/13/2017 9:00	33476	0.95%	31559	0.93%	0.5	0.001000
5	425451003.1	0.1000	1.1370E-05	6/13/2017 9:00	33476	0.95%	32126	0.95%	0.5	0.001000
6	425454001.1	0.1000	1.1370E-05	6/13/2017 10:00	33476	0.95%	31481	0.94%	0.5	0.001000
7	425454002.1	0.1000	1.1370E-05	6/13/2017 9:45	33476	0.95%	28855	0.96%	0.5	0.001000
8	425454003.1	0.1000	1.1370E-05	6/13/2017 7:45	33476	0.95%	32285	0.95%	0.5	0.001000
9	425529001.1	0.1000	1.1370E-05	6/13/2017 10:45	33476	0.95%	30494	0.95%	0.5	0.001000
10	425529002.1	0.1000	1.1370E-05	6/13/2017 10:30	33476	0.95%	30959	0.95%	0.5	0.001000
11	425606001.1	0.1000	1.1370E-05	6/14/2017 14:01	33476	0.95%	27552	0.94%	0.5	0.001000
12	425727001.1	0.1000	1.1370E-05	6/15/2017 13:40	33476	0.95%	29769	0.94%	0.5	0.001000
13	425783004.1	0.1000	1.1370E-05	6/16/2017 13:04	33476	0.95%	31207	0.94%	0.5	0.001000
14	1203815895.1	0.1000	1.1370E-05	6/29/2017 0:00	33476	0.95%	29309	0.95%	0.5	0.001000
15	1203815896.1	0.1000	1.1370E-05	6/13/2017 10:45	33476	0.95%	28862	0.94%	0.5	0.001000
16	1203815897.1	0.1000	1.1370E-05	6/29/2017 0:00	33476	0.95%	26624	0.94%	0.5	0.001000

Pipet, 0.1 ml Stdev : +/- 0.000200 ml
Pipet, 0.5 ml Stdev : +/- 0.001000 ml
Pipet, 1 ml Stdev : +/- 0.002000 ml

Analytical SOP: GL-RAD-A-059
Instrument SOP: GL-RAD-I-004

Count raw Data													Calibration Data						
Pos.	Rack Position #	Counting Time (min.)	Quench#	Gross cpm	Bkg cpm	Bkg Count Time (min.)	Bkg Quench#	Corrected Bkg cpm	Count Start Date/Time	Sample Decay	Calculated Sample Recovery %	Sample Recovery Error %	Counted on	Calibration Date	Calibration Due Date	Detector Efficiency (cpm/dpm)	Detector Efficiency Error (cpm/dpm)	Background Position #	Background Count Start Date/Time
1	11-2	20	188.4	21.2	16.50	20	165.1	17.0662	7/4/2017 11:17	1.000	96.1%	0.73%	LSCGREEN	7/1/2017	6/30/2018	0.5667	0.00792	11-1	7/4/2017 10:56
2	11-3	20	181.3	19.2	16.50	20	165.1	16.9763	7/4/2017 11:38	1.000	99.9%	0.72%	LSCGREEN	7/1/2017	6/30/2018	0.5725	0.00792	11-1	7/4/2017 10:56
3	11-4	20	188.9	24.05	16.50	20	165.1	17.0703	7/4/2017 12:00	1.000	90.5%	0.73%	LSCGREEN	7/1/2017	6/30/2018	0.5662	0.00792	11-1	7/4/2017 10:56
4	11-5	20	189.9	24.15	16.50	20	165.1	17.0777	7/4/2017 12:21	1.000	94.3%	0.72%	LSCGREEN	7/1/2017	6/30/2018	0.5652	0.00792	11-1	7/4/2017 10:56
5	11-6	20	192	23.25	16.50	20	165.1	17.0899	7/4/2017 12:42	1.000	96.0%	0.73%	LSCGREEN	7/1/2017	6/30/2018	0.5631	0.00792	11-1	7/4/2017 10:56
6	11-7	20	194.8	16.6	16.50	20	165.1	17.0996	7/4/2017 13:04	1.000	94.0%	0.73%	LSCGREEN	7/1/2017	6/30/2018	0.5600	0.00792	11-1	7/4/2017 10:56
7	11-8	20	187.8	18.85	16.50	20	165.1	17.0609	7/4/2017 13:25	1.000	86.2%	0.73%	LSCGREEN	7/1/2017	6/30/2018	0.5672	0.00792	11-1	7/4/2017 10:56
8	11-9	20	191.2	16.15	16.50	20	165.1	17.0858	7/4/2017 13:46	1.000	96.4%	0.73%	LSCGREEN	7/1/2017	6/30/2018	0.5639	0.00792	11-1	7/4/2017 10:56
9	11-10	20	194	17.25	16.50	20	165.1	17.0976	7/4/2017 14:07	1.000	91.1%	0.73%	LSCGREEN	7/1/2017	6/30/2018	0.5609	0.00792	11-1	7/4/2017 10:56
10	11-11	20	192.2	17.55	16.50	20	165.1	17.0909	7/4/2017 14:29	1.000	92.5%	0.73%	LSCGREEN	7/1/2017	6/30/2018	0.5629	0.00792	11-1	7/4/2017 10:56
11	11-12	20	190	48.25	16.50	20	165.1	17.0784	7/4/2017 14:50	1.000	82.3%	0.73%	LSCGREEN	7/1/2017	6/30/2018	0.5651	0.00792	11-1	7/4/2017 10:56
12	35-1	20	186.9	16.3	16.50	20	165.1	17.0522	7/4/2017 15:12	1.000	88.9%	0.73%	LSCGREEN	7/1/2017	6/30/2018	0.5680	0.00792	11-1	7/4/2017 10:56
13	35-2	20	193.6	320	16.50	20	165.1	17.0963	7/4/2017 15:33	1.000	93.2%	0.73%	LSCGREEN	7/1/2017	6/30/2018	0.5614	0.00792	11-1	7/4/2017 10:56
14	35-3	20	187.8	16.9	16.50	20	165.1	17.0609	7/4/2017 15:54	1.000	87.6%	0.73%	LSCGREEN	7/1/2017	6/30/2018	0.5672	0.00792	11-1	7/4/2017 10:56
15	35-4	20	193.6	20.9	16.50	20	165.1	17.0963	7/4/2017 16:16	1.000	86.2%	0.73%	LSCGREEN	7/1/2017	6/30/2018	0.5614	0.00792	11-1	7/4/2017 10:56
16	61-1	15	197.9	85.87	15.20	15	164	15.8509	7/5/2017 7:49	1.000	79.5%	0.73%	LSCGREEN	7/1/2017	6/30/2018	0.5564	0.00792	61-3	7/5/2017 8:05

E1675961R

Notes:
1 - Results are decay corrected to Sample Date/Time
2 - Reference date for Spike Activity (dpm/ml) is the batch Prep Date
3 - Spike Nominals are decay corrected to Sample Date/Time

* - RPD changed to 0% due to sample & dup activity below MDA

Spike S/N : N/A
Spike Exp Date : N/A
Spike Activity (dpm/ml): N/A
Spike Volume Added: N/A

LCS S/N : 1621-B
LCS Exp Date : 1/5/2018
LCS Activity (dpm/ml): 1911.37
LCS Volume Added (ml): 0.10

Results

Pos.	Decision Level pCi/L	Critical Level pCi/L	Required MDA pCi/L	MDA pCi/L	Sample Act. Conc. pCi/L	Sample Act. Error %	Net Count Rate CPM	Net Count Rate Error CPM	2 SIGMA Counting Uncertainty pCi/L	2 SIGMA Total Prop. Uncertainty pCi/L	Sample QC	Sample Type	RPD	RER	Nominal pCi/L	Recovery
1	25.1867	17.7821	50	36.8053	**34.2055**	33.48%	4.1338	1.3832	22.4335	22.7525		SAMPLE				
2	23.9129	16.8827	50	34.9469	**17.5159**	60.49%	2.2237	1.3449	20.7638	20.8546		SAMPLE				
3	26.7710	18.9005	50	39.1202	**61.3794**	20.57%	6.9797	1.4339	24.7148	25.6366		SAMPLE				
4	25.7397	18.1724	50	37.6129	**59.7847**	20.33%	7.0723	1.4358	23.7886	24.6966		SAMPLE				
5	25.3908	17.9261	50	37.1026	**51.3493**	23.08%	6.1601	1.4202	23.2038	23.8936		SAMPLE				
6	26.0597	18.3984	50	38.0797	**-4.2731**	259.83%	-0.4996	1.2981	21.7608	21.7608		SAMPLE				
7	28.0395	19.7961	50	40.9742	**16.4833**	74.91%	1.7891	1.3400	24.1973	24.2664		SAMPLE				
8	25.2252	17.8092	50	36.8608	**-7.7509**	137.76%	-0.9358	1.2891	20.9269	20.9270		SAMPLE				
9	26.8583	18.9622	50	39.2467	**1.3437**	859.76%	0.1524	1.3105	22.6435	22.6440		SAMPLE				
10	26.3586	18.6094	50	38.5168	**3.9729**	286.65%	0.4591	1.3161	22.3213	22.3257		SAMPLE				
11	29.4888	20.8194	50	43.0914	**301.8814**	5.90%	31.1716	1.8073	34.3060	47.9538		SAMPLE				
12	27.1320	19.1554	50	39.6484	**-6.7078**	171.68%	-0.7522	1.2914	22.5704	22.5704		SAMPLE				
13	26.2234	18.5139	50	38.3190	**2607.2665**	1.73%	302.9037	4.1055	69.2626	297.5572		SAMPLE				
14	27.6050	19.4893	50	40.3393	**-1.4596**	809.78%	-0.1609	1.3031	23.1665	23.1666		MB				
15	28.3541	20.0182	50	41.4325	**35.4004**	36.25%	3.8037	1.3783	25.1432	25.4483	425384006.1	DUP	* 0.0%	1.0654		
16	34.4831	24.3454	50	50.7267	**712.8058**	3.87%	70.0191	2.6041	51.9601	94.6523		LCS			860.9779	82.8%

July 17, 2017

ASSAY 30-Jun-17 11:45:29

Protocol	id	13	TC99_2
Time	limit	500	
Count	limit	10000	
Isotope	Tc-99m		
Protocol	date	8-Feb-17	13:59:22
Run	id.	61	

POS	RACK	BATCH	TIME	COUNTS	CPM	ERROR	% RECOVERY	COUNT TIME
1	63	1	20	11114	33475.8	0.95		11:45:36
2	63	2	21	11200	32159.2	0.95	96.07	11:46:08
3	63	3	21	11632	33439.8	0.93	99.89	11:46:41
4	63	4	22	11029	30285	0.95	90.47	11:47:14
5	63	5	22	11479	31559.2	0.93	94.27	11:47:48
6	73	6	21	11136	32125.7	0.95	95.97	11:48:35
7	73	7	22	11421	31481.1	0.94	94.04	11:49:08
8	73	8	23	10936	28854.5	0.96	86.20	11:49:42
9	73	9	21	11155	32285.1	0.95	96.44	11:50:17
10	73	10	22	11029	30494.3	0.95	91.09	11:50:50
11	99	11	22	11179	30958.6	0.95	92.48	11:51:38
12	99	12	25	11298	27552.2	0.94	82.30	11:52:12
13	99	13	23	11215	29769.4	0.94	88.93	11:52:49
14	99	14	22	11231	31206.9	0.94	93.22	11:53:24
15	99	15	23	11018	29308.7	0.95	87.55	11:53:58
16	60	16	24	11304	28861.8	0.94	86.22	11:54:46
17	60	17	26	11287	26623.6	0.94	79.53	11:55:22

END OF ASSAY

167596l

ID: TC-99 4 JUL 2017 11:33

USER: 9 COMMENT:GREEN

PRESET TIME :	20.00						
DATA CALC :	CPM	H#	:YES	SAMPLE REPEATS:	1	PRINTER	: STD
COUNT BLANK :	NO	IC#	: NO	REPLICATES :	1	RS232	:EDIT
TWO PHASE :	NO	AQC	: NO	CYCLE REPEATS :	1	DISK	: OFF
SCINTILLATOR:	LIQUID	LUMEX	: NO	LOW SAMPLE REJ:	0	RWM LIST	: OFF
LOW LEVEL :	NO	HALF LIFE CORRECTION DATE:				none	

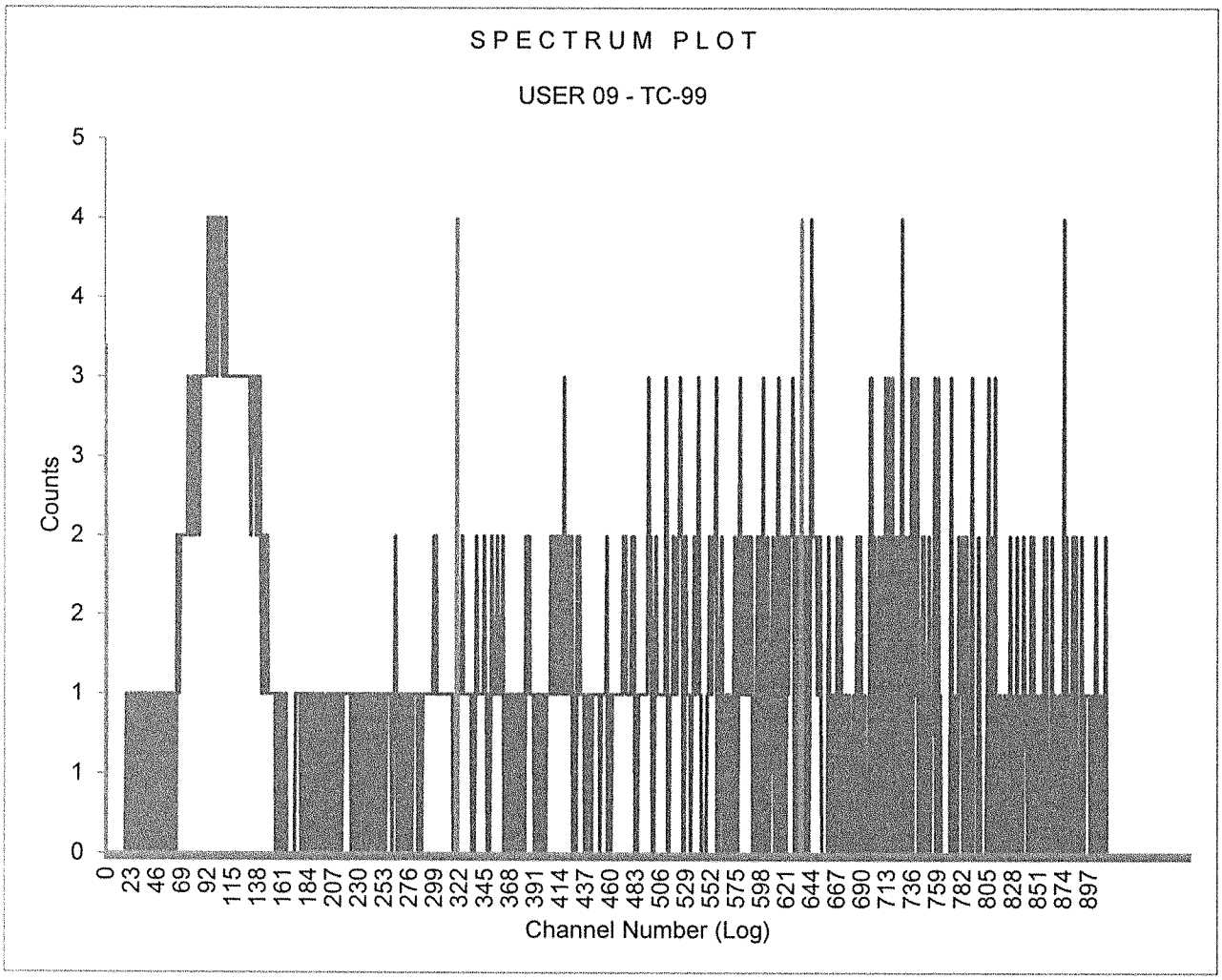
CHAN: 320.0 - 635.0 %ERROR: 2.00 FACTOR: 1.000000 BKG. SUB: 0
CHAN: 0.0 - 900.0 %ERROR: 2.00 FACTOR: 1.000000 BKG. SUB: 0

ALPHA-BETA DISCRIMINATION: NO

SAM NO	POS	TIME MIN	H#	WIND1 CPM	WIND1 %ERROR	WIND2 CPM	WIND2 %ERROR	LUMEX %	ELAPSED TIME
Rf 1	11-1	20.00	165.1	16.50	11.01	45.00	6.67	22.18	20.97
1 2	11-2	20.00	188.4	21.20	9.71	48.55	6.42	9.61	42.30
2 3	11-3	20.00	181.3	19.20	10.21	46.50	6.56	8.91	63.58
3 4	11-4	20.00	188.9	24.05	9.12	49.80	6.34	8.63	84.91
4 5	11-5	20.00	189.9	24.15	9.10	49.35	6.37	9.24	106.23
5 6	11-6	20.00	192.0	23.25	9.27	46.55	6.55	7.77	127.52
6 7	11-7	20.00	194.8	16.60	10.98	40.45	7.03	10.92	148.84
7 8	11-8	20.00	187.8	18.85	10.30	43.15	6.81	8.21	170.14
8 9	11-9	20.00	191.2	16.15	11.13	39.50	7.12	9.49	191.44
9 10	11-10	20.00	194.0	17.25	10.77	41.85	6.91	9.73	212.76
10 11	11-11	20.00	192.2	17.55	10.68	42.05	6.90	10.18	234.08
11 12	11-12	20.00	190.0	48.25	6.44	88.05	4.77	5.98	255.43
12 13	35-1	20.00	186.9	16.30	11.08	42.80	6.84	11.90	276.86
13 14	35-2	20.00	193.6	320.00	2.50	426.50	2.17	1.32	298.20
14 15	35-3	20.00	187.8	16.90	10.88	41.35	6.95	11.79	319.54
15 16	35-4	20.00	193.6	20.90	9.78	46.05	6.59	10.35	340.88
~~16 17~~	~~35-5~~	~~20.00~~	~~194.1~~	~~73.20~~	~~5.23~~	~~117.80~~	~~4.12~~	~~4.52~~	~~362.22~~

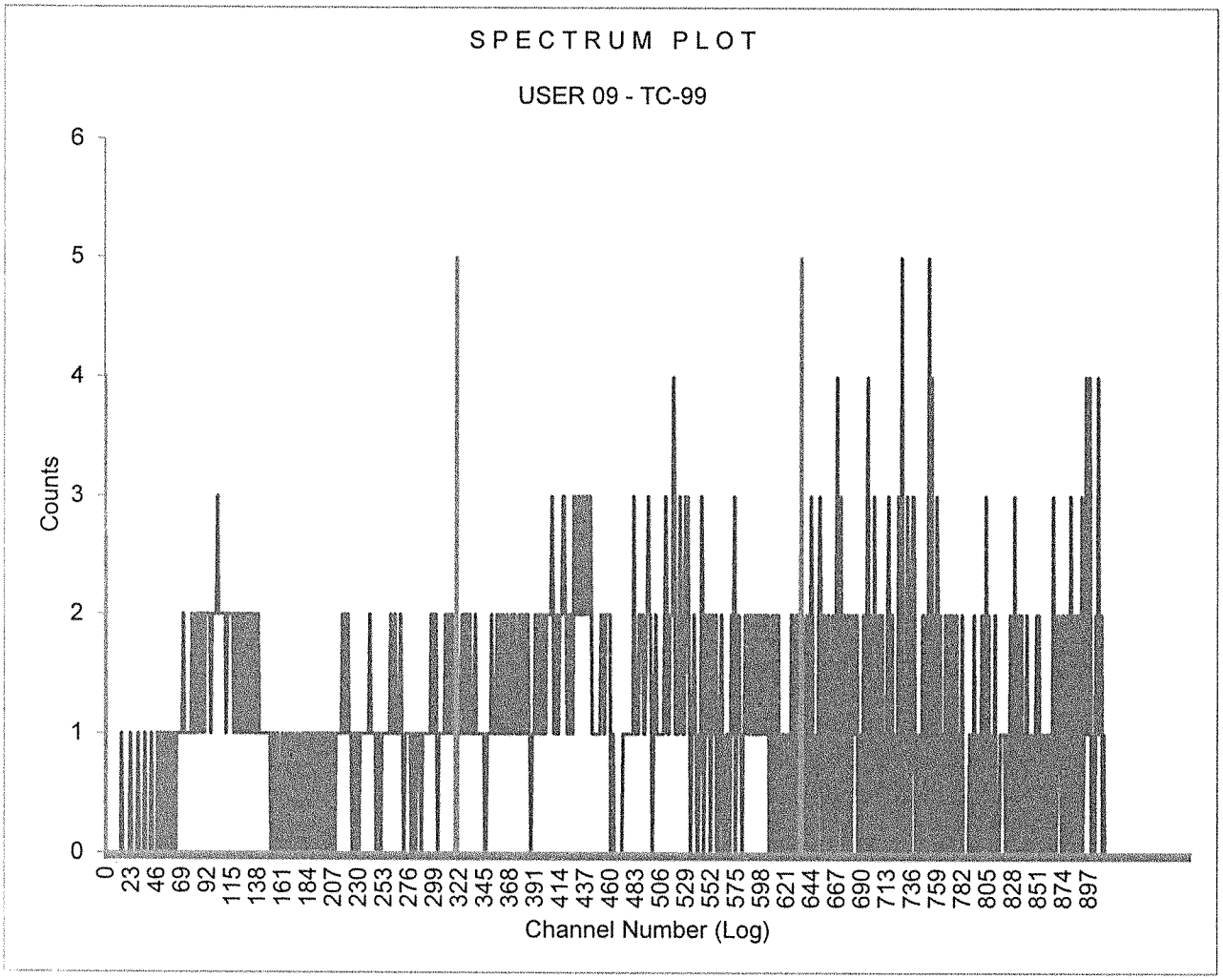
JP 7/6/17

Sample Count Start Time:	4 Jul 2017 10:56:08		
Data Capture Date	04 Jul 2017 11:16:32		
User Filename	S09070411-1A.XLS		
	U09070411-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	1	11-1	20.00
H#, Total Counts:	165.1	909	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



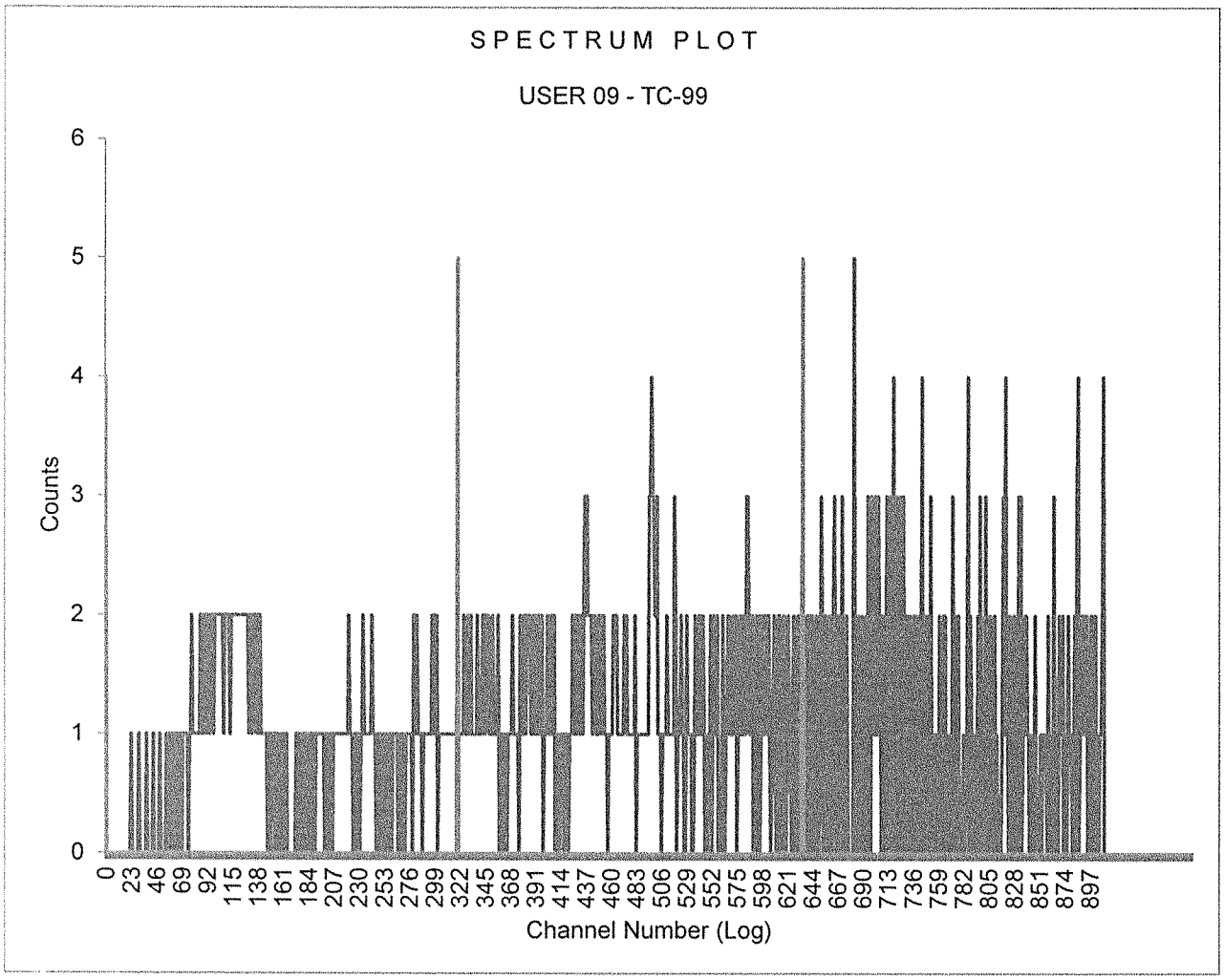
July 17, 2017

Sample Count Start Time:	4 Jul 2017 11:17:28		
Data Capture Date	04 Jul 2017 11:37:51		
User Filename	S09070411-2A.XLS		
	U09070411-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	2	11-2	20.00
H#, Total Counts:	188.4	986	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



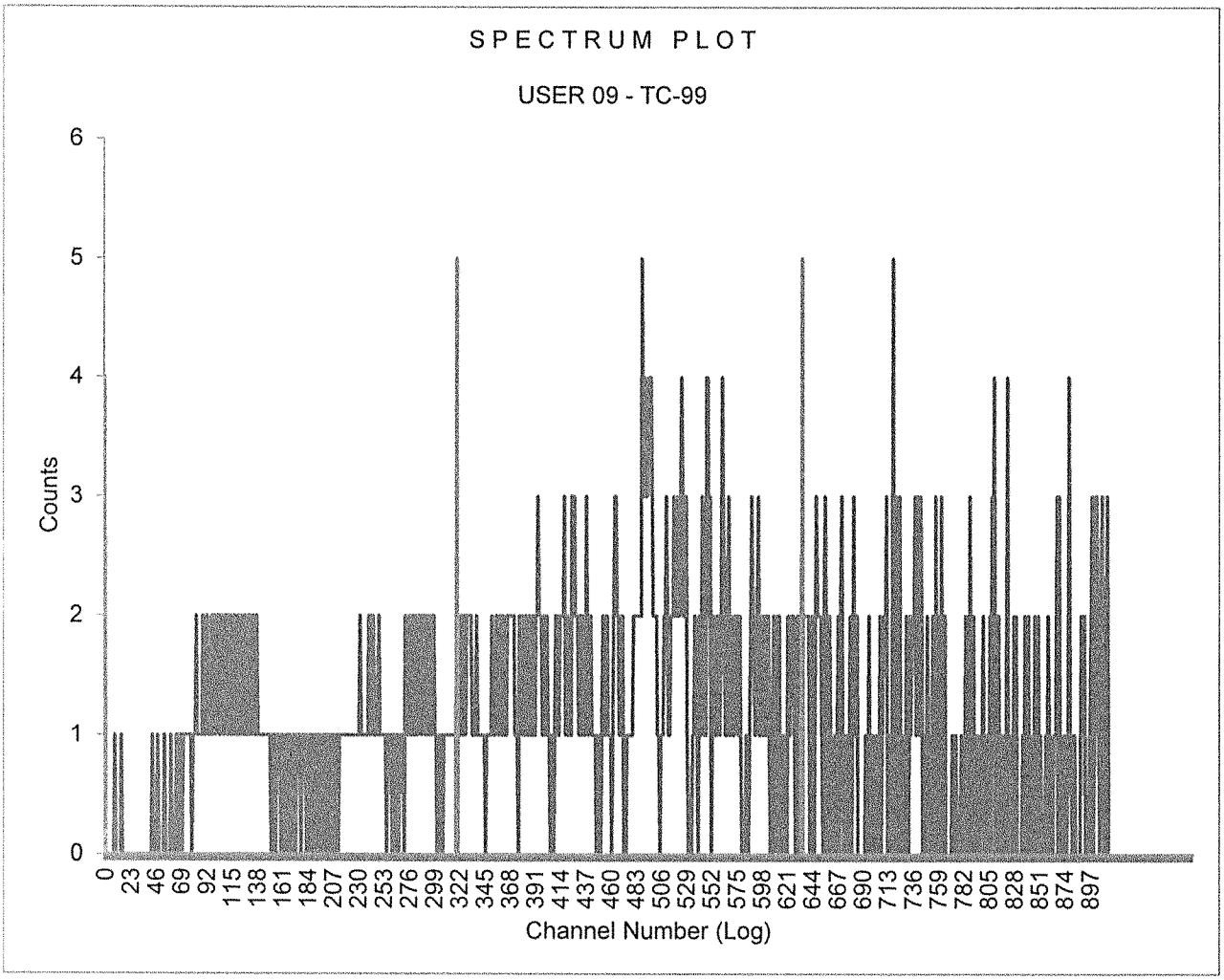
July 17, 2017

Sample Count Start Time:	4 Jul 2017 11:38:45		
Data Capture Date	04 Jul 2017 11:59:09		
User Filename	S09070411-3A.XLS		
	U09070411-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	3	11-3	20.00
H#, Total Counts:	181.3	942	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



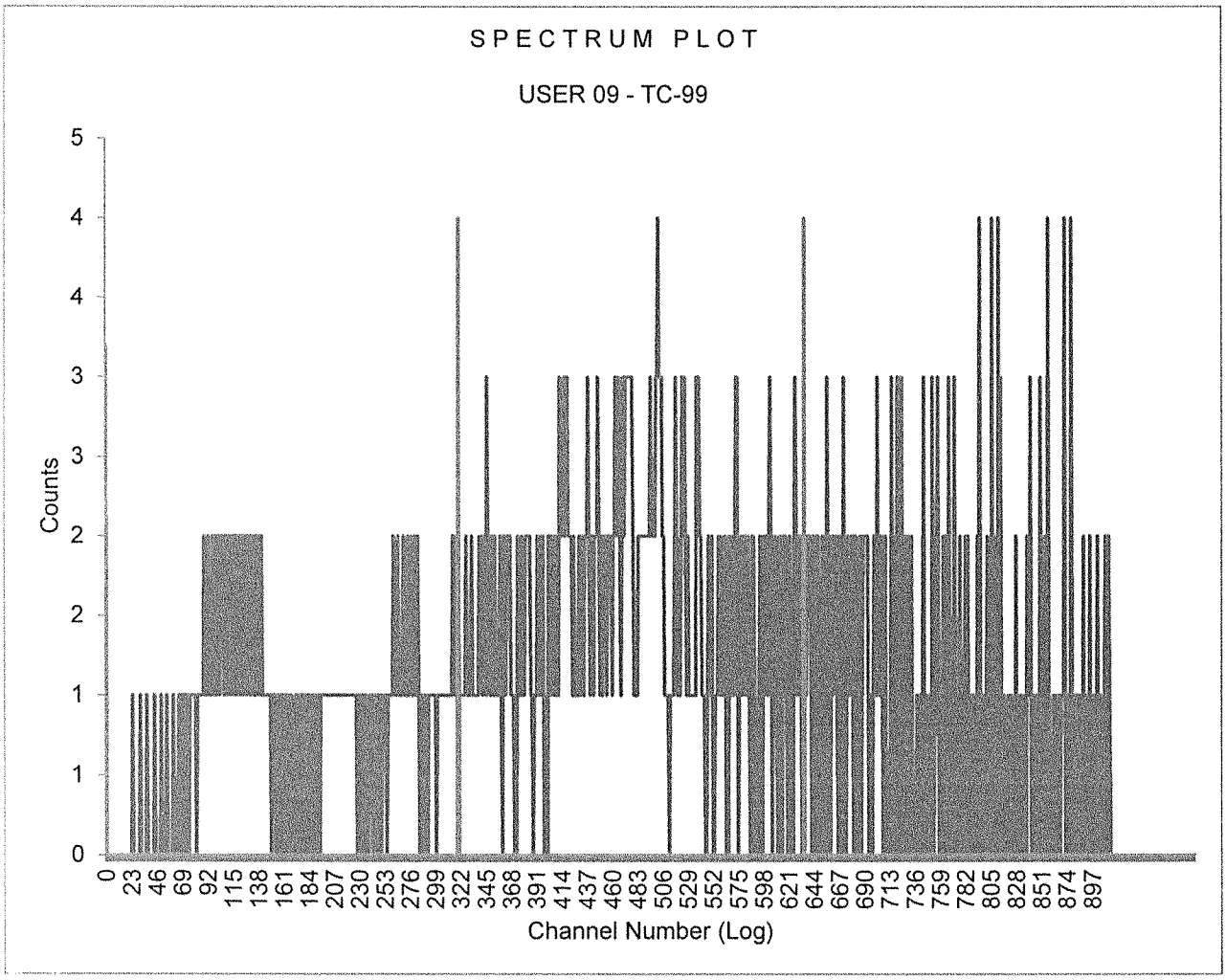
July 17, 2017

Sample Count Start Time:	4 Jul 2017 12:00:05		
Data Capture Date	04 Jul 2017 12:20:28		
User Filename	S09070411-4A.XLS		
	U09070411-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	4	11-4	20.00
H#, Total Counts:	188.9	1017	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



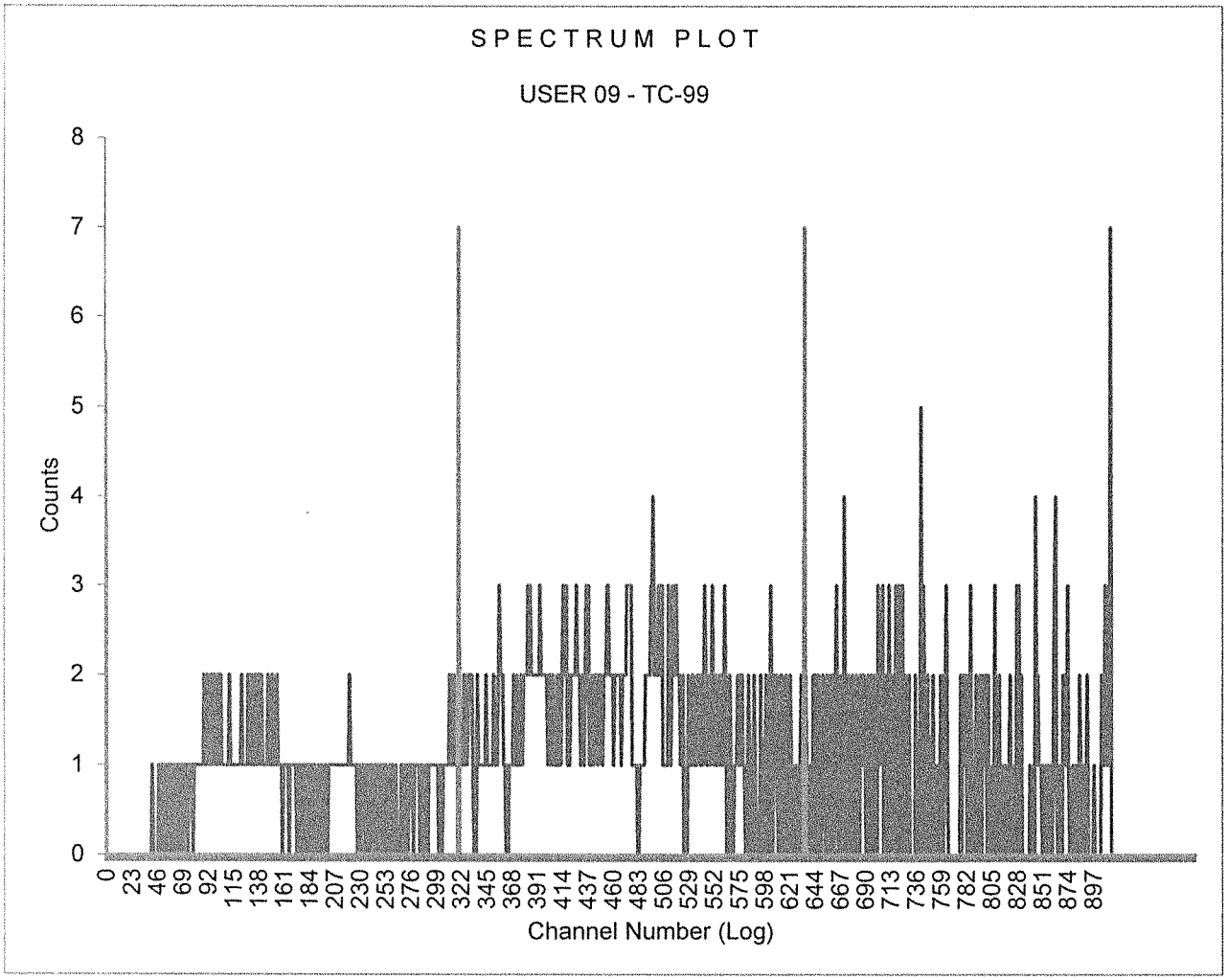
July 17, 2017

Sample Count Start Time:	4 Jul 2017 12:21:24		
Data Capture Date	04 Jul 2017 12:41:47		
User Filename	S09070411-5A.XLS		
	U09070411-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	5	11-5	20.00
H#, Total Counts:	189.9	999	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



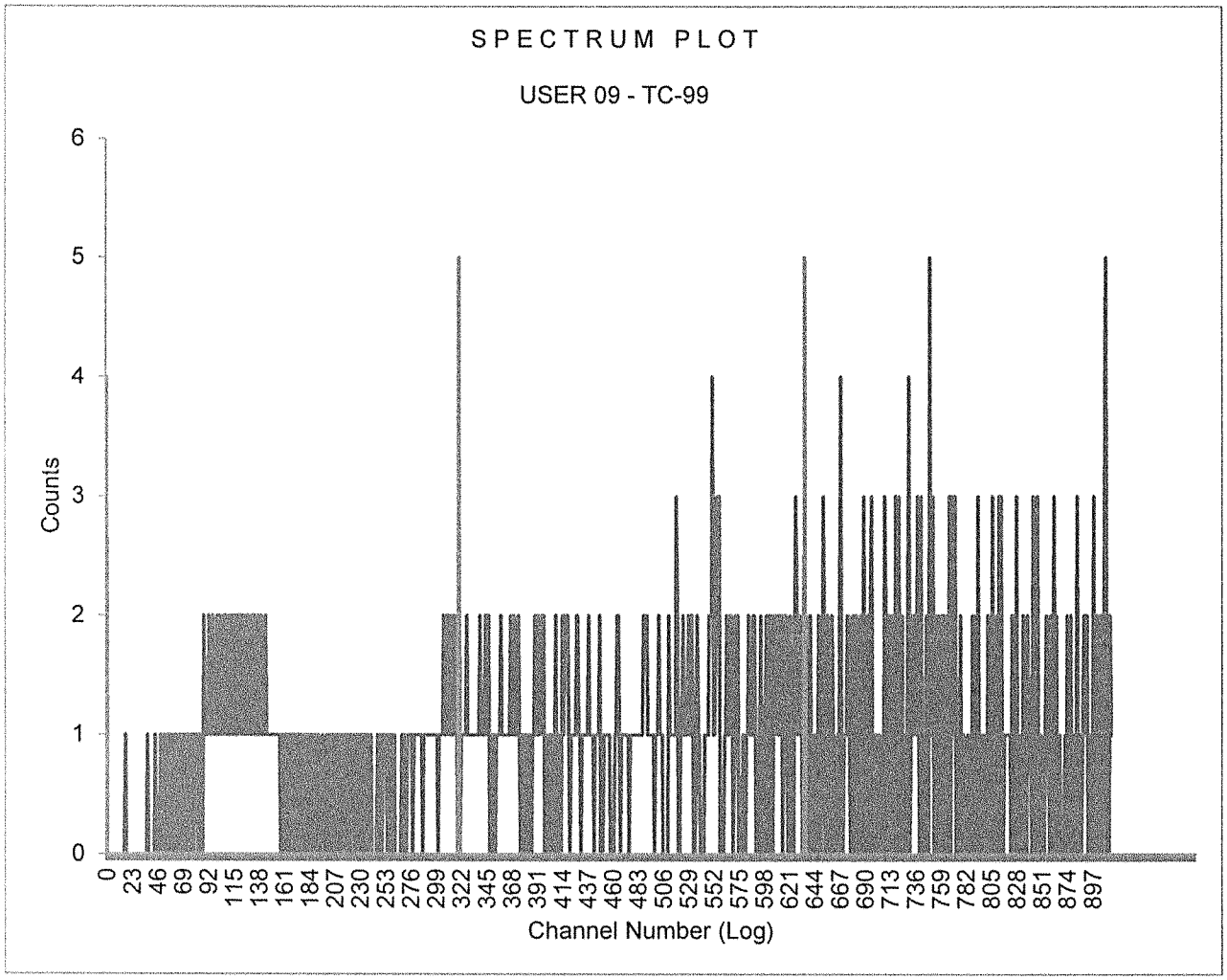
July 17, 2017

Sample Count Start Time:	4 Jul 2017 12:42:41		
Data Capture Date	04 Jul 2017 13:03:05		
User Filename	S09070411-6A.XLS		
	U09070411-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	6	11-6	20.00
H#, Total Counts:	192.0	954	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



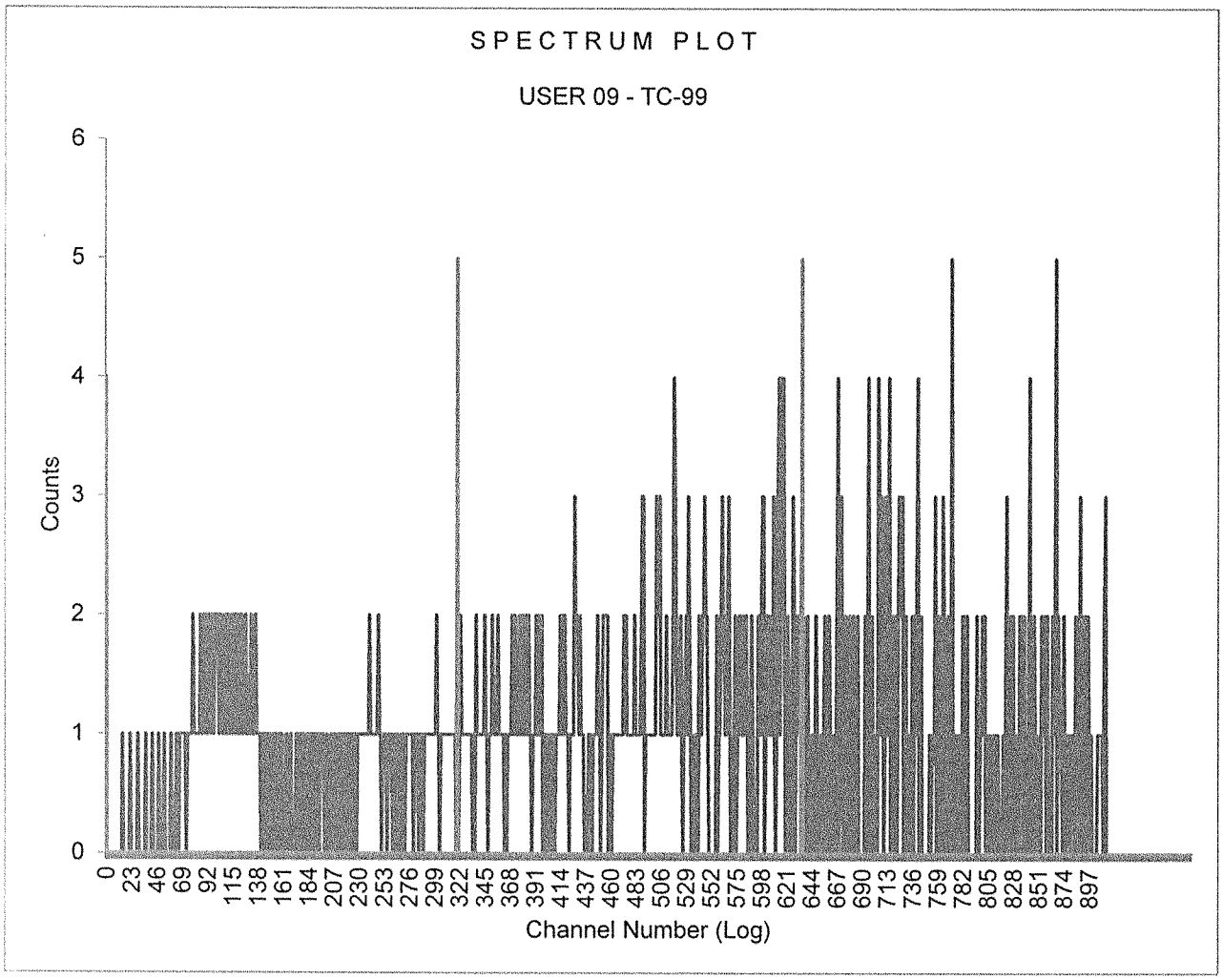
July 17, 2017

Sample Count Start Time:	4 Jul 2017 13:04:00		
Data Capture Date	04 Jul 2017 13:24:24		
User Filename	S09070411-7A.XLS		
	U09070411-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	7	11-7	20.00
H#, Total Counts:	194.8	832	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



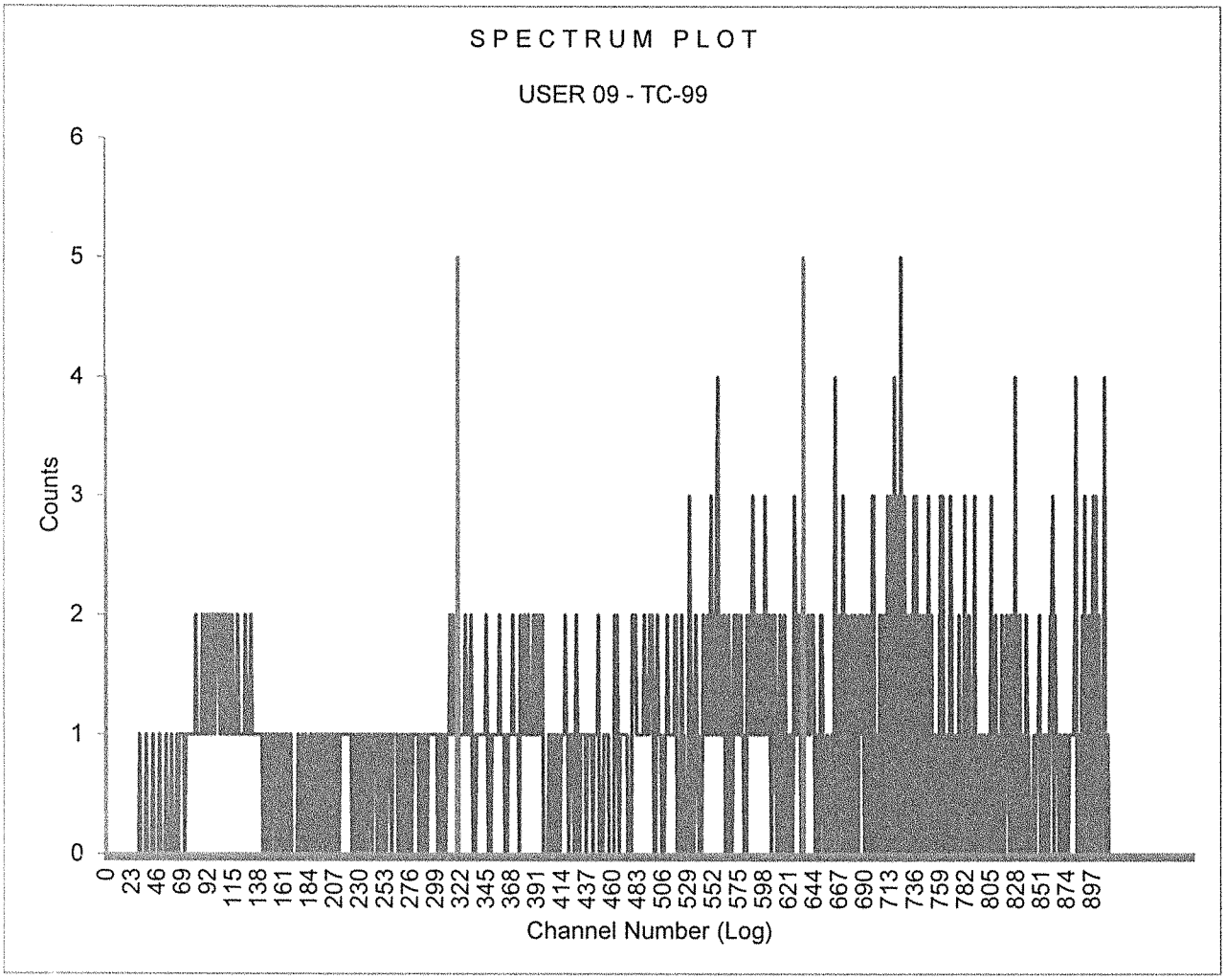
July 17, 2017

Sample Count Start Time:	4 Jul 2017 13:25:18		
Data Capture Date	04 Jul 2017 13:45:42		
User Filename	S09070411-8A.XLS		
	U09070411-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	8	11-8	20.00
H#, Total Counts:	187.8	873	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



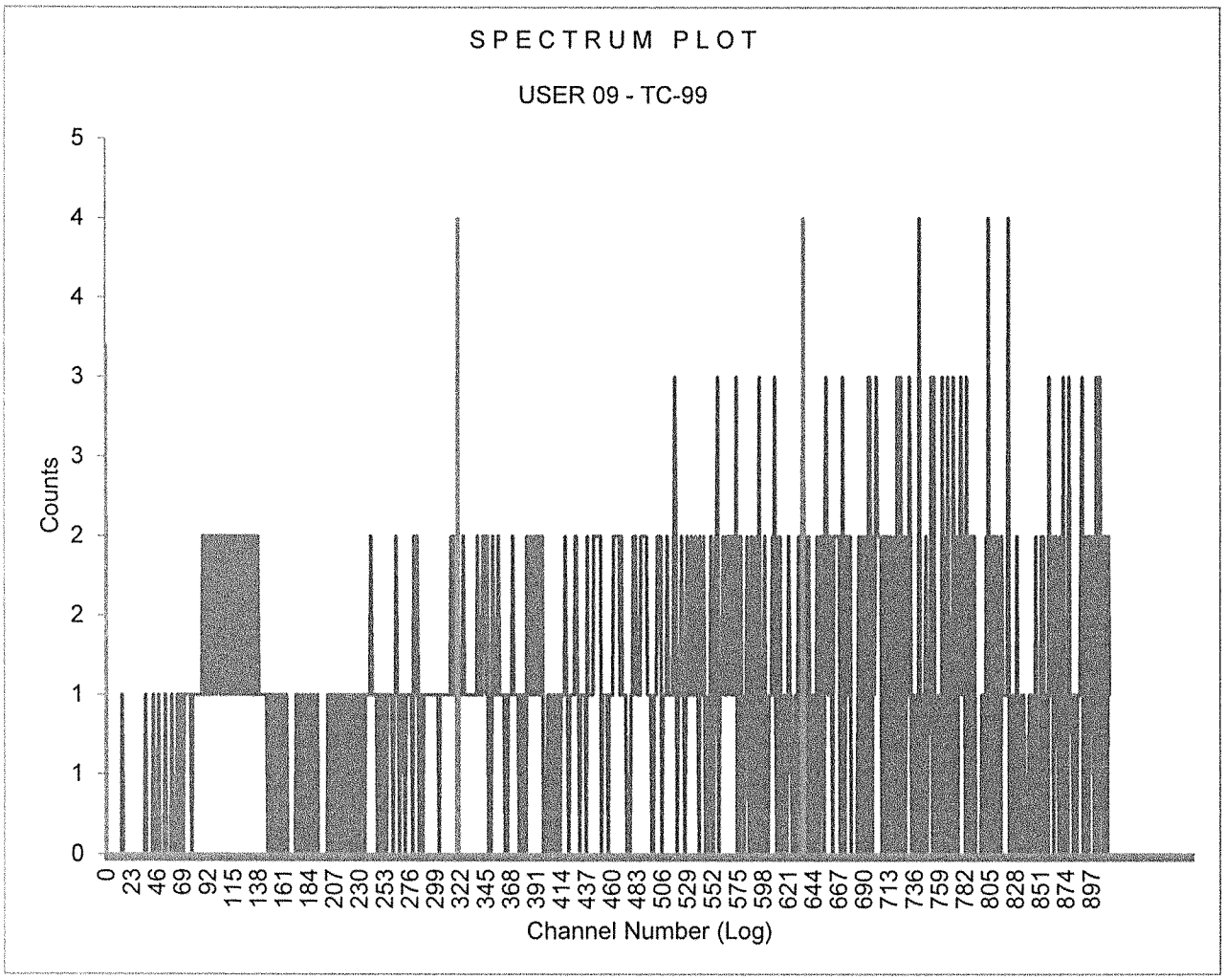
July 17, 2017

Sample Count Start Time:	4 Jul 2017 13:46:36		
Data Capture Date	04 Jul 2017 14:07:00		
User Filename	S09070411-9A.XLS		
	U09070411-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	9	11-9	20.00
H#, Total Counts:	191.2	804	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



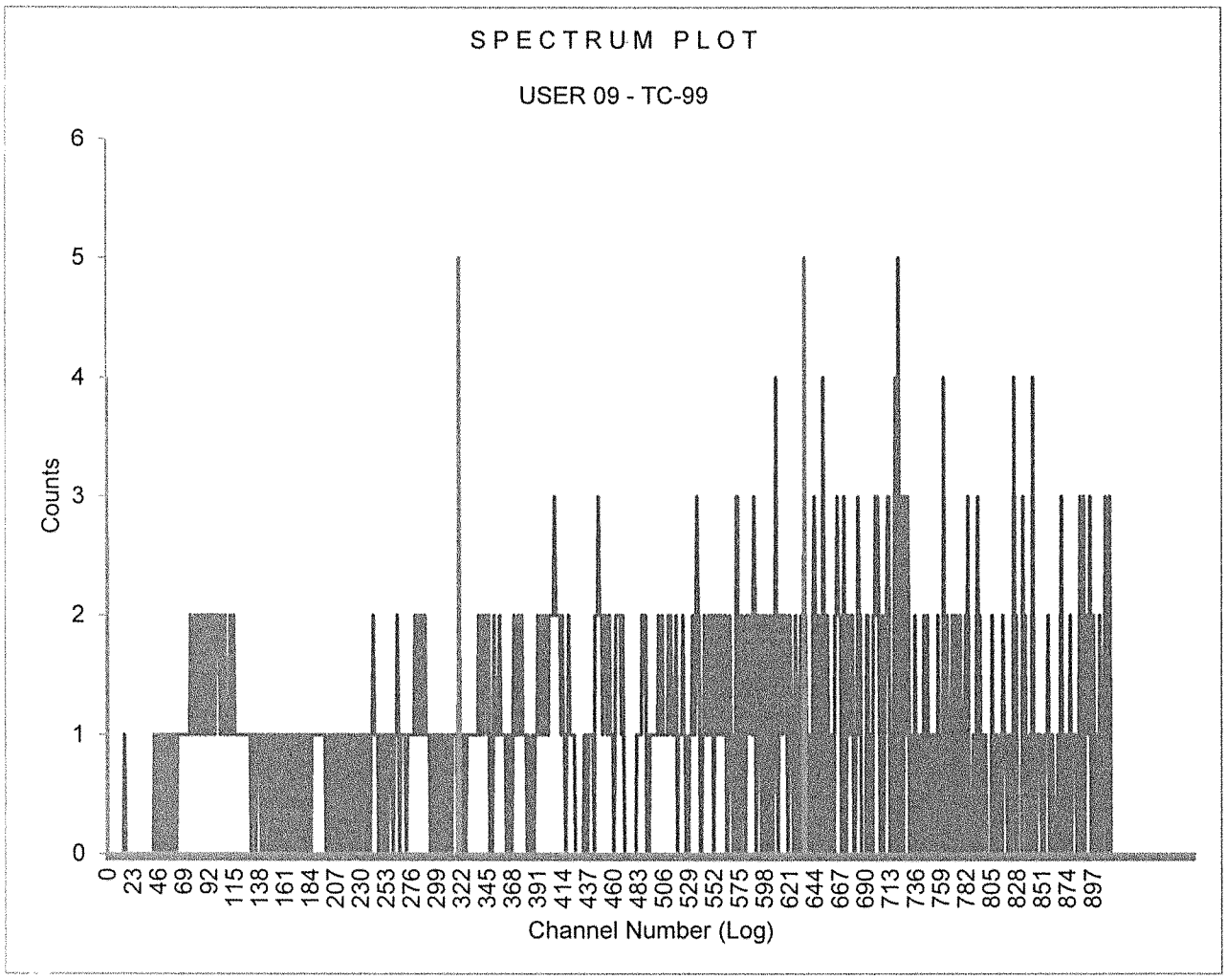
July 17, 2017

Sample Count Start Time:	4 Jul 2017 14:07:56		
Data Capture Date	04 Jul 2017 14:28:19		
User Filename	S09070411-10A.XLS		
	U09070411-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	10	11-10	20.00
H#, Total Counts:	194.0	855	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	

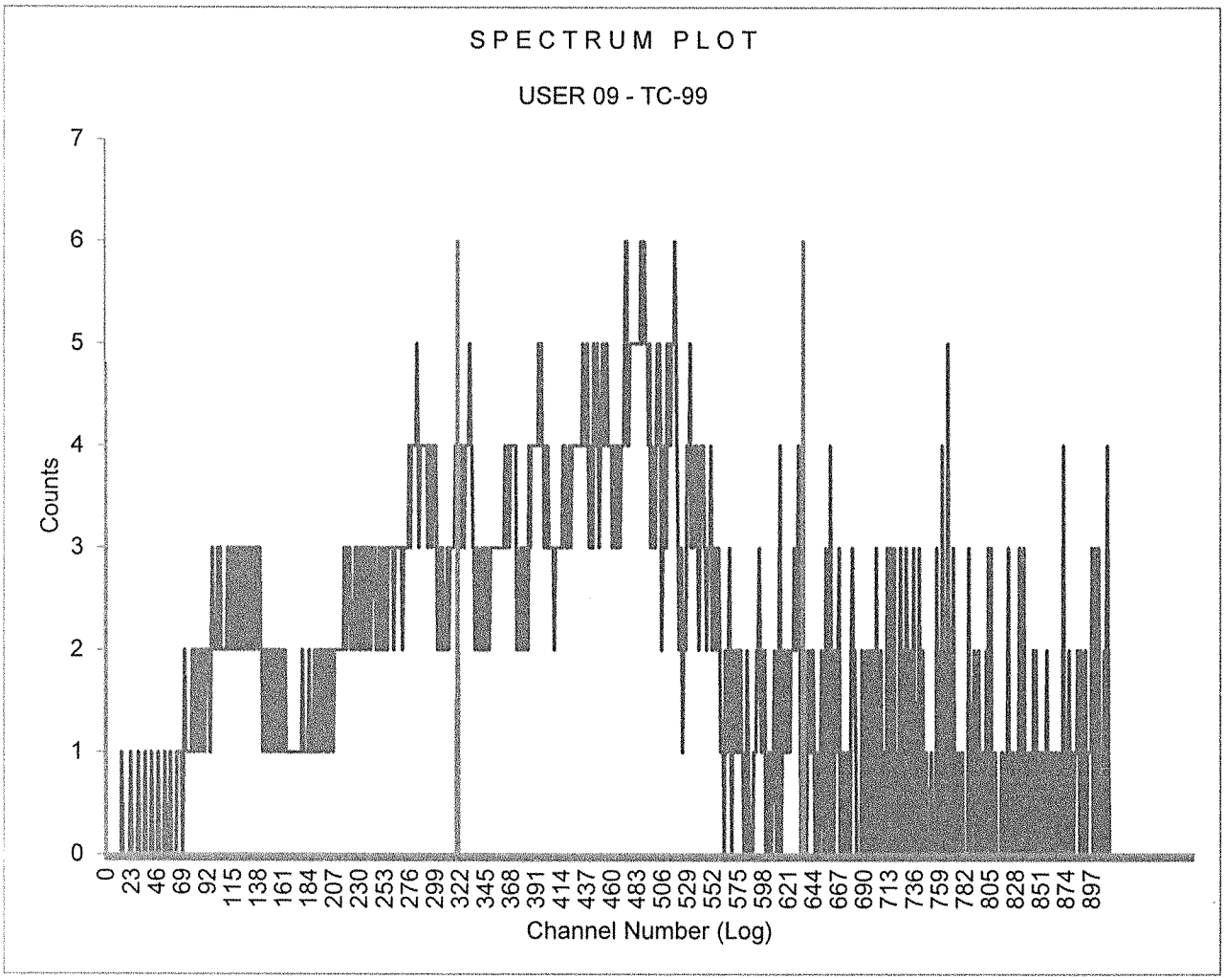


July 17, 2017

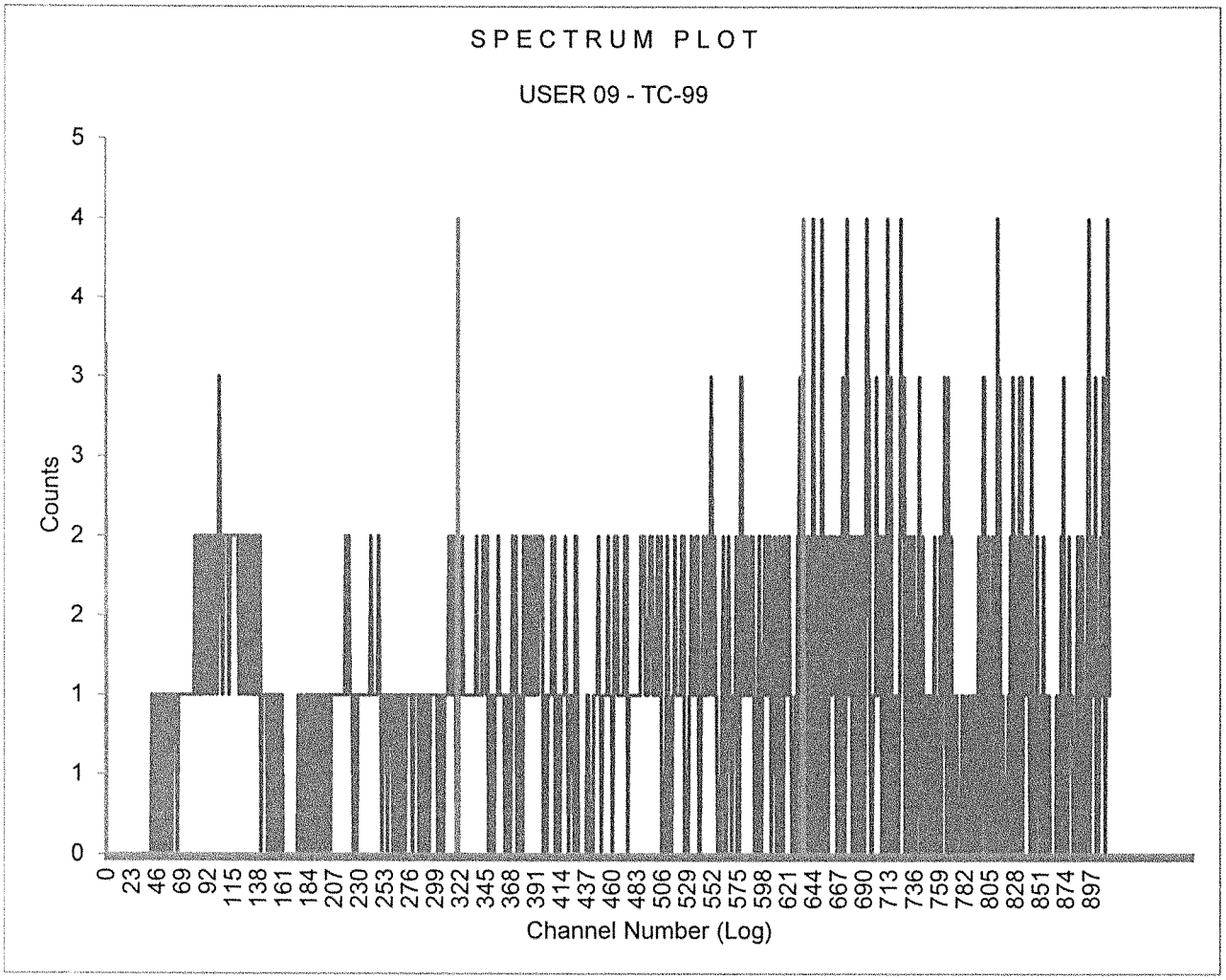
Sample Count Start Time:	4 Jul 2017 14:29:15		
Data Capture Date	04 Jul 2017 14:49:39		
User Filename	S09070411-11A.XLS		
	U09070411-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	11	11-11	20.00
H#, Total Counts:	192.2	858	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



Sample Count Start Time:	4 Jul 2017 14:50:36		
Data Capture Date	04 Jul 2017 15:10:59		
User Filename	S09070411-12A.XLS		
	U09070411-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	12	11-12	20.00
H#, Total Counts:	190.0	1777	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	

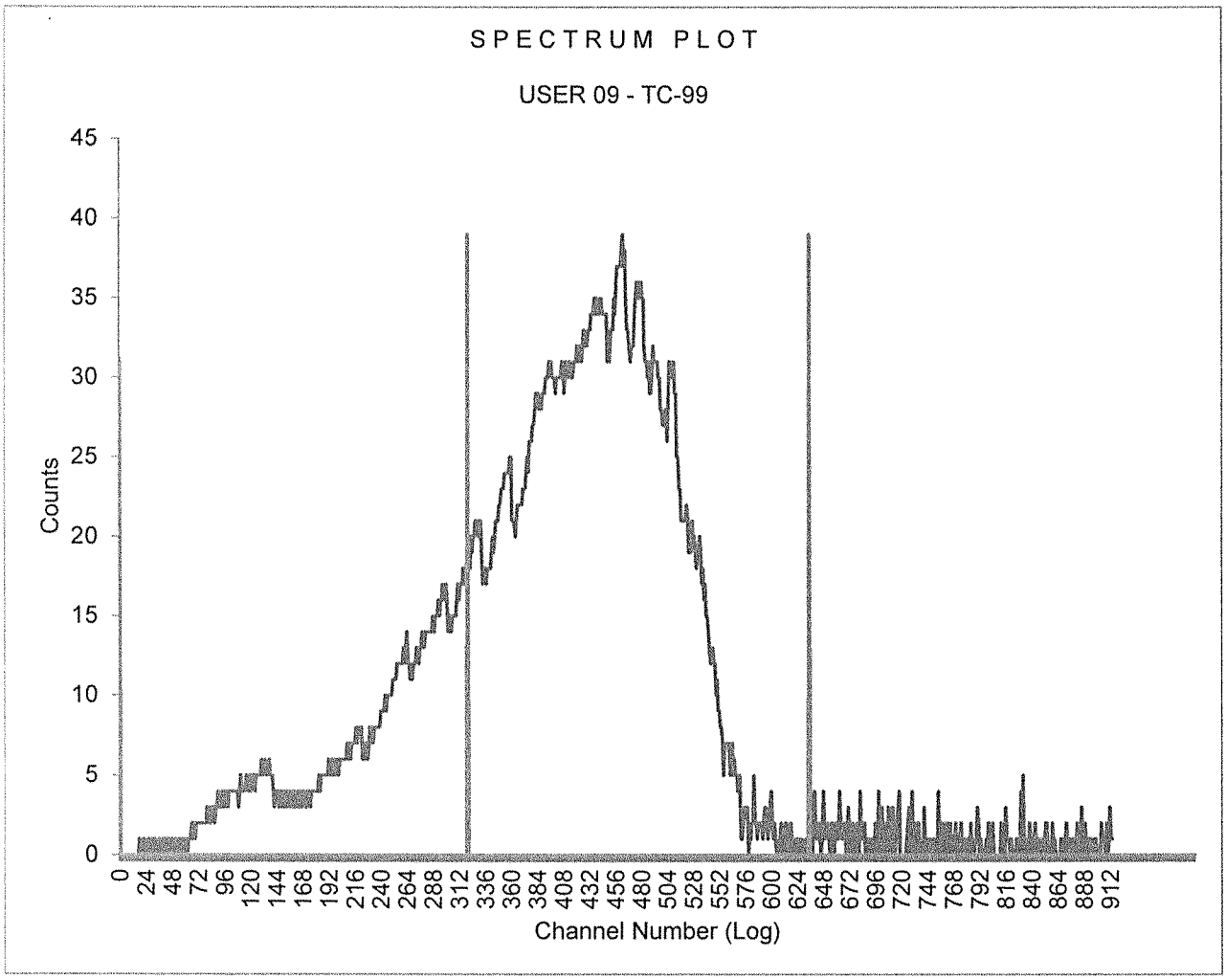


Sample Count Start Time:	4 Jul 2017 15:12:02		
Data Capture Date	04 Jul 2017 15:32:26		
User Filename	S09070435-1A.XLS		
	U09070411-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	13	35-1	20.00
H#, Total Counts:	186.9	876	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



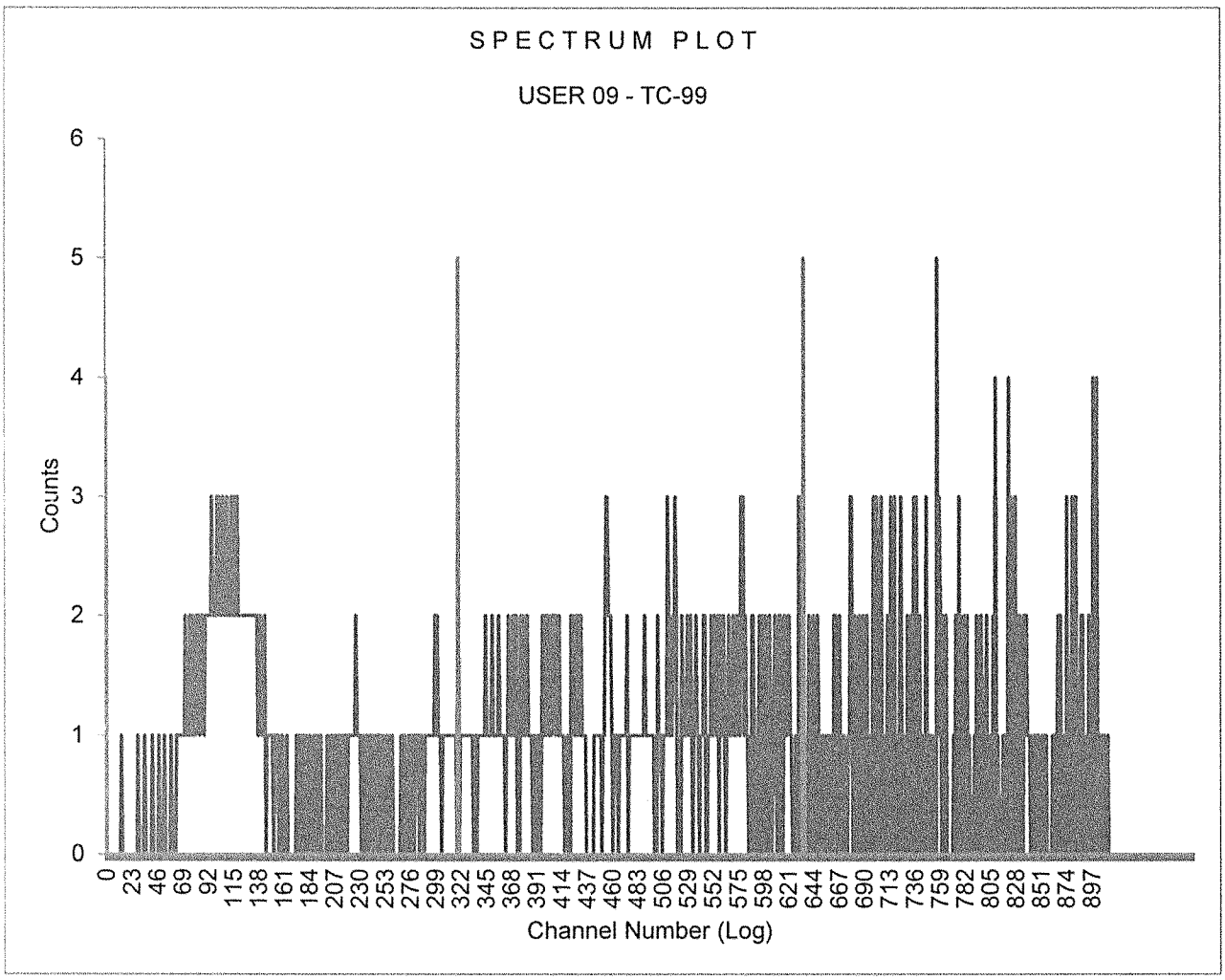
July 17, 2017

Sample Count Start Time:	4 Jul 2017 15:33:22		
Data Capture Date	04 Jul 2017 15:53:46		
User Filename	S09070435-2A.XLS		
	U09070411-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	14	35-2	20.00
H#, Total Counts:	193.6	8543	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	

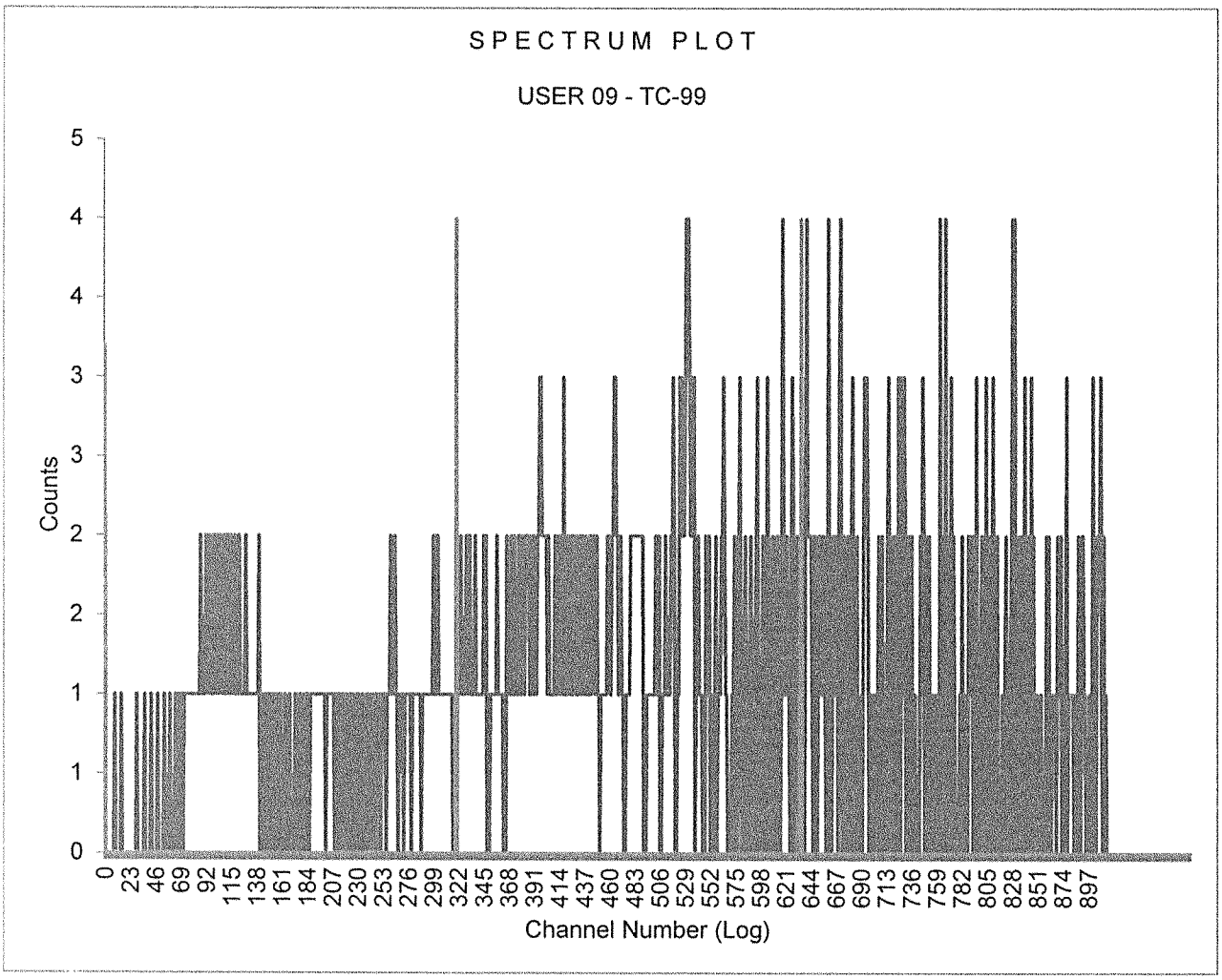


July 17, 2017

Sample Count Start Time:	4 Jul 2017 15:54:42		
Data Capture Date	04 Jul 2017 16:15:06		
User Filename	S09070435-3A.XLS		
	U09070411-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	15	35-3	20.00
H#, Total Counts:	187.8	835	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



Sample Count Start Time:	4 Jul 2017 16:16:03		
Data Capture Date	04 Jul 2017 16:36:27		
User Filename	S09070435-4A.XLS		
	U09070411-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	16	35-4	20.00
H#, Total Counts:	193.6	938	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



1675961

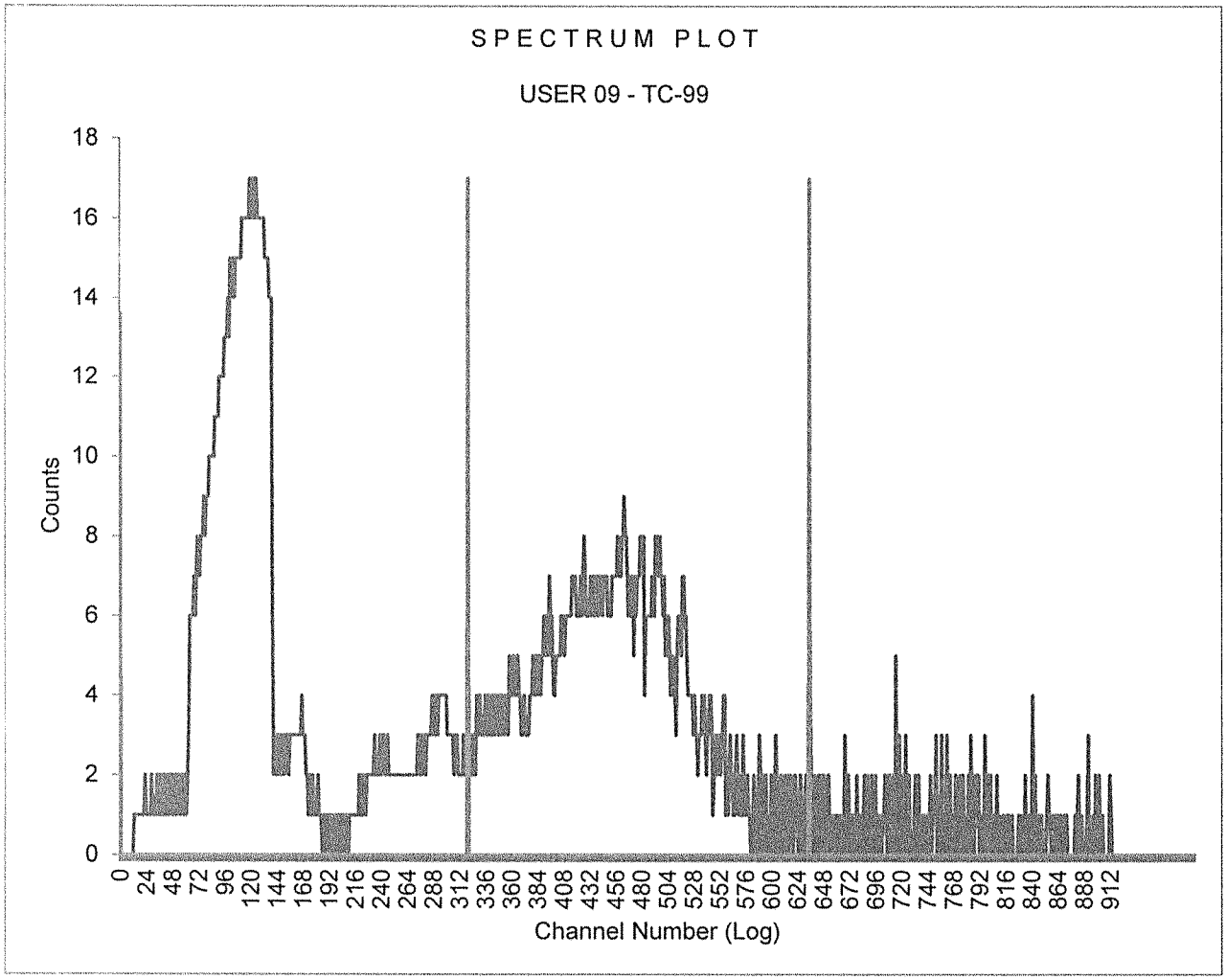
ID: TC-99 5 JUL 2017 08:27
USER: 9 COMMENT:GREEN
PRESET TIME : 15.00
DATA CALC : CPM H# :YES SAMPLE REPEATS: 1 PRINTER : STD
COUNT BLANK : NO IC# : NO REPLICATES : 1 RS232 :EDIT
TWO PHASE : NO AQC : NO CYCLE REPEATS : 1 DISK : OFF
SCINTILLATOR: LIQUID LUMEX: NO LOW SAMPLE REJ: 0 RWM LIST : OFF
LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

CHAN: 320.0 - 635.0 %ERROR: 2.00 FACTOR: 1.000000 BKG. SUB: 0
CHAN: 0.0 - 900.0 %ERROR: 2.00 FACTOR: 1.000000 BKG. SUB: 0

ALPHA-BETA DISCRIMINATION: NO

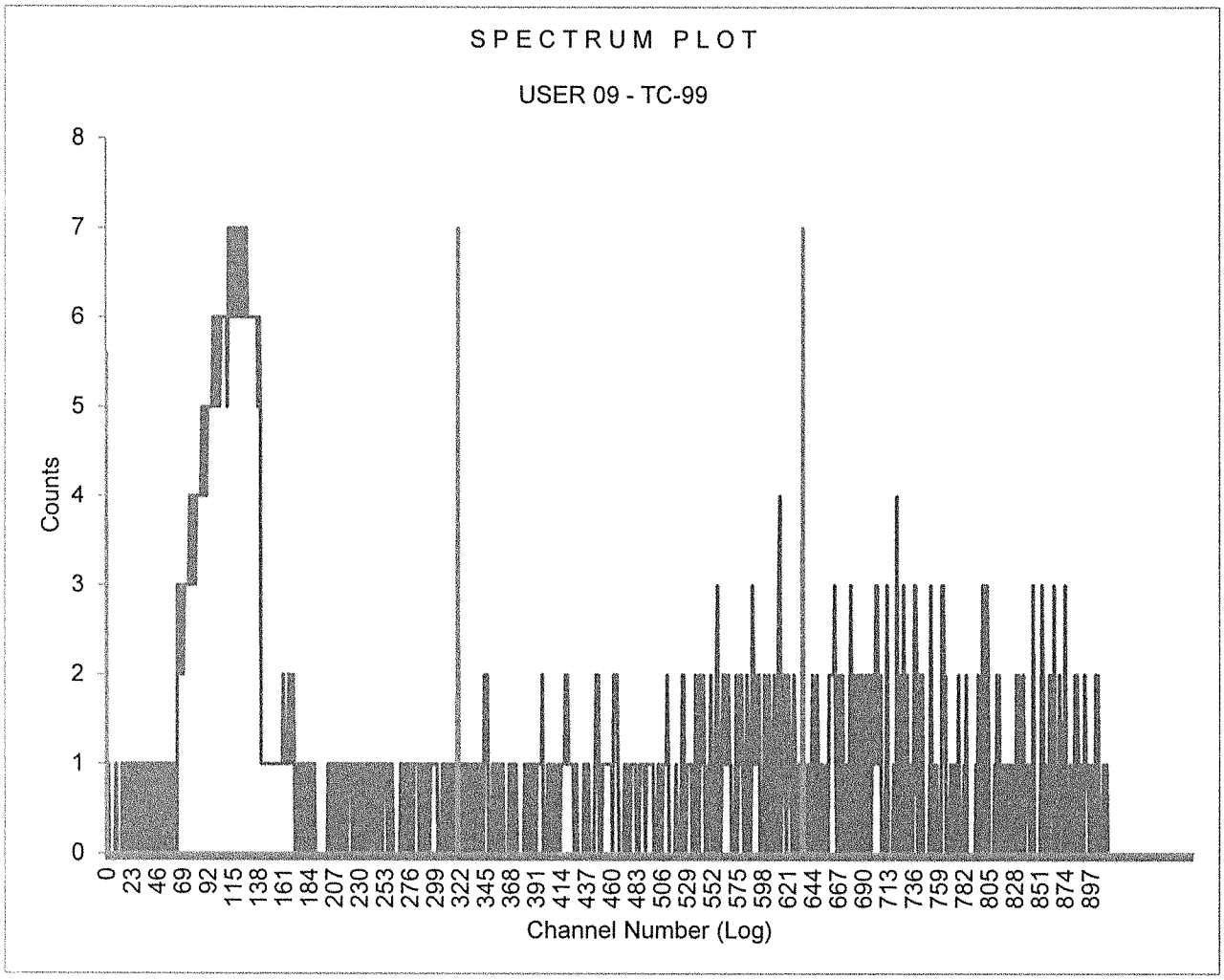
SAM NO	POS	TIME MIN	H#	WIND1 CPM	WIND1 %ERROR	WIND2 CPM	WIND2 %ERROR	LUMEX %	ELAPSED TIME
16 1	61-1	15.00	197.9	85.87	5.57	192.73	3.72	29.70	16.21
	MISSING SAMPLE								
Ref 3	61-3	15.00	164.0	15.20	13.25	64.47	6.43	39.88	32.71

Sample Count Start Time:	5 Jul 2017 07:49:29		
Data Capture Date	05 Jul 2017 08:04:52		
User Filename	S09070561-1A.XLS		
	U09070561-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	1	61-1	15.00
H#, Total Counts:	197.9	2899	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



July 17, 2017

Sample Count Start Time:	5 Jul 2017 08:05:59		
Data Capture Date	05 Jul 2017 08:21:21		
User Filename	S09070561-3A.XLS		
	U09070561-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	3	61-3	15.00
H#, Total Counts:	164.0	973	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



Batch 1678920 Check-list

This check-list was completed on 10-JUL-17 by Lyndsey Pace

This batch was reviewed by Lyndsey Pace on 10-JUL-17 and Elizabeth Krouse on 11-JUL-17.

Batch ID: 1678920 **Product:** LSCDSH3L **Description:** Tritium GL-RAD-A-002

#	Criteria	Yes	No	Comments
Preparation Information				
1	Was the preservation correct for this analysis?	Yes		
2	Were any of the samples classified as radioactive?		No	
Internal Checklist Information				
3	Have client special requirements have been reviewed and met?	Yes		
4	Has a hit notification been completed?		No	
5	Have sample historical results been reviewed for this batch?	Yes		
6	Has an aliquot correction been completed for this batch?		No	
7	Are instrument source checks within limits?	Yes		
Technical Information				
8	Were all the samples prepared/analyzed within the required holding time period?	Yes		
Quality Control (QC) Information				
9	Did all QC samples meet the required acceptance limits?	Yes		
10	Has the method required detection limit been met?	Yes		
Miscellaneous Information				
11	Are sample-specific MDA/MDC calculated and reported?	Yes		

Prep Logbook

CPRC 7/18/17 50

The Determination of Tritium

Batch ID: **1678920**
Analyst: Brittany Moorer
Method: EPA 906.0 Modified
Lab SOP: GL-RAD-A-002 REV# 22
Instrument: LSC-2272418-0.1mL
LSC-J93763

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units
LCS	1203822936	Tritium SPIKE	1753-C	.1	mL
MS	1203822935	Tritium SPIKE	1753-C	.1	mL

Sample ID	Prep Date	Matrix	Initial Sample Aliquot (mL)	Final Volume (mL)	Aliquot in vial (mL)	Rig #
425783002	07-JUL-2017 08:43:06	Water	50	50	10	2
425783004	07-JUL-2017 08:43:06	Water	50	50	10	8
425897001	07-JUL-2017 08:43:06	Water	50	50	10	9
425897002	07-JUL-2017 08:43:06	Water	50	50	10	13
426019001	07-JUL-2017 08:43:06	Water	50	50	10	17
426019002	07-JUL-2017 08:43:06	Water	50	50	10	23
426288001	07-JUL-2017 08:43:06	Water	50	50	10	27
426288003	07-JUL-2017 08:43:06	Water	50	50	10	28
426288005	07-JUL-2017 08:43:06	Water	50	50	10	30
426288008	07-JUL-2017 08:43:06	Water	50	50	10	37
426288010	07-JUL-2017 08:43:06	Water	50	50	10	41
426411002	07-JUL-2017 08:43:06	Water	50	50	10	43
426411003	07-JUL-2017 08:43:06	Water	50	50	10	48
426495003	07-JUL-2017 08:43:06	Water	50	50	10	52
426496005	07-JUL-2017 08:43:06	Water	50	50	10	56
426496007	07-JUL-2017 08:43:06	Water	50	50	10	57
426496009	07-JUL-2017 08:43:06	Water	50	50	10	59
426496011	07-JUL-2017 08:43:06	Water	50	50	10	62
426501001	07-JUL-2017 08:43:06	Water	50	50	10	67
426501003	07-JUL-2017 08:43:06	Water	50	50	10	70
1203822933 MB	07-JUL-2017 08:43:06	Water	50	50	10	71
1203822934 DUP (425783002)	07-JUL-2017 08:43:06	Water	50	50	10	80
1203822935 MS (425783002)	07-JUL-2017 08:43:06	Water	25	50	10	82
1203822936 LCS	07-JUL-2017 08:43:06	Water	50	50	10	85

Reagent/Solvent Lot ID	Description	Amount
2524658.4	Sodium Hydroxide Pellets 98.5%	1 g
2533150	Quenching Agent	20 uL
2563440	RL-Potassium Permanganate	2 mL
2563583.3	Ecoscint Ultra Scintillation Solution	13 mL

Comments:
Spike Pipet ID: RAD-LSC-2970968
Vial Pipet ID: RAD-LSC-8036326
Bkg Prepared with dead water: Yes

T1678920

Tritium Liquid

Filename : H3DST.XLS
File type : Excel
Version # : 1.2.13

Batch : 1678920
Analyst : BRI02142
Prep Date : 7/7/2017
Method Uncertainty : 0.0983

Geometry:
10mL DW/13mL Ecoscint Ultra

Procedure Code : LSCDSH3L
Parmname : Tritium
Required MDA : 400 pCi/L
H-3 Abundance : 1.00
Halflife of Tritium : 12.32 years

Sample Characteristics

Pos.	Sample ID	Total Sample Volume (L)	Sample Aliquot L	Sample Aliquot StDev. L	Distilled Sample Counted L	Sample Counted StDev. L	Rig number	Sample Date/Time
1	425783002.1	0.0500	0.0500	7.8337E-06	0.0100	1.0000E-05	2	6/16/2017 14:50
2	425783004.1	0.0500	0.0500	7.8337E-06	0.0100	1.0000E-05	8	6/16/2017 13:04
3	425897001.1	0.0500	0.0500	7.8337E-06	0.0100	1.0000E-05	9	6/20/2017 9:05
4	425897002.1	0.0500	0.0500	7.8337E-06	0.0100	1.0000E-05	13	6/20/2017 10:54
5	426019001.1	0.0500	0.0500	7.8337E-06	0.0100	1.0000E-05	17	6/21/2017 10:25
6	426019002.1	0.0500	0.0500	7.8337E-06	0.0100	1.0000E-05	23	6/21/2017 10:05
7	426288001.1	0.0500	0.0500	7.8337E-06	0.0100	1.0000E-05	27	6/23/2017 13:27
8	426288003.1	0.0500	0.0500	7.8337E-06	0.0100	1.0000E-05	28	6/23/2017 8:05
9	426288005.1	0.0500	0.0500	7.8337E-06	0.0100	1.0000E-05	30	6/23/2017 8:05
10	426288008.1	0.0500	0.0500	7.8337E-06	0.0100	1.0000E-05	37	6/23/2017 9:02
11	426288010.1	0.0500	0.0500	7.8337E-06	0.0100	1.0000E-05	41	6/23/2017 10:36
12	426411002.1	0.0500	0.0500	7.8337E-06	0.0100	1.0000E-05	43	6/26/2017 11:14
13	426411003.1	0.0500	0.0500	7.8337E-06	0.0100	1.0000E-05	48	6/26/2017 10:28
14	426495003.1	0.0500	0.0500	7.8337E-06	0.0100	1.0000E-05	52	6/27/2017 8:40
15	426496005.1	0.0500	0.0500	7.8337E-06	0.0100	1.0000E-05	56	6/27/2017 11:28
16	426496007.1	0.0500	0.0500	7.8337E-06	0.0100	1.0000E-05	57	6/27/2017 7:20
17	426496009.1	0.0500	0.0500	7.8337E-06	0.0100	1.0000E-05	59	6/27/2017 10:21
18	426496011.1	0.0500	0.0500	7.8337E-06	0.0100	1.0000E-05	62	6/27/2017 10:21
19	426501001.1	0.0500	0.0500	7.8337E-06	0.0100	1.0000E-05	67	6/27/2017 9:31
20	426501003.1	0.0500	0.0500	7.8337E-06	0.0100	1.0000E-05	70	6/27/2017 11:17
21	1203822933.1	0.0500	0.0500	7.8337E-06	0.0100	1.0000E-05	71	7/7/2017 0:00
22	1203822934.1	0.0500	0.0500	7.8337E-06	0.0100	1.0000E-05	80	6/16/2017 14:50
23	1203822935.1	0.0500	0.0250	5.6752E-06	0.0100	1.0000E-05	82	6/16/2017 14:50
24	1203822936.1	0.0500	0.0500	7.8337E-06	0.0100	1.0000E-05	85	7/7/2017 0:00

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Pipet, 0.1 ml Stdev : +/- 0.000200 ml
Pipet, 0.5 ml Stdev : +/- 0.001000 ml
Pipet, 1.0 ml Stdev : +/- 0.002000 ml
Pipet, 5.0 ml Stdev : +/- 0.010000 ml

Analytical SOP: GL-RAD-A-002
Instrument SOP: GL-RAD-I-004

Count raw Data											**Calibration Data**						
Pos.	Rack Position #	Counting Time (min.)	Quench#	Gross cpm	Bkg cpm	Bkg Count Time (min.)	Bkg Quench#	Corrected Bkg cpm	Count Start Date/Time	Sample Decay	Counted on	Calibration Date	Calibration Due Date	Detector Efficiency (cpm/dpm)	Detector Efficiency Error (cpm/dpm)	Background Rack Position #	Background Count Start Date/Time
1	17-2	50	169.2	89.68	3.22	50	166.8	3.2000	7/7/2017 12:00	0.997	LSCSILVER	7/1/2017	6/30/2018	0.1840	0.00792	17-1	7/7/2017 11:08
2	17-3	50	168.3	20.5	3.22	50	166.8	3.2075	7/7/2017 12:52	0.997	LSCSILVER	7/1/2017	6/30/2018	0.1856	0.00792	17-1	7/7/2017 11:08
3	17-4	50	170.4	19.22	3.22	50	166.8	3.1899	7/7/2017 13:44	0.997	LSCSILVER	7/1/2017	6/30/2018	0.1819	0.00792	17-1	7/7/2017 11:08
4	17-5	50	170.1	4.36	3.22	50	166.8	3.1924	7/7/2017 14:36	0.997	LSCSILVER	7/1/2017	6/30/2018	0.1824	0.00792	17-1	7/7/2017 11:08
5	17-6	50	170.4	18.22	3.22	50	166.8	3.1899	7/7/2017 15:28	0.998	LSCSILVER	7/1/2017	6/30/2018	0.1819	0.00792	17-1	7/7/2017 11:08
6	17-7	50	167.7	5.38	3.22	50	166.8	3.2125	7/7/2017 16:20	0.997	LSCSILVER	7/1/2017	6/30/2018	0.1867	0.00792	17-1	7/7/2017 11:08
7	17-8	50	169.2	117.26	3.22	50	166.8	3.2000	7/7/2017 17:12	0.998	LSCSILVER	7/1/2017	6/30/2018	0.1840	0.00792	17-1	7/7/2017 11:08
8	17-9	50	167.6	4.26	3.22	50	166.8	3.2134	7/7/2017 18:04	0.998	LSCSILVER	7/1/2017	6/30/2018	0.1868	0.00792	17-1	7/7/2017 11:08
9	17-10	50	168.6	4.26	3.22	50	166.8	3.2050	7/7/2017 18:56	0.998	LSCSILVER	7/1/2017	6/30/2018	0.1851	0.00792	17-1	7/7/2017 11:08
10	17-11	50	166.2	3.64	3.22	50	166.8	3.2250	7/7/2017 19:48	0.998	LSCSILVER	7/1/2017	6/30/2018	0.1893	0.00792	17-1	7/7/2017 11:08
11	17-12	50	167.6	3.42	3.22	50	166.8	3.2134	7/7/2017 20:40	0.998	LSCSILVER	7/1/2017	6/30/2018	0.1868	0.00792	17-1	7/7/2017 11:08
12	11-1	12.1	168.4	829.67	3.22	50	166.8	3.2067	7/7/2017 21:32	0.998	LSCSILVER	7/1/2017	6/30/2018	0.1854	0.00792	17-1	7/7/2017 11:08
13	11-2	50	168.4	52.62	3.22	50	166.8	3.2067	7/7/2017 21:46	0.998	LSCSILVER	7/1/2017	6/30/2018	0.1854	0.00792	17-1	7/7/2017 11:08
14	11-3	50	168.9	4.8	3.22	50	166.8	3.2025	7/7/2017 22:38	0.998	LSCSILVER	7/1/2017	6/30/2018	0.1845	0.00792	17-1	7/7/2017 11:08
15	11-4	50	170.8	93.64	3.22	50	166.8	3.1865	7/7/2017 23:30	0.998	LSCSILVER	7/1/2017	6/30/2018	0.1812	0.00792	17-1	7/7/2017 11:08
16	11-5	50	171	4.04	3.22	50	166.8	3.1848	7/8/2017 0:22	0.998	LSCSILVER	7/1/2017	6/30/2018	0.1809	0.00792	17-1	7/7/2017 11:08
17	35-1	50	171	34.24	3.22	50	166.8	3.1848	7/8/2017 2:29	0.998	LSCSILVER	7/1/2017	6/30/2018	0.1809	0.00792	17-1	7/7/2017 11:08
18	35-2	50	170.6	31.14	3.22	50	166.8	3.1882	7/8/2017 3:21	0.998	LSCSILVER	7/1/2017	6/30/2018	0.1816	0.00792	17-1	7/7/2017 11:08
19	35-3	50	168.6	12.22	3.22	50	166.8	3.2050	7/8/2017 4:13	0.998	LSCSILVER	7/1/2017	6/30/2018	0.1851	0.00792	17-1	7/7/2017 11:08
20	35-4	50	167.6	7.44	3.22	50	166.8	3.2134	7/8/2017 5:05	0.998	LSCSILVER	7/1/2017	6/30/2018	0.1868	0.00792	17-1	7/7/2017 11:08
21	35-5	50	169.5	3.76	3.22	50	166.8	3.1975	7/8/2017 5:57	1.000	LSCSILVER	7/1/2017	6/30/2018	0.1835	0.00792	17-1	7/7/2017 11:08
22	35-6	50	170	87.24	3.22	50	166.8	3.1932	7/8/2017 6:49	0.997	LSCSILVER	7/1/2017	6/30/2018	0.1826	0.00792	17-1	7/7/2017 11:08
23	35-7	50	170	53.42	3.22	50	166.8	3.1932	7/8/2017 7:41	0.997	LSCSILVER	7/1/2017	6/30/2018	0.1826	0.00792	17-1	7/7/2017 11:08
24	35-8	50	169.7	12.44	3.22	50	166.8	3.1958	7/8/2017 8:33	1.000	LSCSILVER	7/1/2017	6/30/2018	0.1831	0.00792	17-1	7/7/2017 11:08

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Notes:
1 - Results are decay corrected to Sample Date/Time
2 - Reference date for Spike Activity (dpm/ml) is the batch Prep Date
3 - Spike Nominals are decay corrected to Sample Date/Time

Spike S/N : 1753-C
Spike Exp Date : 12/27/2017
Spike Activity (dpm/ml): 2476.23
Spike Volume Added: 0.10

LCS S/N : 1753-C
LCS Exp Date : 12/27/2017
LCS Activity (dpm/ml): 2476.23
LCS Volume Added: 0.10

Results

Pos.	Decision Level pCi/L	Critical Level pCi/L	Required MDA pCi/L	MDA pCi/L	Sample Act. Conc. pCi/L	Sample Act. Error %	Net Count Rate CPM	Net Count Rate Error CPM	2 SIGMA Counting Uncertainty pCi/L	2 SIGMA Total Prop. Uncertainty pCi/L	Sample QC	Sample Type	RPD	RER	Nominal pCi/L	Recovery
1	204.7113	144.5279	400	303.7903	**21237.2267**	1.77%	86.4800	1.3629	656.0156	4157.5033		SAMPLE				
2	203.2032	143.4632	400	301.5350	**4210.3366**	4.06%	17.2925	0.6886	328.6047	877.7422		SAMPLE				
3	206.6361	145.8869	400	306.6703	**3979.8884**	4.25%	16.0301	0.6695	325.7801	835.4942		SAMPLE				
4	206.1217	145.5237	400	305.9009	**289.0488**	33.30%	1.1676	0.3886	188.5786	196.6828		SAMPLE				
5	206.6048	145.8648	400	306.6238	**3731.0477**	4.43%	15.0301	0.6544	318.3803	788.4029		SAMPLE				
6	202.0575	142.6543	400	299.8237	**524.3475**	19.14%	2.1675	0.4145	196.5609	221.1575		SAMPLE				
7	204.4993	144.3783	400	303.4758	**27981.1491**	1.58%	114.0600	1.5522	746.3192	5460.3485		SAMPLE				
8	201.8346	142.4970	400	299.4911	**252.8875**	36.95%	1.0466	0.3866	183.0877	189.5019		SAMPLE				
9	203.5001	143.6728	400	301.9813	**257.3416**	36.63%	1.0550	0.3864	184.7353	191.3163		SAMPLE				
10	199.5401	140.8770	400	296.0606	**98.9633**	89.28%	0.4150	0.3705	173.1698	174.2234		SAMPLE				
11	201.8347	142.4971	400	299.4912	**49.9280**	176.27%	0.2066	0.3642	172.4917	172.7615		SAMPLE				
12	325.3007	229.6651	400	519.6651	**201120.4402**	1.29%	826.4633	8.2844	3951.4065	39079.3674		SAMPLE				
13	203.0722	143.3707	400	301.3427	**12024.8667**	2.28%	49.4133	1.0567	503.9974	2378.5660		SAMPLE				
14	203.8818	143.9423	400	302.5536	**390.5606**	25.06%	1.5975	0.4001	191.7043	206.0360		SAMPLE				
15	207.1098	146.2213	400	307.3811	**22520.8241**	1.74%	90.4535	1.3916	679.0894	4406.2014		SAMPLE				
16	207.4610	146.4692	400	307.9064	**213.3460**	44.46%	0.8552	0.3801	185.8634	190.3842		SAMPLE				
17	207.4598	146.4684	400	307.9046	**7747.1569**	2.90%	31.0552	0.8652	423.0177	1556.2183		SAMPLE				
18	206.7726	145.9832	400	306.8768	**6946.1800**	3.07%	27.9518	0.8286	403.5825	1402.1217		SAMPLE				
19	203.3849	143.5915	400	301.8105	**2197.7732**	6.21%	9.0150	0.5554	265.4005	500.9400		SAMPLE				
20	201.7204	142.4163	400	299.3216	**1020.6562**	10.95%	4.2266	0.4616	218.4734	294.3809		SAMPLE				
21	204.5992	144.4488	400	303.6298	**138.1235**	66.32%	0.5625	0.3730	179.5196	181.4945		MB				
22	206.0942	145.5043	400	305.8582	**20801.0147**	1.79%	84.0468	1.3449	652.3771	4073.6719	425783002.1	DUP	2.1%	0.1469		
23	412.1908	291.0102	400	611.7198	**24861.7155**	2.27%	50.2268	1.0641	1032.3480	4915.7100	425783002.1	MS			4475.7078	81.0%
24	204.9411	144.6902	400	304.1411	**2274.1826**	6.10%	9.2442	0.5592	269.6409	515.7314		LCS			2230.8390	101.9%

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ID:TRITIUM 7 JUL 2017 12:00
USER: 2 COMMENT:SILVER
PRESET TIME : 50.00
DATA CALC : CPM H# :YES SAMPLE REPEATS: 1 PRINTER : STD
COUNT BLANK : NO IC# : NO REPLICATES : 1 RS232 :EDIT
TWO PHASE : NO AQC : NO CYCLE REPEATS : 1 DISK : OFF
SCINTILLATOR: LIQUID LUMEX:YES LOW SAMPLE REJ: 0
LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

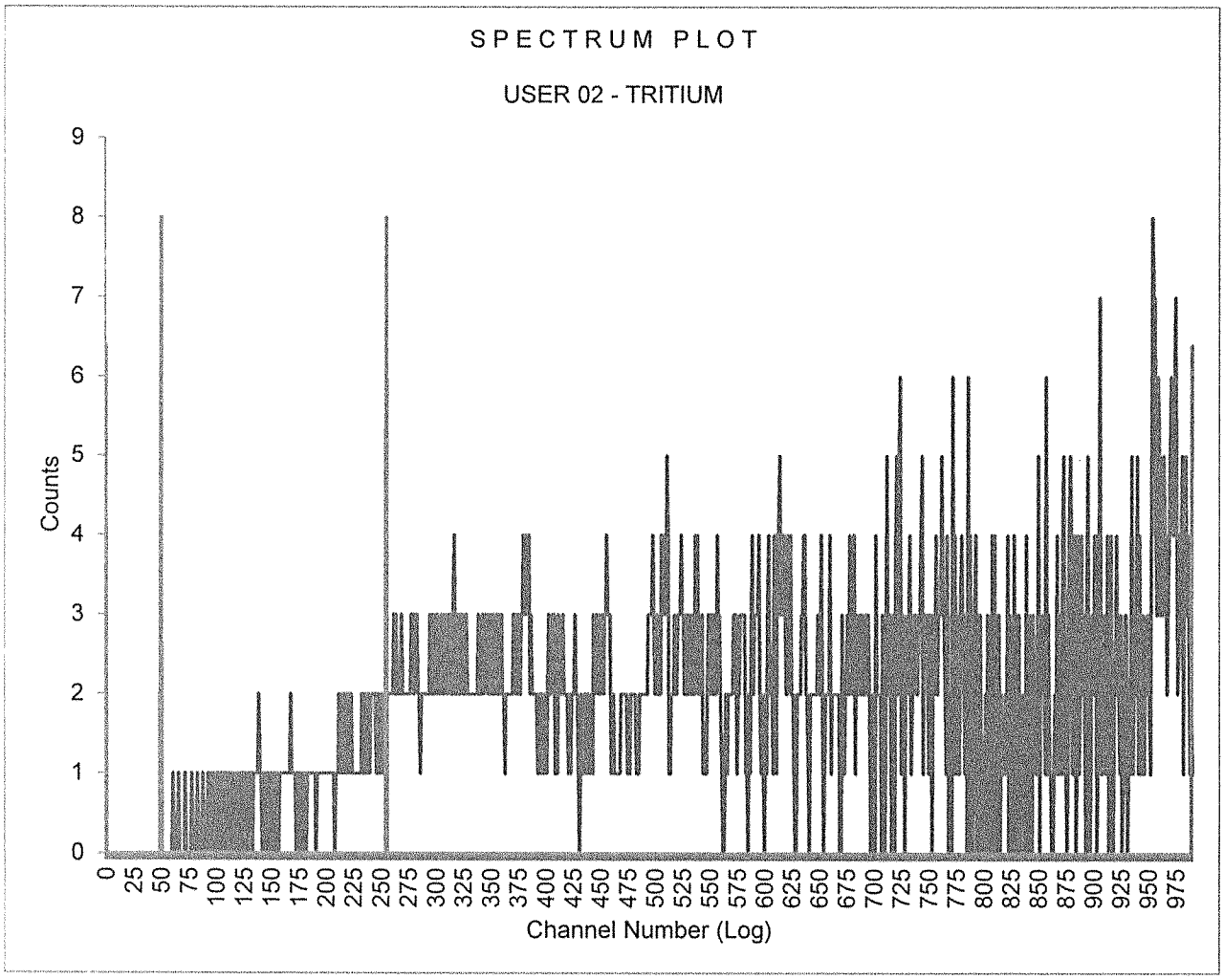
CHAN: 50.0 - 255.0 %ERROR: 2.00 FACTOR: 1.000000 BKG. SUB: 0
CHAN: 0.0 - 1000.0 %ERROR: 2.00 FACTOR: 1.000000 BKG. SUB: 0

SAM NO	POS	TIME MIN	H#	WIND1 CPM	WIND1 %ERROR	WIND2 CPM	WIND2 %ERROR	LUMEX %	ELAPSED TIME
BKL 1	17-1	50.00	166.0	3.22	16.39	37.82	4.62	0.80	51.58
1 2	17-2	50.00	169.2	89.68	2.99	129.10	2.49	0.10	103.66
2 3	17-3	50.00	168.3	20.50	6.27	56.84	3.76	0.34	155.74
3 4	17-4	50.00	170.4	19.22	6.48	55.70	3.80	0.34	207.81
4 5	17-5	50.00	170.1	4.36	13.76	38.32	4.58	0.47	259.85
5 6	17-6	50.00	170.4	18.22	6.65	53.56	3.87	0.31	311.91
6 7	17-7	50.00	167.7	5.38	12.23	40.66	4.44	0.39	363.96
7 8	17-8	50.00	169.2	117.26	2.61	160.76	2.23	0.10	416.03
8 9	17-9	50.00	167.6	4.26	13.90	41.42	4.40	0.36	468.09
9 10	17-10	50.00	168.6	4.26	13.96	40.54	4.45	0.37	520.14
10 11	17-11	50.00	166.2	3.64	14.99	38.44	4.57	0.34	572.17
11 12	17-12	50.00	167.6	3.42	15.52	38.78	4.55	0.37	624.22
12 13	11-1	12.10	168.4	829.67	2.00	919.50	1.90	0.02	637.67
13 14	11-2	50.00	168.4	52.62	3.90	91.80	2.95	0.15	689.70
14 15	11-3	50.00	168.9	4.80	13.02	39.12	4.53	0.33	741.73
15 16	11-4	50.00	170.8	93.64	2.92	135.70	2.43	0.10	793.78
16 17	11-5	50.00	171.0	4.04	14.21	40.84	4.43	0.31	845.82

QPOP

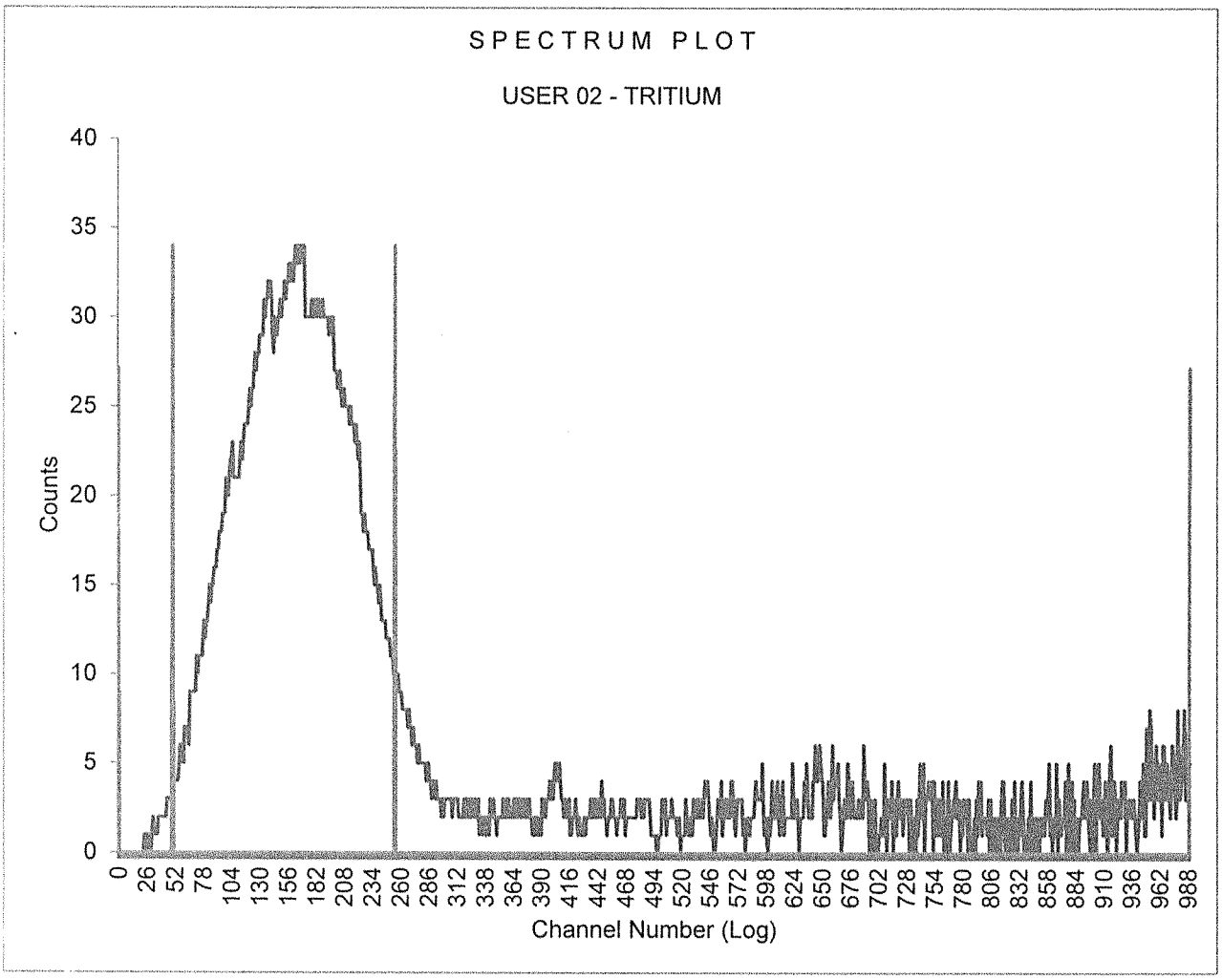
July 17, 2017

Sample Count Start Time:	7 Jul 2017 11:08:06		
Data Capture Date	07 Jul 2017 11:58:32		
User Filename	S02070717-1A.XLS		
	U02070717-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	1	17-1	50.00
H#, Total Counts:	166.8	1891	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



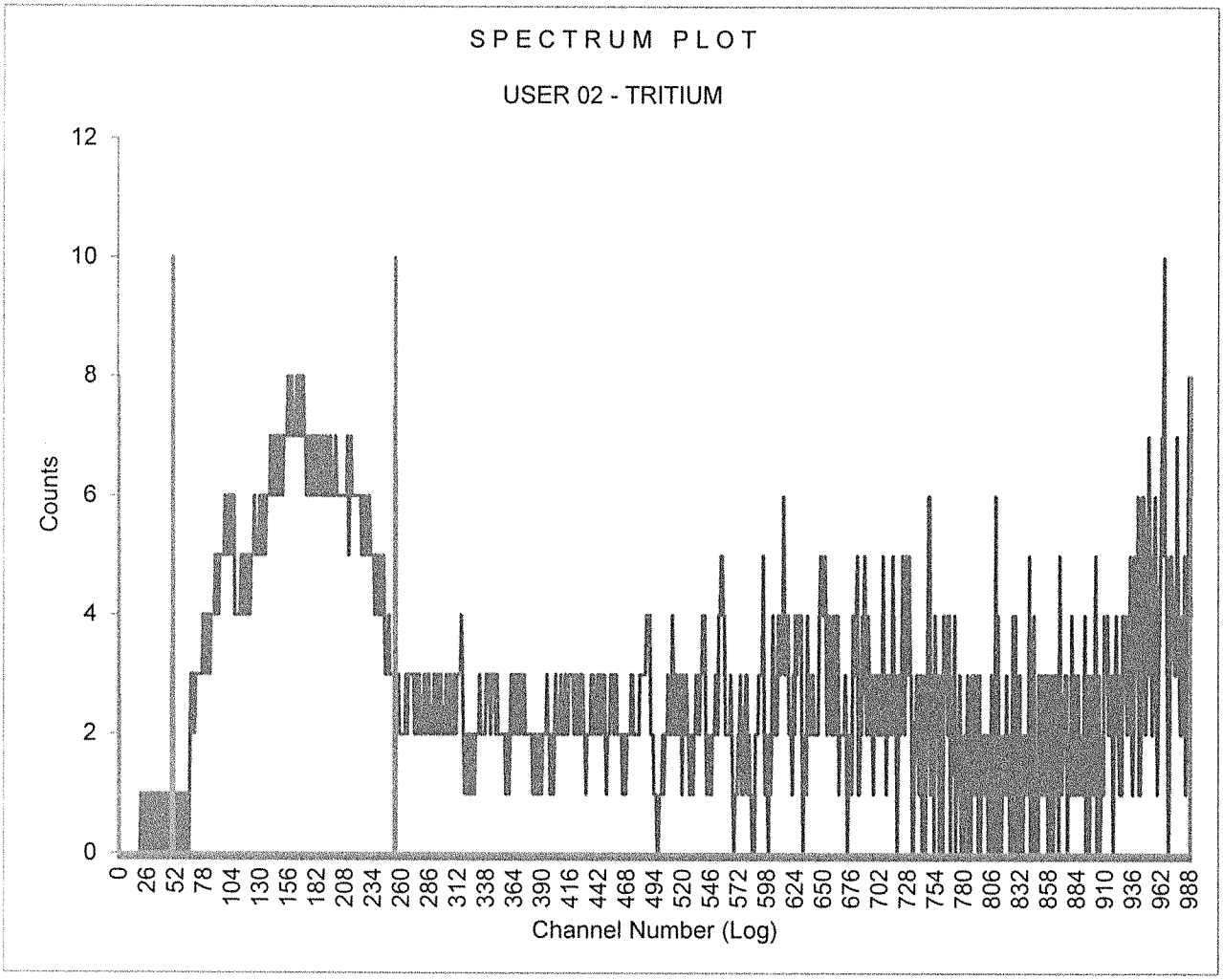
July 17, 2017

Sample Count Start Time:	7 Jul 2017 12:00:11		
Data Capture Date	07 Jul 2017 12:50:37		
User Filename	S02070717-2A.XLS		
	U02070717-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	2	17-2	50.00
H#, Total Counts:	169.2	6455	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



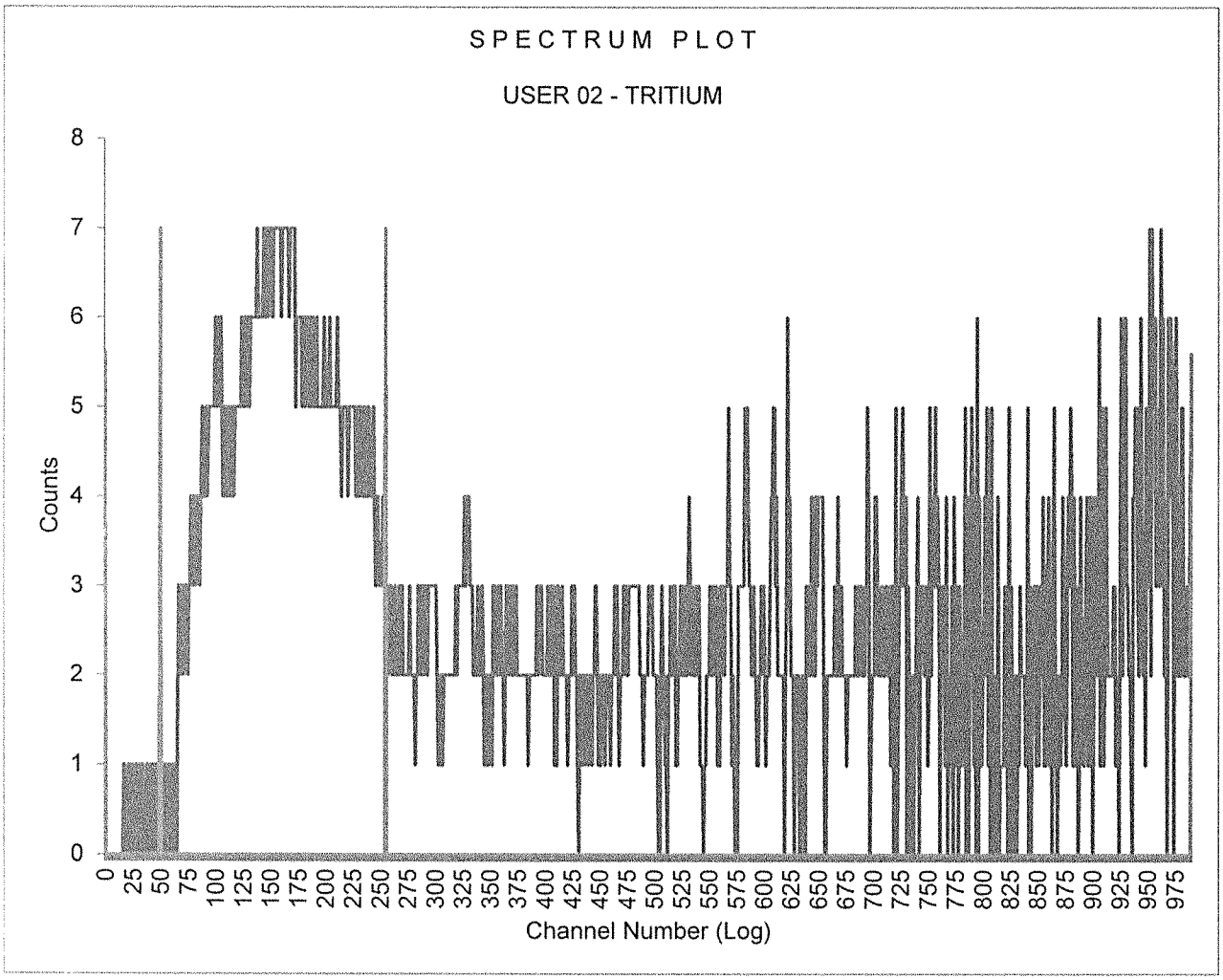
July 17, 2017

Sample Count Start Time:	7 Jul 2017 12:52:15		
Data Capture Date	07 Jul 2017 13:42:41		
User Filename	S02070717-3A.XLS		
	U02070717-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	3	17-3	50.00
H#, Total Counts:	168.3	2842	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



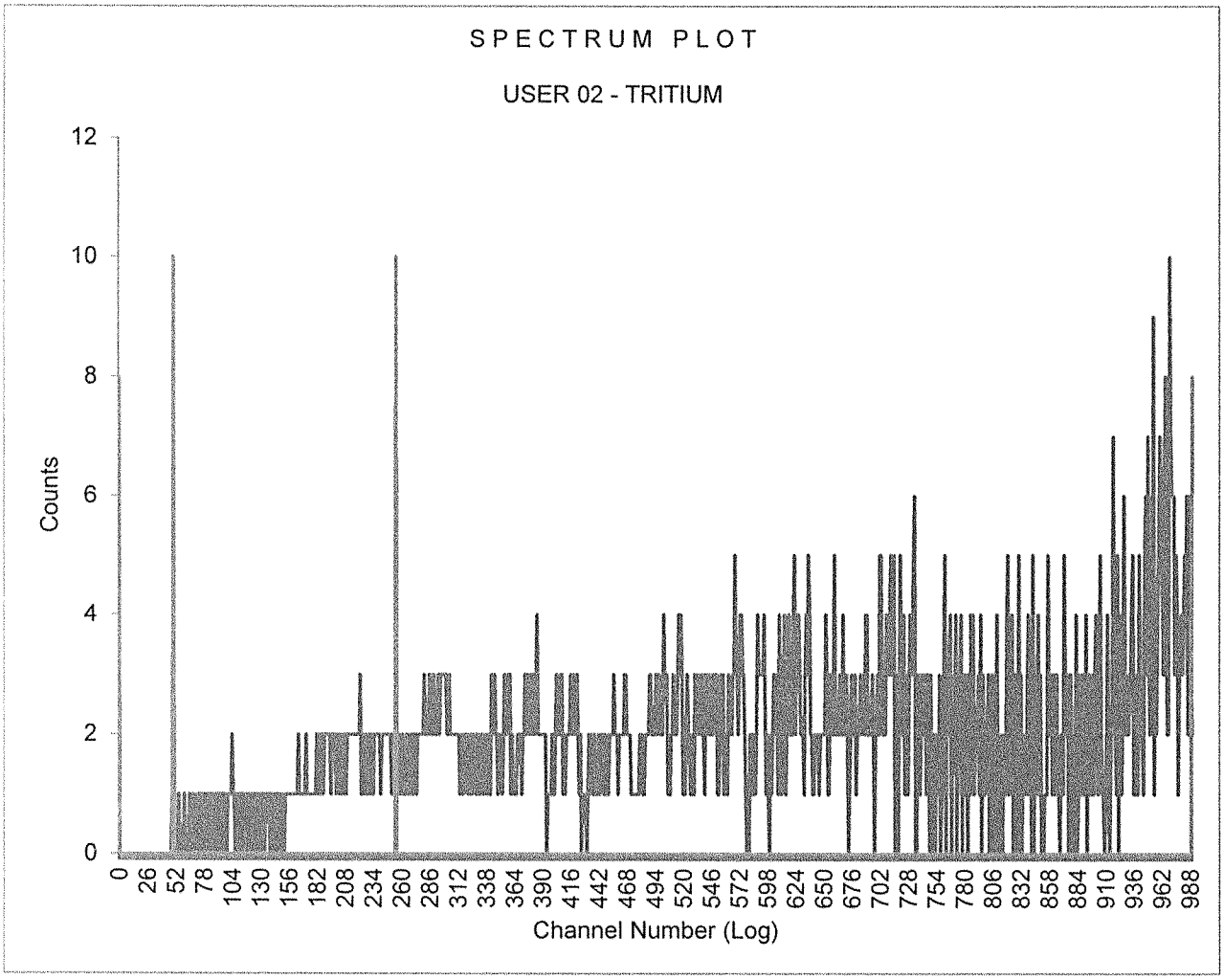
July 17, 2017

Sample Count Start Time:	7 Jul 2017 13:44:20		
Data Capture Date	07 Jul 2017 14:34:45		
User Filename	S02070717-4A.XLS		
	U02070717-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	4	17-4	50.00
H#, Total Counts:	170.4	2785	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



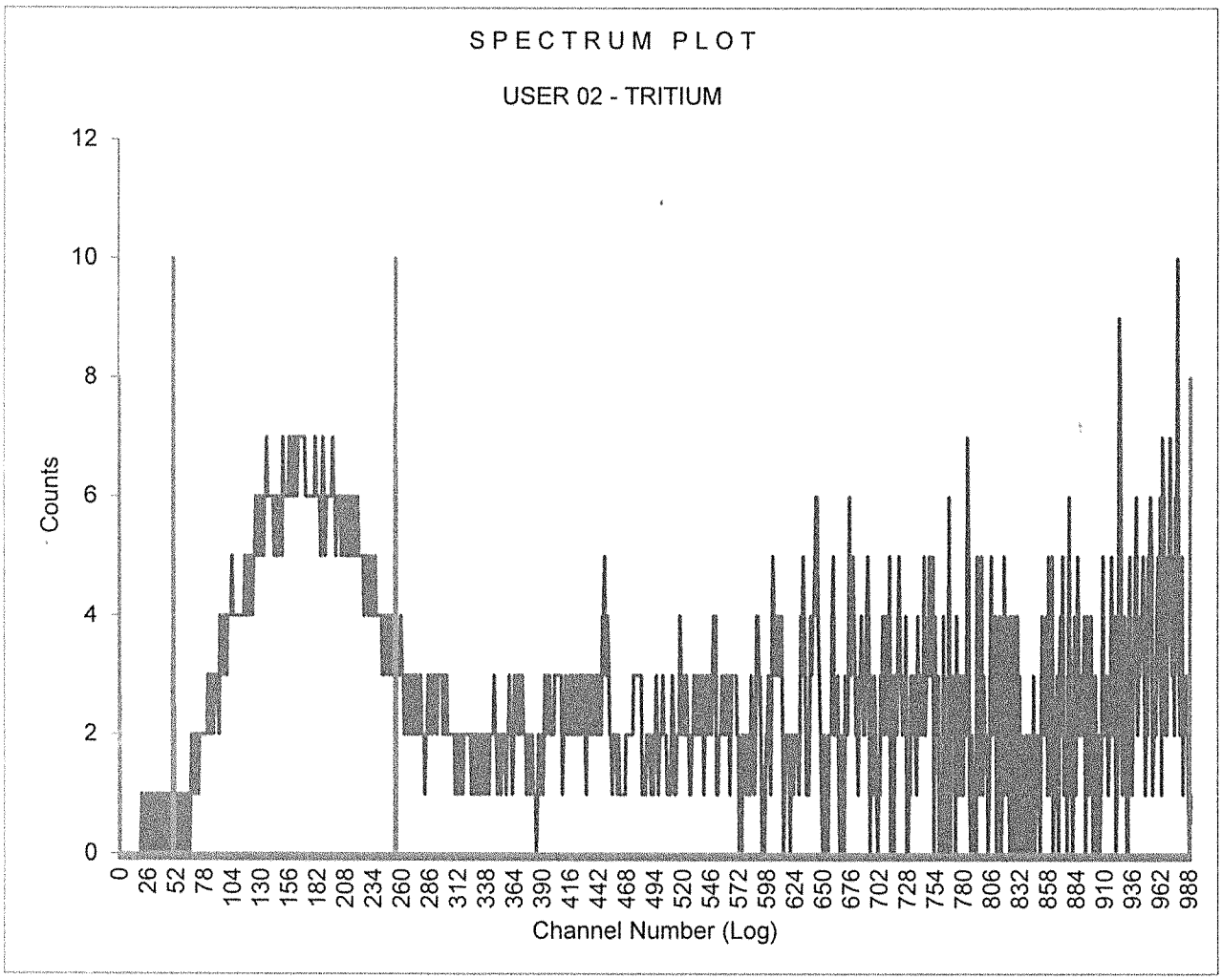
July 17, 2017

Sample Count Start Time:	7 Jul 2017 14:36:22		
Data Capture Date	07 Jul 2017 15:26:48		
User Filename	S02070717-5A.XLS		
	U02070717-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	5	17-5	50.00
H#, Total Counts:	170.1	1916	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



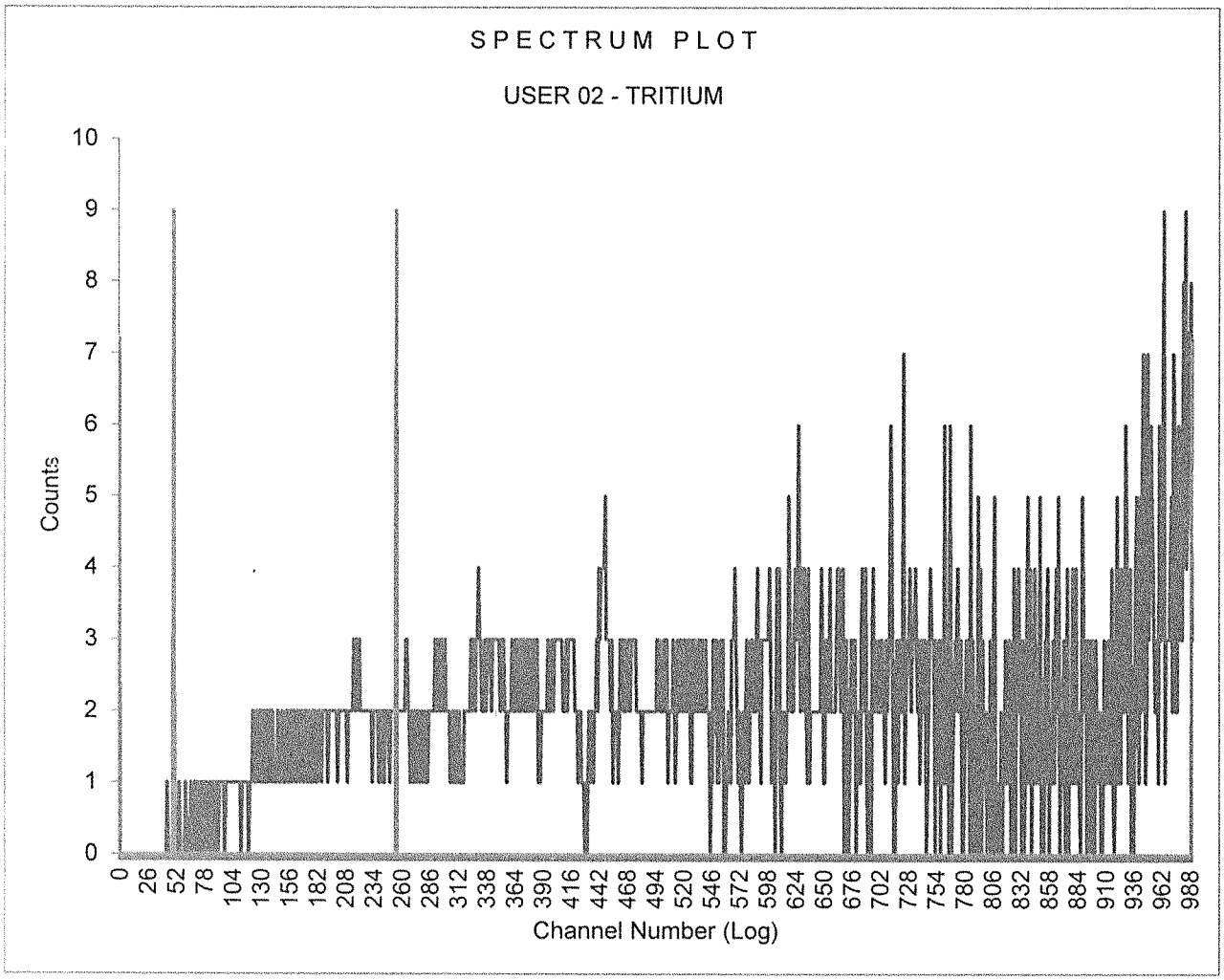
July 17, 2017

Sample Count Start Time:	7 Jul 2017 15:28:26		
Data Capture Date	07 Jul 2017 16:18:51		
User Filename	S02070717-6A.XLS		
	U02070717-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	6	17-6	50.00
H#, Total Counts:	170.4	2678	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



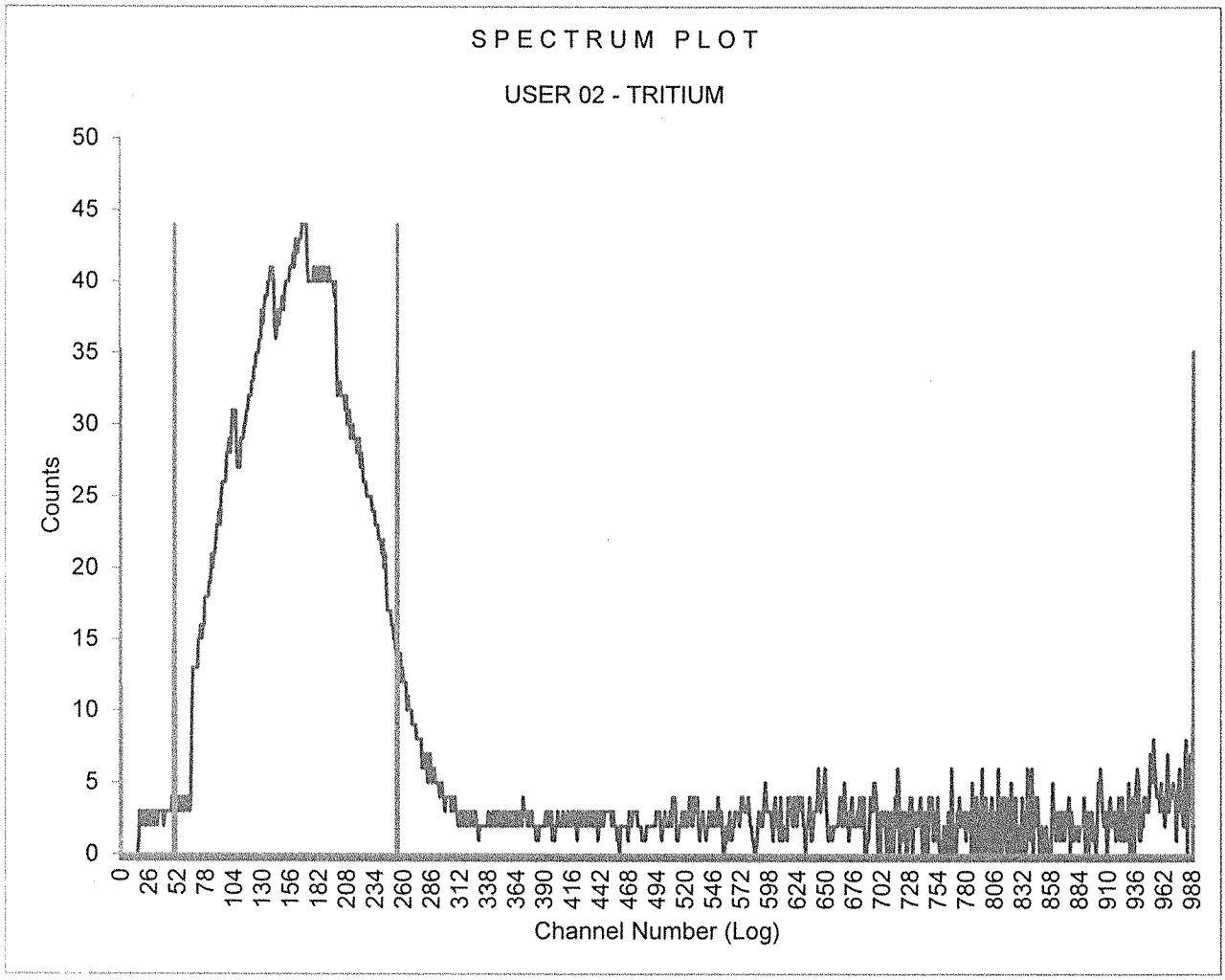
July 17, 2017

Sample Count Start Time:	7 Jul 2017 16:20:29		
Data Capture Date	07 Jul 2017 17:10:54		
User Filename	S02070717-7A.XLS		
	U02070717-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	7	17-7	50.00
H#, Total Counts:	167.7	2033	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



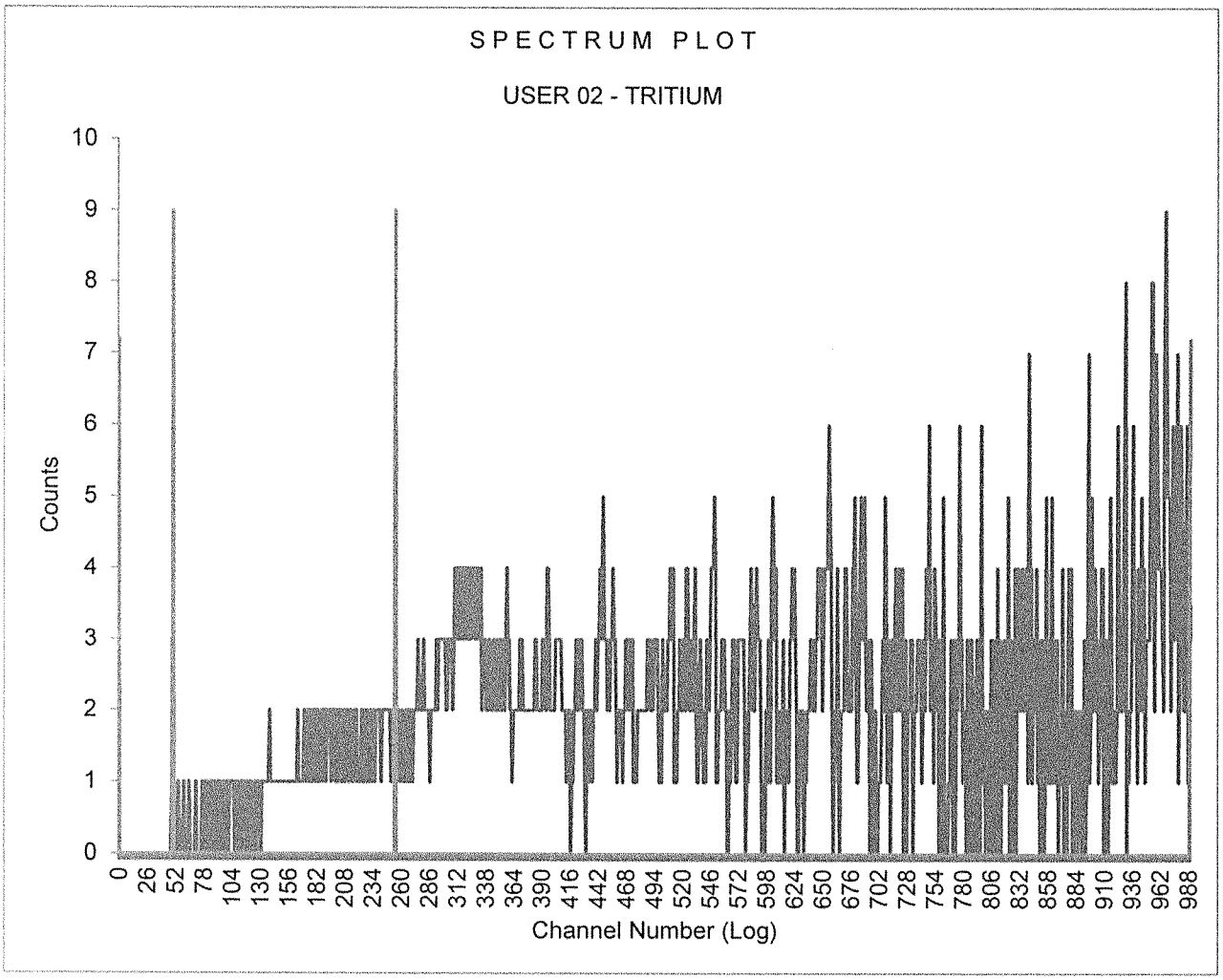
July 17, 2017

Sample Count Start Time:	7 Jul 2017 17:12:33		
Data Capture Date	07 Jul 2017 18:02:58		
User Filename	S02070717-8A.XLS		
	U02070717-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	8	17-8	50.00
H#, Total Counts:	169.2	8038	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



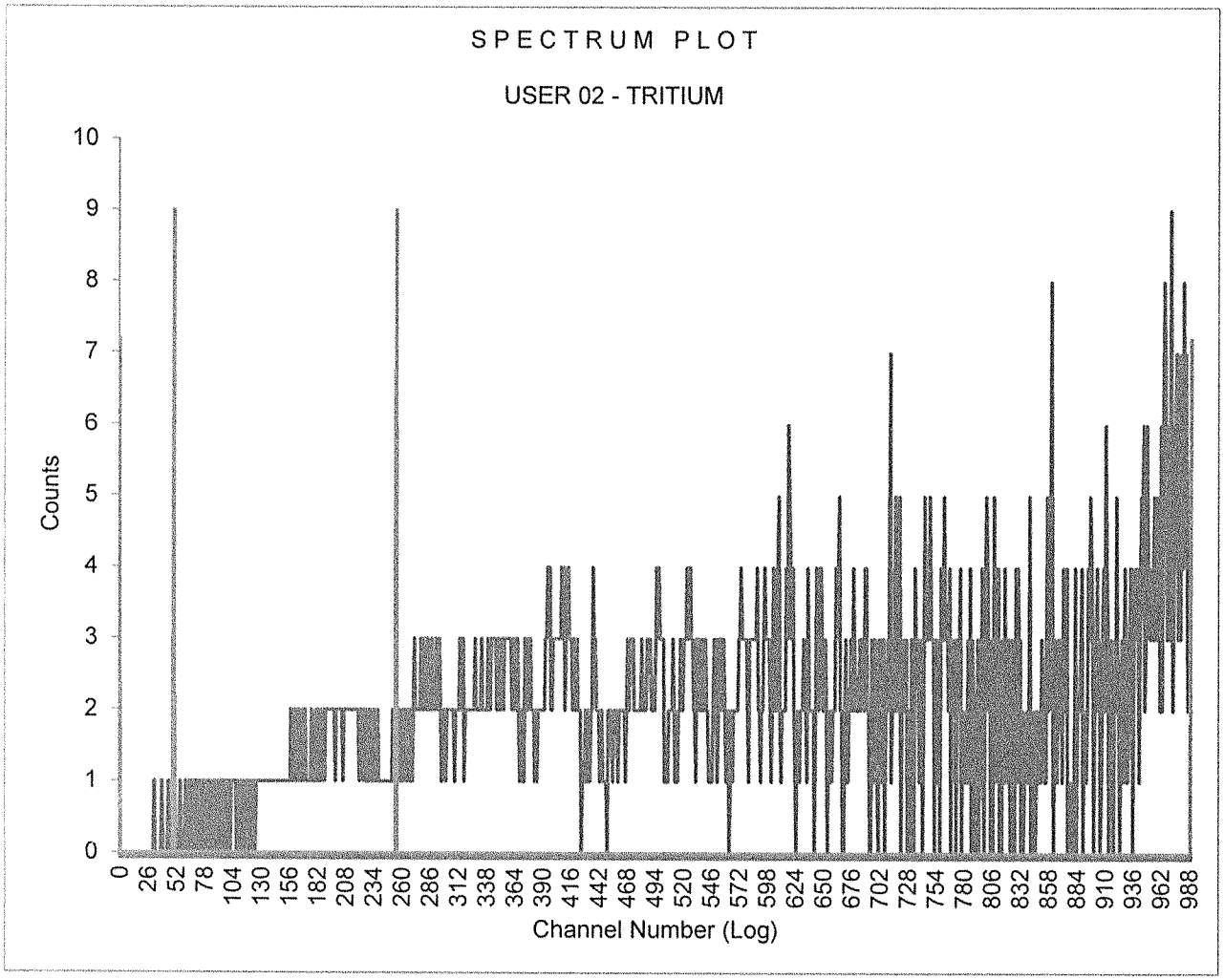
July 17, 2017

Sample Count Start Time:	7 Jul 2017 18:04:36		
Data Capture Date	07 Jul 2017 18:55:01		
User Filename	S02070717-9A.XLS		
	U02070717-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	9	17-9	50.00
H#, Total Counts:	167.6	2071	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



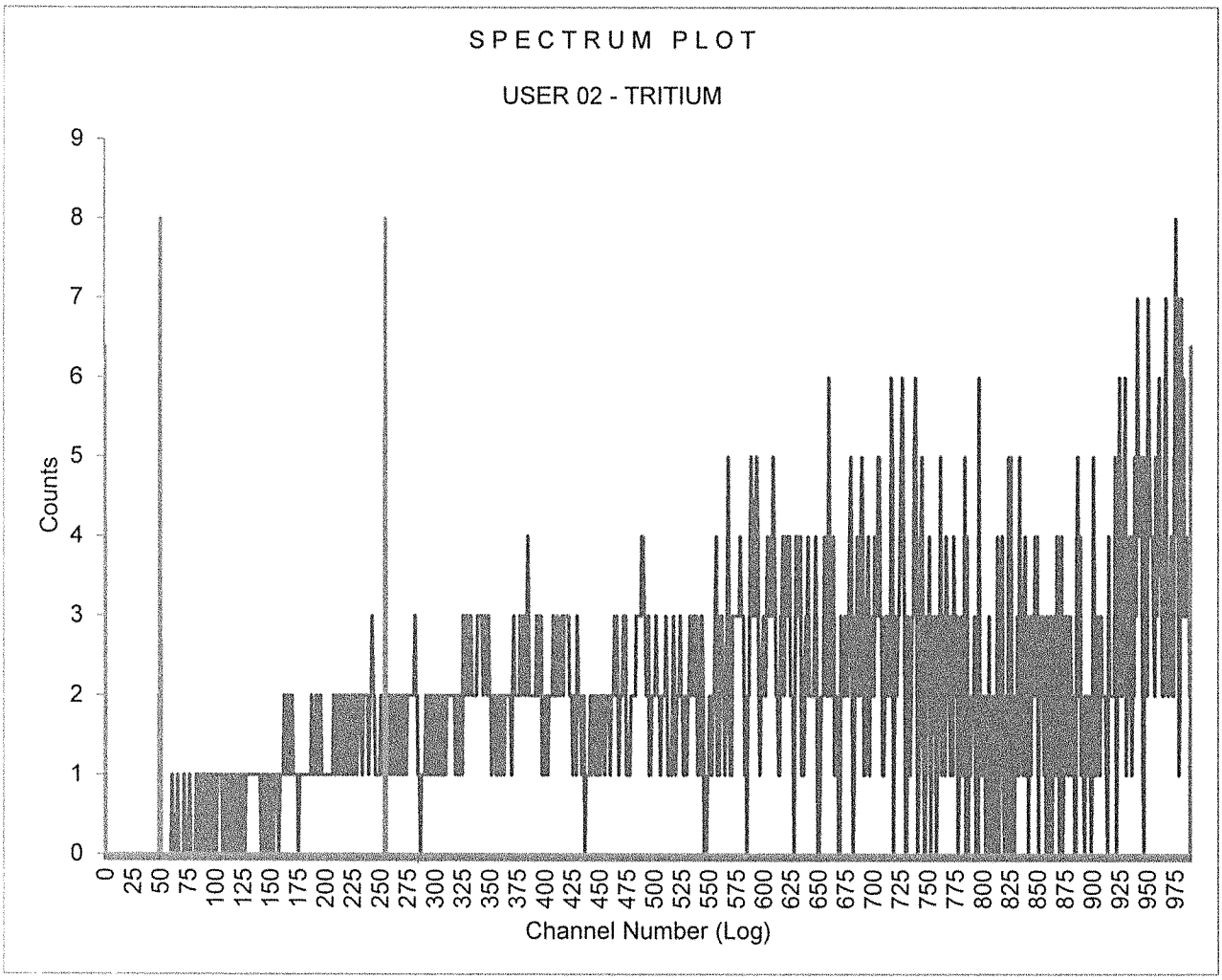
July 17, 2017

Sample Count Start Time:	7 Jul 2017 18:56:39		
Data Capture Date	07 Jul 2017 19:47:04		
User Filename	S02070717-10A.XLS		
	U02070717-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	10	17-10	50.00
H#, Total Counts:	168.6	2027	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



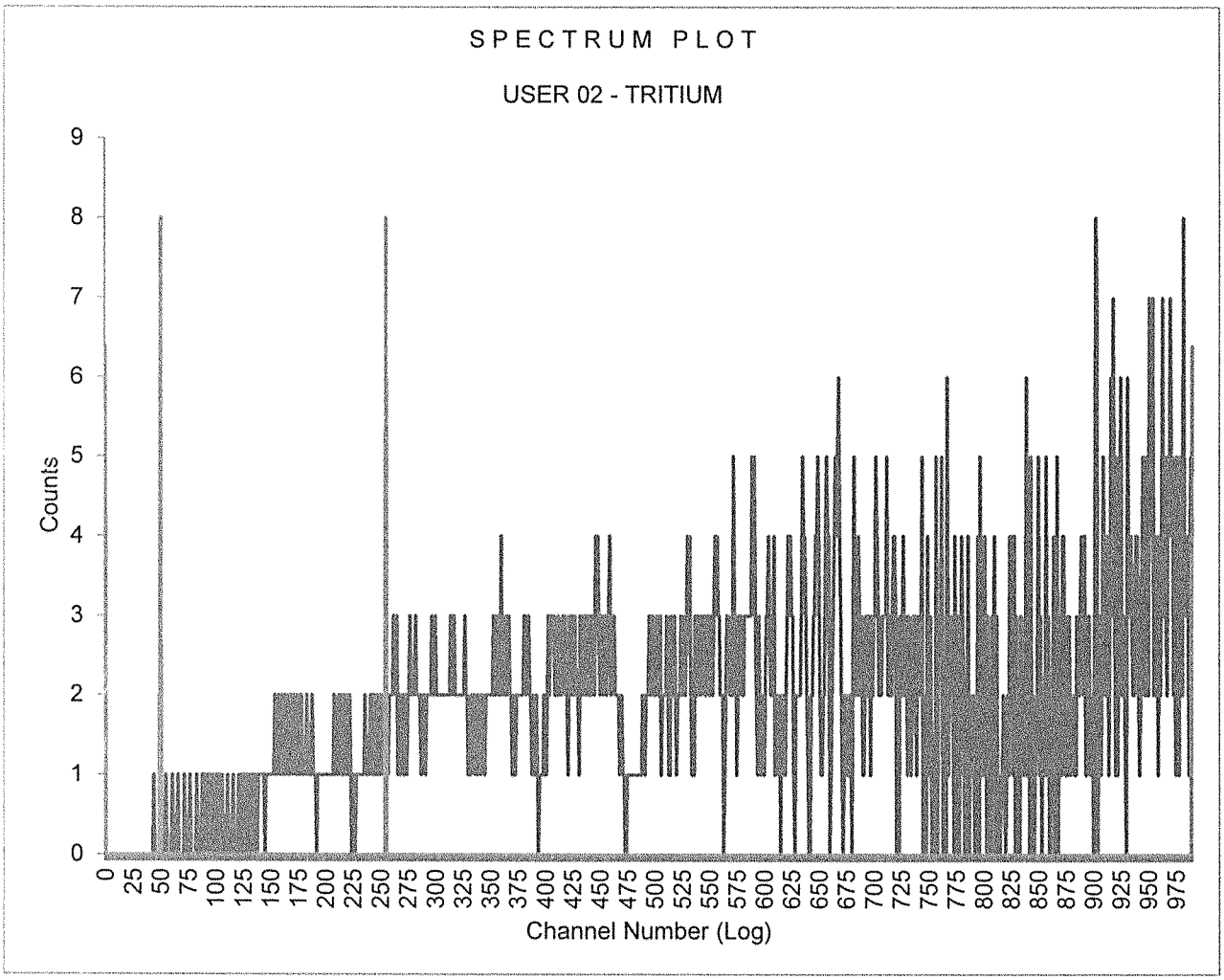
July 17, 2017

Sample Count Start Time:	7 Jul 2017 19:48:41		
Data Capture Date	07 Jul 2017 20:39:07		
User Filename	S02070717-11A.XLS		
	U02070717-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	11	17-11	50.00
H#, Total Counts:	166.2	1922	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



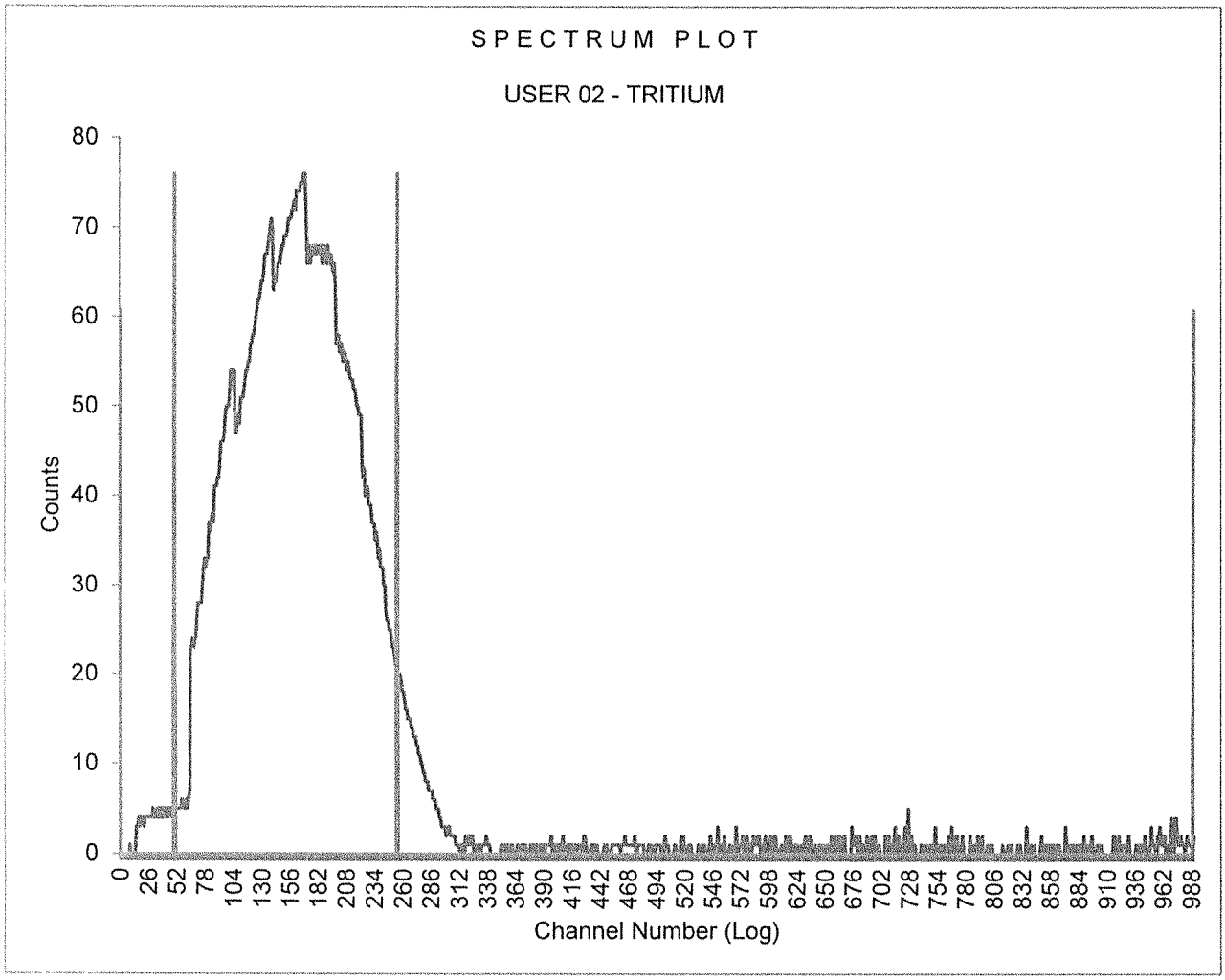
July 17, 2017

Sample Count Start Time:	7 Jul 2017 20:40:44		
Data Capture Date	07 Jul 2017 21:31:09		
User Filename	S02070717-12A.XLS		
	U02070717-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	12	17-12	50.00
H#, Total Counts:	167.6	1939	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



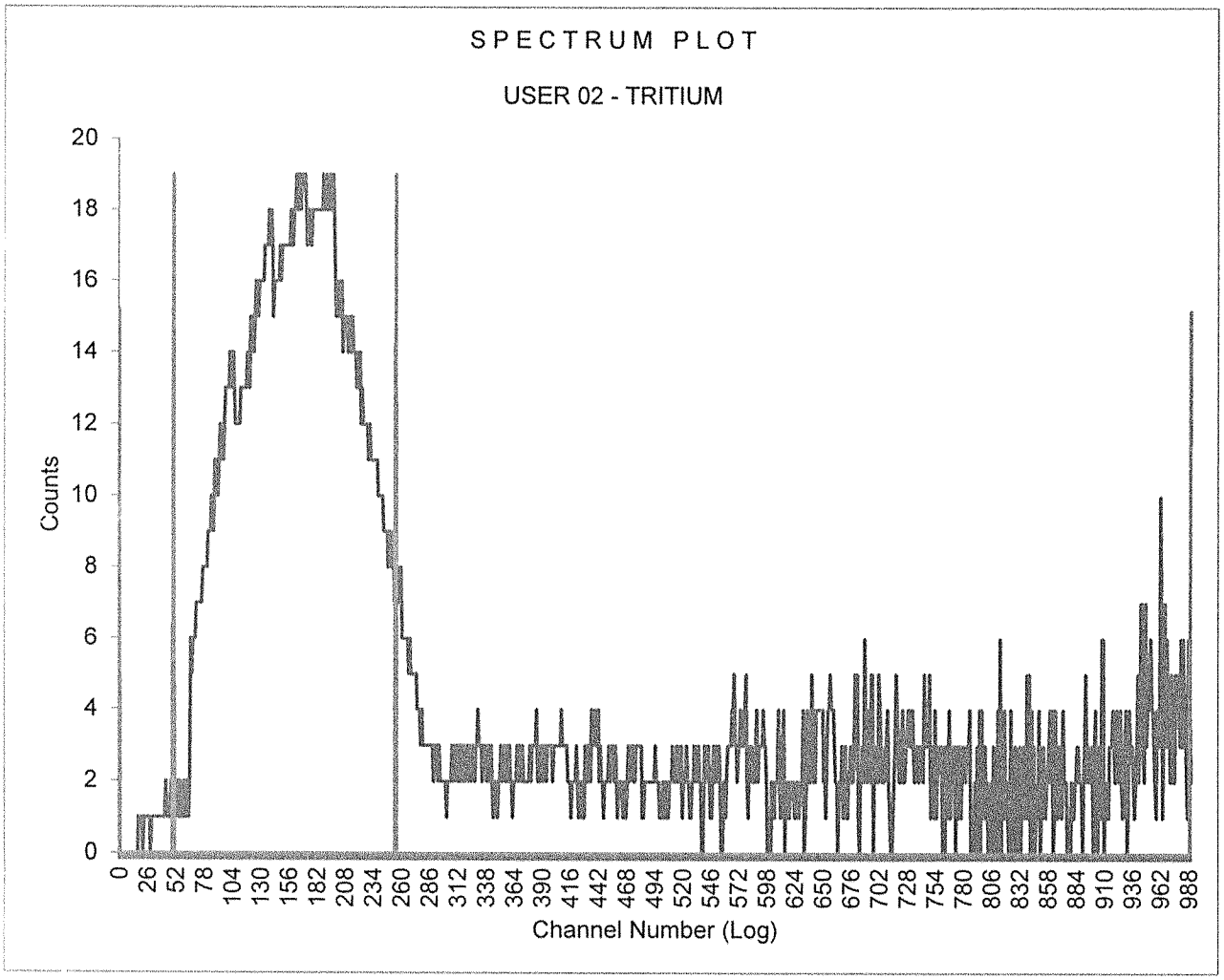
July 17, 2017

Sample Count Start Time:	7 Jul 2017 21:32:05		
Data Capture Date	07 Jul 2017 21:44:35		
User Filename	S02070711-1A.XLS		
	U02070717-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	13	11-1	12.10
H#, Total Counts:	168.4	11126	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



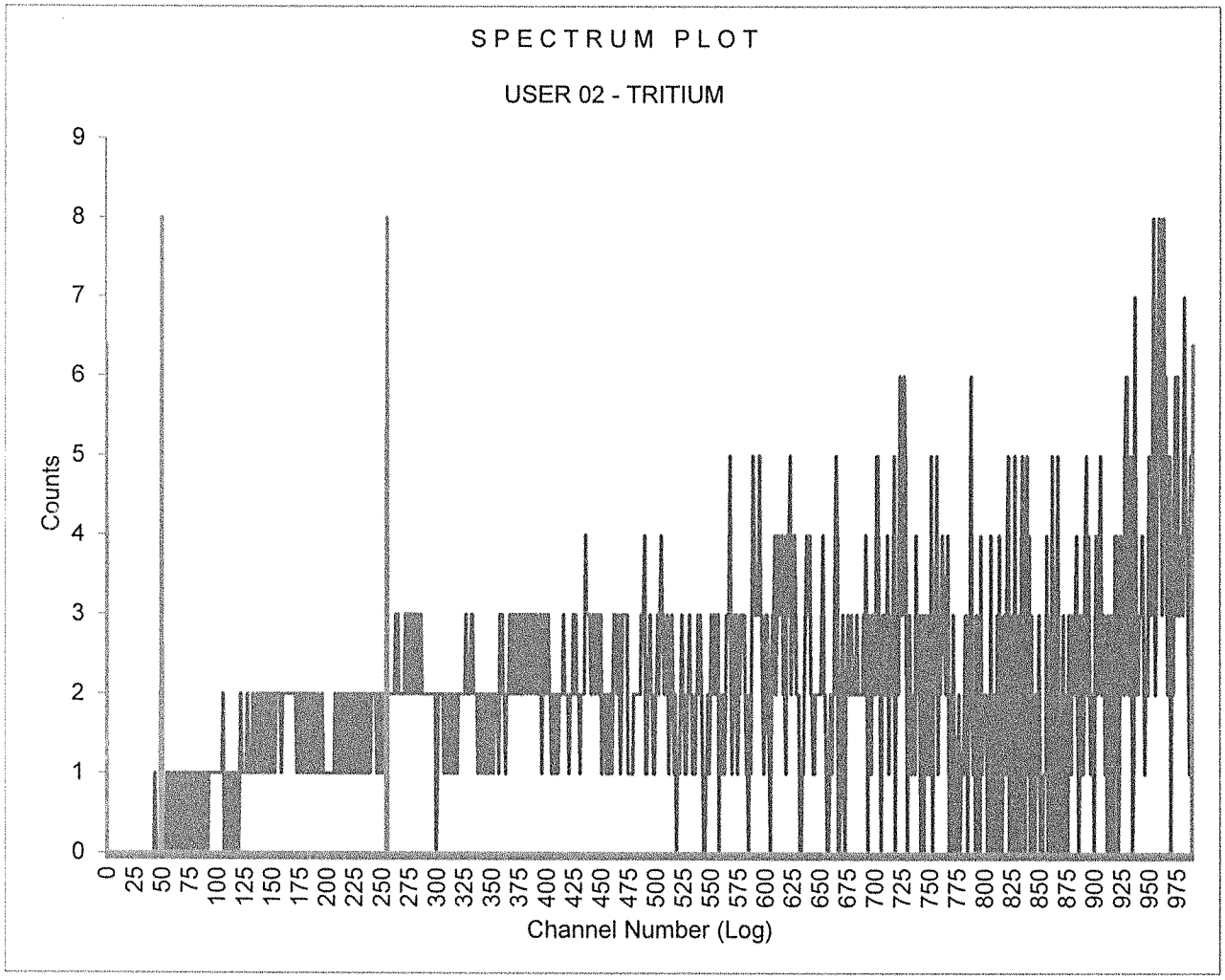
July 17, 2017

Sample Count Start Time:	7 Jul 2017 21:46:13		
Data Capture Date	07 Jul 2017 22:36:38		
User Filename	S02070711-2A.XLS		
	U02070717-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	14	11-2	50.00
H#, Total Counts:	168.4	4590	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



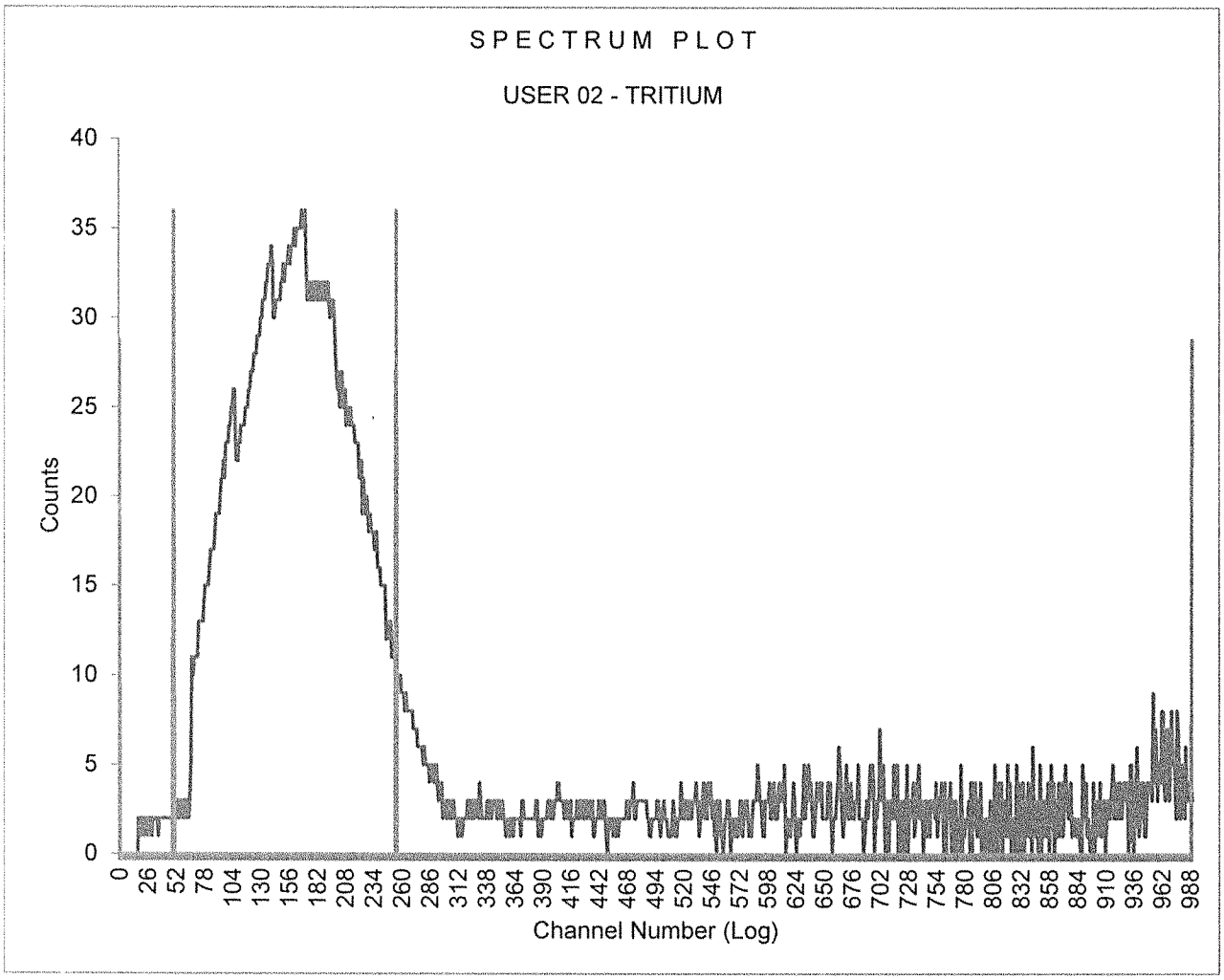
July 17, 2017

Sample Count Start Time:	7 Jul 2017 22:38:15		
Data Capture Date	07 Jul 2017 23:28:40		
User Filename	S02070711-3A.XLS		
	U02070717-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	15	11-3	50.00
H#, Total Counts:	168.9	1956	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



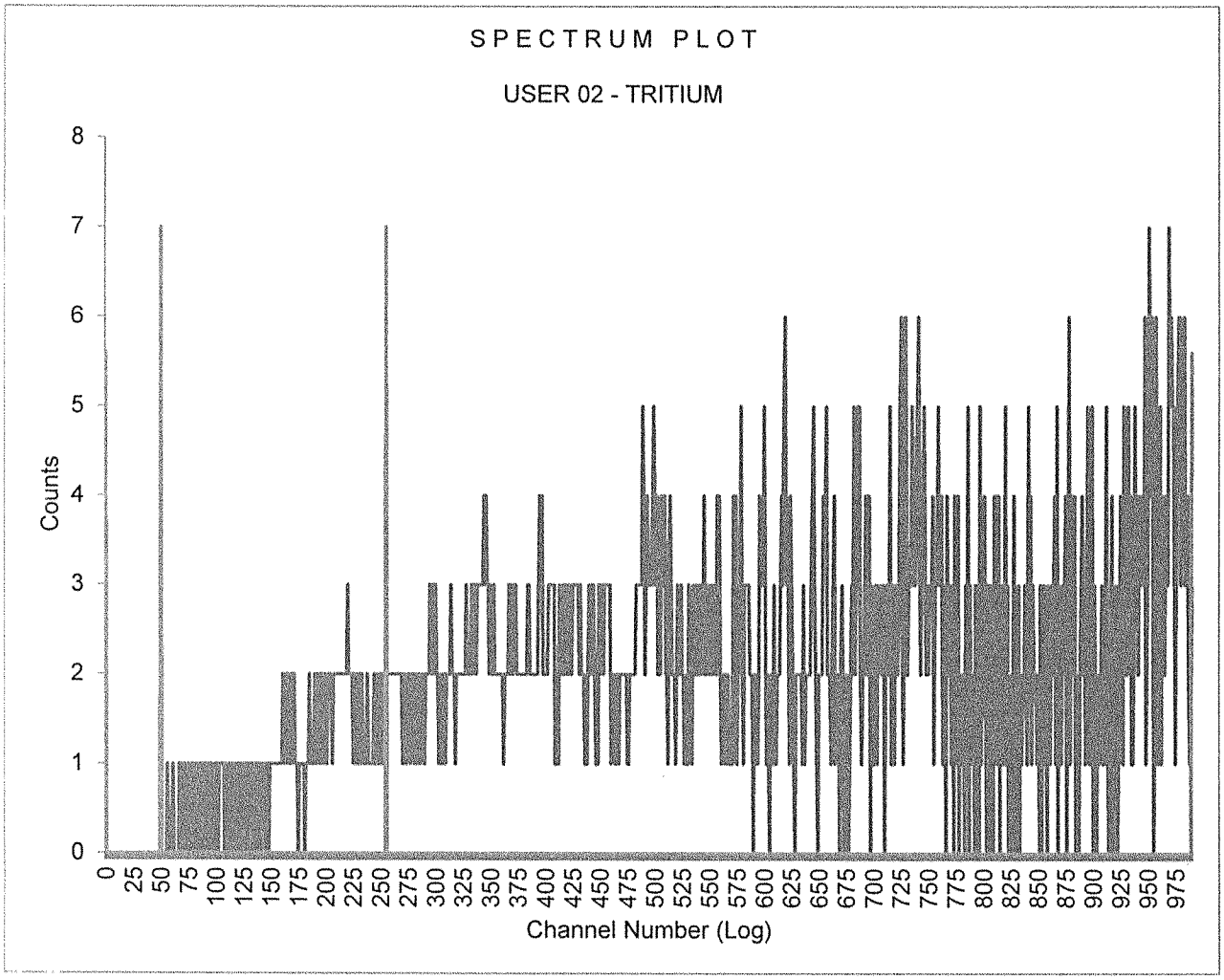
July 17, 2017

Sample Count Start Time:	7 Jul 2017 23:30:18		
Data Capture Date	08 Jul 2017 00:20:43		
User Filename	S02070811-4A.XLS		
	U02070717-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	16	11-4	50.00
H#, Total Counts:	170.8	6785	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



July 17, 2017

Sample Count Start Time:	8 Jul 2017 00:22:20		
Data Capture Date	08 Jul 2017 01:12:45		
User Filename	S02070811-5A.XLS		
	U02070717-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	17	11-5	50.00
H#, Total Counts:	171.0	2042	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



11078920

ID:TRITIUM 8 JUL 2017 03:22
USER: 2 COMMENT:SILVER
PRESET TIME : 50.00
DATA CALC : CPM H# :YES SAMPLE REPEATS: 1 PRINTER : STD
COUNT BLANK : NO IC# : NO REPLICATES : 1 RS232 :EDIT
TWO PHASE : NO AQC : NO CYCLE REPEATS : 1 DISK : OFF
SCINTILLATOR: LIQUID LUMEX:YES LOW SAMPLE REJ: 0
LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

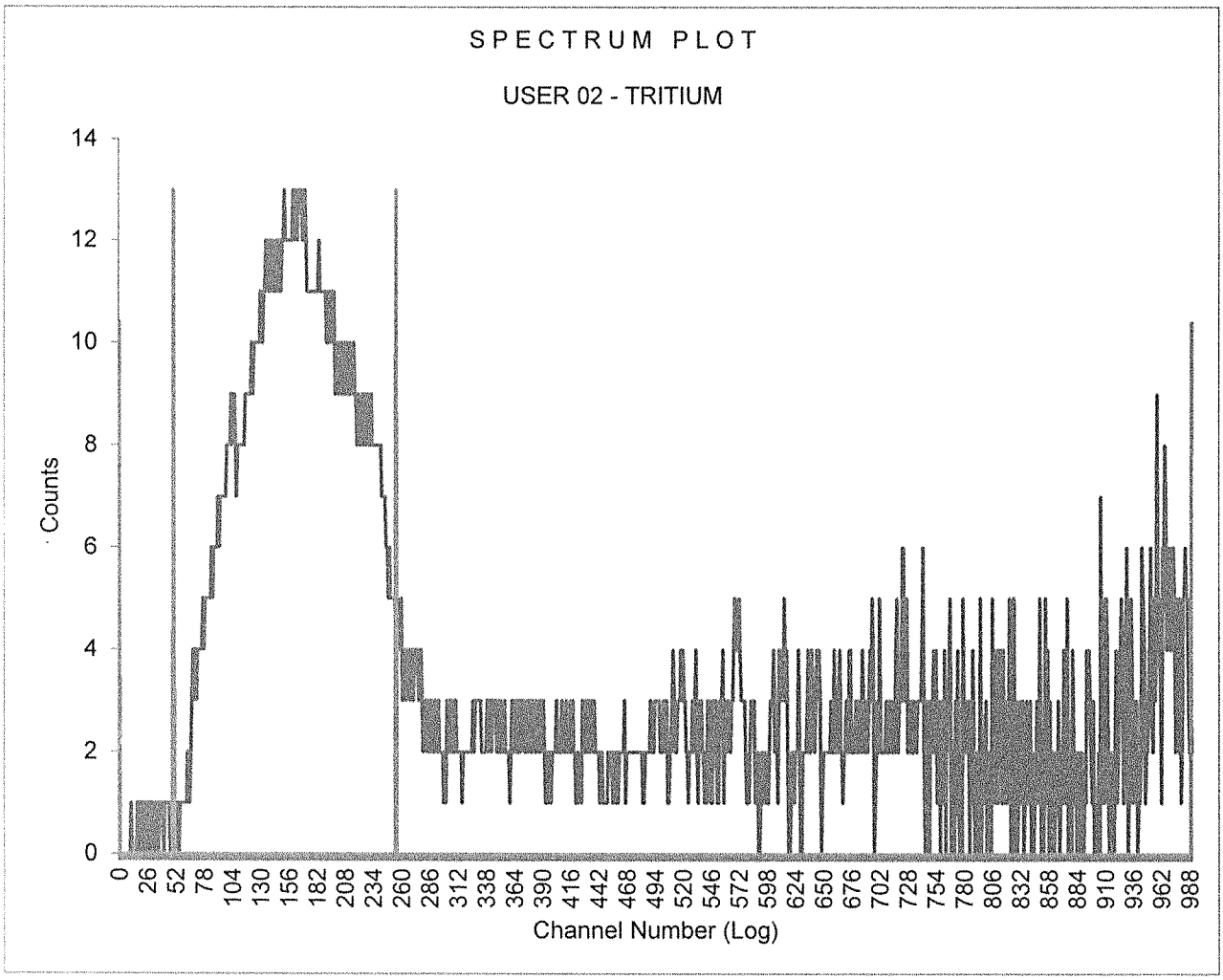
CHAN: 50.0 - 255.0 %ERROR: 2.00 FACTOR: 1.000000 BKG. SUB: 0
CHAN: 0.0 - 1000.0 %ERROR: 2.00 FACTOR: 1.000000 BKG. SUB: 0

	SAM NO	POS	TIME MIN	H#	WIND1 CPM	WIND1 %ERROR	WIND2 CPM	WIND2 %ERROR	LUMEX %	ELAPSED TIME
17	1	35-1	50.00	171.0	34.24	4.84	71.58	3.34	0.17	51.51
18	2	35-2	50.00	170.6	31.14	5.00	68.00	3.43	0.17	103.09
19	3	35-3	50.00	168.6	12.22	0.11	48.66	4.06	0.25	155.13
20	4	35-4	50.00	167.6	7.44	10.43	44.50	4.24	0.27	207.17
21	5	35-5	50.00	169.5	3.76	14.74	39.10	4.53	0.30	259.21
22	6	35-6	50.00	170.0	87.24	3.03	128.46	2.50	0.09	311.22
23	7	35-7	50.00	170.0	53.42	3.07	92.34	2.94	0.14	363.26
24	8	35-8	50.00	169.7	12.44	0.05	47.98	4.09	0.24	415.31

QPOP

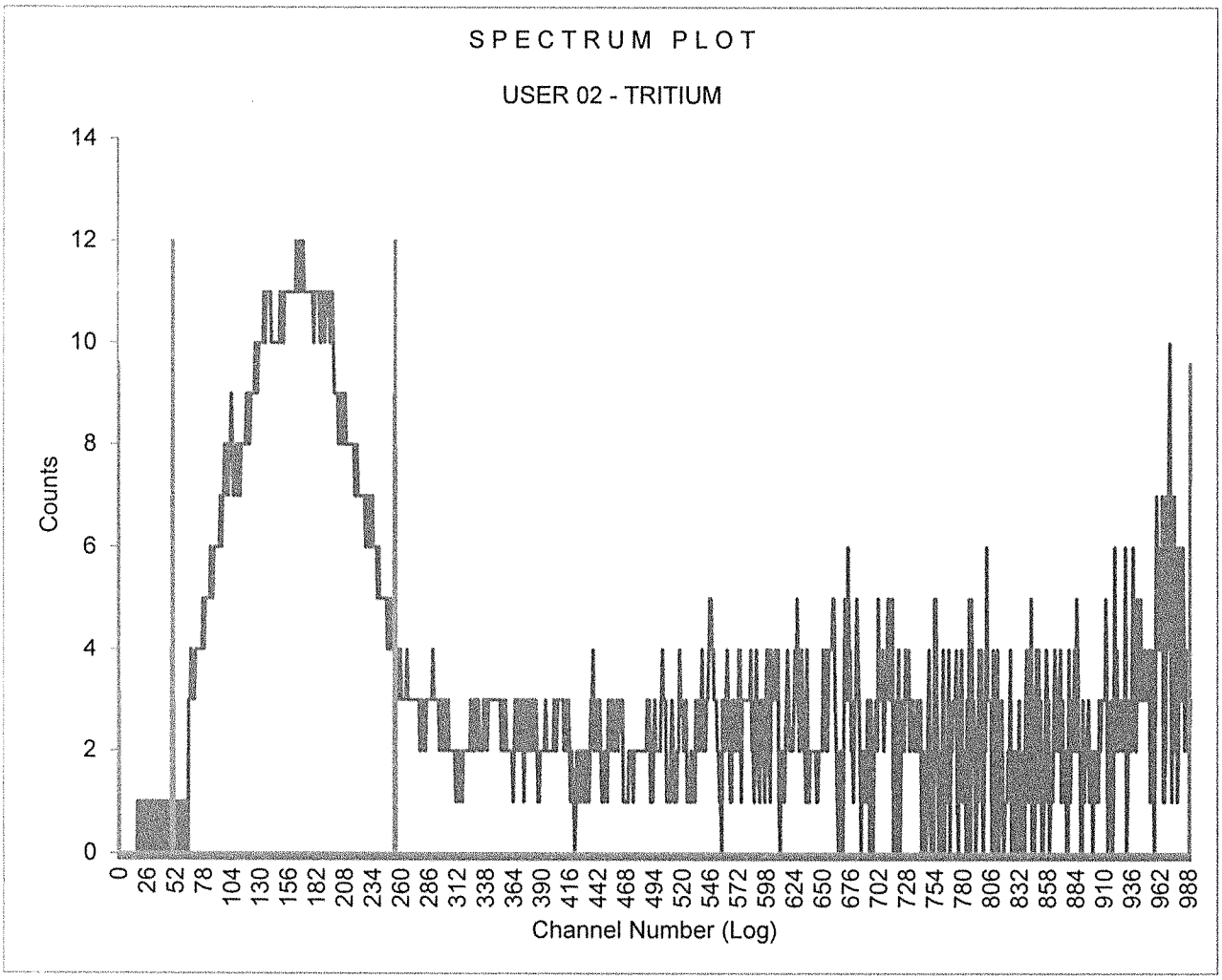
July 17, 2017

Sample Count Start Time:	8 Jul 2017 02:29:33		
Data Capture Date	08 Jul 2017 03:19:58		
User Filename	S02070835-1A.XLS		
	U02070835-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	1	35-1	50.00
H#, Total Counts:	171.0	3579	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



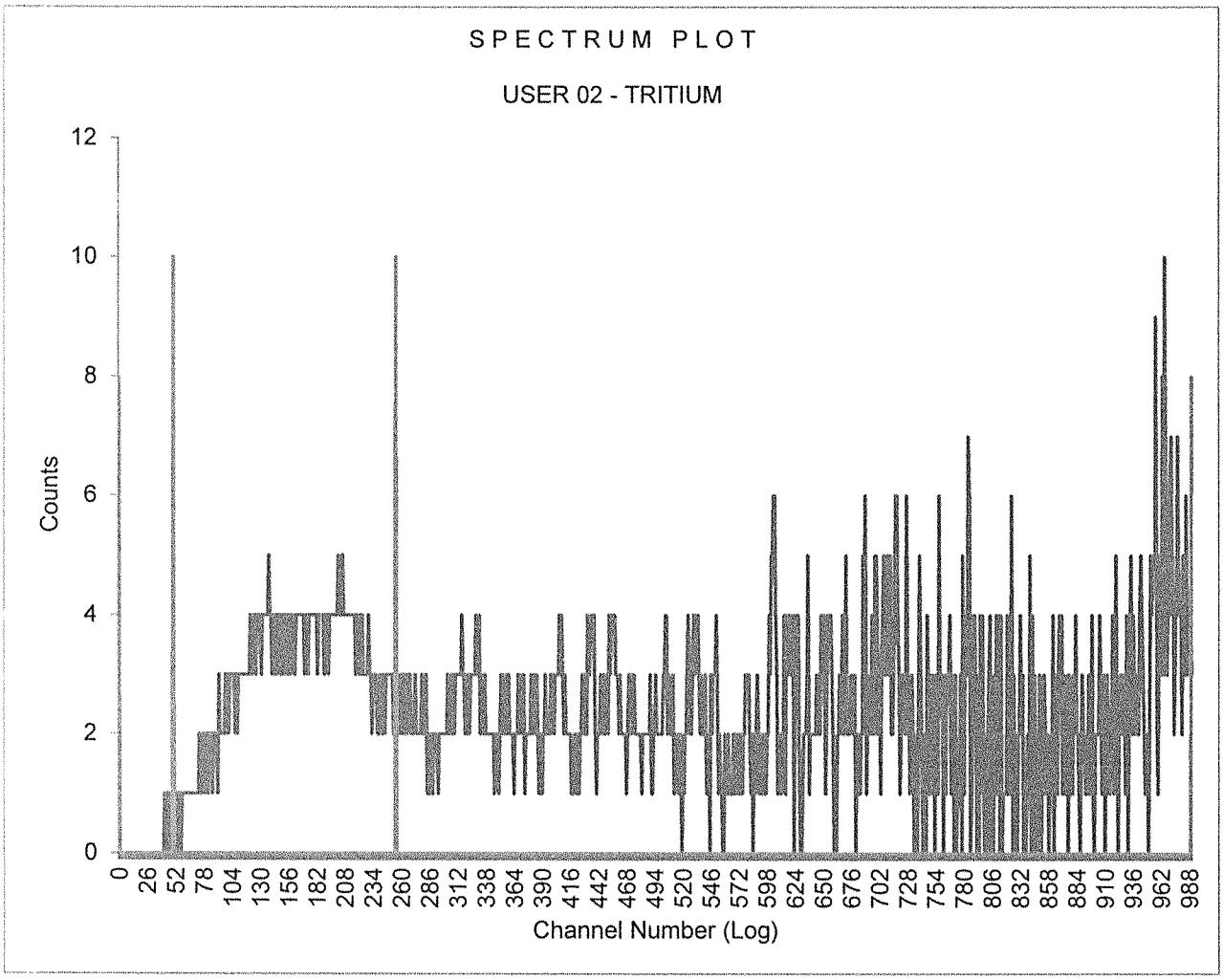
July 17, 2017

Sample Count Start Time:	8 Jul 2017 03:21:07		
Data Capture Date	08 Jul 2017 04:12:01		
User Filename	S02070835-2A.XLS		
	U02070835-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	2	35-2	50.00
H#, Total Counts:	170.6	3400	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



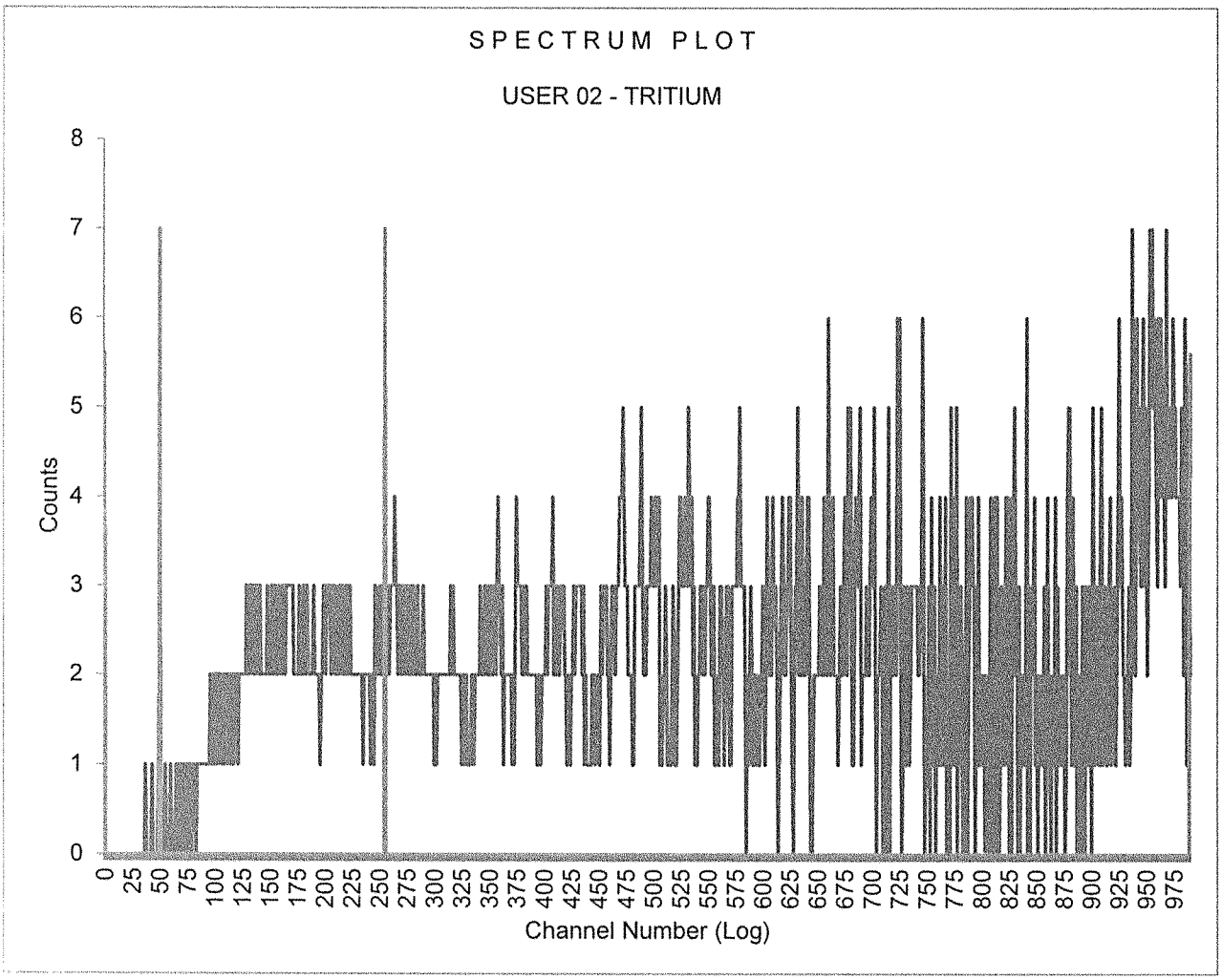
July 17, 2017

Sample Count Start Time:	8 Jul 2017 04:13:10		
Data Capture Date	08 Jul 2017 05:04:03		
User Filename	S02070835-3A.XLS		
	U02070835-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	3	35-3	50.00
H#, Total Counts:	168.6	2433	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



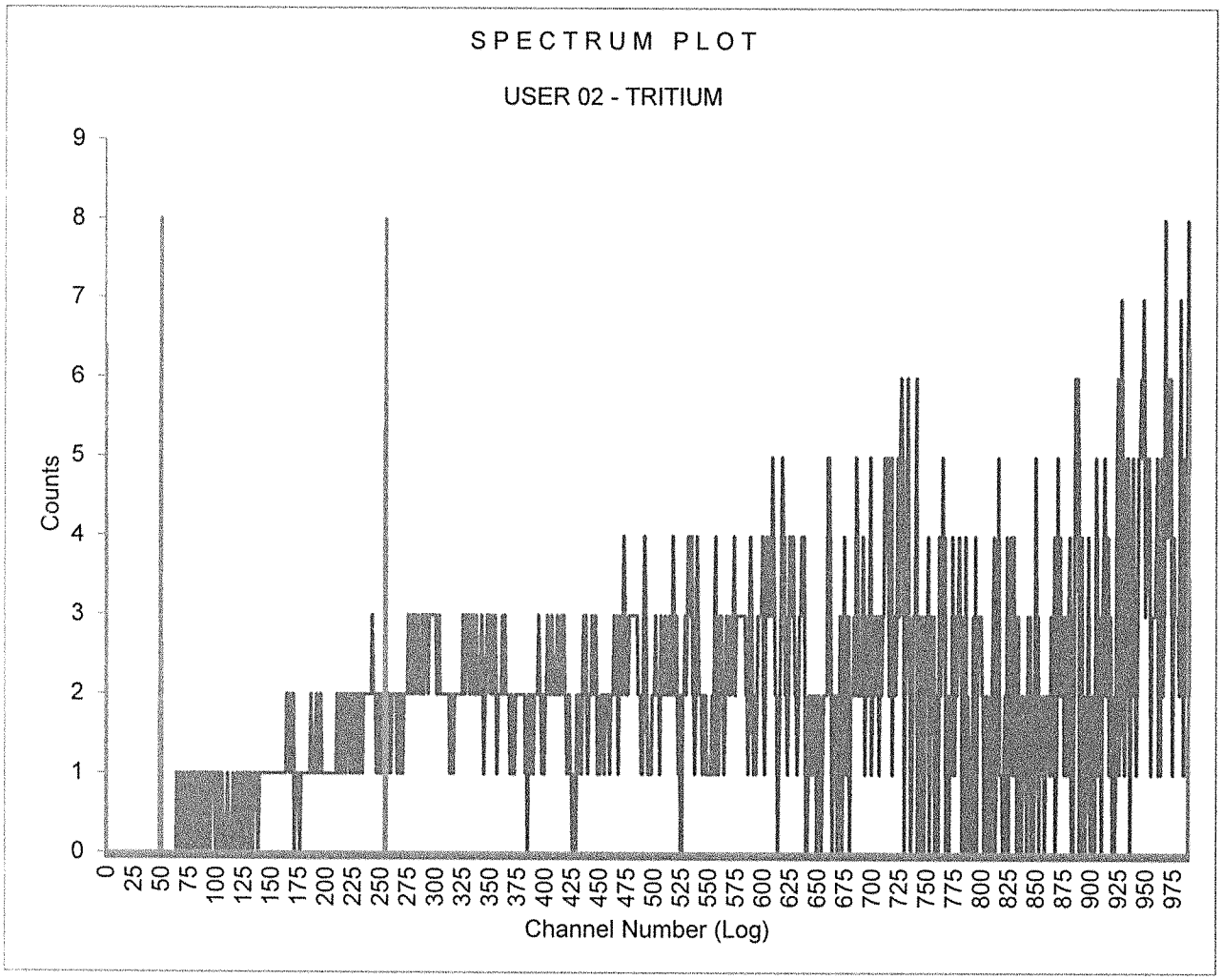
July 17, 2017

Sample Count Start Time:	8 Jul 2017 05:05:12		
Data Capture Date	08 Jul 2017 05:56:05		
User Filename	S02070835-4A.XLS		
	U02070835-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	4	35-4	50.00
H#, Total Counts:	167.6	2225	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	

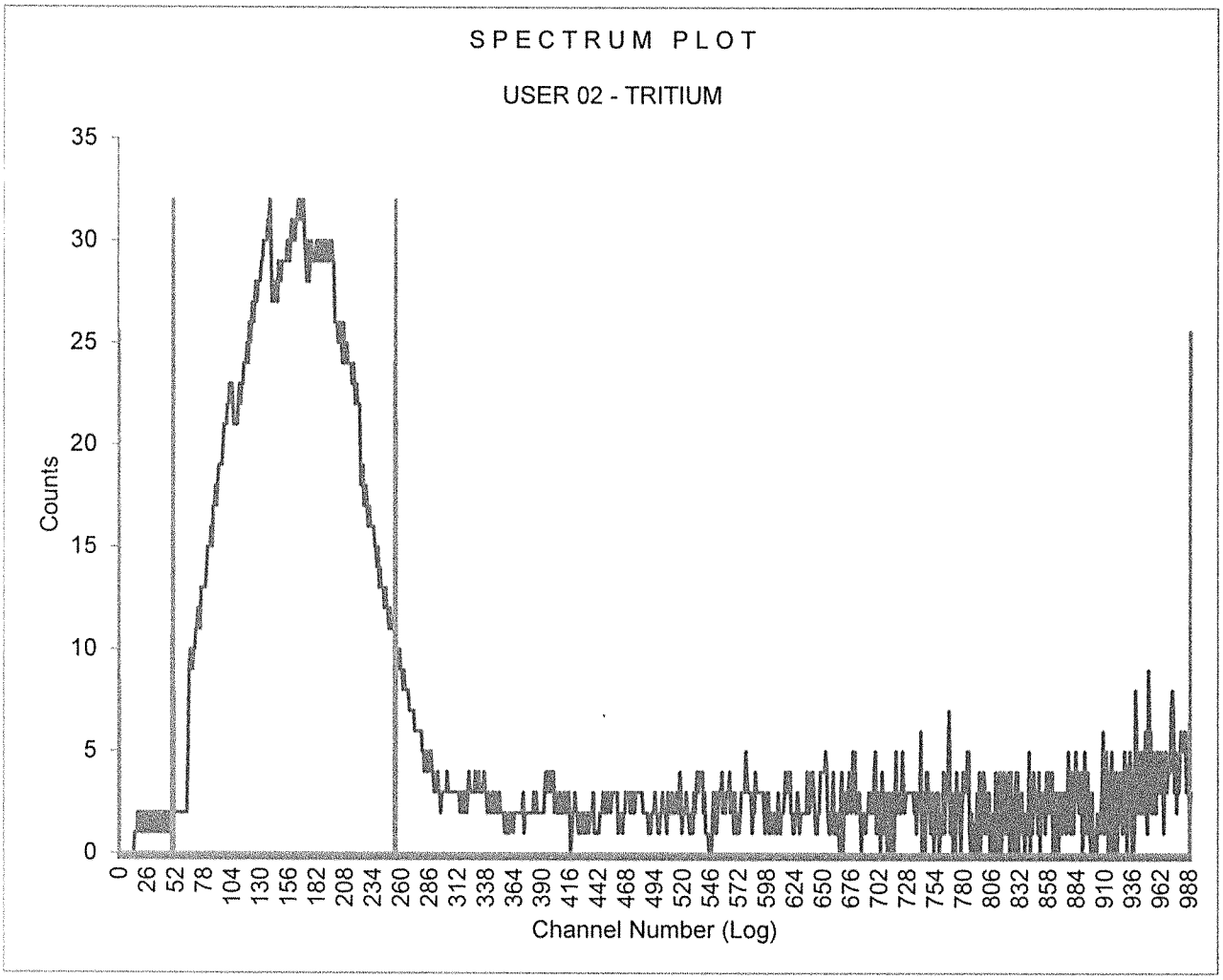


July 17, 2017

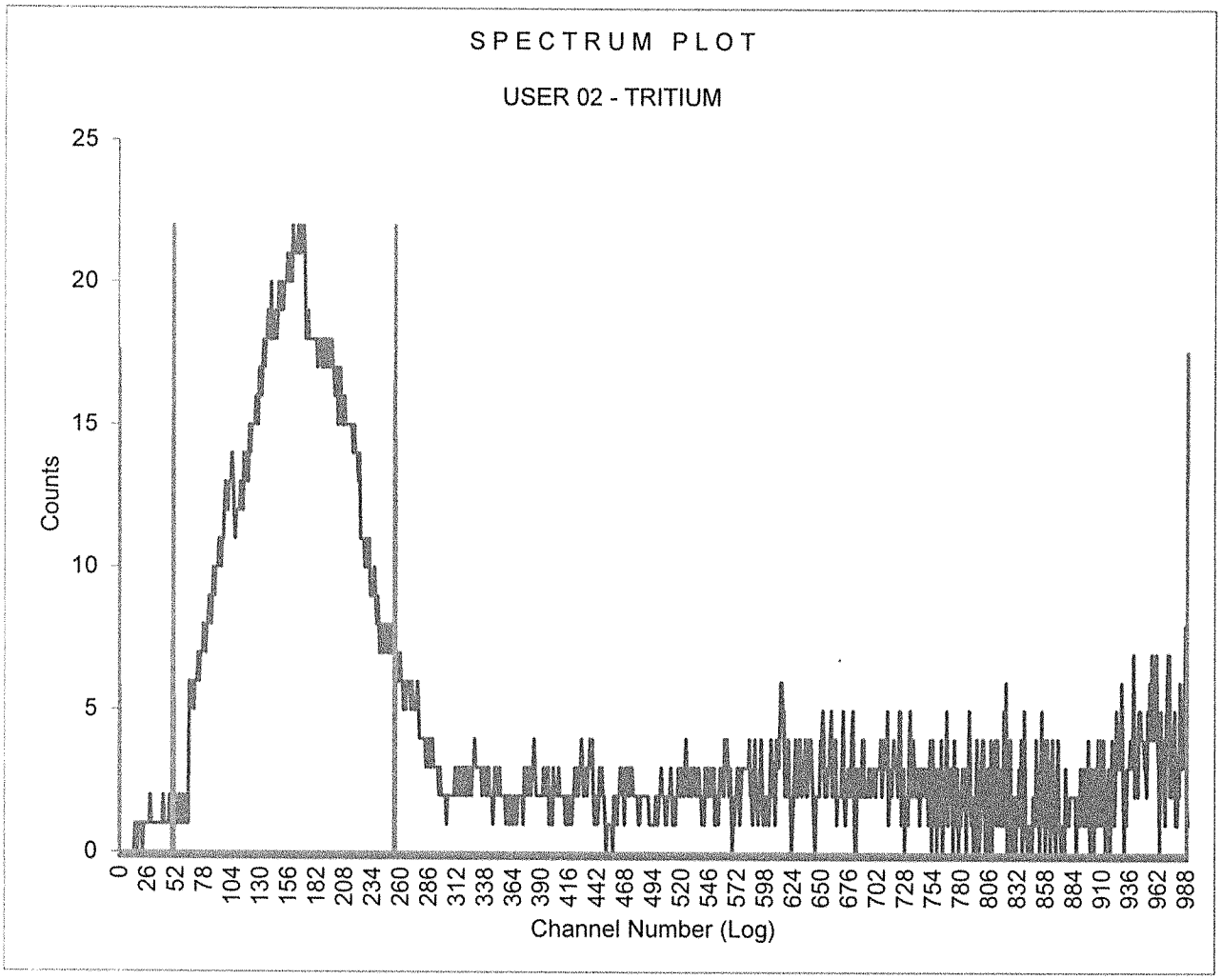
Sample Count Start Time:	8 Jul 2017 05:57:15		
Data Capture Date	08 Jul 2017 06:48:06		
User Filename	S02070835-5A.XLS		
	U02070835-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	5	35-5	50.00
H#, Total Counts:	169.5	1955	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



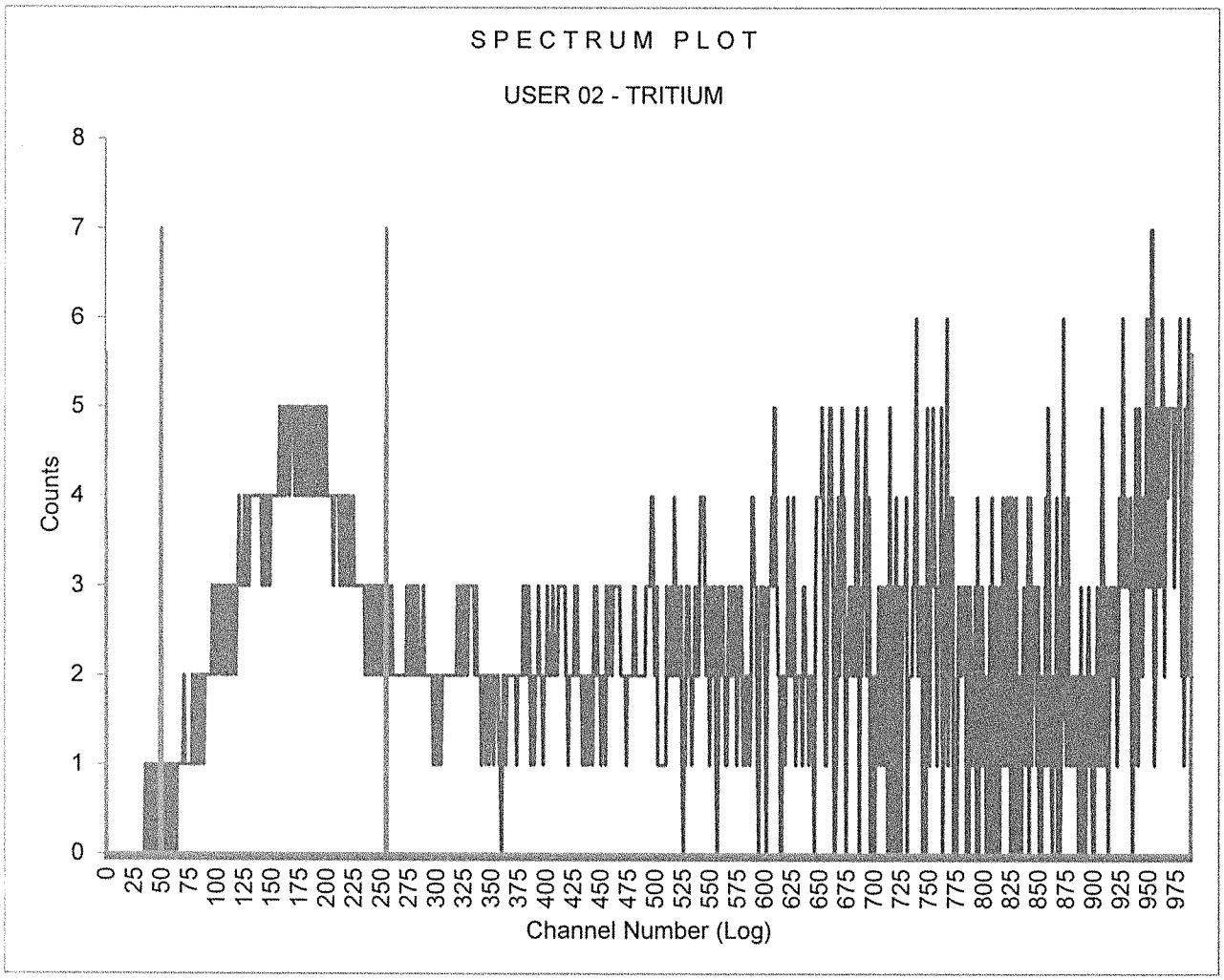
Sample Count Start Time:	8 Jul 2017 08:49:15		
Data Capture Date	08 Jul 2017 07:40:08		
User Filename	S02070835-6A.XLS		
	U02070835-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	6	35-6	50.00
H#, Total Counts:	170.0	6423	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



Sample Count Start Time:	8 Jul 2017 07:41:18		
Data Capture Date	08 Jul 2017 08:32:11		
User Filename	S02070835-7A.XLS		
	U02070835-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	7	35-7	50.00
H#, Total Counts:	170.0	4617	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



Sample Count Start Time:	8 Jul 2017 08:33:21		
Data Capture Date	08 Jul 2017 09:24:13		
User Filename	S02070835-8A.XLS		
	U02070835-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	8	35-8	50.00
H#, Total Counts:	169.7	2399	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



Method Calibration Data

30-Jun-2017

GEL Laboratories
2040 Savage Road, Charleston, SC 29407
(843)556-8171

Liquid Scintillation Counter Calibration Package

Method: Tc-99

Instrument Color Code: GREEN

	Included/ Acceptable	Comments
Part 1: Efficiency determination		
1 Efficiency spreadsheet (eff pts, graph, trendline equation)	✓	
2 Verification Spreadsheet (recoveries 90%-110%)	✓	
3 Applicable portion of Machines.XLS	✓	
4 Raw Data and spectra	✓	
5 Window, Low Level and Lumex settings	✓	
Part 2. Documentation for Calibration Source		
1 Vendor Certificate	✓	
2 Standard Traceability Log (from LIMS)	✓	
3 Verification of Source	✓	
4 Source preparation sheet	✓	
5 Efficiency standard precision check	✓	
Part 3. Documentation for Verification Source		
1 Vendor Certificate	✓	
2 Standard Traceability Log (from LIMS)	✓	
3 Verification of Source	✓	
4 Source preparation sheet	✓	
Part 4. Enter into LIMS		
1 Alpha LIMS instrument calibration updated	✓	

Primary Review of Package

Secondary Review of Package

Effective Date:
7/1/17

Expiration Date: 6/30/18

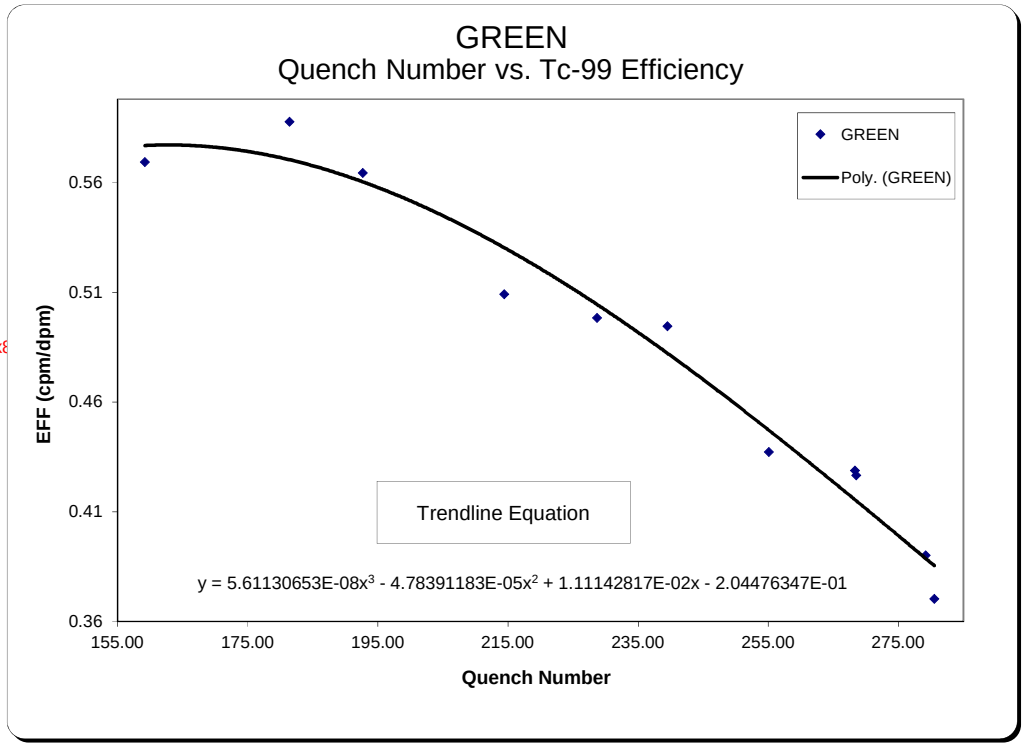
Tc-99 Calibration

Instrument	GREEN

Standard Information from prep sheet	
Isotope	Tc-99
Serial Number	1297-A
Isotope Halflife (days)	77798250
Reference Date	9/1/1996
Ref. Act. (DPM/mL)	95579.91
Amount of Std. (mL)	0.1

Std #	Start Count Time	Quench Number	RAW CPM	BKG	RAW CPM-BKG	Nominal DPM	EFF.
1	6/25/17 12:03	159.20	5477.84	16.73	5461.11	9557.343613	0.57140
2	6/25/17 12:06	181.40	5652.78	16.73	5636.05	9557.343613	0.58971
3	6/25/17 12:09	192.70	5429.73	16.73	5413.00	9557.343612	0.56637
4	6/25/17 12:11	214.40	4901.95	16.73	4885.22	9557.343612	0.51115
5	6/25/17 12:14	228.70	4798.10	16.73	4781.37	9557.343612	0.50028
6	6/25/17 12:17	239.50	4762.86	16.73	4746.13	9557.343612	0.49660
7	6/25/17 12:20	255.10	4214.58	16.73	4197.85	9557.343612	0.43923
8	6/25/17 12:24	268.50	4113.06	16.73	4096.33	9557.343612	0.42861
9	6/25/17 12:27	268.30	4133.88	16.73	4117.15	9557.343611	0.43078
10	6/25/17 12:30	279.20	3764.81	16.73	3748.08	9557.343611	0.39217
11	6/25/17 12:34	280.50	3574.39	16.73	3557.66	9557.343611	0.37224

Copy into Machines.xls	
Cal Date	07/01/17
Min H#	158.5
Max H#	270.1
A0	-2.04476347E-01
A1	1.11142817E-02
A2	-4.78391183E-05
A3	5.61130653E-08
A4	0
A5	0
Geometry	int GL/5mL DI H2O/AG 1x8
Exp Date	06/30/18
Low Level	N
Eff Error	0.007920
Window1 LL	320
Window1 UL	635
Window2 LL	0
Window2 UL	900



Tc-99 Verification

Instrument	GREEN

Standard Information from prep sheet	
Isotope	Tc-99
Serial Number	1621-A
Isotope Halflife (days)	77798250
Reference Date	9/28/2012
Ref. Act. (DPM/mL)	23519.59
Amount of Std. (mL)	0.5

Std #	Start Count Time	Quench Number	Raw CPM	BKG	BKG Corrected CPM	Calculated EFF.	Standard DPM	Measured DPM	Recovery %
1	6/26/17 6:26	158.50	6669.03	18.00	6651.03	0.5787	11759.61	11492.13	97.73%
2	6/26/17 6:28	182.60	6498.06	18.00	6480.06	0.5715	11759.61	11337.87	96.41%
3	6/26/17 6:30	200.20	6252.73	18.00	6234.73	0.5535	11759.61	11264.97	95.79%
4	6/26/17 6:33	213.30	6034.12	18.00	6016.12	0.5342	11759.61	11261.56	95.76%
5	6/26/17 6:36	224.40	5746.29	18.00	5728.29	0.5147	11759.61	11129.90	94.65%
6	6/26/17 6:38	230.90	5607.78	18.00	5589.78	0.5021	11759.61	11133.88	94.68%
7	6/26/17 6:41	242.80	5361.05	18.00	5343.05	0.4770	11759.61	11200.38	95.24%
8	6/26/17 6:44	243.80	5399.47	18.00	5381.47	0.4748	11759.61	11333.17	96.37%
9	6/26/17 6:47	264.70	4887.62	18.00	4869.62	0.4263	11759.61	11423.67	97.14%
10	6/26/17 6:50	262.30	4847.62	18.00	4829.62	0.4321	11759.61	11178.24	95.06%
11	6/26/17 6:53	270.10	4729.30	18.00	4711.30	0.4131	11759.61	11403.73	96.97%

	Calibration Coeffs
a0	-2.04476347E-01
a1	1.11142817E-02
a2	-4.78391183E-05
a3	5.61130653E-08

Green	**Tc-99 AG**
Cal Date	07/01/2017
Min H#	158.50
Max H#	270.10
A0	-2.0447634700E-01
A1	1.1114281700E-02
A2	-4.7839118300E-05
A3	5.6113065300E-08
A4	0.00000000000000E+00
A5	0.00000000000000E+00
B0	-4.14376401858229E+01
B1	8.11443482513157E-01
B2	-3.71400895086310E-03
B3	5.60168582237040E-06
B4	0.00000000000000E+00
B5	0.00000000000000E+00
Geometry	15mL Ecoscint GL/5mL DI H2O/AG 1x8 Resin
Exp Date	06/30/2018
Low Level	N
Eff Error	0.007920
Window1 LL	320
Window1 UL	635
Window2 LL	0
Window2 UL	900

Instrument Type	LS 6000
Data Capture Date	25 Jun 2017 11:46:45
User Filename	C:\LSCCAPTURE\BROWN\USER09\UN062501.BSF

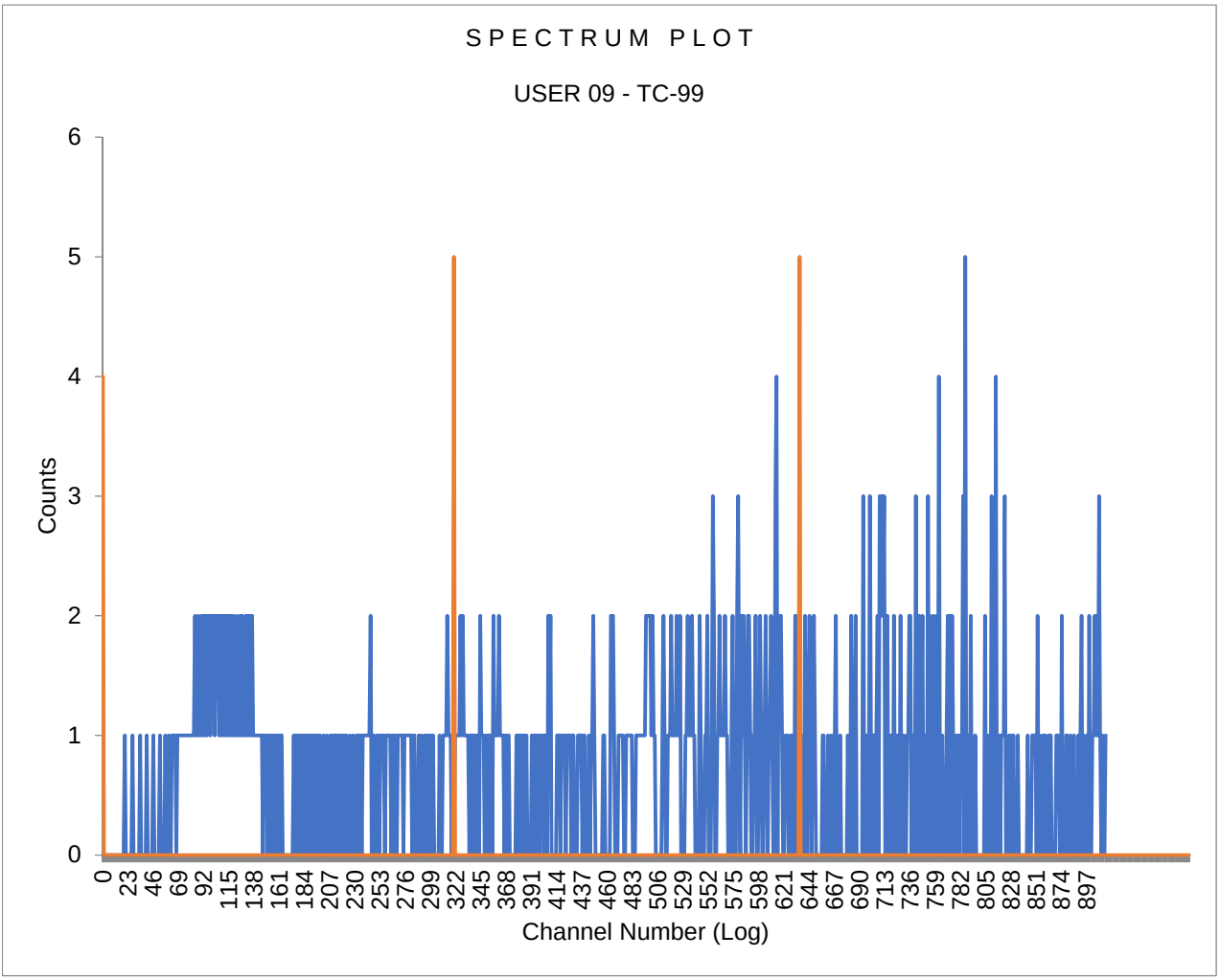
User Number	9
User Id	TC-99
User Comments	GREEN

Scintillator Choice:	LIQUID

Sam	Rack	Time	H#	Raw CPM1	Raw CPM2	CPM Iso1	%Err1	CPM Iso2	%Err2	LumEx	ElTime
1	56-1	15.00	159.7	16.73	42.93	16.73	12.62	42.93	7.88	13.63	15.78
2	56-2	1.85	159.2	5477.84	6480.54	5477.84	1.99	6480.54	1.83	0.13	18.59
3	56-3	1.80	181.4	5652.78	6644.44	5652.78	1.98	6644.44	1.83	0.08	21.32
4	56-4	1.85	192.7	5429.73	6480.00	5429.73	2.00	6480.00	1.83	0.07	24.10
5	56-5	2.05	214.4	4901.95	6180.98	4901.95	2.00	6180.98	1.78	0.05	27.11
6	56-6	2.10	228.7	4798.10	6165.71	4798.10	1.99	6165.71	1.76	0.04	30.13
7	56-7	2.10	239.5	4762.86	6180.48	4762.86	2.00	6180.48	1.76	0.04	33.17
8	56-8	2.40	255.1	4214.58	5875.42	4214.58	1.99	5875.42	1.68	0.03	36.51
9	56-9	2.45	268.5	4113.06	5934.29	4113.06	1.99	5934.29	1.66	0.03	39.89
10	56-10	2.45	268.3	4133.88	5824.90	4133.88	1.99	5824.90	1.67	0.03	43.26
11	56-11	2.70	279.2	3764.81	5570.37	3764.81	1.98	5570.37	1.63	0.02	46.90
12	56-12	2.85	280.5	3574.39	5542.46	3574.39	1.98	5542.46	1.59	0.02	50.68

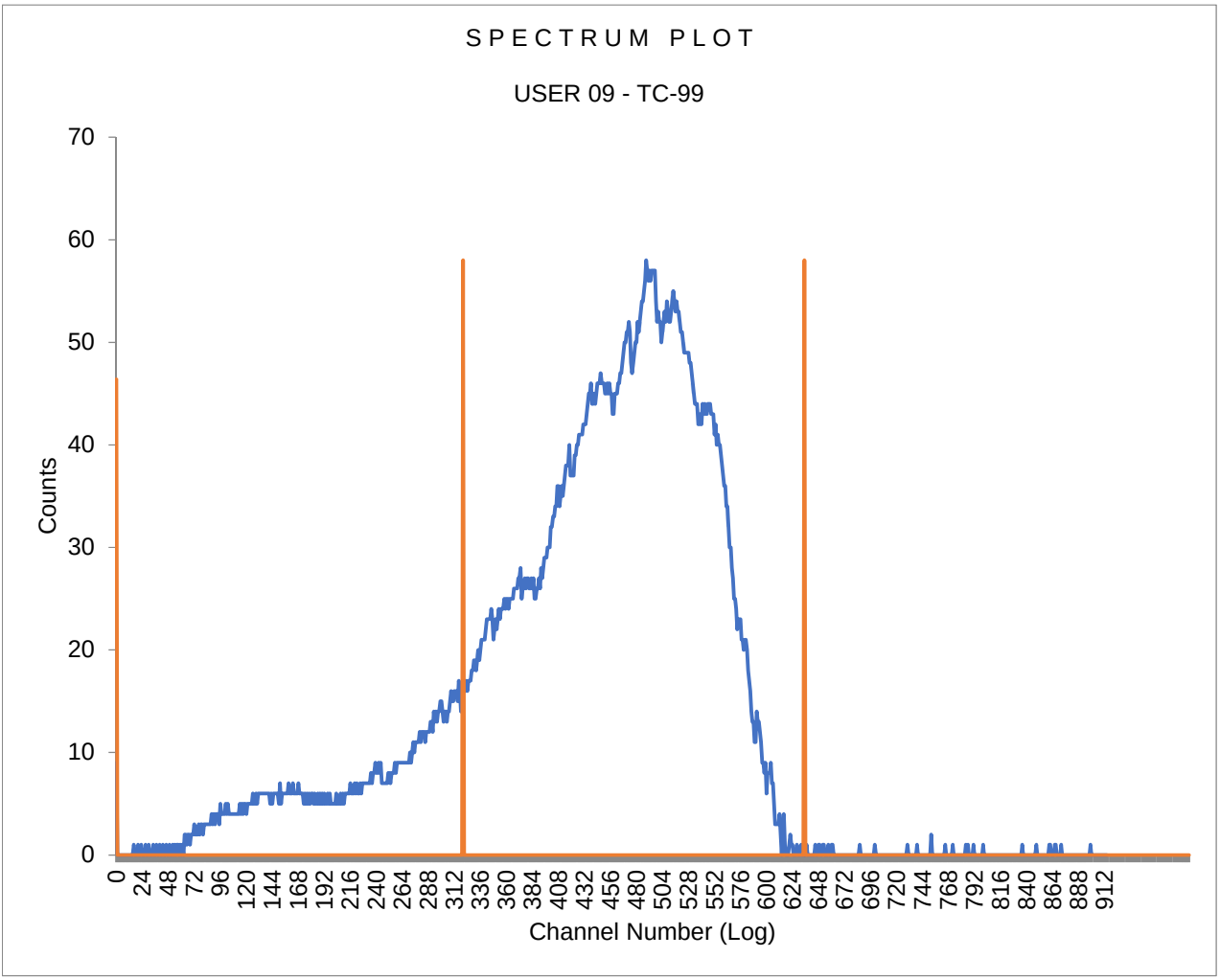
July 17, 2017

Sample Count Start Time:	25 Jun 2017 11:47:32		
Data Capture Date	25 Jun 2017 12:02:55		
User Filename	S09062556-1A.XLS		
	U09062556-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	1	56-1	15.00
H#, Total Counts:	159.7	658	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



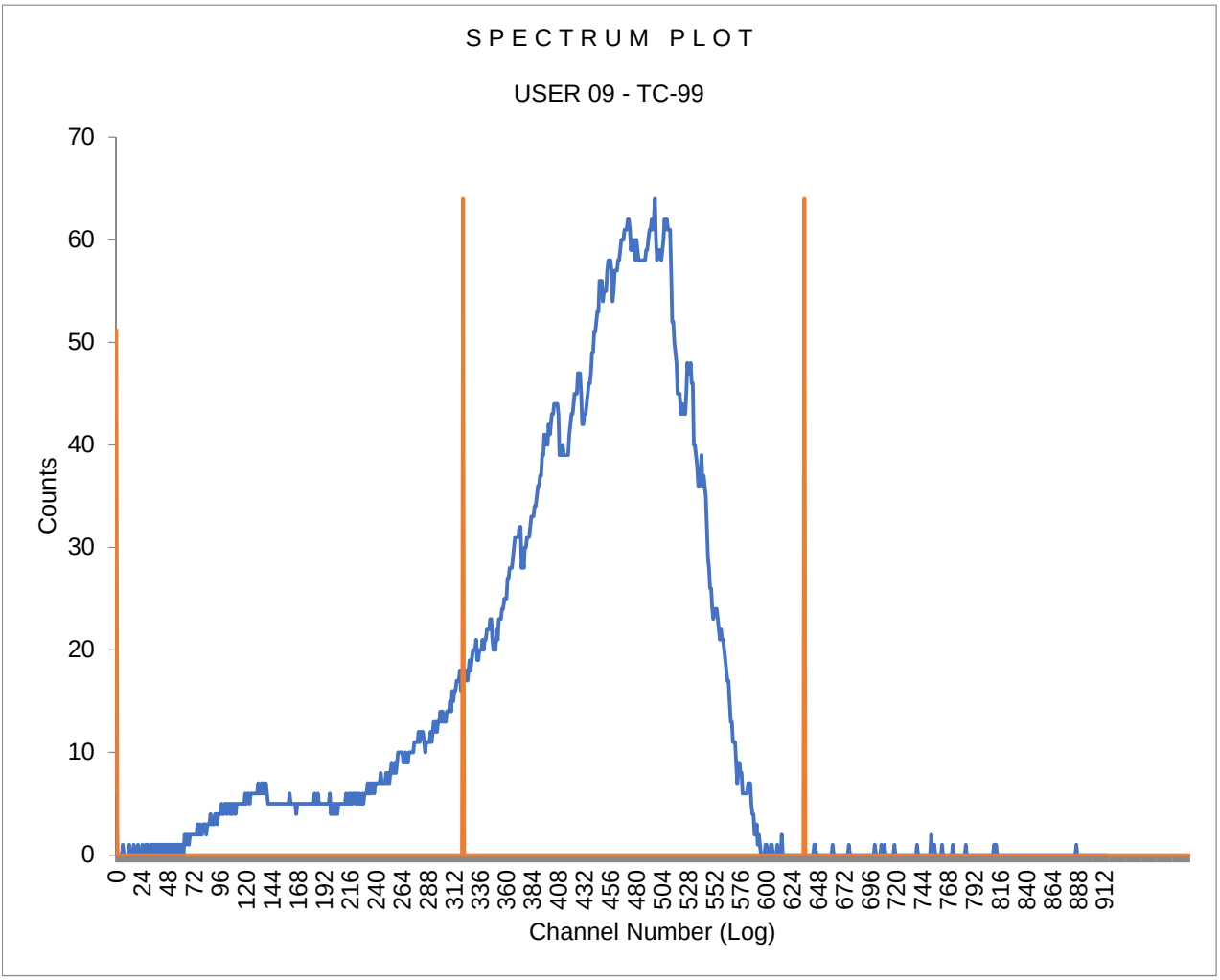
July 17, 2017

Sample Count Start Time:	25 Jun 2017 12:03:29		
Data Capture Date	25 Jun 2017 12:05:42		
User Filename	S09062556-2A.XLS		
	U09062556-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	2	56-2	1.85
H#, Total Counts:	159.2	11989	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



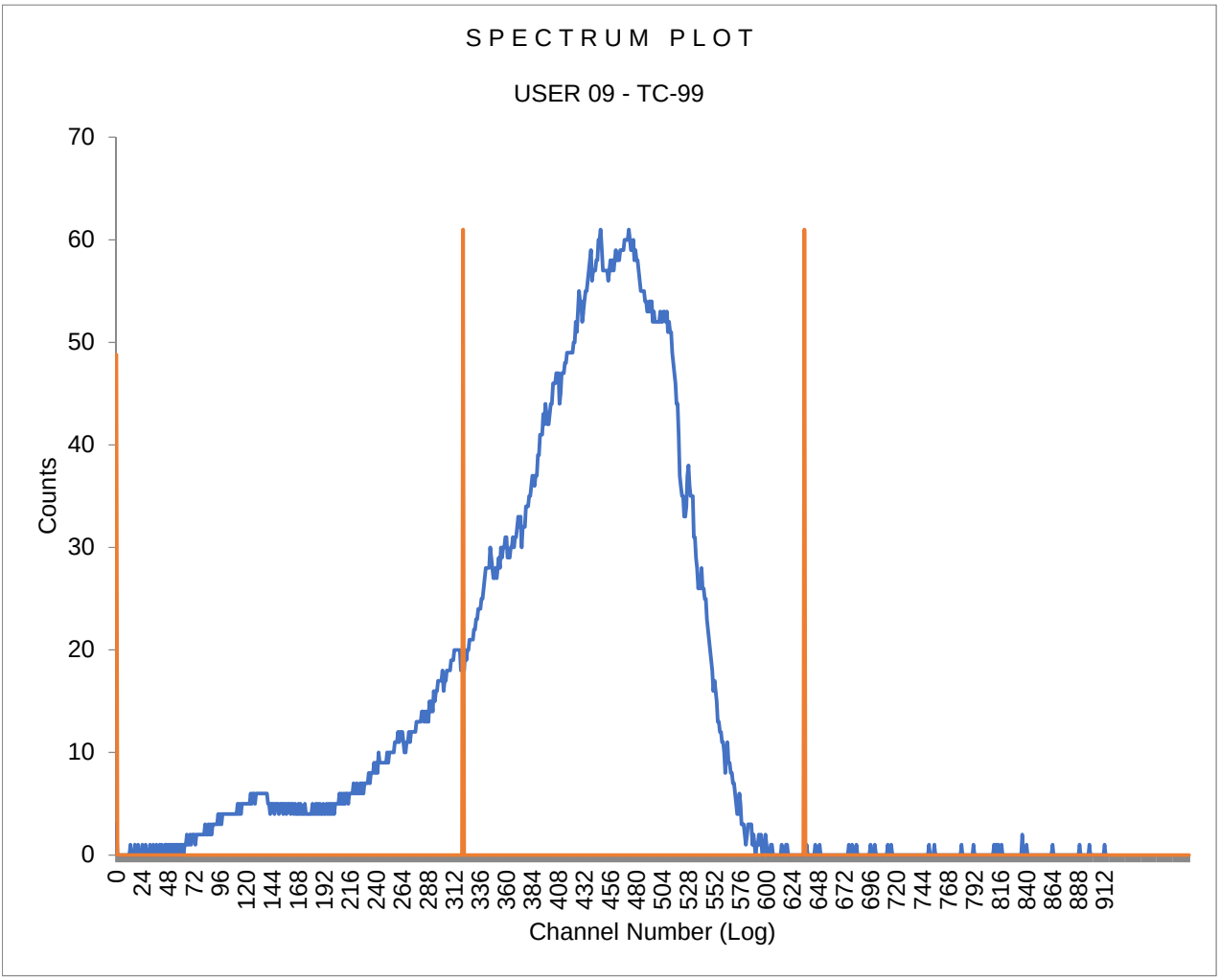
July 17, 2017

Sample Count Start Time:	25 Jun 2017 12:06:16		
Data Capture Date	25 Jun 2017 12:08:26		
User Filename	S09062556-3A.XLS		
	U09062556-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	3	56-3	1.80
H#, Total Counts:	181.4	11960	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



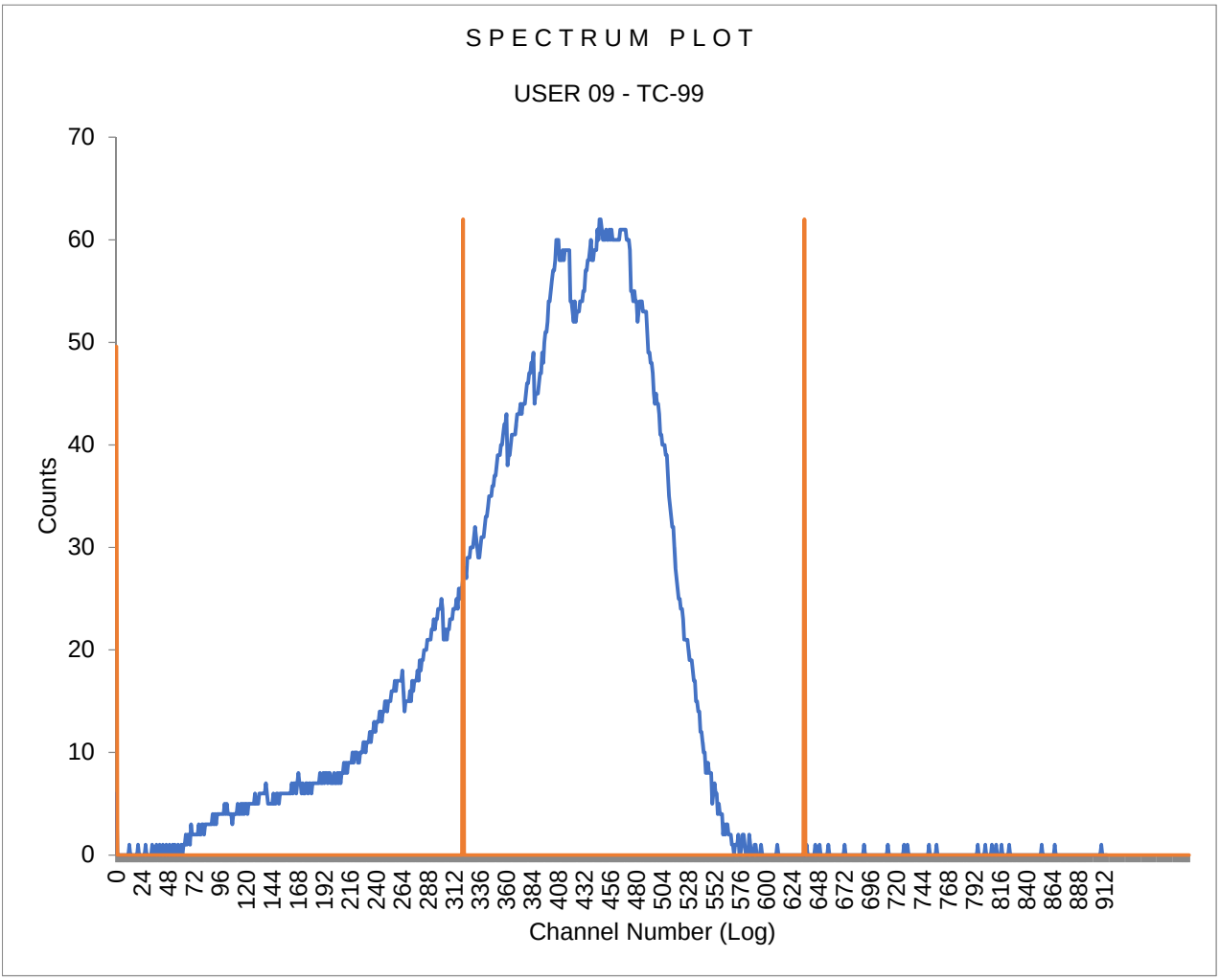
July 17, 2017

Sample Count Start Time:	25 Jun 2017 12:09:00		
Data Capture Date	25 Jun 2017 12:11:13		
User Filename	S09062556-4A.XLS		
	U09062556-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	4	56-4	1.85
H#, Total Counts:	192.7	11989	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



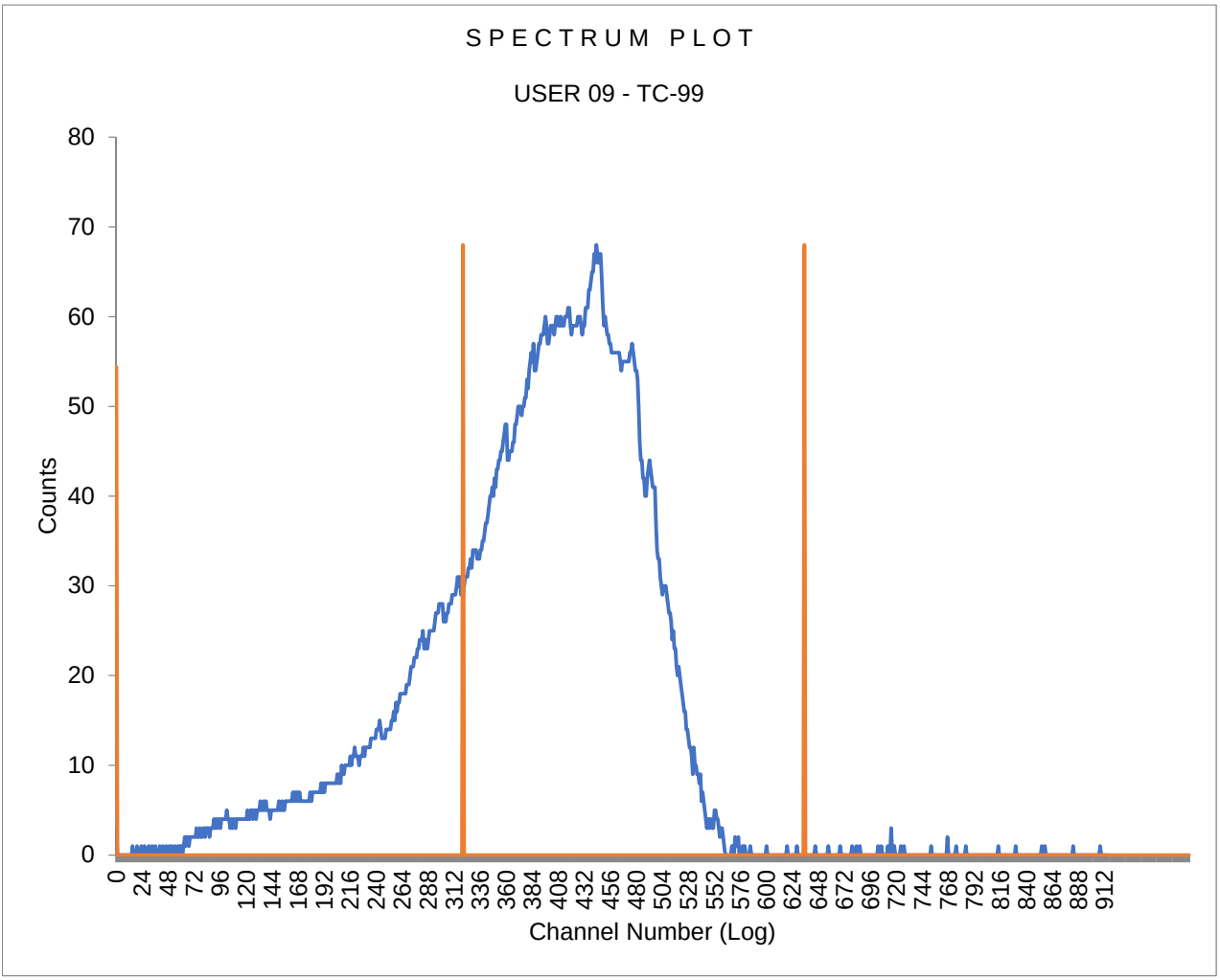
July 17, 2017

Sample Count Start Time:	25 Jun 2017 12:11:49		
Data Capture Date	25 Jun 2017 12:14:13		
User Filename	S09062556-5A.XLS		
	U09062556-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	5	56-5	2.05
H#, Total Counts:	214.4	12672	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



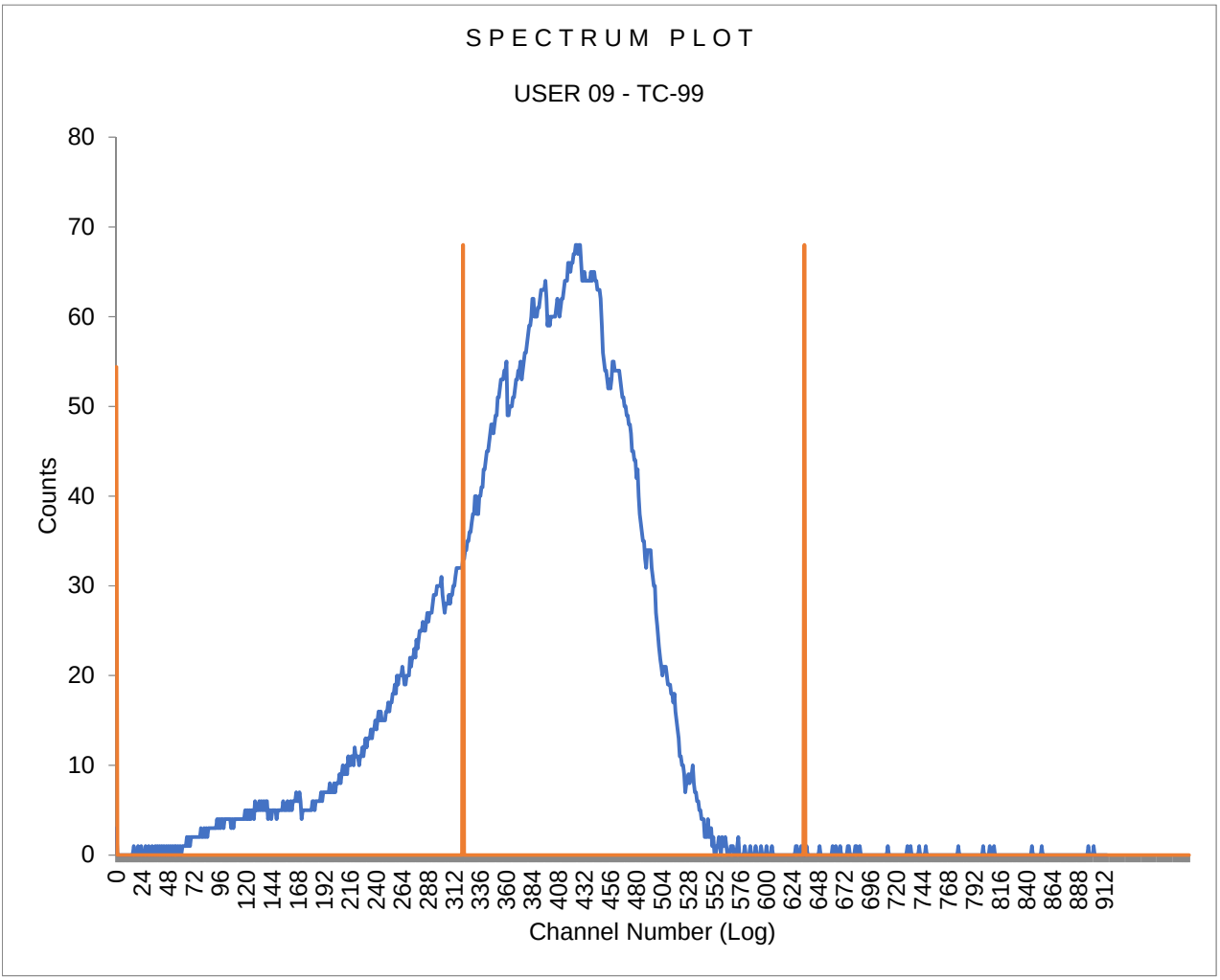
July 17, 2017

Sample Count Start Time:	25 Jun 2017 12:14:47		
Data Capture Date	25 Jun 2017 12:17:15		
User Filename	S09062556-6A.XLS		
	U09062556-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	6	56-6	2.10
H#, Total Counts:	228.7	12949	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



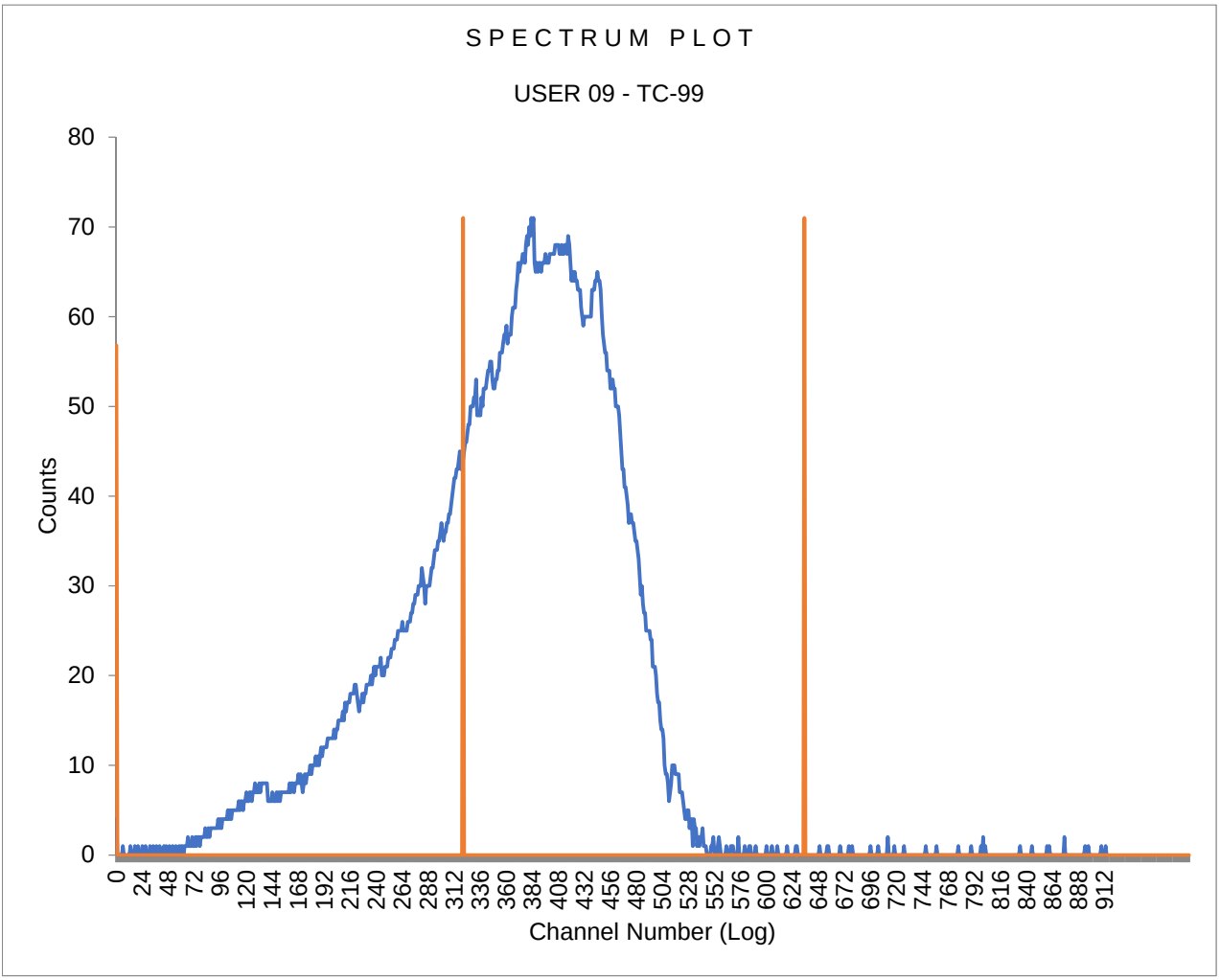
July 17, 2017

Sample Count Start Time:	25 Jun 2017 12:17:49		
Data Capture Date	25 Jun 2017 12:20:17		
User Filename	S09062556-7A.XLS		
	U09062556-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	7	56-7	2.10
H#, Total Counts:	239.5	12980	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



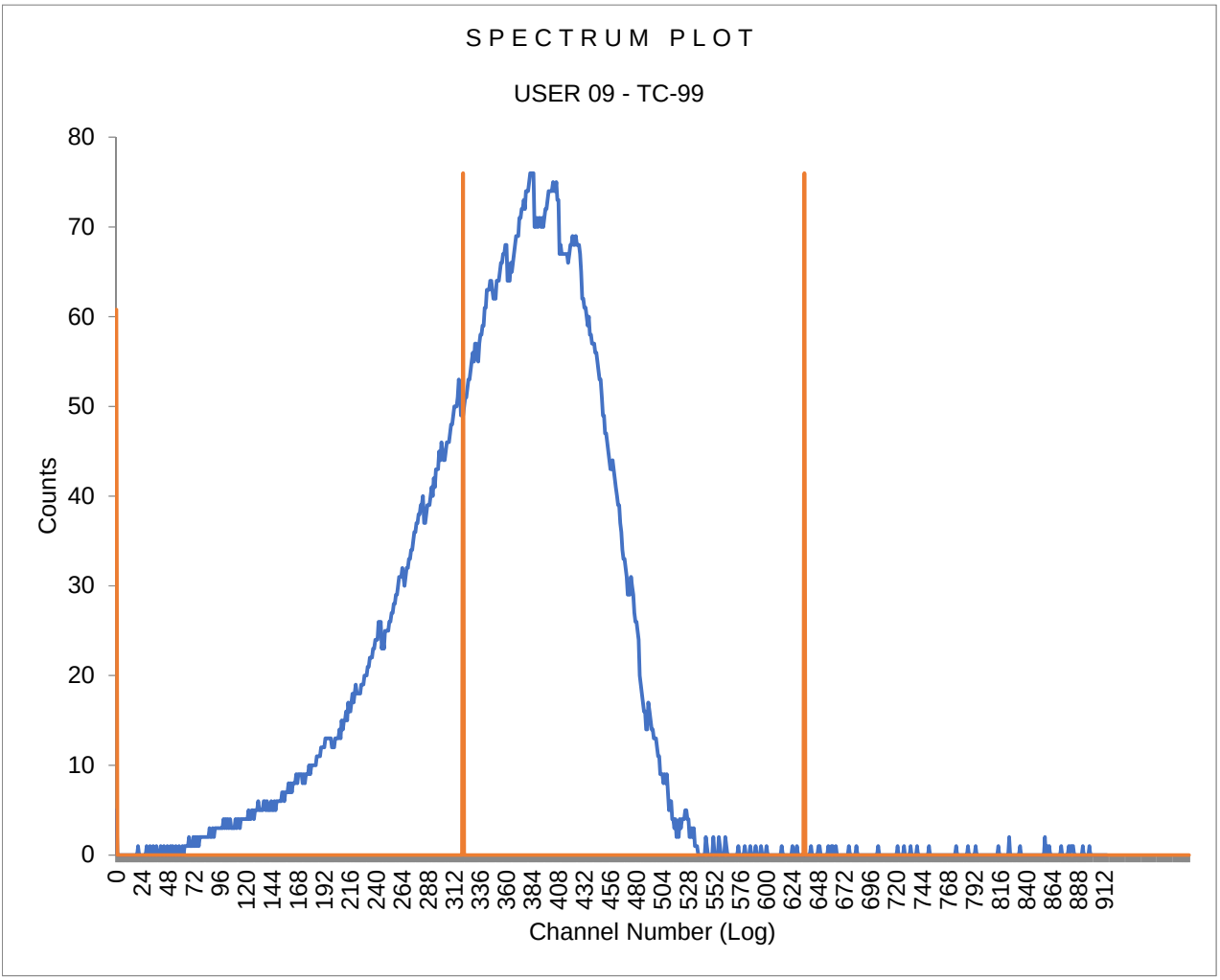
July 17, 2017

Sample Count Start Time:	25 Jun 2017 12:20:52		
Data Capture Date	25 Jun 2017 12:23:37		
User Filename	S09062556-8A.XLS		
	U09062556-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	8	56-8	2.40
H#, Total Counts:	255.1	14103	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



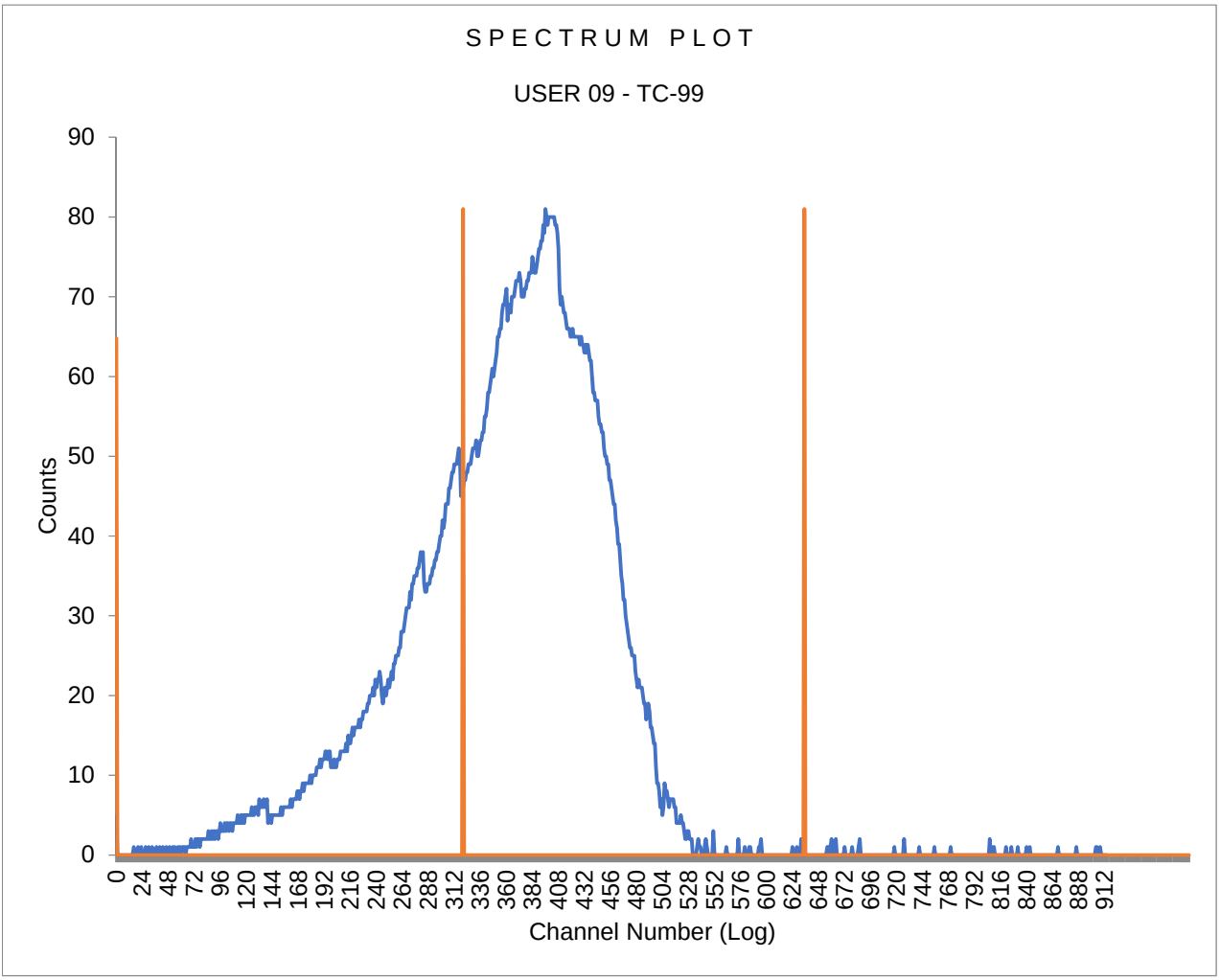
July 17, 2017

Sample Count Start Time:	25 Jun 2017 12:24:11		
Data Capture Date	25 Jun 2017 12:27:00		
User Filename	S09062556-9A.XLS		
	U09062556-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	9	56-9	2.45
H#, Total Counts:	268.5	14539	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



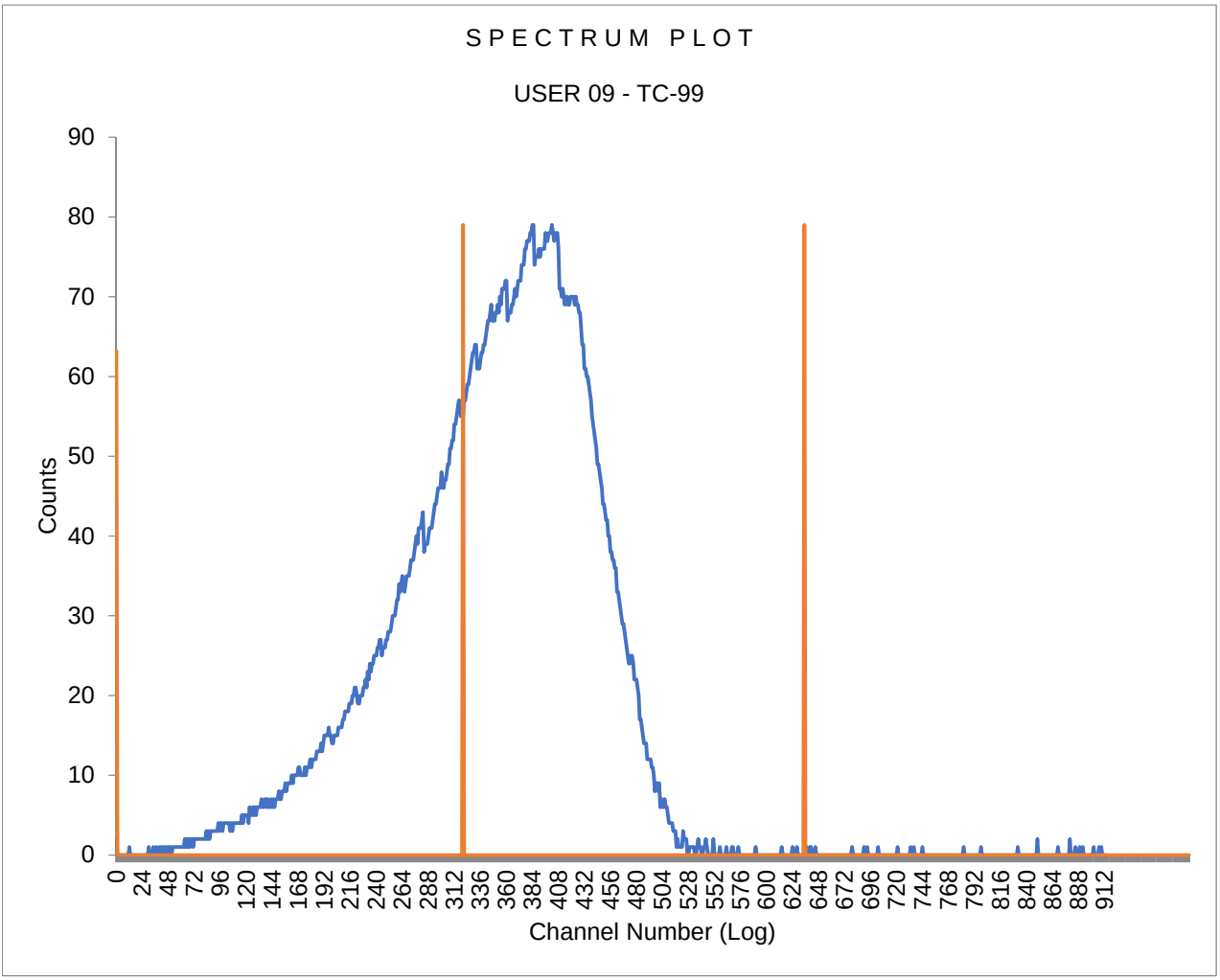
July 17, 2017

Sample Count Start Time:	25 Jun 2017 12:27:34		
Data Capture Date	25 Jun 2017 12:30:22		
User Filename	S09062556-10A.XLS		
	U09062556-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	10	56-10	2.45
H#, Total Counts:	268.3	14274	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



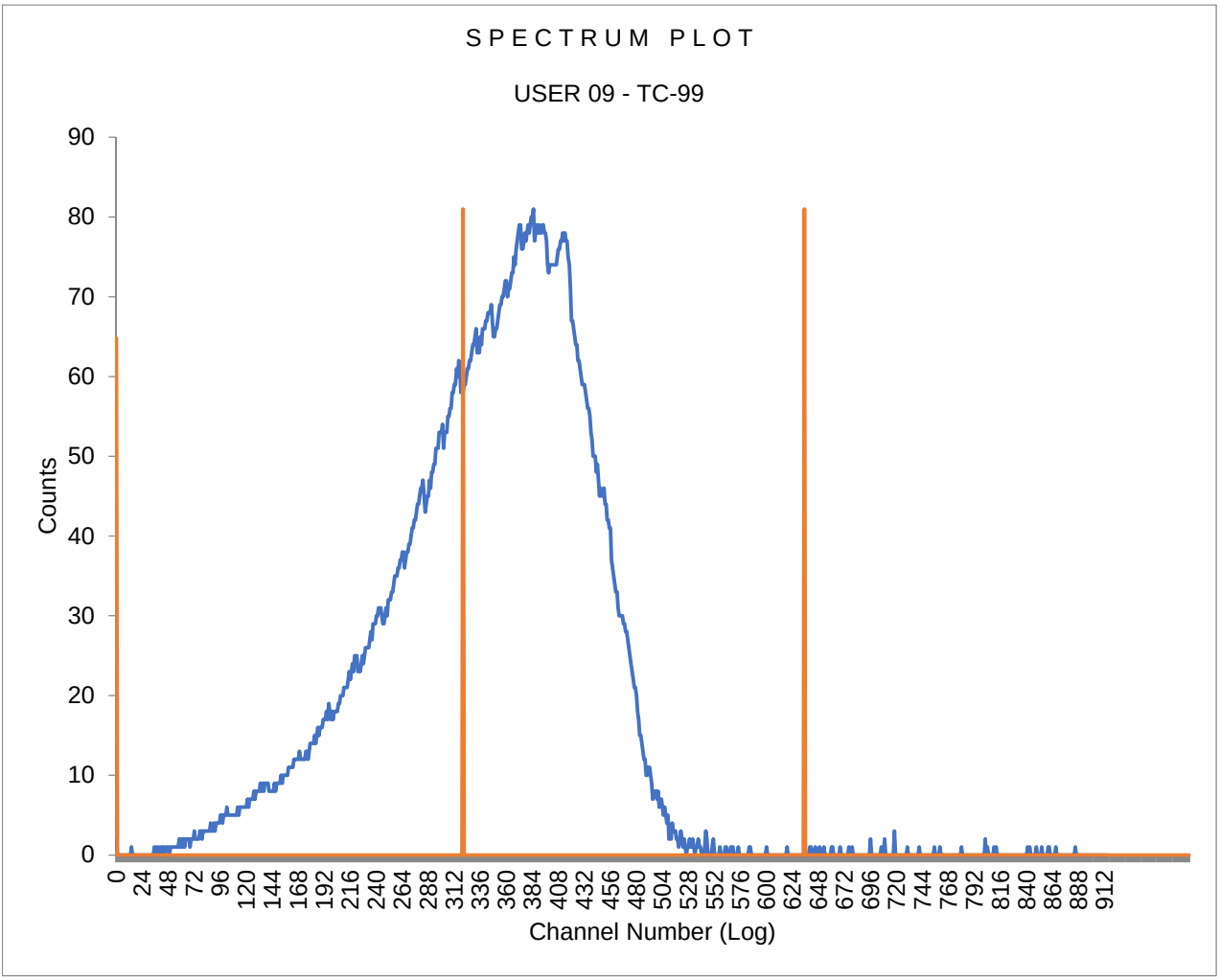
July 17, 2017

Sample Count Start Time:	25 Jun 2017 12:30:57		
Data Capture Date	25 Jun 2017 12:34:00		
User Filename	S09062556-11A.XLS		
	U09062556-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	11	56-11	2.70
H#, Total Counts:	279.2	15043	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



July 17, 2017

Sample Count Start Time:	25 Jun 2017 12:34:35		
Data Capture Date	25 Jun 2017 12:37:47		
User Filename	S09062556-12A.XLS		
	U09062556-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	12	56-12	2.85
H#, Total Counts:	280.5	15796	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



Instrument Type	LS 6000
Data Capture Date	26 Jun 2017 06:09:05
User Filename	C:\LSCCAPTURE\BROWN\USER09\UN062601.BSF

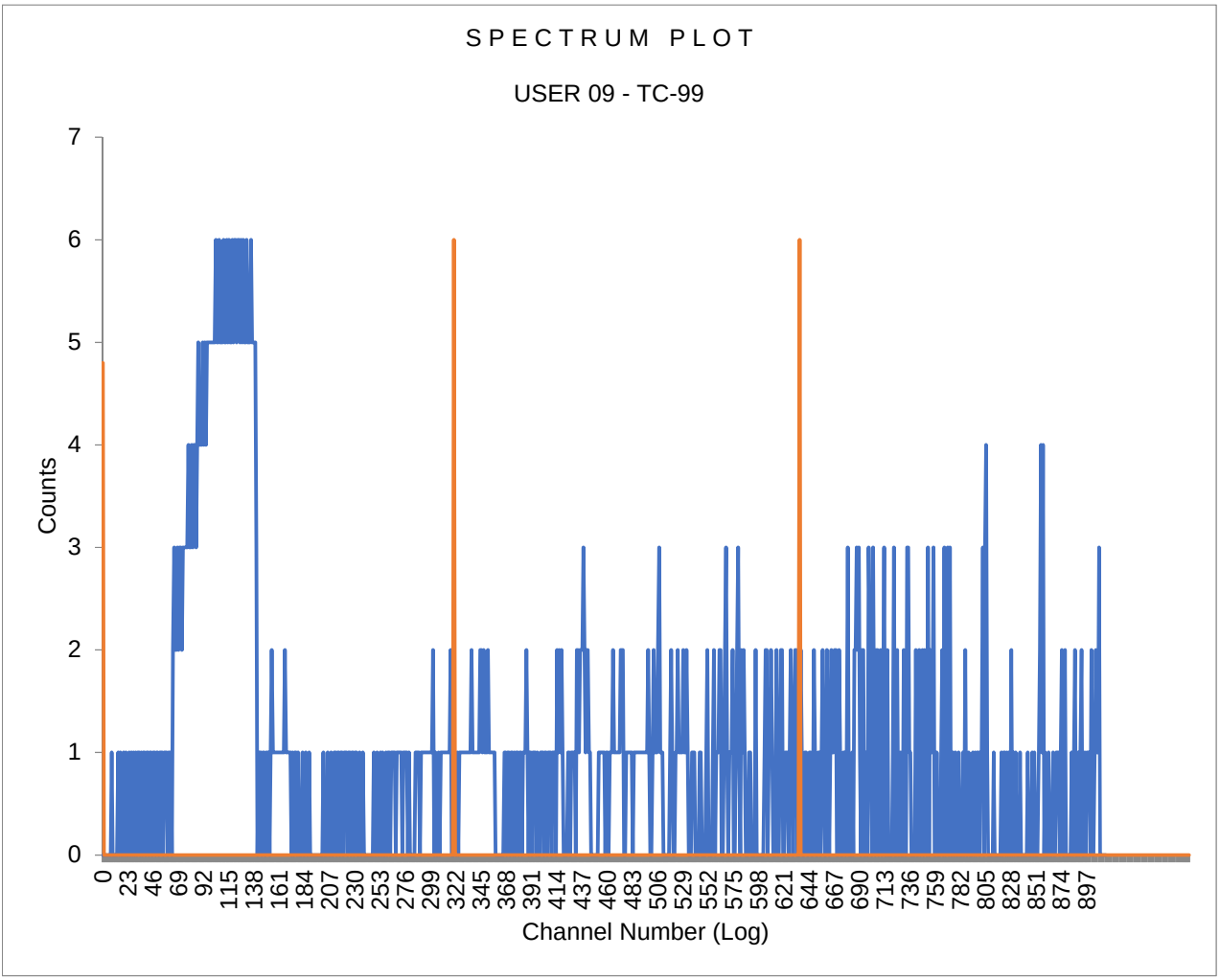
User Number	9
User Id	TC-99
User Comments	GREEN

Scintillator Choice:	LIQUID

Sam	Rack	Time	H#	Raw CPM1	Raw CPM2	CPM Iso1	%Err1	CPM Iso2	%Err2	LumEx	ElTime
1	8-1	15.00	164.6	18.00	63.87	18.00	12.17	63.87	6.46	32.38	15.98
2	8-2	1.55	158.5	6669.03	7772.90	6669.03	1.97	7772.90	1.82	0.13	18.47
3	8-3	1.55	182.6	6498.06	7634.19	6498.06	1.99	7634.19	1.84	0.11	20.95
4	8-4	1.65	200.2	6252.73	7493.33	6252.73	1.97	7493.33	1.80	0.07	23.55
5	8-5	1.70	213.3	6034.12	7493.53	6034.12	1.97	7493.53	1.77	0.06	26.18
6	8-6	1.75	224.4	5746.29	7133.14	5746.29	1.99	7133.14	1.79	0.06	28.86
7	8-7	1.80	230.9	5607.78	7207.22	5607.78	1.99	7207.22	1.76	0.04	31.60
8	8-8	1.90	242.8	5361.05	7086.84	5361.05	1.98	7086.84	1.72	0.03	34.41
9	8-9	1.90	243.8	5399.47	7175.26	5399.47	1.97	7175.26	1.71	0.03	37.24
10	8-10	2.10	264.7	4887.62	6947.62	4887.62	1.97	6947.62	1.66	0.03	40.28
11	8-11	2.10	262.3	4847.62	6832.86	4847.62	1.98	6832.86	1.67	0.02	43.31
12	8-12	2.15	270.1	4729.30	6772.56	4729.30	1.98	6772.56	1.66	0.02	46.41

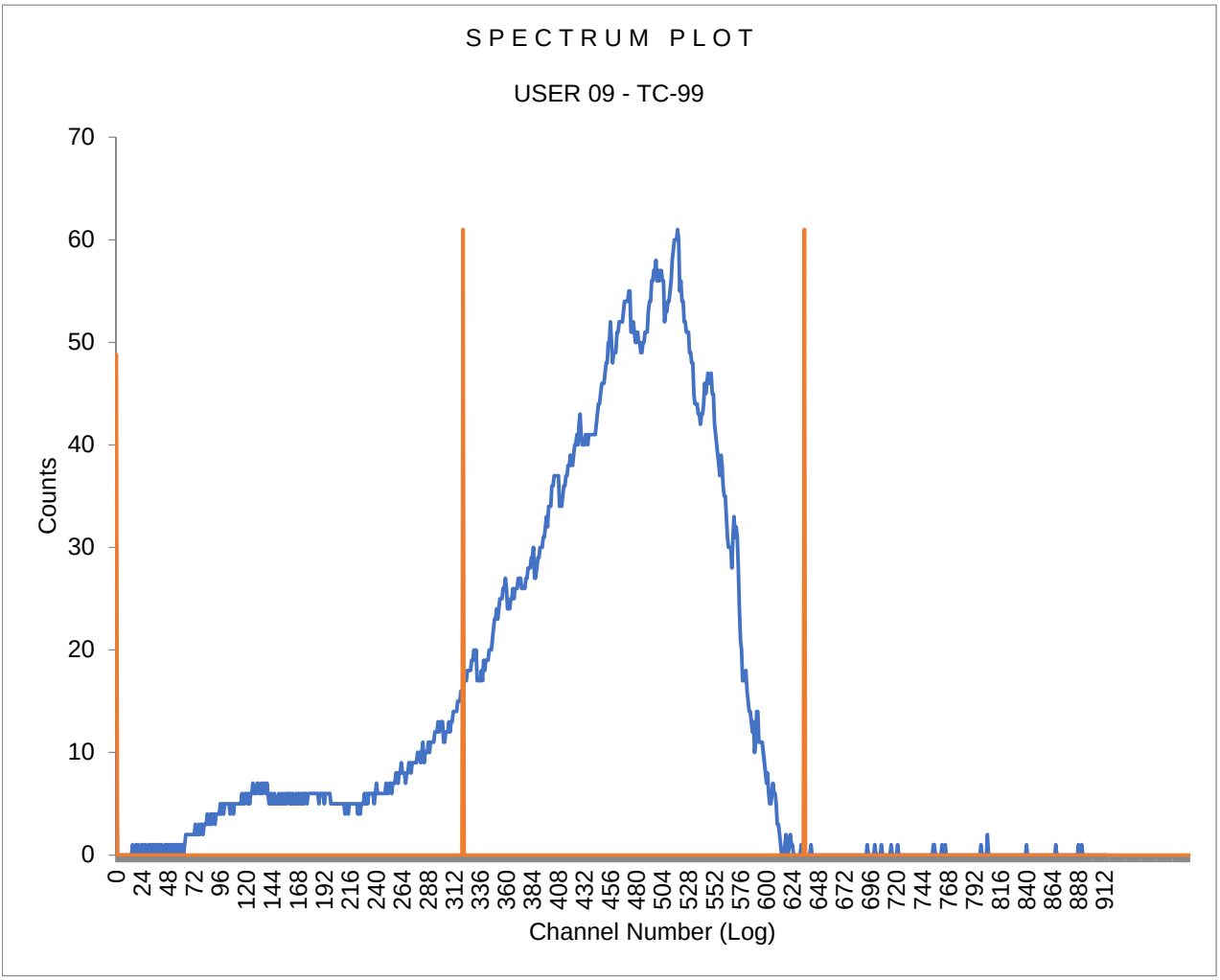
July 17, 2017

Sample Count Start Time:	26 Jun 2017 06:10:04		
Data Capture Date	26 Jun 2017 06:25:26		
User Filename	S09062608-1A.XLS		
	U09062608-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	1	8-1	15.00
H#, Total Counts:	164.6	968	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



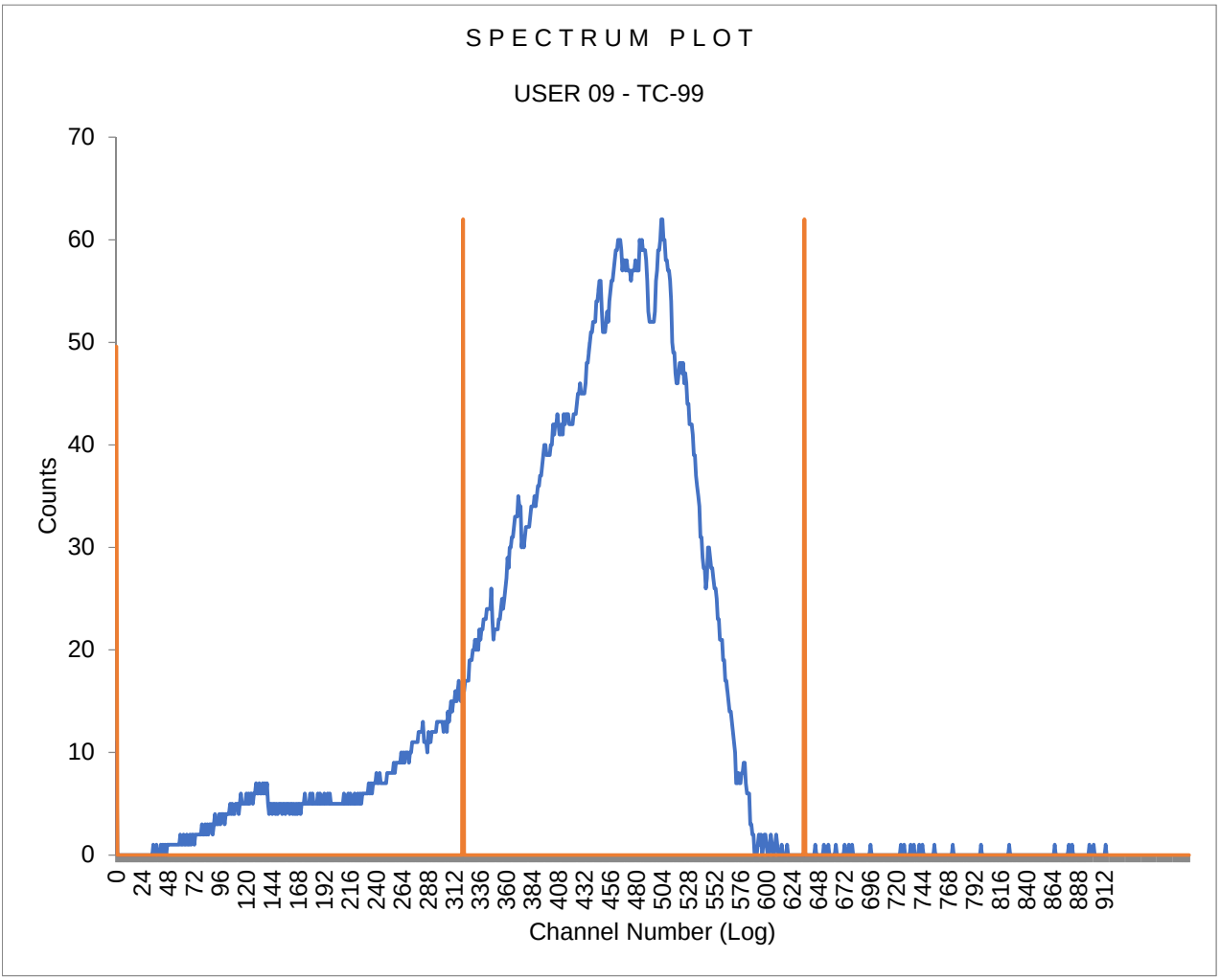
July 17, 2017

Sample Count Start Time:	26 Jun 2017 06:26:00		
Data Capture Date	26 Jun 2017 06:27:55		
User Filename	S09062608-2A.XLS		
	U09062608-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	2	8-2	1.55
H#, Total Counts:	158.5	12048	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



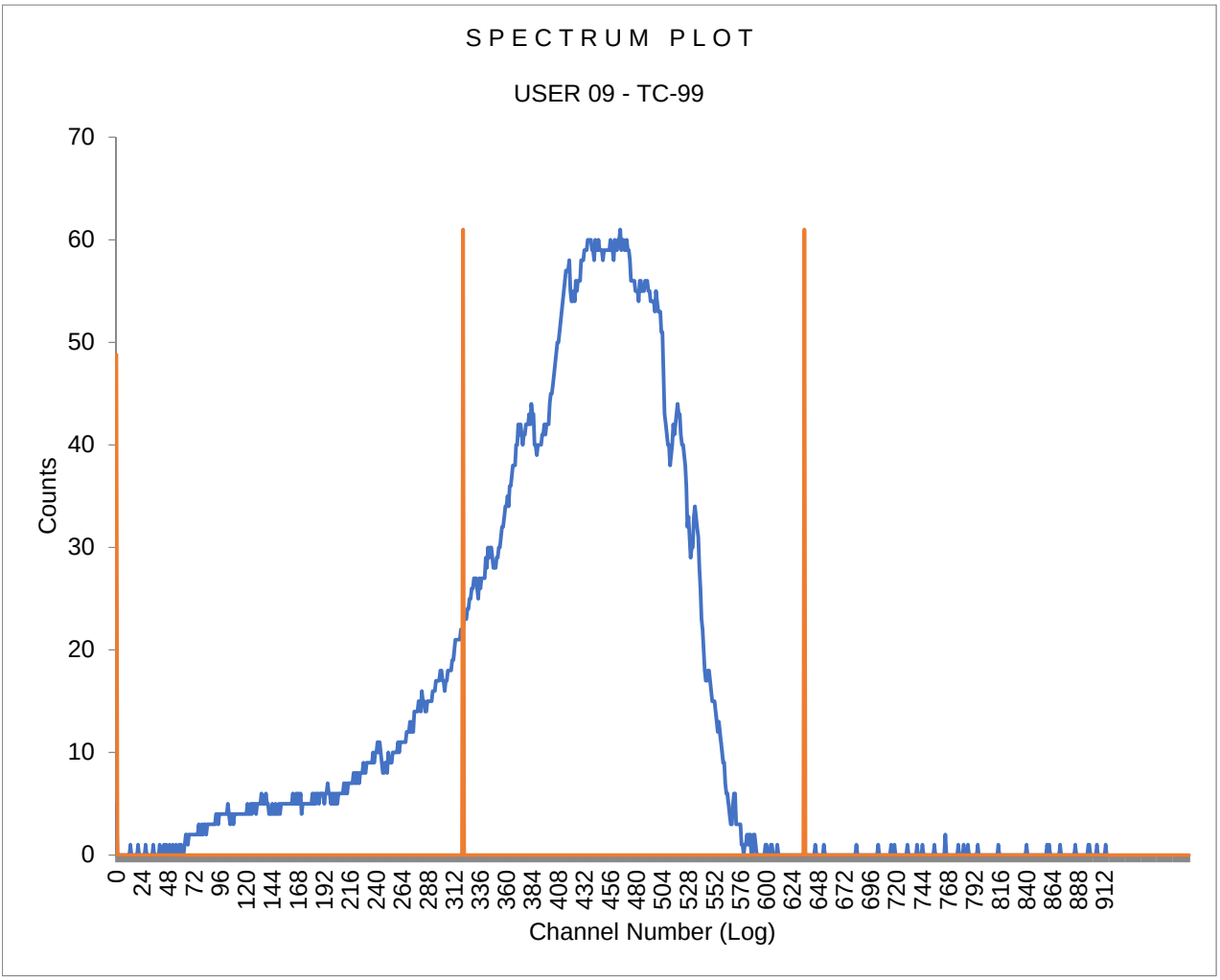
July 17, 2017

Sample Count Start Time:	26 Jun 2017 06:28:29		
Data Capture Date	26 Jun 2017 06:30:24		
User Filename	S09062608-3A.XLS		
	U09062608-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	3	8-3	1.55
H#, Total Counts:	182.6	11835	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



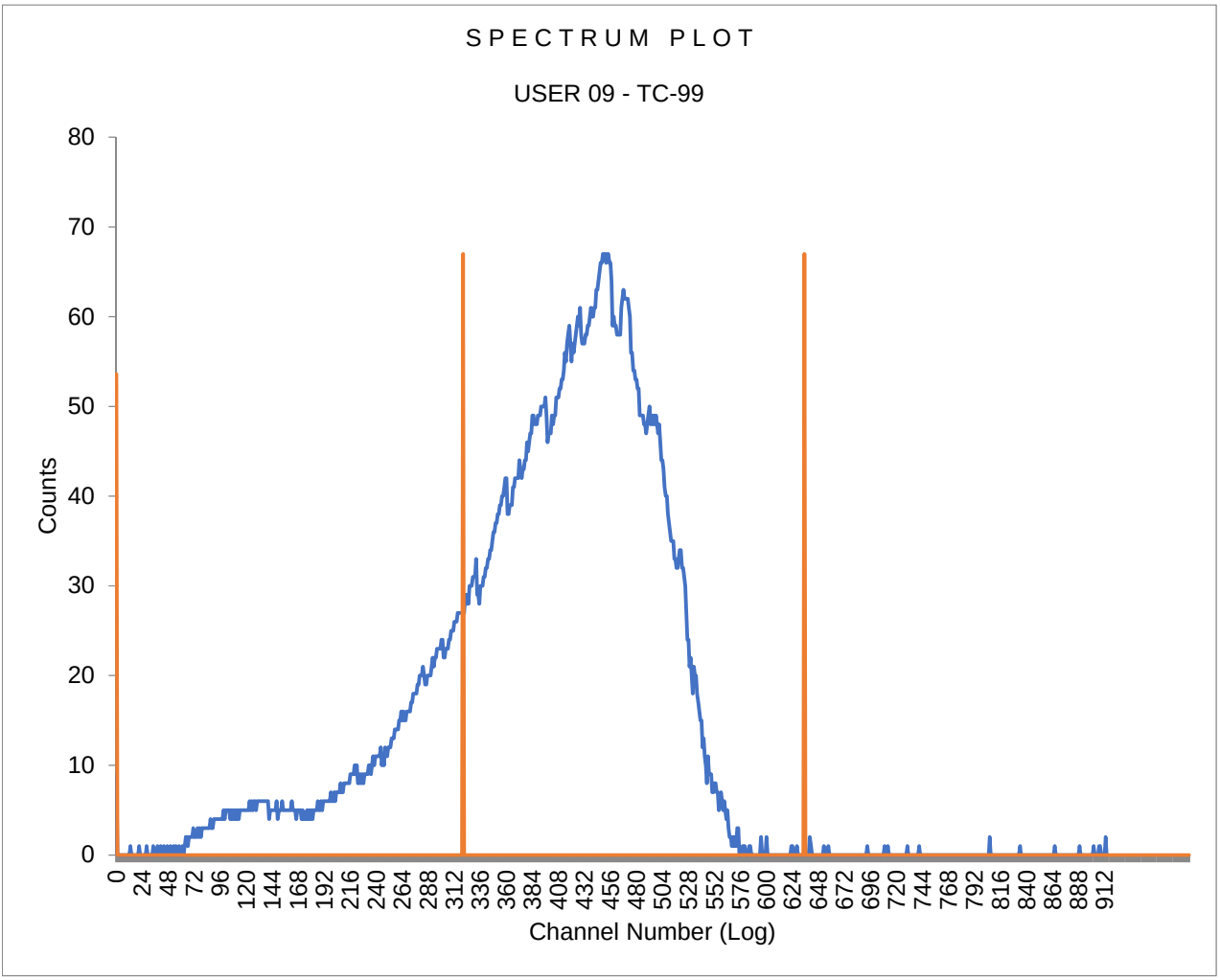
July 17, 2017

Sample Count Start Time:	26 Jun 2017 06:30:59		
Data Capture Date	26 Jun 2017 06:32:59		
User Filename	S09062608-4A.XLS		
	U09062608-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	4	8-4	1.65
H#, Total Counts:	200.2	12366	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



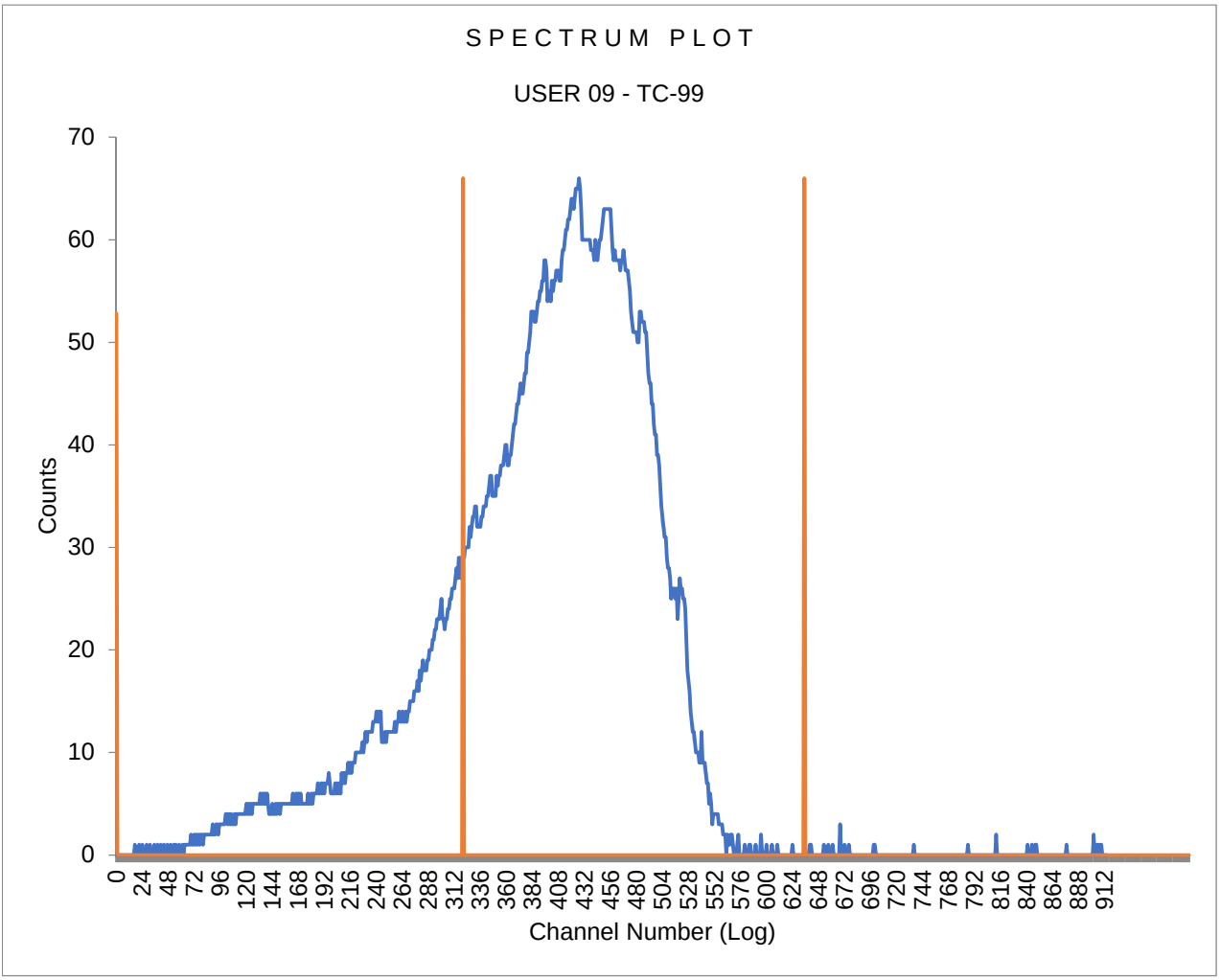
July 17, 2017

Sample Count Start Time:	26 Jun 2017 06:33:34		
Data Capture Date	26 Jun 2017 06:35:37		
User Filename	S09062608-5A.XLS		
	U09062608-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	5	8-5	1.70
H#, Total Counts:	213.3	12744	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



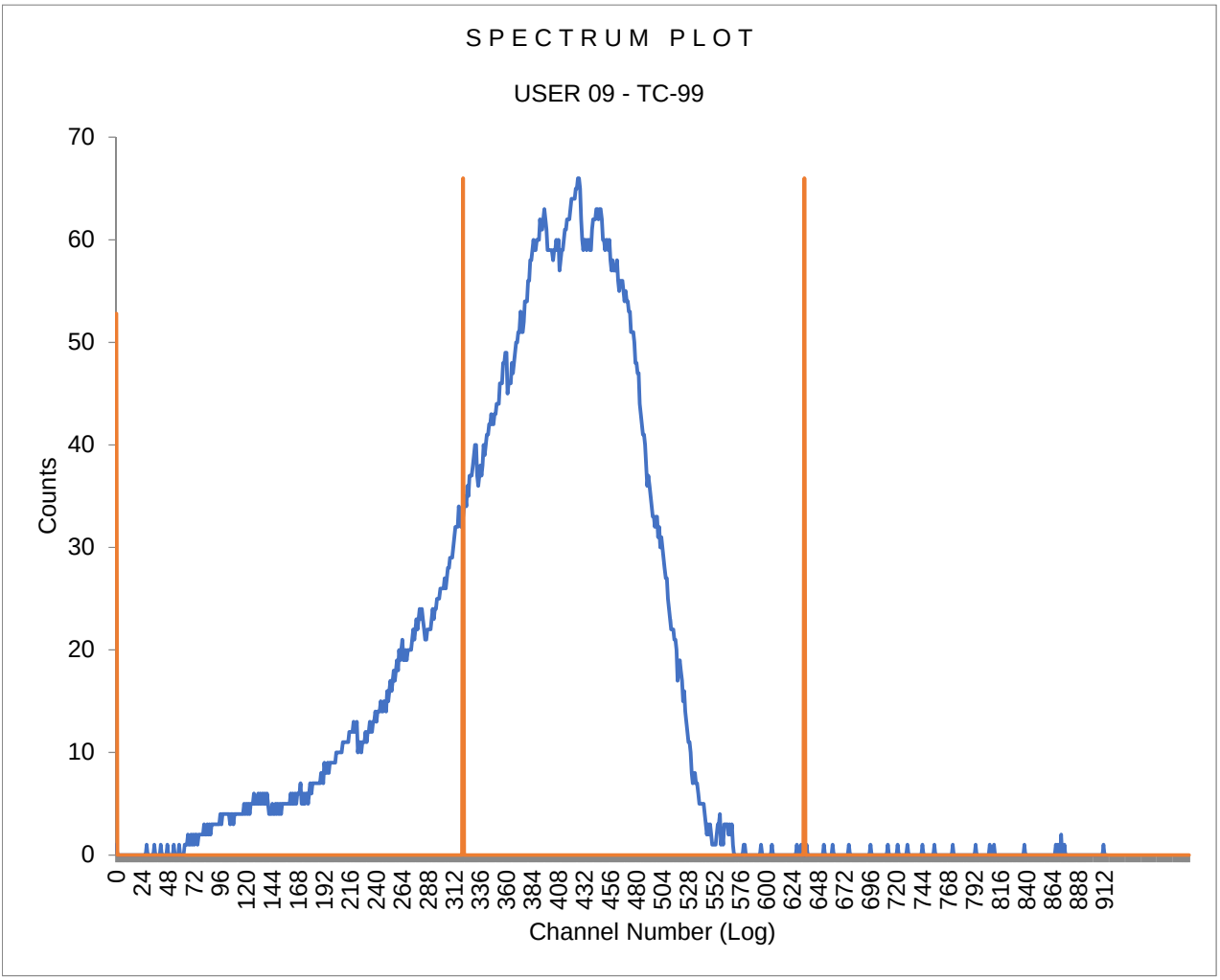
July 17, 2017

Sample Count Start Time:	26 Jun 2017 06:36:12		
Data Capture Date	26 Jun 2017 06:38:18		
User Filename	S09062608-6A.XLS		
	U09062608-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	6	8-6	1.75
H#, Total Counts:	224.4	12488	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



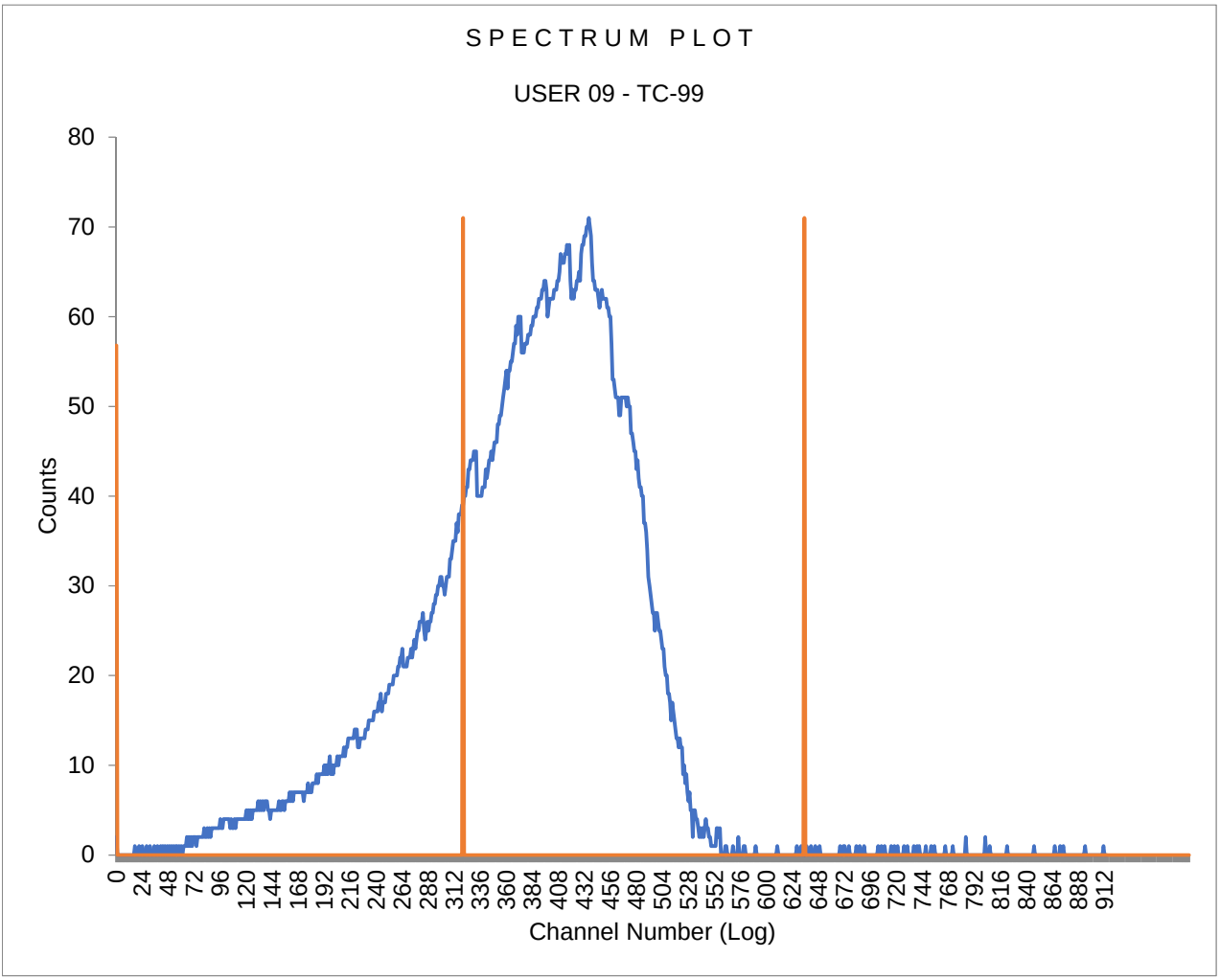
July 17, 2017

Sample Count Start Time:	26 Jun 2017 06:38:53		
Data Capture Date	26 Jun 2017 06:41:01		
User Filename	S09062608-7A.XLS		
	U09062608-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	7	8-7	1.80
H#, Total Counts:	230.9	12982	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



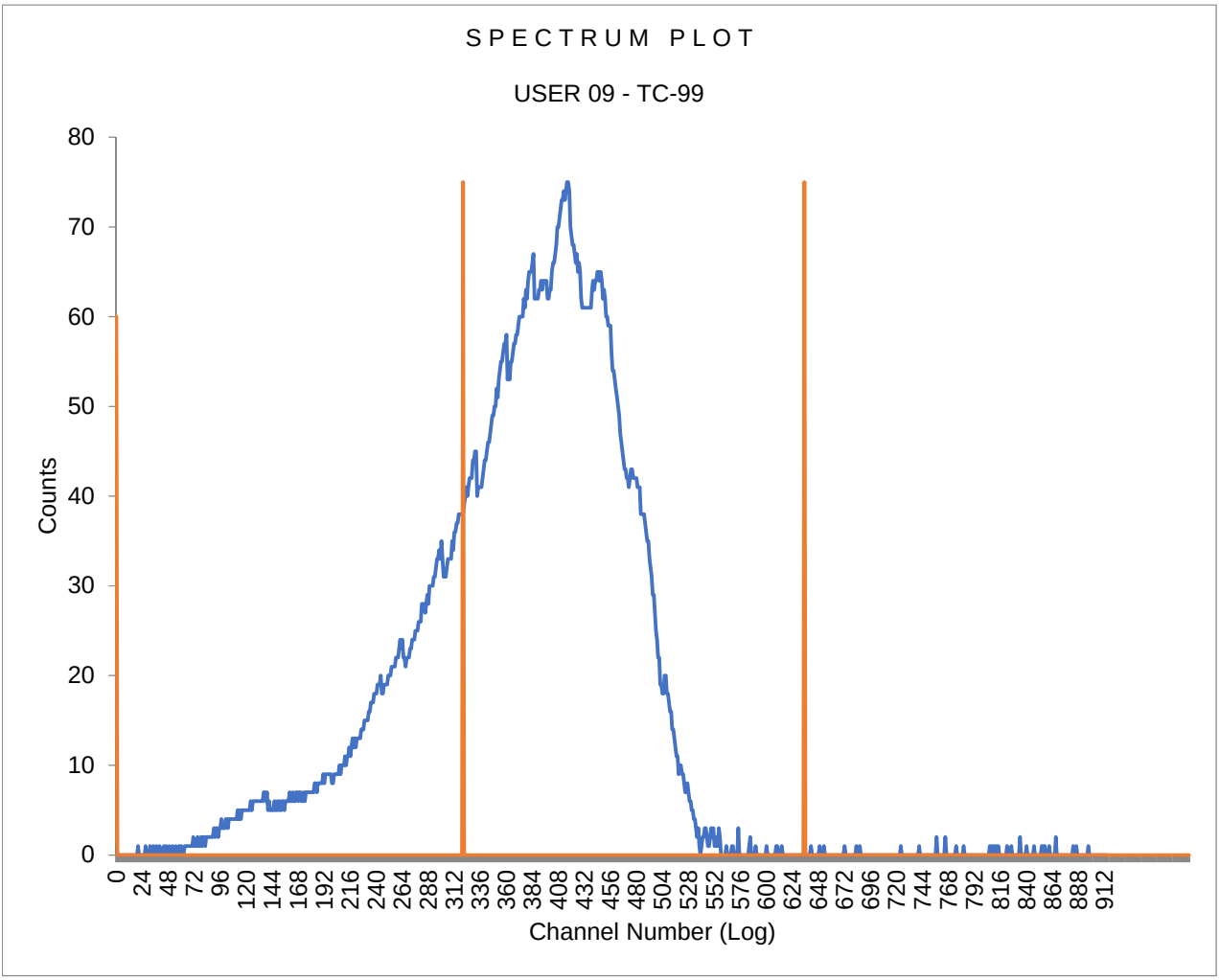
July 17, 2017

Sample Count Start Time:	26 Jun 2017 06:41:36		
Data Capture Date	26 Jun 2017 06:43:51		
User Filename	S09062608-8A.XLS		
	U09062608-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	8	8-8	1.90
H#, Total Counts:	242.8	13466	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



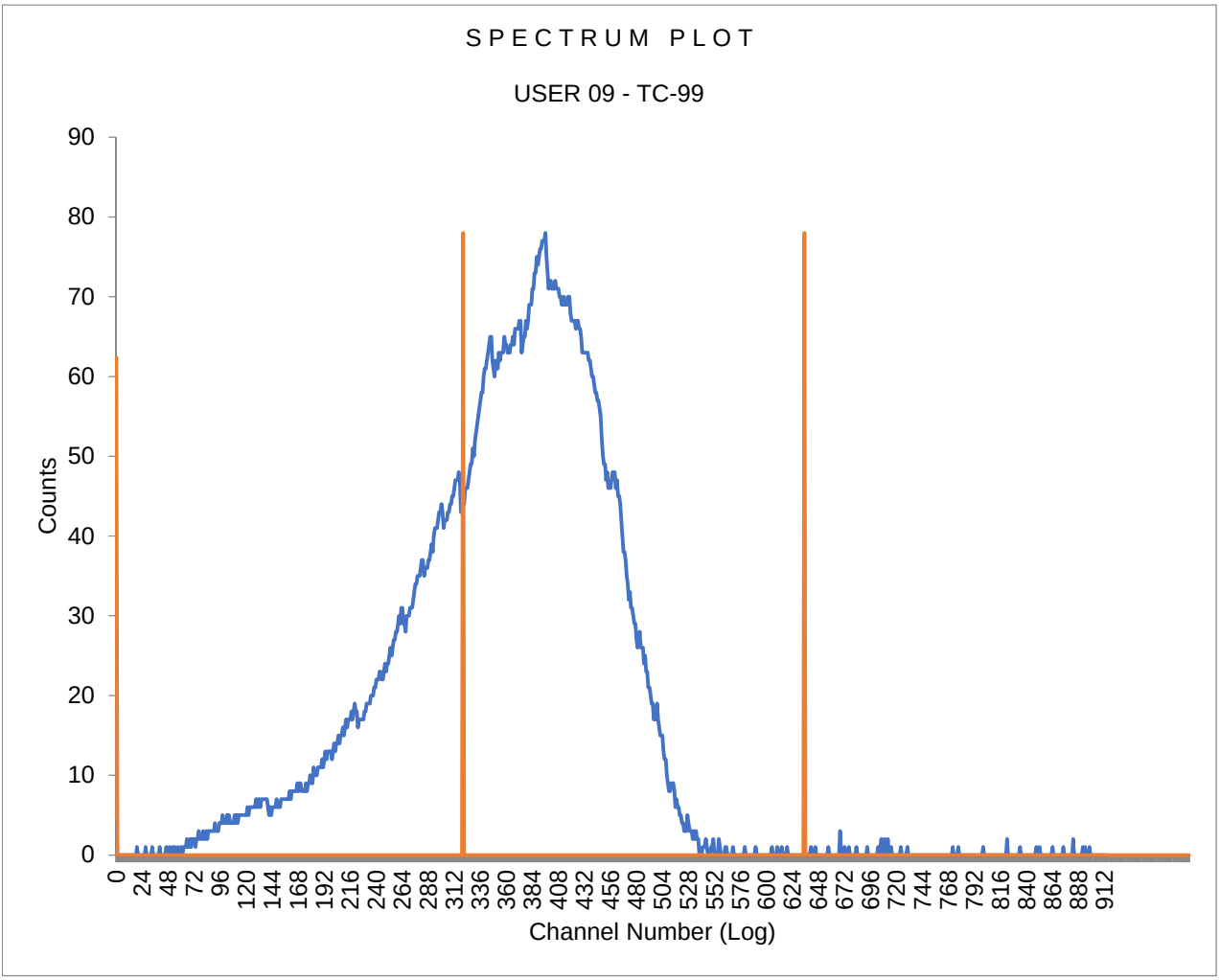
July 17, 2017

Sample Count Start Time:	26 Jun 2017 06:44:25		
Data Capture Date	26 Jun 2017 06:46:41		
User Filename	S09062608-9A.XLS		
	U09062608-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	9	8-9	1.90
H#, Total Counts:	243.8	13633	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



July 17, 2017

Sample Count Start Time:	26 Jun 2017 06:47:16		
Data Capture Date	26 Jun 2017 06:49:43		
User Filename	S09062608-10A.XLS		
	U09062608-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	10	8-10	2.10
H#, Total Counts:	264.7	14590	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



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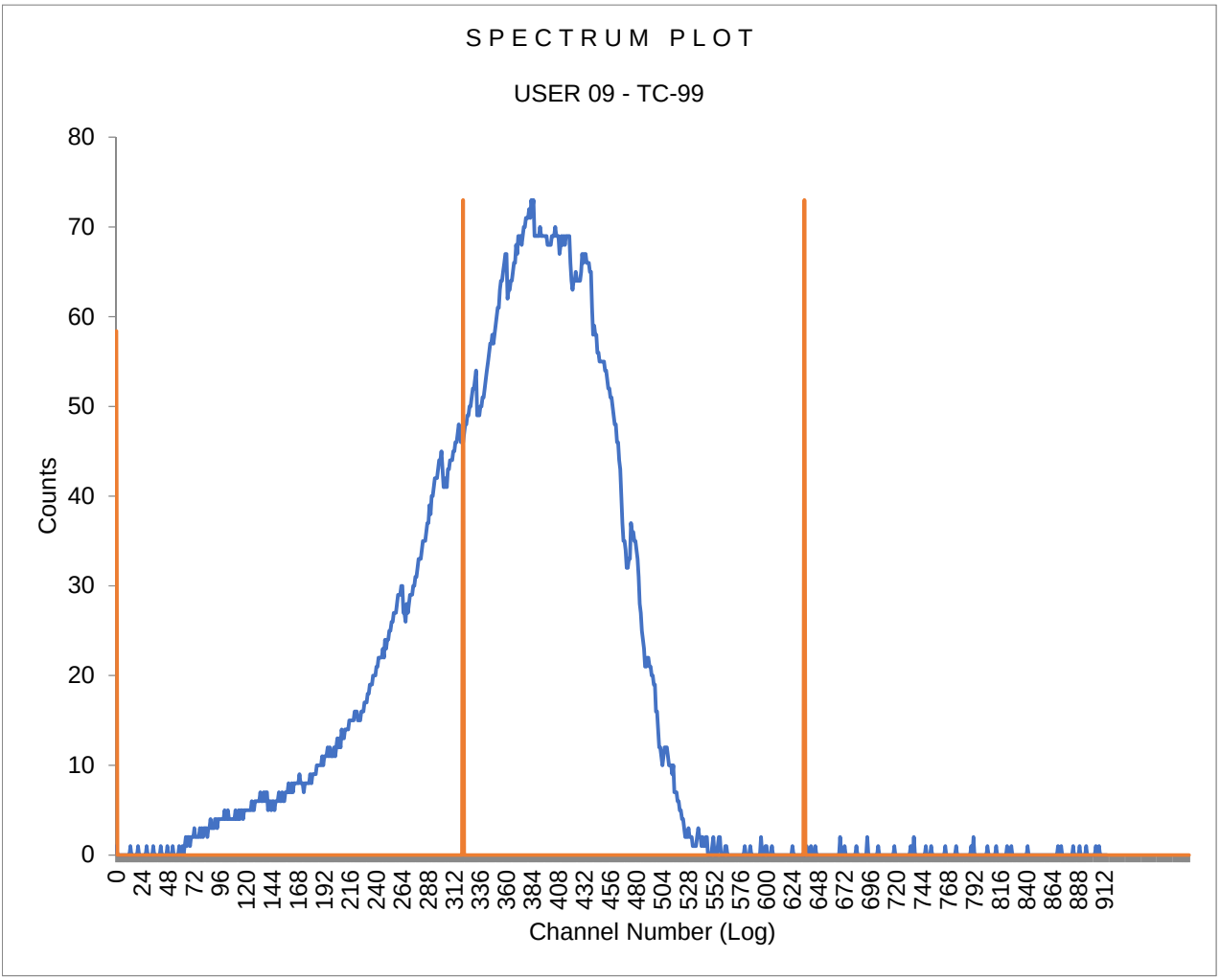
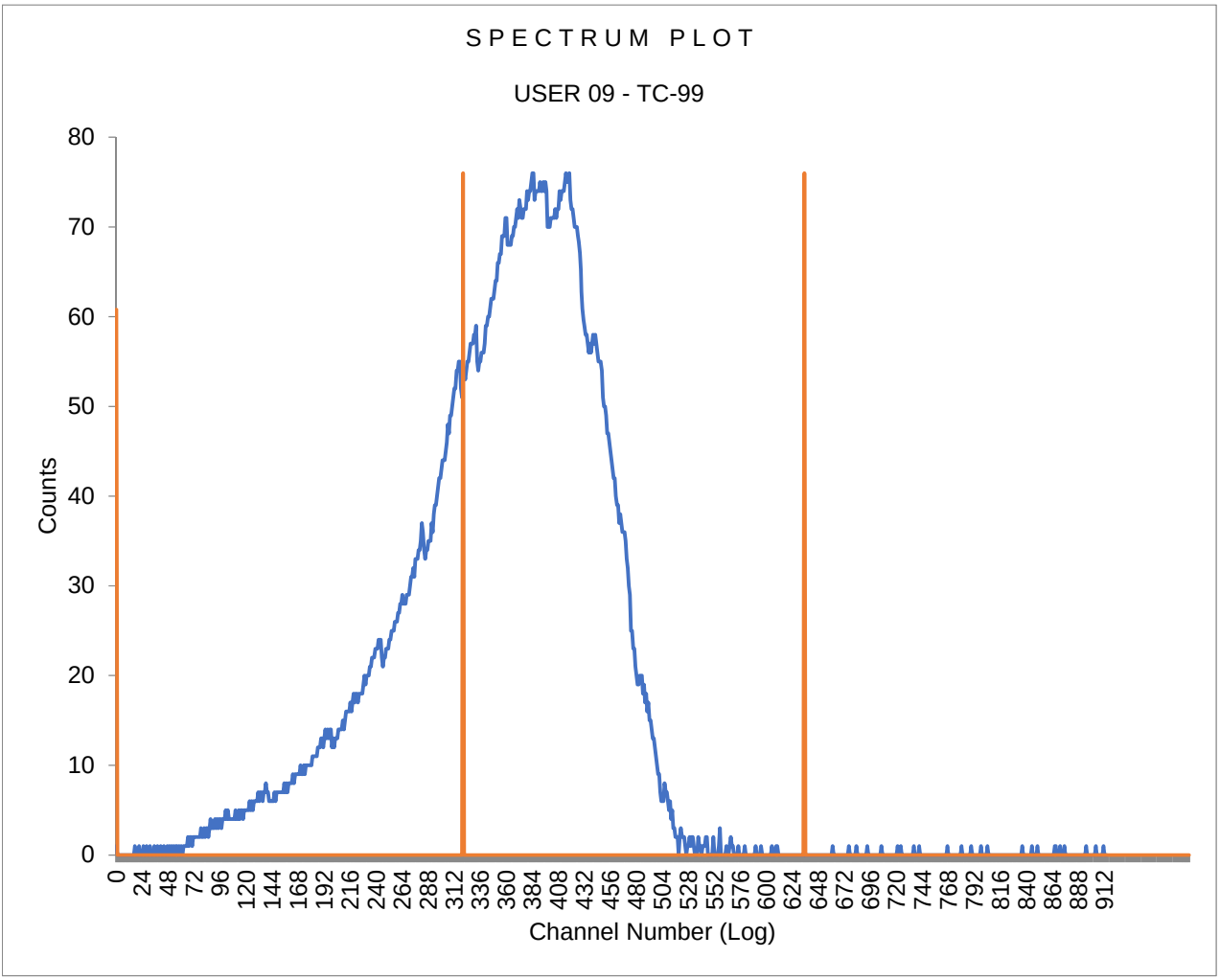
Sample Count Start Time:	26 Jun 2017 06:50:18		
Data Capture Date	26 Jun 2017 06:52:45		
User Filename	S09062608-11A.XLS		
	U09062608-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	11	8-11	2.10
H#, Total Counts:	262.3	14351	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



July 17, 2017

Sample Count Start Time:	26 Jun 2017 06:53:21		
Data Capture Date	26 Jun 2017 06:55:50		
User Filename	S09062608-12A.XLS		
	U09062608-1A.XLS		
Spectrum Type	Log Counts		
User Number	09		
User Id	TC-99		
User Comment	GREEN		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	12	8-12	2.15
H#, Total Counts:	270.1	14563	
Win1: Tc-99 - Start, End:	320	635	
Win2: - Start, End:	0	990	



1297

National Institute of Standards & Technology

Certificate

Standard Reference Material 4288A
Technetium-99 Radioactivity Standard

This Standard Reference Material (SRM) consists of radioactive technetium-99, as potassium pertechnetate, and potassium hydroxide dissolved in 5 mL of distilled water. The solution is contained in a flame-sealed NIST borosilicate-glass ampoule. The SRM is intended for the calibration of beta-particle counting instruments and for the monitoring of radiochemical procedures.

Radiological Hazard

The SRM ampoule contains technetium-99 with a total activity of approximately 160 kBq. Technetium-99 decays by beta-particle emission. None of the beta particles escape from the SRM ampoule. During the decay process no photons are emitted. Approximate unshielded dose rates at several distances (as of the reference time) are given in note [a]* There is no detectable external radiation. The SRM should be used only by persons qualified to handle radioactive material.

Chemical Hazard

The SRM ampoule contains potassium hydroxide (KOH) with a concentration of 0.001 moles per liter of water. The solution is mildly corrosive and could represent a health hazard if it comes in contact with eyes or skin. If the ampoule is to be opened to transfer the solution, the recommended procedure is given on page 2.

Storage and Handling

The SRM should be stored and used at a temperature between 5 and 65 °C. The solution in an unopened ampoule should remain stable and homogeneous until at least September 2006.

The ampoule (or any subsequent container) should always be clearly marked as containing radioactive material. If the ampoule is transported it should be packed, marked, labeled, and shipped in accordance with the applicable national, international, and carrier regulations. The solution in the ampoule is a dangerous good (hazardous material) because of the radioactivity.

Preparation

This Standard Reference Material was prepared in the Physics Laboratory, Ionizing Radiation Division, Radioactivity Group, J.M.R. Hutchinson, Group Leader. The overall technical direction and physical measurements leading to certification were provided by L.L. Lucas of the Radioactivity Group.

The support aspects involved in the preparation, certification, and issuance of this SRM were coordinated through the Standard Reference Materials Program by N.M. Trahey.

Gaithersburg, Maryland 20899
October 1996

Thomas E. Gills, Chief
Standard Reference Materials Program

RECEIVED

*Notes and references are on pages 5 and 6.

Recommended Procedure for Opening the SRM Ampoule

1) If the SRM solution is to be diluted, it is recommended that the diluting solution have a composition comparable to that of the SRM solution.

2) Wear eye protection, gloves, and protective clothing and work over a tray with absorbent paper in it.

3) Shake the ampoule to wet all of the inside surface of the ampoule. Return the ampoule to the upright position.

4) Check that all of the liquid has drained out of the neck of the ampoule. If necessary, gently tap the neck to speed the process.

5) Holding the ampoule upright, score the narrowest part of the neck with a scribe or diamond pencil.

6) Lightly wet the scored line. This reduces the crack propagation velocity and makes for a cleaner break.

7) Hold the ampoule upright with a paper towel, a wiper, or a support jig. Position the scored line away from you. Using a paper towel or wiper to avoid contamination, snap off the top of the ampoule by pressing the narrowest part of the neck away from you while pulling the tip of the ampoule towards you.

8) Transfer the solution from the ampoule using a pycnometer or a pipet with dispenser handle. NEVER PIPETTE BY MOUTH.

9) Seal any unused SRM solution in a flame-sealed glass ampoule, if possible, to minimize the evaporation loss. See also reference [4]*

*Notes and references are on pages 5 and 6

PROPERTIES OF SRM 4288A
(Certified values are shown in bold type)

Source identification number	NIST SRM 4288A		
Physical Properties:			
Source description	Liquid in flame-sealed NIST borosilicate-glass ampoule		
Ampoule specifications	Body outside diameter Wall Thickness Barium content Lead-oxide content Other heavy elements	(16.5 ± 0.5) mm (0.60 ± 0.04) mm Less than 2.5% Less than 0.02% Trace quantities	
Solution density	**(0.998 ± 0.002) g·mL^{-1} at 21 °C** [b]*		
Solution mass	**(4.998 ± 0.002) g** [b]		
Chemical Properties:			
Solution composition	Chemical Formula	Concentration (mol·L^{-1})	Mass Fraction (g·g^{-1})
	H_2O KOH $K^{99}TcO_4$	55 0.001 0.0005	1.00 0.00006 0.0001
Radiological Properties:			
Radionuclide	**Technetium-99**		
Reference time	**1200 EST, 1 September 1996**		
Massic activity of the solution [c]	**32.61 kBq·g^{-1}**		
Relative expanded uncertainty (k=2)	**1.14%** [d] [e]		
Photon-emitting impurities	None detected [f]		
Half lives used in the decay corrections	Cobalt-60: (5.2714 ± 0.0005) a [g] Technetium-99: (2.111 ± 0.012) × 10^5 a [g]		
Measuring instrument	NIST 4πβ(LS)-γ-anticoincidence counting system using cobalt-60 as the efficiency-tracing radionuclide. The efficiency was varied electronically from 50 to 93 percent.		

*Notes and references are on pages 5 and 6

EVALUATION OF THE UNCERTAINTY OF THE MASSIC ACTIVITY [d]*

Input Quantity x_i, the source of uncertainty (and individual uncertainty components where appropriate)	Method Used To Evaluate $u(x_i)$, the standard uncertainty of x_i (A) denotes evaluation by statistical methods (B) denotes evaluation by other methods	Relative Uncertainty Of Input Quantity, $u(x_i)/x_i$, (%) [h]	Relative Sensitivity Factor, $\lvert \partial y/\partial x_i \rvert \cdot (x_i/y)$ [i]	Relative Uncertainty Of Output Quantity, $u_i(y)/y$, (%) [j]
Extrapolated massic liquid-scintillation count rate of the Tc-99 solution, corrected for background, cobalt-60 tracer count rate, and decay.	Standard deviation of the mean for 4 sets of repeated measurements on each of 3 samples (A)	0.10	1.0	0.10
Decay corrections		[k]	[m]	
for cobalt-60	Standard uncertainty of the half life (A)	0.01	0.01	0.0001
for technetium-99	Standard uncertainty of the half life (A)	0.6	0.000005	0.000003
Decay scheme data	Standard uncertainty of the probability of decay by beta-particle emission (A)	0.01	1.0	0.01
Extrapolation of the beta-particle-count-rate versus anticoincidence-gamma-ray-count-rate to zero anticoincidence-gamma-ray-count-rate	Estimated (B)	0.40	1.0	0.40
Calibration of the cobalt-60 tracer solution using the $4\pi\beta$(LS)-γ-anticoincidence counting system	Standard uncertainty of the extrapolated massic count rate (B)	0.25	1.0	0.25
Gravimetric measurements	Estimated (B)	0.20	1.0	0.20
Live-time measurements [n]	Estimated (B)	0.10	1.0	0.10
Variability between ampoules	Estimated (B)	0.20	1.0	0.20
Photon-emitting impurities	Limit of detection (B) [p]	100.	0.00004	0.004
Relative Combined Standard Uncertainty of the Output Quantity, $u_c(y)/y$, (%)				0.57
Coverage Factor, k				x 2
Relative Expanded Uncertainty of the Output Quantity, U/y, (%)				1.14

*Notes and references are on pages 5 and 6.

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NOTES

[a] The Sievert is the SI unit for dose equivalent. See reference [1]. One μSv is equal to 0.1 mrem.

Distance from Ampoule (cm):	1	30	100
Approximate Dose Rate (μSv/h):	<0.1(Not detectable)		

[b] The stated uncertainty is two times the standard uncertainty.

[c] **Massic activity** is the preferred name for the quantity activity divided by the total mass of the sample. See reference [1].

[d] The reported value, y, of massic activity (activity per unit mass) at the reference time was not measured directly but was derived from measurements and calculations of other quantities. This can be expressed as $y = f(x_1, x_2, x_3, \ldots x_n)$, where f is a mathematical function derived from the assumed model of the measurement process.

The value, x_i, used for each input quantity i has a **standard uncertainty**, $u(x_i)$, that generates a corresponding uncertainty in y, $u_i(y) = |\partial y/\partial x_i| \cdot u(x_i)$, called a **component of combined standard uncertainty** of y.

The **combined standard uncertainty** of y, $u_c(y)$, is the positive square root of the sum of the squares of the components of combined standard uncertainty.

The combined standard uncertainty is multiplied by a **coverage factor** of $k = 2$ to obtain U, the **expanded uncertainty** of y.

Since it can be assumed that the possible estimated values of the massic activity are approximately normally distributed with approximate standard deviation $u_c(y)$, the unknown value of the massic activity is believed to lie in the interval $y \pm U$ with a level of confidence of approximately 95 percent.

For further information on the expression of uncertainties, see references [2] and [3].

[e] The value of each standard uncertainty component, and hence the value of the expanded uncertainty itself, is a best estimate based upon all available information, but is only approximately known. That is to say, the "uncertainty of the uncertainty" is large and not well known. This is true for uncertainties evaluated by statistical methods (e.g., the relative standard deviation of the standard deviation of the mean for the liquid-scintillation counting is approximately 50%) and for uncertainties evaluated by other methods (which could easily be over estimated or under estimated by substantial amounts). The unknown value of the expanded uncertainty is believed to lie in the interval $U/2$ to $2U$ (i.e., within a factor of 2 of the estimated value).

[f] Estimated limits of detection for photon-emitting impurities are:
$2 \times 10^{-4}\ \gamma \cdot s^{-1} \cdot g^{-1}$ for energies between 20 and 85 keV,
$2 \times 10^{-5}\ \gamma \cdot s^{-1} \cdot g^{-1}$ for energies between 93 and 503 keV,
$1 \times 10^{-5}\ \gamma \cdot s^{-1} \cdot g^{-1}$ for energies between 519 and 1457 keV, and
$5 \times 10^{-6}\ \gamma \cdot s^{-1} \cdot g^{-1}$ for energies between 1465 and 3250 keV.

[g] The stated uncertainty is the standard uncertainty. See reference [5].

[h] Relative standard uncertainty of the input quantity x_i

[i] The relative change in the output quantity y divided by the relative change in the input quantity x_i. If $|\partial y/\partial x_i| \cdot (x_i/y) = 1.0$, then a 1% change in x_i results in a 1% change in y. If $|\partial y/\partial x_i| \cdot (x_i/y) = 0.05$, then a 1% change in x_i results in a 0.05% change in y.

[j] Relative component of combined standard uncertainty of output quantity y, rounded to two significant figures or less. The relative component of combined standard uncertainty of y is given by $u_i(y)/y \equiv |\partial y/\partial x_i| \cdot u(x_i)/y = \{\partial y/\partial x_i| \cdot (x_i/y) \cdot u(x_i)/x_i$. The numerical values of $u(x_i)/x_i$, $|\partial y/\partial x_i| \cdot (x_i/y)$, and $u_i(y)/y$, all dimensionless quantities, are listed in columns 3, 4, and 5, respectively. Thus, the value in column 5 is equal to the value in column 4 multiplied by the value in column 3. The input quantities are independent, or very nearly so. Hence the covariances are zero or negligible.

[k] The relative standard uncertainty of $\lambda \cdot t$ is determined by the relative standard uncertainty of λ (i.e., of the half life). The relative standard uncertainty of t is negligible.

[m] $|\partial y/\partial x_i| \cdot (x_i/y) = |\lambda \cdot t|$, multiplied by other sensitivity factors where appropriate.

[n] The live time is determined by counting the pulses from a gated crystal-controlled oscillator.

[p] The standard uncertainty for each undetected impurity that might reasonably be expected to be present is estimated to be equal to the estimated limit of detection for that impurity, i.e. $u(x_i)/x_i$ = 100%. $|\partial y/\partial x_i| \cdot (x_i/y)$ = {(response per Bq of impurity)/(response per Bq of Tc-99)} • {(Bq of impurity)/(Bq of Tc-99)}. Thus $u_i(y)/y$ is the relative change in y if the impurity were present with a massic activity equal to the estimated limit of detection.

REFERENCES

[1] International Organization for Standardization (ISO), *ISO Standards Handbook - Quantities and Units*, 1993. Available from the American National Standards Institute, 11 West 42nd Street, New York, NY 10036, U.S.A. 1-212-642-4900.

[2] International Organization for Standardization (ISO), *Guide to the Expression of Uncertainty in Measurement*, 1993. Available from the American National Standards Institute, 11 West 42nd Street, New York, NY 10036, U.S.A. 1-212-642-4900. (Listed under ISO miscellaneous publications as "ISO Guide to the Expression 1993".)

[3] B. N. Taylor and C. E. Kuyatt, *Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results*, NIST Technical Note 1297, 1994. Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20407, U.S.A.

[4] National Council on Radiation Protection and Measurements Report No. 58, *A Handbook of Radioactivity Measurements Procedures*, Second Edition, 1985. Available from the National Council on Radiation Protection and Measurements, 7910 Woodmont Avenue, Bethesda, MD 20814 U.S.A.

[5] Evaluated Nuclear Structure Data File (ENSDF), September 1996.

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Standard Traceability Log Rad

Source Material Info	
Parent Code:	1297
Prepared By:	Amanda Fehr
Carrier Conc:	DI Water
Reference Date:	09/01/1996
Ampoule Mass (g):	4.998 g
Uncertainty:	+/- 1.14 %
LogBook No:	RC-S-051-016

A Solution Material Info	
Isotope:	Technetium-99
Prepared By:	Jesse Craig
Prep Date:	02/16/2009
Verification Date:	02/08/2017
Expiration Date:	02/08/2018
Primary Code:	1297-A
Dilution(mL):	100 mL
Mass of Parent(g):	4.885 g
Density(g/mL):	0.9968
Balance ID:	38080204

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (kBq/g)) * (conversion dpm to kBq) / (Dilution Vol) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (kBq/g)) * (conversion dpm to kBq) / Density (g/mL)/ (Dilution Vol) = Parent Activity (dpm/g)
(4.885 g) * (32.61 kBq/g) * (60000 dpm/kBq) / (100 mL) = 95579.9100 dpm/mL
(4.885 g) * (32.61 kBq/g) * (60000 dpm/kBq) / (0.9968 g/mL) / (100 mL) = 95883.4800 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
04/27/2009	Julie Strock	.02	10	1297-090427-1	5.0636 ug/L	05/04/2008	05/04/2009
04/30/2009	Julie Strock	.01	10	1005-090430-1	5.0373 ug/L	05/04/2008	05/04/2009
04/30/2009	Julie Strock	.02	10	1005-090430-2	5.0373 ug/L	05/04/2008	05/04/2009
04/30/2009	Julie Strock	.2	10	1005-090430-3	5.0373 ug/L	05/04/2008	05/04/2009
04/27/2009	Julie Strock	.2	20	1297-090427-2	5.0636 ug/L	05/04/2008	05/04/2009
04/30/2009	Julie Strock	.2	10	1297-090430-1	5.0636 ug/L	05/04/2008	05/04/2009
04/27/2009	Julie Strock	.1	25	13321297-090427	5.0636 ug/L	05/04/2008	05/04/2009
05/05/2009	Julie Strock	.02	10	1297-090505-1	5.0636 ug/L	05/12/2008	05/12/2009

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05/05/2009	Julie Strock	.01	10	1005-090505-4	.0050373 ug/L	05/12/2008	05/12/2009
05/05/2009	Julie Strock	.2	20	1297-090505-2	5.0636 ug/L	05/12/2008	05/12/2009
05/05/2009	Julie Strock	.1	25	13321297-090505-1		05/12/2008	05/12/2009
06/18/2009	James Schoneman	.02	10	1297-090618-1	5.04782 ug/L	06/25/2008	06/25/2009
06/18/2009	James Schoneman	.2	20	1297-090618-2	5.04782 ug/L	06/25/2008	06/25/2009
06/24/2009	James Schoneman	.2	20	1297-090624-1	5.04782 ug/L	06/25/2008	06/25/2009
06/18/2009	James Schoneman	.1	25	13451297-090618-1	5.04782 ug/L	06/25/2008	06/25/2009
06/24/2009	James Schoneman	.1	25	13451297-090624-1	5.04782 ug/L	06/25/2008	06/25/2009
08/10/2009	James Schoneman	.02	10	1297-090810-1	5.0478 ug/L	08/17/2008	08/17/2009
08/10/2009	James Schoneman	.04	20	1297-090810-2		08/17/2008	08/17/2009
08/10/2009	James Schoneman	.4	20	1297-090810-3		08/17/2008	08/17/2009
08/10/2009	James Schoneman	.02	20	1297-090810-4		08/17/2008	08/17/2009
08/11/2009	James Schoneman	4	20	1297-090811-1	5.0478 ug/L	08/17/2008	08/17/2009
08/10/2009	James Schoneman	.1	25	12971345-090810-1		08/17/2008	08/17/2009
09/29/2009	James Schoneman	.02	10	1297-090929-1	95575.8 dpm/mL	10/06/2008	10/06/2009
09/29/2009	James Schoneman	.04	20	1297-090929-2	5.0478 ug/L	10/06/2008	10/06/2009
09/29/2009	James Schoneman	.4	20	1297-090929-3	5.0478 ug/L	10/06/2008	10/06/2009
09/29/2009	James Schoneman	4	20	1297-090929-4	5.0478 ug/L	10/06/2008	10/06/2009
09/29/2009	James Schoneman	.02	20	1297-090929-5	5.0478 ug/L	10/06/2008	10/06/2009
09/29/2009	James Schoneman	.1	25	12971332-090929-1	95575.8 dpm/mL	10/06/2008	10/06/2009
10/30/2009	James Schoneman	.02	10	1297-091030-1	95575.8 dpm/mL	11/06/2008	11/06/2009

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10/30/2009	James Schoneman	.04	20	1297-091030-2	5.0478 ug/L	11/06/2008	11/06/2009
10/30/2009	James Schoneman	.4	20	1297-091030-3	5.0478 ug/L	11/06/2008	11/06/2009
10/30/2009	James Schoneman	4	20	1297-091030-4	5.0478 ug/L	11/06/2008	11/06/2009
10/30/2009	James Schoneman	.02	20	1297-091030-5	5.0478 ug/L	11/06/2008	11/06/2009
11/03/2009	James Schoneman	.02	20	1297-091103-1	5.0478 ug/L	11/06/2008	11/06/2009
10/30/2009	James Schoneman	.1	25	12971332-091030-1		11/06/2008	11/06/2009
11/06/2009	James Schoneman	.02	10	1297-091106-1	95575.8 dpm/mL	11/13/2008	11/13/2009
11/06/2009	James Schoneman	.04	20	1297-091106-2	5.0478 ug/L	11/13/2008	11/13/2009
11/06/2009	James Schoneman	.4	20	1297-091106-3	5.0478 ug/L	11/13/2008	11/13/2009
11/06/2009	James Schoneman	4	20	1297-091106-4	5.0478 ug/L	11/13/2008	11/13/2009
11/06/2009	James Schoneman	.02	20	1297-091106-5	5.0478 ug/L	11/13/2008	11/13/2009
11/06/2009	James Schoneman	.1	25	12971332-091106-1		11/13/2008	11/13/2009
11/16/2009	James Schoneman	.02	10	1297-091116-1	95575.8 dpm/mL	11/23/2008	11/23/2009
11/16/2009	James Schoneman	.04	20	1247-091116-2	5.0478 ug/L	11/23/2008	11/23/2009
11/16/2009	James Schoneman	.4	20	1297-091116-3	5.0478 ug/L	11/23/2008	11/23/2009
11/16/2009	James Schoneman	4	20	1297-091116-4	5.0478 ug/L	11/23/2008	11/23/2009
11/16/2009	James Schoneman	.02	20	1297-091116-5	5.0478 ug/L	11/23/2008	11/23/2009
11/19/2009	Julie Strock	.04	20	1297-091119-01	95575.8 dpm/mL	11/26/2008	11/26/2009
11/16/2009	James Schoneman	.1	25	12971332-091116-1		11/23/2008	11/23/2009
11/19/2009	Julie Strock	.02	10	1297-091119-2	95575.8 dpm/mL	11/26/2008	11/26/2009
11/19/2009	Julie Strock	.04	20	1297-091119-3	95575.8 dpm/mL	11/23/2008	11/23/2009

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11/19/2009	Julie Strock	.4	20	1297-091119-4	5.0478 ug/L	11/26/2008	11/26/2009
11/19/2009	Julie Strock	4	20	1297-091119-5	5.0478 ug/L	11/26/2008	11/26/2009
11/23/2009	James Schoneman	.02	10	1297-091123-1	95575.8 dpm/mL	11/30/2008	11/30/2009
11/23/2009	James Schoneman	.04	20	1297-091123-2	5.0478 ug/L	11/30/2008	11/30/2009
11/23/2009	James Schoneman	.4	20	1297-091123-3	5.0478 ug/L	11/30/2008	11/30/2009
11/23/2009	James Schoneman	.1	25	12971332-091123-1		11/30/2008	11/30/2009
12/15/2009	James Schoneman	.02	10	1297-091215-1	95575.8 dpm/mL	12/22/2008	12/22/2009
12/15/2009	James Schoneman	.04	20	1297-091215-2	5.0478 ug/L	12/22/2008	12/22/2009
12/15/2009	James Schoneman	.4	20	1297-091215-3	5.0478 ug/L	12/22/2008	12/22/2009
12/15/2009	James Schoneman	4	20	1297-091215-4	5.0478 ug/L	12/22/2008	12/22/2009
12/15/2009	James Schoneman	.02	20	1297-091215-5	5.0478 ug/L	12/22/2008	12/22/2009
12/15/2009	James Schoneman	.1	25	12971333-091215-1		12/22/2008	12/22/2009
02/17/2009	Mary Aders	10.5308	500	1297-B	2019.4595 dpm/ml	02/17/2009	02/17/2010
12/07/2009	Bethany Fiem	10.2418	500	1297-C	1964.0388 dpm/mL	11/29/2010	11/29/2011
04/05/2011	Gregory Ramsay	10.3169	500	1297-D	1978.44055 dpm/mL	03/29/2012	03/29/2012
09/05/2012	Gregory Ramsay	10.0582	500	1297-E	1928.83044 dpm/mL	07/11/2014	07/11/2015

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for Tc-99 Standard 1297-A

v1.0.2

Instrument	RED
Analyst	GXR1
Verification Prep Date	2/8/2017

Standard Information	
Isotope	Tc-99
Serial Number	1297-A
Isotope Halflife	2.1110E+05 Y
Reference Date	9/1/1996
Ref. Act. (DPM/mL)	95579.91
Amount of Std. (mL)	0.1
Standard Prep Date	2/16/2009

Std #	Count Date	Quench Number	Gross cpm	Bkg cpm
1	2/8/2017	68.00	9431.82	43.20
2	2/8/2017	69.60	9630.48	43.20
3	2/8/2017	69.80	9485.45	43.20

Std #	Net cpm	Calculated Avg. Eff.	Standard dpm/mL	Measured dpm
1	9388.62	0.948154	99020.04	9902.00
2	9587.28	0.948154	101115.27	10111.53
3	9442.25	0.948154	99585.67	9958.57

	dpm/mL
Mean Value =	99906.99
Stdev =	1083.94442
Certificate Value* =	**95573.5**
Two sigma =	2167.889
10 % of Mean =	9990.699
Rule A (Pass/Fail)	**Pass**
% Recovery	104.53%
Rule B (Pass/Fail)	**Pass**
Expiration Date	**2/8/2018**

Verification Rules

Rule A = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

Rule B = The determined mean value shall be within 5% of the certificate value.

*** Certificate Value is decay corrected to Count Date.**

The analyst prepared three standard verification sources for Tc-99 source 1297-A by transferring 0.1 mL portions of the standard into glass liquid scintillation vials. 10 mL of Ecoscint Ultra liquid scintillation cocktail was added to each vial and the vials were shaken to mix. A Blank vial was prepared in a similar fashion using 10 mL of Ecoscint Ultra liquid scintillation cocktail. The standard verification vials and background source were dark adapted for at least two hours and counted on LSCRED for Tc-99 source standard verification. The Tc-99 efficiency calibration which was used for verification calculations was performed on 2/8/2017 using Tc-99 source 1621-A.

Standard results for each verification source was calculated as follows:

Source dpm/mL = (A - B)/(C)(D)

where:

A = Ver. source cpm,
B = BKG cpm,
C = System efficiency (cpm/dpm), and
D = volume used for standard verification.

RAD-M-001

2/9/17

2/13/17

July 17, 2017

General Engineering Laboratories
Calibration Source Preparation Sheet

Applicable SOP Number	GL-RAD-A-059	Isotope	Tc-99
Date Standards Prepared	6/22/2017	Cocktail Type Used	Ecoscint GL
Standard ID	1297-A	Matrix of Vial/Planchett	5 mL DI Water 15 mL Ecoscint GL AG 1x8 Resin
Amount Used (g or ml)	0.1		
Standard Activity (DPM/g or mL)	95579.91	Type of Scintillation Vial	Plastic
Reference Date	9/1/1996	Pipette ID Used	2272418
Expiration Date	2/8/2018	Quenching Agent	Conc. Brown Colorant

Standard Number	Quenching Vol (uL)/
1	0
2	30
3	60
4	90
5	120
6	150
7	180
8	210
9	240
10	270
11	300

Prepared By: [signature] Date: 6/23/17

Reviewed By: [signature] Date: 6/29/17

LSC Detectors:

Mocha	✓	Yellow	✓
Brown	✓	Gray	—
Green	✓	Teal	✓ JPG 6/29/17
Silver	✓	Orange	✓
Gold	✓	Pink	✓
Blue	✓	Purple	✓
Red	✓	White	✓

CAL
Date:6/8/17

Efficiency Standard Precision Check

Rack	Time (min.)	CPM Iso1	Within -/+ 5% mean
**-2	1	6167.00	YES
**-3	1	6309.00	YES
**-4	1	6372.00	YES
**-5	1	6183.00	YES
**-6	1	6404.00	YES
**-7	1	6264.00	YES
**-8	1	6161.00	YES
**-9	1	6535.00	YES
**-10	1	6364.00	YES
**-11	1	6223.00	YES
**-12	1	6309.00	YES

-5% Mean	Mean	+5% Mean
5984.22	6299.18	6614.14

Tc99 cal

ID: TOTAL ACTIVITY 23 JUN 2017 02:52

USER:11 COMMENT:GOLD

PRESET TIME :	1.00						
DATA CALC :	CPM	H#	:YES	SAMPLE REPEATS:	1	PRINTER	: STD
COUNT BLANK :	NO	IC#	: NO	REPLICATES :	1	RS232	:EDIT
TWO PHASE :	NO	AQC	: NO	CYCLE REPEATS :	1	DISK	: OFF
SCINTILLATOR:	LIQUID	LUMEX	:YES	LOW SAMPLE REJ:	0		
LOW LEVEL :	NO	HALF LIFE CORRECTION DATE:				none	

CHAN: 0.0 - 990.0 %ERROR: 2.00 FACTOR: 1.000000 BKG. SUB: 0

CHAN: 0.0 - 1000.0 %ERROR: 2.00 FACTOR: 1.000000 BKG. SUB: 0

	SAM NO	POS	TIME MIN	H#	WIND1 CPM	WIND1 %ERROR	WIND2 CPM	WIND2 %ERROR	LUMEX %	ELAPSED TIME
BKG	1	**-1	1.00	163.7	36.00	40.09	37.00	39.38	36.65	1.48
1	2	**-2	1.00	165.8	6167.00	2.55	6168.00	2.55	0.32	3.38
2	3	**-3	1.00	167.1	6309.00	2.52	6311.00	2.52	0.31	5.36
3	4	**-4	1.00	169.5	6372.00	2.51	6374.00	2.51	0.28	7.33
4	5	**-5	1.00	172.0	6183.00	2.55	6185.00	2.55	0.30	9.32
5	6	**-6	1.00	168.6	6404.00	2.50	6409.00	2.50	0.28	11.31
6	7	**-7	1.00	171.6	6264.00	2.53	6265.00	2.53	0.30	13.29
7	8	**-8	1.00	169.9	6161.00	2.55	6165.00	2.55	0.29	15.25
8	9	**-9	1.00	170.1	6535.00	2.48	6535.00	2.48	0.31	17.23
9	10	**-10	1.00	165.4	6364.00	2.51	6365.00	2.51	0.32	19.20
10	11	**-11	1.00	159.3	6223.00	2.54	6223.00	2.54	0.35	21.20
11	12	**-12	1.00	161.4	6309.00	2.52	6310.00	2.52	0.39	23.19

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404·352·8677
Fax 404·352·2837
www.analyticsinc.com

1621

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

91973
Tc-99 5 mL Liquid in Flame Sealed Vial

Customer: General Engineering Labs
P.O. No.: GEL 1202297, Item 1

This standard radionuclide source was prepared gravimetrically from a master solution, calibrated by Eckert & Ziegler Analytics. The master solution was calibrated by liquid scintillation counting. Radionuclide calibration and purity were checked by germanium gamma-ray spectrometry, liquid scintillation counting, and/or alpha spectrometry, as applicable. The nuclear decay rate and reference date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 2, July 2007, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty* , % Type u_A	u_B	U	Reference Date (12:00 PM EST)
Tc-99	7.710E+07	4.025E+04	0.3	1.3	2.7	09/28/2012

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: γ-impurities<0.1%.
5.01799 g 0.001M NaOH solution. Carrier free.

Source Prepared by: M. I. Taskaeva, Radiochemist

QA Approved: J.D. McCorvey, Counting Room Manager

Date: 27 SEP 12

RECEIVED 10/1/12 AMO.

Single Isotope Certificate Rev 3, 22 August 2012

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1956

NC-S-065-051

July 17, 2017

Standard Traceability Log Rad

Source Material Info	
Parent Code:	1621
Prepared By:	Ashley Drochter
Carrier Conc:	0.001M NaOH
Reference Date:	09/28/2012
Ampoule Mass (g):	5.01799 g
Uncertainty:	+/- 2.7 %
LogBook No:	RC-S-065-051

A Solution Material Info	
Isotope:	Technetium-99
Prepared By:	Gregory Ramsay
Prep Date:	06/06/2013
Verification Date:	02/08/2017
Expiration Date:	02/08/2018
Primary Code:	1621-A
Dilution(mL):	100 mL
Mass of Parent(g):	4.887 g
Density(g/mL):	0.9959
Balance ID:	38080204

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (Bq)) * (conversion dpm to Bq) / (Ampoule Mass(g) *(Dilution Vol)) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (Bq)) * (conversion dpm to Bq) / Density / (Ampoule Mass (g) * (Dilution Vol)) = Parent Activity (dpm/g)
(4.887 g) * (40250 Bq) * (60 dpm/Bq) / (5.01799 g * 100 mL) = 23519.5865 dpm/mL
(4.887 g) * (40250 Bq) * (60 dpm/Bq) / (0.9959 g/mL)/ (5.01799 g * 100 mL) = 23616.2004 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
01/13/2015	Gregory Ramsay	40.468	500	1621-B	1911.4008 dpm/mL	01/05/2017	01/05/2018

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for Tc-99 Standard 1621-A

v1.0.2

Instrument	RED
Analyst	GXR1
Verification Prep Date	2/8/2017

Standard Information	
Isotope	Tc-99
Serial Number	1621-A
Isotope Halflife	2.1110E+05 Y
Reference Date	9/28/2012
Ref. Act. (DPM/mL)	23519.5865
Amount of Std. (mL)	0.1
Standard Prep Date	6/6/2013

Std #	Count Date	Quench Number	Gross cpm	Bkg cpm
1	2/8/2017	68.80	2273.86	43.20
2	2/8/2017	69.40	2290.68	43.20
3	2/8/2017	69.10	2257.75	43.20

Std #	Net cpm	Calculated Avg. Eff.	Standard dpm/mL	Measured dpm
1	2230.66	0.990997	22509.24	2250.92
2	2247.48	0.990997	22678.97	2267.90
3	2214.55	0.990997	22346.68	2234.67

	dpm/mL
Mean Value =	22511.63
Stdev =	166.1586055
Certificate Value* =	**23519.2**
Two sigma =	332.317
10 % of Mean =	2251.163
Rule A (Pass/Fail)	**Pass**
% Recovery	95.72%
Rule B (Pass/Fail)	**Pass**
Expiration Date	**2/8/2018**

Verification Rules

Rule A = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

Rule B = The determined mean value shall be within 5% of the certificate value.

*** Certificate Value is decay corrected to Count Date.**

The analyst prepared three standard verification sources for Tc-99 source 1621-A by transferring 0.1 mL portions of the standard into glass liquid scintillation vials. 10 mL of Ecoscint Ultra liquid scintillation cocktail was added to each vial and the vials were shaken to mix. A Blank vial was prepared in a similar fashion using 10 mL of Ecoscint Ultra liquid scintillation cocktail. The standard verification vials and background source were dark adapted for at least two hours and counted on LSCRED for Tc-99 source standard verification. The Tc-99 efficiency calibration which was used for verification calculations was performed on 2/8/2017 using Tc-99 source 1297-A.

Standard results for each verification source was calculated as follows:

Source dpm/mL = (A - B)/(C)(D)

where:

A = Ver. source cpm,
B = BKG cpm,
C = System efficiency (cpm/dpm), and
D = volume used for standard verification.

RAD-M-001

2/13/17

2/14/17

July 17, 2017

General Engineering Laboratories
Verification Source Preparation Sheet

Applicable SOP Number	GL-RAD-A-059	Isotope	Tc-99
Date Standards Prepared	6/22/2017	Cocktail Type Used	Ecoscint GL
Standard ID	1621-A	Matrix of Vial/Planchett	5 mL DI Water 15 mL Ecoscint GL AG 1x8 Resin
Amount Used (g or ml)	0.5		
Standard Activity (DPM/g or mL)	23519.5865	Type of Scintillation Vial	Plastic
Reference Date	9/28/2012	Pipette ID Used	3158763
Expiration Date	2/8/2018	Quenching Agent	Conc. Brown Colorant

Standard Number	Quenching Vol (uL)/
1	0
2	30
3	60
4	90
5	120
6	150
7	180
8	210
9	240
10	270
11	300

Prepared By: [signature] Date: 6/22/17

Reviewed By: [signature] Date: 6/29/17

LSC Detectors:

Mocha	✓	Yellow	✓
Brown	✓	Gray	—
Green	✓	Teal	—
Silver	✓	Orange	✓
Gold	✓	Pink	✓
Blue	✓	Purple	✓
Red	✓	White	✓

15-Jun-2017

GEL Laboratories
2040 Savage Road, Charleston, SC 29407
(843)556-8171

Liquid Scintillation Counter Calibration Package

Method: H-3

Instrument Color Code: SILVER

	Included/ Acceptable	Comments
Part 1: Efficiency determination		
1 Efficiency spreadsheet (eff pts, graph, trendline equation)	X	
2 Verification Spreadsheet (recoveries 90%-110%)	X	
3 Applicable portion of Machines.XLS	X	
4 Raw Data and spectra	X	
5 Window, Low Level and Lumex settings	X	
Part 2. Documentation for Calibration Source		
1 Vendor Certificate	X	
2 Standard Traceability Log (from LIMS)	X	
3 Verification of Source	X	
4 Source preparation sheet	X	
5 Efficiency standard precision check	X	
Part 3. Documentation for Verification Source		
1 Vendor Certificate	X	
2 Standard Traceability Log (from LIMS)	X	
3 Verification of Source	X	
4 Source preparation sheet	X	
Part 4. Enter into LIMS		
1 Alpha LIMS instrument calibration updated	X	

Primary Review of Package _____

Secondary Review of Package _____

Effective Date: 7/1/17

Expiration Date: 6/30/18

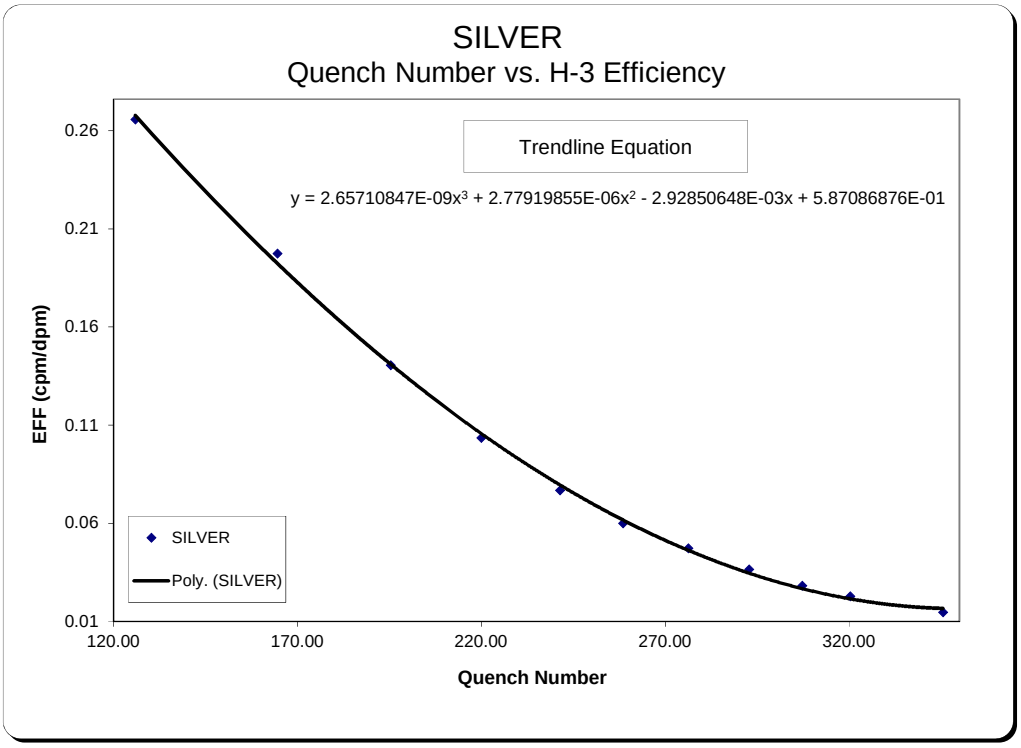
H-3 Calibration

Instrument	SILVER

Standard Information from prep sheet	
Isotope	H-3
Serial Number	1712-A
Isotope Halflife (days)	4485.27
Reference Date	9/9/2014
Ref. Act. (DPM/mL)	44136.21
Amount of Std. (mL)	1.0

Std #	Start Count Time	Quench Number	RAW CPM	BKG	RAW CPM-BKG	Nominal DPM	EFF.
1	6/10/17 4:21	125.90	10044.00	5.77	10038.23	37786.1005	0.26566
2	6/10/17 4:23	164.60	7465.93	5.77	7460.16	37786.09253	0.19743
3	6/10/17 4:25	195.40	5312.63	5.77	5306.86	37786.08334	0.14044
4	6/10/17 4:28	220.00	3914.23	5.77	3908.46	37786.07158	0.10344
5	6/10/17 4:32	241.40	2907.54	5.77	2901.77	37786.05705	0.07679
6	6/10/17 4:36	258.50	2273.41	5.77	2267.64	37786.039	0.06001
7	6/10/17 4:42	276.30	1788.75	5.77	1782.98	37786.01643	0.04719
8	6/10/17 4:48	292.80	1385.10	5.77	1379.33	37785.98933	0.03650
9	6/10/17 4:57	307.30	1073.58	5.77	1067.81	37785.95526	0.02826
10	6/10/17 5:07	320.30	865.34	5.77	859.57	37785.91255	0.02275
11	6/10/17 5:20	345.50	559.11	5.77	553.34	37785.8597	0.01464

Copy into Machines.xls	
Cal Date	07/01/17
Min H#	126.7
Max H#	336.2
A0	5.87086876E-01
A1	-2.92850648E-03
A2	2.77919855E-06
A3	2.65710847E-09
A4	0
A5	0
Geometry	L DW/13mL Ecoscint Ultra
Exp Date	06/30/18
Low Level	N
Eff Error	0.007920
Window1 LL	50
Window1 UL	255
Window2 LL	0
Window2 UL	1000



H-3 Verification

Instrument	SILVER

Standard Information from prep sheet	
Isotope	H-3
Serial Number	1753-C
Isotope Halflife (days)	4485.27
Reference Date	9/1/2015
Ref. Act. (DPM/mL)	2747.56
Amount of Std. (mL)	1.0

Std #	Start Count Time	Quench Number	Raw CPM	BKG	BKG Corrected CPM	Calculated EFF.	Standard DPM	Measured DPM	Recovery %
1	6/7/17 16:37	126.70	653.22	4.23	648.99	0.2661	2486.63	2439.23	98.09%
2	6/7/17 16:54	165.80	486.81	4.23	482.58	0.1901	2486.63	2539.22	102.12%
3	6/7/17 17:16	196.60	335.71	4.23	331.48	0.1390	2486.62	2385.54	95.94%
4	6/7/17 17:48	222.50	248.53	4.23	244.30	0.1024	2486.61	2386.90	95.99%
5	6/7/17 18:19	245.00	185.13	4.23	180.90	0.0755	2486.60	2396.03	96.36%
6	6/7/17 18:51	262.90	141.77	4.23	137.54	0.0576	2486.59	2389.83	96.11%
7	6/7/17 19:23	281.20	114.17	4.23	109.94	0.0424	2486.59	2590.87	104.19%
8	6/7/17 19:54	297.90	83.07	4.23	78.84	0.0316	2486.58	2497.39	100.43%
9	6/7/17 20:26	310.40	67.63	4.23	63.40	0.0253	2486.57	2504.56	100.72%
10	6/7/17 20:57	321.70	56.17	4.23	51.94	0.0211	2486.56	2464.97	99.13%
11	6/7/17 21:29	336.20	46.57	4.23	42.34	0.0176	2486.55	2401.67	96.59%

	Calibration Coeffs
a0	5.87086876E-01
a1	-2.92850648E-03
a2	2.77919855E-06
a3	2.65710847E-09

Silver	**H-3**
Cal Date	07/01/2017
Min H#	126.70
Max H#	336.20
A0	5.87086876E-01
A1	-2.92850648E-03
A2	2.77919855E-06
A3	2.65710847E-09
A4	0.00000000E+00
A5	0.00000000E+00
B0	3.58174200E+00
B1	2.00097851E-02
B2	-1.43667314E-04
B3	2.35283715E-07
B4	0.00000000E+00
B5	0.00000000E+00
Geometry	10mL DW/13mL Ecoscint Ultra
Exp Date	06/30/18
Low Level	N
Eff Error	0.007920
Window1 LL	50
Window1 UL	255
Window2 LL	0
Window2 UL	1000

Instrument Type	LS 6000
Data Capture Date	10 Jun 2017 03:49:17
User Filename	C:\LSCCAPTURE\SILVER\USER02\UN061001.BSF

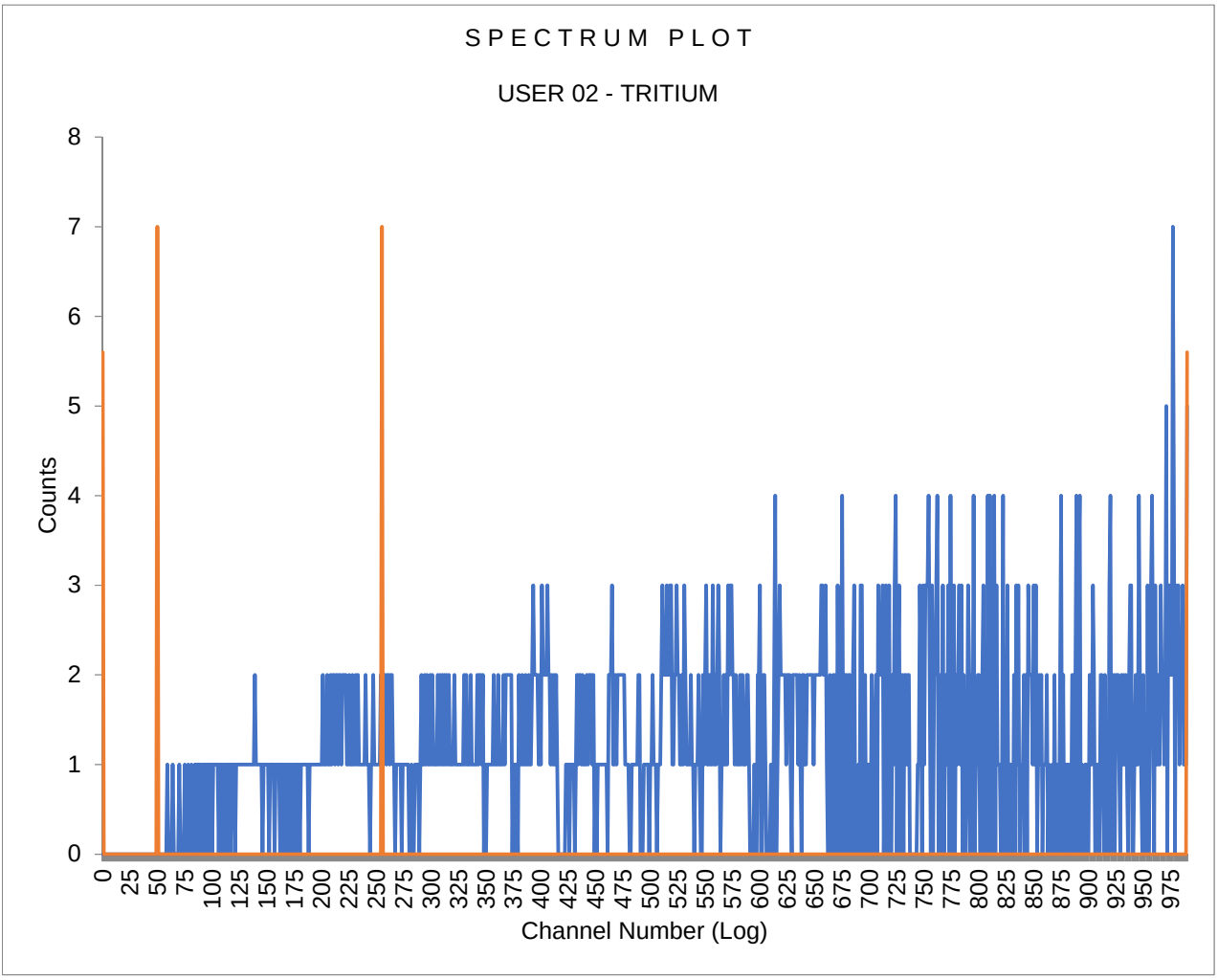
User Number	2
User Id	TRITIUM
User Comments	SILVER

Scintillator Choice:	LIQUID

Sam	Rack	Time	H#	Raw CPM1	Raw CPM2	CPM Iso1	%Err1	CPM Iso2	%Err2	LumEx	ElTime
1	17-1	30.00	126.8	6.07	43.13	5.77	15.60	42.83	5.60	0.80	31.15
2	17-2	1.00	125.9	10044.00	11396.00	10044.00	2.00	11396.00	1.87	0.00	33.15
3	17-3	1.35	164.6	7465.93	7971.85	7465.93	1.99	7971.85	1.93	0.00	35.46
4	17-4	1.90	195.4	5312.63	5574.74	5312.63	1.99	5574.74	1.94	0.00	38.29
5	17-5	2.60	220.0	3914.23	4083.46	3914.23	1.98	4083.46	1.94	0.00	41.88
6	17-6	3.45	241.4	2907.54	3034.78	2907.54	2.00	3034.78	1.95	0.00	46.32
7	17-7	4.40	258.5	2273.41	2365.91	2273.41	2.00	2365.91	1.96	0.00	51.71
8	17-8	5.60	276.3	1788.75	1876.07	1788.75	2.00	1876.07	1.95	0.00	58.48
9	17-9	7.25	292.8	1385.10	1460.41	1385.10	2.00	1460.41	1.94	0.00	66.82
10	17-10	9.35	307.3	1073.58	1137.54	1073.58	2.00	1137.54	1.94	0.02	77.31
11	17-11	11.60	320.3	865.34	928.02	865.34	2.00	928.02	1.93	0.02	90.10
12	17-12	17.90	345.5	559.16	610.17	559.11	2.00	610.11	1.91	0.02	109.43

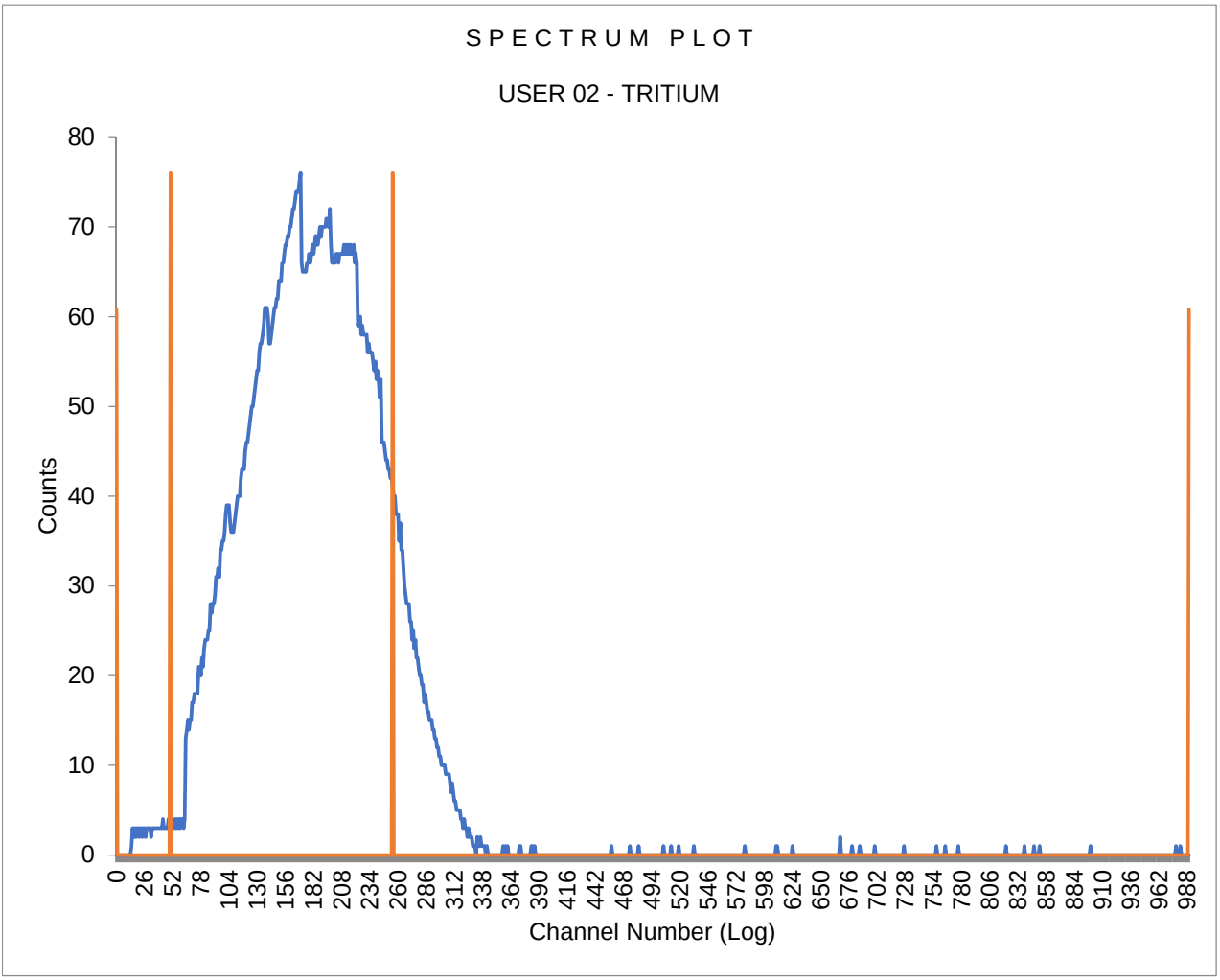
July 17, 2017

Sample Count Start Time:	10 Jun 2017 03:50:26		
Data Capture Date	10 Jun 2017 04:20:52		
User Filename	S02061017-1A.XLS		
	U02061017-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	1	17-1	30.00
H#, Total Counts:	126.8	1285	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



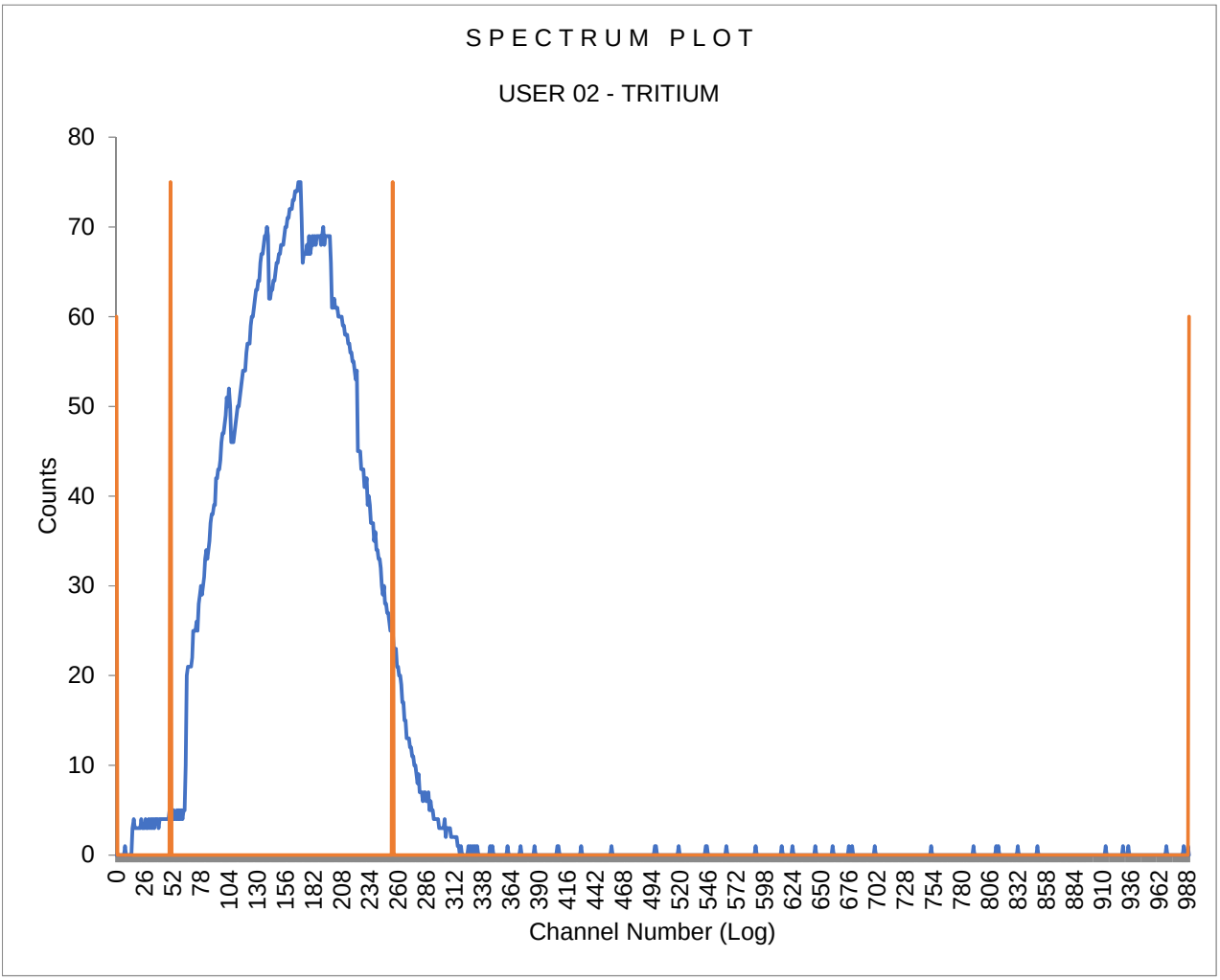
July 17, 2017

Sample Count Start Time:	10 Jun 2017 04:21:26		
Data Capture Date	10 Jun 2017 04:22:48		
User Filename	S02061017-2A.XLS		
	U02061017-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	2	17-2	1.00
H#, Total Counts:	125.9	11396	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



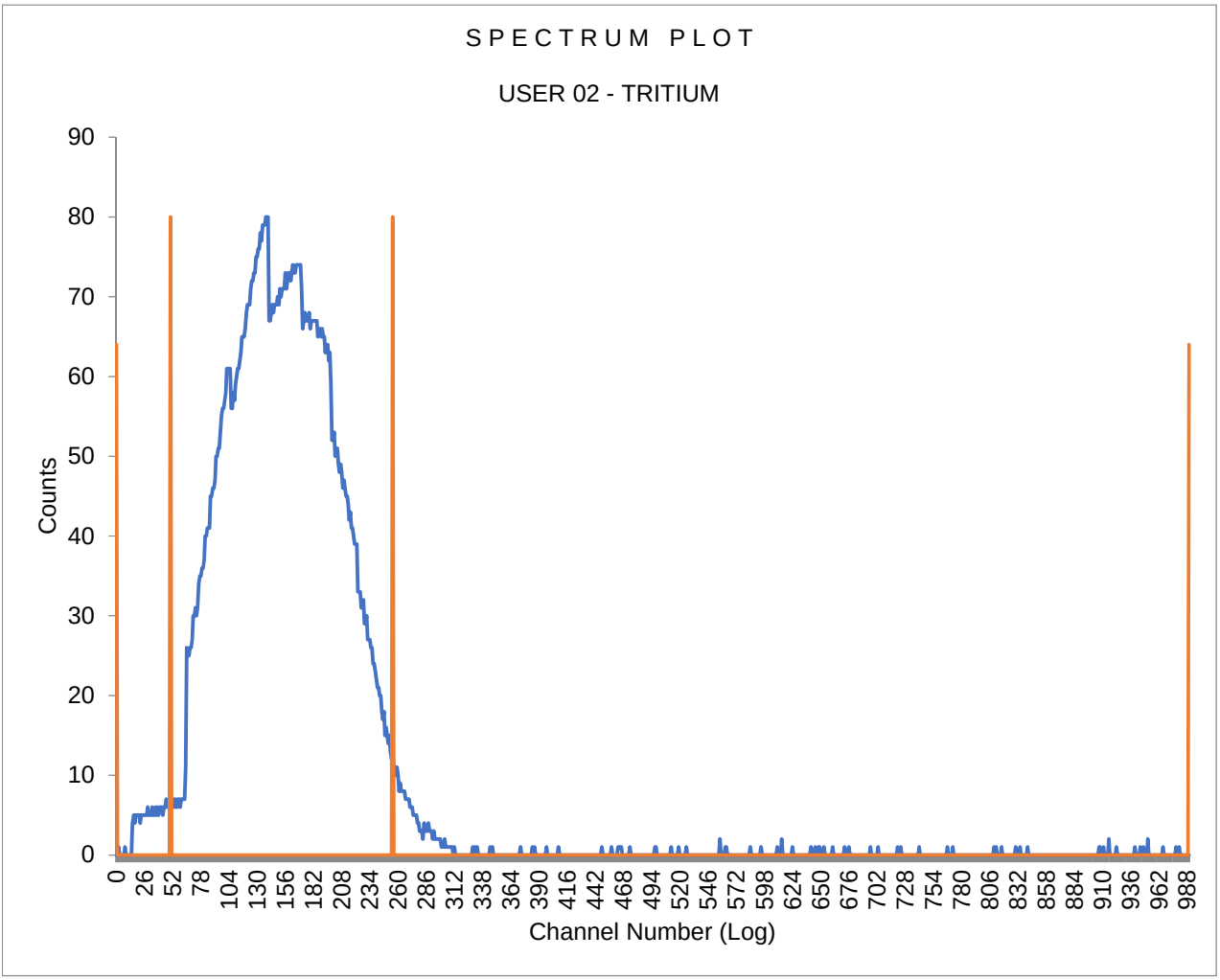
July 17, 2017

Sample Count Start Time:	10 Jun 2017 04:23:24		
Data Capture Date	10 Jun 2017 04:25:06		
User Filename	S02061017-3A.XLS		
	U02061017-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	3	17-3	1.35
H#, Total Counts:	164.6	10762	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



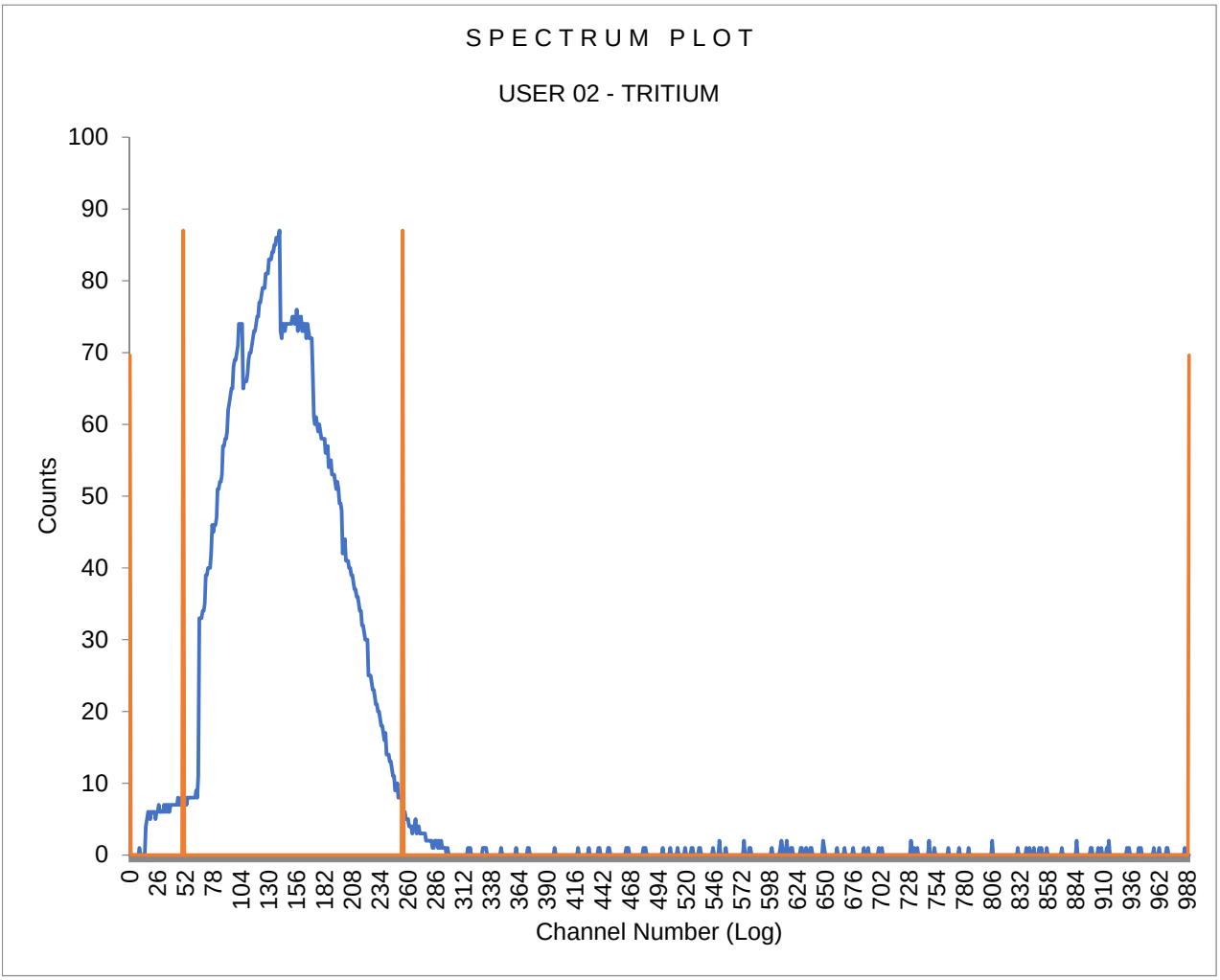
July 17, 2017

Sample Count Start Time:	10 Jun 2017 04:25:40		
Data Capture Date	10 Jun 2017 04:27:58		
User Filename	S02061017-4A.XLS		
	U02061017-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	4	17-4	1.90
H#, Total Counts:	195.4	10592	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



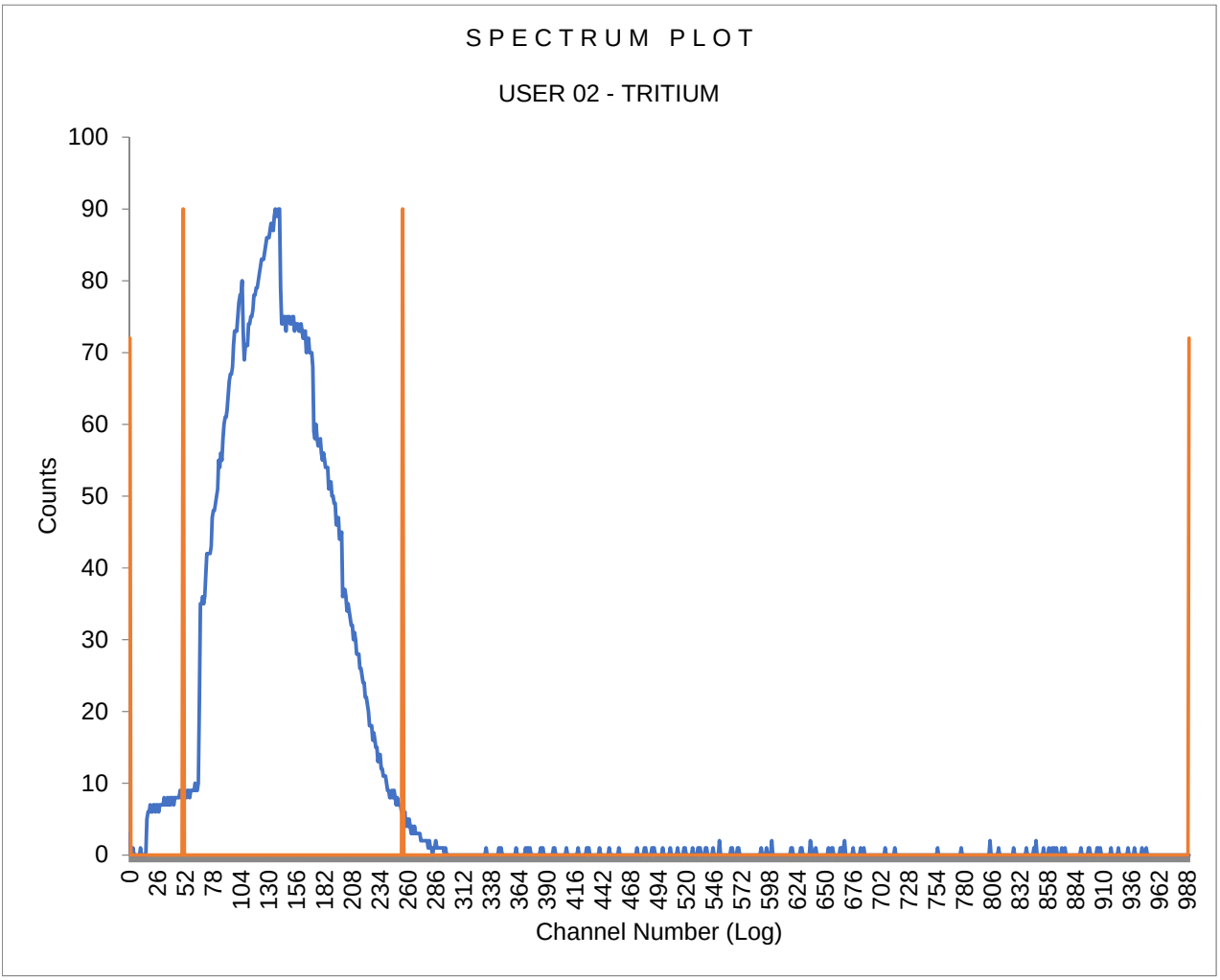
July 17, 2017

Sample Count Start Time:	10 Jun 2017 04:28:34		
Data Capture Date	10 Jun 2017 04:31:33		
User Filename	S02061017-5A.XLS		
	U02061017-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	5	17-5	2.60
H#, Total Counts:	220.0	10617	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



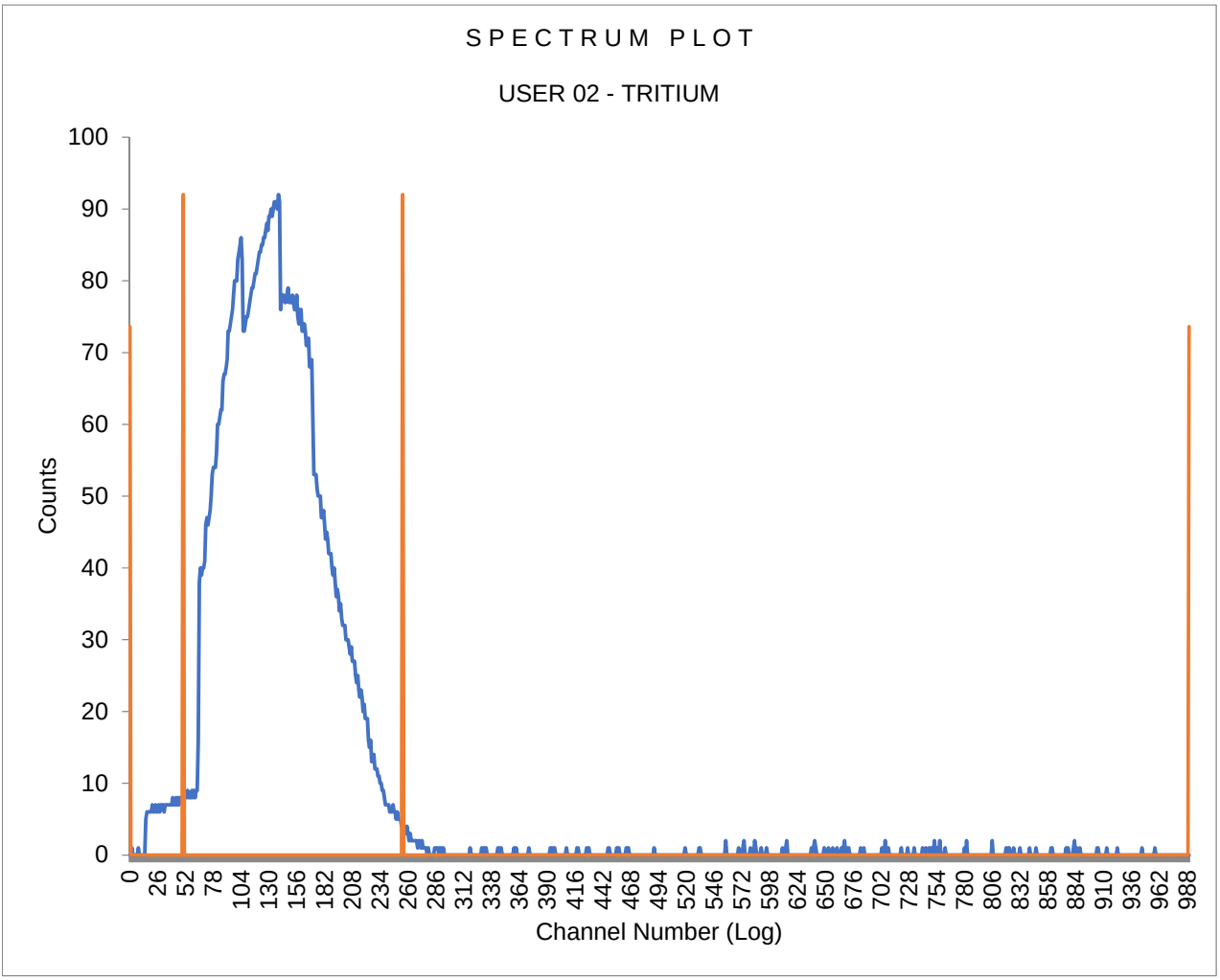
July 17, 2017

Sample Count Start Time:	10 Jun 2017 04:32:09		
Data Capture Date	10 Jun 2017 04:35:59		
User Filename	S02061017-6A.XLS		
	U02061017-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	6	17-6	3.45
H#, Total Counts:	241.4	10470	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



July 17, 2017

Sample Count Start Time:	10 Jun 2017 04:36:36		
Data Capture Date	10 Jun 2017 04:41:23		
User Filename	S02061017-7A.XLS		
	U02061017-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	7	17-7	4.40
H#, Total Counts:	258.5	10410	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



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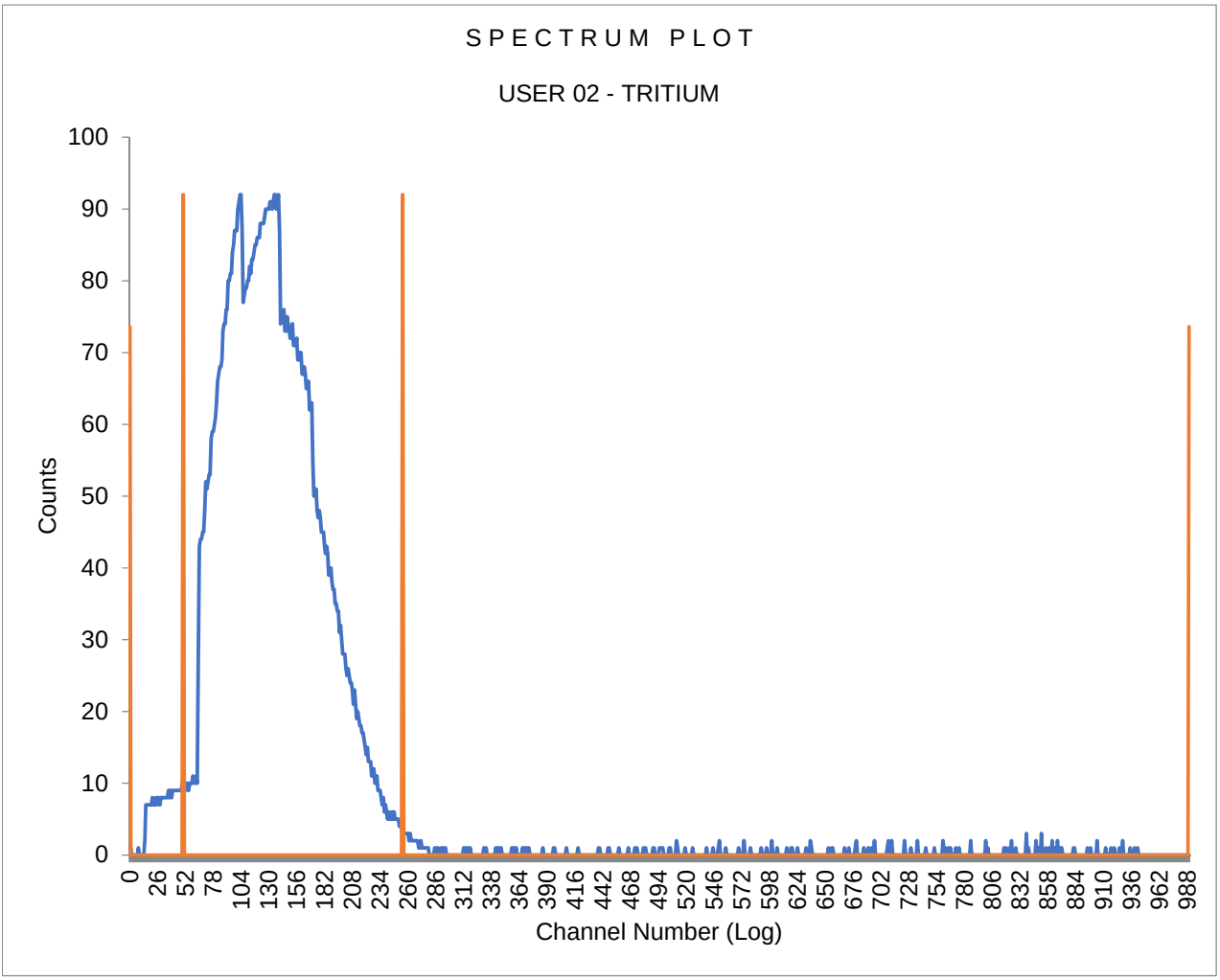
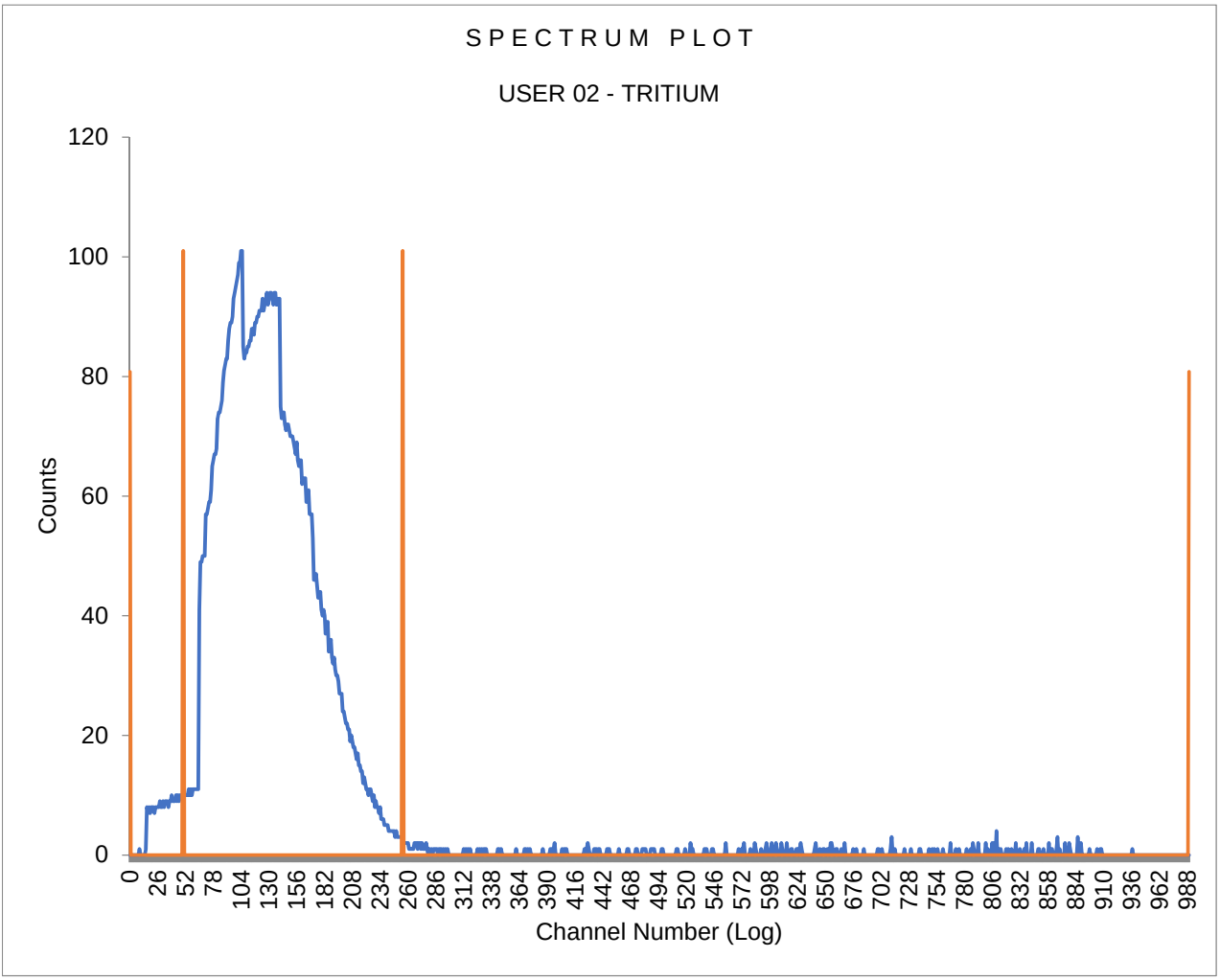
Sample Count Start Time:	10 Jun 2017 04:42:10		
Data Capture Date	10 Jun 2017 04:48:10		
User Filename	S02061017-8A.XLS		
	U02061017-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	8	17-8	5.60
H#, Total Counts:	276.3	10506	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



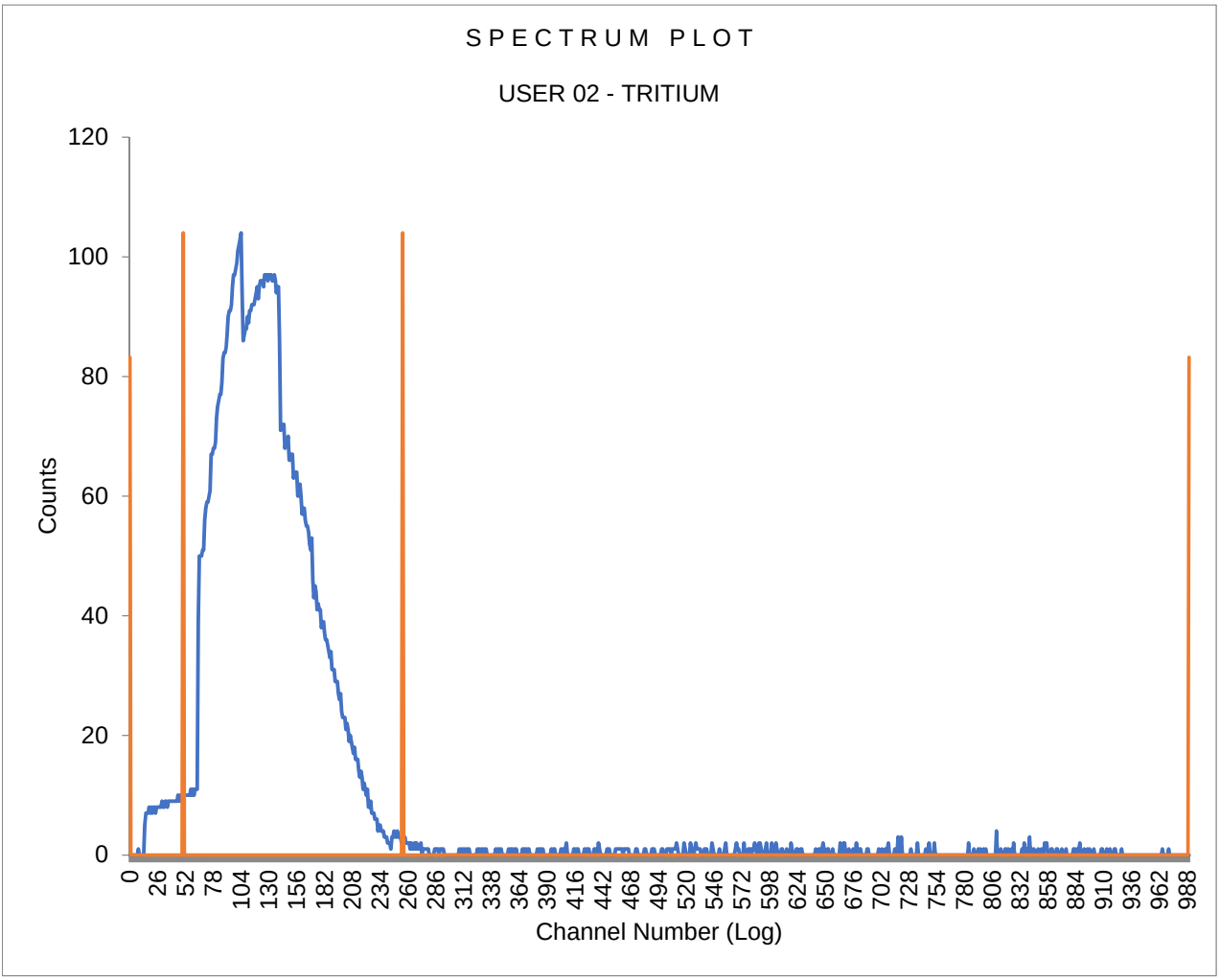
July 17, 2017

Sample Count Start Time:	10 Jun 2017 04:48:51		
Data Capture Date	10 Jun 2017 04:56:30		
User Filename	S02061017-9A.XLS		
	U02061017-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	9	17-9	7.25
H#, Total Counts:	292.8	10588	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



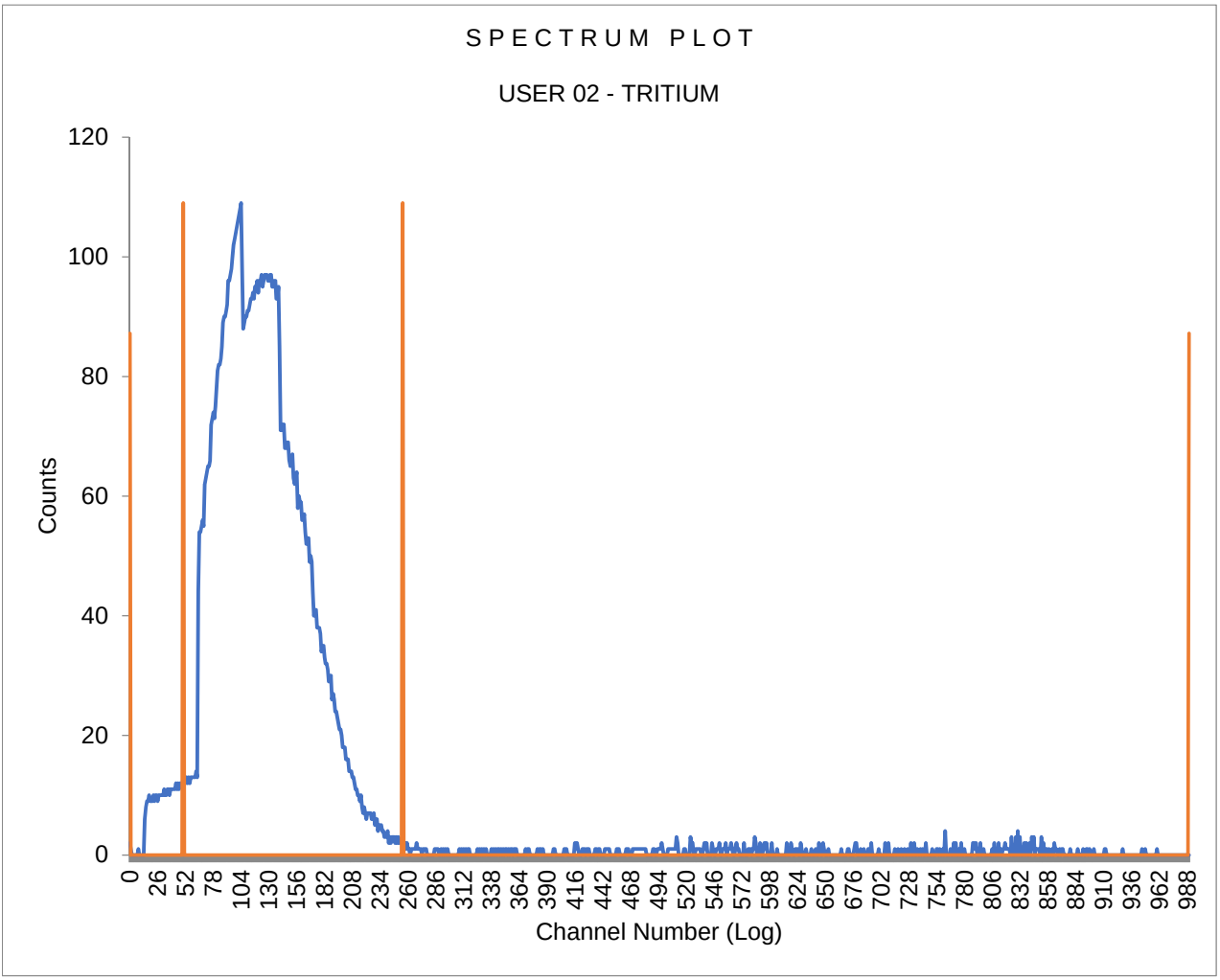
July 17, 2017

Sample Count Start Time:	10 Jun 2017 04:57:15		
Data Capture Date	10 Jun 2017 05:07:00		
User Filename	S02061017-10A.XLS		
	U02061017-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	10	17-10	9.35
H#, Total Counts:	307.3	10636	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



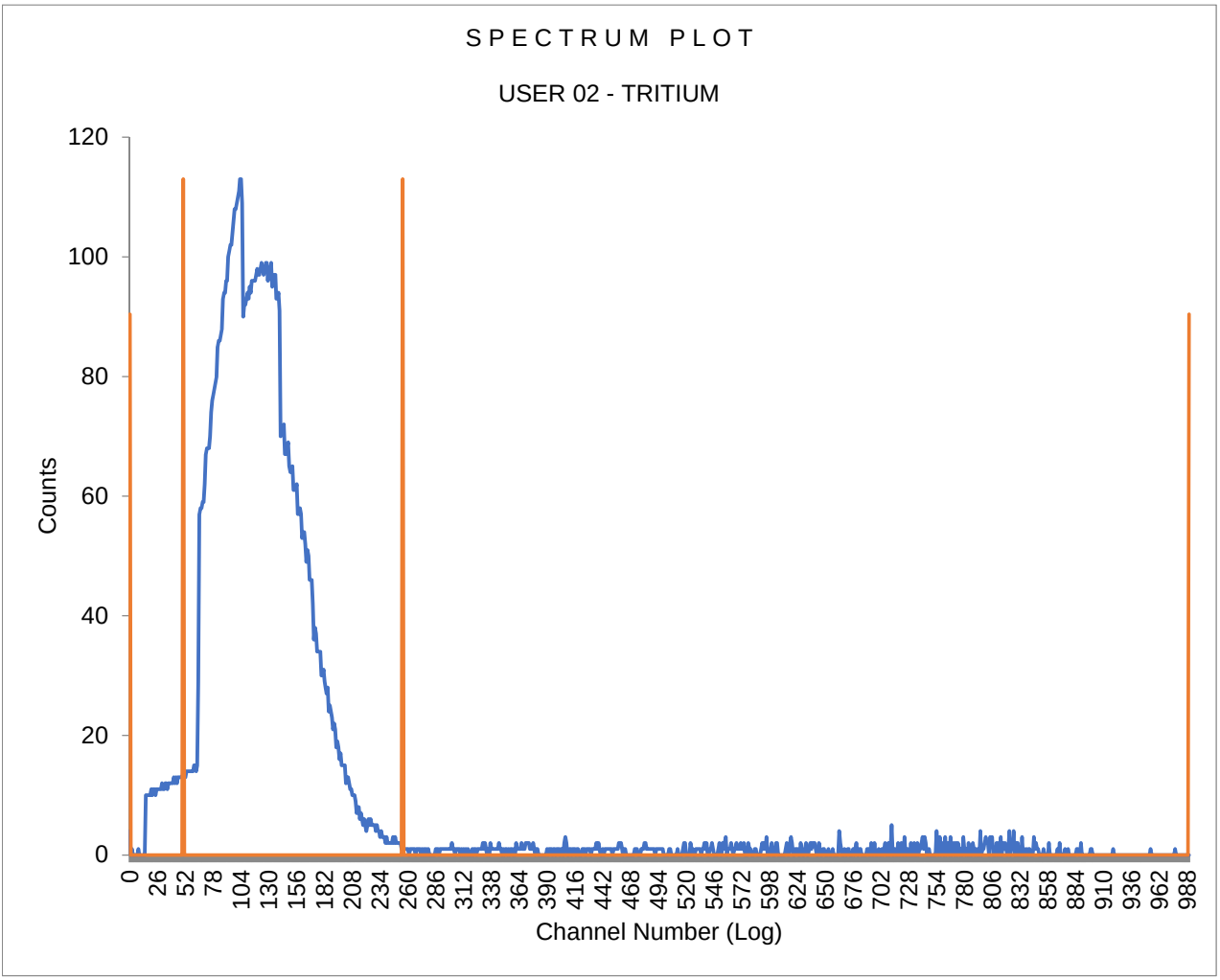
July 17, 2017

Sample Count Start Time:	10 Jun 2017 05:07:47		
Data Capture Date	10 Jun 2017 05:19:48		
User Filename	S02061017-11A.XLS		
	U02061017-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	11	17-11	11.60
H#, Total Counts:	320.3	10765	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



July 17, 2017

Sample Count Start Time:	10 Jun 2017 05:20:49		
Data Capture Date	10 Jun 2017 05:39:08		
User Filename	S02061017-12A.XLS		
	U02061017-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	12	17-12	17.90
H#, Total Counts:	345.5	10921	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



Instrument Type	LS 6000
Data Capture Date	07 Jun 2017 16:05:14
User Filename	C:\LSCCAPTURE\SILVER\USER02\UN060701.BSF

User Number	2
User Id	TRITIUM
User Comments	SILVER

Scintillator Choice:	LIQUID

Sam	Rack	Time	H#	Raw CPM1	Raw CPM2	CPM Iso1	%Err1	CPM Iso2	%Err2	LumEx	ElTime
1	48-1	30.00	129.9	4.63	42.30	4.23	18.57	41.90	5.67	1.12	31.16
2	48-2	15.35	126.7	653.49	777.00	653.22	2.00	776.74	1.83	0.05	47.85
3	48-3	20.55	165.8	487.01	552.26	486.81	2.00	552.07	1.88	0.05	69.84
4	48-4	29.85	196.6	335.85	383.85	335.71	2.00	383.72	1.87	0.05	101.33
5	48-5	30.00	222.5	248.63	292.77	248.53	2.32	292.67	2.13	0.06	132.96
6	48-6	30.00	245.0	185.20	224.73	185.13	2.68	224.67	2.44	0.06	164.57
7	48-7	30.00	262.9	141.83	178.87	141.77	3.07	178.80	2.73	0.06	196.19
8	48-8	30.00	281.2	114.23	148.30	114.17	3.42	148.23	3.00	0.08	227.79
9	48-9	30.00	297.9	83.13	116.10	83.07	4.01	116.03	3.39	0.08	259.39
10	48-10	30.00	310.4	67.70	99.83	67.63	4.44	99.77	3.66	0.09	290.98
11	48-11	30.00	321.7	56.23	87.83	56.17	4.88	87.77	3.90	0.10	322.57
12	48-12	30.00	336.2	46.60	74.93	46.57	5.35	74.90	4.22	0.10	354.15

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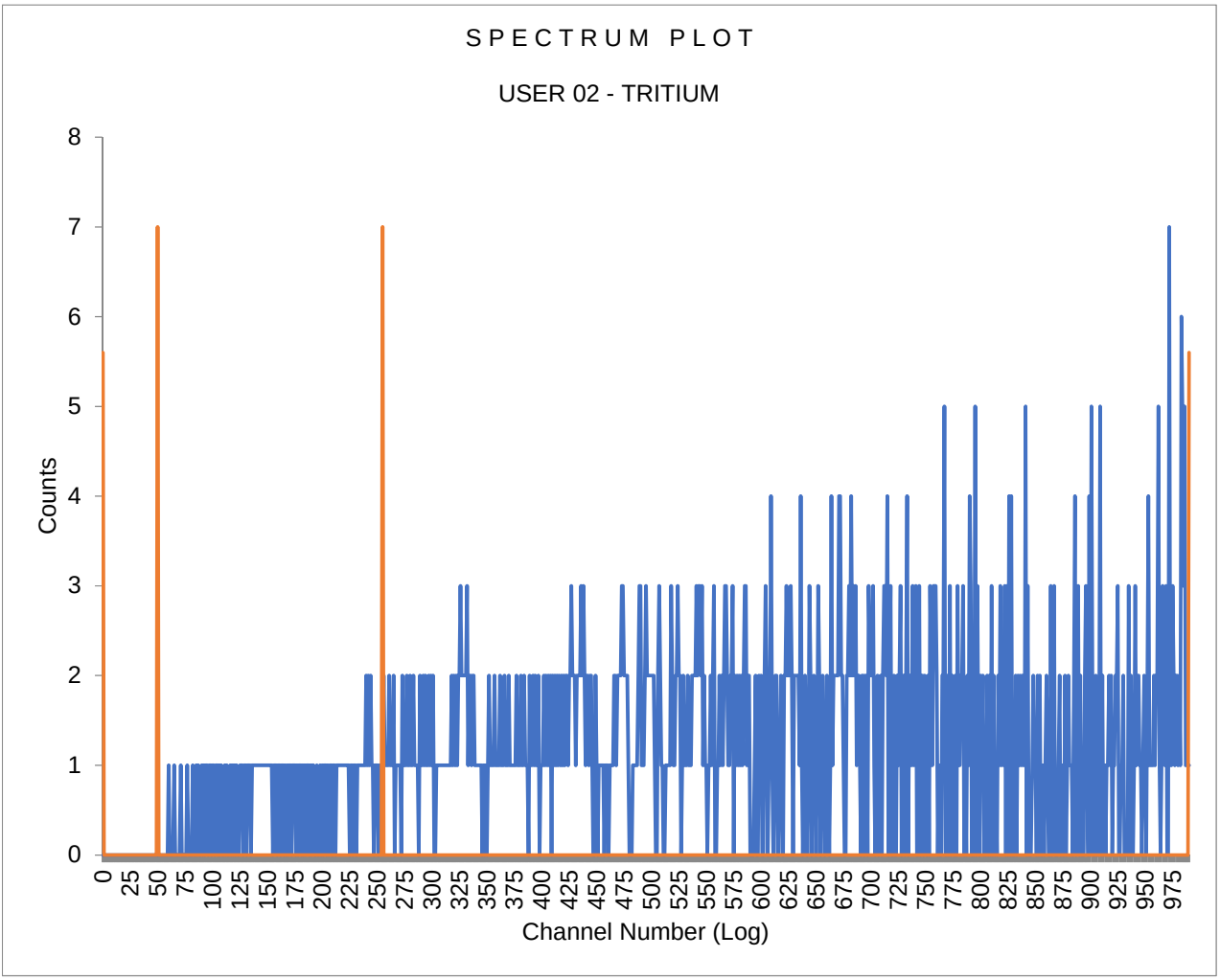
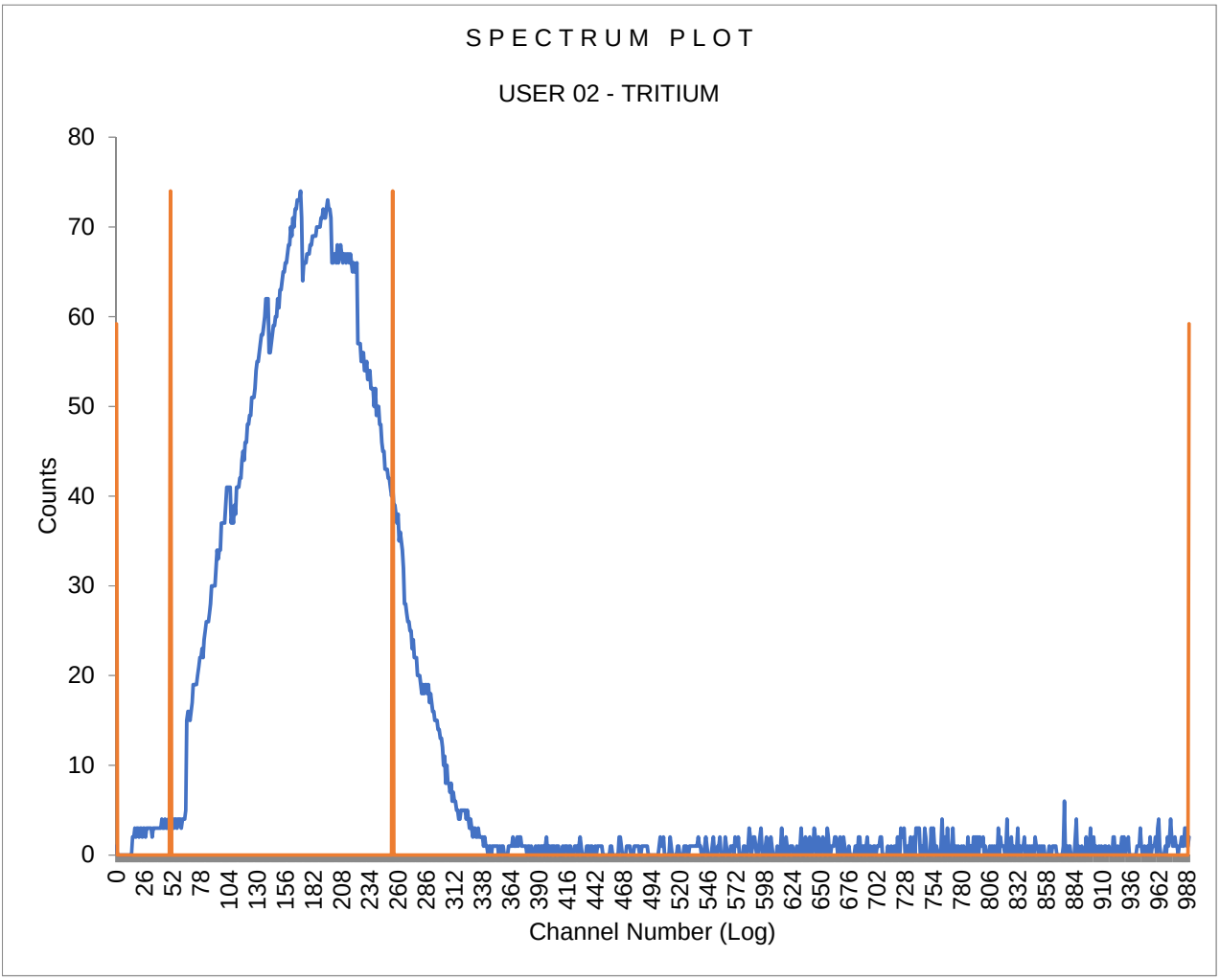
Sample Count Start Time:	7 Jun 2017 16:06:24		
Data Capture Date	07 Jun 2017 16:36:50		
User Filename	S02060748-1A.XLS		
	U02060748-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	1	48-1	30.00
H#, Total Counts:	129.9	1257	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



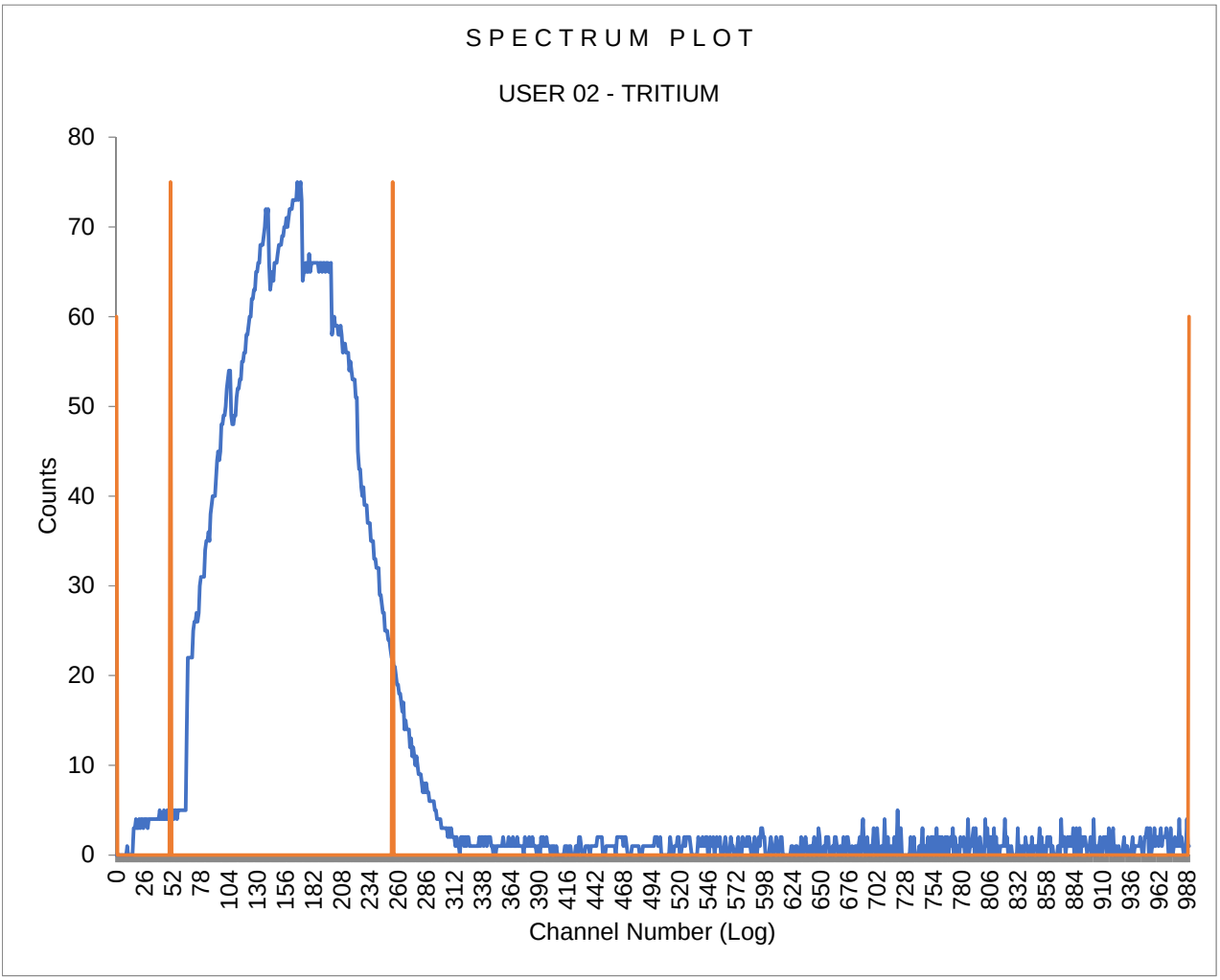
July 17, 2017

Sample Count Start Time:	7 Jun 2017 16:37:44		
Data Capture Date	07 Jun 2017 16:53:30		
User Filename	S02060748-2A.XLS		
	U02060748-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	2	48-2	15.35
H#, Total Counts:	126.7	11923	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



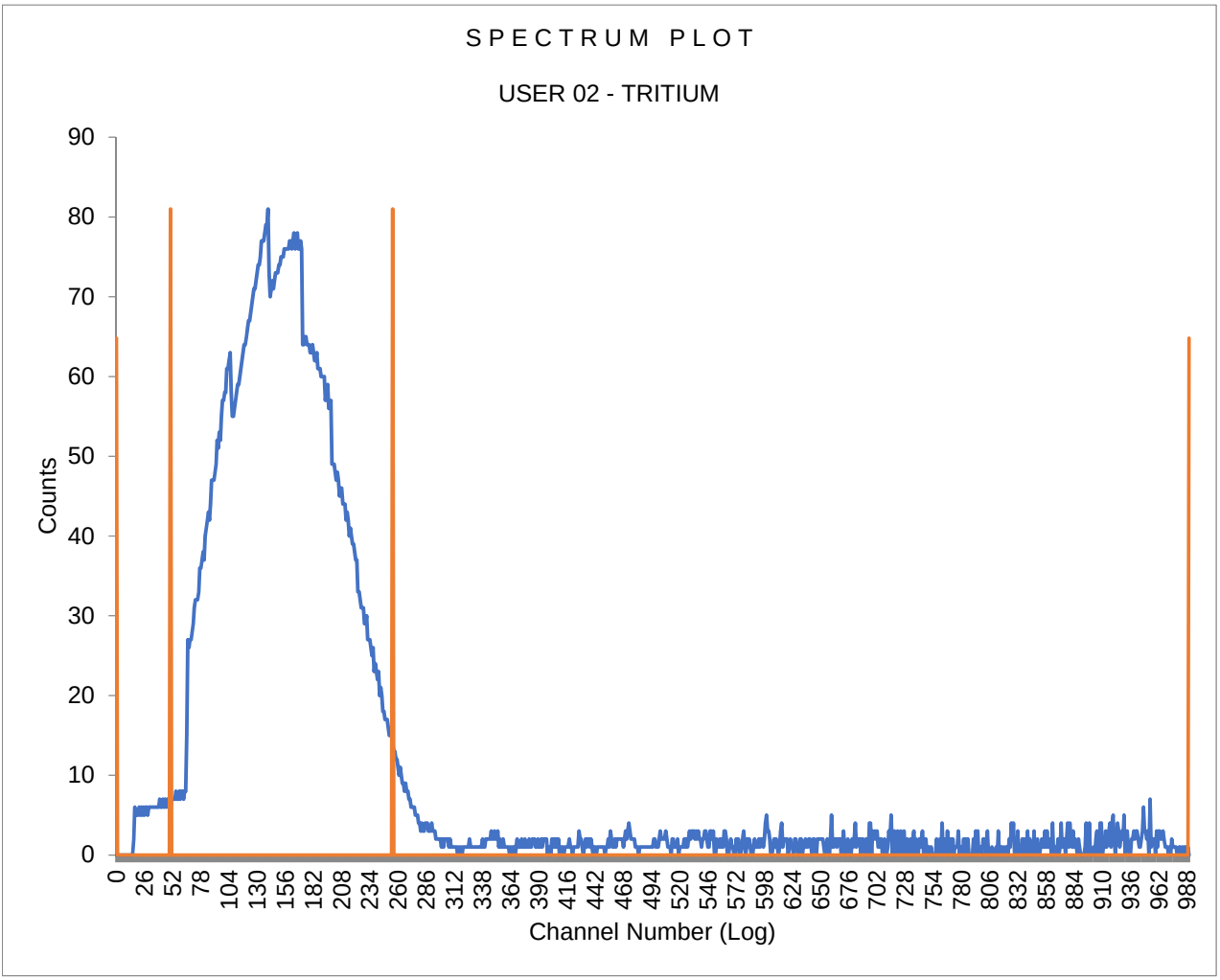
July 17, 2017

Sample Count Start Time:	7 Jun 2017 16:54:31		
Data Capture Date	07 Jun 2017 17:15:30		
User Filename	S02060748-3A.XLS		
	U02060748-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	3	48-3	20.55
H#, Total Counts:	165.8	11345	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



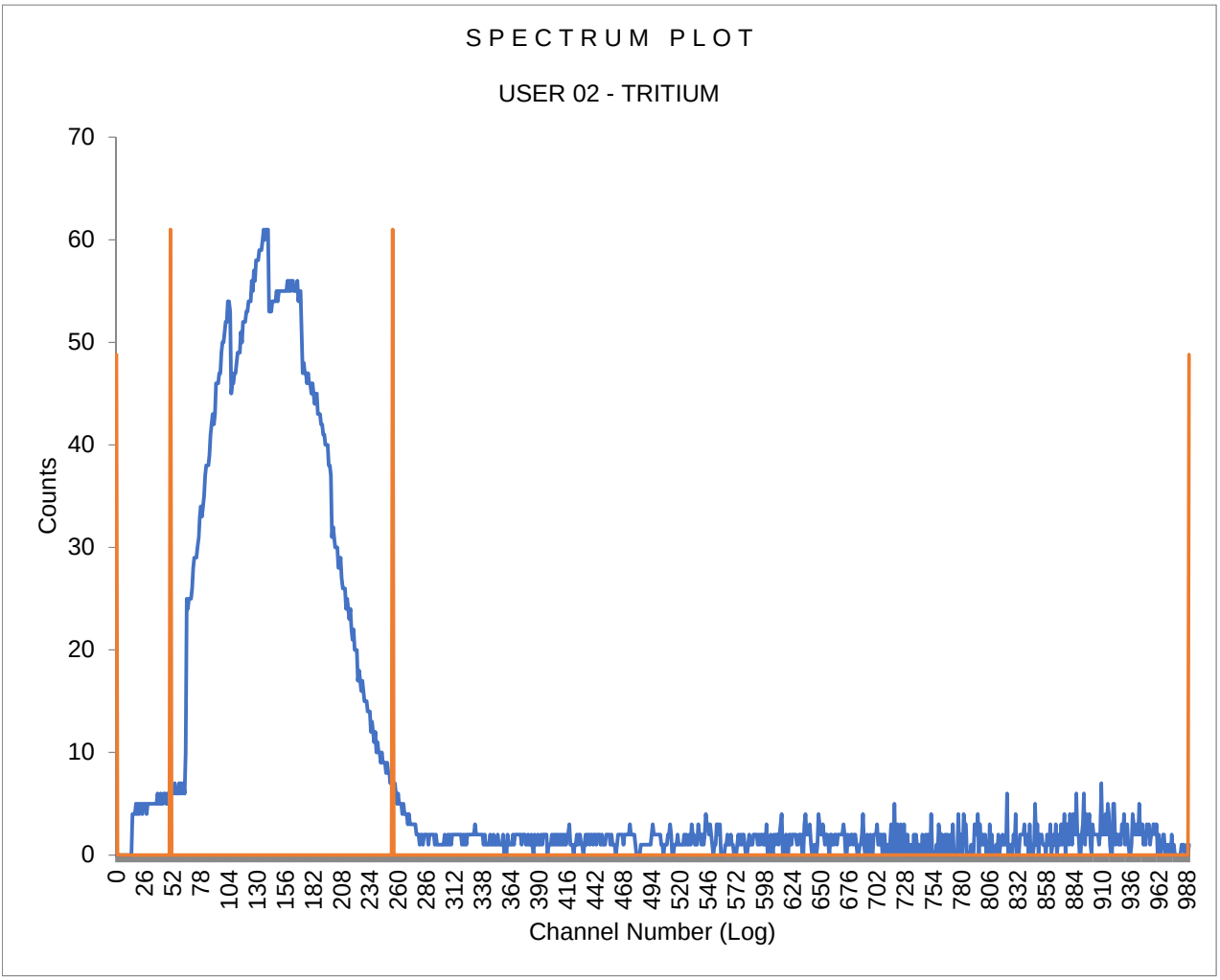
July 17, 2017

Sample Count Start Time:	7 Jun 2017 17:16:43		
Data Capture Date	07 Jun 2017 17:46:59		
User Filename	S02060748-4A.XLS		
	U02060748-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	4	48-4	29.85
H#, Total Counts:	196.6	11454	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



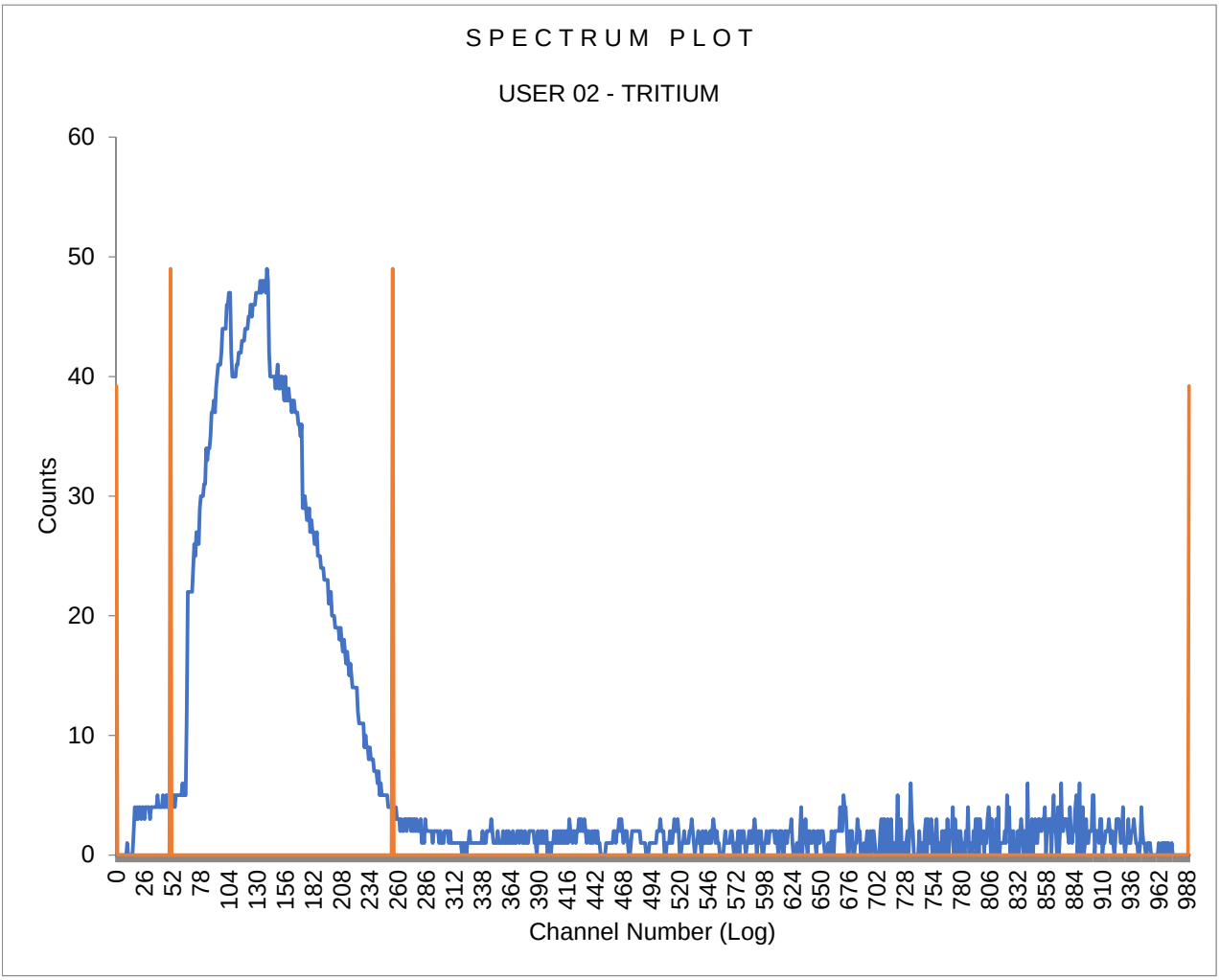
July 17, 2017

Sample Count Start Time:	7 Jun 2017 17:48:12		
Data Capture Date	07 Jun 2017 18:18:37		
User Filename	S02060748-5A.XLS		
	U02060748-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	5	48-5	30.00
H#, Total Counts:	222.5	8780	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



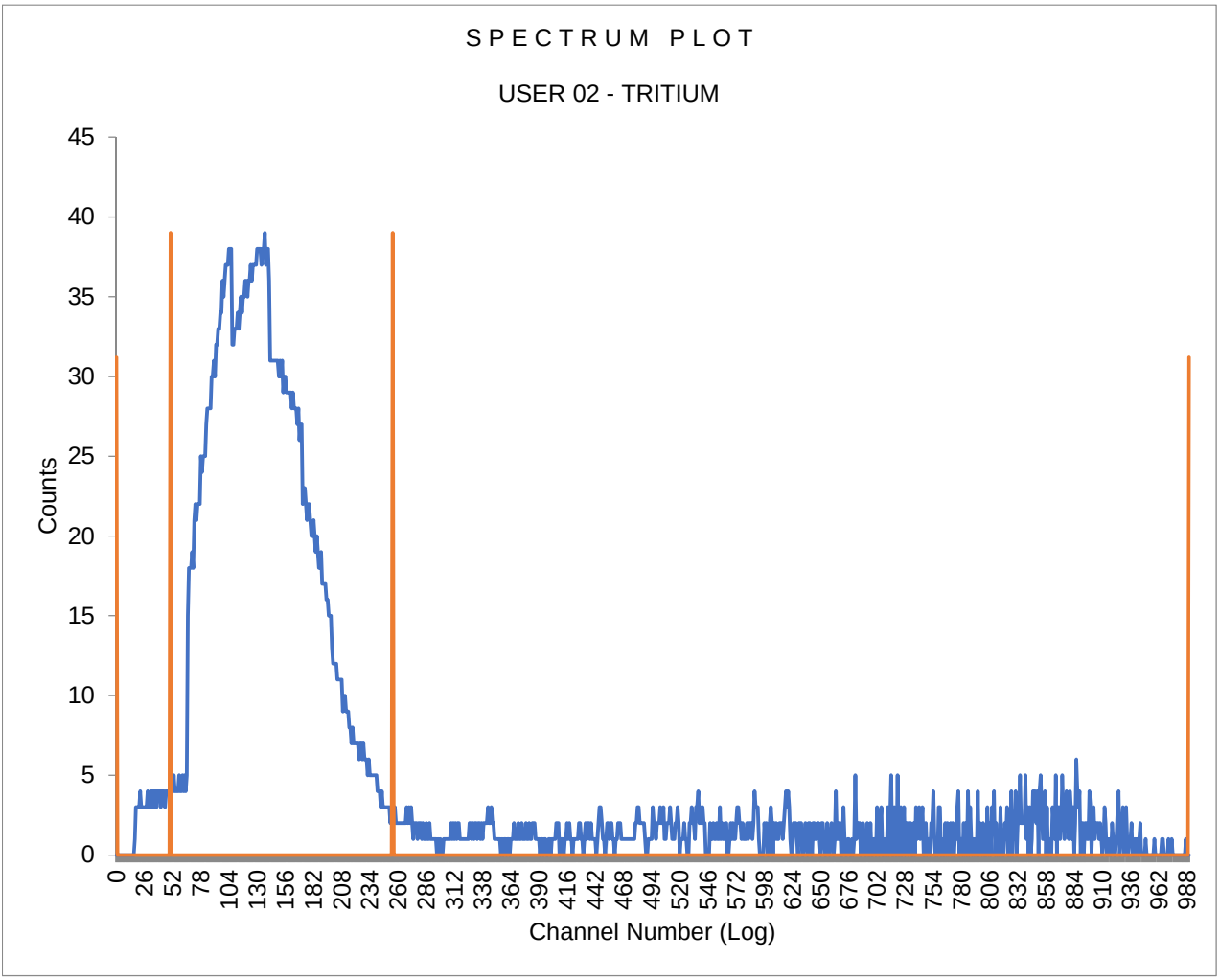
July 17, 2017

Sample Count Start Time:	7 Jun 2017 18:19:48		
Data Capture Date	07 Jun 2017 18:50:14		
User Filename	S02060748-6A.XLS		
	U02060748-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	6	48-6	30.00
H#, Total Counts:	245.0	6740	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



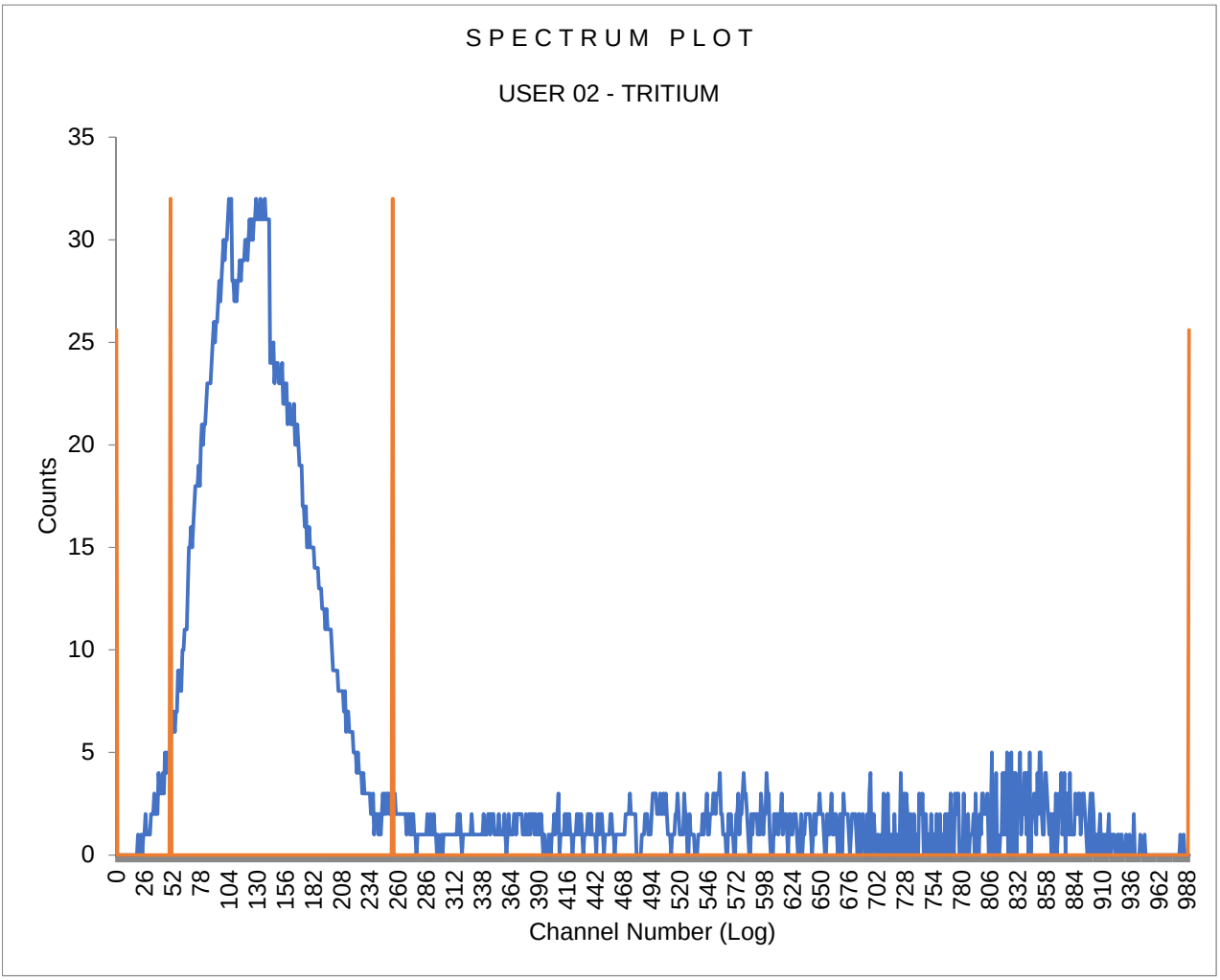
July 17, 2017

Sample Count Start Time:	7 Jun 2017 18:51:25		
Data Capture Date	07 Jun 2017 19:21:50		
User Filename	S02060748-7A.XLS		
	U02060748-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	7	48-7	30.00
H#, Total Counts:	262.9	5364	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



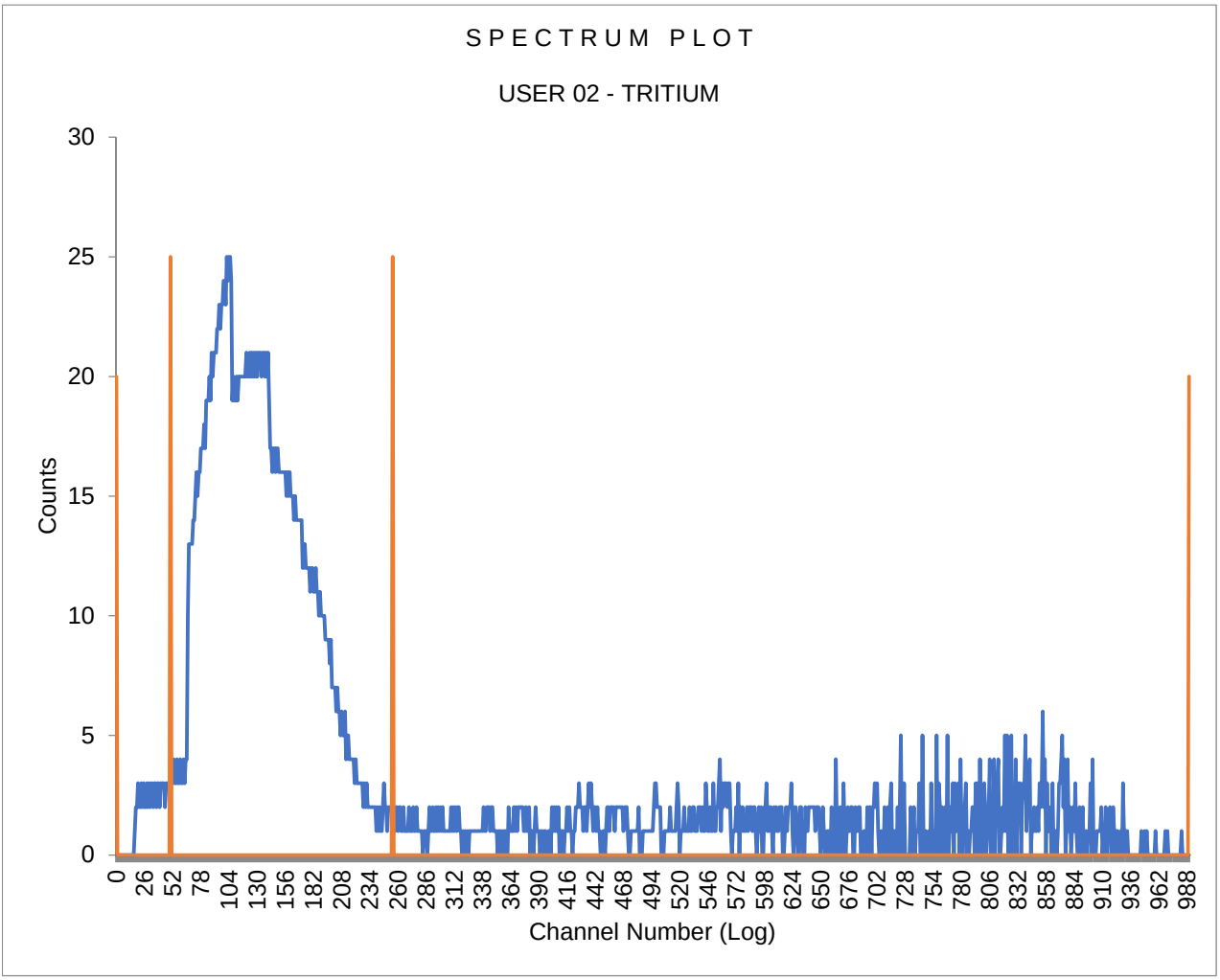
July 17, 2017

Sample Count Start Time:	7 Jun 2017 19:23:01		
Data Capture Date	07 Jun 2017 19:53:26		
User Filename	S02060748-8A.XLS		
	U02060748-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	8	48-8	30.00
H#, Total Counts:	281.2	4447	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



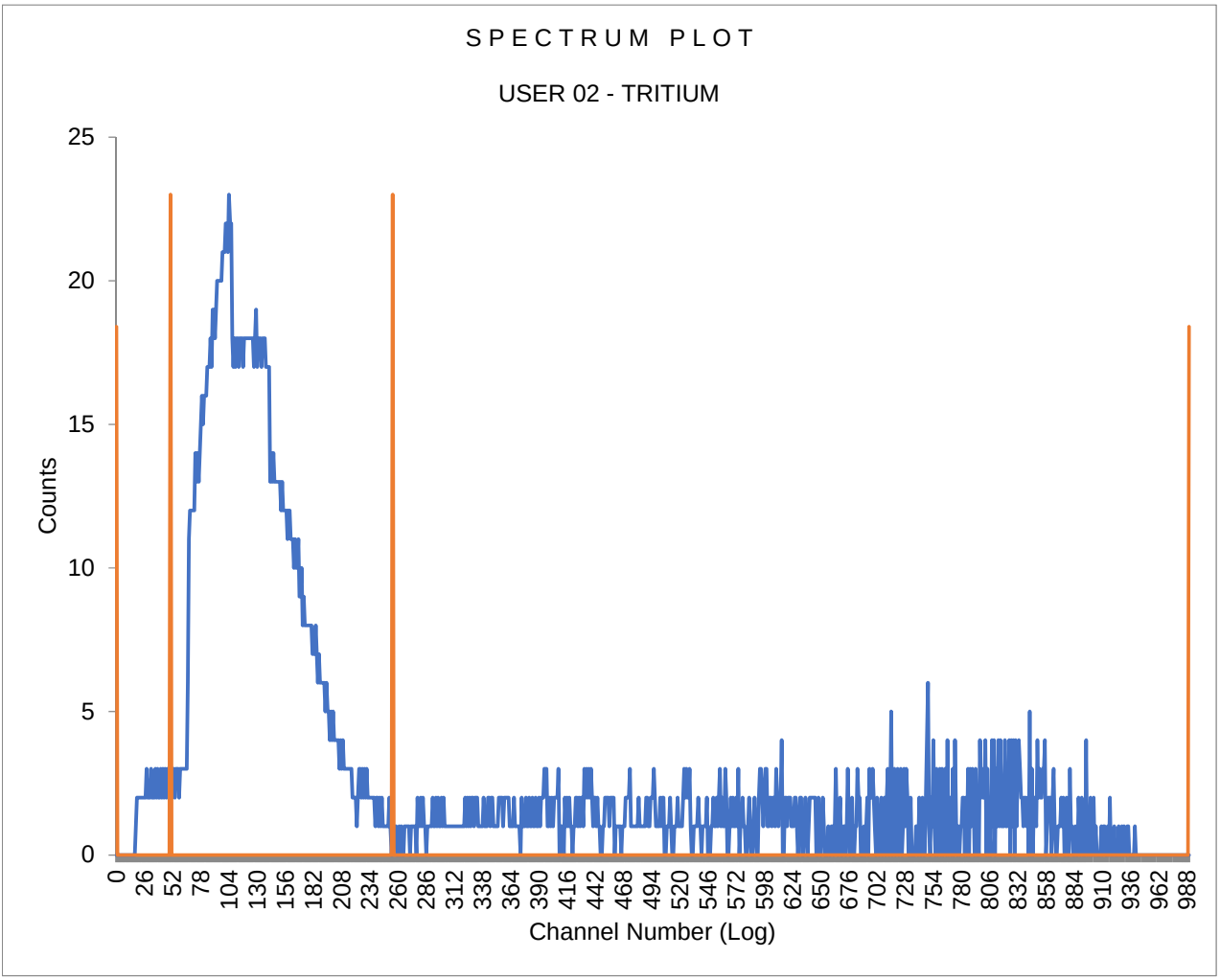
July 17, 2017

Sample Count Start Time:	7 Jun 2017 19:54:37		
Data Capture Date	07 Jun 2017 20:25:02		
User Filename	S02060748-9A.XLS		
	U02060748-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	9	48-9	30.00
H#, Total Counts:	297.9	3481	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



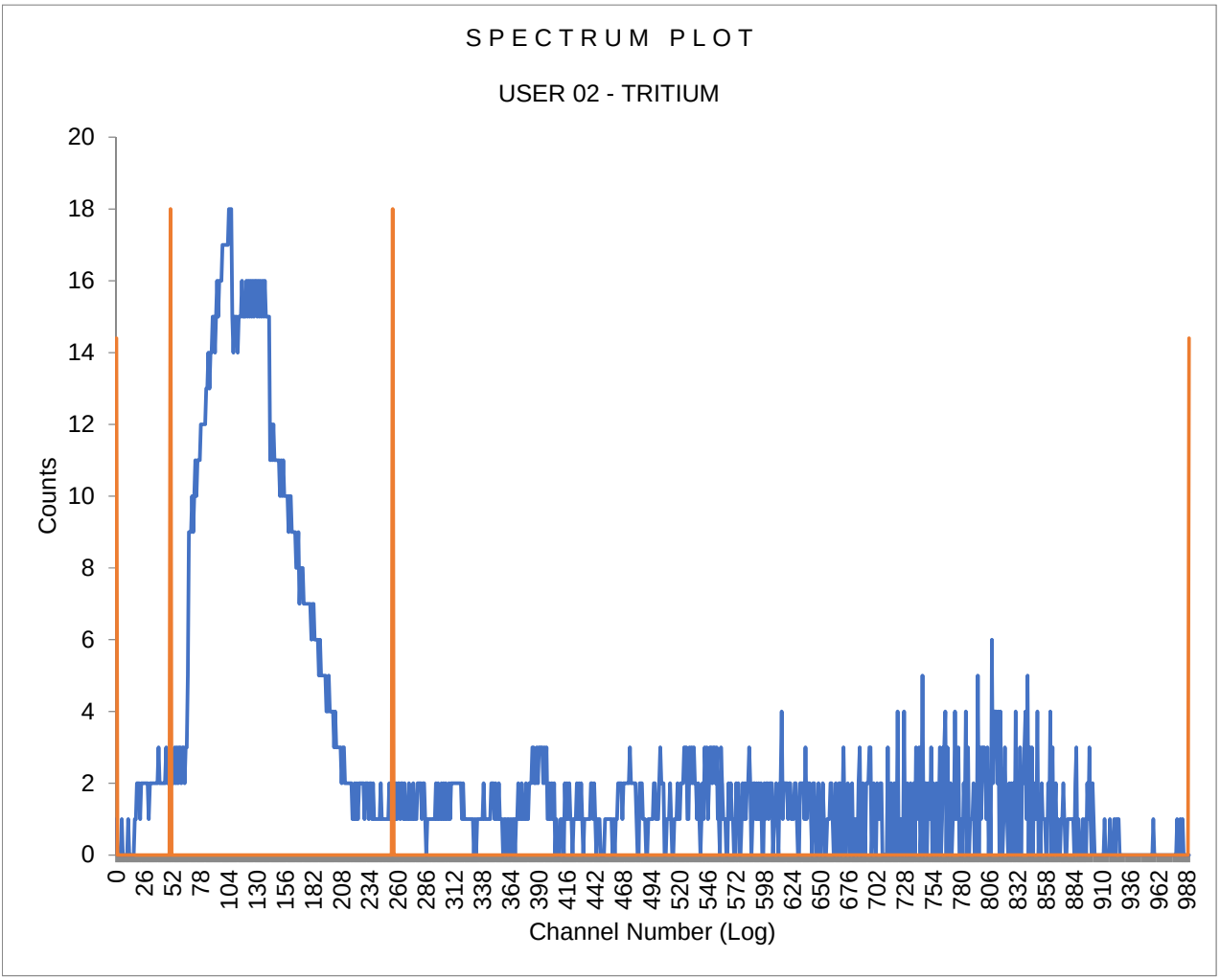
July 17, 2017

Sample Count Start Time:	7 Jun 2017 20:26:13		
Data Capture Date	07 Jun 2017 20:56:37		
User Filename	S02060748-10A.XLS		
	U02060748-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	10	48-10	30.00
H#, Total Counts:	310.4	2993	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



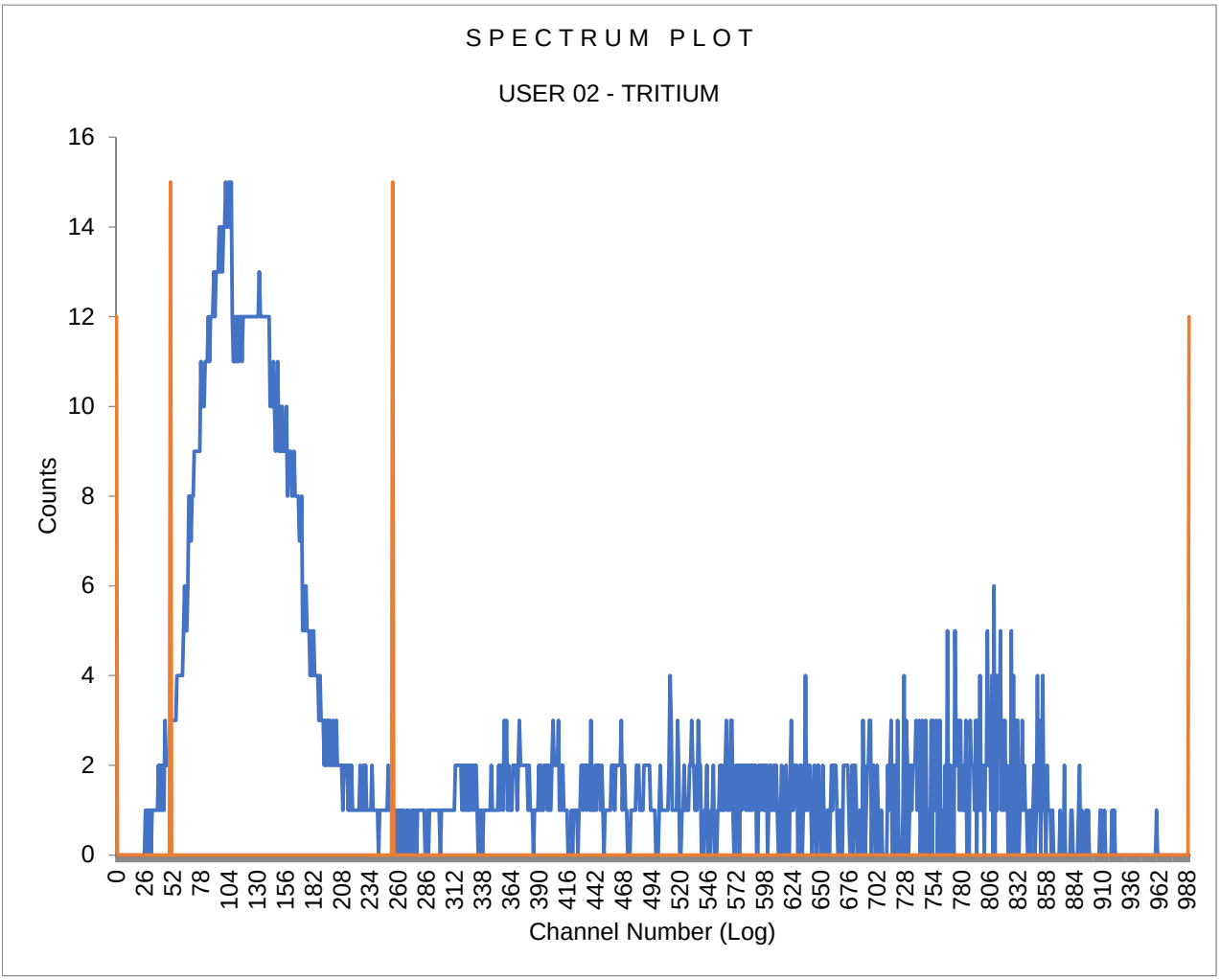
July 17, 2017

Sample Count Start Time:	7 Jun 2017 20:57:48		
Data Capture Date	07 Jun 2017 21:28:13		
User Filename	S02060748-11A.XLS		
	U02060748-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	11	48-11	30.00
H#, Total Counts:	321.7	2633	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



July 17, 2017

Sample Count Start Time:	7 Jun 2017 21:29:23		
Data Capture Date	07 Jun 2017 21:59:48		
User Filename	S02060748-12A.XLS		
	U02060748-1A.XLS		
Spectrum Type	Log Counts		
User Number	02		
User Id	TRITIUM		
User Comment	SILVER		
Scintillator	LIQUID		
Sample, Rack-Pos, Time:	12	48-12	30.00
H#, Total Counts:	336.2	2247	
Win1: Tritium - Start, End:	50	255	
Win2: - Start, End:	0	990	



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Eckert & Ziegler

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Fax 404·352·2837
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CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

17/2

98364

H-3 5 mL Liquid in Flame Sealed Vial

Customer: GEL Laboratories, LLC
P.O. No.: GEL 1408580, Item 4 Product Code: 8003

This standard radionuclide source was prepared gravimetrically from a master solution, calibrated by Eckert & Ziegler Analytics. The master solution was calibrated by liquid scintillation counting. Radionuclide calibration and purity were checked by germanium gamma-ray spectrometry, liquid scintillation counting, and/or alpha spectrometry, as applicable. The nuclear decay rate and reference date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 2, July 2007, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty* , % Type u_A	u_B	U	Reference Date (12:00 PM EST)
H-3	4.500E+03	7.420E+04	0.1	1.5	3.0	09/09/2014

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: γ-impurities<0.1%.
5.02290 g H2O.

Source Prepared by: R. Ormsby
R. Ormsby, Radiochemist

QC Approved: J. S. Lahr
J. S. Lahr, Spectroscopist

Date: 9SEP14

RECEIVED 9/10/14

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1956

Single Isotope Certificate Rev 5, 22 May 2014

GL-CED-297-005

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia, 30318

ANA Form005 Rev. ---

July 17, 2017

Standard Traceability Log Rad

Source Material Info	
Parent Code:	1712
Prepared By:	Gregory Ramsay
Carrier Conc:	Water
Reference Date:	09/09/2014
Ampoule Mass (g):	5.0229 g
Uncertainty:	+/- 1.5 %
LogBook No:	GL-CED-297-005

A Solution Material Info	
Isotope:	Tritium
Prepared By:	Gregory Ramsay
Prep Date:	05/18/2015
Verification Date:	06/14/2016
Expiration Date:	06/14/2017
Primary Code:	1712-A
Dilution(mL):	100 mL
Mass of Parent(g):	4.9796 g
Density(g/mL):	0.9944
Balance ID:	38080204

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (Bq)) * (conversion dpm to Bq) / (Ampoule Mass(g) *(Dilution Vol)) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (Bq)) * (conversion dpm to Bq) / Density / (Ampoule Mass (g) * (Dilution Vol)) = Parent Activity (dpm/g)
(4.9796 g) * (74200 Bq) * (60 dpm/Bq) / (5.0229 g * 100 mL) = 44136.2145 dpm/mL
(4.9796 g) * (74200 Bq) * (60 dpm/Bq) / (0.9944 g/mL)/ (5.0229 g * 100 mL) = 44386.0191 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for H-3 Standard 1712-A

v1.0.2

Instrument	Red
Analyst	GXR1
Verification Prep Date	6/14/2016

Standard Information	
Isotope	H-3
Serial Number	1712-A
Isotope Halflife	12.3200 Y
Reference Date	9/9/2014
Ref. Act. (DPM/mL)	44136.2145
Amount of Std. (mL)	0.1
Standard Prep Date	5/18/2015

Std #	Count Date	Quench Number	Gross cpm	Bkg cpm
1	6/15/2016	68.60	1701.80	47.20
2	6/15/2016	70.90	1707.00	47.20
3	6/15/2016	71.70	1742.20	47.20

Std #	Net cpm	Calculated Avg. Eff.	Standard dpm/mL	Measured dpm
1	1654.60	0.398776	41491.97	4149.20
2	1659.80	0.398776	41622.37	4162.24
3	1695.00	0.398776	42505.07	4250.51

	dpm/mL
Mean Value =	41873.13
Stdev =	551.1407737
Certificate Value* =	**39961.9**
Two sigma =	1102.282
10 % of Mean =	4187.313
Rule A (Pass/Fail)	**Pass**
% Recovery	104.78%
Rule B (Pass/Fail)	**Pass**
Expiration Date	**6/14/2017**

Verification Rules

Rule A = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

Rule B = The determined mean value shall be within 5% of the certificate value.

*** Certificate Value is decay corrected to Count Date.**

The analyst prepared three standard verification sources for H-3 source 1712-A by transferring 0.1 mL portions of the standard into glass liquid scintillation vials. 10 mL of Ecoscint Ultra liquid scintillation cocktail was added to each vial and the vials were shaken to mix. A Blank vial was prepared in a similar fashion using 10 mL of Ecoscint Ultra liquid scintillation cocktail. The standard verification vials and background source were dark adapted for at least two hours and counted on LSCRed for H-3 source standard verification. The H-3 efficiency calibration which was used for verification calculations was performed on 6/14/2016 using H-3 source 1676-A.

Standard results for each verification source was calculated as follows:

Source dpm/mL = (A - B)/(C)(D)

where:

A = Ver. source cpm,

B = BKG cpm,

C = System efficiency (cpm/dpm), and

D = volume used for standard verification.

RAD-M-001

6/16/16

6/15/16

July 17, 2017

General Engineering Laboratories
Calibration Source Preparation Sheet

Applicable SOP Number	GL-RAD-A-002	Isotope	H-3
Date Standards Prepared	6/7/2017	Cocktail Type Used	Ecoscint Ultra
Standard ID	1712-A	Matrix of Vial/Planchett	10 mL Dead Water
Amount Used (g or ml)	1		13 mL Ecoscint Ultra
			NA
Standard Activity (DPM/g or mL)	44136.2145	Type of Scintillation Vial	Plastic
Reference Date	9/9/2014	Pipette ID Used	4099802
Expiration Date	6/14/2017	Quenching Agent	Conc. Brown Colorant

Standard Number	Quenching Vol (uL)/
1	0
2	30
3	60
4	90
5	120
6	150
7	180
8	210
9	240
10	270
11	300

mm 6/7/17

Prepared By: [signature] Date: 6/7/17

Reviewed By: [signature] Date: 6/12/17

LSC Detectors:

Mocha	✓	Yellow	✓
Brown	✓	Gray	—
Green	✓	Teal	—
Silver	✓	Orange	✓
Gold	✓	Pink	✓
Blue	✓	Purple	✓
Red	✓	White	✓

H-3

CAL
Date:6/8/17

Efficiency Standard Precision Check

Rack	Time (min.)	CPM Iso1	Within -/+ 5% mean
17-2	1.200000048	8385.83	YES
17-3	1.25	8320.00	YES
17-4	1.25	8075.20	YES
17-5	1.25	8274.40	YES
17-6	1.25	8224.80	YES
17-7	1.299999952	7958.46	YES
17-8	1.25	8164.00	YES
17-9	1.25	8316.80	YES
17-10	1.25	8082.40	YES
17-11	1.25	8106.40	YES
17-12	1.25	8227.20	YES

-5% Mean	Mean	+5% Mean
7784.43	8194.14	8603.84

H-3

ID: TOTAL ACTIVITY 8 JUN 2017 04:54

USER:11 COMMENT:GOLD

PRESET TIME : 5.00

DATA CALC :	CPM	H#	:YES	SAMPLE REPEATS:	1	PRINTER	: STD
COUNT BLANK :	NO	IC#	: NO	REPLICATES :	1	RS232	:EDIT
TWO PHASE :	NO	AQC	: NO	CYCLE REPEATS :	1	DISK	: OFF
SCINTILLATOR:	LIQUID	LUMEX	:YES	LOW SAMPLE REJ:	0		
LOW LEVEL :	NO	HALF LIFE CORRECTION DATE:				none	

CHAN: 0.0 - 990.0 %ERROR: 2.00 FACTOR: 1.000000 BKG. SUB: 0

CHAN: 0.0 - 1000.0 %ERROR: 2.00 FACTOR: 1.000000 BKG. SUB: 0

SAM NO	POS	TIME MIN	H#	WIND1 CPM	WIND1 %ERROR	WIND2 CPM	WIND2 %ERROR	LUMEX %	ELAPSED TIME
1	17-1	5.00	126.5	40.00	14.14	44.40	13.42	0.39	5.56
2	17-2	1.20	125.4	8385.83	1.99	8388.33	1.99	0.01	7.72
3	17-3	1.25	125.1	8320.00	1.96	8323.20	1.96	0.01	9.91
4	17-4	1.25	125.8	8075.20	1.99	8080.80	1.99	0.01	12.10
5	17-5	1.25	125.6	8274.40	1.97	8278.40	1.97	0.01	14.31
6	17-6	1.25	127.5	8224.80	1.97	8230.40	1.97	0.01	16.53
7	17-7	1.30	127.8	7958.46	1.97	7961.54	1.97	0.01	18.78
8	17-8	1.25	126.1	8164.00	1.98	8166.40	1.98	0.01	20.99
9	17-9	1.25	126.8	8316.80	1.96	8322.40	1.96	0.01	23.19
10	17-10	1.25	127.3	8082.40	1.99	8084.00	1.99	0.01	25.39
11	17-11	1.25	126.5	8106.40	1.99	8108.00	1.99	0.01	27.59
12	17-12	1.25	126.8	8227.20	1.97	8230.40	1.97	0.01	29.77

July 17, 2017

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404·352·8677
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www.ezag.com

CERTIFICATE OF CALIBRATION

Standard Reference Source

1753

100124

H-3 5 mL Liquid in Flame Sealed Vial

RECEIVED 9/1/15

Customer: GEL Laboratories, LLC
P.O. No.: GEL1511998, Item 3 Product Code: 8003-5FSA-185kBq

This standard radionuclide source was prepared gravimetrically from a master solution, calibrated by Eckert & Ziegler Analytics. The master solution was calibrated by liquid scintillation counting. Radionuclide calibration and purity were checked by germanium gamma-ray spectrometry, liquid scintillation counting, and/or alpha spectrometry, as applicable. The nuclear decay rate and reference date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 2, July 2007, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST."

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty* , % Type u_A	u_B	U	Reference Date (12:00 PM EST)
H-3	4.500E+03	1.847E+05	0.1	1.5	3.0	09/01/2015

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: γ-impurities<0.1%.
5.00138 g of tritiated water.

Source Prepared by: _____
Z. Dimitrova, Radiochemist

QC Approved: _____ Date: 28 Aug 15
J. S. Lahr, Spectroscopist

July 17, 2017

Standard Traceability Log Rad

Source Material Info	
Parent Code:	1753
Prepared By:	Gregory Ramsay
Carrier Conc:	Water
Reference Date:	09/01/2015
Ampoule Mass (g):	5.00138 g
Uncertainty:	+/- 1.5 %
LogBook No:	GL-CED-297-046

A Solution Material Info	
Isotope:	Tritium
Prepared By:	Gregory Ramsay
Prep Date:	11/02/2015
Verification Date:	11/02/2015
Expiration Date:	11/02/2016
Primary Code:	1753-A
Dilution(mL):	100 mL
Mass of Parent(g):	4.9357 g
Density(g/mL):	0.9967
Balance ID:	C31514

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (Bq)) * (conversion dpm to Bq) / (Ampoule Mass(g) *(Dilution Vol)) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (Bq)) * (conversion dpm to Bq) / Density / (Ampoule Mass (g) * (Dilution Vol)) = Parent Activity (dpm/g)
(4.9357 g) * (184700 Bq) * (60 dpm/Bq) / (5.00138 g * 100 mL) = 109364.6702 dpm/mL
(4.9357 g) * (184700 Bq) * (60 dpm/Bq) / (0.9967 g/mL)/ (5.00138 g * 100 mL) = 109726.7685 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
11/02/2015	Gregory Ramsay	12.3299	500	1753-B	2705.8402 dpm/mL	11/01/2016	11/01/2017
12/27/2016	Gregory Ramsay	12.52	500	1753-C	2747.5583 dpm/mL	12/27/2016	12/27/2017

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for H-3 Standard 1753-C

v1.0.2

Instrument	RED
Analyst	GXR1
Verification Prep Date	12/27/2016

Standard Information	
Isotope	H-3
Serial Number	1753-C
Isotope Halflife	12.3200 Y
Reference Date	9/1/2015
Ref. Act. (DPM/mL)	2747.5583
Amount of Std. (mL)	2.0
Standard Prep Date	12/27/2016

Std #	Count Date	Quench Number	Gross cpm	Bkg cpm
1	12/28/2016	109.30	1802.80	49.20
2	12/28/2016	108.00	1808.20	49.20
3	12/28/2016	108.60	1832.20	49.20

Std #	Net cpm	Calculated Avg. Eff.	Standard dpm/mL	Measured dpm
1	1753.60	0.344847	2542.58	5085.16
2	1759.00	0.344847	2550.41	5100.82
3	1783.00	0.344847	2585.21	5170.41

	dpm/mL
Mean Value =	2559.40
Stdev =	22.69112461
Certificate Value* =	**2550.2**
Two sigma =	45.382
10 % of Mean =	255.940
Rule A (Pass/Fail)	**Pass**
% Recovery	100.36%
Rule B (Pass/Fail)	**Pass**
Expiration Date	**12/27/2017**

Verification Rules

Rule A = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

Rule B = The determined mean value shall be within 5% of the certificate value.

*** Certificate Value is decay corrected to Count Date.**

The analyst prepared three standard verification sources for H-3 source 1753-C by transferring 2 mL portions of the standard into glass liquid scintillation vials. 10 mL of Ecoscint Ultra liquid scintillation cocktail was added to each vial and the vials were shaken to mix. A Blank vial was prepared in a similar fashion using 10 mL of Ecoscint Ultra liquid scintillation cocktail. The standard verification vials and background source were dark adapted for at least two hours and counted on LSCRED for H-3 source standard verification. The H-3 efficiency calibration which was used for verification calculations was performed on 12/27/2016 using H-3 source 1712-A.

Standard results for each verification source was calculated as follows:

Source dpm/mL = (A - B)/(C)(D)

where:

A = Ver. source cpm,
B = BKG cpm,
C = System efficiency (cpm/dpm), and
D = volume used for standard verification.

RAD-M-001

1/2/17

12/28/16

July 17, 2017

General Engineering Laboratories
Verification Source Preparation Sheet

Applicable SOP Number	GL-RAD-A-002	Isotope	H-3
Date Standards Prepared	6/7/2017	Cocktail Type Used	Ecoscint Ultra
Standard ID	1753-C	Matrix of Vial/Planchett	10 mL Dead Water
Amount Used (g or ml)	1		13 mL Ecoscint Ultra
			NA
Standard Activity (DPM/g or mL)	2747.5583	Type of Scintillation Vial	Plastic
Reference Date	9/1/2015	Pipette ID Used	4099802
Expiration Date	12/27/2017	Quenching Agent	Conc. Brown Colorant

Standard Number	Quenching Vol (uL)/
1	0
2	30
3	60
4	90
5	120
6	150
7	180
8	210
9	240
10	270
11	300

Prepared By: [signature] Date: 6/7/17

Reviewed By: [signature] Date: 6/12/17

LSC Detectors:

Mocha	✓	Yellow	✓
Brown	✓	Gray	—
Green	✓	Teal	—
Silver	✓	Orange	✓
Gold	✓	Pink	✓
Blue	✓	Purple	✓
Red	✓	White	✓

Continuing Calibration Data

Liquid Scintillation Counter Checks for 04-JUL-2017

Short Name	Parmname	Run Time	Count Time	Counts	CPM	Stdev	Status	Comments
LSCBLUE	Carbon-14	07:05	1.5		107777	1.28		
	Carbon-14	07:07	1.5		107473	-0.12		
	Tritium	07:09	1		169717	1.53		
	Tritium	07:10	1		168743	-0.88		
	BKG	07:12	30		21	-1.28		
	BKG	07:43	30		23	0.82		
LSCBROWN	Carbon-14	06:41	1.45		111562	-0.13		
	Carbon-14	06:43	1.45		111492	-0.36		
	Tritium	06:45	1.05		169052	0.09		
	Tritium	06:47	1		169450	0.81		
	BKG	06:48	30		24	0.56		
	BKG	07:19	30		24	0.03		
LSCGOLD	Carbon-14	01:15	1.55		106580	0.72		
	Carbon-14	01:17	1.55		106278	-0.49		
	Tritium	01:19	1.1		157145	0.56		
	Tritium	01:21	1.1		156647	-0.25		
	BKG	01:22	30		18	-2.42		
	BKG	01:53	30		19	-2.03		
LSCGREEN	Carbon-14	01:26	1.5		107817	0.06		
	Carbon-14	01:28	1.5		107703	-0.37		
	Tritium	01:30	1		174960	-1.43		
	Tritium	01:31	1		176061	0.45		
	BKG	01:33	30		23	-0.67		
	BKG	02:03	30		24	0.78		
LSCMOCHA	Carbon-14	06:43	1.5		107853	-0.18		
	Carbon-14	06:45	1.5		107055	-3.21	Outside Three Sigma	
	Tritium	06:47	1		173110	0.68		
	Tritium	06:49	1		173032	0.51		
	BKG	06:50	30		25	0.95		
	BKG	07:21	30		23	-1.45		

	Carbon-14	08:11	1.5	108089	0.72	
	Carbon-14	08:13	1.5	107555	-1.31	
LSCORANGE	Carbon-14	05:33	1.01245	107335	-0.81	
	Tritium	05:37	1.012433	178727	-0.5	
	BKG	06:09	30.01243	10	-0.56	
	Carbon-14	06:11	1.012433	107417	-0.56	
	Tritium	06:12	1.01235	178482	-0.83	
	BKG	06:42	30.01243	11	0.98	
LSCPINK	Carbon-14	07:31	1.012433	106206	-0.29	
	Tritium	07:34	1.012433	142893	-1.69	
	BKG	08:07	30.01243	6.85	-1.45	
	Carbon-14	08:08	1.012433	106321	0.06	
	Tritium	08:10	1.012333	143362	-0.71	
	BKG	08:40	30.01243	7.39	-0.52	
LSCRED	Carbon-14	07:05	1.45	111708	3.98	Outside Three Sigma
	Carbon-14	07:07	1.45	111040	0.69	
	Tritium	07:09	1.05	165242	-0.36	
	Tritium	07:11	1.05	165444	0.1	
	BKG	07:12	30	22	-1.03	
	BKG	07:43	30	21	-1.59	
	Carbon-14	08:32	1.45	111321	2.07	
	Carbon-14	08:33	1.45	110814	-0.42	
LSCSILVER	Carbon-14	06:28	1.5	108100	00	
	Carbon-14	06:30	1.5	108886	2.71	
	Tritium	06:32	1	176619	-1.04	
	Tritium	06:33	.95	176964	-0.29	
	BKG	06:35	30	23	-0.84	
	BKG	07:05	30	23	-0.36	
LSCYELLOW	Carbon-14	01:31	1.517	111562	1.76	
	Carbon-14	01:33	1.517	111415	1.2	
	Tritium	01:36	1.183	151800	0.26	
	Tritium	01:38	1.183	151845	0.37	
	BKG	01:40	30	12	-2.49	
	BKG	02:11	30	12	-2.31	

LSCMOCHA, LSCRED: CLEARED BY RERUN

Reviewed by: Lyndsey Pace **Date:** 04-JUL-17

GEL Laboratories LLC

Liquid Scintillation Counter Checks for 05-JUL-2017

Short Name	Parmname	Run Time	Count Time	Counts	CPM	Stdev	Status	Comments
LSCBLUE	Carbon-14	03:38	1.5		107404	-0.44		
	Carbon-14	03:40	1.5		107391	-0.5		
	Tritium	03:42	1		168837	-0.65		
	Tritium	03:43	1		169239	0.34		
	BKG	03:45	30		23	1.17		
	BKG	04:15	30		23	1.22		
LSCBROWN	Carbon-14	03:16	1.45		111530	-0.24		
	Carbon-14	03:18	1.45		111768	0.56		
	Tritium	03:20	1.05		167965	-1.87		
	Tritium	03:22	1.05		168014	-1.78		
	BKG	03:23	30		24	0.46		
	BKG	03:54	30		22	-1.62		
LSCGOLD	Carbon-14	03:01	1.55		106276	-0.5		
	Carbon-14	03:03	1.55		106531	0.53		
	Tritium	03:05	1.1		156183	-1		
	Tritium	03:07	1.1		155707	-1.78		
	BKG	03:09	30		21	0.26		
	BKG	03:39	30		20	-01		
LSCGREEN	Carbon-14	03:16	1.5		107360	-1.7		
	Carbon-14	03:18	1.5		107538	-1.01		
	Tritium	03:20	1		175607	-0.33		
	Tritium	03:21	1		175001	-1.36		
	BKG	03:23	30		23	-0.74		
	BKG	03:54	30		24	0.57		
LSCMOCHA	Carbon-14	03:19	1.5		108075	0.66		
	Carbon-14	03:21	1.5		107868	-0.12		
	Tritium	03:23	1		173736	2.07		
	Tritium	03:24	1		172597	-0.45		
	BKG	03:26	30		26	1.91		
	BKG	03:56	30		24	-0.13		

LSCORANGE	Carbon-14	00:47	1.01245	107673	0.22
	Tritium	00:50	1.012433	178853	-0.33
	BKG	01:23	30.01243	12	1.57
	Carbon-14	01:24	1.012433	107542	-0.18
	Tritium	01:26	1.012433	178567	-0.72
	BKG	01:56	30.01243	11	0.56
LSCPINK	Carbon-14	03:59	1.012433	106374	0.23
	Tritium	04:02	1.012433	143501	-0.42
	BKG	04:35	30.01243	7.59	-0.18
	Carbon-14	04:36	1.012433	106558	0.79
	Tritium	04:37	1.012433	143641	-0.12
	BKG	05:08	30.01243	6.74	-1.64
LSCPURPLE	Carbon-14	03:03	.5	106742	-0.32
	Carbon-14	03:04	.5	107416	1.04
	Tritium	03:05	.3	181834	-0.07
	Tritium	03:05	.3	181920	0.02
	BKG	03:06	30	30	-1.38
	BKG	03:37	30	29	-1.93
LSCRED	Carbon-14	03:38	1.45	110603	-1.46
	Carbon-14	03:39	1.45	111161	1.29
	Tritium	03:41	1.05	165129	-0.61
	Tritium	03:43	1.05	165717	0.72
	BKG	03:45	30	22	-0.34
	BKG	04:15	30	21	-1.35
LSCSILVER	Carbon-14	03:02	1.5	108230	0.45
	Carbon-14	03:03	1.5	108776	2.33
	Tritium	03:05	.95	177014	-0.19
	Tritium	03:07	1	176500	-1.3
	BKG	03:08	30	23	-0.64
	BKG	03:39	30	25	1.38
LSCYELLOW	Carbon-14	01:49	1.517	111262	0.62
	Carbon-14	01:51	1.517	110724	-1.44
	Tritium	01:54	1.2	151476	-0.58
	Tritium	01:56	1.2	150911	-2.04

BKG	01:58	30	12	-3.19	Outside Three Sigma
BKG	02:29	30	12	-1.96	
BKG	06:35	30	13	-1.61	
BKG	07:06	30	13	-1.61	

LSCYELLOW: CLEARED BY RERUN

Reviewed by: Lyndsey Pace **Date:** 05-JUL-17

GEL Laboratories LLC

Liquid Scintillation Counter Checks for 07-JUL-2017

Short Name	Parmname	Run Time	Count Time	Counts	CPM	Stdev	Status	Comments
LSCBLUE	Carbon-14	01:27	1.5		107267	-1.07		
	Carbon-14	01:29	1.5		107183	-1.46		
	Tritium	01:31	1		169407	0.76		
	Tritium	01:32	1		168662	-1.09		
	BKG	01:34	30		23	1.66		
	BKG	02:04	30		22	0.29		
LSCBROWN	Carbon-14	01:25	1.45		111488	-0.38		
	Carbon-14	01:27	1.45		111511	-0.3		
	Tritium	01:29	1.05		168794	-0.37		
	Tritium	01:30	1.05		168633	-0.66		
	BKG	01:32	30		23	-0.78		
	BKG	02:02	30		24	0.24		
LSCGOLD	Carbon-14	00:40	1.55		106186	-0.86		
	Carbon-14	00:42	1.5		106727	1.31		
	Tritium	00:44	1.1		157476	1.1		
	Tritium	00:45	1.1		156633	-0.27		
	BKG	00:47	30		21	1.21		
	BKG	01:18	30		19	-1.64		
LSCGREEN	Carbon-14	03:16	1.5		107337	-1.79		
	Carbon-14	03:18	1.5		107349	-1.74		
	Tritium	03:20	1		174390	-2.41		
	Tritium	03:22	1		174120	-2.87		
	BKG	03:23	30		22	-1.78		
	BKG	03:54	30		24	0.36		
LSCMOCHA	Carbon-14	03:19	1.5		108017	0.44		
	Carbon-14	03:21	1.5		107999	0.38		
	Tritium	03:23	1		172760	-0.09		
	Tritium	03:24	1		172847	0.1		
	BKG	03:26	30		22	-1.95		
	BKG	03:57	30		25	0.64		

LSCORANGE	Carbon-14	01:08	1.01245	107206	-1.2	
	Tritium	01:12	1.012433	179075	-0.03	
	BKG	01:44	30.01243	11	0.67	
	Carbon-14	01:46	1.01245	107132	-1.43	
	Tritium	01:47	1.012333	178908	-0.26	
	BKG	02:18	30.01243	11	-0.03	
LSCPINK	Carbon-14	03:57	1.012433	106075	-0.69	
	Tritium	04:01	1.012433	143165	-1.12	
	BKG	04:33	30.01243	7.49	-0.35	
	Carbon-14	04:34	1.012433	107350	3.22	Outside Three Sigma
	Tritium	04:36	1.012333	144208	1.06	
	BKG	05:06	30.01243	6.91	-1.35	
	Carbon-14	06:12	1.012433	107033	2.24	
	Tritium	06:15	1.012433	143114	-1.23	
	BKG	06:48	30.01243	8.06	0.64	
	Carbon-14	06:49	1.012433	106508	0.64	
	Tritium	06:50	1.01235	142967	-1.53	
	BKG	07:21	30.01243	7.93	0.41	
LSCPURPLE	Carbon-14	02:58	.5	106132	-1.55	
	Carbon-14	02:58	.5	106818	-0.17	
	Tritium	03:00	.3	181087	-0.87	
	Tritium	03:00	.3	182458	0.59	
	BKG	03:01	30	30	-1.5	
	BKG	03:32	30	29	-1.72	
LSCRED	Carbon-14	01:07	1.45	110891	-0.04	
	Carbon-14	01:09	1.45	110943	0.21	
	Tritium	01:11	1.05	165891	1.11	
	Tritium	01:12	1.05	165793	0.89	
	BKG	01:14	30	23	1.16	
	BKG	01:44	30	22	-1.17	
LSCSILVER	Carbon-14	01:16	1.5	107940	-0.55	
	Carbon-14	01:18	1.5	107888	-0.73	
	Tritium	01:20	1	176948	-0.33	
	Tritium	01:21	.95	177661	1.21	

	BKG	01:23	30	23	-0.16
	BKG	01:54	30	23	0.04
LSCYELLOW	Carbon-14	03:54	1.517	111127	0.1
	Carbon-14	03:57	1.517	111158	0.22
	Tritium	03:59	1.183	152634	2.41
	Tritium	04:01	1.2	150908	-2.04
	BKG	04:03	30	13	-1.09
	BKG	04:34	30	12	-2.49

LSCPINK: CLEARED BY RERUN

Reviewed by: Lyndsey Pace **Date:** 07-JUL-17

GEL Laboratories LLC

Liquid Scintillation Counter Checks for 08-JUL-2017

Short Name	Parmname	Run Time	Count Time	Counts	CPM	Stdev	Status	Comments
LSCBLUE	Carbon-14	01:25	1.5		107643	0.66		
	Carbon-14	01:27	1.5		107488	-0.05		
	Tritium	01:29	1		169061	-0.1		
	Tritium	01:31	1		169932	2.06		
	BKG	01:32	30		22	-0.44		
	BKG	02:03	30		22	0.19		
LSCBROWN	Carbon-14	00:20	1.45		111592	-0.03		
	Carbon-14	00:22	1.45		111524	-0.25		
	Tritium	00:24	1.05		168056	-1.7		
	Tritium	00:25	1.05		169293	0.53		
	BKG	00:27	30		25	1.77		
	BKG	00:58	30		25	1.42		
LSCGOLD	Carbon-14	01:32	1.55		106342	-0.23		
	Carbon-14	01:34	1.5		106864	1.87		
	Tritium	01:36	1.1		155311	-2.42		
	Tritium	01:37	1.1		156138	-1.08		
	BKG	01:39	30		20	-0.21		
	BKG	02:10	30		21	0.5		
LSCGREEN	Carbon-14	00:52	1.5		107319	-1.85		
	Carbon-14	00:54	1.5		107946	0.56		
	Tritium	00:56	1		174124	-2.86		
	Tritium	00:57	1		174875	-1.58		
	BKG	00:59	30		24	0.19		
	BKG	01:30	30		25	1.12		
LSCMOCHA	Carbon-14	00:06	1.5		107664	-0.9		
	Carbon-14	00:08	1.5		107763	-0.52		
	Tritium	00:10	1		173433	1.4		
	Tritium	00:11	1		173521	1.59		
	BKG	00:13	30		26	2.03		
	BKG	00:43	30		24	-0.13		

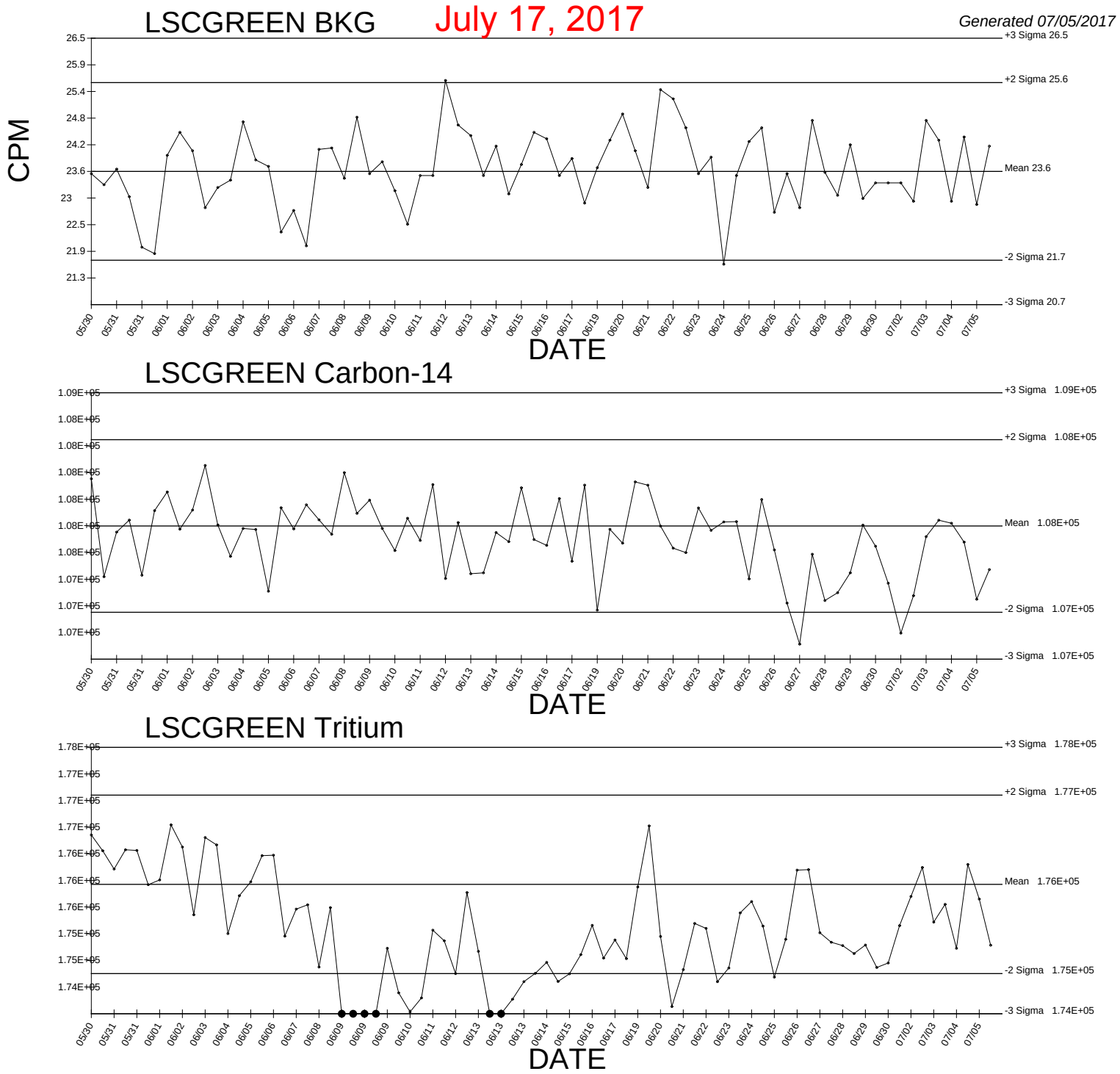
LSCORANGE	Carbon-14	04:27	1.01245	107000	-1.84
	Tritium	04:30	1.012433	178471	-0.85
	BKG	05:03	30.01243	11	0.82
	Carbon-14	05:04	1.012433	107244	-1.09
	Tritium	05:06	1.01235	179360	0.35
	BKG	05:36	30.01243	10	-0.4
LSCPINK	Carbon-14	04:25	1.012433	106103	-0.6
	Tritium	04:28	1.012433	143952	0.53
	BKG	05:01	30.01243	8.2	0.88
	Carbon-14	05:02	1.012433	106650	1.07
	Tritium	05:03	1.012433	143835	0.28
	BKG	05:34	30.01243	8.36	1.15
LSCRED	Carbon-14	04:10	1.45	110773	-0.62
	Carbon-14	04:12	1.45	110848	-0.26
	Tritium	04:14	1.05	165142	-0.58
	Tritium	04:16	1.05	165062	-0.77
	BKG	04:17	30	23	0.4
	BKG	04:48	30	24	2.04
LSCSILVER	Carbon-14	01:13	1.5	107982	-0.41
	Carbon-14	01:15	1.5	108014	-0.3
	Tritium	01:17	.95	177118	0.04
	Tritium	01:19	.95	177365	0.57
	BKG	01:20	30	24	0.54
	BKG	01:51	30	25	1.21
LSCYELLOW	Carbon-14	01:47	1.517	110670	-1.64
	Carbon-14	01:50	1.517	110801	-1.14
	Tritium	01:52	1.2	151286	-1.07
	Tritium	01:54	1.2	151090	-1.58
	BKG	01:57	30	13	-0.56
	BKG	02:27	30	13	-1.09
	Carbon-14	04:29	1.517	110783	-1.21
	Carbon-14	04:31	1.517	111167	0.26
	Tritium	04:34	1.2	151579	-0.31
	Tritium	04:36	1.2	151292	-1.05

BKG	04:38	30	13	-0.56
BKG	05:09	30	13	-0.39

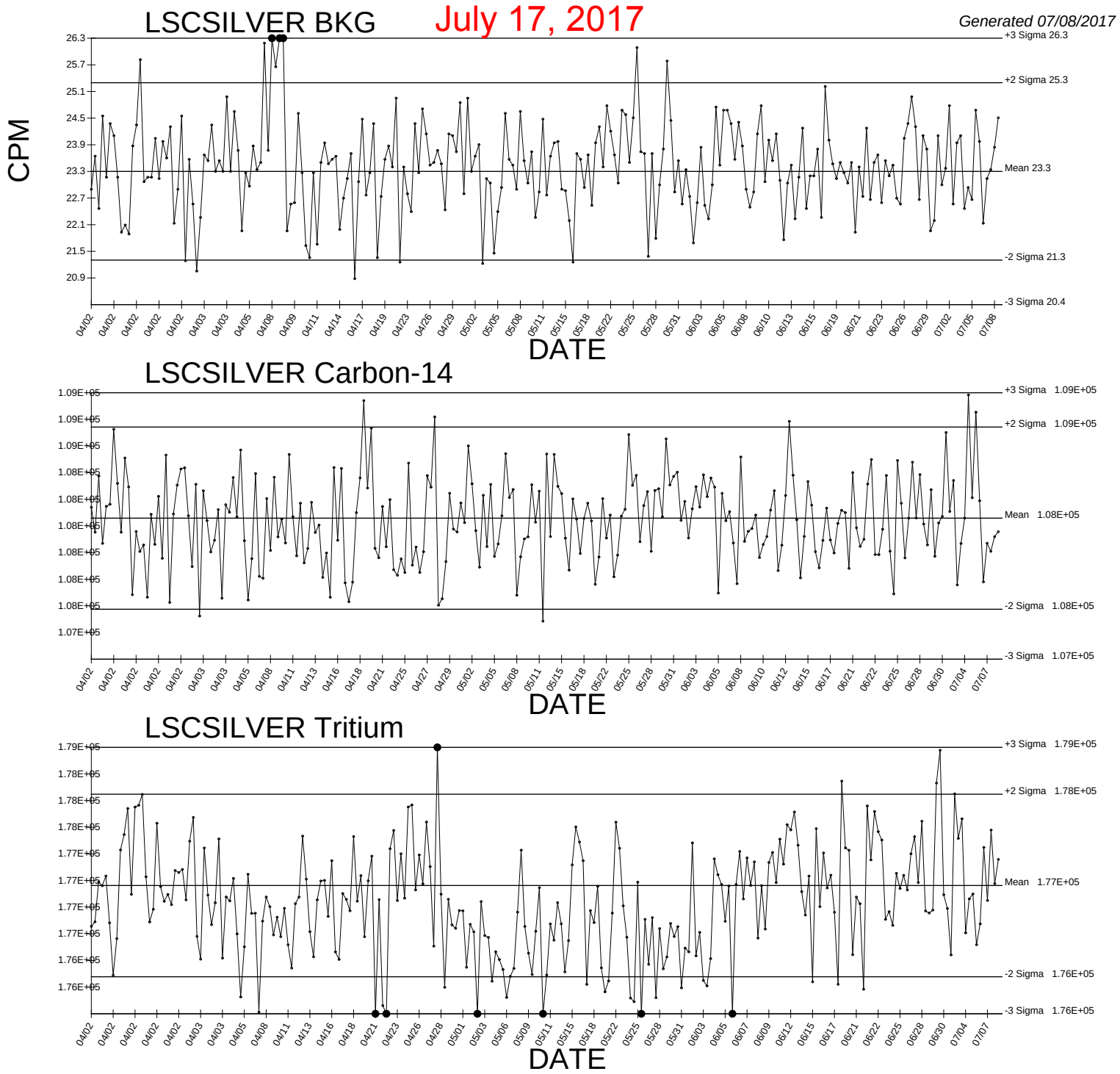
Reviewed by: Lyndsey Pace **Date:** 09-JUL-17

GEL Laboratories LLC

Background and Efficiency Data



● Denotes Outlier



● Denotes Outlier

Quality Control Charts

Data used for LSC Liquids 06-JUL-2017

Technetium-99 BLANK: Limits LCL = -5000 UCL = 5550

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
1672311	1203807032	10-JUN-2017 05:40	DONE	1.58	-0.15	pCi/L	271	-5000	-3300	3790	5550	1760
1670715	1203803131	11-JUN-2017 07:53	DONE	16.3	-0.14	pCi/L	271	-5000	-3300	3790	5550	1760
1666844	1203793686	11-JUN-2017 09:56	DONE	2.77	-0.15	pCi/L	271	-5000	-3300	3790	5550	1760
1669720	1203800788	11-JUN-2017 13:12	DONE	-0.999	-0.15	pCi/L	271	-5000	-3300	3790	5550	1760
1669723	1203800799	11-JUN-2017 13:46	DONE	-53	-0.18	pCi/L	271	-5000	-3300	3790	5550	1760
1669717	1203800775	11-JUN-2017 15:39	DONE	-7.1	-0.16	pCi/L	271	-5000	-3300	3790	5550	1760
1671387	1203804701	13-JUN-2017 06:54	DONE	-0.304	-0.15	pCi/L	271	-5000	-3300	3790	5550	1760
1672185	1203806755	13-JUN-2017 09:10	DONE	-17	-0.16	pCi/L	271	-5000	-3300	3790	5550	1760
1671818	1203805820	13-JUN-2017 14:33	DONE	1.97	-0.15	pCi/L	271	-5000	-3300	3790	5550	1760
1670479	1203802539	13-JUN-2017 19:26	DUSE	1.62	-0.15	pCi/L	271	-5000	-3300	3790	5550	1760
1670479	1203802540	13-JUN-2017 19:58	DUSE	-60	-0.19	pCi/L	271	-5000	-3300	3790	5550	1760
1670479	1203802541	13-JUN-2017 20:29	DUSE	-140	-0.24	pCi/L	271	-5000	-3300	3790	5550	1760
1670479	1203802542	13-JUN-2017 21:01	DUSE	-59	-0.19	pCi/L	271	-5000	-3300	3790	5550	1760
1670479	1203802543	13-JUN-2017 21:32	DUSE	-0.477	-0.15	pCi/L	271	-5000	-3300	3790	5550	1760
1671386	1203804697	13-JUN-2017 21:54	DONE	1.49	-0.15	pCi/L	271	-5000	-3300	3790	5550	1760
1670718	1203803134	13-JUN-2017 23:38	DONE	11.7	-0.15	pCi/L	271	-5000	-3300	3790	5550	1760
1669715	1203800766	14-JUN-2017 01:41	DONE	10.4	-0.15	pCi/L	271	-5000	-3300	3790	5550	1760
1673287	1203809509	14-JUN-2017 12:57	DONE	15.6	-0.14	pCi/L	271	-5000	-3300	3790	5550	1760
1672313	1203807041	19-JUN-2017 06:57	DONE	1.2	-0.15	pCi/L	271	-5000	-3300	3790	5550	1760
1673290	1203809519	19-JUN-2017 10:30	DONE	7.31	-0.15	pCi/L	271	-5000	-3300	3790	5550	1760
1669719	1203800783	19-JUN-2017 14:55	DONE	13.8	-0.15	pCi/L	271	-5000	-3300	3790	5550	1760
1673288	1203809512	19-JUN-2017 15:17	DONE	-0.109	-0.15	pCi/L	271	-5000	-3300	3790	5550	1760
1673664	1203810552	20-JUN-2017 05:47	DONE	11000	6.1	pCi/L	271	-5000	-3300	3790	5550	1760
1674664	1203812801	20-JUN-2017 08:39	DONE	0.17	-0.15	pCi/L	271	-5000	-3300	3790	5550	1760
1673289	1203809516	20-JUN-2017 14:04	DONE	-6.6	-0.16	pCi/L	271	-5000	-3300	3790	5550	1760
1672316	1203807052	20-JUN-2017 14:41	DONE	-4.2	-0.16	pCi/L	271	-5000	-3300	3790	5550	1760
1672315	1203807049	21-JUN-2017 11:17	DONE	-110	-0.22	pCi/L	271	-5000	-3300	3790	5550	1760
1674667	1203812812	27-JUN-2017 05:54	DONE	-21	-0.17	pCi/L	271	-5000	-3300	3790	5550	1760
1672312	1203807038	27-JUN-2017 05:58	DONE	-6.4	-0.16	pCi/L	271	-5000	-3300	3790	5550	1760
1671435	1203804815	27-JUN-2017 06:48	DONE	10.6	-0.15	pCi/L	271	-5000	-3300	3790	5550	1760
1675495	1203814773	27-JUN-2017 08:41	DONE	-1.7	-0.15	pCi/L	271	-5000	-3300	3790	5550	1760
1677574	1203819789	28-JUN-2017 17:44	DONE	-6.8	-0.16	pCi/L	271	-5000	-3300	3790	5550	1760
1673292	1203809522	02-JUL-2017 08:39	DONE	-7.9	-0.16	pCi/L	271	-5000	-3300	3790	5550	1760
1677033	1203818469	02-JUL-2017 08:57	DONE	-4.3	-0.16	pCi/L	271	-5000	-3300	3790	5550	1760
1677036	1203818481	04-JUL-2017 10:02	DONE	-0.183	-0.15	pCi/L	271	-5000	-3300	3790	5550	1760
1675454	1203814689	04-JUL-2017 10:52	DONE	-21	-0.17	pCi/L	271	-5000	-3300	3790	5550	1760
1673293	1203809525	04-JUL-2017 12:43	DONE	8.29	-0.15	pCi/L	271	-5000	-3300	3790	5550	1760
1675961	1203815895	04-JUL-2017 15:54	DONE	-1.5	-0.15	pCi/L	271	-5000	-3300	3790	5550	1760
1675962	1203815898	04-JUL-2017 18:47	DONE	1.63	-0.15	pCi/L	271	-5000	-3300	3790	5550	1760

Technetium-99 DUP: Limits LCL = 0 UCL = 20.0

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
1669721	1203800792	06-JUN-2017 12:31	DONE	0	-0.53	percent	3.93	0	-11	18.8	20.0	7.43
1667837	1203796047	06-JUN-2017 14:27	DONE	0	-0.53	percent	3.93	0	-11	18.8	20.0	7.43
1667835	1203796040	07-JUN-2017 05:03	DONE	9.06	0.69	percent	3.93	0	-11	18.8	20.0	7.43
1671384	1203804695	07-JUN-2017 10:33	DONE	17.8	1.9	percent	3.93	0	-11	18.8	20.0	7.43
1669567	1203800267	08-JUN-2017 01:27	DONE	0	-0.53	percent	3.93	0	-11	18.8	20.0	7.43
1672311	1203807033	10-JUN-2017 06:13	DONE	0	-0.53	percent	3.93	0	-11	18.8	20.0	7.43
1670715	1203803132	11-JUN-2017 08:14	DONE	0	-0.53	percent	3.93	0	-11	18.8	20.0	7.43
1666844	1203793687	11-JUN-2017 11:00	DONE	0	-0.53	percent	3.93	0	-11	18.8	20.0	7.43
1669720	1203800789	11-JUN-2017 13:49	DONE	0	-0.53	percent	3.93	0	-11	18.8	20.0	7.43
1669723	1203800800	11-JUN-2017 14:28	DONE	0	-0.53	percent	3.93	0	-11	18.8	20.0	7.43
1669717	1203800776	11-JUN-2017 16:01	DONE	0	-0.53	percent	3.93	0	-11	18.8	20.0	7.43
1672185	1203806756	13-JUN-2017 09:37	DONE	0	-0.53	percent	3.93	0	-11	18.8	20.0	7.43
1670718	1203803135	14-JUN-2017 00:05	DONE	0.29	-0.49	percent	3.93	0	-11	18.8	20.0	7.43
1670718	1203803136	14-JUN-2017 00:32	DONE	0	-0.53	percent	3.93	0	-11	18.8	20.0	7.43
1669715	1203800767	14-JUN-2017 02:03	DONE	0	-0.53	percent	3.93	0	-11	18.8	20.0	7.43
1669715	1203800768	14-JUN-2017 02:24	DONE	0	-0.53	percent	3.93	0	-11	18.8	20.0	7.43
1671386	1203804698	14-JUN-2017 07:46	DONE	3.59	-0.04	percent	3.93	0	-11	18.8	20.0	7.43
1670718	1203803137	14-JUN-2017 10:36	DONE	0	-0.53	percent	3.93	0	-11	18.8	20.0	7.43
1673287	1203809510	14-JUN-2017 13:22	DONE	0	-0.53	percent	3.93	0	-11	18.8	20.0	7.43
1673290	1203809520	19-JUN-2017 10:57	DONE	19.4	2.1	percent	3.93	0	-11	18.8	20.0	7.43
1669719	1203800784	19-JUN-2017 15:22	DONE	16.4	1.7	percent	3.93	0	-11	18.8	20.0	7.43
1673288	1203809513	19-JUN-2017 17:19	DONE	0	-0.53	percent	3.93	0	-11	18.8	20.0	7.43
1673664	1203810553	20-JUN-2017 06:04	DONE	0	-0.53	percent	3.93	0	-11	18.8	20.0	7.43
1674664	1203812802	20-JUN-2017 10:42	DONE	9.45	0.74	percent	3.93	0	-11	18.8	20.0	7.43
1673289	1203809517	20-JUN-2017 14:31	DONE	27.7	3.2	percent	3.93	0	-11	18.8	20.0	7.43
1672316	1203807053	20-JUN-2017 15:07	DONE	0	-0.53	percent	3.93	0	-11	18.8	20.0	7.43
1672315	1203807050	21-JUN-2017 12:03	DONE	0	-0.53	percent	3.93	0	-11	18.8	20.0	7.43
1674667	1203812813	27-JUN-2017 06:15	DONE	0.71	-0.43	percent	3.93	0	-11	18.8	20.0	7.43
1672312	1203807039	27-JUN-2017 06:20	DONE	22.3	2.5	percent	3.93	0	-11	18.8	20.0	7.43
1671435	1203804816	27-JUN-2017 07:10	DONE	1.47	-0.33	percent	3.93	0	-11	18.8	20.0	7.43
1677574	1203819790	28-JUN-2017 18:06	DONE	0.24	-0.5	percent	3.93	0	-11	18.8	20.0	7.43
1673292	1203809523	02-JUL-2017 09:00	DONE	3.11	-0.11	percent	3.93	0	-11	18.8	20.0	7.43
1677033	1203818470	02-JUL-2017 09:18	DONE	0	-0.53	percent	3.93	0	-11	18.8	20.0	7.43
1677033	1203818471	02-JUL-2017 09:40	DONE	0	-0.53	percent	3.93	0	-11	18.8	20.0	7.43
1673293	1203809526	04-JUL-2017 10:31	DONE	0	-0.53	percent	3.93	0	-11	18.8	20.0	7.43
1677036	1203818482	04-JUL-2017 10:44	DONE	15.3	1.5	percent	3.93	0	-11	18.8	20.0	7.43
1675454	1203814690	04-JUL-2017 11:18	DONE	6.24	0.31	percent	3.93	0	-11	18.8	20.0	7.43
1675961	1203815896	04-JUL-2017 16:16	DONE	0	-0.53	percent	3.93	0	-11	18.8	20.0	7.43
1675962	1203815899	04-JUL-2017 19:34	DONE	0	-0.53	percent	3.93	0	-11	18.8	20.0	7.43

Technetium-99 LCS: Limits LCL = 80.0 UCL = 120

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
1670715	1203803133	12-JUN-2017 07:30	DONE	94.9	-0.76	percent	100	80.0	86.7	113	120	6.67
1671387	1203804702	13-JUN-2017 07:17	DONE	94.1	-0.88	percent	100	80.0	86.7	113	120	6.67
1671387	1203804703	13-JUN-2017 07:39	DONE	87	-2	percent	100	80.0	86.7	113	120	6.67
1672185	1203806757	13-JUN-2017 10:04	DONE	84.6	-2	percent	100	80.0	86.7	113	120	6.67
1671818	1203805821	13-JUN-2017 15:21	DONE	88.3	-2	percent	100	80.0	86.7	113	120	6.67
1671818	1203805822	13-JUN-2017 16:08	DONE	90.2	-1	percent	100	80.0	86.7	113	120	6.67
1670479	1203802544	13-JUN-2017 22:03	DUSE	88.5	-2	percent	100	80.0	86.7	113	120	6.67
1670479	1203802545	13-JUN-2017 22:35	DUSE	92.2	-1	percent	100	80.0	86.7	113	120	6.67
1670479	1203802546	13-JUN-2017 23:06	DUSE	83.3	-3	percent	100	80.0	86.7	113	120	6.67
1670479	1203802547	13-JUN-2017 23:38	DUSE	86	-2	percent	100	80.0	86.7	113	120	6.67
1671386	1203804700	14-JUN-2017 00:01	DONE	83.7	-2	percent	100	80.0	86.7	113	120	6.67
1670479	1203802548	14-JUN-2017 00:09	DUSE	97.7	-0.35	percent	100	80.0	86.7	113	120	6.67
1670718	1203803138	14-JUN-2017 01:25	DONE	94.6	-0.81	percent	100	80.0	86.7	113	120	6.67
1669715	1203800769	14-JUN-2017 02:46	DONE	93.1	-1	percent	100	80.0	86.7	113	120	6.67
1673287	1203809511	14-JUN-2017 13:45	DONE	89.4	-2	percent	100	80.0	86.7	113	120	6.67
1672313	1203807042	19-JUN-2017 08:00	DONE	90.8	-1	percent	100	80.0	86.7	113	120	6.67
1672313	1203807043	19-JUN-2017 09:03	DONE	89.1	-2	percent	100	80.0	86.7	113	120	6.67
1673290	1203809521	19-JUN-2017 11:24	DONE	92.4	-1	percent	100	80.0	86.7	113	120	6.67
1669719	1203800785	19-JUN-2017 15:49	DONE	92	-1	percent	100	80.0	86.7	113	120	6.67
1673288	1203809515	19-JUN-2017 19:54	DONE	94.6	-0.81	percent	100	80.0	86.7	113	120	6.67
1673664	1203810554	20-JUN-2017 06:20	DONE	98.5	-0.23	percent	100	80.0	86.7	113	120	6.67
1674664	1203812803	20-JUN-2017 11:07	DONE	98.4	-0.24	percent	100	80.0	86.7	113	120	6.67
1674664	1203812804	20-JUN-2017 11:24	DONE	102	0.34	percent	100	80.0	86.7	113	120	6.67
1673289	1203809518	20-JUN-2017 14:58	DONE	82.8	-3	percent	100	80.0	86.7	113	120	6.67
1672316	1203807054	20-JUN-2017 15:34	DONE	91.4	-1	percent	100	80.0	86.7	113	120	6.67
1672315	1203807051	21-JUN-2017 12:50	DONE	88.8	-2	percent	100	80.0	86.7	113	120	6.67
1674667	1203812814	27-JUN-2017 06:32	DONE	89.8	-2	percent	100	80.0	86.7	113	120	6.67
1672312	1203807040	27-JUN-2017 06:42	DONE	96.1	-0.58	percent	100	80.0	86.7	113	120	6.67
1671435	1203804817	27-JUN-2017 07:25	DONE	90.6	-1	percent	100	80.0	86.7	113	120	6.67
1675495	1203814775	27-JUN-2017 10:26	DONE	83.1	-3	percent	100	80.0	86.7	113	120	6.67
1675495	1203814774	28-JUN-2017 07:09	DONE	84.3	-2	percent	100	80.0	86.7	113	120	6.67
1677574	1203819792	28-JUN-2017 18:50	DONE	103	0.52	percent	100	80.0	86.7	113	120	6.67
1673292	1203809524	02-JUL-2017 09:21	DONE	85.9	-2	percent	100	80.0	86.7	113	120	6.67
1677033	1203818472	02-JUL-2017 10:02	DONE	79.4	-3	percent	100	80.0	86.7	113	120	6.67
1677036	1203818483	04-JUL-2017 11:26	DONE	90.2	-1	percent	100	80.0	86.7	113	120	6.67
1675454	1203814691	04-JUL-2017 11:45	DONE	84.3	-2	percent	100	80.0	86.7	113	120	6.67
1673293	1203809528	04-JUL-2017 13:16	DONE	98	-0.3	percent	100	80.0	86.7	113	120	6.67
1675962	1203815901	04-JUL-2017 21:09	DONE	95.4	-0.69	percent	100	80.0	86.7	113	120	6.67
1675961	1203815897	05-JUL-2017 07:49	DONE	82.8	-3	percent	100	80.0	86.7	113	120	6.67

Technetium-99 LCSRPD: Limits LCL = 0 UCL = 20.0

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
1648693	1203750159	04-APR-2017 05:54	DONE	4.54	0.09	percent	4.22	0	-2.8	11.2	20.0	3.5
1648600	1203749870	04-APR-2017 12:12	DONE	1.23	-0.85	percent	4.22	0	-2.8	11.2	20.0	3.5
1652203	1203758692	09-APR-2017 14:21	DONE	0.25	-1	percent	4.22	0	-2.8	11.2	20.0	3.5
1653903	1203762586	11-APR-2017 09:05	DONE	1.39	-0.81	percent	4.22	0	-2.8	11.2	20.0	3.5
1655845	1203767258	18-APR-2017 08:01	DONE	3.32	-0.26	percent	4.22	0	-2.8	11.2	20.0	3.5
1655990	1203767501	18-APR-2017 10:52	DONE	1.53	-0.77	percent	4.22	0	-2.8	11.2	20.0	3.5
1658015	1203772301	25-APR-2017 09:02	DONE	4.24	0.01	percent	4.22	0	-2.8	11.2	20.0	3.5
1656198	1203767972	25-APR-2017 15:49	DONE	9.14	1.4	percent	4.22	0	-2.8	11.2	20.0	3.5
1657806	1203771785	30-APR-2017 13:55	DONE	3.58	-0.18	percent	4.22	0	-2.8	11.2	20.0	3.5
1659878	1203776895	02-MAY-2017 10:05	DONE	13.5	2.7	percent	4.22	0	-2.8	11.2	20.0	3.5
1660299	1203777719	07-MAY-2017 14:03	DONE	3.38	-0.24	percent	4.22	0	-2.8	11.2	20.0	3.5
1661327	1203780368	09-MAY-2017 09:28	DONE	2.63	-0.45	percent	4.22	0	-2.8	11.2	20.0	3.5
1662194	1203782376	15-MAY-2017 12:42	DONE	11.6	2.1	percent	4.22	0	-2.8	11.2	20.0	3.5
1664350	1203787710	16-MAY-2017 07:35	DONE	0.93	-0.94	percent	4.22	0	-2.8	11.2	20.0	3.5
1665195	1203789911	23-MAY-2017 19:20	DONE	6.41	0.62	percent	4.22	0	-2.8	11.2	20.0	3.5
1669581	1203800307	06-JUN-2017 05:32	DONE	3.22	-0.28	percent	4.22	0	-2.8	11.2	20.0	3.5
1669570	1203800275	06-JUN-2017 19:38	DONE	4.64	0.12	percent	4.22	0	-2.8	11.2	20.0	3.5
1671387	1203804703	13-JUN-2017 07:39	DONE	7.92	1.1	percent	4.22	0	-2.8	11.2	20.0	3.5
1671818	1203805822	13-JUN-2017 16:08	DONE	2.23	-0.57	percent	4.22	0	-2.8	11.2	20.0	3.5
1672313	1203807043	19-JUN-2017 09:03	DONE	1.9	-0.66	percent	4.22	0	-2.8	11.2	20.0	3.5
1674664	1203812804	20-JUN-2017 11:24	DONE	3.8	-0.12	percent	4.22	0	-2.8	11.2	20.0	3.5
1675495	1203814775	27-JUN-2017 10:26	DONE	1.42	-0.8	percent	4.22	0	-2.8	11.2	20.0	3.5

Technetium-99 RER: Limits LCL = 0 UCL = 2.00

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
1665202	1203789918	28-MAY-2017 23:53	DONE	0.32	-0.33	dec	0.94	0	-2.8	4.64	2.00	1.85
1666836	1203793671	29-MAY-2017 02:49	DONE	0.34	-0.33	dec	0.94	0	-2.8	4.64	2.00	1.85
1667588	1203795387	29-MAY-2017 04:17	DUSE	11.9	5.9	dec	0.94	0	-2.8	4.64	2.00	1.85
1669264	1203799525	30-MAY-2017 17:43	DONE	0.14	-0.43	dec	0.94	0	-2.8	4.64	2.00	1.85
1667836	1203796043	04-JUN-2017 15:05	DONE	1.44	0.27	dec	0.94	0	-2.8	4.64	2.00	1.85
1667836	1203796044	04-JUN-2017 15:27	DONE	0.82	-0.06	dec	0.94	0	-2.8	4.64	2.00	1.85
1666856	1203793722	04-JUN-2017 20:03	DUSE	1.03	0.05	dec	0.94	0	-2.8	4.64	2.00	1.85
1665745	1203791035	05-JUN-2017 18:25	DONE	0.74	-0.11	dec	0.94	0	-2.8	4.64	2.00	1.85
1669721	1203800792	06-JUN-2017 12:31	DONE	0.76	-0.1	dec	0.94	0	-2.8	4.64	2.00	1.85
1667837	1203796047	06-JUN-2017 14:27	DONE	0.58	-0.2	dec	0.94	0	-2.8	4.64	2.00	1.85
1667835	1203796040	07-JUN-2017 05:03	DONE	0.37	-0.31	dec	0.94	0	-2.8	4.64	2.00	1.85
1671384	1203804695	07-JUN-2017 10:33	DONE	1.37	0.23	dec	0.94	0	-2.8	4.64	2.00	1.85
1672311	1203807033	10-JUN-2017 06:13	DONE	1.13	0.1	dec	0.94	0	-2.8	4.64	2.00	1.85
1670715	1203803132	11-JUN-2017 08:14	DONE	0.78	-0.08	dec	0.94	0	-2.8	4.64	2.00	1.85
1666844	1203793687	11-JUN-2017 11:00	DONE	0.56	-0.2	dec	0.94	0	-2.8	4.64	2.00	1.85
1669717	1203800776	11-JUN-2017 16:01	DONE	0.21	-0.4	dec	0.94	0	-2.8	4.64	2.00	1.85

1672185	1203806756	13-JUN-2017 09:37	DONE	0.35	-0.32	dec	0.94	0	-2.8	4.64	2.00	1.85
1670718	1203803135	14-JUN-2017 00:05	DONE	0.03	-0.49	dec	0.94	0	-2.8	4.64	2.00	1.85
1670718	1203803136	14-JUN-2017 00:32	DONE	0.57	-0.2	dec	0.94	0	-2.8	4.64	2.00	1.85
1669715	1203800767	14-JUN-2017 02:03	DONE	0.98	0.02	dec	0.94	0	-2.8	4.64	2.00	1.85
1669715	1203800768	14-JUN-2017 02:24	DONE	0.13	-0.44	dec	0.94	0	-2.8	4.64	2.00	1.85
1671386	1203804698	14-JUN-2017 07:46	DONE	0.37	-0.31	dec	0.94	0	-2.8	4.64	2.00	1.85
1670718	1203803137	14-JUN-2017 10:36	DONE	1.24	0.16	dec	0.94	0	-2.8	4.64	2.00	1.85
1673287	1203809510	14-JUN-2017 13:22	DONE	0.25	-0.37	dec	0.94	0	-2.8	4.64	2.00	1.85
1673290	1203809520	19-JUN-2017 10:57	DONE	0.49	-0.24	dec	0.94	0	-2.8	4.64	2.00	1.85
1669719	1203800784	19-JUN-2017 15:22	DONE	1.11	0.09	dec	0.94	0	-2.8	4.64	2.00	1.85
1673288	1203809513	19-JUN-2017 17:19	DONE	0.27	-0.36	dec	0.94	0	-2.8	4.64	2.00	1.85
1674664	1203812802	20-JUN-2017 10:42	DONE	1.16	0.12	dec	0.94	0	-2.8	4.64	2.00	1.85
1673289	1203809517	20-JUN-2017 14:31	DONE	0.89	-0.02	dec	0.94	0	-2.8	4.64	2.00	1.85
1672316	1203807053	20-JUN-2017 15:07	DONE	0.33	-0.33	dec	0.94	0	-2.8	4.64	2.00	1.85
1674667	1203812813	27-JUN-2017 06:15	DONE	0.09	-0.46	dec	0.94	0	-2.8	4.64	2.00	1.85
1672312	1203807039	27-JUN-2017 06:20	DONE	1.11	0.09	dec	0.94	0	-2.8	4.64	2.00	1.85
1671435	1203804816	27-JUN-2017 07:10	DONE	0.18	-0.41	dec	0.94	0	-2.8	4.64	2.00	1.85
1673292	1203809523	02-JUL-2017 09:00	DONE	0.24	-0.38	dec	0.94	0	-2.8	4.64	2.00	1.85
1677033	1203818470	02-JUL-2017 09:18	DONE	1.51	0.31	dec	0.94	0	-2.8	4.64	2.00	1.85
1677033	1203818471	02-JUL-2017 09:40	DONE	0.39	-0.3	dec	0.94	0	-2.8	4.64	2.00	1.85
1675454	1203814690	04-JUL-2017 11:18	DONE	0.76	-0.1	dec	0.94	0	-2.8	4.64	2.00	1.85
1675961	1203815896	04-JUL-2017 16:16	DONE	1.07	0.07	dec	0.94	0	-2.8	4.64	2.00	1.85
1675962	1203815899	04-JUL-2017 19:34	DONE	0.63	-0.17	dec	0.94	0	-2.8	4.64	2.00	1.85

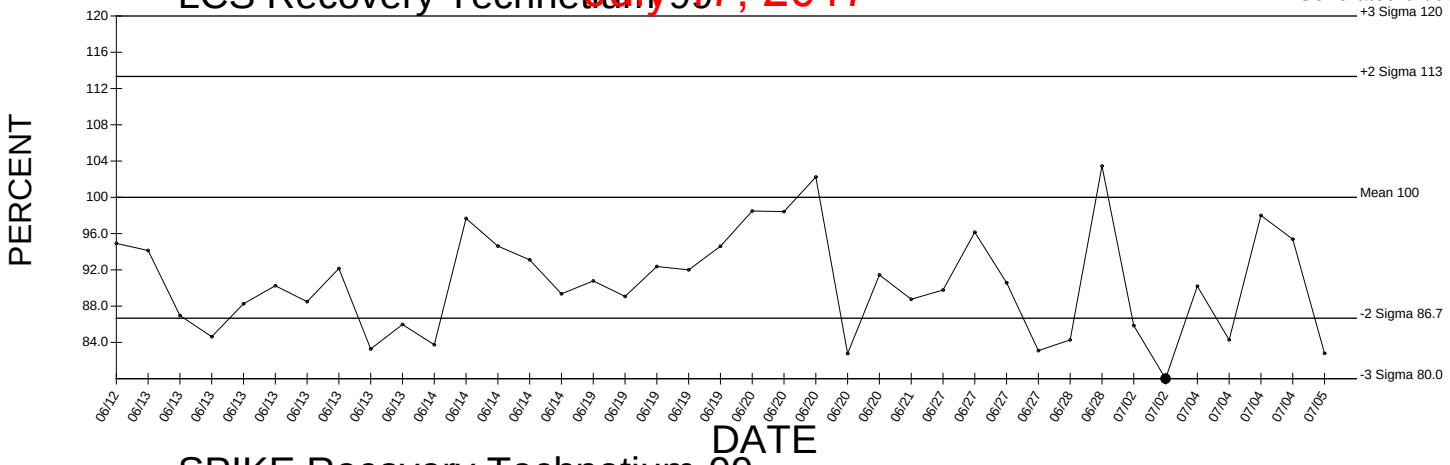
Technetium-99 SPIKE: Limits LCL = 75.0 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
1648173	1203748944	28-MAR-2017 08:58	DONE	70.6	-4	percent	100	75.0	83.3	117	125	8.33
1648601	1203749873	02-APR-2017 15:52	DONE	92.7	-0.87	percent	100	75.0	83.3	117	125	8.33
1650168	1203753771	04-APR-2017 22:59	DONE	101	0.18	percent	100	75.0	83.3	117	125	8.33
1653899	1203762575	16-APR-2017 15:27	DONE	81.6	-2	percent	100	75.0	83.3	117	125	8.33
1655456	1203766392	18-APR-2017 23:22	DONE	77.8	-3	percent	100	75.0	83.3	117	125	8.33
1656201	1203767983	23-APR-2017 09:39	DONE	91.1	-1	percent	100	75.0	83.3	117	125	8.33
1656199	1203767976	23-APR-2017 10:39	DONE	86.5	-2	percent	100	75.0	83.3	117	125	8.33
1654905	1203764982	26-APR-2017 02:22	DONE	98.3	-0.21	percent	100	75.0	83.3	117	125	8.33
1662697	1203783741	16-MAY-2017 21:24	DONE	88.6	-1	percent	100	75.0	83.3	117	125	8.33
1663486	1203785743	18-MAY-2017 02:54	DONE	108	0.97	percent	100	75.0	83.3	117	125	8.33
1665189	1203789877	21-MAY-2017 12:56	DONE	101	0.16	percent	100	75.0	83.3	117	125	8.33
1666857	1203793727	28-MAY-2017 20:12	DONE	94.5	-0.66	percent	100	75.0	83.3	117	125	8.33
1666856	1203793723	04-JUN-2017 20:50	DUSE	136	4.4	percent	100	75.0	83.3	117	125	8.33
1671386	1203804699	13-JUN-2017 23:19	DONE	85.3	-2	percent	100	75.0	83.3	117	125	8.33
1673288	1203809514	19-JUN-2017 19:22	DONE	101	0.14	percent	100	75.0	83.3	117	125	8.33
1677574	1203819791	28-JUN-2017 18:28	DONE	110	1.2	percent	100	75.0	83.3	117	125	8.33
1673293	1203809527	04-JUL-2017 13:00	DONE	92.9	-0.85	percent	100	75.0	83.3	117	125	8.33

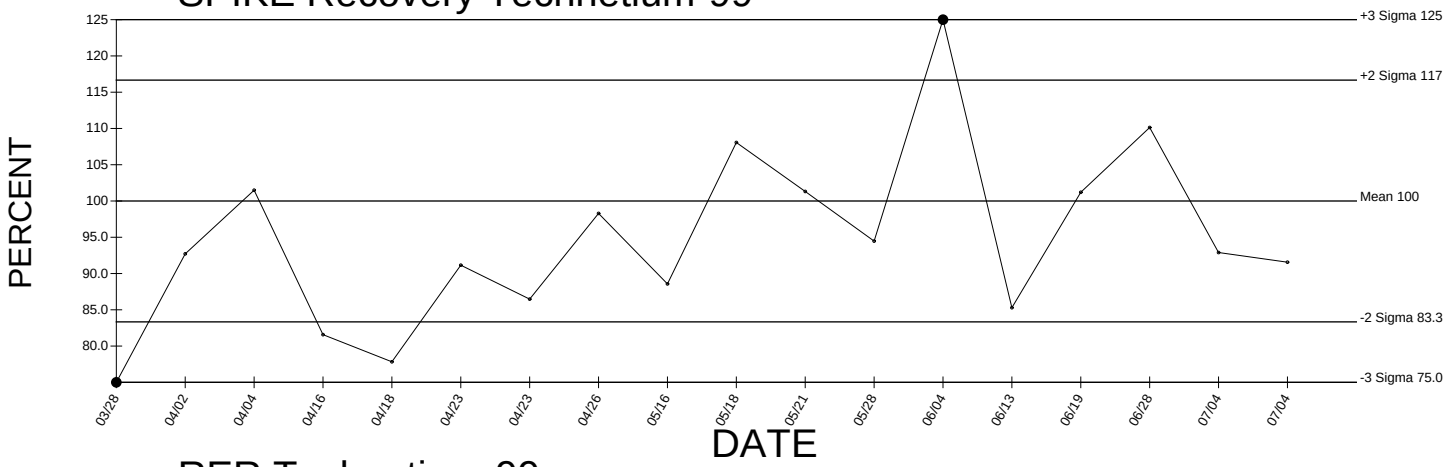
1675962	1203815900	04-JUL-2017 20:22	DONE	91.6	-1	percent	100	75.0	83.3	117	125	8.33

Generated 07/06/2017

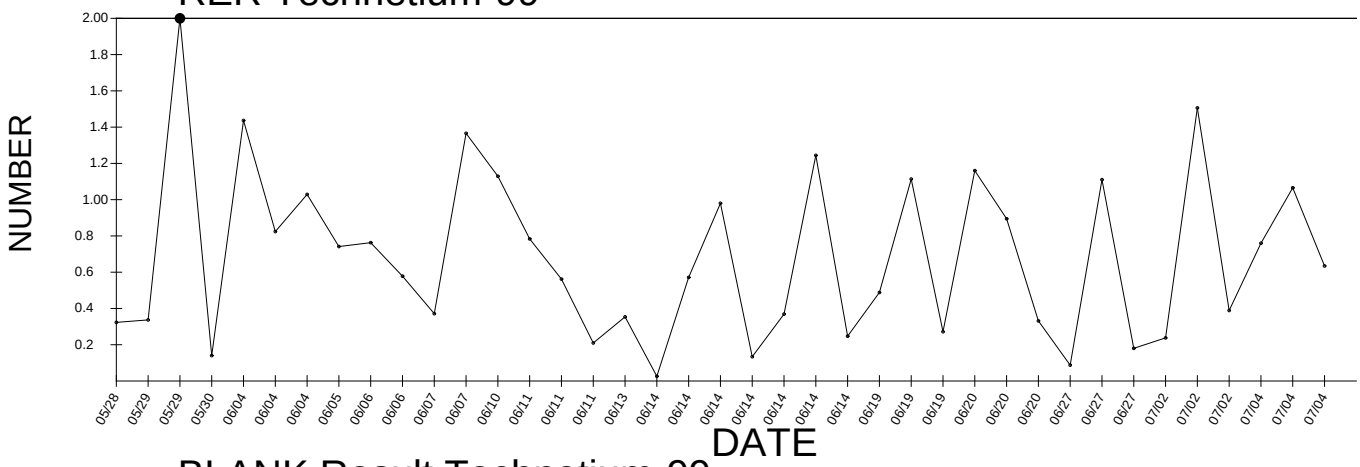
LCS Recovery Technetium-99



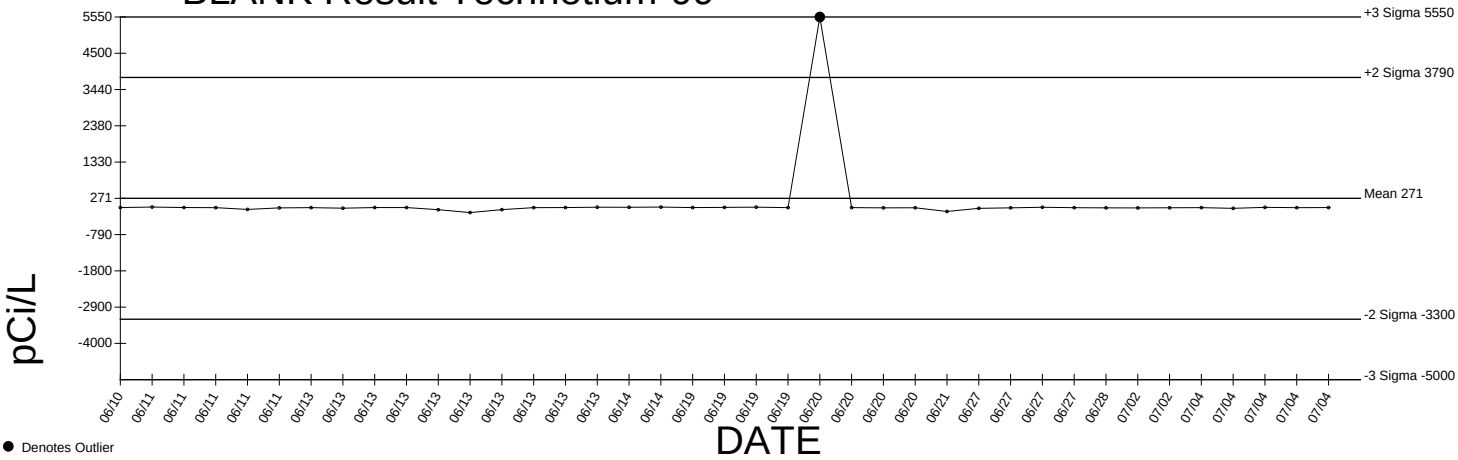
SPIKE Recovery Technetium-99



RER Technetium-99



BLANK Result Technetium-99

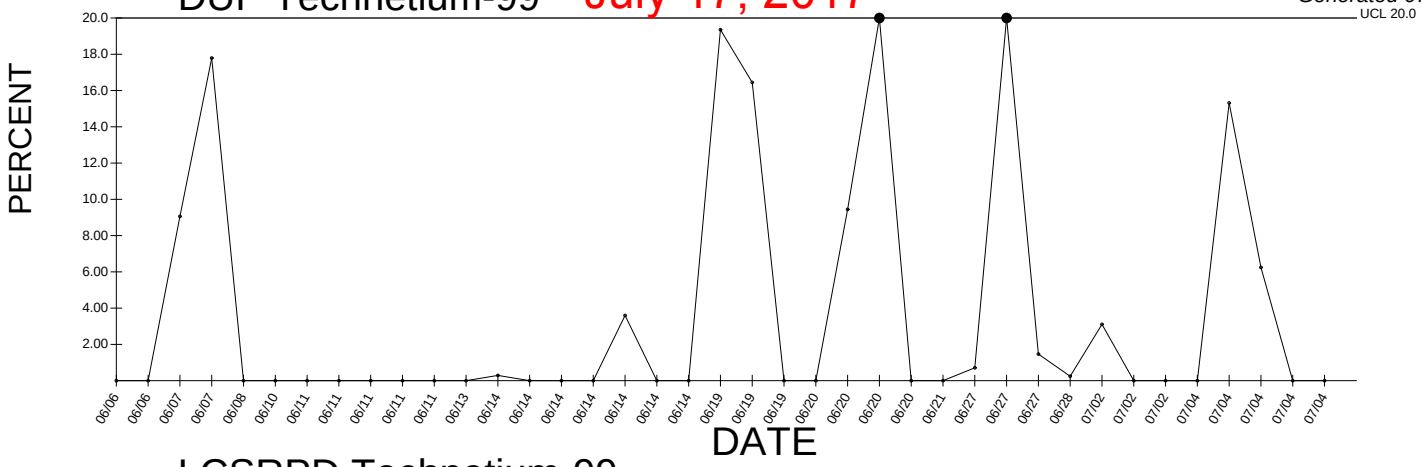


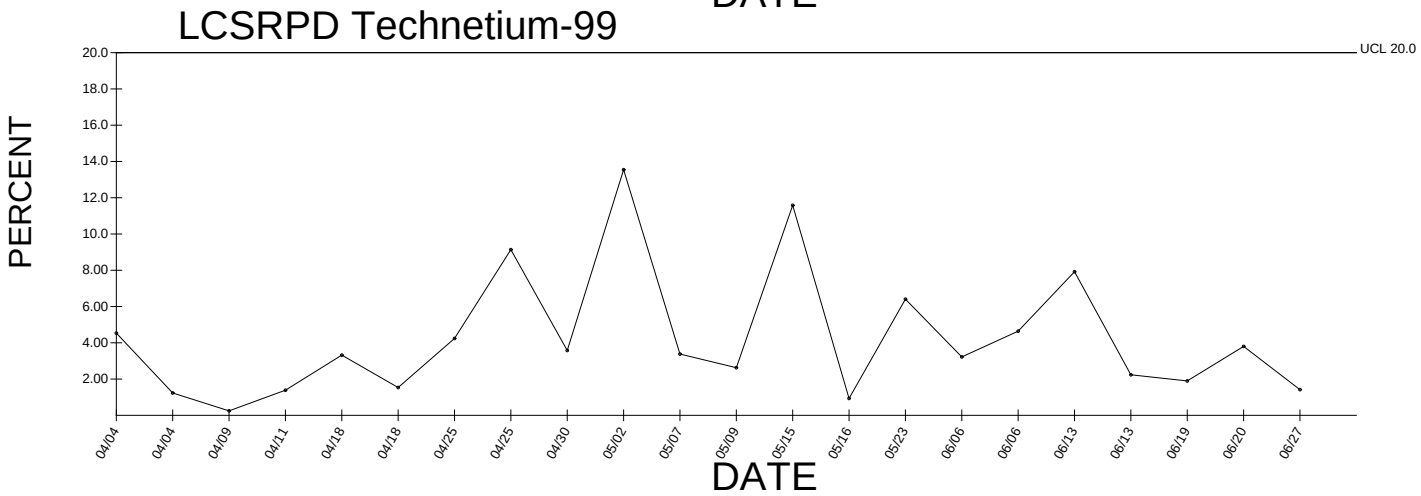
● Denotes Outlier

LSC Liquids LSC99TCL

July 17, 2017

Generated 07/06/2017





● Denotes Outlier

Data used for LSC Liquids 11-JUL-2017

Tritium BLANK: Limits LCL = -150 UCL = 131

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
1675153	1203813995	24-JUN-2017 06:16	DONE	0.01	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1673327	1203809659	24-JUN-2017 10:52	DONE	0.11	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1673323	1203809632	25-JUN-2017 04:38	DONE	0.05	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1673326	1203809651	25-JUN-2017 05:37	DONE	0.08	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1673322	1203809628	26-JUN-2017 16:26	DONE	0.01	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1672405	1203807340	26-JUN-2017 19:00	DONE	-0.018	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1674110	1203811612	26-JUN-2017 20:54	DONE	0.22	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1677053	1203818562	27-JUN-2017 07:07	DONE	-0.002	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1675504	1203814806	27-JUN-2017 17:18	DONE	-0.007	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1675501	1203814792	27-JUN-2017 21:31	DONE	0.11	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1675956	1203815876	28-JUN-2017 19:31	DONE	0.04	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1671691	1203805386	29-JUN-2017 04:19	DONE	0.05	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1678476	1203821851	30-JUN-2017 00:21	DONE	00	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1677054	1203818566	30-JUN-2017 03:49	DONE	-0.554	0.15	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1672993	1203808864	30-JUN-2017 04:06	DONE	0.01	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1677044	1203818509	30-JUN-2017 19:53	DONE	0.02	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1677045	1203818513	02-JUL-2017 08:55	DONE	-0.138	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1678676	1203822349	02-JUL-2017 11:12	DONE	0.17	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1675507	1203814817	02-JUL-2017 23:07	DONE	0.06	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1678675	1203822344	03-JUL-2017 05:49	DONE	0.01	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1675957	1203815879	03-JUL-2017 07:12	DONE	0.01	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1678674	1203822340	03-JUL-2017 08:48	DONE	0.1	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1677050	1203818552	03-JUL-2017 10:32	DONE	0.01	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1673588	1203810336	03-JUL-2017 13:57	DONE	0.09	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1677055	1203818570	03-JUL-2017 15:46	DONE	-0.105	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1677052	1203818558	03-JUL-2017 16:01	DONE	0.06	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1676278	1203816703	03-JUL-2017 16:31	DONE	-0.12	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1677048	1203818543	03-JUL-2017 20:09	DONE	0.04	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1677046	1203818530	04-JUL-2017 16:53	DONE	-0.011	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1675078	1203813869	05-JUL-2017 15:54	DONE	-0.424	0.15	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1678677	1203822353	05-JUL-2017 18:00	DONE	-0.132	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1675958	1203815883	06-JUL-2017 02:25	DONE	0.03	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1675960	1203815891	06-JUL-2017 08:59	DONE	0.07	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1678925	1203822942	06-JUL-2017 21:27	DONE	0.06	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1679704	1203824650	06-JUL-2017 22:13	DONE	0.05	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1677056	1203818574	06-JUL-2017 23:51	DONE	-290	-6	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1680432	1203826173	07-JUL-2017 18:12	DONE	-0.008	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1675080	1203813877	07-JUL-2017 19:47	DONE	0.13	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1
1678920	1203822933	08-JUL-2017 05:57	DONE	0.14	0.16	pCi/mL	-7.4	-150	-100	84.8	131	46.1

Tritium DUP: Limits LCL = 0 UCL = 20.0

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
1675153	1203813996	24-JUN-2017 06:47	DONE	0	-0.4	percent	2.12	0	-8.5	12.7	20.0	5.3
1670513	1203802662	24-JUN-2017 09:04	DONE	0	-0.4	percent	2.12	0	-8.5	12.7	20.0	5.3
1673327	1203809660	24-JUN-2017 12:24	DONE	4.71	0.49	percent	2.12	0	-8.5	12.7	20.0	5.3
1673323	1203809633	25-JUN-2017 06:11	DONE	0	-0.4	percent	2.12	0	-8.5	12.7	20.0	5.3
1673326	1203809652	25-JUN-2017 07:10	DONE	4.6	0.47	percent	2.12	0	-8.5	12.7	20.0	5.3
1673322	1203809629	26-JUN-2017 17:59	DONE	0	-0.4	percent	2.12	0	-8.5	12.7	20.0	5.3
1672405	1203807341	26-JUN-2017 19:16	DONE	0	-0.4	percent	2.12	0	-8.5	12.7	20.0	5.3
1674110	1203811613	26-JUN-2017 21:41	DONE	1.84	-0.05	percent	2.12	0	-8.5	12.7	20.0	5.3
1677053	1203818563	27-JUN-2017 08:25	DONE	0	-0.4	percent	2.12	0	-8.5	12.7	20.0	5.3
1675504	1203814807	27-JUN-2017 18:05	DONE	3.17	0.2	percent	2.12	0	-8.5	12.7	20.0	5.3
1675501	1203814793	27-JUN-2017 23:02	DONE	1.19	-0.18	percent	2.12	0	-8.5	12.7	20.0	5.3
1675501	1203814796	27-JUN-2017 23:14	DONE	0	-0.4	percent	2.12	0	-8.5	12.7	20.0	5.3
1671691	1203805387	29-JUN-2017 05:52	DONE	3.14	0.19	percent	2.12	0	-8.5	12.7	20.0	5.3
1677054	1203818567	30-JUN-2017 04:10	DONE	0	-0.4	percent	2.12	0	-8.5	12.7	20.0	5.3
1672993	1203808865	30-JUN-2017 05:39	DONE	5.7	0.67	percent	2.12	0	-8.5	12.7	20.0	5.3
1677045	1203818514	02-JUL-2017 09:11	DONE	0.08	-0.39	percent	2.12	0	-8.5	12.7	20.0	5.3
1678676	1203822350	02-JUL-2017 11:29	DONE	0	-0.4	percent	2.12	0	-8.5	12.7	20.0	5.3
1675507	1203814818	03-JUL-2017 00:09	DONE	0	-0.4	percent	2.12	0	-8.5	12.7	20.0	5.3
1678675	1203822345	03-JUL-2017 07:11	DONE	29.3	5.1	percent	2.12	0	-8.5	12.7	20.0	5.3
1675957	1203815880	03-JUL-2017 09:14	DONE	0	-0.4	percent	2.12	0	-8.5	12.7	20.0	5.3
1678674	1203822341	03-JUL-2017 09:35	DONE	7.04	0.93	percent	2.12	0	-8.5	12.7	20.0	5.3
1677050	1203818553	03-JUL-2017 11:04	DONE	0	-0.4	percent	2.12	0	-8.5	12.7	20.0	5.3
1673588	1203810337	03-JUL-2017 14:13	DONE	0	-0.4	percent	2.12	0	-8.5	12.7	20.0	5.3
1677044	1203818510	03-JUL-2017 14:40	DONE	0	-0.4	percent	2.12	0	-8.5	12.7	20.0	5.3
1677055	1203818571	03-JUL-2017 16:38	DONE	0	-0.4	percent	2.12	0	-8.5	12.7	20.0	5.3
1677052	1203818559	03-JUL-2017 17:23	DONE	0	-0.4	percent	2.12	0	-8.5	12.7	20.0	5.3
1676278	1203816704	03-JUL-2017 17:34	DONE	0	-0.4	percent	2.12	0	-8.5	12.7	20.0	5.3
1677048	1203818544	03-JUL-2017 21:26	DONE	0	-0.4	percent	2.12	0	-8.5	12.7	20.0	5.3
1677046	1203818532	04-JUL-2017 18:56	DONE	0	-0.4	percent	2.12	0	-8.5	12.7	20.0	5.3
1677046	1203818533	04-JUL-2017 20:59	DONE	0	-0.4	percent	2.12	0	-8.5	12.7	20.0	5.3
1675078	1203813870	05-JUL-2017 16:10	DONE	0	-0.4	percent	2.12	0	-8.5	12.7	20.0	5.3
1678677	1203822354	05-JUL-2017 18:16	DONE	0	-0.4	percent	2.12	0	-8.5	12.7	20.0	5.3
1675958	1203815884	06-JUL-2017 03:58	DONE	14.1	2.3	percent	2.12	0	-8.5	12.7	20.0	5.3
1675960	1203815892	06-JUL-2017 09:46	DONE	5.83	0.7	percent	2.12	0	-8.5	12.7	20.0	5.3
1679704	1203824651	06-JUL-2017 22:30	DONE	0	-0.4	percent	2.12	0	-8.5	12.7	20.0	5.3
1678925	1203822943	06-JUL-2017 22:50	DONE	0	-0.4	percent	2.12	0	-8.5	12.7	20.0	5.3
1680432	1203826174	07-JUL-2017 20:14	DONE	0	-0.4	percent	2.12	0	-8.5	12.7	20.0	5.3
1675080	1203813878	07-JUL-2017 20:19	DONE	0	-0.4	percent	2.12	0	-8.5	12.7	20.0	5.3
1678920	1203822934	08-JUL-2017 06:49	DONE	2.08	-0.01	percent	2.12	0	-8.5	12.7	20.0	5.3

Tritium LCS: Limits LCL = 80.0 UCL = 120

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
1673326	1203809654	25-JUN-2017 10:16	DONE	84.6	-2	percent	100	80.0	86.7	113	120	6.67
1673322	1203809631	26-JUN-2017 19:49	DONE	91.3	-1	percent	100	80.0	86.7	113	120	6.67
1672405	1203807343	26-JUN-2017 19:49	DONE	77.5	-3	percent	100	80.0	86.7	113	120	6.67
1674110	1203811615	26-JUN-2017 23:15	DONE	114	2.1	percent	100	80.0	86.7	113	120	6.67
1677053	1203818565	27-JUN-2017 09:55	DONE	94.4	-0.84	percent	100	80.0	86.7	113	120	6.67
1675504	1203814809	27-JUN-2017 19:39	DONE	83.1	-3	percent	100	80.0	86.7	113	120	6.67
1675501	1203814795	28-JUN-2017 02:22	DONE	88.4	-2	percent	100	80.0	86.7	113	120	6.67
1675956	1203815877	28-JUN-2017 21:04	DONE	79.4	-3	percent	100	80.0	86.7	113	120	6.67
1675956	1203815878	28-JUN-2017 22:37	DONE	92.3	-1	percent	100	80.0	86.7	113	120	6.67
1671691	1203805389	29-JUN-2017 07:40	DONE	80.2	-3	percent	100	80.0	86.7	113	120	6.67
1678476	1203821852	30-JUN-2017 00:52	DONE	79.6	-3	percent	100	80.0	86.7	113	120	6.67
1678476	1203821853	30-JUN-2017 01:24	DONE	91	-1	percent	100	80.0	86.7	113	120	6.67
1677054	1203818569	30-JUN-2017 04:53	DONE	95.2	-0.73	percent	100	80.0	86.7	113	120	6.67
1672993	1203808867	30-JUN-2017 10:25	DONE	81.8	-3	percent	100	80.0	86.7	113	120	6.67
1677044	1203818512	30-JUN-2017 23:16	DONE	91.7	-1	percent	100	80.0	86.7	113	120	6.67
1677045	1203818516	02-JUL-2017 09:44	DONE	75.8	-4	percent	100	80.0	86.7	113	120	6.67
1678674	1203822343	02-JUL-2017 15:40	DONE	81.4	-3	percent	100	80.0	86.7	113	120	6.67
1677052	1203818561	02-JUL-2017 23:04	DONE	83.5	-2	percent	100	80.0	86.7	113	120	6.67
1675507	1203814820	03-JUL-2017 01:29	DONE	102	0.25	percent	100	80.0	86.7	113	120	6.67
1678676	1203822352	03-JUL-2017 06:37	DONE	89.7	-2	percent	100	80.0	86.7	113	120	6.67
1678675	1203822348	03-JUL-2017 09:09	DONE	96.6	-0.5	percent	100	80.0	86.7	113	120	6.67
1675957	1203815882	03-JUL-2017 11:34	DONE	95.9	-0.61	percent	100	80.0	86.7	113	120	6.67
1677050	1203818555	03-JUL-2017 12:06	DONE	86.8	-2	percent	100	80.0	86.7	113	120	6.67
1673588	1203810339	03-JUL-2017 14:46	DONE	75.2	-4	percent	100	80.0	86.7	113	120	6.67
1677055	1203818573	03-JUL-2017 18:22	DONE	75	-4	percent	100	80.0	86.7	113	120	6.67
1676278	1203816706	03-JUL-2017 19:38	DONE	89	-2	percent	100	80.0	86.7	113	120	6.67
1677048	1203818546	03-JUL-2017 23:01	DONE	91.9	-1	percent	100	80.0	86.7	113	120	6.67
1677046	1203818537	04-JUL-2017 23:36	DONE	89.9	-2	percent	100	80.0	86.7	113	120	6.67
1675078	1203813872	05-JUL-2017 16:42	DONE	77.3	-3	percent	100	80.0	86.7	113	120	6.67
1675958	1203815886	06-JUL-2017 05:48	DONE	109	1.4	percent	100	80.0	86.7	113	120	6.67
1675960	1203815894	06-JUL-2017 10:48	DONE	94.4	-0.83	percent	100	80.0	86.7	113	120	6.67
1679704	1203824653	06-JUL-2017 23:02	DONE	105	0.79	percent	100	80.0	86.7	113	120	6.67
1677056	1203818575	07-JUL-2017 00:07	DONE	75.7	-4	percent	100	80.0	86.7	113	120	6.67
1678925	1203822946	07-JUL-2017 00:48	DONE	89.1	-2	percent	100	80.0	86.7	113	120	6.67
1677056	1203818576	07-JUL-2017 06:03	DONE	109	1.4	percent	100	80.0	86.7	113	120	6.67
1678677	1203822356	07-JUL-2017 06:20	DONE	91.3	-1	percent	100	80.0	86.7	113	120	6.67
1675080	1203813880	07-JUL-2017 21:22	DONE	93.2	-1	percent	100	80.0	86.7	113	120	6.67
1680432	1203826176	07-JUL-2017 22:34	DONE	84.2	-2	percent	100	80.0	86.7	113	120	6.67
1678920	1203822936	08-JUL-2017 08:33	DONE	102	0.29	percent	100	80.0	86.7	113	120	6.67

Tritium LCSRPD: Limits LCL = 0 UCL = 20.0

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
1648608	1203749897	28-MAR-2017 04:37	DONE	5.94	-0.43	percent	9.21	0	-6	24.4	20.0	7.6
1650186	1203753826	30-MAR-2017 08:15	DONE	6.61	-0.34	percent	9.21	0	-6	24.4	20.0	7.6
1648692	1203750156	01-APR-2017 23:00	DONE	4.81	-0.58	percent	9.21	0	-6	24.4	20.0	7.6
1653009	1203760429	05-APR-2017 04:42	DONE	3.09	-0.81	percent	9.21	0	-6	24.4	20.0	7.6
1655749	1203767012	19-APR-2017 14:59	DONE	1.17	-1	percent	9.21	0	-6	24.4	20.0	7.6
1655744	1203767002	19-APR-2017 22:47	DONE	7.33	-0.25	percent	9.21	0	-6	24.4	20.0	7.6
1656976	1203769854	23-APR-2017 17:39	DONE	8.03	-0.16	percent	9.21	0	-6	24.4	20.0	7.6
1658018	1203772322	25-APR-2017 14:29	DONE	12.6	0.44	percent	9.21	0	-6	24.4	20.0	7.6
1657823	1203771862	07-MAY-2017 10:55	DONE	14.5	0.7	percent	9.21	0	-6	24.4	20.0	7.6
1663581	1203785908	13-MAY-2017 07:11	DONE	4.85	-0.57	percent	9.21	0	-6	24.4	20.0	7.6
1666840	1203793680	22-MAY-2017 15:17	DONE	11.2	0.26	percent	9.21	0	-6	24.4	20.0	7.6
1666978	1203794737	23-MAY-2017 22:52	DONE	5.47	-0.49	percent	9.21	0	-6	24.4	20.0	7.6
1668878	1203798647	30-MAY-2017 14:34	DONE	2.68	-0.86	percent	9.21	0	-6	24.4	20.0	7.6
1669338	1203799717	02-JUN-2017 09:45	DONE	15.5	0.83	percent	9.21	0	-6	24.4	20.0	7.6
1664479	1203788031	03-JUN-2017 16:12	DONE	0.97	-1	percent	9.21	0	-6	24.4	20.0	7.6
1670648	1203802971	05-JUN-2017 16:49	DONE	11.8	0.34	percent	9.21	0	-6	24.4	20.0	7.6
1669697	1203800687	05-JUN-2017 19:10	DONE	3.57	-0.74	percent	9.21	0	-6	24.4	20.0	7.6
1672404	1203807339	20-JUN-2017 12:58	DONE	12.9	0.49	percent	9.21	0	-6	24.4	20.0	7.6
1676276	1203816702	23-JUN-2017 12:30	DONE	5.22	-0.53	percent	9.21	0	-6	24.4	20.0	7.6
1675956	1203815878	28-JUN-2017 22:37	DONE	15	0.76	percent	9.21	0	-6	24.4	20.0	7.6
1678476	1203821853	30-JUN-2017 01:24	DONE	13.4	0.55	percent	9.21	0	-6	24.4	20.0	7.6
1677056	1203818576	07-JUL-2017 06:03	DONE	36.1	3.5	percent	9.21	0	-6	24.4	20.0	7.6

Tritium RER: Limits LCL = 0 UCL = 2.00

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
1669634	1203800571	17-JUN-2017 01:07	DONE	0.74	1.5	dec	0.27	0	-0.343	0.88	2.00	0.31
1673321	1203809625	17-JUN-2017 04:24	DONE	0.02	-0.82	dec	0.27	0	-0.343	0.88	2.00	0.31
1674109	1203811609	20-JUN-2017 14:50	DONE	0.07	-0.65	dec	0.27	0	-0.343	0.88	2.00	0.31
1672396	1203807307	20-JUN-2017 23:19	DONE	0.27	-0.02	dec	0.27	0	-0.343	0.88	2.00	0.31
1672396	1203807308	20-JUN-2017 23:50	DONE	0.04	-0.74	dec	0.27	0	-0.343	0.88	2.00	0.31
1674224	1203811840	21-JUN-2017 00:30	DONE	0.53	0.83	dec	0.27	0	-0.343	0.88	2.00	0.31
1672396	1203807309	21-JUN-2017 01:37	DONE	0.08	-0.62	dec	0.27	0	-0.343	0.88	2.00	0.31
1675532	1203814879	21-JUN-2017 08:39	DONE	0.72	1.5	dec	0.27	0	-0.343	0.88	2.00	0.31
1674108	1203811605	21-JUN-2017 23:54	DONE	0.01	-0.86	dec	0.27	0	-0.343	0.88	2.00	0.31
1673320	1203809621	22-JUN-2017 18:51	DONE	0.38	0.35	dec	0.27	0	-0.343	0.88	2.00	0.31
1675952	1203815870	22-JUN-2017 21:49	DONE	0.16	-0.36	dec	0.27	0	-0.343	0.88	2.00	0.31
1672394	1203807291	23-JUN-2017 08:56	DONE	0.11	-0.51	dec	0.27	0	-0.343	0.88	2.00	0.31
1672403	1203807334	23-JUN-2017 16:11	DONE	0.01	-0.84	dec	0.27	0	-0.343	0.88	2.00	0.31
1673325	1203809645	24-JUN-2017 00:55	DONE	0.21	-0.21	dec	0.27	0	-0.343	0.88	2.00	0.31
1673328	1203809664	24-JUN-2017 00:59	DONE	0.2	-0.23	dec	0.27	0	-0.343	0.88	2.00	0.31
1673325	1203809646	24-JUN-2017 01:28	DONE	0.04	-0.76	dec	0.27	0	-0.343	0.88	2.00	0.31

1675153	1203813996	24-JUN-2017 06:47	DONE	0.06	-0.7	dec	0.27	0	-0.343	0.88	2.00	0.31
1673323	1203809633	25-JUN-2017 06:11	DONE	0.01	-0.85	dec	0.27	0	-0.343	0.88	2.00	0.31
1673322	1203809629	26-JUN-2017 17:59	DONE	0.02	-0.81	dec	0.27	0	-0.343	0.88	2.00	0.31
1672405	1203807341	26-JUN-2017 19:16	DONE	0.73	1.5	dec	0.27	0	-0.343	0.88	2.00	0.31
1674110	1203811613	26-JUN-2017 21:41	DONE	0.13	-0.46	dec	0.27	0	-0.343	0.88	2.00	0.31
1677053	1203818563	27-JUN-2017 08:25	DONE	0.11	-0.51	dec	0.27	0	-0.343	0.88	2.00	0.31
1675504	1203814807	27-JUN-2017 18:05	DONE	0.22	-0.18	dec	0.27	0	-0.343	0.88	2.00	0.31
1677045	1203818514	02-JUL-2017 09:11	DONE	00	-0.88	dec	0.27	0	-0.343	0.88	2.00	0.31
1678676	1203822350	02-JUL-2017 11:29	DONE	0.03	-0.78	dec	0.27	0	-0.343	0.88	2.00	0.31
1675507	1203814818	03-JUL-2017 00:09	DONE	0.07	-0.66	dec	0.27	0	-0.343	0.88	2.00	0.31
1675957	1203815880	03-JUL-2017 09:14	DONE	0.26	-0.02	dec	0.27	0	-0.343	0.88	2.00	0.31
1677044	1203818510	03-JUL-2017 14:40	DONE	0.28	0.03	dec	0.27	0	-0.343	0.88	2.00	0.31
1677055	1203818571	03-JUL-2017 16:38	DONE	0.39	0.4	dec	0.27	0	-0.343	0.88	2.00	0.31
1677052	1203818559	03-JUL-2017 17:23	DONE	0.25	-0.05	dec	0.27	0	-0.343	0.88	2.00	0.31
1677048	1203818544	03-JUL-2017 21:26	DONE	0.47	0.67	dec	0.27	0	-0.343	0.88	2.00	0.31
1677046	1203818532	04-JUL-2017 18:56	DONE	1.16	2.9	dec	0.27	0	-0.343	0.88	2.00	0.31
1677046	1203818533	04-JUL-2017 20:59	DONE	1.27	3.2	dec	0.27	0	-0.343	0.88	2.00	0.31
1678677	1203822354	05-JUL-2017 18:16	DONE	0.08	-0.62	dec	0.27	0	-0.343	0.88	2.00	0.31
1675958	1203815884	06-JUL-2017 03:58	DONE	0.27	-0.01	dec	0.27	0	-0.343	0.88	2.00	0.31
1675960	1203815892	06-JUL-2017 09:46	DONE	0.4	0.43	dec	0.27	0	-0.343	0.88	2.00	0.31
1679704	1203824651	06-JUL-2017 22:30	DONE	0.55	0.9	dec	0.27	0	-0.343	0.88	2.00	0.31
1680432	1203826174	07-JUL-2017 20:14	DONE	0.04	-0.74	dec	0.27	0	-0.343	0.88	2.00	0.31
1678920	1203822934	08-JUL-2017 06:49	DONE	0.15	-0.4	dec	0.27	0	-0.343	0.88	2.00	0.31

Tritium SPIKE: Limits LCL = 75.0 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
1673327	1203809661	24-JUN-2017 13:55	DONE	110	1.2	percent	100	75.0	83.3	117	125	8.33
1673323	1203809634	25-JUN-2017 07:43	DONE	85.9	-2	percent	100	75.0	83.3	117	125	8.33
1673326	1203809653	25-JUN-2017 08:43	DONE	75	-3	percent	100	75.0	83.3	117	125	8.33
1673322	1203809630	26-JUN-2017 19:31	DONE	79.6	-2	percent	100	75.0	83.3	117	125	8.33
1672405	1203807342	26-JUN-2017 19:32	DONE	87.4	-2	percent	100	75.0	83.3	117	125	8.33
1674110	1203811614	26-JUN-2017 22:28	DONE	56.8	-5	percent	100	75.0	83.3	117	125	8.33
1677053	1203818564	27-JUN-2017 09:38	DONE	87.6	-1	percent	100	75.0	83.3	117	125	8.33
1675504	1203814808	27-JUN-2017 18:52	DONE	95.6	-0.53	percent	100	75.0	83.3	117	125	8.33
1675501	1203814794	28-JUN-2017 01:56	DONE	433	40	percent	100	75.0	83.3	117	125	8.33
1675501	1203814797	28-JUN-2017 02:06	DONE	87.3	-2	percent	100	75.0	83.3	117	125	8.33
1671691	1203805388	29-JUN-2017 07:23	DONE	117	2	percent	100	75.0	83.3	117	125	8.33
1677054	1203818568	30-JUN-2017 04:32	DONE	95.4	-0.55	percent	100	75.0	83.3	117	125	8.33
1672993	1203808866	30-JUN-2017 07:11	DONE	83	-2	percent	100	75.0	83.3	117	125	8.33
1677044	1203818511	30-JUN-2017 22:58	DONE	100	0.06	percent	100	75.0	83.3	117	125	8.33
1677045	1203818515	02-JUL-2017 09:28	DONE	83.2	-2	percent	100	75.0	83.3	117	125	8.33
1678676	1203822351	02-JUL-2017 11:45	DONE	100	-0	percent	100	75.0	83.3	117	125	8.33
1677052	1203818560	02-JUL-2017 22:47	DONE	95.4	-0.56	percent	100	75.0	83.3	117	125	8.33

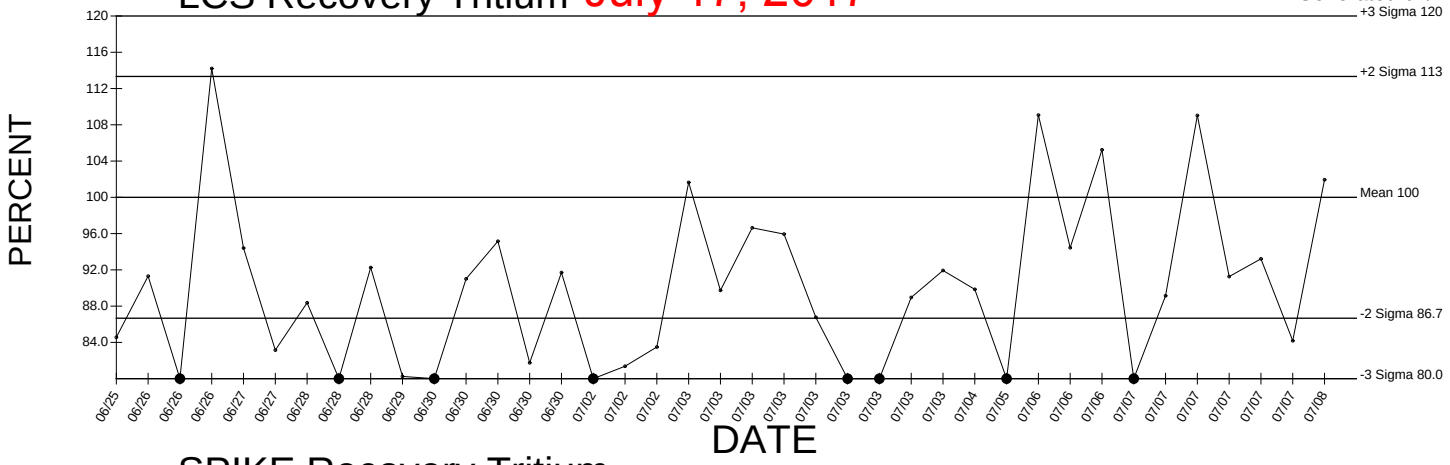
1675507	1203814819	03-JUL-2017 01:12	DONE	102	0.26	percent	100	75.0	83.3	117	125	8.33
1678675	1203822346	03-JUL-2017 08:34	DONE	100	0.02	percent	100	75.0	83.3	117	125	8.33
1678675	1203822347	03-JUL-2017 08:52	DONE	93.6	-0.77	percent	100	75.0	83.3	117	125	8.33
1675957	1203815881	03-JUL-2017 11:17	DONE	91.9	-0.97	percent	100	75.0	83.3	117	125	8.33
1677050	1203818554	03-JUL-2017 11:35	DONE	76.8	-3	percent	100	75.0	83.3	117	125	8.33
1673588	1203810338	03-JUL-2017 14:30	DONE	92.7	-0.88	percent	100	75.0	83.3	117	125	8.33
1678674	1203822342	03-JUL-2017 16:58	DONE	92	-0.96	percent	100	75.0	83.3	117	125	8.33
1677055	1203818572	03-JUL-2017 17:30	DONE	80.1	-2	percent	100	75.0	83.3	117	125	8.33
1676278	1203816705	03-JUL-2017 18:36	DONE	86.8	-2	percent	100	75.0	83.3	117	125	8.33
1677048	1203818545	03-JUL-2017 22:44	DONE	97.2	-0.34	percent	100	75.0	83.3	117	125	8.33
1677046	1203818535	04-JUL-2017 23:01	DONE	91.1	-1	percent	100	75.0	83.3	117	125	8.33
1677046	1203818536	04-JUL-2017 23:19	DONE	89.2	-1	percent	100	75.0	83.3	117	125	8.33
1675078	1203813871	05-JUL-2017 16:26	DONE	81.6	-2	percent	100	75.0	83.3	117	125	8.33
1678677	1203822355	05-JUL-2017 18:32	DONE	107	0.9	percent	100	75.0	83.3	117	125	8.33
1675958	1203815885	06-JUL-2017 05:30	DONE	103	0.39	percent	100	75.0	83.3	117	125	8.33
1679704	1203824652	06-JUL-2017 22:46	DONE	115	1.8	percent	100	75.0	83.3	117	125	8.33
1678925	1203822944	07-JUL-2017 00:12	DONE	84.6	-2	percent	100	75.0	83.3	117	125	8.33
1678925	1203822945	07-JUL-2017 00:30	DONE	87.5	-2	percent	100	75.0	83.3	117	125	8.33
1675960	1203815893	07-JUL-2017 06:22	DONE	96.9	-0.37	percent	100	75.0	83.3	117	125	8.33
1675080	1203813879	07-JUL-2017 20:50	DONE	75.7	-3	percent	100	75.0	83.3	117	125	8.33
1680432	1203826175	07-JUL-2017 22:17	DONE	107	0.84	percent	100	75.0	83.3	117	125	8.33
1678920	1203822935	08-JUL-2017 07:41	DONE	81	-2	percent	100	75.0	83.3	117	125	8.33

Tritium SPRPD: Limits LCL = 0 UCL = 20.0

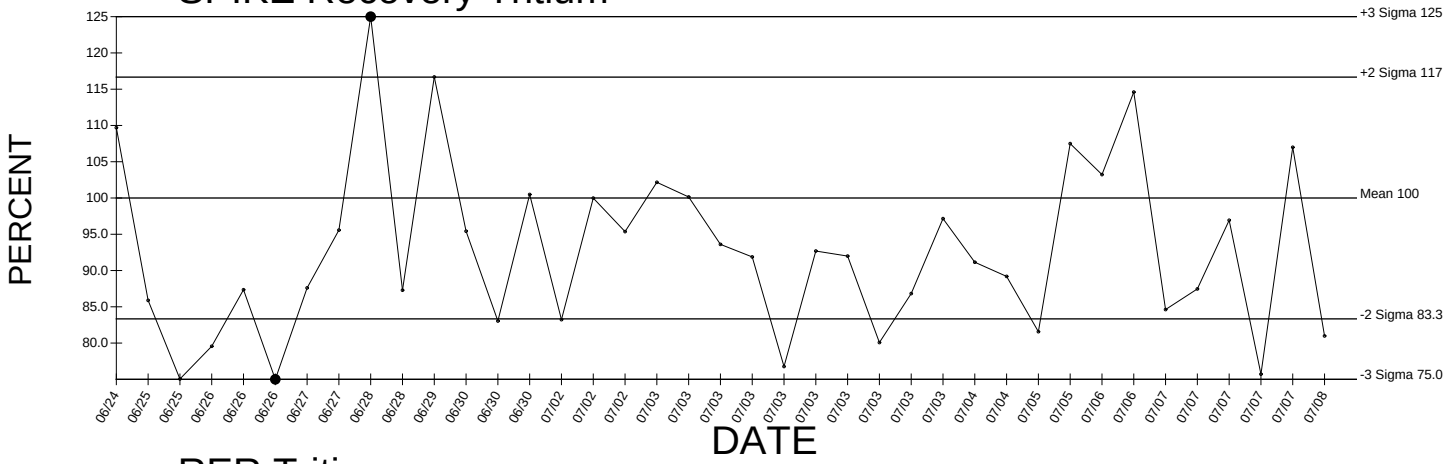
Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
1650555	1203754683	27-MAR-2017 22:52	DONE	3.93	-0.94	percent	10.1	0	-3	23.2	20.0	6.56
1650256	1203754000	10-APR-2017 10:19	DONE	17.8	1.2	percent	10.1	0	-3	23.2	20.0	6.56
1650257	1203754005	10-APR-2017 18:15	DONE	18.1	1.2	percent	10.1	0	-3	23.2	20.0	6.56
1650258	1203754010	12-APR-2017 05:40	DONE	4.79	-0.81	percent	10.1	0	-3	23.2	20.0	6.56
1655734	1203766965	15-APR-2017 09:05	DONE	2.87	-1	percent	10.1	0	-3	23.2	20.0	6.56
1655735	1203766970	21-APR-2017 15:30	DONE	10.8	0.1	percent	10.1	0	-3	23.2	20.0	6.56
1670252	1203801983	04-JUN-2017 12:16	DONE	20.1	1.5	percent	10.1	0	-3	23.2	20.0	6.56
1660572	1203778448	06-JUN-2017 07:09	DONE	17.6	1.1	percent	10.1	0	-3	23.2	20.0	6.56
1668320	1203797260	06-JUN-2017 09:07	DONE	6.76	-0.51	percent	10.1	0	-3	23.2	20.0	6.56
1669701	1203800704	11-JUN-2017 19:57	DONE	9.57	-0.08	percent	10.1	0	-3	23.2	20.0	6.56
1678675	1203822347	03-JUL-2017 08:52	DONE	5.78	-0.66	percent	10.1	0	-3	23.2	20.0	6.56
1678925	1203822945	07-JUL-2017 00:30	DONE	3.3	-1	percent	10.1	0	-3	23.2	20.0	6.56

Generated 07/11/2017

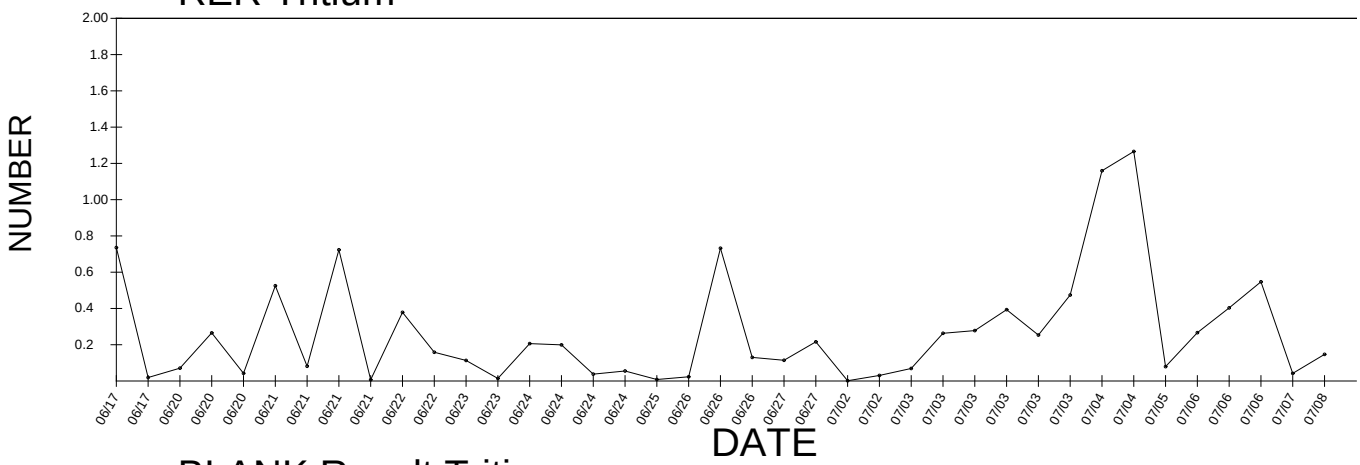
LCS Recovery Tritium July 17, 2017



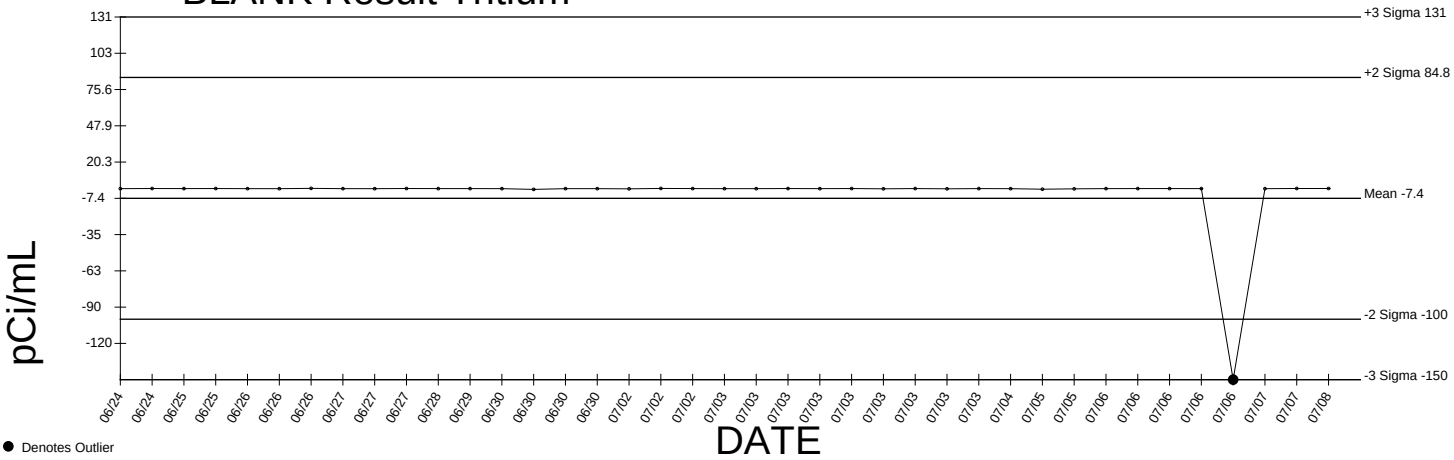
SPIKE Recovery Tritium



RER Tritium



BLANK Result Tritium

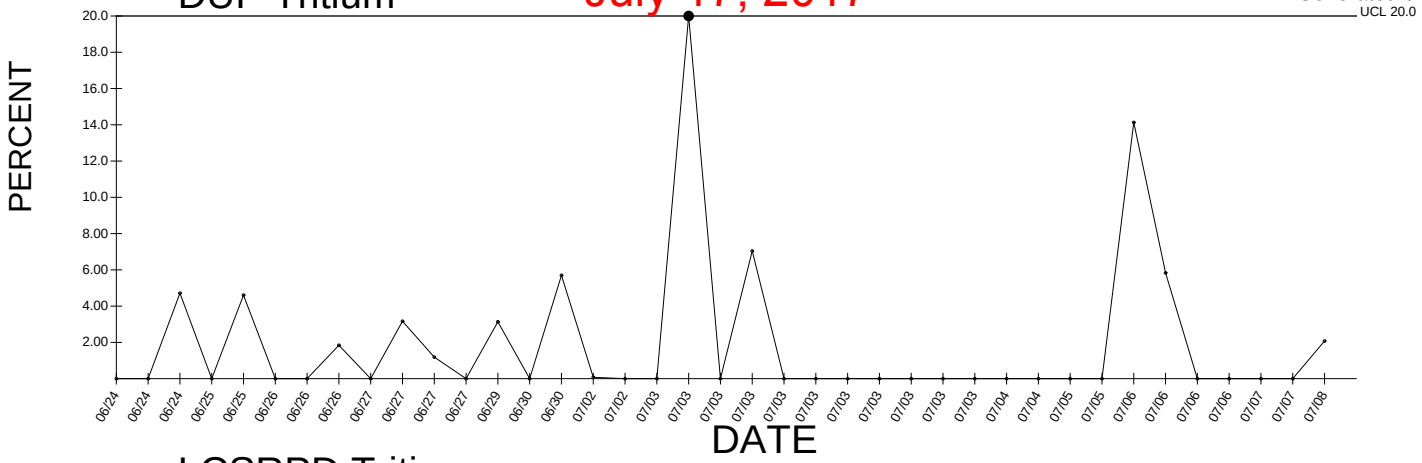


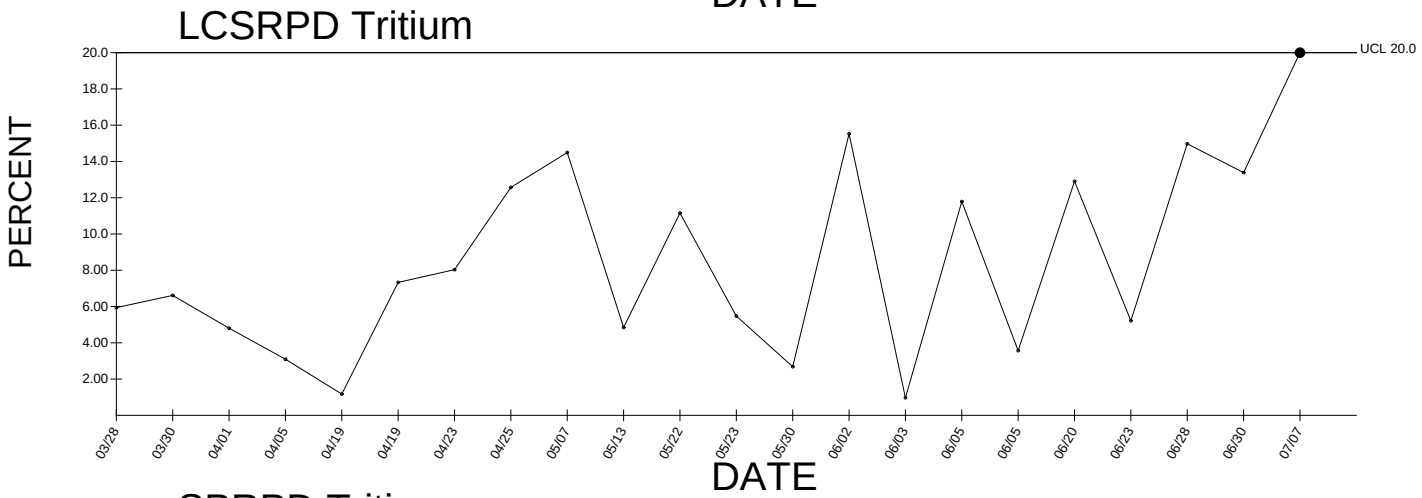
● Denotes Outlier

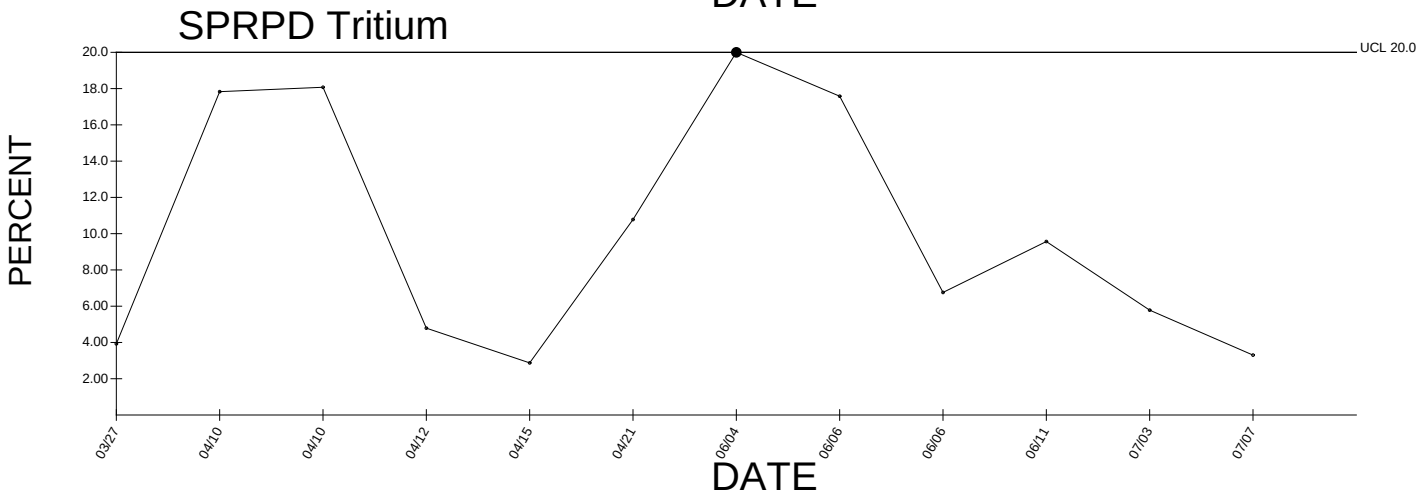
LSC Liquids LSCDSH3L

July 17, 2017

Generated 07/11/2017







● Denotes Outlier

RAD Standards Traceability

July 17, 2017

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404·352·8677
Fax 404·352·2837
www.analyticsinc.com

1621

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

91973
Tc-99 5 mL Liquid in Flame Sealed Vial

Customer: General Engineering Labs
P.O. No.: GEL 1202297, Item 1

This standard radionuclide source was prepared gravimetrically from a master solution, calibrated by Eckert & Ziegler Analytics. The master solution was calibrated by liquid scintillation counting. Radionuclide calibration and purity were checked by germanium gamma-ray spectrometry, liquid scintillation counting, and/or alpha spectrometry, as applicable. The nuclear decay rate and reference date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 2, July 2007, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty* , % Type u_A	u_B	U	Reference Date (12:00 PM EST)
Tc-99	7.710E+07	4.025E+04	0.3	1.3	2.7	09/28/2012

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: γ-impurities<0.1%.
5.01799 g 0.001M NaOH solution. Carrier free.

Source Prepared by: M. I. Taskaeva, Radiochemist

QA Approved: J.D. McCorvey, Counting Room Manager

Date: 27 SEP 12

RECEIVED 10/1/12 AMO.

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1956

Single Isotope Certificate Rev 3, 22 August 2012

NC-S-065-051

Standard Traceability Log Rad

Source Material Info	
Parent Code:	1621
Prepared By:	Ashley Drochter
Carrier Conc:	0.001M NaOH
Reference Date:	09/28/2012
Ampoule Mass (g):	5.01799 g
Uncertainty:	+/- 2.7 %
LogBook No:	RC-S-065-051

A Solution Material Info			
Isotope:	Technetium-99		
Prepared By:	Gregory Ramsay		
Prep Date:	06/06/2013		
Verification Date:	02/08/2017		
Expiration Date:	02/08/2018		
Primary Code:	1621-A		
Dilution(mL):	100 mL		
Mass of Parent(g):	4.887 g		
Density(g/mL):	0.9959	Balance ID:	38080204

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (Bq)) * (conversion dpm to Bq) / (Ampoule Mass(g) *(Dilution Vol)) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (Bq)) * (conversion dpm to Bq) / Density / (Ampoule Mass (g) * (Dilution Vol)) = Parent Activity (dpm/g)
(4.887 g) * (40250 Bq) * (60 dpm/Bq) / (5.01799 g * 100 mL) = 23519.5865 dpm/mL
(4.887 g) * (40250 Bq) * (60 dpm/Bq) / (0.9959 g/mL)/ (5.01799 g * 100 mL) = 23616.2004 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
01/13/2015	Gregory Ramsay	40.468	500	1621-B	1911.4008 dpm/mL	01/05/2017	01/05/2018

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for Tc-99 Standard 1621-B

v1.0.2

Instrument	RED
Analyst	GXR1
Verification Prep Date	1/5/2017

Standard Information	
Isotope	Tc-99
Serial Number	1621-B
Isotope Halflife	2.1110E+05 Y
Reference Date	9/28/2012
Ref. Act. (DPM/mL)	1911.4008
Amount of Std. (mL)	0.1
Standard Prep Date	1/13/2015

Std #	Count Date	Quench Number	Gross cpm	Bkg cpm
1	1/5/2017	70.10	238.40	47.20
2	1/5/2017	69.20	226.40	47.20
3	1/5/2017	69.20	230.60	47.20

Std #	Net cpm	Calculated Avg. Eff.	Standard dpm/mL	Measured dpm
1	191.20	1.009414	1894.17	189.42
2	179.20	1.009414	1775.29	177.53
3	183.40	1.009414	1816.90	181.69

	dpm/mL
Mean Value =	1828.78
Stdev =	60.32542616
Certificate Value* =	**1911.4**
Two sigma =	120.651
10 % of Mean =	182.878
Rule A (Pass/Fail)	**Pass**
% Recovery	95.68%
Rule B (Pass/Fail)	**Pass**
Expiration Date	**1/5/2018**

Verification Rules

Rule A = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

Rule B = The determined mean value shall be within 5% of the certificate value.

*** Certificate Value is decay corrected to Count Date.**

The analyst prepared three standard verification sources for Tc-99 source 1621-B by transferring 0.1 mL portions of the standard into glass liquid scintillation vials. 10 mL of Ecoscint Ultra liquid scintillation cocktail was added to each vial and the vials were shaken to mix. A Blank vial was prepared in a similar fashion using 10 mL of Ecoscint Ultra liquid scintillation cocktail. The standard verification vials and background source were dark adapted for at least two hours and counted on LSCRED for Tc-99 source standard verification. The Tc-99 efficiency calibration which was used for verification calculations was performed on 1/5/2017 using Tc-99 source 1297-A.

Standard results for each verification source was calculated as follows:

Source dpm/mL = (A - B)/(C)(D)

where:

A = Ver. source cpm,
B = BKG cpm,
C = System efficiency (cpm/dpm), and
D = volume used for standard verification.

RAD-M-001

1/5/17

1/6/17

July 17, 2017

Tracer Log

Isotope	Tc-99m
Prep Date	6/29/17
Source Code	TC2158
Prepared By	CB
Expiration Date	6/30/17

Triad Isotopes inc – Charleston (LE) (843) 556 – 1113
44 Folly Road Charleston, SC 29407
RX#659471
Account Name: GEL Laboratories LLC
2040 Savage Rd Charleston, SC 29407
Delivery D/T: 06/29/2017 12:00 Container:1
Patient ——— : PER PHYSICIAN ORDER
Product ——— : Sodium Pertechnetate Tc – 99m HEU
Procedure ——— : Flood Source
Physician ——— : George McAbee RSO
Ordered Amount: 1 mCi Quantity: 1
Cal Date/Time – : 06/29/2017 17:00
Actual Amount – : 1.016 mCi Quantity: 1 Volume: 5.00 ml
Use By ——— : 06/30/2017 04:12
Filled By: Chad Lee PharmD, BCNP
Lot #(s): E – 20170629 – 004 0.032
NOTES: 5 ML VOLUME -FRESH TC99M! PLEASE DELIVER AROUND 8AM

CAUTION: RX ONLY

CAUTION RADIOACTIVE MATERIALS

All Tc – 99m Products are below 0.15uCi of Mo – 99/mCi Tc – 99m at expiration time

Reviewed by: _____ Date: 6/30/17

Standard Traceability Log Rad

Source Material Info	
Parent Code:	TC2158
Prepared By:	Christina Sanchez
Carrier Conc:	DI Water
Reference Date:	06/29/2017
Ampoule Mass (g):	5 g
Uncertainty:	+/-
LogBook No:	

A Solution Material Info			
Isotope:	Technetium-99m TRACER		
Prepared By:	Christina Sanchez		
Prep Date:	06/29/2017		
Verification Date:	06/30/2016		
Expiration Date:	06/30/2017		
Primary Code:	TC2158-A		
Dilution(mL):	100 mL		
Mass of Parent(g):	.2142 g		
Density(g/mL):	1.0000	Balance ID:	C31514

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (mci)) * (conversion dpm to mci) / (Ampoule Mass(g) *(Dilution Vol)) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (mci)) * (conversion dpm to mci) / Density / (Ampoule Mass (g) * (Dilution Vol)) = Parent Activity (dpm/g)
(.2142 g) * (1.092 mci) * (2220000000 dpm/mci) / (5 g * 100 mL) = 1038544.4160 dpm/mL
(.2142 g) * (1.092 mci) * (2220000000 dpm/mci) / (1.0000 g/mL)/ (5 g * 100 mL) = 1038544.4160 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date

GEL Laboratories LLC
Version 1.0 9/18/2000

July 17, 2017

Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404·352·8677
Fax 404·352·2837
www.ezag.com

CERTIFICATE OF CALIBRATION

Standard Reference Source

1753

100124

H-3 5 mL Liquid in Flame Sealed Vial

RECEIVED 9/1/15

Customer: GEL Laboratories, LLC
P.O. No.: GEL1511998, Item 3 Product Code: 8003-5FSA-185kBq

This standard radionuclide source was prepared gravimetrically from a master solution, calibrated by Eckert & Ziegler Analytics. The master solution was calibrated by liquid scintillation counting. Radionuclide calibration and purity were checked by germanium gamma-ray spectrometry, liquid scintillation counting, and/or alpha spectrometry, as applicable. The nuclear decay rate and reference date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 2, July 2007, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST."

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty* , % Type u_A	u_B	U	Reference Date (12:00 PM EST)
H-3	4.500E+03	1.847E+05	0.1	1.5	3.0	09/01/2015

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: γ-impurities<0.1%.
5.00138 g of tritiated water.

Source Prepared by: _____
Z. Dimitrova, Radiochemist

QC Approved: _____ Date: 28 Aug 15
J. S. Lahr, Spectroscopist

Standard Traceability Log Rad

Source Material Info	
Parent Code:	1753
Prepared By:	Gregory Ramsay
Carrier Conc:	Water
Reference Date:	09/01/2015
Ampoule Mass (g):	5.00138 g
Uncertainty:	+/- 1.5 %
LogBook No:	GL-CED-297-046

A Solution Material Info			
Isotope:	Tritium		
Prepared By:	Gregory Ramsay		
Prep Date:	11/02/2015		
Verification Date:	11/02/2015		
Expiration Date:	11/02/2016		
Primary Code:	1753-A		
Dilution(mL):	100 mL		
Mass of Parent(g):	4.9357 g		
Density(g/mL):	0.9967	Balance ID:	C31514

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (Bq)) * (conversion dpm to Bq) / (Ampoule Mass(g) *(Dilution Vol)) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (Bq)) * (conversion dpm to Bq) / Density / (Ampoule Mass (g) * (Dilution Vol)) = Parent Activity (dpm/g)
(4.9357 g) * (184700 Bq) * (60 dpm/Bq) / (5.00138 g * 100 mL) = 109364.6702 dpm/mL
(4.9357 g) * (184700 Bq) * (60 dpm/Bq) / (0.9967 g/mL)/ (5.00138 g * 100 mL) = 109726.7685 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
11/02/2015	Gregory Ramsay	12.3299	500	1753-B	2705.8402 dpm/mL	11/01/2016	11/01/2017
12/27/2016	Gregory Ramsay	12.52	500	1753-C	2747.5583 dpm/mL	12/27/2016	12/27/2017

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for H-3 Standard 1753-C

v1.0.2

Instrument	RED
Analyst	GXR1
Verification Prep Date	12/27/2016

Standard Information	
Isotope	H-3
Serial Number	1753-C
Isotope Halflife	12.3200 Y
Reference Date	9/1/2015
Ref. Act. (DPM/mL)	2747.5583
Amount of Std. (mL)	2.0
Standard Prep Date	12/27/2016

Std #	Count Date	Quench Number	Gross cpm	Bkg cpm
1	12/28/2016	109.30	1802.80	49.20
2	12/28/2016	108.00	1808.20	49.20
3	12/28/2016	108.60	1832.20	49.20

Std #	Net cpm	Calculated Avg. Eff.	Standard dpm/mL	Measured dpm
1	1753.60	0.344847	2542.58	5085.16
2	1759.00	0.344847	2550.41	5100.82
3	1783.00	0.344847	2585.21	5170.41

	dpm/mL
Mean Value =	2559.40
Stdev =	22.69112461
Certificate Value* =	**2550.2**
Two sigma =	45.382
10 % of Mean =	255.940
Rule A (Pass/Fail)	**Pass**
% Recovery	100.36%
Rule B (Pass/Fail)	**Pass**
Expiration Date	**12/27/2017**

Verification Rules

Rule A = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

Rule B = The determined mean value shall be within 5% of the certificate value.

*** Certificate Value is decay corrected to Count Date.**

The analyst prepared three standard verification sources for H-3 source 1753-C by transferring 2 mL portions of the standard into glass liquid scintillation vials. 10 mL of Ecoscint Ultra liquid scintillation cocktail was added to each vial and the vials were shaken to mix. A Blank vial was prepared in a similar fashion using 10 mL of Ecoscint Ultra liquid scintillation cocktail. The standard verification vials and background source were dark adapted for at least two hours and counted on LSCRED for H-3 source standard verification. The H-3 efficiency calibration which was used for verification calculations was performed on 12/27/2016 using H-3 source 1712-A.

Standard results for each verification source was calculated as follows:

Source dpm/mL = (A - B)/(C)(D)

where:

A = Ver. source cpm,
B = BKG cpm,
C = System efficiency (cpm/dpm), and
D = volume used for standard verification.

RAD-M-001

1/2/17

12/28/16

July 17, 2017

Runlogs

Instrument Run Log

Instrument Type: LSC **Batch ID: 1675961**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
425384005	SAMPLE	CXS7	LSCGREEN	JUL-04-17 11:17:28	DONE	15mL Ecoscint GL/5mL DI H2O/AG 1x8 Resin	01-JUL-17 00:00
425384006	SAMPLE	CXS7	LSCGREEN	JUL-04-17 11:38:45	DONE	15mL Ecoscint GL/5mL DI H2O/AG 1x8 Resin	01-JUL-17 00:00
425451001	SAMPLE	CXS7	LSCGREEN	JUL-04-17 12:00:05	DONE	15mL Ecoscint GL/5mL DI H2O/AG 1x8 Resin	01-JUL-17 00:00
425451002	SAMPLE	CXS7	LSCGREEN	JUL-04-17 12:21:24	DONE	15mL Ecoscint GL/5mL DI H2O/AG 1x8 Resin	01-JUL-17 00:00
425451003	SAMPLE	CXS7	LSCGREEN	JUL-04-17 12:42:41	DONE	15mL Ecoscint GL/5mL DI H2O/AG 1x8 Resin	01-JUL-17 00:00
425454001	SAMPLE	CXS7	LSCGREEN	JUL-04-17 13:04:00	DONE	15mL Ecoscint GL/5mL DI H2O/AG 1x8 Resin	01-JUL-17 00:00
425454002	SAMPLE	CXS7	LSCGREEN	JUL-04-17 13:25:18	DONE	15mL Ecoscint GL/5mL DI H2O/AG 1x8 Resin	01-JUL-17 00:00
425454003	SAMPLE	CXS7	LSCGREEN	JUL-04-17 13:46:36	DONE	15mL Ecoscint GL/5mL DI H2O/AG 1x8 Resin	01-JUL-17 00:00
425529001	SAMPLE	CXS7	LSCGREEN	JUL-04-17 14:07:56	DONE	15mL Ecoscint GL/5mL DI H2O/AG 1x8 Resin	01-JUL-17 00:00
425529002	SAMPLE	CXS7	LSCGREEN	JUL-04-17 14:29:15	DONE	15mL Ecoscint GL/5mL DI H2O/AG 1x8 Resin	01-JUL-17 00:00
425606001	SAMPLE	CXS7	LSCGREEN	JUL-04-17 14:50:36	DONE	15mL Ecoscint GL/5mL DI H2O/AG 1x8 Resin	01-JUL-17 00:00
425727001	SAMPLE	CXS7	LSCGREEN	JUL-04-17 15:12:02	DONE	15mL Ecoscint GL/5mL DI H2O/AG 1x8 Resin	01-JUL-17 00:00
425783004	SAMPLE	CXS7	LSCGREEN	JUL-04-17 15:33:22	DONE	15mL Ecoscint GL/5mL DI H2O/AG 1x8 Resin	01-JUL-17 00:00
1203815895	MB	CXS7	LSCGREEN	JUL-04-17 15:54:42	DONE	15mL Ecoscint GL/5mL DI H2O/AG 1x8 Resin	01-JUL-17 00:00
1203815896	DUP	CXS7	LSCGREEN	JUL-04-17 16:16:03	DONE	15mL Ecoscint GL/5mL DI H2O/AG 1x8 Resin	01-JUL-17 00:00
1203815897	LCS	CXS7	LSCGREEN	JUL-05-17 07:49:29	DONE	15mL Ecoscint GL/5mL DI H2O/AG 1x8 Resin	01-JUL-17 00:00

Instrument Run Log

Instrument Type: LSC **Batch ID: 1678920**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
425783002	SAMPLE	BXM4	LSCSILVER	JUL-07-17 12:00:11	DONE	10mL DW/13mL Ecoscint Ultra	01-JUL-17 00:00
425783004	SAMPLE	BXM4	LSCSILVER	JUL-07-17 12:52:15	DONE	10mL DW/13mL Ecoscint Ultra	01-JUL-17 00:00
425897001	SAMPLE	BXM4	LSCSILVER	JUL-07-17 13:44:20	DONE	10mL DW/13mL Ecoscint Ultra	01-JUL-17 00:00
425897002	SAMPLE	BXM4	LSCSILVER	JUL-07-17 14:36:22	DONE	10mL DW/13mL Ecoscint Ultra	01-JUL-17 00:00
426019001	SAMPLE	BXM4	LSCSILVER	JUL-07-17 15:28:26	DONE	10mL DW/13mL Ecoscint Ultra	01-JUL-17 00:00
426019002	SAMPLE	BXM4	LSCSILVER	JUL-07-17 16:20:29	DONE	10mL DW/13mL Ecoscint Ultra	01-JUL-17 00:00
426288001	SAMPLE	BXM4	LSCSILVER	JUL-07-17 17:12:33	DONE	10mL DW/13mL Ecoscint Ultra	01-JUL-17 00:00
426288003	SAMPLE	BXM4	LSCSILVER	JUL-07-17 18:04:36	DONE	10mL DW/13mL Ecoscint Ultra	01-JUL-17 00:00
426288005	SAMPLE	BXM4	LSCSILVER	JUL-07-17 18:56:39	DONE	10mL DW/13mL Ecoscint Ultra	01-JUL-17 00:00
426288008	SAMPLE	BXM4	LSCSILVER	JUL-07-17 19:48:41	DONE	10mL DW/13mL Ecoscint Ultra	01-JUL-17 00:00
426288010	SAMPLE	BXM4	LSCSILVER	JUL-07-17 20:40:44	DONE	10mL DW/13mL Ecoscint Ultra	01-JUL-17 00:00
426411002	SAMPLE	BXM4	LSCSILVER	JUL-07-17 21:32:05	DONE	10mL DW/13mL Ecoscint Ultra	01-JUL-17 00:00
426411003	SAMPLE	BXM4	LSCSILVER	JUL-07-17 21:46:13	DONE	10mL DW/13mL Ecoscint Ultra	01-JUL-17 00:00
426495003	SAMPLE	BXM4	LSCSILVER	JUL-07-17 22:38:15	DONE	10mL DW/13mL Ecoscint Ultra	01-JUL-17 00:00
426496005	SAMPLE	BXM4	LSCSILVER	JUL-07-17 23:30:18	DONE	10mL DW/13mL Ecoscint Ultra	01-JUL-17 00:00
426496007	SAMPLE	BXM4	LSCSILVER	JUL-08-17 00:22:20	DONE	10mL DW/13mL Ecoscint Ultra	01-JUL-17 00:00
426496009	SAMPLE	BXM4	LSCSILVER	JUL-08-17 02:29:33	DONE	10mL DW/13mL Ecoscint Ultra	01-JUL-17 00:00
426496011	SAMPLE	BXM4	LSCSILVER	JUL-08-17 03:21:07	DONE	10mL DW/13mL Ecoscint Ultra	01-JUL-17 00:00
426501001	SAMPLE	BXM4	LSCSILVER	JUL-08-17 04:13:10	DONE	10mL DW/13mL Ecoscint Ultra	01-JUL-17 00:00
426501003	SAMPLE	BXM4	LSCSILVER	JUL-08-17 05:05:12	DONE	10mL DW/13mL Ecoscint Ultra	01-JUL-17 00:00
1203822933	MB	BXM4	LSCSILVER	JUL-08-17 05:57:15	DONE	10mL DW/13mL Ecoscint Ultra	01-JUL-17 00:00
1203822934	DUP	BXM4	LSCSILVER	JUL-08-17 06:49:15	DONE	10mL DW/13mL Ecoscint Ultra	01-JUL-17 00:00
1203822935	MS	BXM4	LSCSILVER	JUL-08-17 07:41:18	DONE	10mL DW/13mL Ecoscint Ultra	01-JUL-17 00:00
1203822936	LCS	BXM4	LSCSILVER	JUL-08-17 08:33:21	DONE	10mL DW/13mL Ecoscint Ultra	01-JUL-17 00:00