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Automated Report

Technical Report for

Atlantic Richfield Company

SCNJL: 4101 Post Road, Trainer, PA

BP028.186.00

SGS Accutest Job Number: JC37217

Sampling Date: 02/14/17

Report to:

Sovereign Consulting Incorporated
111-A North Gold Drive
Robbinsville, NJ 08691
jfisher@sovcon.com

ATTN: Jason Fisher

Total number of pages in report: 179

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Kelly Patterson 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

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SGS Accutest

Sample Summary

Atlantic Richfield Company

Job No: JC37217

SCNJL: 4101 Post Road, Trainer, PA
Project No: BP028.186.00

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC37217-1	02/14/17	15:50	DW	02/15/17	AIR	Ambient Air Comp.	OAS-07

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	Atlantic Richfield Company	**Job No**	JC37217
Site:	SCNJL: 4101 Post Road, Trainer, PA	**Report Date**	3/1/2017 12:50:38 PM

On 02/15/2017, 1 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS Accutest. A SGS Accutest Job Number of JC37217 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method TO-15

Matrix: AIR **Batch ID:** V5W909

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC37214-2DUP were used as the QC samples indicated.

SGS Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS Accutest is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS Accutest indicated via signature on the report cover

Summary of Hits

Job Number: JC37217
Account: Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA
Collected: 02/14/17

3

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC37217-1	**OAS-07**					
Benzene		0.42	0.20	0.031	ppbv	TO-15
p-Dichlorobenzene		0.12 J	0.20	0.027	ppbv	TO-15
Methyl ethyl ketone		0.55	0.20	0.048	ppbv	TO-15
Tetrachloroethylene		0.11	0.040	0.023	ppbv	TO-15
Toluene		0.37	0.20	0.012	ppbv	TO-15
Xylenes (total)		0.19 J	0.20	0.051	ppbv	TO-15
Benzene		1.3	0.64	0.099	ug/m3	TO-15
p-Dichlorobenzene		0.72 J	1.2	0.16	ug/m3	TO-15
Methyl ethyl ketone		1.6	0.59	0.14	ug/m3	TO-15
Tetrachloroethylene		0.75	0.27	0.16	ug/m3	TO-15
Toluene		1.4	0.75	0.045	ug/m3	TO-15
Xylenes (total)		0.83 J	0.87	0.22	ug/m3	TO-15

Sample Results

Report of Analysis

SGS Accutest

Report of Analysis

Client Sample ID:	OAS-07		
Lab Sample ID:	JC37217-1	**Date Sampled:**	02/14/17
Matrix:	AIR - Ambient Air Comp. Summa ID: M158	**Date Received:**	02/15/17
Method:	TO-15	**Percent Solids:**	n/a
Project:	SCNJL: 4101 Post Road, Trainer, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5W22951.D	1.48	02/24/17	LM	n/a	n/a	V5W909
Run #2							

	Initial Volume
Run #1	592 ml
Run #2	

VOA Special List

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	MDL	Units
71-43-2	78.11	Benzene	0.42	0.20	0.031	ppbv		1.3	0.64	0.099	ug/m3
75-15-0	76.14	Carbon disulfide	ND	0.20	0.031	ppbv		ND	0.62	0.097	ug/m3
108-90-7	112.6	Chlorobenzene	ND	0.20	0.056	ppbv		ND	0.92	0.26	ug/m3
67-66-3	119.4	Chloroform	ND	0.20	0.017	ppbv		ND	0.98	0.083	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	0.20	0.015	ppbv		ND	0.81	0.061	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	0.20	0.021	ppbv		ND	0.79	0.083	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	0.20	0.042	ppbv		ND	1.5	0.32	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	0.20	0.018	ppbv		ND	0.81	0.073	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	0.20	0.045	ppbv		ND	0.72	0.16	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	0.20	0.020	ppbv		ND	1.2	0.12	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	0.20	0.016	ppbv		ND	1.2	0.096	ug/m3
106-46-7	147	p-Dichlorobenzene	0.12	0.20	0.027	ppbv	J	0.72	1.2	0.16	ug/m3
100-41-4	106.2	Ethylbenzene	ND	0.20	0.042	ppbv		ND	0.87	0.18	ug/m3
98-82-8	120	Isopropylbenzene	ND	0.20	0.047	ppbv		ND	0.98	0.23	ug/m3
78-93-3	72.11	Methyl ethyl ketone	0.55	0.20	0.048	ppbv		1.6	0.59	0.14	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	ND	0.20	0.020	ppbv		ND	0.72	0.072	ug/m3
91-20-3	128.17	Naphthalene	ND	0.20	0.056	ppbv		ND	1.0	0.29	ug/m3
100-42-5	104.1	Styrene	ND	0.20	0.015	ppbv		ND	0.85	0.064	ug/m3
71-55-6	133.4	1,1,1-Trichloroethane	ND	0.20	0.024	ppbv		ND	1.1	0.13	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	ND	0.20	0.015	ppbv		ND	0.98	0.074	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	ND	0.20	0.045	ppbv		ND	0.98	0.22	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	ND	0.20	0.053	ppbv		ND	0.61	0.16	ug/m3
127-18-4	165.8	Tetrachloroethylene	0.11	0.040	0.023	ppbv		0.75	0.27	0.16	ug/m3
108-88-3	92.14	Toluene	0.37	0.20	0.012	ppbv		1.4	0.75	0.045	ug/m3
79-01-6	131.4	Trichloroethylene	ND	0.040	0.019	ppbv		ND	0.21	0.10	ug/m3
1330-20-7	106.2	Xylenes (total)	0.19	0.20	0.051	ppbv	J	0.83	0.87	0.22	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	96%		65-128%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Summa Canister and Flow Controller Log
- Sample Tracking Chronicle
- Internal Chain of Custody
- 2016 MDL Study - Method: TO-15

ACCUTEST Laboratories

AIR

CHAIN OF CUSTODY

Air Sampling Field Data Sheet

FED-EX Tracking #	Bottle Order Control #
Lab Quote #	Lab Job # JC37217

PAGE 1 OF 1

Client / Reporting Information

Company Name: Sovereign Consulting Inc	Project Name: BP Trainer
Address: 111-A North Gold Drive	Street: 4101 Post Rd
City State Zip: Robbinsville, NJ 08691	City: Trainer State: PA
Project Contact: Jason Fisher E-mail: jfisher@sovcon.com	Project #: BP028.186-00
Phone #: 609-259-8200 Fax #: 609-259-8288	Client Purchase Order # / Incident # -
Sampler(s) Name(s)	

Weather Parameters

Temperature (Fahrenheit) Start: Maximum: Stop: Minimum:

Atmoshpheric Pressure (inches of Hg) Start: Maximum: Stop: Minimum:

Other weather comment:

Lab Sample #	Field ID / Point of Collection	Air Type: Indoor(I) Soil Vap(SV) Ambient(A)	Sampling Equipment Info: Canister Serial #	Canister Size 6L or 1L	Flow Controller Serial #	Start Sampling Information: Date	Time (24hr clock)	Canister Pressure ("Hg)	Interior Temp (F)	Sampler Init.	Stop Sampling Information: Date	Time (24hr clock)	Canister Pressure ("Hg)	Interior Temp (F)	Sampler Init.	Requested Analysis: VTO15SL	EDB by TO-15 SIM
1	OAS-07	A	M158	6	MC194	2/14/17	0750	30	30	DLW	2/14/17	1550	8	41	DLW	X	

Turnaround Time (Business days)

Standard	15 Day	
	10 Day	X
	5 Day	
	3 Day	
	2 Day	
	1 Day	
	Other	

Approved By: _____

Date: _____

Data Deliverable Information

All TO-15 is mandatory Full T1

Comm A	
Comm B	
Reduced T2	
Full T1	X
Other:	

Comments / Remarks

INITIAL ASESSMENT

LABEL VERIFICATION

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Laboratory:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		1	2		2
Relinquished by: 3	Date Time: 2/14/17	Received By: 3	Relinquished By: 4	Date Time: 2-15-17	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5 2/15/17 0925	Custody Seal # INTACT 130		

5.1

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JC37217: Chain of Custody
Page 1 of 2

SGS Accutest Sample Receipt Summary

Job Number: JC37217 **Client:** _____ **Project:** _____

Date / Time Received: 2/15/2017 10:35:00 AM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C:

Cooler Temps (Corrected) °C:

Cooler Security	Y	or N		Y	or N
1. Custody Seals Present:	☑	☐	3. COC Present:	☑	☐
2. Custody Seals Intact:	☑	☐	4. Smpl Dates/Time OK	☑	☐

Cooler Temperature	Y	or N
1. Temp criteria achieved:	☐	☐
2. Cooler temp verification:	N/A	
3. Cooler media:	N/A	
4. No. Coolers:	N/A	

Quality Control Preservation	Y	or N	N/A
1. Trip Blank present / cooler:	☐	☑	☐
2. Trip Blank listed on COC:	☐	☑	☐
3. Samples preserved properly:	☑	☐	
4. VOCs headspace free:	☐	☐	☑

Sample Integrity - Documentation	Y	or N
1. Sample labels present on bottles:	☑	☐
2. Container labeling complete:	☑	☐
3. Sample container label / COC agree:	☑	☐

Sample Integrity - Condition	Y	or N
1. Sample recvd within HT:	☑	☐
2. All containers accounted for:	☑	☐
3. Condition of sample:	Intact	

Sample Integrity - Instructions	Y	or N	N/A
1. Analysis requested is clear:	☑	☐	
2. Bottles received for unspecified tests	☐	☑	
3. Sufficient volume recvd for analysis:	☑	☐	
4. Compositing instructions clear:	☐	☐	☑
5. Filtering instructions clear:	☐	☐	☑

Comments

SM089-02
Rev. Date 12/1/16

5.1

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JC37217: Chain of Custody
Page 2 of 2

Summa Canister and Flow Controller Log

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA
Received: 02/15/17

SUMMA CANISTERS

Shipping							Receiving						
Summa ID	L	Vac " Hg	Date Out	By	SCC Batch	SCC FileID	Sample Number	Date In	By	Vac " Hg	Pres psig	Final psig	Dil Fact
M158	6	29.4	02/10/17	PC	CP8988	5W22695A.D	JC37217-1	02/15/17	PC	8		1.2	1.48

FLOW CONTROLLERS / OTHER

Shipping					Receiving				
Flow Crtl ID	Date Out	By	cc/ min	Time hrs.	Date In	By	cc/ min	Flow RPD	Equipment Type
MC194	02/10/17	PC	9.4	8	02/15/17	RD	9.5	1.1	Flow Controller

SGS Accutest Bottle Order(s):
KP-2/10/2017-292

Prep Date	Room Temp(F)	Bar Pres "Hg
02/10/17	70	29.92

Internal Sample Tracking Chronicle

Atlantic Richfield Company

Job No: JC37217

SCNJL: 4101 Post Road, Trainer, PA
Project No: BP028.186.00

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC37217-1	Collected: 14-FEB-17 15:50 By: DW		Received: 15-FEB-17 By: AS			
OAS-07						
JC37217-1	TO-15	24-FEB-17 06:39	LM			VTO15SL

SGS Accutest Internal Chain of Custody

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA
Received: 02/15/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC37217-1.1	Andrew Marcelino	Air Storage	02/15/17 15:05	Return to Storage
JC37217-1.1	Air Storage	Luis Mejia	02/23/17 17:41	Retrieve from Storage
JC37217-1.1	Luis Mejia	GCMS5W	02/23/17 17:41	Load on Instrument

Accutest Laboratories Annual Method Detection Limit Determination
Dayton, NJ Facility

Method: TO-15 (VTO14/15)
Instrument(s): GCMSW, GCMS3W, GCMS5W
Analyst: Pooled

Matrix: AIR
Quant Factor: 1.00
Study Period: January,2016

			Replicate Spikes											
Cmpd./Element/Parm. Name	Analysis Date	Spike ppbv	R1 ppbv	R2 ppbv	R3 ppbv	R4 ppbv	R5 ppbv	R6 ppbv	R7 ppbv	X-Bar ppbv	X-Bar %Recov.	STD.Dev. ppbv	MDL	Spike/MDL Ratio
Acetone	8-Jan-16	0.1	0.159	0.136	0.161	0.150	0.137	0.147	0.133	0.146	146.04	0.012	0.036	2.76
Acrolein	7-Jan-16	0.1	0.056	0.062	0.053	0.044	0.054	0.045	0.062	0.054	53.45	0.007	0.023	4.38
Acrylonitrile	7-Jan-16	0.1	0.051	0.063	0.064	0.045	0.067	0.062	0.058	0.059	58.54	0.008	0.025	4.00
Acetonitrile	4-Jan-16	0.2	0.249	0.155	0.211	0.182	0.200	0.233	0.259	0.213	106.29	0.037	0.117	1.71
1,3-Butadiene	8-Jan-16	0.1	0.110	0.116	0.105	0.113	0.094	0.121	0.104	0.109	109.08	0.009	0.028	3.62
Benzene	4-Jan-16	0.2	0.204	0.189	0.184	0.208	0.209	0.193	0.204	0.199	99.36	0.010	0.031	6.38
Bromobenzene	8-Jan-16	0.1	0.091	0.089	0.086	0.089	0.074	0.091	0.078	0.085	85.29	0.007	0.021	4.75
Bromodichloromethane	4-Jan-16	0.2	0.208	0.190	0.189	0.215	0.215	0.209	0.220	0.207	103.27	0.012	0.039	5.19
Bromoform	8-Jan-16	0.1	0.092	0.088	0.086	0.087	0.076	0.083	0.082	0.085	84.96	0.005	0.016	6.35
Bromomethane	5-Jan-16	0.1	0.097	0.101	0.100	0.094	0.094	0.110	0.094	0.099	98.57	0.006	0.018	5.42
Bromoethene	8-Jan-16	0.1	0.102	0.106	0.108	0.100	0.095	0.113	0.102	0.103	103.44	0.006	0.018	5.45
n-Butane	8-Jan-16	0.2	0.181	0.224	0.212	0.191	0.237	0.178	0.165	0.198	99.11	0.026	0.083	2.42
Benzyl Chloride	6-Jan-16	0.2	0.108	0.108	0.098	0.104	0.116	0.118	0.096	0.107	53.39	0.009	0.027	7.47
n-Butylbenzene	4-Jan-16	0.2	0.101	0.091	0.085	0.101	0.100	0.088	0.103	0.096	47.80	0.007	0.023	8.72
sec-Butylbenzene	8-Jan-16	0.1	0.082	0.070	0.076	0.070	0.063	0.078	0.074	0.073	73.29	0.006	0.019	5.21
tert-Butylbenzene	5-Jan-16	0.1	0.063	0.060	0.048	0.063	0.066	0.069	0.065	0.062	61.95	0.007	0.021	4.87
Carbon disulfide	7-Jan-16	0.1	0.096	0.108	0.096	0.096	0.083	0.083	0.080	0.092	91.79	0.010	0.031	3.19
Chlorobenzene	4-Jan-16	0.2	0.190	0.169	0.166	0.198	0.211	0.190	0.209	0.191	95.26	0.018	0.056	3.60
Chlorodifluoromethane	6-Jan-16	0.2	0.145	0.159	0.170	0.130	0.177	0.184	0.157	0.160	80.12	0.019	0.059	3.40
Chloroethane	8-Jan-16	0.1	0.131	0.108	0.113	0.104	0.100	0.125	0.110	0.113	112.89	0.011	0.036	2.81
Chloroform	5-Jan-16	0.1	0.110	0.097	0.098	0.105	0.099	0.106	0.108	0.103	103.33	0.005	0.017	6.06
Chloromethane	6-Jan-16	0.2	0.126	0.156	0.156	0.170	0.160	0.179	0.152	0.157	78.42	0.017	0.052	3.83
3-Chloropropene	7-Jan-16	0.1	0.051	0.068	0.057	0.046	0.043	0.054	0.046	0.052	52.15	0.009	0.027	3.76
2-Chlorotoluene	7-Jan-16	0.1	0.052	0.063	0.055	0.051	0.050	0.047	0.048	0.052	52.31	0.005	0.017	5.93
Carbon tetrachloride	4-Jan-16	0.2	0.203	0.191	0.189	0.204	0.219	0.204	0.204	0.202	101.05	0.010	0.031	6.42
Cyclohexane	7-Jan-16	0.1	0.101	0.112	0.104	0.105	0.100	0.101	0.096	0.103	102.71	0.005	0.016	6.19
1,1-Dichloroethane	8-Jan-16	0.1	0.111	0.108	0.102	0.109	0.098	0.111	0.106	0.106	106.24	0.005	0.015	6.59
1,1-Dichloroethylene	6-Jan-16	0.2	0.188	0.177	0.180	0.184	0.189	0.194	0.176	0.184	92.03	0.007	0.021	9.56
1,2-Dibromoethane	4-Jan-16	0.2	0.181	0.161	0.153	0.177	0.188	0.188	0.179	0.176	87.73	0.013	0.042	4.77
1,2-Dichloroethane	8-Jan-16	0.1	0.099	0.094	0.099	0.099	0.084	0.097	0.091	0.095	94.66	0.006	0.018	5.70
1,2-Dichloropropane	7-Jan-16	0.1	0.069	0.082	0.071	0.085	0.070	0.071	0.068	0.074	73.88	0.007	0.022	4.57

Detection limits derived using the method described in 40 CFR Part 136, Appendix B

Method: TO-15 (VTO14/15)
Instrument(s): GCMSW, GCMS3W, GCMS5W
Analyst: Pooled

Matrix: AIR
Quant Factor: 1.00
Study Period: January,2016

			Replicate Spikes											
Cmpd./Element/Parm. Name	Analysis Date	Spike ppbv	R1 ppbv	R2 ppbv	R3 ppbv	R4 ppbv	R5 ppbv	R6 ppbv	R7 ppbv	X-Bar ppbv	X-Bar %Recov.	STD.Dev. ppbv	MDL	Spike/MDL Ratio
1,3-Dichloropropane	4-Jan-16	0.2	0.196	0.174	0.169	0.196	0.208	0.192	0.204	0.191	95.65	0.015	0.046	4.39
1,4-Dioxane	6-Jan-16	0.2	0.103	0.095	0.091	0.100	0.116	0.132	0.102	0.106	52.76	0.014	0.045	4.45
Dichlorodifluoromethane	7-Jan-16	0.1	0.086	0.093	0.083	0.087	0.079	0.076	0.076	0.083	82.77	0.006	0.019	5.25
Dichlorofluoromethane	4-Jan-16	0.2	0.216	0.205	0.197	0.215	0.222	0.215	0.219	0.213	106.41	0.009	0.027	7.31
Dibromochloromethane	4-Jan-16	0.2	0.196	0.173	0.170	0.204	0.216	0.200	0.198	0.194	97.06	0.017	0.053	3.81
Dibromomethane	7-Jan-16	0.1	0.066	0.076	0.065	0.067	0.062	0.061	0.059	0.065	65.02	0.006	0.018	5.51
trans-1,2-Dichloroethylene	7-Jan-16	0.1	0.082	0.098	0.085	0.090	0.074	0.082	0.072	0.083	83.23	0.009	0.028	3.57
cis-1,2-Dichloroethylene	5-Jan-16	0.1	0.088	0.078	0.079	0.078	0.094	0.078	0.076	0.081	81.42	0.007	0.021	4.75
cis-1,3-Dichloropropene	5-Jan-16	0.1	0.078	0.076	0.081	0.080	0.076	0.090	0.083	0.081	80.60	0.005	0.015	6.60
m-Dichlorobenzene	8-Jan-16	0.1	0.088	0.078	0.079	0.085	0.069	0.077	0.077	0.079	79.01	0.006	0.020	5.14
o-Dichlorobenzene	8-Jan-16	0.1	0.088	0.084	0.081	0.081	0.072	0.082	0.076	0.081	80.53	0.005	0.016	6.25
p-Dichlorobenzene	6-Jan-16	0.2	0.125	0.126	0.112	0.117	0.127	0.136	0.113	0.122	61.09	0.009	0.027	7.43
trans-1,3-Dichloropropene	8-Jan-16	0.1	0.080	0.072	0.067	0.071	0.062	0.073	0.066	0.070	70.08	0.006	0.018	5.50
Di-Isopropyl ether	5-Jan-16	0.1	0.066	0.073	0.076	0.048	0.073	0.077	0.066	0.068	68.33	0.010	0.031	3.19
2,3-Dimethylpentane	4-Jan-16	0.2	0.245	0.252	0.248	0.240	0.268	0.248	0.251	0.250	125.13	0.009	0.027	7.35
2,4-Dimethylpentane	7-Jan-16	0.1	0.066	0.072	0.064	0.066	0.057	0.060	0.055	0.063	62.83	0.006	0.019	5.34
Ethanol	6-Jan-16	0.2	0.282	0.279	0.309	0.282	0.341	0.307	0.277	0.297	148.31	0.024	0.075	2.67
Ethylbenzene	4-Jan-16	0.2	0.194	0.174	0.169	0.196	0.206	0.195	0.194	0.190	94.84	0.013	0.042	4.74
Ethyl Acetate	8-Jan-16	0.2	0.166	0.130	0.196	0.147	0.129	0.159	0.168	0.156	78.22	0.024	0.075	2.68
4-Ethyltoluene	8-Jan-16	0.1	0.087	0.082	0.082	0.083	0.072	0.088	0.078	0.082	81.67	0.005	0.017	5.99
Freon 113	7-Jan-16	0.1	0.074	0.084	0.078	0.081	0.070	0.067	0.067	0.074	74.39	0.007	0.021	4.67
Freon 114	4-Jan-16	0.2	0.205	0.205	0.195	0.218	0.225	0.208	0.217	0.211	105.24	0.010	0.031	6.37
Freon 115	5-Jan-16	0.1	0.096	0.084	0.084	0.087	0.088	0.078	0.077	0.085	84.74	0.006	0.020	4.98
Freon 123	4-Jan-16	0.2	0.204	0.196	0.186	0.204	0.218	0.204	0.205	0.202	101.20	0.010	0.031	6.52
Freon 123A	5-Jan-16	0.1	0.091	0.091	0.106	0.096	0.098	0.103	0.098	0.098	97.65	0.006	0.018	5.65
Freon 141B	8-Jan-16	0.1	0.111	0.105	0.104	0.112	0.101	0.116	0.120	0.110	109.86	0.007	0.022	4.63
Freon 142B	7-Jan-16	0.1	0.082	0.091	0.086	0.085	0.075	0.076	0.074	0.081	81.35	0.006	0.020	4.94
Freon 143a	8-Jan-16	0.1	0.125	0.143	0.137	0.120	0.129	0.123	0.124	0.129	128.70	0.008	0.027	3.78
Freon 152A	8-Jan-16	0.2	0.240	0.273	0.269	0.252	0.252	0.242	0.260	0.255	127.66	0.013	0.040	5.07
Heptane	8-Jan-16	0.1	0.079	0.087	0.080	0.096	0.077	0.087	0.081	0.084	83.87	0.006	0.020	4.96
Hexachlorobutadiene	8-Jan-16	0.1	0.085	0.085	0.079	0.083	0.068	0.073	0.079	0.079	78.76	0.007	0.020	4.93
Hexachloroethane	8-Jan-16	0.1	0.079	0.077	0.074	0.074	0.061	0.075	0.071	0.073	73.25	0.006	0.019	5.34
Hexane	4-Jan-16	0.2	0.178	0.177	0.179	0.195	0.183	0.171	0.182	0.181	90.43	0.007	0.023	8.85
2-Hexanone	6-Jan-16	0.2	0.087	0.098	0.094	0.102	0.111	0.121	0.079	0.099	49.46	0.014	0.045	4.46

Detection limits derived using the method described in 40 CFR Part 136, Appendix B

Method: TO-15 (VTO14/15)
Instrument(s): GCMSW, GCMS3W, GCMS5W
Analyst: Pooled

Matrix: AIR
Quant Factor: 1.00
Study Period: January,2016

			Replicate Spikes											
Cmpd./Element/Parm. Name	Analysis Date	Spike ppbv	R1 ppbv	R2 ppbv	R3 ppbv	R4 ppbv	R5 ppbv	R6 ppbv	R7 ppbv	X-Bar ppbv	X-Bar %Recov.	STD.Dev. ppbv	MDL	Spike/MDL Ratio
Iodomethane	7-Jan-16	0.1	0.073	0.083	0.074	0.074	0.065	0.067	0.064	0.071	71.37	0.007	0.021	4.74
Isopropylbenzene	4-Jan-16	0.2	0.194	0.173	0.165	0.197	0.205	0.199	0.198	0.190	95.03	0.015	0.047	4.26
Isopropyl Alcohol	8-Jan-16	0.2	0.345	0.388	0.410	0.398	0.309	0.414	0.462	0.390	194.78	0.050	0.156	1.28
p-Isopropyltoluene	4-Jan-16	0.2	0.131	0.116	0.114	0.133	0.138	0.124	0.137	0.128	63.81	0.010	0.031	6.47
Methylene chloride	7-Jan-16	0.1	0.074	0.084	0.079	0.075	0.063	0.071	0.063	0.073	72.69	0.008	0.025	4.02
Methyl ethyl ketone	6-Jan-16	0.2	0.119	0.114	0.106	0.116	0.133	0.153	0.118	0.123	61.36	0.015	0.048	4.14
Methyl Isobutyl Ketone	4-Jan-16	0.2	0.145	0.110	0.140	0.160	0.149	0.163	0.136	0.143	71.60	0.018	0.055	3.64
Methyl Tert Butyl Ether	4-Jan-16	0.2	0.183	0.173	0.177	0.187	0.189	0.180	0.188	0.183	91.25	0.006	0.020	10.16
Methylmethacrylate	4-Jan-16	0.2	0.142	0.115	0.136	0.151	0.150	0.148	0.146	0.141	70.56	0.013	0.040	5.00
Naphthalene	4-Jan-16	0.2	0.106	0.090	0.067	0.108	0.124	0.097	0.103	0.100	49.74	0.018	0.056	3.55
Nonane	4-Jan-16	0.2	0.166	0.145	0.142	0.166	0.170	0.174	0.166	0.161	80.63	0.013	0.039	5.09
Octane	4-Jan-16	0.2	0.188	0.169	0.160	0.197	0.203	0.195	0.191	0.186	92.94	0.016	0.049	4.08
Pentane	8-Jan-16	0.2	0.184	0.183	0.195	0.173	0.155	0.161	0.179	0.176	87.75	0.014	0.044	4.54
n-Propylbenzene	8-Jan-16	0.1	0.081	0.078	0.079	0.072	0.062	0.077	0.070	0.074	74.31	0.007	0.021	4.75
Propylene	5-Jan-16	0.1	0.174	0.185	0.160	0.172	0.158	0.159	0.161	0.167	166.86	0.010	0.032	3.09
Styrene	8-Jan-16	0.1	0.081	0.078	0.079	0.081	0.067	0.076	0.077	0.077	76.91	0.005	0.015	6.50
1,1,1-Trichloroethane	4-Jan-16	0.2	0.196	0.186	0.194	0.201	0.208	0.200	0.207	0.199	99.46	0.008	0.024	8.50
1,1,1,2-Tetrachloroethane	7-Jan-16	0.1	0.061	0.071	0.067	0.063	0.062	0.061	0.058	0.063	63.22	0.004	0.014	7.23
1,1,2,2-Tetrachloroethane	7-Jan-16	0.1	0.063	0.074	0.061	0.067	0.059	0.063	0.061	0.064	64.00	0.005	0.016	6.21
1,1,2-Trichloroethane	4-Jan-16	0.2	0.201	0.174	0.176	0.205	0.202	0.195	0.193	0.192	96.16	0.012	0.039	5.16
1,2,4-Trichlorobenzene	4-Jan-16	0.2	0.140	0.105	0.083	0.119	0.125	0.119	0.120	0.116	57.86	0.018	0.056	3.58
1,2,3-Trichloropropane	5-Jan-16	0.1	0.079	0.082	0.092	0.078	0.088	0.079	0.090	0.084	84.06	0.006	0.018	5.50
1,2,4-Trimethylbenzene	8-Jan-16	0.1	0.079	0.076	0.076	0.080	0.067	0.082	0.074	0.076	76.27	0.005	0.015	6.59
1,3,5-Trimethylbenzene	4-Jan-16	0.2	0.169	0.154	0.150	0.186	0.187	0.171	0.168	0.169	84.52	0.014	0.045	4.46
2,2,4-Trimethylpentane	4-Jan-16	0.2	0.207	0.199	0.192	0.211	0.213	0.210	0.207	0.205	102.70	0.007	0.023	8.79
Tertiary Butyl Alcohol	4-Jan-16	0.2	0.194	0.177	0.162	0.203	0.208	0.199	0.206	0.193	96.34	0.017	0.053	3.77
Tetrachloroethylene	7-Jan-16	0.1	0.061	0.074	0.063	0.066	0.059	0.057	0.052	0.062	61.60	0.007	0.023	4.36
Tetrahydrofuran	6-Jan-16	0.2	0.100	0.103	0.094	0.102	0.117	0.137	0.104	0.108	54.15	0.014	0.045	4.41
Toluene	8-Jan-16	0.1	0.092	0.088	0.090	0.093	0.081	0.091	0.089	0.089	89.24	0.004	0.012	8.08
Trichloroethylene	7-Jan-16	0.1	0.064	0.070	0.061	0.071	0.056	0.060	0.057	0.063	62.73	0.006	0.019	5.38
Trichlorofluoromethane	7-Jan-16	0.1	0.080	0.092	0.081	0.082	0.072	0.076	0.071	0.079	79.13	0.007	0.022	4.56
Vinyl chloride	5-Jan-16	0.1	0.098	0.106	0.111	0.096	0.102	0.096	0.110	0.103	102.76	0.007	0.021	4.85
Vinyl Acetate	4-Jan-16	0.2	0.096	0.110	0.102	0.091	0.067	0.090	0.122	0.097	48.42	0.017	0.054	3.72
m,p-Xylene	4-Jan-16	0.4	0.370	0.333	0.323	0.371	0.376	0.369	0.374	0.360	89.89	0.022	0.068	5.85

Detection limits derived using the method described in 40 CFR Part 136, Appendix B

Method: TO-15 (VTO14/15)
Instrument(s): GCMSW, GCMS3W, GCMS5W
Analyst: Pooled

Matrix: AIR
Quant Factor: 1.00
Study Period: January,2016

			Replicate Spikes											
Cmpd./Element/Parm. Name	Analysis Date	Spike ppbv	R1 ppbv	R2 ppbv	R3 ppbv	R4 ppbv	R5 ppbv	R6 ppbv	R7 ppbv	X-Bar ppbv	X-Bar %Recov.	STD.Dev. ppbv	MDL	Spike/MDL Ratio
o-Xylene	4-Jan-16	0.2	0.180	0.159	0.159	0.198	0.197	0.184	0.186	0.181	90.23	0.016	0.051	3.93
TVHC As Equiv Pentane	8-Jan-16	0.1	0.112	0.108	0.109	0.130	0.112	0.113	0.104	0.113	112.51	0.008	0.026	3.90
4-Bromofluorobenzene	6-Jan-16	0.2	10.03	10.12	10.18	10.19	10.10	10.07	9.96	10.09	5045.72	0.081	0.255	0.79

Detection limits derived using the method described in 40 CFR Part 136, Appendix B

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Initial Calibration RT/ISTD Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

Method Blank Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5W909-MB	5W22934.D	1	02/23/17	LM	n/a	n/a	V5W909

The QC reported here applies to the following samples: **Method:** TO-15

JC37217-1

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
71-43-2	Benzene	ND	0.20	0.031	ppbv		ND	0.64	ug/m3
75-15-0	Carbon disulfide	ND	0.20	0.031	ppbv		ND	0.62	ug/m3
108-90-7	Chlorobenzene	ND	0.20	0.056	ppbv		ND	0.92	ug/m3
67-66-3	Chloroform	ND	0.20	0.017	ppbv		ND	0.98	ug/m3
75-34-3	1,1-Dichloroethane	ND	0.20	0.015	ppbv		ND	0.81	ug/m3
75-35-4	1,1-Dichloroethylene	ND	0.20	0.021	ppbv		ND	0.79	ug/m3
106-93-4	1,2-Dibromoethane	ND	0.20	0.042	ppbv		ND	1.5	ug/m3
107-06-2	1,2-Dichloroethane	ND	0.20	0.018	ppbv		ND	0.81	ug/m3
123-91-1	1,4-Dioxane	ND	0.20	0.045	ppbv		ND	0.72	ug/m3
541-73-1	m-Dichlorobenzene	ND	0.20	0.020	ppbv		ND	1.2	ug/m3
95-50-1	o-Dichlorobenzene	ND	0.20	0.016	ppbv		ND	1.2	ug/m3
106-46-7	p-Dichlorobenzene	ND	0.20	0.027	ppbv		ND	1.2	ug/m3
100-41-4	Ethylbenzene	ND	0.20	0.042	ppbv		ND	0.87	ug/m3
98-82-8	Isopropylbenzene	ND	0.20	0.047	ppbv		ND	0.98	ug/m3
78-93-3	Methyl ethyl ketone	ND	0.20	0.048	ppbv		ND	0.59	ug/m3
1634-04-4	Methyl Tert Butyl Ether	ND	0.20	0.020	ppbv		ND	0.72	ug/m3
91-20-3	Naphthalene	ND	0.20	0.056	ppbv		ND	1.0	ug/m3
100-42-5	Styrene	ND	0.20	0.015	ppbv		ND	0.85	ug/m3
71-55-6	1,1,1-Trichloroethane	ND	0.20	0.024	ppbv		ND	1.1	ug/m3
95-63-6	1,2,4-Trimethylbenzene	ND	0.20	0.015	ppbv		ND	0.98	ug/m3
108-67-8	1,3,5-Trimethylbenzene	ND	0.20	0.045	ppbv		ND	0.98	ug/m3
75-65-0	Tertiary Butyl Alcohol	ND	0.20	0.053	ppbv		ND	0.61	ug/m3
127-18-4	Tetrachloroethylene	ND	0.040	0.023	ppbv		ND	0.27	ug/m3
108-88-3	Toluene	ND	0.20	0.012	ppbv		ND	0.75	ug/m3
79-01-6	Trichloroethylene	ND	0.040	0.019	ppbv		ND	0.21	ug/m3
1330-20-7	Xylenes (total)	ND	0.20	0.051	ppbv		ND	0.87	ug/m3

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	87%	65-128%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
124-38-9	Carbon dioxide	3.78	32	ppbv	JN

Method Blank Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5W909-MB	5W22934.D	1	02/23/17	LM	n/a	n/a	V5W909

The QC reported here applies to the following samples: **Method:**

JC37217-1

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ppbv	

Method Blank Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5W900-MB	5W22695.D	1	02/10/17	DFT	n/a	n/a	V5W900

The QC reported here applies to the following samples: **Method:** TO-15

V5W900-SCC

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
71-43-2	Benzene	ND	0.20	0.031	ppbv		ND	0.64	ug/m3
75-15-0	Carbon disulfide	ND	0.20	0.031	ppbv		ND	0.62	ug/m3
108-90-7	Chlorobenzene	ND	0.20	0.056	ppbv		ND	0.92	ug/m3
67-66-3	Chloroform	ND	0.20	0.017	ppbv		ND	0.98	ug/m3
75-34-3	1,1-Dichloroethane	ND	0.20	0.015	ppbv		ND	0.81	ug/m3
75-35-4	1,1-Dichloroethylene	ND	0.20	0.021	ppbv		ND	0.79	ug/m3
106-93-4	1,2-Dibromoethane	ND	0.20	0.042	ppbv		ND	1.5	ug/m3
107-06-2	1,2-Dichloroethane	ND	0.20	0.018	ppbv		ND	0.81	ug/m3
123-91-1	1,4-Dioxane	ND	0.20	0.045	ppbv		ND	0.72	ug/m3
541-73-1	m-Dichlorobenzene	ND	0.20	0.020	ppbv		ND	1.2	ug/m3
95-50-1	o-Dichlorobenzene	ND	0.20	0.016	ppbv		ND	1.2	ug/m3
106-46-7	p-Dichlorobenzene	ND	0.20	0.027	ppbv		ND	1.2	ug/m3
100-41-4	Ethylbenzene	ND	0.20	0.042	ppbv		ND	0.87	ug/m3
98-82-8	Isopropylbenzene	ND	0.20	0.047	ppbv		ND	0.98	ug/m3
78-93-3	Methyl ethyl ketone	ND	0.20	0.048	ppbv		ND	0.59	ug/m3
1634-04-4	Methyl Tert Butyl Ether	ND	0.20	0.020	ppbv		ND	0.72	ug/m3
91-20-3	Naphthalene	ND	0.20	0.056	ppbv		ND	1.0	ug/m3
100-42-5	Styrene	ND	0.20	0.015	ppbv		ND	0.85	ug/m3
71-55-6	1,1,1-Trichloroethane	ND	0.20	0.024	ppbv		ND	1.1	ug/m3
95-63-6	1,2,4-Trimethylbenzene	ND	0.20	0.015	ppbv		ND	0.98	ug/m3
108-67-8	1,3,5-Trimethylbenzene	ND	0.20	0.045	ppbv		ND	0.98	ug/m3
75-65-0	Tertiary Butyl Alcohol	ND	0.20	0.053	ppbv		ND	0.61	ug/m3
127-18-4	Tetrachloroethylene	ND	0.040	0.023	ppbv		ND	0.27	ug/m3
108-88-3	Toluene	ND	0.20	0.012	ppbv		ND	0.75	ug/m3
79-01-6	Trichloroethylene	ND	0.040	0.019	ppbv		ND	0.21	ug/m3
1330-20-7	Xylenes (total)	ND	0.20	0.051	ppbv		ND	0.87	ug/m3

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	92%	65-128%

Blank Spike/Blank Spike Duplicate Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5W909-BS	5W22930.D	1	02/23/17	LM	n/a	n/a	V5W909
V5W909-BSD	5W22932.D	1	02/23/17	LM	n/a	n/a	V5W909

The QC reported here applies to the following samples: **Method:** TO-15

JC37217-1

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	BSD ppbv	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	10	9.1	91	9.7	97	6	70-130/30
75-15-0	Carbon disulfide	10	10.5	105	10.9	109	4	70-130/30
108-90-7	Chlorobenzene	10	9.3	93	9.8	98	5	70-130/30
67-66-3	Chloroform	10	9.7	97	10.1	101	4	70-130/30
75-34-3	1,1-Dichloroethane	10	9.3	93	9.8	98	5	70-130/30
75-35-4	1,1-Dichloroethylene	10	9.4	94	9.8	98	4	70-130/30
106-93-4	1,2-Dibromoethane	10	10.6	106	11.1	111	5	70-130/30
107-06-2	1,2-Dichloroethane	10	10.5	105	11.1	111	6	70-130/30
123-91-1	1,4-Dioxane	10	10.0	100	10.6	106	6	70-130/30
541-73-1	m-Dichlorobenzene	10	9.9	99	10.5	105	6	70-130/30
95-50-1	o-Dichlorobenzene	10	10	100	10.6	106	6	70-130/30
106-46-7	p-Dichlorobenzene	10	10	100	10.6	106	6	70-130/30
100-41-4	Ethylbenzene	10	9.3	93	9.7	97	4	70-130/30
98-82-8	Isopropylbenzene	10	9.2	92	9.9	99	7	70-130/30
78-93-3	Methyl ethyl ketone	10	10.3	103	10.8	108	5	70-130/30
1634-04-4	Methyl Tert Butyl Ether	10	9.4	94	10	100	6	70-130/30
91-20-3	Naphthalene	10	11.7	117	13.0	130	11	70-130/30
100-42-5	Styrene	10	9.4	94	9.8	98	4	70-130/30
71-55-6	1,1,1-Trichloroethane	10	9.8	98	10.5	105	7	70-130/30
95-63-6	1,2,4-Trimethylbenzene	10	9.9	99	10.4	104	5	70-130/30
108-67-8	1,3,5-Trimethylbenzene	10	9.5	95	9.9	99	4	70-130/30
75-65-0	Tertiary Butyl Alcohol	10	8.7	87	9.2	92	6	70-130/30
127-18-4	Tetrachloroethylene	10	9.5	95	10.0	100	5	70-130/30
108-88-3	Toluene	10	9.3	93	10	100	7	70-130/30
79-01-6	Trichloroethylene	10	10	100	10.5	105	5	70-130/30
1330-20-7	Xylenes (total)	30	27.6	92	29.0	97	5	70-130/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
460-00-4	4-Bromofluorobenzene	97%	97%	65-128%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5W900-BS	5W22692.D	1	02/10/17	DFT	n/a	n/a	V5W900
V5W900-BSD	5W22693.D	1	02/10/17	DFT	n/a	n/a	V5W900

The QC reported here applies to the following samples: **Method:** TO-15

V5W900-SCC

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	BSD ppbv	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	10	8.5	85	8.7	87	2	70-130/30
75-15-0	Carbon disulfide	10	9.6	96	9.7	97	1	70-130/30
108-90-7	Chlorobenzene	10	9.0	90	9.2	92	2	70-130/30
67-66-3	Chloroform	10	9.0	90	9.2	92	2	70-130/30
75-34-3	1,1-Dichloroethane	10	8.7	87	8.9	89	2	70-130/30
75-35-4	1,1-Dichloroethylene	10	8.7	87	8.8	88	1	70-130/30
106-93-4	1,2-Dibromoethane	10	9.9	99	10.2	102	3	70-130/30
107-06-2	1,2-Dichloroethane	10	9.9	99	10.1	101	2	70-130/30
123-91-1	1,4-Dioxane	10	9.2	92	9.4	94	2	70-130/30
541-73-1	m-Dichlorobenzene	10	9.5	95	9.6	96	1	70-130/30
95-50-1	o-Dichlorobenzene	10	9.6	96	9.7	97	1	70-130/30
106-46-7	p-Dichlorobenzene	10	9.7	97	9.8	98	1	70-130/30
100-41-4	Ethylbenzene	10	8.9	89	9.0	90	1	70-130/30
98-82-8	Isopropylbenzene	10	9.0	90	9.1	91	1	70-130/30
78-93-3	Methyl ethyl ketone	10	9.6	96	9.7	97	1	70-130/30
1634-04-4	Methyl Tert Butyl Ether	10	9.0	90	9.1	91	1	70-130/30
91-20-3	Naphthalene	10	10.8	108	10.6	106	2	70-130/30
100-42-5	Styrene	10	9.0	90	9.2	92	2	70-130/30
71-55-6	1,1,1-Trichloroethane	10	9.4	94	9.6	96	2	70-130/30
95-63-6	1,2,4-Trimethylbenzene	10	9.3	93	9.4	94	1	70-130/30
108-67-8	1,3,5-Trimethylbenzene	10	9.1	91	9.2	92	1	70-130/30
75-65-0	Tertiary Butyl Alcohol	10	8.1	81	8.2	82	1	70-130/30
127-18-4	Tetrachloroethylene	10	9.0	90	9.4	94	4	70-130/30
108-88-3	Toluene	10	8.8	88	9.0	90	2	70-130/30
79-01-6	Trichloroethylene	10	9.2	92	9.5	95	3	70-130/30
1330-20-7	Xylenes (total)	30	26.5	88	26.9	90	1	70-130/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
460-00-4	4-Bromofluorobenzene	100%	99%	65-128%

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC37214-2DUP	5W22947.D	1	02/24/17	LM	n/a	n/a	V5W909
JC37214-2	5W22946.D	1	02/24/17	LM	n/a	n/a	V5W909

The QC reported here applies to the following samples: **Method:** TO-15

JC37217-1

CAS No.	Compound	JC37214-2 ppbv	Q	DUP ppbv	Q	RPD	Limits
71-43-2	Benzene	ND		ND		nc	17
75-15-0	Carbon disulfide	ND		ND		nc	11
108-90-7	Chlorobenzene	ND		ND		nc	20
67-66-3	Chloroform	ND		ND		nc	12
75-34-3	1,1-Dichloroethane	ND		ND		nc	20
75-35-4	1,1-Dichloroethylene	ND		ND		nc	20
106-93-4	1,2-Dibromoethane	ND		ND		nc	20
107-06-2	1,2-Dichloroethane	ND		ND		nc	20
123-91-1	1,4-Dioxane	ND		ND		nc	20
541-73-1	m-Dichlorobenzene	ND		ND		nc	20
95-50-1	o-Dichlorobenzene	ND		ND		nc	10
106-46-7	p-Dichlorobenzene	ND		ND		nc	20
100-41-4	Ethylbenzene	ND		ND		nc	15
98-82-8	Isopropylbenzene	ND		ND		nc	20
78-93-3	Methyl ethyl ketone	ND		ND		nc	21
1634-04-4	Methyl Tert Butyl Ether	ND		ND		nc	20
91-20-3	Naphthalene	ND		ND		nc	20
100-42-5	Styrene	ND		ND		nc	11
71-55-6	1,1,1-Trichloroethane	ND		ND		nc	20
95-63-6	1,2,4-Trimethylbenzene	ND		ND		nc	19
108-67-8	1,3,5-Trimethylbenzene	ND		ND		nc	13
75-65-0	Tertiary Butyl Alcohol	ND		ND		nc	21
127-18-4	Tetrachloroethylene	ND		ND		nc	17
108-88-3	Toluene	ND		ND		nc	20
79-01-6	Trichloroethylene	ND		ND		nc	13
1330-20-7	Xylenes (total)	ND		ND		nc	26

CAS No.	Surrogate Recoveries	DUP	JC37214-2	Limits
460-00-4	4-Bromofluorobenzene	86%	87%	65-128%

* = Outside of Control Limits.

Summa Cleaning Certification

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5W900-SCC	5W22695A.D	1	02/10/17	DFT	n/a	n/a	V5W900

The QC reported here (Summa A633) applies to the following samples: **Method:** TO-15

Batch CP8988 cleaned 01/30/17: JC37217-1(M158)

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
71-43-2	Benzene	ND	0.20	0.031	ppbv		ND	0.64	ug/m3
75-15-0	Carbon disulfide	ND	0.20	0.031	ppbv		ND	0.62	ug/m3
108-90-7	Chlorobenzene	ND	0.20	0.056	ppbv		ND	0.92	ug/m3
67-66-3	Chloroform	ND	0.20	0.017	ppbv		ND	0.98	ug/m3
75-34-3	1,1-Dichloroethane	ND	0.20	0.015	ppbv		ND	0.81	ug/m3
75-35-4	1,1-Dichloroethylene	ND	0.20	0.021	ppbv		ND	0.79	ug/m3
106-93-4	1,2-Dibromoethane	ND	0.20	0.042	ppbv		ND	1.5	ug/m3
107-06-2	1,2-Dichloroethane	ND	0.20	0.018	ppbv		ND	0.81	ug/m3
123-91-1	1,4-Dioxane	ND	0.20	0.045	ppbv		ND	0.72	ug/m3
541-73-1	m-Dichlorobenzene	ND	0.20	0.020	ppbv		ND	1.2	ug/m3
95-50-1	o-Dichlorobenzene	ND	0.20	0.016	ppbv		ND	1.2	ug/m3
106-46-7	p-Dichlorobenzene	ND	0.20	0.027	ppbv		ND	1.2	ug/m3
100-41-4	Ethylbenzene	ND	0.20	0.042	ppbv		ND	0.87	ug/m3
98-82-8	Isopropylbenzene	ND	0.20	0.047	ppbv		ND	0.98	ug/m3
78-93-3	Methyl ethyl ketone	ND	0.20	0.048	ppbv		ND	0.59	ug/m3
1634-04-4	Methyl Tert Butyl Ether	ND	0.20	0.020	ppbv		ND	0.72	ug/m3
91-20-3	Naphthalene	ND	0.20	0.056	ppbv		ND	1.0	ug/m3
100-42-5	Styrene	ND	0.20	0.015	ppbv		ND	0.85	ug/m3
71-55-6	1,1,1-Trichloroethane	ND	0.20	0.024	ppbv		ND	1.1	ug/m3
95-63-6	1,2,4-Trimethylbenzene	ND	0.20	0.015	ppbv		ND	0.98	ug/m3
108-67-8	1,3,5-Trimethylbenzene	ND	0.20	0.045	ppbv		ND	0.98	ug/m3
75-65-0	Tertiary Butyl Alcohol	ND	0.20	0.053	ppbv		ND	0.61	ug/m3
127-18-4	Tetrachloroethylene	ND	0.040	0.023	ppbv		ND	0.27	ug/m3
108-88-3	Toluene	ND	0.20	0.012	ppbv		ND	0.75	ug/m3
79-01-6	Trichloroethylene	ND	0.040	0.019	ppbv		ND	0.21	ug/m3
1330-20-7	Xylenes (total)	ND	0.20	0.051	ppbv		ND	0.87	ug/m3

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	92%	65-128%

Instrument Performance Check (BFB)

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample: V5W881-BFB
Lab File ID: 5W22153.D
Instrument ID: GCMS5W
Injection Date: 01/12/17
Injection Time: 10:15

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	8.0 - 40.0% of mass 95	29930	15.2		Pass
75	30.0 - 66.0% of mass 95	83434	42.3		Pass
95	Base peak, 100% relative abundance	197205	100.0		Pass
96	5.0 - 9.0% of mass 95	13105	6.65		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	172928	87.7		Pass
175	4.0 - 9.01% of mass 174	12925	6.55	(7.47) [a]	Pass
176	93.0 - 101.0% of mass 174	166741	84.6	(96.4) [a]	Pass
177	5.0 - 9.0% of mass 176	11198	5.68	(6.72) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	5W22154A.D	01/12/17	10:56	00:41	(unrelated sample)
V5W881-IC881	5W22154.D	01/12/17	10:56	00:41	Initial cal 0.04
ZZZZZZ	5W22155A.D	01/12/17	11:38	01:23	(unrelated sample)
V5W881-IC881	5W22155.D	01/12/17	11:38	01:23	Initial cal 0.1
ZZZZZZ	5W22156A.D	01/12/17	12:19	02:04	(unrelated sample)
V5W881-IC881	5W22156.D	01/12/17	12:19	02:04	Initial cal 0.2
V5W881-IC881	5W22157.D	01/12/17	13:02	02:47	Initial cal 0.5
V5W881-IC881	5W22158.D	01/12/17	13:43	03:28	Initial cal 5
V5W881-ICC881	5W22159.D	01/12/17	14:26	04:11	Initial cal 10
V5W881-IC881	5W22160.D	01/12/17	15:11	04:56	Initial cal 20
V5W881-IC881	5W22161.D	01/12/17	15:56	05:41	Initial cal 40
V5W881-ICV881	5W22163.D	01/12/17	17:23	07:08	Initial cal verification 10
V5W882-BS	5W22163A.D	01/12/17	17:23	07:08	Blank Spike
V5W882-BSD	5W22164.D	01/12/17	18:04	07:49	Blank Spike Duplicate
V5W882-MB	5W22166.D	01/12/17	19:35	09:20	Method Blank
ZZZZZZ	5W22167.D	01/12/17	20:17	10:02	(unrelated sample)
ZZZZZZ	5W22168.D	01/12/17	20:59	10:44	(unrelated sample)
ZZZZZZ	5W22169.D	01/12/17	21:40	11:25	(unrelated sample)
ZZZZZZ	5W22170.D	01/12/17	22:21	12:06	(unrelated sample)
ZZZZZZ	5W22171.D	01/12/17	23:02	12:47	(unrelated sample)
ZZZZZZ	5W22172.D	01/12/17	23:44	13:29	(unrelated sample)
ZZZZZZ	5W22173.D	01/13/17	00:26	14:11	(unrelated sample)
ZZZZZZ	5W22174.D	01/13/17	01:09	14:54	(unrelated sample)
ZZZZZZ	5W22175.D	01/13/17	01:51	15:36	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample: V5W881-BFB
Lab File ID: 5W22153.D
Instrument ID: GCMS5W
Injection Date: 01/12/17
Injection Time: 10:15

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	5W22176.D	01/13/17	02:34	16:19	(unrelated sample)
ZZZZZZ	5W22177.D	01/13/17	03:15	17:00	(unrelated sample)
ZZZZZZ	5W22178.D	01/13/17	03:57	17:42	(unrelated sample)
ZZZZZZ	5W22179.D	01/13/17	04:39	18:24	(unrelated sample)
ZZZZZZ	5W22180.D	01/13/17	05:21	19:06	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample: V5W900-BFB
Lab File ID: 5W22686.D
Instrument ID: GCMS5W
Injection Date: 02/10/17
Injection Time: 08:42

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	8.0 - 40.0% of mass 95	31941	16.5		Pass
75	30.0 - 66.0% of mass 95	87061	45.0		Pass
95	Base peak, 100% relative abundance	193578	100.0		Pass
96	5.0 - 9.0% of mass 95	12833	6.63		Pass
173	Less than 2.0% of mass 174	1396	0.72	(0.83) [a]	Pass
174	50.0 - 120.0% of mass 95	168362	87.0		Pass
175	4.0 - 9.01% of mass 174	12158	6.28	(7.22) [a]	Pass
176	93.0 - 101.0% of mass 174	162218	83.8	(96.4) [a]	Pass
177	5.0 - 9.0% of mass 176	10762	5.56	(6.63) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V5W900-CC881	5W22689.D	02/10/17	11:59	03:17	Continuing cal 10
V5W900-BS	5W22692.D	02/10/17	14:20	05:38	Blank Spike
V5W900-BSD	5W22693.D	02/10/17	15:02	06:20	Blank Spike Duplicate
V5W900-MB	5W22695.D	02/10/17	16:36	07:54	Method Blank
V5W900-SCC	5W22695A.D	02/10/17	16:36	07:54	Summa Cleaning Certification
V5W900-SCC	5W22696.D	02/10/17	17:31	08:49	Summa Cleaning Certification
V5W900-SCC	5W22697.D	02/10/17	18:17	09:35	Summa Cleaning Certification
V5W900-SCC	5W22698.D	02/10/17	19:02	10:20	Summa Cleaning Certification
V5W900-SCC	5W22699.D	02/10/17	19:47	11:05	Summa Cleaning Certification
V5W900-SCC	5W22700.D	02/10/17	20:34	11:52	Summa Cleaning Certification
V5W900-SCC	5W22701.D	02/10/17	21:19	12:37	Summa Cleaning Certification
V5W900-SCC	5W22702.D	02/10/17	22:04	13:22	Summa Cleaning Certification
V5W900-SCC	5W22703.D	02/10/17	22:49	14:07	Summa Cleaning Certification
V5W900-SCC	5W22704.D	02/10/17	23:33	14:51	Summa Cleaning Certification
V5W900-SCC	5W22705.D	02/11/17	00:18	15:36	Summa Cleaning Certification
V5W900-SCC	5W22706.D	02/11/17	01:02	16:20	Summa Cleaning Certification
V5W900-SCC	5W22707.D	02/11/17	01:47	17:05	Summa Cleaning Certification
V5W900-SCC	5W22708.D	02/11/17	02:34	17:52	Summa Cleaning Certification
ZZZZZZ	5W22709.D	02/11/17	03:20	18:38	(unrelated sample)
ZZZZZZ	5W22710.D	02/11/17	04:07	19:25	(unrelated sample)
ZZZZZZ	5W22711.D	02/11/17	04:53	20:11	(unrelated sample)
JC36682-4	5W22712.D	02/11/17	05:43	21:01	(used for QC only; not part of job JC37217)
JC36682-4DUP	5W22713.D	02/11/17	06:32	21:50	Duplicate

Instrument Performance Check (BFB)

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample: V5W909-BFB
Lab File ID: 5W22928.D
Instrument ID: GCMS5W
Injection Date: 02/23/17
Injection Time: 09:33

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	8.0 - 40.0% of mass 95	25413	16.9		Pass
75	30.0 - 66.0% of mass 95	67619	44.9		Pass
95	Base peak, 100% relative abundance	150699	100.0		Pass
96	5.0 - 9.0% of mass 95	9769	6.48		Pass
173	Less than 2.0% of mass 174	1073	0.71	(0.86) [a]	Pass
174	50.0 - 120.0% of mass 95	125421	83.2		Pass
175	4.0 - 9.0% of mass 174	9163	6.08	(7.31) [a]	Pass
176	93.0 - 101.0% of mass 174	122069	81.0	(97.3) [a]	Pass
177	5.0 - 9.0% of mass 176	7835	5.20	(6.42) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V5W909-CC881	5W22929.D	02/23/17	10:53	01:20	Continuing cal 10
V5W909-BS	5W22930.D	02/23/17	11:49	02:16	Blank Spike
V5W909-BSD	5W22932.D	02/23/17	13:32	03:59	Blank Spike Duplicate
V5W909-MB	5W22934.D	02/23/17	15:27	05:54	Method Blank
V5W909-SCC	5W22934A.D	02/23/17	15:27	05:54	Summa Cleaning Certification
ZZZZZZ	5W22935.D	02/23/17	16:30	06:57	(unrelated sample)
ZZZZZZ	5W22936.D	02/23/17	17:23	07:50	(unrelated sample)
ZZZZZZ	5W22937.D	02/23/17	18:12	08:39	(unrelated sample)
V5W909-SCC	5W22938.D	02/23/17	19:05	09:32	Summa Cleaning Certification
ZZZZZZ	5W22939.D	02/23/17	19:59	10:26	(unrelated sample)
ZZZZZZ	5W22940.D	02/23/17	20:52	11:19	(unrelated sample)
ZZZZZZ	5W22941.D	02/23/17	21:47	12:14	(unrelated sample)
ZZZZZZ	5W22942.D	02/23/17	22:43	13:10	(unrelated sample)
ZZZZZZ	5W22943.D	02/23/17	23:36	14:03	(unrelated sample)
ZZZZZZ	5W22944.D	02/24/17	00:30	14:57	(unrelated sample)
ZZZZZZ	5W22945.D	02/24/17	01:23	15:50	(unrelated sample)
JC37214-2	5W22946.D	02/24/17	02:14	16:41	(used for QC only; not part of job JC37217)
JC37214-2DUP	5W22947.D	02/24/17	03:06	17:33	Duplicate
ZZZZZZ	5W22948.D	02/24/17	03:55	18:22	(unrelated sample)
ZZZZZZ	5W22949.D	02/24/17	04:49	19:16	(unrelated sample)
ZZZZZZ	5W22950.D	02/24/17	05:44	20:11	(unrelated sample)
JC37217-1	5W22951.D	02/24/17	06:39	21:06	OAS-07
V5W909-SCC	5W22952.D	02/24/17	07:31	21:58	Summa Cleaning Certification
V5W909-SCC	5W22953.D	02/24/17	08:23	22:50	Summa Cleaning Certification

Volatile Internal Standard Area Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Check Std:	V5W900-CC881	**Injection Date:**	02/10/17
Lab File ID:	5W22689.D	**Injection Time:**	11:59
Instrument ID:	GCMS5W	**Method:**	TO-15

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Check Std	148048	8.22	588871	10.34	319942	15.81
Upper Limit [a]	207267	8.55	824419	10.67	447919	16.14
Lower Limit [b]	88829	7.89	353323	10.01	191965	15.48

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
V5W900-BS	185389	8.21	740963	10.33	393731	15.81
V5W900-BSD	184413	8.21	737322	10.33	395834	15.81
V5W900-MB	177963	8.21	698271	10.33	338088	15.80
V5W900-SCC	177963	8.21	698271	10.33	338088	15.80
V5W900-SCC	167385	8.21	647917	10.33	317989	15.80
V5W900-SCC	175389	8.21	691568	10.33	331921	15.80
V5W900-SCC	174722	8.21	675310	10.33	327305	15.80
V5W900-SCC	168955	8.21	653457	10.33	311374	15.80
V5W900-SCC	169619	8.22	653828	10.33	311468	15.80
V5W900-SCC	166579	8.22	638000	10.33	305647	15.80
V5W900-SCC	171002	8.21	659131	10.33	319519	15.80
V5W900-SCC	164020	8.21	625499	10.33	301797	15.81
V5W900-SCC	165601	8.21	629580	10.33	298371	15.80
V5W900-SCC	168327	8.21	645799	10.33	308278	15.80
V5W900-SCC	163984	8.21	628315	10.33	299533	15.80
V5W900-SCC	163926	8.21	619139	10.33	295681	15.80
V5W900-SCC	170598	8.21	659450	10.33	312865	15.81
ZZZZZZ	169327	8.22	650961	10.33	324305	15.80
ZZZZZZ	156839	8.21	594050	10.33	296942	15.80
ZZZZZZ	157420	8.21	592723	10.33	308475	15.80
JC36682-4	174284	8.22	662910	10.34	326534	15.81
JC36682-4DUP	150068	8.21	580228	10.33	309166	15.80

IS 1 = Bromochloromethane
IS 2 = 1,4-Difluorobenzene
IS 3 = Chlorobenzene-D5

(a) Upper Limit = +40% of check standard area; Retention time +0.33 minutes.
(b) Lower Limit = -40% of check standard area; Retention time -0.33 minutes.

Volatile Internal Standard Area Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Check Std:	V5W909-CC881	**Injection Date:**	02/23/17
Lab File ID:	5W22929.D	**Injection Time:**	10:53
Instrument ID:	GCMS5W	**Method:**	TO-15

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Check Std	141757	8.14	557451	10.29	299516	15.80
Upper Limit [a]	198460	8.47	780431	10.62	419322	16.13
Lower Limit [b]	85054	7.81	334471	9.96	179710	15.47

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
V5W909-BS	141715	8.14	562166	10.29	303214	15.80
V5W909-BSD	136009	8.14	546002	10.29	297300	15.80
V5W909-MB	142130	8.13	559200	10.29	269563	15.80
V5W909-SCC	142130	8.13	559200	10.29	269563	15.80
ZZZZZZ	137364	8.13	532935	10.29	264822	15.80
ZZZZZZ	131634	8.14	501862	10.29	250684	15.80
ZZZZZZ	138809	8.14	527956	10.29	253051	15.80
V5W909-SCC	131223	8.14	519985	10.29	245624	15.80
ZZZZZZ	142390	8.14	532321	10.29	263188	15.80
ZZZZZZ	128893	8.16	492695	10.30	247951	15.80
ZZZZZZ	137631	8.17	537004	10.31	273042	15.80
ZZZZZZ	129425	8.16	507573	10.30	258160	15.80
ZZZZZZ	142534	8.14	548919	10.29	268622	15.80
ZZZZZZ	124394	8.16	478047	10.30	239472	15.81
ZZZZZZ	130225	8.14	494897	10.29	236580	15.80
JC37214-2	134684	8.13	511177	10.29	243708	15.80
JC37214-2DUP	119358	8.14	454021	10.29	215608	15.80
ZZZZZZ	131351	8.15	513555	10.31	254679	15.80
ZZZZZZ	125591	8.14	479629	10.29	239410	15.80
ZZZZZZ	141210	8.14	532828	10.29	259273	15.80
JC37217-1	131953	8.14	493292	10.29	242267	15.80
V5W909-SCC	121752	8.16	464443	10.30	219182	15.80
V5W909-SCC	119526	8.14	452977	10.29	215955	15.80

IS 1 = Bromochloromethane
IS 2 = 1,4-Difluorobenzene
IS 3 = Chlorobenzene-D5

(a) Upper Limit = +40% of check standard area; Retention time +0.33 minutes.
(b) Lower Limit = -40% of check standard area; Retention time -0.33 minutes.

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V5W881-IC881	5W22154.D	01/12/17 10:56	DFT	0.04	GCMS5W	TO-15	Reporting this level
V5W881-IC881	5W22155.D	01/12/17 11:38	DFT	0.1	GCMS5W	TO-15	
V5W881-IC881	5W22156.D	01/12/17 12:19	DFT	0.2	GCMS5W	TO-15	
V5W881-IC881	5W22157.D	01/12/17 13:02	DFT	0.5	GCMS5W	TO-15	
V5W881-IC881	5W22158.D	01/12/17 13:43	DFT	5	GCMS5W	TO-15	
V5W881-ICC881	5W22159.D	01/12/17 14:26	DFT	10	GCMS5W	TO-15	
V5W881-IC881	5W22160.D	01/12/17 15:11	DFT	20	GCMS5W	TO-15	
V5W881-IC881	5W22161.D	01/12/17 15:56	DFT	40	GCMS5W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+/- .06)
Acrylonitrile	5.78	8.21	0.704	ok	0.703	0.643-0.763
1,3-Butadiene	4.54	8.21	0.553	ok	0.553	0.493-0.613
Benzene	9.91	8.21	1.207	ok	1.207	1.147-1.267
Bromobenzene	18.38	15.81	1.163	ok	1.162	1.102-1.222
Bromodichloromethane	11.11	10.33	1.076	ok	1.075	1.015-1.135
Bromoform	16.77	15.81	1.061	ok	1.060	1.000-1.120
Bromomethane	4.75	8.21	0.579	ok	0.579	0.519-0.639
Bromoethene	5.16	8.21	0.629	ok	0.629	0.569-0.689
n-Butane	4.57	8.21	0.557	ok	0.557	0.497-0.617
Benzyl Chloride	20.21	15.81	1.278	ok	1.277	1.217-1.337
n-Butylbenzene	21.20	15.81	1.341	ok	1.340	1.280-1.400
sec-Butylbenzene	20.39	15.81	1.290	ok	1.289	1.229-1.349
tert-Butylbenzene	19.99	15.81	1.264	ok	1.264	1.204-1.324
Carbon disulfide	6.42	8.21	0.782	ok	0.782	0.722-0.842
Chlorobenzene	15.88	15.81	1.004	ok	1.004	0.944-1.064
Chlorodifluoromethane	4.05	8.21	0.493	ok	0.494	0.434-0.554
Chloroethane	4.88	8.21	0.594	ok	0.595	0.535-0.655
Chlorotrifluoroethene	4.08	8.21	0.497	ok	0.497	0.437-0.557
Chloroform	8.35	8.21	1.017	ok	1.017	0.957-1.077
Chloromethane	4.26	8.21	0.519	ok	0.520	0.460-0.580
3-Chloropropene	6.25	8.21	0.761	ok	0.761	0.701-0.821
2-Chlorotoluene	19.00	15.81	1.202	ok	1.201	1.141-1.261
Carbon tetrachloride	10.08	8.21	1.228	ok	1.227	1.167-1.287
Cyclohexane	10.20	8.21	1.242	ok	1.242	1.182-1.302
1,1-Dichloroethane	7.20	8.21	0.877	ok	0.877	0.817-0.937
1,1-Dichloroethylene	6.04	8.21	0.736	ok	0.736	0.676-0.796
1,2-Dibromoethane	14.31	10.33	1.385	ok	1.384	1.324-1.444
1,2-Dichloroethane	9.14	8.21	1.113	ok	1.112	1.052-1.172
1,2-Dichloropropane	10.86	10.33	1.051	ok	1.051	0.991-1.111
1,3-Dichloropropane	13.49	10.33	1.306	ok	1.305	1.245-1.365
1,4-Dioxane	11.26	10.33	1.090	ok	1.085	1.025-1.145
Dichlorodifluoromethane	4.13	8.21	0.503	ok	0.504	0.444-0.564
Dichlorofluoromethane	4.96	8.21	0.604	ok	0.604	0.544-0.664
Dibromochloromethane	13.99	10.33	1.354	ok	1.353	1.293-1.413
Dibromomethane	10.85	10.33	1.050	ok	1.049	0.989-1.109
trans-1,2-Dichloroethylene	7.01	8.21	0.854	ok	0.853	0.793-0.913
cis-1,2-Dichloroethylene	8.05	8.21	0.981	ok	0.980	0.920-1.040
cis-1,3-Dichloropropene	12.23	10.33	1.184	ok	1.182	1.122-1.242
m-Dichlorobenzene	20.21	15.81	1.278	ok	1.278	1.218-1.338
o-Dichlorobenzene	20.78	15.81	1.314	ok	1.313	1.253-1.373

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V5W881-IC881	5W22154.D	01/12/17 10:56	DFT	0.04	GCMS5W	TO-15	Reporting this level
V5W881-IC881	5W22155.D	01/12/17 11:38	DFT	0.1	GCMS5W	TO-15	
V5W881-IC881	5W22156.D	01/12/17 12:19	DFT	0.2	GCMS5W	TO-15	
V5W881-IC881	5W22157.D	01/12/17 13:02	DFT	0.5	GCMS5W	TO-15	
V5W881-IC881	5W22158.D	01/12/17 13:43	DFT	5	GCMS5W	TO-15	
V5W881-ICC881	5W22159.D	01/12/17 14:26	DFT	10	GCMS5W	TO-15	
V5W881-IC881	5W22160.D	01/12/17 15:11	DFT	20	GCMS5W	TO-15	
V5W881-IC881	5W22161.D	01/12/17 15:56	DFT	40	GCMS5W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+/- .06)
p-Dichlorobenzene	20.31	15.81	1.285	ok	1.284	1.224-1.344
trans-1,3-Dichloropropene	12.90	10.33	1.249	ok	1.247	1.187-1.307
Di-Isopropyl ether	8.27	8.21	1.007	ok	1.005	0.945-1.065
2,3-Dimethylpentane	10.49	8.21	1.278	ok	1.277	1.217-1.337
2,4-Dimethylpentane	9.17	8.21	1.117	ok	1.117	1.057-1.177
Ethylbenzene	16.43	15.81	1.039	ok	1.038	0.978-1.098
4-Ethyltoluene	19.30	15.81	1.221	ok	1.220	1.160-1.280
Freon 113	6.38	8.21	0.777	ok	0.777	0.717-0.837
Freon 114	4.33	8.21	0.527	ok	0.528	0.468-0.588
Freon 123	5.28	8.21	0.643	ok	0.643	0.583-0.703
Freon 123A	5.33	8.21	0.649	ok	0.649	0.589-0.709
Freon 141B	5.61	8.21	0.683	ok	0.682	0.622-0.742
Freon 142B	4.24	8.21	0.516	ok	0.517	0.457-0.577
Freon 143a	3.93	8.21	0.479	ok	0.479	0.419-0.539
Freon 152A	4.02	8.21	0.490	ok	0.490	0.430-0.550
Heptane	11.50	10.33	1.113	ok	1.112	1.052-1.172
Hexachlorobutadiene	23.58	15.81	1.491	ok	1.491	1.431-1.551
Hexachloroethane	21.66	15.81	1.370	ok	1.370	1.310-1.430
Hexane	8.24	8.21	1.004	ok	1.002	0.942-1.062
Iodomethane	5.99	8.21	0.730	ok	0.728	0.668-0.788
Isopropylbenzene	18.27	15.81	1.156	ok	1.155	1.095-1.215
p-Isopropyltoluene	20.62	15.81	1.304	ok	1.304	1.244-1.364
Methyl ethyl ketone	7.68	8.21	0.935	ok	0.930	0.870-0.990
Methyl Isobutyl Ketone	12.32	10.33	1.193	ok	1.189	1.129-1.249
Methyl Tert Butyl Ether	7.31	8.21	0.890	ok	0.887	0.827-0.947
Methylmethacrylate	11.46	10.33	1.109	ok	1.107	1.047-1.167
Nonane	17.74	15.81	1.122	ok	1.122	1.062-1.182
Octane	14.77	10.33	1.430	ok	1.429	1.369-1.489
n-Propylbenzene	19.08	15.81	1.207	ok	1.206	1.146-1.266
Propylene	4.07	8.21	0.496	ok	0.497	0.437-0.557
Styrene	17.22	15.81	1.089	ok	1.088	1.028-1.148
1,1,1-Trichloroethane	9.40	8.21	1.145	ok	1.144	1.084-1.204
1,1,1,2-Tetrachloroethane	15.85	10.33	1.534	ok	1.533	1.473-1.593
1,1,2,2-Tetrachloroethane	17.37	15.81	1.099	ok	1.098	1.038-1.158
1,1,2-Trichloroethane	13.10	10.33	1.268	ok	1.266	1.206-1.326
1,2,4-Trichlorobenzene	23.01	15.81	1.455	ok	1.455	1.395-1.515
1,2,3-Trichloropropane	17.57	15.81	1.111	ok	1.110	1.050-1.170
1,2,4-Trimethylbenzene	20.01	15.81	1.266	ok	1.265	1.205-1.325
1,3,5-Trimethylbenzene	19.43	15.81	1.229	ok	1.228	1.168-1.288
2,2,4-Trimethylpentane	11.16	10.33	1.080	ok	1.080	1.020-1.140

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V5W881-IC881	5W22154.D	01/12/17 10:56	DFT	0.04	GCMS5W	TO-15	Reporting this level
V5W881-IC881	5W22155.D	01/12/17 11:38	DFT	0.1	GCMS5W	TO-15	
V5W881-IC881	5W22156.D	01/12/17 12:19	DFT	0.2	GCMS5W	TO-15	
V5W881-IC881	5W22157.D	01/12/17 13:02	DFT	0.5	GCMS5W	TO-15	
V5W881-IC881	5W22158.D	01/12/17 13:43	DFT	5	GCMS5W	TO-15	
V5W881-ICC881	5W22159.D	01/12/17 14:26	DFT	10	GCMS5W	TO-15	
V5W881-IC881	5W22160.D	01/12/17 15:11	DFT	20	GCMS5W	TO-15	
V5W881-IC881	5W22161.D	01/12/17 15:56	DFT	40	GCMS5W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+/- .06)
Tertiary Butyl Alcohol	6.16	8.21	0.750	ok	0.745	0.685-0.805
Tetrachloroethylene	14.94	10.33	1.446	ok	1.445	1.385-1.505
Toluene	13.44	10.33	1.301	ok	1.300	1.240-1.360
Trichloroethylene	11.15	10.33	1.079	ok	1.078	1.018-1.138
Trichlorofluoromethane	5.50	8.21	0.670	ok	0.670	0.610-0.730
Vinyl chloride	4.43	8.21	0.540	ok	0.540	0.480-0.600
Vinyl Acetate	7.37	8.21	0.898	ok	0.897	0.837-0.957
m,p-Xylene	16.70	15.81	1.056	ok	1.055	0.995-1.115
o-Xylene	17.36	15.81	1.098	ok	1.098	1.038-1.158

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+/- 0.33)	Area		Mean Area	Area Range (+/- 40 %)
Bromochloromethane	8.21	ok	8.22	7.89-8.55	189535	ok	172460	103476-241444
1,4-Difluorobenzene	10.33	ok	10.34	10.01-10.67	767790	ok	702187	421312-983062
Chlorobenzene-D5	15.81	ok	15.81	15.48-16.14	366336	ok	361425	216855-505995

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V5W881-IC881	5W22154.D	01/12/17 10:56	DFT	0.04	GCMS5W	TO-15	
V5W881-IC881	5W22155.D	01/12/17 11:38	DFT	0.1	GCMS5W	TO-15	Reporting this level
V5W881-IC881	5W22156.D	01/12/17 12:19	DFT	0.2	GCMS5W	TO-15	
V5W881-IC881	5W22157.D	01/12/17 13:02	DFT	0.5	GCMS5W	TO-15	
V5W881-IC881	5W22158.D	01/12/17 13:43	DFT	5	GCMS5W	TO-15	
V5W881-ICC881	5W22159.D	01/12/17 14:26	DFT	10	GCMS5W	TO-15	
V5W881-IC881	5W22160.D	01/12/17 15:11	DFT	20	GCMS5W	TO-15	
V5W881-IC881	5W22161.D	01/12/17 15:56	DFT	40	GCMS5W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+/- .06)
Acetone	5.42	8.21	0.660	ok	0.657	0.597-0.717
Acrylonitrile	5.78	8.21	0.704	ok	0.703	0.643-0.763
Acetonitrile	5.20	8.21	0.633	ok	0.631	0.571-0.691
1,3-Butadiene	4.54	8.21	0.553	ok	0.553	0.493-0.613
Benzene	9.92	8.21	1.208	ok	1.207	1.147-1.267
Bromobenzene	18.38	15.81	1.163	ok	1.162	1.102-1.222
Bromodichloromethane	11.11	10.33	1.076	ok	1.075	1.015-1.135
Bromoform	16.76	15.81	1.060	ok	1.060	1.000-1.120
Bromomethane	4.76	8.21	0.580	ok	0.579	0.519-0.639
Bromoethene	5.17	8.21	0.630	ok	0.629	0.569-0.689
n-Butane	4.57	8.21	0.557	ok	0.557	0.497-0.617
Benzyl Chloride	20.20	15.81	1.278	ok	1.277	1.217-1.337
n-Butylbenzene	21.20	15.81	1.341	ok	1.340	1.280-1.400
sec-Butylbenzene	20.39	15.81	1.290	ok	1.289	1.229-1.349
tert-Butylbenzene	19.99	15.81	1.264	ok	1.264	1.204-1.324
Carbon disulfide	6.43	8.21	0.783	ok	0.782	0.722-0.842
Chlorobenzene	15.87	15.81	1.004	ok	1.004	0.944-1.064
Chlorodifluoromethane	4.06	8.21	0.495	ok	0.494	0.434-0.554
Chloroethane	4.89	8.21	0.596	ok	0.595	0.535-0.655
Chlorotrifluoroethene	4.08	8.21	0.497	ok	0.497	0.437-0.557
Chloroform	8.35	8.21	1.017	ok	1.017	0.957-1.077
Chloromethane	4.27	8.21	0.520	ok	0.520	0.460-0.580
3-Chloropropene	6.26	8.21	0.762	ok	0.761	0.701-0.821
2-Chlorotoluene	18.99	15.81	1.201	ok	1.201	1.141-1.261
Carbon tetrachloride	10.08	8.21	1.228	ok	1.227	1.167-1.287
Cyclohexane	10.21	8.21	1.244	ok	1.242	1.182-1.302
1,1-Dichloroethane	7.21	8.21	0.878	ok	0.877	0.817-0.937
1,1-Dichloroethylene	6.05	8.21	0.737	ok	0.736	0.676-0.796
1,2-Dibromoethane	14.31	10.33	1.385	ok	1.384	1.324-1.444
1,2-Dichloroethane	9.14	8.21	1.113	ok	1.112	1.052-1.172
1,2-Dichloropropane	10.86	10.33	1.051	ok	1.051	0.991-1.111
1,3-Dichloropropane	13.49	10.33	1.306	ok	1.305	1.245-1.365
1,4-Dioxane	11.25	10.33	1.089	ok	1.085	1.025-1.145
Dichlorodifluoromethane	4.14	8.21	0.504	ok	0.504	0.444-0.564
Dichlorofluoromethane	4.96	8.21	0.604	ok	0.604	0.544-0.664
Dibromochloromethane	13.99	10.33	1.354	ok	1.353	1.293-1.413
Dibromomethane	10.84	10.33	1.049	ok	1.049	0.989-1.109
trans-1,2-Dichloroethylene	7.01	8.21	0.854	ok	0.853	0.793-0.913
cis-1,2-Dichloroethylene	8.05	8.21	0.981	ok	0.980	0.920-1.040
cis-1,3-Dichloropropene	12.23	10.33	1.184	ok	1.182	1.122-1.242

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V5W881-IC881	5W22154.D	01/12/17 10:56	DFT	0.04	GCMS5W	TO-15	
V5W881-IC881	5W22155.D	01/12/17 11:38	DFT	0.1	GCMS5W	TO-15	Reporting this level
V5W881-IC881	5W22156.D	01/12/17 12:19	DFT	0.2	GCMS5W	TO-15	
V5W881-IC881	5W22157.D	01/12/17 13:02	DFT	0.5	GCMS5W	TO-15	
V5W881-IC881	5W22158.D	01/12/17 13:43	DFT	5	GCMS5W	TO-15	
V5W881-ICC881	5W22159.D	01/12/17 14:26	DFT	10	GCMS5W	TO-15	
V5W881-IC881	5W22160.D	01/12/17 15:11	DFT	20	GCMS5W	TO-15	
V5W881-IC881	5W22161.D	01/12/17 15:56	DFT	40	GCMS5W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+/- .06)
m-Dichlorobenzene	20.21	15.81	1.278	ok	1.278	1.218-1.338
o-Dichlorobenzene	20.77	15.81	1.314	ok	1.313	1.253-1.373
p-Dichlorobenzene	20.31	15.81	1.285	ok	1.284	1.224-1.344
trans-1,3-Dichloropropene	12.90	10.33	1.249	ok	1.247	1.187-1.307
Di-Isopropyl ether	8.26	8.21	1.006	ok	1.005	0.945-1.065
2,3-Dimethylpentane	10.48	8.21	1.276	ok	1.277	1.217-1.337
2,4-Dimethylpentane	9.17	8.21	1.117	ok	1.117	1.057-1.177
Ethanol	5.02	8.21	0.611	ok	0.609	0.549-0.669
Ethylbenzene	16.42	15.81	1.039	ok	1.038	0.978-1.098
Ethyl Acetate	8.33	8.21	1.015	ok	1.011	0.951-1.071
Ethyl Acrylate	10.94	10.33	1.059	ok	1.056	0.996-1.116
4-Ethyltoluene	19.30	15.81	1.221	ok	1.220	1.160-1.280
Freon 113	6.38	8.21	0.777	ok	0.777	0.717-0.837
Freon 114	4.34	8.21	0.529	ok	0.528	0.468-0.588
Freon 123	5.28	8.21	0.643	ok	0.643	0.583-0.703
Freon 123A	5.33	8.21	0.649	ok	0.649	0.589-0.709
Freon 141B	5.60	8.21	0.682	ok	0.682	0.622-0.742
Freon 142B	4.25	8.21	0.518	ok	0.517	0.457-0.577
Freon 143a	3.94	8.21	0.480	ok	0.479	0.419-0.539
Freon 152A	4.02	8.21	0.490	ok	0.490	0.430-0.550
Heptane	11.50	10.33	1.113	ok	1.112	1.052-1.172
Hexachlorobutadiene	23.58	15.81	1.491	ok	1.491	1.431-1.551
Hexachloroethane	21.66	15.81	1.370	ok	1.370	1.310-1.430
Hexane	8.22	8.21	1.001	ok	1.002	0.942-1.062
2-Hexanone	13.86	10.33	1.342	ok	1.338	1.278-1.398
Iodomethane	5.99	8.21	0.730	ok	0.728	0.668-0.788
Isopropylbenzene	18.26	15.81	1.155	ok	1.155	1.095-1.215
p-Isopropyltoluene	20.62	15.81	1.304	ok	1.304	1.244-1.364
Methylene chloride	6.16	8.21	0.750	ok	0.750	0.690-0.810
Methyl ethyl ketone	7.67	8.21	0.934	ok	0.930	0.870-0.990
Methyl Isobutyl Ketone	12.30	10.33	1.191	ok	1.189	1.129-1.249
Methyl Tert Butyl Ether	7.30	8.21	0.889	ok	0.887	0.827-0.947
Methylmethacrylate	11.45	10.33	1.108	ok	1.107	1.047-1.167
Naphthalene	23.14	15.81	1.464	ok	1.463	1.403-1.523
Nonane	17.74	15.81	1.122	ok	1.122	1.062-1.182
Octane	14.77	10.33	1.430	ok	1.429	1.369-1.489
Pentane	5.78	8.21	0.704	ok	0.704	0.644-0.764
n-Propylbenzene	19.07	15.81	1.206	ok	1.206	1.146-1.266
Propylene	4.08	8.21	0.497	ok	0.497	0.437-0.557
Styrene	17.22	15.81	1.089	ok	1.088	1.028-1.148

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V5W881-IC881	5W22154.D	01/12/17 10:56	DFT	0.04	GCMS5W	TO-15	
V5W881-IC881	5W22155.D	01/12/17 11:38	DFT	0.1	GCMS5W	TO-15	Reporting this level
V5W881-IC881	5W22156.D	01/12/17 12:19	DFT	0.2	GCMS5W	TO-15	
V5W881-IC881	5W22157.D	01/12/17 13:02	DFT	0.5	GCMS5W	TO-15	
V5W881-IC881	5W22158.D	01/12/17 13:43	DFT	5	GCMS5W	TO-15	
V5W881-ICC881	5W22159.D	01/12/17 14:26	DFT	10	GCMS5W	TO-15	
V5W881-IC881	5W22160.D	01/12/17 15:11	DFT	20	GCMS5W	TO-15	
V5W881-IC881	5W22161.D	01/12/17 15:56	DFT	40	GCMS5W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+/- .06)
1,1,1-Trichloroethane	9.40	8.21	1.145	ok	1.144	1.084-1.204
1,1,1,2-Tetrachloroethane	15.86	10.33	1.535	ok	1.533	1.473-1.593
1,1,2,2-Tetrachloroethane	17.37	15.81	1.099	ok	1.098	1.038-1.158
1,1,2-Trichloroethane	13.09	10.33	1.267	ok	1.266	1.206-1.326
1,2,4-Trichlorobenzene	23.01	15.81	1.455	ok	1.455	1.395-1.515
1,2,3-Trichloropropane	17.56	15.81	1.111	ok	1.110	1.050-1.170
1,2,4-Trimethylbenzene	20.01	15.81	1.266	ok	1.265	1.205-1.325
1,3,5-Trimethylbenzene	19.42	15.81	1.228	ok	1.228	1.168-1.288
2,2,4-Trimethylpentane	11.16	10.33	1.080	ok	1.080	1.020-1.140
Tertiary Butyl Alcohol	6.14	8.21	0.748	ok	0.745	0.685-0.805
Tetrachloroethylene	14.93	10.33	1.445	ok	1.445	1.385-1.505
Tetrahydrofuran	8.88	8.21	1.082	ok	1.074	1.014-1.134
Toluene	13.44	10.33	1.301	ok	1.300	1.240-1.360
Trichloroethylene	11.14	10.33	1.078	ok	1.078	1.018-1.138
Trichlorofluoromethane	5.50	8.21	0.670	ok	0.670	0.610-0.730
Vinyl chloride	4.44	8.21	0.541	ok	0.540	0.480-0.600
Vinyl Acetate	7.37	8.21	0.898	ok	0.897	0.837-0.957
m,p-Xylene	16.67	15.81	1.054	ok	1.055	0.995-1.115
o-Xylene	17.36	15.81	1.098	ok	1.098	1.038-1.158

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+/- 0.33)	Area		Mean Area	Area Range (+/- 40 %)
Bromochloromethane	8.21	ok	8.22	7.89-8.55	186632	ok	172460	103476-241444
1,4-Difluorobenzene	10.33	ok	10.34	10.01-10.67	752989	ok	702187	421312-983062
Chlorobenzene-D5	15.81	ok	15.81	15.48-16.14	361700	ok	361425	216855-505995

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V5W881-IC881	5W22154.D	01/12/17 10:56	DFT	0.04	GCMS5W	TO-15	
V5W881-IC881	5W22155.D	01/12/17 11:38	DFT	0.1	GCMS5W	TO-15	
V5W881-IC881	5W22156.D	01/12/17 12:19	DFT	0.2	GCMS5W	TO-15	Reporting this level
V5W881-IC881	5W22157.D	01/12/17 13:02	DFT	0.5	GCMS5W	TO-15	
V5W881-IC881	5W22158.D	01/12/17 13:43	DFT	5	GCMS5W	TO-15	
V5W881-ICC881	5W22159.D	01/12/17 14:26	DFT	10	GCMS5W	TO-15	
V5W881-IC881	5W22160.D	01/12/17 15:11	DFT	20	GCMS5W	TO-15	
V5W881-IC881	5W22161.D	01/12/17 15:56	DFT	40	GCMS5W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+/- .06)
Acetone	5.42	8.22	0.659	ok	0.657	0.597-0.717
Acrylonitrile	5.78	8.22	0.703	ok	0.703	0.643-0.763
Acetonitrile	5.20	8.22	0.633	ok	0.631	0.571-0.691
1,3-Butadiene	4.54	8.22	0.552	ok	0.553	0.493-0.613
Benzene	9.92	8.22	1.207	ok	1.207	1.147-1.267
Bromobenzene	18.37	15.81	1.162	ok	1.162	1.102-1.222
Bromodichloromethane	11.11	10.34	1.074	ok	1.075	1.015-1.135
Bromoform	16.76	15.81	1.060	ok	1.060	1.000-1.120
Bromomethane	4.76	8.22	0.579	ok	0.579	0.519-0.639
Bromoethene	5.18	8.22	0.630	ok	0.629	0.569-0.689
n-Butane	4.58	8.22	0.557	ok	0.557	0.497-0.617
Benzyl Chloride	20.20	15.81	1.278	ok	1.277	1.217-1.337
n-Butylbenzene	21.20	15.81	1.341	ok	1.340	1.280-1.400
sec-Butylbenzene	20.39	15.81	1.290	ok	1.289	1.229-1.349
tert-Butylbenzene	19.99	15.81	1.264	ok	1.264	1.204-1.324
Carbon disulfide	6.43	8.22	0.782	ok	0.782	0.722-0.842
Chlorobenzene	15.87	15.81	1.004	ok	1.004	0.944-1.064
Chlorodifluoromethane	4.07	8.22	0.495	ok	0.494	0.434-0.554
Chloroethane	4.89	8.22	0.595	ok	0.595	0.535-0.655
Chlorotrifluoroethene	4.09	8.22	0.498	ok	0.497	0.437-0.557
Chloroform	8.35	8.22	1.016	ok	1.017	0.957-1.077
Chloromethane	4.28	8.22	0.521	ok	0.520	0.460-0.580
3-Chloropropene	6.26	8.22	0.762	ok	0.761	0.701-0.821
2-Chlorotoluene	18.99	15.81	1.201	ok	1.201	1.141-1.261
Carbon tetrachloride	10.08	8.22	1.226	ok	1.227	1.167-1.287
Cyclohexane	10.21	8.22	1.242	ok	1.242	1.182-1.302
1,1-Dichloroethane	7.21	8.22	0.877	ok	0.877	0.817-0.937
1,1-Dichloroethylene	6.05	8.22	0.736	ok	0.736	0.676-0.796
1,2-Dibromoethane	14.31	10.34	1.384	ok	1.384	1.324-1.444
1,2-Dichloroethane	9.14	8.22	1.112	ok	1.112	1.052-1.172
1,2-Dichloropropane	10.86	10.34	1.050	ok	1.051	0.991-1.111
1,3-Dichloropropane	13.49	10.34	1.305	ok	1.305	1.245-1.365
1,4-Dioxane	11.25	10.34	1.088	ok	1.085	1.025-1.145
Dichlorodifluoromethane	4.15	8.22	0.505	ok	0.504	0.444-0.564
Dichlorofluoromethane	4.96	8.22	0.603	ok	0.604	0.544-0.664
Dibromochloromethane	13.99	10.34	1.353	ok	1.353	1.293-1.413
Dibromomethane	10.85	10.34	1.049	ok	1.049	0.989-1.109
trans-1,2-Dichloroethylene	7.01	8.22	0.853	ok	0.853	0.793-0.913
cis-1,2-Dichloroethylene	8.05	8.22	0.979	ok	0.980	0.920-1.040
cis-1,3-Dichloropropene	12.22	10.34	1.182	ok	1.182	1.122-1.242

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V5W881-IC881	5W22154.D	01/12/17 10:56	DFT	0.04	GCMS5W	TO-15	
V5W881-IC881	5W22155.D	01/12/17 11:38	DFT	0.1	GCMS5W	TO-15	
V5W881-IC881	5W22156.D	01/12/17 12:19	DFT	0.2	GCMS5W	TO-15	Reporting this level
V5W881-IC881	5W22157.D	01/12/17 13:02	DFT	0.5	GCMS5W	TO-15	
V5W881-IC881	5W22158.D	01/12/17 13:43	DFT	5	GCMS5W	TO-15	
V5W881-ICC881	5W22159.D	01/12/17 14:26	DFT	10	GCMS5W	TO-15	
V5W881-IC881	5W22160.D	01/12/17 15:11	DFT	20	GCMS5W	TO-15	
V5W881-IC881	5W22161.D	01/12/17 15:56	DFT	40	GCMS5W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+/- .06)
m-Dichlorobenzene	20.20	15.81	1.278	ok	1.278	1.218-1.338
o-Dichlorobenzene	20.77	15.81	1.314	ok	1.313	1.253-1.373
p-Dichlorobenzene	20.30	15.81	1.284	ok	1.284	1.224-1.344
trans-1,3-Dichloropropene	12.90	10.34	1.248	ok	1.247	1.187-1.307
Di-Isopropyl ether	8.27	8.22	1.006	ok	1.005	0.945-1.065
2,3-Dimethylpentane	10.49	8.22	1.276	ok	1.277	1.217-1.337
2,4-Dimethylpentane	9.18	8.22	1.117	ok	1.117	1.057-1.177
Ethanol	5.02	8.22	0.611	ok	0.609	0.549-0.669
Ethylbenzene	16.42	15.81	1.039	ok	1.038	0.978-1.098
Ethyl Acetate	8.33	8.22	1.013	ok	1.011	0.951-1.071
Ethyl Acrylate	10.93	10.34	1.057	ok	1.056	0.996-1.116
4-Ethyltoluene	19.30	15.81	1.221	ok	1.220	1.160-1.280
Freon 113	6.38	8.22	0.776	ok	0.777	0.717-0.837
Freon 114	4.35	8.22	0.529	ok	0.528	0.468-0.588
Freon 123	5.29	8.22	0.644	ok	0.643	0.583-0.703
Freon 123A	5.34	8.22	0.650	ok	0.649	0.589-0.709
Freon 141B	5.61	8.22	0.682	ok	0.682	0.622-0.742
Freon 142B	4.25	8.22	0.517	ok	0.517	0.457-0.577
Freon 143a	3.94	8.22	0.479	ok	0.479	0.419-0.539
Freon 152A	4.03	8.22	0.490	ok	0.490	0.430-0.550
Heptane	11.50	10.34	1.112	ok	1.112	1.052-1.172
Hexachlorobutadiene	23.58	15.81	1.491	ok	1.491	1.431-1.551
Hexachloroethane	21.66	15.81	1.370	ok	1.370	1.310-1.430
Hexane	8.23	8.22	1.001	ok	1.002	0.942-1.062
2-Hexanone	13.86	10.34	1.340	ok	1.338	1.278-1.398
Iodomethane	5.99	8.22	0.729	ok	0.728	0.668-0.788
Isopropylbenzene	18.26	15.81	1.155	ok	1.155	1.095-1.215
Isopropyl Alcohol	5.62	8.22	0.684	ok	0.682	0.622-0.742
p-Isopropyltoluene	20.62	15.81	1.304	ok	1.304	1.244-1.364
Methylene chloride	6.16	8.22	0.749	ok	0.750	0.690-0.810
Methyl ethyl ketone	7.67	8.22	0.933	ok	0.930	0.870-0.990
Methyl Isobutyl Ketone	12.30	10.34	1.190	ok	1.189	1.129-1.249
Methyl Tert Butyl Ether	7.30	8.22	0.888	ok	0.887	0.827-0.947
Methylmethacrylate	11.45	10.34	1.107	ok	1.107	1.047-1.167
Naphthalene	23.14	15.81	1.464	ok	1.463	1.403-1.523
Nonane	17.74	15.81	1.122	ok	1.122	1.062-1.182
Octane	14.77	10.34	1.428	ok	1.429	1.369-1.489
Pentane	5.79	8.22	0.704	ok	0.704	0.644-0.764
n-Propylbenzene	19.07	15.81	1.206	ok	1.206	1.146-1.266
Propylene	4.09	8.22	0.498	ok	0.497	0.437-0.557

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V5W881-IC881	5W22154.D	01/12/17 10:56	DFT	0.04	GCMS5W	TO-15	
V5W881-IC881	5W22155.D	01/12/17 11:38	DFT	0.1	GCMS5W	TO-15	
V5W881-IC881	5W22156.D	01/12/17 12:19	DFT	0.2	GCMS5W	TO-15	Reporting this level
V5W881-IC881	5W22157.D	01/12/17 13:02	DFT	0.5	GCMS5W	TO-15	
V5W881-IC881	5W22158.D	01/12/17 13:43	DFT	5	GCMS5W	TO-15	
V5W881-ICC881	5W22159.D	01/12/17 14:26	DFT	10	GCMS5W	TO-15	
V5W881-IC881	5W22160.D	01/12/17 15:11	DFT	20	GCMS5W	TO-15	
V5W881-IC881	5W22161.D	01/12/17 15:56	DFT	40	GCMS5W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+/- .06)
Styrene	17.21	15.81	1.089	ok	1.088	1.028-1.148
1,1,1-Trichloroethane	9.40	8.22	1.144	ok	1.144	1.084-1.204
1,1,1,2-Tetrachloroethane	15.85	10.34	1.533	ok	1.533	1.473-1.593
1,1,2,2-Tetrachloroethane	17.37	15.81	1.099	ok	1.098	1.038-1.158
1,1,2-Trichloroethane	13.10	10.34	1.267	ok	1.266	1.206-1.326
1,2,4-Trichlorobenzene	23.01	15.81	1.455	ok	1.455	1.395-1.515
1,2,3-Trichloropropane	17.56	15.81	1.111	ok	1.110	1.050-1.170
1,2,4-Trimethylbenzene	20.01	15.81	1.266	ok	1.265	1.205-1.325
1,3,5-Trimethylbenzene	19.41	15.81	1.228	ok	1.228	1.168-1.288
2,2,4-Trimethylpentane	11.16	10.34	1.079	ok	1.080	1.020-1.140
Tertiary Butyl Alcohol	6.14	8.22	0.747	ok	0.745	0.685-0.805
Tetrachloroethylene	14.94	10.34	1.445	ok	1.445	1.385-1.505
Tetrahydrofuran	8.86	8.22	1.078	ok	1.074	1.014-1.134
Toluene	13.44	10.34	1.300	ok	1.300	1.240-1.360
Trichloroethylene	11.15	10.34	1.078	ok	1.078	1.018-1.138
Trichlorofluoromethane	5.51	8.22	0.670	ok	0.670	0.610-0.730
Vinyl chloride	4.44	8.22	0.540	ok	0.540	0.480-0.600
Vinyl Acetate	7.37	8.22	0.897	ok	0.897	0.837-0.957
m,p-Xylene	16.68	15.81	1.055	ok	1.055	0.995-1.115
o-Xylene	17.36	15.81	1.098	ok	1.098	1.038-1.158
TVHC As Equiv Pentane	5.80	15.81	0.367	ok	0.366	0.306-0.426

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+/- 0.33)	Area		Mean Area	Area Range (+/- 40 %)
Bromochloromethane	8.22	ok	8.22	7.89-8.55	176587	ok	172460	103476-241444
1,4-Difluorobenzene	10.34	ok	10.34	10.01-10.67	718360	ok	702187	421312-983062
Chlorobenzene-D5	15.81	ok	15.81	15.48-16.14	347959	ok	361425	216855-505995

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V5W881-IC881	5W22154.D	01/12/17 10:56	DFT	0.04	GCMS5W	TO-15	
V5W881-IC881	5W22155.D	01/12/17 11:38	DFT	0.1	GCMS5W	TO-15	
V5W881-IC881	5W22156.D	01/12/17 12:19	DFT	0.2	GCMS5W	TO-15	
V5W881-IC881	5W22157.D	01/12/17 13:02	DFT	0.5	GCMS5W	TO-15	Reporting this level
V5W881-IC881	5W22158.D	01/12/17 13:43	DFT	5	GCMS5W	TO-15	
V5W881-ICC881	5W22159.D	01/12/17 14:26	DFT	10	GCMS5W	TO-15	
V5W881-IC881	5W22160.D	01/12/17 15:11	DFT	20	GCMS5W	TO-15	
V5W881-IC881	5W22161.D	01/12/17 15:56	DFT	40	GCMS5W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+/- .06)
Acetone	5.41	8.21	0.659	ok	0.657	0.597-0.717
Acrylonitrile	5.78	8.21	0.704	ok	0.703	0.643-0.763
Acetonitrile	5.19	8.21	0.632	ok	0.631	0.571-0.691
1,3-Butadiene	4.54	8.21	0.553	ok	0.553	0.493-0.613
Benzene	9.91	8.21	1.207	ok	1.207	1.147-1.267
Bromobenzene	18.37	15.81	1.162	ok	1.162	1.102-1.222
Bromodichloromethane	11.11	10.33	1.076	ok	1.075	1.015-1.135
Bromoform	16.76	15.81	1.060	ok	1.060	1.000-1.120
Bromomethane	4.76	8.21	0.580	ok	0.579	0.519-0.639
Bromoethene	5.17	8.21	0.630	ok	0.629	0.569-0.689
n-Butane	4.57	8.21	0.557	ok	0.557	0.497-0.617
Benzyl Chloride	20.20	15.81	1.278	ok	1.277	1.217-1.337
n-Butylbenzene	21.19	15.81	1.340	ok	1.340	1.280-1.400
sec-Butylbenzene	20.38	15.81	1.289	ok	1.289	1.229-1.349
tert-Butylbenzene	19.99	15.81	1.264	ok	1.264	1.204-1.324
Carbon disulfide	6.42	8.21	0.782	ok	0.782	0.722-0.842
Chlorobenzene	15.87	15.81	1.004	ok	1.004	0.944-1.064
Chlorodifluoromethane	4.06	8.21	0.495	ok	0.494	0.434-0.554
Chloroethane	4.88	8.21	0.594	ok	0.595	0.535-0.655
Chlorotrifluoroethene	4.08	8.21	0.497	ok	0.497	0.437-0.557
Chloroform	8.35	8.21	1.017	ok	1.017	0.957-1.077
Chloromethane	4.27	8.21	0.520	ok	0.520	0.460-0.580
3-Chloropropene	6.25	8.21	0.761	ok	0.761	0.701-0.821
2-Chlorotoluene	18.99	15.81	1.201	ok	1.201	1.141-1.261
Carbon tetrachloride	10.08	8.21	1.228	ok	1.227	1.167-1.287
Cyclohexane	10.20	8.21	1.242	ok	1.242	1.182-1.302
1,1-Dichloroethane	7.20	8.21	0.877	ok	0.877	0.817-0.937
1,1-Dichloroethylene	6.05	8.21	0.737	ok	0.736	0.676-0.796
1,2-Dibromoethane	14.30	10.33	1.384	ok	1.384	1.324-1.444
1,2-Dichloroethane	9.13	8.21	1.112	ok	1.112	1.052-1.172
1,2-Dichloropropane	10.86	10.33	1.051	ok	1.051	0.991-1.111
1,3-Dichloropropane	13.48	10.33	1.305	ok	1.305	1.245-1.365
1,4-Dioxane	11.22	10.33	1.086	ok	1.085	1.025-1.145
Dichlorodifluoromethane	4.14	8.21	0.504	ok	0.504	0.444-0.564
Dichlorofluoromethane	4.96	8.21	0.604	ok	0.604	0.544-0.664
Dibromochloromethane	13.99	10.33	1.354	ok	1.353	1.293-1.413
Dibromomethane	10.84	10.33	1.049	ok	1.049	0.989-1.109
trans-1,2-Dichloroethylene	7.01	8.21	0.854	ok	0.853	0.793-0.913
cis-1,2-Dichloroethylene	8.04	8.21	0.979	ok	0.980	0.920-1.040
cis-1,3-Dichloropropene	12.21	10.33	1.182	ok	1.182	1.122-1.242

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V5W881-IC881	5W22154.D	01/12/17 10:56	DFT	0.04	GCMS5W	TO-15	
V5W881-IC881	5W22155.D	01/12/17 11:38	DFT	0.1	GCMS5W	TO-15	
V5W881-IC881	5W22156.D	01/12/17 12:19	DFT	0.2	GCMS5W	TO-15	
V5W881-IC881	5W22157.D	01/12/17 13:02	DFT	0.5	GCMS5W	TO-15	Reporting this level
V5W881-IC881	5W22158.D	01/12/17 13:43	DFT	5	GCMS5W	TO-15	
V5W881-ICC881	5W22159.D	01/12/17 14:26	DFT	10	GCMS5W	TO-15	
V5W881-IC881	5W22160.D	01/12/17 15:11	DFT	20	GCMS5W	TO-15	
V5W881-IC881	5W22161.D	01/12/17 15:56	DFT	40	GCMS5W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+/- .06)
m-Dichlorobenzene	20.20	15.81	1.278	ok	1.278	1.218-1.338
o-Dichlorobenzene	20.77	15.81	1.314	ok	1.313	1.253-1.373
p-Dichlorobenzene	20.30	15.81	1.284	ok	1.284	1.224-1.344
trans-1,3-Dichloropropene	12.89	10.33	1.248	ok	1.247	1.187-1.307
Di-Isopropyl ether	8.25	8.21	1.005	ok	1.005	0.945-1.065
2,3-Dimethylpentane	10.49	8.21	1.278	ok	1.277	1.217-1.337
2,4-Dimethylpentane	9.17	8.21	1.117	ok	1.117	1.057-1.177
Ethanol	5.01	8.21	0.610	ok	0.609	0.549-0.669
Ethylbenzene	16.42	15.81	1.039	ok	1.038	0.978-1.098
Ethyl Acetate	8.31	8.21	1.012	ok	1.011	0.951-1.071
Ethyl Acrylate	10.92	10.33	1.057	ok	1.056	0.996-1.116
4-Ethyltoluene	19.29	15.81	1.220	ok	1.220	1.160-1.280
Freon 113	6.38	8.21	0.777	ok	0.777	0.717-0.837
Freon 114	4.33	8.21	0.527	ok	0.528	0.468-0.588
Freon 123	5.28	8.21	0.643	ok	0.643	0.583-0.703
Freon 123A	5.33	8.21	0.649	ok	0.649	0.589-0.709
Freon 141B	5.60	8.21	0.682	ok	0.682	0.622-0.742
Freon 142B	4.25	8.21	0.518	ok	0.517	0.457-0.577
Freon 143a	3.93	8.21	0.479	ok	0.479	0.419-0.539
Freon 152A	4.02	8.21	0.490	ok	0.490	0.430-0.550
Heptane	11.50	10.33	1.113	ok	1.112	1.052-1.172
Hexachlorobutadiene	23.58	15.81	1.491	ok	1.491	1.431-1.551
Hexachloroethane	21.66	15.81	1.370	ok	1.370	1.310-1.430
Hexane	8.22	8.21	1.001	ok	1.002	0.942-1.062
2-Hexanone	13.84	10.33	1.340	ok	1.338	1.278-1.398
Iodomethane	5.98	8.21	0.728	ok	0.728	0.668-0.788
Isopropylbenzene	18.26	15.81	1.155	ok	1.155	1.095-1.215
Isopropyl Alcohol	5.61	8.21	0.683	ok	0.682	0.622-0.742
p-Isopropyltoluene	20.62	15.81	1.304	ok	1.304	1.244-1.364
Methylene chloride	6.16	8.21	0.750	ok	0.750	0.690-0.810
Methyl ethyl ketone	7.64	8.21	0.931	ok	0.930	0.870-0.990
Methyl Isobutyl Ketone	12.29	10.33	1.190	ok	1.189	1.129-1.249
Methyl Tert Butyl Ether	7.29	8.21	0.888	ok	0.887	0.827-0.947
Methylmethacrylate	11.44	10.33	1.107	ok	1.107	1.047-1.167
Naphthalene	23.13	15.81	1.463	ok	1.463	1.403-1.523
Nonane	17.74	15.81	1.122	ok	1.122	1.062-1.182
Octane	14.76	10.33	1.429	ok	1.429	1.369-1.489
Pentane	5.78	8.21	0.704	ok	0.704	0.644-0.764
n-Propylbenzene	19.06	15.81	1.206	ok	1.206	1.146-1.266
Propylene	4.08	8.21	0.497	ok	0.497	0.437-0.557

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V5W881-IC881	5W22154.D	01/12/17 10:56	DFT	0.04	GCMS5W	TO-15	
V5W881-IC881	5W22155.D	01/12/17 11:38	DFT	0.1	GCMS5W	TO-15	
V5W881-IC881	5W22156.D	01/12/17 12:19	DFT	0.2	GCMS5W	TO-15	
V5W881-IC881	5W22157.D	01/12/17 13:02	DFT	0.5	GCMS5W	TO-15	Reporting this level
V5W881-IC881	5W22158.D	01/12/17 13:43	DFT	5	GCMS5W	TO-15	
V5W881-ICC881	5W22159.D	01/12/17 14:26	DFT	10	GCMS5W	TO-15	
V5W881-IC881	5W22160.D	01/12/17 15:11	DFT	20	GCMS5W	TO-15	
V5W881-IC881	5W22161.D	01/12/17 15:56	DFT	40	GCMS5W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+/- .06)
Styrene	17.21	15.81	1.089	ok	1.088	1.028-1.148
1,1,1-Trichloroethane	9.40	8.21	1.145	ok	1.144	1.084-1.204
1,1,1,2-Tetrachloroethane	15.85	10.33	1.534	ok	1.533	1.473-1.593
1,1,2,2-Tetrachloroethane	17.36	15.81	1.098	ok	1.098	1.038-1.158
1,1,2-Trichloroethane	13.09	10.33	1.267	ok	1.266	1.206-1.326
1,2,4-Trichlorobenzene	23.00	15.81	1.455	ok	1.455	1.395-1.515
1,2,3-Trichloropropane	17.55	15.81	1.110	ok	1.110	1.050-1.170
1,2,4-Trimethylbenzene	20.01	15.81	1.266	ok	1.265	1.205-1.325
1,3,5-Trimethylbenzene	19.41	15.81	1.228	ok	1.228	1.168-1.288
2,2,4-Trimethylpentane	11.16	10.33	1.080	ok	1.080	1.020-1.140
Tertiary Butyl Alcohol	6.12	8.21	0.745	ok	0.745	0.685-0.805
Tetrachloroethylene	14.93	10.33	1.445	ok	1.445	1.385-1.505
Tetrahydrofuran	8.84	8.21	1.077	ok	1.074	1.014-1.134
Toluene	13.44	10.33	1.301	ok	1.300	1.240-1.360
Trichloroethylene	11.15	10.33	1.079	ok	1.078	1.018-1.138
Trichlorofluoromethane	5.50	8.21	0.670	ok	0.670	0.610-0.730
Vinyl chloride	4.43	8.21	0.540	ok	0.540	0.480-0.600
Vinyl Acetate	7.37	8.21	0.898	ok	0.897	0.837-0.957
m,p-Xylene	16.67	15.81	1.054	ok	1.055	0.995-1.115
o-Xylene	17.36	15.81	1.098	ok	1.098	1.038-1.158
TVHC As Equiv Pentane	5.78	15.81	0.366	ok	0.366	0.306-0.426

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+/- 0.33)	Area		Mean Area	Area Range (+/- 40 %)
Bromochloromethane	8.21	ok	8.22	7.89-8.55	164457	ok	172460	103476-241444
1,4-Difluorobenzene	10.33	ok	10.34	10.01-10.67	675076	ok	702187	421312-983062
Chlorobenzene-D5	15.81	ok	15.81	15.48-16.14	340851	ok	361425	216855-505995

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V5W881-IC881	5W22154.D	01/12/17 10:56	DFT	0.04	GCMS5W	TO-15	
V5W881-IC881	5W22155.D	01/12/17 11:38	DFT	0.1	GCMS5W	TO-15	
V5W881-IC881	5W22156.D	01/12/17 12:19	DFT	0.2	GCMS5W	TO-15	
V5W881-IC881	5W22157.D	01/12/17 13:02	DFT	0.5	GCMS5W	TO-15	
V5W881-IC881	5W22158.D	01/12/17 13:43	DFT	5	GCMS5W	TO-15	Reporting this level
V5W881-ICC881	5W22159.D	01/12/17 14:26	DFT	10	GCMS5W	TO-15	
V5W881-IC881	5W22160.D	01/12/17 15:11	DFT	20	GCMS5W	TO-15	
V5W881-IC881	5W22161.D	01/12/17 15:56	DFT	40	GCMS5W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+/- .06)
Acetone	5.40	8.22	0.657	ok	0.657	0.597-0.717
Acrylonitrile	5.78	8.22	0.703	ok	0.703	0.643-0.763
Acetonitrile	5.19	8.22	0.631	ok	0.631	0.571-0.691
1,3-Butadiene	4.55	8.22	0.554	ok	0.553	0.493-0.613
Benzene	9.92	8.22	1.207	ok	1.207	1.147-1.267
Bromobenzene	18.37	15.82	1.161	ok	1.162	1.102-1.222
Bromodichloromethane	11.11	10.35	1.073	ok	1.075	1.015-1.135
Bromoform	16.76	15.82	1.059	ok	1.060	1.000-1.120
Bromomethane	4.76	8.22	0.579	ok	0.579	0.519-0.639
Bromoethene	5.18	8.22	0.630	ok	0.629	0.569-0.689
n-Butane	4.58	8.22	0.557	ok	0.557	0.497-0.617
Benzyl Chloride	20.19	15.82	1.276	ok	1.277	1.217-1.337
n-Butylbenzene	21.19	15.82	1.339	ok	1.340	1.280-1.400
sec-Butylbenzene	20.39	15.82	1.289	ok	1.289	1.229-1.349
tert-Butylbenzene	19.99	15.82	1.264	ok	1.264	1.204-1.324
Carbon disulfide	6.43	8.22	0.782	ok	0.782	0.722-0.842
Chlorobenzene	15.88	15.82	1.004	ok	1.004	0.944-1.064
Chlorodifluoromethane	4.06	8.22	0.494	ok	0.494	0.434-0.554
Chloroethane	4.90	8.22	0.596	ok	0.595	0.535-0.655
Chlorotrifluoroethene	4.09	8.22	0.498	ok	0.497	0.437-0.557
Chloroform	8.36	8.22	1.017	ok	1.017	0.957-1.077
Chloromethane	4.27	8.22	0.519	ok	0.520	0.460-0.580
3-Chloropropene	6.27	8.22	0.763	ok	0.761	0.701-0.821
2-Chlorotoluene	18.99	15.82	1.200	ok	1.201	1.141-1.261
Carbon tetrachloride	10.09	8.22	1.227	ok	1.227	1.167-1.287
Cyclohexane	10.21	8.22	1.242	ok	1.242	1.182-1.302
1,1-Dichloroethane	7.21	8.22	0.877	ok	0.877	0.817-0.937
1,1-Dichloroethylene	6.05	8.22	0.736	ok	0.736	0.676-0.796
1,2-Dibromoethane	14.30	10.35	1.382	ok	1.384	1.324-1.444
1,2-Dichloroethane	9.14	8.22	1.112	ok	1.112	1.052-1.172
1,2-Dichloropropane	10.87	10.35	1.050	ok	1.051	0.991-1.111
1,3-Dichloropropane	13.49	10.35	1.303	ok	1.305	1.245-1.365
1,4-Dioxane	11.20	10.35	1.082	ok	1.085	1.025-1.145
Dichlorodifluoromethane	4.14	8.22	0.504	ok	0.504	0.444-0.564
Dichlorofluoromethane	4.97	8.22	0.605	ok	0.604	0.544-0.664
Dibromochloromethane	13.99	10.35	1.352	ok	1.353	1.293-1.413
Dibromomethane	10.85	10.35	1.048	ok	1.049	0.989-1.109
trans-1,2-Dichloroethylene	7.02	8.22	0.854	ok	0.853	0.793-0.913
cis-1,2-Dichloroethylene	8.05	8.22	0.979	ok	0.980	0.920-1.040
cis-1,3-Dichloropropene	12.22	10.35	1.181	ok	1.182	1.122-1.242

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V5W881-IC881	5W22154.D	01/12/17 10:56	DFT	0.04	GCMS5W	TO-15	
V5W881-IC881	5W22155.D	01/12/17 11:38	DFT	0.1	GCMS5W	TO-15	
V5W881-IC881	5W22156.D	01/12/17 12:19	DFT	0.2	GCMS5W	TO-15	
V5W881-IC881	5W22157.D	01/12/17 13:02	DFT	0.5	GCMS5W	TO-15	
V5W881-IC881	5W22158.D	01/12/17 13:43	DFT	5	GCMS5W	TO-15	Reporting this level
V5W881-ICC881	5W22159.D	01/12/17 14:26	DFT	10	GCMS5W	TO-15	
V5W881-IC881	5W22160.D	01/12/17 15:11	DFT	20	GCMS5W	TO-15	
V5W881-IC881	5W22161.D	01/12/17 15:56	DFT	40	GCMS5W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+/- .06)
m-Dichlorobenzene	20.20	15.82	1.277	ok	1.278	1.218-1.338
o-Dichlorobenzene	20.77	15.82	1.313	ok	1.313	1.253-1.373
p-Dichlorobenzene	20.30	15.82	1.283	ok	1.284	1.224-1.344
trans-1,3-Dichloropropene	12.89	10.35	1.245	ok	1.247	1.187-1.307
Di-Isopropyl ether	8.26	8.22	1.005	ok	1.005	0.945-1.065
2,3-Dimethylpentane	10.49	8.22	1.276	ok	1.277	1.217-1.337
2,4-Dimethylpentane	9.18	8.22	1.117	ok	1.117	1.057-1.177
Ethanol	5.01	8.22	0.609	ok	0.609	0.549-0.669
Ethylbenzene	16.42	15.82	1.038	ok	1.038	0.978-1.098
Ethyl Acetate	8.31	8.22	1.011	ok	1.011	0.951-1.071
Ethyl Acrylate	10.92	10.35	1.055	ok	1.056	0.996-1.116
4-Ethyltoluene	19.29	15.82	1.219	ok	1.220	1.160-1.280
Freon 113	6.39	8.22	0.777	ok	0.777	0.717-0.837
Freon 114	4.35	8.22	0.529	ok	0.528	0.468-0.588
Freon 123	5.29	8.22	0.644	ok	0.643	0.583-0.703
Freon 123A	5.34	8.22	0.650	ok	0.649	0.589-0.709
Freon 141B	5.61	8.22	0.682	ok	0.682	0.622-0.742
Freon 142B	4.25	8.22	0.517	ok	0.517	0.457-0.577
Freon 143a	3.94	8.22	0.479	ok	0.479	0.419-0.539
Freon 152A	4.03	8.22	0.490	ok	0.490	0.430-0.550
Heptane	11.50	10.35	1.111	ok	1.112	1.052-1.172
Hexachlorobutadiene	23.58	15.82	1.491	ok	1.491	1.431-1.551
Hexachloroethane	21.66	15.82	1.369	ok	1.370	1.310-1.430
Hexane	8.24	8.22	1.002	ok	1.002	0.942-1.062
2-Hexanone	13.83	10.35	1.336	ok	1.338	1.278-1.398
Iodomethane	5.99	8.22	0.729	ok	0.728	0.668-0.788
Isopropylbenzene	18.26	15.82	1.154	ok	1.155	1.095-1.215
Isopropyl Alcohol	5.61	8.22	0.682	ok	0.682	0.622-0.742
p-Isopropyltoluene	20.62	15.82	1.303	ok	1.304	1.244-1.364
Methylene chloride	6.17	8.22	0.751	ok	0.750	0.690-0.810
Methyl ethyl ketone	7.63	8.22	0.928	ok	0.930	0.870-0.990
Methyl Isobutyl Ketone	12.28	10.35	1.186	ok	1.189	1.129-1.249
Methyl Tert Butyl Ether	7.28	8.22	0.886	ok	0.887	0.827-0.947
Methylmethacrylate	11.44	10.35	1.105	ok	1.107	1.047-1.167
Naphthalene	23.13	15.82	1.462	ok	1.463	1.403-1.523
Nonane	17.74	15.82	1.121	ok	1.122	1.062-1.182
Octane	14.77	10.35	1.427	ok	1.429	1.369-1.489
Pentane	5.80	8.22	0.706	ok	0.704	0.644-0.764
n-Propylbenzene	19.06	15.82	1.205	ok	1.206	1.146-1.266
Propylene	4.09	8.22	0.498	ok	0.497	0.437-0.557

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V5W881-IC881	5W22154.D	01/12/17 10:56	DFT	0.04	GCMS5W	TO-15	
V5W881-IC881	5W22155.D	01/12/17 11:38	DFT	0.1	GCMS5W	TO-15	
V5W881-IC881	5W22156.D	01/12/17 12:19	DFT	0.2	GCMS5W	TO-15	
V5W881-IC881	5W22157.D	01/12/17 13:02	DFT	0.5	GCMS5W	TO-15	
V5W881-IC881	5W22158.D	01/12/17 13:43	DFT	5	GCMS5W	TO-15	Reporting this level
V5W881-ICC881	5W22159.D	01/12/17 14:26	DFT	10	GCMS5W	TO-15	
V5W881-IC881	5W22160.D	01/12/17 15:11	DFT	20	GCMS5W	TO-15	
V5W881-IC881	5W22161.D	01/12/17 15:56	DFT	40	GCMS5W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+/- .06)
Styrene	17.21	15.82	1.088	ok	1.088	1.028-1.148
1,1,1-Trichloroethane	9.40	8.22	1.144	ok	1.144	1.084-1.204
1,1,1,2-Tetrachloroethane	15.85	10.35	1.531	ok	1.533	1.473-1.593
1,1,2,2-Tetrachloroethane	17.36	15.82	1.097	ok	1.098	1.038-1.158
1,1,2-Trichloroethane	13.09	10.35	1.265	ok	1.266	1.206-1.326
1,2,4-Trichlorobenzene	23.00	15.82	1.454	ok	1.455	1.395-1.515
1,2,3-Trichloropropane	17.55	15.82	1.109	ok	1.110	1.050-1.170
1,2,4-Trimethylbenzene	20.01	15.82	1.265	ok	1.265	1.205-1.325
1,3,5-Trimethylbenzene	19.41	15.82	1.227	ok	1.228	1.168-1.288
2,2,4-Trimethylpentane	11.17	10.35	1.079	ok	1.080	1.020-1.140
Tertiary Butyl Alcohol	6.12	8.22	0.745	ok	0.745	0.685-0.805
Tetrachloroethylene	14.94	10.35	1.443	ok	1.445	1.385-1.505
Tetrahydrofuran	8.82	8.22	1.073	ok	1.074	1.014-1.134
Toluene	13.44	10.35	1.299	ok	1.300	1.240-1.360
Trichloroethylene	11.15	10.35	1.077	ok	1.078	1.018-1.138
Trichlorofluoromethane	5.51	8.22	0.670	ok	0.670	0.610-0.730
Vinyl chloride	4.44	8.22	0.540	ok	0.540	0.480-0.600
Vinyl Acetate	7.37	8.22	0.897	ok	0.897	0.837-0.957
m,p-Xylene	16.69	15.82	1.055	ok	1.055	0.995-1.115
o-Xylene	17.36	15.82	1.097	ok	1.098	1.038-1.158
TVHC As Equiv Pentane	5.80	15.82	0.367	ok	0.366	0.306-0.426

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+/- 0.33)	Area		Mean Area	Area Range (+/- 40 %)
Bromochloromethane	8.22	ok	8.22	7.89-8.55	183634	ok	172460	103476-241444
1,4-Difluorobenzene	10.35	ok	10.34	10.01-10.67	742371	ok	702187	421312-983062
Chlorobenzene-D5	15.82	ok	15.81	15.48-16.14	375886	ok	361425	216855-505995

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V5W881-IC881	5W22154.D	01/12/17 10:56	DFT	0.04	GCMS5W	TO-15	
V5W881-IC881	5W22155.D	01/12/17 11:38	DFT	0.1	GCMS5W	TO-15	
V5W881-IC881	5W22156.D	01/12/17 12:19	DFT	0.2	GCMS5W	TO-15	
V5W881-IC881	5W22157.D	01/12/17 13:02	DFT	0.5	GCMS5W	TO-15	
V5W881-IC881	5W22158.D	01/12/17 13:43	DFT	5	GCMS5W	TO-15	
V5W881-ICC881	5W22159.D	01/12/17 14:26	DFT	10	GCMS5W	TO-15	Reporting this level
V5W881-IC881	5W22160.D	01/12/17 15:11	DFT	20	GCMS5W	TO-15	
V5W881-IC881	5W22161.D	01/12/17 15:56	DFT	40	GCMS5W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+/- .06)
Acetone	5.38	8.22	0.655	ok	0.657	0.597-0.717
Acrylonitrile	5.76	8.22	0.701	ok	0.703	0.643-0.763
Acetonitrile	5.17	8.22	0.629	ok	0.631	0.571-0.691
1,3-Butadiene	4.54	8.22	0.552	ok	0.553	0.493-0.613
Benzene	9.92	8.22	1.207	ok	1.207	1.147-1.267
Bromobenzene	18.37	15.82	1.161	ok	1.162	1.102-1.222
Bromodichloromethane	11.11	10.34	1.074	ok	1.075	1.015-1.135
Bromoform	16.76	15.82	1.059	ok	1.060	1.000-1.120
Bromomethane	4.76	8.22	0.579	ok	0.579	0.519-0.639
Bromoethene	5.17	8.22	0.629	ok	0.629	0.569-0.689
n-Butane	4.58	8.22	0.557	ok	0.557	0.497-0.617
Benzyl Chloride	20.19	15.82	1.276	ok	1.277	1.217-1.337
n-Butylbenzene	21.19	15.82	1.339	ok	1.340	1.280-1.400
sec-Butylbenzene	20.39	15.82	1.289	ok	1.289	1.229-1.349
tert-Butylbenzene	19.99	15.82	1.264	ok	1.264	1.204-1.324
Carbon disulfide	6.42	8.22	0.781	ok	0.782	0.722-0.842
Chlorobenzene	15.87	15.82	1.003	ok	1.004	0.944-1.064
Chlorodifluoromethane	4.06	8.22	0.494	ok	0.494	0.434-0.554
Chloroethane	4.88	8.22	0.594	ok	0.595	0.535-0.655
Chlorotrifluoroethene	4.09	8.22	0.498	ok	0.497	0.437-0.557
Chloroform	8.35	8.22	1.016	ok	1.017	0.957-1.077
Chloromethane	4.27	8.22	0.519	ok	0.520	0.460-0.580
3-Chloropropene	6.25	8.22	0.760	ok	0.761	0.701-0.821
2-Chlorotoluene	18.99	15.82	1.200	ok	1.201	1.141-1.261
Carbon tetrachloride	10.08	8.22	1.226	ok	1.227	1.167-1.287
Cyclohexane	10.21	8.22	1.242	ok	1.242	1.182-1.302
1,1-Dichloroethane	7.20	8.22	0.876	ok	0.877	0.817-0.937
1,1-Dichloroethylene	6.05	8.22	0.736	ok	0.736	0.676-0.796
1,2-Dibromoethane	14.30	10.34	1.383	ok	1.384	1.324-1.444
1,2-Dichloroethane	9.13	8.22	1.111	ok	1.112	1.052-1.172
1,2-Dichloropropane	10.86	10.34	1.050	ok	1.051	0.991-1.111
1,3-Dichloropropane	13.48	10.34	1.304	ok	1.305	1.245-1.365
1,4-Dioxane	11.19	10.34	1.082	ok	1.085	1.025-1.145
Dichlorodifluoromethane	4.14	8.22	0.504	ok	0.504	0.444-0.564
Dichlorofluoromethane	4.96	8.22	0.603	ok	0.604	0.544-0.664
Dibromochloromethane	13.99	10.34	1.353	ok	1.353	1.293-1.413
Dibromomethane	10.84	10.34	1.048	ok	1.049	0.989-1.109
trans-1,2-Dichloroethylene	7.01	8.22	0.853	ok	0.853	0.793-0.913
cis-1,2-Dichloroethylene	8.05	8.22	0.979	ok	0.980	0.920-1.040
cis-1,3-Dichloropropene	12.21	10.34	1.181	ok	1.182	1.122-1.242

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V5W881-IC881	5W22154.D	01/12/17 10:56	DFT	0.04	GCMS5W	TO-15	
V5W881-IC881	5W22155.D	01/12/17 11:38	DFT	0.1	GCMS5W	TO-15	
V5W881-IC881	5W22156.D	01/12/17 12:19	DFT	0.2	GCMS5W	TO-15	
V5W881-IC881	5W22157.D	01/12/17 13:02	DFT	0.5	GCMS5W	TO-15	
V5W881-IC881	5W22158.D	01/12/17 13:43	DFT	5	GCMS5W	TO-15	
V5W881-ICC881	5W22159.D	01/12/17 14:26	DFT	10	GCMS5W	TO-15	Reporting this level
V5W881-IC881	5W22160.D	01/12/17 15:11	DFT	20	GCMS5W	TO-15	
V5W881-IC881	5W22161.D	01/12/17 15:56	DFT	40	GCMS5W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+/- .06)
m-Dichlorobenzene	20.20	15.82	1.277	ok	1.278	1.218-1.338
o-Dichlorobenzene	20.77	15.82	1.313	ok	1.313	1.253-1.373
p-Dichlorobenzene	20.30	15.82	1.283	ok	1.284	1.224-1.344
trans-1,3-Dichloropropene	12.88	10.34	1.246	ok	1.247	1.187-1.307
Di-Isopropyl ether	8.25	8.22	1.004	ok	1.005	0.945-1.065
2,3-Dimethylpentane	10.49	8.22	1.276	ok	1.277	1.217-1.337
2,4-Dimethylpentane	9.17	8.22	1.116	ok	1.117	1.057-1.177
Ethanol	4.99	8.22	0.607	ok	0.609	0.549-0.669
Ethylbenzene	16.42	15.82	1.038	ok	1.038	0.978-1.098
Ethyl Acetate	8.30	8.22	1.010	ok	1.011	0.951-1.071
Ethyl Acrylate	10.91	10.34	1.055	ok	1.056	0.996-1.116
4-Ethyltoluene	19.29	15.82	1.219	ok	1.220	1.160-1.280
Freon 113	6.38	8.22	0.776	ok	0.777	0.717-0.837
Freon 114	4.34	8.22	0.528	ok	0.528	0.468-0.588
Freon 123	5.28	8.22	0.642	ok	0.643	0.583-0.703
Freon 123A	5.33	8.22	0.648	ok	0.649	0.589-0.709
Freon 152A	4.02	8.22	0.489	ok	0.490	0.430-0.550
Heptane	11.50	10.34	1.112	ok	1.112	1.052-1.172
Hexachlorobutadiene	23.58	15.82	1.491	ok	1.491	1.431-1.551
Hexachloroethane	21.66	15.82	1.369	ok	1.370	1.310-1.430
Hexane	8.23	8.22	1.001	ok	1.002	0.942-1.062
2-Hexanone	13.82	10.34	1.337	ok	1.338	1.278-1.398
Iodomethane	5.98	8.22	0.727	ok	0.728	0.668-0.788
Isopropylbenzene	18.26	15.82	1.154	ok	1.155	1.095-1.215
Isopropyl Alcohol	5.59	8.22	0.680	ok	0.682	0.622-0.742
p-Isopropyltoluene	20.62	15.82	1.303	ok	1.304	1.244-1.364
Methylene chloride	6.16	8.22	0.749	ok	0.750	0.690-0.810
Methyl ethyl ketone	7.61	8.22	0.926	ok	0.930	0.870-0.990
Methyl Isobutyl Ketone	12.27	10.34	1.187	ok	1.189	1.129-1.249
Methyl Tert Butyl Ether	7.27	8.22	0.884	ok	0.887	0.827-0.947
Methylmethacrylate	11.43	10.34	1.105	ok	1.107	1.047-1.167
Naphthalene	23.13	15.82	1.462	ok	1.463	1.403-1.523
Nonane	17.74	15.82	1.121	ok	1.122	1.062-1.182
Octane	14.77	10.34	1.428	ok	1.429	1.369-1.489
Pentane	5.78	8.22	0.703	ok	0.704	0.644-0.764
n-Propylbenzene	19.06	15.82	1.205	ok	1.206	1.146-1.266
Propylene	4.08	8.22	0.496	ok	0.497	0.437-0.557
Styrene	17.20	15.82	1.087	ok	1.088	1.028-1.148
1,1,1-Trichloroethane	9.40	8.22	1.144	ok	1.144	1.084-1.204
1,1,1,2-Tetrachloroethane	15.85	10.34	1.533	ok	1.533	1.473-1.593

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V5W881-IC881	5W22154.D	01/12/17 10:56	DFT	0.04	GCMS5W	TO-15	
V5W881-IC881	5W22155.D	01/12/17 11:38	DFT	0.1	GCMS5W	TO-15	
V5W881-IC881	5W22156.D	01/12/17 12:19	DFT	0.2	GCMS5W	TO-15	
V5W881-IC881	5W22157.D	01/12/17 13:02	DFT	0.5	GCMS5W	TO-15	
V5W881-IC881	5W22158.D	01/12/17 13:43	DFT	5	GCMS5W	TO-15	
V5W881-ICC881	5W22159.D	01/12/17 14:26	DFT	10	GCMS5W	TO-15	Reporting this level
V5W881-IC881	5W22160.D	01/12/17 15:11	DFT	20	GCMS5W	TO-15	
V5W881-IC881	5W22161.D	01/12/17 15:56	DFT	40	GCMS5W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+/- .06)
1,1,2,2-Tetrachloroethane	17.36	15.82	1.097	ok	1.098	1.038-1.158
1,1,2-Trichloroethane	13.09	10.34	1.266	ok	1.266	1.206-1.326
1,2,4-Trichlorobenzene	23.00	15.82	1.454	ok	1.455	1.395-1.515
1,2,3-Trichloropropane	17.55	15.82	1.109	ok	1.110	1.050-1.170
1,2,4-Trimethylbenzene	20.01	15.82	1.265	ok	1.265	1.205-1.325
1,3,5-Trimethylbenzene	19.41	15.82	1.227	ok	1.228	1.168-1.288
2,2,4-Trimethylpentane	11.16	10.34	1.079	ok	1.080	1.020-1.140
Tertiary Butyl Alcohol	6.10	8.22	0.742	ok	0.745	0.685-0.805
Tetrachloroethylene	14.94	10.34	1.445	ok	1.445	1.385-1.505
Tetrahydrofuran	8.80	8.22	1.071	ok	1.074	1.014-1.134
Toluene	13.44	10.34	1.300	ok	1.300	1.240-1.360
Trichloroethylene	11.15	10.34	1.078	ok	1.078	1.018-1.138
Trichlorofluoromethane	5.50	8.22	0.669	ok	0.670	0.610-0.730
Vinyl chloride	4.43	8.22	0.539	ok	0.540	0.480-0.600
Vinyl Acetate	7.36	8.22	0.895	ok	0.897	0.837-0.957
m,p-Xylene	16.68	15.82	1.054	ok	1.055	0.995-1.115
o-Xylene	17.36	15.82	1.097	ok	1.098	1.038-1.158
TVHC As Equiv Pentane	5.78	15.82	0.365	ok	0.366	0.306-0.426

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+/- 0.33)	Area		Mean Area	Area Range (+/- 40 %)
Bromochloromethane	8.22	ok	8.22	7.89-8.55	172044	ok	172460	103476-241444
1,4-Difluorobenzene	10.34	ok	10.34	10.01-10.67	695340	ok	702187	421312-983062
Chlorobenzene-D5	15.82	ok	15.81	15.48-16.14	362126	ok	361425	216855-505995

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V5W881-IC881	5W22154.D	01/12/17 10:56	DFT	0.04	GCMS5W	TO-15	
V5W881-IC881	5W22155.D	01/12/17 11:38	DFT	0.1	GCMS5W	TO-15	
V5W881-IC881	5W22156.D	01/12/17 12:19	DFT	0.2	GCMS5W	TO-15	
V5W881-IC881	5W22157.D	01/12/17 13:02	DFT	0.5	GCMS5W	TO-15	
V5W881-IC881	5W22158.D	01/12/17 13:43	DFT	5	GCMS5W	TO-15	
V5W881-ICC881	5W22159.D	01/12/17 14:26	DFT	10	GCMS5W	TO-15	
V5W881-IC881	5W22160.D	01/12/17 15:11	DFT	20	GCMS5W	TO-15	Reporting this level
V5W881-IC881	5W22161.D	01/12/17 15:56	DFT	40	GCMS5W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+/- .06)
Acetone	5.38	8.22	0.655	ok	0.657	0.597-0.717
Acrylonitrile	5.76	8.22	0.701	ok	0.703	0.643-0.763
Acetonitrile	5.17	8.22	0.629	ok	0.631	0.571-0.691
1,3-Butadiene	4.54	8.22	0.552	ok	0.553	0.493-0.613
Benzene	9.92	8.22	1.207	ok	1.207	1.147-1.267
Bromobenzene	18.37	15.82	1.161	ok	1.162	1.102-1.222
Bromodichloromethane	11.11	10.34	1.074	ok	1.075	1.015-1.135
Bromoform	16.77	15.82	1.060	ok	1.060	1.000-1.120
Bromomethane	4.75	8.22	0.578	ok	0.579	0.519-0.639
Bromoethene	5.17	8.22	0.629	ok	0.629	0.569-0.689
n-Butane	4.57	8.22	0.556	ok	0.557	0.497-0.617
Benzyl Chloride	20.20	15.82	1.277	ok	1.277	1.217-1.337
n-Butylbenzene	21.20	15.82	1.340	ok	1.340	1.280-1.400
sec-Butylbenzene	20.39	15.82	1.289	ok	1.289	1.229-1.349
tert-Butylbenzene	19.99	15.82	1.264	ok	1.264	1.204-1.324
Carbon disulfide	6.42	8.22	0.781	ok	0.782	0.722-0.842
Chlorobenzene	15.88	15.82	1.004	ok	1.004	0.944-1.064
Chlorodifluoromethane	4.06	8.22	0.494	ok	0.494	0.434-0.554
Chloroethane	4.88	8.22	0.594	ok	0.595	0.535-0.655
Chlorotrifluoroethene	4.08	8.22	0.496	ok	0.497	0.437-0.557
Chloroform	8.35	8.22	1.016	ok	1.017	0.957-1.077
Chloromethane	4.27	8.22	0.519	ok	0.520	0.460-0.580
3-Chloropropene	6.25	8.22	0.760	ok	0.761	0.701-0.821
2-Chlorotoluene	18.99	15.82	1.200	ok	1.201	1.141-1.261
Carbon tetrachloride	10.08	8.22	1.226	ok	1.227	1.167-1.287
Cyclohexane	10.21	8.22	1.242	ok	1.242	1.182-1.302
1,1-Dichloroethane	7.21	8.22	0.877	ok	0.877	0.817-0.937
1,1-Dichloroethylene	6.05	8.22	0.736	ok	0.736	0.676-0.796
1,2-Dibromoethane	14.31	10.34	1.384	ok	1.384	1.324-1.444
1,2-Dichloroethane	9.14	8.22	1.112	ok	1.112	1.052-1.172
1,2-Dichloropropane	10.86	10.34	1.050	ok	1.051	0.991-1.111
1,3-Dichloropropane	13.49	10.34	1.305	ok	1.305	1.245-1.365
1,4-Dioxane	11.19	10.34	1.082	ok	1.085	1.025-1.145
Dichlorodifluoromethane	4.14	8.22	0.504	ok	0.504	0.444-0.564
Dichlorofluoromethane	4.96	8.22	0.603	ok	0.604	0.544-0.664
Dibromochloromethane	13.99	10.34	1.353	ok	1.353	1.293-1.413
Dibromomethane	10.85	10.34	1.049	ok	1.049	0.989-1.109
trans-1,2-Dichloroethylene	7.01	8.22	0.853	ok	0.853	0.793-0.913
cis-1,2-Dichloroethylene	8.05	8.22	0.979	ok	0.980	0.920-1.040
cis-1,3-Dichloropropene	12.21	10.34	1.181	ok	1.182	1.122-1.242

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V5W881-IC881	5W22154.D	01/12/17 10:56	DFT	0.04	GCMS5W	TO-15	
V5W881-IC881	5W22155.D	01/12/17 11:38	DFT	0.1	GCMS5W	TO-15	
V5W881-IC881	5W22156.D	01/12/17 12:19	DFT	0.2	GCMS5W	TO-15	
V5W881-IC881	5W22157.D	01/12/17 13:02	DFT	0.5	GCMS5W	TO-15	
V5W881-IC881	5W22158.D	01/12/17 13:43	DFT	5	GCMS5W	TO-15	
V5W881-ICC881	5W22159.D	01/12/17 14:26	DFT	10	GCMS5W	TO-15	
V5W881-IC881	5W22160.D	01/12/17 15:11	DFT	20	GCMS5W	TO-15	Reporting this level
V5W881-IC881	5W22161.D	01/12/17 15:56	DFT	40	GCMS5W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+/- .06)
m-Dichlorobenzene	20.20	15.82	1.277	ok	1.278	1.218-1.338
o-Dichlorobenzene	20.77	15.82	1.313	ok	1.313	1.253-1.373
p-Dichlorobenzene	20.30	15.82	1.283	ok	1.284	1.224-1.344
trans-1,3-Dichloropropene	12.89	10.34	1.247	ok	1.247	1.187-1.307
Di-Isopropyl ether	8.25	8.22	1.004	ok	1.005	0.945-1.065
2,3-Dimethylpentane	10.49	8.22	1.276	ok	1.277	1.217-1.337
2,4-Dimethylpentane	9.17	8.22	1.116	ok	1.117	1.057-1.177
Ethanol	4.99	8.22	0.607	ok	0.609	0.549-0.669
Ethylbenzene	16.42	15.82	1.038	ok	1.038	0.978-1.098
Ethyl Acetate	8.30	8.22	1.010	ok	1.011	0.951-1.071
Ethyl Acrylate	10.92	10.34	1.056	ok	1.056	0.996-1.116
4-Ethyltoluene	19.30	15.82	1.220	ok	1.220	1.160-1.280
Freon 113	6.38	8.22	0.776	ok	0.777	0.717-0.837
Freon 114	4.34	8.22	0.528	ok	0.528	0.468-0.588
Freon 123	5.28	8.22	0.642	ok	0.643	0.583-0.703
Freon 123A	5.33	8.22	0.648	ok	0.649	0.589-0.709
Freon 141B	5.60	8.22	0.681	ok	0.682	0.622-0.742
Freon 142B	4.25	8.22	0.517	ok	0.517	0.457-0.577
Freon 143a	3.93	8.22	0.478	ok	0.479	0.419-0.539
Freon 152A	4.02	8.22	0.489	ok	0.490	0.430-0.550
Heptane	11.50	10.34	1.112	ok	1.112	1.052-1.172
Hexachlorobutadiene	23.58	15.82	1.491	ok	1.491	1.431-1.551
Hexachloroethane	21.66	15.82	1.369	ok	1.370	1.310-1.430
Hexane	8.23	8.22	1.001	ok	1.002	0.942-1.062
2-Hexanone	13.83	10.34	1.338	ok	1.338	1.278-1.398
Iodomethane	5.98	8.22	0.727	ok	0.728	0.668-0.788
Isopropylbenzene	18.26	15.82	1.154	ok	1.155	1.095-1.215
Isopropyl Alcohol	5.59	8.22	0.680	ok	0.682	0.622-0.742
p-Isopropyltoluene	20.62	15.82	1.303	ok	1.304	1.244-1.364
Methylene chloride	6.16	8.22	0.749	ok	0.750	0.690-0.810
Methyl ethyl ketone	7.61	8.22	0.926	ok	0.930	0.870-0.990
Methyl Isobutyl Ketone	12.27	10.34	1.187	ok	1.189	1.129-1.249
Methyl Tert Butyl Ether	7.26	8.22	0.883	ok	0.887	0.827-0.947
Methylmethacrylate	11.43	10.34	1.105	ok	1.107	1.047-1.167
Naphthalene	23.13	15.82	1.462	ok	1.463	1.403-1.523
Nonane	17.74	15.82	1.121	ok	1.122	1.062-1.182
Octane	14.77	10.34	1.428	ok	1.429	1.369-1.489
Pentane	5.78	8.22	0.703	ok	0.704	0.644-0.764
n-Propylbenzene	19.06	15.82	1.205	ok	1.206	1.146-1.266
Propylene	4.08	8.22	0.496	ok	0.497	0.437-0.557

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V5W881-IC881	5W22154.D	01/12/17 10:56	DFT	0.04	GCMS5W	TO-15	
V5W881-IC881	5W22155.D	01/12/17 11:38	DFT	0.1	GCMS5W	TO-15	
V5W881-IC881	5W22156.D	01/12/17 12:19	DFT	0.2	GCMS5W	TO-15	
V5W881-IC881	5W22157.D	01/12/17 13:02	DFT	0.5	GCMS5W	TO-15	
V5W881-IC881	5W22158.D	01/12/17 13:43	DFT	5	GCMS5W	TO-15	
V5W881-ICC881	5W22159.D	01/12/17 14:26	DFT	10	GCMS5W	TO-15	
V5W881-IC881	5W22160.D	01/12/17 15:11	DFT	20	GCMS5W	TO-15	Reporting this level
V5W881-IC881	5W22161.D	01/12/17 15:56	DFT	40	GCMS5W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+/- .06)
Styrene	17.21	15.82	1.088	ok	1.088	1.028-1.148
1,1,1-Trichloroethane	9.40	8.22	1.144	ok	1.144	1.084-1.204
1,1,1,2-Tetrachloroethane	15.86	10.34	1.534	ok	1.533	1.473-1.593
1,1,2,2-Tetrachloroethane	17.37	15.82	1.098	ok	1.098	1.038-1.158
1,1,2-Trichloroethane	13.09	10.34	1.266	ok	1.266	1.206-1.326
1,2,4-Trichlorobenzene	23.00	15.82	1.454	ok	1.455	1.395-1.515
1,2,3-Trichloropropane	17.56	15.82	1.110	ok	1.110	1.050-1.170
1,2,4-Trimethylbenzene	20.01	15.82	1.265	ok	1.265	1.205-1.325
1,3,5-Trimethylbenzene	19.42	15.82	1.228	ok	1.228	1.168-1.288
2,2,4-Trimethylpentane	11.17	10.34	1.080	ok	1.080	1.020-1.140
Tertiary Butyl Alcohol	6.10	8.22	0.742	ok	0.745	0.685-0.805
Tetrachloroethylene	14.94	10.34	1.445	ok	1.445	1.385-1.505
Tetrahydrofuran	8.80	8.22	1.071	ok	1.074	1.014-1.134
Toluene	13.44	10.34	1.300	ok	1.300	1.240-1.360
Trichloroethylene	11.15	10.34	1.078	ok	1.078	1.018-1.138
Trichlorofluoromethane	5.50	8.22	0.669	ok	0.670	0.610-0.730
Vinyl chloride	4.43	8.22	0.539	ok	0.540	0.480-0.600
Vinyl Acetate	7.36	8.22	0.895	ok	0.897	0.837-0.957
m,p-Xylene	16.69	15.82	1.055	ok	1.055	0.995-1.115
o-Xylene	17.36	15.82	1.097	ok	1.098	1.038-1.158
TVHC As Equiv Pentane	5.78	15.82	0.365	ok	0.366	0.306-0.426

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+/- 0.33)	Area		Mean Area	Area Range (+/- 40 %)
Bromochloromethane	8.22	ok	8.22	7.89-8.55	144713	ok	172460	103476-241444
1,4-Difluorobenzene	10.34	ok	10.34	10.01-10.67	590604	ok	702187	421312-983062
Chlorobenzene-D5	15.82	ok	15.81	15.48-16.14	344318	ok	361425	216855-505995

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V5W881-IC881	5W22154.D	01/12/17 10:56	DFT	0.04	GCMS5W	TO-15	
V5W881-IC881	5W22155.D	01/12/17 11:38	DFT	0.1	GCMS5W	TO-15	
V5W881-IC881	5W22156.D	01/12/17 12:19	DFT	0.2	GCMS5W	TO-15	
V5W881-IC881	5W22157.D	01/12/17 13:02	DFT	0.5	GCMS5W	TO-15	
V5W881-IC881	5W22158.D	01/12/17 13:43	DFT	5	GCMS5W	TO-15	
V5W881-ICC881	5W22159.D	01/12/17 14:26	DFT	10	GCMS5W	TO-15	
V5W881-IC881	5W22160.D	01/12/17 15:11	DFT	20	GCMS5W	TO-15	
V5W881-IC881	5W22161.D	01/12/17 15:56	DFT	40	GCMS5W	TO-15	Reporting this level

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+/- .06)
Acetone	5.38	8.22	0.655	ok	0.657	0.597-0.717
Acrylonitrile	5.77	8.22	0.702	ok	0.703	0.643-0.763
Acetonitrile	5.18	8.22	0.630	ok	0.631	0.571-0.691
1,3-Butadiene	4.53	8.22	0.551	ok	0.553	0.493-0.613
Benzene	9.92	8.22	1.207	ok	1.207	1.147-1.267
Bromobenzene	18.38	15.82	1.162	ok	1.162	1.102-1.222
Bromodichloromethane	11.12	10.35	1.074	ok	1.075	1.015-1.135
Bromoform	16.78	15.82	1.061	ok	1.060	1.000-1.120
Bromomethane	4.76	8.22	0.579	ok	0.579	0.519-0.639
Bromoethene	5.17	8.22	0.629	ok	0.629	0.569-0.689
n-Butane	4.58	8.22	0.557	ok	0.557	0.497-0.617
Benzyl Chloride	20.20	15.82	1.277	ok	1.277	1.217-1.337
n-Butylbenzene	21.21	15.82	1.341	ok	1.340	1.280-1.400
sec-Butylbenzene	20.39	15.82	1.289	ok	1.289	1.229-1.349
tert-Butylbenzene	20.00	15.82	1.264	ok	1.264	1.204-1.324
Carbon disulfide	6.42	8.22	0.781	ok	0.782	0.722-0.842
Chlorobenzene	15.88	15.82	1.004	ok	1.004	0.944-1.064
Chlorodifluoromethane	4.06	8.22	0.494	ok	0.494	0.434-0.554
Chloroethane	4.89	8.22	0.595	ok	0.595	0.535-0.655
Chlorotrifluoroethene	4.09	8.22	0.498	ok	0.497	0.437-0.557
Chloroform	8.36	8.22	1.017	ok	1.017	0.957-1.077
Chloromethane	4.27	8.22	0.519	ok	0.520	0.460-0.580
3-Chloropropene	6.26	8.22	0.762	ok	0.761	0.701-0.821
2-Chlorotoluene	19.00	15.82	1.201	ok	1.201	1.141-1.261
Carbon tetrachloride	10.09	8.22	1.227	ok	1.227	1.167-1.287
Cyclohexane	10.21	8.22	1.242	ok	1.242	1.182-1.302
1,1-Dichloroethane	7.21	8.22	0.877	ok	0.877	0.817-0.937
1,1-Dichloroethylene	6.05	8.22	0.736	ok	0.736	0.676-0.796
1,2-Dibromoethane	14.31	10.35	1.383	ok	1.384	1.324-1.444
1,2-Dichloroethane	9.14	8.22	1.112	ok	1.112	1.052-1.172
1,2-Dichloropropane	10.87	10.35	1.050	ok	1.051	0.991-1.111
1,3-Dichloropropane	13.49	10.35	1.303	ok	1.305	1.245-1.365
1,4-Dioxane	11.20	10.35	1.082	ok	1.085	1.025-1.145
Dichlorodifluoromethane	4.14	8.22	0.504	ok	0.504	0.444-0.564
Dichlorofluoromethane	4.96	8.22	0.603	ok	0.604	0.544-0.664
Dibromochloromethane	14.01	10.35	1.354	ok	1.353	1.293-1.413
Dibromomethane	10.85	10.35	1.048	ok	1.049	0.989-1.109
trans-1,2-Dichloroethylene	7.01	8.22	0.853	ok	0.853	0.793-0.913
cis-1,2-Dichloroethylene	8.05	8.22	0.979	ok	0.980	0.920-1.040
cis-1,3-Dichloropropene	12.22	10.35	1.181	ok	1.182	1.122-1.242

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V5W881-IC881	5W22154.D	01/12/17 10:56	DFT	0.04	GCMS5W	TO-15	
V5W881-IC881	5W22155.D	01/12/17 11:38	DFT	0.1	GCMS5W	TO-15	
V5W881-IC881	5W22156.D	01/12/17 12:19	DFT	0.2	GCMS5W	TO-15	
V5W881-IC881	5W22157.D	01/12/17 13:02	DFT	0.5	GCMS5W	TO-15	
V5W881-IC881	5W22158.D	01/12/17 13:43	DFT	5	GCMS5W	TO-15	
V5W881-ICC881	5W22159.D	01/12/17 14:26	DFT	10	GCMS5W	TO-15	
V5W881-IC881	5W22160.D	01/12/17 15:11	DFT	20	GCMS5W	TO-15	
V5W881-IC881	5W22161.D	01/12/17 15:56	DFT	40	GCMS5W	TO-15	Reporting this level

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+/- .06)
m-Dichlorobenzene	20.21	15.82	1.277	ok	1.278	1.218-1.338
o-Dichlorobenzene	20.78	15.82	1.314	ok	1.313	1.253-1.373
p-Dichlorobenzene	20.31	15.82	1.284	ok	1.284	1.224-1.344
trans-1,3-Dichloropropene	12.89	10.35	1.245	ok	1.247	1.187-1.307
Di-Isopropyl ether	8.25	8.22	1.004	ok	1.005	0.945-1.065
2,3-Dimethylpentane	10.49	8.22	1.276	ok	1.277	1.217-1.337
2,4-Dimethylpentane	9.18	8.22	1.117	ok	1.117	1.057-1.177
Ethanol	5.00	8.22	0.608	ok	0.609	0.549-0.669
Ethylbenzene	16.42	15.82	1.038	ok	1.038	0.978-1.098
Ethyl Acetate	8.30	8.22	1.010	ok	1.011	0.951-1.071
Ethyl Acrylate	10.92	10.35	1.055	ok	1.056	0.996-1.116
4-Ethyltoluene	19.30	15.82	1.220	ok	1.220	1.160-1.280
Freon 113	6.38	8.22	0.776	ok	0.777	0.717-0.837
Freon 114	4.34	8.22	0.528	ok	0.528	0.468-0.588
Freon 123	5.29	8.22	0.644	ok	0.643	0.583-0.703
Freon 123A	5.33	8.22	0.648	ok	0.649	0.589-0.709
Freon 141B	5.60	8.22	0.681	ok	0.682	0.622-0.742
Freon 142B	4.25	8.22	0.517	ok	0.517	0.457-0.577
Freon 152A	4.02	8.22	0.489	ok	0.490	0.430-0.550
Heptane	11.51	10.35	1.112	ok	1.112	1.052-1.172
Hexachlorobutadiene	23.59	15.82	1.491	ok	1.491	1.431-1.551
Hexachloroethane	21.66	15.82	1.369	ok	1.370	1.310-1.430
Hexane	8.23	8.22	1.001	ok	1.002	0.942-1.062
2-Hexanone	13.83	10.35	1.336	ok	1.338	1.278-1.398
Iodomethane	5.98	8.22	0.727	ok	0.728	0.668-0.788
Isopropylbenzene	18.28	15.82	1.155	ok	1.155	1.095-1.215
Isopropyl Alcohol	5.60	8.22	0.681	ok	0.682	0.622-0.742
p-Isopropyltoluene	20.63	15.82	1.304	ok	1.304	1.244-1.364
Methylene chloride	6.16	8.22	0.749	ok	0.750	0.690-0.810
Methyl ethyl ketone	7.62	8.22	0.927	ok	0.930	0.870-0.990
Methyl Isobutyl Ketone	12.28	10.35	1.186	ok	1.189	1.129-1.249
Methyl Tert Butyl Ether	7.27	8.22	0.884	ok	0.887	0.827-0.947
Methylmethacrylate	11.44	10.35	1.105	ok	1.107	1.047-1.167
Naphthalene	23.13	15.82	1.462	ok	1.463	1.403-1.523
Nonane	17.75	15.82	1.122	ok	1.122	1.062-1.182
Octane	14.78	10.35	1.428	ok	1.429	1.369-1.489
Pentane	5.79	8.22	0.704	ok	0.704	0.644-0.764
n-Propylbenzene	19.07	15.82	1.205	ok	1.206	1.146-1.266
Propylene	4.08	8.22	0.496	ok	0.497	0.437-0.557
Styrene	17.22	15.82	1.088	ok	1.088	1.028-1.148

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V5W881-IC881	5W22154.D	01/12/17 10:56	DFT	0.04	GCMS5W	TO-15	
V5W881-IC881	5W22155.D	01/12/17 11:38	DFT	0.1	GCMS5W	TO-15	
V5W881-IC881	5W22156.D	01/12/17 12:19	DFT	0.2	GCMS5W	TO-15	
V5W881-IC881	5W22157.D	01/12/17 13:02	DFT	0.5	GCMS5W	TO-15	
V5W881-IC881	5W22158.D	01/12/17 13:43	DFT	5	GCMS5W	TO-15	
V5W881-ICC881	5W22159.D	01/12/17 14:26	DFT	10	GCMS5W	TO-15	
V5W881-IC881	5W22160.D	01/12/17 15:11	DFT	20	GCMS5W	TO-15	
V5W881-IC881	5W22161.D	01/12/17 15:56	DFT	40	GCMS5W	TO-15	Reporting this level

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+/- .06)
1,1,1-Trichloroethane	9.40	8.22	1.144	ok	1.144	1.084-1.204
1,1,1,2-Tetrachloroethane	15.86	10.35	1.532	ok	1.533	1.473-1.593
1,1,2,2-Tetrachloroethane	17.38	15.82	1.099	ok	1.098	1.038-1.158
1,1,2-Trichloroethane	13.10	10.35	1.266	ok	1.266	1.206-1.326
1,2,4-Trichlorobenzene	23.00	15.82	1.454	ok	1.455	1.395-1.515
1,2,3-Trichloropropane	17.57	15.82	1.111	ok	1.110	1.050-1.170
1,2,4-Trimethylbenzene	20.02	15.82	1.265	ok	1.265	1.205-1.325
1,3,5-Trimethylbenzene	19.43	15.82	1.228	ok	1.228	1.168-1.288
2,2,4-Trimethylpentane	11.17	10.35	1.079	ok	1.080	1.020-1.140
Tertiary Butyl Alcohol	6.11	8.22	0.743	ok	0.745	0.685-0.805
Tetrachloroethylene	14.94	10.35	1.443	ok	1.445	1.385-1.505
Tetrahydrofuran	8.80	8.22	1.071	ok	1.074	1.014-1.134
Toluene	13.44	10.35	1.299	ok	1.300	1.240-1.360
Trichloroethylene	11.15	10.35	1.077	ok	1.078	1.018-1.138
Trichlorofluoromethane	5.50	8.22	0.669	ok	0.670	0.610-0.730
Vinyl chloride	4.44	8.22	0.540	ok	0.540	0.480-0.600
Vinyl Acetate	7.36	8.22	0.895	ok	0.897	0.837-0.957
m,p-Xylene	16.70	15.82	1.056	ok	1.055	0.995-1.115
o-Xylene	17.36	15.82	1.097	ok	1.098	1.038-1.158
TVHC As Equiv Pentane	5.78	15.82	0.365	ok	0.366	0.306-0.426

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+/- 0.33)	Area		Mean Area	Area Range (+/- 40 %)
Bromochloromethane	8.22	ok	8.22	7.89-8.55	162077	ok	172460	103476-241444
1,4-Difluorobenzene	10.35	ok	10.34	10.01-10.67	674964	ok	702187	421312-983062
Chlorobenzene-D5	15.82	ok	15.81	15.48-16.14	392221	ok	361425	216855-505995

Volatile Surrogate Recovery Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Method: TO-15 **Matrix:** AIR

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1
JC37217-1	5W22951.D	96
JC37214-2DUP	5W22947.D	86
V5W900-SCC	5W22695A.D	92
V5W909-BS	5W22930.D	97
V5W909-BSD	5W22932.D	97
V5W909-MB	5W22934.D	87
V5W900-BS	5W22692.D	100
V5W900-BSD	5W22693.D	99
V5W900-MB	5W22695.D	92

Surrogate Compounds	Recovery Limits
S1 = 4-Bromofluorobenzene	65-128%

Initial Calibration Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample: V5W881-ICC881
Lab FileID: 5W22159.D

Response Factor Report GCMS5W

Method Path : C:\msdchem\1\METHODS\
Method File : m5w881.M
Title : TO-15 Full Scan Mode
Last Update : Thu Jan 12 16:49:46 2017
Response Via : Initial Calibration

Calibration Files
20 =5W22160.D 0.5 =5W22157.D 0.2 =5W22156.D 0.1 =5W22155.D 0.04=5W22154.D 10 =5W22159.D 5 =5W22158.D
40 =5W22161.D

	Compound	20	0.5	0.2	0.1	0.04	10	5	40	Avg	%RSD
1) I	Bromochloromethane	----------ISTD----------									
2)	1,1,1-Trifluor...	2.326	2.004	2.925	2.915	3.398	1.775	2.765		2.587	22.20
3)	Freon 152A	0.770	0.716	0.668	0.670	0.708	0.658	0.640	0.682	0.689	5.99
4)	Chlorodifluoro...	0.291	0.262	0.255	0.254	0.265	0.251	0.240	0.257	0.259	5.77
5)	Propene	0.843	0.855	0.891	0.810	0.889	0.737	0.719	0.723	0.808	9.02
6)	Chlorotrifluor...	1.583	1.426	1.367	1.302	1.295	1.353	1.305	1.390	1.378	6.89
7)	Dichlorodifluo...	3.048	2.825	2.656	2.557	2.755	2.596	2.537	2.617	2.699	6.36
8)	1-Chloro-1,1-d...	2.112	1.936	1.849	1.792	1.985	1.821	1.754	1.782	1.879	6.53
9)	Chloromethane	1.115	1.038	0.985	1.045	1.090	0.963	0.931	0.942	1.013	6.79
10)	Dichlorotetraf...	3.334	3.095	2.982	2.897	3.298	2.891	2.804	2.805	3.013	6.95
11)	Vinyl Chloride	1.293	1.189	1.119	1.063	1.049	1.106	1.071	1.119	1.126	7.14
12)	1,3-Butadiene	0.911	0.826	0.813	0.837	0.859	0.775	0.757	0.779	0.820	6.16
13)	n-Butane	0.201	0.195	0.185	0.190	0.175	0.174	0.171	0.173	0.183	6.18
14)	Bromomethane	1.292	1.196	1.202	1.351	1.217	1.112	1.070	1.136	1.197	7.76
15)	Chloroethane	0.632	0.570	0.552	0.531	0.575	0.549	0.532	0.559	0.562	5.75
16)	Dichlorofluoro...	2.834	2.636	2.588	2.565	3.093	2.457	2.388	2.445	2.626	8.93
17)	Acetonitrile	0.957	0.894	0.848	0.828		0.827	0.799	0.824	0.854	6.34
18)	Freon 123	3.215	3.023	2.933	2.991	3.598	2.794	2.724	2.706	2.998	9.88
19)	Freon 123A	1.654	1.561	1.514	1.470	1.512	1.436	1.400	1.391	1.492	5.90
20)	Bromoethene	1.259	1.115	1.056	1.042	0.977	1.076	1.041	1.108	1.084	7.65
21)	Trichlorofluor...	2.996	2.736	2.600	2.507	2.402	2.561	2.510	2.570	2.610	6.99
22)	Acetone	0.563	0.557	0.563	0.598		0.485	0.477	0.491	0.533	9.01
23)	Pentane	0.319	0.333	0.403	0.347		0.278	0.270	0.275	0.318	15.29
24)	1,1-Dichloro-1...	2.553	2.392	2.334	2.295	2.573	2.207	2.149	2.187	2.336	6.90
25)	Iodomethane	3.442	3.097	2.984	2.826	2.968	2.944	2.842	3.002	3.013	6.43
26)	Isopropyl Alcohol	0.368	0.425	0.407			0.320	0.313	0.311	0.357	14.11
27)	1,1-Dichloroet...	1.949	1.820	1.705	1.648	1.563	1.682	1.640	1.684	1.711	7.02
28)	Freon 113	2.709	2.470	2.340	2.270	2.245	2.328	2.254	2.347	2.370	6.52
29)	Methylene Chlo...	1.160	1.116	1.125	1.313		0.990	0.960	1.015	1.097	11.09
30)	Carbon Disulfide	3.583	3.196	2.973	2.911	2.831	3.072	2.975	3.121	3.083	7.57
31)	Ethanol	0.520	0.536	0.496	0.657		0.464	0.447	0.456	0.511	14.26
32)	Acrylonitrile	0.979	0.821	0.710	0.667	0.718	0.835	0.796	0.849	0.797	12.43
33)	3-Chloropropene	0.573	0.512	0.462	0.463	0.438	0.489	0.474	0.507	0.490	8.48
34)	trans-1,2-Dich...	1.789	1.573	1.458	1.460	1.356	1.525	1.470	1.569	1.525	8.38
35)	tert-Butyl Alc...	2.680	2.433	2.275	2.215	2.105	2.299	2.203	2.347	2.320	7.58
36)	Methyl tert-Bu...	3.425	3.159	3.001	2.938	2.940	2.932	2.861	2.989	3.031	5.98
37)	Vinyl Acetate	3.276	3.055	2.838	2.627	2.542	2.777	2.671	2.870	2.832	8.47
38)	1,1-Dichloroet...	2.318	2.130	2.007	2.024	1.932	1.977	1.927	2.030	2.043	6.27
39)	2-Butanone	0.631	0.549	0.496	0.445	0.348	0.531	0.516	0.554	0.509	16.47
40)	Hexane	1.837	1.766	1.806	2.107	1.980	1.604	1.560	1.561	1.778	11.21
41)	cis-1,2-Dichlo...	1.752	1.566	1.446	1.433	1.377	1.490	1.443	1.535	1.505	7.72
42)	Di-isopropyl E...	1.074	0.965	0.897	0.838	0.728	0.930	0.891	0.929	0.906	10.99
43)	Ethyl Acetate	0.409	0.347	0.312	0.295		0.358	0.340	0.355	0.345	10.61
44)	Methyl Acrylate	2.170	1.972	1.881	2.095		1.879	1.800	1.865	1.952	6.92
45)	Chloroform	2.714	2.491	2.398	2.330	2.548	2.327	2.252	2.346	2.426	6.21

Initial Calibration Summary

Job Number: JC37217 **Sample:** V5W881-ICC881
Account: BPAMSS Atlantic Richfield Company **Lab FileID:** 5W22159.D
Project: SCNJL: 4101 Post Road, Trainer, PA

46)		2,4-Dimethylpe...	2.264	2.106	2.045	2.301	2.496	1.946	1.900	1.951	2.126	9.86
47)		Tetrahydrofuran	0.645	0.565	0.527	0.457		0.544	0.530	0.566	0.548	10.32
48)		1,1,1-Trichlor...	2.616	2.333	2.235	2.208	2.324	2.235	2.158	2.295	2.300	6.12
49)		1,2-Dichloroet...	1.589	1.414	1.335	1.252	1.212	1.357	1.306	1.390	1.357	8.50
50)		Benzene	4.110	3.754	3.571	3.638	3.805	3.517	3.417	3.585	3.675	5.86
51)		Carbon Tetrach...	2.588	2.141	2.032	1.970	1.890	2.147	2.046	2.329	2.143	10.41
52)		Cyclohexane	1.952	1.818	1.709	1.759	2.110	1.663	1.618	1.712	1.793	9.16
53)		2,3-Dimethylpe...	0.860	0.797	0.775	0.817	1.150	0.739	0.717	0.739	0.824	16.95
54)	I	1,4-Difluorobenzene	----------ISTD----------									
55)		2,2,4-Trimethy...	1.486	1.398	1.334	1.443	1.313	1.320	1.297	1.193	1.348	6.84
56)		Heptane	0.312	0.286	0.275	0.277	0.350	0.270	0.267	0.265	0.288	10.16
57)		Trichloroethene	0.448	0.403	0.382	0.388	0.371	0.389	0.378	0.375	0.392	6.38
58)		1,2-Dichloropr...	0.369	0.337	0.330	0.325	0.332	0.320	0.312	0.311	0.329	5.58
59)		Dibromomethane	0.428	0.366	0.346	0.341	0.337	0.364	0.349	0.367	0.362	8.05
60)		Ethyl Acrylate	0.730	0.642	0.608	0.689		0.630	0.599	0.628	0.647	7.26
61)		Methyl Methacr...	0.366	0.325	0.302	0.300	0.364	0.312	0.301	0.312	0.323	8.47
62)		1,4-Dioxane	0.238	0.213	0.197	0.186	0.158	0.207	0.199	0.195	0.199	11.47
63)		Bromodichlorom...	0.716	0.610	0.582	0.576	0.626	0.609	0.586	0.610	0.614	7.23
64)		cis-1,3-Dichlo...	0.622	0.522	0.488	0.457	0.466	0.528	0.502	0.534	0.515	10.04
65)		4-Methyl-2-pen...	0.309	0.265	0.240	0.230	0.217	0.264	0.252	0.263	0.255	10.97
66)		trans-1,3-Dich...	0.524	0.416	0.375	0.342	0.309	0.443	0.419	0.441	0.409	16.32
67)		Toluene	1.195	1.070	1.027	1.048	1.182	1.027	1.001	0.995	1.068	7.30
68)		1,1,2-Trichlor...	0.428	0.375	0.345	0.346	0.356	0.367	0.353	0.359	0.366	7.32
69)		1,3-Dichloropr...	0.543	0.473	0.442	0.426	0.396	0.468	0.453	0.459	0.458	9.33
70)		2-Hexanone	0.425	0.350	0.291	0.269		0.363	0.350	0.357	0.344	14.90
71)		Ethyl Methacry...	0.597	0.524	0.492	0.480	0.582	0.514	0.497	0.498	0.523	8.25
72)		Dibromochlorom...	0.750	0.583	0.550	0.529	0.527	0.627	0.600	0.612	0.597	12.09
73)		Tetrachloroethene	0.610	0.539	0.503	0.512	0.485	0.521	0.502	0.514	0.523	7.32
74)		1,2-Dibromoethane	0.676	0.564	0.525	0.504	0.478	0.577	0.552	0.560	0.554	10.71
75)		Octane	0.708	0.634	0.629	0.570	0.690	0.629	0.598	0.596	0.632	7.45
76)		1,1,1,2-Tetrac...	0.515	0.418	0.399	0.382	0.364	0.432	0.414	0.414	0.417	10.83
77)	I	Chlorobenzene-d5	----------ISTD----------									
78)		Chlorobenzene	1.587	1.576	1.581	1.597	1.617	1.516	1.494	1.271	1.530	7.36
79)		Ethylbenzene	2.604	2.633	2.660	2.686	2.972	2.509	2.467	2.091	2.578	9.64
80)		m,p-Xylene	1.971	2.118	2.132	2.159	2.445	1.930	1.896	1.555	2.026	12.71
81)		Styrene	1.550	1.477	1.430	1.433	1.462	1.487	1.431	1.260	1.441	5.80
82)		Nonane	1.197	1.235	1.255	1.708	1.333	1.187	1.114	1.016	1.256	16.39
83)		o-Xylene	1.991	2.058	2.098	2.123	2.326	1.944	1.911	1.537	1.999	11.35
84)		Bromoform	1.280	1.010	0.971	0.933	0.975	1.183	1.121	1.022	1.062	11.42
85)		1,1,2,2-Tetrac...	1.566	1.562	1.571	1.588	1.664	1.523	1.500	1.246	1.527	8.09
86)		1,2,3-Trichlor...	1.168	1.146	1.149	1.124	1.121	1.112	1.087	0.973	1.110	5.46
87)		Isopropylbenzene	2.821	2.876	2.864	2.845	2.911	2.748	2.690	2.259	2.752	7.69
88)		Bromobenzene	0.936	0.876	0.860	0.819	0.843	0.891	0.856	0.749	0.854	6.40
89)		2-Chlorotoluene	0.705	0.668	0.672	0.642	0.656	0.675	0.646	0.576	0.655	5.70
90)		n-Propylbenzene	0.754	0.731	0.706	0.684	0.658	0.719	0.696	0.617	0.696	6.21
91)	S	4-Bromofluorob...	1.320	1.334	1.319	1.319	1.332	1.331	1.323	1.199	1.310	3.46
92)		4-Ethyltoluene	2.646	2.655	2.663	2.656	2.789	2.525	2.509	2.142	2.573	7.58
93)		1,3,5-Trimethy...	2.231	2.273	2.303	2.306	2.444	2.133	2.090	1.826	2.201	8.49
94)		alpha-Methylst...	1.161	1.096	1.091	1.053	1.145	1.121	1.073	0.976	1.090	5.34
95)		tert-Butylbenzene	0.477	0.490	0.487	0.478	0.455	0.463	0.445	0.383	0.459	7.57
96)		1,2,4-Trimethy...	2.117	2.162	2.184	2.126	2.330	2.089	2.023	1.648	2.085	9.47
97)		1,3-Dichlorobe...	1.447	1.363	1.334	1.287	1.423	1.390	1.324	1.159	1.341	6.74
98)		Benzyl Chloride	1.811	1.409	1.371	1.381	1.776	1.719	1.618	1.456	1.568	11.79
99)		1,4-Dichlorobe...	1.455	1.287	1.287	1.247	1.480	1.376	1.288	1.197	1.327	7.55
100)		sec-Butylbenzene	0.595	0.603	0.610	0.595	0.568	0.570	0.541	0.496	0.572	6.66
101)		p-Isopropyltol...	0.660	0.669	0.658	0.632	0.635	0.637	0.611	0.520	0.628	7.53
102)		1,2-Dichlorobe...	1.400	1.289	1.261	1.219	1.356	1.328	1.256	1.163	1.284	5.95
103)		n-Butylbenzene	0.612	0.566	0.528	0.501	0.517	0.577	0.543	0.516	0.545	6.88

Initial Calibration Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample: V5W881-ICC881
Lab FileID: 5W22159.D

```
104)     Hexachloroethane  0.873 0.658 0.622 0.588 0.602 0.805 0.723 0.737 0.701   14.56
105)     1,2,4-Trichlor... 0.808 0.495 0.452 0.440 0.753 0.736 0.617 0.736 0.630   23.64
106)     Naphthalene       1.686 1.183 1.182 1.234       1.559 1.304 1.501 1.378   14.66
107)     Hexachlorobuta... 0.899 0.887 0.878 0.851 0.997 0.859 0.786 0.764 0.865    8.27

108) I   Bromochloromethane... ----------------ISTD---------------------
109)     TVHC as equiv ... 7.720 7.213 7.501             6.678 6.363 6.578 7.009    7.82
 ---------------------------------------------------------------------------
 (#) = Out of Range

m5w881.M Fri Jan 13 10:23:21 2017 GCMS5W
```

Initial Calibration Verification

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample: V5W881-ICV881
Lab FileID: 5W22163.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\5W22163.D Vial: 11
Acq On : 12 Jan 2017 5:23 pm Operator: danat
Sample : icv881-10 Inst : GCMS5W
Misc : MS11221,v5w881,,,,,1 Multiplr: 1.00
MS Integration Params: Rteint.p

Method : C:\msdchem\1\METHODS\m5w881.M (RTE Integrator)
Title : TO-15 Full Scan Mode
Last Update : Thu Jan 12 16:49:46 2017
Response via : Single Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 60% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 140%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	Bromochloromethane	1.000	1.000	0.0	109	0.00	8.22
2	1,1,1-Trifluoroethane	2.587	2.557	1.2	157#	0.00	3.93
3	Freon 152A	0.689	0.594	13.8	98	0.00	4.02
4	Chlorodifluoromethane	0.259	0.228	12.0	99	0.00	4.06
5	Propene	0.808	0.669	17.2	99	0.00	4.08
6	Chlorotrifluoroethene	1.378	1.282	7.0	103	0.00	4.09
7	Dichlorodifluoromethane	2.699	2.377	11.9	100	0.00	4.14
8	1-Chloro-1,1-difluoroetha	1.879	1.635	13.0	98	0.00	4.25
9	Chloromethane	1.013	0.861	15.0	97	0.00	4.27
10	Dichlorotetrafluoroethane	3.013	2.641	12.3	99	0.00	4.34
11	Vinyl Chloride	1.126	0.995	11.6	98	0.00	4.44
12	1,3-Butadiene	0.820	0.711	13.3	100	0.00	4.54
13	n-Butane	0.183	0.160	12.6	100	0.00	4.58
14	Bromomethane	1.197	1.008	15.8	99	0.00	4.76
15	Chloroethane	0.562	0.491	12.6	97	0.00	4.88
16	Dichlorofluoromethane	2.626	2.211	15.8	98	0.00	4.96
17	Acetonitrile	0.854	0.756	11.5	99	0.00	5.17
18	Freon 123	2.998	2.588	13.7	101	0.00	5.28
19	Freon 123A	1.492	1.333	10.7	101	0.00	5.33
20	Bromoethene	1.084	0.960	11.4	97	0.00	5.17
21	Trichlorofluoromethane	2.610	2.375	9.0	101	0.00	5.50
22	Acetone	0.533	0.448	15.9	101	0.00	5.38
23	Pentane	0.318	0.257	19.2	101	0.00	5.78
24	1,1-Dichloro-1-fluoroetha	2.336	2.010	14.0	99	0.00	5.60
25	Iodomethane	3.013	2.834	5.9	105	0.00	5.99
26	Isopropyl Alcohol	0.357	0.310	13.2	105	0.00	5.59
27	1,1-Dichloroethene	1.711	1.466	14.3	95	0.00	6.05
28	Freon 113	2.370	2.000	15.6	93	0.00	6.38
29	Methylene Chloride	1.097	0.880	19.8	97	0.00	6.16
30	Carbon Disulfide	3.083	2.984	3.2	106	0.00	6.42
31	Ethanol	0.511	0.404	20.9	95	0.00	4.99
32	Acrylonitrile	0.797	0.774	2.9	101	0.00	5.76
33	3-Chloropropene	0.490	0.469	4.3	104	0.00	6.25
34	trans-1,2-Dichloroethene	1.525	1.451	4.9	104	0.00	7.01
35	tert-Butyl Alcohol	2.320	1.907	17.8	90	0.00	6.10
36	Methyl tert-Butyl Ether	3.031	2.747	9.4	102	0.00	7.27
37	Vinyl Acetate	2.832	2.687	5.1	105	0.00	7.36
38	1,1-Dichloroethane	2.043	1.795	12.1	99	0.00	7.20
39	2-Butanone	0.509	0.496	2.6	102	0.00	7.61
40	Hexane	1.778	1.522	14.4	103	0.00	8.23
41	cis-1,2-Dichloroethene	1.505	1.357	9.8	99	0.00	8.05
42	Di-isopropyl Ether	0.906	0.835	7.8	98	0.00	8.25

Initial Calibration Verification

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample: V5W881-ICV881
Lab FileID: 5W22163.D

43		Ethyl Acetate	0.345	0.346	-0.3	105	0.00	8.30
44		Methyl Acrylate	1.952	1.755	10.1	102	0.00	8.28
45		Chloroform	2.426	2.110	13.0	99	0.00	8.35
46		2,4-Dimethylpentane	2.126	1.797	15.5	100	0.00	9.17
47		Tetrahydrofuran	0.548	0.500	8.8	100	0.00	8.80
48		1,1,1-Trichloroethane	2.300	2.059	10.5	100	0.00	9.40
49		1,2-Dichloroethane	1.357	1.239	8.7	99	0.00	9.13
50		Benzene	3.675	3.208	12.7	99	0.00	9.92
51		Carbon Tetrachloride	2.143	2.019	5.8	102	0.00	10.08
52		Cyclohexane	1.793	1.543	13.9	101	0.00	10.21
53		2,3-Dimethylpentane	0.824	0.678	17.7	100	0.00	10.49
54	I	1,4-Difluorobenzene	1.000	1.000	0.0	107	0.00	10.34
55		2,2,4-Trimethylpentane	1.348	1.253	7.0	102	0.00	11.16
56		Heptane	0.288	0.252	12.5	100	0.00	11.50
57		Trichloroethene	0.392	0.362	7.7	100	0.00	11.15
58		1,2-Dichloropropane	0.329	0.302	8.2	101	0.00	10.86
59		Dibromomethane	0.362	0.340	6.1	100	0.00	10.84
60		Ethyl Acrylate	0.647	0.594	8.2	101	0.00	10.91
61		Methyl Methacrylate	0.323	0.292	9.6	100	0.00	11.43
62		1,4-Dioxane	0.199	0.188	5.5	97	0.00	11.19
63		Bromodichloromethane	0.614	0.586	4.6	103	0.00	11.11
64		cis-1,3-Dichloropropene	0.515	0.497	3.5	101	0.00	12.21
65		4-Methyl-2-pentanone	0.255	0.249	2.4	101	0.00	12.27
66		trans-1,3-Dichloropropene	0.409	0.413	-1.0	100	0.00	12.88
67		Toluene	1.068	0.965	9.6	101	0.00	13.44
68		1,1,2-Trichloroethane	0.366	0.342	6.6	100	0.00	13.09
69		1,3-Dichloropropane	0.458	0.439	4.1	101	0.00	13.48
70		2-Hexanone	0.344	0.341	0.9	101	0.00	13.82
71		Ethyl Methacrylate	0.523	0.485	7.3	101	0.00	13.85
72		Dibromochloromethane	0.597	0.603	-1.0	103	0.00	13.99
73		Tetrachloroethene	0.523	0.489	6.5	101	0.00	14.94
74		1,2-Dibromoethane	0.554	0.536	3.2	100	0.00	14.30
75		Octane	0.632	0.576	8.9	98	0.00	14.77
76		1,1,1,2-Tetrachloroethane	0.417	0.410	1.7	102	0.00	15.85
77	I	Chlorobenzene-d5	1.000	1.000	0.0	106	0.00	15.82
78		Chlorobenzene	1.530	1.436	6.1	100	0.00	15.87
79		Ethylbenzene	2.578	2.346	9.0	99	0.00	16.42
80		m,p-Xylene	2.026	1.786	11.8	98	0.00	16.68
81		Styrene	1.441	1.364	5.3	97	0.00	17.20
82		Nonane	1.256	1.057	15.8	94	0.00	17.74
83		o-Xylene	1.999	1.811	9.4	99	0.00	17.36
84		Bromoform	1.062	1.122	-5.6	100	0.00	16.76
85		1,1,2,2-Tetrachloroethane	1.527	1.417	7.2	98	0.00	17.36
86		1,2,3-Trichloropropane	1.110	1.019	8.2	97	0.00	17.55
87		Isopropylbenzene	2.752	2.516	8.6	97	0.00	18.26
88		Bromobenzene	0.854	0.814	4.7	97	0.00	18.37
89		2-Chlorotoluene	0.655	0.611	6.7	96	0.00	18.99
90		n-Propylbenzene	0.696	0.648	6.9	95	0.00	19.06
91	S	4-Bromofluorobenzene	1.310	1.298	0.9	103	0.00	18.05
92		4-Ethyltoluene	2.573	2.338	9.1	98	0.00	19.29
93		1,3,5-Trimethylbenzene	2.201	1.963	10.8	97	0.00	19.41
94		alpha-Methylstyrene	1.090	0.993	8.9	94	0.00	19.65
95		tert-Butylbenzene	0.459	0.417	9.2	95	0.00	19.99
96		1,2,4-Trimethylbenzene	2.085	1.885	9.6	95	0.00	20.01
97		1,3-Dichlorobenzene	1.341	1.273	5.1	97	0.00	20.20
98		Benzyl Chloride	1.568	1.609	-2.6	99	0.00	20.19
99		1,4-Dichlorobenzene	1.327	1.257	5.3	97	0.00	20.30
100		sec-Butylbenzene	0.572	0.513	10.3	95	0.00	20.39

Initial Calibration Verification

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample: V5W881-ICV881
Lab FileID: 5W22163.D

101		p-Isopropyltoluene	0.628	0.569	9.4	94	0.00	20.62
102		1,2-Dichlorobenzene	1.284	1.201	6.5	96	0.00	20.77
103		n-Butylbenzene	0.545	0.511	6.2	94	0.00	21.19
104		Hexachloroethane	0.701	0.738	-5.3	97	0.00	21.66
105		1,2,4-Trichlorobenzene	0.630	0.596	5.4	86	0.00	23.00
106		Naphthalene	1.378	1.287	6.6	87	0.00	23.13
107		Hexachlorobutadiene	0.865	0.692	20.0	85	0.00	23.58
108	I	Bromochloromethane (A)	1.000	1.000	0.0	109	0.00	8.22
109		TVHC as equiv Pentane	7.009	6.129	12.6	100	0.00	5.78

(#) = Out of Range SPCC's out = 0 CCC's out = 0
5W22159.D m5w881.M Fri Jan 13 10:23:05 2017 GCMS5W

6.9.2

6

Continuing Calibration Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA
Sample: V5W900-CC881
Lab FileID: 5W22689.D

Evaluate Continuing Calibration Report

```
Data Path : C:\msdchem\1\DATA\
Data File : 5W22689.D
Acq On    : 10 Feb 2017  11:59 am
Operator  : danat
Sample    : CC881-10
Misc      : MS12270,v5w900,,,,,1
ALS Vial  : 2   Sample Multiplier: 1

Quant Time: Feb 10 13:15:30 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title  : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration


Min. RRF     :   0.000  Min. Rel. Area :  60%  Max. R.T. Dev  0.33min
Max. RRF Dev :  30%     Max. Rel. Area : 140%
```

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	Bromochloromethane	1.000	1.000	0.0	86	0.00
2	1,1,1-Trifluoroethane	2.587	1.426	44.9#	69	0.00
3	Freon 152A	0.689	0.688	0.1	90	0.00
4	Chlorodifluoromethane	0.259	0.287	-10.8	99	0.00
5	Propene	0.808	0.734	9.2	86	0.00
6	Chlorotrifluoroethene	1.378	1.411	-2.4	90	0.00
7	Dichlorodifluoromethane	2.699	2.966	-9.9	98	0.00
8	1-Chloro-1,1-difluoroethane	1.879	2.148	-14.3	101	0.00
9	Chloromethane	1.013	1.012	0.1	90	0.00
10	Dichlorotetrafluoroethane	3.013	3.177	-5.4	95	0.00
11	Vinyl Chloride	1.126	1.189	-5.6	93	0.00
12	1,3-Butadiene	0.820	0.837	-2.1	93	0.00
13	n-Butane	0.183	0.185	-1.1	92	0.00
14	Bromomethane	1.197	1.200	-0.3	93	0.00
15	Chloroethane	0.562	0.585	-4.1	92	0.00
16	Dichlorofluoromethane	2.626	2.757	-5.0	97	0.00
17	Acetonitrile	0.854	0.869	-1.8	90	0.00
18	Freon 123	2.998	3.074	-2.5	95	0.00
19	Freon 123A	1.492	1.570	-5.2	94	0.00
20	Bromoethene	1.084	1.159	-6.9	93	0.00
21	Trichlorofluoromethane	2.610	3.026	-15.9	102	0.00
22	Acetone	0.533	0.543	-1.9	96	0.00
23	Pentane	0.318	0.285	10.4	88	0.00
24	1,1-Dichloro-1-fluoroethane	2.336	2.600	-11.3	101	0.00
25	Iodomethane	3.013	3.130	-3.9	91	0.00
26	Isopropyl Alcohol	0.357	0.365	-2.2	98	0.00
27	1,1-Dichloroethene	1.711	1.804	-5.4	92	0.00
28	Freon 113	2.370	2.502	-5.6	92	0.00
29	Methylene Chloride	1.097	1.052	4.1	91	0.00
30	Carbon Disulfide	3.083	3.202	-3.9	90	0.00
31	Ethanol	0.511	0.482	5.7	89	0.01
32	Acrylonitrile	0.797	0.859	-7.8	88	0.00
33	3-Chloropropene	0.490	0.509	-3.9	90	0.00
34	trans-1,2-Dichloroethene	1.525	1.596	-4.7	90	0.00
35	tert-Butyl Alcohol	2.320	2.411	-3.9	90	0.01
36	Methyl tert-Butyl Ether	3.031	3.029	0.1	89	0.00
37	Vinyl Acetate	2.832	2.836	-0.1	88	0.00
38	1,1-Dichloroethane	2.043	2.051	-0.4	89	0.00

Continuing Calibration Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample: V5W900-CC881
Lab FileID: 5W22689.D

39		2-Butanone	0.509	0.545	-7.1	88	0.00
40		Hexane	1.778	1.627	8.5	87	0.00
41		cis-1,2-Dichloroethene	1.505	1.552	-3.1	90	0.00
42		Di-isopropyl Ether	0.906	0.941	-3.9	87	0.00
43		Ethyl Acetate	0.345	0.358	-3.8	86	0.00
44		Methyl Acrylate	1.952	1.897	2.8	87	0.00
45		Chloroform	2.426	2.543	-4.8	94	0.00
46		2,4-Dimethylpentane	2.126	2.010	5.5	89	0.00
47		Tetrahydrofuran	0.548	0.558	-1.8	88	0.00
48		1,1,1-Trichloroethane	2.300	2.486	-8.1	96	0.00
49		1,2-Dichloroethane	1.357	1.517	-11.8	96	0.00
50		Benzene	3.675	3.574	2.7	87	0.00
51		Carbon Tetrachloride	2.143	2.522	-17.7	101	0.00
52		Cyclohexane	1.793	1.690	5.7	87	0.00
53		2,3-Dimethylpentane	0.824	0.754	8.5	88	0.00
54	I	1,4-Difluorobenzene	1.000	1.000	0.0	85	0.00
55		2,2,4-Trimethylpentane	1.348	1.393	-3.3	89	0.00
56		Heptane	0.288	0.287	0.3	90	0.00
57		Trichloroethene	0.392	0.417	-6.4	91	0.00
58		1,2-Dichloropropane	0.329	0.332	-0.9	88	0.00
59		Dibromomethane	0.362	0.379	-4.7	88	0.00
60		Ethyl Acrylate	0.647	0.652	-0.8	88	0.00
61		Methyl Methacrylate	0.323	0.327	-1.2	89	0.00
62		1,4-Dioxane	0.199	0.219	-10.1	89	0.00
63		Bromodichloromethane	0.614	0.688	-12.1	96	0.00
64		cis-1,3-Dichloropropene	0.515	0.551	-7.0	88	0.00
65		4-Methyl-2-pentanone	0.255	0.276	-8.2	88	0.00
66		trans-1,3-Dichloropropene	0.409	0.472	-15.4	90	0.00
67		Toluene	1.068	1.051	1.6	87	0.00
68		1,1,2-Trichloroethane	0.366	0.382	-4.4	88	0.00
69		1,3-Dichloropropane	0.458	0.492	-7.4	89	0.00
70		2-Hexanone	0.344	0.379	-10.2	88	0.00
71		Ethyl Methacrylate	0.523	0.549	-5.0	90	0.00
72		Dibromochloromethane	0.597	0.699	-17.1	94	0.00
73		Tetrachloroethene	0.523	0.535	-2.3	87	0.00
74		1,2-Dibromoethane	0.554	0.601	-8.5	88	0.00
75		Octane	0.632	0.655	-3.6	88	0.00
76		1,1,1,2-Tetrachloroethane	0.417	0.458	-9.8	90	0.00
77	I	Chlorobenzene-d5	1.000	1.000	0.0	88	0.00
78		Chlorobenzene	1.530	1.456	4.8	85	0.00
79		Ethylbenzene	2.578	2.448	5.0	86	0.00
80		m,p-Xylene	2.026	1.919	5.3	88	0.00
81		Styrene	1.441	1.429	0.8	85	0.00
82		Nonane	1.256	1.215	3.3	90	0.00
83		o-Xylene	1.999	1.933	3.3	88	0.00
84		Bromoform	1.062	1.226	-15.4	92	0.00
85		1,1,2,2-Tetrachloroethane	1.527	1.564	-2.4	91	0.00
86		1,2,3-Trichloropropane	1.110	1.153	-3.9	92	0.00
87		Isopropylbenzene	2.752	2.724	1.0	88	0.00
88		Bromobenzene	0.854	0.868	-1.6	86	0.00
89		2-Chlorotoluene	0.655	0.652	0.5	85	0.00
90		n-Propylbenzene	0.696	0.712	-2.3	88	0.00
91	S	4-Bromofluorobenzene	1.310	1.372	-4.7	91	0.00
92		4-Ethyltoluene	2.573	2.546	1.0	89	0.00
93		1,3,5-Trimethylbenzene	2.201	2.160	1.9	89	0.00
94		alpha-Methylstyrene	1.090	1.085	0.5	85	0.00
95		tert-Butylbenzene	0.459	0.450	2.0	86	0.00
96		1,2,4-Trimethylbenzene	2.085	2.110	-1.2	89	0.00

Continuing Calibration Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample: V5W900-CC881
Lab FileID: 5W22689.D

97		1,3-Dichlorobenzene	1.341	1.361	-1.5	86	0.00
98		Benzyl Chloride	1.568	1.767	-12.7	91	0.00
99		1,4-Dichlorobenzene	1.327	1.336	-0.7	86	0.00
100		sec-Butylbenzene	0.572	0.559	2.3	87	0.00
101		p-Isopropyltoluene	0.628	0.624	0.6	87	0.00
102		1,2-Dichlorobenzene	1.284	1.298	-1.1	86	0.00
103		n-Butylbenzene	0.545	0.553	-1.5	85	0.00
104		Hexachloroethane	0.701	0.829	-18.3	91	0.00
105		1,2,4-Trichlorobenzene	0.630	0.650	-3.2	78	0.00
106		Naphthalene	1.378	1.383	-0.4	78	0.00
107		Hexachlorobutadiene	0.865	0.775	10.4	80	0.00
108	I	Bromochloromethane (A)	1.000	1.000	0.0	86	0.00
109		TVHC as equiv Pentane	7.009	6.862	2.1	88	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

m5w881.M Mon Feb 13 10:10:50 2017 5W

Continuing Calibration Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample: V5W909-CC881
Lab FileID: 5W22929.D

Evaluate Continuing Calibration Report

```
Data Path : C:\msdchem\1\DATA\
Data File : 5W22929.D
Acq On    : 23 Feb 2017  10:53 am
Operator  : LUISM1
Sample    : CC881-10
Misc      : MS12740,v5w909,,,,,1
ALS Vial  : 2   Sample Multiplier: 1

Quant Time: Feb 23 12:39:58 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title  : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration


Min. RRF     :   0.000  Min. Rel. Area :  60%  Max. R.T. Dev  0.33min
Max. RRF Dev :  30%     Max. Rel. Area : 140%
```

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	Bromochloromethane	1.000	1.000	0.0	82	-0.08
2	1,1,1-Trifluoroethane	2.587	0.000	100.0#	0#	-3.93#
3	Freon 152A	0.689	0.658	4.5	82	-0.12
4	Chlorodifluoromethane	0.259	0.266	-2.7	87	-0.12
5	Propene	0.808	0.745	7.8	83	-0.12
6	Chlorotrifluoroethene	1.378	1.393	-1.1	85	-0.12
7	Dichlorodifluoromethane	2.699	2.736	-1.4	87	-0.12
8	1-Chloro-1,1-difluoroethane	1.879	0.000	100.0#	0#	-4.25#
9	Chloromethane	1.013	0.980	3.3	84	-0.12
10	Dichlorotetrafluoroethane	3.013	2.939	2.5	84	-0.12
11	Vinyl Chloride	1.126	1.134	-0.7	85	-0.12
12	1,3-Butadiene	0.820	0.808	1.5	86	-0.12
13	n-Butane	0.183	0.178	2.7	85	-0.12
14	Bromomethane	1.197	1.097	8.4	81	-0.12
15	Chloroethane	0.562	0.547	2.7	82	-0.12
16	Dichlorofluoromethane	2.626	2.562	2.4	86	-0.12
17	Acetonitrile	0.854	0.908	-6.3	90	-0.11
18	Freon 123	2.998	2.866	4.4	85	-0.11
19	Freon 123A	1.492	1.374	7.9	79	-0.12
20	Bromoethene	1.084	1.037	4.3	79	-0.12
21	Trichlorofluoromethane	2.610	2.637	-1.0	85	-0.11
22	Acetone	0.533	0.509	4.5	86	-0.11
23	Pentane	0.318	0.272	14.5	81	-0.11
24	1,1-Dichloro-1-fluoroethane	2.336	0.000	100.0#	0#	-5.60#
25	Iodomethane	3.013	2.831	6.0	79	-0.11
26	Isopropyl Alcohol	0.357	0.368	-3.1	95	-0.10
27	1,1-Dichloroethene	1.711	1.691	1.2	83	-0.11
28	Freon 113	2.370	2.331	1.6	82	-0.10
29	Methylene Chloride	1.097	1.001	8.8	83	-0.10
30	Carbon Disulfide	3.083	3.069	0.5	82	-0.10
31	Ethanol	0.511	0.473	7.4	84	-0.11
32	Acrylonitrile	0.797	0.833	-4.5	82	-0.10
33	3-Chloropropene	0.490	0.477	2.7	80	-0.10
34	trans-1,2-Dichloroethene	1.525	1.502	1.5	81	-0.09
35	tert-Butyl Alcohol	2.320	2.219	4.4	80	-0.09
36	Methyl tert-Butyl Ether	3.031	2.753	9.2	77	-0.09
37	Vinyl Acetate	2.832	2.698	4.7	80	-0.08
38	1,1-Dichloroethane	2.043	1.936	5.2	81	-0.09

Continuing Calibration Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample: V5W909-CC881
Lab FileID: 5W22929.D

39		2-Butanone	0.509	0.503	1.2	78	-0.07
40		Hexane	1.778	1.542	13.3	79	-0.08
41		cis-1,2-Dichloroethene	1.505	1.471	2.3	81	-0.08
42		Di-isopropyl Ether	0.906	0.872	3.8	77	-0.07
43		Ethyl Acetate	0.345	0.340	1.4	78	-0.07
44		Methyl Acrylate	1.952	1.785	8.6	78	-0.07
45		Chloroform	2.426	2.387	1.6	85	-0.07
46		2,4-Dimethylpentane	2.126	1.902	10.5	81	-0.07
47		Tetrahydrofuran	0.548	0.512	6.6	77	-0.06
48		1,1,1-Trichloroethane	2.300	2.275	1.1	84	-0.06
49		1,2-Dichloroethane	1.357	1.415	-4.3	86	-0.06
50		Benzene	3.675	3.369	8.3	79	-0.05
51		Carbon Tetrachloride	2.143	2.305	-7.6	88	-0.05
52		Cyclohexane	1.793	1.590	11.3	79	-0.05
53		2,3-Dimethylpentane	0.824	0.719	12.7	80	-0.05
54	I	1,4-Difluorobenzene	1.000	1.000	0.0	80	-0.05
55		2,2,4-Trimethylpentane	1.348	1.395	-3.5	85	-0.04
56		Heptane	0.288	0.283	1.7	84	-0.04
57		Trichloroethene	0.392	0.404	-3.1	83	-0.04
58		1,2-Dichloropropane	0.329	0.332	-0.9	83	-0.05
59		Dibromomethane	0.362	0.355	1.9	78	-0.04
60		Ethyl Acrylate	0.647	0.620	4.2	79	-0.04
61		Methyl Methacrylate	0.323	0.311	3.7	80	-0.03
62		1,4-Dioxane	0.199	0.207	-4.0	80	-0.04
63		Bromodichloromethane	0.614	0.664	-8.1	87	-0.04
64		cis-1,3-Dichloropropene	0.515	0.537	-4.3	81	-0.03
65		4-Methyl-2-pentanone	0.255	0.265	-3.9	81	-0.02
66		trans-1,3-Dichloropropene	0.409	0.441	-7.8	80	-0.02
67		Toluene	1.068	1.015	5.0	79	-0.02
68		1,1,2-Trichloroethane	0.366	0.367	-0.3	80	-0.02
69		1,3-Dichloropropane	0.458	0.477	-4.1	82	-0.02
70		2-Hexanone	0.344	0.363	-5.5	80	-0.01
71		Ethyl Methacrylate	0.523	0.519	0.8	81	-0.01
72		Dibromochloromethane	0.597	0.678	-13.6	87	-0.02
73		Tetrachloroethene	0.523	0.505	3.4	78	-0.02
74		1,2-Dibromoethane	0.554	0.577	-4.2	80	-0.02
75		Octane	0.632	0.650	-2.8	83	-0.02
76		1,1,1,2-Tetrachloroethane	0.417	0.448	-7.4	83	0.00
77	I	Chlorobenzene-d5	1.000	1.000	0.0	83	-0.01
78		Chlorobenzene	1.530	1.429	6.6	78	0.00
79		Ethylbenzene	2.578	2.364	8.3	78	0.00
80		m,p-Xylene	2.026	1.833	9.5	79	-0.01
81		Styrene	1.441	1.310	9.1	73	0.00
82		Nonane	1.256	1.203	4.2	84	0.00
83		o-Xylene	1.999	1.887	5.6	80	0.00
84		Bromoform	1.062	1.175	-10.6	82	-0.01
85		1,1,2,2-Tetrachloroethane	1.527	1.532	-0.3	83	0.00
86		1,2,3-Trichloropropane	1.110	1.104	0.5	82	0.00
87		Isopropylbenzene	2.752	2.593	5.8	78	0.00
88		Bromobenzene	0.854	0.812	4.9	75	0.00
89		2-Chlorotoluene	0.655	0.616	6.0	75	0.00
90		n-Propylbenzene	0.696	0.661	5.0	76	0.00
91	S	4-Bromofluorobenzene	1.310	1.280	2.3	80	0.00
92		4-Ethyltoluene	2.573	2.380	7.5	78	0.00
93		1,3,5-Trimethylbenzene	2.201	2.057	6.5	80	0.00
94		alpha-Methylstyrene	1.090	1.008	7.5	74	0.00
95		tert-Butylbenzene	0.459	0.413	10.0	74	0.00
96		1,2,4-Trimethylbenzene	2.085	1.993	4.4	79	0.00

Continuing Calibration Summary

Job Number: JC37217
Account: BPAMSS Atlantic Richfield Company
Project: SCNJL: 4101 Post Road, Trainer, PA

Sample: V5W909-CC881
Lab FileID: 5W22929.D

97		1,3-Dichlorobenzene	1.341	1.260	6.0	75	0.00
98		Benzyl Chloride	1.568	1.658	-5.7	80	0.00
99		1,4-Dichlorobenzene	1.327	1.234	7.0	74	0.00
100		sec-Butylbenzene	0.572	0.522	8.7	76	0.00
101		p-Isopropyltoluene	0.628	0.590	6.1	77	0.00
102		1,2-Dichlorobenzene	1.284	1.217	5.2	76	0.00
103		n-Butylbenzene	0.545	0.519	4.8	74	0.00
104		Hexachloroethane	0.701	0.715	-2.0	73	0.00
105		1,2,4-Trichlorobenzene	0.630	0.589	6.5	66	0.00
106		Naphthalene	1.378	1.242	9.9	66	0.00
107		Hexachlorobutadiene	0.865	0.703	18.7	68	0.00
108	I	Bromochloromethane (A)	1.000	1.000	0.0	82	-0.08
109		TVHC as equiv Pentane	7.009	6.685	4.6	82	-0.11

(#) = Out of Range SPCC's out = 0 CCC's out = 0

m5w881.M Thu Feb 23 14:44:37 2017 5W

6.9.4

6

GC/MS Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22951.D
Acq On : 24 Feb 2017 6:39 am
Operator : LUISM1
Sample : JC37217-1
Misc : MS12628,v5w909,592,,,,1.48
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 01 12:03:53 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration

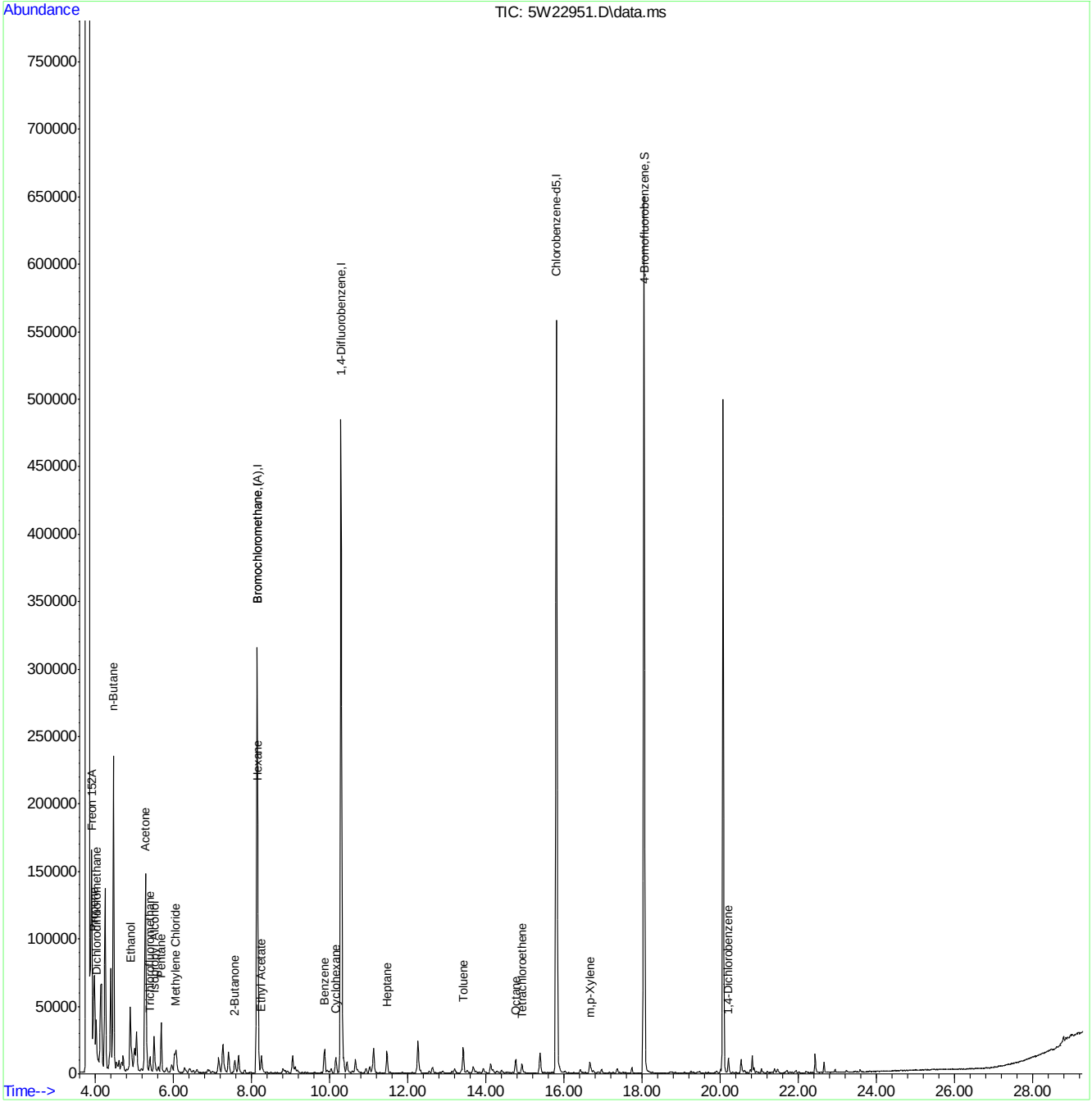
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	8.138	130	131953	10.00	ppb(v	-0.08
54) 1,4-Difluorobenzene	10.286	114	493292	10.00	ppb(v	-0.06
77) Chlorobenzene-d5	15.798	82	242267	10.00	ppb(v	-0.02
108) Bromochloromethane (A)	8.138	130	131953	10.00	ppb(v	-0.08
System Monitoring Compounds						
91) 4-Bromofluorobenzene	18.043	95	305447	9.63	ppb(v	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 96.30%			
Target Compounds						Qvalue
3) Freon 152A	3.905	65	31623	3.48	ppb(v	99
5) Propene	3.966	41	23396	2.19	ppb(v	94
7) Dichlorodifluoromethane	4.021	85	17703	0.50	ppb(v	98
13) n-Butane	4.462	58	23023	9.53	ppb(v	96
21) Trichlorofluoromethane	5.398	101	9128	0.27	ppb(v	97
22) Acetone	5.282	58	47727	6.78	ppb(v	91
23) Pentane	5.685	57	3910	0.93	ppb(v	97
26) Isopropyl Alcohol	5.502	43	8184	1.74	ppb(v#	36
29) Methylene Chloride	6.058	84	4545	0.31	ppb(v	95
31) Ethanol	4.890	45	60712	9.01	ppb(v	100
39) 2-Butanone	7.563	72	3688	0.55	ppb(v	86
40) Hexane	8.157	57	12679	0.54	ppb(v#	70
43) Ethyl Acetate	8.249	61	2627	0.58	ppb(v	92
50) Benzene	9.864	78	20320	0.42	ppb(v	98
52) Cyclohexane	10.157	56	6142	0.26	ppb(v	97
56) Heptane	11.460	71	4284	0.30	ppb(v	96
67) Toluene	13.412	91	19508	0.37	ppb(v	98
73) Tetrachloroethene	14.917	166	2884	0.11	ppb(v	98
75) Octane	14.758	43	4554	0.15	ppb(v	90
80) m,p-Xylene	16.660	91	9355	0.19	ppb(v	97
99) 1,4-Dichlorobenzene	20.203	146	4013	0.12	ppb(v	94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

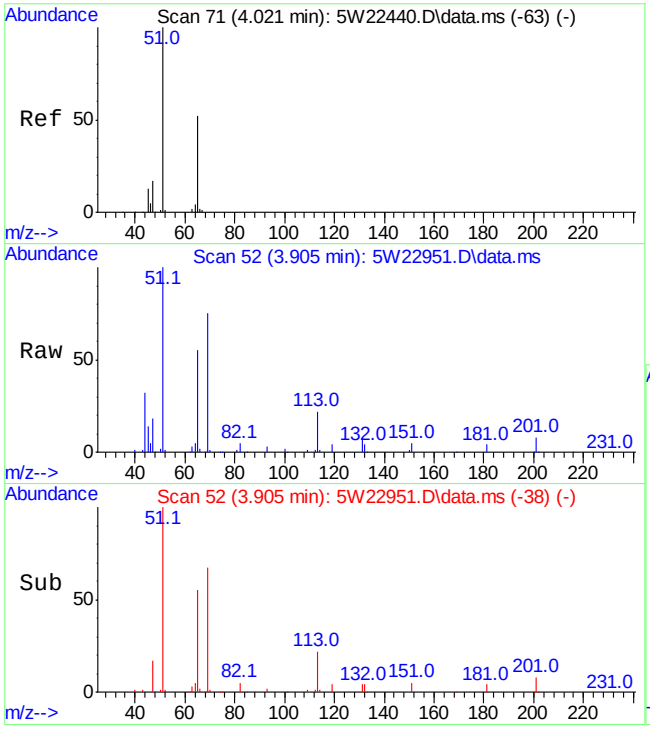
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22951.D
Acq On : 24 Feb 2017 6:39 am
Operator : LUISM1
Sample : JC37217-1
Misc : MS12628,v5w909,592,,,,1.48
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 01 12:03:53 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration



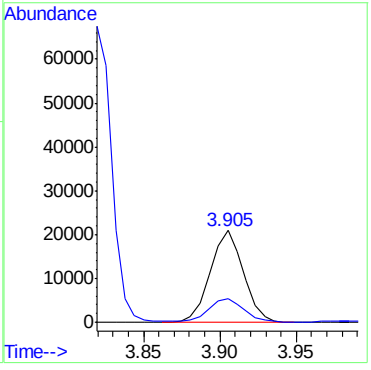
SGS ACCUTEST JC37217

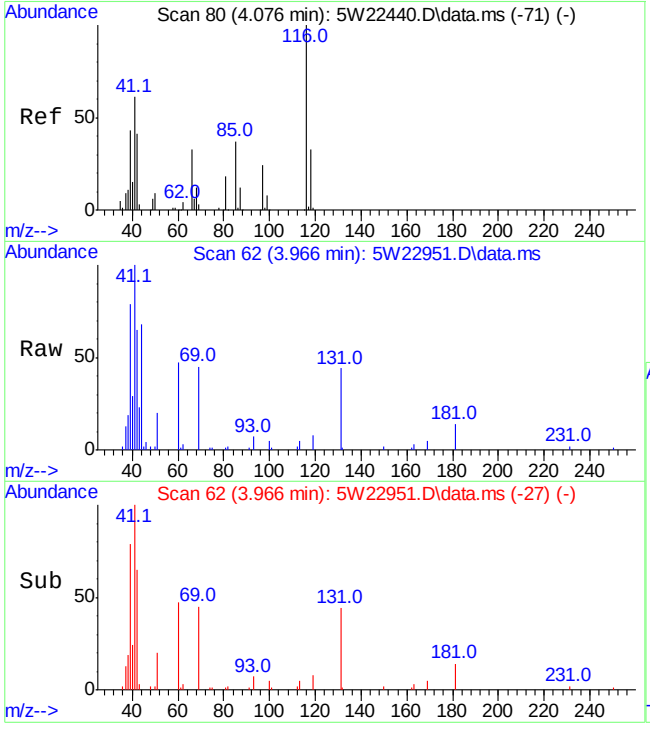


#3
Freon 152A
Concen: 3.48 ppb(v)
RT: 3.905 min Scan# 52
Delta R.T. -0.116 min
Lab File: 5W22951.D
Acq: 24 Feb 2017 6:39 am

Tgt Ion: 65 Resp: 31623

Ion	Ratio	Lower	Upper
65	100		
45	25.7	17.7	32.9

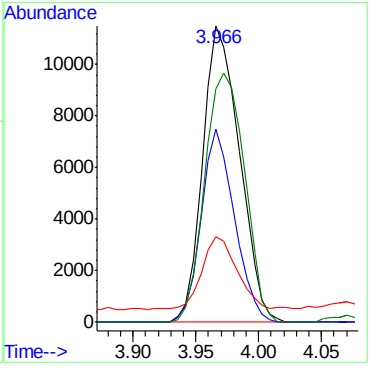


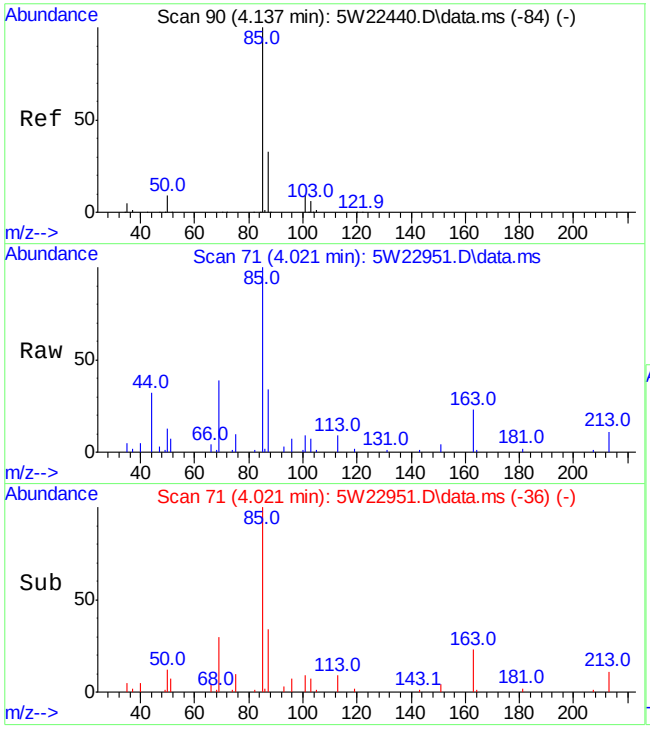


#5
Propene
Concen: 2.19 ppb(v)
RT: 3.966 min Scan# 62
Delta R.T. -0.116 min
Lab File: 5W22951.D
Acq: 24 Feb 2017 6:39 am

Tgt Ion: 41 Resp: 23396

Ion	Ratio	Lower	Upper
41	100		
42	65.2	46.1	85.5
40	29.0	17.7	32.9
39	78.6	49.4	91.8

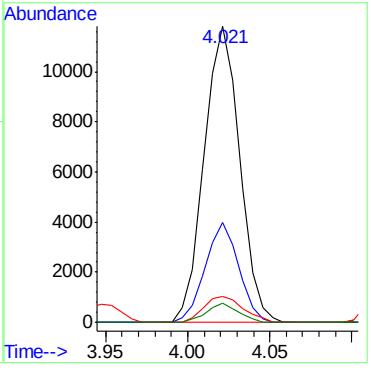


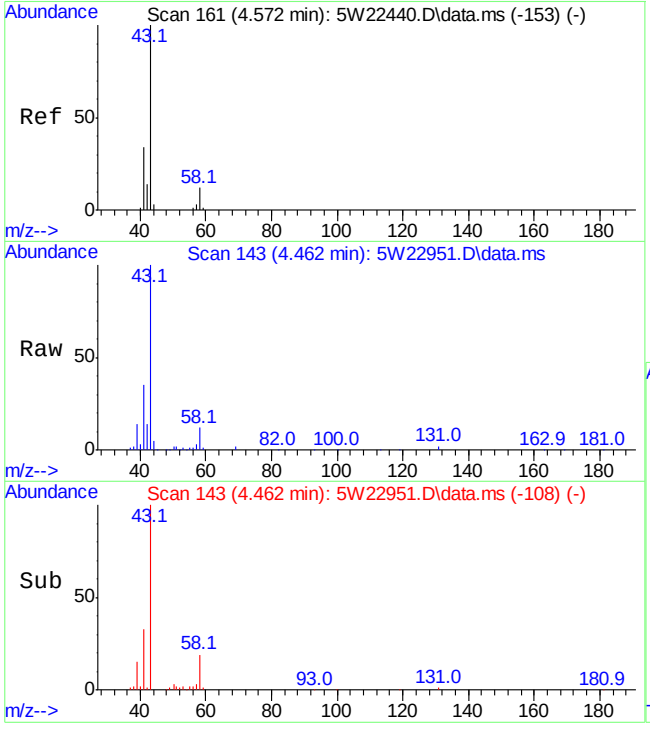


#7
Dichlorodifluoromethane
Concen: 0.50 ppb(v)
RT: 4.021 min Scan# 71
Delta R.T. -0.116 min
Lab File: 5W22951.D
Acq: 24 Feb 2017 6:39 am

Tgt Ion: 85 Resp: 17703

Ion	Ratio	Lower	Upper
85	100		
87	33.6	22.6	42.0
101	8.8	6.2	11.4
103	6.6	4.0	7.4

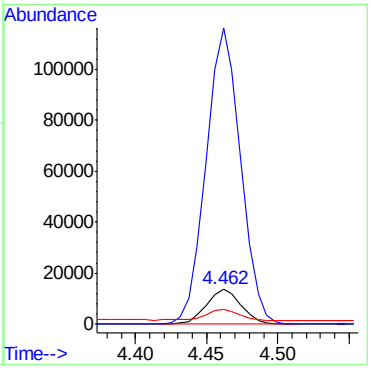


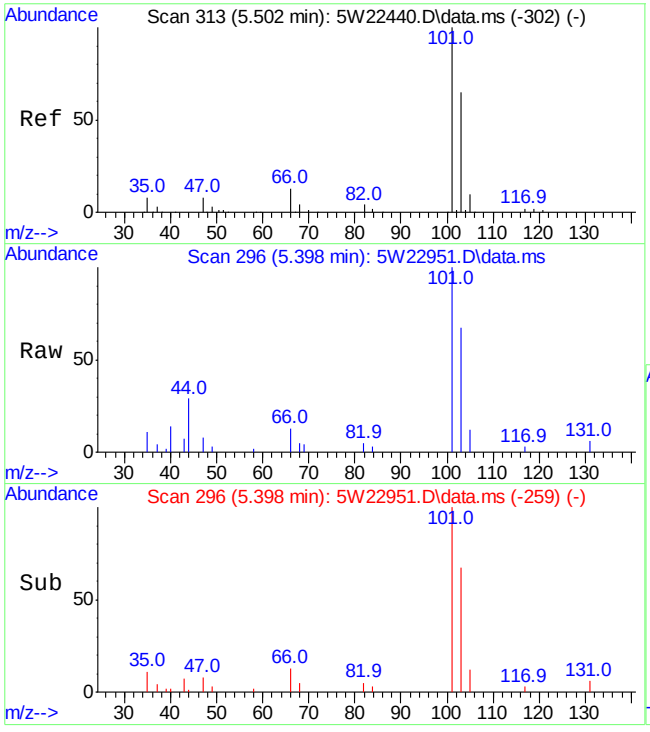


#13
n-Butane
Concen: 9.53 ppb(v)
RT: 4.462 min Scan# 143
Delta R.T. -0.116 min
Lab File: 5W22951.D
Acq: 24 Feb 2017 6:39 am

Tgt Ion: 58 Resp: 23023

Ion	Ratio	Lower	Upper
58	100		
43	841.8	578.1	1073.5
44	41.7	26.0	48.2

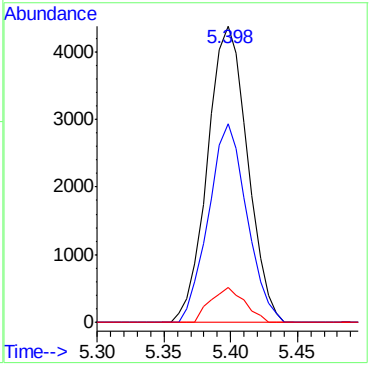


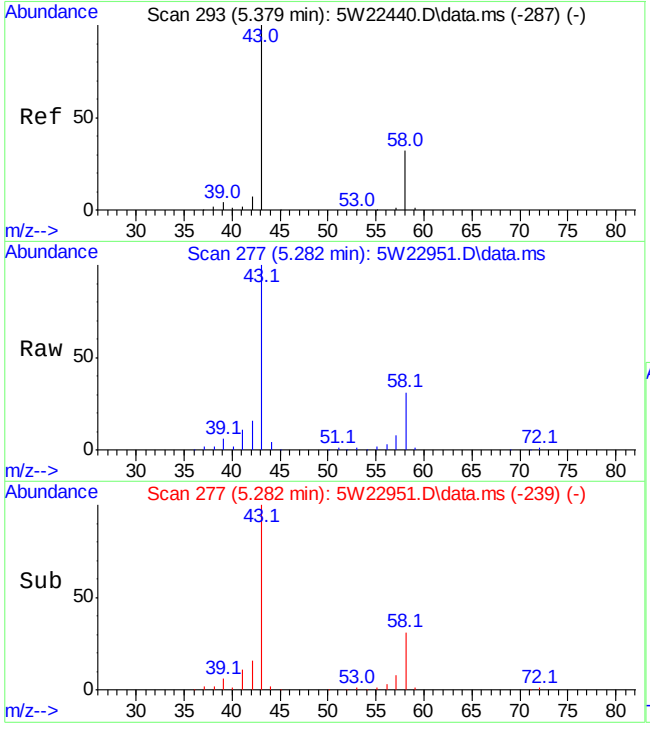


#21
Trichlorofluoromethane
Concen: 0.27 ppb(v)
RT: 5.398 min Scan# 296
Delta R.T. -0.104 min
Lab File: 5W22951.D
Acq: 24 Feb 2017 6:39 am

Tgt Ion:101 Resp: 9128

Ion	Ratio	Lower	Upper
101	100		
103	67.1	45.6	84.6
105	11.9	7.3	13.5

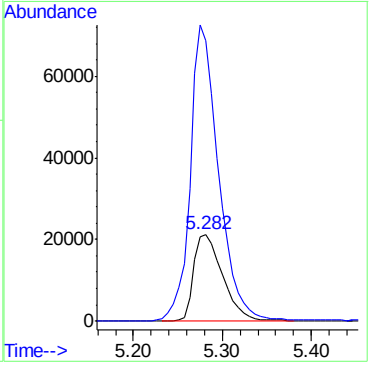


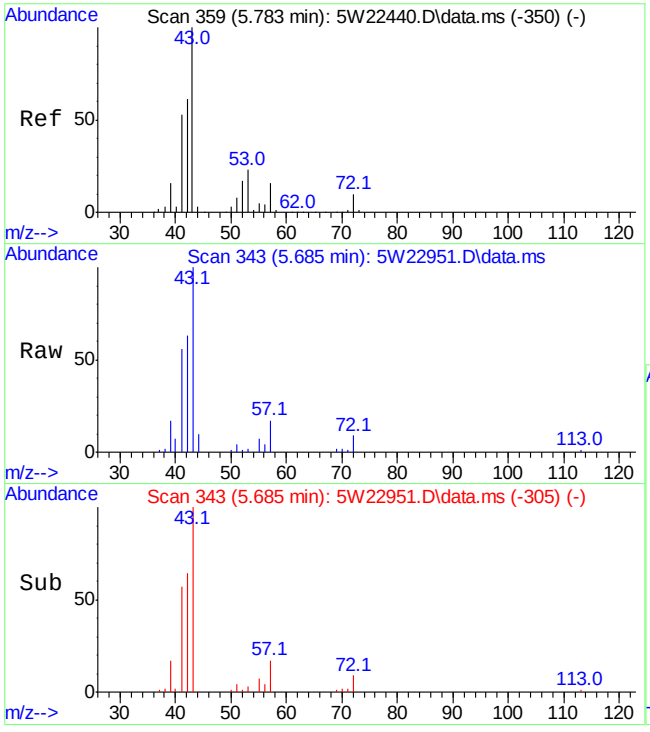


#22
Acetone
Concen: 6.78 ppb(v)
RT: 5.282 min Scan# 277
Delta R.T. -0.098 min
Lab File: 5W22951.D
Acq: 24 Feb 2017 6:39 am

Tgt Ion: 58 Resp: 47727

Ion	Ratio	Lower	Upper
58	100		
43	324.2	213.8	397.0

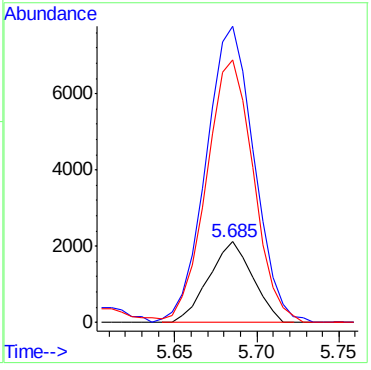


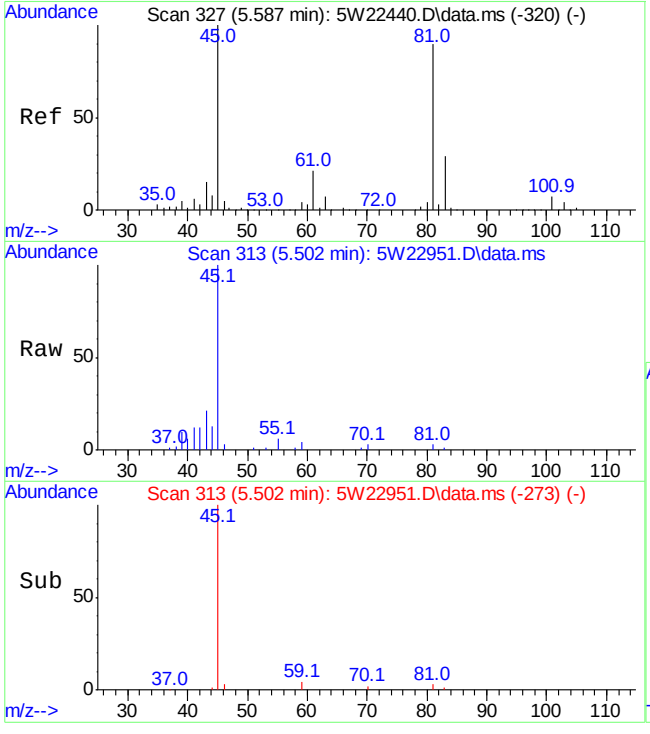


#23
Pentane
Concen: 0.93 ppb(v)
RT: 5.685 min Scan# 343
Delta R.T. -0.098 min
Lab File: 5W22951.D
Acq: 24 Feb 2017 6:39 am

Tgt Ion: 57 Resp: 3910

Ion	Ratio	Lower	Upper
57	100		
42	367.2	261.9	486.3
41	325.6	222.5	413.3

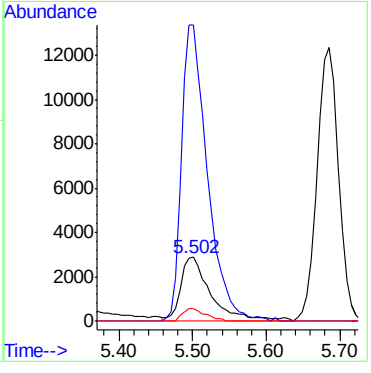


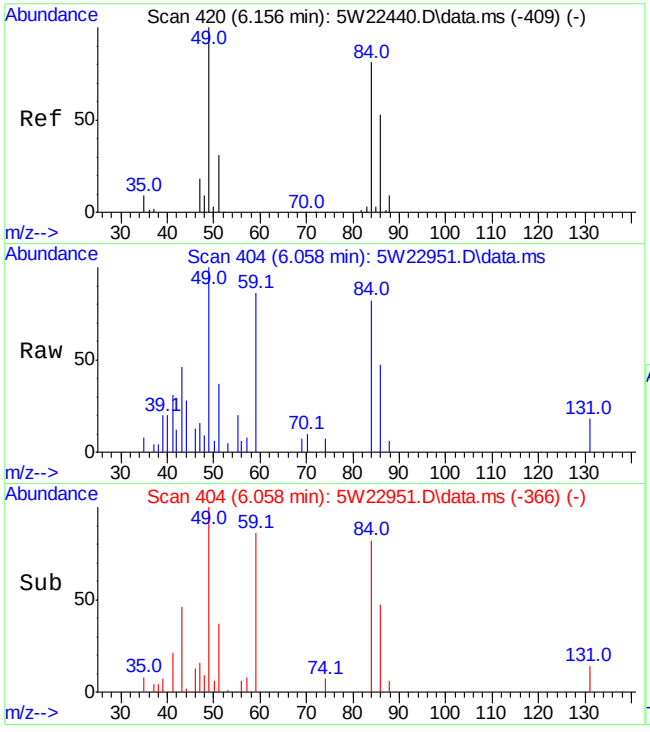


#26
Isopropyl Alcohol
Concen: 1.74 ppb(v)
RT: 5.502 min Scan# 313
Delta R.T. -0.086 min
Lab File: 5W22951.D
Acq: 24 Feb 2017 6:39 am

Tgt Ion: 43 Resp: 8184

Ion	Ratio	Lower	Upper
43	100		
45	465.6	483.8	898.4#
59	18.8	18.2	33.8

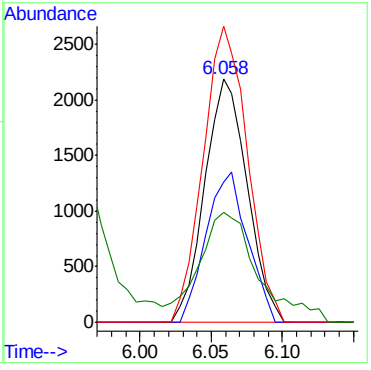


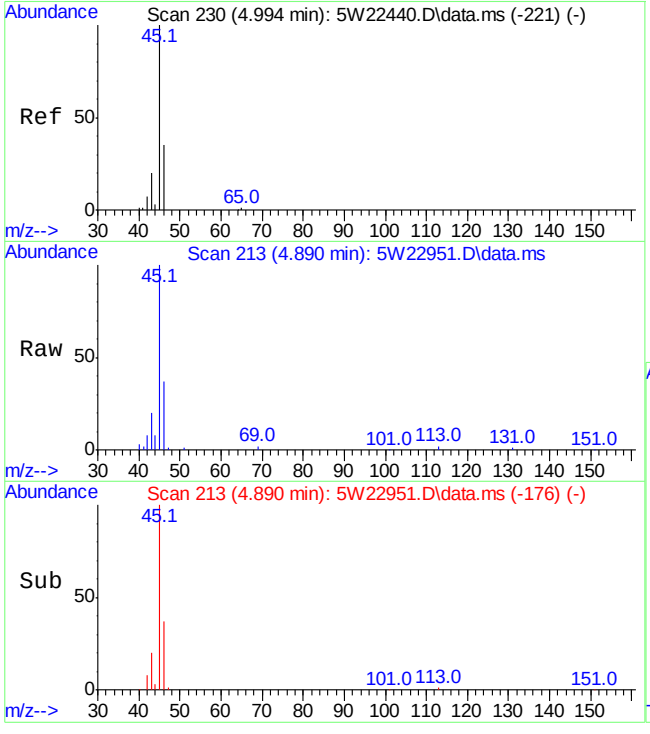


#29
Methylene Chloride
Concen: 0.31 ppb(v)
RT: 6.058 min Scan# 404
Delta R.T. -0.098 min
Lab File: 5W22951.D
Acq: 24 Feb 2017 6:39 am

Tgt Ion: 84 Resp: 4545

Ion	Ratio	Lower	Upper
84	100		
86	57.8	45.3	84.1
49	121.8	84.4	156.8
51	45.2	26.8	49.8

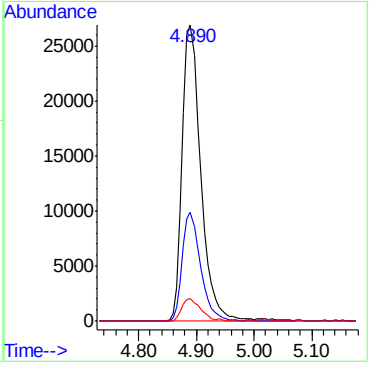


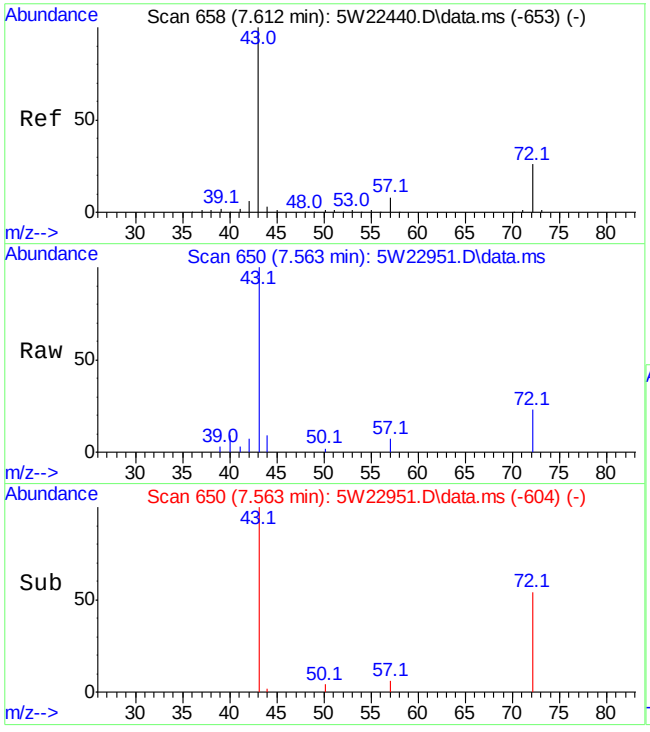


#31
Ethanol
Concen: 9.01 ppb(v)
RT: 4.890 min Scan# 213
Delta R.T. -0.104 min
Lab File: 5W22951.D
Acq: 24 Feb 2017 6:39 am

Tgt Ion: 45 Resp: 60712

Ion	Ratio	Lower	Upper
45	100		
46	36.9	26.0	48.4
42	7.5	5.2	9.6

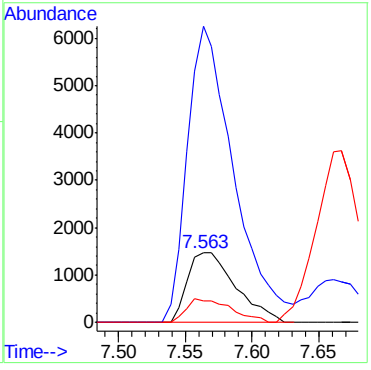


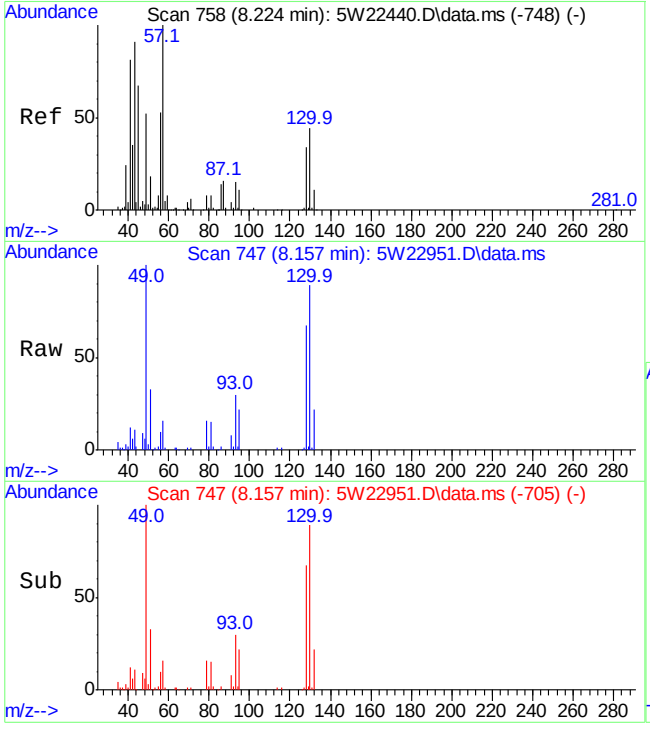


#39
2-Butanone
Concen: 0.55 ppb(v)
RT: 7.563 min Scan# 650
Delta R.T. -0.049 min
Lab File: 5W22951.D
Acq: 24 Feb 2017 6:39 am

Tgt Ion: 72 Resp: 3688

Ion	Ratio	Lower	Upper
72	100		
43	426.9	273.8	508.4
57	31.0	20.6	38.2

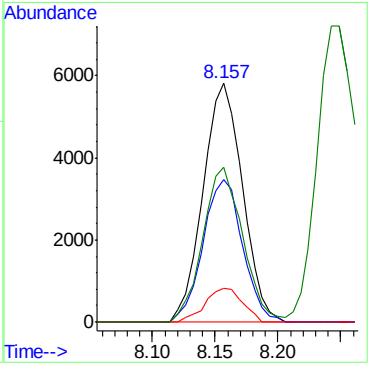




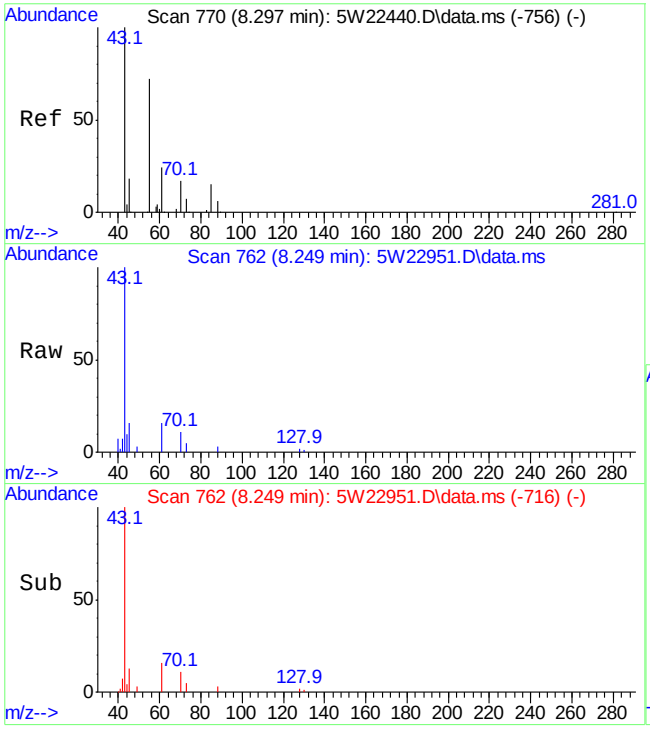
#40
Hexane
Concen: 0.54 ppb(v)
RT: 8.157 min Scan# 747
Delta R.T. -0.073 min
Lab File: 5W22951.D
Acq: 24 Feb 2017 6:39 am

Tgt Ion: 57 Resp: 12679

Ion	Ratio	Lower	Upper
57	100		
56	59.4	36.3	67.5
86	14.3	10.0	18.6
43	65.0	77.4	143.8#



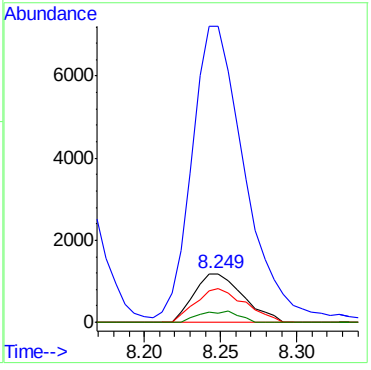
SGS ACCUTEST JC37217

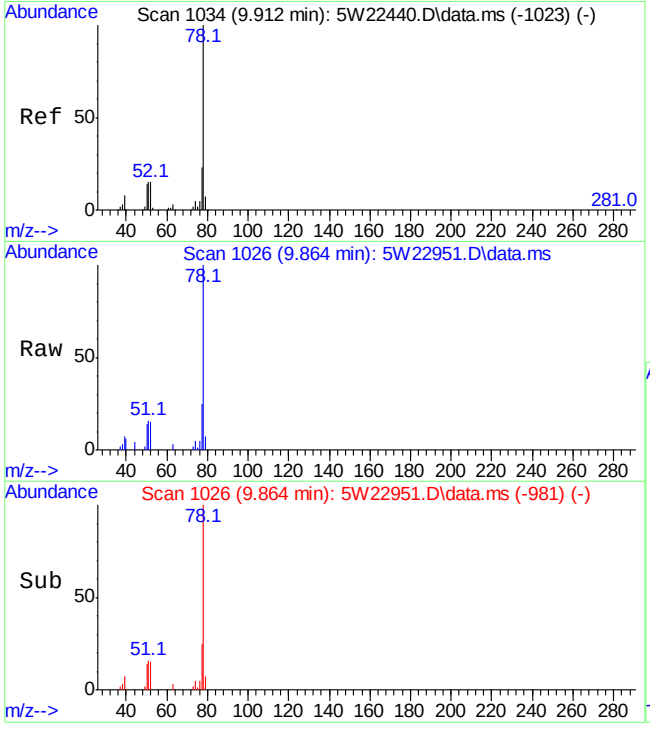


#43
Ethyl Acetate
Concen: 0.58 ppb(v)
RT: 8.249 min Scan# 762
Delta R.T. -0.049 min
Lab File: 5W22951.D
Acq: 24 Feb 2017 6:39 am

Tgt Ion: 61 Resp: 2627

Ion	Ratio	Lower	Upper
61	100		
43	610.3	444.1	824.7
70	69.1	53.3	99.1
88	19.7	17.1	31.9

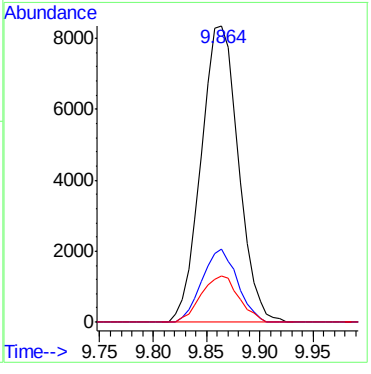


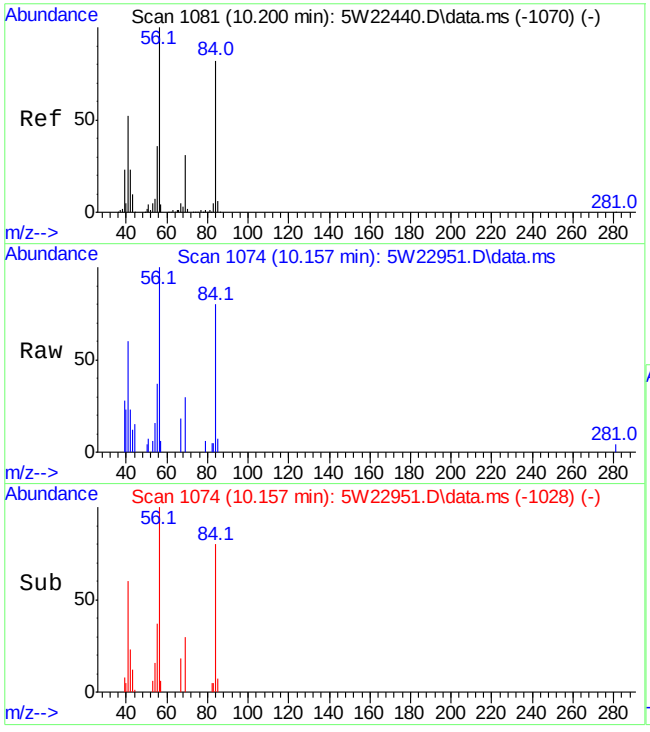


#50
Benzene
Concen: 0.42 ppb(v)
RT: 9.864 min Scan# 1026
Delta R.T. -0.055 min
Lab File: 5W22951.D
Acq: 24 Feb 2017 6:39 am

Tgt Ion: 78 Resp: 20320

Ion	Ratio	Lower	Upper
78	100		
77	24.5	16.6	30.8
51	15.6	10.5	19.5

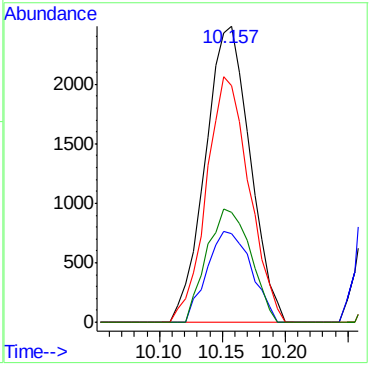


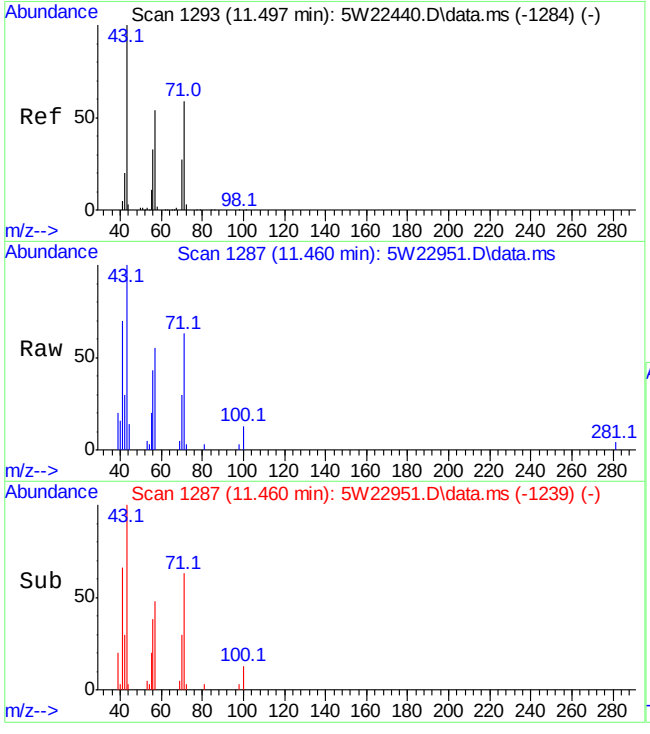


#52
Cyclohexane
Concen: 0.26 ppb(v)
RT: 10.157 min Scan# 1074
Delta R.T. -0.049 min
Lab File: 5W22951.D
Acq: 24 Feb 2017 6:39 am

Tgt Ion: 56 Resp: 6142

Ion	Ratio	Lower	Upper
56	100		
69	29.9	22.3	41.3
84	79.9	58.0	107.8
55	37.2	25.9	48.1

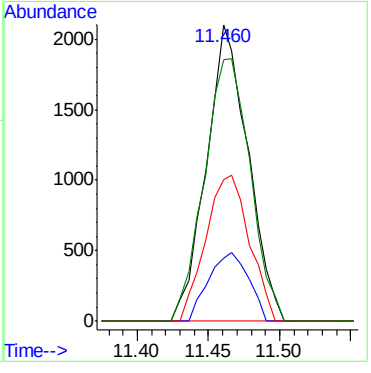


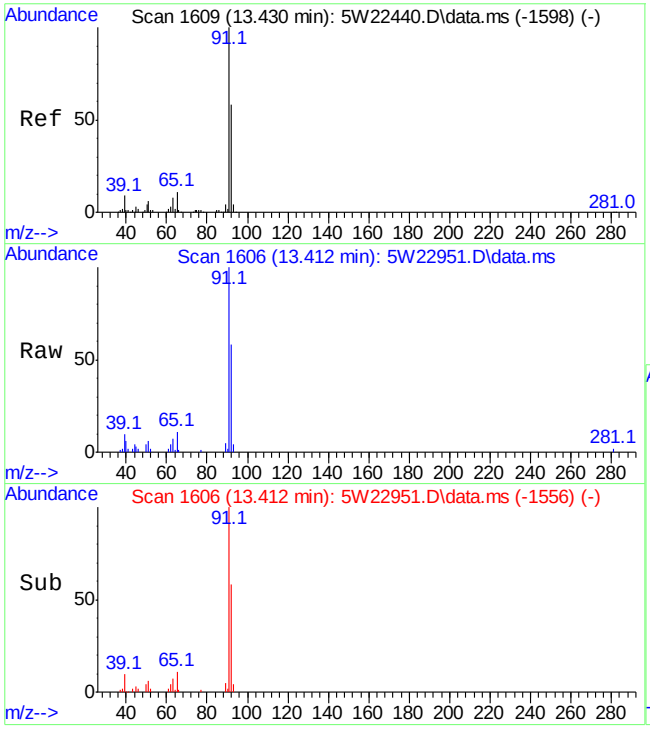


#56
Heptane
Concen: 0.30 ppb(v)
RT: 11.460 min Scan# 1287
Delta R.T. -0.037 min
Lab File: 5W22951.D
Acq: 24 Feb 2017 6:39 am

Tgt Ion: 71 Resp: 4284

Ion	Ratio	Lower	Upper
71	100		
100	21.4	18.0	33.4
70	47.7	34.1	63.3
57	88.3	64.3	119.5

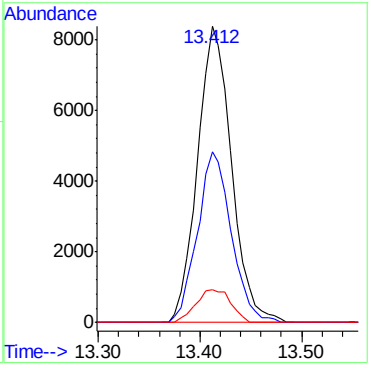


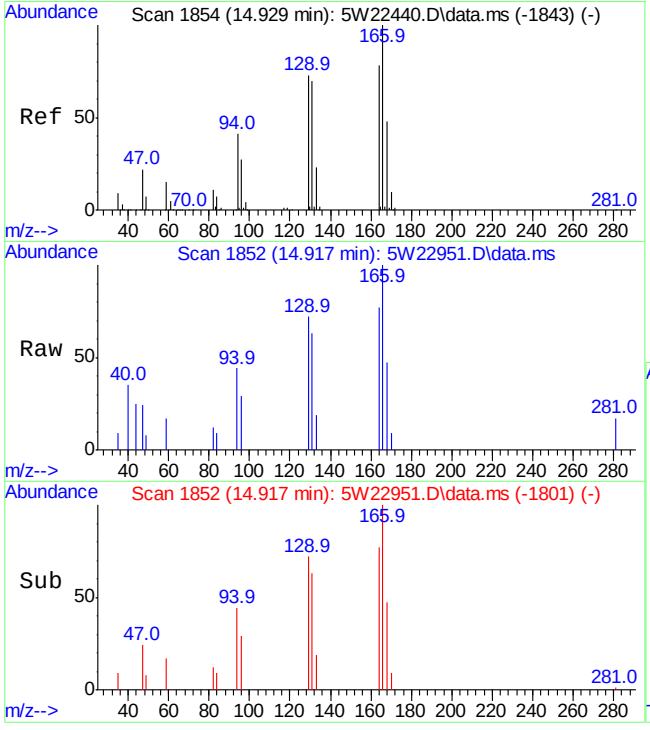


#67
Toluene
Concen: 0.37 ppb(v)
RT: 13.412 min Scan# 1606
Delta R.T. -0.024 min
Lab File: 5W22951.D
Acq: 24 Feb 2017 6:39 am

Tgt Ion: 91 Resp: 19508

Ion	Ratio	Lower	Upper
91	100		
92	57.6	41.5	77.1
65	11.2	8.0	14.8

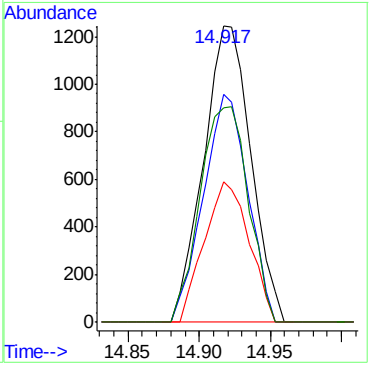


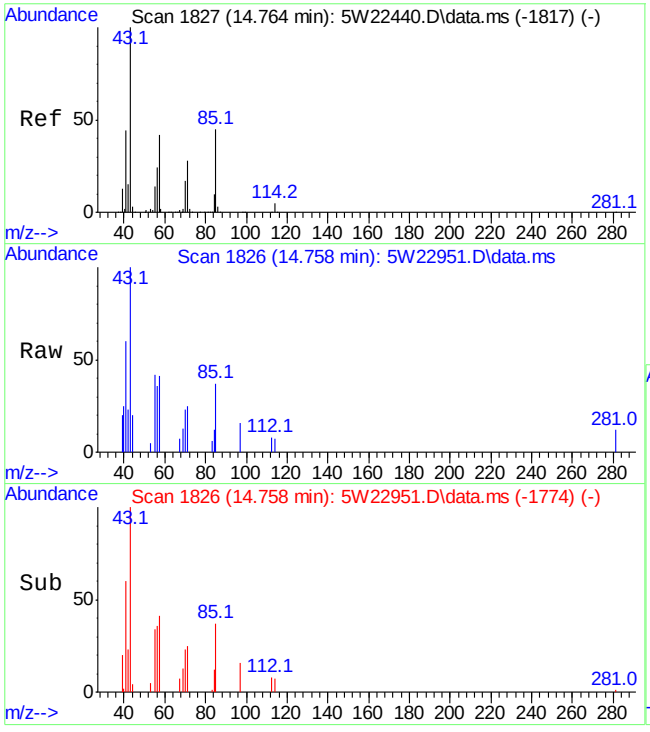


#73
Tetrachloroethene
Concen: 0.11 ppb(v)
RT: 14.917 min Scan# 1852
Delta R.T. -0.018 min
Lab File: 5W22951.D
Acq: 24 Feb 2017 6:39 am

Tgt Ion:166 Resp: 2884

Ion	Ratio	Lower	Upper
166	100		
164	76.9	54.4	101.0
168	47.4	33.7	62.5
129	72.2	48.6	90.2

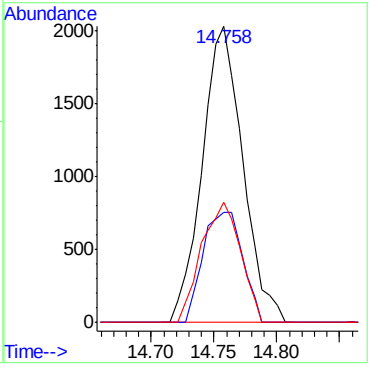


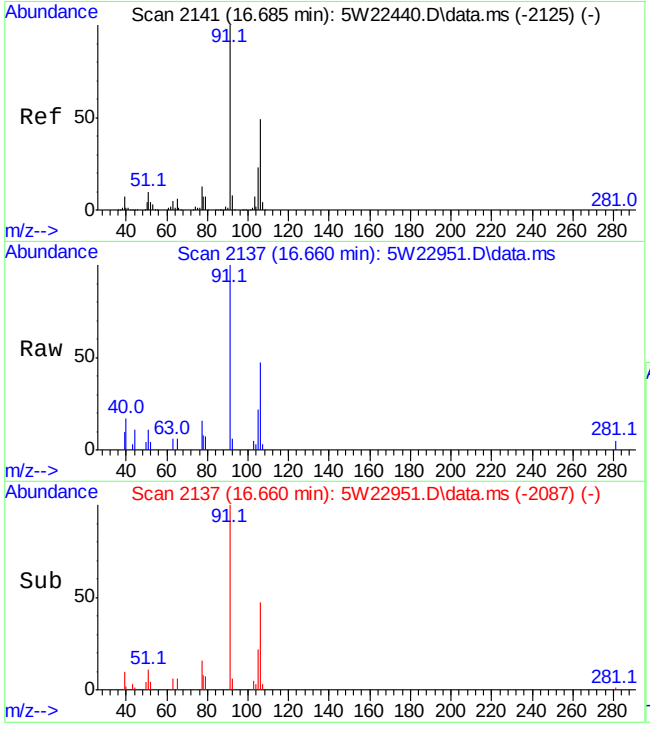


#75
Octane
Concen: 0.15 ppb(v)
RT: 14.758 min Scan# 1826
Delta R.T. -0.012 min
Lab File: 5W22951.D
Acq: 24 Feb 2017 6:39 am

Tgt Ion: 43 Resp: 4554

Ion	Ratio	Lower	Upper
43	100		
85	37.3	33.2	61.6
57	40.5	30.0	55.8

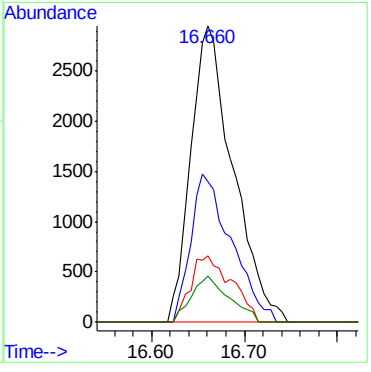




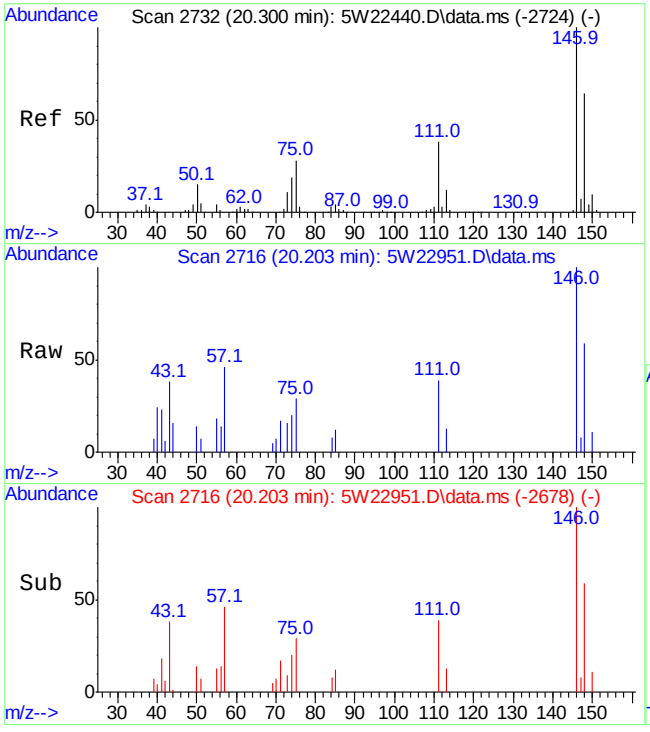
#80
m,p-Xylene
Concen: 0.19 ppb(v)
RT: 16.660 min Scan# 2137
Delta R.T. -0.024 min
Lab File: 5W22951.D
Acq: 24 Feb 2017 6:39 am

Tgt Ion: 91 Resp: 9355

Ion	Ratio	Lower	Upper
91	100		
106	47.4	35.1	65.1
105	22.3	15.8	29.4
77	15.6	9.2	17.2



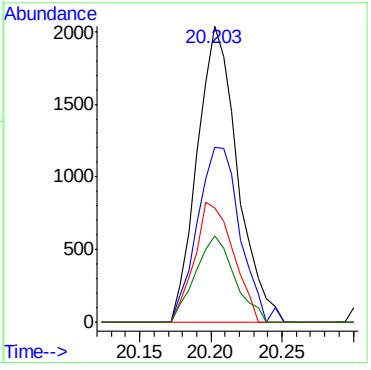
7.1.1



#99
1,4-Dichlorobenzene
Concen: 0.12 ppb(v)
RT: 20.203 min Scan# 2716
Delta R.T. -0.098 min
Lab File: 5W22951.D
Acq: 24 Feb 2017 6:39 am

Tgt Ion:146 Resp: 4013

Ion	Ratio	Lower	Upper
146	100		
148	59.1	44.9	83.5
111	38.8	25.6	47.4
75	29.0	18.3	33.9



SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22934.D
Acq On : 23 Feb 2017 3:27 pm
Operator : LUISM1
Sample : mb
Misc : MS12740,v5w909,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 23 16:39:49 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	8.132	130	142130	10.00	ppb(v	-0.09
54) 1,4-Difluorobenzene	10.286	114	559200	10.00	ppb(v	-0.06
77) Chlorobenzene-d5	15.798	82	269563	10.00	ppb(v	-0.02
108) Bromochloromethane (A)	8.132	130	142130	10.00	ppb(v	-0.09
System Monitoring Compounds						
91) 4-Bromofluorobenzene	18.043	95	306773	8.69	ppb(v	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 86.90%			

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.2.1

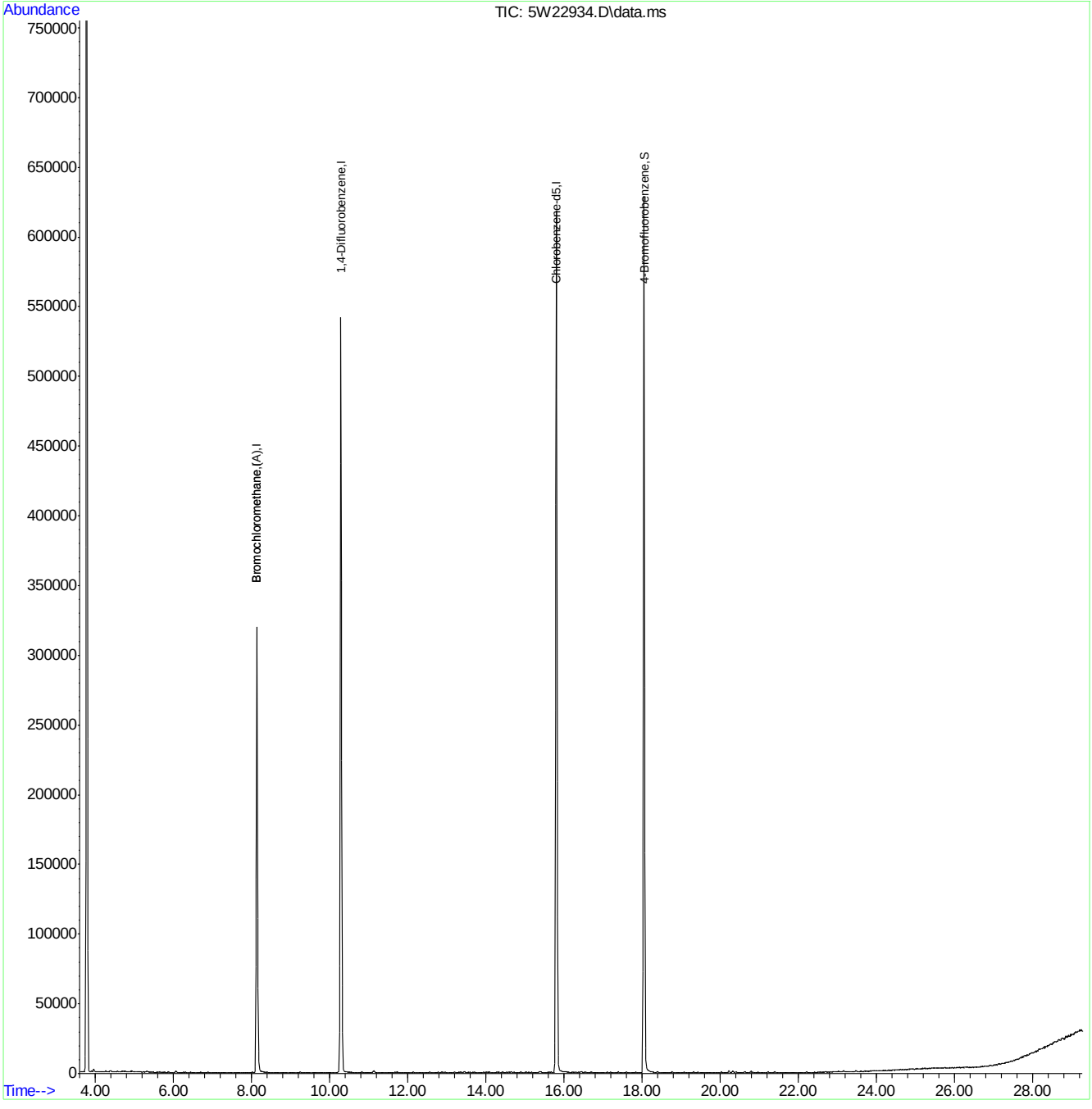
7

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22934.D
Acq On : 23 Feb 2017 3:27 pm
Operator : LUISM1
Sample : mb
Misc : MS12740,v5w909,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 23 16:39:49 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration



m5w881.M Thu Feb 23 16:39:55 2017 5W

Page: 2

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22695.D
Acq On : 10 Feb 2017 4:36 pm
Operator : danat
Sample : MB
Misc : MS12270,v5w900,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 13 09:55:50 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	8.212	130	177963	10.00	ppb(v	0.00
54) 1,4-Difluorobenzene	10.328	114	698271	10.00	ppb(v	-0.01
77) Chlorobenzene-d5	15.804	82	338088	10.00	ppb(v	-0.01
108) Bromochloromethane (A)	8.212	130	178006	10.00	ppb(v	0.00
System Monitoring Compounds						
91) 4-Bromofluorobenzene	18.043	95	409007	9.24	ppb(v	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 92.40%			

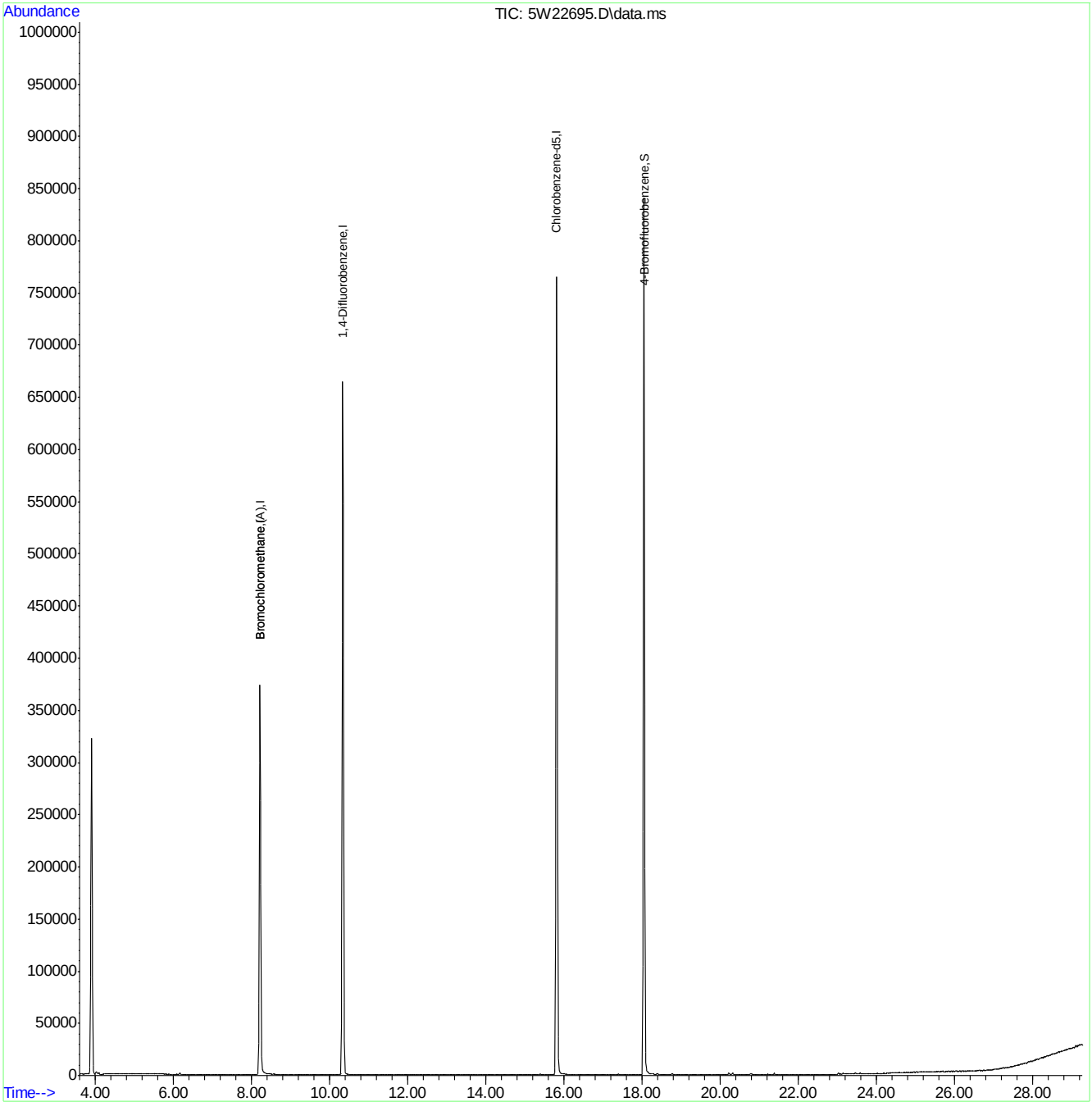
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22695.D
Acq On : 10 Feb 2017 4:36 pm
Operator : danat
Sample : MB
Misc : MS12270,v5w900,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 13 09:55:50 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration



m5w881.M Mon Feb 13 10:11:45 2017 5W

Page: 2

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22930.D
Acq On : 23 Feb 2017 11:49 am
Operator : LUISM1
Sample : bs
Misc : MS12740,v5w909,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 23 12:45:41 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	8.138	130	141715	10.00	ppb(v	-0.08
54) 1,4-Difluorobenzene	10.286	114	562166	10.00	ppb(v	-0.06
77) Chlorobenzene-d5	15.804	82	303214	10.00	ppb(v	-0.01
108) Bromochloromethane (A)	8.138	130	141715	10.00	ppb(v	-0.08
System Monitoring Compounds						
91) 4-Bromofluorobenzene	18.043	95	383463	9.66	ppb(v	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 96.60%			
Target Compounds						Qvalue
3) Freon 152A	3.905	65	93093	9.53	ppb(v	98
4) Chlorodifluoromethane	3.942	67	38764	10.55	ppb(v	99
5) Propene	3.960	41	108063	9.43	ppb(v	98
6) Chlorotrifluoroethene	3.966	116	196553	10.07	ppb(v#	88
7) Dichlorodifluoromethane	4.021	85	395104	10.33	ppb(v	99
9) Chloromethane	4.143	50	138778	9.66	ppb(v	100
10) Dichlorotetrafluoroethane	4.217	85	423991	9.93	ppb(v	92
11) Vinyl Chloride	4.315	62	161018	10.09	ppb(v	99
12) 1,3-Butadiene	4.419	54	116089	10.00	ppb(v	99
13) n-Butane	4.455	58	25263	9.73	ppb(v	92
14) Bromomethane	4.633	94	157336	9.27	ppb(v	100
15) Chloroethane	4.767	64	77693	9.75	ppb(v	97
16) Dichlorofluoromethane	4.841	67	365152	9.81	ppb(v	99
17) Acetonitrile	5.061	41	130390	10.78	ppb(v	98
18) Freon 123	5.165	83	413078	9.72	ppb(v	99
19) Freon 123A	5.214	117	401590	18.99	ppb(v	91
20) Bromoethene	5.049	106	144824	9.42	ppb(v	97
21) Trichlorofluoromethane	5.385	101	385687	10.43	ppb(v	100
22) Acetone	5.269	58	72532	9.59	ppb(v	95
23) Pentane	5.673	57	39261	8.72	ppb(v	95
25) Iodomethane	5.875	142	414369	9.70	ppb(v	93
26) Isopropyl Alcohol	5.483	43	53057	10.48	ppb(v	57
27) 1,1-Dichloroethene	5.936	61	227397	9.38	ppb(v	96
28) Freon 113	6.272	101	302956	9.02	ppb(v	97
29) Methylene Chloride	6.052	84	133763	8.60	ppb(v	97
30) Carbon Disulfide	6.315	76	456970	10.46	ppb(v	100
31) Ethanol	4.884	45	65536	9.05	ppb(v	98
32) Acrylonitrile	5.661	53	121902	10.80	ppb(v	98
33) 3-Chloropropene	6.150	76	70695	10.18	ppb(v	93
34) trans-1,2-Dichloroethene	6.909	61	220127	10.19	ppb(v	96
35) tert-Butyl Alcohol	6.003	59	285760	8.69	ppb(v	98
36) Methyl tert-Butyl Ether	7.184	73	404797	9.43	ppb(v	98
37) Vinyl Acetate	7.270	43	414003	10.32	ppb(v	99
38) 1,1-Dichloroethane	7.111	63	270442	9.34	ppb(v	100
39) 2-Butanone	7.539	72	74320	10.31	ppb(v	99
40) Hexane	8.151	57	226995	9.01	ppb(v	81
41) cis-1,2-Dichloroethene	7.967	61	206404	9.68	ppb(v	97
42) Di-isopropyl Ether	8.175	87	122435	9.53	ppb(v	92
43) Ethyl Acetate	8.224	61	51591	10.55	ppb(v	92

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22930.D
Acq On : 23 Feb 2017 11:49 am
Operator : LUISM1
Sample : bs
Misc : MS12740,v5w909,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 23 12:45:41 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) Methyl Acrylate	8.212	55	264672	9.57	ppb(v	99
45) Chloroform	8.279	83	332936	9.68	ppb(v	99
46) 2,4-Dimethylpentane	9.105	57	270804	8.99	ppb(v	99
47) Tetrahydrofuran	8.738	72	73404	9.46	ppb(v	98
48) 1,1,1-Trichloroethane	9.337	97	320463	9.83	ppb(v	99
49) 1,2-Dichloroethane	9.068	62	202639	10.54	ppb(v	99
50) Benzene	9.857	78	472350	9.07	ppb(v	99
51) Carbon Tetrachloride	10.029	117	326442	10.75	ppb(v	99
52) Cyclohexane	10.151	56	229703	9.04	ppb(v	98
53) 2,3-Dimethylpentane	10.439	71	99218	8.49	ppb(v	95
55) 2,2,4-Trimethylpentane	11.118	57	768220	10.14	ppb(v	99
56) Heptane	11.460	71	155500	9.61	ppb(v	99
57) Trichloroethene	11.105	95	219204	9.96	ppb(v	98
58) 1,2-Dichloropropane	10.812	63	180141	9.73	ppb(v	99
59) Dibromomethane	10.793	174	191676	9.42	ppb(v	86
60) Ethyl Acrylate	10.873	55	350732	9.65	ppb(v	100
61) Methyl Methacrylate	11.399	69	169684	9.35	ppb(v	98
62) 1,4-Dioxane	11.154	88	112254	10.02	ppb(v	95
63) Bromodichloromethane	11.063	83	371339	10.75	ppb(v	100
64) cis-1,3-Dichloropropene	12.182	75	294110	10.16	ppb(v	99
65) 4-Methyl-2-pentanone	12.249	58	147620	10.30	ppb(v	98
66) trans-1,3-Dichloropropene	12.855	75	250340	10.90	ppb(v	99
67) Toluene	13.412	91	556684	9.27	ppb(v	100
68) 1,1,2-Trichloroethane	13.063	97	204229	9.92	ppb(v	98
69) 1,3-Dichloropropane	13.461	76	267325	10.39	ppb(v	98
70) 2-Hexanone	13.809	58	211300	10.94	ppb(v	97
71) Ethyl Methacrylate	13.840	69	296055	10.07	ppb(v	99
72) Dibromochloromethane	13.969	129	378425	11.27	ppb(v	100
73) Tetrachloroethene	14.917	166	278334	9.47	ppb(v	97
74) 1,2-Dibromoethane	14.281	107	331128	10.62	ppb(v	99
75) Octane	14.752	43	365068	10.28	ppb(v	98
76) 1,1,1,2-Tetrachloroethane	15.841	131	245987	10.48	ppb(v	99
78) Chlorobenzene	15.865	112	433537	9.35	ppb(v	98
79) Ethylbenzene	16.409	91	725781	9.29	ppb(v	98
80) m,p-Xylene	16.679	91	1120873	18.25	ppb(v	98
81) Styrene	17.199	104	409718	9.38	ppb(v	98
82) Nonane	17.731	43	363891	9.56	ppb(v	97
83) o-Xylene	17.352	91	569649	9.40	ppb(v	98
84) Bromoform	16.752	173	352493	10.95	ppb(v	99
85) 1,1,2,2-Tetrachloroethane	17.358	83	466713	10.08	ppb(v	99
86) 1,2,3-Trichloropropane	17.547	75	336526	10.00	ppb(v	99
87) Isopropylbenzene	18.257	105	771322	9.24	ppb(v	98
88) Bromobenzene	18.367	156	246476	9.52	ppb(v	93
89) 2-Chlorotoluene	18.985	126	188415	9.49	ppb(v	90
90) n-Propylbenzene	19.065	120	198725	9.42	ppb(v	89
92) 4-Ethyltoluene	19.291	105	736933	9.45	ppb(v	99
93) 1,3,5-Trimethylbenzene	19.413	105	633516	9.49	ppb(v	97
94) alpha-Methylstyrene	19.652	118	304440	9.21	ppb(v	99
95) tert-Butylbenzene	19.994	134	127728	9.17	ppb(v	89
96) 1,2,4-Trimethylbenzene	20.007	105	625966	9.90	ppb(v	97

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22930.D
Acq On : 23 Feb 2017 11:49 am
Operator : LUISM1
Sample : bs
Misc : MS12740,v5w909,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 23 12:45:41 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration

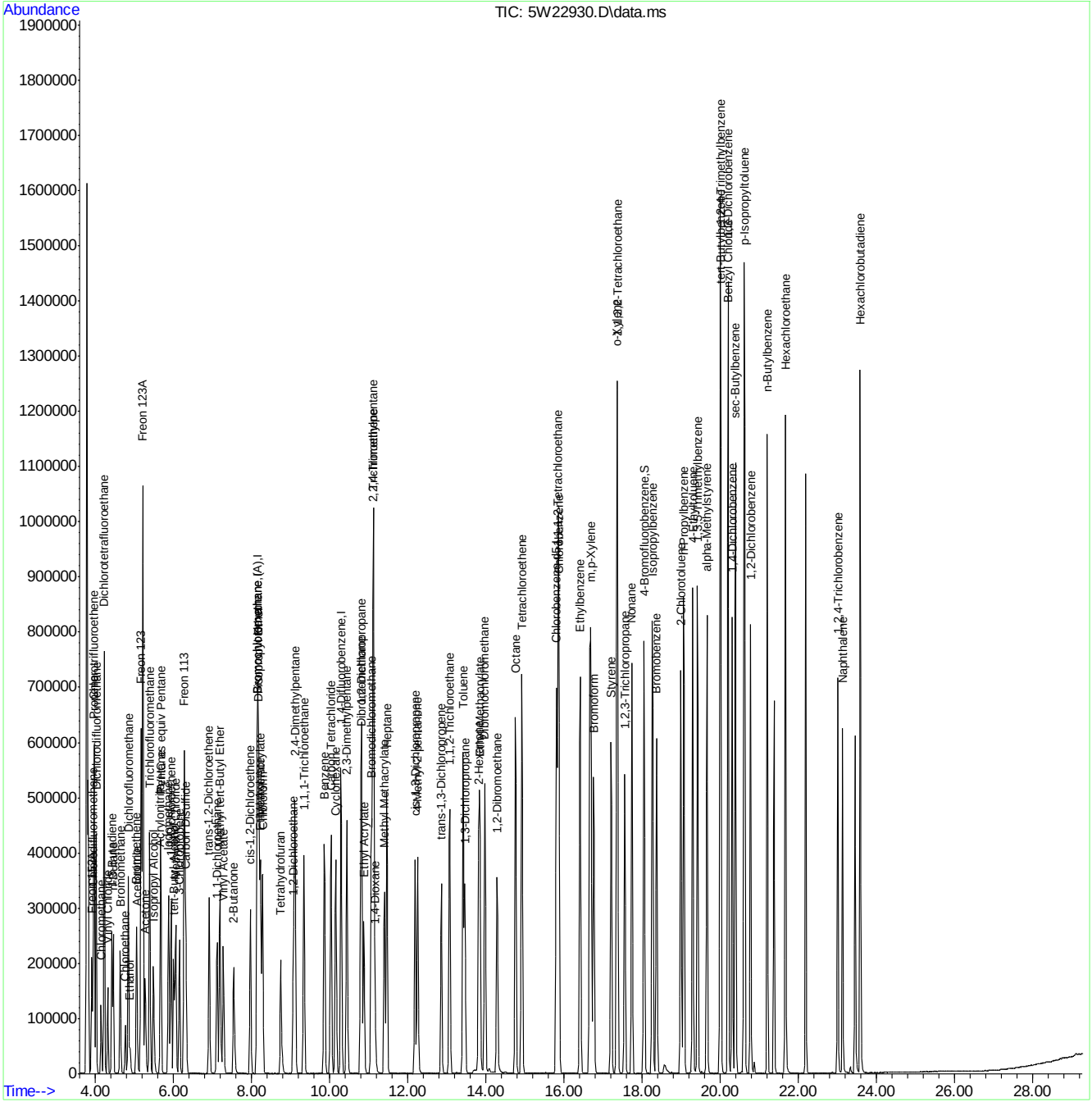
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
97)	1,3-Dichlorobenzene	20.196	146	403785	9.93	ppb(v	97
98)	Benzyl Chloride	20.190	91	554125	11.66	ppb(v	97
99)	1,4-Dichlorobenzene	20.300	146	400417	9.95	ppb(v	97
100)	sec-Butylbenzene	20.386	134	162728	9.38	ppb(v	89
101)	p-Isopropyltoluene	20.618	134	183712	9.65	ppb(v	93
102)	1,2-Dichlorobenzene	20.771	146	388665	9.98	ppb(v	97
103)	n-Butylbenzene	21.200	134	166104	10.05	ppb(v	96
104)	Hexachloroethane	21.665	201	224946	10.58	ppb(v	83
105)	1,2,4-Trichlorobenzene	23.004	180	221459	11.60	ppb(v	99
106)	Naphthalene	23.127	128	487956	11.67	ppb(v	100
107)	Hexachlorobutadiene	23.579	225	244830	9.33	ppb(v	98
109)	TVHC as equiv Pentane	5.673	TIC	971820	9.78	ppb(v	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22930.D
Acq On : 23 Feb 2017 11:49 am
Operator : LUISM1
Sample : bs
Misc : MS12740,v5w909,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 23 12:45:41 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration



m5w881.M Thu Feb 23 14:44:48 2017 5W

Page: 4

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22932.D
Acq On : 23 Feb 2017 1:32 pm
Operator : LUISM1
Sample : bsd
Misc : MS12740,v5w909,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 23 14:45:18 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	8.139	130	136009	10.00	ppb(v	-0.08
54) 1,4-Difluorobenzene	10.286	114	546002	10.00	ppb(v	-0.06
77) Chlorobenzene-d5	15.804	82	297300	10.00	ppb(v	-0.01
108) Bromochloromethane (A)	8.139	130	136009	10.00	ppb(v	-0.08
System Monitoring Compounds						
91) 4-Bromofluorobenzene	18.043	95	379048	9.73	ppb(v	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 97.30%			
Target Compounds						Qvalue
3) Freon 152A	3.905	65	95619	10.20	ppb(v	99
4) Chlorodifluoromethane	3.942	67	39894	11.31	ppb(v	99
5) Propene	3.960	41	109356	9.95	ppb(v	99
6) Chlorotrifluoroethene	3.966	116	200925	10.72	ppb(v#	88
7) Dichlorodifluoromethane	4.021	85	408062	11.12	ppb(v	99
9) Chloromethane	4.150	50	141137	10.24	ppb(v	99
10) Dichlorotetrafluoroethane	4.223	85	432442	10.55	ppb(v	96
11) Vinyl Chloride	4.315	62	164085	10.71	ppb(v	99
12) 1,3-Butadiene	4.419	54	117388	10.53	ppb(v	98
13) n-Butane	4.456	58	25654	10.30	ppb(v	91
14) Bromomethane	4.633	94	158598	9.74	ppb(v	99
15) Chloroethane	4.768	64	77611	10.15	ppb(v	97
16) Dichlorofluoromethane	4.841	67	367341	10.29	ppb(v	99
17) Acetonitrile	5.061	41	129097	11.12	ppb(v	98
18) Freon 123	5.165	83	412833	10.12	ppb(v	100
19) Freon 123A	5.214	117	405917	20.00	ppb(v	92
20) Bromoethene	5.049	106	145610	9.87	ppb(v	98
21) Trichlorofluoromethane	5.386	101	390079	10.99	ppb(v	99
22) Acetone	5.269	58	71475	9.85	ppb(v	96
23) Pentane	5.673	57	39189	9.07	ppb(v	97
25) Iodomethane	5.875	142	420347	10.26	ppb(v	94
26) Isopropyl Alcohol	5.477	43	52123	10.72	ppb(v	58
27) 1,1-Dichloroethene	5.936	61	227390	9.77	ppb(v	97
28) Freon 113	6.273	101	305823	9.49	ppb(v	98
29) Methylene Chloride	6.052	84	134818	9.04	ppb(v	99
30) Carbon Disulfide	6.315	76	456637	10.89	ppb(v	100
31) Ethanol	4.884	45	66375	9.56	ppb(v	97
32) Acrylonitrile	5.661	53	121171	11.18	ppb(v	98
33) 3-Chloropropene	6.150	76	71517	10.74	ppb(v	92
34) trans-1,2-Dichloroethene	6.909	61	222056	10.71	ppb(v	96
35) tert-Butyl Alcohol	5.997	59	291438	9.24	ppb(v	98
36) Methyl tert-Butyl Ether	7.184	73	410396	9.96	ppb(v	99
37) Vinyl Acetate	7.270	43	415061	10.78	ppb(v	99
38) 1,1-Dichloroethane	7.111	63	273090	9.83	ppb(v	99
39) 2-Butanone	7.533	72	74613	10.78	ppb(v	98
40) Hexane	8.151	57	230727	9.54	ppb(v	82
41) cis-1,2-Dichloroethene	7.967	61	209782	10.25	ppb(v	98
42) Di-isopropyl Ether	8.175	87	126005	10.22	ppb(v	95
43) Ethyl Acetate	8.224	61	52059	11.09	ppb(v	93

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22932.D
Acq On : 23 Feb 2017 1:32 pm
Operator : LUISM1
Sample : bsd
Misc : MS12740,v5w909,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 23 14:45:18 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) Methyl Acrylate	8.212	55	269220	10.14	ppb(v	99
45) Chloroform	8.273	83	334767	10.15	ppb(v	99
46) 2,4-Dimethylpentane	9.105	57	273650	9.46	ppb(v	99
47) Tetrahydrofuran	8.738	72	74655	10.02	ppb(v	99
48) 1,1,1-Trichloroethane	9.338	97	328492	10.50	ppb(v	99
49) 1,2-Dichloroethane	9.068	62	205133	11.12	ppb(v	99
50) Benzene	9.858	78	482664	9.66	ppb(v	99
51) Carbon Tetrachloride	10.029	117	335865	11.52	ppb(v	99
52) Cyclohexane	10.151	56	232263	9.53	ppb(v	99
53) 2,3-Dimethylpentane	10.439	71	101541	9.06	ppb(v	96
55) 2,2,4-Trimethylpentane	11.118	57	785590	10.67	ppb(v	99
56) Heptane	11.460	71	157919	10.05	ppb(v	99
57) Trichloroethene	11.106	95	224247	10.49	ppb(v	98
58) 1,2-Dichloropropane	10.812	63	182971	10.17	ppb(v	98
59) Dibromomethane	10.794	174	196249	9.93	ppb(v	88
60) Ethyl Acrylate	10.873	55	354106	10.03	ppb(v	100
61) Methyl Methacrylate	11.393	69	174625	9.91	ppb(v	98
62) 1,4-Dioxane	11.155	88	115665	10.63	ppb(v	94
63) Bromodichloromethane	11.063	83	379306	11.31	ppb(v	100
64) cis-1,3-Dichloropropene	12.182	75	303575	10.80	ppb(v	99
65) 4-Methyl-2-pentanone	12.250	58	149773	10.76	ppb(v	99
66) trans-1,3-Dichloropropene	12.855	75	257514	11.54	ppb(v	99
67) Toluene	13.412	91	582286	9.99	ppb(v	99
68) 1,1,2-Trichloroethane	13.063	97	209073	10.46	ppb(v	99
69) 1,3-Dichloropropane	13.461	76	273112	10.93	ppb(v	98
70) 2-Hexanone	13.810	58	211922	11.29	ppb(v	98
71) Ethyl Methacrylate	13.840	69	299999	10.50	ppb(v	100
72) Dibromochloromethane	13.969	129	388766	11.92	ppb(v	99
73) Tetrachloroethene	14.917	166	286051	10.02	ppb(v	97
74) 1,2-Dibromoethane	14.281	107	336733	11.12	ppb(v	100
75) Octane	14.752	43	368573	10.69	ppb(v	98
76) 1,1,1,2-Tetrachloroethane	15.841	131	253507	11.13	ppb(v	99
78) Chlorobenzene	15.865	112	443576	9.75	ppb(v	99
79) Ethylbenzene	16.404	91	744226	9.71	ppb(v	99
80) m,p-Xylene	16.679	91	1150155	19.10	ppb(v	98
81) Styrene	17.199	104	420983	9.83	ppb(v	98
82) Nonane	17.731	43	370790	9.93	ppb(v	98
83) o-Xylene	17.352	91	585707	9.86	ppb(v	98
84) Bromoform	16.752	173	364946	11.56	ppb(v	99
85) 1,1,2,2-Tetrachloroethane	17.358	83	476884	10.50	ppb(v	100
86) 1,2,3-Trichloropropane	17.548	75	345141	10.46	ppb(v	99
87) Isopropylbenzene	18.257	105	808105	9.88	ppb(v	98
88) Bromobenzene	18.367	156	257316	10.14	ppb(v	93
89) 2-Chlorotoluene	18.985	126	193511	9.94	ppb(v	89
90) n-Propylbenzene	19.059	120	208810	10.10	ppb(v	88
92) 4-Ethyltoluene	19.291	105	765992	10.01	ppb(v	99
93) 1,3,5-Trimethylbenzene	19.413	105	649703	9.93	ppb(v	98
94) alpha-Methylstyrene	19.652	118	320040	9.88	ppb(v	99
95) tert-Butylbenzene	19.995	134	132974	9.73	ppb(v	89
96) 1,2,4-Trimethylbenzene	20.007	105	645636	10.42	ppb(v	97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22932.D
Acq On : 23 Feb 2017 1:32 pm
Operator : LUISM1
Sample : bsd
Misc : MS12740,v5w909,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 23 14:45:18 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
97)	1,3-Dichlorobenzene	20.196	146	418524	10.50	ppb(v	97
98)	Benzyl Chloride	20.190	91	573537	12.31	ppb(v	97
99)	1,4-Dichlorobenzene	20.300	146	418864	10.62	ppb(v	97
100)	sec-Butylbenzene	20.386	134	168207	9.89	ppb(v	87
101)	p-Isopropyltoluene	20.619	134	190917	10.23	ppb(v	91
102)	1,2-Dichlorobenzene	20.772	146	403704	10.58	ppb(v	97
103)	n-Butylbenzene	21.200	134	173224	10.69	ppb(v	96
104)	Hexachloroethane	21.665	201	240361	11.53	ppb(v	85
105)	1,2,4-Trichlorobenzene	23.005	180	241930	12.92	ppb(v	99
106)	Naphthalene	23.127	128	532545	12.99	ppb(v	99
107)	Hexachlorobutadiene	23.580	225	263929	10.26	ppb(v	98
109)	TVHC as equiv Pentane	5.673	TIC	961583	10.09	ppb(v	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.3.2

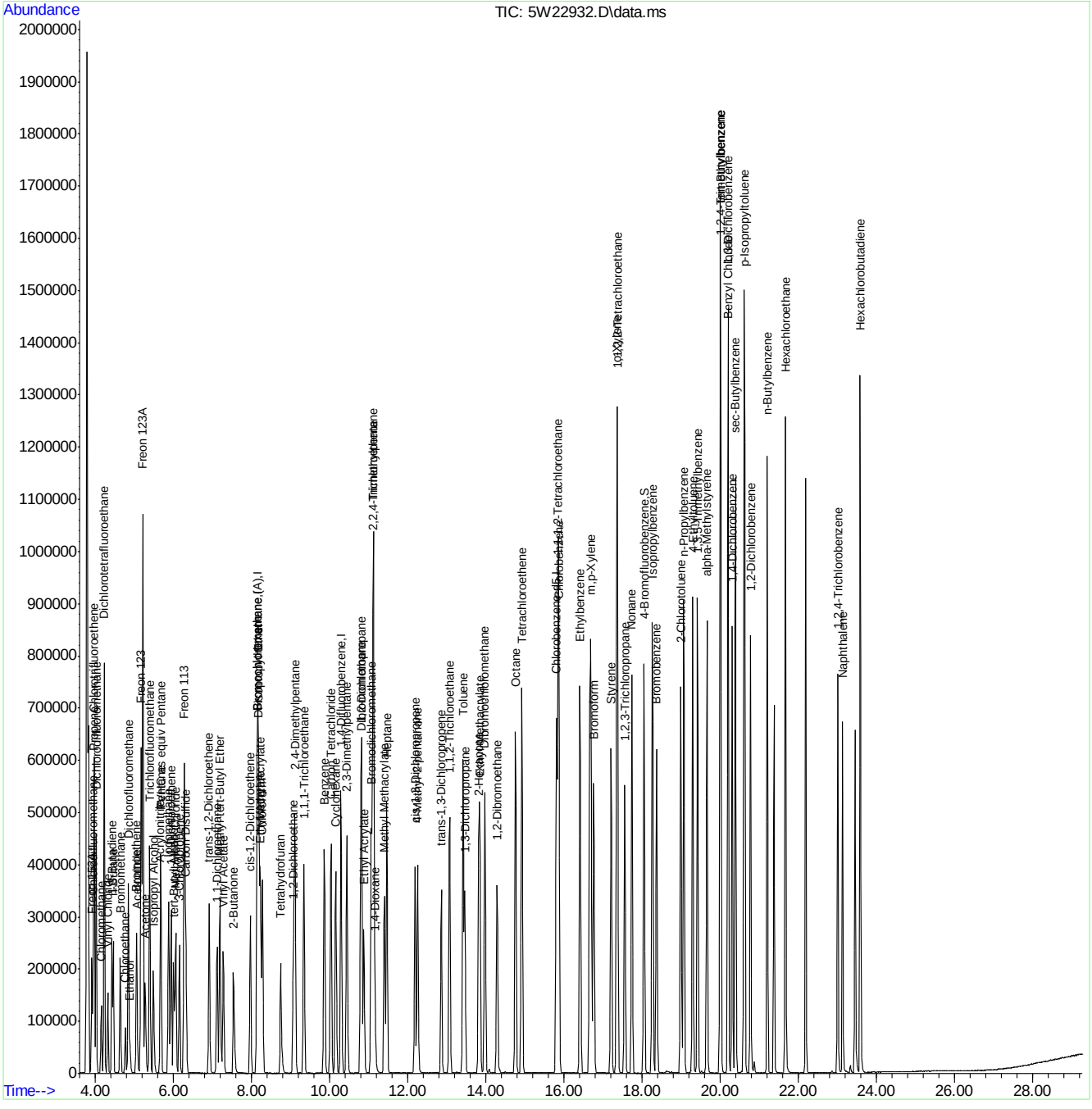
7

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22932.D
Acq On : 23 Feb 2017 1:32 pm
Operator : LUISM1
Sample : bsd
Misc : MS12740,v5w909,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 23 14:45:18 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration



SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22692.D
Acq On : 10 Feb 2017 2:20 pm
Operator : danat
Sample : BS
Misc : MS12270,v5w900,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 13 09:53:09 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	8.212	130	185389	10.00	ppb(v	0.00
54) 1,4-Difluorobenzene	10.335	114	740963	10.00	ppb(v	0.00
77) Chlorobenzene-d5	15.810	82	393731	10.00	ppb(v	0.00
108) Bromochloromethane (A)	8.212	130	185389	10.00	ppb(v	0.00
System Monitoring Compounds						
91) 4-Bromofluorobenzene	18.043	95	517146	10.03	ppb(v	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 100.30%			
Target Compounds						Qvalue
3) Freon 152A	4.021	65	111993	8.77	ppb(v	97
4) Chlorodifluoromethane	4.058	67	48086	10.00	ppb(v	99
5) Propene	4.076	41	127467	8.51	ppb(v	97
6) Chlorotrifluoroethene	4.082	116	245049	9.60	ppb(v	99
7) Dichlorodifluoromethane	4.137	85	495634	9.91	ppb(v	99
8) 1-Chloro-1,1-difluoroe...	4.247	65	353232	10.14	ppb(v	98
9) Chloromethane	4.266	50	164397	8.75	ppb(v	99
10) Dichlorotetrafluoroethane	4.333	85	513424	9.19	ppb(v	95
11) Vinyl Chloride	4.431	62	186686	8.94	ppb(v	99
12) 1,3-Butadiene	4.535	54	134201	8.83	ppb(v	98
13) n-Butane	4.572	58	29466	8.68	ppb(v	93
14) Bromomethane	4.749	94	189490	8.54	ppb(v	99
15) Chloroethane	4.884	64	91247	8.75	ppb(v	98
16) Dichlorofluoromethane	4.951	67	430000	8.83	ppb(v	100
17) Acetonitrile	5.171	41	142315	8.99	ppb(v	100
18) Freon 123	5.281	83	486168	8.75	ppb(v	99
19) Freon 123A	5.324	117	490289	17.72	ppb(v	96
20) Bromoethene	5.165	106	177461	8.83	ppb(v	98
21) Trichlorofluoromethane	5.502	101	474496	9.81	ppb(v	99
22) Acetone	5.379	58	86491	8.75	ppb(v	97
23) Pentane	5.783	57	46841	7.95	ppb(v	98
25) Iodomethane	5.979	142	517658	9.27	ppb(v	94
26) Isopropyl Alcohol	5.587	43	57996	8.75	ppb(v	59
27) 1,1-Dichloroethene	6.040	61	274822	8.66	ppb(v	97
28) Freon 113	6.370	101	371256	8.45	ppb(v	99
29) Methylene Chloride	6.156	84	160416	7.89	ppb(v	99
30) Carbon Disulfide	6.413	76	546503	9.56	ppb(v	100
31) Ethanol	4.994	45	71908	7.59	ppb(v	98
32) Acrylonitrile	5.765	53	142055	9.62	ppb(v	97
33) 3-Chloropropene	6.254	76	85089	9.37	ppb(v	95
34) trans-1,2-Dichloroethene	7.000	61	270421	9.57	ppb(v	97
35) tert-Butyl Alcohol	6.101	59	350454	8.15	ppb(v	98
36) Methyl tert-Butyl Ether	7.270	73	504169	8.97	ppb(v	99
37) Vinyl Acetate	7.355	43	493534	9.40	ppb(v	100
38) 1,1-Dichloroethane	7.202	63	329785	8.71	ppb(v	99
39) 2-Butanone	7.612	72	90449	9.59	ppb(v	100
40) Hexane	8.224	57	275831	8.37	ppb(v	87
41) cis-1,2-Dichloroethene	8.040	61	253196	9.07	ppb(v	98
42) Di-isopropyl Ether	8.248	87	151436	9.01	ppb(v	99

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22692.D
Acq On : 10 Feb 2017 2:20 pm
Operator : danat
Sample : BS
Misc : MS12270,v5w900,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 13 09:53:09 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) Ethyl Acetate	8.297	61	62442	9.76	ppb(v	94
44) Methyl Acrylate	8.279	55	319270	8.82	ppb(v	99
45) Chloroform	8.346	83	405129	9.01	ppb(v	99
46) 2,4-Dimethylpentane	9.166	57	325097	8.25	ppb(v	99
47) Tetrahydrofuran	8.805	72	89421	8.81	ppb(v	98
48) 1,1,1-Trichloroethane	9.393	97	399297	9.36	ppb(v	99
49) 1,2-Dichloroethane	9.129	62	248212	9.87	ppb(v	99
50) Benzene	9.912	78	578840	8.50	ppb(v	99
51) Carbon Tetrachloride	10.078	117	403607	10.16	ppb(v	99
52) Cyclohexane	10.200	56	279077	8.40	ppb(v	99
53) 2,3-Dimethylpentane	10.481	71	121422	7.94	ppb(v	97
55) 2,2,4-Trimethylpentane	11.154	57	912485	9.14	ppb(v	99
56) Heptane	11.497	71	184471	8.65	ppb(v	99
57) Trichloroethene	11.142	95	267539	9.22	ppb(v	98
58) 1,2-Dichloropropane	10.855	63	216358	8.86	ppb(v	98
59) Dibromomethane	10.836	174	243154	9.06	ppb(v	94
60) Ethyl Acrylate	10.910	55	428502	8.94	ppb(v	100
61) Methyl Methacrylate	11.430	69	211234	8.83	ppb(v	98
62) 1,4-Dioxane	11.191	88	136231	9.23	ppb(v	95
63) Bromodichloromethane	11.099	83	450514	9.90	ppb(v	100
64) cis-1,3-Dichloropropene	12.207	75	362420	9.50	ppb(v	99
65) 4-Methyl-2-pentanone	12.274	58	178401	9.45	ppb(v	98
66) trans-1,3-Dichloropropene	12.873	75	311656	10.29	ppb(v	99
67) Toluene	13.430	91	694934	8.78	ppb(v	100
68) 1,1,2-Trichloroethane	13.088	97	251712	9.28	ppb(v	99
69) 1,3-Dichloropropane	13.473	76	327717	9.66	ppb(v	98
70) 2-Hexanone	13.822	58	252434	9.91	ppb(v	98
71) Ethyl Methacrylate	13.852	69	360966	9.31	ppb(v	99
72) Dibromochloromethane	13.987	129	467720	10.57	ppb(v	99
73) Tetrachloroethene	14.929	166	349202	9.01	ppb(v	98
74) 1,2-Dibromoethane	14.299	107	406002	9.88	ppb(v	99
75) Octane	14.764	43	438023	9.36	ppb(v	99
76) 1,1,1,2-Tetrachloroethane	15.847	131	309642	10.01	ppb(v	99
78) Chlorobenzene	15.871	112	539498	8.96	ppb(v	98
79) Ethylbenzene	16.410	91	903079	8.90	ppb(v	100
80) m,p-Xylene	16.685	91	1393901	17.48	ppb(v	98
81) Styrene	17.205	104	511738	9.02	ppb(v	98
82) Nonane	17.731	43	424306	8.58	ppb(v	97
83) o-Xylene	17.352	91	709741	9.02	ppb(v	98
84) Bromoform	16.758	173	451720	10.81	ppb(v	99
85) 1,1,2,2-Tetrachloroethane	17.358	83	565711	9.41	ppb(v	100
86) 1,2,3-Trichloropropane	17.547	75	414567	9.49	ppb(v	99
87) Isopropylbenzene	18.257	105	977838	9.03	ppb(v	98
88) Bromobenzene	18.367	156	315154	9.38	ppb(v	96
89) 2-Chlorotoluene	18.985	126	236406	9.17	ppb(v	93
90) n-Propylbenzene	19.058	120	252053	9.20	ppb(v	93
92) 4-Ethyltoluene	19.285	105	924180	9.12	ppb(v	98
93) 1,3,5-Trimethylbenzene	19.413	105	786236	9.07	ppb(v	98
94) alpha-Methylstyrene	19.646	118	388687	9.06	ppb(v	99
95) tert-Butylbenzene	19.988	134	160048	8.85	ppb(v	93

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22692.D
Acq On : 10 Feb 2017 2:20 pm
Operator : danat
Sample : BS
Misc : MS12270,v5w900,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 13 09:53:09 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
96)	1,2,4-Trimethylbenzene	20.007	105	762088	9.28	ppb(v	89
97)	1,3-Dichlorobenzene	20.196	146	501207	9.49	ppb(v	98
98)	Benzyl Chloride	20.190	91	675645	10.95	ppb(v	98
99)	1,4-Dichlorobenzene	20.294	146	507207	9.71	ppb(v	97
100)	sec-Butylbenzene	20.380	134	203206	9.02	ppb(v	89
101)	p-Isopropyltoluene	20.618	134	226149	9.15	ppb(v	98
102)	1,2-Dichlorobenzene	20.765	146	485930	9.61	ppb(v	97
103)	n-Butylbenzene	21.194	134	206747	9.64	ppb(v	97
104)	Hexachloroethane	21.659	201	300254	10.88	ppb(v	86
105)	1,2,4-Trichlorobenzene	22.998	180	270063	10.89	ppb(v	100
106)	Naphthalene	23.121	128	587659	10.83	ppb(v	99
107)	Hexachlorobutadiene	23.579	225	295697	8.68	ppb(v	99
109)	TVHC as equiv Pentane	5.777	TIC	1136312	8.75	ppb(v	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.3.3

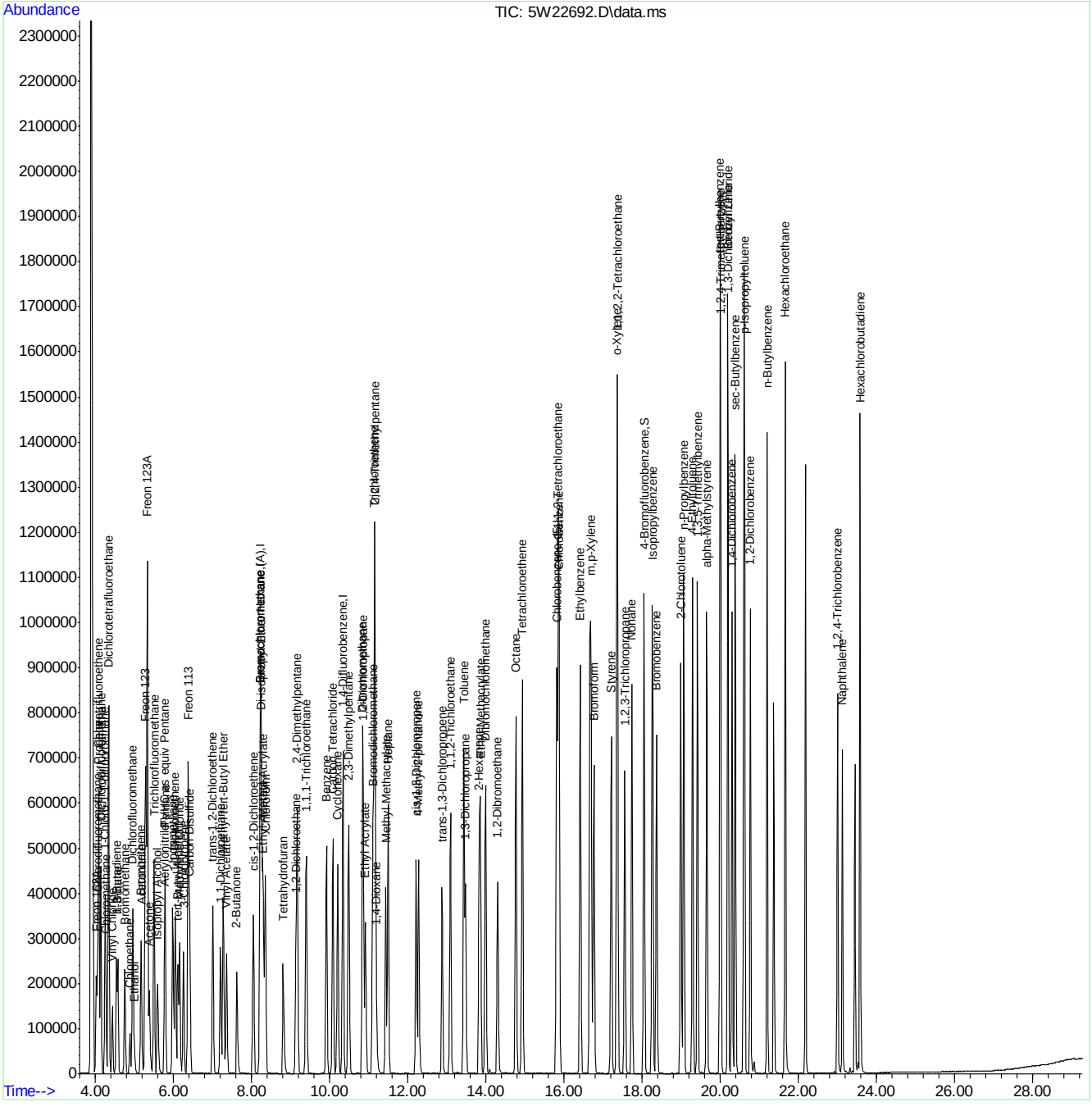
7

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22692.D
Acq On : 10 Feb 2017 2:20 pm
Operator : danat
Sample : BS
Misc : MS12270,v5w900,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 13 09:53:09 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration



m5w881.M Mon Feb 13 10:10:05 2017 5W

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22693.D
Acq On : 10 Feb 2017 3:02 pm
Operator : danat
Sample : BSD
Misc : MS12270,v5w900,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 13 09:53:36 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	8.212	130	184413	10.00	ppb(v	0.00
54) 1,4-Difluorobenzene	10.335	114	737322	10.00	ppb(v	0.00
77) Chlorobenzene-d5	15.810	82	395834	10.00	ppb(v	0.00
108) Bromochloromethane (A)	8.212	130	184413	10.00	ppb(v	0.00
System Monitoring Compounds						
91) 4-Bromofluorobenzene	18.043	95	511453	9.87	ppb(v	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 98.70%			
Target Compounds						Qvalue
3) Freon 152A	4.021	65	111341	8.76	ppb(v	97
4) Chlorodifluoromethane	4.058	67	49008	10.25	ppb(v	99
5) Propene	4.076	41	128999	8.65	ppb(v	98
6) Chlorotrifluoroethene	4.082	116	248712	9.79	ppb(v	99
7) Dichlorodifluoromethane	4.131	85	499892	10.04	ppb(v	100
8) 1-Chloro-1,1-difluoroe...	4.242	65	355059	10.25	ppb(v	98
9) Chloromethane	4.260	50	164391	8.80	ppb(v	99
10) Dichlorotetrafluoroethane	4.333	85	515513	9.28	ppb(v	96
11) Vinyl Chloride	4.431	62	187766	9.04	ppb(v	99
12) 1,3-Butadiene	4.535	54	134052	8.87	ppb(v	98
13) n-Butane	4.572	58	29756	8.81	ppb(v	98
14) Bromomethane	4.749	94	191091	8.66	ppb(v	99
15) Chloroethane	4.884	64	91588	8.83	ppb(v	97
16) Dichlorofluoromethane	4.951	67	434441	8.97	ppb(v	100
17) Acetonitrile	5.171	41	143515	9.11	ppb(v	99
18) Freon 123	5.282	83	487227	8.81	ppb(v	99
19) Freon 123A	5.324	117	492902	17.91	ppb(v	96
20) Bromoethene	5.165	106	178045	8.90	ppb(v	98
21) Trichlorofluoromethane	5.496	101	477139	9.91	ppb(v	100
22) Acetone	5.379	58	84724	8.61	ppb(v	96
23) Pentane	5.783	57	46934	8.01	ppb(v	98
25) Iodomethane	5.979	142	527563	9.49	ppb(v	94
26) Isopropyl Alcohol	5.587	43	58111	8.82	ppb(v	60
27) 1,1-Dichloroethene	6.040	61	277225	8.78	ppb(v	97
28) Freon 113	6.370	101	378331	8.65	ppb(v	99
29) Methylene Chloride	6.156	84	161831	8.00	ppb(v	99
30) Carbon Disulfide	6.413	76	553134	9.73	ppb(v	100
31) Ethanol	4.994	45	71599	7.60	ppb(v	99
32) Acrylonitrile	5.765	53	141979	9.66	ppb(v	98
33) 3-Chloropropene	6.254	76	84996	9.41	ppb(v	95
34) trans-1,2-Dichloroethene	7.001	61	271556	9.66	ppb(v	98
35) tert-Butyl Alcohol	6.101	59	352051	8.23	ppb(v	98
36) Methyl tert-Butyl Ether	7.270	73	510058	9.13	ppb(v	99
37) Vinyl Acetate	7.355	43	498896	9.55	ppb(v	100
38) 1,1-Dichloroethane	7.202	63	333756	8.86	ppb(v	99
39) 2-Butanone	7.612	72	91346	9.74	ppb(v	99
40) Hexane	8.224	57	279175	8.52	ppb(v	89
41) cis-1,2-Dichloroethene	8.041	61	254766	9.18	ppb(v	98
42) Di-isopropyl Ether	8.249	87	153313	9.17	ppb(v	96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22693.D
Acq On : 10 Feb 2017 3:02 pm
Operator : danat
Sample : BSD
Misc : MS12270,v5w900,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 13 09:53:36 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43)	Ethyl Acetate	8.298	61	63620	10.00	ppb(v	98
44)	Methyl Acrylate	8.279	55	323838	9.00	ppb(v	99
45)	Chloroform	8.347	83	411044	9.19	ppb(v	99
46)	2,4-Dimethylpentane	9.166	57	330065	8.42	ppb(v	100
47)	Tetrahydrofuran	8.799	72	91403	9.05	ppb(v	97
48)	1,1,1-Trichloroethane	9.393	97	405887	9.57	ppb(v	100
49)	1,2-Dichloroethane	9.130	62	253462	10.13	ppb(v	99
50)	Benzene	9.913	78	589262	8.70	ppb(v	99
51)	Carbon Tetrachloride	10.078	117	411272	10.41	ppb(v	99
52)	Cyclohexane	10.200	56	281965	8.53	ppb(v	100
53)	2,3-Dimethylpentane	10.482	71	123532	8.13	ppb(v	98
55)	2,2,4-Trimethylpentane	11.155	57	928716	9.34	ppb(v	99
56)	Heptane	11.491	71	186791	8.81	ppb(v	100
57)	Trichloroethene	11.142	95	273103	9.46	ppb(v	98
58)	1,2-Dichloropropane	10.855	63	220552	9.08	ppb(v	97
59)	Dibromomethane	10.836	174	248058	9.29	ppb(v	93
60)	Ethyl Acrylate	10.910	55	436320	9.15	ppb(v	100
61)	Methyl Methacrylate	11.430	69	213448	8.97	ppb(v	99
62)	1,4-Dioxane	11.191	88	138413	9.42	ppb(v	94
63)	Bromodichloromethane	11.099	83	464006	10.25	ppb(v	100
64)	cis-1,3-Dichloropropene	12.207	75	369936	9.75	ppb(v	99
65)	4-Methyl-2-pentanone	12.274	58	182708	9.72	ppb(v	99
66)	trans-1,3-Dichloropropene	12.874	75	315966	10.49	ppb(v	99
67)	Toluene	13.430	91	711778	9.04	ppb(v	100
68)	1,1,2-Trichloroethane	13.082	97	257120	9.52	ppb(v	99
69)	1,3-Dichloropropane	13.473	76	334462	9.91	ppb(v	98
70)	2-Hexanone	13.822	58	254961	10.06	ppb(v	96
71)	Ethyl Methacrylate	13.852	69	365067	9.46	ppb(v	99
72)	Dibromochloromethane	13.987	129	482589	10.96	ppb(v	99
73)	Tetrachloroethene	14.929	166	361099	9.36	ppb(v	98
74)	1,2-Dibromoethane	14.293	107	415490	10.16	ppb(v	99
75)	Octane	14.764	43	444053	9.53	ppb(v	99
76)	1,1,1,2-Tetrachloroethane	15.847	131	318743	10.36	ppb(v	99
78)	Chlorobenzene	15.871	112	554882	9.16	ppb(v	98
79)	Ethylbenzene	16.410	91	914508	8.96	ppb(v	100
80)	m,p-Xylene	16.685	91	1421539	17.73	ppb(v	98
81)	Styrene	17.199	104	524685	9.20	ppb(v	98
82)	Nonane	17.731	43	433380	8.72	ppb(v	98
83)	o-Xylene	17.352	91	723900	9.15	ppb(v	98
84)	Bromoform	16.758	173	465079	11.07	ppb(v	99
85)	1,1,2,2-Tetrachloroethane	17.358	83	572898	9.48	ppb(v	100
86)	1,2,3-Trichloropropane	17.548	75	419343	9.54	ppb(v	99
87)	Isopropylbenzene	18.257	105	991794	9.11	ppb(v	99
88)	Bromobenzene	18.367	156	323814	9.58	ppb(v	97
89)	2-Chlorotoluene	18.985	126	242818	9.36	ppb(v	93
90)	n-Propylbenzene	19.059	120	257734	9.36	ppb(v	94
92)	4-Ethyltoluene	19.285	105	937136	9.20	ppb(v	98
93)	1,3,5-Trimethylbenzene	19.413	105	799473	9.18	ppb(v	98
94)	alpha-Methylstyrene	19.646	118	396275	9.19	ppb(v	99
95)	tert-Butylbenzene	19.988	134	162435	8.93	ppb(v	93

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22693.D
Acq On : 10 Feb 2017 3:02 pm
Operator : danat
Sample : BSD
Misc : MS12270,v5w900,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 13 09:53:36 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
96)	1,2,4-Trimethylbenzene	20.001	105	773784	9.38	ppb(v	95
97)	1,3-Dichlorobenzene	20.197	146	510017	9.61	ppb(v	98
98)	Benzyl Chloride	20.190	91	683927	11.02	ppb(v	98
99)	1,4-Dichlorobenzene	20.294	146	513654	9.78	ppb(v	97
100)	sec-Butylbenzene	20.380	134	206910	9.14	ppb(v	92
101)	p-Isopropyltoluene	20.619	134	227106	9.14	ppb(v	98
102)	1,2-Dichlorobenzene	20.765	146	494927	9.74	ppb(v	97
103)	n-Butylbenzene	21.194	134	203174	9.42	ppb(v	97
104)	Hexachloroethane	21.659	201	303273	10.93	ppb(v	88
105)	1,2,4-Trichlorobenzene	22.998	180	265052	10.63	ppb(v	99
106)	Naphthalene	23.121	128	578757	10.61	ppb(v	100
107)	Hexachlorobutadiene	23.573	225	290603	8.49	ppb(v	99
109)	TVHC as equiv Pentane	5.777	TIC	1153237	8.92	ppb(v	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.3.4

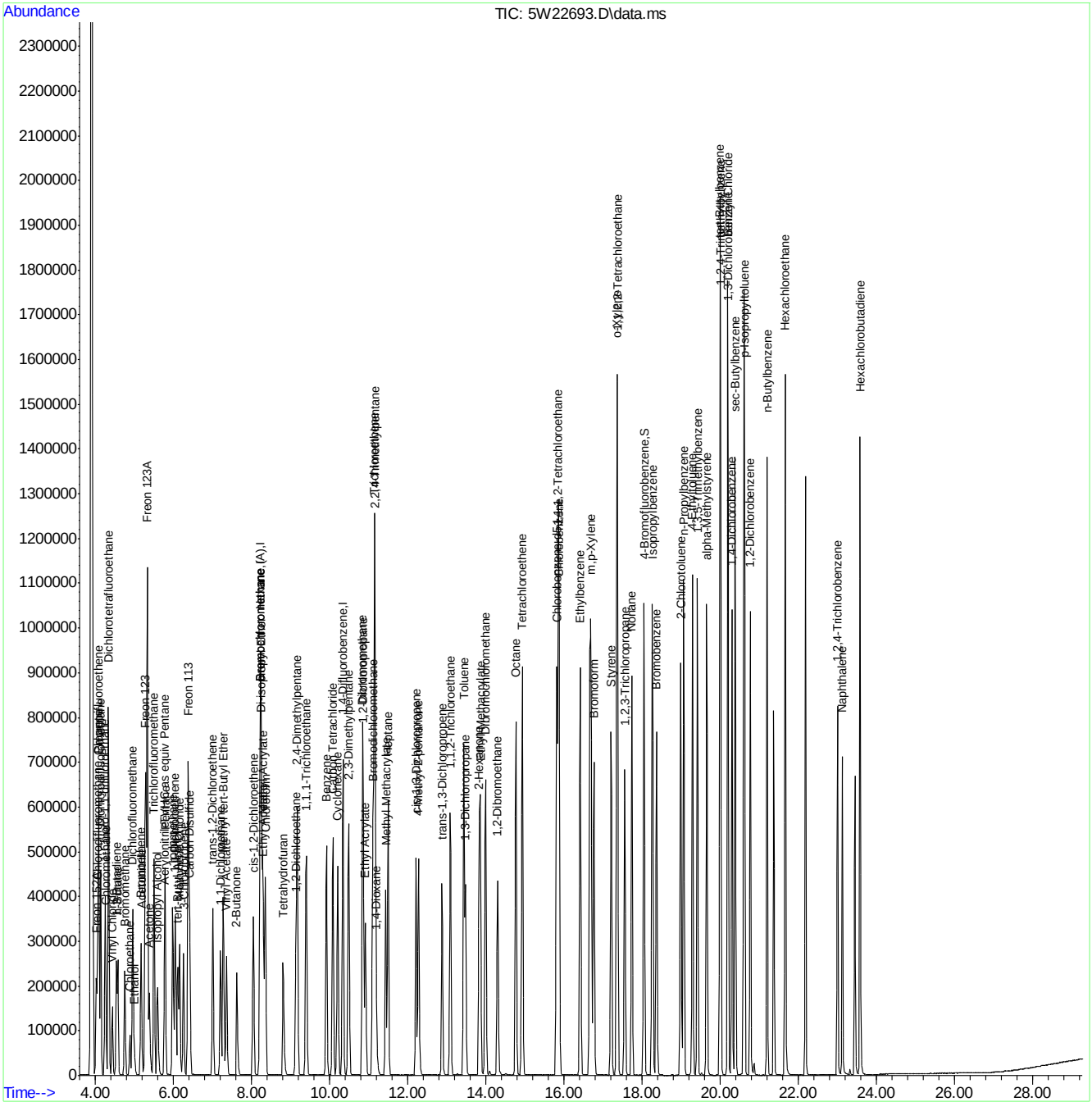
7

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22693.D
Acq On : 10 Feb 2017 3:02 pm
Operator : danat
Sample : BSD
Misc : MS12270,v5w900,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 13 09:53:36 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration


Abundance
TIC: 5W22693.D\data.ms
Time-->
Freon 123A
Freon 123
Freon 113
Tetrachloroethene
Octane
Ethylbenzene
m,p-Xylene
Styrene
Bromoform
Bromobenzene
Toluene
Hexachlorobutadiene
Naphthalene
1,2,4-Trichlorobenzene
Hexachloroethane
n-Butylbenzene
1,2-Dichlorobenzene
sec-Butylbenzene
p-Isopropyltoluene
alpha-Methylstyrene
n-Propylbenzene
2-Chlorotoluene
4-Bromofluorobenzene,S
isopropylbenzene
1,2,3-Trichloropropane
Kerosene
o-Xylene
Tetrachloroethane
Chlorobenzene
1,2-Dibromoethane
1,2-Dichloroethane
1,1,2-Trichloroethane
trans-1,3-Dichloropropene
Tetrahydrofuran
Benzene
Cyclohexane
Methyl Methacrylate
Ethyl Acrylate
Methacrylonitrile
Acrylonitrile
Acetone
Vinyl Acetate
2-Butanone
Methyl Ethyl Ketone
Methyl Tert-Butyl Ether
Carbon Disulfide
Dichlorodifluoromethane
Chloromethane
Vinyl Chloride
Bromomethane
Chloroethane
Trichlorofluoromethane
Dichlorotetrafluoroethane
Freon 12
Methylene Chloride
Chloroform
Carbon Tetrachloride
Trichloroethene
Dibromochloromethane
Bromodichloromethane
Methyl Iodide
Methyl Acrylate
Methyl Methacrylate
Ethyl Acrylate
Methyl Tert-Butyl Ether
Methyl Ethyl Ketone
Methyl Iodide
Methyl Methacrylate
Methyl Acrylate
Methyl Methacrylate
Methyl Methacrylate
Methyl Methac

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22947.D
Acq On : 24 Feb 2017 3:06 am
Operator : LUISM1
Sample : JC37214-2DUP
Misc : MS12505,v5w909,100,,,,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Feb 24 14:37:06 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	8.138	130	119358	10.00	ppb(v	-0.08
54) 1,4-Difluorobenzene	10.286	114	454021	10.00	ppb(v	-0.06
77) Chlorobenzene-d5	15.798	82	215608	10.00	ppb(v	-0.02
108) Bromochloromethane (A)	8.138	130	119358	10.00	ppb(v	-0.08
System Monitoring Compounds						
91) 4-Bromofluorobenzene	18.043	95	242444	8.59	ppb(v	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 85.90%			

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.4.1

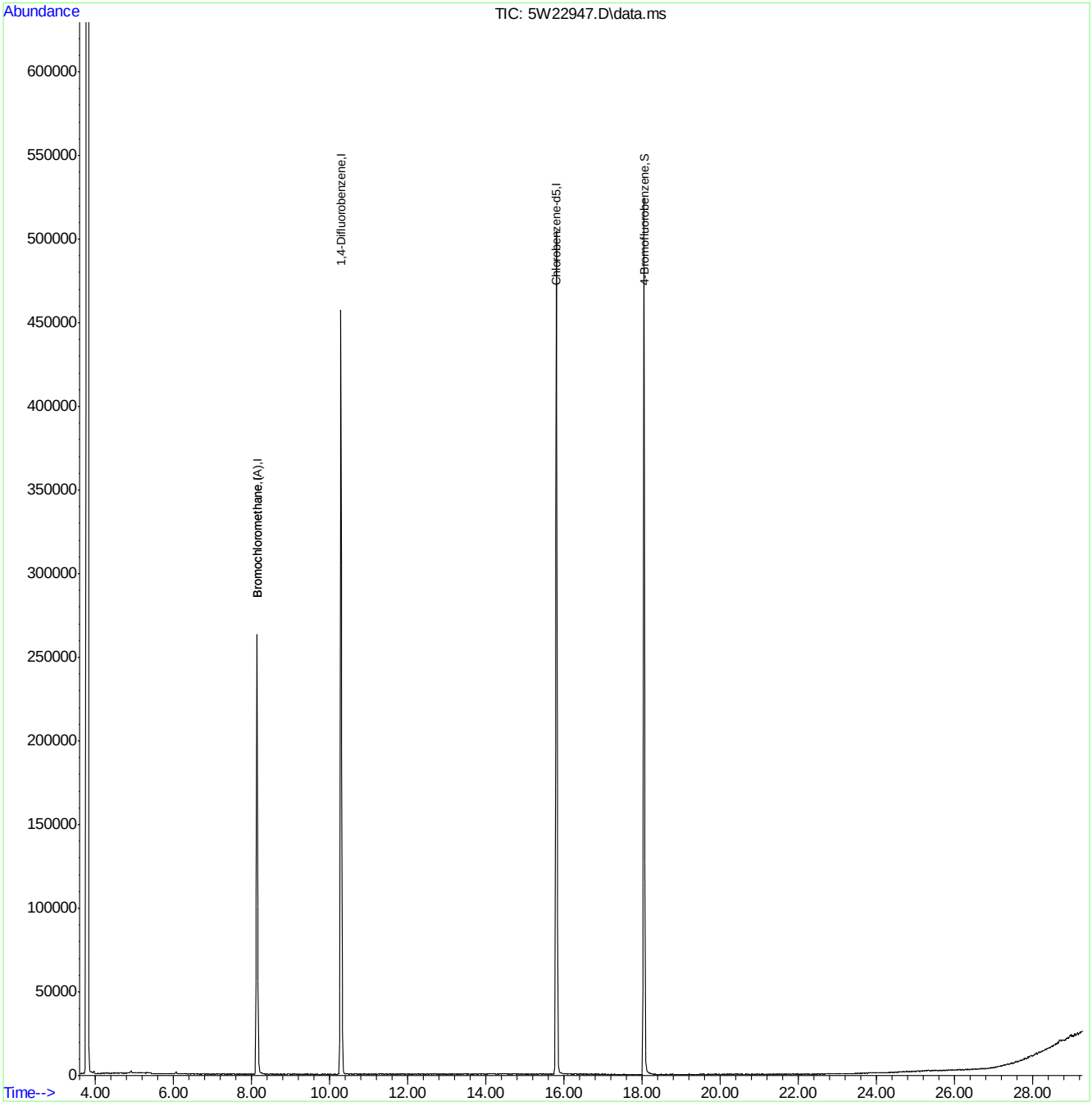
7

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22947.D
Acq On : 24 Feb 2017 3:06 am
Operator : LUISM1
Sample : JC37214-2DUP
Misc : MS12505,v5w909,100,,,,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Feb 24 14:37:06 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration



SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22695A.D
Acq On : 10 Feb 2017 4:36 pm
Operator : danat
Sample : SCC(A633)
Misc : MS12270,v5w900,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 13 09:56:22 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	8.212	130	177963	10.00	ppb(v	0.00
54) 1,4-Difluorobenzene	10.328	114	698271	10.00	ppb(v	-0.01
77) Chlorobenzene-d5	15.804	82	338088	10.00	ppb(v	-0.01
108) Bromochloromethane (A)	8.212	130	178006	10.00	ppb(v	0.00
System Monitoring Compounds						
91) 4-Bromofluorobenzene	18.043	95	409007	9.24	ppb(v	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 92.40%			

Target Compounds Qvalue

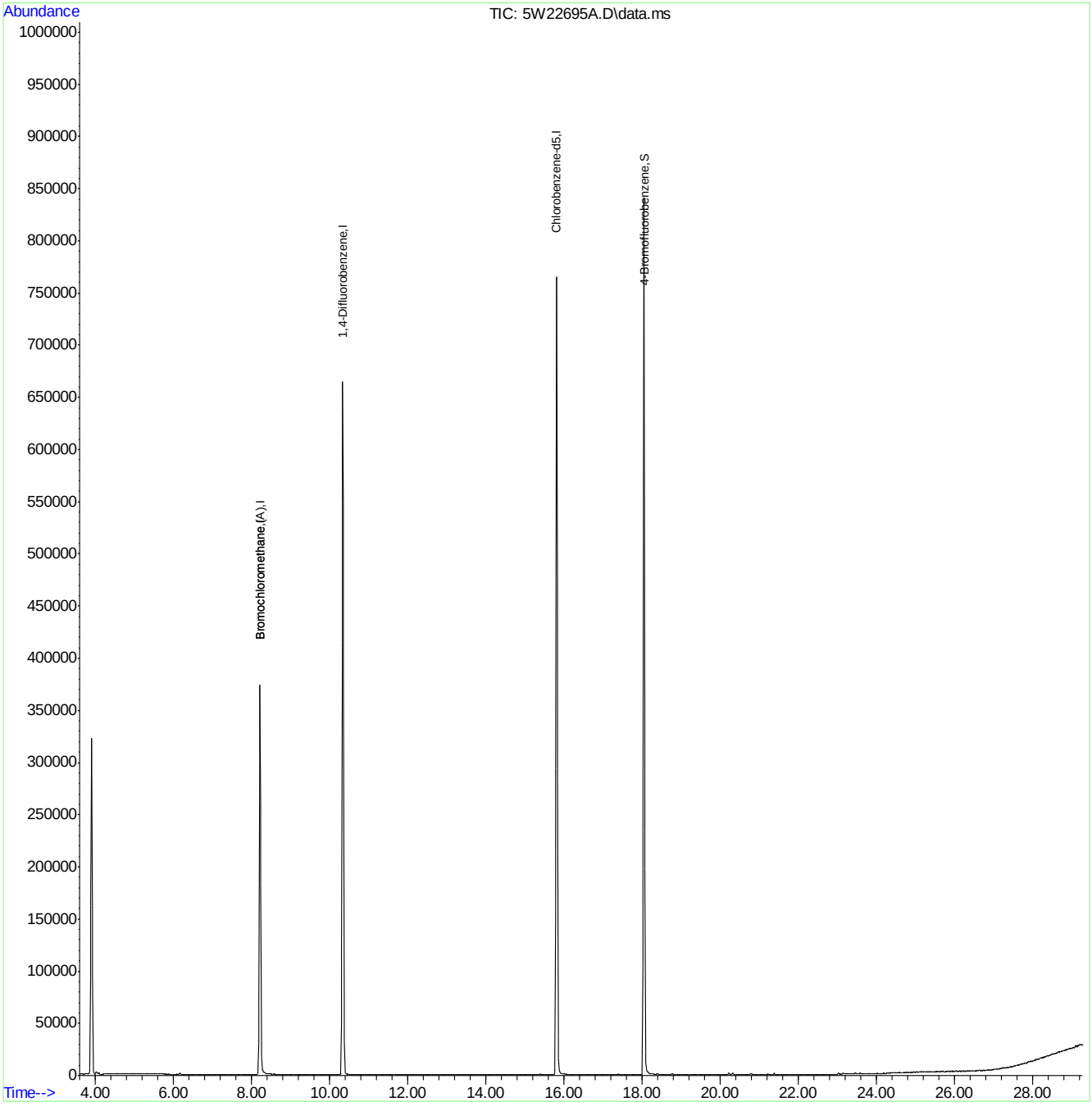
(#) = qualifier out of range (m) = manual integration (+) = signals summed

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22695A.D
Acq On : 10 Feb 2017 4:36 pm
Operator : danat
Sample : SCC(A633)
Misc : MS12270,v5w900,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 13 09:56:22 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration

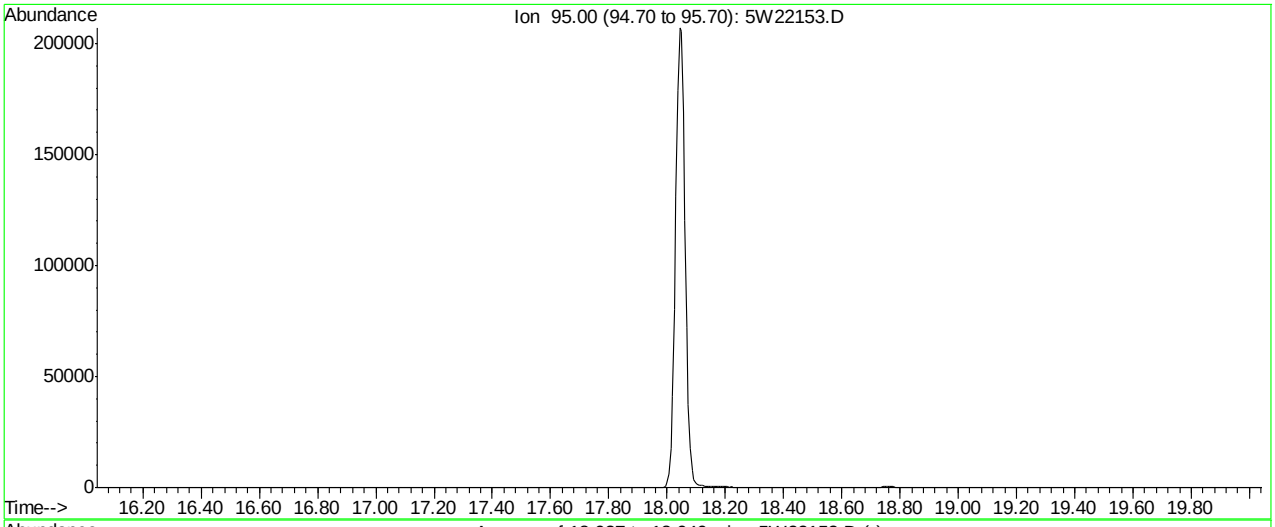


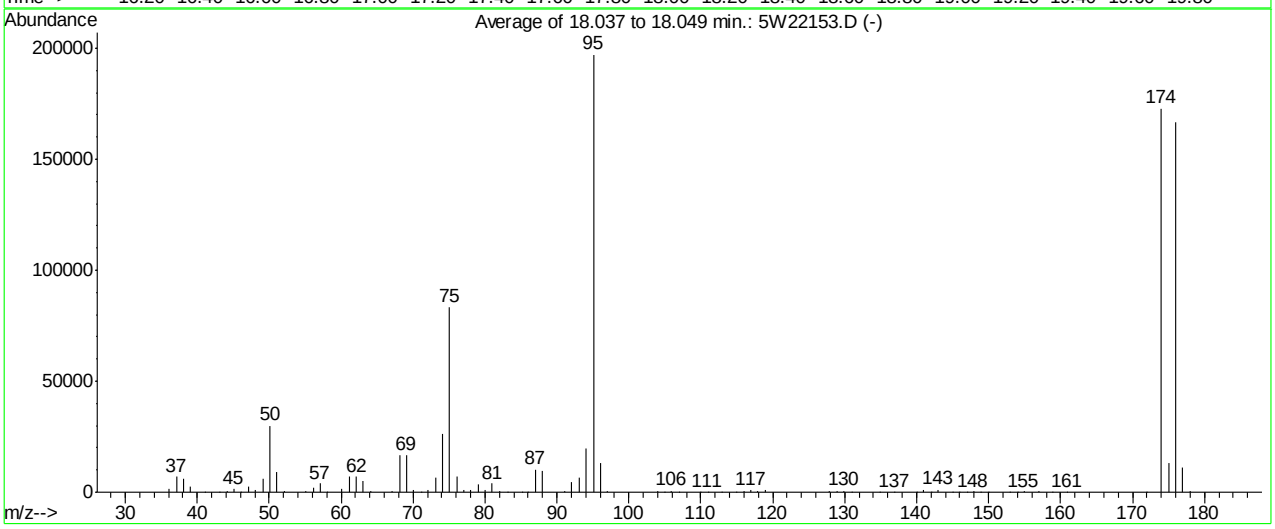
m5w881.M Mon Feb 13 10:11:48 2017 5W

Page: 2

BFB

Data File : C:\MSDCHEM\1\DATA\OLD_W\5W22153.D Vial: 1
Acq On : 12 Jan 2017 10:15 am Operator: danat
Sample : bfb Inst : GCMS5W
Misc : MS11221,v5w881,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\MW2322.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60m X 0.32mm ID X 1.0 um





AutoFind: Scans 2362, 2363, 2364; Background Corrected with Scan 2351

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	15.2	29930	PASS
75	95	30	66	42.3	83434	PASS
95	95	100	100	100.0	197205	PASS
96	95	5	9	6.6	13105	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	87.7	172928	PASS
175	174	4	9	7.5	12925	PASS
176	174	93	101	96.4	166741	PASS
177	176	5	9	6.7	11198	PASS

5W22153.D MW2322.M Fri Jan 13 10:29:11 2017 MSW

Average of 18.037 to 18.049 min.: 5W22153.D
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.10	1303	49.10	6065	63.10	5019	76.10	7242
37.10	6972	50.10	29930	64.10	453	77.00	1181
38.10	6094	51.10	9296	67.05	489	78.00	867
39.10	2406	52.10	406	68.10	16616	79.00	3746
41.10	14	55.05	361	69.10	16702	80.00	1026
43.10	77	56.10	2086	70.10	1233	81.00	3856
44.10	605	57.10	3884	71.10	56	82.00	758
45.10	1381	58.05	196	72.05	823	83.05	26
46.10	34	60.05	1450	73.10	6801	85.10	114
47.10	2590	61.10	6875	74.10	26314	86.00	257
48.05	902	62.10	6932	75.10	83434	87.00	10297

Average of 18.037 to 18.049 min.: 5W22153.D
bfb
Modified:subtracted

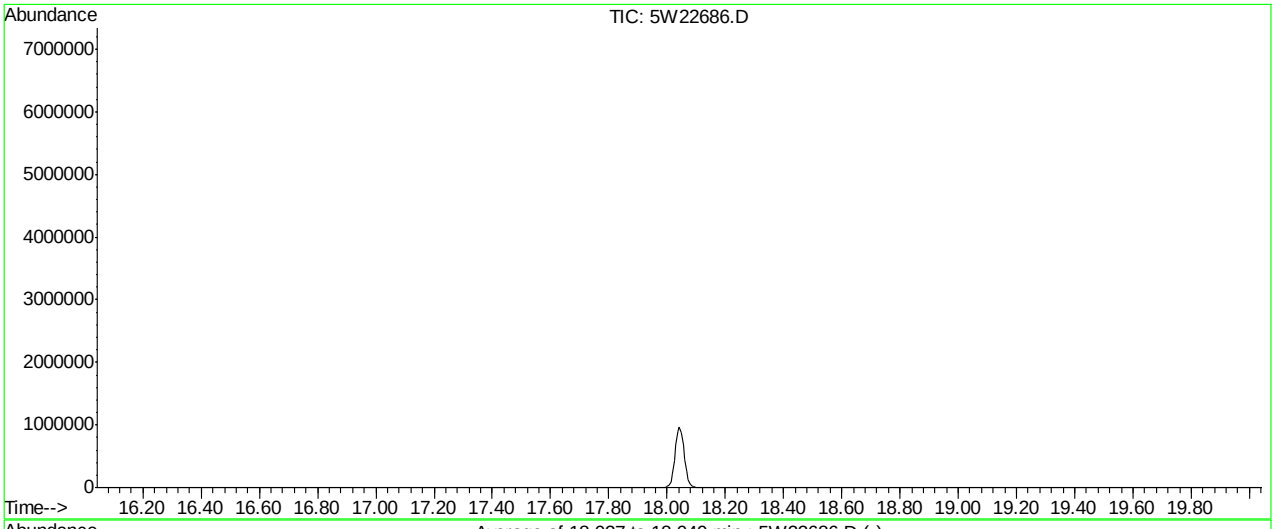
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
88.00	9770	106.95	175	129.95	611	147.95	402
91.00	587	109.90	36	130.95	230	148.90	111
92.05	4430	110.95	131	134.90	262	149.95	177
93.05	6651	112.95	119	136.95	270	152.95	93
94.10	19544	114.95	158	139.95	118	153.95	122
95.10	197205	115.95	532	141.00	1207	154.95	416
96.10	13105	117.00	947	141.95	176	156.95	303
97.05	418	117.95	562	143.00	1244	158.90	172
104.00	631	118.95	785	144.95	121	160.90	160
105.00	260	127.90	574	145.90	245	172.00	42
105.95	638	128.90	296	146.95	115	174.00	172928

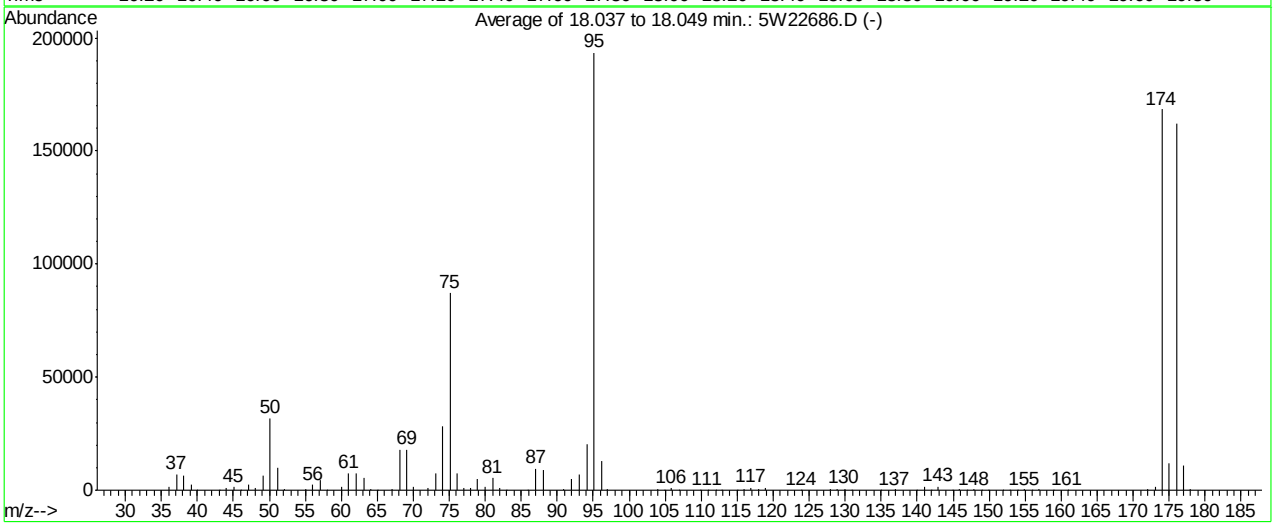
Average of 18.037 to 18.049 min.: 5W22153.D
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
175.00	12925						
176.00	166741						
177.00	11198						
178.00	302						

BFB

Data File : C:\MSDCHEM\1\DATA\5W\5W22686.D Vial: 1
Acq On : 10 Feb 2017 8:42 am Operator: danat
Sample : BFB Inst : GCMS5W
Misc : MS12270,v5w900,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT1.P
Method : C:\MSDCHEM\1\METHODS\M3W2212.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um





AutoFind: Scans 2362, 2363, 2364; Background Corrected with Scan 2351

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	16.5	31941	PASS
75	95	30	66	45.0	87061	PASS
95	95	100	100	100.0	193578	PASS
96	95	5	9	6.6	12833	PASS
173	174	0.00	2	0.8	1396	PASS
174	95	50	120	87.0	168362	PASS
175	174	4	9	7.2	12158	PASS
176	174	93	101	96.4	162218	PASS
177	176	5	9	6.6	10762	PASS

5W22686.D M3W2212.M Mon Feb 13 10:14:33 2017 MS3W

Average of 18.037 to 18.049 min.: 5W22686.D
BFB
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.10	1286	49.10	6443	63.10	5567	76.10	7456
37.10	7203	50.10	31941	64.05	494	77.00	1196
38.10	6476	51.10	9809	65.05	197	78.00	892
39.10	2602	52.05	395	67.00	447	78.95	5085
40.00	101	55.10	425	68.10	17696	80.00	1497
43.00	38	56.05	2457	69.10	17960	81.00	5335
44.00	826	57.10	4485	70.00	1298	81.95	1108
45.05	1453	58.05	200	72.05	815	83.00	113
46.05	72	60.00	1440	73.10	7312	85.95	245
47.10	2300	61.05	7491	74.10	28093	87.00	9657
48.00	900	62.10	7471	75.10	87061	88.00	9139

Average of 18.037 to 18.049 min.: 5W22686.D
BFB
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
90.95	569	109.90	39	128.95	273	146.95	125
92.00	4800	110.95	149	129.95	665	147.90	423
93.00	7161	112.00	38	130.95	223	148.90	124
94.10	20208	112.90	127	134.90	263	149.90	198
95.10	193578	114.95	181	136.90	290	151.90	36
96.10	12833	115.95	567	139.95	83	152.90	79
97.00	380	116.95	1056	141.00	1442	153.95	116
103.90	709	117.90	587	141.95	196	154.95	466
104.90	257	118.95	882	142.95	1551	155.90	109
105.90	777	123.90	83	144.95	160	156.90	333
106.95	173	127.90	629	145.90	266	158.95	202

Average of 18.037 to 18.049 min.: 5W22686.D
BFB
Modified:subtracted

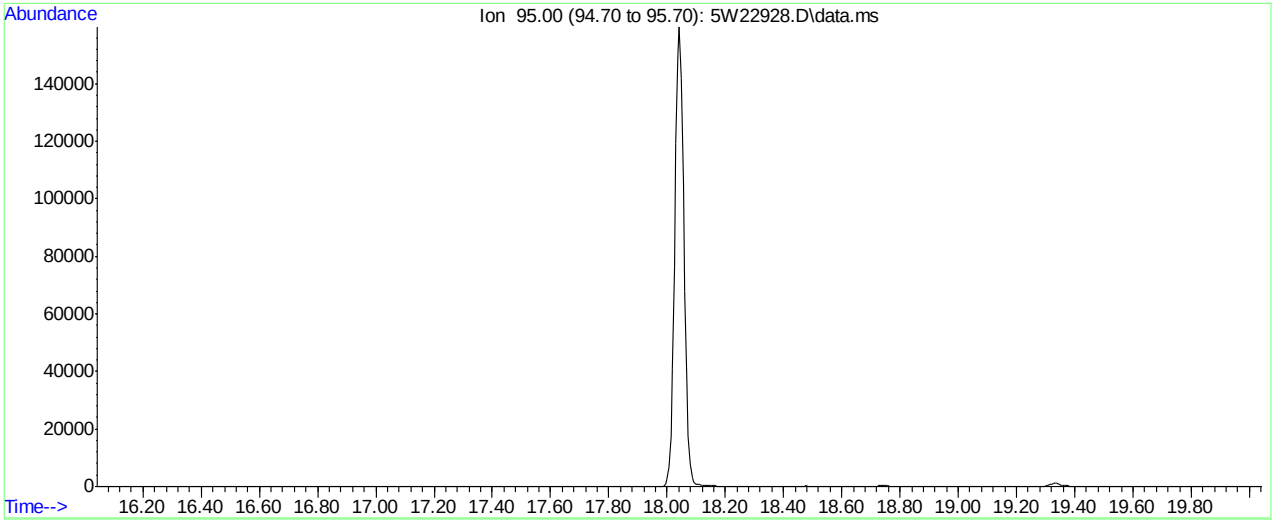
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
160.90	158						
172.00	356						
173.10	1396						
174.00	168362						
175.00	12158						
176.00	162218						
177.00	10762						
177.90	305						

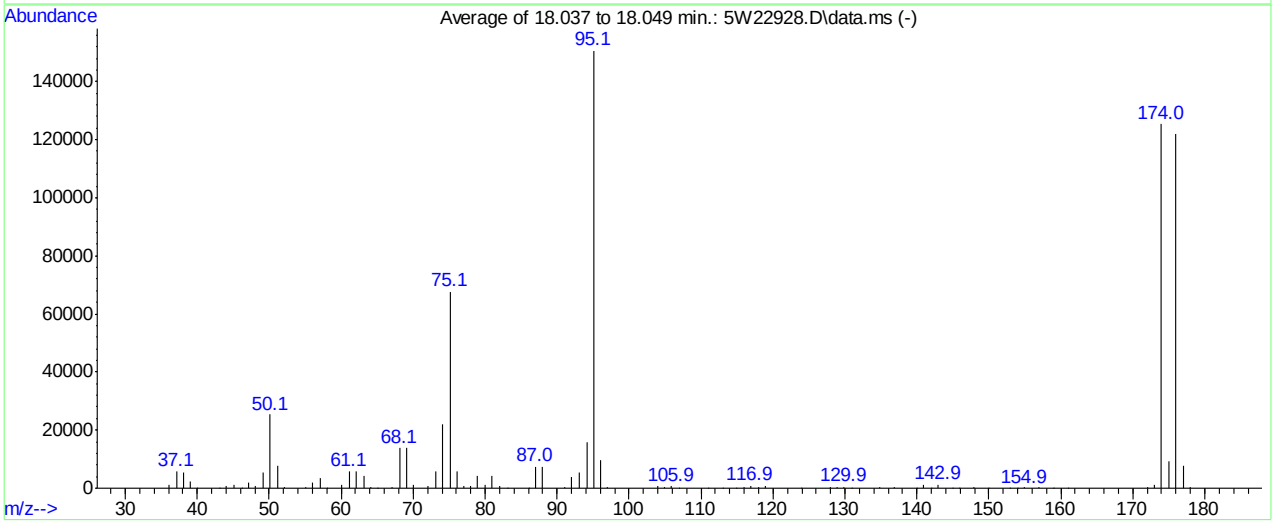
BFB

Data File : C:\msdchem\1\DATA\5W22928.D
Acq On : 23 Feb 2017 9:33 am
Sample : BFB
Misc : MS12740,v5w909,,,,,1
MS Integration Params: Rteint.p

Vial: 1
Operator: LUISM1
Inst : GCMS5W
Multiplr: 1.00

Method : C:\msdchem\1\METHODS\m5w881.M (RTE Integrator)
Title : TO-15 Full Scan Mode





AutoFind: Scans 2362, 2363, 2364; Background Corrected with Scan 2351

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	16.9	25413	PASS
75	95	30	66	44.9	67619	PASS
95	95	100	100	100.0	150699	PASS
96	95	5	9	6.5	9769	PASS
173	174	0.00	2	0.9	1073	PASS
174	95	50	120	83.2	125421	PASS
175	174	4	9	7.3	9163	PASS
176	174	93	101	97.3	122069	PASS
177	176	5	9	6.4	7835	PASS

5W22928.D m5w881.M Thu Feb 23 14:44:11 2017 5W

Manual Integrations APPROVED (compounds with "m" flag)
Dana Tryon
01/18/17 12:21

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22154.D
Acq On : 12 Jan 2017 10:56 am
Operator : danat
Sample : ic881-0.04
Misc : MS11221,v5w881,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 12 15:11:21 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:08:06 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	8.212	130	189535	10.00	ppb(v	0.00
54) 1,4-Difluorobenzene	10.335	114	767790	10.00	ppb(v	0.00
77) Chlorobenzene-d5	15.810	82	366336	10.00	ppb(v	0.00
108) Bromochloromethane (A)	8.212	130	189708	10.00	ppb(v	0.00
System Monitoring Compounds						
91) 4-Bromofluorobenzene	18.043	95	488097	10.05	ppb(v	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 100.50%			
Target Compounds						Qvalue
2) 1,1,1-Trifluoroethane	3.929	69	2576	0.05	ppb(v#	76
3) Freon 152A	4.021	65	537	0.04	ppb(v#	63
4) Chlorodifluoromethane	4.052	67	201	0.04	ppb(v#	42
5) Propene	4.070	41	674	0.04	ppb(v#	21
6) Chlorotrifluoroethene	4.082	116	982	0.04	ppb(v#	80
7) Dichlorodifluoromethane	4.131	85	2089	0.04	ppb(v#	94
8) 1-Chloro-1,1-difluoroe...	4.241	65	1505	0.04	ppb(v#	63
9) Chloromethane	4.260	50	826	0.04	ppb(v	86
10) Dichlorotetrafluoroethane	4.333	85	2500	0.04	ppb(v	95
11) Vinyl Chloride	4.431	62	795	0.04	ppb(v#	88
12) 1,3-Butadiene	4.535	54	651	0.04	ppb(v#	80
13) n-Butane	4.566	58	133	0.04	ppb(v#	1
14) Bromomethane	4.749	94	923m	0.04	ppb(v	
15) Chloroethane	4.878	64	436	0.04	ppb(v#	56
16) Dichlorofluoromethane	4.957	67	2345	0.05	ppb(v#	78
18) Freon 123	5.281	83	2728	0.05	ppb(v#	95
19) Freon 123A	5.330	117	2292	0.08	ppb(v	91
20) Bromoethene	5.159	106	741	0.04	ppb(v#	90
21) Trichlorofluoromethane	5.502	101	1821	0.04	ppb(v#	91
24) 1,1-Dichloro-1-fluoroe...	5.606	81	1951	0.05	ppb(v#	83
25) Iodomethane	5.985	142	2250	0.04	ppb(v	99
27) 1,1-Dichloroethene	6.040	61	1185	0.04	ppb(v	96
28) Freon 113	6.377	101	1702	0.04	ppb(v	86
30) Carbon Disulfide	6.419	76	2146	0.04	ppb(v#	89
32) Acrylonitrile	5.783	53	544	0.04	ppb(v	90
33) 3-Chloropropene	6.254	76	332	0.04	ppb(v#	79
34) trans-1,2-Dichloroethene	7.013	61	1028	0.04	ppb(v	90
35) tert-Butyl Alcohol	6.162	59	1596	0.04	ppb(v#	29
36) Methyl tert-Butyl Ether	7.306	73	2229	0.04	ppb(v#	60
37) Vinyl Acetate	7.374	43	1927	0.04	ppb(v#	76
38) 1,1-Dichloroethane	7.202	63	1465	0.04	ppb(v#	94
39) 2-Butanone	7.680	72	264	0.03	ppb(v#	90
40) Hexane	8.236	57	1501	0.04	ppb(v#	71
41) cis-1,2-Dichloroethene	8.047	61	1044	0.04	ppb(v	95
42) Di-isopropyl Ether	8.273	87	552	0.03	ppb(v	85
45) Chloroform	8.353	83	1932	0.04	ppb(v#	95
46) 2,4-Dimethylpentane	9.172	57	1892	0.05	ppb(v	91
48) 1,1,1-Trichloroethane	9.399	97	1762	0.04	ppb(v#	83
49) 1,2-Dichloroethane	9.136	62	919	0.04	ppb(v#	88

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22154.D
Acq On : 12 Jan 2017 10:56 am
Operator : danat
Sample : ic881-0.04
Misc : MS11221,v5w881,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 12 15:11:21 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:08:06 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
50)	Benzene	9.913	78	2885	0.04	ppb(v	96
51)	Carbon Tetrachloride	10.084	117	1433	0.04	ppb(v	94
52)	Cyclohexane	10.200	56	1600	0.05	ppb(v#	76
53)	2,3-Dimethylpentane	10.488	71	872	0.06	ppb(v#	65
55)	2,2,4-Trimethylpentane	11.161	57	4032	0.04	ppb(v	93
56)	Heptane	11.503	71	1075	0.05	ppb(v	91
57)	Trichloroethene	11.148	95	1138	0.04	ppb(v	92
58)	1,2-Dichloropropane	10.861	63	1020	0.04	ppb(v#	89
59)	Dibromomethane	10.849	174	1034	0.04	ppb(v	93
61)	Methyl Methacrylate	11.460	69	1119	0.05	ppb(v#	82
62)	1,4-Dioxane	11.265	88	486	0.03	ppb(v#	63
63)	Bromodichloromethane	11.112	83	1922	0.04	ppb(v#	93
64)	cis-1,3-Dichloropropene	12.225	75	1430	0.04	ppb(v#	88
65)	4-Methyl-2-pentanone	12.323	58	665	0.03	ppb(v#	64
66)	trans-1,3-Dichloropropene	12.898	75	949	0.03	ppb(v#	77
67)	Toluene	13.443	91	3629	0.05	ppb(v	97
68)	1,1,2-Trichloroethane	13.100	97	1094	0.04	ppb(v	92
69)	1,3-Dichloropropane	13.491	76	1216	0.03	ppb(v#	16
71)	Ethyl Methacrylate	13.883	69	1788	0.05	ppb(v#	63
72)	Dibromochloromethane	13.993	129	1619	0.04	ppb(v#	97
73)	Tetrachloroethene	14.935	166	1489	0.04	ppb(v	96
74)	1,2-Dibromoethane	14.311	107	1468	0.04	ppb(v#	93
75)	Octane	14.770	43	2118	0.05	ppb(v	92
76)	1,1,1,2-Tetrachloroethane	15.847	131	1118	0.04	ppb(v#	1
78)	Chlorobenzene	15.877	112	2369	0.04	ppb(v	96
79)	Ethylbenzene	16.428	91	4355	0.05	ppb(v#	94
80)	m,p-Xylene	16.697	91	7165	0.10	ppb(v	95
81)	Styrene	17.223	104	2143	0.04	ppb(v	96
82)	Nonane	17.737	43	1954	0.04	ppb(v#	84
83)	o-Xylene	17.364	91	3409	0.05	ppb(v	97
84)	Bromoform	16.771	173	1428	0.04	ppb(v#	95
85)	1,1,2,2-Tetrachloroethane	17.370	83	2438	0.04	ppb(v#	95
86)	1,2,3-Trichloropropane	17.566	75	1642	0.04	ppb(v	98
87)	Isopropylbenzene	18.269	105	4266	0.04	ppb(v	97
88)	Bromobenzene	18.379	156	1236	0.04	ppb(v	84
89)	2-Chlorotoluene	19.003	126	961	0.04	ppb(v	99
90)	n-Propylbenzene	19.077	120	964	0.04	ppb(v	99
92)	4-Ethyltoluene	19.297	105	4087	0.04	ppb(v	93
93)	1,3,5-Trimethylbenzene	19.426	105	3582	0.04	ppb(v	96
94)	alpha-Methylstyrene	19.664	118	1678	0.04	ppb(v	87
95)	tert-Butylbenzene	19.988	134	666	0.04	ppb(v	94
96)	1,2,4-Trimethylbenzene	20.013	105	3414	0.04	ppb(v#	85
97)	1,3-Dichlorobenzene	20.209	146	2085	0.04	ppb(v	97
98)	Benzyl Chloride	20.209	91	2602	0.05	ppb(v#	93
99)	1,4-Dichlorobenzene	20.313	146	2169	0.05	ppb(v	96
100)	sec-Butylbenzene	20.386	134	833	0.04	ppb(v	95
101)	p-Isopropyltoluene	20.625	134	931	0.04	ppb(v	92
102)	1,2-Dichlorobenzene	20.778	146	1987	0.04	ppb(v	95
103)	n-Butylbenzene	21.200	134	757	0.04	ppb(v	91
104)	Hexachloroethane	21.659	201	882	0.04	ppb(v	81

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22154.D
Acq On : 12 Jan 2017 10:56 am
Operator : danat
Sample : ic881-0.04
Misc : MS11221,v5w881,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 12 15:11:21 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:08:06 2017
Response via : Initial Calibration

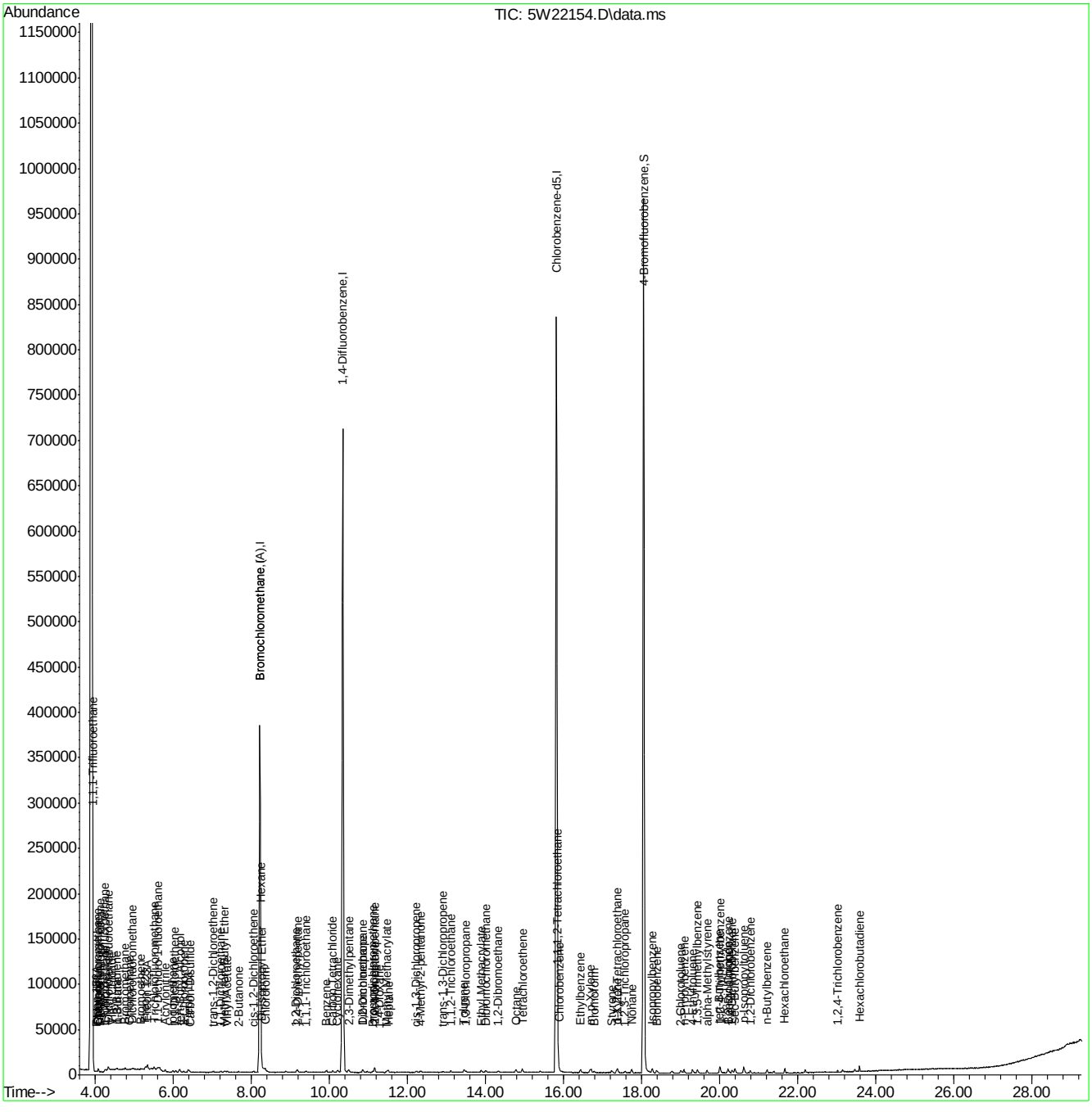
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
105) 1,2,4-Trichlorobenzene	23.011	180	1103	0.05 ppb(v	98
107) Hexachlorobutadiene	23.580	225	1461	0.05 ppb(v	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22154.D
Acq On : 12 Jan 2017 10:56 am
Operator : danat
Sample : ic881-0.04
Misc : MS11221,v5w881,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 12 15:11:21 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:08:06 2017
Response via : Initial Calibration



SGS ACCUTEST JC37217

Manual Integration Approval Summary

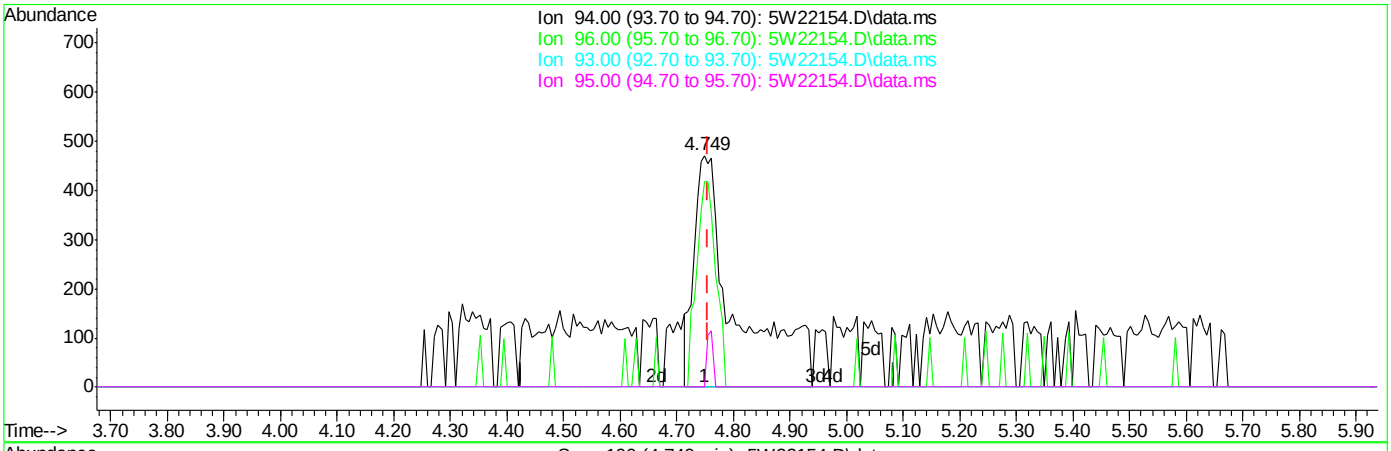
Sample Number:	V5W881-IC881	**Method:**	TO-15
Lab FileID:	5W22154.D	**Analyst approved:**	01/13/17 10:27 Dana Tryon
Injection Time:	01/12/17 10:56	**Supervisor approved:**	01/18/17 12:21 Dana Tryon

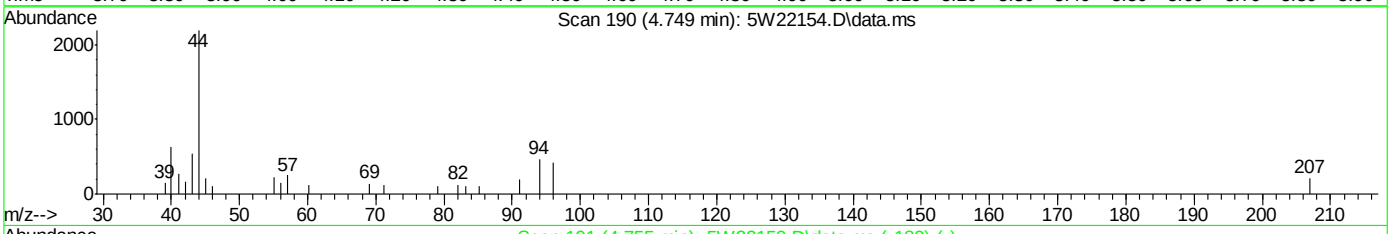
Parameter	CAS	Sig#	R.T. (min.)	Reason
Bromomethane	74-83-9		4.75	Poor instrument integration

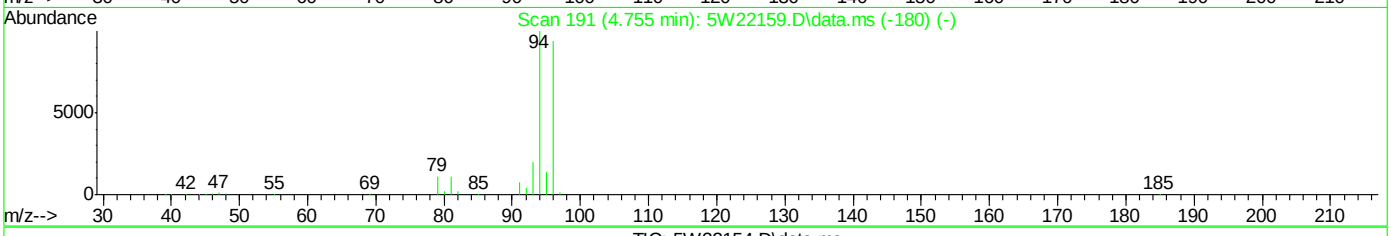
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22154.D
Acq On : 12 Jan 2017 10:56 am
Operator : danat
Sample : ic881-0.04
Misc : MS11221,v5w881,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 12 15:08:17 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:08:06 2017
Response via : Initial Calibration







TIC: 5W22154.D\data.ms

(14) Bromomethane

4.749min (-0.006) 0.11ppb(v)

response 2404

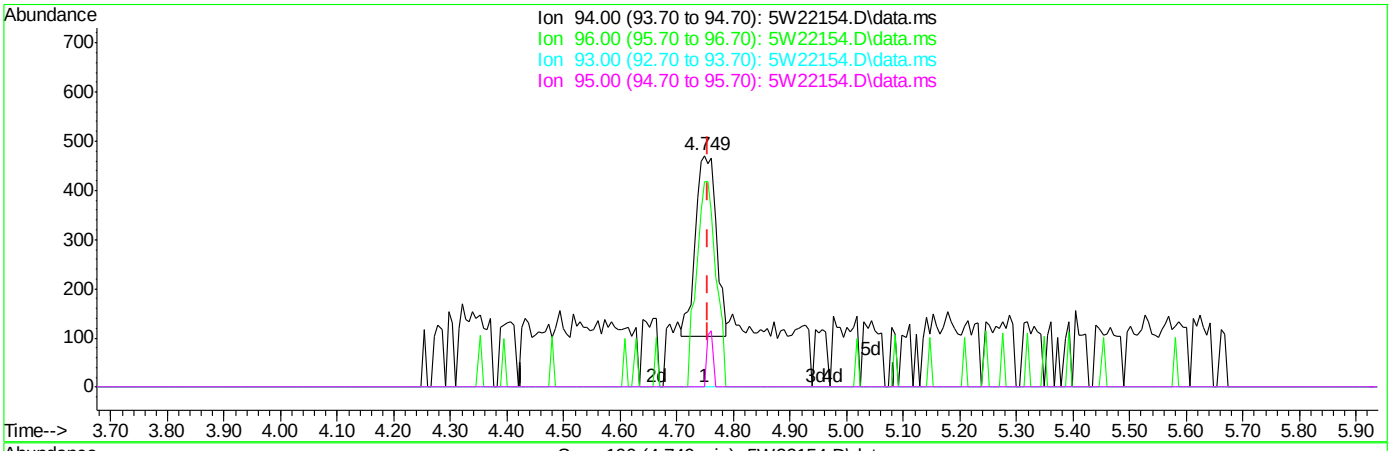
Ion	Exp%	Act%
94.00	100	100
96.00	93.80	88.54
93.00	20.20	0.00#
95.00	13.80	0.00#

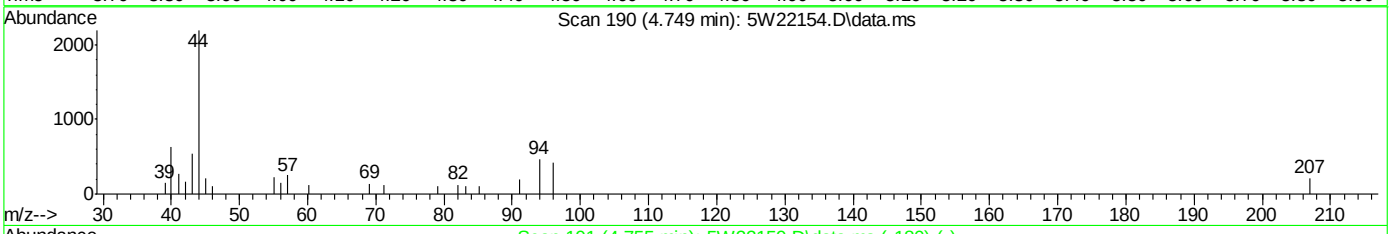
SGS ACCUTEST JC37217

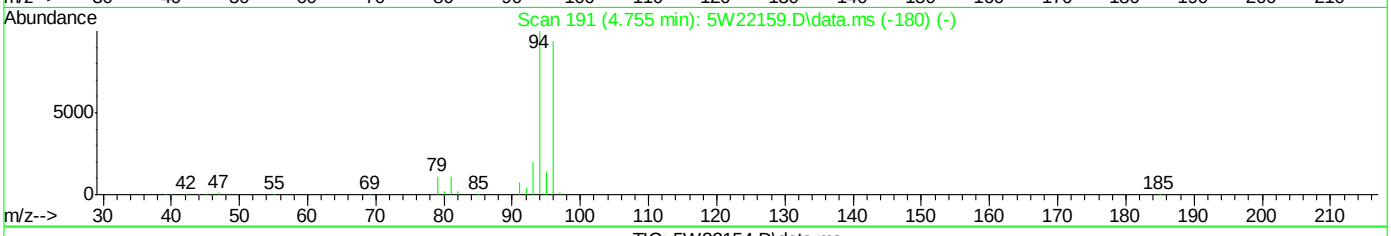
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22154.D
Acq On : 12 Jan 2017 10:56 am
Operator : danat
Sample : ic881-0.04
Misc : MS11221,v5w881,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jan 12 15:08:17 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:08:06 2017
Response via : Initial Calibration







TIC: 5W22154.D\data.ms

(14) Bromomethane

4.749min (-0.006) 0.04ppb(v) m

response 923

Ion	Exp%	Act%
94.00	100	100
96.00	93.80	88.54
93.00	20.20	0.00#
95.00	13.80	0.00#

SGS ACCUTEST JC37217

Manual Integrations APPROVED (compounds with "m" flag)
Dana Tryon
01/18/17 12:21

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22155.D
Acq On : 12 Jan 2017 11:38 am
Operator : danat
Sample : ic881-0.1
Misc : MS11221,v5w881,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 12 15:07:04 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:05:22 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	8.212	130	186632	10.00	ppb(v	0.00
54) 1,4-Difluorobenzene	10.335	114	752989	10.00	ppb(v	0.00
77) Chlorobenzene-d5	15.810	82	361700	10.00	ppb(v	0.00
108) Bromochloromethane (A)	8.212	130	186708	10.00	ppb(v	0.00
System Monitoring Compounds						
91) 4-Bromofluorobenzene	18.043	95	477110	9.94	ppb(v	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 99.40%			
Target Compounds						Qvalue
2) 1,1,1-Trifluoroethane	3.936	69	5440	0.12	ppb(v#	87
3) Freon 152A	4.021	65	1251	0.10	ppb(v#	68
4) Chlorodifluoromethane	4.064	67	474	0.10	ppb(v#	64
5) Propene	4.082	41	1512m	0.10	ppb(v	
6) Chlorotrifluoroethene	4.082	116	2430	0.10	ppb(v#	93
7) Dichlorodifluoromethane	4.137	85	4773	0.10	ppb(v	98
8) 1-Chloro-1,1-difluoroe...	4.248	65	3345	0.10	ppb(v#	69
9) Chloromethane	4.266	50	1951	0.11	ppb(v	96
10) Dichlorotetrafluoroethane	4.339	85	5406	0.10	ppb(v	98
11) Vinyl Chloride	4.443	62	1984	0.09	ppb(v#	95
12) 1,3-Butadiene	4.535	54	1562	0.11	ppb(v	87
13) n-Butane	4.566	58	355	0.10	ppb(v#	1
14) Bromomethane	4.755	94	2522	0.12	ppb(v	98
15) Chloroethane	4.890	64	991	0.10	ppb(v#	67
16) Dichlorofluoromethane	4.957	67	4787	0.10	ppb(v	92
17) Acetonitrile	5.196	41	1546	0.10	ppb(v#	30
18) Freon 123	5.281	83	5582	0.10	ppb(v	94
19) Freon 123A	5.330	117	5486	0.20	ppb(v	98
20) Bromoethene	5.165	106	1945	0.10	ppb(v#	97
21) Trichlorofluoromethane	5.502	101	4678	0.10	ppb(v#	95
22) Acetone	5.416	58	1116	0.11	ppb(v	84
23) Pentane	5.783	57	648m	0.11	ppb(v	
24) 1,1-Dichloro-1-fluoroe...	5.600	81	4284	0.10	ppb(v#	97
25) Iodomethane	5.985	142	5275	0.10	ppb(v	97
27) 1,1-Dichloroethene	6.046	61	3076	0.10	ppb(v	89
28) Freon 113	6.377	101	4236	0.10	ppb(v	96
29) Methylene Chloride	6.156	84	2451	0.13	ppb(v	97
30) Carbon Disulfide	6.425	76	5432	0.10	ppb(v	98
31) Ethanol	5.018	45	1227m	0.14	ppb(v	
32) Acrylonitrile	5.783	53	1244	0.08	ppb(v	96
33) 3-Chloropropene	6.260	76	865	0.10	ppb(v	97
34) trans-1,2-Dichloroethene	7.007	61	2724	0.10	ppb(v	98
35) tert-Butyl Alcohol	6.144	59	4134	0.10	ppb(v#	76
36) Methyl tert-Butyl Ether	7.300	73	5484	0.10	ppb(v	92
37) Vinyl Acetate	7.368	43	4903	0.09	ppb(v	99
38) 1,1-Dichloroethane	7.209	63	3777	0.10	ppb(v#	96
39) 2-Butanone	7.667	72	831	0.09	ppb(v#	86
40) Hexane	8.224	57	3932	0.13	ppb(v#	72
41) cis-1,2-Dichloroethene	8.047	61	2674	0.10	ppb(v	98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22155.D
Acq On : 12 Jan 2017 11:38 am
Operator : danat
Sample : ic881-0.1
Misc : MS11221,v5w881,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 12 15:07:04 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:05:22 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
42) Di-isopropyl Ether	8.261	87	1564	0.09	ppb(v	98
43) Ethyl Acetate	8.334	61	550	0.09	ppb(v#	78
44) Methyl Acrylate	8.304	55	3910	0.11	ppb(v#	91
45) Chloroform	8.346	83	4349	0.10	ppb(v	99
46) 2,4-Dimethylpentane	9.172	57	4294	0.12	ppb(v	95
47) Tetrahydrofuran	8.879	72	852	0.08	ppb(v	80
48) 1,1,1-Trichloroethane	9.399	97	4120	0.10	ppb(v	99
49) 1,2-Dichloroethane	9.136	62	2336	0.09	ppb(v#	92
50) Benzene	9.919	78	6790	0.10	ppb(v	99
51) Carbon Tetrachloride	10.078	117	3676	0.09	ppb(v	96
52) Cyclohexane	10.206	56	3282	0.10	ppb(v	96
53) 2,3-Dimethylpentane	10.482	71	1524	0.11	ppb(v#	89
55) 2,2,4-Trimethylpentane	11.161	57	10862	0.11	ppb(v	97
56) Heptane	11.497	71	2087	0.10	ppb(v	94
57) Trichloroethene	11.142	95	2920	0.10	ppb(v	94
58) 1,2-Dichloropropane	10.861	63	2444	0.10	ppb(v	90
59) Dibromomethane	10.842	174	2566	0.10	ppb(v	94
60) Ethyl Acrylate	10.940	55	5190	0.11	ppb(v#	92
61) Methyl Methacrylate	11.454	69	2262	0.10	ppb(v	94
62) 1,4-Dioxane	11.252	88	1397	0.09	ppb(v#	92
63) Bromodichloromethane	11.106	83	4337	0.10	ppb(v	98
64) cis-1,3-Dichloropropene	12.225	75	3440	0.09	ppb(v	94
65) 4-Methyl-2-pentanone	12.305	58	1734	0.09	ppb(v	99
66) trans-1,3-Dichloropropene	12.898	75	2576	0.08	ppb(v#	90
67) Toluene	13.443	91	7889	0.10	ppb(v	96
68) 1,1,2-Trichloroethane	13.094	97	2608	0.10	ppb(v	98
69) 1,3-Dichloropropane	13.491	76	3210	0.09	ppb(v#	85
70) 2-Hexanone	13.865	58	2026	0.08	ppb(v	91
71) Ethyl Methacrylate	13.877	69	3617	0.09	ppb(v#	96
72) Dibromochloromethane	13.993	129	3980	0.09	ppb(v#	96
73) Tetrachloroethene	14.929	166	3854	0.10	ppb(v	97
74) 1,2-Dibromoethane	14.311	107	3795	0.09	ppb(v#	95
75) Octane	14.770	43	4291	0.09	ppb(v	92
76) 1,1,1,2-Tetrachloroethane	15.859	131	2874	0.09	ppb(v#	1
78) Chlorobenzene	15.871	112	5777	0.10	ppb(v	94
79) Ethylbenzene	16.422	91	9714	0.10	ppb(v	97
80) m,p-Xylene	16.673	91	15618	0.21	ppb(v	97
81) Styrene	17.217	104	5182	0.10	ppb(v	97
82) Nonane	17.737	43	6177	0.14	ppb(v	99
83) o-Xylene	17.364	91	7678	0.11	ppb(v	94
84) Bromoform	16.764	173	3373	0.09	ppb(v	98
85) 1,1,2,2-Tetrachloroethane	17.370	83	5744	0.10	ppb(v#	99
86) 1,2,3-Trichloropropane	17.560	75	4065	0.10	ppb(v	96
87) Isopropylbenzene	18.263	105	10289	0.10	ppb(v	98
88) Bromobenzene	18.379	156	2961	0.09	ppb(v	93
89) 2-Chlorotoluene	18.991	126	2323	0.10	ppb(v	91
90) n-Propylbenzene	19.071	120	2475	0.10	ppb(v	95
92) 4-Ethyltoluene	19.297	105	9607	0.10	ppb(v	98
93) 1,3,5-Trimethylbenzene	19.419	105	8341	0.10	ppb(v	95
94) alpha-Methylstyrene	19.664	118	3810	0.10	ppb(v	98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22155.D
Acq On : 12 Jan 2017 11:38 am
Operator : danat
Sample : ic881-0.1
Misc : MS11221,v5w881,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 12 15:07:04 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:05:22 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
95)	tert-Butylbenzene	19.988	134	1728	0.10	ppb(v	97
96)	1,2,4-Trimethylbenzene	20.007	105	7691	0.10	ppb(v	97
97)	1,3-Dichlorobenzene	20.209	146	4655	0.10	ppb(v	98
98)	Benzyl Chloride	20.203	91	4995	0.09	ppb(v	96
99)	1,4-Dichlorobenzene	20.307	146	4509	0.10	ppb(v	99
100)	sec-Butylbenzene	20.386	134	2151	0.10	ppb(v	95
101)	p-Isopropyltoluene	20.619	134	2285	0.10	ppb(v	93
102)	1,2-Dichlorobenzene	20.772	146	4409	0.09	ppb(v	97
103)	n-Butylbenzene	21.200	134	1813	0.09	ppb(v	88
104)	Hexachloroethane	21.659	201	2127	0.08	ppb(v	91
105)	1,2,4-Trichlorobenzene	23.011	180	1592	0.08	ppb(v	94
106)	Naphthalene	23.139	128	4462	0.09	ppb(v	100
107)	Hexachlorobutadiene	23.580	225	3077	0.10	ppb(v	98

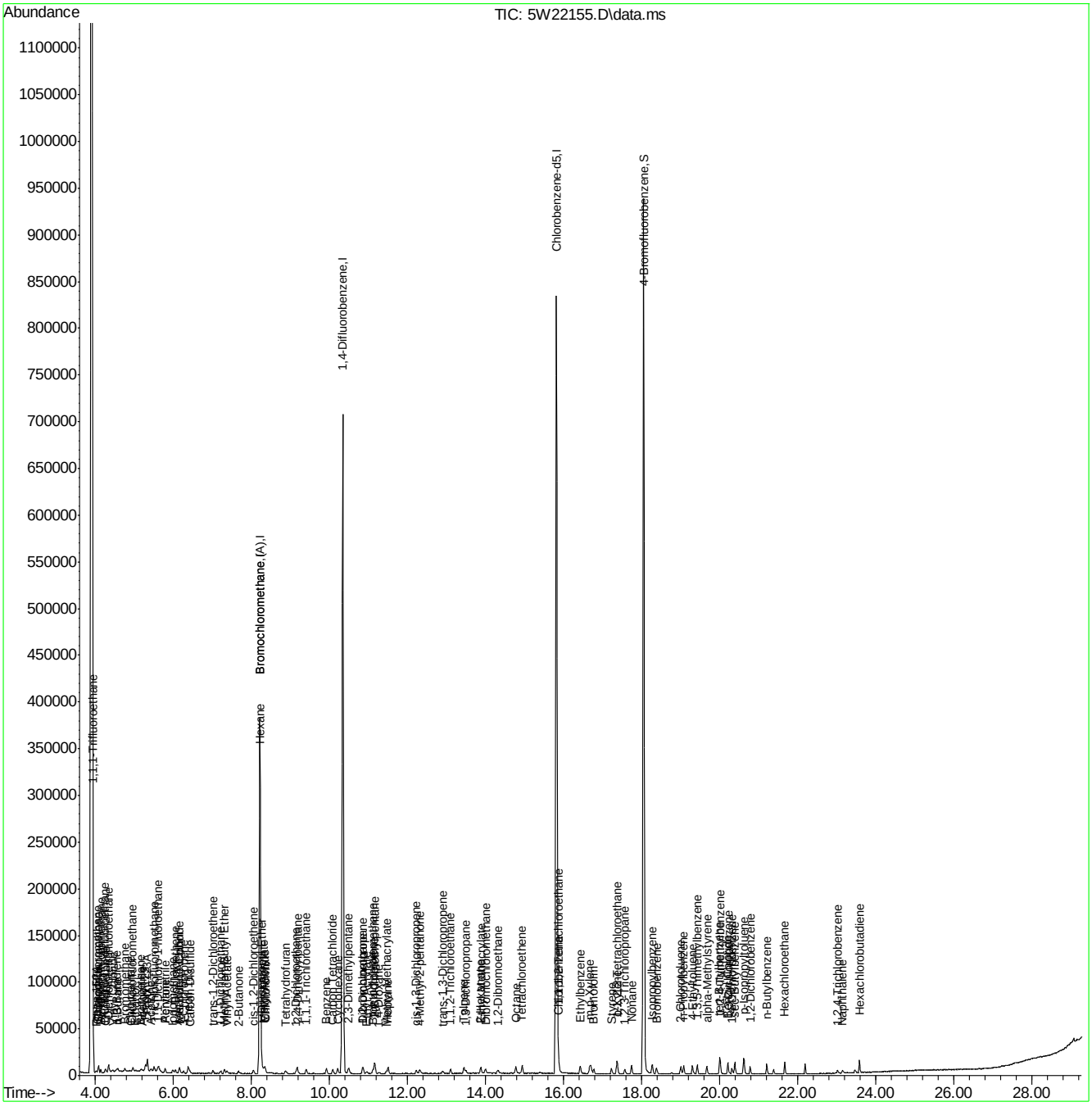
(#) = qualifier out of range (m) = manual integration (+) = signals summed

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22155.D
Acq On : 12 Jan 2017 11:38 am
Operator : danat
Sample : ic881-0.1
Misc : MS11221,v5w881,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 12 15:07:04 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:05:22 2017
Response via : Initial Calibration



m5w881.M Fri Jan 13 10:21:29 2017 GCMS5W Page: 4

Manual Integration Approval Summary

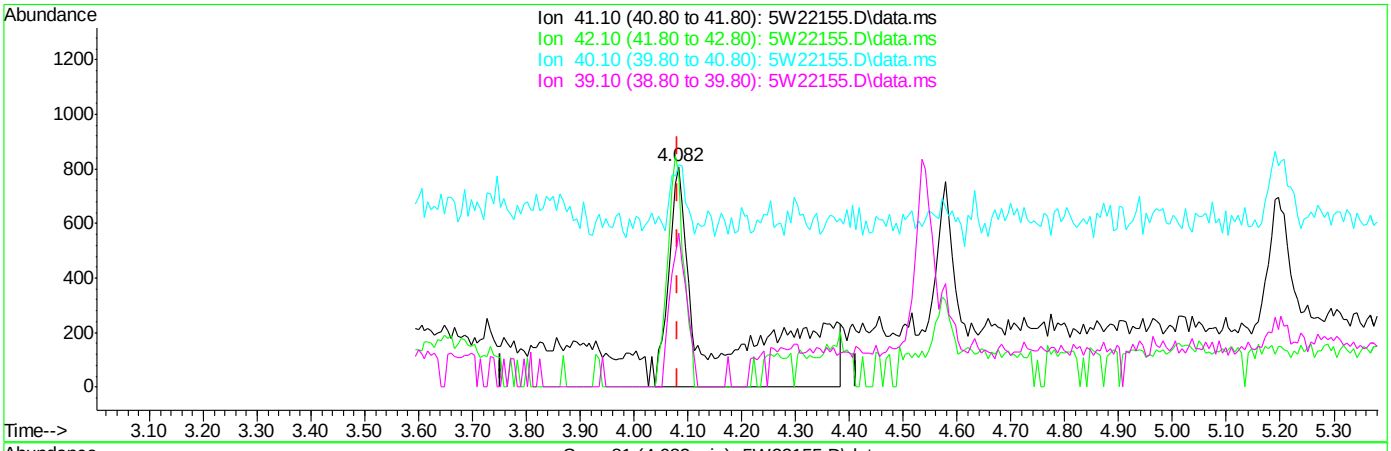
Sample Number:	V5W881-IC881	**Method:**	TO-15
Lab FileID:	5W22155.D	**Analyst approved:**	01/13/17 10:27 Dana Tryon
Injection Time:	01/12/17 11:38	**Supervisor approved:**	01/18/17 12:21 Dana Tryon

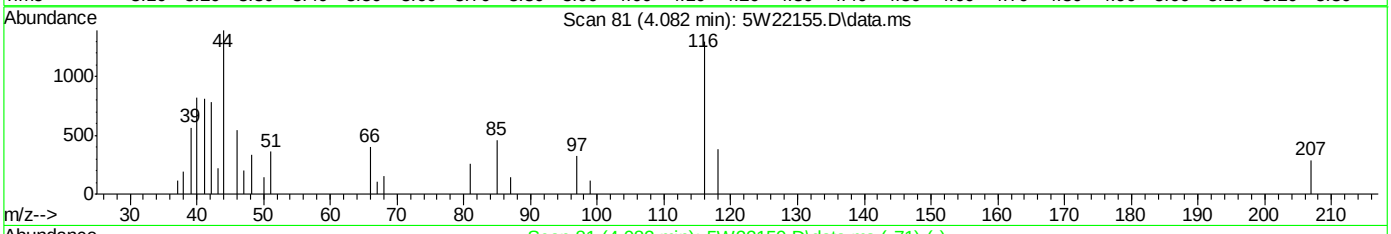
Parameter	CAS	Sig#	R.T. (min.)	Reason
Propylene	115-07-1		4.08	Poor instrument integration
Ethanol	64-17-5		5.02	Poor instrument integration
Pentane	109-66-0		5.78	Poor instrument integration

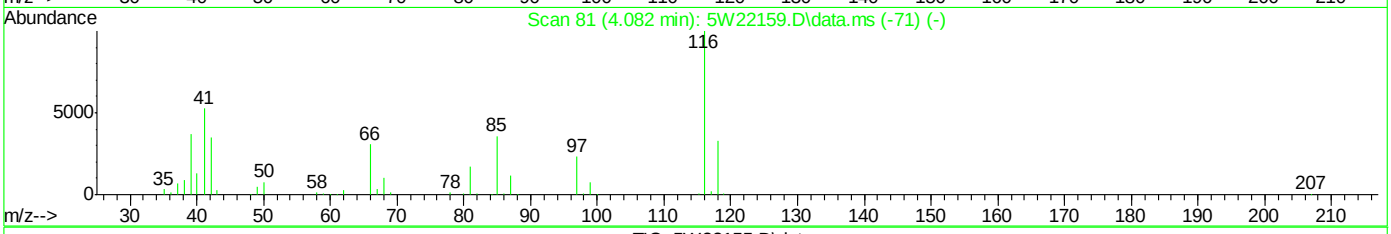
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22155.D
Acq On : 12 Jan 2017 11:38 am
Operator : danat
Sample : ic881-0.1
Misc : MS11221,v5w881,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 12 15:05:43 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:05:22 2017
Response via : Initial Calibration







TIC: 5W22155.D\data.ms

(5) Propene

4.082min (+0.000) 0.31ppb(v)

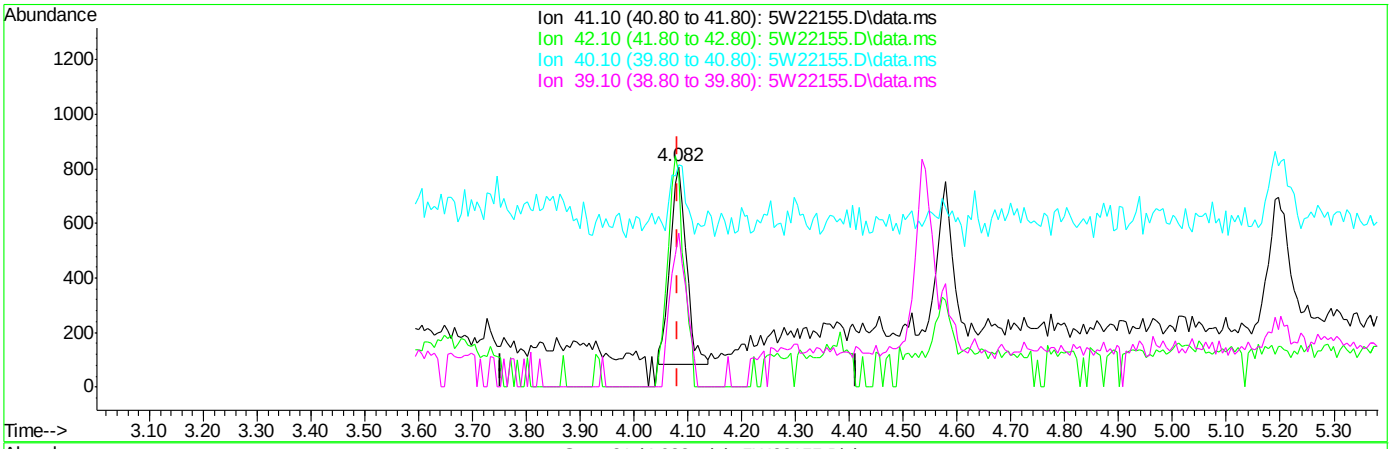
response 4613

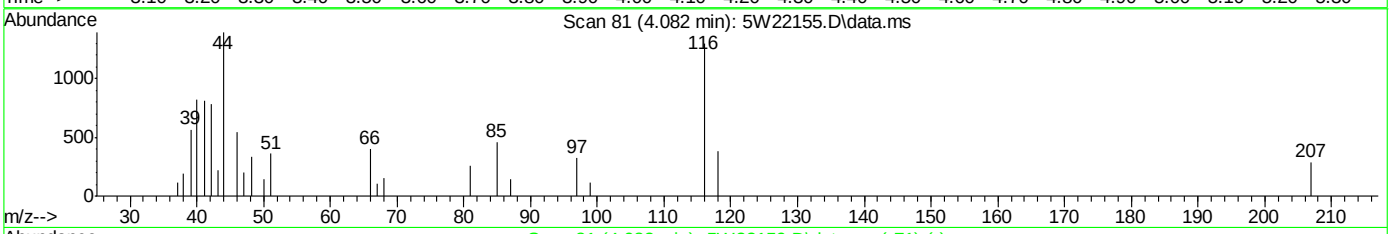
Ion	Exp%	Act%
41.10	100	100
42.10	65.80	96.91#
40.10	25.30	100.99#
39.10	70.60	70.05

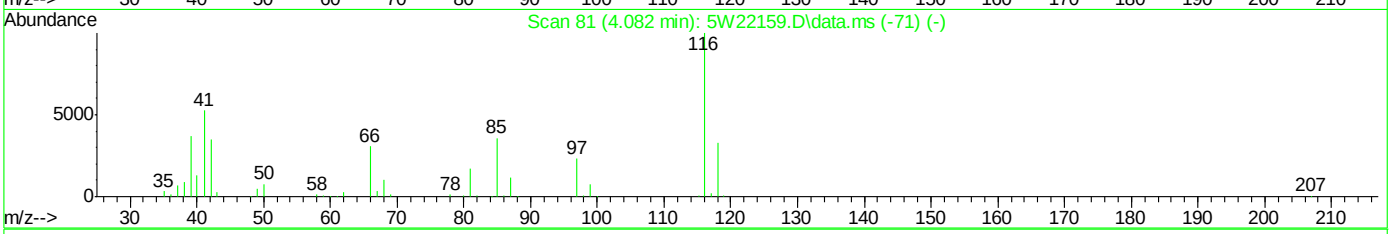
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22155.D
Acq On : 12 Jan 2017 11:38 am
Operator : danat
Sample : ic881-0.1
Misc : MS11221,v5w881,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 12 15:05:43 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:05:22 2017
Response via : Initial Calibration







TIC: 5W22155.D\data.ms

(5) Propene

4.082min (+0.000) 0.10ppb(v) m

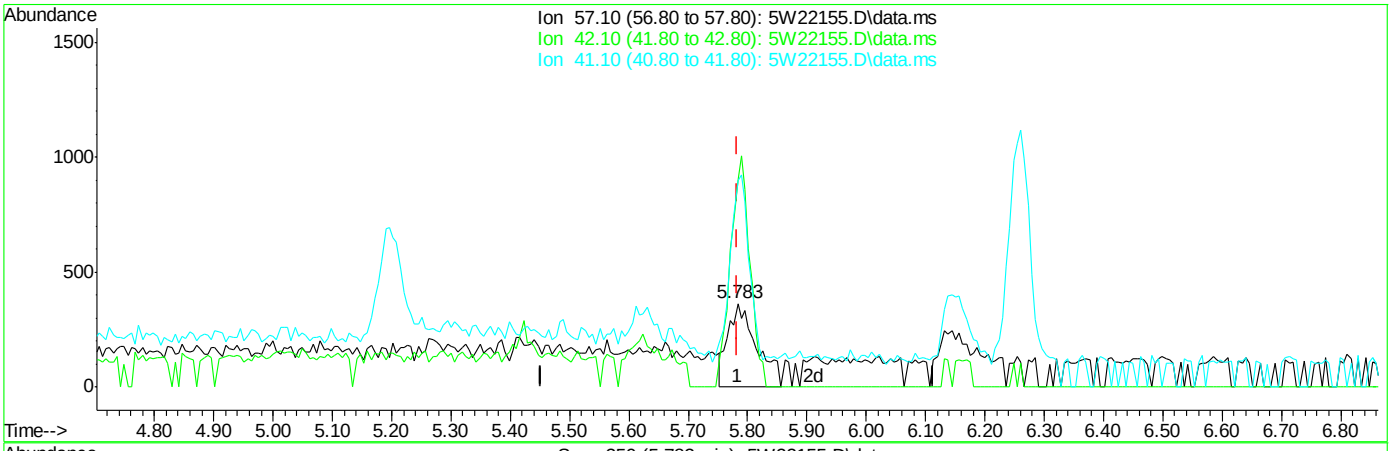
response 1512

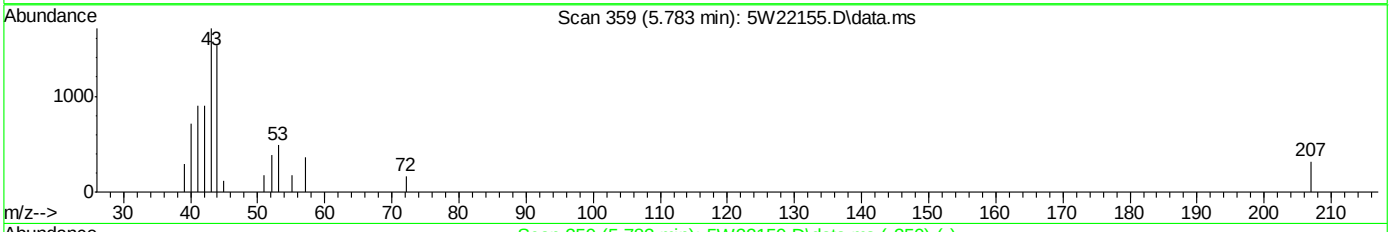
Ion	Exp%	Act%
41.10	100	100
42.10	65.80	96.91#
40.10	25.30	100.99#
39.10	70.60	70.05

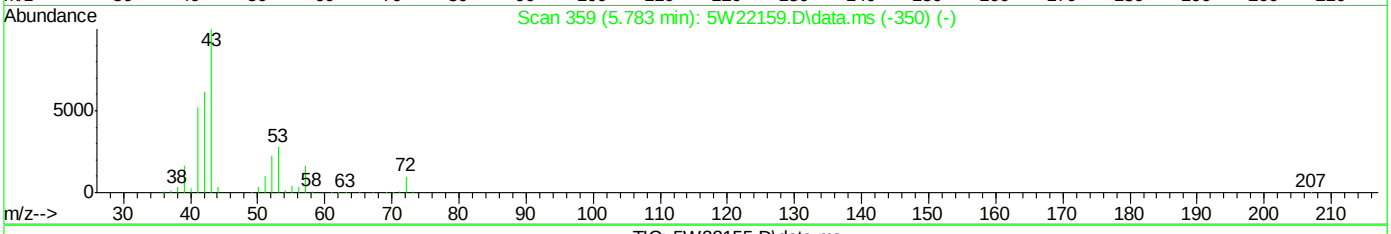
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22155.D
Acq On : 12 Jan 2017 11:38 am
Operator : danat
Sample : ic881-0.1
Misc : MS11221,v5w881,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 12 15:05:43 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:05:22 2017
Response via : Initial Calibration







TIC: 5W22155.D\data.ms

(23) Pentane

5.783min (+0.000) 0.20ppb(v)

response 1213

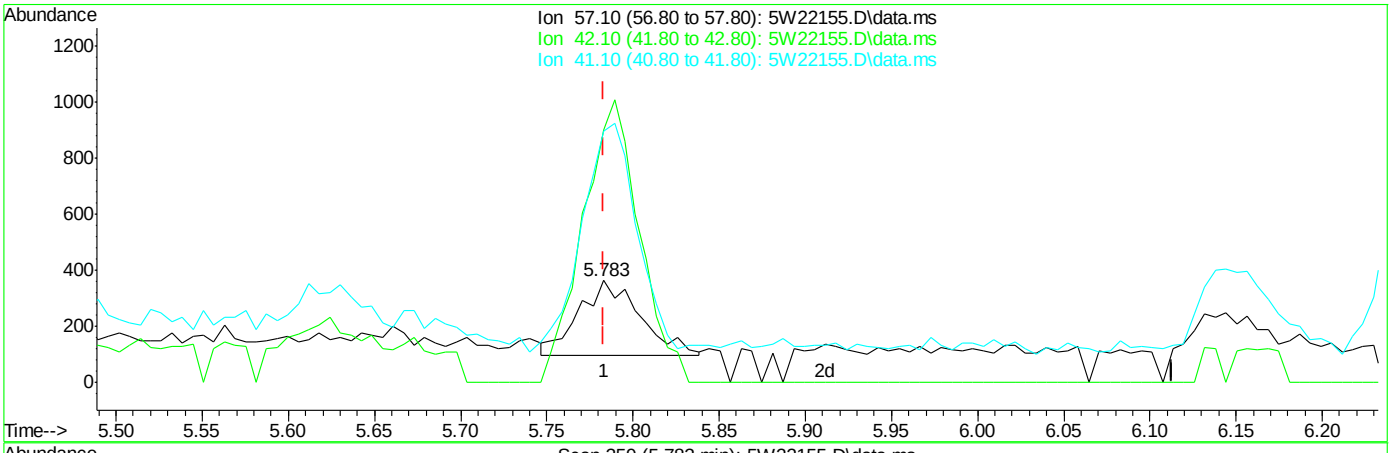
Ion	Exp%	Act%
57.10	100	100
42.10	374.10	248.48#
41.10	317.90	247.11
0.00	0.00	0.00

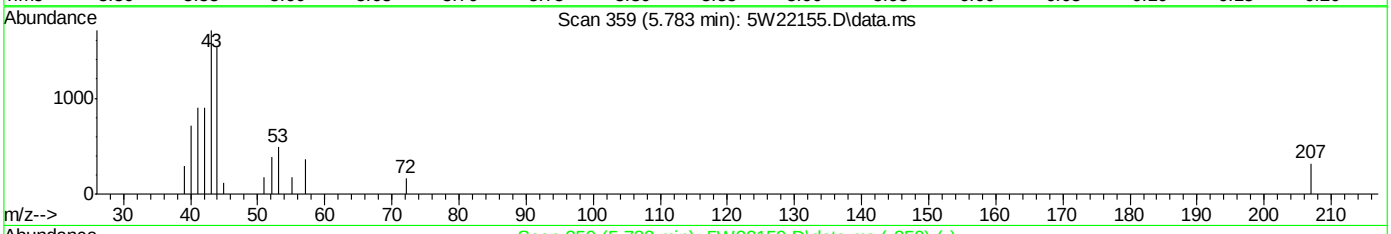
SGS ACCUTEST JC37217

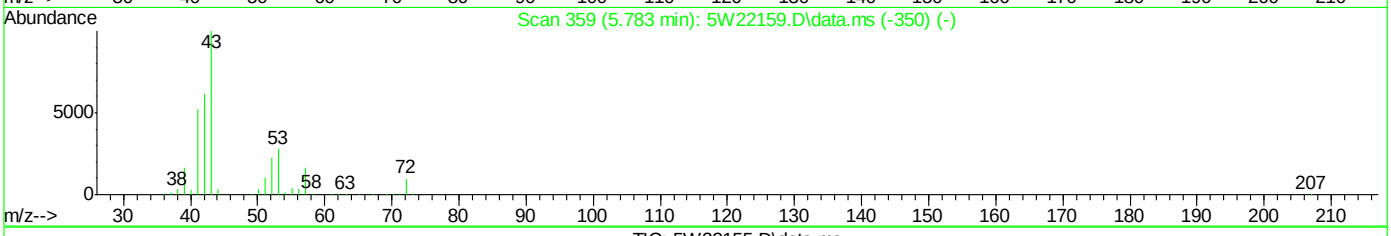
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22155.D
Acq On : 12 Jan 2017 11:38 am
Operator : danat
Sample : ic881-0.1
Misc : MS11221,v5w881,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 12 15:05:43 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:05:22 2017
Response via : Initial Calibration







TIC: 5W22155.D\data.ms

(23) Pentane

5.783min (+0.000) 0.11ppb(v) m

response 648

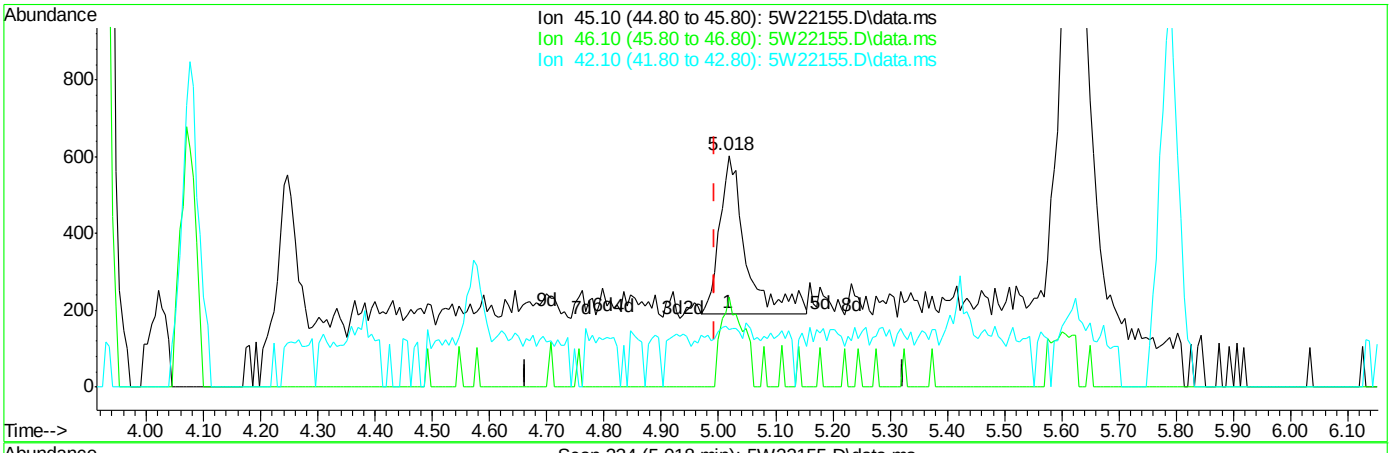
Ion	Exp%	Act%
57.10	100	100
42.10	374.10	248.48#
41.10	317.90	247.11
0.00	0.00	0.00

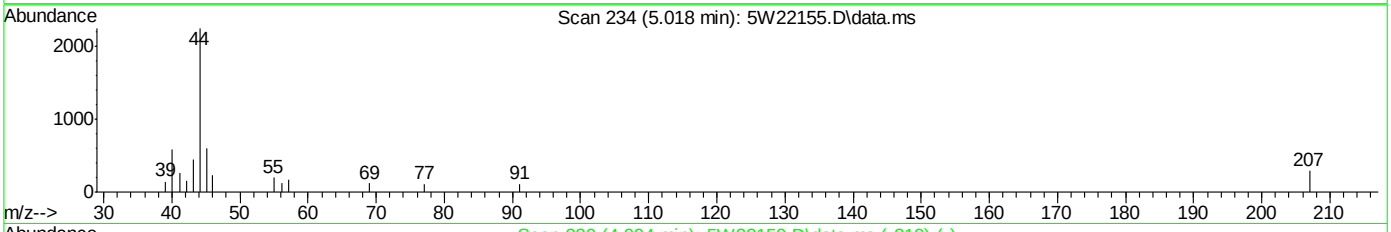
SGS ACCUTEST JC37217

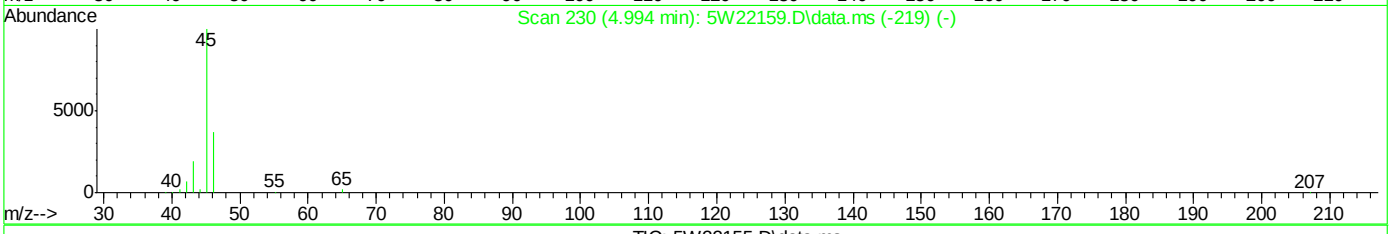
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22155.D
Acq On : 12 Jan 2017 11:38 am
Operator : danat
Sample : ic881-0.1
Misc : MS11221,v5w881,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 12 15:05:43 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:05:22 2017
Response via : Initial Calibration







TIC: 5W22155.D\data.ms

(31) Ethanol

5.018min (+0.025) 0.14ppb(v)

response 1308

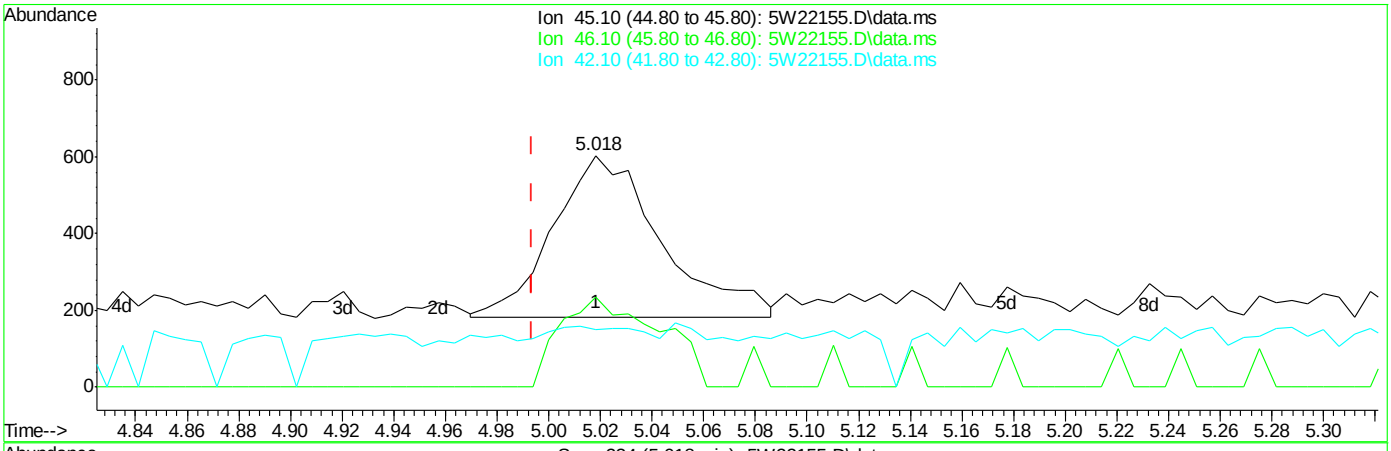
Ion	Exp%	Act%
45.10	100	100
46.10	37.20	38.97
42.10	7.40	24.71#
0.00	0.00	0.00

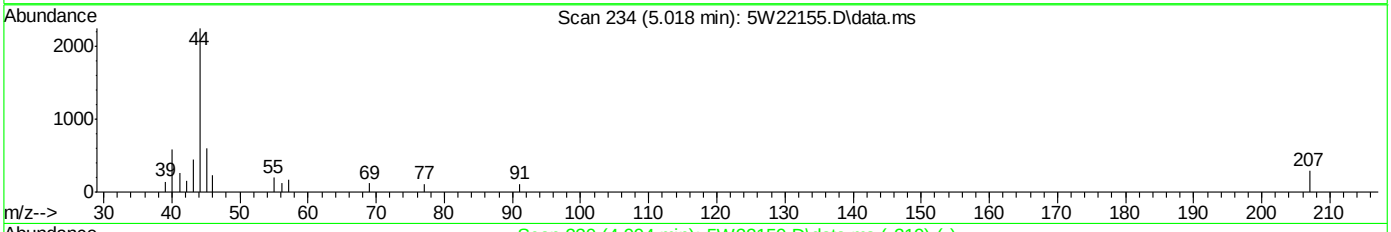
SGS ACCUTEST JC37217

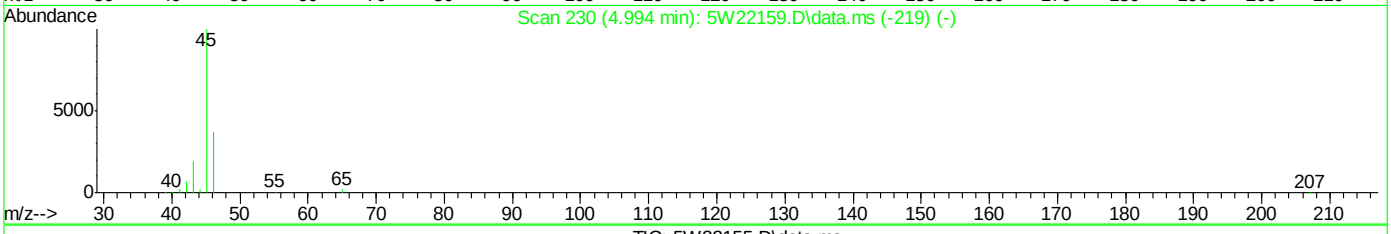
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22155.D
Acq On : 12 Jan 2017 11:38 am
Operator : danat
Sample : ic881-0.1
Misc : MS11221,v5w881,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 12 15:05:43 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:05:22 2017
Response via : Initial Calibration







TIC: 5W22155.D\data.ms

(31) Ethanol

5.018min (+0.025) 0.14ppb(v) m

response 1227

Ion	Exp%	Act%
45.10	100	100
46.10	37.20	38.97
42.10	7.40	24.71#
0.00	0.00	0.00

SGS ACCUTEST JC37217

Manual Integrations APPROVED (compounds with "m" flag)
Dana Tryon
01/18/17 12:21

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22156.D
Acq On : 12 Jan 2017 12:19 pm
Operator : danat
Sample : ic881-0.2
Misc : MS11221,v5w881,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 12 15:05:09 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:02:13 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	8.218	130	176587	10.00	ppb(v	0.00
54) 1,4-Difluorobenzene	10.341	114	718360	10.00	ppb(v	0.00
77) Chlorobenzene-d5	15.810	82	347959	10.00	ppb(v	0.00
108) Bromochloromethane (A)	8.218	130	176627	10.00	ppb(v	0.00
System Monitoring Compounds						
91) 4-Bromofluorobenzene	18.049	95	458892	9.92	ppb(v	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 99.20%			
Target Compounds						Qvalue
2) 1,1,1-Trifluoroethane	3.942	69	10332	0.27	ppb(v#	88
3) Freon 152A	4.033	65	2359	0.20	ppb(v	85
4) Chlorodifluoromethane	4.070	67	899	0.20	ppb(v#	82
5) Propene	4.095	41	3148	0.23	ppb(v#	79
6) Chlorotrifluoroethene	4.095	116	4828	0.20	ppb(v#	89
7) Dichlorodifluoromethane	4.150	85	9382	0.20	ppb(v	98
8) 1-Chloro-1,1-difluoroe...	4.254	65	6529	0.20	ppb(v#	14
9) Chloromethane	4.278	50	3477	0.20	ppb(v	97
10) Dichlorotetrafluoroethane	4.345	85	10531	0.20	ppb(v	98
11) Vinyl Chloride	4.443	62	3953	0.20	ppb(v#	92
12) 1,3-Butadiene	4.541	54	2873	0.21	ppb(v	94
13) n-Butane	4.584	58	654	0.21	ppb(v#	64
14) Bromomethane	4.761	94	4244	0.21	ppb(v	99
15) Chloroethane	4.890	64	1950	0.20	ppb(v#	92
16) Dichlorofluoromethane	4.963	67	9139	0.21	ppb(v	98
17) Acetonitrile	5.202	41	2994	0.20	ppb(v#	56
18) Freon 123	5.294	83	10359	0.21	ppb(v	98
19) Freon 123A	5.337	117	10693	0.41	ppb(v	99
20) Bromoethene	5.177	106	3728	0.20	ppb(v	99
21) Trichlorofluoromethane	5.508	101	9184	0.20	ppb(v	91
22) Acetone	5.422	58	1990	0.22	ppb(v	98
23) Pentane	5.789	57	1424	0.27	ppb(v	81
24) 1,1-Dichloro-1-fluoroe...	5.606	81	8244	0.21	ppb(v	97
25) Iodomethane	5.991	142	10538	0.20	ppb(v	98
26) Isopropyl Alcohol	5.618	43	1438m	0.23	ppb(v	
27) 1,1-Dichloroethene	6.046	61	6020	0.20	ppb(v	95
28) Freon 113	6.383	101	8265	0.20	ppb(v	97
29) Methylene Chloride	6.162	84	3972	0.22	ppb(v	98
30) Carbon Disulfide	6.426	76	10500	0.19	ppb(v	99
31) Ethanol	5.025	45	1751m	0.21	ppb(v	
32) Acrylonitrile	5.783	53	2507	0.17	ppb(v	95
33) 3-Chloropropene	6.260	76	1630	0.19	ppb(v	94
34) trans-1,2-Dichloroethene	7.013	61	5148	0.19	ppb(v	96
35) tert-Butyl Alcohol	6.138	59	8034	0.20	ppb(v#	90
36) Methyl tert-Butyl Ether	7.300	73	10597	0.20	ppb(v	98
37) Vinyl Acetate	7.374	43	10023	0.20	ppb(v	100
38) 1,1-Dichloroethane	7.209	63	7088	0.20	ppb(v	99
39) 2-Butanone	7.667	72	1750	0.19	ppb(v	81
40) Hexane	8.230	57	6377	0.22	ppb(v#	72

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22156.D
Acq On : 12 Jan 2017 12:19 pm
Operator : danat
Sample : ic881-0.2
Misc : MS11221,v5w881,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 12 15:05:09 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:02:13 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
41) cis-1,2-Dichloroethene	8.047	61	5108	0.19	ppb(v	98
42) Di-isopropyl Ether	8.267	87	3169	0.19	ppb(v	98
43) Ethyl Acetate	8.328	61	1102	0.18	ppb(v	91
44) Methyl Acrylate	8.304	55	6642	0.20	ppb(v	95
45) Chloroform	8.353	83	8470	0.20	ppb(v	98
46) 2,4-Dimethylpentane	9.178	57	7223	0.21	ppb(v	99
47) Tetrahydrofuran	8.860	72	1860	0.19	ppb(v	89
48) 1,1,1-Trichloroethane	9.405	97	7895	0.20	ppb(v	97
49) 1,2-Dichloroethane	9.136	62	4714	0.20	ppb(v	96
50) Benzene	9.919	78	12613	0.20	ppb(v	97
51) Carbon Tetrachloride	10.084	117	7178	0.19	ppb(v	95
52) Cyclohexane	10.206	56	6036	0.20	ppb(v	98
53) 2,3-Dimethylpentane	10.494	71	2737	0.21	ppb(v	87
55) 2,2,4-Trimethylpentane	11.161	57	19164	0.20	ppb(v	99
56) Heptane	11.503	71	3951	0.20	ppb(v	97
57) Trichloroethene	11.148	95	5494	0.20	ppb(v	98
58) 1,2-Dichloropropane	10.861	63	4747	0.20	ppb(v	97
59) Dibromomethane	10.849	174	4965	0.19	ppb(v	98
60) Ethyl Acrylate	10.934	55	8735	0.19	ppb(v	99
61) Methyl Methacrylate	11.448	69	4340	0.19	ppb(v	93
62) 1,4-Dioxane	11.246	88	2835	0.19	ppb(v	85
63) Bromodichloromethane	11.106	83	8358	0.19	ppb(v	96
64) cis-1,3-Dichloropropene	12.219	75	7011	0.19	ppb(v	97
65) 4-Methyl-2-pentanone	12.305	58	3442	0.18	ppb(v	98
66) trans-1,3-Dichloropropene	12.898	75	5386	0.18	ppb(v	98
67) Toluene	13.436	91	14757	0.20	ppb(v	97
68) 1,1,2-Trichloroethane	13.100	97	4955	0.19	ppb(v	94
69) 1,3-Dichloropropane	13.485	76	6353	0.19	ppb(v	92
70) 2-Hexanone	13.859	58	4174	0.16	ppb(v#	87
71) Ethyl Methacrylate	13.865	69	7074	0.19	ppb(v	100
72) Dibromochloromethane	13.993	129	7902	0.18	ppb(v	100
73) Tetrachloroethene	14.935	166	7223	0.19	ppb(v	98
74) 1,2-Dibromoethane	14.305	107	7536	0.19	ppb(v	99
75) Octane	14.770	43	9044	0.20	ppb(v	96
76) 1,1,1,2-Tetrachloroethane	15.853	131	5729	0.19	ppb(v#	1
78) Chlorobenzene	15.871	112	11005	0.21	ppb(v	98
79) Ethylbenzene	16.422	91	18512	0.21	ppb(v	97
80) m,p-Xylene	16.679	91	29672	0.43	ppb(v	97
81) Styrene	17.211	104	9952	0.20	ppb(v	97
82) Nonane	17.737	43	8734	0.21	ppb(v	99
83) o-Xylene	17.358	91	14603	0.21	ppb(v	99
84) Bromoform	16.764	173	6756	0.18	ppb(v	98
85) 1,1,2,2-Tetrachloroethane	17.370	83	10936	0.21	ppb(v	98
86) 1,2,3-Trichloropropane	17.560	75	7999	0.21	ppb(v	98
87) Isopropylbenzene	18.263	105	19928	0.21	ppb(v	98
88) Bromobenzene	18.373	156	5983	0.20	ppb(v	94
89) 2-Chlorotoluene	18.991	126	4678	0.20	ppb(v	91
90) n-Propylbenzene	19.071	120	4914	0.20	ppb(v	94
92) 4-Ethyltoluene	19.297	105	18532	0.21	ppb(v	99
93) 1,3,5-Trimethylbenzene	19.413	105	16027	0.21	ppb(v	100

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22156.D
Acq On : 12 Jan 2017 12:19 pm
Operator : danat
Sample : ic881-0.2
Misc : MS11221,v5w881,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 12 15:05:09 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:02:13 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
94)	alpha-Methylstyrene	19.658	118	7589	0.20	ppb(v	97
95)	tert-Butylbenzene	19.988	134	3390	0.21	ppb(v	87
96)	1,2,4-Trimethylbenzene	20.007	105	15197	0.21	ppb(v	99
97)	1,3-Dichlorobenzene	20.203	146	9287	0.20	ppb(v	99
98)	Benzyl Chloride	20.196	91	9542	0.17	ppb(v	99
99)	1,4-Dichlorobenzene	20.300	146	8954	0.20	ppb(v	96
100)	sec-Butylbenzene	20.386	134	4244	0.21	ppb(v	94
101)	p-Isopropyltoluene	20.619	134	4582	0.21	ppb(v	92
102)	1,2-Dichlorobenzene	20.772	146	8775	0.20	ppb(v	93
103)	n-Butylbenzene	21.200	134	3671	0.19	ppb(v	100
104)	Hexachloroethane	21.665	201	4326	0.17	ppb(v	98
105)	1,2,4-Trichlorobenzene	23.011	180	3148	0.15	ppb(v	96
106)	Naphthalene	23.139	128	8228	0.18	ppb(v	100
107)	Hexachlorobutadiene	23.580	225	6113	0.21	ppb(v	97
109)	TVHC as equiv Pentane	5.795	TIC	26499m	0.22	ppb(v	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.7.3

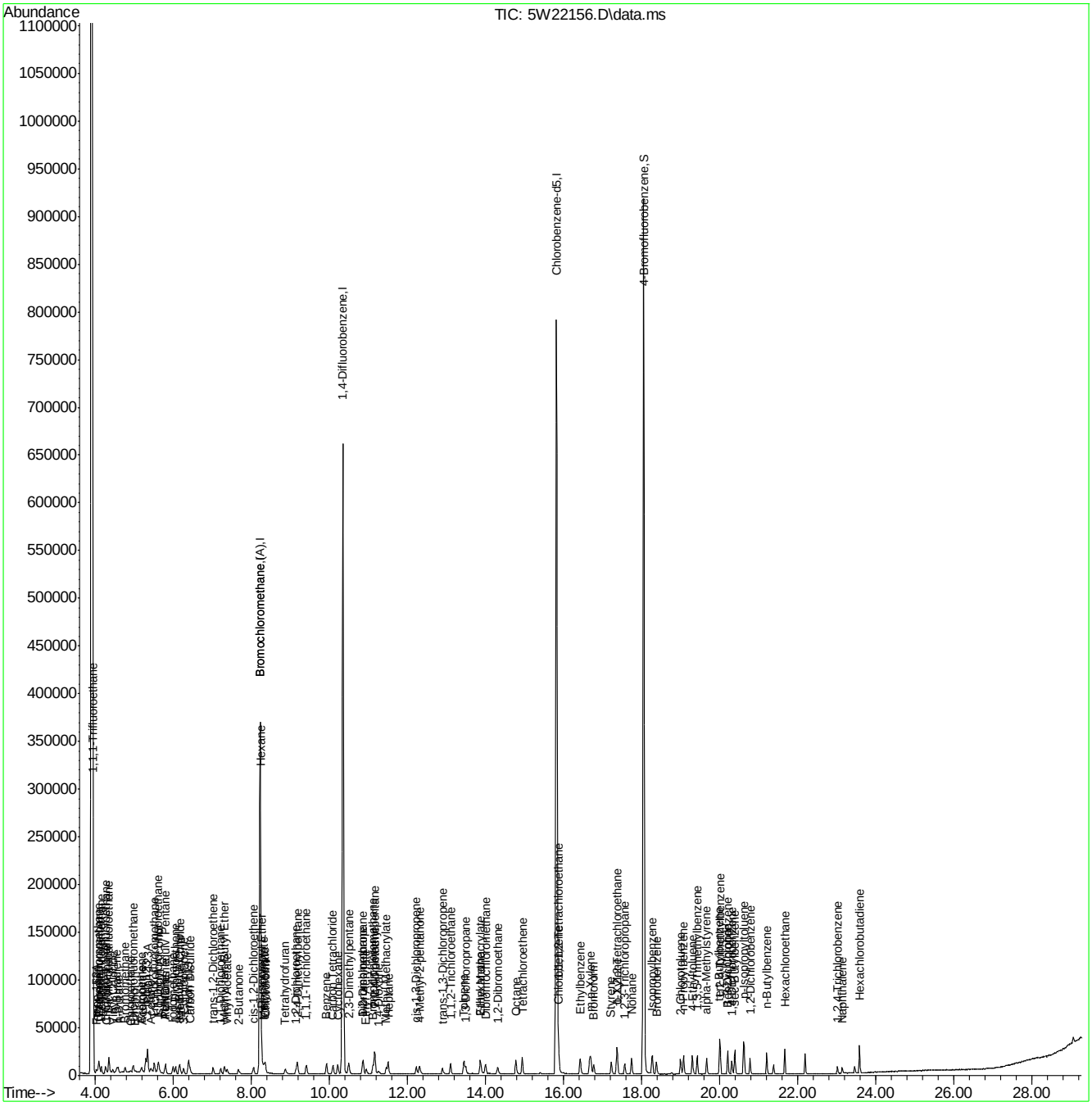
7

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22156.D
Acq On : 12 Jan 2017 12:19 pm
Operator : danat
Sample : ic881-0.2
Misc : MS11221,v5w881,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 12 15:05:09 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:02:13 2017
Response via : Initial Calibration



SGS ACCUTEST JC37217

Manual Integration Approval Summary

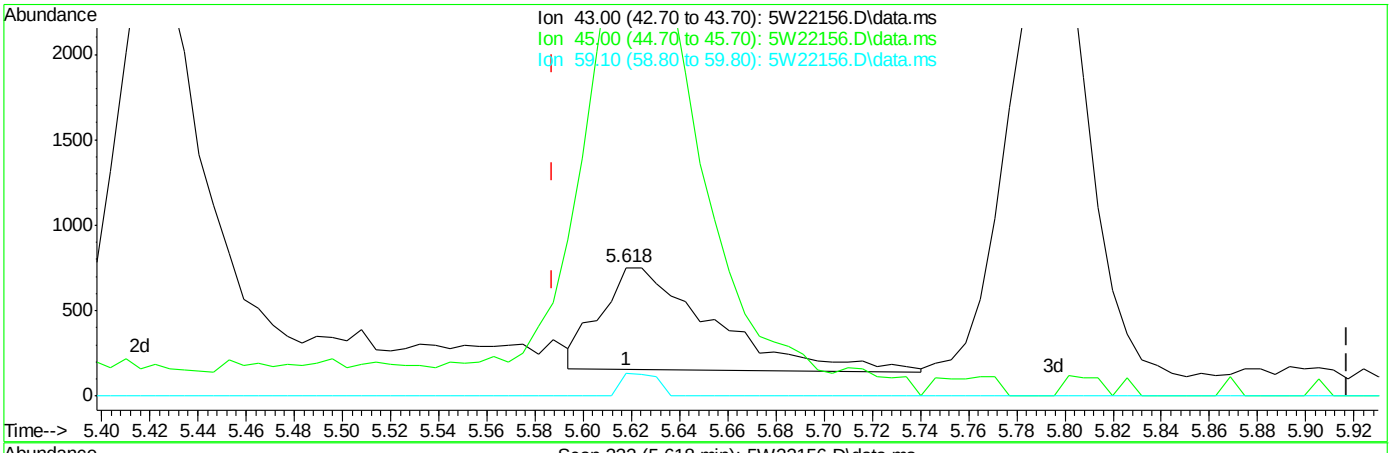
Sample Number:	V5W881-IC881	**Method:**	TO-15
Lab FileID:	5W22156.D	**Analyst approved:**	01/13/17 10:27 Dana Tryon
Injection Time:	01/12/17 12:19	**Supervisor approved:**	01/18/17 12:21 Dana Tryon

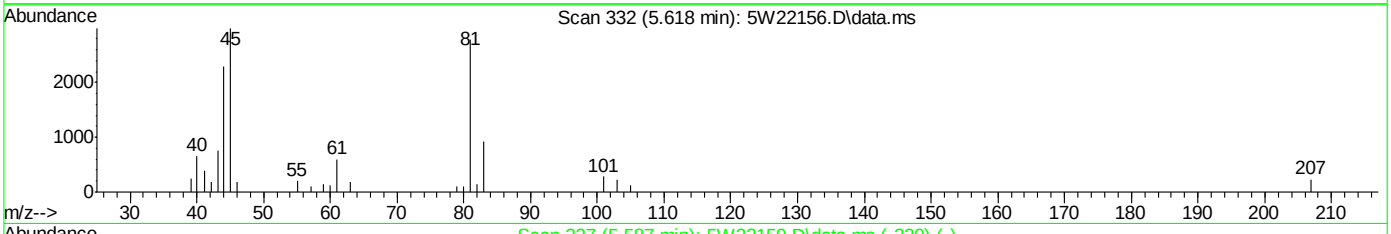
Parameter	CAS	Sig#	R.T. (min.)	Reason
Ethanol	64-17-5		5.02	Poor instrument integration
Isopropyl Alcohol	67-63-0		5.62	Poor instrument integration
TVHC As Equiv Pentane			5.80	Missed peak

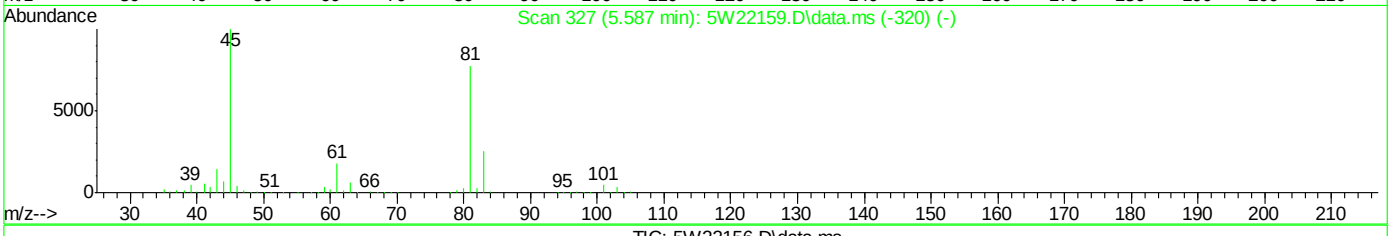
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22156.D
Acq On : 12 Jan 2017 12:19 pm
Operator : danat
Sample : ic881-0.2
Misc : MS11221,v5w881,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 12 15:02:24 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:02:13 2017
Response via : Initial Calibration







TIC: 5W22156.D\data.ms

(26) Isopropyl Alcohol

5.618min (+0.031) 0.31ppb(v)

response 1907

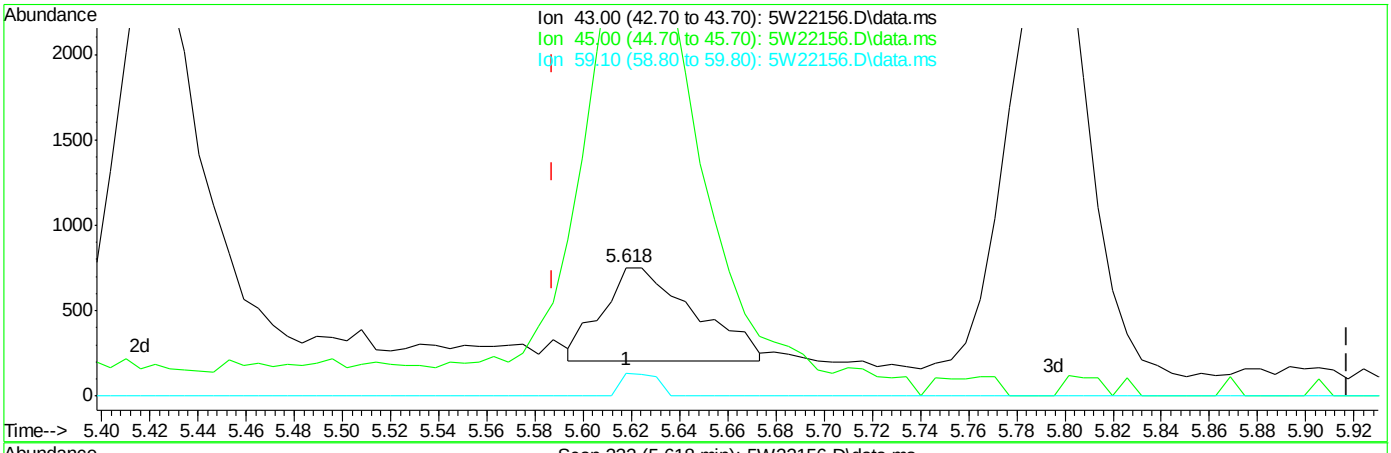
Ion	Exp%	Act%
43.00	100	100
45.00	691.10	397.34#
59.10	26.00	17.95#
0.00	0.00	0.00

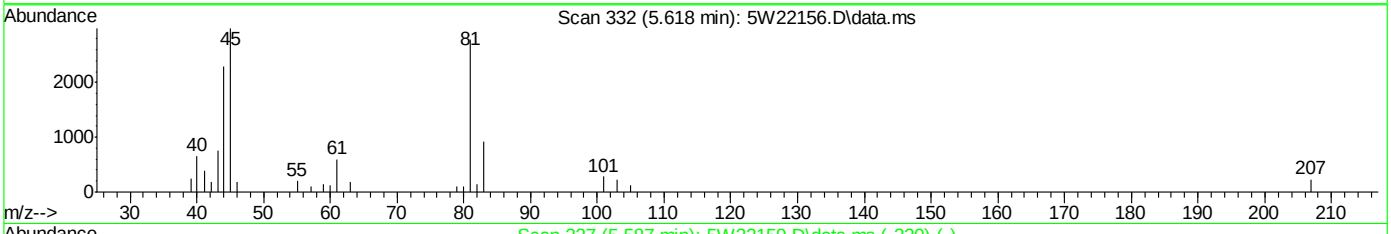
SGS ACCUTEST JC37217

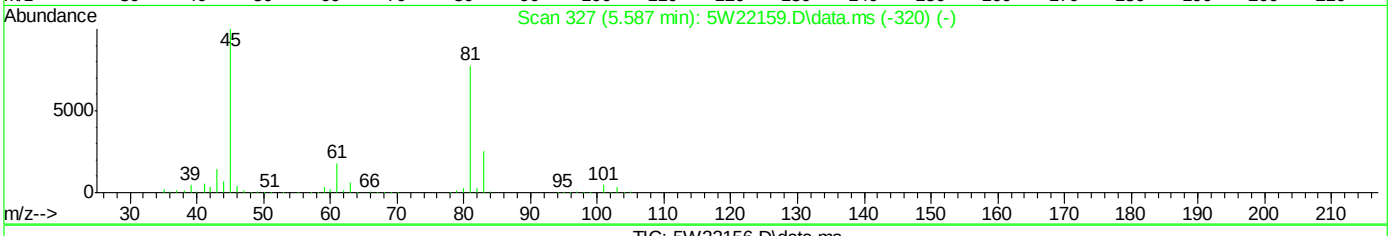
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22156.D
Acq On : 12 Jan 2017 12:19 pm
Operator : danat
Sample : ic881-0.2
Misc : MS11221,v5w881,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 12 15:02:24 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:02:13 2017
Response via : Initial Calibration







TIC: 5W22156.D\data.ms

(26) Isopropyl Alcohol

5.618min (+0.031) 0.23ppb(v) m

response 1438

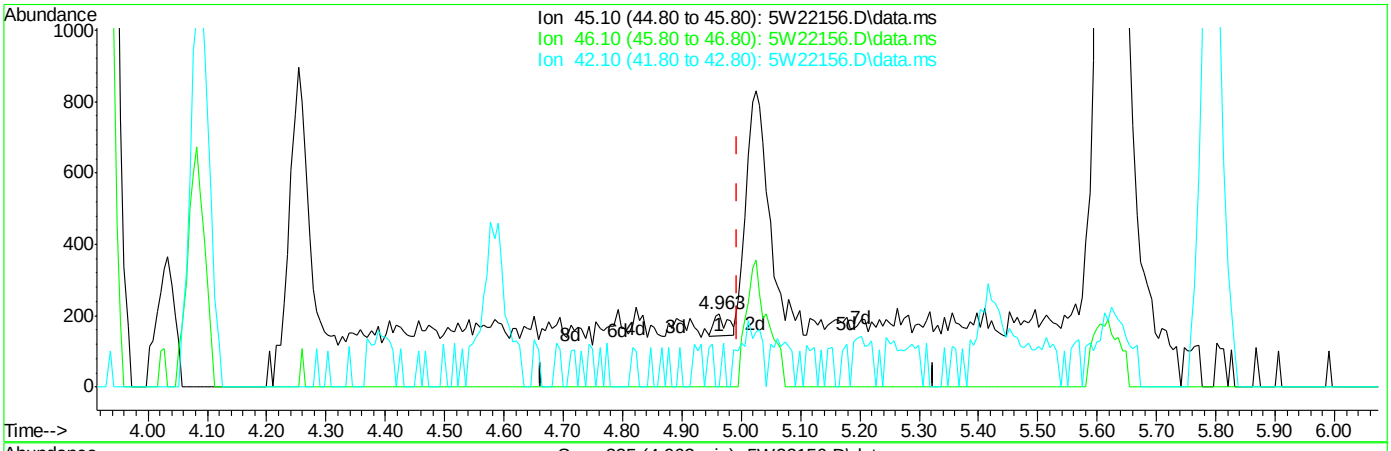
Ion	Exp%	Act%
43.00	100	100
45.00	691.10	397.34#
59.10	26.00	17.95#
0.00	0.00	0.00

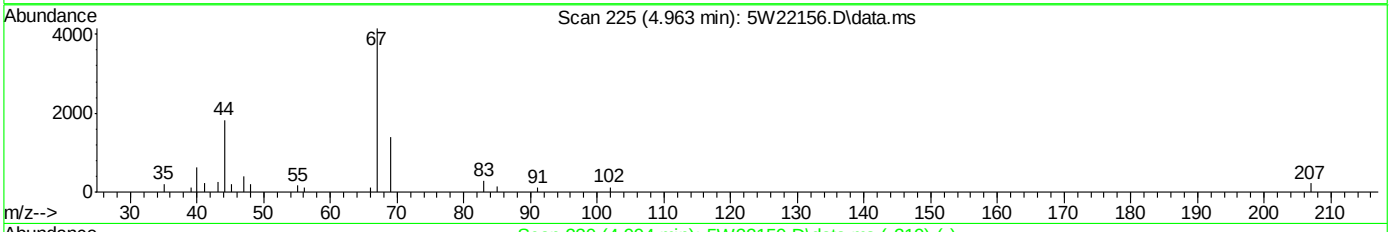
SGS ACCUTEST JC37217

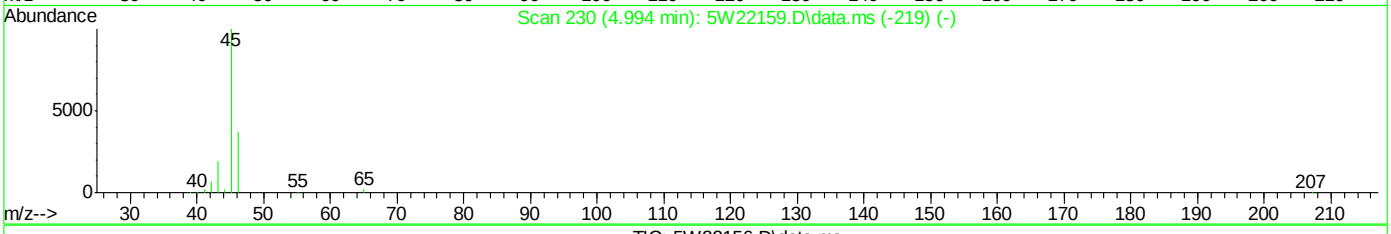
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22156.D
Acq On : 12 Jan 2017 12:19 pm
Operator : danat
Sample : ic881-0.2
Misc : MS11221,v5w881,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 12 15:02:24 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:02:13 2017
Response via : Initial Calibration







TIC: 5W22156.D\data.ms

(31) Ethanol

4.963min (-0.030) 0.01ppb(v)

response 102

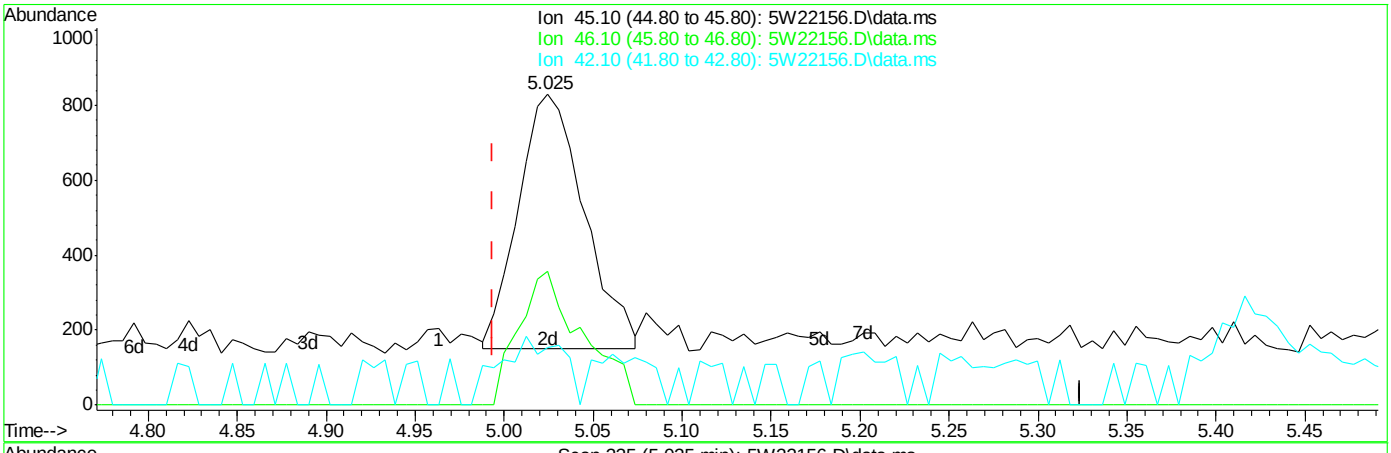
Ion	Exp%	Act%
45.10	100	100
46.10	37.20	0.00#
42.10	7.40	0.00#
0.00	0.00	0.00

SGS ACCUTEST JC37217

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22156.D
Acq On : 12 Jan 2017 12:19 pm
Operator : danat
Sample : ic881-0.2
Misc : MS11221,v5w881,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 12 15:02:24 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:02:13 2017
Response via : Initial Calibration



(31) Ethanol

5.025min (+0.031) 0.21ppb(v) m

response 1751

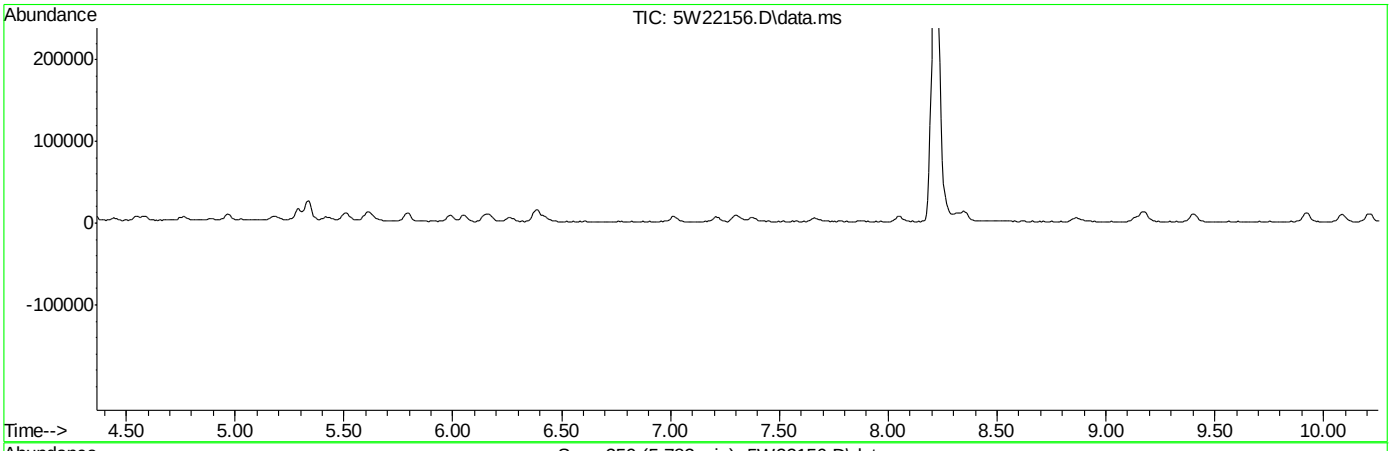
Ion	Exp%	Act%
45.10	100	100
46.10	37.20	42.84
42.10	7.40	18.65#
0.00	0.00	0.00

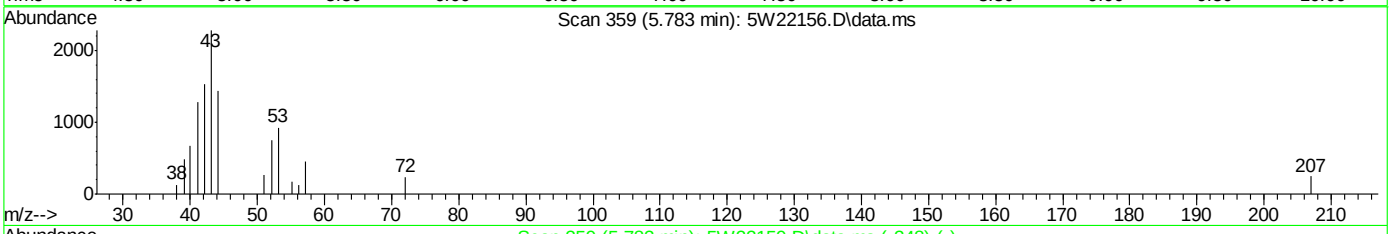
SGS ACCUTEST JC37217

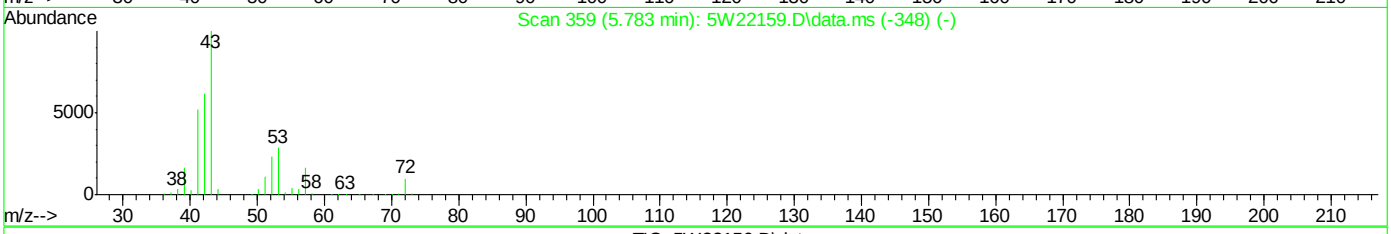
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22156.D
Acq On : 12 Jan 2017 12:19 pm
Operator : danat
Sample : ic881-0.2
Misc : MS11221,v5w881,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jan 12 15:02:24 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:02:13 2017
Response via : Initial Calibration







TIC: 5W22156.D\data.ms

(109) TVHC as equiv Pentane

5.783min (-5.783) 0.00ppb(v)

response 0

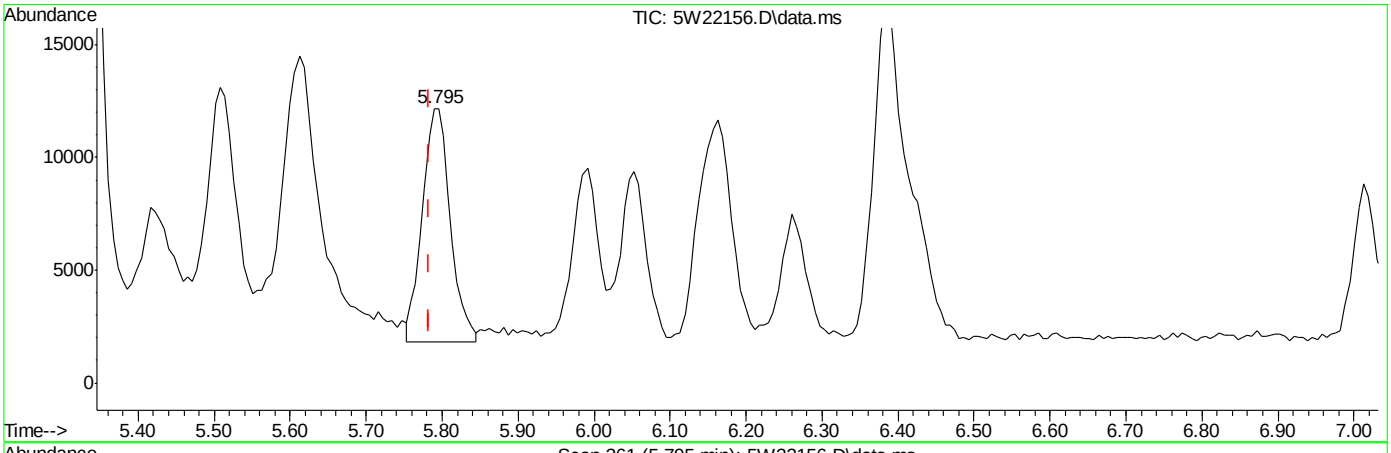
Signal	Exp%	Act%
TIC	100	0.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

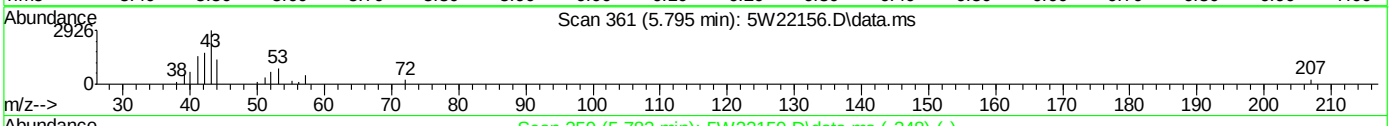
SGS ACCUTEST JC37217

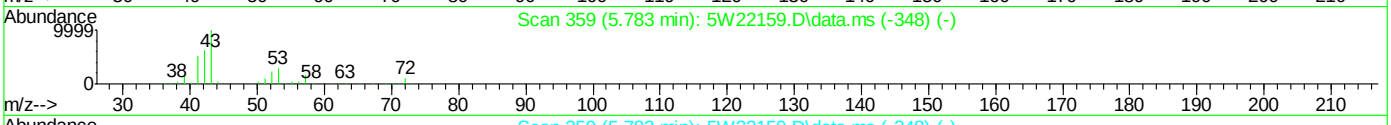
Quantitation Report (Qedit)

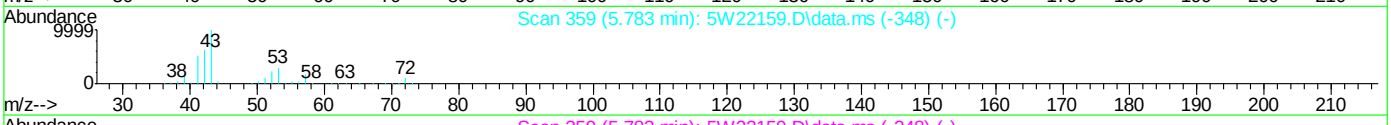
Data Path : C:\msdchem\1\DATA\
Data File : 5W22156.D
Acq On : 12 Jan 2017 12:19 pm
Operator : danat
Sample : ic881-0.2
Misc : MS11221,v5w881,,,,,1
ALS Vial : 4 Sample Multiplier: 1

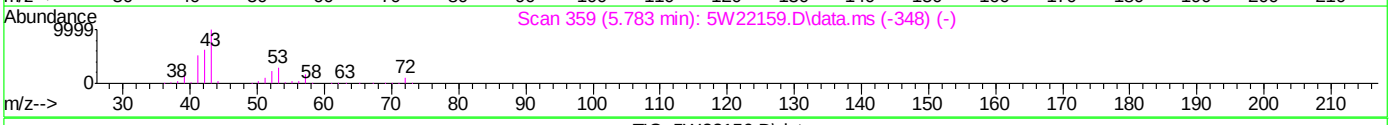
Quant Time: Jan 12 15:02:24 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:02:13 2017
Response via : Initial Calibration











TIC: 5W22156.D\data.ms

(109) TVHC as equiv Pentane

5.795min (+0.012) 0.22ppb(v) m

response 26499

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

SGS ACCUTEST JC37217

Manual Integrations APPROVED (compounds with "m" flag)
Dana Tryon
01/18/17 12:21

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22157.D
Acq On : 12 Jan 2017 1:02 pm
Operator : danat
Sample : ic881-0.5
Misc : MS11221,v5w881,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 12 15:02:02 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:00:20 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	8.212	130	164457	10.00	ppb(v	0.00
54) 1,4-Difluorobenzene	10.335	114	675076	10.00	ppb(v	0.00
77) Chlorobenzene-d5	15.810	82	340851	10.00	ppb(v	0.00
108) Bromochloromethane (A)	8.212	130	164457	10.00	ppb(v	0.00
System Monitoring Compounds						
91) 4-Bromofluorobenzene	18.043	95	454802	10.05	ppb(v	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 100.50%			
Target Compounds						Qvalue
2) 1,1,1-Trifluoroethane	3.929	69	16479	0.44	ppb(v	97
3) Freon 152A	4.021	65	5891	0.55	ppb(v	99
4) Chlorodifluoromethane	4.058	67	2157	0.53	ppb(v	92
5) Propene	4.076	41	7030	0.59	ppb(v#	89
6) Chlorotrifluoroethene	4.082	116	11724	0.54	ppb(v	99
7) Dichlorodifluoromethane	4.137	85	23229	0.55	ppb(v	100
8) 1-Chloro-1,1-difluoroe...	4.248	65	15920	0.54	ppb(v#	92
9) Chloromethane	4.266	50	8535	0.55	ppb(v	93
10) Dichlorotetrafluoroethane	4.333	85	25451	0.54	ppb(v	97
11) Vinyl Chloride	4.431	62	9774	0.55	ppb(v#	99
12) 1,3-Butadiene	4.541	54	6793	0.54	ppb(v	98
13) n-Butane	4.572	58	1600	0.56	ppb(v#	81
14) Bromomethane	4.755	94	9837	0.55	ppb(v	99
15) Chloroethane	4.884	64	4687	0.53	ppb(v#	95
16) Dichlorofluoromethane	4.957	67	21672	0.54	ppb(v	98
17) Acetonitrile	5.190	41	7353	0.55	ppb(v#	81
18) Freon 123	5.282	83	24854	0.55	ppb(v	100
19) Freon 123A	5.330	117	25679	1.10	ppb(v	97
20) Bromoethene	5.165	106	9172	0.53	ppb(v	97
21) Trichlorofluoromethane	5.502	101	22498	0.54	ppb(v	98
22) Acetone	5.410	58	4580	0.58	ppb(v	83
23) Pentane	5.783	57	2739	0.61	ppb(v	91
24) 1,1-Dichloro-1-fluoroe...	5.600	81	19672	0.55	ppb(v	99
25) Iodomethane	5.979	142	25468	0.54	ppb(v	99
26) Isopropyl Alcohol	5.606	43	3495	0.67	ppb(v	68
27) 1,1-Dichloroethene	6.046	61	14962	0.55	ppb(v	96
28) Freon 113	6.377	101	20313	0.54	ppb(v	98
29) Methylene Chloride	6.156	84	9179	0.57	ppb(v	98
30) Carbon Disulfide	6.419	76	26279	0.53	ppb(v	100
31) Ethanol	5.012	45	4410	0.59	ppb(v#	96
32) Acrylonitrile	5.777	53	6748	0.50	ppb(v	96
33) 3-Chloropropene	6.254	76	4210	0.53	ppb(v	94
34) trans-1,2-Dichloroethene	7.007	61	12935	0.53	ppb(v	99
35) tert-Butyl Alcohol	6.120	59	20009	0.54	ppb(v	96
36) Methyl tert-Butyl Ether	7.288	73	25978	0.55	ppb(v	98
37) Vinyl Acetate	7.368	43	25118	0.56	ppb(v	100
38) 1,1-Dichloroethane	7.202	63	17511	0.55	ppb(v	99
39) 2-Butanone	7.643	72	4517	0.52	ppb(v	98
40) Hexane	8.224	57	14518	0.56	ppb(v#	75

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22157.D
Acq On : 12 Jan 2017 1:02 pm
Operator : danat
Sample : ic881-0.5
Misc : MS11221,v5w881,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 12 15:02:02 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:00:20 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
41) cis-1,2-Dichloroethene	8.041	61	12873	0.53	ppb(v	94
42) Di-isopropyl Ether	8.255	87	7937	0.53	ppb(v	89
43) Ethyl Acetate	8.310	61	2851	0.50	ppb(v	83
44) Methyl Acrylate	8.291	55	16214	0.54	ppb(v	98
45) Chloroform	8.346	83	20482	0.54	ppb(v	98
46) 2,4-Dimethylpentane	9.172	57	17317	0.55	ppb(v	98
47) Tetrahydrofuran	8.836	72	4645	0.53	ppb(v	97
48) 1,1,1-Trichloroethane	9.399	97	19183	0.53	ppb(v	99
49) 1,2-Dichloroethane	9.130	62	11623	0.53	ppb(v	99
50) Benzene	9.913	78	30869	0.54	ppb(v	100
51) Carbon Tetrachloride	10.084	117	17604	0.51	ppb(v	97
52) Cyclohexane	10.200	56	14949	0.55	ppb(v	97
53) 2,3-Dimethylpentane	10.488	71	6557	0.55	ppb(v	93
55) 2,2,4-Trimethylpentane	11.161	57	47197	0.53	ppb(v	99
56) Heptane	11.497	71	9640	0.53	ppb(v	98
57) Trichloroethene	11.148	95	13599	0.53	ppb(v	98
58) 1,2-Dichloropropane	10.861	63	11359	0.53	ppb(v	97
59) Dibromomethane	10.842	174	12342	0.51	ppb(v	98
60) Ethyl Acrylate	10.922	55	21681	0.52	ppb(v	97
61) Methyl Methacrylate	11.436	69	10958	0.53	ppb(v	98
62) 1,4-Dioxane	11.222	88	7197	0.52	ppb(v#	87
63) Bromodichloromethane	11.106	83	20598	0.51	ppb(v	98
64) cis-1,3-Dichloropropene	12.213	75	17622	0.51	ppb(v	96
65) 4-Methyl-2-pentanone	12.286	58	8949	0.51	ppb(v	96
66) trans-1,3-Dichloropropene	12.886	75	14044	0.48	ppb(v	98
67) Toluene	13.436	91	36112	0.53	ppb(v	100
68) 1,1,2-Trichloroethane	13.094	97	12670	0.52	ppb(v	98
69) 1,3-Dichloropropane	13.479	76	15974	0.51	ppb(v	95
70) 2-Hexanone	13.840	58	11799	0.49	ppb(v	97
71) Ethyl Methacrylate	13.859	69	17681	0.52	ppb(v	99
72) Dibromochloromethane	13.987	129	19691	0.48	ppb(v	98
73) Tetrachloroethene	14.929	166	18188	0.53	ppb(v	98
74) 1,2-Dibromoethane	14.299	107	19030	0.50	ppb(v	99
75) Octane	14.764	43	21390	0.52	ppb(v	97
76) 1,1,1,2-Tetrachloroethane	15.853	131	14115	0.49	ppb(v#	34
78) Chlorobenzene	15.871	112	26859	0.52	ppb(v	99
79) Ethylbenzene	16.416	91	44873	0.53	ppb(v	99
80) m,p-Xylene	16.667	91	72206	1.11	ppb(v	99
81) Styrene	17.211	104	25171	0.51	ppb(v	99
82) Nonane	17.737	43	21044	0.54	ppb(v	97
83) o-Xylene	17.358	91	35082	0.53	ppb(v	99
84) Bromoform	16.764	173	17219	0.44	ppb(v	99
85) 1,1,2,2-Tetrachloroethane	17.364	83	26612	0.52	ppb(v	100
86) 1,2,3-Trichloropropane	17.554	75	19529	0.52	ppb(v	98
87) Isopropylbenzene	18.263	105	49008	0.53	ppb(v	99
88) Bromobenzene	18.373	156	14930	0.50	ppb(v	99
89) 2-Chlorotoluene	18.991	126	11382	0.51	ppb(v	96
90) n-Propylbenzene	19.065	120	12451	0.52	ppb(v	87
92) 4-Ethyltoluene	19.291	105	45242	0.53	ppb(v	99
93) 1,3,5-Trimethylbenzene	19.413	105	38738	0.54	ppb(v	98

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22157.D
Acq On : 12 Jan 2017 1:02 pm
Operator : danat
Sample : ic881-0.5
Misc : MS11221,v5w881,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 12 15:02:02 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:00:20 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
94)	alpha-Methylstyrene	19.652	118	18683	0.50	ppb(v	98
95)	tert-Butylbenzene	19.988	134	8343	0.54	ppb(v	93
96)	1,2,4-Trimethylbenzene	20.007	105	36851	0.53	ppb(v	93
97)	1,3-Dichlorobenzene	20.196	146	23221	0.50	ppb(v	98
98)	Benzyl Chloride	20.196	91	24019	0.42	ppb(v	99
99)	1,4-Dichlorobenzene	20.300	146	21932	0.48	ppb(v	99
100)	sec-Butylbenzene	20.380	134	10270	0.54	ppb(v	86
101)	p-Isopropyltoluene	20.619	134	11406	0.54	ppb(v	93
102)	1,2-Dichlorobenzene	20.772	146	21974	0.50	ppb(v	98
103)	n-Butylbenzene	21.194	134	9640	0.51	ppb(v	98
104)	Hexachloroethane	21.665	201	11208	0.43	ppb(v	98
105)	1,2,4-Trichlorobenzene	23.004	180	8441	0.37	ppb(v	99
106)	Naphthalene	23.133	128	20167	0.41	ppb(v	98
107)	Hexachlorobutadiene	23.580	225	15117	0.54	ppb(v	99
109)	TVHC as equiv Pentane	5.783	TIC	59309m	0.55	ppb(v	

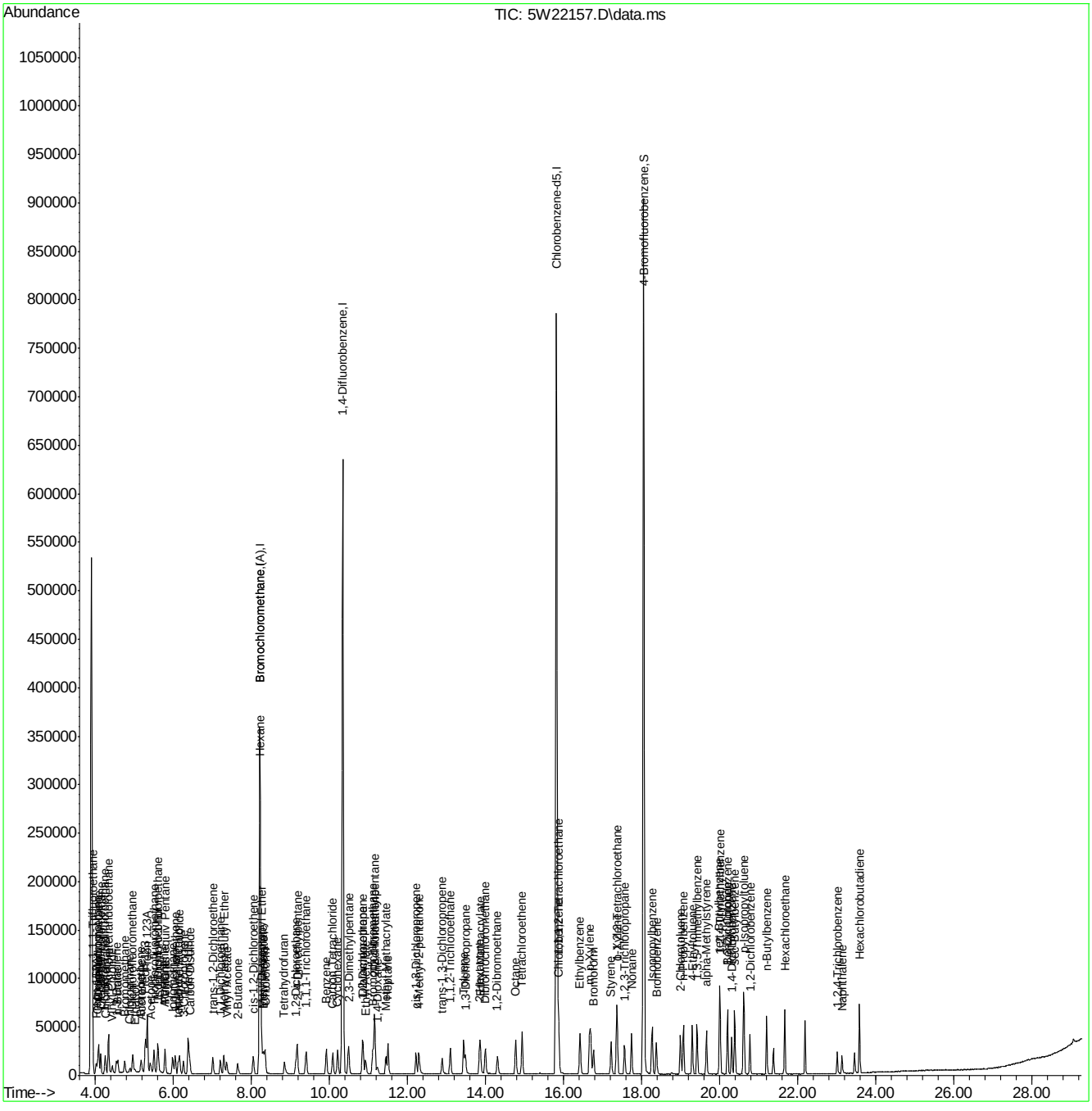
(#) = qualifier out of range (m) = manual integration (+) = signals summed

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22157.D
Acq On : 12 Jan 2017 1:02 pm
Operator : danat
Sample : ic881-0.5
Misc : MS11221,v5w881,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 12 15:02:02 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:00:20 2017
Response via : Initial Calibration



SGS ACCUTEST JC37217

Manual Integration Approval Summary

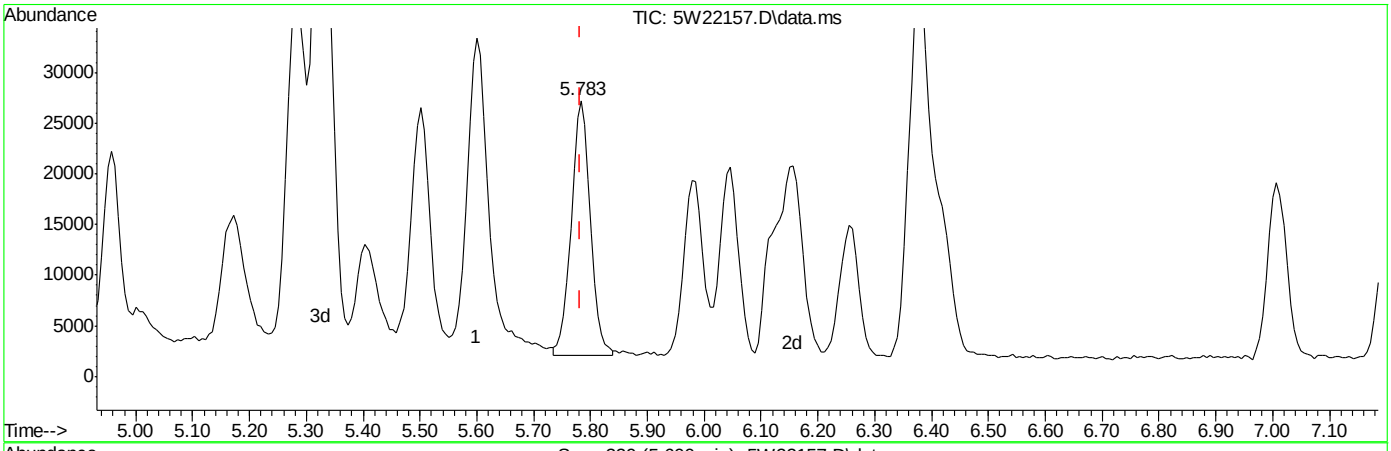
Sample Number:	V5W881-IC881	**Method:**	TO-15
Lab FileID:	5W22157.D	**Analyst approved:**	01/13/17 10:27 Dana Tryon
Injection Time:	01/12/17 13:02	**Supervisor approved:**	01/18/17 12:21 Dana Tryon

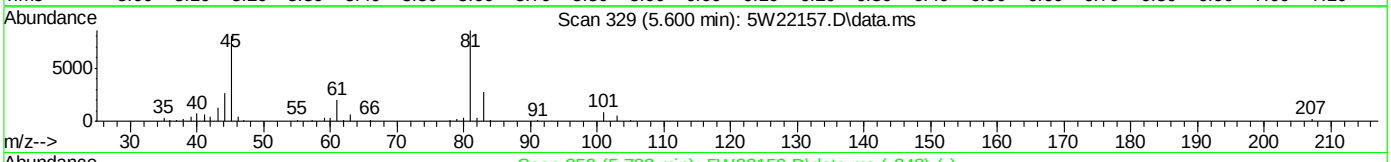
Parameter	CAS	Sig#	R.T. (min.)	Reason
TVHC As Equiv Pentane			5.78	Missed peak

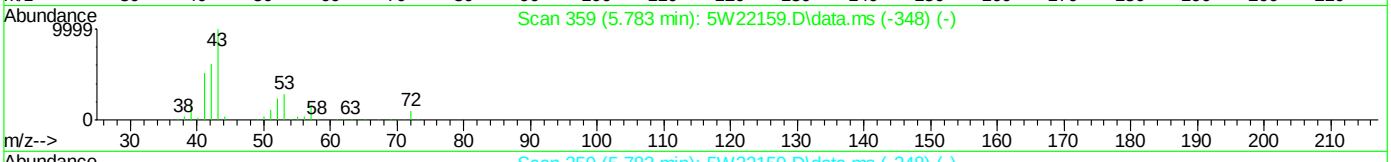
Quantitation Report (Qedit)

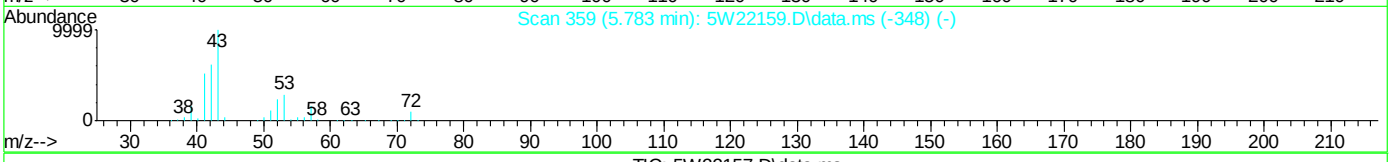
Data Path : C:\msdchem\1\DATA\
Data File : 5W22157.D
Acq On : 12 Jan 2017 1:02 pm
Operator : danat
Sample : ic881-0.5
Misc : MS11221,v5w881,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 12 15:00:31 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:00:20 2017
Response via : Initial Calibration









TIC: 5W22157.D\data.ms

(109) TVHC as equiv Pentane

5.783min (+0.000) 0.55ppb(v) m

response 59309

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22158.D
Acq On : 12 Jan 2017 1:43 pm
Operator : danat
Sample : ic881-5
Misc : MS11221,v5w881,,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 12 14:58:25 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 14:58:10 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	8.224	130	183634	10.00	ppb(v	0.00
54) 1,4-Difluorobenzene	10.347	114	742371	10.00	ppb(v	0.00
77) Chlorobenzene-d5	15.816	82	375886	10.00	ppb(v	0.00
108) Bromochloromethane (A)	8.224	130	183634	10.00	ppb(v	0.00
System Monitoring Compounds						
91) 4-Bromofluorobenzene	18.049	95	497349	9.94	ppb(v	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 99.40%			
Target Compounds						Qvalue
2) 1,1,1-Trifluoroethane	3.942	69	253834	7.79	ppb(v#	88
3) Freon 152A	4.027	65	58743	4.86	ppb(v	100
4) Chlorodifluoromethane	4.064	67	22041	4.78	ppb(v	98
5) Propene	4.088	41	66032	4.88	ppb(v	98
6) Chlorotrifluoroethene	4.095	116	119820	4.82	ppb(v#	90
7) Dichlorodifluoromethane	4.143	85	232914	4.89	ppb(v	99
8) 1-Chloro-1,1-difluoroe...	4.254	65	161057	4.82	ppb(v	99
9) Chloromethane	4.272	50	85440	4.83	ppb(v	99
10) Dichlorotetrafluoroethane	4.345	85	257479	4.85	ppb(v	98
11) Vinyl Chloride	4.443	62	98295	4.84	ppb(v	99
12) 1,3-Butadiene	4.547	54	69472	4.88	ppb(v	99
13) n-Butane	4.584	58	15746	4.94	ppb(v	98
14) Bromomethane	4.761	94	98236	4.81	ppb(v	99
15) Chloroethane	4.896	64	48804	4.84	ppb(v	100
16) Dichlorofluoromethane	4.969	67	219289	4.86	ppb(v	100
17) Acetonitrile	5.190	41	73356	4.83	ppb(v	98
18) Freon 123	5.294	83	250086	4.87	ppb(v	100
19) Freon 123A	5.343	117	257073	9.75	ppb(v	99
20) Bromoethene	5.177	106	95576	4.84	ppb(v	99
21) Trichlorofluoromethane	5.514	101	230457	4.90	ppb(v	100
22) Acetone	5.398	58	43756	4.91	ppb(v	96
23) Pentane	5.795	57	24768	4.85	ppb(v	96
24) 1,1-Dichloro-1-fluoroe...	5.612	81	197356	4.87	ppb(v	100
25) Iodomethane	5.991	142	260959	4.83	ppb(v	99
26) Isopropyl Alcohol	5.606	43	28733	4.90	ppb(v	90
27) 1,1-Dichloroethene	6.052	61	150583	4.88	ppb(v	99
28) Freon 113	6.389	101	206998	4.84	ppb(v	99
29) Methylene Chloride	6.168	84	88130	4.85	ppb(v	99
30) Carbon Disulfide	6.425	76	273111	4.84	ppb(v	100
31) Ethanol	5.012	45	41001	4.82	ppb(v	98
32) Acrylonitrile	5.783	53	73127	4.77	ppb(v	97
33) 3-Chloropropene	6.266	76	43563	4.85	ppb(v	98
34) trans-1,2-Dichloroethene	7.019	61	135016	4.82	ppb(v	99
35) tert-Butyl Alcohol	6.119	59	202284	4.79	ppb(v	100
36) Methyl tert-Butyl Ether	7.282	73	262698	4.88	ppb(v	100
37) Vinyl Acetate	7.367	43	245218	4.81	ppb(v	99
38) 1,1-Dichloroethane	7.215	63	176945	4.87	ppb(v	99
39) 2-Butanone	7.631	72	47333	4.85	ppb(v	96
40) Hexane	8.236	57	143270	4.86	ppb(v	88

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22158.D
Acq On : 12 Jan 2017 1:43 pm
Operator : danat
Sample : ic881-5
Misc : MS11221,v5w881,,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 12 14:58:25 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 14:58:10 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
41) cis-1,2-Dichloroethene	8.053	61	132460	4.84	ppb(v	99
42) Di-isopropyl Ether	8.261	87	81764	4.79	ppb(v	100
43) Ethyl Acetate	8.310	61	31233	4.75	ppb(v	94
44) Methyl Acrylate	8.291	55	165302	4.79	ppb(v	100
45) Chloroform	8.359	83	206752	4.84	ppb(v	100
46) 2,4-Dimethylpentane	9.178	57	174445	4.88	ppb(v	99
47) Tetrahydrofuran	8.817	72	48671	4.87	ppb(v	99
48) 1,1,1-Trichloroethane	9.405	97	198141	4.83	ppb(v	99
49) 1,2-Dichloroethane	9.142	62	119924	4.81	ppb(v	99
50) Benzene	9.925	78	313709	4.86	ppb(v	99
51) Carbon Tetrachloride	10.090	117	187867	4.77	ppb(v	99
52) Cyclohexane	10.212	56	148569	4.87	ppb(v	100
53) 2,3-Dimethylpentane	10.494	71	65875	4.86	ppb(v	99
55) 2,2,4-Trimethylpentane	11.167	57	481532	4.92	ppb(v	100
56) Heptane	11.503	71	99169	4.95	ppb(v	99
57) Trichloroethene	11.154	95	140316	4.86	ppb(v	99
58) 1,2-Dichloropropane	10.867	63	115810	4.88	ppb(v	99
59) Dibromomethane	10.848	174	129582	4.80	ppb(v	99
60) Ethyl Acrylate	10.916	55	222295	4.76	ppb(v	100
61) Methyl Methacrylate	11.436	69	111683	4.81	ppb(v	99
62) 1,4-Dioxane	11.197	88	74038	4.81	ppb(v	99
63) Bromodichloromethane	11.112	83	217490	4.81	ppb(v	100
64) cis-1,3-Dichloropropene	12.219	75	186226	4.75	ppb(v	99
65) 4-Methyl-2-pentanone	12.280	58	93577	4.77	ppb(v	98
66) trans-1,3-Dichloropropene	12.886	75	155597	4.73	ppb(v	100
67) Toluene	13.436	91	371526	4.87	ppb(v	99
68) 1,1,2-Trichloroethane	13.094	97	131051	4.82	ppb(v	99
69) 1,3-Dichloropropane	13.485	76	168128	4.84	ppb(v	99
70) 2-Hexanone	13.828	58	129905	4.81	ppb(v	99
71) Ethyl Methacrylate	13.858	69	184618	4.84	ppb(v	99
72) Dibromochloromethane	13.993	129	222681	4.78	ppb(v	99
73) Tetrachloroethene	14.935	166	186461	4.83	ppb(v	99
74) 1,2-Dibromoethane	14.305	107	204933	4.79	ppb(v	100
75) Octane	14.770	43	221920	4.75	ppb(v	99
76) 1,1,1,2-Tetrachloroethane	15.853	131	153835	4.80	ppb(v	92
78) Chlorobenzene	15.877	112	280767	4.93	ppb(v	100
79) Ethylbenzene	16.416	91	463595	4.92	ppb(v	100
80) m,p-Xylene	16.691	91	712618	9.82	ppb(v	100
81) Styrene	17.211	104	268961	4.81	ppb(v	99
82) Nonane	17.737	43	209444	4.70	ppb(v	99
83) o-Xylene	17.358	91	359246	4.92	ppb(v	100
84) Bromoform	16.764	173	210618	4.73	ppb(v	99
85) 1,1,2,2-Tetrachloroethane	17.364	83	281863	4.92	ppb(v	100
86) 1,2,3-Trichloropropane	17.553	75	204207	4.89	ppb(v	99
87) Isopropylbenzene	18.263	105	505480	4.89	ppb(v	100
88) Bromobenzene	18.373	156	160821	4.80	ppb(v	99
89) 2-Chlorotoluene	18.991	126	121358	4.78	ppb(v	98
90) n-Propylbenzene	19.065	120	130902	4.85	ppb(v	99
92) 4-Ethyltoluene	19.291	105	471608	4.97	ppb(v	99
93) 1,3,5-Trimethylbenzene	19.413	105	392787	4.90	ppb(v	99

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22158.D
Acq On : 12 Jan 2017 1:43 pm
Operator : danat
Sample : ic881-5
Misc : MS11221,v5w881,,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 12 14:58:25 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 14:58:10 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
94)	alpha-Methylstyrene	19.652	118	201754	4.79	ppb(v	99
95)	tert-Butylbenzene	19.994	134	83562	4.80	ppb(v	98
96)	1,2,4-Trimethylbenzene	20.007	105	380122	4.84	ppb(v	97
97)	1,3-Dichlorobenzene	20.196	146	248776	4.76	ppb(v	100
98)	Benzyl Chloride	20.190	91	304058	4.71	ppb(v	99
99)	1,4-Dichlorobenzene	20.300	146	242141	4.68	ppb(v	99
100)	sec-Butylbenzene	20.386	134	101641	4.75	ppb(v	96
101)	p-Isopropyltoluene	20.618	134	114756	4.79	ppb(v	99
102)	1,2-Dichlorobenzene	20.765	146	236056	4.73	ppb(v	98
103)	n-Butylbenzene	21.194	134	101968	4.70	ppb(v	99
104)	Hexachloroethane	21.665	201	135891	4.49	ppb(v	99
105)	1,2,4-Trichlorobenzene	22.998	180	115891	4.19	ppb(v	99
106)	Naphthalene	23.127	128	245138	4.18	ppb(v	100
107)	Hexachlorobutadiene	23.579	225	147774	4.58	ppb(v	99
109)	TVHC as equiv Pentane	5.795	TIC	584237	4.76	ppb(v	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.7.5

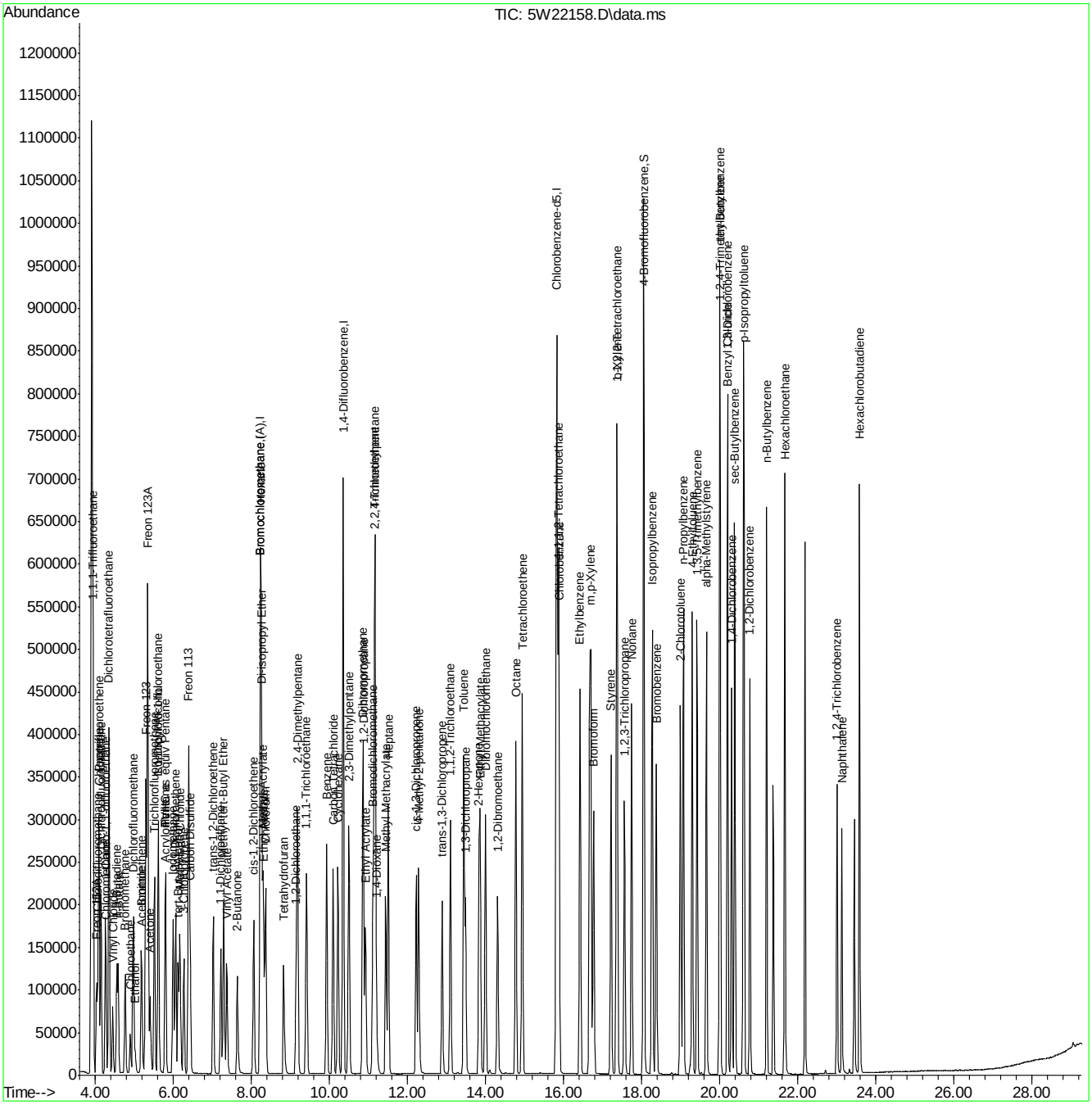
7

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22158.D
Acq On : 12 Jan 2017 1:43 pm
Operator : danat
Sample : ic881-5
Misc : MS11221,v5w881,,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 12 14:58:25 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 14:58:10 2017
Response via : Initial Calibration



SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22159.D
Acq On : 12 Jan 2017 2:26 pm
Operator : danat
Sample : icc881-10
Misc : MS11221,v5w881,,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 12 14:56:21 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Mon Dec 19 15:31:29 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	8.218	130	172044	10.00	ppb(v	-0.01
54) 1,4-Difluorobenzene	10.341	114	695340	10.00	ppb(v	-0.01
77) Chlorobenzene-d5	15.816	82	362126	10.00	ppb(v	-0.01
108) Bromochloromethane (A)	8.218	130	172044	10.00	ppb(v	-0.01
System Monitoring Compounds						
91) 4-Bromofluorobenzene	18.049	95	482039	10.20	ppb(v	-0.01
Spiked Amount 10.000	Range 65 - 128		Recovery = 102.00%			
Target Compounds						Qvalue
3) Freon 152A	4.021	65	113286	11.03	ppb(v	97
4) Chlorodifluoromethane	4.058	67	43175	12.23	ppb(v	99
5) Propene	4.082	41	126728	13.06	ppb(v	99
6) Chlorotrifluoroethene	4.088	116	232758	10.63	ppb(v#	89
7) Dichlorodifluoromethane	4.137	85	446553	10.89	ppb(v	99
9) Chloromethane	4.266	50	165629	12.42	ppb(v	100
10) Dichlorotetrafluoroethane	4.339	85	497458	11.09	ppb(v	98
11) Vinyl Chloride	4.431	62	190206	11.90	ppb(v	100
12) 1,3-Butadiene	4.535	54	133313	12.55	ppb(v	95
13) n-Butane	4.578	58	29887	13.51	ppb(v	90
14) Bromomethane	4.755	94	191301	10.33	ppb(v	99
15) Chloroethane	4.884	64	94417	12.14	ppb(v	98
16) Dichlorofluoromethane	4.957	67	422682	11.43	ppb(v	99
17) Acetonitrile	5.171	41	142222	11.71	ppb(v	97
18) Freon 123	5.281	83	480721	11.03	ppb(v	99
19) Freon 123A	5.330	117	494164	20.30	ppb(v	94
20) Bromoethene	5.165	106	185142	10.78	ppb(v	99
21) Trichlorofluoromethane	5.502	101	440539	10.46	ppb(v	100
22) Acetone	5.379	58	83464	10.27	ppb(v	87
23) Pentane	5.783	57	47823	12.87	ppb(v	90
25) Iodomethane	5.985	142	506530	9.95	ppb(v	98
26) Isopropyl Alcohol	5.587	43	54971	1.95	ppb(v#	1
27) 1,1-Dichloroethene	6.046	61	289294	11.48	ppb(v	98
28) Freon 113	6.376	101	400565	10.57	ppb(v	96
29) Methylene Chloride	6.156	84	170316	9.54	ppb(v	93
30) Carbon Disulfide	6.419	76	528577	11.36	ppb(v	100
31) Ethanol	4.994	45	79757	11.29	ppb(v	98
32) Acrylonitrile	5.765	53	143709	13.44	ppb(v	98
33) 3-Chloropropene	6.254	76	84156	12.11	ppb(v	85
34) trans-1,2-Dichloroethene	7.007	61	262399	11.86	ppb(v	96
35) tert-Butyl Alcohol	6.095	59	395497	12.93	ppb(v	98
36) Methyl tert-Butyl Ether	7.270	73	504366	11.27	ppb(v	97
37) Vinyl Acetate	7.355	43	477835	13.36	ppb(v	96
38) 1,1-Dichloroethane	7.202	63	340195	11.26	ppb(v	98
39) 2-Butanone	7.612	72	91375	11.77	ppb(v	83
40) Hexane	8.230	57	275917	11.61	ppb(v#	81
41) cis-1,2-Dichloroethene	8.047	61	256398	11.65	ppb(v	97
42) Di-isopropyl Ether	8.248	87	159977	11.61	ppb(v	78
43) Ethyl Acetate	8.297	61	61545	12.90	ppb(v	92

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22159.D
Acq On : 12 Jan 2017 2:26 pm
Operator : danat
Sample : icc881-10
Misc : MS11221,v5w881,,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 12 14:56:21 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Mon Dec 19 15:31:29 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) Methyl Acrylate	8.279	55	323350	12.76	ppb(v	97
45) Chloroform	8.352	83	400326	10.89	ppb(v	99
46) 2,4-Dimethylpentane	9.172	57	334753	11.82	ppb(v	98
47) Tetrahydrofuran	8.799	72	93650	11.84	ppb(v	89
48) 1,1,1-Trichloroethane	9.399	97	384450	10.75	ppb(v	99
49) 1,2-Dichloroethane	9.129	62	233505	11.23	ppb(v	99
50) Benzene	9.919	78	605131	11.13	ppb(v	98
51) Carbon Tetrachloride	10.084	117	369299	10.39	ppb(v	99
52) Cyclohexane	10.206	56	286042	11.95	ppb(v	95
53) 2,3-Dimethylpentane	10.488	71	127111	11.72	ppb(v	91
55) 2,2,4-Trimethylpentane	11.161	57	917604	11.46	ppb(v	98
56) Heptane	11.497	71	187669	11.04	ppb(v	96
57) Trichloroethene	11.148	95	270247	10.31	ppb(v	94
58) 1,2-Dichloropropane	10.861	63	222224	10.96	ppb(v	98
59) Dibromomethane	10.842	174	252809	9.30	ppb(v	95
60) Ethyl Acrylate	10.910	55	437880	12.71	ppb(v	98
61) Methyl Methacrylate	11.430	69	217258	12.03	ppb(v	92
62) 1,4-Dioxane	11.191	88	144184	10.81	ppb(v#	88
63) Bromodichloromethane	11.105	83	423169	10.47	ppb(v	98
64) cis-1,3-Dichloropropene	12.213	75	367083	11.06	ppb(v	99
65) 4-Methyl-2-pentanone	12.274	58	183653	12.30	ppb(v	94
66) trans-1,3-Dichloropropene	12.880	75	307861	11.55	ppb(v	98
67) Toluene	13.436	91	714161	10.43	ppb(v	99
68) 1,1,2-Trichloroethane	13.088	97	254884	10.63	ppb(v	98
69) 1,3-Dichloropropane	13.479	76	325583	10.70	ppb(v	94
70) 2-Hexanone	13.822	58	252756	12.64	ppb(v	93
71) Ethyl Methacrylate	13.852	69	357529	12.49	ppb(v	97
72) Dibromochloromethane	13.993	129	436048	9.91	ppb(v	99
73) Tetrachloroethene	14.935	166	361962	9.20	ppb(v	99
74) 1,2-Dibromoethane	14.299	107	401111	10.35	ppb(v	100
75) Octane	14.770	43	437342	12.68	ppb(v	93
76) 1,1,1,2-Tetrachloroethane	15.853	131	300446	9.99	ppb(v	97
78) Chlorobenzene	15.871	112	548938	8.96	ppb(v	94
79) Ethylbenzene	16.416	91	908648	9.84	ppb(v	99
80) m,p-Xylene	16.685	91	1397993	19.35	ppb(v	98
81) Styrene	17.205	104	538366	10.08	ppb(v	98
82) Nonane	17.737	43	429759	11.37	ppb(v	95
83) o-Xylene	17.358	91	704004	9.72	ppb(v	97
84) Bromoform	16.764	173	428572	9.45	ppb(v	99
85) 1,1,2,2-Tetrachloroethane	17.364	83	551579	9.90	ppb(v	100
86) 1,2,3-Trichloropropane	17.554	75	402678	9.55	ppb(v	97
87) Isopropylbenzene	18.263	105	995269	9.56	ppb(v	98
88) Bromobenzene	18.373	156	322592	9.08	ppb(v	90
89) 2-Chlorotoluene	18.991	126	244513	9.44	ppb(v	92
90) n-Propylbenzene	19.065	120	260198	9.63	ppb(v	91
92) 4-Ethyltoluene	19.291	105	914264	9.54	ppb(v	99
93) 1,3,5-Trimethylbenzene	19.413	105	772264	9.47	ppb(v	98
94) alpha-Methylstyrene	19.652	118	406096	9.96	ppb(v	98
95) tert-Butylbenzene	19.994	134	167754	9.30	ppb(v	93
96) 1,2,4-Trimethylbenzene	20.007	105	756352	9.78	ppb(v	99

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22159.D
Acq On : 12 Jan 2017 2:26 pm
Operator : danat
Sample : icc881-10
Misc : MS11221,v5w881,,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 12 14:56:21 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Mon Dec 19 15:31:29 2016
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
97)	1,3-Dichlorobenzene	20.196	146	503527	8.99	ppb(v	98
98)	Benzyl Chloride	20.190	91	622405	12.09	ppb(v	98
99)	1,4-Dichlorobenzene	20.300	146	498346	8.82	ppb(v	98
100)	sec-Butylbenzene	20.386	134	206321	9.10	ppb(v	91
101)	p-Isopropyltoluene	20.618	134	230715	9.12	ppb(v	96
102)	1,2-Dichlorobenzene	20.771	146	480905	8.93	ppb(v	99
103)	n-Butylbenzene	21.194	134	208911	9.48	ppb(v	81
104)	Hexachloroethane	21.665	201	291606	10.48	ppb(v	99
105)	1,2,4-Trichlorobenzene	22.998	180	266641	9.73	ppb(v	98
106)	Naphthalene	23.127	128	564384	9.33	ppb(v	100
107)	Hexachlorobutadiene	23.579	225	310948	7.79	ppb(v	99
109)	TVHC as equiv Pentane	5.783	TIC	1148852	12.92	ppb(v	100

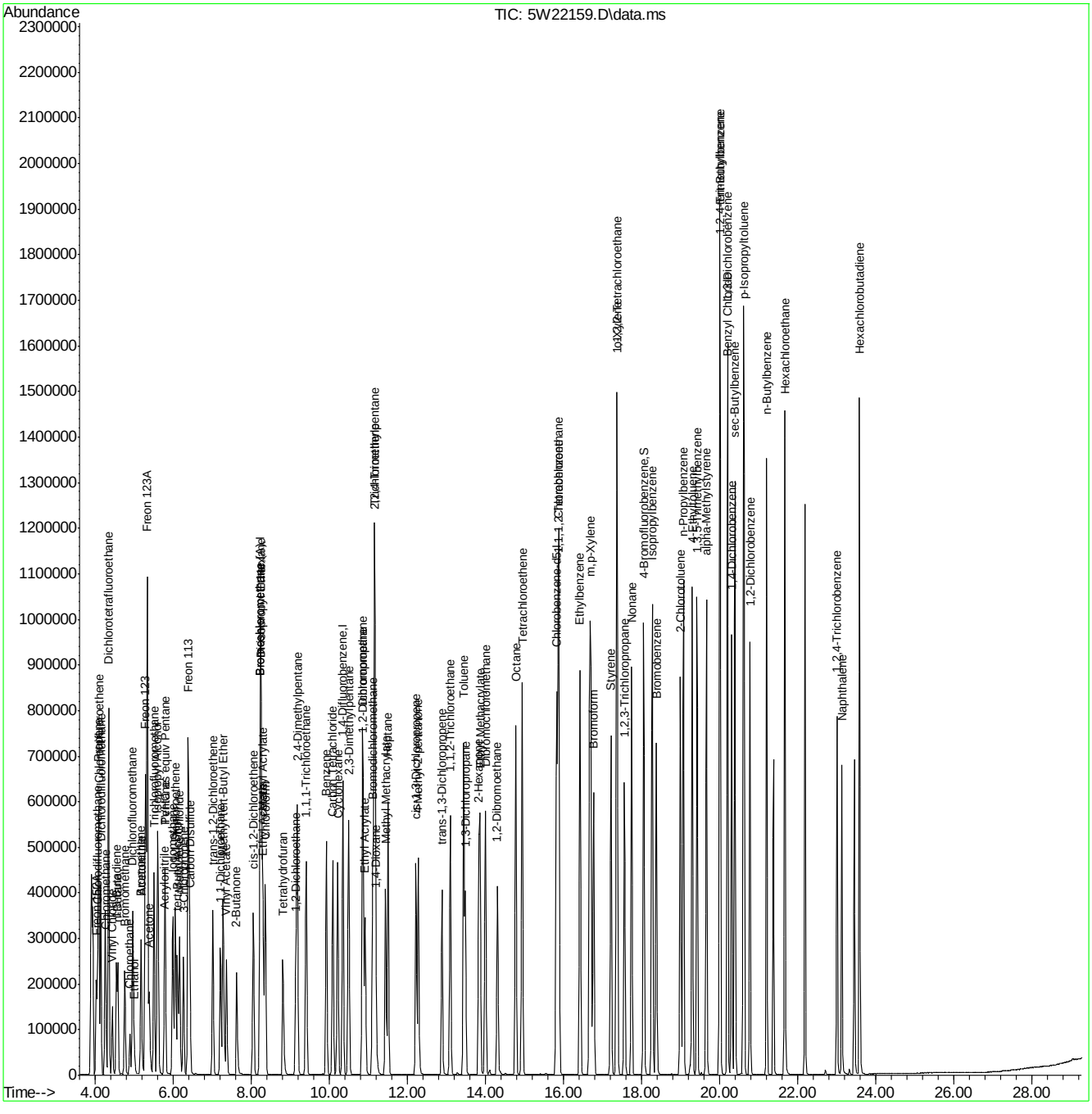
(#) = qualifier out of range (m) = manual integration (+) = signals summed

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22159.D
Acq On : 12 Jan 2017 2:26 pm
Operator : danat
Sample : icc881-10
Misc : MS11221,v5w881,,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jan 12 14:56:21 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Mon Dec 19 15:31:29 2016
Response via : Initial Calibration



SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22160.D
Acq On : 12 Jan 2017 3:11 pm
Operator : danat
Sample : ic881-20
Misc : MS11221,v5w881,,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 12 15:40:54 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:11:16 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	8.218	130	144713	10.00	ppb(v	0.00
54) 1,4-Difluorobenzene	10.341	114	590604	10.00	ppb(v	0.00
77) Chlorobenzene-d5	15.816	82	344318	10.00	ppb(v	0.00
108) Bromochloromethane (A)	8.218	130	144713	10.00	ppb(v	0.00
System Monitoring Compounds						
91) 4-Bromofluorobenzene	18.049	95	454494	9.95	ppb(v	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 99.50%			
Target Compounds						Qvalue
2) 1,1,1-Trifluoroethane	3.929	69	673234	17.69	ppb(v	94
3) Freon 152A	4.021	65	222899	22.76	ppb(v	99
4) Chlorodifluoromethane	4.058	67	84325	22.90	ppb(v	99
5) Propene	4.076	41	244010	20.64	ppb(v	99
6) Chlorotrifluoroethene	4.082	116	458098	23.60	ppb(v	100
7) Dichlorodifluoromethane	4.137	85	882175	22.97	ppb(v	99
8) 1-Chloro-1,1-difluoroe...	4.247	65	611231	22.75	ppb(v	100
9) Chloromethane	4.266	50	322781	22.12	ppb(v	100
10) Dichlorotetrafluoroethane	4.339	85	964963	22.27	ppb(v	99
11) Vinyl Chloride	4.431	62	374091	23.52	ppb(v	99
12) 1,3-Butadiene	4.535	54	263565	22.45	ppb(v	99
13) n-Butane	4.572	58	58281	22.16	ppb(v	99
14) Bromomethane	4.749	94	373927	21.69	ppb(v	100
15) Chloroethane	4.884	64	182963	22.93	ppb(v	99
16) Dichlorofluoromethane	4.957	67	820289	21.63	ppb(v	100
17) Acetonitrile	5.171	41	276923	22.80	ppb(v	99
18) Freon 123	5.281	83	930613	21.36	ppb(v	99
19) Freon 123A	5.330	117	957443	44.64	ppb(v	97
20) Bromoethene	5.165	106	364520	23.96	ppb(v	99
21) Trichlorofluoromethane	5.502	101	867075	23.47	ppb(v	100
22) Acetone	5.379	58	162957	21.01	ppb(v	97
23) Pentane	5.783	57	92338	19.56	ppb(v	99
24) 1,1-Dichloro-1-fluoroe...	5.599	81	738921	21.96	ppb(v	100
25) Iodomethane	5.985	142	996130	23.38	ppb(v	100
26) Isopropyl Alcohol	5.587	43	106618	20.12	ppb(v	99
27) 1,1-Dichloroethene	6.046	61	564169	23.26	ppb(v	99
28) Freon 113	6.376	101	783959	23.37	ppb(v	99
29) Methylene Chloride	6.156	84	335740	21.08	ppb(v	99
30) Carbon Disulfide	6.419	76	1037017	23.94	ppb(v	100
31) Ethanol	4.994	45	150371	19.99	ppb(v	98
32) Acrylonitrile	5.765	53	283245	25.83	ppb(v	99
33) 3-Chloropropene	6.254	76	165751	24.21	ppb(v	100
34) trans-1,2-Dichloroethene	7.007	61	517754	24.28	ppb(v	100
35) tert-Butyl Alcohol	6.101	59	775726	23.77	ppb(v	99
36) Methyl tert-Butyl Ether	7.264	73	991253	23.05	ppb(v	100
37) Vinyl Acetate	7.361	43	948032	23.81	ppb(v	99
38) 1,1-Dichloroethane	7.208	63	670869	23.18	ppb(v	99
39) 2-Butanone	7.612	72	182668	26.25	ppb(v	98
40) Hexane	8.230	57	531784	20.37	ppb(v	97

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22160.D
Acq On : 12 Jan 2017 3:11 pm
Operator : danat
Sample : ic881-20
Misc : MS11221,v5w881,,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 12 15:40:54 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:11:16 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
41)	cis-1,2-Dichloroethene	8.047	61	506993	24.01	ppb(v	100
42)	Di-isopropyl Ether	8.248	87	310909	24.56	ppb(v	97
43)	Ethyl Acetate	8.297	61	118484	24.79	ppb(v	96
44)	Methyl Acrylate	8.285	55	628058	22.54	ppb(v	99
45)	Chloroform	8.352	83	785513	22.70	ppb(v	99
46)	2,4-Dimethylpentane	9.172	57	655381	21.24	ppb(v	99
47)	Tetrahydrofuran	8.799	72	186656	24.59	ppb(v	97
48)	1,1,1-Trichloroethane	9.399	97	757140	23.27	ppb(v	100
49)	1,2-Dichloroethane	9.136	62	459851	24.21	ppb(v	99
50)	Benzene	9.919	78	1189591	22.73	ppb(v	100
51)	Carbon Tetrachloride	10.084	117	749033	25.40	ppb(v	100
52)	Cyclohexane	10.206	56	564843	21.93	ppb(v	100
53)	2,3-Dimethylpentane	10.488	71	248938	20.66	ppb(v	100
55)	2,2,4-Trimethylpentane	11.167	57	1755221	22.00	ppb(v	100
56)	Heptane	11.503	71	368046	21.68	ppb(v	99
57)	Trichloroethene	11.148	95	529560	23.29	ppb(v	99
58)	1,2-Dichloropropane	10.861	63	435653	22.64	ppb(v	99
59)	Dibromomethane	10.849	174	505717	24.45	ppb(v	98
60)	Ethyl Acrylate	10.916	55	862749	23.05	ppb(v	99
61)	Methyl Methacrylate	11.430	69	432281	23.06	ppb(v	99
62)	1,4-Dioxane	11.191	88	281174	24.60	ppb(v	96
63)	Bromodichloromethane	11.112	83	845237	23.93	ppb(v	100
64)	cis-1,3-Dichloropropene	12.213	75	734471	25.19	ppb(v	100
65)	4-Methyl-2-pentanone	12.274	58	364707	25.24	ppb(v	99
66)	trans-1,3-Dichloropropene	12.886	75	618780	27.28	ppb(v	100
67)	Toluene	13.436	91	1411047	22.56	ppb(v	100
68)	1,1,2-Trichloroethane	13.094	97	505086	23.95	ppb(v	100
69)	1,3-Dichloropropane	13.485	76	641841	24.52	ppb(v	100
70)	2-Hexanone	13.828	58	502446	26.21	ppb(v	98
71)	Ethyl Methacrylate	13.858	69	705025	23.18	ppb(v	99
72)	Dibromochloromethane	13.993	129	885844	26.34	ppb(v	100
73)	Tetrachloroethene	14.935	166	720022	23.90	ppb(v	99
74)	1,2-Dibromoethane	14.305	107	798359	25.35	ppb(v	99
75)	Octane	14.770	43	836659	22.67	ppb(v	99
76)	1,1,1,2-Tetrachloroethane	15.859	131	608799	25.67	ppb(v	97
78)	Chlorobenzene	15.877	112	1092991	20.30	ppb(v	100
79)	Ethylbenzene	16.416	91	1793028	19.62	ppb(v	99
80)	m,p-Xylene	16.691	91	2714365	37.30	ppb(v	99
81)	Styrene	17.211	104	1067454	21.33	ppb(v	99
82)	Nonane	17.743	43	824616	18.35	ppb(v	99
83)	o-Xylene	17.358	91	1370992	19.17	ppb(v	99
84)	Bromoform	16.770	173	881682	24.81	ppb(v	99
85)	1,1,2,2-Tetrachloroethane	17.370	83	1078574	19.98	ppb(v	100
86)	1,2,3-Trichloropropane	17.560	75	804240	20.80	ppb(v	99
87)	Isopropylbenzene	18.263	105	1942881	19.99	ppb(v	99
88)	Bromobenzene	18.373	156	644325	21.83	ppb(v	99
89)	2-Chlorotoluene	18.991	126	485397	21.36	ppb(v	99
90)	n-Propylbenzene	19.065	120	519516	21.59	ppb(v	99
92)	4-Ethyltoluene	19.297	105	1822187	20.10	ppb(v	100
93)	1,3,5-Trimethylbenzene	19.419	105	1536243	19.76	ppb(v	100

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22160.D
Acq On : 12 Jan 2017 3:11 pm
Operator : danat
Sample : ic881-20
Misc : MS11221,v5w881,,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 12 15:40:54 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:11:16 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
94)	alpha-Methylstyrene	19.658	118	799217	21.17	ppb(v	100
95)	tert-Butylbenzene	19.994	134	328144	20.30	ppb(v	96
96)	1,2,4-Trimethylbenzene	20.013	105	1458107	19.68	ppb(v	93
97)	1,3-Dichlorobenzene	20.202	146	996663	21.39	ppb(v	99
98)	Benzyl Chloride	20.196	91	1247330	23.44	ppb(v	99
99)	1,4-Dichlorobenzene	20.300	146	1001756	21.92	ppb(v	99
100)	sec-Butylbenzene	20.386	134	409928	20.49	ppb(v	98
101)	p-Isopropyltoluene	20.625	134	454388	20.61	ppb(v	94
102)	1,2-Dichlorobenzene	20.771	146	963816	21.79	ppb(v	99
103)	n-Butylbenzene	21.200	134	421601	22.74	ppb(v	90
104)	Hexachloroethane	21.665	201	600995	26.20	ppb(v	98
105)	1,2,4-Trichlorobenzene	23.004	180	556142	27.74	ppb(v	99
106)	Naphthalene	23.127	128	1161091	26.09	ppb(v	100
107)	Hexachlorobutadiene	23.579	225	619353	20.53	ppb(v	100
109)	TVHC as equiv Pentane	5.783	TIC	2234395	22.25	ppb(v	100

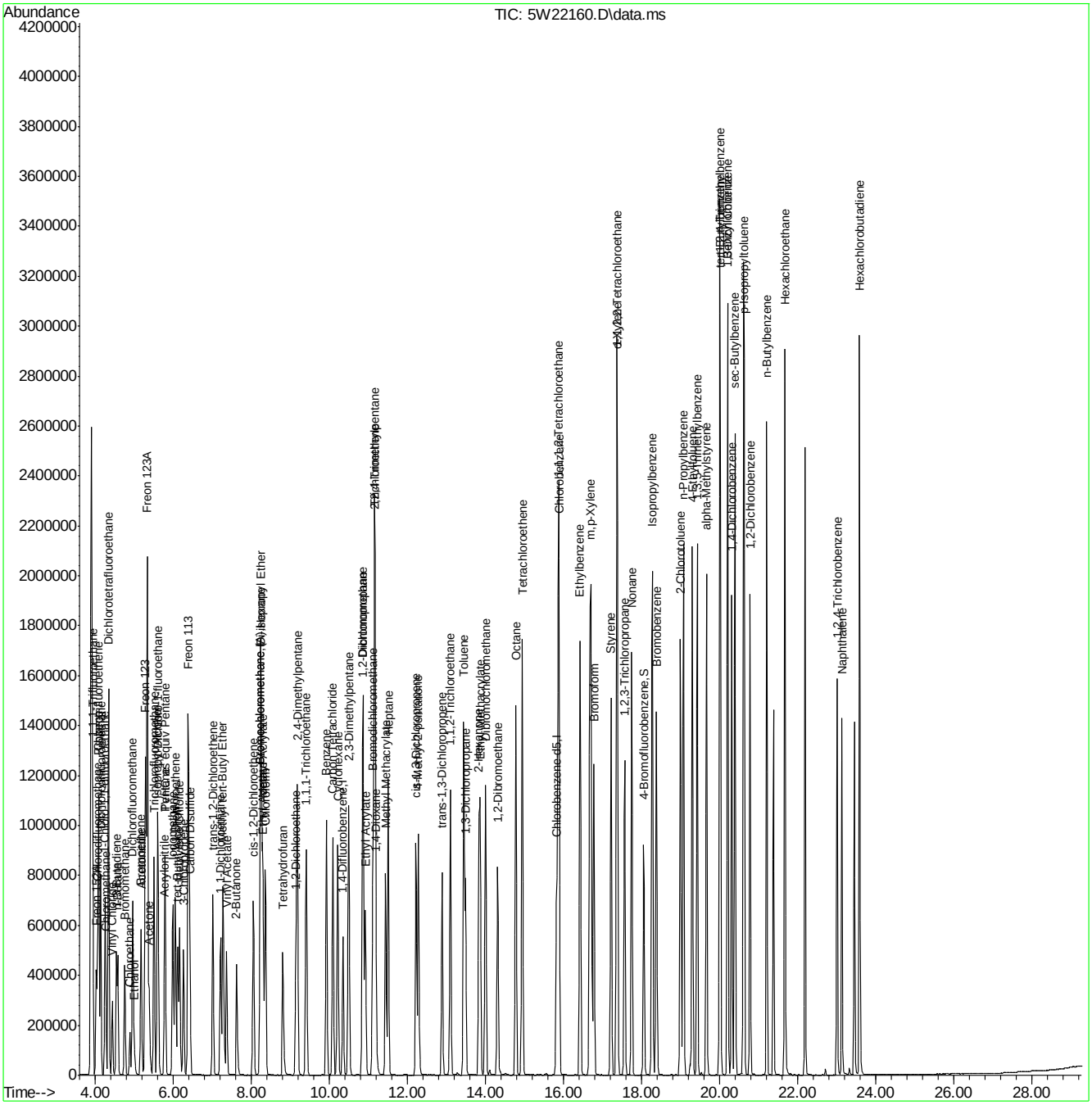
(#) = qualifier out of range (m) = manual integration (+) = signals summed

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22160.D
Acq On : 12 Jan 2017 3:11 pm
Operator : danat
Sample : ic881-20
Misc : MS11221,v5w881,,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 12 15:40:54 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:11:16 2017
Response via : Initial Calibration



SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22161.D
Acq On : 12 Jan 2017 3:56 pm
Operator : danat
Sample : ic881-40
Misc : MS11221,v5w881,,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 12 16:50:00 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:42:33 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	8.224	130	162077	10.00	ppb(v	0.00
54) 1,4-Difluorobenzene	10.347	114	674964	10.00	ppb(v	0.00
77) Chlorobenzene-d5	15.822	82	392221	10.00	ppb(v	0.00
108) Bromochloromethane (A)	8.224	130	162077	10.00	ppb(v	0.00
System Monitoring Compounds						
91) 4-Bromofluorobenzene	18.055	95	470124	9.04	ppb(v	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 90.40%			
Target Compounds						Qvalue
3) Freon 152A	4.021	65	441978	39.51	ppb(v	98
4) Chlorodifluoromethane	4.058	67	166512	39.55	ppb(v	100
5) Propene	4.076	41	468661	35.24	ppb(v	100
6) Chlorotrifluoroethene	4.088	116	901167	40.41	ppb(v	100
7) Dichlorodifluoromethane	4.137	85	1696829	38.62	ppb(v	99
8) 1-Chloro-1,1-difluoroe...	4.247	65	1155345	37.66	ppb(v	100
9) Chloromethane	4.266	50	610618	36.80	ppb(v	100
10) Dichlorotetrafluoroethane	4.339	85	1818761	36.88	ppb(v	98
11) Vinyl Chloride	4.437	62	725613	39.73	ppb(v	99
12) 1,3-Butadiene	4.535	54	504901	37.74	ppb(v	98
13) n-Butane	4.578	58	112344	37.56	ppb(v	92
14) Bromomethane	4.755	94	736400	37.68	ppb(v	100
15) Chloroethane	4.890	64	362189	39.70	ppb(v	99
16) Dichlorofluoromethane	4.957	67	1585192	36.89	ppb(v	100
17) Acetonitrile	5.177	41	534204	38.38	ppb(v	99
18) Freon 123	5.287	83	1754304	35.61	ppb(v	98
19) Freon 123A	5.330	117	1803530	73.86	ppb(v	94
20) Bromoethene	5.165	106	718434	41.00	ppb(v	100
21) Trichlorofluoromethane	5.502	101	1665958	39.29	ppb(v	100
22) Acetone	5.379	58	318377	36.34	ppb(v	95
23) Pentane	5.789	57	177977	33.78	ppb(v	98
24) 1,1-Dichloro-1-fluoroe...	5.599	81	1417539	37.09	ppb(v	100
25) Iodomethane	5.985	142	1946351	39.83	ppb(v	98
26) Isopropyl Alcohol	5.599	43	201764	33.96	ppb(v	87
27) 1,1-Dichloroethene	6.046	61	1091521	39.27	ppb(v	99
28) Freon 113	6.376	101	1521471	39.55	ppb(v	99
29) Methylene Chloride	6.162	84	658070	36.56	ppb(v	97
30) Carbon Disulfide	6.419	76	2023177	40.57	ppb(v	99
31) Ethanol	5.000	45	295559	35.08	ppb(v	99
32) Acrylonitrile	5.771	53	550314	43.02	ppb(v	99
33) 3-Chloropropene	6.260	76	328873	41.64	ppb(v	97
34) trans-1,2-Dichloroethene	7.013	61	1017215	41.33	ppb(v	98
35) tert-Butyl Alcohol	6.113	59	1521442	40.54	ppb(v	100
36) Methyl tert-Butyl Ether	7.270	73	1937878	39.38	ppb(v	100
37) Vinyl Acetate	7.361	43	1860612	40.62	ppb(v	99
38) 1,1-Dichloroethane	7.208	63	1316083	39.71	ppb(v	99
39) 2-Butanone	7.618	72	358962	44.09	ppb(v	92
40) Hexane	8.230	57	1012195	34.53	ppb(v	86
41) cis-1,2-Dichloroethene	8.053	61	995120	40.91	ppb(v	98

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22161.D
Acq On : 12 Jan 2017 3:56 pm
Operator : danat
Sample : ic881-40
Misc : MS11221,v5w881,,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 12 16:50:00 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:42:33 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
42)	Di-isopropyl Ether	8.255	87	602089	41.12	ppb(v	90
43)	Ethyl Acetate	8.303	61	230047	41.33	ppb(v	98
44)	Methyl Acrylate	8.291	55	1208972	37.94	ppb(v	99
45)	Chloroform	8.365	83	1521082	38.51	ppb(v	100
46)	2,4-Dimethylpentane	9.178	57	1264602	36.27	ppb(v	99
47)	Tetrahydrofuran	8.799	72	367178	41.60	ppb(v	96
48)	1,1,1-Trichloroethane	9.405	97	1487590	39.88	ppb(v	100
49)	1,2-Dichloroethane	9.142	62	901378	41.13	ppb(v	100
50)	Benzene	9.925	78	2324188	38.89	ppb(v	100
51)	Carbon Tetrachloride	10.090	117	1509939	44.02	ppb(v	100
52)	Cyclohexane	10.212	56	1109969	37.96	ppb(v	99
53)	2,3-Dimethylpentane	10.494	71	479399	35.36	ppb(v	95
55)	2,2,4-Trimethylpentane	11.173	57	3219734	34.82	ppb(v	99
56)	Heptane	11.509	71	715768	36.45	ppb(v	98
57)	Trichloroethene	11.154	95	1011132	38.01	ppb(v	100
58)	1,2-Dichloropropane	10.867	63	840456	37.51	ppb(v	99
59)	Dibromomethane	10.855	174	990778	40.62	ppb(v	97
60)	Ethyl Acrylate	10.922	55	1696784	38.69	ppb(v	99
61)	Methyl Methacrylate	11.442	69	841524	38.43	ppb(v	96
62)	1,4-Dioxane	11.197	88	526058	38.99	ppb(v	97
63)	Bromodichloromethane	11.118	83	1647279	39.69	ppb(v	100
64)	cis-1,3-Dichloropropene	12.219	75	1442089	41.73	ppb(v	99
65)	4-Methyl-2-pentanone	12.280	58	708853	41.38	ppb(v	98
66)	trans-1,3-Dichloropropene	12.892	75	1190588	43.66	ppb(v	99
67)	Toluene	13.442	91	2686715	36.91	ppb(v	100
68)	1,1,2-Trichloroethane	13.100	97	969336	39.12	ppb(v	99
69)	1,3-Dichloropropane	13.491	76	1240006	40.16	ppb(v	99
70)	2-Hexanone	13.834	58	965101	41.89	ppb(v	97
71)	Ethyl Methacrylate	13.864	69	1345876	37.86	ppb(v	98
72)	Dibromochloromethane	14.005	129	1651076	41.10	ppb(v	100
73)	Tetrachloroethene	14.941	166	1387377	39.20	ppb(v	98
74)	1,2-Dibromoethane	14.311	107	1512530	40.48	ppb(v	100
75)	Octane	14.776	43	1608675	37.42	ppb(v	97
76)	1,1,1,2-Tetrachloroethane	15.865	131	1118244	39.65	ppb(v	97
78)	Chlorobenzene	15.883	112	1994032	32.45	ppb(v	99
79)	Ethylbenzene	16.422	91	3280066	31.59	ppb(v	99
80)	m,p-Xylene	16.703	91	4878636	59.43	ppb(v	99
81)	Styrene	17.217	104	1976170	34.34	ppb(v	99
82)	Nonane	17.749	43	1593438	31.49	ppb(v	98
83)	o-Xylene	17.364	91	2410689	29.77	ppb(v	99
84)	Bromoform	16.776	173	1602876	38.28	ppb(v	98
85)	1,1,2,2-Tetrachloroethane	17.376	83	1954536	31.79	ppb(v	99
86)	1,2,3-Trichloropropane	17.566	75	1526980	34.47	ppb(v	99
87)	Isopropylbenzene	18.275	105	3544411	32.02	ppb(v	98
88)	Bromobenzene	18.379	156	1175173	34.50	ppb(v	99
89)	2-Chlorotoluene	18.997	126	904403	34.61	ppb(v	95
90)	n-Propylbenzene	19.071	120	967914	34.91	ppb(v	91
92)	4-Ethyltoluene	19.297	105	3359793	32.51	ppb(v	98
93)	1,3,5-Trimethylbenzene	19.425	105	2864912	32.40	ppb(v	100
94)	alpha-Methylstyrene	19.658	118	1531151	35.30	ppb(v	99

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22161.D
Acq On : 12 Jan 2017 3:56 pm
Operator : danat
Sample : ic881-40
Misc : MS11221,v5w881,,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 12 16:50:00 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:42:33 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
95)	tert-Butylbenzene	20.001	134	600193	32.53	ppb(v	93
96)	1,2,4-Trimethylbenzene	20.019	105	2586219	30.71	ppb(v	94
97)	1,3-Dichlorobenzene	20.209	146	1818609	33.92	ppb(v	99
98)	Benzyl Chloride	20.202	91	2284145	36.78	ppb(v	97
99)	1,4-Dichlorobenzene	20.306	146	1878552	35.59	ppb(v	98
100)	sec-Butylbenzene	20.392	134	778562	34.04	ppb(v	88
101)	p-Isopropyltoluene	20.631	134	816529	32.37	ppb(v	91
102)	1,2-Dichlorobenzene	20.777	146	1823986	35.74	ppb(v	98
103)	n-Butylbenzene	21.206	134	809743	37.61	ppb(v	80
104)	Hexachloroethane	21.665	201	1156139	42.37	ppb(v	99
105)	1,2,4-Trichlorobenzene	23.004	180	1154988	47.93	ppb(v	99
106)	Naphthalene	23.127	128	2354871	44.21	ppb(v	99
107)	Hexachlorobutadiene	23.586	225	1199145	34.76	ppb(v	99
109)	TVHC as equiv Pentane	5.783	TIC	4264673	37.09	ppb(v	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.7.8

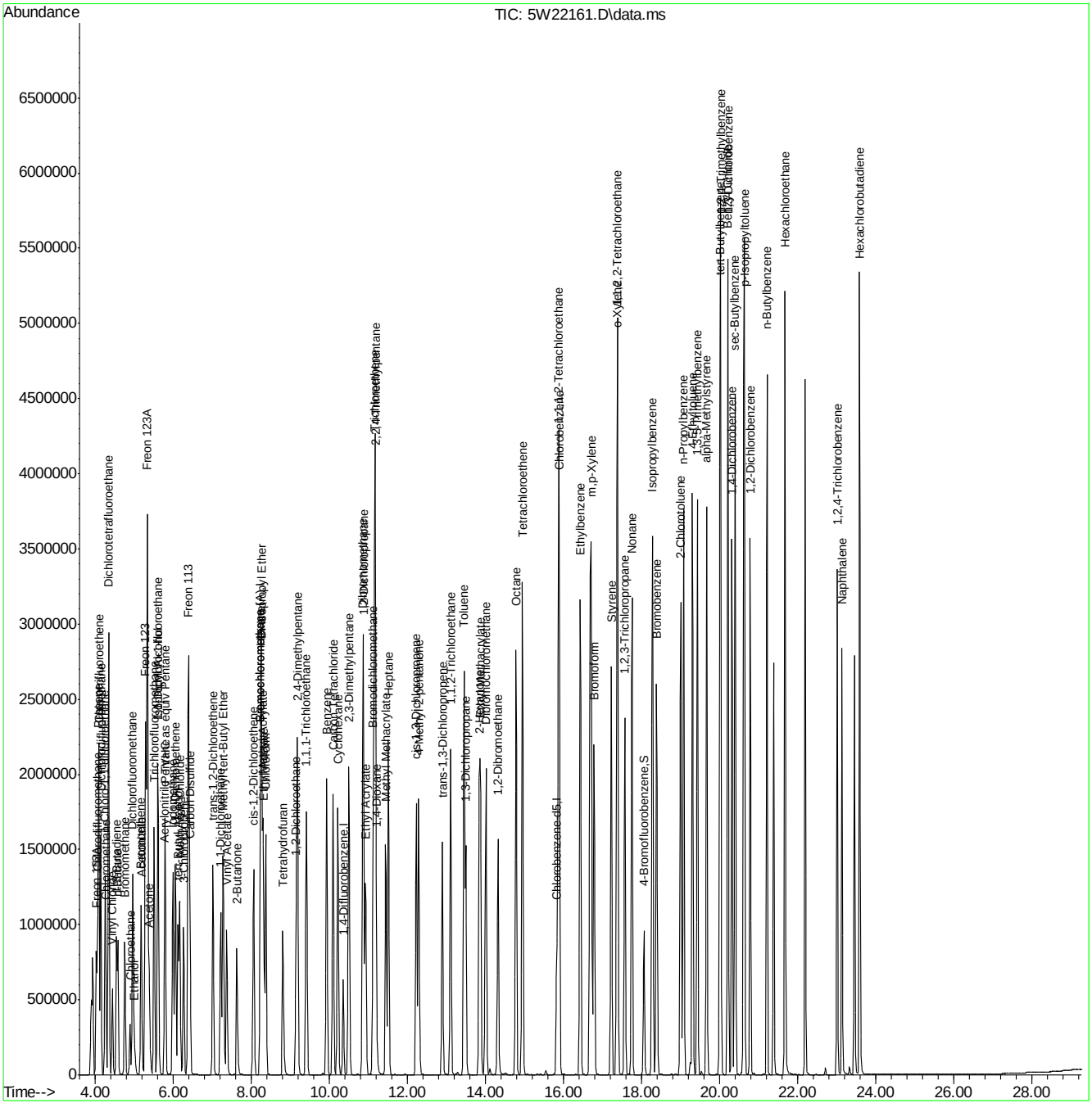
7

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22161.D
Acq On : 12 Jan 2017 3:56 pm
Operator : danat
Sample : ic881-40
Misc : MS11221,v5w881,,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jan 12 16:50:00 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 15:42:33 2017
Response via : Initial Calibration



SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22163.D
Acq On : 12 Jan 2017 5:23 pm
Operator : danat
Sample : icv881-10
Misc : MS11221,v5w881,,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 13 09:09:35 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	8.218	130	187142	10.00	ppb(v	0.00
54) 1,4-Difluorobenzene	10.341	114	746619	10.00	ppb(v	0.00
77) Chlorobenzene-d5	15.816	82	382852	10.00	ppb(v	0.00
108) Bromochloromethane (A)	8.218	130	187142	10.00	ppb(v	0.00
System Monitoring Compounds						
91) 4-Bromofluorobenzene	18.049	95	496943	9.91	ppb(v	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 99.10%			
Target Compounds						Qvalue
2) 1,1,1-Trifluoroethane	3.930	69	478583	9.89	ppb(v#	88
3) Freon 152A	4.021	65	111183	8.62	ppb(v	97
4) Chlorodifluoromethane	4.058	67	42740	8.80	ppb(v	100
5) Propene	4.076	41	125228	8.28	ppb(v	100
6) Chlorotrifluoroethene	4.089	116	239965	9.31	ppb(v	100
7) Dichlorodifluoromethane	4.138	85	444819	8.81	ppb(v	100
8) 1-Chloro-1,1-difluoroe...	4.248	65	305901	8.70	ppb(v	100
9) Chloromethane	4.266	50	161082	8.49	ppb(v	99
10) Dichlorotetrafluoroethane	4.339	85	494222	8.76	ppb(v	99
11) Vinyl Chloride	4.437	62	186165	8.84	ppb(v	100
12) 1,3-Butadiene	4.535	54	132996	8.67	ppb(v	99
13) n-Butane	4.578	58	29857	8.71	ppb(v	100
14) Bromomethane	4.755	94	188654	8.42	ppb(v	99
15) Chloroethane	4.884	64	91887	8.73	ppb(v	98
16) Dichlorofluoromethane	4.957	67	413708	8.42	ppb(v	99
17) Acetonitrile	5.171	41	141477	8.85	ppb(v	100
18) Freon 123	5.282	83	484375	8.63	ppb(v	100
19) Freon 123A	5.330	117	498955	17.87	ppb(v	100
20) Bromoethene	5.165	106	179616	8.85	ppb(v	99
21) Trichlorofluoromethane	5.502	101	444434	9.10	ppb(v	100
22) Acetone	5.379	58	83904	8.40	ppb(v	99
23) Pentane	5.783	57	48096	8.09	ppb(v	99
24) 1,1-Dichloro-1-fluoroe...	5.600	81	376104	8.60	ppb(v	100
25) Iodomethane	5.985	142	530376	9.41	ppb(v	100
26) Isopropyl Alcohol	5.587	43	57940	8.66	ppb(v	99
27) 1,1-Dichloroethene	6.046	61	274371	8.57	ppb(v	99
28) Freon 113	6.377	101	374269	8.44	ppb(v	99
29) Methylene Chloride	6.156	84	164752	8.03	ppb(v	99
30) Carbon Disulfide	6.419	76	558347	9.68	ppb(v	99
31) Ethanol	4.994	45	75545	7.90	ppb(v	97
32) Acrylonitrile	5.765	53	144777	9.71	ppb(v	99
33) 3-Chloropropene	6.254	76	87816	9.58	ppb(v	98
34) trans-1,2-Dichloroethene	7.007	61	271602	9.52	ppb(v	100
35) tert-Butyl Alcohol	6.101	59	356866	8.22	ppb(v	100
36) Methyl tert-Butyl Ether	7.270	73	514168	9.07	ppb(v	99
37) Vinyl Acetate	7.355	43	502888	9.49	ppb(v	100
38) 1,1-Dichloroethane	7.202	63	335835	8.78	ppb(v	100
39) 2-Butanone	7.612	72	92857	9.75	ppb(v	99
40) Hexane	8.230	57	284808	8.56	ppb(v	97

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22163.D
Acq On : 12 Jan 2017 5:23 pm
Operator : danat
Sample : icv881-10
Misc : MS11221,v5w881,,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 13 09:09:35 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
41)	cis-1,2-Dichloroethene	8.047	61	253954	9.02	ppb(v	100
42)	Di-isopropyl Ether	8.249	87	156250	9.21	ppb(v	99
43)	Ethyl Acetate	8.298	61	64660	10.01	ppb(v	99
44)	Methyl Acrylate	8.279	55	328437	8.99	ppb(v	100
45)	Chloroform	8.353	83	394858	8.70	ppb(v	100
46)	2,4-Dimethylpentane	9.172	57	336367	8.45	ppb(v	100
47)	Tetrahydrofuran	8.799	72	93593	9.13	ppb(v	99
48)	1,1,1-Trichloroethane	9.399	97	385342	8.95	ppb(v	100
49)	1,2-Dichloroethane	9.130	62	231837	9.13	ppb(v	100
50)	Benzene	9.919	78	600331	8.73	ppb(v	100
51)	Carbon Tetrachloride	10.084	117	377765	9.42	ppb(v	100
52)	Cyclohexane	10.206	56	288765	8.61	ppb(v	99
53)	2,3-Dimethylpentane	10.488	71	126837	8.22	ppb(v	99
55)	2,2,4-Trimethylpentane	11.161	57	935189	9.29	ppb(v	100
56)	Heptane	11.497	71	188511	8.78	ppb(v	99
57)	Trichloroethene	11.148	95	269984	9.23	ppb(v	99
58)	1,2-Dichloropropane	10.861	63	225147	9.15	ppb(v	100
59)	Dibromomethane	10.843	174	253572	9.38	ppb(v	99
60)	Ethyl Acrylate	10.910	55	443636	9.19	ppb(v	100
61)	Methyl Methacrylate	11.430	69	217751	9.03	ppb(v	99
62)	1,4-Dioxane	11.191	88	140399	9.44	ppb(v	99
63)	Bromodichloromethane	11.106	83	437747	9.55	ppb(v	100
64)	cis-1,3-Dichloropropene	12.213	75	370715	9.65	ppb(v	100
65)	4-Methyl-2-pentanone	12.274	58	186039	9.78	ppb(v	100
66)	trans-1,3-Dichloropropene	12.880	75	308565	10.11	ppb(v	99
67)	Toluene	13.436	91	720415	9.03	ppb(v	99
68)	1,1,2-Trichloroethane	13.094	97	255057	9.33	ppb(v	100
69)	1,3-Dichloropropane	13.479	76	327548	9.59	ppb(v	100
70)	2-Hexanone	13.822	58	254788	9.93	ppb(v	99
71)	Ethyl Methacrylate	13.852	69	362237	9.27	ppb(v	100
72)	Dibromochloromethane	13.993	129	449905	10.09	ppb(v	100
73)	Tetrachloroethene	14.935	166	364988	9.35	ppb(v	99
74)	1,2-Dibromoethane	14.299	107	400088	9.67	ppb(v	99
75)	Octane	14.770	43	429873	9.11	ppb(v	99
76)	1,1,1,2-Tetrachloroethane	15.853	131	305977	9.82	ppb(v	98
78)	Chlorobenzene	15.871	112	549594	9.38	ppb(v	99
79)	Ethylbenzene	16.416	91	898264	9.10	ppb(v	99
80)	m,p-Xylene	16.685	91	1367867	17.64	ppb(v	99
81)	Styrene	17.205	104	522158	9.46	ppb(v	99
82)	Nonane	17.737	43	404595	8.42	ppb(v	100
83)	o-Xylene	17.358	91	693463	9.06	ppb(v	100
84)	Bromoform	16.764	173	429499	10.57	ppb(v	100
85)	1,1,2,2-Tetrachloroethane	17.364	83	542321	9.27	ppb(v	99
86)	1,2,3-Trichloropropane	17.554	75	390175	9.18	ppb(v	100
87)	Isopropylbenzene	18.263	105	963242	9.14	ppb(v	99
88)	Bromobenzene	18.373	156	311698	9.54	ppb(v	100
89)	2-Chlorotoluene	18.991	126	233747	9.32	ppb(v	99
90)	n-Propylbenzene	19.065	120	248053	9.31	ppb(v	99
92)	4-Ethyltoluene	19.291	105	895140	9.09	ppb(v	99
93)	1,3,5-Trimethylbenzene	19.413	105	751520	8.92	ppb(v	99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22163.D
Acq On : 12 Jan 2017 5:23 pm
Operator : danat
Sample : icv881-10
Misc : MS11221,v5w881,,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 13 09:09:35 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration

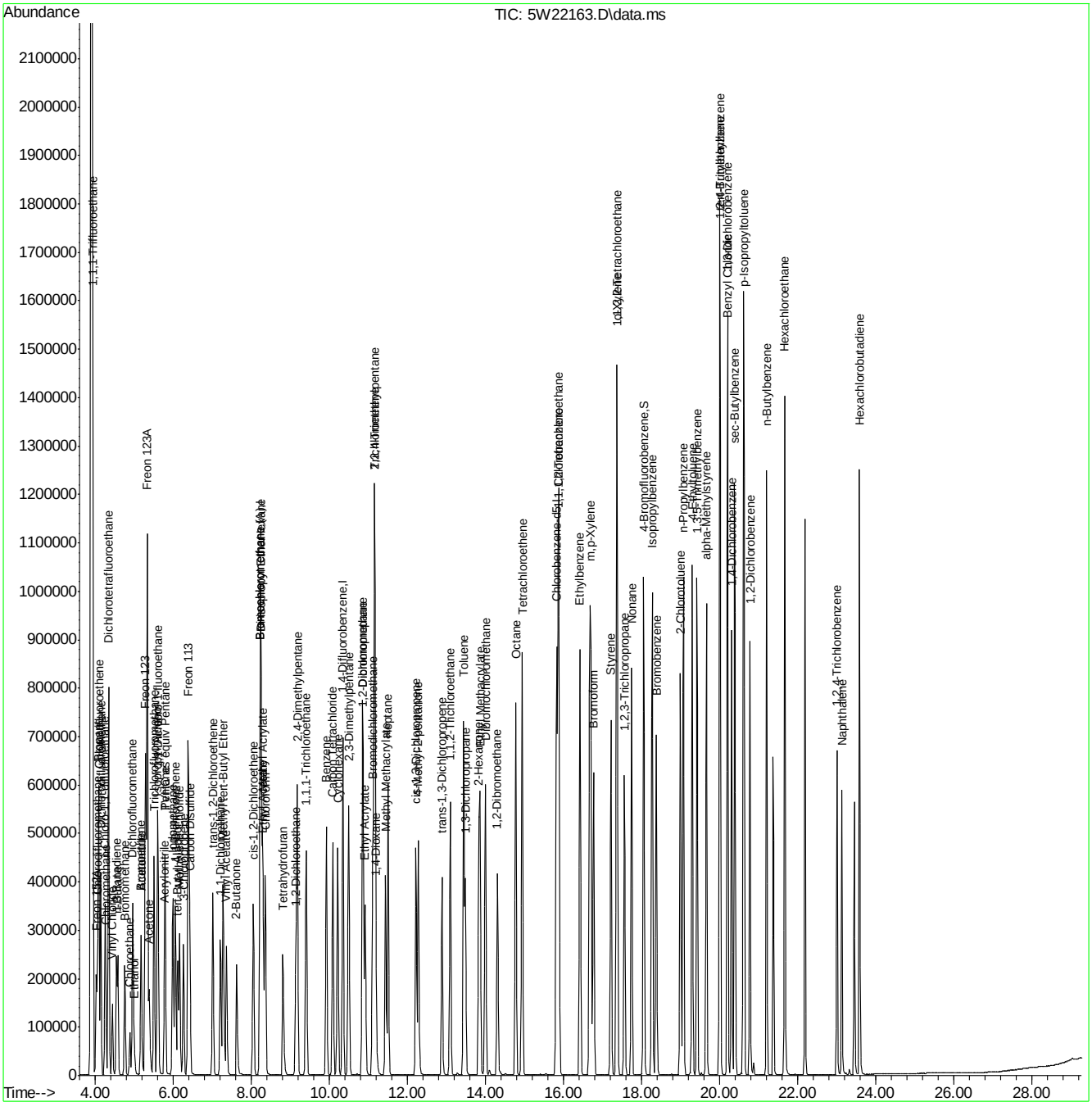
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
94)	alpha-Methylstyrene	19.652	118	380235	9.12	ppb(v	99
95)	tert-Butylbenzene	19.995	134	159711	9.08	ppb(v	99
96)	1,2,4-Trimethylbenzene	20.007	105	721635	9.04	ppb(v	100
97)	1,3-Dichlorobenzene	20.196	146	487505	9.50	ppb(v	100
98)	Benzyl Chloride	20.190	91	616128	10.27	ppb(v	100
99)	1,4-Dichlorobenzene	20.300	146	481339	9.47	ppb(v	100
100)	sec-Butylbenzene	20.386	134	196344	8.96	ppb(v	96
101)	p-Isopropyltoluene	20.619	134	218012	9.07	ppb(v	99
102)	1,2-Dichlorobenzene	20.772	146	459765	9.35	ppb(v	100
103)	n-Butylbenzene	21.194	134	195537	9.37	ppb(v	99
104)	Hexachloroethane	21.659	201	282420	10.52	ppb(v	92
105)	1,2,4-Trichlorobenzene	22.998	180	228026	9.46	ppb(v	100
106)	Naphthalene	23.127	128	492730	9.34	ppb(v	100
107)	Hexachlorobutadiene	23.580	225	264776	7.99	ppb(v	99
109)	TVHC as equiv Pentane	5.783	TIC	1146903	8.74	ppb(v	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22163.D
Acq On : 12 Jan 2017 5:23 pm
Operator : danat
Sample : icv881-10
Misc : MS11221,v5w881,,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jan 13 09:09:35 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration



SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22689.D
Acq On : 10 Feb 2017 11:59 am
Operator : danat
Sample : CC881-10
Misc : MS12270,v5w900,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 10 13:15:30 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	8.218	130	148048	10.00	ppb(v	0.00
54) 1,4-Difluorobenzene	10.341	114	588871	10.00	ppb(v	0.00
77) Chlorobenzene-d5	15.810	82	319942	10.00	ppb(v	0.00
108) Bromochloromethane (A)	8.218	130	148048	10.00	ppb(v	0.00
System Monitoring Compounds						
91) 4-Bromofluorobenzene	18.043	95	439118	10.48	ppb(v	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 104.80%			
Target Compounds						Qvalue
2) 1,1,1-Trifluoroethane	3.935	69	211156	5.51	ppb(v	93
3) Freon 152A	4.027	65	101860	9.98	ppb(v	98
4) Chlorodifluoromethane	4.064	67	42542	11.08	ppb(v	99
5) Propene	4.082	41	108672	9.08	ppb(v	98
6) Chlorotrifluoroethene	4.088	116	208890	10.24	ppb(v	99
7) Dichlorodifluoromethane	4.143	85	439061	10.99	ppb(v	100
8) 1-Chloro-1,1-difluoroe...	4.247	65	317951	11.43	ppb(v	98
9) Chloromethane	4.266	50	149791	9.98	ppb(v	99
10) Dichlorotetrafluoroethane	4.339	85	470296	10.54	ppb(v	97
11) Vinyl Chloride	4.437	62	175961	10.56	ppb(v	99
12) 1,3-Butadiene	4.541	54	123893	10.21	ppb(v	99
13) n-Butane	4.578	58	27423	10.11	ppb(v	97
14) Bromomethane	4.755	94	177633	10.02	ppb(v	100
15) Chloroethane	4.890	64	86548	10.39	ppb(v	98
16) Dichlorofluoromethane	4.957	67	408214	10.50	ppb(v	100
17) Acetonitrile	5.177	41	128641	10.18	ppb(v	99
18) Freon 123	5.287	83	455150	10.25	ppb(v	99
19) Freon 123A	5.330	117	464907	21.04	ppb(v	98
20) Bromoethene	5.165	106	171630	10.69	ppb(v	98
21) Trichlorofluoromethane	5.502	101	448020	11.59	ppb(v	100
22) Acetone	5.385	58	80447	10.19	ppb(v	98
23) Pentane	5.789	57	42213	8.97	ppb(v	96
24) 1,1-Dichloro-1-fluoroe...	5.599	81	384970	11.13	ppb(v	99
25) Iodomethane	5.985	142	463402	10.39	ppb(v	93
26) Isopropyl Alcohol	5.593	43	54002	10.21	ppb(v	98
27) 1,1-Dichloroethene	6.046	61	267114	10.54	ppb(v	97
28) Freon 113	6.376	101	370347	10.55	ppb(v	99
29) Methylene Chloride	6.156	84	155759	9.59	ppb(v	99
30) Carbon Disulfide	6.419	76	474104	10.39	ppb(v	100
31) Ethanol	5.006	45	71316	9.43	ppb(v	98
32) Acrylonitrile	5.771	53	127153	10.78	ppb(v	98
33) 3-Chloropropene	6.260	76	75370	10.39	ppb(v	97
34) trans-1,2-Dichloroethene	7.007	61	236330	10.47	ppb(v	99
35) tert-Butyl Alcohol	6.107	59	356996	10.40	ppb(v	99
36) Methyl tert-Butyl Ether	7.270	73	448498	10.00	ppb(v	99
37) Vinyl Acetate	7.361	43	419918	10.02	ppb(v	99
38) 1,1-Dichloroethane	7.208	63	303636	10.04	ppb(v	100
39) 2-Butanone	7.618	72	80705	10.72	ppb(v	95
40) Hexane	8.230	57	240881	9.15	ppb(v	90

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22689.D
Acq On : 10 Feb 2017 11:59 am
Operator : danat
Sample : CC881-10
Misc : MS12270,v5w900,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 10 13:15:30 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
41)	cis-1,2-Dichloroethene	8.047	61	229773	10.31	ppb(v	99
42)	Di-isopropyl Ether	8.248	87	139295	10.38	ppb(v	98
43)	Ethyl Acetate	8.303	61	53038	10.38	ppb(v	99
44)	Methyl Acrylate	8.285	55	280868	9.72	ppb(v	99
45)	Chloroform	8.352	83	376450	10.48	ppb(v	100
46)	2,4-Dimethylpentane	9.166	57	297619	9.46	ppb(v	100
47)	Tetrahydrofuran	8.805	72	82622	10.19	ppb(v	97
48)	1,1,1-Trichloroethane	9.399	97	368045	10.81	ppb(v	100
49)	1,2-Dichloroethane	9.135	62	224629	11.18	ppb(v	99
50)	Benzene	9.919	78	529080	9.73	ppb(v	100
51)	Carbon Tetrachloride	10.084	117	373442	11.77	ppb(v	99
52)	Cyclohexane	10.206	56	250140	9.43	ppb(v	99
53)	2,3-Dimethylpentane	10.487	71	111695	9.15	ppb(v	99
55)	2,2,4-Trimethylpentane	11.160	57	820252	10.33	ppb(v	99
56)	Heptane	11.497	71	169075	9.98	ppb(v	99
57)	Trichloroethene	11.148	95	245347	10.64	ppb(v	99
58)	1,2-Dichloropropane	10.861	63	195617	10.08	ppb(v	97
59)	Dibromomethane	10.842	174	223446	10.48	ppb(v	95
60)	Ethyl Acrylate	10.910	55	383940	10.08	ppb(v	99
61)	Methyl Methacrylate	11.430	69	192826	10.14	ppb(v	99
62)	1,4-Dioxane	11.191	88	128933	10.99	ppb(v	97
63)	Bromodichloromethane	11.105	83	405023	11.20	ppb(v	100
64)	cis-1,3-Dichloropropene	12.213	75	324688	10.71	ppb(v	99
65)	4-Methyl-2-pentanone	12.274	58	162269	10.81	ppb(v	99
66)	trans-1,3-Dichloropropene	12.880	75	278100	11.56	ppb(v	99
67)	Toluene	13.430	91	618678	9.84	ppb(v	100
68)	1,1,2-Trichloroethane	13.088	97	224795	10.43	ppb(v	98
69)	1,3-Dichloropropane	13.479	76	289842	10.75	ppb(v	99
70)	2-Hexanone	13.822	58	223466	11.04	ppb(v	99
71)	Ethyl Methacrylate	13.852	69	323029	10.48	ppb(v	100
72)	Dibromochloromethane	13.987	129	411585	11.70	ppb(v	100
73)	Tetrachloroethene	14.929	166	314936	10.22	ppb(v	98
74)	1,2-Dibromoethane	14.299	107	354045	10.84	ppb(v	100
75)	Octane	14.764	43	385909	10.37	ppb(v	100
76)	1,1,1,2-Tetrachloroethane	15.853	131	269580	10.97	ppb(v	97
78)	Chlorobenzene	15.871	112	465808	9.52	ppb(v	97
79)	Ethylbenzene	16.409	91	783230	9.50	ppb(v	100
80)	m,p-Xylene	16.685	91	1228241	18.95	ppb(v	98
81)	Styrene	17.205	104	457283	9.92	ppb(v	99
82)	Nonane	17.737	43	388774	9.68	ppb(v	99
83)	o-Xylene	17.352	91	618447	9.67	ppb(v	98
84)	Bromoform	16.758	173	392204	11.55	ppb(v	99
85)	1,1,2,2-Tetrachloroethane	17.358	83	500436	10.24	ppb(v	99
86)	1,2,3-Trichloropropane	17.553	75	368927	10.39	ppb(v	99
87)	Isopropylbenzene	18.257	105	871570	9.90	ppb(v	99
88)	Bromobenzene	18.367	156	277553	10.16	ppb(v	95
89)	2-Chlorotoluene	18.985	126	208708	9.96	ppb(v	93
90)	n-Propylbenzene	19.058	120	227694	10.23	ppb(v	92
92)	4-Ethyltoluene	19.291	105	814607	9.90	ppb(v	99
93)	1,3,5-Trimethylbenzene	19.413	105	690940	9.81	ppb(v	98

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22689.D
Acq On : 10 Feb 2017 11:59 am
Operator : danat
Sample : CC881-10
Misc : MS12270,v5w900,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 10 13:15:30 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
94)	alpha-Methylstyrene	19.652	118	347091	9.96	ppb(v	99
95)	tert-Butylbenzene	19.988	134	143854	9.79	ppb(v	94
96)	1,2,4-Trimethylbenzene	20.007	105	675129	10.12	ppb(v	91
97)	1,3-Dichlorobenzene	20.196	146	435425	10.15	ppb(v	97
98)	Benzyl Chloride	20.190	91	565340	11.27	ppb(v	98
99)	1,4-Dichlorobenzene	20.294	146	427439	10.07	ppb(v	96
100)	sec-Butylbenzene	20.380	134	178882	9.77	ppb(v	89
101)	p-Isopropyltoluene	20.618	134	199800	9.95	ppb(v	95
102)	1,2-Dichlorobenzene	20.765	146	415250	10.11	ppb(v	96
103)	n-Butylbenzene	21.193	134	177021	10.15	ppb(v	94
104)	Hexachloroethane	21.658	201	265162	11.82	ppb(v	85
105)	1,2,4-Trichlorobenzene	22.998	180	208018	10.33	ppb(v	99
106)	Naphthalene	23.127	128	442479	10.03	ppb(v	100
107)	Hexachlorobutadiene	23.579	225	247984	8.96	ppb(v	98
109)	TVHC as equiv Pentane	5.783	TIC	1015945	9.79	ppb(v	100

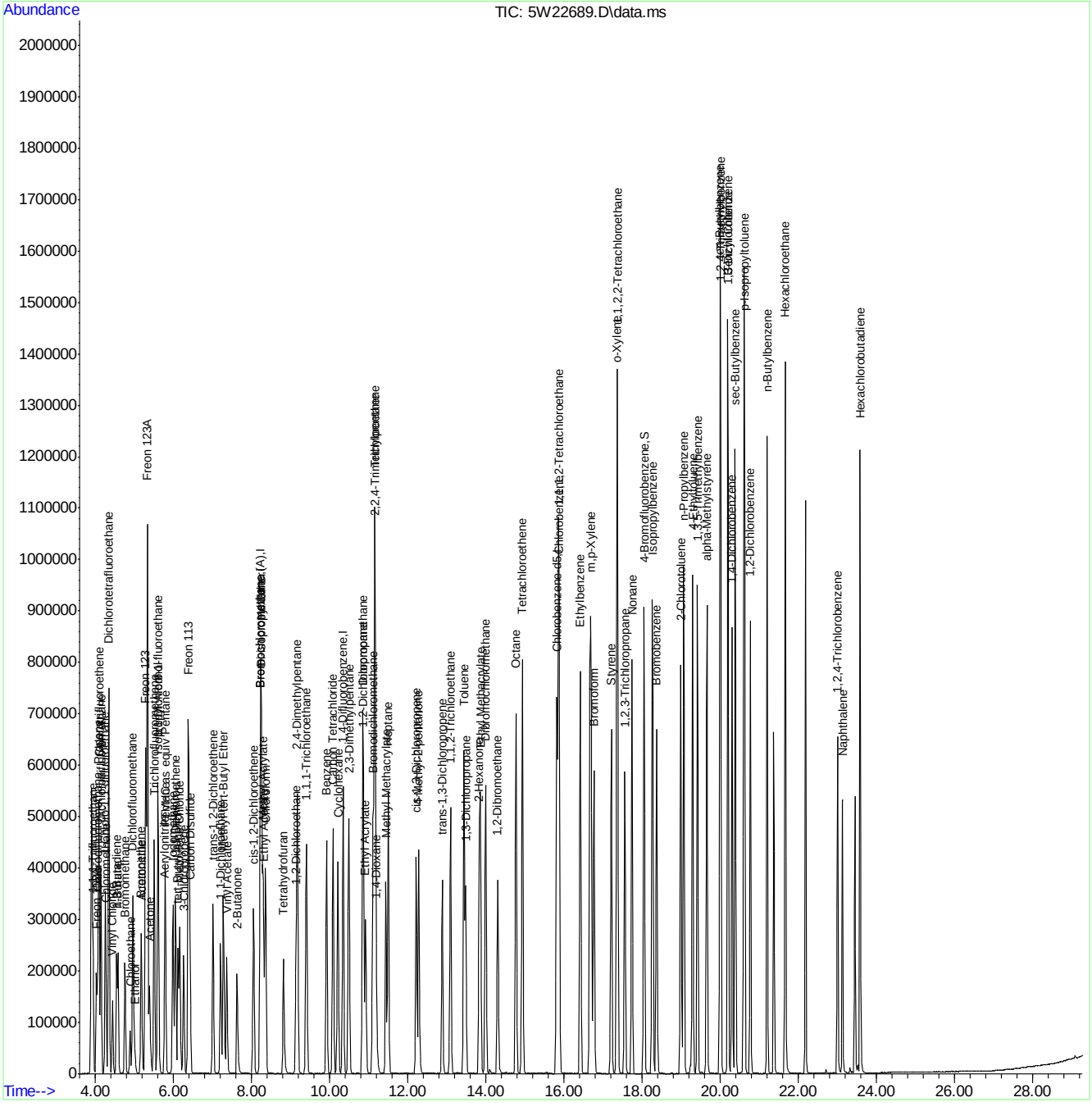
(#) = qualifier out of range (m) = manual integration (+) = signals summed

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22689.D
Acq On : 10 Feb 2017 11:59 am
Operator : danat
Sample : CC881-10
Misc : MS12270,v5w900,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 10 13:15:30 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration



SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22929.D
Acq On : 23 Feb 2017 10:53 am
Operator : LUISM1
Sample : CC881-10
Misc : MS12740,v5w909,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 23 12:39:58 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane	8.138	130	141757	10.00	ppb(v	-0.08
54) 1,4-Difluorobenzene	10.292	114	557451	10.00	ppb(v	-0.05
77) Chlorobenzene-d5	15.804	82	299516	10.00	ppb(v	-0.01
108) Bromochloromethane (A)	8.138	130	141757	10.00	ppb(v	-0.08
System Monitoring Compounds						
91) 4-Bromofluorobenzene	18.043	95	383490	9.78	ppb(v	0.00
Spiked Amount 10.000	Range 65 - 128		Recovery = 97.80%			
Target Compounds						Qvalue
3) Freon 152A	3.905	65	93256	9.55	ppb(v	98
4) Chlorodifluoromethane	3.942	67	37744	10.26	ppb(v	99
5) Propene	3.960	41	105634	9.22	ppb(v	98
6) Chlorotrifluoroethene	3.966	116	197480	10.11	ppb(v#	89
7) Dichlorodifluoromethane	4.021	85	387871	10.14	ppb(v	100
9) Chloromethane	4.150	50	138939	9.67	ppb(v	100
10) Dichlorotetrafluoroethane	4.223	85	416628	9.75	ppb(v	95
11) Vinyl Chloride	4.315	62	160763	10.07	ppb(v	100
12) 1,3-Butadiene	4.419	54	114600	9.86	ppb(v	99
13) n-Butane	4.456	58	25286	9.74	ppb(v	87
14) Bromomethane	4.633	94	155486	9.16	ppb(v	99
15) Chloroethane	4.768	64	77547	9.73	ppb(v	96
16) Dichlorofluoromethane	4.841	67	363112	9.76	ppb(v	99
17) Acetonitrile	5.061	41	128651	10.63	ppb(v	99
18) Freon 123	5.171	83	406227	9.56	ppb(v	99
19) Freon 123A	5.214	117	389606	18.42	ppb(v	90
20) Bromoethene	5.049	106	146977	9.56	ppb(v	98
21) Trichlorofluoromethane	5.392	101	373862	10.10	ppb(v	99
22) Acetone	5.269	58	72087	9.53	ppb(v	98
23) Pentane	5.673	57	38614	8.57	ppb(v	98
25) Iodomethane	5.875	142	401302	9.40	ppb(v	95
26) Isopropyl Alcohol	5.483	43	52136	10.29	ppb(v	54
27) 1,1-Dichloroethene	5.936	61	239669	9.88	ppb(v	97
28) Freon 113	6.273	101	330370	9.83	ppb(v	96
29) Methylene Chloride	6.052	84	141928	9.13	ppb(v	99
30) Carbon Disulfide	6.315	76	435090	9.96	ppb(v	100
31) Ethanol	4.884	45	67018	9.26	ppb(v	99
32) Acrylonitrile	5.661	53	118102	10.46	ppb(v	98
33) 3-Chloropropene	6.156	76	67674	9.75	ppb(v	98
34) trans-1,2-Dichloroethene	6.915	61	212917	9.85	ppb(v	97
35) tert-Butyl Alcohol	6.003	59	314520	9.56	ppb(v	97
36) Methyl tert-Butyl Ether	7.184	73	390235	9.08	ppb(v	98
37) Vinyl Acetate	7.276	43	382424	9.53	ppb(v	100
38) 1,1-Dichloroethane	7.117	63	274463	9.48	ppb(v	99
39) 2-Butanone	7.539	72	71318	9.89	ppb(v	99
40) Hexane	8.151	57	218629	8.68	ppb(v#	79
41) cis-1,2-Dichloroethene	7.967	61	208487	9.77	ppb(v	98
42) Di-isopropyl Ether	8.175	87	123596	9.62	ppb(v	93
43) Ethyl Acetate	8.230	61	48194	9.85	ppb(v	98

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22929.D
Acq On : 23 Feb 2017 10:53 am
Operator : LUISM1
Sample : CC881-10
Misc : MS12740,v5w909,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 23 12:39:58 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) Methyl Acrylate	8.212	55	253087	9.15	ppb(v	100
45) Chloroform	8.279	83	338389	9.84	ppb(v	99
46) 2,4-Dimethylpentane	9.105	57	269587	8.95	ppb(v	99
47) Tetrahydrofuran	8.738	72	72556	9.35	ppb(v	98
48) 1,1,1-Trichloroethane	9.338	97	322501	9.89	ppb(v	99
49) 1,2-Dichloroethane	9.068	62	200534	10.43	ppb(v	99
50) Benzene	9.864	78	477567	9.17	ppb(v	99
51) Carbon Tetrachloride	10.029	117	326753	10.76	ppb(v	99
52) Cyclohexane	10.151	56	225449	8.87	ppb(v	99
53) 2,3-Dimethylpentane	10.439	71	101942	8.72	ppb(v	96
55) 2,2,4-Trimethylpentane	11.118	57	777761	10.35	ppb(v	99
56) Heptane	11.460	71	157767	9.84	ppb(v	99
57) Trichloroethene	11.106	95	225374	10.32	ppb(v	96
58) 1,2-Dichloropropane	10.812	63	185024	10.08	ppb(v	99
59) Dibromomethane	10.800	174	197799	9.80	ppb(v	91
60) Ethyl Acrylate	10.873	55	345790	9.59	ppb(v	99
61) Methyl Methacrylate	11.399	69	173359	9.63	ppb(v	97
62) 1,4-Dioxane	11.155	88	115623	10.41	ppb(v#	97
63) Bromodichloromethane	11.063	83	370032	10.81	ppb(v	100
64) cis-1,3-Dichloropropene	12.182	75	299115	10.42	ppb(v	99
65) 4-Methyl-2-pentanone	12.250	58	147943	10.41	ppb(v	96
66) trans-1,3-Dichloropropene	12.855	75	245705	10.79	ppb(v	99
67) Toluene	13.412	91	565984	9.51	ppb(v	100
68) 1,1,2-Trichloroethane	13.063	97	204829	10.04	ppb(v	98
69) 1,3-Dichloropropane	13.461	76	266048	10.43	ppb(v	97
70) 2-Hexanone	13.810	58	202111	10.55	ppb(v	96
71) Ethyl Methacrylate	13.840	69	289440	9.92	ppb(v	99
72) Dibromochloromethane	13.969	129	378184	11.36	ppb(v	98
73) Tetrachloroethene	14.917	166	281440	9.65	ppb(v	98
74) 1,2-Dibromoethane	14.281	107	321914	10.42	ppb(v	99
75) Octane	14.752	43	362392	10.29	ppb(v	97
76) 1,1,1,2-Tetrachloroethane	15.847	131	249494	10.72	ppb(v	97
78) Chlorobenzene	15.865	112	427949	9.34	ppb(v	98
79) Ethylbenzene	16.410	91	707939	9.17	ppb(v	99
80) m,p-Xylene	16.673	91	1097889	18.09	ppb(v	98
81) Styrene	17.199	104	392252	9.09	ppb(v	98
82) Nonane	17.731	43	360275	9.58	ppb(v	98
83) o-Xylene	17.352	91	565212	9.44	ppb(v	98
84) Bromoform	16.752	173	352064	11.07	ppb(v	99
85) 1,1,2,2-Tetrachloroethane	17.358	83	458788	10.03	ppb(v	99
86) 1,2,3-Trichloropropane	17.547	75	330586	9.94	ppb(v	99
87) Isopropylbenzene	18.257	105	776635	9.42	ppb(v	98
88) Bromobenzene	18.367	156	243241	9.51	ppb(v	94
89) 2-Chlorotoluene	18.985	126	184554	9.41	ppb(v	92
90) n-Propylbenzene	19.065	120	197940	9.50	ppb(v	91
92) 4-Ethyltoluene	19.291	105	712919	9.25	ppb(v	99
93) 1,3,5-Trimethylbenzene	19.413	105	616180	9.35	ppb(v	97
94) alpha-Methylstyrene	19.652	118	302020	9.25	ppb(v	99
95) tert-Butylbenzene	19.995	134	123806	9.00	ppb(v	84
96) 1,2,4-Trimethylbenzene	20.007	105	597016	9.56	ppb(v	96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22929.D
Acq On : 23 Feb 2017 10:53 am
Operator : LUISM1
Sample : CC881-10
Misc : MS12740,v5w909,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 23 12:39:58 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
97)	1,3-Dichlorobenzene	20.196	146	377532	9.40	ppb(v	97
98)	Benzyl Chloride	20.190	91	496626	10.58	ppb(v	97
99)	1,4-Dichlorobenzene	20.300	146	369560	9.30	ppb(v	97
100)	sec-Butylbenzene	20.386	134	156415	9.13	ppb(v	89
101)	p-Isopropyltoluene	20.619	134	176763	9.40	ppb(v	92
102)	1,2-Dichlorobenzene	20.772	146	364645	9.48	ppb(v	97
103)	n-Butylbenzene	21.200	134	155303	9.52	ppb(v	94
104)	Hexachloroethane	21.665	201	214298	10.21	ppb(v	84
105)	1,2,4-Trichlorobenzene	23.004	180	176349	9.35	ppb(v	99
106)	Naphthalene	23.127	128	372008	9.01	ppb(v	100
107)	Hexachlorobutadiene	23.580	225	210532	8.12	ppb(v	98
109)	TVHC as equiv Pentane	5.673	TIC	947662	9.54	ppb(v	100

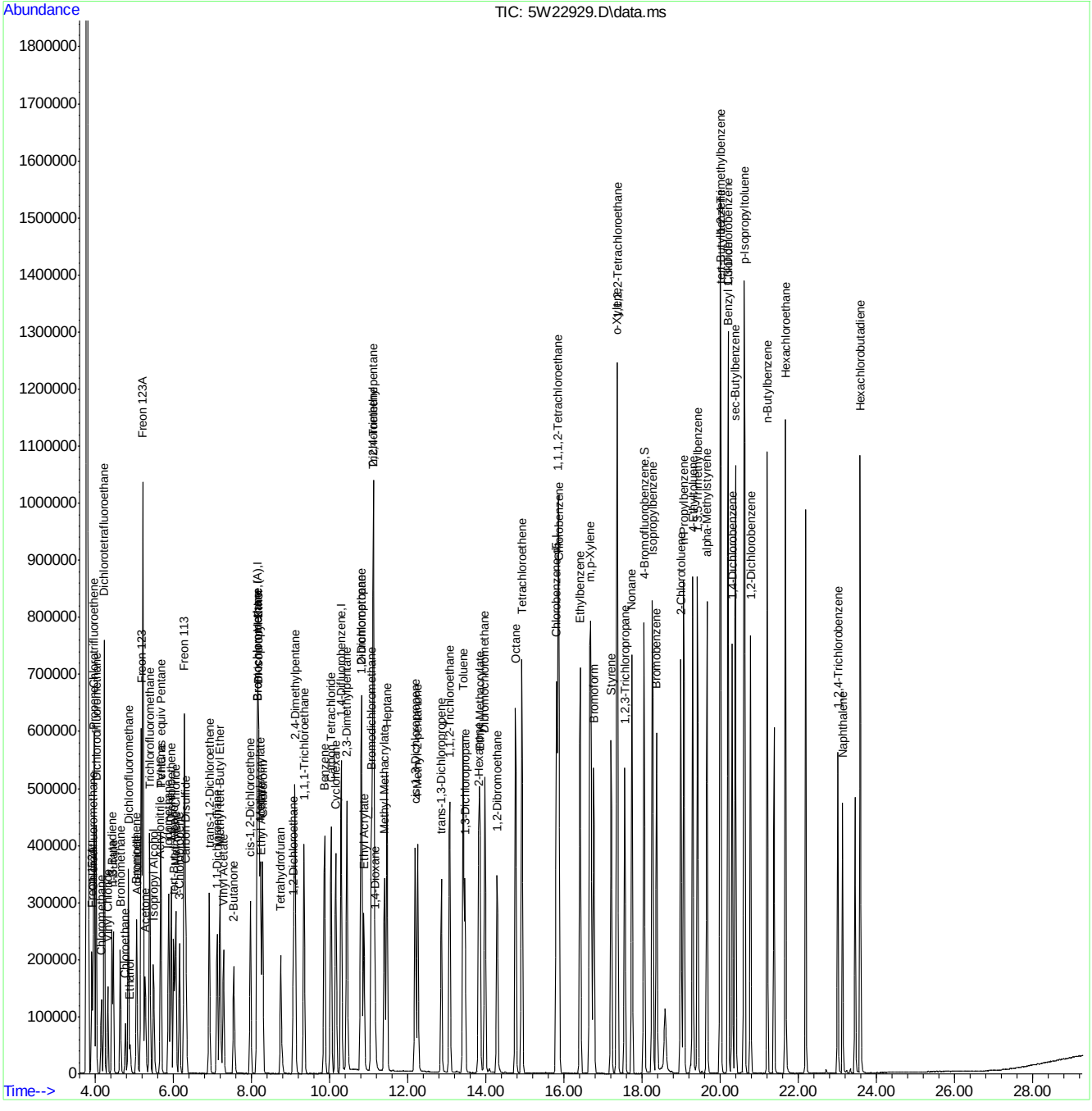
(#) = qualifier out of range (m) = manual integration (+) = signals summed

SGS ACCUTEST JC37217

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 5W22929.D
Acq On : 23 Feb 2017 10:53 am
Operator : LUISM1
Sample : CC881-10
Misc : MS12740,v5w909,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 23 12:39:58 2017
Quant Method : C:\msdchem\1\METHODS\m5w881.M
Quant Title : TO-15 Full Scan Mode
QLast Update : Thu Jan 12 16:49:46 2017
Response via : Initial Calibration



SGS ACCUTEST JC37217

SGS ACCUTEST

TO-14/TO-15

Batch ID: V5W881

Date: 1/12/17

Analyst Signature: [illegible]

Columns: RTX1 - 60m x 0.32mm x 1.0µm

Method: 5WTO15.m

Seq. File: 5W170112.5

Initial Cal. Method: M5W881

AS Data

Method: TO15.CFG

Standard Data

Lot #	Description	Conc.
AS7425	TO15 LCS (A968)	40 ppbv

Standard Data

Lot #	Description	Conc.
AS6906	Int/Surr	100 ppbv
AS7426	TO15 Std (A978)	40 ppbv
AS7427	TO15 Std (A971)	1.0 ppbv
AS7428	TO15 Std (A981)	0.4 ppbv

(M) Manually integrated chromatographic peaks in the following reportable file have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [illegible] Date: 1/13/17

AS #	Data File	Sample ID	TEST	Canister Serial #	Vol Sample	Dil Fact	TICS	Int. STD Areas	Surr	Status Data	Comments
1	5W22152	IB		A958	400						
1	5W22153	BFB		A981	40					OK	time 1015
1	5W22154	IC881-0.04		A981	40			✓	✓	ok	
2	5W22155	IC881-0.1		A971	40			✓	✓	ok	
2	5W22156	IC881-0.2		A971	80			✓	✓	ok	
2	5W22157	IC881-0.5		A971	200			✓	✓	ok	
3	5W22158	IC881-5		A981	50			✓	✓	ok	
3	5W22159	ICC881-10		A981	100			✓	✓	ok	
3	5W22160	IC881-20		A981	200			✓	✓	ok	
3	5W22161	IC881-40		A981	400			✓	✓	ok	
4	5W22162	IB		A958	400						
5	5W22163	ICV881-10		A968	100			✓	✓	ok	

[illegible] 1/13/17

All strikeouts must be initial and dated. Comment is require for anything other than a transcription error.

Form: AT008-05
Rev. Date: 10/20/09

SGS ACCUTEST

TO-14/TO-15

Batch ID: V5W900

Date: 2/10/17

Analyst Signature:

Columns: RTX-1 60mx0.5mmx1.0um
Method: SW TO15.M
Seq. File: 170210.S
Initial Cal. Method: M SW881

AS Data

Method: TO15.CFD

Standard Data

Lot #	Description	Conc.
A57483	TO15 LCS (A967)	40ppbv

Standard Data

Lot #	Description	Conc.
A36986	IS/Surr.	100ppbv
A37470	TO15 STD (A965)	40ppbv
A37475	TO15 LCS (A968)	40ppbv
A57483	TO15 CHL (A977)	40ppbv

(M) Manually integrated chromatographic peaks in the following reportable file have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: Date: 2/13/17

AS #	Data File	Sample ID	TEST	Canister Serial #	Vol Sample	Dil Fact	TICS	Int. STD Areas	Surr	Status Data	Comments
1	SW22686	BFB		open position	400					OK	
2	SW22687	CC881-10		A965	100					RR	compost
2	SW22688	CC881-10		A965	100					RR	std degraded
2	SW22689	CC881-10		A977	100			✓	✓	OK	
2	SW22690	BS		A968	100			✓	✓	RR	compost
3	SW22691	BSD		A968	100			✓	✓	RR	compost
3	SW22692	BS		A967	100			✓	✓	OK	
3	SW22693	BSD		A967	100			✓	✓	OK	
4	SW22694	MB		A633	400			✓	✓	—	
4	SW22695	MB		A633	400			✓	✓	OK	Also see CP8988
5	SW22696	SCC CP8997		A779	400			✓	✓	OK	
6	SW22697	SCC CP8965		A258	400			✓	✓	OK	
7	SW22698	SCC CP8986		A470	400			✓	✓	OK	
8	SW22699	SCC CP8986		A1178	400			✓	✓	OK	
9	SW22700	SCC CP8999		A220	400			✓	✓	OK	
10	SW22701	SCC CP8999		A739	400			✓	✓	OK	
11	SW22702	SCC CP8999		A816	400			✓	✓	OK	
12	SW22703	SCC CP8999		A290	400			✓	✓	OK	
13	SW22704	SCC CP8999		A1259	400			✓	✓	OK	
14	SW22705	SCC CP8999		M027	400			✓	✓	OK	
15	SW22706	SCC CP8999		A300	400			✓	✓	OK	
16	SW22707	SCC CP8999		A1187	400			✓	✓	OK	
1	SW22708	SCC CP8999		A900	400			✓	✓	OK	
2	SW22709	JC 36682-1	NYSCC MS12270	A336	400	1		✓	✓	OK	
3	SW22710	JC 36682-2	✓	A203	400	1		✓	✓	OK	
4	SW22711	JC 36682-3	✓	A1183	400	1		✓	✓	OK	
5	SW22712	JC 36682-4	✓	A765	400	1		✓	✓	OK	
5	SW22713	JC 36682-4DUP	✓	A765	400	1		✓	✓	OK	

All strikeouts must be initial and dated. Comment is require for anything other than a transcription error.

Form: AT008-05
Rev. Date: 10/20/09

ACCUTEST

Canister Secondary Dilution Log

Test Gauge ID : TG-

			Original Canister Dilution				Secondary Canister Dilution						
Date	Initials	Accutest Sample ID	Canister ID	Vacuum in "Hg at time of Dilution	Final Pressure psig	Dilution Factor	Canister ID	Canister Volume CC	Sample Volume Added CC	Final Pressure psig	Equiv Total Volume CC	Dilution Factor	Final Canister Dilution Factor
2/10/17	Cm	JC36491-1	A221	8.5	1.3	1.52	M404	6000	20	9.8	10,000	500	760

Definition:

Final DF = (Original Canister DF) x (Secondary Canister DF)

Dilution Factor at Instrument = (Final Canister Dilution Factor) x (Normal Sampling Volume in cc) / (Sample Volume in cc Injected)

Example:

Original Canister is diluted 2x for manual sample draw. 75cc from this canister is added to a 375cc minican and brought to 14.7 psig or 750cc equiv volume. This results in an additional dilution of 750/75 or 10. The final canister dilution factor is 2 x 10 = 20. From the dilution canister 20cc is injected at the instrument where normal volume is 400cc. This is an additional instrument dilution factor of 20. The final dilution multiplier is 20(from canister dilution) x 20(from instrument dilution) = 400

Notes:

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error; # 3 = Computer Miscalclulation, # 4 = Analyst's Correction Error

Form: AT003-04
Rev. Date: 04/15/1

168

SGS ACCUTEST

TO-14/TO-15

Batch ID: V5W909

Date: 2/23/17

Analyst Signature: [signature]

Columns: RTX-1 60mx0.32mmx1.0um
Method: SW7015.M
Seq. File: 170223.S
Initial Cal. Method: MSW881

AS Data

Method: 7015.CTD

Standard Data

Lot #	Description	Conc.

Standard Data

Lot #	Description	Conc.
A6906	IS/Surr.	100ppbv
A3746	7015 STD ~~(A965)~~	40ppbv (A965)
A3747	7015 LCS (A968)	40ppbv

(M) Manually integrated chromatographic peaks in the following reportable file have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [signature] Date: 2/27/17

AS #	Data File	Sample ID	TEST	Canister Serial #	Vol Sample	Dil Fact	PICS	Int. STD Areas	Surr	Status Data	Comments
1	SW22928	BFB		open position	400					ok	time 933
2	SW22929	CC881-10		A965	100			✓	✓	ok	
3	SW22930	BS		A968	100			✓	✓	ok	
3	SW22931	BSD		A968	100				✓	RR	bad injection
3	SW22932	BSD		A968	100			✓	✓	ok	
4	SW22933	IB		A1152	400						
4	SW22934	MB		A1152	400		+	✓	✓	ok	Also SCC CP9019
5	SW22935	JC37079-5	SC MS12536	A863, A555	200	56		✓	✓	ok/ok	
5	~~SW22936~~	~~JC37079-5DUP~~	✓	A863, A555	200	56			✓	not Run	
6	SW22936	JC37521-2	STD MS12740	7-BAG, A1131	400	100		✓	✓	ok	
7	SW22937	JC37118-1	STD MS12505	A420	100	1		✓	✓	ok	
8	SW22938	SCC CP9011		A1221	400			✓	✓	ok	
9	SW22939	JC37213-3	Benz MS12505	A855	592	1.48		✓	✓	ok	
10	SW22940	JC37213-2	✓	M016	400	1		✓	✓	ok	
11	SW22941	JC37213-4	✓	A10 ~~400~~ 60	~~400~~ 640	1.6		✓	✓	ok	RR
12	SW22942	JC37213-5	✓	A1041	592	1.48		✓	✓	ok	
13	SW22943	JC37213-6	✓	A1050	400	1		✓	✓	ok	
14	SW22944	JC37212-4	Benz MS12505	A1097	400	1		✓	✓	ok	
15	SW22945	JC37214-1	STD MS12505	A321	100	1	+	✓	✓	ok	
16	SW22946	JC37214-2	✓	A210	100	1	+	✓	✓	ok	
16	SW22947	JC37214-2DUP	✓	A210	100	1		✓	✓	ok	
1	SW22948	JC37214-3	✓	LA 2308	40	1	+	✓	✓	ok	RR 2214-7MPA 50x
2	SW22949	JC37216-1	SC MS12628	A636	400	1		✓	✓	ok	
3	SW22950	JC37216-2	✓	A1032	400	1		✓	✓	ok	
4	SW22951	JC37217-1	SC MS12628	M158	592	1.48		✓	✓	ok	
5	SW22952	SCC CP9021		A304	400			✓	✓	ok	
6	SW22953	SCC CP9022		A691	400			✓	✓	ok	

All strikeouts must be initial and dated. Comment is require for anything other than a transcription error.

Form: AT008-05
Rev. Date: 10/20/09

ACCUTEST

Canister Secondary Dilution Log

Test Gauge ID : TG-

			Original Canister Dilution				Secondary Canister Dilution						
Date	Initials	Accutest Sample ID	Canister ID	Vacuum in "Hg at time of Dilution	Final Pressure psig	Dilution Factor	Canister ID	Canister Volume CC	Sample Volume Added CC	Final Pressure psig	Equiv Total Volume CC	Dilution Factor	Final Canister Dilution Factor
2/23/17	CM	JC37019-5	A863	1	1.2	1.12	A555	1000	40	14.7	2000	50	56

Definition:

Final DF = (Original Canister DF) x (Secondary Canister DF)

Dilution Factor at Instrument = (Final Canister Dilution Factor) x (Normal Sampling Volume in cc) / (Sample Volume in cc Injected)

Example:

Original Canister is diluted 2x for manual sample draw. 75cc from this canister is added to a 375cc minican and brought to 14.7 psig or 750cc equiv volume. This results in an additional dilution of 750/75 or 10. The final canister dilution factor is 2 x 10 = 20. From the dilution canister 20cc is injected at the instrument where normal volume is 400cc. This is an additional instrument dilution factor of 20. The final dilution multiplier is 20(from canister dilution) x 20(from instrument dilution) = 400

Notes:

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error; # 3 = Computer Miscalclulation, # 4 = Analyst's Correction Error

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