New Jersey ACCUTEST LABORATORIES

09/16/14

Technical Report for

Shell Oil Products US

URSMDG:SAP#171356, New Hope, PA

INC#97611740 Project # 49234152

Accutest Job Number: JB75730

Sampling Date: 09/04/14

Report to:

12420 Milestone Center Drive
Suite 150
Germantown, MD 20876
[redacted]

ATTN: [redacted]

Total number of pages in report: **262**

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.

[redacted]
Laboratory Director

Client Service contact: Marty Vitanza 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, DE, FL, IL, IN, KS, KY, LA, MA, MD, MI, MT, NC, OH VAP (CL0056), PA, RI, SC, TN, VA, WV, DoD ELAP (L-A-B L2248)

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Accutest Laboratories

Sample Summary

Shell Oil Products US

Job No: JB75730

URSMDG:SAP#171356, New Hope, PA
Project No: INC#97611740 Project # 49234152

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JB75730-1	09/04/14	10:30	BR	09/05/14	AQ	Surface Water	BROOK-1-SH
JB75730-1R	09/04/14	10:30	BR	09/05/14	AQ	Surface Water	BROOK-1-SH
JB75730-2	09/04/14	11:45	BR	09/05/14	AQ	Surface Water	BROOK-2-SH
JB75730-2R	09/04/14	11:45	BR	09/05/14	AQ	Surface Water	BROOK-2-SH
JB75730-3	09/04/14	13:30	BR	09/05/14	AQ	Surface Water	BROOK-3-SH
JB75730-3R	09/04/14	13:30	BR	09/05/14	AQ	Surface Water	BROOK-3-SH
JB75730-4	09/04/14	13:30	BR	09/05/14	AQ	Trip Blank Water	TB
JB75730-4R	09/04/14	13:30	BR	09/05/14	AQ	Trip Blank Water	TB

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	Shell Oil Products US	**Job No**	JB75730
Site:	URSMDG:SAP#171356, New Hope, PA	**Report Date**	9/16/2014 10:54:20 A

On 09/05/2014, 3 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were received at Accutest Laboratories at a temperature of 2.5 C. Samples were intact and chemically preserved, unless noted below. An Accutest Job Number of JB75730 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 SW846 8260B

Matrix: AQ **Batch ID:** V3D4402

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JB75723-1RMS, JB75723-1RMSD were used as the QC samples indicated.

Matrix: AQ **Batch ID:** VU8647

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JB75858-6MS, JB75858-6MSD were used as the QC samples indicated.

Volatiles by GC By Method RSK-175

Matrix: AQ **Batch ID:** GAA510

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JB75730-1DUP were used as the QC samples indicated.

Volatiles by GC By Method SW846 8015C

Matrix: AQ **Batch ID:** GUV4701

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JB75898-2MS, JB75898-2MSD were used as the QC samples indicated.

Matrix: AQ **Batch ID:** GUV4702

- All samples were analyzed within the recommended method holding time.
- Sample(s) JB75898-5MS, JB75898-5MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Extractables by GC By Method SW846 8015C

Matrix: AQ **Batch ID:** OP77917

- All samples were extracted within the recommended method holding time.
- Sample(s) JB75730-1MS, JB75730-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method EPA 300/SW846 9056A

Matrix: AQ **Batch ID:** GP83085

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JB76197-1DUP, JB76197-1MS were used as the QC samples for Sulfate.

Wet Chemistry By Method SM4500S2- F-11

Matrix: AQ **Batch ID:** GN11449

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JB75689-3DUP, JB75689-4MS were used as the QC samples for Sulfide.

Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting Accutest's 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.

Accutest Laboratories 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 Accutest Laboratories indicated via signature on the report cover

Summary of Hits

Job Number: JB75730
Account: Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA
Collected: 09/04/14

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JB75730-1	**BROOK-1-SH**					
2-Butanone (MEK)		10.3	10		ug/l	SW846 8260B
Isopropylbenzene		5.2	1.0		ug/l	SW846 8260B
Methylcyclohexane		83.0	5.0		ug/l	SW846 8260B
Total TIC, Volatile		239.6 J			ug/l	
Methane		76.3	0.11		ug/l	RSK-175
TPH-GRO (C6-C10)		0.806	0.20		mg/l	SW846 8015C
TPH-DRO (C10-C28)		0.114	0.028		mg/l	SW846 8015C
JB75730-1R	**BROOK-1-SH**					
Pentane		13.3	5.0		ug/l	SW846 8260B
JB75730-2	**BROOK-2-SH**					
2-Butanone (MEK)		11.1	10		ug/l	SW846 8260B
Isopropylbenzene		7.1	1.0		ug/l	SW846 8260B
Methylcyclohexane		87.8	5.0		ug/l	SW846 8260B
Total TIC, Volatile		251.6 J			ug/l	
Methane		49.5	0.11		ug/l	RSK-175
TPH-GRO (C6-C10)		0.781	0.20		mg/l	SW846 8015C
TPH-DRO (C10-C28)		0.150	0.026		mg/l	SW846 8015C
Sulfate		13.2	10		mg/l	EPA 300/SW846 9056A
JB75730-2R	**BROOK-2-SH**					
Pentane		13.3	5.0		ug/l	SW846 8260B
JB75730-3	**BROOK-3-SH**					
Methane		43.4	0.11		ug/l	RSK-175
TPH-DRO (C10-C28)		0.180	0.026		mg/l	SW846 8015C
TPH-ORO (> C28-C40)		0.131	0.026		mg/l	SW846 8015C
JB75730-3R	**BROOK-3-SH**					
No hits reported in this sample.						
JB75730-4	**TB**					
No hits reported in this sample.						

Summary of Hits

Job Number: JB75730
Account: Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA
Collected: 09/04/14

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JB75730-4R	**TB**					

No hits reported in this sample.

New Jersey ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Client Sample ID:	BROOK-1-SH		
Lab Sample ID:	JB75730-1	**Date Sampled:**	09/04/14
Matrix:	AQ - Surface Water	**Date Received:**	09/05/14
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSMDG:SAP#171356, New Hope, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U187447.D	1	09/09/14	ST	n/a	n/a	VU8647
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List (SOM0 1.1)

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	10.3	10	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
110-82-7	Cyclohexane	ND	5.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
76-13-1	Freon 113	ND	5.0	ug/l	

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

Report of Analysis

Client Sample ID: BROOK-1-SH
Lab Sample ID: JB75730-1
Matrix: AQ - Surface Water
Method: SW846 8260B
Project: URSMDG:SAP#171356, New Hope, PA

Date Sampled: 09/04/14
Date Received: 09/05/14
Percent Solids: n/a

VOA TCL List (SOM0 1.1)

CAS No.	Compound	Result	RL	Units	Q
110-54-3	Hexane	ND	5.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	5.2	1.0	ug/l	
79-20-9	Methyl Acetate	ND	5.0	ug/l	
108-87-2	Methylcyclohexane	83.0	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		79-120%
17060-07-0	1,2-Dichloroethane-D4	97%		72-123%
2037-26-5	Toluene-D8	104%		78-119%
460-00-4	4-Bromofluorobenzene	100%		74-119%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	alkane	6.09	11	ug/l	J
	alkane	6.17	40	ug/l	J
	alkane	6.57	12	ug/l	J
	alkane	8.39	38	ug/l	J
	alkene	10.60	14	ug/l	J
	alkene	10.78	19	ug/l	J
	alkene	10.85	17	ug/l	J
	alkene	10.92	35	ug/l	J

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

Report of Analysis

Client Sample ID:	BROOK-1-SH		
Lab Sample ID:	JB75730-1	**Date Sampled:**	09/04/14
Matrix:	AQ - Surface Water	**Date Received:**	09/05/14
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSMDG:SAP#171356, New Hope, PA		

VOA TCL List (SOM0 1.1)

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	alkene	11.88	7.8	ug/l	J
	alkene	12.11	5.2	ug/l	J
	alkene	12.77	11	ug/l	J
	alkene	12.99	7.3	ug/l	J
	alkene	13.20	8.3	ug/l	J
	alkene	13.82	8	ug/l	J
103-65-1	Benzene, propyl-	15.98	6	ug/l	JN
	Total TIC, Volatile		239.6	ug/l	J

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID: BROOK-1-SH
Lab Sample ID: JB75730-1
Matrix: AQ - Surface Water
Method: SW846 8015C
Project: URSMDG:SAP#171356, New Hope, PA

Date Sampled: 09/04/14
Date Received: 09/05/14
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	UV18649.D	1	09/11/14	WO	n/a	n/a	GUV4702
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
	TPH-GRO (C6-C10)	0.806	0.20	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	81%		62-120%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	BROOK-1-SH		
Lab Sample ID:	JB75730-1	**Date Sampled:**	09/04/14
Matrix:	AQ - Surface Water	**Date Received:**	09/05/14
Method:	RSK-175	**Percent Solids:**	n/a
Project:	URSMDG:SAP#171356, New Hope, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA42424.D	1	09/09/14	TCH	n/a	n/a	GAA510
Run #2							

CAS No.	Compound	Result	RL	Units	Q
74-82-8	Methane	76.3	0.11	ug/l	
74-84-0	Ethane	ND	0.23	ug/l	
74-85-1	Ethene	ND	0.31	ug/l	

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

Accutest Laboratories

Report of Analysis

Client Sample ID: BROOK-1-SH
Lab Sample ID: JB75730-1
Matrix: AQ - Surface Water
Method: SW846 8015C SW846 3510C
Project: URSMDG:SAP#171356, New Hope, PA

Date Sampled: 09/04/14
Date Received: 09/05/14
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7Y6381.D	1	09/11/14	JM	09/10/14	OP77917	G7Y240
Run #2							

	Initial Volume	Final Volume
Run #1	900 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
	TPH-DRO (C10-C28)	0.114	0.028	mg/l	
	TPH-ORO (> C28-C40)	ND	0.028	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	58%		36-144%
16416-32-3	Tetracosane-d50	41%		32-138%
438-22-2	5a-Androstane	41%		31-136%

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

Report of Analysis

Client Sample ID:	BROOK-1-SH		
Lab Sample ID:	JB75730-1	**Date Sampled:**	09/04/14
Matrix:	AQ - Surface Water	**Date Received:**	09/05/14
		Percent Solids:	n/a
Project:	URSMDG:SAP#171356, New Hope, PA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sulfate	< 10	10	mg/l	1	09/15/14 14:26	CV	EPA 300/SW846 9056A
Sulfide	< 2.0	2.0	mg/l	1	09/10/14	ST	SM4500S2- F-11

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	BROOK-1-SH		
Lab Sample ID:	JB75730-1R	**Date Sampled:**	09/04/14
Matrix:	AQ - Surface Water	**Date Received:**	09/05/14
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSMDG:SAP#171356, New Hope, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D102396.D	1	09/12/14	BM	n/a	n/a	V3D4402
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
109-66-0	Pentane	13.3	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		79-120%
17060-07-0	1,2-Dichloroethane-D4	103%		72-123%
2037-26-5	Toluene-D8	101%		78-119%
460-00-4	4-Bromofluorobenzene	100%		74-119%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	BROOK-2-SH		
Lab Sample ID:	JB75730-2	**Date Sampled:**	09/04/14
Matrix:	AQ - Surface Water	**Date Received:**	09/05/14
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSMDG:SAP#171356, New Hope, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U187448.D	1	09/09/14	ST	n/a	n/a	VU8647
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List (SOM0 1.1)

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	11.1	10	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
110-82-7	Cyclohexane	ND	5.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
76-13-1	Freon 113	ND	5.0	ug/l	

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

Report of Analysis

Client Sample ID: BROOK-2-SH
Lab Sample ID: JB75730-2
Matrix: AQ - Surface Water
Method: SW846 8260B
Project: URSMDG:SAP#171356, New Hope, PA

Date Sampled: 09/04/14
Date Received: 09/05/14
Percent Solids: n/a

VOA TCL List (SOM0 1.1)

CAS No.	Compound	Result	RL	Units	Q
110-54-3	Hexane	ND	5.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	7.1	1.0	ug/l	
79-20-9	Methyl Acetate	ND	5.0	ug/l	
108-87-2	Methylcyclohexane	87.8	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		79-120%
17060-07-0	1,2-Dichloroethane-D4	97%		72-123%
2037-26-5	Toluene-D8	105%		78-119%
460-00-4	4-Bromofluorobenzene	101%		74-119%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	alkane	6.09	11	ug/l	J
	alkane	6.17	40	ug/l	J
	alkane	6.56	11	ug/l	J
	alkane	8.39	40	ug/l	J
	alkene	10.60	14	ug/l	J
	alkene	10.78	20	ug/l	J
	alkene	10.85	18	ug/l	J
	alkene	10.92	36	ug/l	J

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

Report of Analysis

Client Sample ID:	BROOK-2-SH		
Lab Sample ID:	JB75730-2	**Date Sampled:**	09/04/14
Matrix:	AQ - Surface Water	**Date Received:**	09/05/14
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSMDG:SAP#171356, New Hope, PA		

VOA TCL List (SOM0 1.1)

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	alkene	11.88	8.3	ug/l	J
	alkene	12.77	13	ug/l	J
	alkene	12.99	7.2	ug/l	J
	alkene	13.20	8.4	ug/l	J
	alkene	13.82	8.2	ug/l	J
103-65-1	Benzene, propyl-	15.98	9.2	ug/l	JN
	1H-Indene-dihydro-methyl- isomer	17.95	7.3	ug/l	J
	Total TIC, Volatile		251.6	ug/l	J

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	BROOK-2-SH
Lab Sample ID:	JB75730-2
Matrix:	AQ - Surface Water
Method:	SW846 8015C
Project:	URSMDG:SAP#171356, New Hope, PA
Date Sampled:	09/04/14
Date Received:	09/05/14
Percent Solids:	n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	UV18625.D	1	09/10/14	WO	n/a	n/a	GUV4701
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
	TPH-GRO (C6-C10)	0.781	0.20	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	81%		62-120%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	BROOK-2-SH		
Lab Sample ID:	JB75730-2	**Date Sampled:**	09/04/14
Matrix:	AQ - Surface Water	**Date Received:**	09/05/14
Method:	RSK-175	**Percent Solids:**	n/a
Project:	URSMDG:SAP#171356, New Hope, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA42426.D	1	09/09/14	TCH	n/a	n/a	GAA510
Run #2							

CAS No.	Compound	Result	RL	Units	Q
74-82-8	Methane	49.5	0.11	ug/l	
74-84-0	Ethane	ND	0.23	ug/l	
74-85-1	Ethene	ND	0.31	ug/l	

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

Accutest Laboratories

Report of Analysis

Client Sample ID: BROOK-2-SH
Lab Sample ID: JB75730-2
Matrix: AQ - Surface Water
Method: SW846 8015C SW846 3510C
Project: URSMDG:SAP#171356, New Hope, PA

Date Sampled: 09/04/14
Date Received: 09/05/14
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7Y6382.D	1	09/11/14	JM	09/10/14	OP77917	G7Y240
Run #2							

	Initial Volume	Final Volume
Run #1	960 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
	TPH-DRO (C10-C28)	0.150	0.026	mg/l	
	TPH-ORO (> C28-C40)	ND	0.026	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	86%		36-144%
16416-32-3	Tetracosane-d50	62%		32-138%
438-22-2	5a-Androstane	63%		31-136%

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

Report of Analysis

Client Sample ID:	BROOK-2-SH		
Lab Sample ID:	JB75730-2	**Date Sampled:**	09/04/14
Matrix:	AQ - Surface Water	**Date Received:**	09/05/14
		Percent Solids:	n/a
Project:	URSMDG:SAP#171356, New Hope, PA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sulfate	13.2	10	mg/l	1	09/15/14 14:50	CV	EPA 300/SW846 9056A
Sulfide	< 2.0	2.0	mg/l	1	09/10/14	ST	SM4500S2- F-11

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	BROOK-2-SH		
Lab Sample ID:	JB75730-2R	**Date Sampled:**	09/04/14
Matrix:	AQ - Surface Water	**Date Received:**	09/05/14
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSMDG:SAP#171356, New Hope, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D102397.D	1	09/12/14	BM	n/a	n/a	V3D4402
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
109-66-0	Pentane	13.3	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		79-120%
17060-07-0	1,2-Dichloroethane-D4	102%		72-123%
2037-26-5	Toluene-D8	101%		78-119%
460-00-4	4-Bromofluorobenzene	100%		74-119%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	BROOK-3-SH		
Lab Sample ID:	JB75730-3	**Date Sampled:**	09/04/14
Matrix:	AQ - Surface Water	**Date Received:**	09/05/14
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSMDG:SAP#171356, New Hope, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U187449.D	1	09/09/14	ST	n/a	n/a	VU8647
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List (SOM0 1.1)

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
110-82-7	Cyclohexane	ND	5.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
76-13-1	Freon 113	ND	5.0	ug/l	

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

Report of Analysis

Client Sample ID:	BROOK-3-SH		
Lab Sample ID:	JB75730-3	**Date Sampled:**	09/04/14
Matrix:	AQ - Surface Water	**Date Received:**	09/05/14
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSMDG:SAP#171356, New Hope, PA		

VOA TCL List (SOM0 1.1)

CAS No.	Compound	Result	RL	Units	Q
110-54-3	Hexane	ND	5.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
79-20-9	Methyl Acetate	ND	5.0	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		79-120%
17060-07-0	1,2-Dichloroethane-D4	96%		72-123%
2037-26-5	Toluene-D8	104%		78-119%
460-00-4	4-Bromofluorobenzene	100%		74-119%

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

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	BROOK-3-SH		
Lab Sample ID:	JB75730-3	**Date Sampled:**	09/04/14
Matrix:	AQ - Surface Water	**Date Received:**	09/05/14
Method:	SW846 8015C	**Percent Solids:**	n/a
Project:	URSMDG:SAP#171356, New Hope, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	UV18626.D	1	09/10/14	WO	n/a	n/a	GUV4701
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	77%		62-120%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	BROOK-3-SH		
Lab Sample ID:	JB75730-3	**Date Sampled:**	09/04/14
Matrix:	AQ - Surface Water	**Date Received:**	09/05/14
Method:	RSK-175	**Percent Solids:**	n/a
Project:	URSMDG:SAP#171356, New Hope, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA42427.D	1	09/09/14	TCH	n/a	n/a	GAA510
Run #2							

CAS No.	Compound	Result	RL	Units	Q
74-82-8	Methane	43.4	0.11	ug/l	
74-84-0	Ethane	ND	0.23	ug/l	
74-85-1	Ethene	ND	0.31	ug/l	

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	BROOK-3-SH		
Lab Sample ID:	JB75730-3	**Date Sampled:**	09/04/14
Matrix:	AQ - Surface Water	**Date Received:**	09/05/14
Method:	SW846 8015C SW846 3510C	**Percent Solids:**	n/a
Project:	URSMDG:SAP#171356, New Hope, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7Y6386.D	1	09/11/14	JM	09/10/14	OP77917	G7Y240
Run #2							

	Initial Volume	Final Volume
Run #1	960 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
	TPH-DRO (C10-C28)	0.180	0.026	mg/l	
	TPH-ORO (> C28-C40)	0.131	0.026	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	92%		36-144%
16416-32-3	Tetracosane-d50	70%		32-138%
438-22-2	5a-Androstane	70%		31-136%

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

Report of Analysis

Client Sample ID:	BROOK-3-SH		
Lab Sample ID:	JB75730-3	**Date Sampled:**	09/04/14
Matrix:	AQ - Surface Water	**Date Received:**	09/05/14
		Percent Solids:	n/a
Project:	URSMDG:SAP#171356, New Hope, PA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sulfate	< 10	10	mg/l	1	09/15/14 15:14	CV	EPA 300/SW846 9056A
Sulfide	< 2.0	2.0	mg/l	1	09/10/14	ST	SM4500S2- F-11

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	BROOK-3-SH		
Lab Sample ID:	JB75730-3R	**Date Sampled:**	09/04/14
Matrix:	AQ - Surface Water	**Date Received:**	09/05/14
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSMDG:SAP#171356, New Hope, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D102398.D	1	09/12/14	BM	n/a	n/a	V3D4402
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
109-66-0	Pentane	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		79-120%
17060-07-0	1,2-Dichloroethane-D4	102%		72-123%
2037-26-5	Toluene-D8	101%		78-119%
460-00-4	4-Bromofluorobenzene	100%		74-119%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	TB		
Lab Sample ID:	JB75730-4	**Date Sampled:**	09/04/14
Matrix:	AQ - Trip Blank Water	**Date Received:**	09/05/14
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSMDG:SAP#171356, New Hope, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U187445.D	1	09/09/14	ST	n/a	n/a	VU8647
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List (SOM0 1.1)

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
110-82-7	Cyclohexane	ND	5.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
76-13-1	Freon 113	ND	5.0	ug/l	

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

Report of Analysis

Client Sample ID:	TB		
Lab Sample ID:	JB75730-4	**Date Sampled:**	09/04/14
Matrix:	AQ - Trip Blank Water	**Date Received:**	09/05/14
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSMDG:SAP#171356, New Hope, PA		

VOA TCL List (SOM0 1.1)

CAS No.	Compound	Result	RL	Units	Q
110-54-3	Hexane	ND	5.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
79-20-9	Methyl Acetate	ND	5.0	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		79-120%
17060-07-0	1,2-Dichloroethane-D4	97%		72-123%
2037-26-5	Toluene-D8	103%		78-119%
460-00-4	4-Bromofluorobenzene	100%		74-119%

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

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	TB		
Lab Sample ID:	JB75730-4R	**Date Sampled:**	09/04/14
Matrix:	AQ - Trip Blank Water	**Date Received:**	09/05/14
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	URSMDG:SAP#171356, New Hope, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D102403.D	1	09/12/14	BM	n/a	n/a	V3D4402
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
109-66-0	Pentane	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		79-120%
17060-07-0	1,2-Dichloroethane-D4	102%		72-123%
2037-26-5	Toluene-D8	101%		78-119%
460-00-4	4-Bromofluorobenzene	99%		74-119%

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

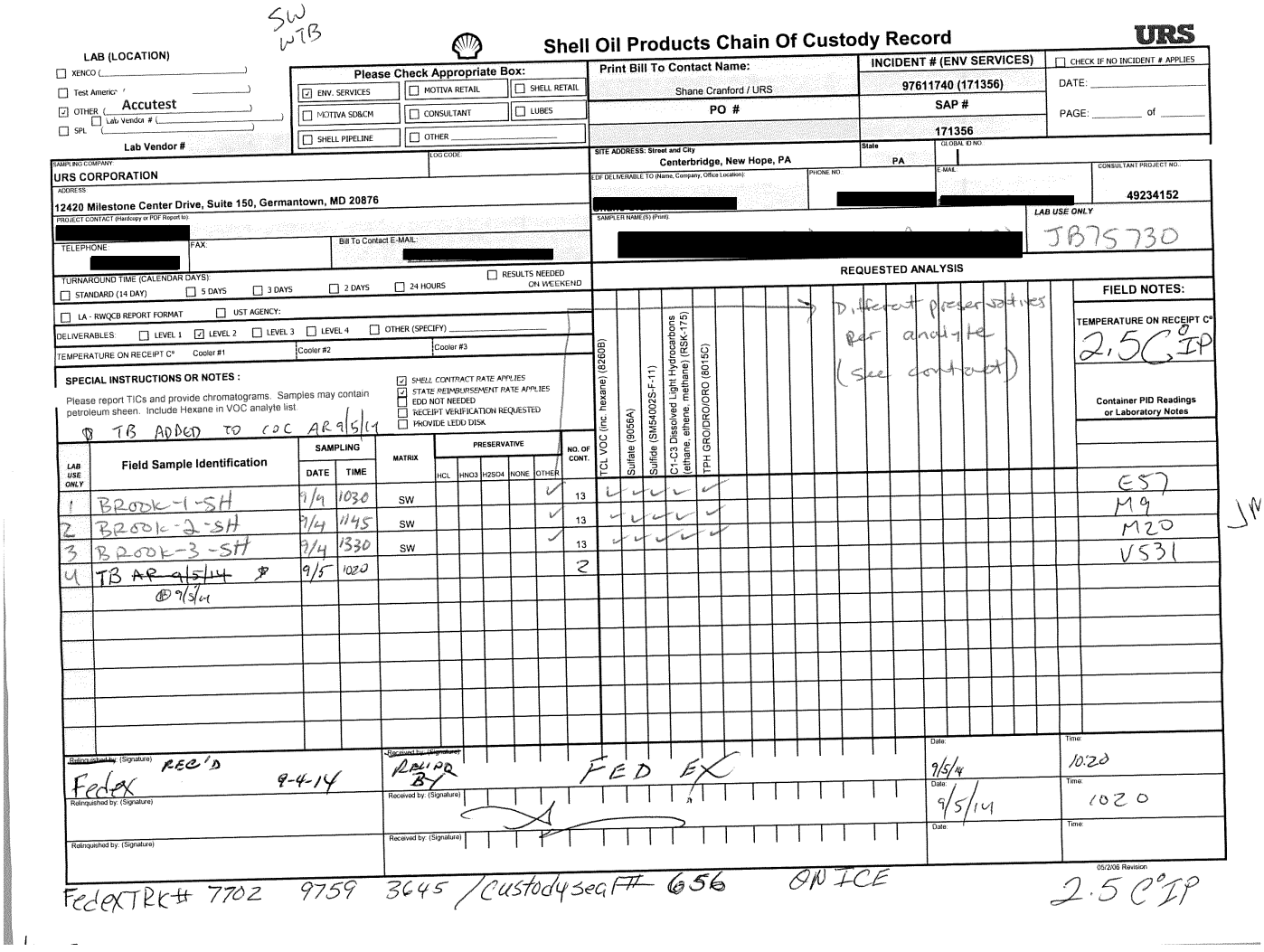
New Jersey ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody



Shell Oil Products Chain Of Custody Record

URS

SW
WTB

LAB (LOCATION)
☐ XENCO (_____)
☐ Test America (_____)
☑ OTHER (Accutest) ☐ Lab Vendor # (_____)
☐ SPL
Lab Vendor #

Please Check Appropriate Box:
☑ ENV. SERVICES ☐ MOTIVA RETAIL ☐ SHELL RETAIL
☐ MOTIVA SD&CM ☐ CONSULTANT ☐ LUBES
☐ SHELL PIPELINE ☐ OTHER

Print Bill To Contact Name: Shane Cranford / URS
PO #
INCIDENT # (ENV SERVICES): 97611740 (171356)
SAP #: 171356
☐ CHECK IF NO INCIDENT # APPLIES
DATE:
PAGE: _____ of _____

SITE ADDRESS: Street and City: Centerbridge, New Hope, PA
State: PA
GLOBAL ID NO.:
EDF DELIVERABLE TO (Name, Company, Office Location):
PHONE NO.:
E-MAIL:
CONSULTANT PROJECT NO.: 49234152

SAMPLING COMPANY: URS CORPORATION
LOG CODE:
ADDRESS: 12420 Milestone Center Drive, Suite 150, Germantown, MD 20876
PROJECT CONTACT (Hardcopy or PDF Report to):
TELEPHONE:
FAX:
Bill To Contact E-MAIL:
SAMPLER NAME(S) (Print):
LAB USE ONLY: JB75730

TURNAROUND TIME (CALENDAR DAYS):
☐ STANDARD (14 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND
☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:
DELIVERABLES: ☐ LEVEL 1 ☑ LEVEL 2 ☐ LEVEL 3 ☐ LEVEL 4 ☐ OTHER (SPECIFY)
TEMPERATURE ON RECEIPT C°: Cooler #1 | Cooler #2 | Cooler #3

SPECIAL INSTRUCTIONS OR NOTES:
Please report TICs and provide chromatograms. Samples may contain petroleum sheen. Include Hexane in VOC analyte list.
TB ADDED TO COC AR 9/5/14
☑ SHELL CONTRACT RATE APPLIES
☑ STATE REIMBURSEMENT RATE APPLIES
☐ EDD NOT NEEDED
☐ RECEIPT VERIFICATION REQUESTED
☐ PROVIDE LEDD DISK

REQUESTED ANALYSIS
→ Different preservatives per analyte (see container)

FIELD NOTES:
TEMPERATURE ON RECEIPT C°: 2.5C IP
Container PID Readings or Laboratory Notes

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.	TCL VOC (inc. hexane) (8260B)	Sulfate (9056A)	Sulfide (SM5400 2S-F-11)	C1-C3 Dissolved Light Hydrocarbons (ethane, ethene, methane) (RSK-175)	TPH GRO/DRO/ORO (8015C)	Container PID Readings or Laboratory Notes
1	BROOK-1-SH	9/4	1030	SW					✓	13	✓	✓	✓	✓	✓	E57
2	BROOK-2-SH	9/4	1145	SW					✓	13	✓	✓	✓	✓	✓	M9
3	BROOK-3-SH	9/4	1330	SW					✓	13	✓	✓	✓	✓	✓	M20
4	TB ~~AR 9/5/14~~ @ 9/5/14	9/5	1020							2						V531

JN

Relinquished by: (Signature) REC'D 9-4-14 — Received by: (Signature) RELINQ BY FED EX — Date: 9/5/14 — Time: 10:20
Relinquished by: (Signature) — Received by: (Signature) — Date: 9/5/14 — Time: 1020
Relinquished by: (Signature) — Received by: (Signature) — Date: — Time:

FedEx TRK# 7702 9759 3645 / Custody Seal # 656 ON ICE

05/2/06 Revision

2.5 C° IP

JB75730: Chain of Custody
Page 1 of 3

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: JB75730 **Client:** **Project:**

Date / Time Received: 9/5/2014 **Delivery Method:** **Airbill #'s:**

Cooler Temps (Initial/Adjusted): #1: (2.5/2.5); 0

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:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservatio	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

Accutest Laboratories
V:732.329.0200

2235 US Highway 130
F: 732.329.3499

Dayton, New Jersey
www/accutest.com

JB75730: Chain of Custody
Page 2 of 3

ACCUTEST LABORATORIES

Job Change Order: JB75730

Requested Date:	9/10/2014	**Received Date:**	9/5/2014
Account Name:	Shell Oil Products US	**Due Date:**	9/15/2014
Project Description:	URSMDG:SAP#171356, New Hope, PA	**Deliverable:**	COMMBN
CSR:	MartyV	**TAT (Days):**	10

==========

Sample #: JB75730-All

Dept:

Change:
Add VMS+PENTANE, Change delievrable to REDT2

==========

Above Changes Per: [redacted]

Date/Time: 9/10/2014 1:15:47 PM

To Client: This Change Order is confirmation of the revisions, previously discussed with the Accutest Client Service Representative.

JB75730: Chain of Custody
Page 3 of 3

Internal Sample Tracking Chronicle

Shell Oil Products US

Job No: JB75730

URSMDG:SAP#171356, New Hope, PA
Project No: INC#97611740 Project # 49234152

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JB75730-1	Collected: 04-SEP-14 10:30 By: BR		Received: 05-SEP-14 By: AS			
BROOK-1-SH						
JB75730-1	RSK-175	09-SEP-14 10:32	TCH			VRSK175DGMEE
JB75730-1	SW846 8260B	09-SEP-14 18:06	ST			V8260TCL11+
JB75730-1	SM4500S2- F-11	10-SEP-14	ST			S
JB75730-1	SW846 8015C	11-SEP-14 08:07	JM	10-SEP-14	NG	B8015DRO,BGC+ ORO
JB75730-1	SW846 8015C	11-SEP-14 14:13	WO			V8015GRO
JB75730-1	EPA 300/SW846 9056A	15-SEP-14 14:26	CV	15-SEP-14	JJY	SO4
JB75730-2	Collected: 04-SEP-14 11:45 By: BR		Received: 05-SEP-14 By: AS			
BROOK-2-SH						
JB75730-2	RSK-175	09-SEP-14 11:24	TCH			VRSK175DGMEE
JB75730-2	SW846 8260B	09-SEP-14 18:35	ST			V8260TCL11+
JB75730-2	SM4500S2- F-11	10-SEP-14	ST			S
JB75730-2	SW846 8015C	10-SEP-14 19:11	WO			V8015GRO
JB75730-2	SW846 8015C	11-SEP-14 08:41	JM	10-SEP-14	NG	B8015DRO,BGC+ ORO
JB75730-2	EPA 300/SW846 9056A	15-SEP-14 14:50	CV	15-SEP-14	JJY	SO4
JB75730-3	Collected: 04-SEP-14 13:30 By: BR		Received: 05-SEP-14 By: AS			
BROOK-3-SH						
JB75730-3	RSK-175	09-SEP-14 11:41	TCH			VRSK175DGMEE
JB75730-3	SW846 8260B	09-SEP-14 19:04	ST			V8260TCL11+
JB75730-3	SM4500S2- F-11	10-SEP-14	ST			S
JB75730-3	SW846 8015C	10-SEP-14 19:40	WO			V8015GRO
JB75730-3	SW846 8015C	11-SEP-14 11:17	JM	10-SEP-14	NG	B8015DRO,BGC+ ORO
JB75730-3	EPA 300/SW846 9056A	15-SEP-14 15:14	CV	15-SEP-14	JJY	SO4
JB75730-4	Collected: 04-SEP-14 13:30 By: BR		Received: 05-SEP-14 By: AS			
TB						
JB75730-4	SW846 8260B	09-SEP-14 17:08	ST			V8260TCL11+
JB75730-1R	Collected: 04-SEP-14 10:30 By: BR		Received: 05-SEP-14 By: AS			
BROOK-1-SH						
JB75730-1R	SW846 8260B	12-SEP-14 11:57	BM			V8260PENTANE

Internal Sample Tracking Chronicle

Shell Oil Products US

Job No: JB75730

URSMDG:SAP#171356, New Hope, PA
Project No: INC#97611740 Project # 49234152

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JB75730-2R	Collected: 04-SEP-14 11:45 By: BR			Received: 05-SEP-14 By: AS		
BROOK-2-SH						
JB75730-2R	SW846 8260B	12-SEP-14 12:24	BM			V8260PENTANE
JB75730-3R	Collected: 04-SEP-14 13:30 By: BR			Received: 05-SEP-14 By: AS		
BROOK-3-SH						
JB75730-3R	SW846 8260B	12-SEP-14 12:51	BM			V8260PENTANE
JB75730-4R	Collected: 04-SEP-14 13:30 By: BR			Received: 05-SEP-14 By: AS		
TB						
JB75730-4R	SW846 8260B	12-SEP-14 15:06	BM			V8260PENTANE

Accutest Internal Chain of Custody

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA
Received: 09/05/14

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JB75730-1.1	Secured Storage	[redacted]	09/10/14 04:35	Retrieve from Storage
JB75730-1.1	[redacted]		09/10/14 17:20	Depleted
Analyst unavailable for custody transfer.				
JB75730-1.1.1	[redacted]	Organics Prep	09/10/14 04:40	Extract from JB75730-1.1
JB75730-1.1.1	Organics Prep	[redacted]	09/10/14 15:38	Extract from JB75730-1.1
JB75730-1.1.1	[redacted]	Extract Storage	09/10/14 15:38	Return to Storage
JB75730-1.1.1	Extract Storage	[redacted]	09/10/14 16:33	Retrieve from Storage
JB75730-1.1.1	[redacted]	GC7Y	09/10/14 16:33	Load on Instrument
JB75730-1.1.1	GC7Y	[redacted]	09/11/14 17:02	Unload from Instrument
JB75730-1.1.1	[redacted]	Extract Freezer	09/11/14 17:02	Return to Storage
JB75730-1.2	Secured Storage	[redacted]	09/10/14 04:35	Retrieve from Storage
JB75730-1.2	[redacted]		09/10/14 17:20	Depleted
Analyst unavailable for custody transfer.				
JB75730-1.2.1	[redacted]	Organics Prep	09/10/14 04:40	Extract from JB75730-1.2
JB75730-1.2.1	Organics Prep	[redacted]	09/10/14 15:38	Extract from JB75730-1.2
JB75730-1.2.1	[redacted]	Extract Storage	09/10/14 15:38	Return to Storage
JB75730-1.2.1	Extract Storage	[redacted]	09/10/14 16:33	Retrieve from Storage
JB75730-1.2.1	[redacted]	GC7Y	09/10/14 16:33	Load on Instrument
JB75730-1.2.1	GC7Y	[redacted]	09/11/14 17:02	Unload from Instrument
JB75730-1.2.1	[redacted]	Extract Freezer	09/11/14 17:02	Return to Storage
JB75730-1.3	Secured Storage	[redacted]	09/09/14 08:33	Retrieve from Storage
JB75730-1.3	[redacted]	Secured Staging Area	09/09/14 08:33	Return to Storage
JB75730-1.3	Secured Staging Area	[redacted]	09/09/14 08:56	Retrieve from Storage
JB75730-1.3	[redacted]	Secured Storage	09/09/14 17:31	Return to Storage
JB75730-1.3	Secured Storage	[redacted]	09/10/14 08:29	Retrieve from Storage
JB75730-1.3	[redacted]	Secured Staging Area	09/10/14 08:29	Return to Storage
JB75730-1.3	Secured Staging Area	[redacted]	09/10/14 08:48	Retrieve from Storage
JB75730-1.3	[redacted]	Secured Storage	09/10/14 12:18	Return to Storage
JB75730-1.4	Secured Storage	[redacted]	09/09/14 08:33	Retrieve from Storage
JB75730-1.4	[redacted]	Secured Staging Area	09/09/14 08:33	Return to Storage
JB75730-1.4	Secured Staging Area	[redacted]	09/09/14 08:56	Retrieve from Storage
JB75730-1.4	[redacted]	Secured Storage	09/09/14 17:31	Return to Storage
JB75730-1.4	Secured Storage	[redacted]	09/10/14 08:29	Retrieve from Storage
JB75730-1.4	[redacted]	[redacted]	09/10/14 08:48	Retrieve from Storage
JB75730-1.4	[redacted]		09/10/14 12:17	Depleted
JB75730-1.5	Secured Storage	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]	09/14/14 15:18	Return to Storage

Accutest Internal Chain of Custody

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA
Received: 09/05/14

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JB75730-1.5	Secured Storage	[redacted]	09/15/14 08:56	Retrieve from Storage
JB75730-1.5	[redacted]	Secured Staging Area	09/15/14 08:56	Return to Storage
JB75730-1.5	Secured Staging Area	[redacted]	09/15/14 08:59	Retrieve from Storage
JB75730-1.5	[redacted]	Secured Storage	09/15/14 20:04	Return to Storage
JB75730-1.5	Secured Storage	[redacted]	09/16/14 06:00	Retrieve from Storage
JB75730-1.5	[redacted]	Secured Staging Area	09/16/14 06:00	Return to Storage
JB75730-1.5	Secured Staging Area	[redacted]	09/16/14 08:17	Retrieve from Storage
JB75730-1.6	Secured Storage	[redacted]	09/09/14 14:14	Retrieve from Storage
JB75730-1.6	[redacted]	GCMSU	09/09/14 14:14	Load on Instrument
JB75730-1.6	GCMSU	[redacted]	09/10/14 13:44	Unload from Instrument
JB75730-1.6	[redacted]	Secured Storage	09/10/14 13:44	Return to Storage
JB75730-1.7	Secured Storage	[redacted]	09/09/14 08:42	Retrieve from Storage
JB75730-1.7	[redacted]	GCAA	09/09/14 08:42	Load on Instrument
JB75730-1.8	Secured Storage	[redacted]	09/12/14 10:28	Retrieve from Storage
JB75730-1.8	[redacted]	GCMS3D	09/12/14 10:28	Load on Instrument
JB75730-1.8	GCMS3D	[redacted]	09/15/14 10:28	Unload from Instrument
JB75730-1.8	[redacted]	Secured Storage	09/15/14 10:28	Return to Storage
JB75730-1.12	Secured Storage	[redacted]	09/09/14 15:05	Retrieve from Storage
JB75730-1.12	[redacted]	VOA Prep Storage	09/09/14 16:57	Return to Storage
JB75730-1.12	VOA Prep Storage	[redacted]	09/10/14 10:06	Retrieve from Storage
JB75730-1.12	[redacted]	GCUV	09/10/14 16:06	Load on Instrument
JB75730-1.12	GCUV	[redacted]	09/10/14 17:24	Unload from Instrument
JB75730-1.12	[redacted]	VOA Prep Storage	09/10/14 17:24	Return to Storage
JB75730-1.12	VOA Prep Storage	[redacted]	09/11/14 11:30	Retrieve from Storage
JB75730-1.12	[redacted]	GCUV	09/11/14 18:05	Load on Instrument
JB75730-1.12	GCUV	[redacted]	09/12/14 09:37	Unload from Instrument
JB75730-1.12	[redacted]	Secured Storage	09/12/14 09:37	Return to Storage
JB75730-2.1	Secured Storage	[redacted]	09/10/14 04:35	Retrieve from Storage
JB75730-2.1	[redacted]		09/10/14 17:20	Depleted
Analyst unavailable for custody transfer.				
JB75730-2.1.1	[redacted]	Organics Prep	09/10/14 04:40	Extract from JB75730-2.1
JB75730-2.1.1	Organics Prep	[redacted]	09/10/14 15:38	Extract from JB75730-2.1
JB75730-2.1.1	[redacted]	Extract Storage	09/10/14 15:38	Return to Storage
JB75730-2.1.1	Extract Storage	[redacted]	09/10/14 16:33	Retrieve from Storage
JB75730-2.1.1	[redacted]	GC7Y	09/10/14 16:33	Load on Instrument
JB75730-2.1.1	GC7Y	[redacted]	09/11/14 17:02	Unload from Instrument
JB75730-2.1.1	[redacted]	Extract Freezer	09/11/14 17:02	Return to Storage

Accutest Internal Chain of Custody

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA
Received: 09/05/14

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JB75730-2.3	Secured Storage	[redacted]	09/09/14 08:33	Retrieve from Storage
JB75730-2.3	[redacted]	Secured Staging Area	09/09/14 08:33	Return to Storage
JB75730-2.3	Secured Staging Area	[redacted]	09/09/14 08:56	Retrieve from Storage
JB75730-2.3	[redacted]	Secured Storage	09/09/14 17:31	Return to Storage
JB75730-2.3	Secured Storage	[redacted]	09/10/14 08:29	Retrieve from Storage
JB75730-2.3	[redacted]	[redacted]	09/10/14 08:48	Retrieve from Storage
JB75730-2.3	[redacted]	Secured Storage	09/10/14 12:18	Return to Storage
JB75730-2.4	Secured Storage	[redacted]	09/09/14 08:33	Retrieve from Storage
JB75730-2.4	[redacted]	Secured Staging Area	09/09/14 08:33	Return to Storage
JB75730-2.4	Secured Staging Area	[redacted]	09/09/14 08:56	Retrieve from Storage
JB75730-2.4	[redacted]	Secured Storage	09/09/14 17:31	Return to Storage
JB75730-2.4	Secured Storage	[redacted]	09/10/14 08:29	Retrieve from Storage
JB75730-2.4	[redacted]	Secured Staging Area	09/10/14 08:29	Return to Storage
JB75730-2.4	Secured Staging Area	[redacted]	09/10/14 08:48	Retrieve from Storage
JB75730-2.4	[redacted]		09/10/14 12:17	Depleted
JB75730-2.5	Secured Storage	[redacted]	09/14/14 09:11	Retrieve from Storage
JB75730-2.5	[redacted]	Secured Storage	09/14/14 15:18	Return to Storage
JB75730-2.5	Secured Storage	[redacted]	09/15/14 08:56	Retrieve from Storage
JB75730-2.5	[redacted]	Secured Staging Area	09/15/14 08:56	Return to Storage
JB75730-2.5	Secured Staging Area	[redacted]	09/15/14 08:59	Retrieve from Storage
JB75730-2.5	[redacted]	Secured Storage	09/15/14 20:04	Return to Storage
JB75730-2.5	Secured Storage	[redacted]	09/16/14 06:00	Return to Storage
JB75730-2.5	Secured Staging Area	[redacted]	09/16/14 08:17	Retrieve from Storage
JB75730-2.6	Secured Storage	[redacted]	09/09/14 14:14	Retrieve from Storage
JB75730-2.6	[redacted]	GCMSU	09/09/14 14:14	Load on Instrument
JB75730-2.6	GCMSU	[redacted]	09/10/14 13:44	Unload from Instrument
JB75730-2.6	[redacted]	Secured Storage	09/10/14 13:44	Return to Storage
JB75730-2.7	Secured Storage	[redacted]	09/09/14 08:42	Retrieve from Storage
JB75730-2.7	[redacted]	GCAA	09/09/14 08:42	Load on Instrument
JB75730-2.8	Secured Storage	[redacted]	09/12/14 10:28	Retrieve from Storage
JB75730-2.8	[redacted]	GCMS3D	09/12/14 10:28	Load on Instrument
JB75730-2.8	GCMS3D	[redacted]	09/15/14 10:28	Unload from Instrument
JB75730-2.8	[redacted]	Secured Storage	09/15/14 10:28	Return to Storage
JB75730-2.12	Secured Storage	[redacted]	09/09/14 15:05	Retrieve from Storage
JB75730-2.12	[redacted]	VOA Prep Storage	09/09/14 16:57	Return to Storage
JB75730-2.12	VOA Prep Storage	[redacted]	09/10/14 10:06	Retrieve from Storage

Accutest Internal Chain of Custody

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA
Received: 09/05/14

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JB75730-2.12	[redacted]	GCUV	09/10/14 16:06	Load on Instrument
JB75730-2.12	GCUV	[redacted]	09/11/14 12:09	Unload from Instrument
JB75730-2.12	[redacted]	Secured Storage	09/11/14 12:09	Return to Storage
JB75730-3.1	Secured Storage	[redacted]	09/10/14 04:35	Retrieve from Storage
JB75730-3.1	[redacted]		09/10/14 17:20	Depleted
Analyst unavailable for custody transfer.				
JB75730-3.1.1	[redacted]	Organics Prep	09/10/14 04:40	Extract from JB75730-3.1
JB75730-3.1.1	Organics Prep	[redacted]	09/10/14 15:38	Extract from JB75730-3.1
JB75730-3.1.1	[redacted]	Extract Storage	09/10/14 15:38	Return to Storage
JB75730-3.1.1	Extract Storage	[redacted]	09/10/14 16:33	Retrieve from Storage
JB75730-3.1.1	[redacted]	GC7Y	09/10/14 16:33	Load on Instrument
JB75730-3.1.1	GC7Y	[redacted]	09/11/14 17:02	Unload from Instrument
JB75730-3.1.1	[redacted]	Extract Freezer	09/11/14 17:02	Return to Storage
JB75730-3.3	Secured Storage	[redacted]	09/09/14 08:33	Retrieve from Storage
JB75730-3.3	[redacted]	Secured Staging Area	09/09/14 08:33	Return to Storage
JB75730-3.3	Secured Staging Area	[redacted]	09/09/14 08:56	Retrieve from Storage
JB75730-3.3	[redacted]	Secured Storage	09/09/14 17:31	Return to Storage
JB75730-3.3	Secured Storage	[redacted]	09/10/14 08:29	Retrieve from Storage
JB75730-3.3	[redacted]	[redacted]	09/10/14 08:48	Retrieve from Storage
JB75730-3.3	[redacted]	Secured Storage	09/10/14 12:18	Return to Storage
JB75730-3.4	Secured Storage	[redacted]	09/09/14 08:33	Return to Storage
JB75730-3.4	Secured Staging Area	[redacted]	09/09/14 08:56	Retrieve from Storage
JB75730-3.4	[redacted]	Secured Storage	09/09/14 17:31	Return to Storage
JB75730-3.4	Secured Storage	[redacted]	09/10/14 08:29	Retrieve from Storage
JB75730-3.4	[redacted]	Secured Staging Area	09/10/14 08:29	Return to Storage
JB75730-3.4	Secured Staging Area	[redacted]	09/10/14 08:48	Retrieve from Storage
JB75730-3.4	[redacted]		09/10/14 12:17	Depleted
JB75730-3.5	Secured Storage	[redacted]	09/14/14 09:11	Retrieve from Storage
JB75730-3.5	[redacted]	Secured Storage	09/14/14 15:18	Return to Storage
JB75730-3.5	Secured Storage	[redacted]	09/15/14 08:56	Retrieve from Storage
JB75730-3.5	[redacted]	Secured Staging Area	09/15/14 08:56	Return to Storage
JB75730-3.5	Secured Staging Area	[redacted]	09/15/14 08:59	Retrieve from Storage
JB75730-3.5	[redacted]	[redacted]	09/16/14 06:00	Retrieve from Storage
JB75730-3.5	[redacted]	Secured Staging Area	09/16/14 06:00	Return to Storage
JB75730-3.5	Secured Staging Area	[redacted]	09/16/14 08:17	Retrieve from Storage

Accutest Internal Chain of Custody

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA
Received: 09/05/14

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JB75730-3.6	Secured Storage	[redacted]	09/09/14 14:14	Retrieve from Storage
JB75730-3.6	[redacted]	GCMSU	09/09/14 14:14	Load on Instrument
JB75730-3.6	GCMSU	[redacted]	09/10/14 13:44	Unload from Instrument
JB75730-3.6	[redacted]	Secured Storage	09/10/14 13:44	Return to Storage
JB75730-3.7	Secured Storage	[redacted]	09/09/14 08:42	Retrieve from Storage
JB75730-3.7	[redacted]	GCAA	09/09/14 08:42	Load on Instrument
JB75730-3.8	Secured Storage	[redacted]	09/12/14 10:28	Retrieve from Storage
JB75730-3.8	[redacted]	GCMS3D	09/12/14 10:28	Load on Instrument
JB75730-3.8	GCMS3D	[redacted]	09/15/14 10:28	Unload from Instrument
JB75730-3.8	[redacted]	Secured Storage	09/15/14 10:28	Return to Storage
JB75730-3.12	Secured Storage	[redacted]	09/09/14 15:05	Retrieve from Storage
JB75730-3.12	[redacted]	VOA Prep Storage	09/09/14 16:57	Return to Storage
JB75730-3.12	VOA Prep Storage	[redacted]	09/10/14 10:06	Retrieve from Storage
JB75730-3.12	[redacted]	GCUV	09/10/14 16:06	Load on Instrument
JB75730-3.12	GCUV	[redacted]	09/11/14 12:09	Unload from Instrument
JB75730-3.12	[redacted]	Secured Storage	09/11/14 12:09	Return to Storage
JB75730-4.1	Secured Storage	[redacted]	09/09/14 14:14	Retrieve from Storage
JB75730-4.1	[redacted]	GCMSU	09/09/14 14:14	Load on Instrument
JB75730-4.1	GCMSU	[redacted]	09/10/14 13:44	Unload from Instrument
JB75730-4.1	[redacted]	Secured Storage	09/10/14 13:44	Return to Storage
JB75730-4.2	Secured Storage	[redacted]	09/12/14 10:28	Retrieve from Storage
JB75730-4.2	[redacted]	GCMS3D	09/12/14 10:28	Load on Instrument
JB75730-4.2	GCMS3D	[redacted]	09/15/14 10:28	Unload from Instrument
JB75730-4.2	[redacted]	Secured Storage	09/15/14 10:28	Return to Storage

New Jersey ACCUTEST LABORATORIES

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
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

Method Blank Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VU8647-MB2	U187441.D	1	09/09/14	ST	n/a	n/a	VU8647

The QC reported here applies to the following samples: **Method:** SW846 8260B

JB75730-1, JB75730-2, JB75730-3, JB75730-4

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
110-82-7	Cyclohexane	ND	5.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
76-13-1	Freon 113	ND	5.0	ug/l	
110-54-3	Hexane	ND	5.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
79-20-9	Methyl Acetate	ND	5.0	ug/l	

Method Blank Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VU8647-MB2	U187441.D	1	09/09/14	ST	n/a	n/a	VU8647

The QC reported here applies to the following samples: **Method:** SW846 8260B

JB75730-1, JB75730-2, JB75730-3, JB75730-4

CAS No.	Compound	Result	RL	Units	Q
108-87-2	Methylcyclohexane	ND	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	100%	79-120%
17060-07-0	1,2-Dichloroethane-D4	96%	72-123%
2037-26-5	Toluene-D8	105%	78-119%
460-00-4	4-Bromofluorobenzene	103%	74-119%

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

Method Blank Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3D4402-MB	3D102392.D	1	09/12/14	BM	n/a	n/a	V3D4402

The QC reported here applies to the following samples: **Method:** SW846 8260B

JB75730-1R, JB75730-2R, JB75730-3R, JB75730-4R

CAS No.	Compound	Result	RL	Units	Q
109-66-0	Pentane	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	100%	79-120%
17060-07-0	1,2-Dichloroethane-D4	100%	72-123%
2037-26-5	Toluene-D8	101%	78-119%
460-00-4	4-Bromofluorobenzene	100%	74-119%

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

Method Blank Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VU8647-MB	U187426.D	1	09/09/14	ST	n/a	n/a	VU8647

The QC reported here applies to the following samples: **Method:** SW846 8260B

VU8647-BS, JB75858-6MS, JB75858-6MSD

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
110-82-7	Cyclohexane	ND	5.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
76-13-1	Freon 113	ND	5.0	ug/l	
110-54-3	Hexane	ND	5.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
79-20-9	Methyl Acetate	ND	5.0	ug/l	

Method Blank Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VU8647-MB	U187426.D	1	09/09/14	ST	n/a	n/a	VU8647

The QC reported here applies to the following samples: **Method:** SW846 8260B

VU8647-BS, JB75858-6MS, JB75858-6MSD

CAS No.	Compound	Result	RL	Units	Q
108-87-2	Methylcyclohexane	ND	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	102%	79-120%
17060-07-0	1,2-Dichloroethane-D4	95%	72-123%
2037-26-5	Toluene-D8	104%	78-119%
460-00-4	4-Bromofluorobenzene	98%	74-119%

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

Blank Spike Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VU8647-BS	U187427.D	1	09/09/14	ST	n/a	n/a	VU8647

The QC reported here applies to the following samples: **Method:** SW846 8260B

JB75730-1, JB75730-2, JB75730-3, JB75730-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	50	45.3	91	52-152
71-43-2	Benzene	50	47.7	95	80-121
74-97-5	Bromochloromethane	50	48.0	96	82-125
75-27-4	Bromodichloromethane	50	47.4	95	83-127
75-25-2	Bromoform	50	48.8	98	74-131
74-83-9	Bromomethane	50	45.5	91	45-155
78-93-3	2-Butanone (MEK)	50	48.3	97	67-136
75-15-0	Carbon disulfide	50	50.2	100	69-129
56-23-5	Carbon tetrachloride	50	51.1	102	77-138
108-90-7	Chlorobenzene	50	49.5	99	82-119
75-00-3	Chloroethane	50	52.1	104	61-151
67-66-3	Chloroform	50	46.0	92	79-124
74-87-3	Chloromethane	50	45.3	91	48-148
110-82-7	Cyclohexane	50	50.1	100	72-129
96-12-8	1,2-Dibromo-3-chloropropane	50	44.5	89	66-137
124-48-1	Dibromochloromethane	50	48.5	97	81-127
106-93-4	1,2-Dibromoethane	50	47.8	96	79-122
95-50-1	1,2-Dichlorobenzene	50	48.4	97	81-121
541-73-1	1,3-Dichlorobenzene	50	48.8	98	81-119
106-46-7	1,4-Dichlorobenzene	50	48.9	98	80-116
75-71-8	Dichlorodifluoromethane	50	51.8	104	33-161
75-34-3	1,1-Dichloroethane	50	48.0	96	78-129
107-06-2	1,2-Dichloroethane	50	48.5	97	75-133
75-35-4	1,1-Dichloroethene	50	47.7	95	74-128
156-59-2	cis-1,2-Dichloroethene	50	46.0	92	78-123
156-60-5	trans-1,2-Dichloroethene	50	45.6	91	75-122
78-87-5	1,2-Dichloropropane	50	51.3	103	80-124
10061-01-5	cis-1,3-Dichloropropene	50	46.8	94	75-114
10061-02-6	trans-1,3-Dichloropropene	50	44.7	89	78-123
123-91-1	1,4-Dioxane	1250	956	76	57-154
100-41-4	Ethylbenzene	50	48.5	97	82-120
76-13-1	Freon 113	50	53.2	106	65-150
110-54-3	Hexane	50	26.6	53	29-162
591-78-6	2-Hexanone	50	45.0	90	65-135
98-82-8	Isopropylbenzene	50	48.2	96	80-124
79-20-9	Methyl Acetate	50	40.5	81	53-137

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VU8647-BS	U187427.D	1	09/09/14	ST	n/a	n/a	VU8647

The QC reported here applies to the following samples: **Method:** SW846 8260B

JB75730-1, JB75730-2, JB75730-3, JB75730-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
108-87-2	Methylcyclohexane	50	52.4	105	62-142
1634-04-4	Methyl Tert Butyl Ether	100	87.3	87	74-123
108-10-1	4-Methyl-2-pentanone(MIBK)	50	46.2	92	68-135
75-09-2	Methylene chloride	50	47.2	94	75-121
100-42-5	Styrene	50	48.6	97	81-123
79-34-5	1,1,2,2-Tetrachloroethane	50	42.7	85	71-123
127-18-4	Tetrachloroethene	50	51.2	102	69-141
108-88-3	Toluene	50	49.9	100	80-122
87-61-6	1,2,3-Trichlorobenzene	50	45.8	92	71-138
120-82-1	1,2,4-Trichlorobenzene	50	46.4	93	77-132
71-55-6	1,1,1-Trichloroethane	50	49.4	99	80-132
79-00-5	1,1,2-Trichloroethane	50	47.8	96	80-127
79-01-6	Trichloroethene	50	50.0	100	82-126
75-69-4	Trichlorofluoromethane	50	52.1	104	63-141
75-01-4	Vinyl chloride	50	47.0	94	53-135
	m,p-Xylene	100	100	100	81-121
95-47-6	o-Xylene	50	49.5	99	82-121
1330-20-7	Xylene (total)	150	150	100	82-121

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	102%	79-120%
17060-07-0	1,2-Dichloroethane-D4	94%	72-123%
2037-26-5	Toluene-D8	105%	78-119%
460-00-4	4-Bromofluorobenzene	99%	74-119%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3D4402-BS	3D102393.D	1	09/12/14	BM	n/a	n/a	V3D4402

The QC reported here applies to the following samples: **Method:** SW846 8260B

JB75730-1R, JB75730-2R, JB75730-3R, JB75730-4R

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
109-66-0	Pentane	50	41.4	83	13-151

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	102%	79-120%
17060-07-0	1,2-Dichloroethane-D4	102%	72-123%
2037-26-5	Toluene-D8	102%	78-119%
460-00-4	4-Bromofluorobenzene	102%	74-119%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JB75858-6MS	U187428.D	1	09/09/14	ST	n/a	n/a	VU8647
JB75858-6MSD	U187429.D	1	09/09/14	ST	n/a	n/a	VU8647
JB75858-6	U187431.D	1	09/09/14	ST	n/a	n/a	VU8647

The QC reported here applies to the following samples: **Method:** SW846 8260B

JB75730-1, JB75730-2, JB75730-3, JB75730-4

CAS No.	Compound	JB75858-6 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		50	46.5	93	50	46.7	93	0	44-160/20
71-43-2	Benzene	ND		50	52.8	106	50	52.7	105	0	50-136/12
74-97-5	Bromochloromethane	ND		50	53.2	106	50	53.0	106	0	74-131/11
75-27-4	Bromodichloromethane	ND		50	52.0	104	50	52.3	105	1	74-132/11
75-25-2	Bromoform	ND		50	55.8	112	50	55.8	112	0	68-136/12
74-83-9	Bromomethane	ND		50	53.3	107	50	52.3	105	2	37-157/21
78-93-3	2-Butanone (MEK)	ND		50	49.9	100	50	49.7	99	0	60-145/15
75-15-0	Carbon disulfide	ND		50	53.8	108	50	53.9	108	0	37-143/17
56-23-5	Carbon tetrachloride	ND		50	58.5	117	50	58.3	117	0	46-152/17
108-90-7	Chlorobenzene	ND		50	55.8	112	50	56.2	112	1	70-127/12
75-00-3	Chloroethane	ND		50	55.8	112	50	54.6	109	2	44-147/16
67-66-3	Chloroform	ND		50	51.4	103	50	51.7	103	1	67-129/12
74-87-3	Chloromethane	ND		50	49.0	98	50	49.1	98	0	40-149/19
110-82-7	Cyclohexane	ND		50	60.1	120	50	59.7	119	1	31-153/21
96-12-8	1,2-Dibromo-3-chloropropane	ND		50	49.8	100	50	50.0	100	0	61-144/14
124-48-1	Dibromochloromethane	ND		50	55.6	111	50	55.8	112	0	74-131/10
106-93-4	1,2-Dibromoethane	ND		50	53.1	106	50	53.6	107	1	74-129/10
95-50-1	1,2-Dichlorobenzene	ND		50	54.6	109	50	55.4	111	1	73-126/11
541-73-1	1,3-Dichlorobenzene	ND		50	56.3	113	50	56.7	113	1	71-124/12
106-46-7	1,4-Dichlorobenzene	ND		50	55.9	112	50	56.5	113	1	71-123/12
75-71-8	Dichlorodifluoromethane	ND		50	54.9	110	50	52.8	106	4	20-161/25
75-34-3	1,1-Dichloroethane	ND		50	52.9	106	50	52.5	105	1	61-134/12
107-06-2	1,2-Dichloroethane	ND		50	53.0	106	50	52.5	105	1	68-137/11
75-35-4	1,1-Dichloroethene	ND		50	52.7	105	50	52.4	105	1	40-143/17
156-59-2	cis-1,2-Dichloroethene	ND		50	51.6	103	50	51.6	103	0	59-133/12
156-60-5	trans-1,2-Dichloroethene	ND		50	52.4	105	50	52.2	104	0	55-132/14
78-87-5	1,2-Dichloropropane	ND		50	56.2	112	50	55.7	111	1	70-128/11
10061-01-5	cis-1,3-Dichloropropene	ND		50	53.2	106	50	53.3	107	0	73-127/11
10061-02-6	trans-1,3-Dichloropropene	ND		50	52.0	104	50	52.1	104	0	72-128/11
123-91-1	1,4-Dioxane	ND		1250	1130	90	1250	1180	94	4	49-161/26
100-41-4	Ethylbenzene	ND		50	55.9	112	50	56.3	113	1	49-137/13
76-13-1	Freon 113	ND		50	61.4	123	50	59.9	120	2	32-161/23
110-54-3	Hexane	ND		50	63.5	127	50	61.4	123	3	14-169/23
591-78-6	2-Hexanone	ND		50	47.3	95	50	47.0	94	1	59-145/14
98-82-8	Isopropylbenzene	ND		50	56.7	113	50	57.5	115	1	57-136/14
79-20-9	Methyl Acetate	ND		50	42.3	85	50	41.7	83	1	46-148/15

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JB75858-6MS	U187428.D	1	09/09/14	ST	n/a	n/a	VU8647
JB75858-6MSD	U187429.D	1	09/09/14	ST	n/a	n/a	VU8647
JB75858-6	U187431.D	1	09/09/14	ST	n/a	n/a	VU8647

The QC reported here applies to the following samples: **Method:** SW846 8260B

JB75730-1, JB75730-2, JB75730-3, JB75730-4

CAS No.	Compound	JB75858-6 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
108-87-2	Methylcyclohexane	ND		50	63.0	126	50	60.5	121	4	30-155/21
1634-04-4	Methyl Tert Butyl Ether	ND		50	47.8	96	50	48.0	96	0	64-134/11
108-10-1	4-Methyl-2-pentanone(MIBK)	ND		50	49.3	99	50	48.9	98	1	63-144/13
75-09-2	Methylene chloride	ND		50	51.5	103	50	51.4	103	0	64-128/11
100-42-5	Styrene	ND		50	55.1	110	50	55.9	112	1	67-130/12
79-34-5	1,1,2,2-Tetrachloroethane	ND		50	49.6	99	50	49.6	99	0	68-131/11
127-18-4	Tetrachloroethene	ND		50	58.1	116	50	58.7	117	1	48-143/15
108-88-3	Toluene	ND		50	56.7	113	50	56.2	112	1	54-137/13
87-61-6	1,2,3-Trichlorobenzene	ND		50	51.3	103	50	52.4	105	2	62-143/13
120-82-1	1,2,4-Trichlorobenzene	ND		50	51.8	104	50	52.9	106	2	66-138/12
71-55-6	1,1,1-Trichloroethane	ND		50	56.1	112	50	56.7	113	1	52-145/16
79-00-5	1,1,2-Trichloroethane	ND		50	52.6	105	50	52.1	104	1	73-130/10
79-01-6	Trichloroethene	ND		50	57.3	115	50	57.3	115	0	54-141/13
75-69-4	Trichlorofluoromethane	ND		50	61.4	123	50	61.2	122	0	33-159/25
75-01-4	Vinyl chloride	ND		50	54.3	109	50	53.8	108	1	36-149/19
	m,p-Xylene	ND		100	115	115	100	115	115	0	50-137/12
95-47-6	o-Xylene	ND		50	56.8	114	50	57.4	115	1	60-134/12
1330-20-7	Xylene (total)	ND		150	172	115	150	173	115	1	53-136/12

CAS No.	Surrogate Recoveries	MS	MSD	JB75858-6	Limits
1868-53-7	Dibromofluoromethane	101%	101%	101%	79-120%
17060-07-0	1,2-Dichloroethane-D4	94%	94%	96%	72-123%
2037-26-5	Toluene-D8	106%	105%	103%	78-119%
460-00-4	4-Bromofluorobenzene	99%	99%	99%	74-119%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JB75723-1RMS	3D102399.D	1	09/12/14	BM	n/a	n/a	V3D4402
JB75723-1RMSD	3D102400.D	1	09/12/14	BM	n/a	n/a	V3D4402
JB75723-1R	3D102395.D	1	09/12/14	BM	n/a	n/a	V3D4402

The QC reported here applies to the following samples: **Method:** SW846 8260B

JB75730-1R, JB75730-2R, JB75730-3R, JB75730-4R

CAS No.	Compound	JB75723-1R ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
109-66-0	Pentane	ND		50	36.5	73	50	34.8	70	5	10-171/10

CAS No.	Surrogate Recoveries	MS	MSD	JB75723-1R	Limits
1868-53-7	Dibromofluoromethane	103%	102%	101%	79-120%
17060-07-0	1,2-Dichloroethane-D4	100%	101%	101%	72-123%
2037-26-5	Toluene-D8	102%	102%	101%	78-119%
460-00-4	4-Bromofluorobenzene	100%	100%	99%	74-119%

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample:	V3D4368-BFB	**Injection Date:**	08/08/14
Lab File ID:	3D101638.D	**Injection Time:**	10:32
Instrument ID:	GCMS3D		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	11655	16.2		Pass
75	30.0 - 60.0% of mass 95	31389	43.6		Pass
95	Base peak, 100% relative abundance	71941	100.0		Pass
96	5.0 - 9.0% of mass 95	5052	7.02		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	70920	98.6		Pass
175	5.0 - 9.0% of mass 174	5386	7.49	(7.59) [a]	Pass
176	95.0 - 101.0% of mass 174	68266	94.9	(96.3) [a]	Pass
177	5.0 - 9.0% of mass 176	4516	6.28	(6.62) [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
V3D4368-IC4368	3D101639.D	08/08/14	11:02	00:30	Initial cal 0.2
V3D4368-IC4368	3D101641.D	08/08/14	11:56	01:24	Initial cal 1.0
V3D4368-IC4368	3D101642.D	08/08/14	12:23	01:51	Initial cal 2.0
V3D4368-IC4368	3D101643.D	08/08/14	12:50	02:18	Initial cal 5.0
V3D4368-IC4368	3D101644.D	08/08/14	13:17	02:45	Initial cal 10
V3D4368-IC4368	3D101645.D	08/08/14	13:44	03:12	Initial cal 20
V3D4368-ICC4368	3D101646.D	08/08/14	14:11	03:39	Initial cal 50
V3D4368-IC4368	3D101647.D	08/08/14	14:38	04:06	Initial cal 100
V3D4368-IC4368	3D101648.D	08/08/14	15:05	04:33	Initial cal 200
V3D4368-IC4368	3D101651.D	08/08/14	16:26	05:54	Initial cal 0.5
V3D4368-ICV4368	3D101652.D	08/08/14	17:02	06:30	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: V3D4402-BFB
Lab File ID: 3D102389.D
Instrument ID: GCMS3D
Injection Date: 09/12/14
Injection Time: 08:39

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	18601	16.8		Pass
75	30.0 - 60.0% of mass 95	48824	44.2		Pass
95	Base peak, 100% relative abundance	110448	100.0		Pass
96	5.0 - 9.0% of mass 95	7452	6.75		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	108853	98.6		Pass
175	5.0 - 9.0% of mass 174	8268	7.49	(7.60) [a]	Pass
176	95.0 - 101.0% of mass 174	106506	96.4	(97.8) [a]	Pass
177	5.0 - 9.0% of mass 176	7174	6.50	(6.74) [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
V3D4402-CC4368	3D102390.D	09/12/14	09:07	00:28	Continuing cal 20
V3D4402-MB	3D102392.D	09/12/14	10:09	01:30	Method Blank
V3D4402-BS	3D102393.D	09/12/14	10:36	01:57	Blank Spike
JB75723-1R	3D102395.D	09/12/14	11:30	02:51	(used for QC only; not part of job JB75730)
JB75730-1R	3D102396.D	09/12/14	11:57	03:18	BROOK-1-SH
JB75730-2R	3D102397.D	09/12/14	12:24	03:45	BROOK-2-SH
JB75730-3R	3D102398.D	09/12/14	12:51	04:12	BROOK-3-SH
JB75723-1RMS	3D102399.D	09/12/14	13:18	04:39	Matrix Spike
JB75723-1RMSD	3D102400.D	09/12/14	13:45	05:06	Matrix Spike Duplicate
ZZZZZZ	3D102401.D	09/12/14	14:12	05:33	(unrelated sample)
ZZZZZZ	3D102402.D	09/12/14	14:39	06:00	(unrelated sample)
JB75730-4R	3D102403.D	09/12/14	15:06	06:27	TB
ZZZZZZ	3D102404.D	09/12/14	15:33	06:54	(unrelated sample)
ZZZZZZ	3D102405.D	09/12/14	15:59	07:20	(unrelated sample)
ZZZZZZ	3D102406.D	09/12/14	16:26	07:47	(unrelated sample)
ZZZZZZ	3D102407.D	09/12/14	16:53	08:14	(unrelated sample)
ZZZZZZ	3D102408.D	09/12/14	17:20	08:41	(unrelated sample)
ZZZZZZ	3D102409.D	09/12/14	17:47	09:08	(unrelated sample)
ZZZZZZ	3D102410.D	09/12/14	18:14	09:35	(unrelated sample)
ZZZZZZ	3D102411.D	09/12/14	18:41	10:02	(unrelated sample)
ZZZZZZ	3D102412.D	09/12/14	19:08	10:29	(unrelated sample)
ZZZZZZ	3D102413.D	09/12/14	19:35	10:56	(unrelated sample)
ZZZZZZ	3D102414.D	09/12/14	20:02	11:23	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample:	VU8630-BFB	**Injection Date:**	08/27/14
Lab File ID:	U187025.D	**Injection Time:**	17:24
Instrument ID:	GCMSU		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	17488	20.3		Pass
75	30.0 - 60.0% of mass 95	41056	47.7		Pass
95	Base peak, 100% relative abundance	86042	100.0		Pass
96	5.0 - 9.0% of mass 95	5820	6.76		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	72536	84.3		Pass
175	5.0 - 9.0% of mass 174	5550	6.45	(7.65) [a]	Pass
176	95.0 - 101.0% of mass 174	70058	81.4	(96.6) [a]	Pass
177	5.0 - 9.0% of mass 176	4736	5.50	(6.76) [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
VU8630-IC8630	U187026.D	08/27/14	17:53	00:29	Initial cal 0.2
VU8630-IC8630	U187027.D	08/27/14	18:22	00:58	Initial cal 0.5
VU8630-IC8630	U187028.D	08/27/14	18:52	01:28	Initial cal 1
VU8630-IC8630	U187029.D	08/27/14	19:21	01:57	Initial cal 2
VU8630-IC8630	U187030.D	08/27/14	19:50	02:26	Initial cal 5
VU8630-IC8630	U187031.D	08/27/14	20:19	02:55	Initial cal 10
VU8630-IC8630	U187032.D	08/27/14	20:48	03:24	Initial cal 20
VU8630-ICC8630	U187033.D	08/27/14	21:18	03:54	Initial cal 50
VU8630-IC8630	U187034.D	08/27/14	21:47	04:23	Initial cal 100
VU8630-IC8630	U187035.D	08/27/14	22:16	04:52	Initial cal 200
VU8630-ICV8630	U187038.D	08/27/14	23:44	06:20	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: VU8646-BFB
Lab File ID: U187412.D
Instrument ID: GCMSU
Injection Date: 09/08/14
Injection Time: 20:38

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	24629	18.9		Pass
75	30.0 - 60.0% of mass 95	61763	47.5		Pass
95	Base peak, 100% relative abundance	130141	100.0		Pass
96	5.0 - 9.0% of mass 95	8575	6.59		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	114651	88.1		Pass
175	5.0 - 9.0% of mass 174	8760	6.73	(7.64) [a]	Pass
176	95.0 - 101.0% of mass 174	111704	85.8	(97.4) [a]	Pass
177	5.0 - 9.0% of mass 176	7393	5.68	(6.62) [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
VU8646-CC8630	U187413.D	09/08/14	21:08	00:30	Continuing cal 50
VU8646-MB2	U187415.D	09/08/14	22:06	01:28	Method Blank
VU8649-MB	U187415.D	09/08/14	22:06	01:28	Method Blank
ZZZZZZ	U187417.D	09/08/14	23:04	02:26	(unrelated sample)
ZZZZZZ	U187418.D	09/08/14	23:33	02:55	(unrelated sample)
ZZZZZZ	U187419.D	09/09/14	00:02	03:24	(unrelated sample)
ZZZZZZ	U187420.D	09/09/14	00:31	03:53	(unrelated sample)
ZZZZZZ	U187421.D	09/09/14	01:01	04:23	(unrelated sample)
ZZZZZZ	U187422.D	09/09/14	01:30	04:52	(unrelated sample)
ZZZZZZ	U187423.D	09/09/14	01:59	05:21	(unrelated sample)
ZZZZZZ	U187424.D	09/09/14	02:28	05:50	(unrelated sample)
ZZZZZZ	U187425.D	09/09/14	02:57	06:19	(unrelated sample)
VU8647-MB	U187426.D	09/09/14	03:26	06:48	Method Blank
VU8647-BS	U187427.D	09/09/14	03:55	07:17	Blank Spike
JB75858-6MS	U187428.D	09/09/14	04:24	07:46	Matrix Spike
JB75858-6MSD	U187429.D	09/09/14	04:53	08:15	Matrix Spike Duplicate
JB75858-6	U187431.D	09/09/14	05:51	09:13	(used for QC only; not part of job JB75730)
ZZZZZZ	U187432.D	09/09/14	06:20	09:42	(unrelated sample)
ZZZZZZ	U187433.D	09/09/14	06:49	10:11	(unrelated sample)
ZZZZZZ	U187434.D	09/09/14	07:18	10:40	(unrelated sample)
ZZZZZZ	U187435.D	09/09/14	07:47	11:09	(unrelated sample)
ZZZZZZ	U187436.D	09/09/14	08:16	11:38	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: VU8647-BFB
Lab File ID: U187437.D
Instrument ID: GCMSU
Injection Date: 09/09/14
Injection Time: 12:19

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	23416	19.1		Pass
75	30.0 - 60.0% of mass 95	58197	47.4		Pass
95	Base peak, 100% relative abundance	122896	100.0		Pass
96	5.0 - 9.0% of mass 95	7988	6.50		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	108005	87.9		Pass
175	5.0 - 9.0% of mass 174	8275	6.73	(7.66) [a]	Pass
176	95.0 - 101.0% of mass 174	105549	85.9	(97.7) [a]	Pass
177	5.0 - 9.0% of mass 176	7210	5.87	(6.83) [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
VU8647-CC8630	U187439.D	09/09/14	13:43	01:24	Continuing cal 20
VU8650-MB	U187441.D	09/09/14	15:09	02:50	Method Blank
VU8647-MB2	U187441.D	09/09/14	15:09	02:50	Method Blank
ZZZZZZ	U187442.D	09/09/14	15:40	03:21	(unrelated sample)
ZZZZZZ	U187443.D	09/09/14	16:10	03:51	(unrelated sample)
ZZZZZZ	U187444.D	09/09/14	16:39	04:20	(unrelated sample)
JB75730-4	U187445.D	09/09/14	17:08	04:49	TB
ZZZZZZ	U187446.D	09/09/14	17:37	05:18	(unrelated sample)
JB75730-1	U187447.D	09/09/14	18:06	05:47	BROOK-1-SH
JB75730-2	U187448.D	09/09/14	18:35	06:16	BROOK-2-SH
JB75730-3	U187449.D	09/09/14	19:04	06:45	BROOK-3-SH
ZZZZZZ	U187450.D	09/09/14	19:33	07:14	(unrelated sample)
ZZZZZZ	U187451.D	09/09/14	20:02	07:43	(unrelated sample)
ZZZZZZ	U187452.D	09/09/14	20:32	08:13	(unrelated sample)
ZZZZZZ	U187453.D	09/09/14	21:01	08:42	(unrelated sample)
ZZZZZZ	U187454.D	09/09/14	21:29	09:10	(unrelated sample)
ZZZZZZ	U187455.D	09/09/14	21:58	09:39	(unrelated sample)
ZZZZZZ	U187456.D	09/09/14	22:27	10:08	(unrelated sample)

Volatile Internal Standard Area Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Check Std: V3D4402-CC4368 **Injection Date:** 09/12/14
Lab File ID: 3D102390.D **Injection Time:** 09:07
Instrument ID: GCMS3D **Method:** SW846 8260B

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	121194	7.20	324254	9.44	359539	10.36	288383	13.51	152494	15.82
Upper Limit [a]	242388	7.70	648508	9.94	719078	10.86	576766	14.01	304988	16.32
Lower Limit [b]	60597	6.70	162127	8.94	179770	9.86	144192	13.01	76247	15.32

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
V3D4402-MB	108824	7.21	313263	9.45	342859	10.36	274959	13.52	149509	15.83
V3D4402-BS	109181	7.21	305602	9.44	341900	10.36	273297	13.52	148185	15.83
JB75723-1R	105993	7.20	306105	9.44	335281	10.36	268017	13.52	147020	15.82
JB75730-1R	101704	7.21	301177	9.44	329453	10.36	261673	13.52	143241	15.82
JB75730-2R	99559	7.21	296731	9.45	324800	10.36	257840	13.52	141107	15.83
JB75730-3R	105528	7.20	306357	9.44	338582	10.36	268106	13.52	146223	15.82
JB75723-1RMS	105346	7.20	303047	9.44	337003	10.36	268882	13.52	145724	15.83
JB75723-1RMSD	104875	7.21	293877	9.45	327177	10.36	261942	13.52	142067	15.83
ZZZZZZ	101549	7.20	300664	9.44	333541	10.36	268047	13.52	145097	15.83
ZZZZZZ	105116	7.20	309054	9.44	344274	10.36	270073	13.52	149258	15.82
JB75730-4R	104662	7.21	301833	9.44	334550	10.36	266390	13.51	145526	15.82
ZZZZZZ	104499	7.20	302892	9.44	332321	10.36	259591	13.52	145572	15.83
ZZZZZZ	105670	7.21	300943	9.44	333637	10.36	262592	13.52	143393	15.83
ZZZZZZ	106910	7.21	302009	9.45	334827	10.36	265032	13.52	143873	15.83
ZZZZZZ	103925	7.20	298559	9.44	332820	10.36	263828	13.52	143715	15.83
ZZZZZZ	108662	7.20	298299	9.44	332151	10.36	263769	13.52	143691	15.83
ZZZZZZ	104678	7.21	299091	9.45	332314	10.36	261914	13.52	142646	15.83
ZZZZZZ	103171	7.20	294931	9.45	327440	10.36	259558	13.52	141535	15.83
ZZZZZZ	104246	7.20	293416	9.44	325695	10.35	258752	13.51	142423	15.82
ZZZZZZ	102110	7.20	284453	9.44	315651	10.35	251974	13.52	136707	15.83
ZZZZZZ	106497	7.20	284372	9.44	316944	10.36	249398	13.52	137631	15.83
ZZZZZZ	102076	7.20	282925	9.44	313649	10.36	251629	13.52	136341	15.83

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = Chlorobenzene-D5
IS 5 = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Volatile Internal Standard Area Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Check Std:	VU8646-CC8630	**Injection Date:**	09/08/14
Lab File ID:	U187413.D	**Injection Time:**	21:08
Instrument ID:	GCMSU	**Method:**	SW846 8260B

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	168324	7.99	429400	10.22	490745	11.13	468895	14.46	289018	17.04
Upper Limit [a]	336648	8.49	858800	10.72	981490	11.63	937790	14.96	578036	17.54
Lower Limit [b]	84162	7.49	214700	9.72	245373	10.63	234448	13.96	144509	16.54

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
VU8646-MB2	175767	7.99	420437	10.22	479288	11.13	456784	14.46	278558	17.04
VU8649-MB	175767	7.99	420437	10.22	479288	11.13	456784	14.46	278558	17.04
ZZZZZZ	172749	8.01	412618	10.22	475727	11.13	455795	14.46	273679	17.04
ZZZZZZ	155155	7.98	407549	10.22	472369	11.13	451617	14.46	271604	17.04
ZZZZZZ	164832	7.98	420690	10.22	481396	11.13	458734	14.46	273490	17.04
ZZZZZZ	164810	7.98	416087	10.22	481310	11.13	456982	14.46	271999	17.04
ZZZZZZ	170589	7.99	412508	10.21	477745	11.13	457533	14.46	272307	17.04
ZZZZZZ	166815	7.99	412115	10.22	474930	11.13	455994	14.46	269991	17.04
ZZZZZZ	170916	7.98	417534	10.22	480586	11.13	452029	14.46	269242	17.04
ZZZZZZ	179286	7.98	416725	10.22	477333	11.13	448566	14.46	268211	17.04
ZZZZZZ	176466	7.99	403050	10.21	466283	11.13	442153	14.46	266590	17.04
VU8647-MB	167146	7.99	397883	10.22	455292	11.13	437449	14.46	267317	17.04
VU8647-BS	175917	8.00	404203	10.22	463562	11.13	453470	14.46	280767	17.04
JB75858-6MS	180041	7.99	416147	10.22	479143	11.13	464804	14.46	285574	17.04
JB75858-6MSD	180926	7.98	421172	10.22	486464	11.13	465198	14.46	286074	17.04
JB75858-6	173377	8.01	419969	10.22	481635	11.13	455968	14.46	275642	17.04
ZZZZZZ	159174	8.00	415812	10.22	475653	11.13	455169	14.46	272523	17.04
ZZZZZZ	180302	7.99	422019	10.22	485094	11.13	463097	14.46	275008	17.04
ZZZZZZ	166153	7.98	414275	10.22	477799	11.13	459571	14.46	273415	17.04
ZZZZZZ	180808	7.99	417244	10.22	483325	11.13	464012	14.46	271055	17.04
ZZZZZZ	167853	7.98	413367	10.22	478933	11.13	460155	14.46	271768	17.04

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = Chlorobenzene-D5
IS 5 = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Volatile Internal Standard Area Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Check Std:	VU8647-CC8630	**Injection Date:**	09/09/14
Lab File ID:	U187439.D	**Injection Time:**	13:43
Instrument ID:	GCMSU	**Method:**	SW846 8260B

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	164247	7.99	403201	10.22	469262	11.14	454318	14.46	267139	17.04
Upper Limit [a]	328494	8.49	806402	10.72	938524	11.64	908636	14.96	534278	17.54
Lower Limit [b]	82124	7.49	201601	9.72	234631	10.64	227159	13.96	133570	16.54

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
VU8650-MB	171855	8.01	413761	10.22	479376	11.13	458308	14.46	264468	17.04
VU8647-MB2	171855	8.01	413761	10.22	479376	11.13	458308	14.46	264468	17.04
ZZZZZZ	179286	8.03	402668	10.22	466618	11.13	446597	14.46	257482	17.04
ZZZZZZ	162141	8.02	407750	10.22	474120	11.13	454349	14.46	263031	17.04
ZZZZZZ	171224	8.03	405118	10.22	467000	11.13	441296	14.46	260487	17.04
JB75730-4	169733	8.02	397238	10.22	459335	11.13	430505	14.46	255718	17.04
ZZZZZZ	161570	8.02	400943	10.22	461179	11.14	431228	14.46	255500	17.04
JB75730-1	165618	8.02	399974	10.22	460436	11.13	431445	14.46	256086	17.04
JB75730-2	168110	8.00	402029	10.22	459958	11.13	438764	14.46	259792	17.04
JB75730-3	174114	8.00	408014	10.22	467302	11.13	440719	14.46	262415	17.04
ZZZZZZ	167942	8.00	406659	10.22	466756	11.14	445111	14.46	261616	17.04
ZZZZZZ	159543	8.01	400438	10.22	461820	11.13	443452	14.46	259262	17.04
ZZZZZZ	159706	8.00	399551	10.22	460639	11.13	441119	14.46	259277	17.04
ZZZZZZ	158759	8.00	399521	10.22	458597	11.13	433268	14.46	258851	17.04
ZZZZZZ	165790	8.00	402780	10.22	462018	11.13	441045	14.46	259737	17.04
ZZZZZZ	165795	7.99	401497	10.22	457939	11.13	441876	14.46	266351	17.04
ZZZZZZ	158618	8.00	420271	10.22	479725	11.13	451756	14.46	270852	17.04

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = Chlorobenzene-D5
IS 5 = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Volatile Surrogate Recovery Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Method: SW846 8260B **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JB75730-1	U187447.D	102	97	104	100
JB75730-2	U187448.D	101	97	105	101
JB75730-3	U187449.D	100	96	104	100
JB75730-4	U187445.D	102	97	103	100
JB75730-1R	3D102396.D	103	103	101	100
JB75730-2R	3D102397.D	102	102	101	100
JB75730-3R	3D102398.D	102	102	101	100
JB75730-4R	3D102403.D	102	102	101	99
JB75723-1RMS	3D102399.D	103	100	102	100
JB75723-1RMSD	3D102400.D	102	101	102	100
JB75858-6MS	U187428.D	101	94	106	99
JB75858-6MSD	U187429.D	101	94	105	99
V3D4402-BS	3D102393.D	102	102	102	102
V3D4402-MB	3D102392.D	100	100	101	100
VU8647-BS	U187427.D	102	94	105	99
VU8647-MB2	U187441.D	100	96	105	103
VU8647-MB	U187426.D	102	95	104	98

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	79-120%
S2 = 1,2-Dichloroethane-D4	72-123%
S3 = Toluene-D8	78-119%
S4 = 4-Bromofluorobenzene	74-119%

Initial Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: V3D4368-ICC4368
Lab FileID: 3D101646.D

Response Factor Report MS3D

Method : C:\msdchem\1\METHODS\M3D4368.M (RTE Integrator)
Title : Method SW846 8260B, ZB 624 60m x 0.25mm x 1.4 um
Last Update : Tue Aug 12 08:27:48 2014
Response via : Initial Calibration

Calibration Files
5 =3D101643.D 0.5 =3D101651.D 2 =3D101642.D 50 =3D101646.D
100 =3D101647.D 1 =3D101641.D 200 =3D101648.D 20 =3D101645.D
10 =3D101644.D 0.2 =3D101639.D = =

Compound	5	0.5	2	50	100	1	200	20	10	0.2	Avg	%RSD
1) I Tert Butyl Alcohol-d9	----------ISTD----------											
2) 1,4-dioxane	0.065		0.080	0.072		0.089	0.083	0.072			0.077	11.21
3) tertiary butyl alcohol	1.072		1.043	1.134	1.097	1.049	1.056	1.145	1.097		1.087	3.53
4) I pentafluorobenzene	----------ISTD----------											
5) FREON 115											0.000#	-1.00
6) FREON 152A											0.000#	-1.00
7) chlorotrifluoroethene											0.000#	-1.00
8) chlorodifluoromethane	0.300	0.278	0.311	0.322	0.308	0.300	0.314	0.339	0.318		0.310	5.46
9) dichlorodifluoromethane	0.412	0.437	0.384	0.452	0.425	0.433	0.451	0.483	0.453		0.437	6.47
10) chloromethane	0.447	0.643	0.477	0.510	0.483	0.557	0.512	0.516	0.500		0.516	10.94
11) vinyl chloride	0.429	0.580	0.437	0.506	0.486	0.507	0.510	0.512	0.483		0.494	8.99
12) bromomethane	0.290		0.292	0.332	0.313	0.337	0.269	0.336	0.328		0.312	8.15
13) chloroethane	0.212	0.282	0.202	0.228	0.214	0.228	0.200	0.235	0.232		0.226	10.88
14) 1,3-butadiene	0.314	0.335	0.322	0.299		0.322		0.311	0.295		0.314	4.45
15) vinyl bromide	0.315	0.357	0.320	0.311		0.321		0.320	0.311		0.322	4.97
16) trichlorofluoromethane	0.477	0.668	0.449	0.523	0.496	0.499	0.528	0.547	0.515		0.522	11.86
17) pentane	0.595	0.698	0.554	0.518		0.566		0.572	0.567		0.581	9.71
18) ethyl ether	0.154	0.145	0.152	0.168	0.169	0.144	0.168	0.166	0.154		0.158	6.45
19) freon 123a											0.000#	-1.00
20) FREON 123											0.000#	-1.00
21) acrolein	0.065	0.065	0.069	0.069		0.071		0.069	0.064		0.068	4.18
22) 1,1-dichloroethene	0.426	0.492	0.433	0.451	0.438	0.473	0.438	0.471	0.407		0.448	5.95
23) acetone												

Initial Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: V3D4368-ICC4368
Lab FileID: 3D101646.D

```
      0.027             0.033 0.032       0.034 0.030 0.020        0.030   17.45
            ----- Linear regression -----  Coefficient =  0.9995
              Response Ratio = -0.00195 + 0.03441 *A

24)  allyl chloride
      0.140       0.133 0.156 0.156 0.151 0.154 0.161 0.146        0.150    6.12
25)  acetonitrile
      0.023       0.027 0.027 0.024 0.023 0.028 0.026 0.024        0.025    7.61
26)  acetaldehyde
                                                                   0.000#  -1.00
27)  iodomethane
      0.557 0.756 0.585 0.603 0.587 0.592 0.591 0.599 0.548 0.691  0.611   10.42
28)  iso-butyl alcohol
      0.008       0.008 0.010 0.008       0.010 0.010 0.009        0.009#   9.32
29)  carbon disulfide
      1.009       1.066 1.086 1.052 1.181 1.056 1.107 0.982        1.067    5.70
30)  methylene chloride
      0.330       0.334 0.342 0.333 0.367 0.331 0.341 0.324        0.338    3.91
31)  methyl acetate
      0.034             0.052 0.051       0.053 0.046 0.040        0.046   16.20
            ----- Linear regression -----  Coefficient =  0.9997
              Response Ratio = -0.00242 + 0.05291 *A

32)  methyl tert butyl ether
      0.899 1.157 0.905 0.943 0.919 0.922 0.916 0.935 0.898        0.944    8.63
33)  trans-1,2-dichloroethene
      0.433 0.610 0.449 0.455 0.444 0.474 0.436 0.473 0.421        0.466   12.20
34)  di-isopropyl ether
      0.952 1.079 0.971 1.045 0.998 0.903 0.997 1.043 1.010        1.000    5.33
35)  ethyl tert-butyl ether
      0.938 1.136 0.983 1.046 1.008 0.897 1.023 1.035 0.986        1.006    6.78
36)  2-butanone
                        0.037 0.035       0.038 0.036 0.029        0.035   10.03
37)  1,1-dichloroethane
      0.535 0.665 0.553 0.550 0.540 0.596 0.535 0.565 0.520        0.562    7.88
38)  chloroprene
      0.379 0.371 0.365 0.412 0.409 0.339 0.419 0.426 0.392        0.390    7.38
39)  acrylonitrile
      0.111 0.112 0.102 0.124 0.118 0.097 0.119 0.120 0.111        0.113    7.90
40)  vinyl acetate
      0.027             0.049 0.049       0.050 0.044 0.038        0.043   20.91
            ----- Linear regression -----  Coefficient =  1.0000
              Response Ratio = -0.00251 + 0.05091 *A

41)  ethyl acetate
      0.033             0.042 0.041       0.041 0.042 0.037        0.039    9.40
42)  2,2-dichloropropane
      0.435 0.587 0.460 0.457 0.433 0.517 0.429 0.472 0.425        0.468   11.31
43)  cis-1,2-dichloroethene
      0.527 0.655 0.518 0.553 0.541 0.572 0.538 0.562 0.517 0.579  0.556    7.33
44)  propionitrile
      0.043 0.042 0.040 0.047 0.045 0.034 0.047 0.047 0.042        0.043    9.45
45)  methyl acrylate
      0.270       0.249 0.328 0.329       0.339 0.317 0.285        0.302   11.40
46)  bromochloromethane
      0.172 0.226 0.163 0.182 0.180 0.170 0.180 0.182 0.170        0.181   10.18
47)  tetrahydrofuran
      0.096       0.106 0.102 0.097 0.097 0.099 0.105 0.096        0.100    4.02
48)  chloroform
      0.524 0.729 0.533 0.541 0.527 0.586 0.529 0.545 0.506        0.558   12.13
```

Initial Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: V3D4368-ICC4368
Lab FileID: 3D101646.D

```
49)  Tert-Butyl Formate
      0.198 0.186 0.200 0.239 0.233 0.178 0.239 0.230 0.213        0.213   10.99
50)  dibromofluoromethane (s)
      0.284       0.291 0.301 0.299 0.355 0.305 0.317 0.313        0.308    7.08
51)  1,2-dichloroethane-d4 (s)
      0.303       0.325 0.307 0.301 0.380 0.304 0.321 0.321        0.320    8.15
52)  freon 113
      0.243 0.209 0.238 0.255 0.248 0.237 0.251 0.277 0.250        0.245    7.41
53)  methacrylonitrile
      0.159 0.172 0.150 0.180 0.182       0.184 0.173 0.159        0.170    7.31
54)  1,1,1-trichloroethane
      0.433 0.528 0.443 0.471 0.456 0.465 0.460 0.472 0.424        0.461    6.51
55)  tert amyl alcohol
                                                                   0.000#  -1.00
56)  2,2,4-Trimethylpentane
      0.930 0.990 0.936 0.998 0.974 0.924 0.988 1.029 0.936        0.967    3.83
57)  tert-amyl methyl ether
      0.891 1.063 0.916 1.002 0.959 0.882 0.956 0.988 0.935        0.955    6.01

58) I   1,4-difluorobenzene   ----------------ISTD---------------------
59)  epichlorohydrin
      0.022       0.020 0.026 0.025       0.027 0.026 0.024        0.024   10.28
60)  n-butyl alcohol
      0.005             0.007 0.006       0.008 0.007 0.006        0.006#  15.07
            ----- Linear regression -----  Coefficient =  0.9914
              Response Ratio = -0.02808 + 0.00745 *A

61)  cyclohexane
      0.393 0.430 0.415 0.421 0.407 0.450 0.405 0.449 0.387        0.417    5.36
62)  carbon tetrachloride
      0.361 0.416 0.366 0.380 0.368 0.382 0.367 0.394 0.346 0.439  0.382    7.26
63)  1,1-dichloropropene
      0.339 0.437 0.367 0.363 0.356 0.381 0.355 0.375 0.333        0.367    8.25
64)  hexane
      0.316 0.344 0.311 0.316 0.308 0.313 0.311 0.339 0.310        0.319    4.16
65)  benzene
      1.070 1.373 1.171 1.114 1.105 1.278 1.078 1.143 1.078        1.157    8.99
66)  heptane
      0.181 0.163 0.184 0.184 0.181 0.161 0.183 0.198 0.184        0.180    6.40
67)  isopropyl acetate
      0.440 0.465 0.446 0.490 0.484 0.423 0.494 0.489 0.448        0.464    5.60
68)  1,2-dichloroethane
      0.332 0.387 0.343 0.334 0.333 0.326 0.325 0.343 0.328 0.403  0.346    7.89
69)  trichloroethene
      0.259 0.359 0.277 0.279 0.280 0.295 0.283 0.289 0.260        0.287   10.28
70)  ethyl acrylate
      0.292       0.363 0.339       0.355       0.335 0.304        0.331    8.44
71)  tert amyl ethyl ether
                                                                   0.000#  -1.00
72)  2-nitropropane
      0.074       0.073 0.082 0.081       0.083 0.080 0.073        0.078    5.67
73)  2-chloroethyl vinyl ether
      0.095 0.100 0.103 0.117 0.117 0.092 0.121 0.112 0.105        0.107    9.85
74)  methyl methacrylate
      0.355 0.352 0.374 0.382 0.385 0.388 0.389 0.385 0.367        0.375    3.75
75)  1,2-dichloropropane
      0.269 0.353 0.275 0.282 0.284 0.308 0.281 0.289 0.271        0.290    9.04
76)  methylcyclohexane
      0.439 0.469 0.459 0.465 0.451 0.445 0.459 0.500 0.452        0.460    3.87
77)  dibromomethane
```

Initial Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: V3D4368-ICC4368
Lab FileID: 3D101646.D

```
      0.175 0.216 0.174 0.181 0.182 0.174 0.181 0.183 0.176        0.182    7.21
 78)  bromodichloromethane
      0.339 0.432 0.345 0.365 0.372 0.356 0.375 0.366 0.333        0.365    7.97
 79)  cis-1,3-dichloropropene
      0.415 0.529 0.417 0.436 0.446 0.443 0.449 0.436 0.405 0.479  0.446    8.10
 80)  toluene-d8 (s)
      0.885       0.928 0.889 0.911 1.087 0.934 0.962 0.950        0.943    6.79
 81)  4-methyl-2-pentanone
      0.086       0.081 0.101 0.101       0.105 0.100 0.090        0.095    9.64
 82)  toluene
      0.600 0.799 0.629 0.636 0.641 0.686 0.646 0.654 0.593        0.654    9.33
 83)  3-methyl-1-butanol
      0.004       0.003 0.006 0.005       0.006 0.006 0.005        0.005#  24.02
            ----- Linear regression -----  Coefficient =  0.9944
              Response Ratio = -0.00847 + 0.00638 *A

 84)  trans-1,3-dichloropropene
      0.354 0.447 0.366 0.381 0.391 0.347 0.387 0.385 0.362        0.380    7.73
 85)  ethyl methacrylate
                  0.304 0.316       0.323 0.298 0.265        0.301    7.41
 86)  1,1,2-trichloroethane
      0.195 0.229 0.201 0.206 0.206 0.206 0.207 0.207 0.195        0.206    4.83
 87)  2-hexanone
      0.067             0.087 0.087       0.089 0.081 0.073        0.081   10.85

 88) I   chlorobenzene-d5      ----------------ISTD--------------------
 89)  tetrachloroethene
      0.349 0.466 0.388 0.382 0.381 0.395 0.385 0.391 0.349        0.387    8.82
 90)  1,3-dichloropropane
      0.443       0.461 0.456 0.455 0.448 0.451 0.458 0.437        0.451    1.80
 91)  butyl acetate
      0.160             0.194 0.191       0.195 0.189 0.172        0.183    7.72
 92)  3,3-Dimethyl-1-Butanol
      0.017       0.017 0.024 0.022       0.028 0.022 0.019        0.021   18.84
            ----- Linear regression -----  Coefficient =  0.9906
              Response Ratio = -0.02426 + 0.02718 *A

 93)  dibromochloromethane
      0.339 0.433 0.337 0.375 0.380 0.334 0.387 0.366 0.347        0.366    8.72
 94)  1,2-dibromoethane
      0.289 0.363 0.289 0.310 0.315 0.288 0.317 0.307 0.289        0.308    7.85
 95)  n-Butyl Ether
                                                                   0.000#  -1.00
 96)  chlorobenzene
      0.820       0.862 0.848 0.857 0.923 0.865 0.857 0.802        0.854    4.18
 97)  1,1,1,2-tetrachloroethane
      0.324 0.392 0.325 0.348 0.340 0.333 0.345 0.345 0.324        0.342    6.24
 98)  ethylbenzene
      1.337 1.772 1.454 1.410 1.405 1.500 1.415 1.445 1.316        1.450    9.19
 99)  m,p-xylene
      0.512 0.679 0.538 0.542 0.538 0.556 0.540 0.557 0.510        0.553    9.07
100)  o-xylene
      0.507 0.685 0.540 0.554 0.545 0.534 0.550 0.556 0.515        0.554    9.36
101)  styrene
      0.761 0.934 0.763 0.892 0.906 0.776 0.917 0.870 0.776        0.844    8.70
102)  Butyl Acrylate
                                                                   0.000#  -1.00
103)  bromoform
      0.235       0.228 0.271 0.281 0.237 0.292 0.263 0.242        0.256    9.33
```

Initial Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: V3D4368-ICC4368
Lab FileID: 3D101646.D

104) I 1,4-dichlorobenzene-d ----------ISTD----------
105) isopropylbenzene
2.357 3.029 2.441 2.572 2.592 2.514 2.514 2.614 2.355 2.554 7.90
106) 4-bromofluorobenzene (s)
0.715 0.875 0.705 0.719 0.704 0.748 0.768 0.748 8.12
107) bromobenzene
0.692 0.718 0.729 0.737 0.702 0.712 0.744 0.691 0.716 2.80
108) cyclohexanone
0.081 0.091 0.088 0.086 0.094 0.088 0.071 0.085 9.05
109) 1,1,2,2-tetrachloroethane
0.730 0.710 0.760 0.761 0.697 0.734 0.770 0.724 0.736 3.53
110) trans-1,4-dichloro-2-butene
0.153 0.147 0.164 0.170 0.166 0.162 0.150 0.159 5.66
111) 1,2,3-trichloropropane
0.172 0.147 0.169 0.169 0.162 0.176 0.168 0.166 5.65
112) n-propylbenzene
2.659 3.380 2.751 2.795 2.816 2.786 2.714 2.909 2.617 2.825 7.97
113) 4-Ethyltoluene
0.000# -1.00
114) 2-chlorotoluene
0.595 0.770 0.601 0.627 0.629 0.633 0.600 0.644 0.586 0.632 8.77
115) 4-chlorotoluene
0.601 0.585 0.631 0.647 0.610 0.635 0.636 0.590 0.617 3.82
116) 1,3,5-trimethylbenzene
1.981 2.475 2.024 2.160 2.183 2.093 2.142 2.163 1.970 2.132 7.12
117) tert-butylbenzene
1.640 2.137 1.699 1.831 1.863 1.759 1.863 1.826 1.624 1.805 8.58
118) pentachloroethane
0.423 0.473 0.410 0.499 0.509 0.414 0.506 0.480 0.446 0.462 8.64
119) 1,2,4-trimethylbenzene
1.949 1.995 2.098 2.131 2.007 2.131 2.099 1.960 2.046 3.73
120) sec-butylbenzene
2.563 3.323 2.620 2.813 2.844 2.702 2.839 2.852 2.570 2.792 8.31
121) 1,3-dichlorobenzene
1.330 1.379 1.355 1.388 1.404 1.386 1.375 1.295 1.364 2.62
122) p-isopropyltoluene
2.146 2.735 2.134 2.355 2.383 2.362 2.408 2.386 2.177 2.781 2.387 9.30
123) 1,4-dichlorobenzene
1.340 1.412 1.372 1.406 1.507 1.405 1.389 1.311 1.393 4.17
124) 1,2-dichlorobenzene
1.335 1.365 1.385 1.410 1.380 1.408 1.398 1.332 1.377 2.22
125) 1,4-Diethylbenzene
0.000# -1.00
126) n-butylbenzene
1.087 1.118 1.197 1.213 1.133 1.232 1.203 1.118 1.163 4.68
127) 1,2,4,5-Tetramethylbenzene
0.000# -1.00
128) 1,2-dibromo-3-chloropropane
0.142 0.135 0.175 0.182 0.184 0.169 0.151 0.163 12.09
129) 1,3,5-trichlorobenzene
1.236 1.237 1.350 1.381 1.332 1.337 1.349 1.253 1.309 4.42
130) 1,2,4-trichlorobenzene
1.080 1.128 1.269 1.289 1.112 1.179 1.235 1.141 1.179 6.54
131) hexachlorobutadiene
0.588 0.598 0.659 0.661 0.651 0.639 0.655 0.598 0.631 4.92
132) naphthalene
2.155 2.128 2.656 2.650 2.394 2.589 2.328 2.414 9.28
133) 1,2,3-trichlorobenzene
1.041 1.067 1.189 1.167 0.982 1.050 1.168 1.087 1.094 6.72
134) hexachloroethane

Initial Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: V3D4368-ICC4368
Lab FileID: 3D101646.D

```
       0.413       0.411 0.509 0.526 0.435 0.540 0.486 0.427        0.468   11.30
135)  Benzyl chloride
       1.210 1.665 1.254 1.406 1.396 1.210 1.400 1.387 1.295        1.358   10.37
 ---------------------------------------------------------------------------
 (#) = Out of Range  ###  Number of calibration levels exceeded format  ###

           M3D4368.M         Tue Aug 12 08:40:01 2014   3D
```

Initial Calibration Verification

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: V3D4368-ICV4368
Lab FileID: 3D101652.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\3D101652.D Vial: 15
Acq On : 8 Aug 2014 5:02 pm Operator: [redacted]
Sample : icv4368-50 Inst : MS3D
Misc : MS70766,V3D4368,w,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\msdchem\1\METHODS\M3D4368.M (RTE Integrator)
Title : Method SW846 8260B, ZB 624 60m x 0.25mm x 1.4 um
Last Update : Tue Aug 12 08:27:48 2014
Response via : Multiple Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.30min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	105	0.00	7.22
2		1,4-dioxane	0.077	0.081	-5.2	105	0.00	11.09
3	M	tertiary butyl alcohol	1.087	1.150	-5.8	106	0.00	7.33
4	I	pentafluorobenzene	1.000	1.000	0.0	103	0.00	9.45
5		FREON 115		----------NA----------				
6		FREON 152A		----------NA----------				
7		chlorotrifluoroethene		----------NA----------				
8		chlorodifluoromethane	0.310	0.303	2.3	97	0.00	3.88
9		dichlorodifluoromethane	0.437	0.435	0.5	99	0.00	3.86
10		chloromethane	0.516	0.487	5.6	98	0.00	4.21
11		vinyl chloride	0.494	0.470	4.9	96	0.00	4.46
12		bromomethane	0.312	0.315	-1.0	98	0.00	5.11
13		chloroethane	0.226	0.238	-5.3	107	0.00	5.27
14		1,3-butadiene	0.314	0.298	5.1	103	0.00	4.51
15		vinyl bromide	0.322	0.308	4.3	102	0.00	5.62
16		trichlorofluoromethane	0.522	0.499	4.4	98	0.01	5.74
17		pentane	0.581	0.530	8.8	105	0.00	5.79
18		ethyl ether	0.158	0.169	-7.0	103	0.00	6.12
19		freon 123a		----------NA----------				
20		FREON 123		----------NA----------				
21		acrolein	0.068	0.062	8.8	92	0.00	6.38
22		1,1-dichloroethene	0.448	0.425	5.1	97	0.00	6.55
		----------	True	Calc.	% Drift	----------		
23		acetone	50.000	44.006	12.0	89	0.00	6.60
		----------	AvgRF	CCRF	% Dev	----------		
24		allyl chloride	0.150	0.173	-15.3	115	0.00	7.07
25		acetonitrile	0.025	0.027	-8.0	104	0.00	7.04
26	m	acetaldehyde		----------NA----------				
27		iodomethane	0.611	0.565	7.5	96	0.00	6.82
28		iso-butyl alcohol	0.009	0.009#	0.0	96	0.00	9.74
29		carbon disulfide	1.067	1.023	4.1	97	0.00	6.95
30		methylene chloride	0.338	0.325	3.8	98	0.00	7.27
		----------	True	Calc.	% Drift	----------		
31		methyl acetate	50.000	47.254	5.5	94	0.00	7.06
		----------	AvgRF	CCRF	% Dev	----------		
32		methyl tert butyl ether	0.944	0.892	5.5	98	0.00	7.57
33		trans-1,2-dichloroethene	0.466	0.428	8.2	97	0.00	7.63

Initial Calibration Verification

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: V3D4368-ICV4368
Lab FileID: 3D101652.D

			True	Calc.	% Drift			
34		di-isopropyl ether	1.000	0.988	1.2	97	0.00	8.17
35		ethyl tert-butyl ether	1.006	0.957	4.9	94	0.00	8.63
36		2-butanone	0.035	0.035	0.0	97	0.00	8.91
37	M	1,1-dichloroethane	0.562	0.538	4.3	101	0.00	8.20
38		chloroprene	0.390	0.395	-1.3	99	0.00	8.31
39		acrylonitrile	0.113	0.121	-7.1	100	0.00	7.60
			True	Calc.	% Drift			
40		vinyl acetate	50.000	50.830	-1.7	104	0.00	8.18
			AvgRF	CCRF	% Dev			
41		ethyl acetate	0.039	0.040	-2.6	98	0.00	8.92
42		2,2-dichloropropane	0.468	0.408	12.8	92	0.00	8.94
43		cis-1,2-dichloroethene	0.556	0.526	5.4	98	0.00	8.94
44		propionitrile	0.043	0.048	-11.6	104	0.00	9.01
45		methyl acrylate	0.302	0.331	-9.6	104	0.00	9.00
46		bromochloromethane	0.181	0.174	3.9	99	0.00	9.25
47		tetrahydrofuran	0.100	0.103	-3.0	104	0.00	9.28
48		chloroform	0.558	0.527	5.6	100	0.00	9.30
49		Tert-Butyl Formate	0.213	0.248	-16.4	107	0.00	9.33
50	S	dibromofluoromethane (s)	0.308	0.307	0.3	105	0.00	9.50
51	S	1,2-dichloroethane-d4 (s)	0.320	0.308	3.8	103	0.00	9.92
52		freon 113	0.245	0.249	-1.6	100	0.00	6.52
53		methacrylonitrile	0.170	0.180	-5.9	103	0.00	9.18
54		1,1,1-trichloroethane	0.461	0.446	3.3	97	0.00	9.56
55		tert amyl alcohol		----------NA----------				
56		2,2,4-Trimethylpentane	0.967	0.958	0.9	99	0.00	9.99
57		tert-amyl methyl ether	0.955	0.934	2.2	96	0.00	10.02
58	I	1,4-difluorobenzene	1.000	1.000	0.0	102	0.00	10.37
59		epichlorohydrin	0.024	0.027	-12.5	104	0.00	11.63
			True	Calc.	% Drift			
60		n-butyl alcohol	2500.000	2632.842	-5.3	103	0.00	10.49
			AvgRF	CCRF	% Dev			
61	M	cyclohexane	0.417	0.393	5.8	96	0.00	9.62
62		carbon tetrachloride	0.382	0.363	5.0	98	0.00	9.76
63		1,1-dichloropropene	0.367	0.336	8.4	95	0.00	9.73
64		hexane	0.319	0.376	-17.9	122	0.00	7.92
65	M	benzene	1.157	1.095	5.4	101	0.00	10.00
66		heptane	0.180	0.157	12.8	87	0.00	10.15
67		isopropyl acetate	0.464	0.510	-9.9	107	0.00	9.91
68		1,2-dichloroethane	0.346	0.332	4.0	102	0.00	10.01
69		trichloroethene	0.287	0.274	4.5	101	0.00	10.71
70		ethyl acrylate	0.331	0.337	-1.8	102	0.00	10.71
71		tert amyl ethyl ether		----------NA----------				
72		2-nitropropane	0.078	0.080	-2.6	101	0.00	11.49
73		2-chloroethyl vinyl ether	0.107	0.105	1.9	92	0.00	11.50
74		methyl methacrylate	0.375	0.369	1.6	99	0.00	10.98
75		1,2-dichloropropane	0.290	0.280	3.4	102	0.00	10.98
76		methylcyclohexane	0.460	0.422	8.3	93	0.00	10.92
77		dibromomethane	0.182	0.175	3.8	99	0.00	11.14
78		bromodichloromethane	0.365	0.367	-0.5	103	0.00	11.27
79		cis-1,3-dichloropropene	0.446	0.437	2.0	103	0.00	11.72
80	S	toluene-d8 (s)	0.943	0.927	1.7	107	0.00	12.01
81		4-methyl-2-pentanone	0.095	0.106	-11.6	108	0.00	11.82
82		toluene	0.654	0.629	3.8	101	0.00	12.08
			True	Calc.	% Drift			

Initial Calibration Verification

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: V3D4368-ICV4368
Lab FileID: 3D101652.D

83		3-methyl-1-butanol	1000.000	1059.132	-5.9	108	0.00	11.83
		----------	AvgRF	CCRF	% Dev	----------		
84		trans-1,3-dichloropropene	0.380	0.358	5.8	96	0.00	12.28
85		ethyl methacrylate	0.301	0.309	-2.7	104	0.00	12.27
86		1,1,2-trichloroethane	0.206	0.202	1.9	101	0.00	12.50
87		2-hexanone	0.081	0.085	-4.9	100	0.00	12.67
88	I	chlorobenzene-d5	1.000	1.000	0.0	100	0.00	13.52
89		tetrachloroethene	0.387	0.386	0.3	101	0.00	12.67
90		1,3-dichloropropane	0.451	0.453	-0.4	99	0.00	12.68
91		butyl acetate	0.183	0.193	-5.5	100	0.00	12.73
		----------	True	Calc.	% Drift	----------		
92		3,3-Dimethyl-1-Butanol	500.000	498.508	0.3	102	0.00	12.83
		----------	AvgRF	CCRF	% Dev	----------		
93		dibromochloromethane	0.366	0.369	-0.8	98	0.00	12.94
94		1,2-dibromoethane	0.308	0.310	-0.6	100	0.00	13.10
95		n-Butyl Ether		----------NA----------				
96		chlorobenzene	0.854	0.842	1.4	99	0.00	13.55
97		1,1,1,2-tetrachloroethane	0.342	0.340	0.6	98	0.00	13.61
98		ethylbenzene	1.450	1.383	4.6	98	0.00	13.60
99		m,p-xylene	0.553	0.537	2.9	99	0.00	13.71
100		o-xylene	0.554	0.540	2.5	97	0.00	14.13
101		styrene	0.844	0.884	-4.7	99	0.00	14.14
102		Butyl Acrylate		----------NA----------				
103		bromoform	0.256	0.274	-7.0	101	0.00	14.41
104	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	99	0.00	15.83
105		isopropylbenzene	2.554	2.544	0.4	98	0.00	14.46
106	S	4-bromofluorobenzene (s)	0.748	0.734	1.9	104	0.00	14.67
107		bromobenzene	0.716	0.733	-2.4	100	0.00	14.87
108		cyclohexanone	0.085	0.016	81.2#	18#	0.00	14.64
109		1,1,2,2-tetrachloroethane	0.736	0.737	-0.1	96	0.00	14.78
110		trans-1,4-dichloro-2-bute	0.159	0.164	-3.1	100	0.00	14.82
111		1,2,3-trichloropropane	0.166	0.170	-2.4	100	0.00	14.85
112		n-propylbenzene	2.825	2.925	-3.5	104	0.00	14.87
113		4-Ethyltoluene		----------NA----------				
114		2-chlorotoluene	0.632	0.614	2.8	97	0.00	15.02
115		4-chlorotoluene	0.617	0.625	-1.3	99	0.00	15.12
116		1,3,5-trimethylbenzene	2.132	2.127	0.2	98	0.00	15.02
117		tert-butylbenzene	1.805	1.832	-1.5	99	0.00	15.37
118		pentachloroethane	0.462	0.480	-3.9	96	0.00	15.45
119		1,2,4-trimethylbenzene	2.046	2.173	-6.2	103	0.00	15.42
120		sec-butylbenzene	2.792	2.760	1.1	98	0.00	15.59
121		1,3-dichlorobenzene	1.364	1.329	2.6	97	0.00	15.77
122		p-isopropyltoluene	2.387	2.330	2.4	98	0.00	15.70
123		1,4-dichlorobenzene	1.393	1.366	1.9	99	0.00	15.85
124		1,2-dichlorobenzene	1.377	1.361	1.2	98	0.00	16.24
125		1,4-Diethylbenzene		----------NA----------				
126		n-butylbenzene	1.163	1.198	-3.0	99	0.00	16.10
127		1,2,4,5-Tetramethylbenzen		----------NA----------				
128		1,2-dibromo-3-chloropropa	0.163	0.178	-9.2	101	0.00	16.97
129		1,3,5-trichlorobenzene	1.309	1.320	-0.8	97	0.00	17.13
130		1,2,4-trichlorobenzene	1.179	1.263	-7.1	99	0.00	17.70
131		hexachlorobutadiene	0.631	0.629	0.3	95	0.00	17.79
132		naphthalene	2.414	2.689	-11.4	101	0.00	17.94
133		1,2,3-trichlorobenzene	1.094	1.200	-9.7	100	0.00	18.15
134		hexachloroethane	0.468	0.501	-7.1	98	0.00	16.48

Initial Calibration Verification

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: V3D4368-ICV4368
Lab FileID: 3D101652.D

135	Benzyl chloride	1.358	1.287	5.2	91	0.00	15.97

(#) = Out of Range SPCC's out = 0 CCC's out = 0
3D101646.D M3D4368.M Tue Aug 12 08:40:19 2014 3D

Continuing Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: V3D4402-CC4368
Lab FileID: 3D102390.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\3D102390.D Vial: 2
Acq On : 12 Sep 2014 9:07 am Operator: [redacted]m
Sample : cc4368-20 Inst : MS3D
Misc : MS73642,V3D4402,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\msdchem\1\METHODS\M3D4368.M (RTE Integrator)
Title : Method SW846 8260B, ZB 624 60m x 0.25mm x 1.4 um
Last Update : Thu Sep 11 09:16:23 2014
Response via : Multiple Level Calibration

Min. RRF : 0.010 Min. Rel. Area : 50% Max. R.T. Dev 0.30min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	140	-0.02	7.20
2		1,4-dioxane	0.077	0.101	-31.2#	171	0.00	11.08
3	M	tertiary butyl alcohol	1.087	1.096	-0.8	134	0.00	7.33
4	I	pentafluorobenzene	1.000	1.000	0.0	122	-0.01	9.44
5		FREON 115		----------NA----------				
6		FREON 152A		----------NA----------				
7		chlorotrifluoroethene		----------NA----------				
8		chlorodifluoromethane	0.310	0.398	-28.4#	143	0.00	3.88
9		dichlorodifluoromethane	0.437	0.440	-0.7	111	-0.01	3.86
10		chloromethane	0.516	0.491	4.8	116	-0.01	4.20
11		vinyl chloride	0.494	0.455	7.9	108	-0.02	4.44
12		bromomethane	0.312	0.282	9.6	102	-0.01	5.09
13		chloroethane	0.226	0.200	11.5	103	0.00	5.27
14		1,3-butadiene	0.314	0.357	-13.7	139	0.00	4.50
15		vinyl bromide	0.322	0.308	4.3	117	0.00	5.62
16		trichlorofluoromethane	0.522	0.463	11.3	103	0.00	5.73
17		pentane	0.581	0.523	10.0	111	0.00	5.79
18		ethyl ether	0.158	0.179	-13.3	131	0.00	6.12
19		freon 123a		----------NA----------				
20		FREON 123		----------NA----------				
21		acrolein	0.068	0.071	-4.4	125	-0.01	6.37
22		1,1-dichloroethene	0.448	0.481	-7.4	124	-0.01	6.54
		----------	True	Calc.	% Drift	----------		
23		acetone	20.000	22.241	-11.2	134	0.00	6.59
		----------	AvgRF	CCRF	% Dev	----------		
24		allyl chloride	0.150	0.163	-8.7	123	-0.02	7.06
25		acetonitrile	0.025	0.031	-24.0#	148	0.00	7.04
26	m	acetaldehyde		----------NA----------				
27		iodomethane	0.611	0.599	2.0	121	-0.01	6.82
28		iso-butyl alcohol	0.009	0.012	-33.3#	149	0.00	9.73
29		carbon disulfide	1.067	1.139	-6.7	125	0.00	6.95
30		methylene chloride	0.338	0.353	-4.4	126	-0.01	7.26
		----------	True	Calc.	% Drift	----------		
31		methyl acetate	20.000	23.330	-16.6	146	0.00	7.05
		----------	AvgRF	CCRF	% Dev	----------		
32		methyl tert butyl ether	0.944	0.979	-3.7	127	-0.02	7.56
33		trans-1,2-dichloroethene	0.466	0.483	-3.6	124	-0.01	7.63

Continuing Calibration Summary

Job Number: JB75730 **Sample:** V3D4402-CC4368
Account: SHELLWIC Shell Oil Products US **Lab FileID:** 3D102390.D
Project: URSMDG:SAP#171356, New Hope, PA

34		di-isopropyl ether	1.000	1.120	-12.0	130	-0.01	8.16
35		ethyl tert-butyl ether	1.006	1.074	-6.8	126	-0.01	8.62
36		2-butanone	0.035	0.038	-8.6	128	-0.02	8.89
37	M	1,1-dichloroethane	0.562	0.592	-5.3	127	-0.01	8.19
38		chloroprene	0.390	0.420	-7.7	120	-0.01	8.30
39		acrylonitrile	0.113	0.136	-20.4#	138	-0.01	7.59
			True	Calc.	% Drift			
40		vinyl acetate	20.000	21.690	-8.5	135	-0.01	8.18
			AvgRF	CCRF	% Dev			
41		ethyl acetate	0.039	0.046	-17.9	135	-0.01	8.91
42		2,2-dichloropropane	0.468	0.489	-4.5	126	-0.01	8.93
43		cis-1,2-dichloroethene	0.556	0.599	-7.7	130	-0.01	8.93
44		propionitrile	0.043	0.053	-23.3#	137	-0.01	9.00
45		methyl acrylate	0.302	0.364	-20.5#	140	-0.01	8.99
46		bromochloromethane	0.181	0.185	-2.2	124	-0.02	9.24
47		tetrahydrofuran	0.100	0.122	-22.0#	142	-0.02	9.27
48		chloroform	0.558	0.566	-1.4	126	-0.01	9.29
49		Tert-Butyl Formate	0.213	0.312	-46.5#	165	0.00	9.32
50	S	dibromofluoromethane (s)	0.308	0.310	-0.6	119	-0.01	9.49
51	S	1,2-dichloroethane-d4 (s)	0.320	0.328	-2.5	124	0.00	9.92
52		freon 113	0.245	0.283	-15.5	124	0.00	6.51
53		methacrylonitrile	0.170	0.196	-15.3	137	-0.01	9.18
54		1,1,1-trichloroethane	0.461	0.490	-6.3	126	-0.01	9.55
55		tert amyl alcohol		----------NA----------				
56		2,2,4-Trimethylpentane	0.967	1.214	-25.5#	143	-0.01	9.97
57		tert-amyl methyl ether	0.955	1.050	-9.9	129	0.00	10.01
58	I	1,4-difluorobenzene	1.000	1.000	0.0	123	0.00	10.36
59		epichlorohydrin	0.024	0.031	-29.2#	144	0.00	11.62
			True	Calc.	% Drift			
60		n-butyl alcohol	1000.000	1363.971	-36.4#	157	0.00	10.48
			AvgRF	CCRF	% Dev			
61	M	cyclohexane	0.417	0.448	-7.4	123	-0.01	9.61
62		carbon tetrachloride	0.382	0.396	-3.7	124	-0.01	9.75
63		1,1-dichloropropene	0.367	0.389	-6.0	127	0.00	9.72
64		hexane	0.319	0.353	-10.7	128	-0.01	7.92
65	M	benzene	1.157	1.179	-1.9	127	-0.01	9.99
66		heptane	0.180	0.197	-9.4	122	0.00	10.15
67		isopropyl acetate	0.464	0.543	-17.0	136	0.00	9.90
68		1,2-dichloroethane	0.346	0.359	-3.8	129	-0.01	10.00
69		trichloroethene	0.287	0.294	-2.4	125	-0.01	10.70
70		ethyl acrylate	0.331	0.369	-11.5	135	-0.01	10.70
71		tert amyl ethyl ether		----------NA----------				
72		2-nitropropane	0.078	0.106	-35.9#	162	-0.01	11.48
73		2-chloroethyl vinyl ether	0.107	0.198	-85.0#	217#	0.00	11.50
74		methyl methacrylate	0.375	0.416	-10.9	133	0.00	10.97
75		1,2-dichloropropane	0.290	0.301	-3.8	128	-0.01	10.97
76		methylcyclohexane	0.460	0.486	-5.7	119	0.00	10.91
77		dibromomethane	0.182	0.190	-4.4	127	-0.01	11.13
78		bromodichloromethane	0.365	0.378	-3.6	127	0.00	11.26
79		cis-1,3-dichloropropene	0.446	0.464	-4.0	131	0.00	11.72
80	S	toluene-d8 (s)	0.943	0.966	-2.4	123	-0.01	12.00
81		4-methyl-2-pentanone	0.095	0.113	-18.9	138	0.00	11.81
82		toluene	0.654	0.670	-2.4	126	0.00	12.08
			True	Calc.	% Drift			

Continuing Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: V3D4402-CC4368
Lab FileID: 3D102390.D

83		3-methyl-1-butanol	400.000	542.463	-35.6#	164	0.00	11.83
		----------	AvgRF	CCRF	% Dev	----------		
84		trans-1,3-dichloropropene	0.380	0.411	-8.2	131	0.00	12.28
85		ethyl methacrylate	0.301	0.310	-3.0	128	0.00	12.26
86		1,1,2-trichloroethane	0.206	0.215	-4.4	128	0.00	12.49
87		2-hexanone	0.081	0.093	-14.8	140	0.00	12.66
88	I	chlorobenzene-d5	1.000	1.000	0.0	123	0.00	13.51
89		tetrachloroethene	0.387	0.383	1.0	120	0.00	12.66
90		1,3-dichloropropane	0.451	0.492	-9.1	132	-0.01	12.67
91		butyl acetate	0.183	0.212	-15.8	138	0.00	12.73
		----------	True	Calc.	% Drift	----------		
92		3,3-Dimethyl-1-Butanol	200.000	298.078	-49.0#	192	0.00	12.83
		----------	AvgRF	CCRF	% Dev	----------		
93		dibromochloromethane	0.366	0.370	-1.1	124	0.00	12.94
94		1,2-dibromoethane	0.308	0.323	-4.9	129	0.00	13.09
95		n-Butyl Ether		----------NA----------				
96		chlorobenzene	0.854	0.880	-3.0	126	0.00	13.55
97		1,1,1,2-tetrachloroethane	0.342	0.342	0.0	122	0.00	13.60
98		ethylbenzene	1.450	1.482	-2.2	126	0.00	13.60
99		m,p-xylene	0.553	0.569	-2.9	126	0.00	13.70
100		o-xylene	0.554	0.570	-2.9	126	0.00	14.12
101		styrene	0.844	0.874	-3.6	123	0.00	14.13
102		Butyl Acrylate		----------NA----------				
103		bromoform	0.256	0.266	-3.9	124	0.00	14.40
104	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	118	-0.01	15.82
105		isopropylbenzene	2.554	2.737	-7.2	123	0.00	14.46
106	S	4-bromofluorobenzene (s)	0.748	0.763	-2.0	120	0.00	14.67
107		bromobenzene	0.716	0.765	-6.8	121	0.00	14.86
108		cyclohexanone	0.085	0.077	9.4	103	0.00	14.63
109		1,1,2,2-tetrachloroethane	0.736	0.831	-12.9	127	0.00	14.77
110		trans-1,4-dichloro-2-bute	0.159	0.177	-11.3	129	0.00	14.81
111		1,2,3-trichloropropane	0.166	0.190	-14.5	128	-0.01	14.84
112		n-propylbenzene	2.825	3.047	-7.9	123	0.00	14.87
113		4-Ethyltoluene		----------NA----------				
114		2-chlorotoluene	0.632	0.661	-4.6	121	0.00	15.02
115		4-chlorotoluene	0.617	0.669	-8.4	124	0.00	15.11
116		1,3,5-trimethylbenzene	2.132	2.269	-6.4	124	0.00	15.02
117		tert-butylbenzene	1.805	1.924	-6.6	124	0.00	15.37
118		pentachloroethane	0.462	0.506	-9.5	124	0.00	15.45
119		1,2,4-trimethylbenzene	2.046	2.209	-8.0	124	0.00	15.41
120		sec-butylbenzene	2.792	2.969	-6.3	123	0.00	15.58
121		1,3-dichlorobenzene	1.364	1.413	-3.6	121	0.00	15.77
122		p-isopropyltoluene	2.387	2.462	-3.1	122	0.00	15.70
123		1,4-dichlorobenzene	1.393	1.432	-2.8	122	0.00	15.85
124		1,2-dichlorobenzene	1.377	1.428	-3.7	120	0.00	16.23
125		1,4-Diethylbenzene		----------NA----------				
126		n-butylbenzene	1.163	1.236	-6.3	121	0.00	16.10
127		1,2,4,5-Tetramethylbenzen		----------NA----------				
128		1,2-dibromo-3-chloropropa	0.163	0.176	-8.0	123	-0.01	16.96
129		1,3,5-trichlorobenzene	1.309	1.349	-3.1	118	0.00	17.13
130		1,2,4-trichlorobenzene	1.179	1.247	-5.8	119	0.00	17.69
131		hexachlorobutadiene	0.631	0.645	-2.2	116	0.00	17.79
132		naphthalene	2.414	2.774	-14.9	126	0.00	17.93
133		1,2,3-trichlorobenzene	1.094	1.192	-9.0	120	0.00	18.14
134		hexachloroethane	0.468	0.505	-7.9	123	0.00	16.47

Continuing Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: V3D4402-CC4368
Lab FileID: 3D102390.D

135	Benzyl chloride	1.358	1.499	-10.4	127	0.00	15.96

(#) = Out of Range SPCC's out = 0 CCC's out = 0
3D101645.D M3D4368.M Fri Sep 12 12:42:27 2014 3D

Initial Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: VU8630-ICC8630
Lab FileID: U187033.D

Response Factor Report MSU

Method : C:\MSDCHEM\1\METHODS\MU8630.M (RTE Integrator)
Title : SW-846 8260B, DB624 60m x 250um x 1.40um
Last Update : Thu Aug 28 10:39:31 2014
Response via : Initial Calibration

Calibration Files
5 =U187030.D 2 =U187029.D 20 =U187032.D 50 =U187033.D
100 =U187034.D 1 =U187028.D 200 =U187035.D 10 =U187031.D
0.5 =U187027.D 0.2 =U187026.D = =

Compound	5	2	20	50	100	1	200	10	0.5	0.2	Avg	%RSD
1) I Tert Butyl Alcohol-d9	----------ISTD----------											
2) tertiary butyl alcohol	1.124	1.305	1.116	1.112	1.022	1.204	1.024	0.886			1.099	11.48
3) Ethanol											0.000	-1.00
4) 1,4-dioxane	0.092	0.089	0.097	0.098	0.092		0.092	0.072			0.090	9.74
5) I pentafluorobenzene	----------ISTD----------											
6) freon 115											0.000	-1.00
7) freon 23											0.000	-1.00
8) freon 143A											0.000	-1.00
9) freon 152A											0.000	-1.00
10) chlorotrifluoroethene											0.000	-1.00
11) chlorodifluoromethane	0.582	0.605	0.555	0.530	0.507	0.534	0.503	0.433	0.520		0.530	9.37
12) dichlorodifluoromethane	0.514	0.427	0.460	0.475	0.452	0.382	0.458	0.464			0.454	8.38
13) freon 142B											0.000	-1.00
14) freon 114											0.000	-1.00
15) chloromethane	0.734	0.706	0.716	0.684	0.673	0.755	0.657	0.675	0.788	0.797	0.718	6.83
16) vinyl chloride	0.628	0.598	0.608	0.589	0.577	0.569	0.566	0.581	0.609		0.592	3.52
17) acetaldehyde											0.000	-1.00
18) bromomethane	0.370	0.343	0.336	0.311	0.281	0.388		0.322			0.336	10.70
19) chloroethane	0.312	0.262	0.287	0.272	0.256	0.283	0.211	0.279	0.273		0.271	10.14
20) trichlorofluoromethane	0.580	0.481	0.566	0.546	0.536	0.457	0.517	0.537			0.528	7.82
21) pentane											0.000	-1.00
22) freon 123A											0.000	-1.00
23) ethyl ether												

Initial Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: VU8630-ICC8630
Lab FileID: U187033.D

	0.235	0.191	0.227	0.222	0.220	0.188	0.224	0.220			0.216	7.83
24)	2-CHLOROPROPANE											
	0.807	0.673	0.842	0.788	0.774	0.854	0.793	0.811	0.694		0.782	7.85
25)	freon 141B											
											0.000	-1.00
26)	freon 123											
											0.000	-1.00
27)	acrolein											
	0.124	0.109	0.104	0.105	0.106	0.105		0.095			0.107	8.25
28)	1,1-dichloroethene											
	0.389	0.326	0.387	0.360	0.356	0.394	0.355	0.373	0.403		0.371	6.55
29)	acetone											
	0.059		0.050	0.046	0.043		0.045	0.052			0.049	11.86
30)	allyl chloride											
	0.073		0.078	0.071	0.071		0.073	0.076			0.074	3.76
31)	acetonitrile											
	0.047		0.047	0.047	0.044		0.043	0.037			0.044	8.82
32)	iodomethane											
	0.649	0.543	0.684	0.645	0.636	0.600	0.642	0.636	0.508	0.511	0.605	10.29
33)	carbon disulfide											
	1.292	1.104	1.311	1.278	1.207	1.316	1.210	1.272	1.263		1.250	5.38
34)	1-CHLOROPROPANE											
	0.038	0.033	0.038	0.034	0.034		0.034	0.039			0.036	6.50
35)	methylene chloride											
	0.431	0.387	0.442	0.417	0.413	0.430	0.417	0.420	0.425		0.420	3.66
36)	methyl acetate											
	0.441	0.475	0.422	0.428	0.399		0.411	0.351			0.418	9.13
37)	methyl tert butyl ether											
	1.331	1.194	1.346	1.289	1.250	1.326	1.258	1.275	1.357		1.292	4.11
38)	trans-1,2-dichloroethene											
	0.393	0.337	0.396	0.364	0.366	0.416	0.366	0.380	0.378		0.377	6.02
39)	di-isopropyl ether											
	1.739	1.803	1.615	1.566	1.488	1.749	1.513	1.323			1.600	10.05
40)	ethyl tert-butyl ether											
	1.632	1.765	1.498	1.458	1.379		1.413	1.241			1.484	11.57
41)	2-butanone											
	0.050	0.040	0.055	0.053	0.052		0.052	0.051			0.050	9.83
42)	1,1-dichloroethane											
	0.766	0.644	0.768	0.735	0.727	0.719	0.728	0.740	0.644	0.685	0.715	6.22
43)	chloroprene											
	0.643	0.656	0.604	0.584	0.565	0.631	0.574	0.487	0.614	0.528	0.588	8.93
44)	acrylonitrile											
	0.203	0.198	0.201	0.194	0.187	0.202	0.190	0.196	0.205	0.238	0.201	6.91
45)	vinyl acetate											
	0.070	0.067	0.073	0.075	0.071		0.072	0.060			0.070	7.26
46)	ethyl acetate											
	0.075		0.079	0.076	0.068		0.069	0.073			0.073	5.81
47)	2,2-dichloropropane											
	0.564	0.487	0.552	0.515	0.489	0.585	0.480	0.529	0.570		0.530	7.49
48)	cis-1,2-dichloroethene											
	0.429	0.363	0.428	0.400	0.396	0.440	0.402	0.403	0.440		0.411	6.17
49)	methyl acrylate											
	0.593	0.639	0.551	0.554	0.520		0.537	0.546			0.563	7.14
50)	propionitrile											
	0.083	0.079	0.079	0.078	0.074	0.078	0.076	0.079	0.080		0.078	3.19
51)	bromochloromethane											
	0.200	0.177	0.203	0.196	0.196	0.180	0.198	0.193			0.193	4.82
52)	tetrahydrofuran											
	0.223		0.170	0.169	0.158		0.163	0.169			0.175	13.52
53)	chloroform											

Initial Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: VU8630-ICC8630
Lab FileID: U187033.D

	0.673	0.595	0.671	0.638	0.634	0.671	0.645	0.639	0.708		0.652	4.95
54)	tert-butyl Formate											
	0.490	0.528	0.481	0.473	0.450	0.455	0.463	0.388	0.448		0.464	8.16
55)	iso-butyl alcohol											
	0.006		0.006	0.006	0.005		0.005	0.005			0.005	3.41
56)	dibromofluoromethane (s)											
	0.349	0.337	0.330	0.328	0.319	0.354	0.331	0.319	0.303		0.330	4.77
57)	1,2-dichloroethane-d4 (s)											
	0.429	0.434	0.424	0.421	0.406	0.447	0.421	0.404	0.393	0.473	0.425	5.42
58)	freon 113											
	0.298	0.294	0.281	0.270	0.257		0.258	0.214			0.267	10.68
59)	methacrylonitrile											
	0.336	0.422	0.329	0.325	0.315	0.348	0.324	0.312	0.340		0.339	9.80
60)	1,1,1-trichloroethane											
	0.559	0.440	0.578	0.550	0.542	0.534	0.547	0.535	0.431	0.597	0.531	10.22
61)	tert amyl alcohol											
											0.000	-1.00
62)	tert-amyl methyl ether											
	0.311	0.316	0.303	0.300	0.285	0.283	0.291	0.250	0.252		0.288	8.19
63)	iso-octane											
	1.783	1.835	1.652	1.617	1.487	1.386	1.498	1.311	1.428	1.690	1.569	11.08
64)	I 1,4-difluorobenzene	----------ISTD----------										
65)	Di-isobutylene											
											0.000	-1.00
66)	epichlorohydrin											
	0.053		0.047	0.045	0.042		0.044	0.040			0.045	9.94
67)	n-butyl alcohol											
	0.017		0.014	0.013	0.012		0.012	0.013			0.013	13.89
68)	Cyclohexane											
	0.516	0.403	0.535	0.494	0.475	0.443	0.465	0.507			0.480	8.92
69)	carbon tetrachloride											
	0.435	0.350	0.445	0.422	0.415	0.403	0.413	0.424			0.413	6.97
70)	1,1-dichloropropene											
	0.448	0.376	0.458	0.439	0.434	0.449	0.430	0.438	0.380	0.461	0.431	6.93
71)	hexane											
	0.060	0.051	0.059	0.057	0.054		0.055	0.046			0.054	9.01
72)	benzene											
	1.367	1.178	1.385	1.311	1.295	1.379	1.277	1.316	1.293	1.669	1.347	9.52
73)	heptane											
	0.296	0.316	0.275	0.262	0.244	0.255	0.250	0.219			0.265	11.60
74)	isopropyl acetate											
	0.838	0.871	0.788	0.787	0.732	0.825	0.761	0.649	0.780	0.941	0.797	9.95
75)	1,2-dichloroethane											
	0.448	0.416	0.461	0.448	0.439	0.441	0.434	0.440	0.391	0.394	0.431	5.45
76)	ethyl acrylate											
											0.000	-1.00
77)	tert amyl ethyl ether											
											0.000	-1.00
78)	trichloroethene											
	0.322	0.270	0.327	0.315	0.312	0.313	0.317	0.313	0.285	0.265	0.304	7.27
79)	methylcyclohexane											
	0.624	0.640	0.586	0.564	0.530	0.476	0.529	0.463	0.496	0.481	0.539	11.63
80)	2-nitropropane											
			0.174	0.175	0.165		0.168	0.178			0.172	3.02
81)	2-chloroethyl vinyl ether											
	0.270	0.286	0.264	0.262	0.245	0.254	0.246	0.211	0.243	0.256	0.254	7.86
82)	methyl methacrylate											
	0.091	0.077	0.097	0.096	0.093	0.083	0.094	0.090			0.090	7.61
83)	1,2-dichloropropane											

Initial Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: VU8630-ICC8630
Lab FileID: U187033.D

```
      0.372 0.322 0.380 0.369 0.362 0.348 0.364 0.359 0.286 0.344  0.351    8.03
 84)  propyl acetate
      0.085       0.074 0.073 0.067       0.069 0.066              0.072    9.84
 85)  dibromomethane
      0.202 0.185 0.211 0.205 0.202 0.186 0.206 0.199 0.182        0.197    5.32
 86)  bromodichloromethane
      0.446 0.398 0.459 0.446 0.443 0.455 0.450 0.438 0.432 0.505  0.447    5.94
 87)  cis-1,3-dichloropropene
      0.581 0.505 0.598 0.582 0.577 0.564 0.585 0.561 0.517 0.584  0.565    5.40
 88)  toluene-d8 (s)
      1.145 1.178 1.168 1.148 1.111 1.196 1.139 1.083 1.064 1.341  1.157    6.61
 89)  4-methyl-2-pentanone
      0.165 0.161 0.166 0.163 0.153 0.155 0.156 0.159 0.182        0.162    5.38
 90)  toluene
      0.820 0.699 0.845 0.820 0.812 0.804 0.816 0.784 0.712 0.895  0.801    7.28
 91)  3-methyl-1-butanol
      0.025 0.028 0.022 0.020 0.017       0.017 0.020              0.021   20.04
           ----- Linear regression -----  Coefficient =  0.9983
             Response Ratio = 0.02729 + 0.01648 *A

 92)  trans-1,3-dichloropropene
      0.546 0.492 0.557 0.547 0.539 0.527 0.549 0.531 0.505 0.610  0.540    5.89
 93)  ethyl methacrylate
      0.489 0.454 0.493 0.487 0.471 0.515 0.488 0.462 0.527        0.487    4.79
 94)  1,1,2-trichloroethane
      0.262 0.248 0.268 0.264 0.262 0.269 0.270 0.254 0.276 0.296  0.267    4.87
 95)  2-hexanone
      0.153 0.157 0.157 0.152 0.146 0.174 0.150 0.151 0.182        0.158    7.61

 96) I   chlorobenzene-d5      ----------------ISTD--------------------
 97)  cyclohexanone
      0.046 0.042 0.040 0.033 0.025             0.046              0.039   20.98
         ----- Quadratic regression -----                Coefficient =  0.9994
             Response Ratio = 0.00661 + 0.04060 *A + -0.00079 *A^2

 98)  tetrachloroethene
      0.302 0.240 0.305 0.287 0.286 0.283 0.290 0.296              0.286    6.98
 99)  1,3-dichloropropane
      0.565 0.510 0.573 0.558 0.547 0.563 0.555 0.547 0.536 0.586  0.554    3.78
100)  butyl acetate
      0.313 0.329 0.284 0.279 0.258 0.321 0.269 0.240 0.340        0.293   11.86
101)  dibromochloromethane
      0.373 0.340 0.385 0.380 0.375 0.357 0.387 0.366 0.339 0.333  0.363    5.49
102)  1,2-dibromoethane
      0.333 0.307 0.335 0.328 0.322 0.319 0.333 0.318 0.315 0.345  0.325    3.48
103)  3,3-dimethyl-1-Butanol
      0.054 0.056 0.045 0.041 0.035       0.034 0.041              0.044   19.99
           ----- Linear regression -----  Coefficient =  0.9975
             Response Ratio = 0.03270 + 0.03308 *A

104)  n-butyl ether
                                                                   0.000   -1.00
105)  chlorobenzene
      0.967 0.830 0.988 0.955 0.948 0.963 0.965 0.927 0.905 1.043  0.949    5.85
106)  1,1,1,2-tetrachloroethane
      0.379 0.319 0.376 0.363 0.357 0.350 0.362 0.359 0.317 0.308  0.349    7.23
107)  ethylbenzene
      1.704 1.437 1.735 1.672 1.656 1.676 1.687 1.647 1.523 1.945  1.668    7.95
108)  m,p-xylene
      0.642 0.545 0.660 0.632 0.624 0.627 0.631 0.623 0.582 0.647  0.621    5.41
```

Initial Calibration Summary

Job Number: JB75730 **Sample:** VU8630-ICC8630
Account: SHELLWIC Shell Oil Products US **Lab FileID:** U187033.D
Project: URSMDG:SAP#171356, New Hope, PA

```
109)  o-xylene
       0.666 0.554 0.684 0.653 0.642 0.635 0.643 0.643 0.580 0.621  0.632    6.15
110)  styrene
       1.117 0.972 1.159 1.123 1.111 1.097 1.128 1.087 1.019 1.195  1.101    5.86
111)  bromoform
       0.283 0.263 0.298 0.297 0.296 0.287 0.307 0.280 0.231        0.283    8.26

112) I   1,4-dichlorobenzene-d ----------------ISTD--------------------
113)  isopropylbenzene
       2.880 2.395 2.934 2.853 2.858 2.819 2.981 2.735 2.568 3.023  2.805    6.88
114)  4-bromofluorobenzene (s)
       0.829 0.867 0.815 0.821 0.807 0.896 0.880 0.768 0.907        0.843    5.51
115)  bromobenzene
       0.744 0.664 0.762 0.742 0.749 0.728 0.797 0.714 0.604 0.779  0.728    7.79
116)  1,1,2,2-tetrachloroethane
       0.863 0.824 0.866 0.860 0.844 0.874 0.881 0.839 0.955 1.063  0.887    8.02
117)  trans-1,4-dichloro-2-butene
       0.257 0.251 0.257 0.257 0.251 0.264 0.269 0.251 0.240 0.269  0.256    3.49
118)  1,2,3-trichloropropane
       0.222 0.194 0.214 0.216 0.212 0.207 0.224 0.212 0.176        0.208    7.23
119)  n-propylbenzene
       3.294 2.793 3.394 3.283 3.288 3.249 3.443 3.204 3.086 3.802  3.284    7.82
120)  2-chlorotoluene
       0.704 0.590 0.714 0.694 0.688 0.667 0.712 0.679 0.609 0.707  0.677    6.42
121)  4-chlorotoluene
       2.142 1.891 2.198 2.163 2.162 2.203 2.263 2.103 2.064 2.594  2.178    8.15
122)  p-Ethyltoluene
                                                                    0.000   -1.00
123)  1,3,5-trimethylbenzene
       2.523 2.160 2.602 2.537 2.506 2.493 2.548 2.481 2.333 2.933  2.512    7.79
124)  tert-butylbenzene
       2.198 1.906 2.286 2.211 2.189 2.197 2.217 2.147 2.196 2.387  2.193    5.52
125)  pentachloroethane
       0.467 0.417 0.507 0.505 0.504 0.453 0.523 0.464 0.403        0.471    8.95
126)  1,2,4-trimethylbenzene
       2.570 2.191 2.621 2.532 2.508 2.552 2.562 2.501 2.484 2.981  2.550    7.50
127)  1,2,3-trimethylbenzene
                                                                    0.000   -1.00
128)  sec-butylbenzene
       3.357 2.826 3.446 3.326 3.284 3.201 3.312 3.268 3.099 3.642  3.276    6.54
129)  1,3-dichlorobenzene
       1.536 1.342 1.567 1.517 1.505 1.558 1.556 1.482 1.354 1.581  1.500    5.71
130)  p-isopropyltoluene
       2.852 2.442 2.940 2.850 2.777 2.811 2.813 2.771 2.726 3.269  2.825    7.21
131)  1,4-dichlorobenzene
       1.552 1.374 1.589 1.538 1.519 1.574 1.562 1.498 1.495        1.523    4.24
132)  benzyl chloride
       1.776 1.897 1.632 1.612 1.491 1.868 1.539 1.365 1.893        1.675   11.54
133)  1,2-dichlorobenzene
       1.492 1.323 1.531 1.475 1.448 1.471 1.476 1.445 1.346 1.762  1.477    8.05
134)  p-Diethylbenzene
                                                                    0.000   -1.00
135)  n-butylbenzene
       1.476 1.243 1.525 1.462 1.425 1.440 1.440 1.431 1.388 1.450  1.428    5.20
136)  1,2,4,5-Tetramethylbenzene
                                                                    0.000   -1.00
137)  1,2-dibromo-3-chloropropane
       0.181 0.161 0.183 0.178 0.171 0.159 0.179 0.172              0.173    5.23
138)  1,3,5-trichlorobenzene
       1.276 1.067 1.294 1.258 1.231 1.220 1.273 1.240 1.145 1.341  1.234    6.32
```

Initial Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: VU8630-ICC8630
Lab FileID: U187033.D

```
139)  1,2,4-trichlorobenzene
       1.038 0.894 1.071 1.041 1.039 1.015 1.071 1.013 1.018 1.267  1.047    8.79
140)  hexachlorobutadiene
       0.601 0.528 0.629 0.610 0.584 0.589 0.605 0.598 0.568 0.583  0.590    4.65
141)  naphthalene
       2.206 1.994 2.203 2.145 2.105 2.147 2.159 2.157 2.380        2.166    4.71
142)  INDANE
                                                                    0.000   -1.00
143)  1,2,3-trichlorobenzene
       0.883 0.759 0.894 0.860 0.853 0.820 0.879 0.860 0.884        0.855    4.94
144)  hexachloroethane
       0.464 0.372 0.510 0.513 0.509 0.442 0.524 0.479              0.477   10.62
145)  MMT
                                                                    0.000   -1.00
146)  Bis(chloromethyl)ether
                                                                    0.000   -1.00
147)  Ethylenimine
                                                                    0.000   -1.00
 ---------------------------------------------------------------------------
 (#) = Out of Range  ###  Number of calibration levels exceeded format  ###

          MU8630.M          Thu Aug 28 10:42:49 2014   U_CORE
```

Initial Calibration Verification

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: VU8630-ICV8630
Lab FileID: U187038.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\U187038.D Vial: 24
Acq On : 27 Aug 2014 11:44 pm Operator: [redacted]p
Sample : icv8630-50 Inst : MSU
Misc : ms72718,vu8630,5.0,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\MU8630.M (RTE Integrator)
Title : SW-846 8260B, DB624 60m x 250um x 1.40um
Last Update : Thu Aug 28 10:39:31 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	99	0.02	8.03
2	M	tertiary butyl alcohol	1.099	1.077	2.0	96	0.01	8.13
3		Ethanol		----------NA----------				
4	m	1,4-dioxane	0.090	0.092	-2.2	93	0.00	11.87
5	I	pentafluorobenzene	1.000	1.000	0.0	102	0.00	10.22
6	M	freon 115		----------NA----------				
7	M	freon 23		----------NA----------				
8	M	freon 143A		----------NA----------				
9	M	freon 152A		----------NA----------				
10	M	chlorotrifluoroethene		----------NA----------				
11	M	chlorodifluoromethane	0.530	0.445	16.0	86	0.00	4.49
12	M	dichlorodifluoromethane	0.454	0.463	-2.0	100	0.00	4.46
13	M	freon 142B		----------NA----------				
14	M	freon 114		----------NA----------				
15	M	chloromethane	0.718	0.686	4.5	103	0.00	4.87
16	M	vinyl chloride	0.592	0.591	0.2	103	0.00	5.15
17	M	acetaldehyde		----------NA----------				
18	M	bromomethane	0.336	0.292	13.1	96	0.00	5.82
19	M	chloroethane	0.271	0.264	2.6	99	0.00	6.00
20	M	trichlorofluoromethane	0.528	0.548	-3.8	103	0.00	6.51
21	M	pentane		----------NA----------				
22	M	freon 123A		----------NA----------				
23	M	ethyl ether	0.216	0.229	-6.0	106	0.00	6.90
24		2-CHLOROPROPANE	0.782	0.809	-3.5	105	0.00	7.12
25	M	freon 141B		----------NA----------				
26	M	freon 123		----------NA----------				
27	M	acrolein	0.107	0.098	8.4	96	0.00	7.17
28	M	1,1-dichloroethene	0.371	0.369	0.5	105	0.00	7.35
29	M	acetone	0.049	0.048	2.0	107	0.00	7.39
30	M	allyl chloride	0.074	0.084	-13.5	122	0.00	7.86
31	M	acetonitrile	0.044	0.044	0.0	95	0.00	7.86
32	M	iodomethane	0.605	0.652	-7.8	103	0.00	7.63
33	M	carbon disulfide	1.250	1.316	-5.3	105	0.00	7.75
34		1-CHLOROPROPANE	0.036	0.034	5.6	101	0.00	8.09
35	M	methylene chloride	0.420	0.423	-0.7	104	0.00	8.06
36	M	methyl acetate	0.418	0.359	14.1	86	0.00	7.84
37	M	methyl tert butyl ether	1.292	1.238	4.2	99	0.00	8.39
38	M	trans-1,2-dichloroethene	0.377	0.367	2.7	103	0.00	8.42
39	M	di-isopropyl ether	1.600	1.499	6.3	98	0.00	8.97
40	M	ethyl tert-butyl ether	1.484	1.370	7.7	96	0.00	9.43
41	M	2-butanone	0.050	0.054	-8.0	105	0.00	9.69

Initial Calibration Verification

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: VU8630-ICV8630
Lab FileID: U187038.D

42	M	1,1-dichloroethane	0.715	0.753	-5.3	105	0.00	8.99
43	M	chloroprene	0.588	0.575	2.2	101	0.00	9.09
44	M	acrylonitrile	0.201	0.196	2.5	103	0.00	8.38
45	M	vinyl acetate	0.070	0.072	-2.9	99	0.00	8.97
46	M	ethyl acetate	0.073	0.071	2.7	95	0.00	9.70
47	M	2,2-dichloropropane	0.530	0.494	6.8	98	0.00	9.73
48	M	cis-1,2-dichloroethene	0.411	0.401	2.4	103	0.00	9.71
49	M	methyl acrylate	0.563	0.540	4.1	100	0.00	9.78
50	M	propionitrile	0.078	0.079	-1.3	104	0.00	9.80
51	M	bromochloromethane	0.193	0.195	-1.0	102	0.00	10.02
52	M	tetrahydrofuran	0.175	0.170	2.9	103	0.00	10.06
53	M	chloroform	0.652	0.648	0.6	104	0.00	10.07
54		tert-butyl Formate	0.464	0.429	7.5	93	0.00	10.13
55	M	iso-butyl alcohol	0.005	0.006	-20.0	100	0.00	10.50
56	S	dibromofluoromethane (s)	0.330	0.328	0.6	102	0.00	10.27
57	S	1,2-dichloroethane-d4 (s)	0.425	0.419	1.4	102	0.00	10.70
58	M	freon 113	0.267	0.246	7.9	93	0.00	7.31
59	M	methacrylonitrile	0.339	0.322	5.0	102	0.00	9.98
60	M	1,1,1-trichloroethane	0.531	0.558	-5.1	104	0.00	10.34
61	M	tert amyl alcohol		----------NA----------				
62	M	tert-amyl methyl ether	0.288	0.278	3.5	95	0.00	10.81
63		iso-octane	1.569	1.390	11.4	88	0.00	10.79
64	I	1,4-difluorobenzene	1.000	1.000	0.0	102	0.00	11.14
65	M	Di-isobutylene		----------NA----------				
66	M	epichlorohydrin	0.045	0.044	2.2	100	0.00	12.42
67	M	n-butyl alcohol	0.013	0.013	0.0	100	0.00	11.25
68	M	Cyclohexane	0.480	0.492	-2.5	102	0.00	10.41
69	M	carbon tetrachloride	0.413	0.431	-4.4	104	0.00	10.53
70	M	1,1-dichloropropene	0.431	0.427	0.9	99	0.00	10.51
71	M	hexane	0.054	0.047	13.0	85	0.00	8.72
72	M	benzene	1.347	1.338	0.7	104	0.00	10.78
73	M	heptane	0.265	0.215	18.9	84	0.00	10.94
74	M	isopropyl acetate	0.797	0.766	3.9	99	0.00	10.69
75	M	1,2-dichloroethane	0.431	0.455	-5.6	104	0.00	10.79
76	M	ethyl acrylate		----------NA----------				
77		tert amyl ethyl ether		----------NA----------				
78	M	trichloroethene	0.304	0.317	-4.3	103	0.00	11.48
79	M	methylcyclohexane	0.539	0.507	5.9	92	0.00	11.72
80	M	2-nitropropane	0.172	0.170	1.2	99	0.00	12.28
81	M	2-chloroethyl vinyl ether	0.254	0.247	2.8	96	0.00	12.29
82	M	methyl methacrylate	0.090	0.096	-6.7	102	0.00	11.75
83	M	1,2-dichloropropane	0.351	0.377	-7.4	104	0.00	11.76
84	M	propyl acetate	0.072	0.070	2.8	98	0.00	11.79
85	M	dibromomethane	0.197	0.205	-4.1	102	0.00	11.91
86	M	bromodichloromethane	0.447	0.454	-1.6	104	0.00	12.03
87	M	cis-1,3-dichloropropene	0.565	0.571	-1.1	100	0.00	12.52
88	S	toluene-d8 (s)	1.157	1.147	0.9	102	0.00	12.83
89	M	4-methyl-2-pentanone	0.162	0.165	-1.9	103	0.00	12.63
90	M	toluene	0.801	0.818	-2.1	102	0.00	12.91
		----------	True	Calc.	% Drift	----------		
91	M	3-methyl-1-butanol	1000.000	1083.950	-8.4	99	0.00	12.62
		----------	AvgRF	CCRF	% Dev	----------		
92	M	trans-1,3-dichloropropene	0.540	0.522	3.3	97	0.00	13.11
93	M	ethyl methacrylate	0.487	0.479	1.6	100	0.00	13.10
94	M	1,1,2-trichloroethane	0.267	0.265	0.7	102	0.00	13.34
95	M	2-hexanone	0.158	0.154	2.5	103	0.00	13.54

Initial Calibration Verification

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: VU8630-ICV8630
Lab FileID: U187038.D

96	I	chlorobenzene-d5	1.000	1.000	0.0	102	0.00	14.47
		----------	True	Calc.	% Drift	----------		
97	M	cyclohexanone	500.000	213.175	57.4#	51	0.00	15.73
		----------	AvgRF	CCRF	% Dev	----------		
98	M	tetrachloroethene	0.286	0.294	-2.8	104	0.00	13.52
99	M	1,3-dichloropropane	0.554	0.556	-0.4	102	0.00	13.54
100	M	butyl acetate	0.293	0.266	9.2	97	0.00	13.60
101	M	dibromochloromethane	0.363	0.374	-3.0	100	0.00	13.82
102	M	1,2-dibromoethane	0.325	0.327	-0.6	102	0.00	14.00
		----------	True	Calc.	% Drift	----------		
103		3,3-dimethyl-1-Butanol	500.000	533.499	-6.7	96	0.00	13.70
		----------	AvgRF	CCRF	% Dev	----------		
104		n-butyl ether		----------NA----------				
105	M	chlorobenzene	0.949	0.959	-1.1	102	0.00	14.50
106	M	1,1,1,2-tetrachloroethane	0.349	0.361	-3.4	101	0.00	14.56
107	M	ethylbenzene	1.668	1.670	-0.1	102	0.00	14.56
108	M	m,p-xylene	0.621	0.634	-2.1	102	0.00	14.68
109	M	o-xylene	0.632	0.649	-2.7	101	0.00	15.14
110	M	styrene	1.101	1.118	-1.5	102	0.00	15.15
111	M	bromoform	0.283	0.295	-4.2	101	0.00	15.44
112	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	102	0.00	17.04
113	M	isopropylbenzene	2.805	2.865	-2.1	102	0.00	15.52
114	S	4-bromofluorobenzene (s)	0.843	0.816	3.2	101	0.00	15.75
115	M	bromobenzene	0.728	0.746	-2.5	102	0.00	15.97
116	M	1,1,2,2-tetrachloroethane	0.887	0.828	6.7	98	0.00	15.85
117	M	trans-1,4-dichloro-2-bute	0.256	0.249	2.7	99	0.00	15.90
118	M	1,2,3-trichloropropane	0.208	0.212	-1.9	100	0.00	15.94
119	M	n-propylbenzene	3.284	3.466	-5.5	108	0.00	15.98
120	M	2-chlorotoluene	0.677	0.696	-2.8	102	0.00	16.14
121	M	4-chlorotoluene	2.178	2.153	1.1	102	0.00	16.25
122		p-Ethyltoluene		----------NA----------				
123	M	1,3,5-trimethylbenzene	2.512	2.513	-0.0	101	0.00	16.14
124	M	tert-butylbenzene	2.193	2.206	-0.6	102	0.00	16.54
125	M	pentachloroethane	0.471	0.498	-5.7	101	0.00	16.63
126	M	1,2,4-trimethylbenzene	2.550	2.654	-4.1	107	0.00	16.58
127		1,2,3-trimethylbenzene		----------NA----------				
128	M	sec-butylbenzene	3.276	3.309	-1.0	101	0.00	16.78
129	M	1,3-dichlorobenzene	1.500	1.505	-0.3	101	0.00	16.98
130	M	p-isopropyltoluene	2.825	2.839	-0.5	102	0.00	16.91
131	M	1,4-dichlorobenzene	1.523	1.531	-0.5	102	0.00	17.07
132	M	benzyl chloride	1.675	1.598	4.6	101	0.00	17.20
133	M	1,2-dichlorobenzene	1.477	1.477	0.0	102	0.00	17.51
134		p-Diethylbenzene		----------NA----------				
135	M	n-butylbenzene	1.428	1.493	-4.6	104	0.00	17.37
136		1,2,4,5-Tetramethylbenzen		----------NA----------				
137	M	1,2-dibromo-3-chloropropa	0.173	0.176	-1.7	101	0.00	18.37
138		1,3,5-trichlorobenzene	1.234	1.234	0.0	100	0.00	18.57
139	M	1,2,4-trichlorobenzene	1.047	1.055	-0.8	103	0.00	19.31
140	M	hexachlorobutadiene	0.590	0.610	-3.4	102	0.00	19.44
141	M	naphthalene	2.166	2.142	1.1	102	0.00	19.64
142		INDANE		----------NA----------				
143	M	1,2,3-trichlorobenzene	0.855	0.878	-2.7	104	0.00	19.91
144	M	hexachloroethane	0.477	0.514	-7.8	102	0.00	17.80
145	M	MMT		----------NA----------				
146	M	Bis(chloromethyl)ether		----------NA----------				

Initial Calibration Verification

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: VU8630-ICV8630
Lab FileID: U187038.D

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147 M   Ethylenimine                          ----------NA----------
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    (#) = Out of Range                SPCC's out = 0  CCC's out = 0
     U187033.D  MU8630.M         Thu Aug 28 10:59:43 2014   U_CORE
```

Continuing Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: VU8646-CC8630
Lab FileID: U187413.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\U ...vu8646-8647\U187413.D Vial: 23
Acq On : 8 Sep 2014 9:08 pm Operator: S[redacted]t
Sample : cc8630-50 Inst : MSU
Misc : ms73397,vu8646,5.0,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\MU8630.M (RTE Integrator)
Title : SW-846 8260B, DB624 60m x 250um x 1.40um
Last Update : Thu Aug 28 10:39:31 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	99	-0.01	7.99
2	M	tertiary butyl alcohol	1.099	1.060	3.5	94	0.00	8.11
3		Ethanol		----------NA----------				
4	m	1,4-dioxane	0.090	0.075	16.7	76	0.00	11.86
5	I	pentafluorobenzene	1.000	1.000	0.0	130	0.00	10.22
6	M	freon 115		----------NA----------				
7	M	freon 23		----------NA----------				
8	M	freon 143A		----------NA----------				
9	M	freon 152A		----------NA----------				
10	M	chlorotrifluoroethene		----------NA----------				
11	M	chlorodifluoromethane	0.530	0.434	18.1	107	0.00	4.49
12	M	dichlorodifluoromethane	0.454	0.399	12.1	109	0.00	4.45
13	M	freon 142B		----------NA----------				
14	M	freon 114		----------NA----------				
15	M	chloromethane	0.718	0.587	18.2	112	0.01	4.88
16	M	vinyl chloride	0.592	0.519	12.3	115	0.00	5.15
17	M	acetaldehyde		----------NA----------				
18	M	bromomethane	0.336	0.297	11.6	124	0.01	5.82
19	M	chloroethane	0.271	0.247	8.9	118	0.00	6.00
20	M	trichlorofluoromethane	0.528	0.520	1.5	124	0.00	6.51
21	M	pentane		----------NA----------				
22	M	freon 123A		----------NA----------				
23	M	ethyl ether	0.216	0.194	10.2	114	0.00	6.89
24		2-CHLOROPROPANE	0.782	0.655	16.2	108	0.00	7.11
25	M	freon 141B		----------NA----------				
26	M	freon 123		----------NA----------				
27	M	acrolein	0.107	0.082	23.4#	101	0.00	7.16
28	M	1,1-dichloroethene	0.371	0.306	17.5	111	0.00	7.34
29	M	acetone	0.049	0.039	20.4#	110	0.00	7.39
30	M	allyl chloride	0.074	0.060	18.9	110	0.00	7.86
31	M	acetonitrile	0.044	0.034	22.7#	94	0.00	7.85
32	M	iodomethane	0.605	0.562	7.1	113	0.00	7.62
33	M	carbon disulfide	1.250	1.043	16.6	106	0.00	7.74
34		1-CHLOROPROPANE	0.036	0.029	19.4	111	0.00	8.08
35	M	methylene chloride	0.420	0.363	13.6	113	0.00	8.05
36	M	methyl acetate	0.418	0.352	15.8	107	0.00	7.84
37	M	methyl tert butyl ether	1.292	1.086	15.9	110	0.00	8.37
38	M	trans-1,2-dichloroethene	0.377	0.318	15.6	114	0.00	8.41
39	M	di-isopropyl ether	1.600	1.343	16.1	112	0.00	8.96
40	M	ethyl tert-butyl ether	1.484	1.229	17.2	110	0.00	9.43
41	M	2-butanone	0.050	0.045	10.0	109	0.00	9.69

Continuing Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: VU8646-CC8630
Lab FileID: U187413.D

42	M	1,1-dichloroethane	0.715	0.625	12.6	111	0.00	8.98
43	M	chloroprene	0.588	0.486	17.3	108	0.00	9.09
44	M	acrylonitrile	0.201	0.165	17.9	111	0.00	8.38
45	M	vinyl acetate	0.070	0.064	8.6	111	0.00	8.97
46	M	ethyl acetate	0.073	0.060	17.8	104	0.00	9.69
47	M	2,2-dichloropropane	0.530	0.398	24.9#	101	0.00	9.72
48	M	cis-1,2-dichloroethene	0.411	0.352	14.4	115	0.00	9.71
49	M	methyl acrylate	0.563	0.458	18.7	108	0.00	9.78
50	M	propionitrile	0.078	0.065	16.7	108	0.00	9.79
51	M	bromochloromethane	0.193	0.175	9.3	116	0.00	10.02
52	M	tetrahydrofuran	0.175	0.139	20.6#	107	0.00	10.05
53	M	chloroform	0.652	0.564	13.5	115	0.00	10.06
54		tert-butyl Formate	0.464	0.373	19.6	103	0.00	10.13
55	M	iso-butyl alcohol	0.005	0.004	20.0	102	0.00	10.50
56	S	dibromofluoromethane (s)	0.330	0.331	-0.3	131	0.00	10.26
57	S	1,2-dichloroethane-d4 (s)	0.425	0.401	5.6	124	0.00	10.69
58	M	freon 113	0.267	0.245	8.2	118	0.01	7.32
59	M	methacrylonitrile	0.339	0.271	20.1#	109	0.00	9.97
60	M	1,1,1-trichloroethane	0.531	0.472	11.1	112	0.00	10.34
61	M	tert amyl alcohol		----------NA----------				
62	M	tert-amyl methyl ether	0.288	0.258	10.4	112	0.00	10.81
63		iso-octane	1.569	1.335	14.9	108	0.00	10.78
64	I	1,4-difluorobenzene	1.000	1.000	0.0	127	0.00	11.13
65	M	Di-isobutylene		----------NA----------				
66	M	epichlorohydrin	0.045	0.037	17.8	105	0.00	12.42
67	M	n-butyl alcohol	0.013	0.010	23.1#	93	0.00	11.23
68	M	Cyclohexane	0.480	0.440	8.3	113	0.00	10.41
69	M	carbon tetrachloride	0.413	0.379	8.2	113	0.00	10.53
70	M	1,1-dichloropropene	0.431	0.388	10.0	112	0.00	10.50
71	M	hexane	0.054	0.050	7.4	111	0.00	8.73
72	M	benzene	1.347	1.179	12.5	114	0.00	10.77
73	M	heptane	0.265	0.217	18.1	104	0.00	10.94
74	M	isopropyl acetate	0.797	0.680	14.7	109	0.00	10.69
75	M	1,2-dichloroethane	0.431	0.397	7.9	112	0.00	10.78
76	M	ethyl acrylate		----------NA----------				
77		tert amyl ethyl ether		----------NA----------				
78	M	trichloroethene	0.304	0.286	5.9	115	0.00	11.48
79	M	methylcyclohexane	0.539	0.507	5.9	114	0.00	11.71
80	M	2-nitropropane	0.172	0.142	17.4	103	0.00	12.28
81	M	2-chloroethyl vinyl ether	0.254	0.227	10.6	110	0.00	12.29
82	M	methyl methacrylate	0.090	0.084	6.7	110	0.00	11.75
83	M	1,2-dichloropropane	0.351	0.331	5.7	114	0.00	11.76
84	M	propyl acetate	0.072	0.064	11.1	112	0.00	11.78
85	M	dibromomethane	0.197	0.186	5.6	115	0.00	11.90
86	M	bromodichloromethane	0.447	0.397	11.2	113	0.00	12.03
87	M	cis-1,3-dichloropropene	0.565	0.514	9.0	112	0.00	12.51
88	S	toluene-d8 (s)	1.157	1.204	-4.1	133	0.00	12.83
89	M	4-methyl-2-pentanone	0.162	0.141	13.0	110	0.00	12.63
90	M	toluene	0.801	0.742	7.4	115	0.00	12.91
		----------	True	Calc.	% Drift	----------		
91	M	3-methyl-1-butanol	1000.000	788.211	21.2#	92	0.00	12.61
		----------	AvgRF	CCRF	% Dev	----------		
92	M	trans-1,3-dichloropropene	0.540	0.485	10.2	112	0.00	13.10
93	M	ethyl methacrylate	0.487	0.426	12.5	111	0.00	13.10
94	M	1,1,2-trichloroethane	0.267	0.243	9.0	117	0.00	13.34
95	M	2-hexanone	0.158	0.131	17.1	109	0.00	13.53

Continuing Calibration Summary

Job Number: JB75730 **Sample:** VU8646-CC8630
Account: SHELLWIC Shell Oil Products US **Lab FileID:** U187413.D
Project: URSMDG:SAP#171356, New Hope, PA

96	I	chlorobenzene-d5	1.000	1.000	0.0	126	0.00	14.46
			True	Calc.	% Drift			
97	M	cyclohexanone	500.000	132.160	73.6#	41	0.00	15.72
			AvgRF	CCRF	% Dev			
98	M	tetrachloroethene	0.286	0.274	4.2	120	0.00	13.52
99	M	1,3-dichloropropane	0.554	0.516	6.9	116	0.00	13.54
100	M	butyl acetate	0.293	0.249	15.0	112	0.00	13.60
101	M	dibromochloromethane	0.363	0.350	3.6	116	0.00	13.82
102	M	1,2-dibromoethane	0.325	0.308	5.2	118	0.00	13.99
			True	Calc.	% Drift			
103		3,3-dimethyl-1-Butanol	500.000	375.313	24.9#	87	0.00	13.70
			AvgRF	CCRF	% Dev			
104		n-butyl ether			NA			
105	M	chlorobenzene	0.949	0.899	5.3	118	0.00	14.50
106	M	1,1,1,2-tetrachloroethane	0.349	0.341	2.3	118	0.00	14.56
107	M	ethylbenzene	1.668	1.535	8.0	115	0.00	14.56
108	M	m,p-xylene	0.621	0.590	5.0	117	0.00	14.67
109	M	o-xylene	0.632	0.606	4.1	117	0.00	15.14
110	M	styrene	1.101	1.022	7.2	114	0.00	15.15
111	M	bromoform	0.283	0.279	1.4	118	0.00	15.44
112	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	128	0.00	17.04
113	M	isopropylbenzene	2.805	2.583	7.9	116	0.00	15.52
114	S	4-bromofluorobenzene (s)	0.843	0.834	1.1	130	0.00	15.74
115	M	bromobenzene	0.728	0.702	3.6	121	0.00	15.97
116	M	1,1,2,2-tetrachloroethane	0.887	0.769	13.3	114	0.00	15.85
117	M	trans-1,4-dichloro-2-bute	0.256	0.203	20.7#	101	0.00	15.90
118	M	1,2,3-trichloropropane	0.208	0.196	5.8	116	0.00	15.94
119	M	n-propylbenzene	3.284	2.960	9.9	115	0.00	15.98
120	M	2-chlorotoluene	0.677	0.645	4.7	119	0.00	16.14
121	M	4-chlorotoluene	2.178	1.951	10.4	115	0.00	16.25
122		p-Ethyltoluene			NA			
123	M	1,3,5-trimethylbenzene	2.512	2.287	9.0	115	0.00	16.14
124	M	tert-butylbenzene	2.193	1.987	9.4	115	0.00	16.54
125	M	pentachloroethane	0.471	0.471	0.0	119	0.00	16.62
126	M	1,2,4-trimethylbenzene	2.550	2.299	9.8	116	0.00	16.58
127		1,2,3-trimethylbenzene			NA			
128	M	sec-butylbenzene	3.276	2.987	8.8	115	0.00	16.78
129	M	1,3-dichlorobenzene	1.500	1.431	4.6	120	0.00	16.98
130	M	p-isopropyltoluene	2.825	2.587	8.4	116	0.00	16.91
131	M	1,4-dichlorobenzene	1.523	1.447	5.0	120	0.00	17.07
132	M	benzyl chloride	1.675	1.186	29.2#	94	0.00	17.20
133	M	1,2-dichlorobenzene	1.477	1.383	6.4	120	0.00	17.51
134		p-Diethylbenzene			NA			
135	M	n-butylbenzene	1.428	1.298	9.1	113	0.00	17.36
136		1,2,4,5-Tetramethylbenzen			NA			
137	M	1,2-dibromo-3-chloropropa	0.173	0.154	11.0	110	0.00	18.37
138		1,3,5-trichlorobenzene	1.234	1.160	6.0	118	0.00	18.57
139	M	1,2,4-trichlorobenzene	1.047	0.939	10.3	115	0.00	19.30
140	M	hexachlorobutadiene	0.590	0.536	9.2	112	0.00	19.43
141	M	naphthalene	2.166	1.821	15.9	108	0.00	19.63
142		INDANE			NA			
143	M	1,2,3-trichlorobenzene	0.855	0.753	11.9	112	0.00	19.91
144	M	hexachloroethane	0.477	0.474	0.6	118	0.00	17.80
145	M	MMT			NA			
146	M	Bis(chloromethyl)ether			NA			

Continuing Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: VU8646-CC8630
Lab FileID: U187413.D

147 M Ethylenimine ----------NA----------

(#) = Out of Range SPCC's out = 0 CCC's out = 0
U187033.D MU8630.M Tue Sep 09 14:34:40 2014 ACC-VOA-DP

Continuing Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: VU8647-CC8630
Lab FileID: U187439.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\U ...vu8646-8647\U187439.D Vial: 3
Acq On : 9 Sep 2014 1:43 pm Operator: [redacted]t
Sample : cc8630-20 Inst : MSU
Misc : ms73397,vu8647,5.0,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\MU8630.M (RTE Integrator)
Title : SW-846 8260B, DB624 60m x 250um x 1.40um
Last Update : Thu Aug 28 10:39:31 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	96	0.00	7.99
2	M	tertiary butyl alcohol	1.099	1.122	-2.1	96	-0.01	8.10
3		Ethanol		----------NA----------				
4	m	1,4-dioxane	0.090	0.099	-10.0	98	0.00	11.86
5	I	pentafluorobenzene	1.000	1.000	0.0	124	0.00	10.22
6	M	freon 115		----------NA----------				
7	M	freon 23		----------NA----------				
8	M	freon 143A		----------NA----------				
9	M	freon 152A		----------NA----------				
10	M	chlorotrifluoroethene		----------NA----------				
11	M	chlorodifluoromethane	0.530	0.510	3.8	114	0.01	4.50
12	M	dichlorodifluoromethane	0.454	0.415	8.6	112	0.00	4.46
13	M	freon 142B		----------NA----------				
14	M	freon 114		----------NA----------				
15	M	chloromethane	0.718	0.634	11.7	110	0.02	4.89
16	M	vinyl chloride	0.592	0.565	4.6	116	0.00	5.16
17	M	acetaldehyde		----------NA----------				
18	M	bromomethane	0.336	0.319	5.1	118	0.01	5.82
19	M	chloroethane	0.271	0.263	3.0	114	0.00	6.00
20	M	trichlorofluoromethane	0.528	0.564	-6.8	124	0.00	6.51
21	M	pentane		----------NA----------				
22	M	freon 123A		----------NA----------				
23	M	ethyl ether	0.216	0.204	5.6	111	0.00	6.90
24		2-CHLOROPROPANE	0.782	0.727	7.0	107	0.00	7.11
25	M	freon 141B		----------NA----------				
26	M	freon 123		----------NA----------				
27	M	acrolein	0.107	0.101	5.6	121	0.00	7.17
28	M	1,1-dichloroethene	0.371	0.341	8.1	110	0.00	7.34
29	M	acetone	0.049	0.043	12.2	107	0.00	7.39
30	M	allyl chloride	0.074	0.066	10.8	105	0.00	7.86
31	M	acetonitrile	0.044	0.046	-4.5	120	0.00	7.85
32	M	iodomethane	0.605	0.597	1.3	108	0.00	7.62
33	M	carbon disulfide	1.250	1.180	5.6	112	0.00	7.74
34		1-CHLOROPROPANE	0.036	0.031	13.9	103	0.00	8.08
35	M	methylene chloride	0.420	0.397	5.5	111	0.00	8.05
36	M	methyl acetate	0.418	0.388	7.2	114	0.00	7.84
37	M	methyl tert butyl ether	1.292	1.165	9.8	108	0.00	8.38
38	M	trans-1,2-dichloroethene	0.377	0.352	6.6	110	0.00	8.42
39	M	di-isopropyl ether	1.600	1.489	6.9	114	0.00	8.97
40	M	ethyl tert-butyl ether	1.484	1.330	10.4	110	0.00	9.43
41	M	2-butanone	0.050	0.048	4.0	108	0.00	9.68

Continuing Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: VU8647-CC8630
Lab FileID: U187439.D

42	M	1,1-dichloroethane	0.715	0.688	3.8	111	0.00	8.98
43	M	chloroprene	0.588	0.548	6.8	113	0.00	9.09
44	M	acrylonitrile	0.201	0.179	10.9	110	0.00	8.38
45	M	vinyl acetate	0.070	0.068	2.9	115	0.00	8.97
46	M	ethyl acetate	0.073	0.066	9.6	104	0.00	9.69
47	M	2,2-dichloropropane	0.530	0.538	-1.5	121	0.00	9.72
48	M	cis-1,2-dichloroethene	0.411	0.386	6.1	112	0.00	9.71
49	M	methyl acrylate	0.563	0.489	13.1	110	0.00	9.78
50	M	propionitrile	0.078	0.070	10.3	111	0.00	9.79
51	M	bromochloromethane	0.193	0.190	1.6	116	0.00	10.02
52	M	tetrahydrofuran	0.175	0.159	9.1	116	0.00	10.06
53	M	chloroform	0.652	0.617	5.4	114	0.00	10.06
54		tert-butyl Formate	0.464	0.391	15.7	101	0.00	10.13
55	M	iso-butyl alcohol	0.005	0.005	0.0	106	0.00	10.50
56	S	dibromofluoromethane (s)	0.330	0.335	-1.5	126	0.00	10.26
57	S	1,2-dichloroethane-d4 (s)	0.425	0.409	3.8	120	0.00	10.69
58	M	freon 113	0.267	0.280	-4.9	124	0.01	7.32
59	M	methacrylonitrile	0.339	0.294	13.3	111	0.00	9.97
60	M	1,1,1-trichloroethane	0.531	0.511	3.8	110	0.00	10.34
61	M	tert amyl alcohol		----------NA----------				
62	M	tert-amyl methyl ether	0.288	0.282	2.1	115	0.00	10.80
63		iso-octane	1.569	1.689	-7.6	127	0.00	10.78
64	I	1,4-difluorobenzene	1.000	1.000	0.0	123	0.00	11.14
65	M	Di-isobutylene		----------NA----------				
66	M	epichlorohydrin	0.045	0.040	11.1	104	0.00	12.42
67	M	n-butyl alcohol	0.013	0.010	23.1#	89	0.00	11.24
68	M	Cyclohexane	0.480	0.483	-0.6	111	0.00	10.41
69	M	carbon tetrachloride	0.413	0.413	0.0	114	0.00	10.53
70	M	1,1-dichloropropene	0.431	0.426	1.2	115	0.00	10.50
71	M	hexane	0.054	0.061	-13.0	127	0.00	8.72
72	M	benzene	1.347	1.287	4.5	115	0.00	10.77
73	M	heptane	0.265	0.279	-5.3	125	0.00	10.94
74	M	isopropyl acetate	0.797	0.722	9.4	113	0.00	10.69
75	M	1,2-dichloroethane	0.431	0.429	0.5	115	0.00	10.78
76	M	ethyl acrylate		----------NA----------				
77		tert amyl ethyl ether		----------NA----------				
78	M	trichloroethene	0.304	0.305	-0.3	115	0.00	11.47
79	M	methylcyclohexane	0.539	0.577	-7.1	121	0.00	11.71
80	M	2-nitropropane	0.172	0.149	13.4	105	0.00	12.28
81	M	2-chloroethyl vinyl ether	0.254	0.222	12.6	103	0.00	12.29
82	M	methyl methacrylate	0.090	0.087	3.3	111	0.00	11.75
83	M	1,2-dichloropropane	0.351	0.356	-1.4	115	0.00	11.76
84	M	propyl acetate	0.072	0.067	6.9	111	0.00	11.78
85	M	dibromomethane	0.197	0.199	-1.0	116	0.00	11.90
86	M	bromodichloromethane	0.447	0.423	5.4	114	0.00	12.04
87	M	cis-1,3-dichloropropene	0.565	0.575	-1.8	118	0.00	12.51
88	S	toluene-d8 (s)	1.157	1.227	-6.1	129	0.00	12.83
89	M	4-methyl-2-pentanone	0.162	0.147	9.3	109	0.00	12.63
90	M	toluene	0.801	0.816	-1.9	119	0.00	12.91
		----------	True	Calc.	% Drift	----------		
91	M	3-methyl-1-butanol	400.000	236.687	40.8#	75	0.00	12.62
		----------	AvgRF	CCRF	% Dev	----------		
92	M	trans-1,3-dichloropropene	0.540	0.543	-0.6	120	0.00	13.10
93	M	ethyl methacrylate	0.487	0.450	7.6	113	0.00	13.10
94	M	1,1,2-trichloroethane	0.267	0.264	1.1	121	0.00	13.34
95	M	2-hexanone	0.158	0.136	13.9	107	0.00	13.53

Continuing Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: VU8647-CC8630
Lab FileID: U187439.D

96	I	chlorobenzene-d5	1.000	1.000	0.0	125	0.00	14.46
		----------	True	Calc.	% Drift	----------		
97	M	cyclohexanone	200.000	83.559	58.2#	57	0.00	15.72
		----------	AvgRF	CCRF	% Dev	----------		
98	M	tetrachloroethene	0.286	0.297	-3.8	122	0.00	13.53
99	M	1,3-dichloropropane	0.554	0.551	0.5	120	0.00	13.54
100	M	butyl acetate	0.293	0.260	11.3	115	0.00	13.60
101	M	dibromochloromethane	0.363	0.365	-0.6	119	0.00	13.82
102	M	1,2-dibromoethane	0.325	0.322	0.9	120	0.00	13.99
		----------	True	Calc.	% Drift	----------		
103		3,3-dimethyl-1-Butanol	200.000	83.369	58.3#	61	0.00	13.70
		----------	AvgRF	CCRF	% Dev	----------		
104		n-butyl ether		----------NA----------				
105	M	chlorobenzene	0.949	0.961	-1.3	122	0.00	14.50
106	M	1,1,1,2-tetrachloroethane	0.349	0.354	-1.4	118	0.00	14.56
107	M	ethylbenzene	1.668	1.688	-1.2	122	0.00	14.56
108	M	m,p-xylene	0.621	0.640	-3.1	121	0.00	14.68
109	M	o-xylene	0.632	0.654	-3.5	120	0.00	15.14
110	M	styrene	1.101	1.089	1.1	118	0.00	15.15
111	M	bromoform	0.283	0.279	1.4	117	0.00	15.44
112	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	119	0.00	17.04
113	M	isopropylbenzene	2.805	2.933	-4.6	119	0.00	15.52
114	S	4-bromofluorobenzene (s)	0.843	0.863	-2.4	126	0.00	15.74
115	M	bromobenzene	0.728	0.776	-6.6	121	0.00	15.96
116	M	1,1,2,2-tetrachloroethane	0.887	0.843	5.0	116	0.00	15.85
117	M	trans-1,4-dichloro-2-bute	0.256	0.225	12.1	104	0.00	15.90
118	M	1,2,3-trichloropropane	0.208	0.209	-0.5	117	0.00	15.94
119	M	n-propylbenzene	3.284	3.397	-3.4	119	0.00	15.98
120	M	2-chlorotoluene	0.677	0.723	-6.8	121	0.00	16.14
121	M	4-chlorotoluene	2.178	2.173	0.2	118	0.00	16.25
122		p-Ethyltoluene		----------NA----------				
123	M	1,3,5-trimethylbenzene	2.512	2.553	-1.6	117	0.00	16.14
124	M	tert-butylbenzene	2.193	2.203	-0.5	115	0.00	16.54
125	M	pentachloroethane	0.471	0.514	-9.1	121	0.00	16.62
126	M	1,2,4-trimethylbenzene	2.550	2.533	0.7	115	0.00	16.58
127		1,2,3-trimethylbenzene		----------NA----------				
128	M	sec-butylbenzene	3.276	3.382	-3.2	117	0.00	16.78
129	M	1,3-dichlorobenzene	1.500	1.552	-3.5	118	0.00	16.98
130	M	p-isopropyltoluene	2.825	2.871	-1.6	116	0.00	16.90
131	M	1,4-dichlorobenzene	1.523	1.553	-2.0	116	0.00	17.07
132	M	benzyl chloride	1.675	1.704	-1.7	124	0.00	17.20
133	M	1,2-dichlorobenzene	1.477	1.494	-1.2	116	0.00	17.51
134		p-Diethylbenzene		----------NA----------				
135	M	n-butylbenzene	1.428	1.465	-2.6	114	0.00	17.36
136		1,2,4,5-Tetramethylbenzen		----------NA----------				
137	M	1,2-dibromo-3-chloropropa	0.173	0.156	9.8	101	0.00	18.36
138		1,3,5-trichlorobenzene	1.234	1.288	-4.4	119	0.00	18.57
139	M	1,2,4-trichlorobenzene	1.047	0.999	4.6	111	0.00	19.31
140	M	hexachlorobutadiene	0.590	0.628	-6.4	119	0.00	19.43
141	M	naphthalene	2.166	1.779	17.9	96	0.00	19.63
142		INDANE		----------NA----------				
143	M	1,2,3-trichlorobenzene	0.855	0.766	10.4	102	0.00	19.91
144	M	hexachloroethane	0.477	0.491	-2.9	115	0.00	17.80
145	M	MMT		----------NA----------				
146	M	Bis(chloromethyl)ether		----------NA----------				

Continuing Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: VU8647-CC8630
Lab FileID: U187439.D

147 M Ethylenimine ----------NA----------

(#) = Out of Range SPCC's out = 0 CCC's out = 0
U187032.D MU8630.M Wed Sep 10 10:38:33 2014 ACC-VOA-DP

New Jersey ACCUTEST LABORATORIES

GC/MS Volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
[redacted]
09/10/14 17:46

Quantitation Report (QT/LSC Reviewed)

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187447.D
Acq On : 9 Sep 2014 6:06 pm
Operator : [redacted]
Sample : jb75730-1
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Sep 10 15:16:05 2014
Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um
QLast Update : Thu Aug 28 10:39:31 2014
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	8.015	65	165618	500.00	ug/L	0.01
5) pentafluorobenzene	10.221	168	399974	50.00	ug/L	0.00
64) 1,4-difluorobenzene	11.131	114	460436	50.00	ug/L	0.00
96) chlorobenzene-d5	14.461	117	431445	50.00	ug/L	0.00
112) 1,4-dichlorobenzene-d4	17.039	152	256086	50.00	ug/L	0.00
System Monitoring Compounds						
56) dibromofluoromethane (s)	10.268	113	134525	50.96	ug/L	0.00
Spiked Amount 50.000	Range 79 - 120		Recovery = 101.92%			
57) 1,2-dichloroethane-d4 (s)	10.692	65	165245	48.56	ug/L	0.00
Spiked Amount 50.000	Range 72 - 123		Recovery = 97.12%			
88) toluene-d8 (s)	12.830	98	551927	51.79	ug/L	0.00
Spiked Amount 50.000	Range 78 - 119		Recovery = 103.58%			
114) 4-bromofluorobenzene (s)	15.742	95	216884	50.21	ug/L	0.00
Spiked Amount 50.000	Range 74 - 119		Recovery = 100.42%			
Target Compounds						Qvalue
41) 2-butanone	9.683	72	4160	10.30	ug/L #	1
68) Cyclohexane	10.410	84	16015	3.63	ug/L #	33
79) methylcyclohexane	11.711	83	411904m	83.00	ug/L	
113) isopropylbenzene	15.523	105	75182	5.23	ug/L	98

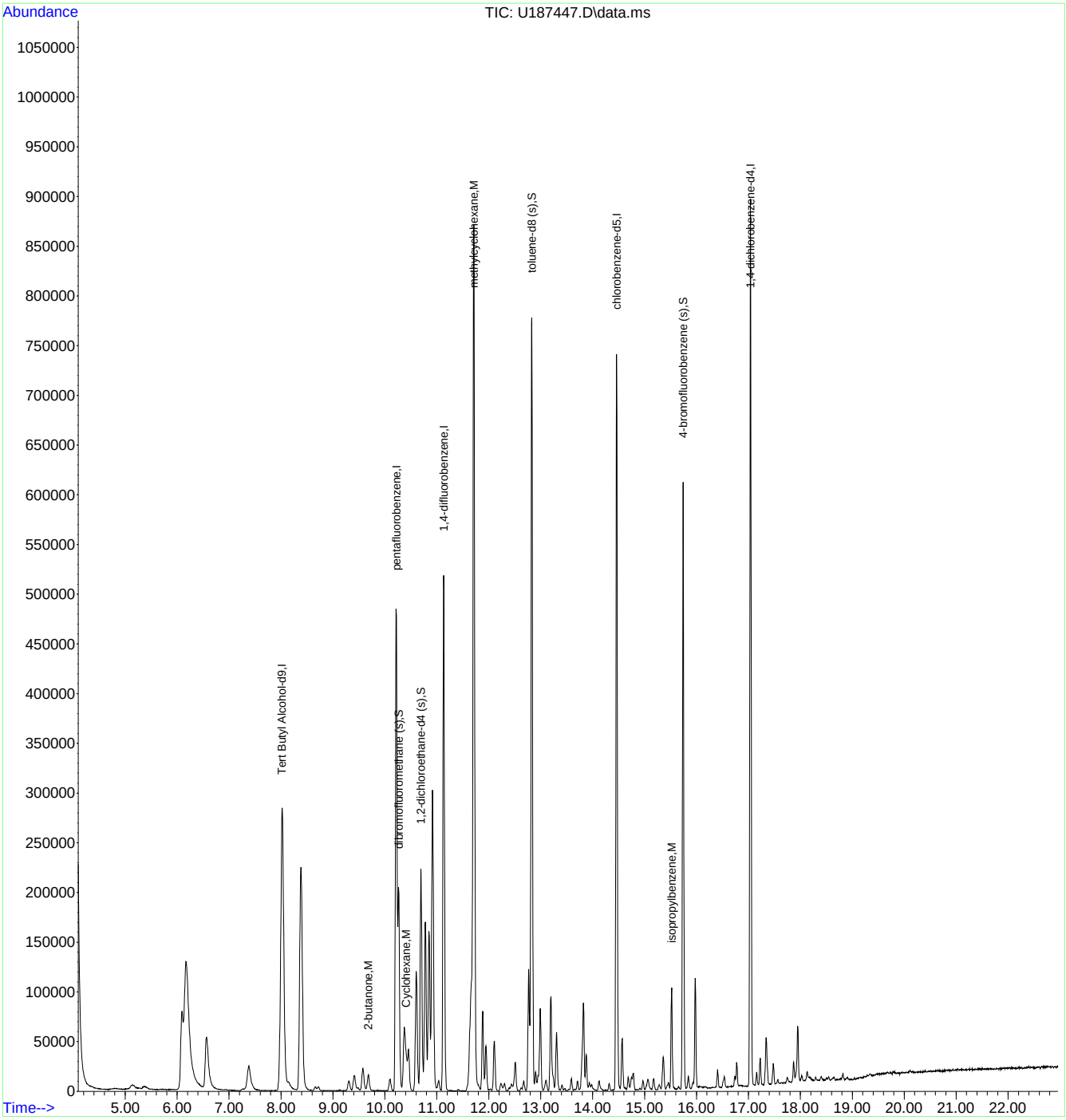
(#) = qualifier out of range (m) = manual integration (+) = signals summed

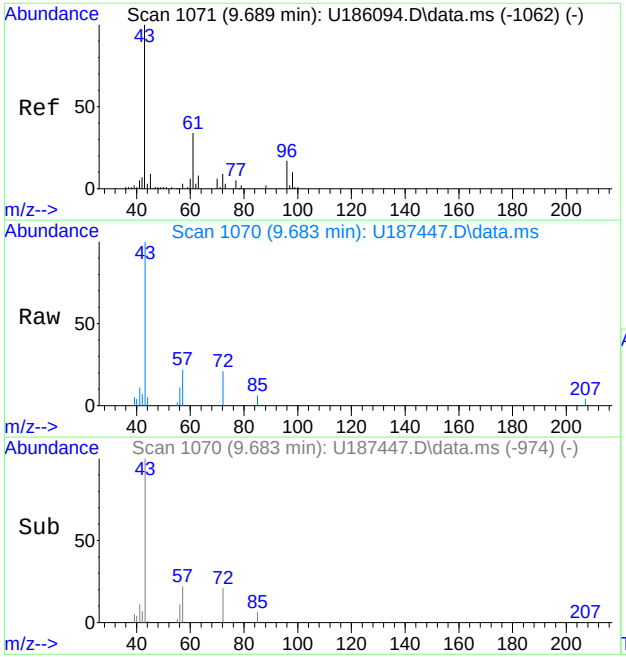
7.1.1
7

Quantitation Report (QT/LSC Reviewed)

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187447.D
Acq On : 9 Sep 2014 6:06 pm
Operator : [redacted]
Sample : jb75730-1
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Sep 10 15:16:05 2014
Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um
QLast Update : Thu Aug 28 10:39:31 2014
Response via : Initial Calibration

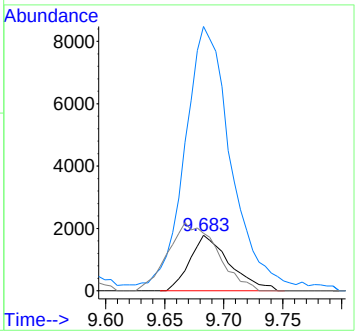


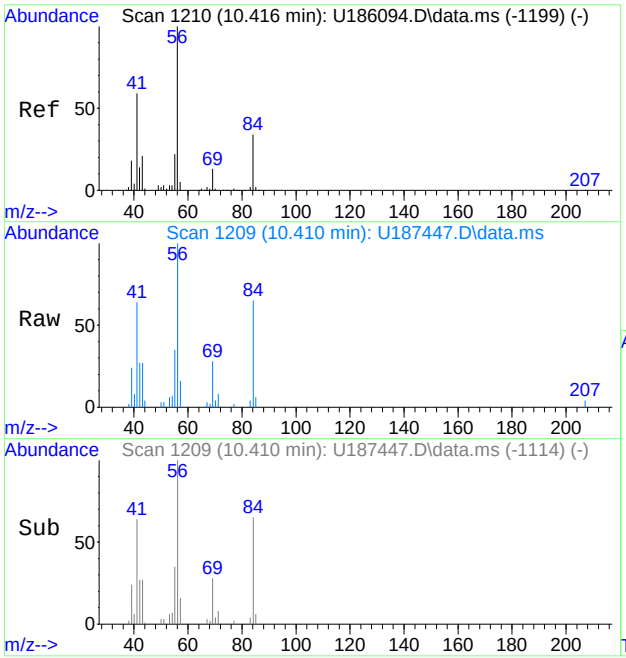


#41
2-butanone
Concen: 10.30 ug/L
RT: 9.683 min Scan# 1070
Delta R.T. 0.002 min
Lab File: U187447.D
Acq: 9 Sep 2014 6:06 pm

Tgt Ion: 72 Resp: 4160

Ion	Ratio	Lower	Upper
72	100		
43	569.5	1362.9	1422.9#
57	152.3	4.9	64.9#

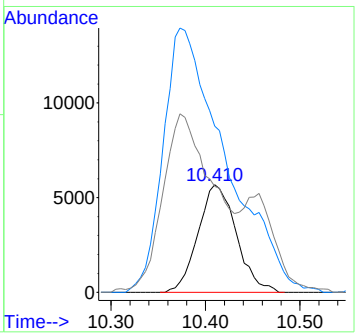


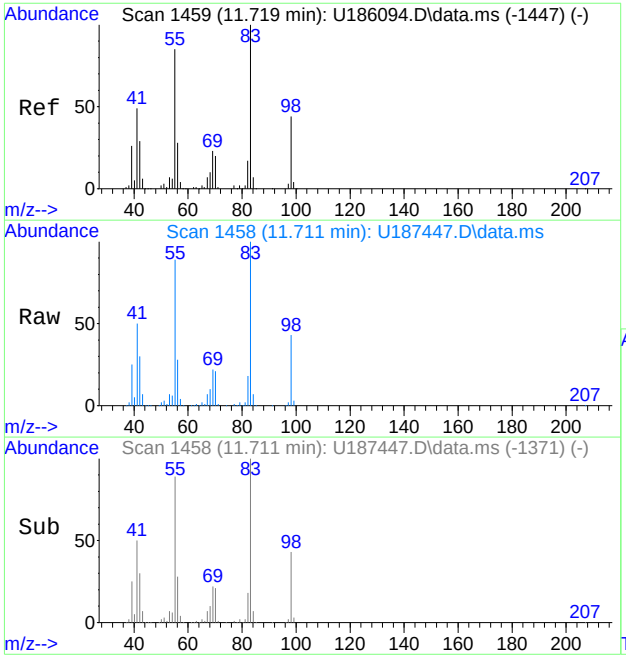


#68
Cyclohexane
Concen: 3.63 ug/L
RT: 10.410 min Scan# 1209
Delta R.T. -0.004 min
Lab File: U187447.D
Acq: 9 Sep 2014 6:06 pm

Tgt Ion: 84 Resp: 16015

Ion	Ratio	Lower	Upper
84	100		
56	154.5	265.3	325.3#
41	98.6	153.5	213.5#

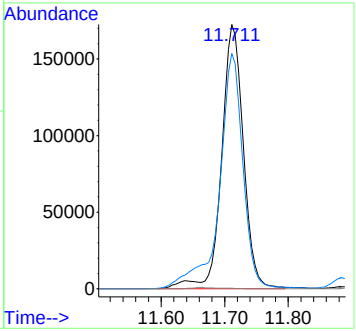


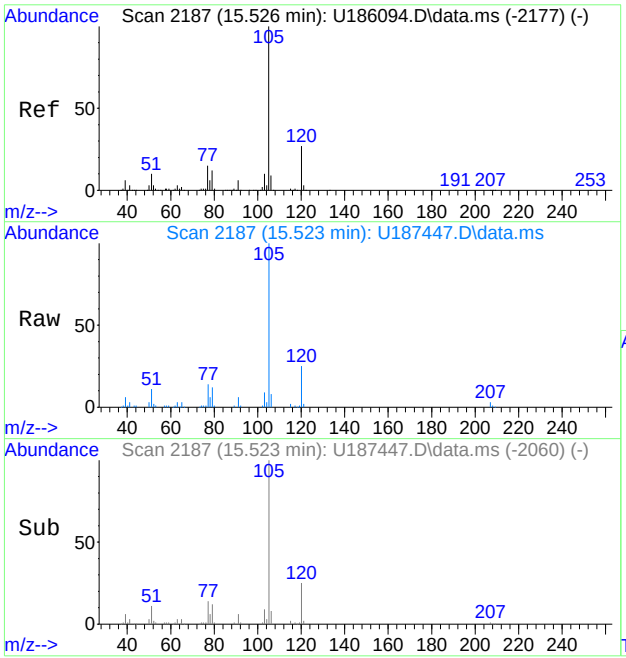


#79
methylcyclohexane
Concen: 83.00 ug/L m
RT: 11.711 min Scan# 1458
Delta R.T. -0.004 min
Lab File: U187447.D
Acq: 9 Sep 2014 6:06 pm

Tgt Ion: 83 Resp: 411904

Ion	Ratio	Lower	Upper
83	100		
55	89.0	58.9	118.9
85	0.3	0.0	50.3

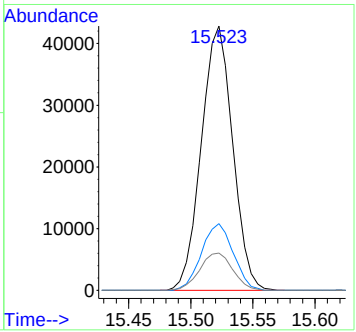




#113
isopropylbenzene
Concen: 5.23 ug/L
RT: 15.523 min Scan# 2187
Delta R.T. 0.002 min
Lab File: U187447.D
Acq: 9 Sep 2014 6:06 pm

Tgt Ion:105 Resp: 75182

Ion	Ratio	Lower	Upper
105	100		
120	25.2	0.0	55.6
77	14.1	0.0	45.4



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\U core\vu8647 single\
Data File : U187447.D
Acq On : 9 Sep 2014 6:06 pm
Operator : [redacted]t
Sample : jb75730-1
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 11 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 3 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\MU8630.M
Title : SW-846 8260B, DB624 60m x 250um x 1.40um

Signal : TIC: U187447.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	6.091	367	383	388	rBV2	78373	247474	10.50%	1.342%
2	6.170	390	398	461	rVV2	128488	881483	37.39%	4.780%
3	6.567	461	474	519	rVB2	52435	252824	10.73%	1.371%
4	7.383	611	630	675	rVB3	24887	131537	5.58%	0.713%
5	8.026	729	753	805	rBV2	284487	1217028	51.63%	6.600%
6	8.386	805	822	855	rVB	224447	840858	35.67%	4.560%
7	10.216	1162	1172	1178	rBV	484445	1094306	46.42%	5.934%
8	10.373	1193	1202	1213	rBV2	60497	217366	9.22%	1.179%
9	10.457	1214	1218	1234	rVB3	41583	91186	3.87%	0.494%
10	10.603	1234	1246	1256	rBV	120068	308914	13.10%	1.675%
11	10.692	1256	1263	1272	rVV	219988	497986	21.13%	2.701%
12	10.781	1272	1280	1287	rVV	166618	400582	16.99%	2.172%
13	10.849	1287	1293	1299	rVV	157058	371977	15.78%	2.017%
14	10.917	1299	1306	1323	rVB	299430	744401	31.58%	4.037%
15	11.131	1338	1347	1367	rVB	518121	1064807	45.17%	5.774%
16	11.711	1427	1458	1482	rBV	871508	2357241	100.00%	12.783%
17	11.884	1482	1491	1497	rVV	79728	165967	7.04%	0.900%
18	11.947	1497	1503	1514	rVB2	44182	96937	4.11%	0.526%
19	12.109	1525	1534	1547	rVB	49812	111431	4.73%	0.604%
20	12.511	1602	1611	1626	rVB3	28688	71340	3.03%	0.387%
21	12.767	1650	1660	1664	rBV2	122025	243527	10.33%	1.321%
22	12.830	1664	1672	1681	rVB	771547	1537636	65.23%	8.338%
23	12.992	1691	1703	1714	rVB2	82287	196098	8.32%	1.063%
24	13.196	1732	1742	1755	rBV	94691	222779	9.45%	1.208%
25	13.306	1755	1763	1777	rVB	58294	126162	5.35%	0.684%
26	13.823	1847	1862	1868	rBV2	86830	216459	9.18%	1.174%
27	14.461	1972	1984	1997	rBV	740272	1347064	57.15%	7.305%
28	14.571	1997	2005	2014	rVV2	50147	101072	4.29%	0.548%
29	15.360	2148	2156	2165	rVB4	32421	71096	3.02%	0.386%
30	15.523	2180	2187	2198	rVB	101826	180797	7.67%	0.980%
31	15.742	2220	2229	2241	rBV	610559	1070311	45.41%	5.804%
32	15.977	2267	2274	2283	rVB	109738	187287	7.95%	1.016%
33	17.039	2467	2477	2494	rBV	892698	1556879	66.05%	8.443%
34	17.342	2526	2535	2549	rBV4	47707	110217	4.68%	0.598%
35	17.948	2642	2651	2659	rVB2	54825	107340	4.55%	0.582%

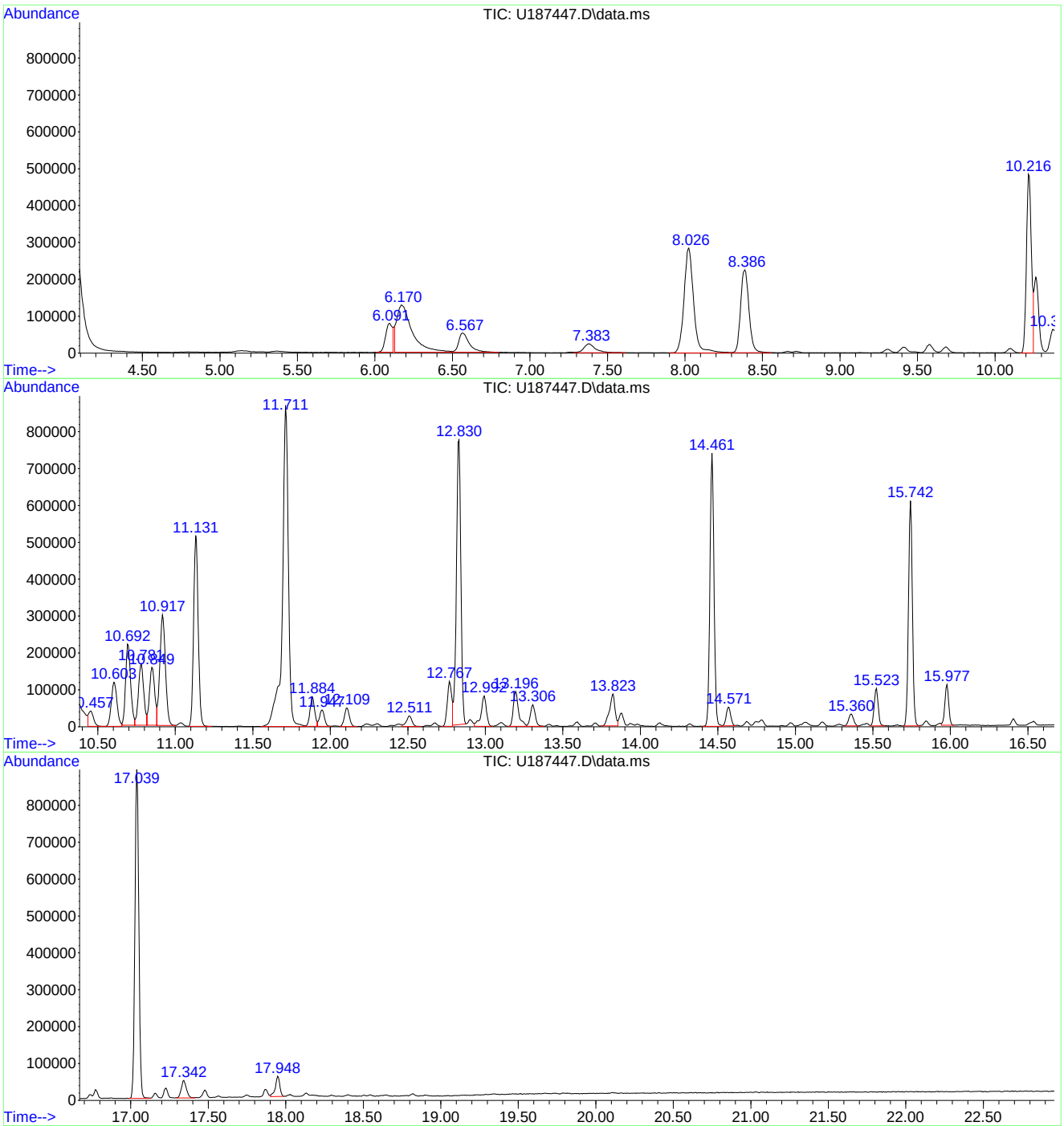
Sum of corrected areas: 18440369

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\U core\vu8647 single\
Data File : U187447.D
Acq On : 9 Sep 2014 6:06 pm
Operator : [redacted]t
Sample : jb75730-1
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\U core\vu8647 single\
Data File : U187447.D
Acq On : 9 Sep 2014 6:06 pm
Operator : [redacted]
Sample : jb75730-1
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

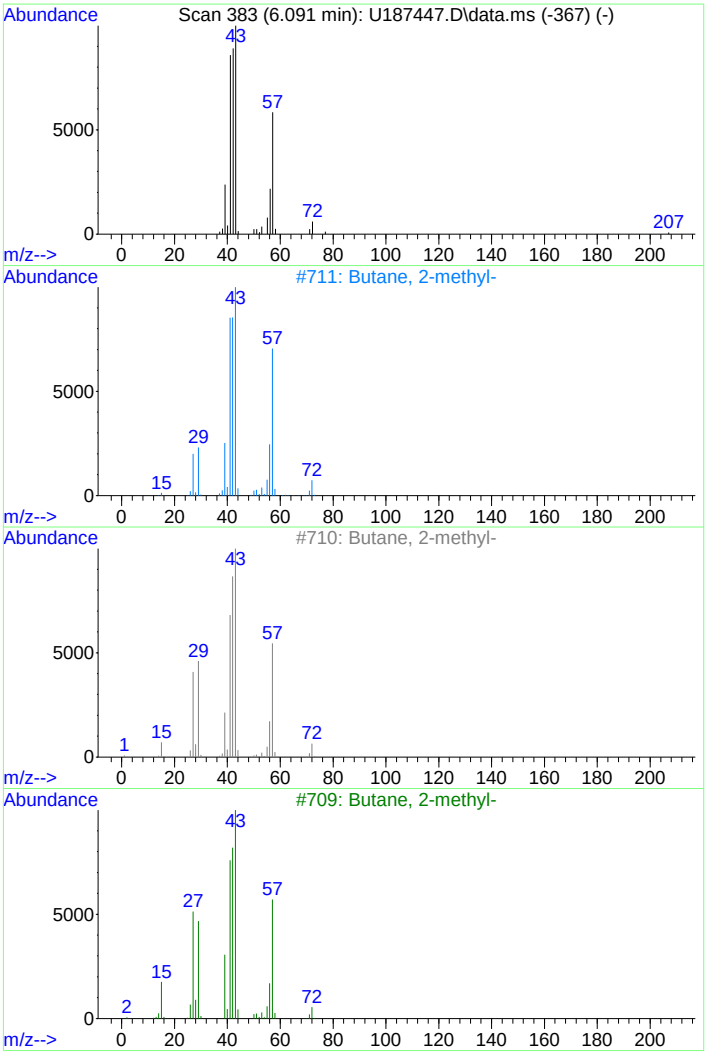
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

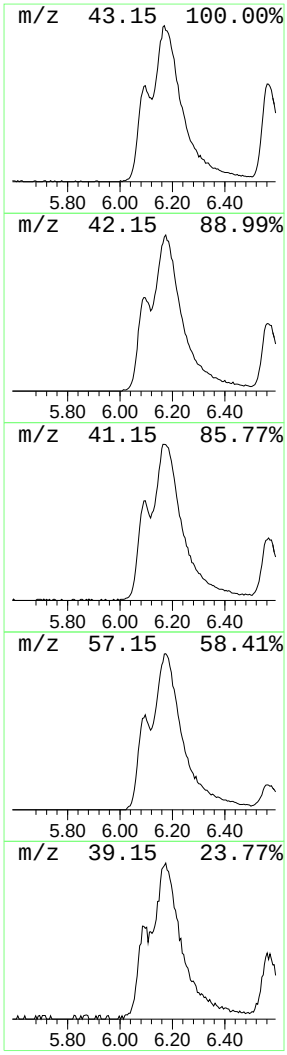
****

Peak Number 1 Butane, 2-methyl- Concentration Rank 9

R.T.	EstConc	Area	Relative to ISTD	R.T.
6.091	11.31 ug/L	247474	pentafluorobenzene	10.221

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Butane, 2-methyl-	72	C5H12	000078-78-4	91
2	Butane, 2-methyl-	72	C5H12	000078-78-4	91
3	Butane, 2-methyl-	72	C5H12	000078-78-4	90
4	3-Buten-1-ol	72	C4H8O	000627-27-0	47
5	Pentane	72	C5H12	000109-66-0	42





Library Search Compound Report

Data Path : C:\msdchem\1\DATA\U core\vu8647 single\
Data File : U187447.D
Acq On : 9 Sep 2014 6:06 pm
Operator [redacted]
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

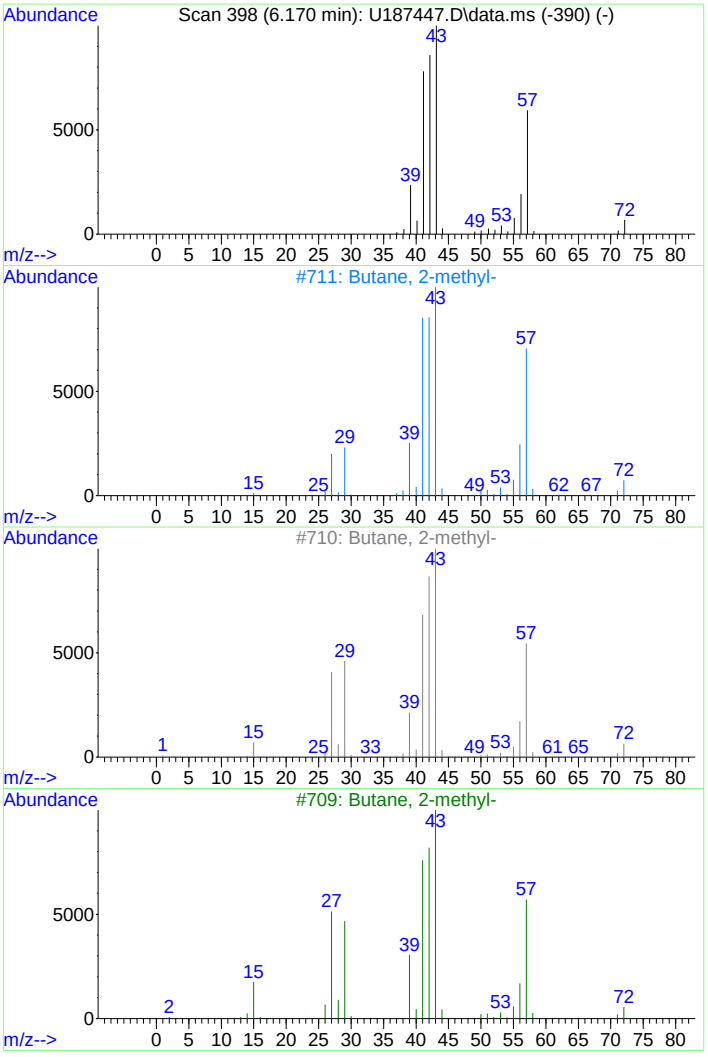
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

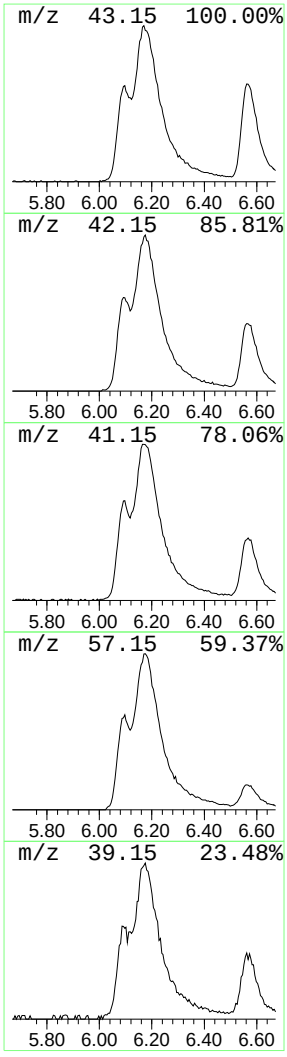
****

Peak Number 2 Butane, 2-methyl- Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
6.170	40.28 ug/L	881483	pentafluorobenzene	10.221

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Butane, 2-methyl-	72	C5H12	000078-78-4	91
2	Butane, 2-methyl-	72	C5H12	000078-78-4	91
3	Butane, 2-methyl-	72	C5H12	000078-78-4	90
4	Pentane	72	C5H12	000109-66-0	45
5	3-Buten-1-ol	72	C4H8O	000627-27-0	28





Library Search Compound Report

Data Path : C:\msdchem\1\DATA\U core\vu8647 single\
Data File : U187447.D
Acq On : 9 Sep 2014 6:06 pm
Operator : [redacted]t
Sample : jb75730-1
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

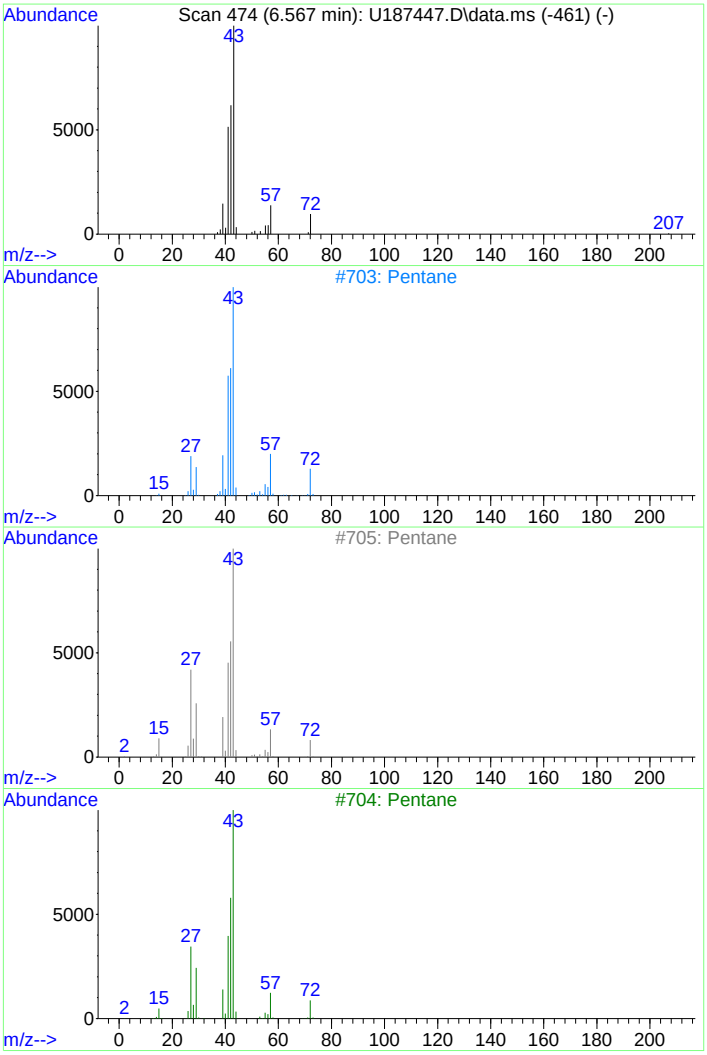
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

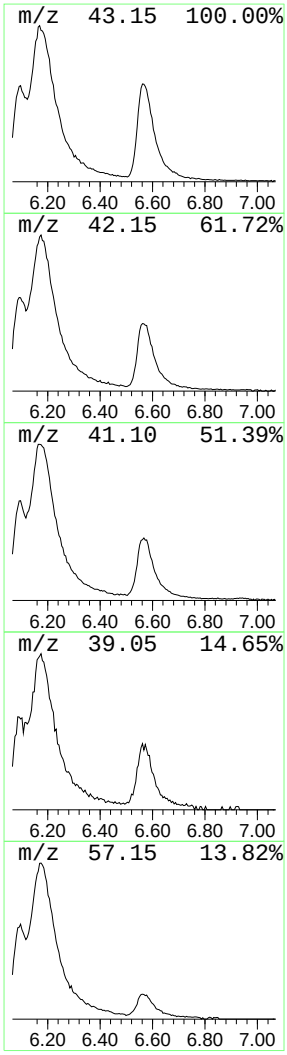
****

Peak Number 3 Pentane Concentration Rank 7

R.T.	EstConc	Area	Relative to ISTD	R.T.
6.567	11.55 ug/L	252824	pentafluorobenzene	10.221

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Pentane	72	C5H12	000109-66-0	91
2	Pentane	72	C5H12	000109-66-0	86
3	Pentane	72	C5H12	000109-66-0	80
4	Pentane	72	C5H12	000109-66-0	64
5	Butane, 2-methyl-	72	C5H12	000078-78-4	64





Library Search Compound Report

Data Path : C:\msdchem\1\DATA\U core\vu8647 single\
Data File : U187447.D
Acq On : 9 Sep 2014 6:06 pm
Operator : [redacted]t
Sample : jb75730-1
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

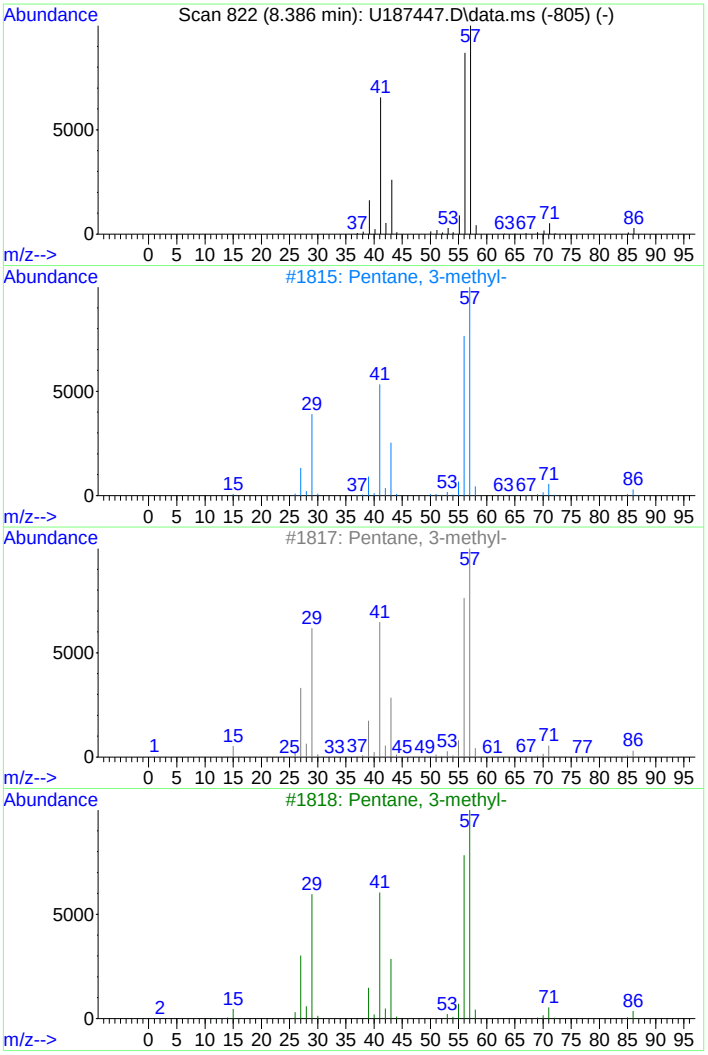
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

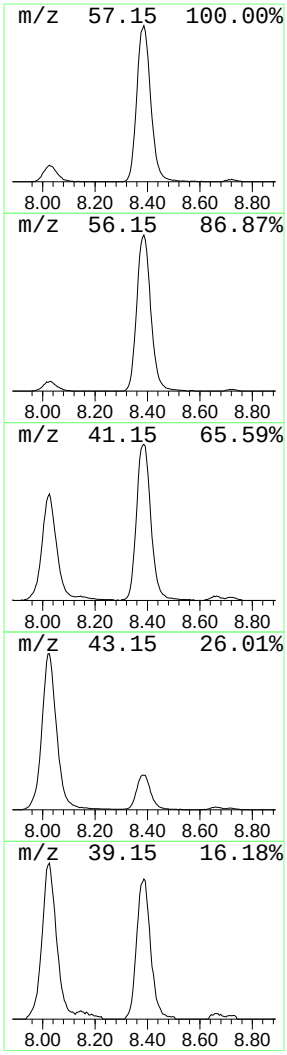
****

Peak Number 4 Pentane, 3-methyl- Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.386	38.42 ug/L	840858	pentafluorobenzene	10.221

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Pentane, 3-methyl-	86	C6H14	000096-14-0	91
2	Pentane, 3-methyl-	86	C6H14	000096-14-0	91
3	Pentane, 3-methyl-	86	C6H14	000096-14-0	91
4	Hexane, 2,2,3-trimethyl-	128	C9H20	016747-25-4	74
5	3,4-Dimethyldihydrofuran-2,5-dione	128	C6H8O3	007475-92-5	53





Library Search Compound Report

Data Path : C:\msdchem\1\DATA\U core\vu8647 single\
Data File : U187447.D
Acq On : 9 Sep 2014 6:06 pm
Operator : [redacted]
Sample : jb75730-1
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

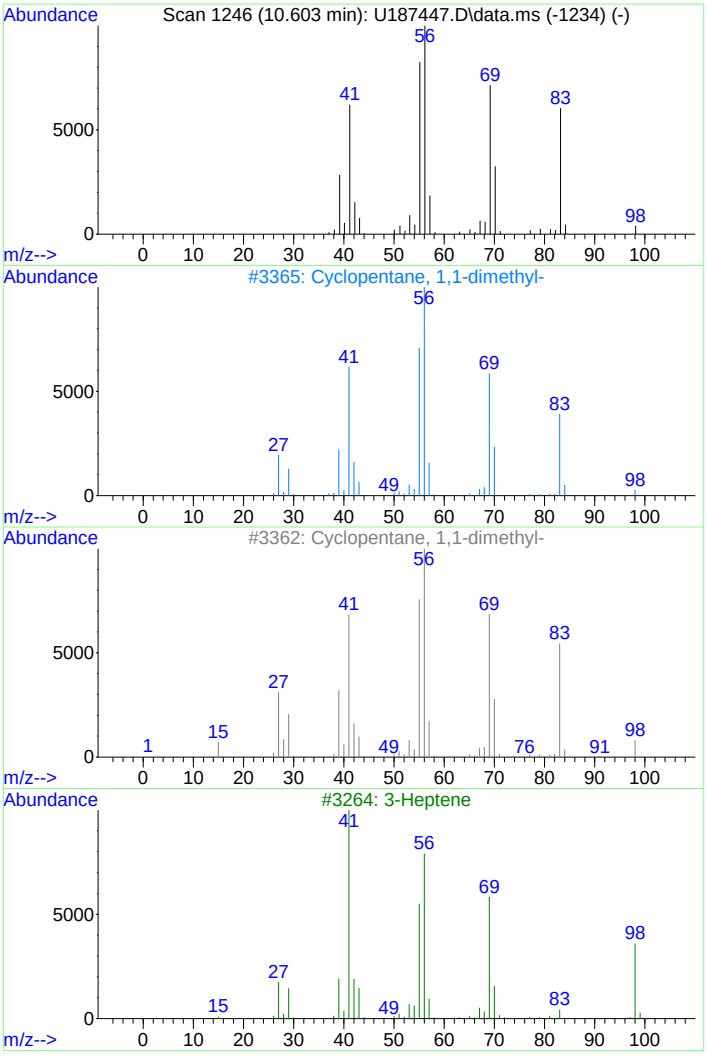
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

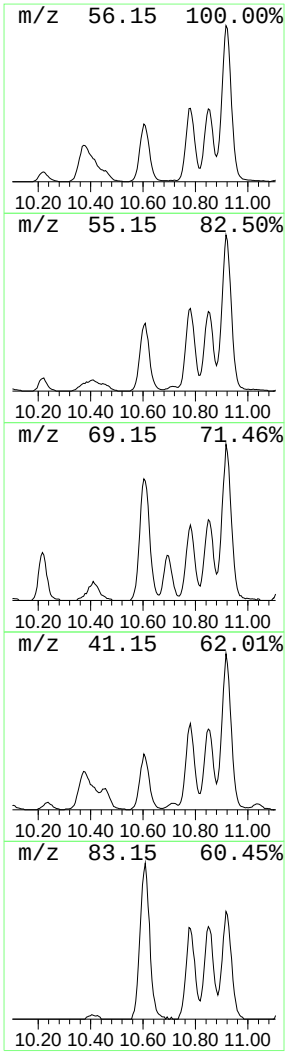
****

Peak Number 5 Cyclopentane, 1,1-dimethyl- Concentration Rank 6

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.603	14.11 ug/L	308914	pentafluorobenzene	10.221

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentane, 1,1-dimethyl-	98	C7H14	001638-26-2	91
2	Cyclopentane, 1,1-dimethyl-	98	C7H14	001638-26-2	90
3	3-Heptene	98	C7H14	000592-78-9	64
4	4-Pentenal, 2-methyl-	98	C6H10O	005187-71-3	59
5	3-Heptene, (E)-	98	C7H14	014686-14-7	53





Library Search Compound Report

Data Path : C:\msdchem\1\DATA\U core\vu8647 single\
Data File : U187447.D
Acq On : 9 Sep 2014 6:06 pm
Operator : [redacted]
Sample : jb75730-1
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 11 Sample Multiplier: 1

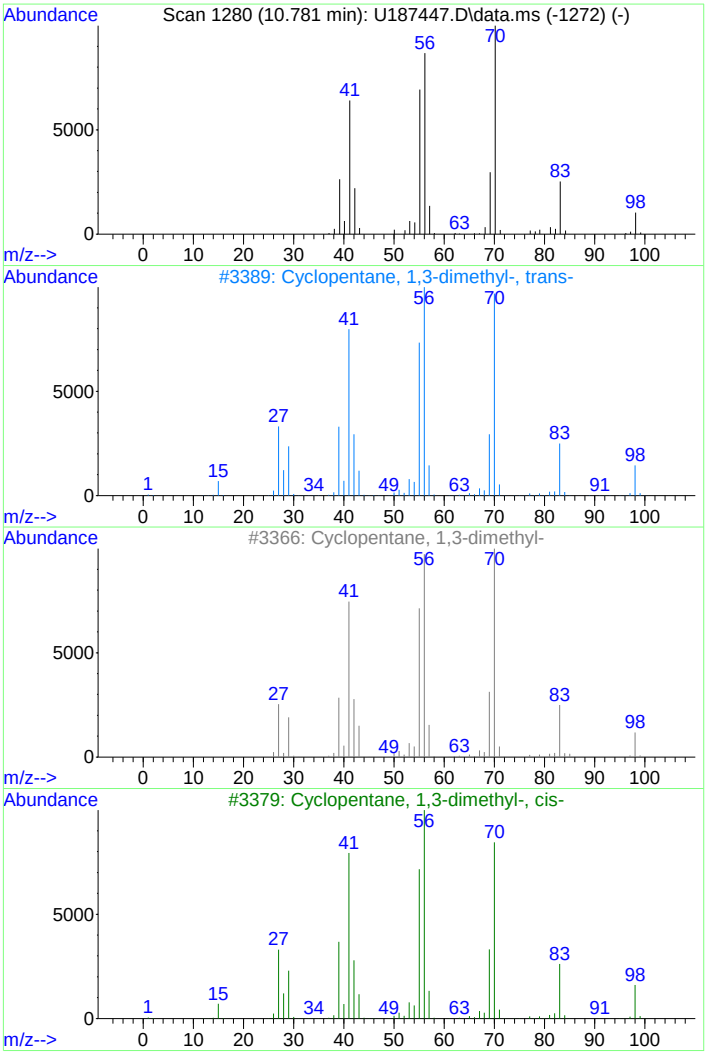
Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

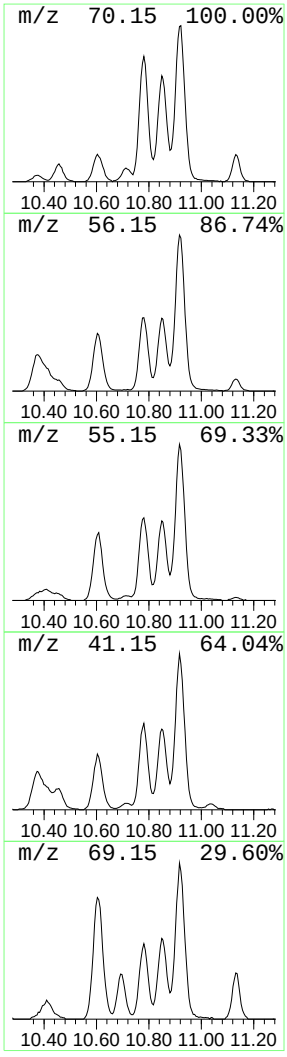
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

****
Peak Number 6 Cyclopentane, 1,3-dimethyl-... Concentration Rank 4

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.781	18.81 ug/L	400582	1,4-difluorobenzene	11.131

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentane, 1,3-dimethyl-, trans-	98	C7H14	001759-58-6	97
2	Cyclopentane, 1,3-dimethyl-	98	C7H14	002453-00-1	95
3	Cyclopentane, 1,3-dimethyl-, cis-	98	C7H14	002532-58-3	91
4	Cyclopentane, 1,3-dimethyl-, cis-	98	C7H14	002532-58-3	91
5	Cyclopentane, 1,3-dimethyl-, cis-	98	C7H14	002532-58-3	90





Library Search Compound Report

Data Path : C:\msdchem\1\DATA\U core\vu8647 single\
Data File : U187447.D
Acq On : 9 Sep 2014 6:06 pm
Operator : [redacted]
Sample : jb75730-1
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

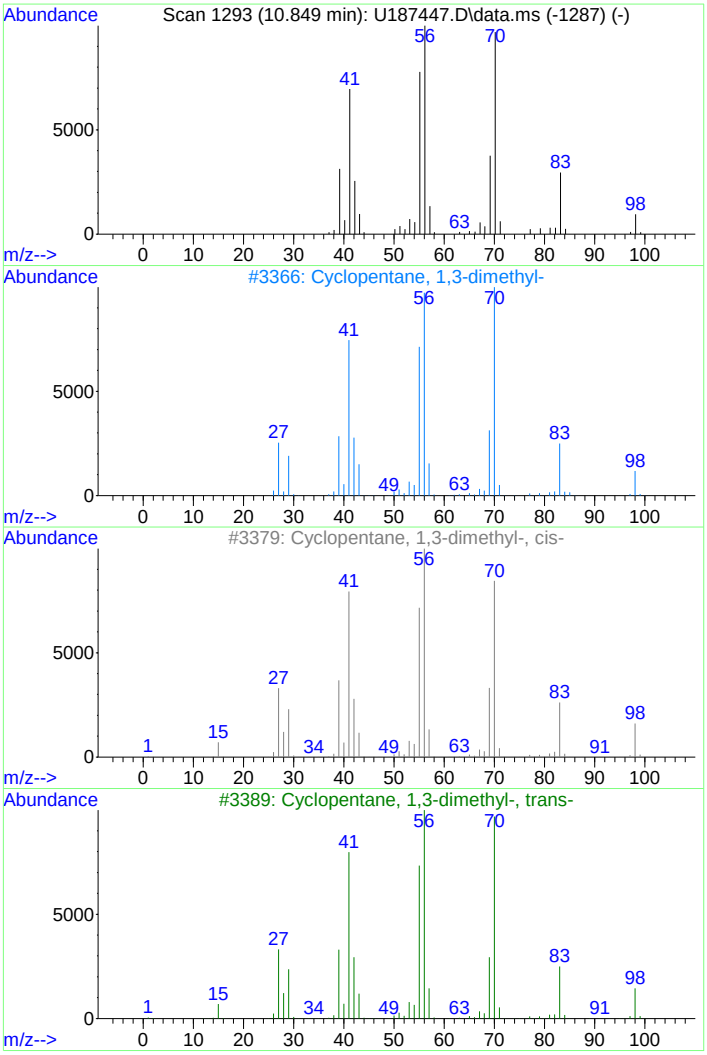
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

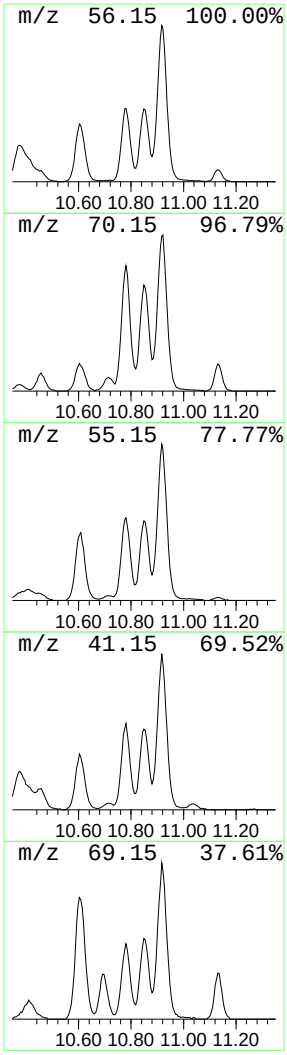
****

Peak Number 7 Cyclopentane, 1,3-dimethyl- Concentration Rank 5

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.849	17.47 ug/L	371977	1,4-difluorobenzene	11.131

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentane, 1,3-dimethyl-	98	C7H14	002453-00-1	97
2	Cyclopentane, 1,3-dimethyl-, cis-	98	C7H14	002532-58-3	95
3	Cyclopentane, 1,3-dimethyl-, trans-	98	C7H14	001759-58-6	91
4	Cyclopentane, 1,2-dimethyl-, cis-	98	C7H14	001192-18-3	90
5	Cyclopentane, 1,2-dimethyl-, cis-	98	C7H14	001192-18-3	90





Library Search Compound Report

Data Path : C:\msdchem\1\DATA\U core\vu8647 single\
Data File : U187447.D
Acq On : 9 Sep 2014 6:06 pm
Operator : [redacted]t
Sample : jb75730-1
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

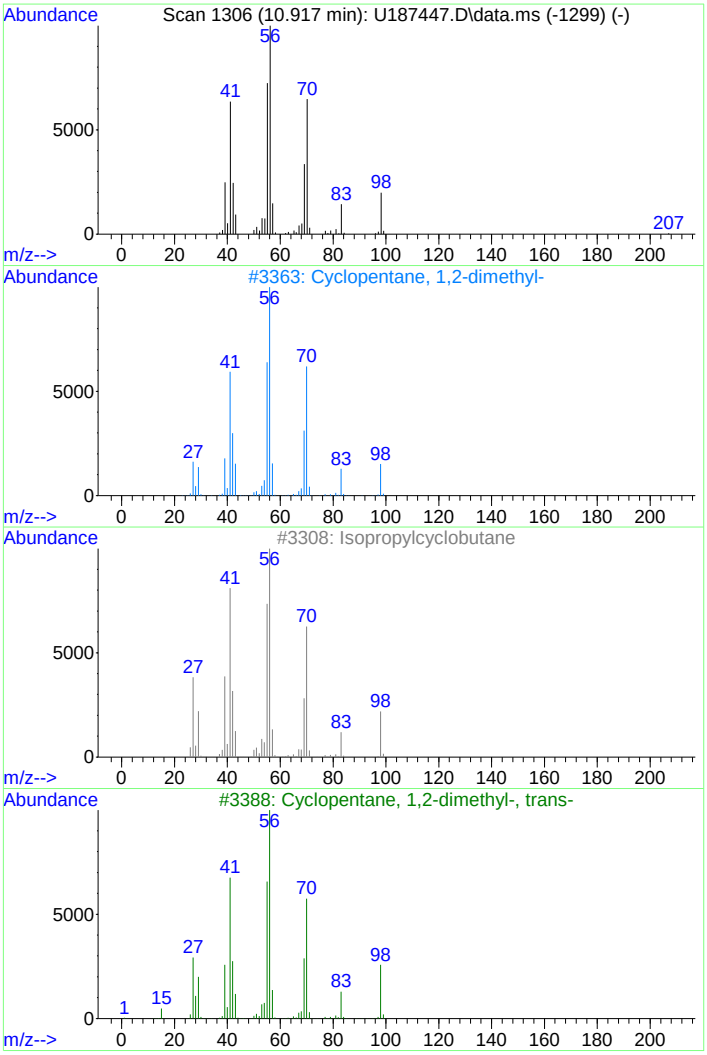
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

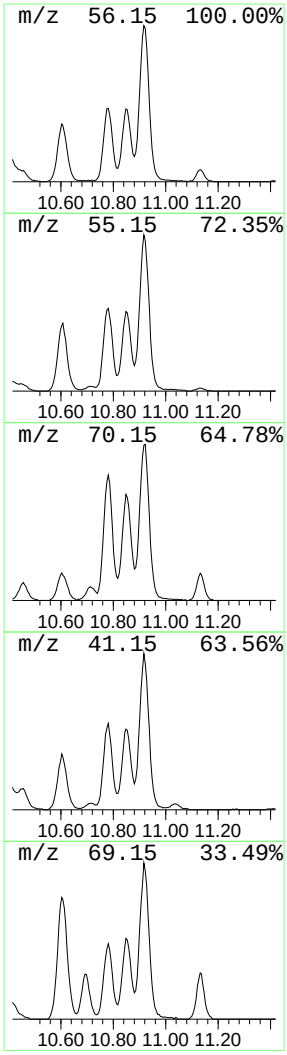
****

Peak Number 8 Cyclopentane, 1,2-dimethyl- Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.917	34.95 ug/L	744401	1,4-difluorobenzene	11.131

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentane, 1,2-dimethyl-	98	C7H14	002452-99-5	94
2	Isopropylcyclobutane	98	C7H14	000872-56-0	94
3	Cyclopentane, 1,2-dimethyl-, trans-	98	C7H14	000822-50-4	91
4	Cyclopentane, 1,2-dimethyl-, trans-	98	C7H14	000822-50-4	91
5	1-Heptene	98	C7H14	000592-76-7	86





Library Search Compound Report

Data Path : C:\msdchem\1\DATA\U core\vu8647 single\
Data File : U187447.D
Acq On : 9 Sep 2014 6:06 pm
Operator : [redacted]
Sample : jb75730-1
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

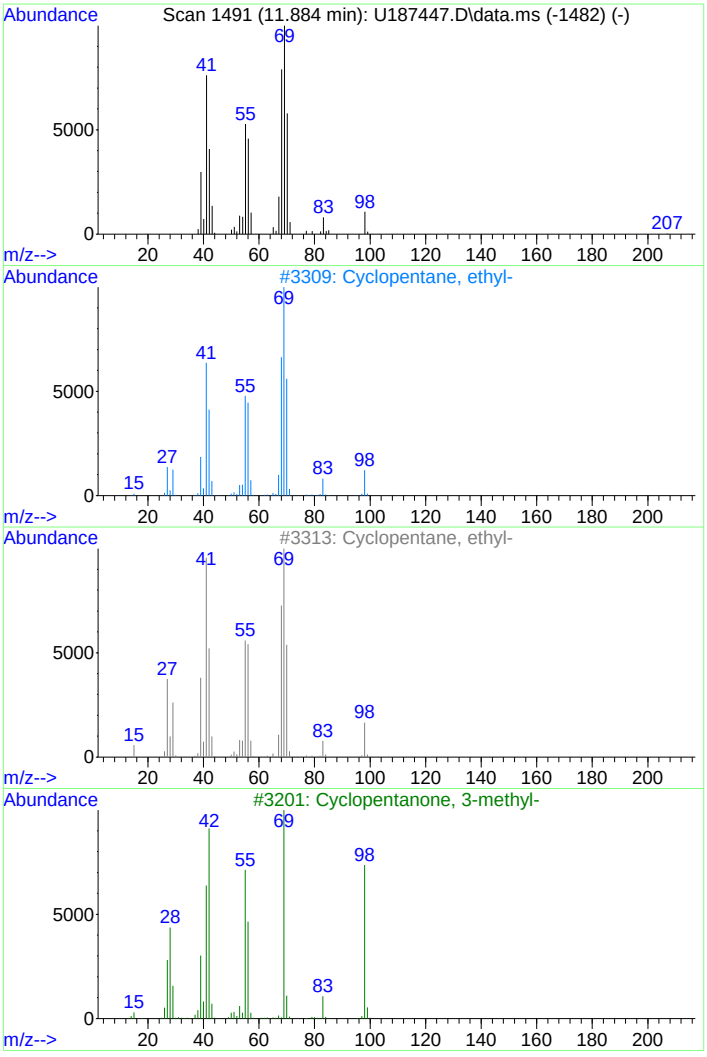
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

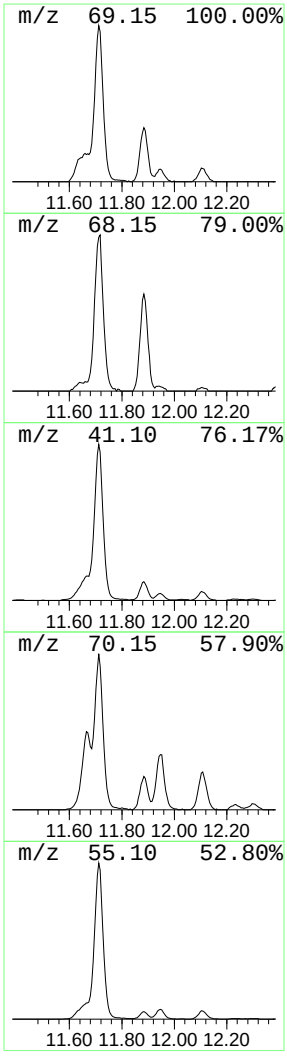
****

Peak Number 9 Cyclopentane, ethyl- Concentration Rank 12

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.884	7.79 ug/L	165967	1,4-difluorobenzene	11.131

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentane, ethyl-	98	C7H14	001640-89-7	96
2	Cyclopentane, ethyl-	98	C7H14	001640-89-7	91
3	Cyclopentanone, 3-methyl-	98	C6H10O	001757-42-2	46
4	Cyclopentane, 1,3-dimethyl-, cis-	98	C7H14	002532-58-3	38
5	Cyclopentane, 1,2-dimethyl-, cis-	98	C7H14	001192-18-3	38





Library Search Compound Report

Data Path : C:\msdchem\1\DATA\U core\vu8647 single\
Data File : U187447.D
Acq On : 9 Sep 2014 6:06 pm
Operator : [redacted]
Sample : jb75730-1
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 11 Sample Multiplier: 1

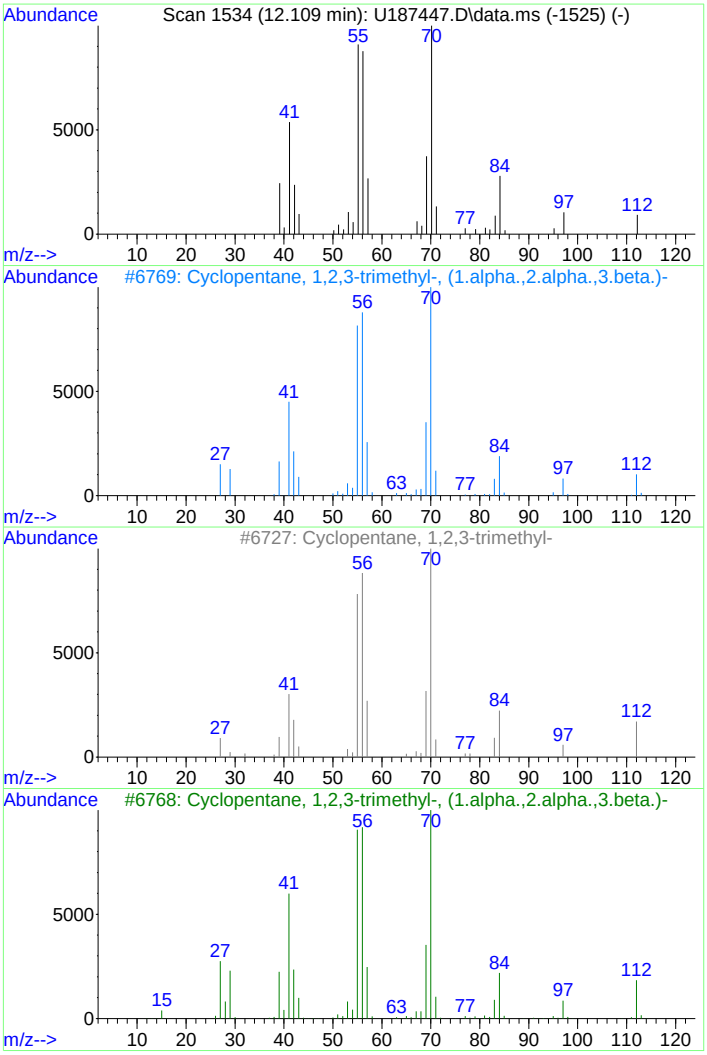
Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

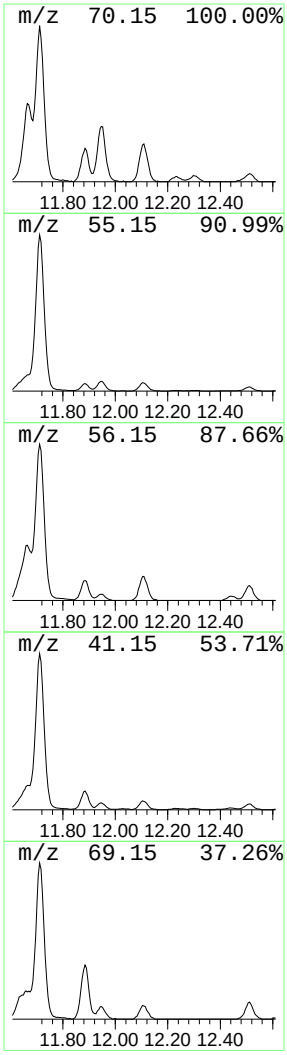
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

****
Peak Number 10 Cyclopentane, 1,2,3-trimeth... Concentration Rank 15

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.109	5.23 ug/L	111431	1,4-difluorobenzene	11.131

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentane, 1,2,3-trimethyl-, ...	112	C8H16	015890-40-1	93
2	Cyclopentane, 1,2,3-trimethyl-	112	C8H16	002815-57-8	91
3	Cyclopentane, 1,2,3-trimethyl-, ...	112	C8H16	015890-40-1	90
4	Cyclopentane, 1,2-dimethyl-, cis-	98	C7H14	001192-18-3	72
5	Heptane, 3-methylene-	112	C8H16	001632-16-2	60





Library Search Compound Report

Data Path : C:\msdchem\1\DATA\U core\vu8647 single\
Data File : U187447.D
Acq On : 9 Sep 2014 6:06 pm
Operator : [redacted]
Sample : jb75730-1
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

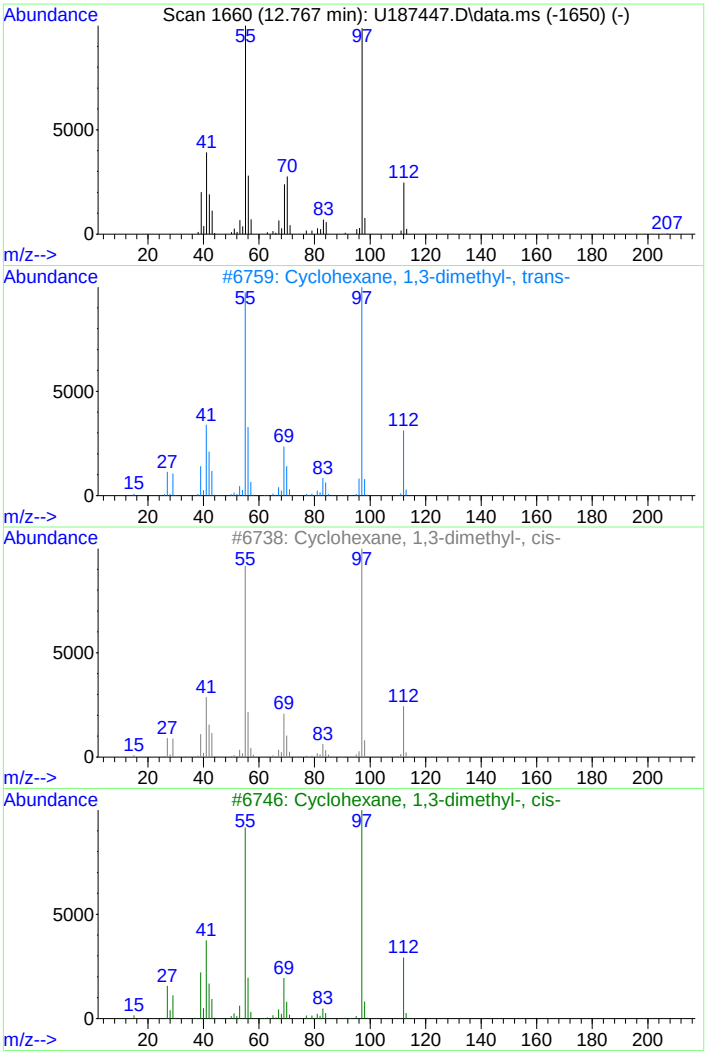
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

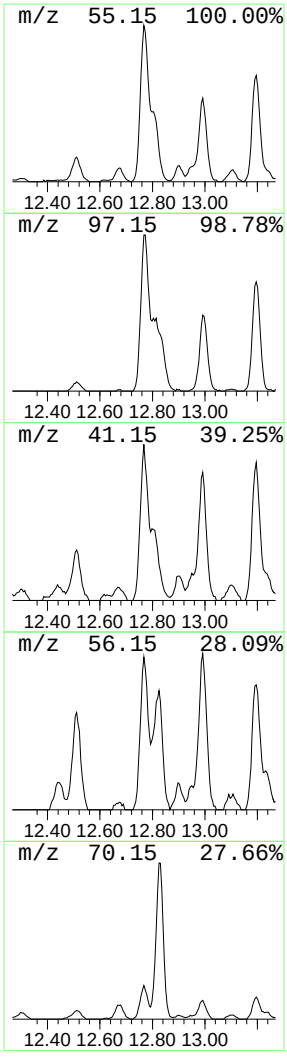
****

Peak Number 11 Cyclohexane, 1,3-dimethyl-,... Concentration Rank 8

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.767	11.44 ug/L	243527	1,4-difluorobenzene	11.131

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexane, 1,3-dimethyl-, trans-	112	C8H16	002207-03-6	93
2	Cyclohexane, 1,3-dimethyl-, cis-	112	C8H16	000638-04-0	91
3	Cyclohexane, 1,3-dimethyl-, cis-	112	C8H16	000638-04-0	90
4	Cyclohexane, 1,3-dimethyl-, trans-	112	C8H16	002207-03-6	90
5	Cyclohexane, 1,4-dimethyl-	112	C8H16	000589-90-2	90





Library Search Compound Report

Data Path : C:\msdchem\1\DATA\U core\vu8647 single\
Data File : U187447.D
Acq On : 9 Sep 2014 6:06 pm
Operator : [redacted]
Sample : jb75730-1
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 11 Sample Multiplier: 1

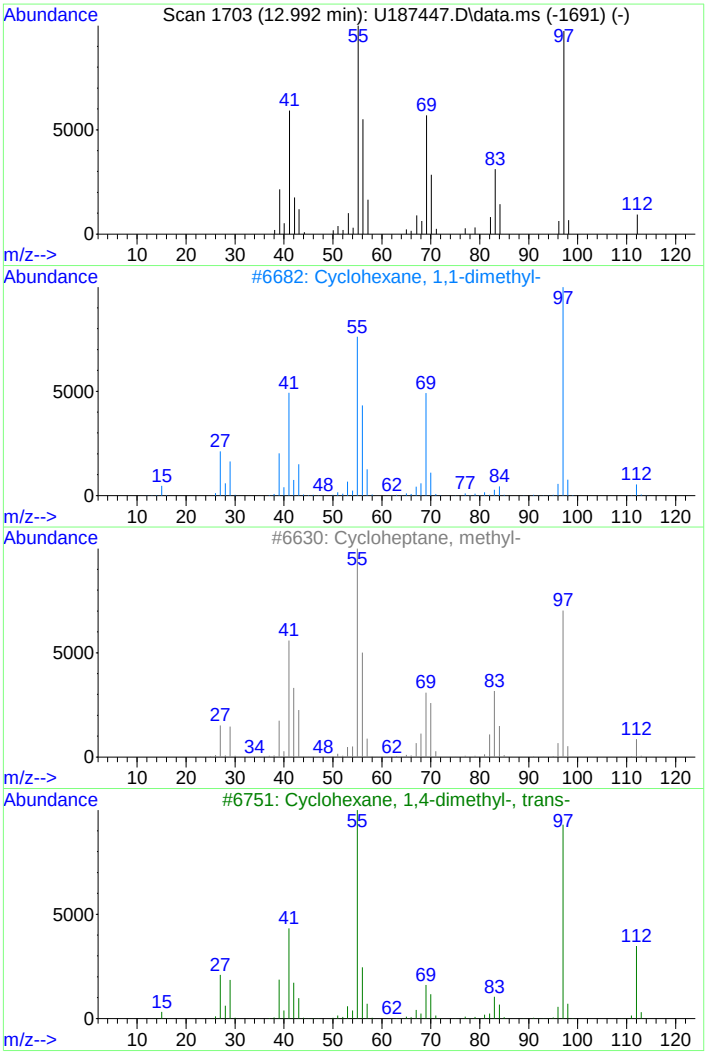
Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

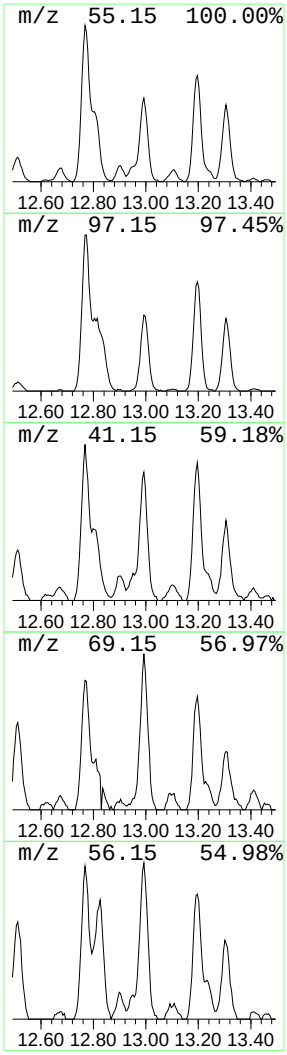
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

****
Peak Number 12 Cyclohexane, 1,1-dimethyl- Concentration Rank 13

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.992	7.28 ug/L	196098	chlorobenzene-d5	14.461

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexane, 1,1-dimethyl-	112	C8H16	000590-66-9	87
2	Cycloheptane, methyl-	112	C8H16	004126-78-7	83
3	Cyclohexane, 1,4-dimethyl-, trans-	112	C8H16	002207-04-7	72
4	Cyclohexane, 1,3-dimethyl-, trans-	112	C8H16	002207-03-6	64
5	Cyclohexane, 1,3-dimethyl-, trans-	112	C8H16	002207-03-6	64





Library Search Compound Report

Data Path : C:\msdchem\1\DATA\U core\vu8647 single\
Data File : U187447.D
Acq On : 9 Sep 2014 6:06 pm
Operator : [redacted]
Sample : jb75730-1
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 11 Sample Multiplier: 1

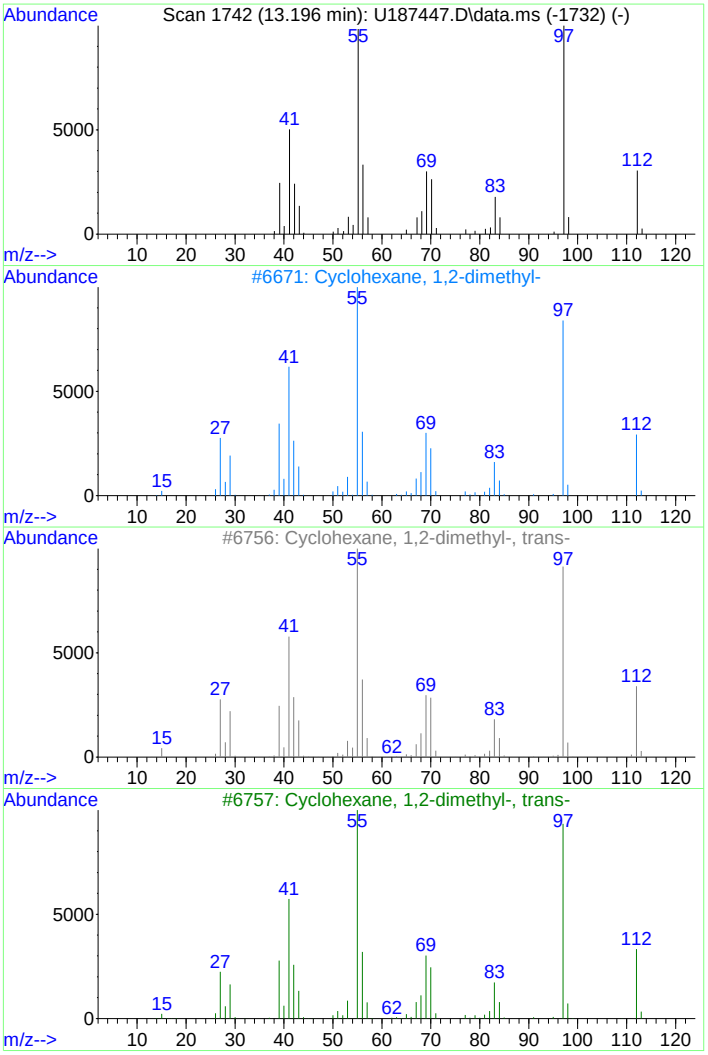
Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

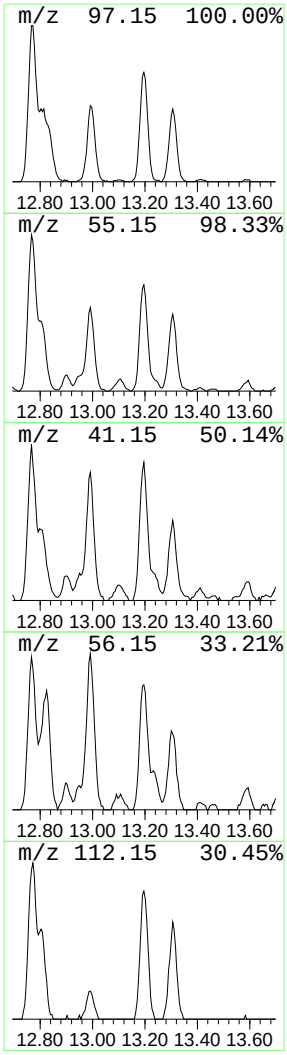
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

****
Peak Number 13 Cyclohexane, 1,2-dimethyl- Concentration Rank 10

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.196	8.27 ug/L	222779	chlorobenzene-d5	14.461

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexane, 1,2-dimethyl-	112	C8H16	000583-57-3	96
2	Cyclohexane, 1,2-dimethyl-, trans-	112	C8H16	006876-23-9	96
3	Cyclohexane, 1,2-dimethyl-, trans-	112	C8H16	006876-23-9	96
4	Cyclohexane, 1,2-dimethyl-, trans-	112	C8H16	006876-23-9	96
5	Cyclohexane, 1,3-dimethyl-, trans-	112	C8H16	002207-03-6	90





Library Search Compound Report

Data Path : C:\msdchem\1\DATA\U core\vu8647 single\
Data File : U187447.D
Acq On : 9 Sep 2014 6:06 pm
Operator : [redacted]
Sample : jb75730-1
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

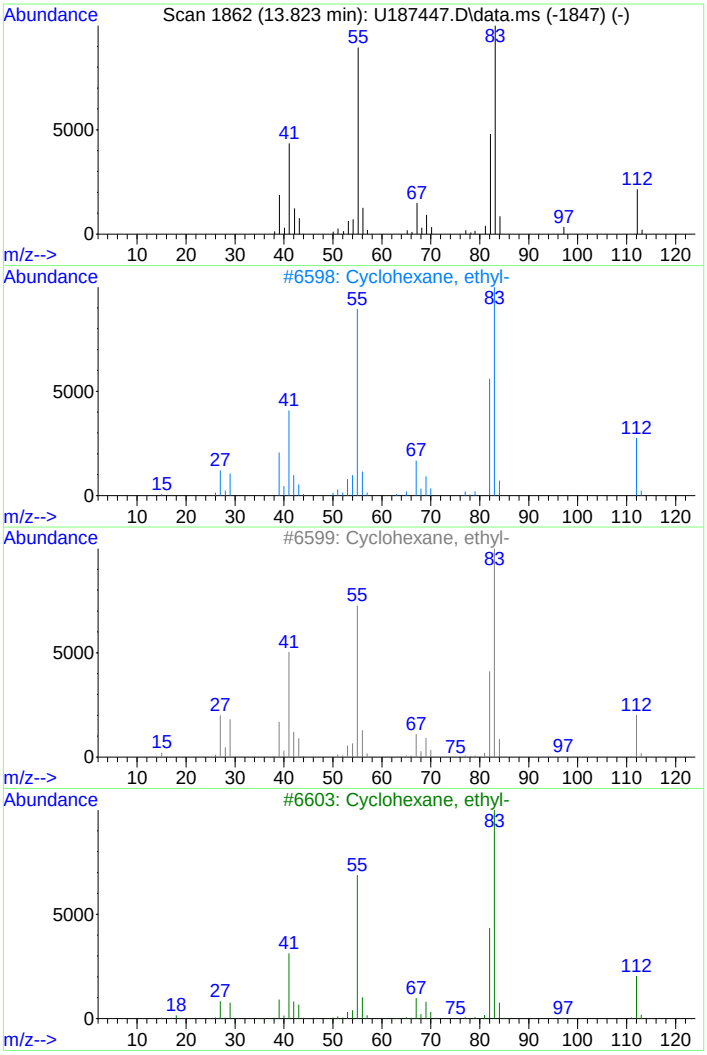
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

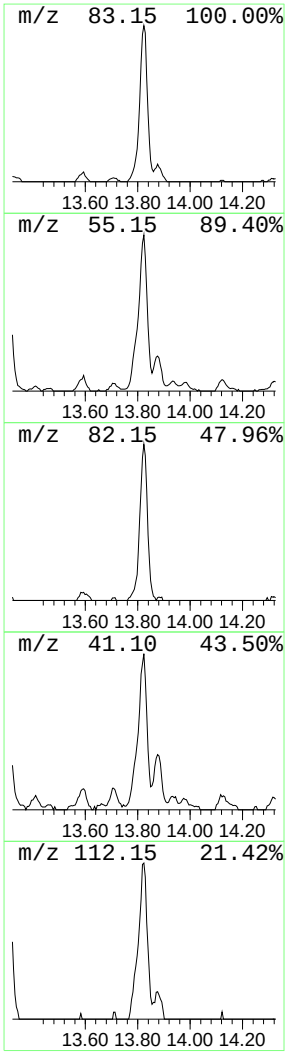
****

Peak Number 14 Cyclohexane, ethyl- Concentration Rank 11

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.823	8.03 ug/L	216459	chlorobenzene-d5	14.461

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexane, ethyl-	112	C8H16	001678-91-7	97
2	Cyclohexane, ethyl-	112	C8H16	001678-91-7	94
3	Cyclohexane, ethyl-	112	C8H16	001678-91-7	91
4	Cyclohexane, ethyl-	112	C8H16	001678-91-7	91
5	Cyclohexane, ethyl-	112	C8H16	001678-91-7	91





Library Search Compound Report

Data Path : C:\msdchem\1\DATA\U core\vu8647 single\
Data File : U187447.D
Acq On : 9 Sep 2014 6:06 pm
Operator : [redacted]t
Sample : jb75730-1
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

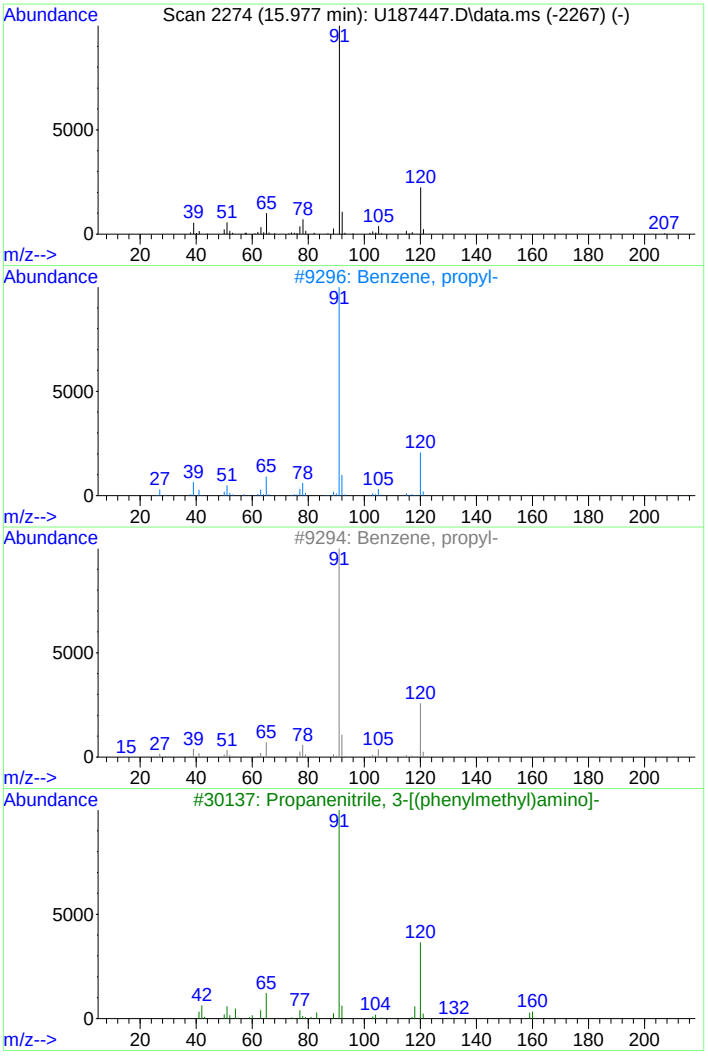
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

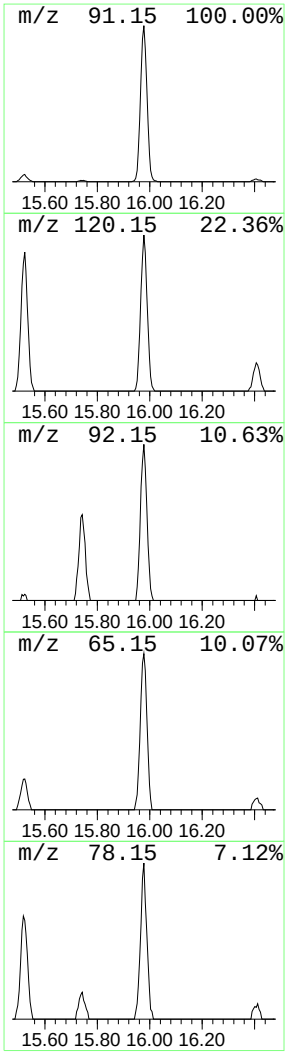
****

Peak Number 15 Benzene, propyl- Concentration Rank 14

R.T.	EstConc	Area	Relative to ISTD	R.T.
15.977	6.01 ug/L	187287	1,4-dichlorobenzene-d4	17.039

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Benzene, propyl-	120	C9H12	000103-65-1	91
2	Benzene, propyl-	120	C9H12	000103-65-1	91
3	Propanenitrile, 3-[(phenylmethyl...	160	C10H12N2	000706-03-6	72
4	1,2-Ethanediamine, N,N'-bis(phen...	240	C16H20N2	000140-28-3	64
5	N-Benzyl-2-phenethylamine	211	C15H17N	003647-71-0	64





Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\U core\vu8647 single\
Data File : U187447.D
Acq On : 9 Sep 2014 6:06 pm
Operator [redacted]
[redacted] jb75730-1
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

					Internal Standard			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc
Butane, 2-methyl-	6.091	11.3	ug/L	247474	2	10.221	1094310	50.0
Butane, 2-methyl-	6.170	40.3	ug/L	881483	2	10.221	1094310	50.0
Pentane	6.567	11.6	ug/L	252824	2	10.221	1094310	50.0
Pentane, 3-methyl-	8.386	38.4	ug/L	840858	2	10.221	1094310	50.0
Cyclopentane, 1...	10.603	14.1	ug/L	308914	2	10.221	1094310	50.0
Cyclopentane, 1...	10.781	18.8	ug/L	400582	3	11.131	1064810	50.0
Cyclopentane, 1...	10.849	17.5	ug/L	371977	3	11.131	1064810	50.0
Cyclopentane, 1...	10.917	35.0	ug/L	744401	3	11.131	1064810	50.0
Cyclopentane, e...	11.884	7.8	ug/L	165967	3	11.131	1064810	50.0
Cyclopentane, 1...	12.109	5.2	ug/L	111431	3	11.131	1064810	50.0
Cyclohexane, 1,...	12.767	11.4	ug/L	243527	3	11.131	1064810	50.0
Cyclohexane, 1,...	12.992	7.3	ug/L	196098	4	14.461	1347060	50.0
Cyclohexane, 1,...	13.196	8.3	ug/L	222779	4	14.461	1347060	50.0
Cyclohexane, et...	13.823	8.0	ug/L	216459	4	14.461	1347060	50.0
Benzene, propyl-	15.977	6.0	ug/L	187287	5	17.039	1556880	50.0

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3D102396.D
Acq On : 12 Sep 2014 11:57 am
Operator : [redacted]
Sample : jb75730-1r
Misc : MS73391,V3D4402,5,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 12 12:53:13 2014
Quant Method : C:\msdchem\1\METHODS\M3D4368.M
Quant Title : Method SW846 8260B, ZB 624 60m x 0.25mm x 1.4 um
QLast Update : Thu Sep 11 09:16:23 2014
Response via : Initial Calibration

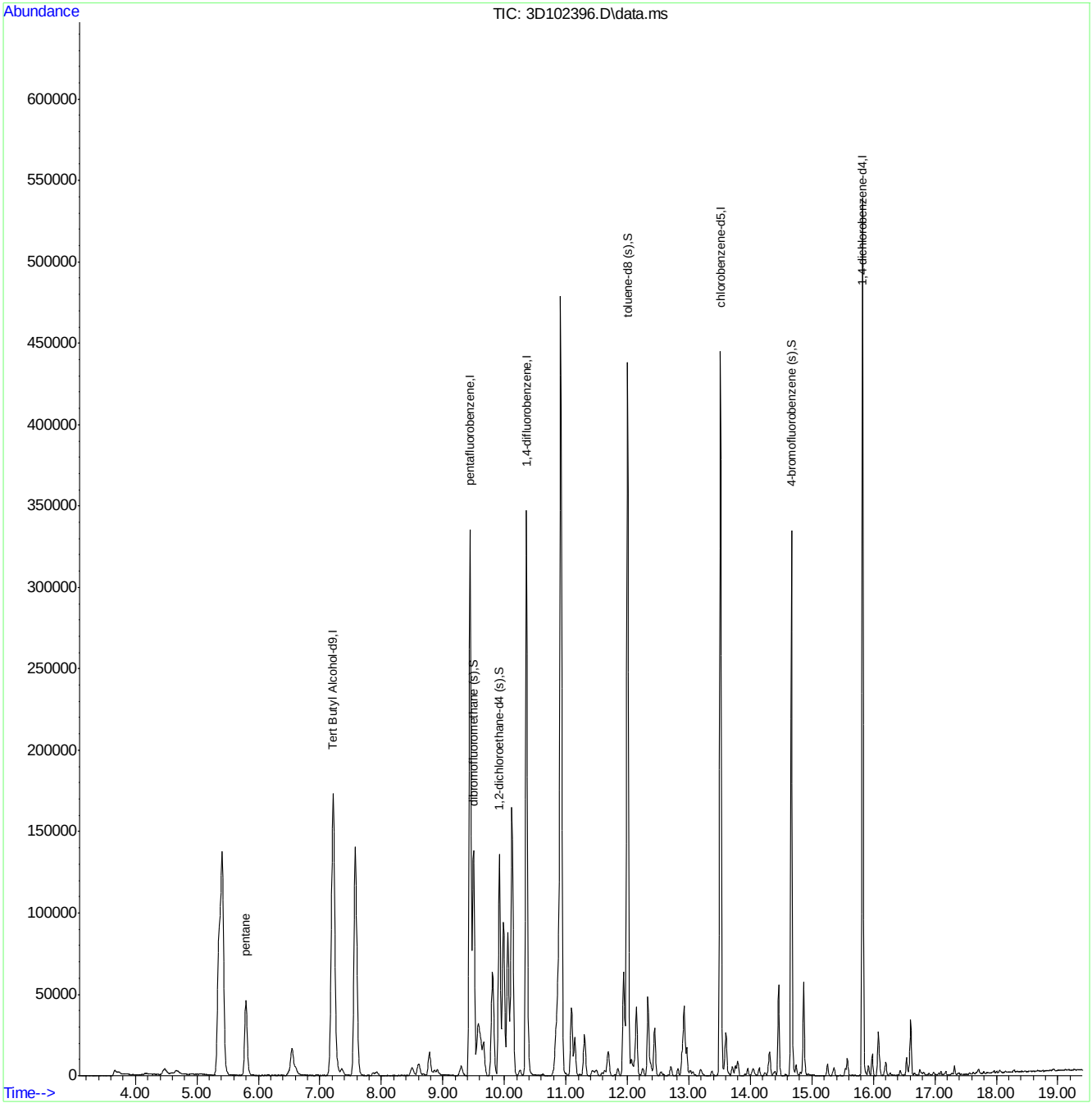
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	7.208	65	101704	500.00	ug/L	-0.01
4) pentafluorobenzene	9.441	168	301177	50.00	ug/L	-0.01
58) 1,4-difluorobenzene	10.359	114	329453	50.00	ug/L	0.00
88) chlorobenzene-d5	13.515	117	261673	50.00	ug/L	0.00
104) 1,4-dichlorobenzene-d4	15.822	152	143241	50.00	ug/L	-0.01
System Monitoring Compounds						
50) dibromofluoromethane (s)	9.499	113	95921	51.70	ug/L	0.00
Spiked Amount 50.000	Range 79 - 120		Recovery = 103.40%			
51) 1,2-dichloroethane-d4 (s)	9.918	65	99186	51.41	ug/L	0.00
Spiked Amount 50.000	Range 72 - 123		Recovery = 102.82%			
80) toluene-d8 (s)	12.000	98	313295	50.40	ug/L	-0.01
Spiked Amount 50.000	Range 78 - 119		Recovery = 100.80%			
106) 4-bromofluorobenzene (s)	14.669	95	106950	49.93	ug/L	0.00
Spiked Amount 50.000	Range 74 - 119		Recovery = 99.86%			
Target Compounds						Qvalue
17) pentane	5.797	43	46707	13.34	ug/L	97

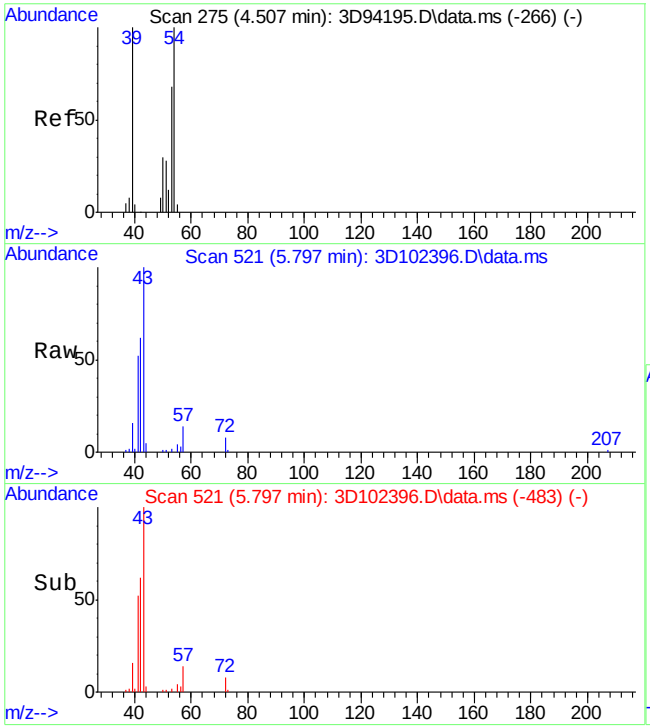
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3D102396.D
Acq On : 12 Sep 2014 11:57 am
Operator : [redacted]
Sample : jb75730-1r
Misc : MS73391,V3D4402,5,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 12 12:53:13 2014
Quant Method : C:\msdchem\1\METHODS\M3D4368.M
Quant Title : Method SW846 8260B, ZB 624 60m x 0.25mm x 1.4 um
QLast Update : Thu Sep 11 09:16:23 2014
Response via : Initial Calibration

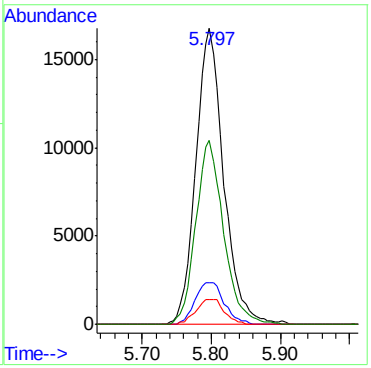




#17
pentane
Concen: 13.34 ug/L
RT: 5.797 min Scan# 521
Delta R.T. 0.000 min
Lab File: 3D102396.D
Acq: 12 Sep 2014 11:57 am

Tgt Ion: 43 Resp: 46707

Ion	Ratio	Lower	Upper
43	100		
57	13.9	0.0	45.9
72	8.4	0.0	39.2
42	62.3	30.7	90.7



Manual Integrations APPROVED (compounds with "m" flag)
[redacted]
09/10/14 17:46

Quantitation Report (QT/LSC Reviewed)

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187448.D
Acq On : 9 Sep 2014 6:35 pm
Operator : [redacted]t
Sample : jb75730-2
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Sep 10 15:18:26 2014
Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um
QLast Update : Thu Aug 28 10:39:31 2014
Response via : Initial Calibration

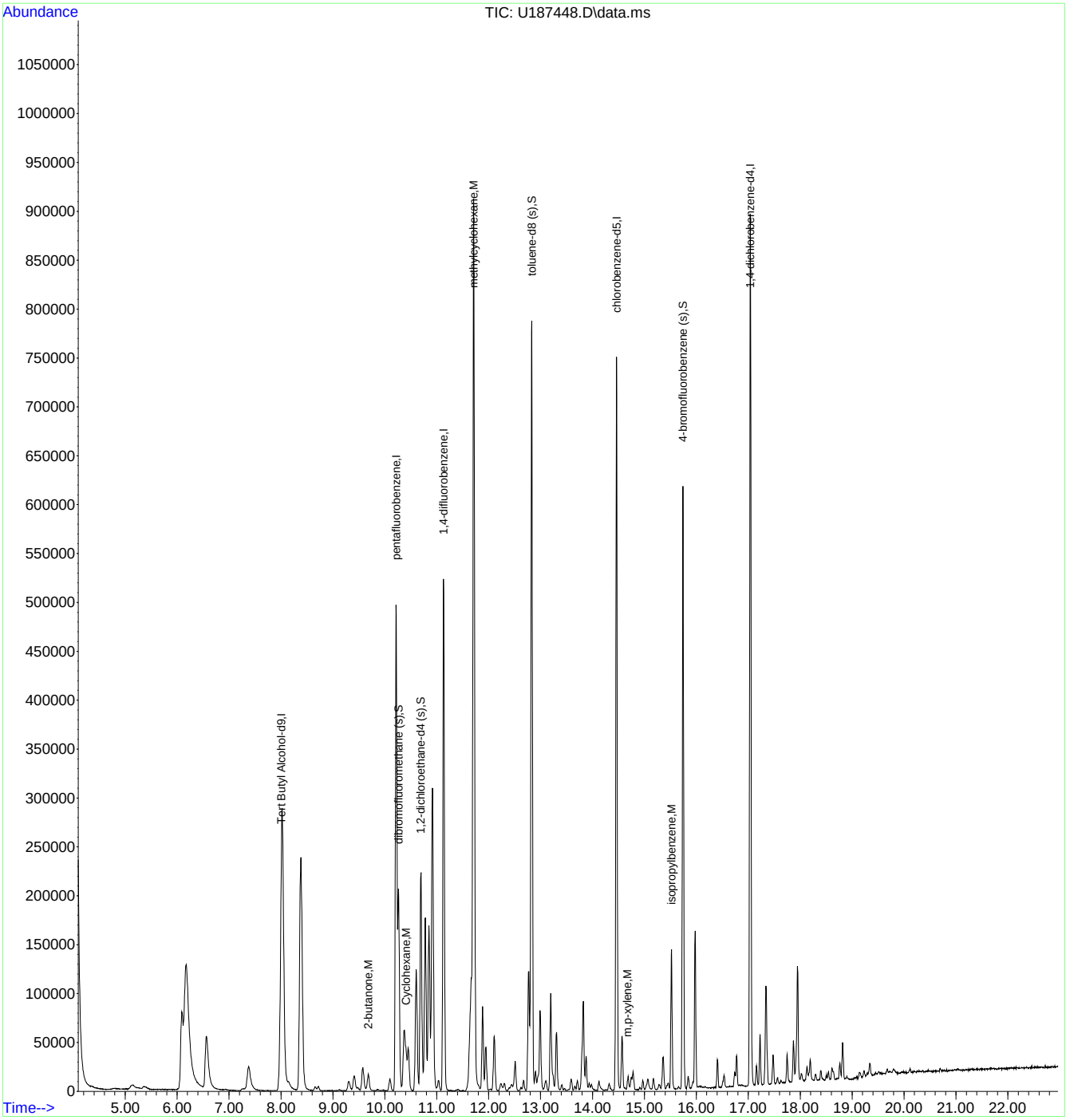
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	8.004	65	168110	500.00	ug/L	0.00
5) pentafluorobenzene	10.216	168	402029	50.00	ug/L	0.00
64) 1,4-difluorobenzene	11.130	114	459958	50.00	ug/L	0.00
96) chlorobenzene-d5	14.461	117	438764	50.00	ug/L	0.00
112) 1,4-dichlorobenzene-d4	17.038	152	259792	50.00	ug/L	0.00
System Monitoring Compounds						
56) dibromofluoromethane (s)	10.263	113	134529	50.70	ug/L	0.00
Spiked Amount 50.000	Range 79 - 120		Recovery = 101.40%			
57) 1,2-dichloroethane-d4 (s)	10.691	65	165098	48.27	ug/L	0.00
Spiked Amount 50.000	Range 72 - 123		Recovery = 96.54%			
88) toluene-d8 (s)	12.830	98	561290	52.73	ug/L	0.00
Spiked Amount 50.000	Range 78 - 119		Recovery = 105.46%			
114) 4-bromofluorobenzene (s)	15.742	95	221263	50.49	ug/L	0.00
Spiked Amount 50.000	Range 74 - 119		Recovery = 100.98%			
Target Compounds						Qvalue
41) 2-butanone	9.682	72	4487	11.06	ug/L #	1
68) Cyclohexane	10.409	84	16678	3.78	ug/L #	37
79) methylcyclohexane	11.711	83	435429m	87.84	ug/L	
108) m,p-xylene	14.670	106	1726	0.32	ug/L	93
113) isopropylbenzene	15.522	105	103233	7.08	ug/L	99

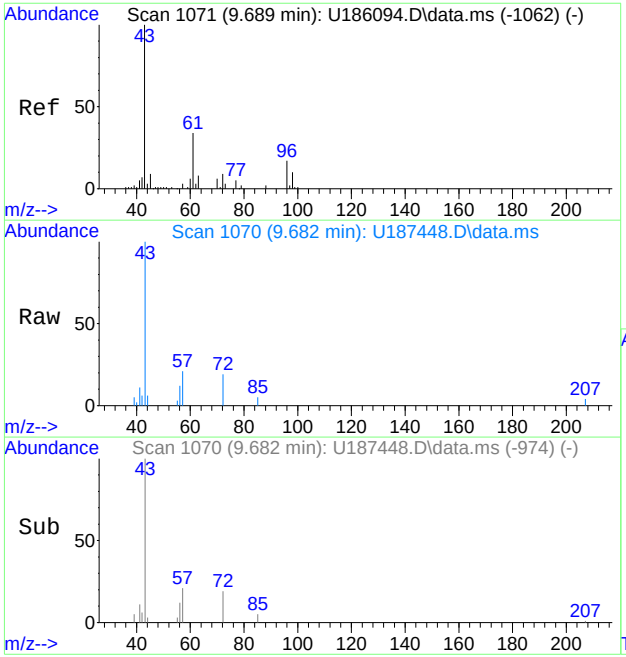
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT/LSC Reviewed)

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187448.D
Acq On : 9 Sep 2014 6:35 pm
Operator : s[redacted]
Sample : jb75730-2
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Sep 10 15:18:26 2014
Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um
QLast Update : Thu Aug 28 10:39:31 2014
Response via : Initial Calibration

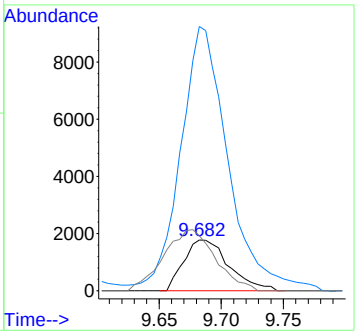


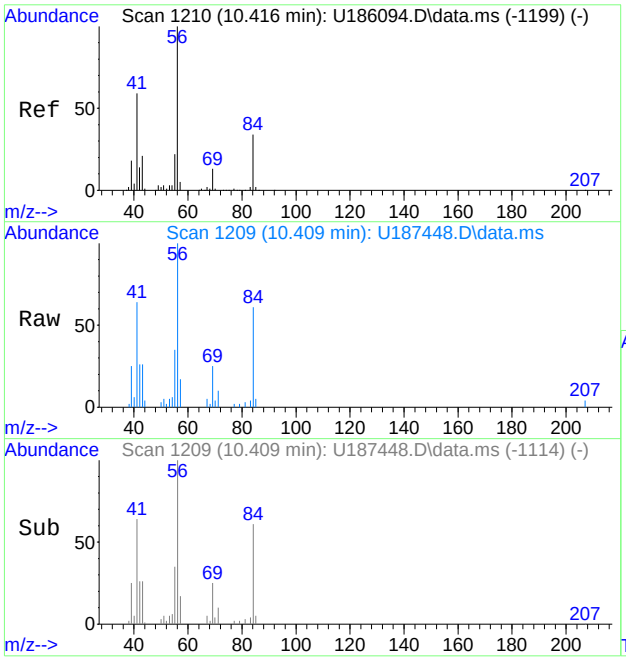


#41
2-butanone
Concen: 11.06 ug/L
RT: 9.682 min Scan# 1070
Delta R.T. 0.001 min
Lab File: U187448.D
Acq: 9 Sep 2014 6:35 pm

Tgt Ion: 72 Resp: 4487

Ion	Ratio	Lower	Upper
72	100		
43	549.2	1362.9	1422.9#
57	138.4	4.9	64.9#

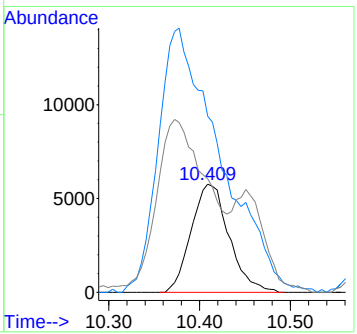


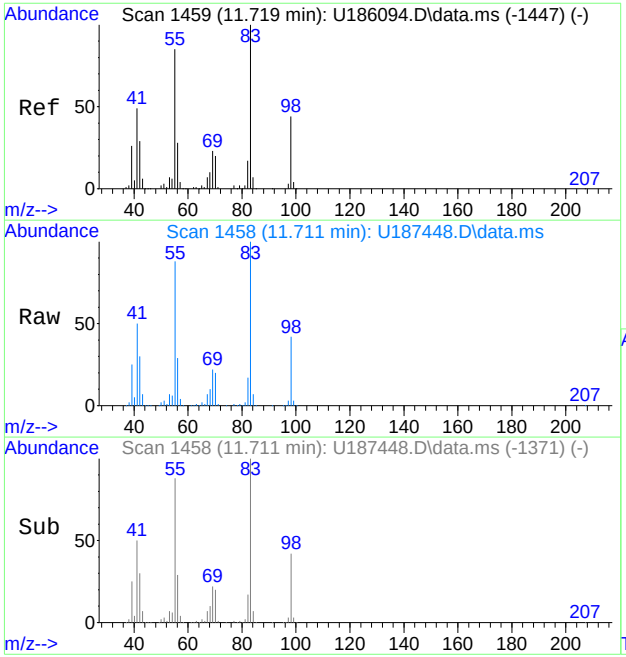


#68
Cyclohexane
Concen: 3.78 ug/L
RT: 10.409 min Scan# 1209
Delta R.T. -0.004 min
Lab File: U187448.D
Acq: 9 Sep 2014 6:35 pm

Tgt Ion: 84 Resp: 16678

Ion	Ratio	Lower	Upper
84	100		
56	162.9	265.3	325.3#
41	105.0	153.5	213.5#

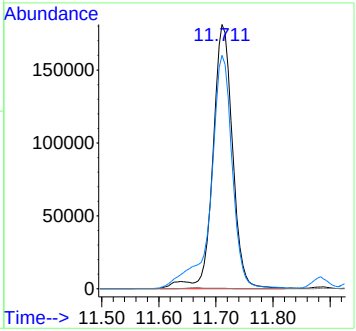


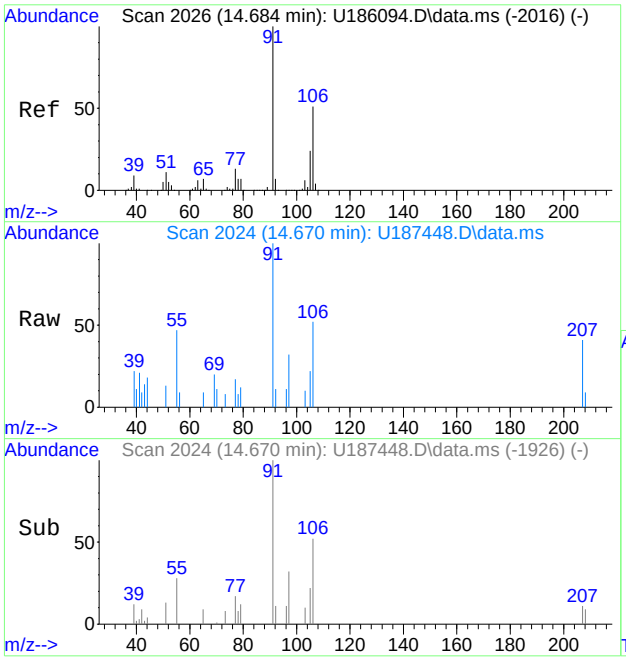


#79
methylcyclohexane
Concen: 87.84 ug/L m
RT: 11.711 min Scan# 1458
Delta R.T. -0.004 min
Lab File: U187448.D
Acq: 9 Sep 2014 6:35 pm

Tgt Ion: 83 Resp: 435429

Ion	Ratio	Lower	Upper
83	100		
55	88.3	58.9	118.9
85	0.3	0.0	50.3

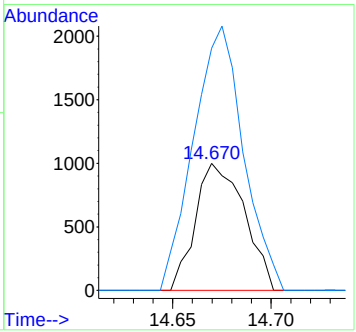


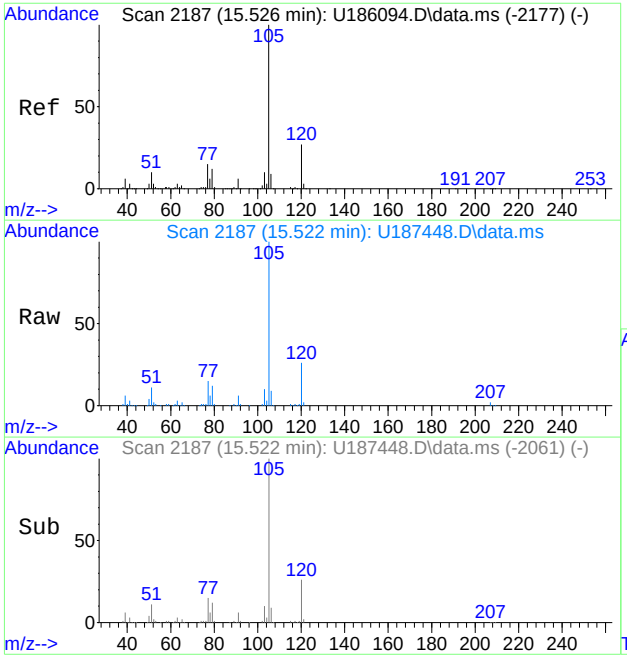


#108
m,p-xylene
Concen: 0.32 ug/L
RT: 14.670 min Scan# 2024
Delta R.T. -0.009 min
Lab File: U187448.D
Acq: 9 Sep 2014 6:35 pm

Tgt Ion:106 Resp: 1726

Ion	Ratio	Lower	Upper
106	100		
91	190.5	171.5	231.5

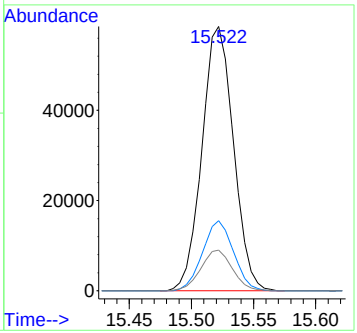




#113
isopropylbenzene
Concen: 7.08 ug/L
RT: 15.522 min Scan# 2187
Delta R.T. 0.001 min
Lab File: U187448.D
Acq: 9 Sep 2014 6:35 pm

Tgt Ion:105 Resp: 103233

Ion	Ratio	Lower	Upper
105	100		
120	26.5	0.0	55.6
77	15.4	0.0	45.4



7.1.4

LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187448.D
Acq On : 9 Sep 2014 6:35 pm
Operator : [redacted]
Sample : jb75730-2
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 12 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 3 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\MU8630.M
Title : SW-846 8260B, DB624 60m x 250um x 1.40um

Signal : TIC: U187448.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	6.091	368	383	388	rBV2	79405	250715	10.12%	1.303%
2	6.174	390	399	460	rVV3	127888	877686	35.44%	4.561%
3	6.561	462	473	511	rVB2	53935	251094	10.14%	1.305%
4	7.377	615	629	661	rVB5	24355	119344	4.82%	0.620%
5	8.025	733	753	796	rBV2	288289	1237679	49.98%	6.432%
6	8.386	805	822	857	rVB	238349	877312	35.43%	4.559%
7	10.216	1161	1172	1178	rBV	496847	1098218	44.35%	5.707%
8	10.372	1192	1202	1213	rBV4	57767	222766	9.00%	1.158%
9	10.451	1214	1217	1234	rVB3	43749	94942	3.83%	0.493%
10	10.602	1234	1246	1256	rBV	123847	317684	12.83%	1.651%
11	10.697	1256	1264	1272	rVV	219572	496108	20.03%	2.578%
12	10.780	1272	1280	1287	rVV	173624	417941	16.88%	2.172%
13	10.848	1287	1293	1299	rVV	165532	388654	15.69%	2.020%
14	10.916	1299	1306	1321	rVB	306453	773082	31.22%	4.018%
15	11.130	1337	1347	1370	rVB	523246	1064587	42.99%	5.532%
16	11.711	1426	1458	1481	rBV	912338	2476439	100.00%	12.869%
17	11.883	1481	1491	1497	rVV	85838	176503	7.13%	0.917%
18	11.946	1497	1503	1513	rVB2	44121	97701	3.95%	0.508%
19	12.108	1525	1534	1549	rVB3	55534	132116	5.33%	0.687%
20	12.772	1650	1661	1665	rBV	121824	269062	10.86%	1.398%
21	12.830	1665	1672	1681	rVB	780690	1532433	61.88%	7.964%
22	12.992	1691	1703	1714	rVB2	80684	195673	7.90%	1.017%
23	13.196	1732	1742	1755	rBV	99419	230494	9.31%	1.198%
24	13.305	1755	1763	1776	rVB2	58795	127579	5.15%	0.663%
25	13.823	1849	1862	1868	rBV2	90181	224027	9.05%	1.164%
26	14.461	1974	1984	1996	rBV	749675	1366941	55.20%	7.104%
27	14.570	1996	2005	2014	rVB	53195	107375	4.34%	0.558%
28	15.522	2180	2187	2198	rVB	142550	250910	10.13%	1.304%
29	15.742	2219	2229	2240	rBV	616348	1089984	44.01%	5.664%
30	15.977	2259	2274	2283	rBV	160849	288812	11.66%	1.501%
31	17.038	2468	2477	2492	rBV	891538	1576624	63.66%	8.193%
32	17.226	2506	2513	2521	rVB	51874	86167	3.48%	0.448%
33	17.341	2526	2535	2549	rVB4	100915	221424	8.94%	1.151%
34	17.869	2630	2636	2641	rBV3	42238	74500	3.01%	0.387%
35	17.948	2642	2651	2660	rVB2	115749	230129	9.29%	1.196%

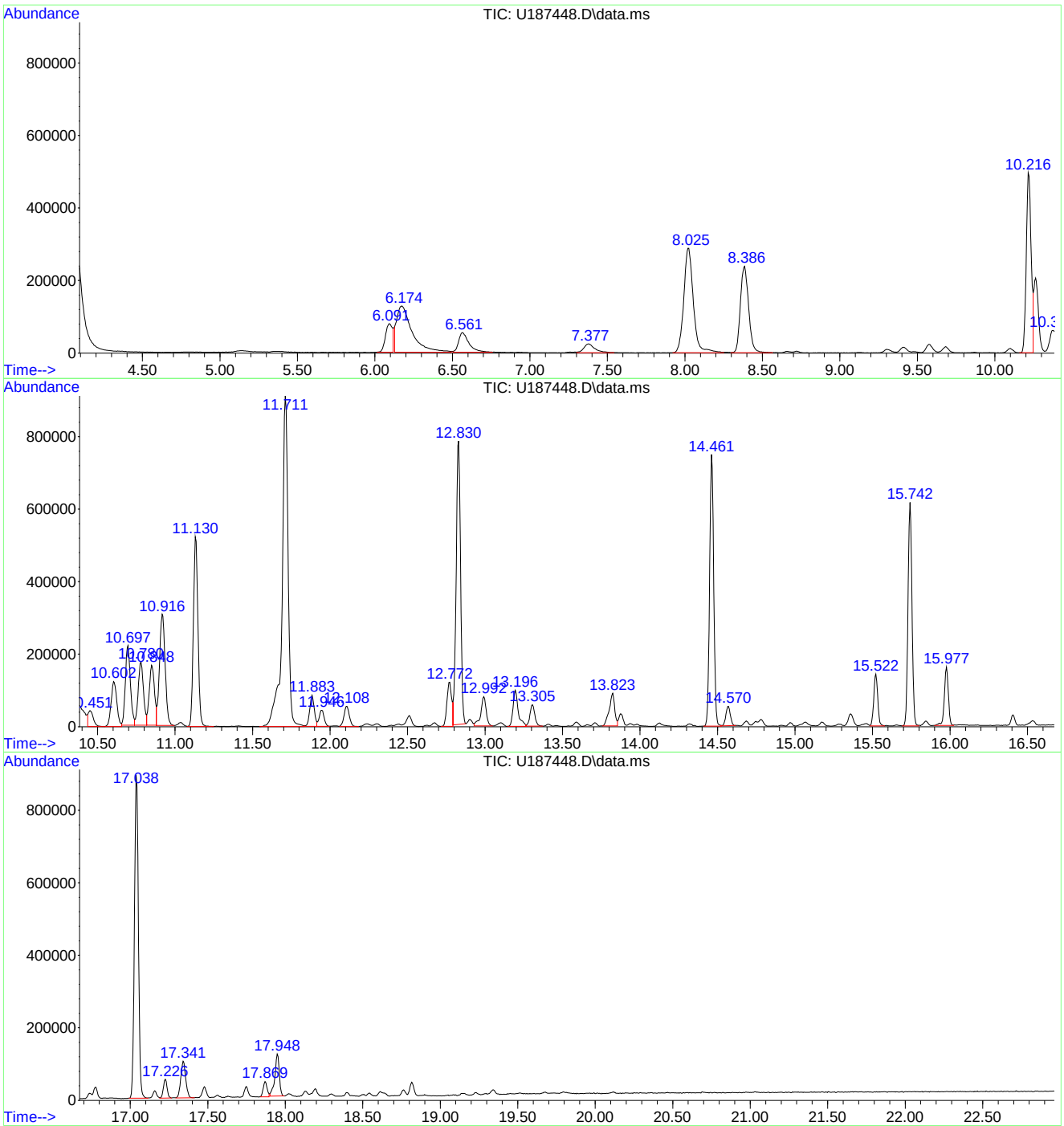
Sum of corrected areas: 19242705

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187448.D
Acq On : 9 Sep 2014 6:35 pm
Operator : [redacted]
Sample : jb75730-2
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P



Library Search Compound Report

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187448.D
Acq On : 9 Sep 2014 6:35 pm
Operator : [redacted]t
Sample : jb75730-2
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

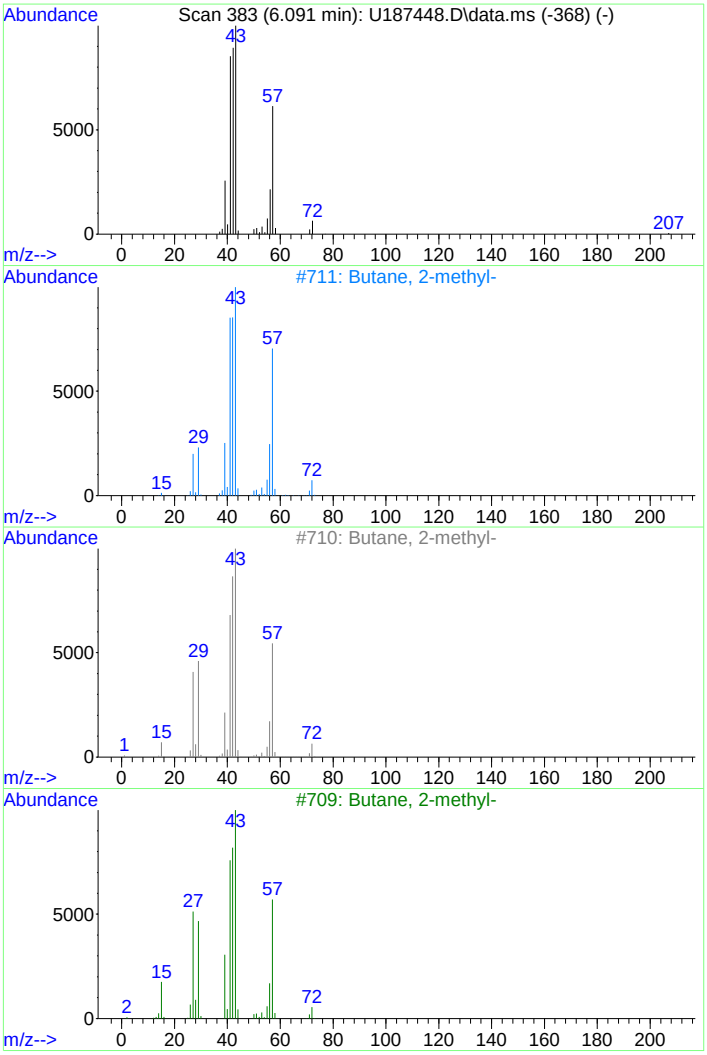
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

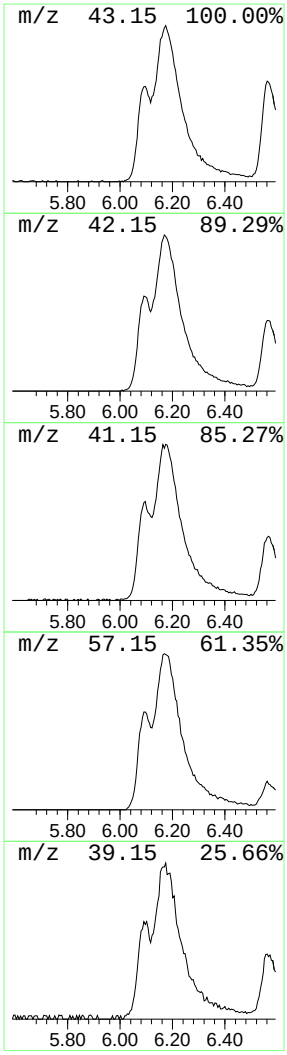
****

Peak Number 1 Butane, 2-methyl- Concentration Rank 9

R.T.	EstConc	Area	Relative to ISTD	R.T.
6.091	11.41 ug/L	250715	pentafluorobenzene	10.216

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Butane, 2-methyl-	72	C5H12	000078-78-4	91
2	Butane, 2-methyl-	72	C5H12	000078-78-4	91
3	Butane, 2-methyl-	72	C5H12	000078-78-4	90
4	3-Buten-1-ol	72	C4H8O	000627-27-0	47
5	Pentane	72	C5H12	000109-66-0	36





Library Search Compound Report

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187448.D
Acq On : 9 Sep 2014 6:35 pm
Operator : [redacted]t
Sample : jb75730-2
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

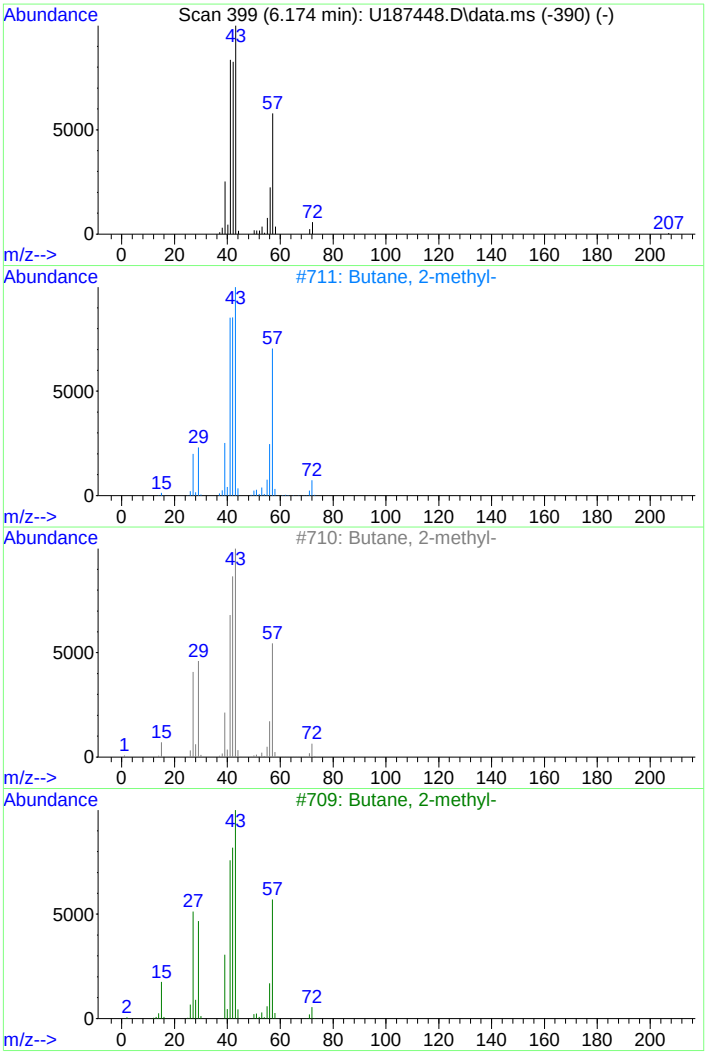
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

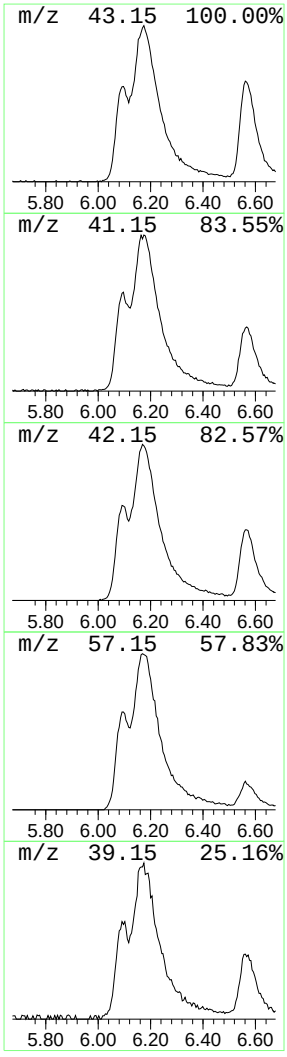
****

Peak Number 2 Butane, 2-methyl- Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
6.174	39.96 ug/L	877686	pentafluorobenzene	10.216

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Butane, 2-methyl-	72	C5H12	000078-78-4	91
2	Butane, 2-methyl-	72	C5H12	000078-78-4	91
3	Butane, 2-methyl-	72	C5H12	000078-78-4	90
4	3-Buten-1-ol	72	C4H8O	000627-27-0	38
5	Pentane	72	C5H12	000109-66-0	33





Library Search Compound Report

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187448.D
Acq On : 9 Sep 2014 6:35 pm
Operator : [redacted]
Sample : jb75730-2
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

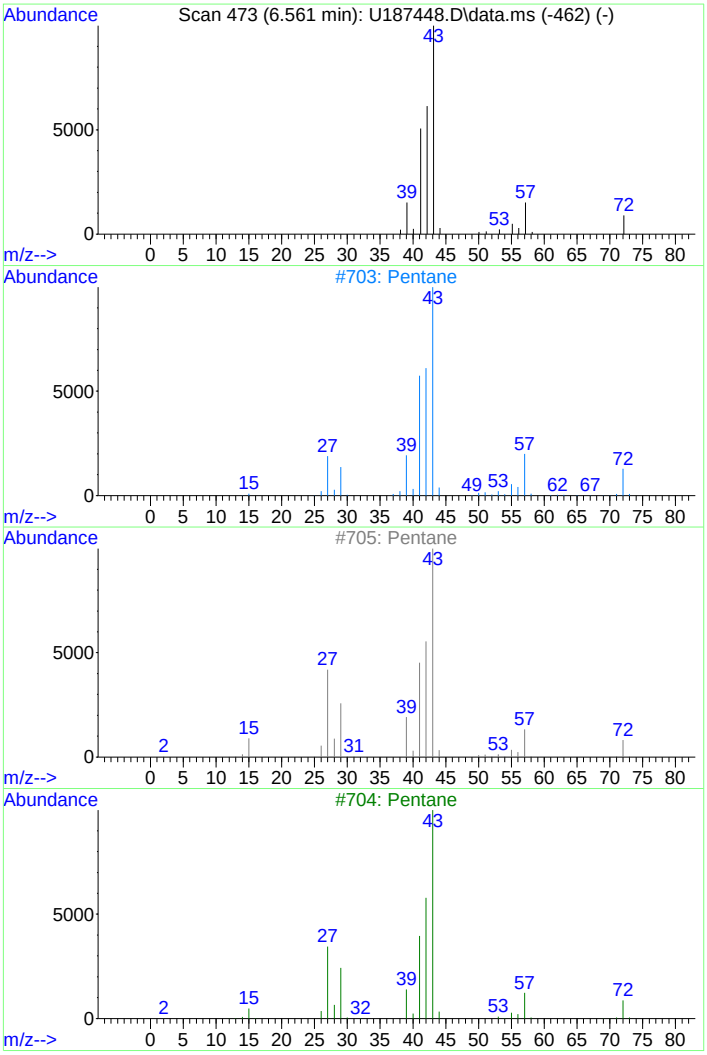
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

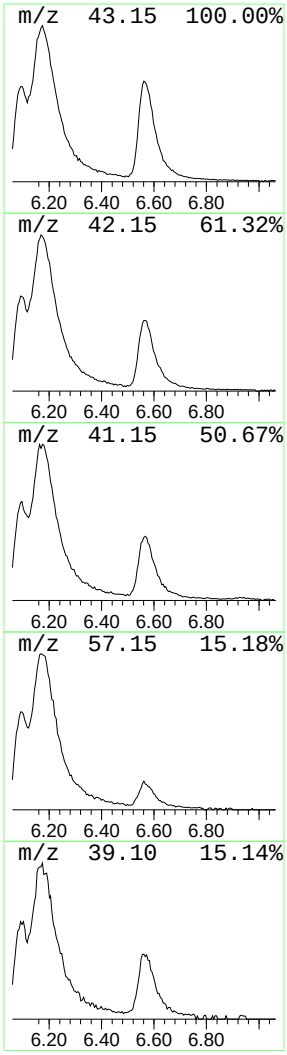
****

Peak Number 3 Pentane Concentration Rank 8

R.T.	EstConc	Area	Relative to ISTD	R.T.
6.561	11.43 ug/L	251094	pentafluorobenzene	10.216

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Pentane	72	C5H12	000109-66-0	91
2	Pentane	72	C5H12	000109-66-0	90
3	Pentane	72	C5H12	000109-66-0	80
4	Butane, 2-methyl-	72	C5H12	000078-78-4	72
5	Butane, 2-methyl-	72	C5H12	000078-78-4	58





Library Search Compound Report

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187448.D
Acq On : 9 Sep 2014 6:35 pm
Operator : [redacted]t
Sample : jb75730-2
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

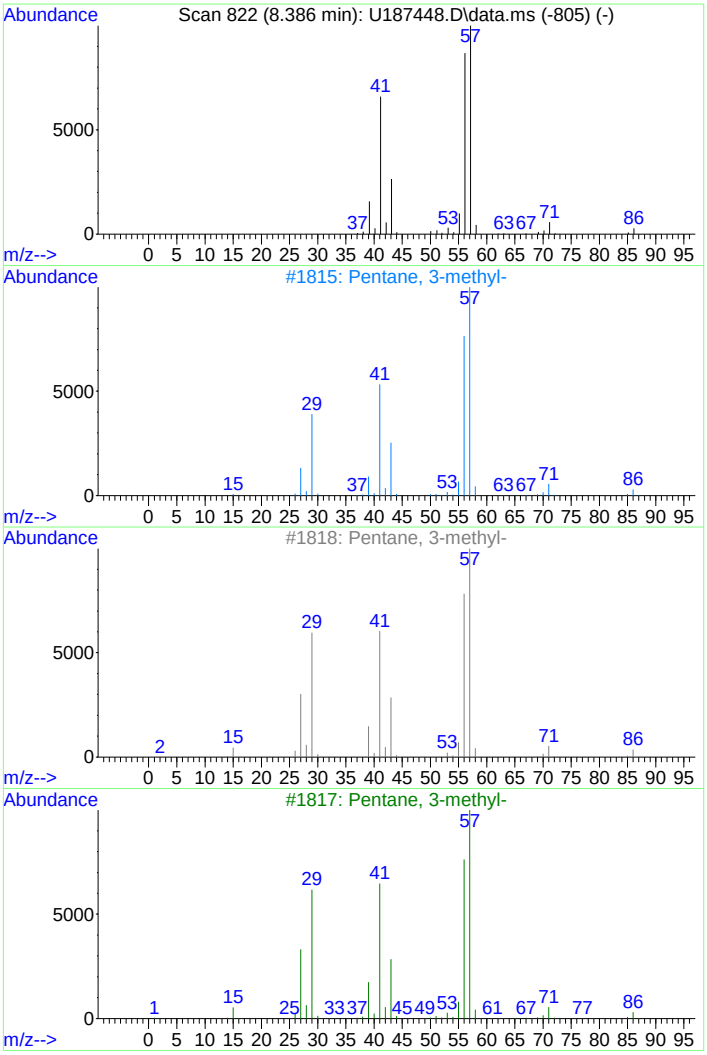
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

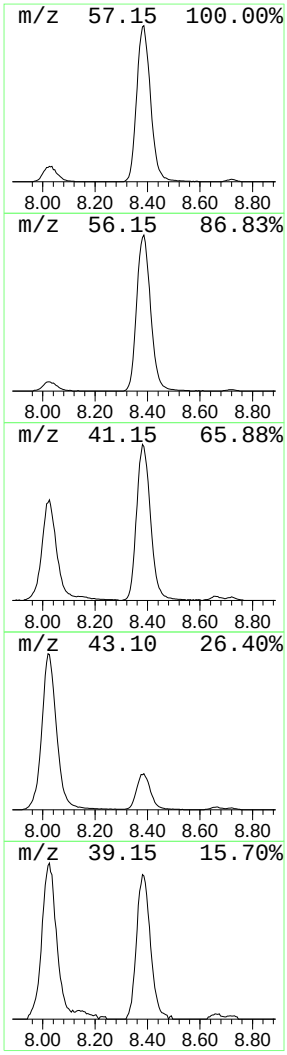
****

Peak Number 4 Pentane, 3-methyl- Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
8.386	39.94 ug/L	877312	pentafluorobenzene	10.216

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Pentane, 3-methyl-	86	C6H14	000096-14-0	91
2	Pentane, 3-methyl-	86	C6H14	000096-14-0	91
3	Pentane, 3-methyl-	86	C6H14	000096-14-0	91
4	Hexane, 2,2,3-trimethyl-	128	C9H20	016747-25-4	74
5	Pentane, 3-ethyl-2,2-dimethyl-	128	C9H20	016747-32-3	64





Library Search Compound Report

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187448.D
Acq On : 9 Sep 2014 6:35 pm
Operator : [redacted]
[redacted] jb75730-2
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

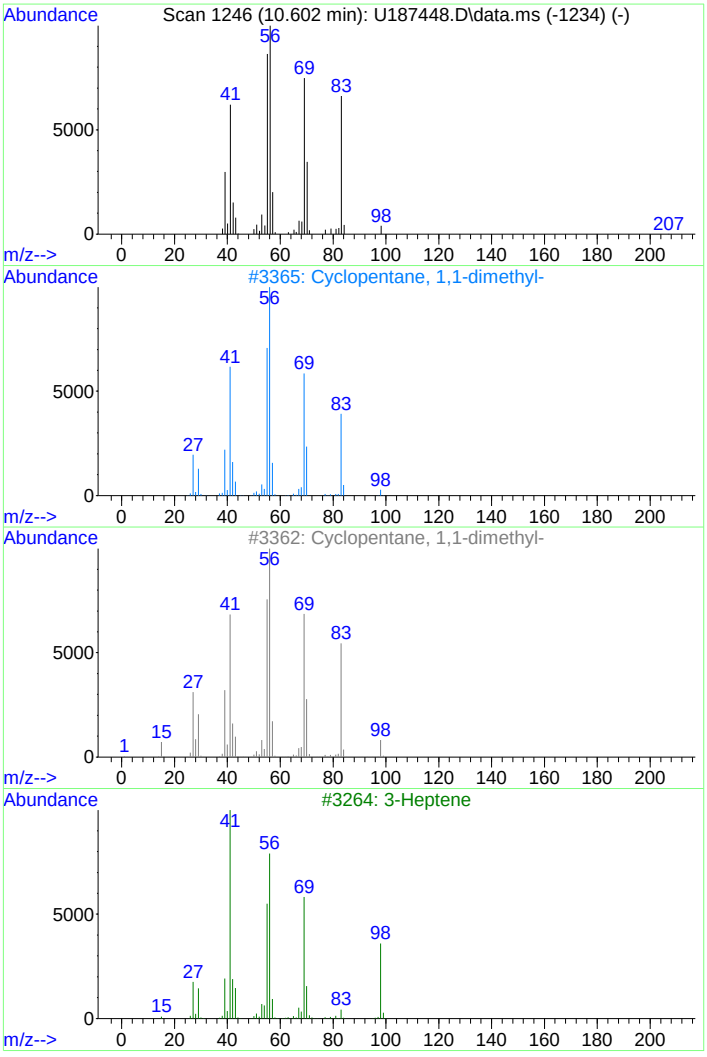
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

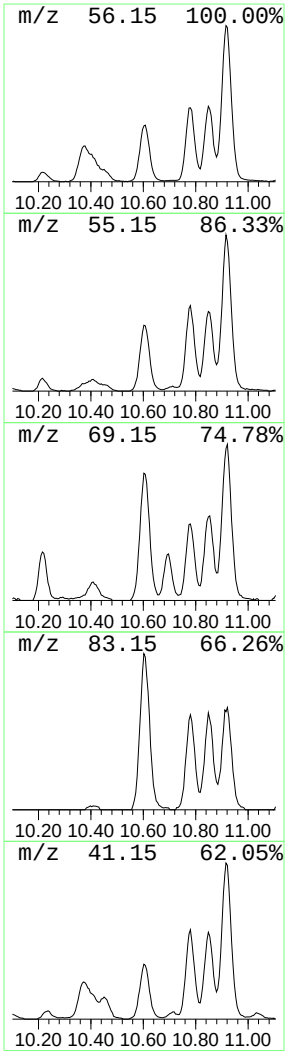
****

Peak Number 5 Cyclopentane, 1,1-dimethyl- Concentration Rank 6

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.602	14.46 ug/L	317684	pentafluorobenzene	10.216

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentane, 1,1-dimethyl-	98	C7H14	001638-26-2	90
2	Cyclopentane, 1,1-dimethyl-	98	C7H14	001638-26-2	90
3	3-Heptene	98	C7H14	000592-78-9	72
4	4-Pentenal, 2-methyl-	98	C6H10O	005187-71-3	64
5	1-Heptene	98	C7H14	000592-76-7	38





Library Search Compound Report

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187448.D
Acq On : 9 Sep 2014 6:35 pm
Operator : [redacted]
Sample : jb75730-2
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

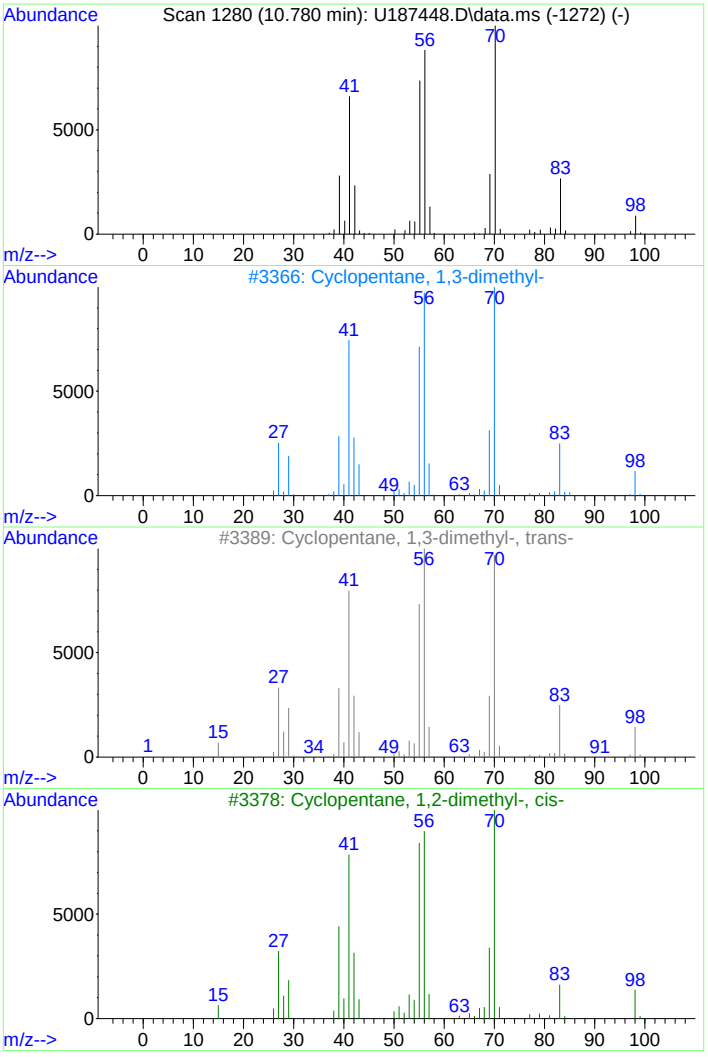
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

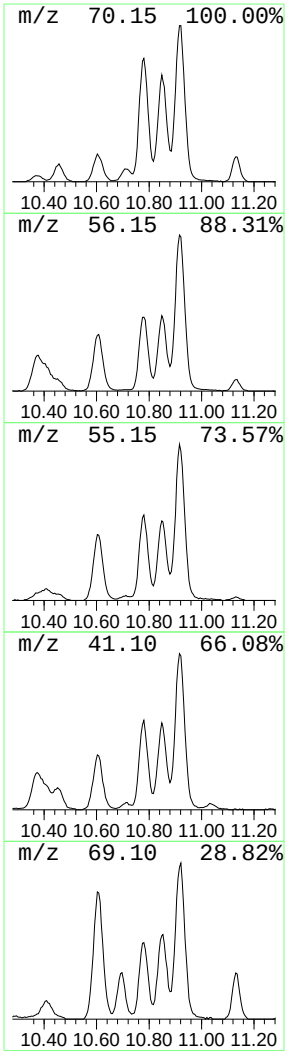
****

Peak Number 6 Cyclopentane, 1,3-dimethyl- Concentration Rank 4

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.780	19.63 ug/L	417941	1,4-difluorobenzene	11.131

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentane, 1,3-dimethyl-	98	C7H14	002453-00-1	95
2	Cyclopentane, 1,3-dimethyl-, trans-	98	C7H14	001759-58-6	91
3	Cyclopentane, 1,2-dimethyl-, cis-	98	C7H14	001192-18-3	91
4	Cyclopentane, 1,3-dimethyl-, cis-	98	C7H14	002532-58-3	91
5	Cyclopentane, 1,2-dimethyl-, cis-	98	C7H14	001192-18-3	90





Library Search Compound Report

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187448.D
Acq On : 9 Sep 2014 6:35 pm
Operator : [redacted]t
Sample : jb75730-2
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 12 Sample Multiplier: 1

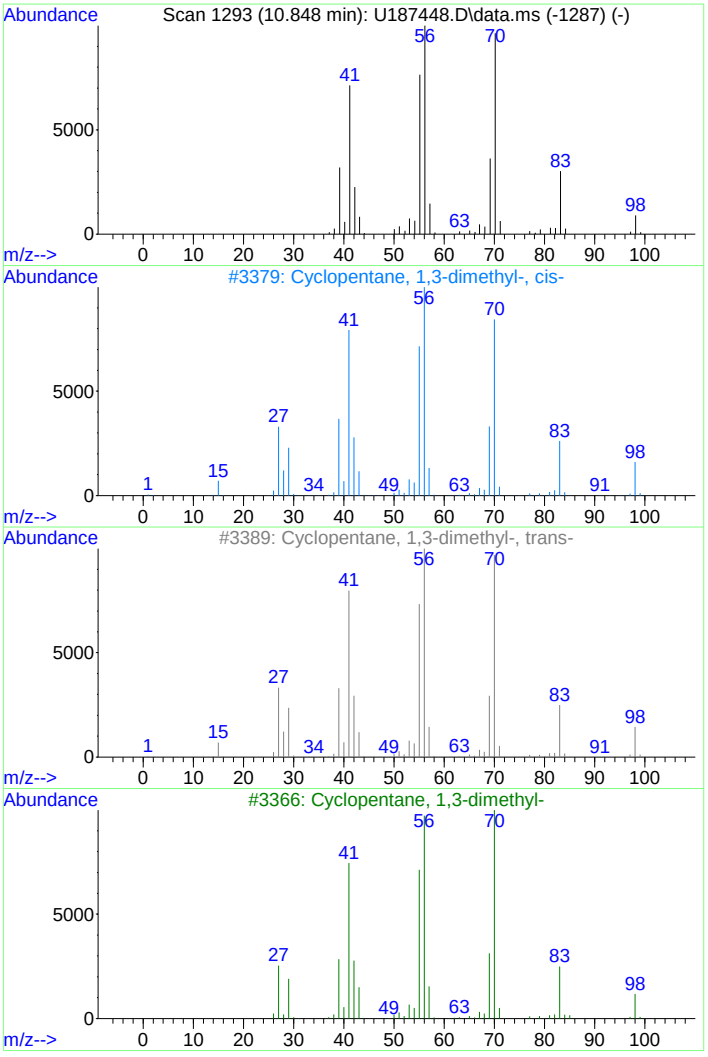
Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

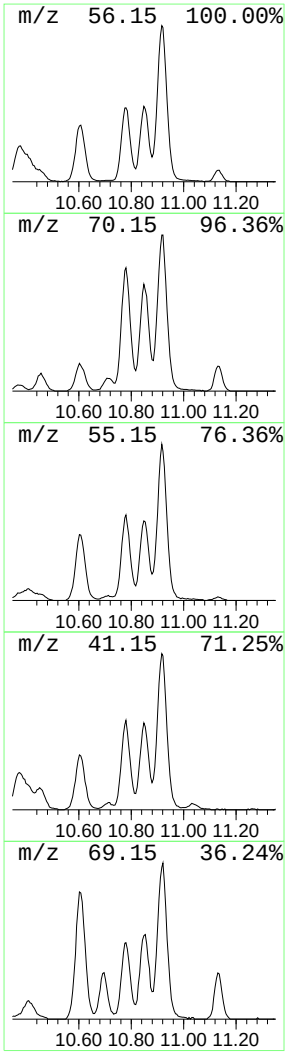
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

****
Peak Number 7 Cyclopentane, 1,3-dimethyl-... Concentration Rank 5

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.848	18.25 ug/L	388654	1,4-difluorobenzene	11.131

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentane, 1,3-dimethyl-, cis-	98	C7H14	002532-58-3	95
2	Cyclopentane, 1,3-dimethyl-, trans-	98	C7H14	001759-58-6	94
3	Cyclopentane, 1,3-dimethyl-	98	C7H14	002453-00-1	91
4	Cyclopentane, 1,2-dimethyl-, cis-	98	C7H14	001192-18-3	90
5	Cyclopentane, 1,2-dimethyl-, cis-	98	C7H14	001192-18-3	87





Library Search Compound Report

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187448.D
Acq On : 9 Sep 2014 6:35 pm
Operator : [redacted]
[redacted] : jb75730-2
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 12 Sample Multiplier: 1

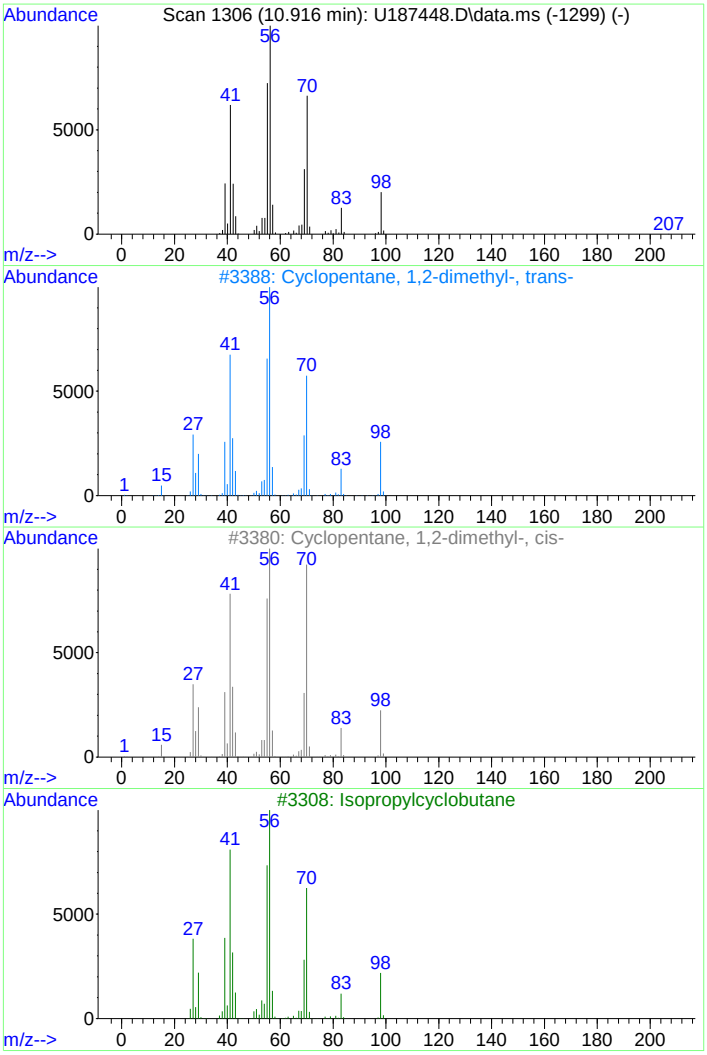
Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

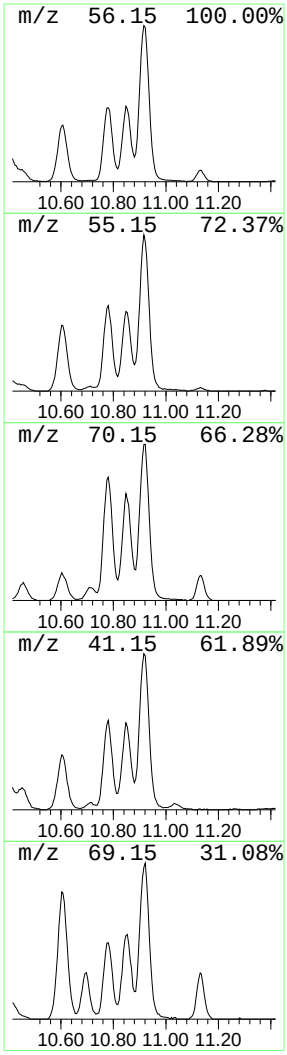
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

****
Peak Number 8 Cyclopentane, 1,2-dimethyl-... Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.916	36.31 ug/L	773082	1,4-difluorobenzene	11.131

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentane, 1,2-dimethyl-, trans-	98	C7H14	000822-50-4	95
2	Cyclopentane, 1,2-dimethyl-, cis-	98	C7H14	001192-18-3	94
3	Isopropylcyclobutane	98	C7H14	000872-56-0	94
4	Cyclopentane, 1,2-dimethyl-, trans-	98	C7H14	000822-50-4	91
5	Cyclopentane, 1,2-dimethyl-	98	C7H14	002452-99-5	74





Library Search Compound Report

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187448.D
Acq On : 9 Sep 2014 6:35 pm
Operator : [redacted]
Sample : jb75730-2
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

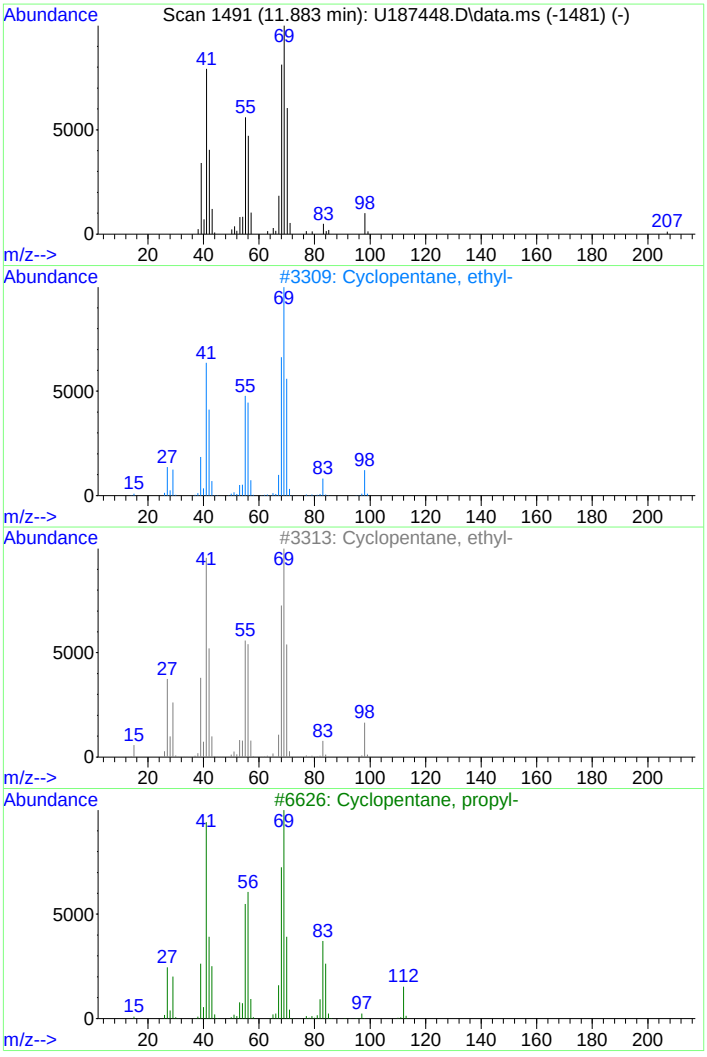
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

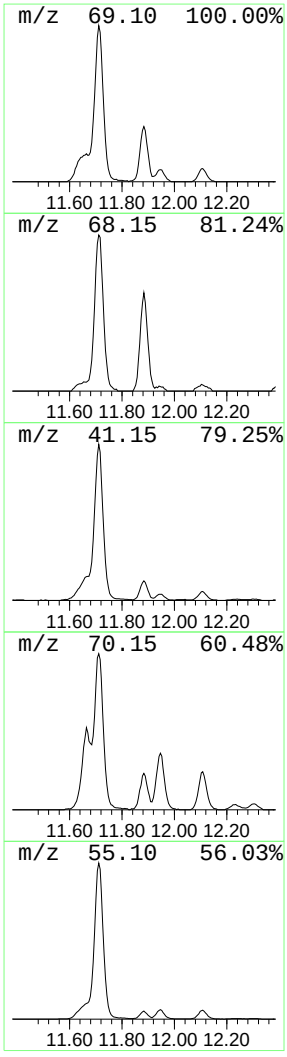
****

Peak Number 9 Cyclopentane, ethyl- Concentration Rank 12

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.883	8.29 ug/L	176503	1,4-difluorobenzene	11.131

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentane, ethyl-	98	C7H14	001640-89-7	91
2	Cyclopentane, ethyl-	98	C7H14	001640-89-7	91
3	Cyclopentane, propyl-	112	C8H16	002040-96-2	78
4	Cyclopentane, propyl-	112	C8H16	002040-96-2	72
5	Cyclopentane, 1,3-dimethyl-	98	C7H14	002453-00-1	38





Library Search Compound Report

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187448.D
Acq On : 9 Sep 2014 6:35 pm
Operator [redacted]
[redacted] jb75730-2
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 12 Sample Multiplier: 1

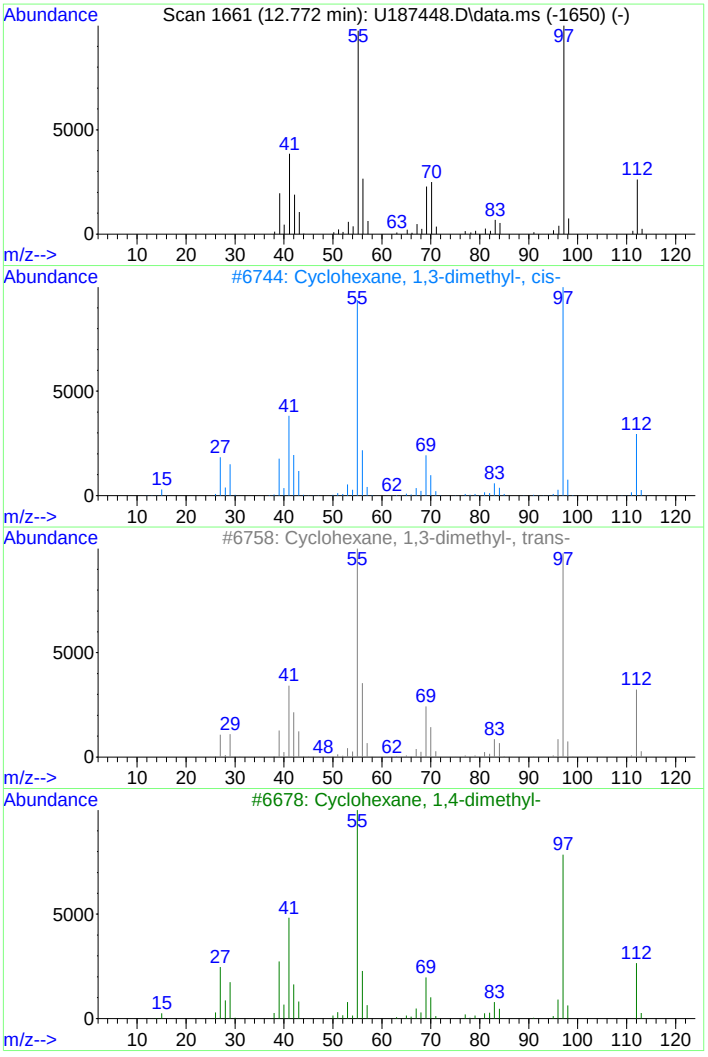
Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

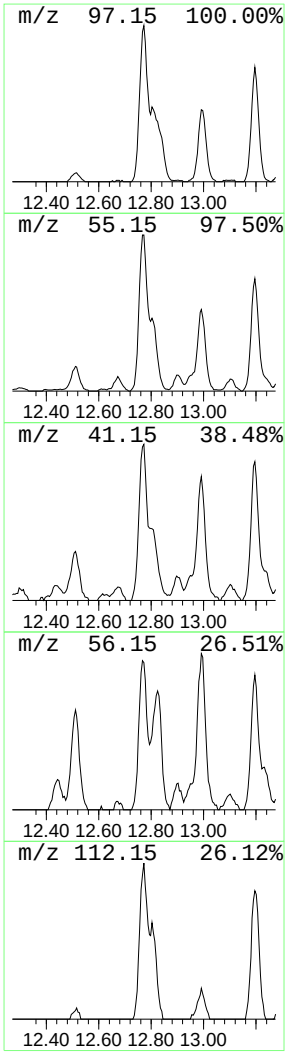
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

****
Peak Number 10 Cyclohexane, 1,3-dimethyl-,... Concentration Rank 7

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.772	12.64 ug/L	269062	1,4-difluorobenzene	11.131

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexane, 1,3-dimethyl-, cis-	112	C8H16	000638-04-0	94
2	Cyclohexane, 1,3-dimethyl-, trans-	112	C8H16	002207-03-6	93
3	Cyclohexane, 1,4-dimethyl-	112	C8H16	000589-90-2	93
4	Cyclohexane, 1,3-dimethyl-, trans-	112	C8H16	002207-03-6	93
5	Cyclohexane, 1,3-dimethyl-, cis-	112	C8H16	000638-04-0	91





Library Search Compound Report

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187448.D
Acq On : 9 Sep 2014 6:35 pm
Operator : [redacted]t
Sample : jb75730-2
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

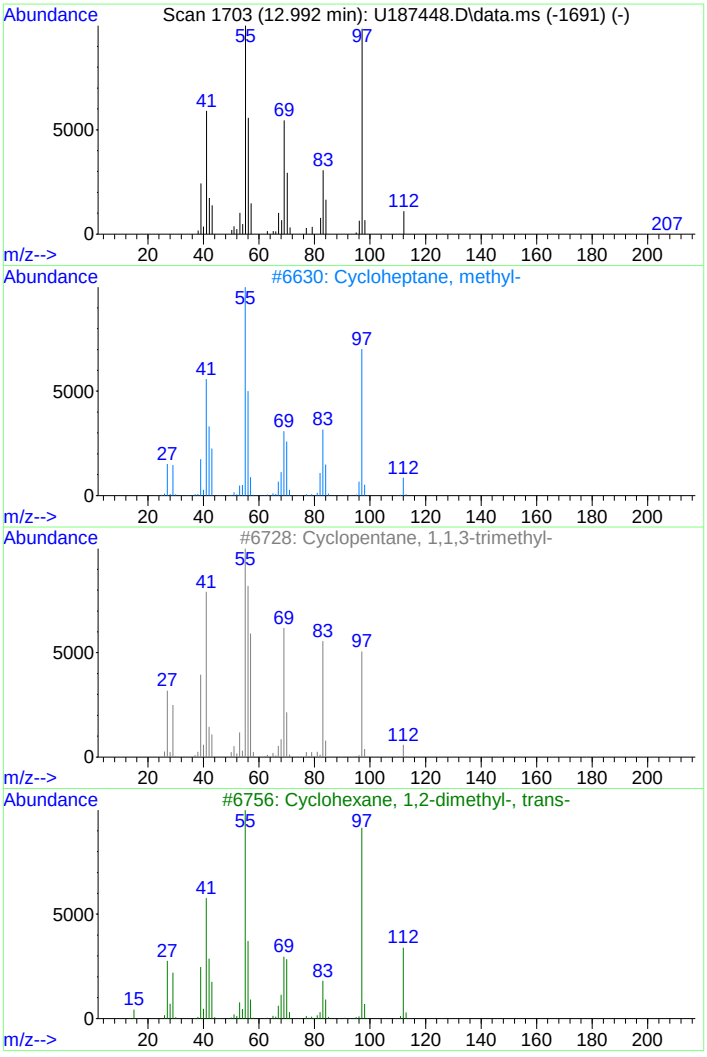
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

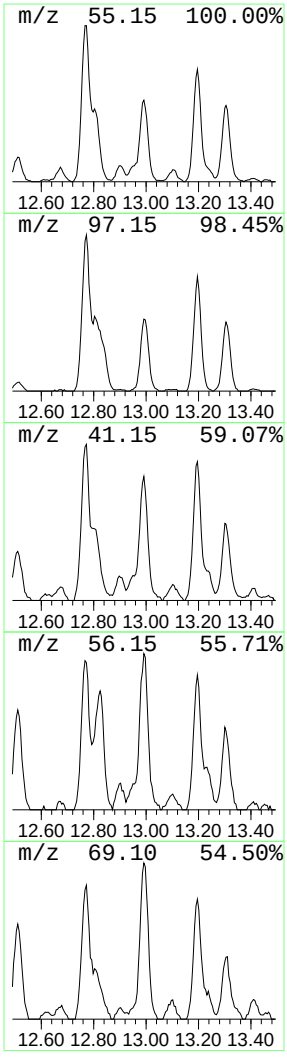
****

Peak Number 11 Cycloheptane, methyl- Concentration Rank 15

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.992	7.16 ug/L	195673	chlorobenzene-d5	14.461

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cycloheptane, methyl-	112	C8H16	004126-78-7	91
2	Cyclopentane, 1,1,3-trimethyl-	112	C8H16	004516-69-2	83
3	Cyclohexane, 1,2-dimethyl-, trans-	112	C8H16	006876-23-9	72
4	Cyclohexane, 1,2-dimethyl-, trans-	112	C8H16	006876-23-9	72
5	Cyclohexane, 1,2-dimethyl-, trans-	112	C8H16	006876-23-9	72





Library Search Compound Report

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187448.D
Acq On : 9 Sep 2014 6:35 pm
Operator : [redacted]t
Sample : jb75730-2
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 12 Sample Multiplier: 1

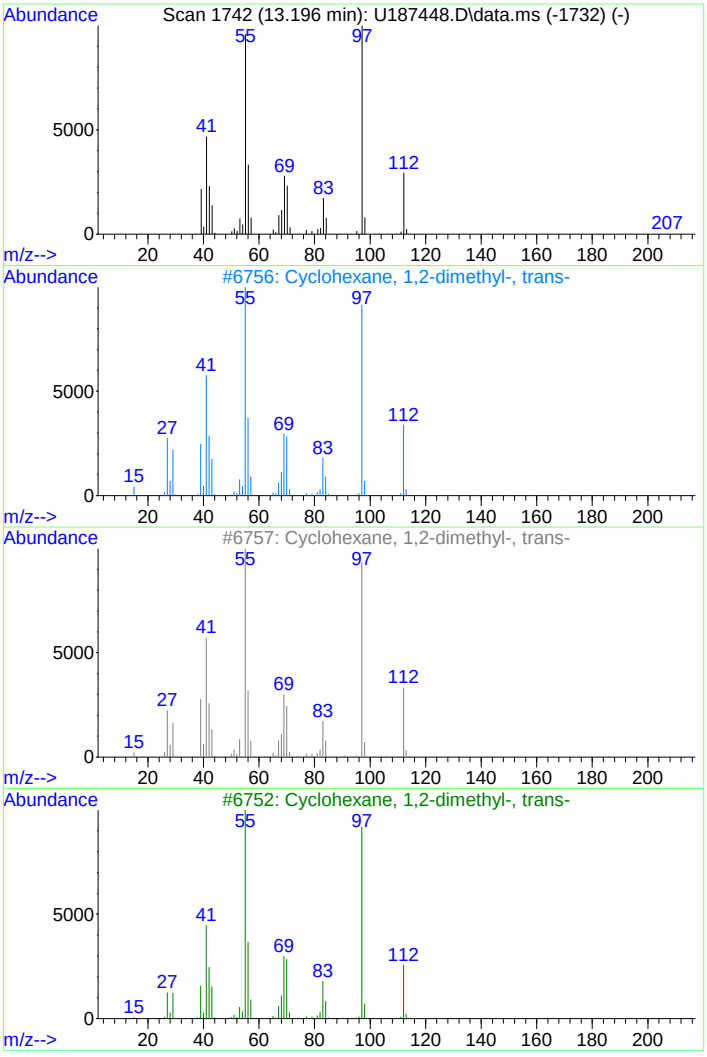
Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

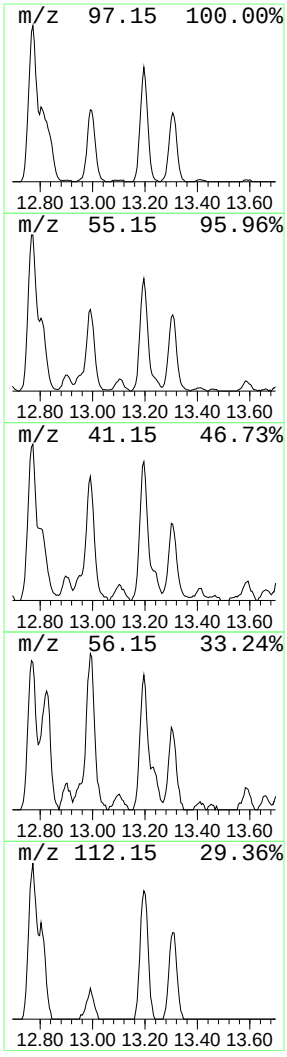
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

****
Peak Number 12 Cyclohexane, 1,2-dimethyl-,... Concentration Rank 11

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.195	8.43 ug/L	230494	chlorobenzene-d5	14.461

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexane, 1,2-dimethyl-, trans-	112	C8H16	006876-23-9	96
2	Cyclohexane, 1,2-dimethyl-, trans-	112	C8H16	006876-23-9	96
3	Cyclohexane, 1,2-dimethyl-, trans-	112	C8H16	006876-23-9	96
4	Cyclohexane, 1,2-dimethyl-	112	C8H16	000583-57-3	94
5	Cyclohexane, 1,3-dimethyl-, trans-	112	C8H16	002207-03-6	91





Library Search Compound Report

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187448.D
Acq On : 9 Sep 2014 6:35 pm
Operator : s[redacted]t
Sample : jb75730-2
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

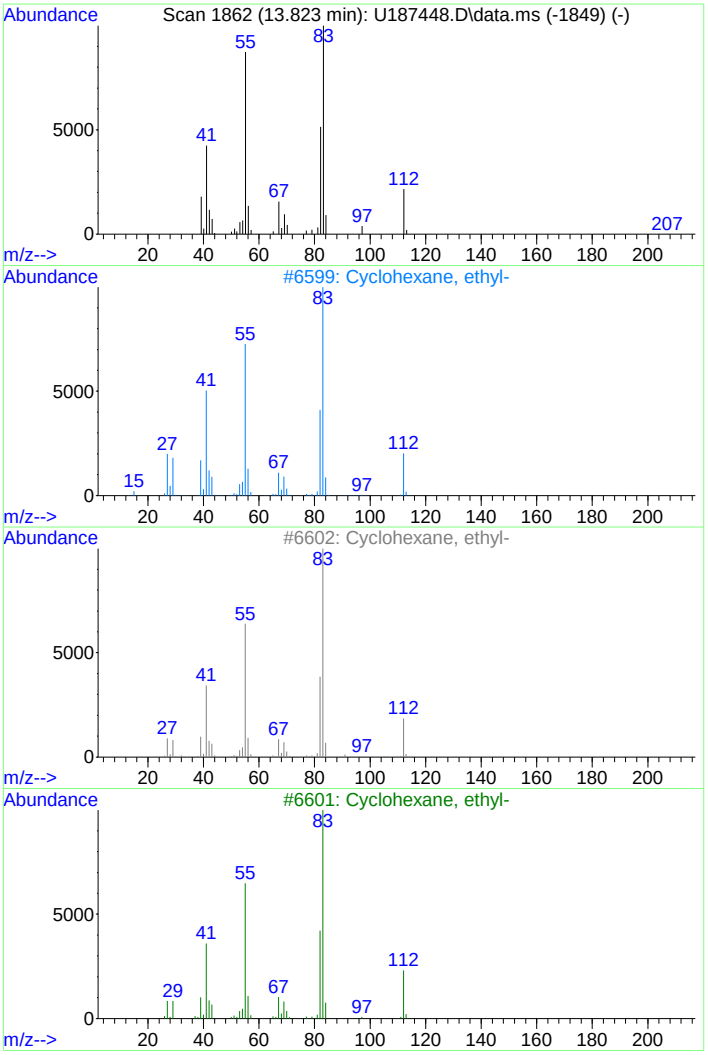
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

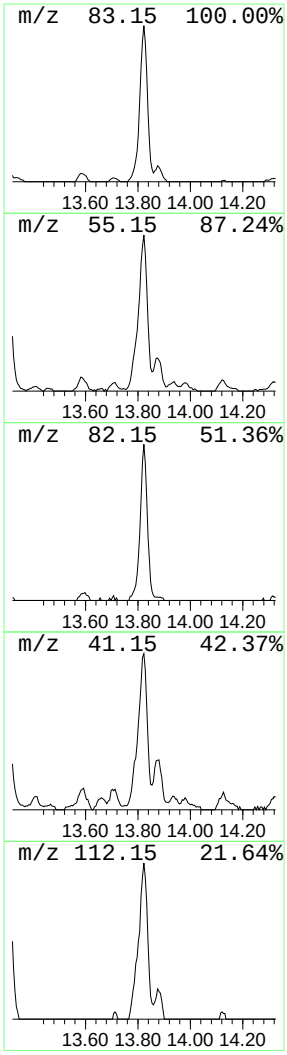
****

Peak Number 13 Cyclohexane, ethyl- Concentration Rank 13

R.T.	EstConc	Area	Relative to ISTD	R.T.
13.823	8.19 ug/L	224027	chlorobenzene-d5	14.461

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclohexane, ethyl-	112	C8H16	001678-91-7	95
2	Cyclohexane, ethyl-	112	C8H16	001678-91-7	94
3	Cyclohexane, ethyl-	112	C8H16	001678-91-7	94
4	Cyclohexane, ethyl-	112	C8H16	001678-91-7	94
5	Cyclohexane, ethyl-	112	C8H16	001678-91-7	91





Library Search Compound Report

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187448.D
Acq On : 9 Sep 2014 6:35 pm
Operator [redacted]
[redacted] jb75730-2
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

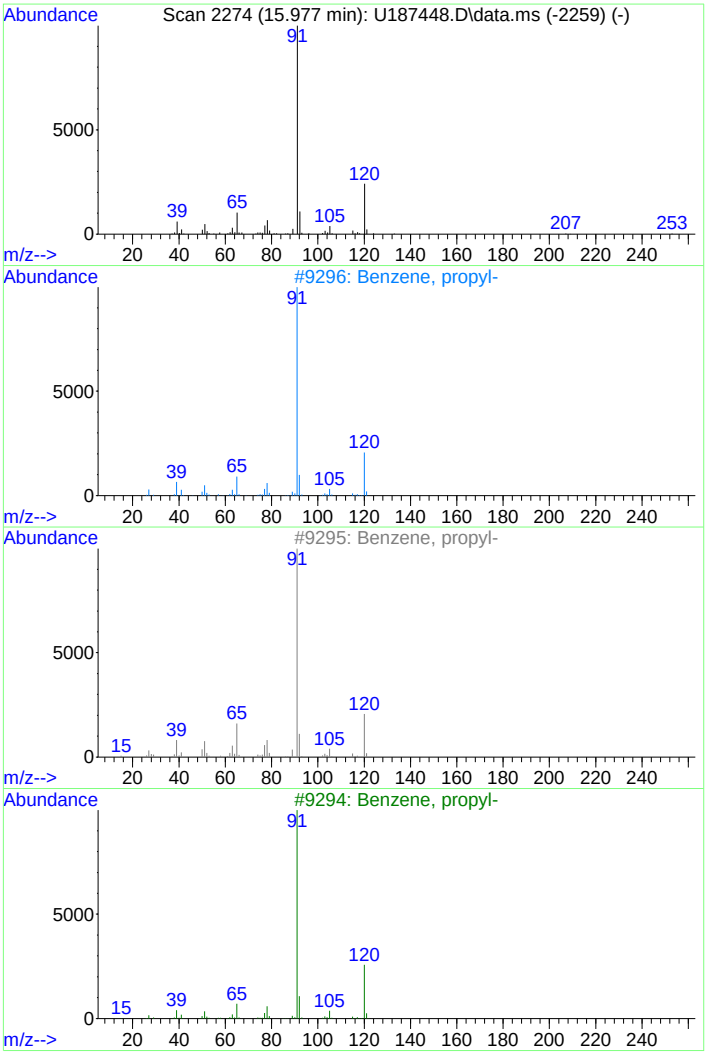
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

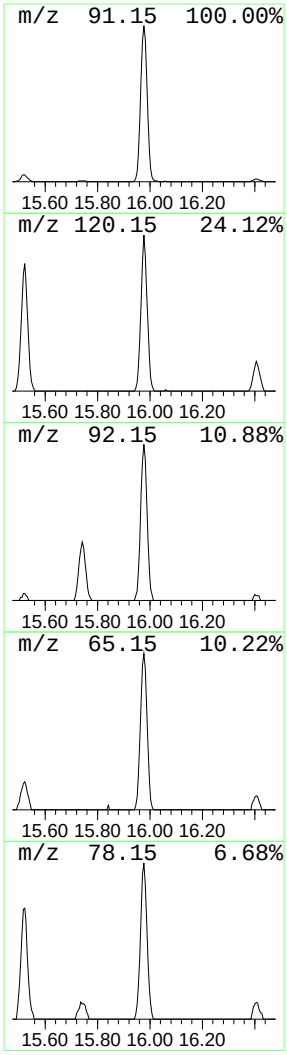
****

Peak Number 14 Benzene, propyl- Concentration Rank 10

R.T.	EstConc	Area	Relative to ISTD	R.T.
15.977	9.16 ug/L	288812	1,4-dichlorobenzene-d4	17.038

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Benzene, propyl-	120	C9H12	000103-65-1	91
2	Benzene, propyl-	120	C9H12	000103-65-1	91
3	Benzene, propyl-	120	C9H12	000103-65-1	91
4	N-Benzyl-2-phenethylamine	211	C15H17N	003647-71-0	83
5	N-Benzyl-2-phenethylamine	211	C15H17N	003647-71-0	74





Library Search Compound Report

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187448.D
Acq On : 9 Sep 2014 6:35 pm
Operator : [redacted]
Sample : jb75730-2
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 12 Sample Multiplier: 1

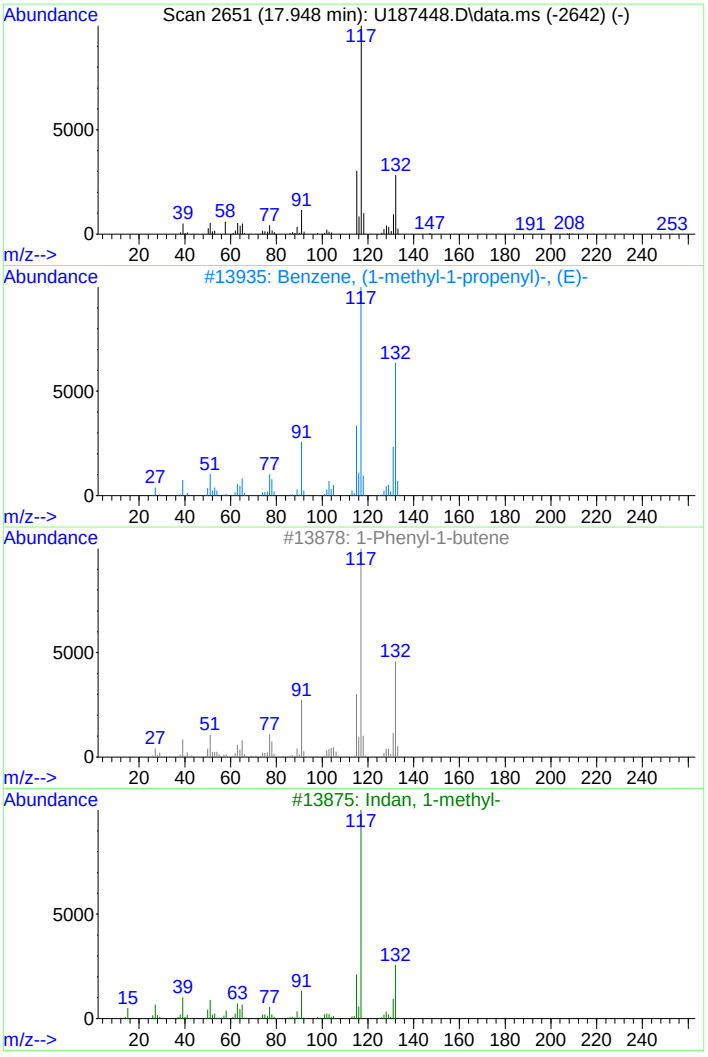
Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

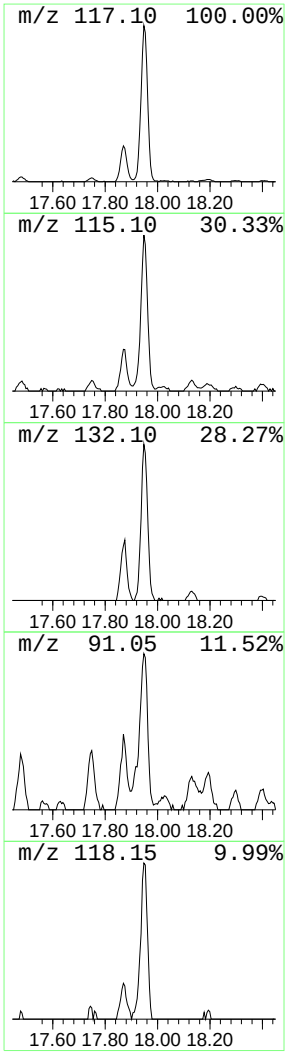
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

****
Peak Number 15 Benzene, (1-methyl-1-propen... Concentration Rank 14

R.T.	EstConc	Area	Relative to ISTD	R.T.
17.948	7.30 ug/L	230129	1,4-dichlorobenzene-d4	17.038

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Benzene, (1-methyl-1-propenyl)-,...	132	C10H12	000768-00-3	87
2	1-Phenyl-1-butene	132	C10H12	000824-90-8	87
3	Indan, 1-methyl-	132	C10H12	000767-58-8	87
4	Indan, 1-methyl-	132	C10H12	000767-58-8	87
5	Benzene, 1-ethenyl-3-ethyl-	132	C10H12	007525-62-4	86





Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187448.D
Acq On : 9 Sep 2014 6:35 pm
Operator : [redacted]
Sample : jb75730-2
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

					Internal Standard			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc
Butane, 2-methyl-	6.091	11.4	ug/L	250715	2	10.216	1098220	50.0
Butane, 2-methyl-	6.174	40.0	ug/L	877686	2	10.216	1098220	50.0
Pentane	6.561	11.4	ug/L	251094	2	10.216	1098220	50.0
Pentane, 3-methyl-	8.386	39.9	ug/L	877312	2	10.216	1098220	50.0
Cyclopentane, 1...	10.602	14.5	ug/L	317684	2	10.216	1098220	50.0
Cyclopentane, 1...	10.780	19.6	ug/L	417941	3	11.131	1064590	50.0
Cyclopentane, 1...	10.848	18.3	ug/L	388654	3	11.131	1064590	50.0
Cyclopentane, 1...	10.916	36.3	ug/L	773082	3	11.131	1064590	50.0
Cyclopentane, e...	11.883	8.3	ug/L	176503	3	11.131	1064590	50.0
Cyclohexane, 1,...	12.772	12.6	ug/L	269062	3	11.131	1064590	50.0
Cycloheptane, m...	12.992	7.2	ug/L	195673	4	14.461	1366940	50.0
Cyclohexane, 1,...	13.195	8.4	ug/L	230494	4	14.461	1366940	50.0
Cyclohexane, et...	13.823	8.2	ug/L	224027	4	14.461	1366940	50.0
Benzene, propyl-	15.977	9.2	ug/L	288812	5	17.038	1576620	50.0
Benzene, (1-met...	17.948	7.3	ug/L	230129	5	17.038	1576620	50.0

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3D102397.D
Acq On : 12 Sep 2014 12:24 pm
Operator : [redacted]
Sample : jb75730-2r
Misc : MS73391,V3D4402,5,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 12 12:54:13 2014
Quant Method : C:\msdchem\1\METHODS\M3D4368.M
Quant Title : Method SW846 8260B, ZB 624 60m x 0.25mm x 1.4 um
QLast Update : Thu Sep 11 09:16:23 2014
Response via : Initial Calibration

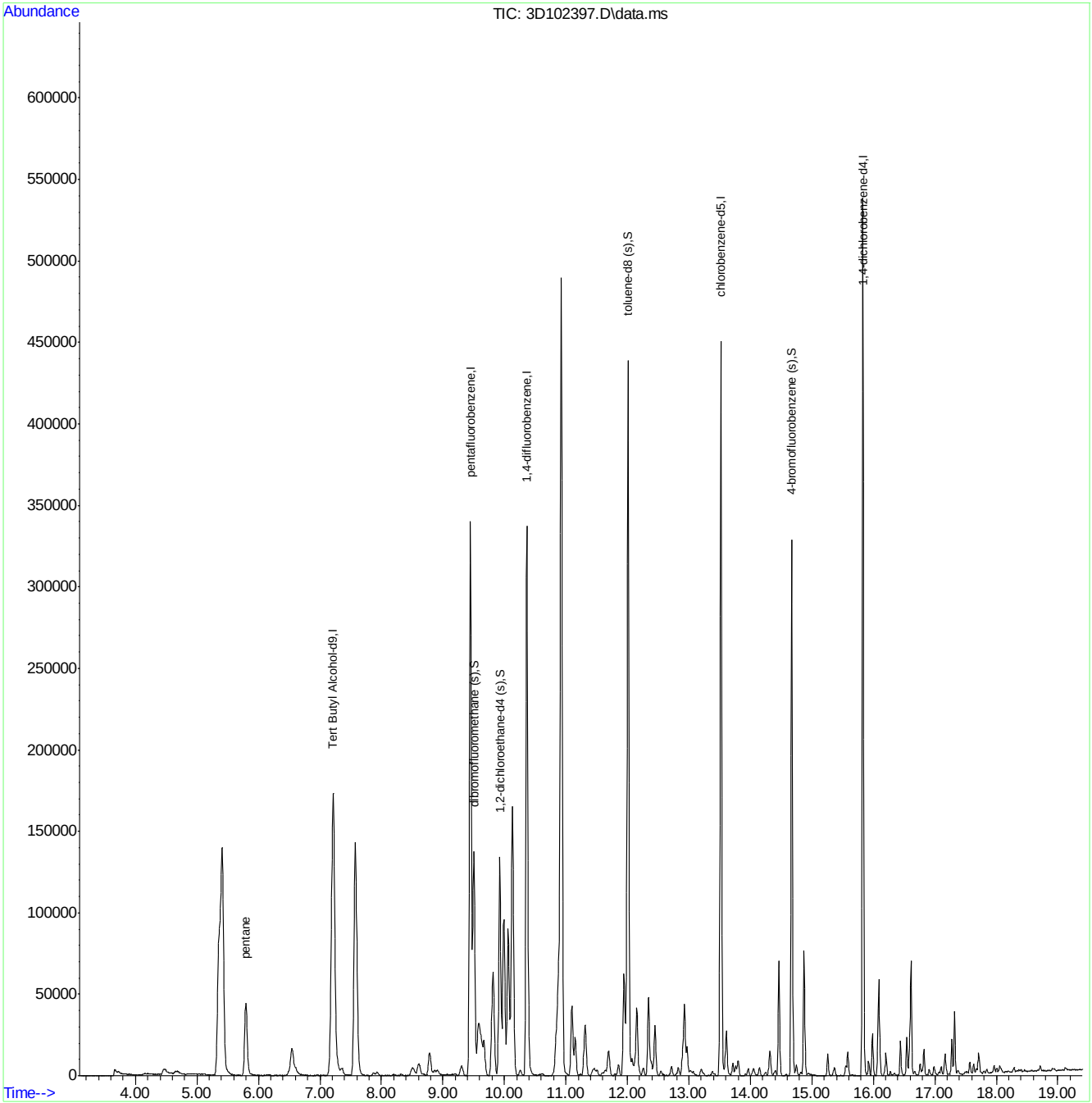
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	7.208	65	99559	500.00	ug/L	-0.01
4) pentafluorobenzene	9.446	168	296731	50.00	ug/L	0.00
58) 1,4-difluorobenzene	10.364	114	324800	50.00	ug/L	0.00
88) chlorobenzene-d5	13.520	117	257840	50.00	ug/L	0.00
104) 1,4-dichlorobenzene-d4	15.827	152	141107	50.00	ug/L	0.00
System Monitoring Compounds						
50) dibromofluoromethane (s)	9.504	113	93505	51.15	ug/L	0.00
Spiked Amount 50.000	Range 79 - 120		Recovery = 102.30%			
51) 1,2-dichloroethane-d4 (s)	9.924	65	96615	50.83	ug/L	0.00
Spiked Amount 50.000	Range 72 - 123		Recovery = 101.66%			
80) toluene-d8 (s)	12.010	98	310306	50.64	ug/L	0.00
Spiked Amount 50.000	Range 78 - 119		Recovery = 101.28%			
106) 4-bromofluorobenzene (s)	14.674	95	105387	49.95	ug/L	0.00
Spiked Amount 50.000	Range 74 - 119		Recovery = 99.90%			
Target Compounds						Qvalue
17) pentane	5.797	43	45842	13.29	ug/L	95

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

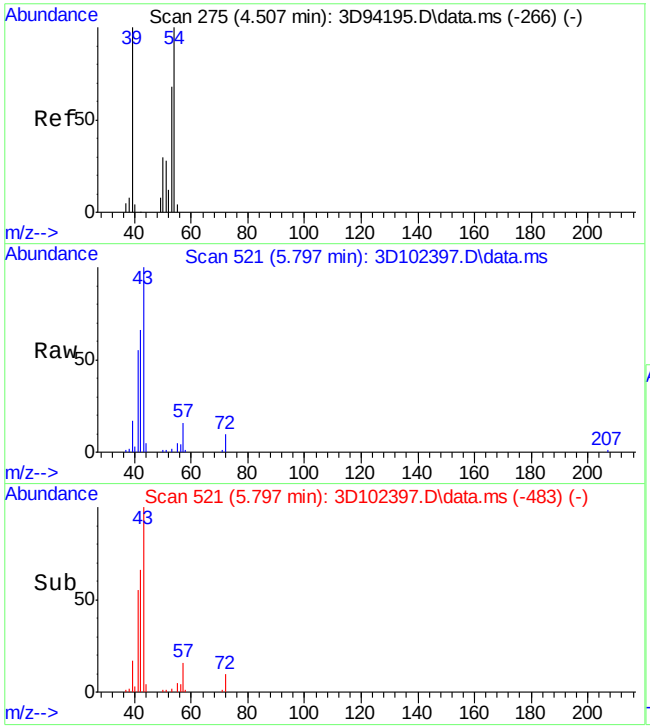
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3D102397.D
Acq On : 12 Sep 2014 12:24 pm
Operator : [redacted]
Sample : jb75730-2r
Misc : MS73391,V3D4402,5,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 12 12:54:13 2014
Quant Method : C:\msdchem\1\METHODS\M3D4368.M
Quant Title : Method SW846 8260B, ZB 624 60m x 0.25mm x 1.4 um
QLast Update : Thu Sep 11 09:16:23 2014
Response via : Initial Calibration



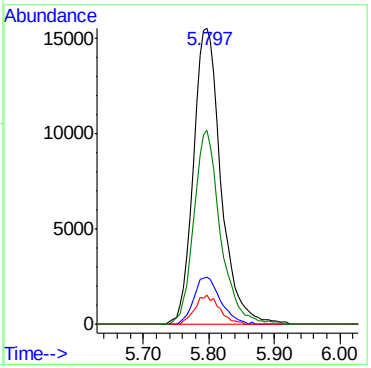
M3D4368.M Fri Sep 12 12:54:33 2014 3D



#17
pentane
Concen: 13.29 ug/L
RT: 5.797 min Scan# 521
Delta R.T. -0.000 min
Lab File: 3D102397.D
Acq: 12 Sep 2014 12:24 pm

Tgt Ion: 43 Resp: 45842

Ion	Ratio	Lower	Upper
43	100		
57	15.8	0.0	45.9
72	9.9	0.0	39.2
42	65.6	30.7	90.7



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187449.D
Acq On : 9 Sep 2014 7:04 pm
Operator : [redacted]t
Sample : jb75730-3
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Sep 10 11:28:07 2014
Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um
QLast Update : Thu Aug 28 10:39:31 2014
Response via : Initial Calibration

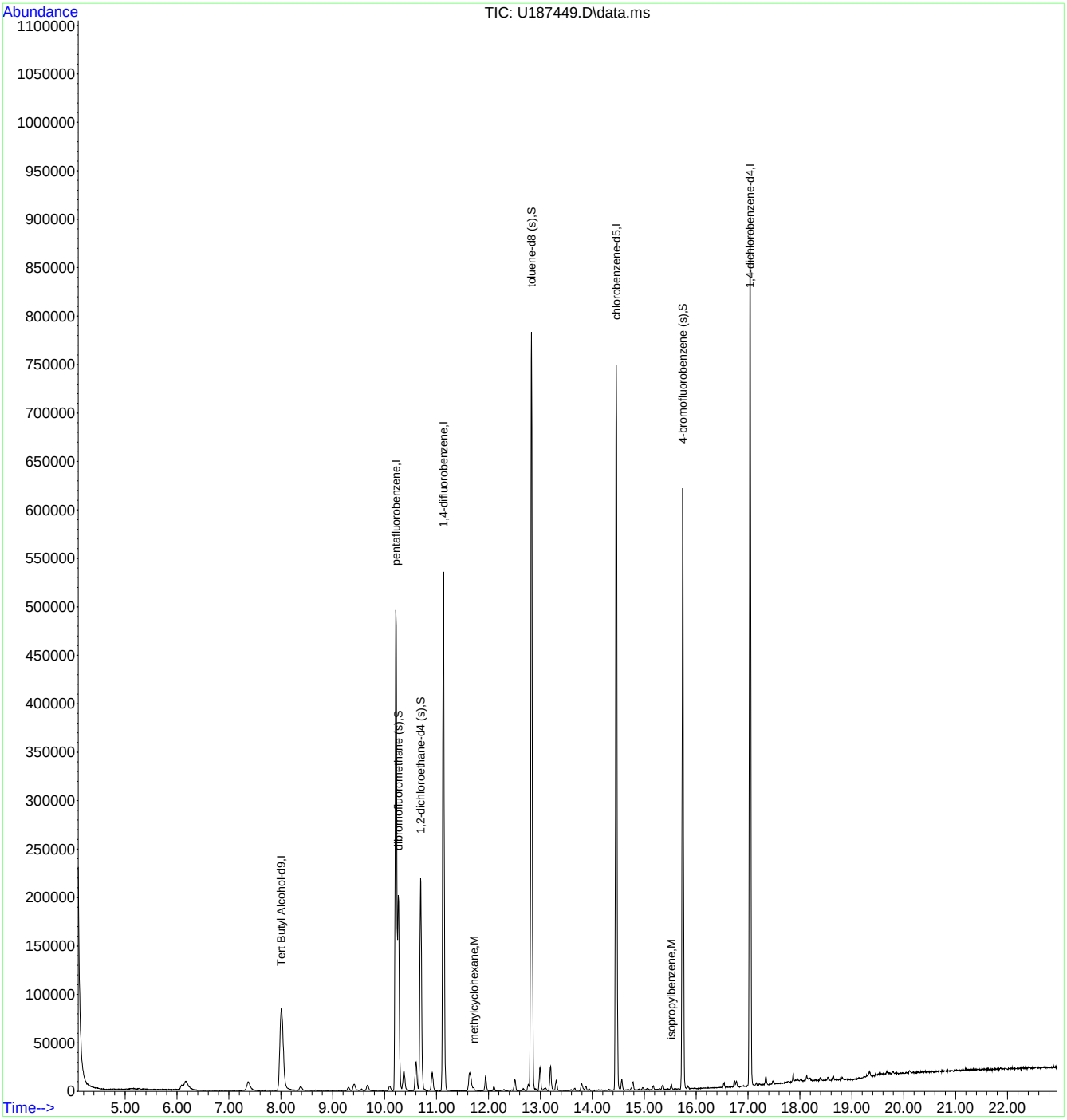
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	8.005	65	174114	500.00	ug/L	0.00
5) pentafluorobenzene	10.216	168	408014	50.00	ug/L	0.00
64) 1,4-difluorobenzene	11.131	114	467302	50.00	ug/L	0.00
96) chlorobenzene-d5	14.461	117	440719	50.00	ug/L	0.00
112) 1,4-dichlorobenzene-d4	17.039	152	262415	50.00	ug/L	0.00
System Monitoring Compounds						
56) dibromofluoromethane (s)	10.263	113	134673	50.01	ug/L	0.00
Spiked Amount 50.000	Range 79 - 120		Recovery = 100.02%			
57) 1,2-dichloroethane-d4 (s)	10.692	65	166770	48.04	ug/L	0.00
Spiked Amount 50.000	Range 72 - 123		Recovery = 96.08%			
88) toluene-d8 (s)	12.830	98	562268	51.99	ug/L	0.00
Spiked Amount 50.000	Range 78 - 119		Recovery = 103.98%			
114) 4-bromofluorobenzene (s)	15.742	95	222380	50.24	ug/L	0.00
Spiked Amount 50.000	Range 74 - 119		Recovery = 100.48%			
Target Compounds						Qvalue
79) methylcyclohexane	11.722	83	1372	0.27	ug/L	96
113) isopropylbenzene	15.522	105	4046	0.27	ug/L	99

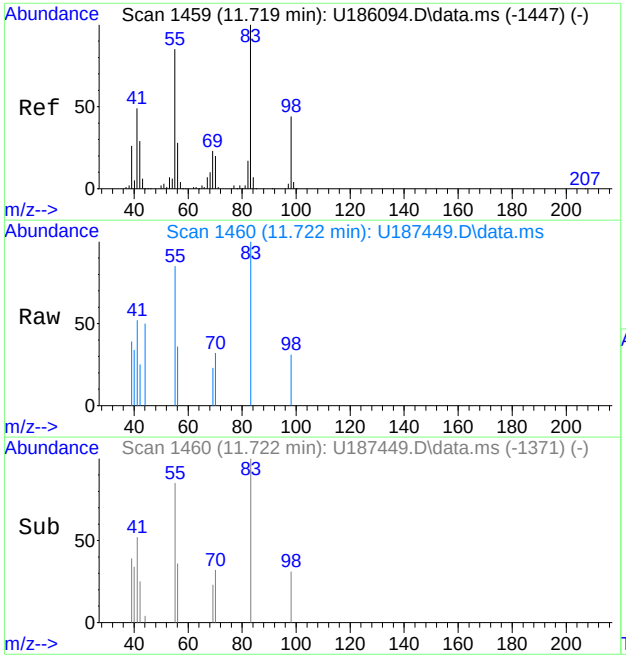
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187449.D
Acq On : 9 Sep 2014 7:04 pm
Operator : [redacted]
Sample : jb75730-3
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Sep 10 11:28:07 2014
Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um
QLast Update : Thu Aug 28 10:39:31 2014
Response via : Initial Calibration

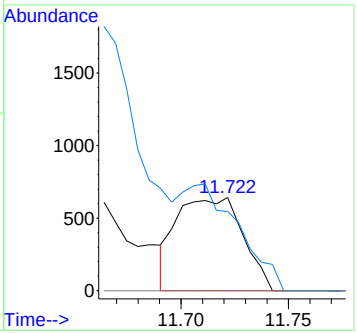


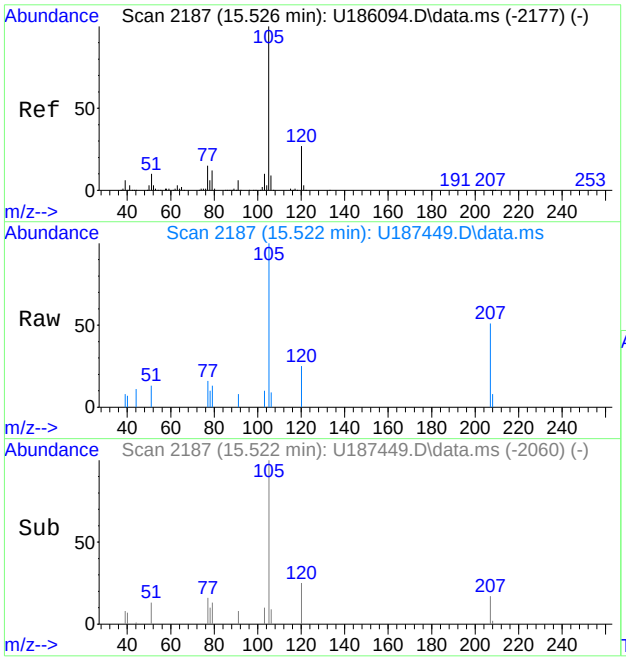


#79
methylcyclohexane
Concen: 0.27 ug/L
RT: 11.722 min Scan# 1460
Delta R.T. 0.007 min
Lab File: U187449.D
Acq: 9 Sep 2014 7:04 pm

Tgt Ion: 83 Resp: 1372

Ion	Ratio	Lower	Upper
83	100		
55	84.8	58.9	118.9
85	0.0	0.0	50.3

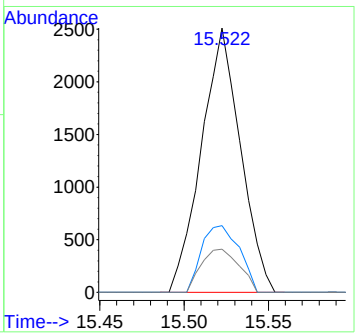




#113
isopropylbenzene
Concen: 0.27 ug/L
RT: 15.522 min Scan# 2187
Delta R.T. 0.002 min
Lab File: U187449.D
Acq: 9 Sep 2014 7:04 pm

Tgt Ion:105 Resp: 4046

Ion	Ratio	Lower	Upper
105	100		
120	25.3	0.0	55.6
77	16.4	0.0	45.4



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187449.D
Acq On : 9 Sep 2014 7:04 pm
Operator : [redacted]t
Sample : jb75730-3
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 13 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 3 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\MU8630.M
Title : SW-846 8260B, DB624 60m x 250um x 1.40um

Signal : TIC: U187449.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	6.159	391	396	436	rVB6	9347	53731	3.41%	0.600%
2	8.010	733	750	791	rBV3	84892	408154	25.91%	4.555%
3	10.216	1160	1172	1178	rBV	496150	1093574	69.43%	12.205%
4	10.368	1194	1201	1218	rVB	20835	57108	3.63%	0.637%
5	10.608	1230	1247	1254	rBV2	29879	76593	4.86%	0.855%
6	10.692	1254	1263	1288	rVB	219572	494353	31.39%	5.517%
7	11.131	1334	1347	1362	rBV	535987	1080549	68.60%	12.059%
8	11.638	1428	1444	1457	rBV5	18794	68130	4.33%	0.760%
9	12.830	1663	1672	1686	rVB	781460	1482628	94.13%	16.547%
10	12.992	1696	1703	1713	rBV2	23806	50969	3.24%	0.569%
11	13.196	1732	1742	1755	rBV2	25075	52192	3.31%	0.582%
12	14.461	1969	1984	1998	rBV	748906	1369555	86.95%	15.285%
13	15.742	2219	2229	2243	rBV	620394	1097715	69.69%	12.251%
14	17.039	2468	2477	2495	rBV	915592	1575067	100.00%	17.578%

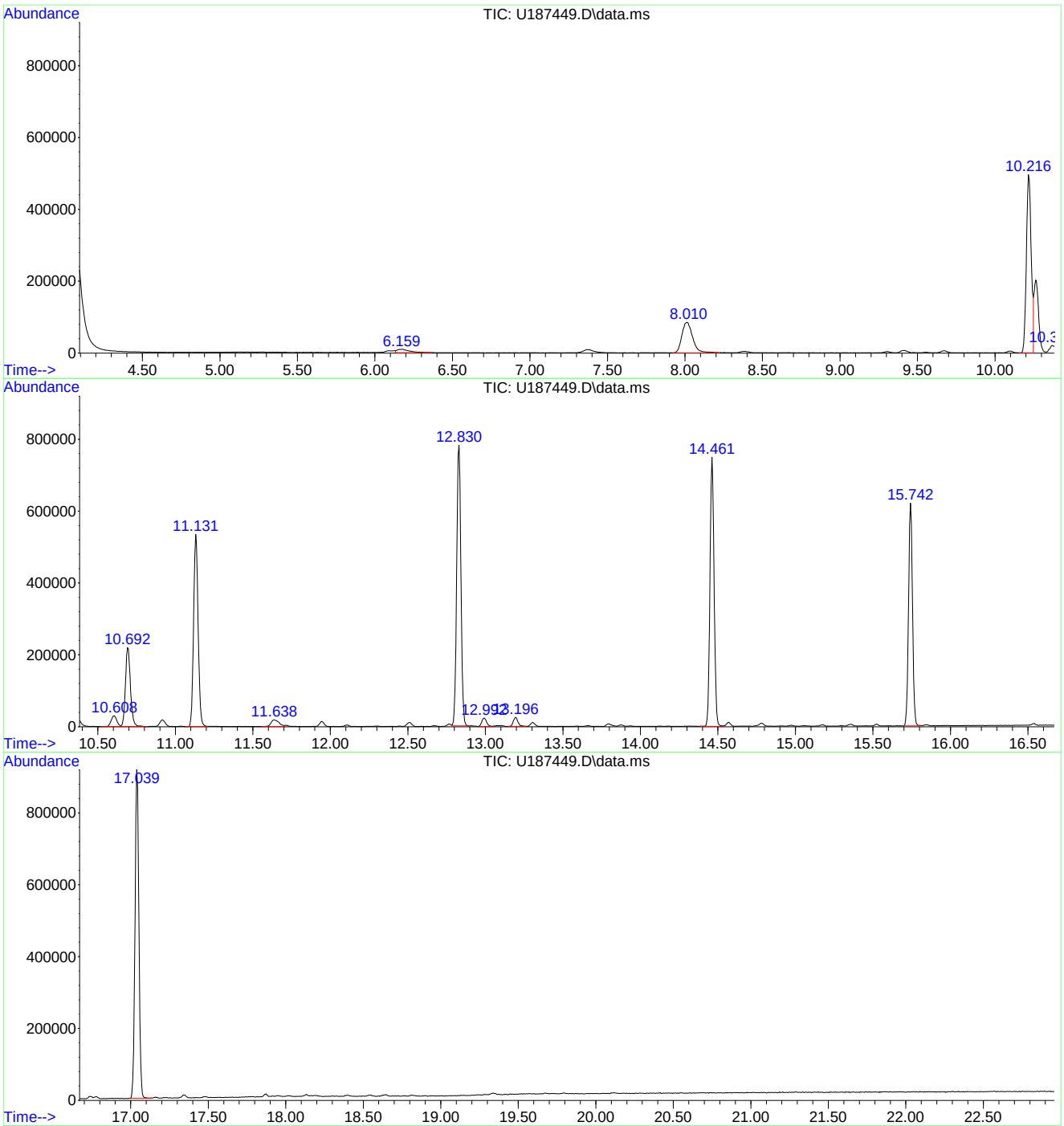
Sum of corrected areas: 8960318

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187449.D
Acq On : 9 Sep 2014 7:04 pm
Operator : [redacted]
Sample : jb75730-3
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P



Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187449.D
Acq On : 9 Sep 2014 7:04 pm
Operator [redacted]
[redacted] jb75730-3
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc

No Library Search Compounds Detected
****

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3D102398.D
Acq On : 12 Sep 2014 12:51 pm
Operator : [redacted]
Sample : jb75730-3r
Misc : MS73391,V3D4402,5,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Sep 12 15:02:05 2014
Quant Method : C:\msdchem\1\METHODS\M3D4368.M
Quant Title : Method SW846 8260B, ZB 624 60m x 0.25mm x 1.4 um
QLast Update : Thu Sep 11 09:16:23 2014
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	7.202	65	105528	500.00	ug/L	-0.02
4) pentafluorobenzene	9.441	168	306357	50.00	ug/L	-0.01
58) 1,4-difluorobenzene	10.359	114	338582	50.00	ug/L	0.00
88) chlorobenzene-d5	13.515	117	268106	50.00	ug/L	0.00
104) 1,4-dichlorobenzene-d4	15.822	152	146223	50.00	ug/L	-0.01
System Monitoring Compounds						
50) dibromofluoromethane (s)	9.494	113	96565	51.16	ug/L	-0.01
Spiked Amount 50.000	Range 79 - 120		Recovery = 102.32%			
51) 1,2-dichloroethane-d4 (s)	9.913	65	100401	51.16	ug/L	-0.01
Spiked Amount 50.000	Range 72 - 123		Recovery = 102.32%			
80) toluene-d8 (s)	12.005	98	321896	50.39	ug/L	0.00
Spiked Amount 50.000	Range 78 - 119		Recovery = 100.78%			
106) 4-bromofluorobenzene (s)	14.669	95	108832	49.78	ug/L	0.00
Spiked Amount 50.000	Range 74 - 119		Recovery = 99.56%			

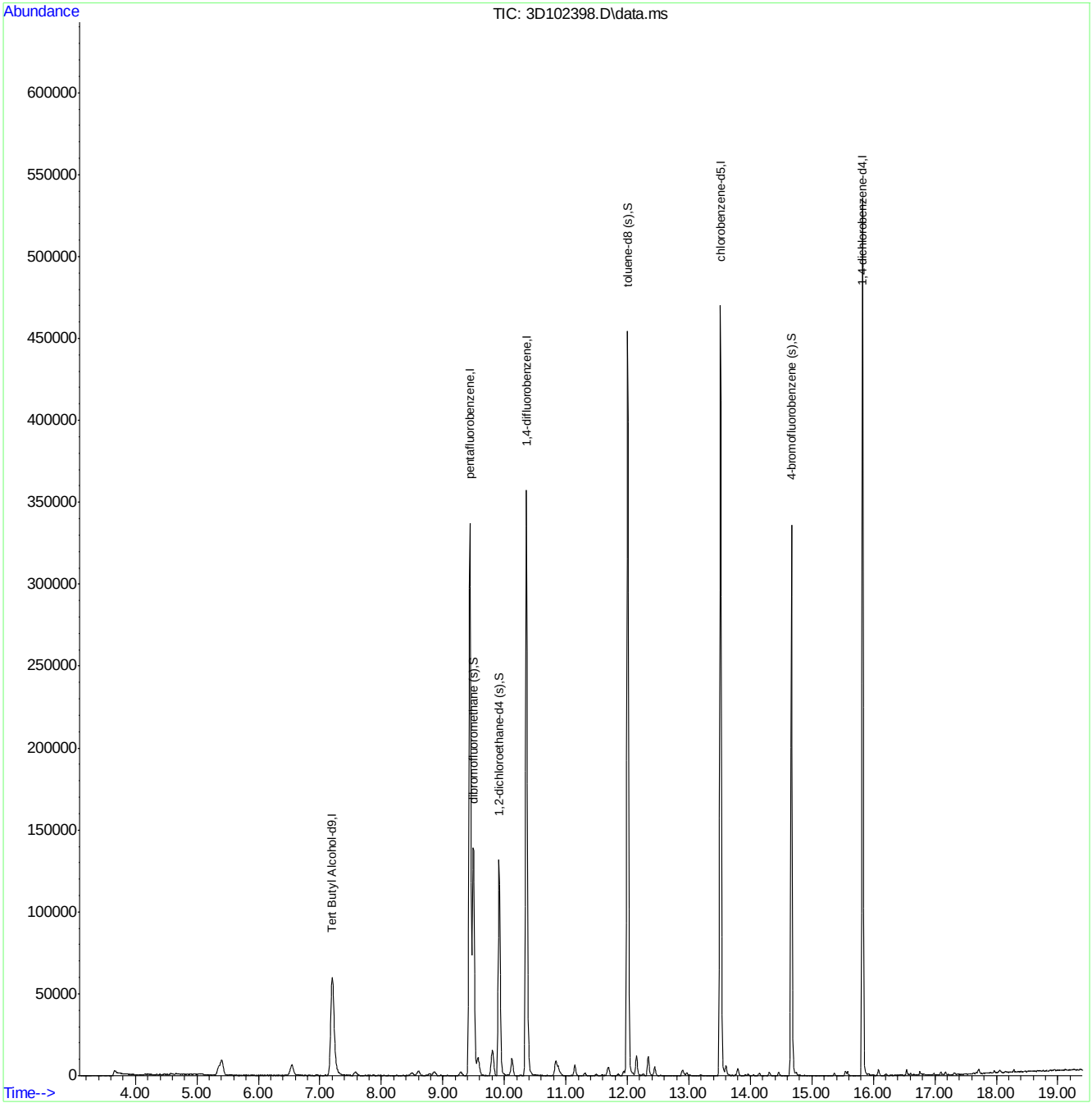
Target Compounds	Qvalue

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3D102398.D
Acq On : 12 Sep 2014 12:51 pm
Operator [redacted]
[redacted] jb75730-3r
Misc : MS73391,V3D4402,5,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Sep 12 15:02:05 2014
Quant Method : C:\msdchem\1\METHODS\M3D4368.M
Quant Title : Method SW846 8260B, ZB 624 60m x 0.25mm x 1.4 um
QLast Update : Thu Sep 11 09:16:23 2014
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187445.D
Acq On : 9 Sep 2014 5:08 pm
Operator : [redacted]
Sample : jb75730-4
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Sep 10 10:54:07 2014
Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um
QLast Update : Thu Aug 28 10:39:31 2014
Response via : Initial Calibration

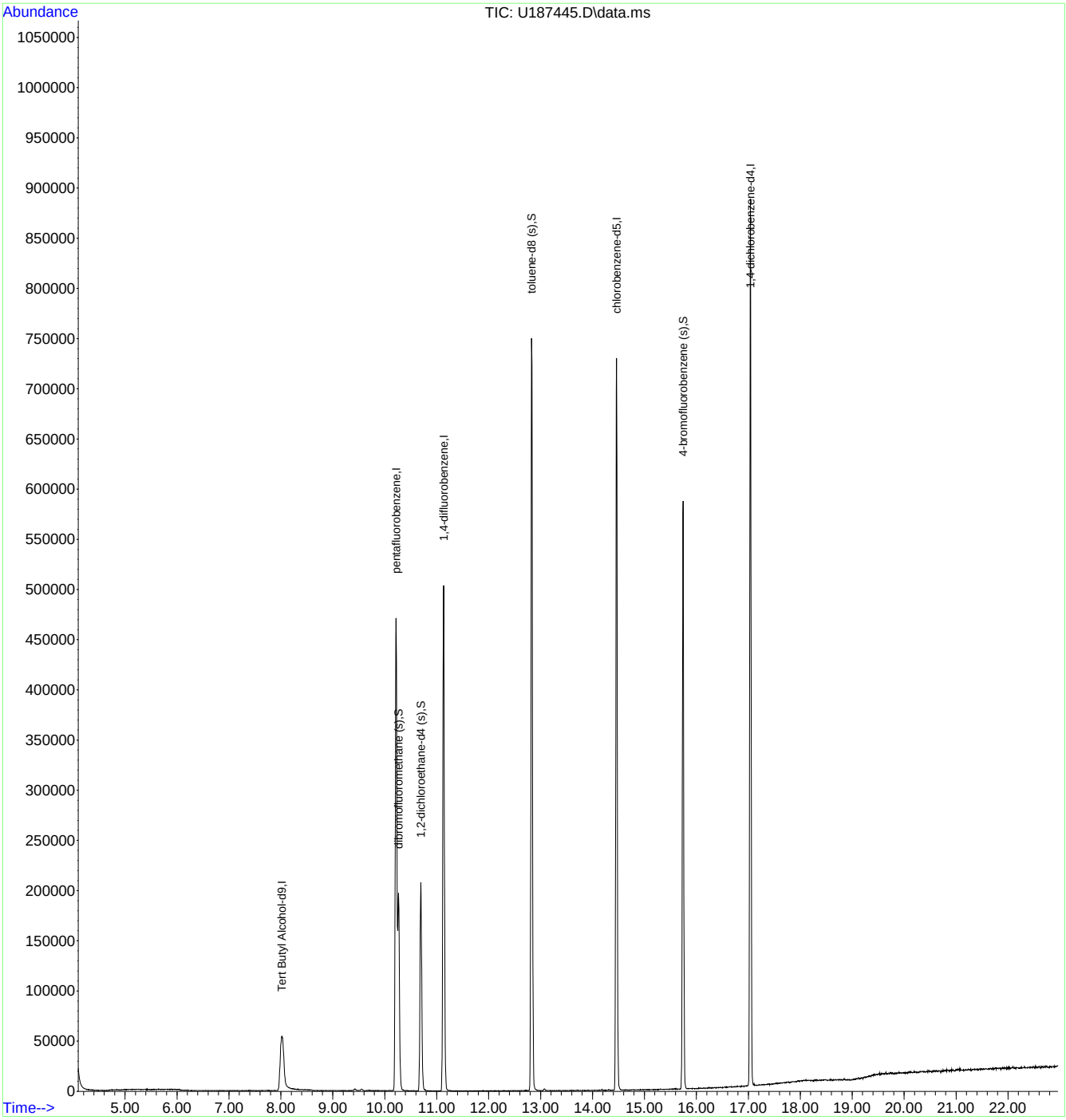
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	8.017	65	169733	500.00	ug/L	0.01
5) pentafluorobenzene	10.218	168	397238	50.00	ug/L	0.00
64) 1,4-difluorobenzene	11.133	114	459335	50.00	ug/L	0.00
96) chlorobenzene-d5	14.463	117	430505	50.00	ug/L	0.00
112) 1,4-dichlorobenzene-d4	17.041	152	255718	50.00	ug/L	0.00
System Monitoring Compounds						
56) dibromofluoromethane (s)	10.265	113	133547	50.94	ug/L	0.00
Spiked Amount 50.000	Range 79 - 120		Recovery = 101.88%			
57) 1,2-dichloroethane-d4 (s)	10.694	65	164140	48.57	ug/L	0.00
Spiked Amount 50.000	Range 72 - 123		Recovery = 97.14%			
88) toluene-d8 (s)	12.827	98	548361	51.58	ug/L	0.00
Spiked Amount 50.000	Range 78 - 119		Recovery = 103.16%			
114) 4-bromofluorobenzene (s)	15.744	95	215685	50.00	ug/L	0.00
Spiked Amount 50.000	Range 74 - 119		Recovery = 100.00%			
Target Compounds						Qvalue

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187445.D
Acq On : 9 Sep 2014 5:08 pm
Operator : [redacted]
Sample : jb75730-4
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Sep 10 10:54:07 2014
Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um
QLast Update : Thu Aug 28 10:39:31 2014
Response via : Initial Calibration



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187445.D
Acq On : 9 Sep 2014 5:08 pm
Operator : [redacted]
Sample : jb75730-4
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 9 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 3 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\MU8630.M
Title : SW-846 8260B, DB624 60m x 250um x 1.40um

Signal : TIC: U187445.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	8.017	734	751	786	rBV3	53887	284822	18.47%	3.437%
2	10.218	1158	1172	1178	rBV	470843	1084848	70.33%	13.092%
3	10.694	1253	1263	1278	rBV	207769	469365	30.43%	5.664%
4	11.133	1336	1347	1367	rBV	503717	1059908	68.72%	12.791%
5	12.827	1661	1671	1697	rBV	749958	1447687	93.86%	17.470%
6	14.463	1974	1984	2005	rBV	729550	1335448	86.58%	16.116%
7	15.744	2217	2229	2244	rBV	586246	1062024	68.85%	12.816%
8	17.041	2467	2477	2499	rBV	883828	1542426	100.00%	18.614%

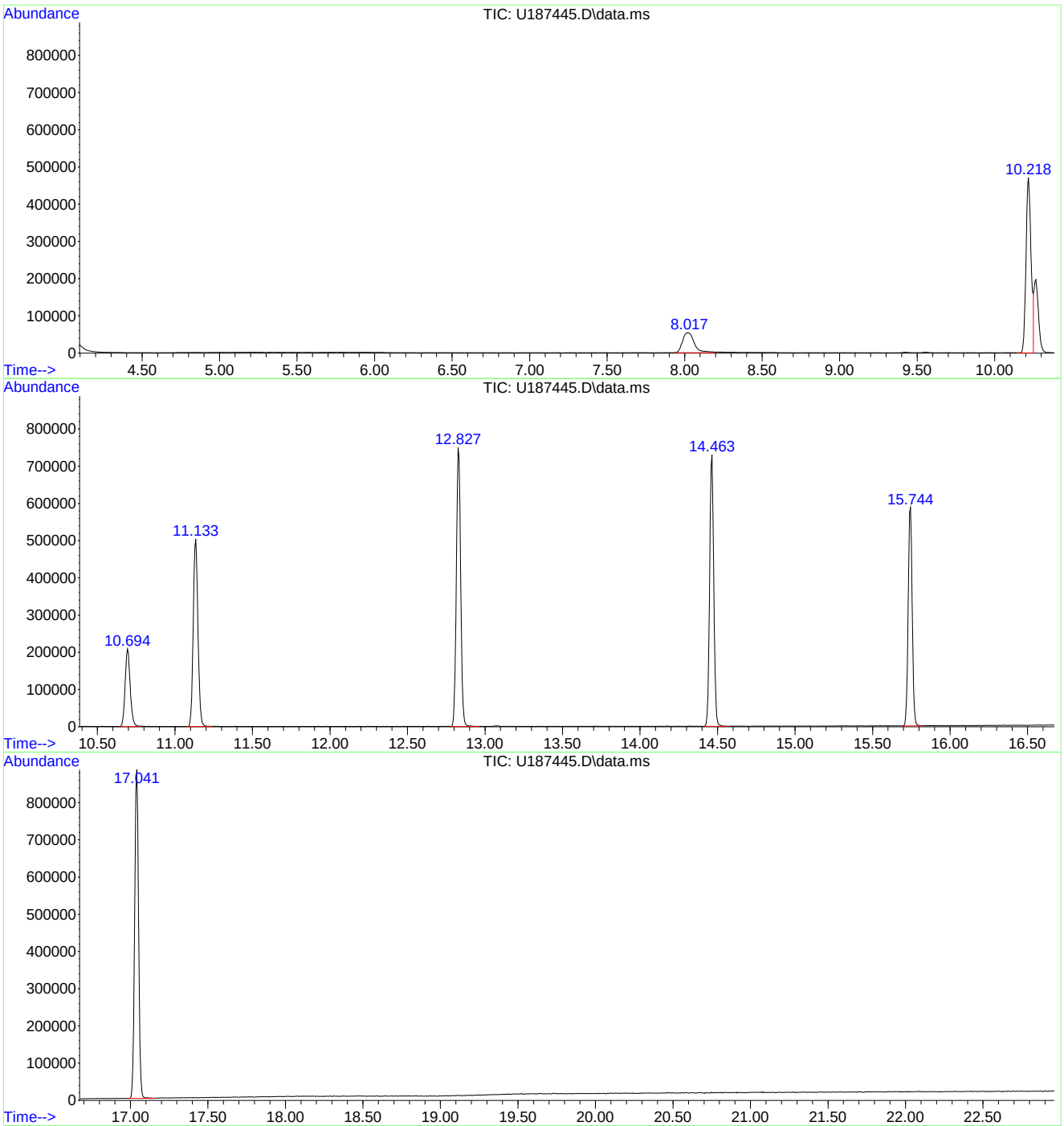
Sum of corrected areas: 8286528

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187445.D
Acq On : 9 Sep 2014 5:08 pm
Operator : [redacted]
Sample : jb75730-4
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P



Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187445.D
Acq On : 9 Sep 2014 5:08 pm
Operator : [redacted]t
Sample : jb75730-4
Misc : ms73391,vu8647,5.0,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc

No Library Search Compounds Detected
****

7.1.11

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3D102403.D
Acq On : 12 Sep 2014 3:06 pm
Operator : [redacted]
Sample : jb75730-4r
Misc : MS73391,V3D4402,5,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Sep 12 16:11:01 2014
Quant Method : C:\msdchem\1\METHODS\M3D4368.M
Quant Title : Method SW846 8260B, ZB 624 60m x 0.25mm x 1.4 um
QLast Update : Thu Sep 11 09:16:23 2014
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	7.208	65	104662	500.00	ug/L	-0.01
4) pentafluorobenzene	9.441	168	301833	50.00	ug/L	-0.01
58) 1,4-difluorobenzene	10.359	114	334550	50.00	ug/L	0.00
88) chlorobenzene-d5	13.515	117	266390	50.00	ug/L	0.00
104) 1,4-dichlorobenzene-d4	15.822	152	145526	50.00	ug/L	-0.01
System Monitoring Compounds						
50) dibromofluoromethane (s)	9.499	113	95091	51.14	ug/L	0.00
Spiked Amount 50.000	Range 79 - 120		Recovery = 102.28%			
51) 1,2-dichloroethane-d4 (s)	9.913	65	98970	51.19	ug/L	-0.01
Spiked Amount 50.000	Range 72 - 123		Recovery = 102.38%			
80) toluene-d8 (s)	12.000	98	318971	50.54	ug/L	-0.01
Spiked Amount 50.000	Range 78 - 119		Recovery = 101.08%			
106) 4-bromofluorobenzene (s)	14.668	95	108179	49.71	ug/L	0.00
Spiked Amount 50.000	Range 74 - 119		Recovery = 99.42%			

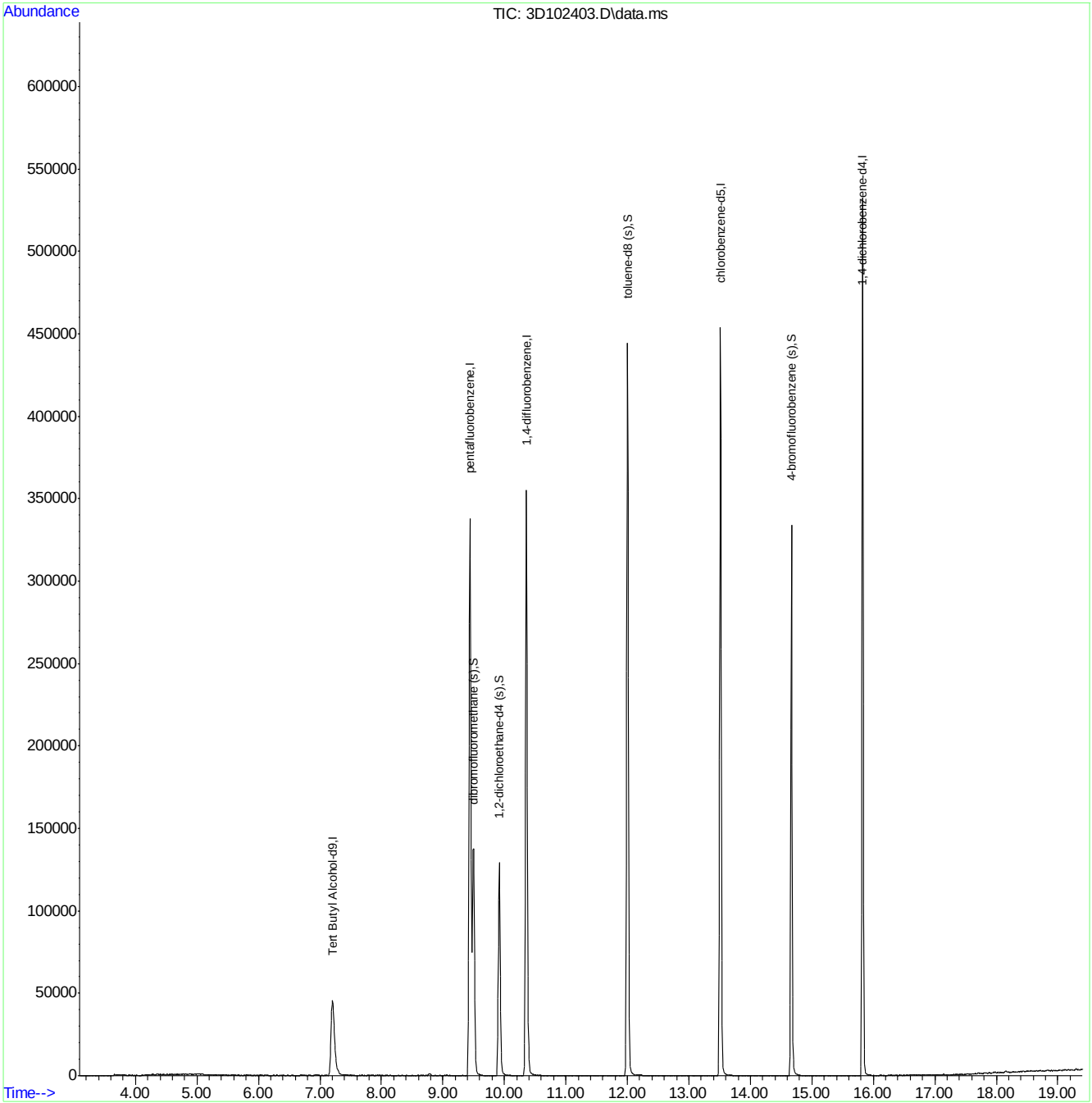
Target Compounds	Qvalue

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3D102403.D
Acq On : 12 Sep 2014 3:06 pm
Operator : [redacted]
Sample : jb75730-4r
Misc : MS73391,V3D4402,5,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Sep 12 16:11:01 2014
Quant Method : C:\msdchem\1\METHODS\M3D4368.M
Quant Title : Method SW846 8260B, ZB 624 60m x 0.25mm x 1.4 um
QLast Update : Thu Sep 11 09:16:23 2014
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3D102392.D
Acq On : 12 Sep 2014 10:09 am
Operator : [redacted]
Sample : mb
Misc : MS73391,V3D4402,5,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 12 12:44:09 2014
Quant Method : C:\msdchem\1\METHODS\M3D4368.M
Quant Title : Method SW846 8260B, ZB 624 60m x 0.25mm x 1.4 um
QLast Update : Thu Sep 11 09:16:23 2014
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	7.208	65	108824	500.00	ug/L	-0.01
4) pentafluorobenzene	9.447	168	313263	50.00	ug/L	0.00
58) 1,4-difluorobenzene	10.364	114	342859	50.00	ug/L	0.00
88) chlorobenzene-d5	13.520	117	274959	50.00	ug/L	0.00
104) 1,4-dichlorobenzene-d4	15.827	152	149509	50.00	ug/L	0.00
System Monitoring Compounds						
50) dibromofluoromethane (s)	9.504	113	96863	50.19	ug/L	0.00
Spiked Amount 50.000	Range 79 - 120		Recovery = 100.38%			
51) 1,2-dichloroethane-d4 (s)	9.924	65	100693	50.18	ug/L	0.00
Spiked Amount 50.000	Range 72 - 123		Recovery = 100.36%			
80) toluene-d8 (s)	12.010	98	327923	50.69	ug/L	0.00
Spiked Amount 50.000	Range 78 - 119		Recovery = 101.38%			
106) 4-bromofluorobenzene (s)	14.674	95	111757	49.99	ug/L	0.00
Spiked Amount 50.000	Range 74 - 119		Recovery = 99.98%			

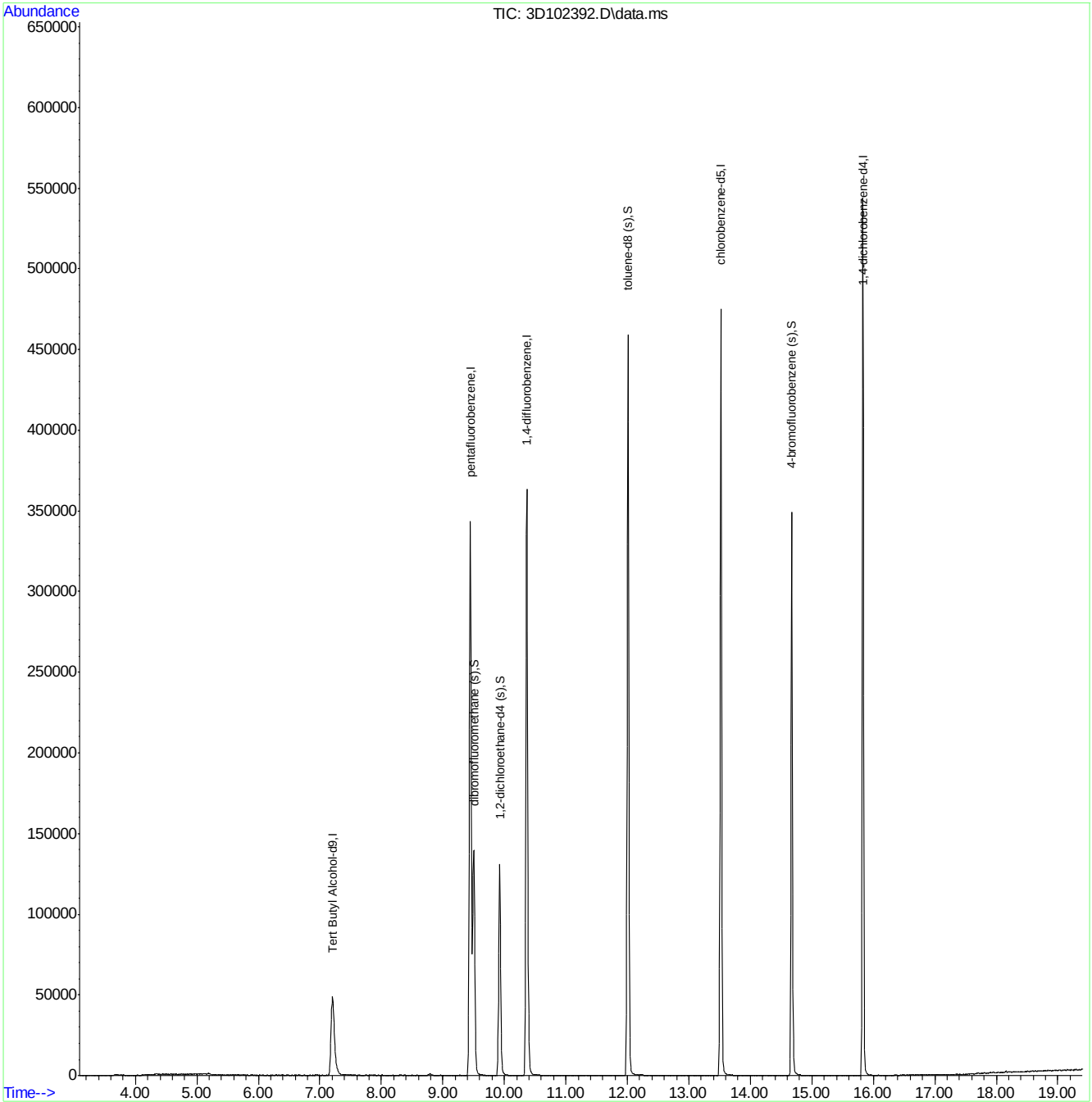
Target Compounds	Qvalue

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : 3D102392.D
Acq On : 12 Sep 2014 10:09 am
Operator : [redacted]
Sample : mb
Misc : MS73391,V3D4402,5,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 12 12:44:09 2014
Quant Method : C:\msdchem\1\METHODS\M3D4368.M
Quant Title : Method SW846 8260B, ZB 624 60m x 0.25mm x 1.4 um
QLast Update : Thu Sep 11 09:16:23 2014
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187441.D
Acq On : 9 Sep 2014 3:09 pm
Operator : [redacted]
Sample : mb
Misc : ms69794,vu8650,5.0,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 10 10:43:21 2014
Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um
QLast Update : Thu Aug 28 10:39:31 2014
Response via : Initial Calibration

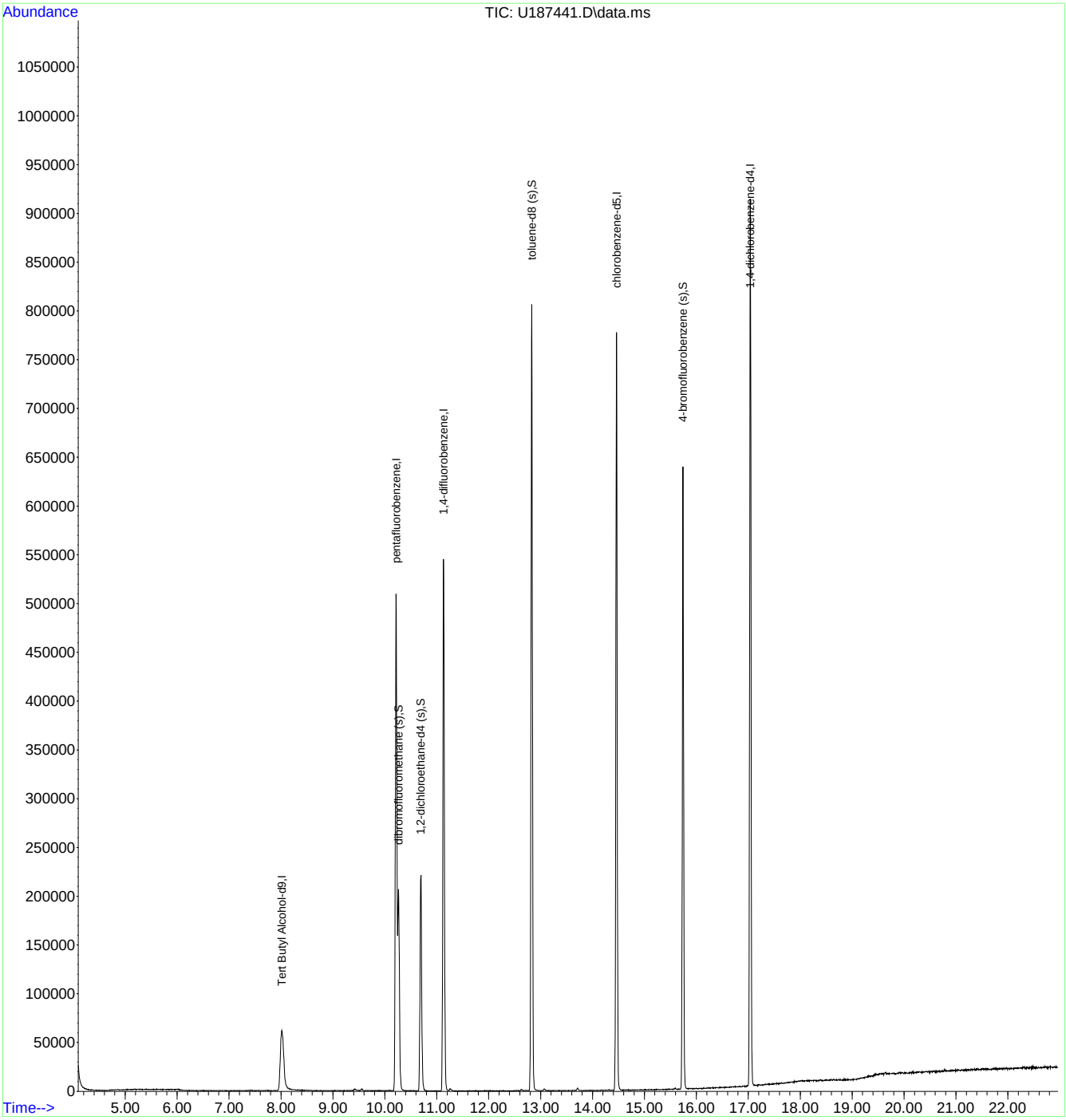
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	8.014	65	171855	500.00	ug/L	0.01
5) pentafluorobenzene	10.220	168	413761	50.00	ug/L	0.00
64) 1,4-difluorobenzene	11.130	114	479376	50.00	ug/L	0.00
96) chlorobenzene-d5	14.460	117	458308	50.00	ug/L	0.00
112) 1,4-dichlorobenzene-d4	17.038	152	264468	50.00	ug/L	0.00
System Monitoring Compounds						
56) dibromofluoromethane (s)	10.262	113	136885	50.13	ug/L	0.00
Spiked Amount 50.000	Range 79 - 120		Recovery = 100.26%			
57) 1,2-dichloroethane-d4 (s)	10.691	65	169127	48.04	ug/L	0.00
Spiked Amount 50.000	Range 72 - 123		Recovery = 96.08%			
88) toluene-d8 (s)	12.829	98	580052	52.28	ug/L	0.00
Spiked Amount 50.000	Range 78 - 119		Recovery = 104.56%			
114) 4-bromofluorobenzene (s)	15.741	95	228897	51.31	ug/L	0.00
Spiked Amount 50.000	Range 74 - 119		Recovery = 102.62%			
Target Compounds						Qvalue

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187441.D
Acq On : 9 Sep 2014 3:09 pm
Operator [redacted]
[redacted] mb
Misc : ms69794,vu8650,5.0,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 10 10:43:21 2014
Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um
QLast Update : Thu Aug 28 10:39:31 2014
Response via : Initial Calibration



LSC Area Percent Report

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187441.D
Acq On : 9 Sep 2014 3:09 pm
Operator : [redacted]
Sample : mb
Misc : ms73397,vu8647,5.0,,,,1
ALS Vial : 5 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 3 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0.05 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\MSDCHEM\1\METHODS\MU8630.M
Title : SW-846 8260B, DB624 60m x 250um x 1.40um

Signal : TIC: U187441.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	8.014	735	751	801	rBV3	61700	303514	19.09%	3.489%
2	10.215	1161	1172	1178	rBV	509127	1111993	69.93%	12.784%
3	10.696	1252	1264	1282	rBV	221153	484580	30.47%	5.571%
4	11.130	1337	1347	1367	rBV	545369	1110744	69.85%	12.770%
5	12.829	1662	1672	1697	rVB	806083	1537037	96.65%	17.670%
6	14.460	1974	1984	2002	rBV	777218	1425737	89.66%	16.391%
7	15.741	2219	2229	2247	rBV	638368	1134559	71.35%	13.043%
8	17.038	2468	2477	2491	rBV	909277	1590236	100.00%	18.282%

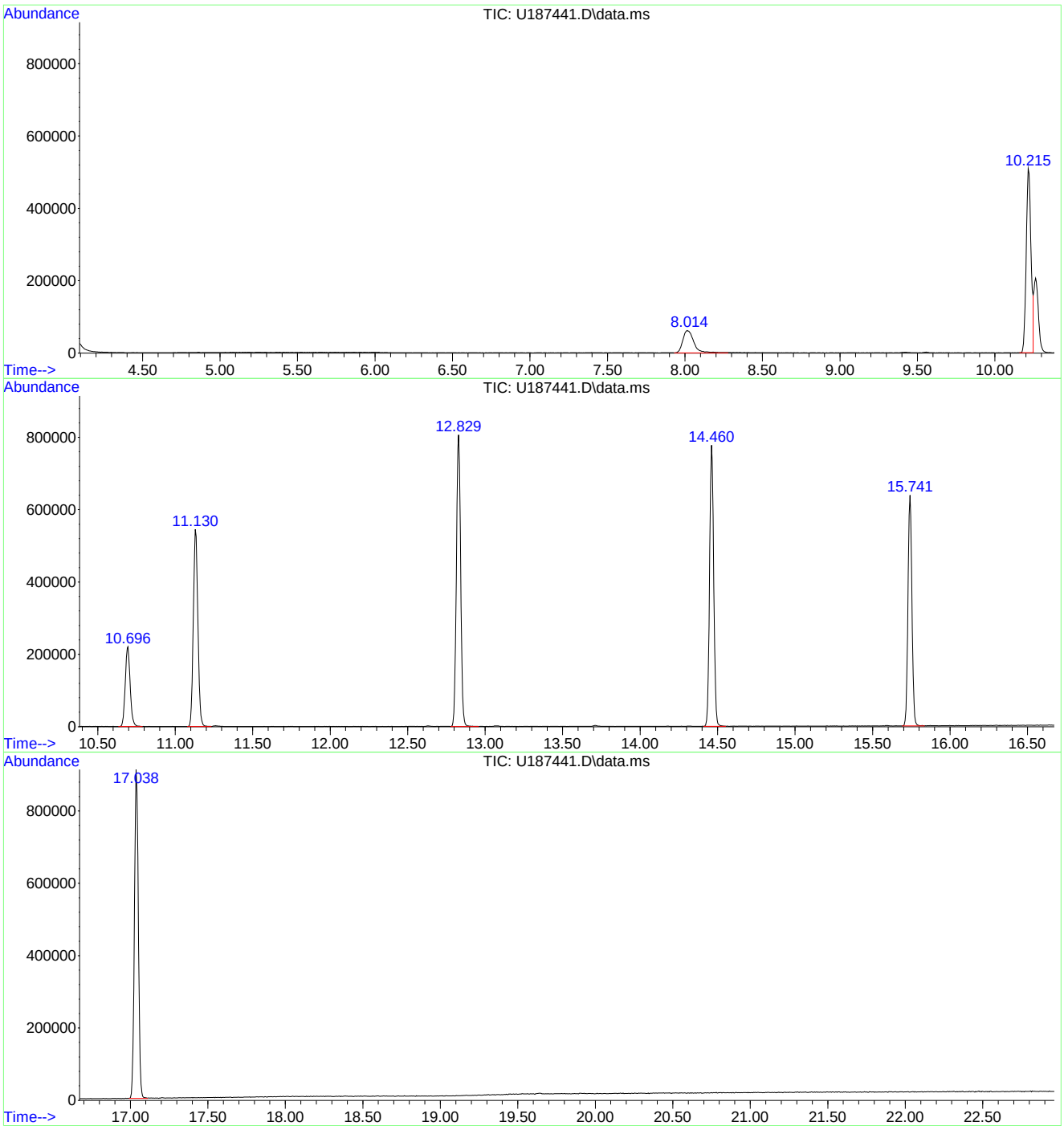
Sum of corrected areas: 8698400

LSC Report - Integrated Chromatogram

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187441.D
Acq On : 9 Sep 2014 3:09 pm
Operator [redacted]
[redacted] mb
Misc : ms73397,vu8647,5.0,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P



Tentatively Identified Compound (LSC) summary

Data Path : C:\msdchem\1\DATA\U core\vu8646-8647\
Data File : U187441.D
Acq On : 9 Sep 2014 3:09 pm
Operator : [redacted]t
Sample : mb
Misc : ms73397,vu8647,5.0,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MU8630.M
Quant Title : SW-846 8260B, DB624 60m x 250um x 1.40um

TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: RTEINT.P

TIC Top Hit name	RT	EstConc	Units	Response	Internal Standard #	Internal Standard RT	Internal Standard Resp	Internal Standard Conc

No Library Search Compounds Detected
****

New Jersey ACCUTEST LABORATORIES

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries
- GC Surrogate Retention Time Summaries
- Initial and Continuing Calibration Summaries

Method Blank Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GUV4701-MB2	UV18617.D	1	09/10/14	WO	n/a	n/a	GUV4701

The QC reported here applies to the following samples: **Method:** SW846 8015C

JB75730-2, JB75730-3

CAS No.	Compound	Result	RL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	mg/l	

CAS No.	Surrogate Recoveries		Limits
98-08-8	aaa-Trifluorotoluene	78%	62-120%

Method Blank Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GUV4702-MB1	UV18643.D	1	09/11/14	WO	n/a	n/a	GUV4702

The QC reported here applies to the following samples: **Method:** SW846 8015C

JB75730-1

CAS No.	Compound	Result	RL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	mg/l	

CAS No.	Surrogate Recoveries		Limits
98-08-8	aaa-Trifluorotoluene	78%	62-120%

Method Blank Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GUV4701-MB1	UV18610.D	1	09/10/14	WO	n/a	n/a	GUV4701

The QC reported here applies to the following samples: **Method:** SW846 8015C

GUV4701-BS

CAS No.	Compound	Result	RL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	mg/l	

CAS No.	Surrogate Recoveries		Limits
98-08-8	aaa-Trifluorotoluene	77%	62-120%

Method Blank Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GAA510-MB	AA42422.D	1	09/09/14	TCH	n/a	n/a	GAA510

The QC reported here applies to the following samples: **Method:** RSK-175

JB75730-1, JB75730-2, JB75730-3

CAS No.	Compound	Result	RL	Units	Q
74-82-8	Methane	ND	0.11	ug/l	
74-84-0	Ethane	ND	0.23	ug/l	
74-85-1	Ethene	ND	0.31	ug/l	

Blank Spike Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GUV4701-BS	UV18611.D	1	09/10/14	WO	n/a	n/a	GUV4701

The QC reported here applies to the following samples: **Method:** SW846 8015C

JB75730-2, JB75730-3

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-GRO (C6-C10)	8	8.39	105	74-121

CAS No.	Surrogate Recoveries	BSP	Limits
98-08-8	aaa-Trifluorotoluene	105%	62-120%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GUV4702-BS	UV18644.D	1	09/11/14	WO	n/a	n/a	GUV4702

The QC reported here applies to the following samples: **Method:** SW846 8015C

JB75730-1

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-GRO (C6-C10)	8	9.33	117	74-121

CAS No.	Surrogate Recoveries	BSP	Limits
98-08-8	aaa-Trifluorotoluene	107%	62-120%

* = Outside of Control Limits.

Laboratory Control Sample Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GAA510-LCS	AA42420.D	1	09/09/14	TCH	n/a	n/a	GAA510

The QC reported here applies to the following samples: **Method:** RSK-175

JB75730-1, JB75730-2, JB75730-3

CAS No.	Compound	Spike ug/l	LCS ug/l	LCS %	Limits
74-82-8	Methane	11	9.2	84	59-134
74-84-0	Ethane	23	20.5	89	63-135
74-85-1	Ethene	31	27.4	88	62-133

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JB75898-2MS	UV18623.D	1	09/10/14	WO	n/a	n/a	GUV4701
JB75898-2MSD	UV18624.D	1	09/10/14	WO	n/a	n/a	GUV4701
JB75898-2	UV18618.D	1	09/10/14	WO	n/a	n/a	GUV4701

The QC reported here applies to the following samples: **Method:** SW846 8015C

JB75730-2, JB75730-3

CAS No.	Compound	JB75898-2 mg/l	Q	Spike mg/l	MS mg/l	MS %	Spike mg/l	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		8	7.77	97	8	7.64	96	2	59-126/21

CAS No.	Surrogate Recoveries	MS	MSD	JB75898-2	Limits
98-08-8	aaa-Trifluorotoluene	94%	95%	78%	62-120%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JB75898-5MS	UV18650.D	1	09/11/14	WO	n/a	n/a	GUV4702
JB75898-5MSD	UV18651.D	1	09/11/14	WO	n/a	n/a	GUV4702
JB75898-5	UV18647.D	1	09/11/14	WO	n/a	n/a	GUV4702

The QC reported here applies to the following samples: **Method:** SW846 8015C

JB75730-1

CAS No.	Compound	JB75898-5 mg/l	Q	Spike mg/l	MS mg/l	MS %	Spike mg/l	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	1.15		8	8.24	89	8	7.97	85	3	59-126/21

CAS No.	Surrogate Recoveries	MS	MSD	JB75898-5	Limits
98-08-8	aaa-Trifluorotoluene	93%	92%	75%	62-120%

* = Outside of Control Limits.

Duplicate Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JB75730-1DUP	AA42425.D	1	09/09/14	TCH	n/a	n/a	GAA510
JB75730-1	AA42424.D	1	09/09/14	TCH	n/a	n/a	GAA510

The QC reported here applies to the following samples: **Method:** RSK-175

JB75730-1, JB75730-2, JB75730-3

CAS No.	Compound	JB75730-1 ug/l	Q	DUP ug/l	Q	RPD	Limits
74-82-8	Methane	76.3		73.9		3	14
74-84-0	Ethane	ND		ND		nc	10
74-85-1	Ethene	ND		ND		nc	6

* = Outside of Control Limits.

Volatile Surrogate Recovery Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Method: SW846 8015C **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]
JB75730-1	UV18649.D	81
JB75730-2	UV18625.D	81
JB75730-3	UV18626.D	77
GUV4701-BS	UV18611.D	105
GUV4701-MB2	UV18617.D	78
GUV4702-BS	UV18644.D	107
GUV4702-MB1	UV18643.D	78
JB75898-2MS	UV18623.D	94
JB75898-2MSD	UV18624.D	95
JB75898-5MS	UV18650.D	93
JB75898-5MSD	UV18651.D	92
GUV4701-MB1	UV18610.D	77

Surrogate Compounds	Recovery Limits
S1 = aaa-Trifluorotoluene	62-120%

(a) Recovery from GC signal #1

GC Surrogate Retention Time Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Check Std:	GUV4700-CC4556	**Injection Date:**	09/10/14
Lab File ID:	UV18606.D	**Injection Time:**	09:25
Instrument ID:	GCUV	**Method:**	SW846 8015C

	S1 [a] **RT**
Check Std	7.59

Lab Sample ID	**Lab File ID**	**Date Analyzed**	**Time Analyzed**	**S1** [a] **RT**
GUV4701-RT	UV18608.D	09/10/14	10:25	7.60

Surrogate Compounds

S1 = aaa-Trifluorotoluene

(a) Retention time from GC signal #1

GC Surrogate Retention Time Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Check Std:	GUV4701-CC4556	**Injection Date:**	09/10/14
Lab File ID:	UV18609.D	**Injection Time:**	10:57
Instrument ID:	GCUV	**Method:**	SW846 8015C

	S1 [a] **RT**
Check Std	7.60

Lab Sample ID	**Lab File ID**	**Date Analyzed**	**Time Analyzed**	**S1** [a] **RT**
GUV4701-MB1	UV18610.D	09/10/14	11:27	7.60
GUV4701-BS	UV18611.D	09/10/14	11:56	7.59
ZZZZZZ	UV18613.D	09/10/14	13:11	7.60

Surrogate Compounds

S1 = aaa-Trifluorotoluene

(a) Retention time from GC signal #1

GC Surrogate Retention Time Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Check Std:	GUV4701-CC4556	**Injection Date:**	09/10/14
Lab File ID:	UV18616.D	**Injection Time:**	14:43
Instrument ID:	GCUV	**Method:**	SW846 8015C

	S1 [a] **RT**
Check Std	7.59

Lab Sample ID	**Lab File ID**	**Date Analyzed**	**Time Analyzed**	**S1** [a] **RT**
GUV4701-MB2	UV18617.D	09/10/14	15:12	7.60
JB75898-2	UV18618.D	09/10/14	15:38	7.60
ZZZZZZ	UV18619.D	09/10/14	16:11	7.60
ZZZZZZ	UV18620.D	09/10/14	16:39	7.60
ZZZZZZ	UV18621.D	09/10/14	17:08	7.60
ZZZZZZ	UV18622.D	09/10/14	17:44	7.60
JB75898-2MS	UV18623.D	09/10/14	18:13	7.59
JB75898-2MSD	UV18624.D	09/10/14	18:42	7.59
JB75730-2	UV18625.D	09/10/14	19:11	7.60
JB75730-3	UV18626.D	09/10/14	19:40	7.60

Surrogate Compounds

S1 = aaa-Trifluorotoluene

(a) Retention time from GC signal #1

GC Surrogate Retention Time Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Check Std:	GUV4701-CC4556	**Injection Date:**	09/11/14
Lab File ID:	UV18638.D	**Injection Time:**	01:42
Instrument ID:	GCUV	**Method:**	SW846 8015C

	S1 [a] **RT**
Check Std	7.59

Lab Sample ID	**Lab File ID**	**Date Analyzed**	**Time Analyzed**	**S1** [a] **RT**
GUV4702-RT	UV18641.D	09/11/14	09:25	7.60

Surrogate Compounds

S1 = aaa-Trifluorotoluene

(a) Retention time from GC signal #1

GC Surrogate Retention Time Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Check Std:	GUV4702-CC4556	**Injection Date:**	09/11/14
Lab File ID:	UV18642.D	**Injection Time:**	09:54
Instrument ID:	GCUV	**Method:**	SW846 8015C

	S1 [a] RT
Check Std	7.60

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT
GUV4702-MB1	UV18643.D	09/11/14	10:23	7.60
GUV4702-BS	UV18644.D	09/11/14	10:51	7.60
ZZZZZZ	UV18646.D	09/11/14	12:39	7.60
JB75898-5	UV18647.D	09/11/14	13:08	7.60
ZZZZZZ	UV18648.D	09/11/14	13:44	7.60
JB75730-1	UV18649.D	09/11/14	14:13	7.60
JB75898-5MS	UV18650.D	09/11/14	14:42	7.60
JB75898-5MSD	UV18651.D	09/11/14	15:11	7.60

Surrogate Compounds

S1 = aaa-Trifluorotoluene

(a) Retention time from GC signal #1

Initial Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: GAA301-ICC301
Lab FileID: AA38034.D

Response Factor Report GCAA

Method : C:\MSDCHEM\1\METHODS\MAA301.M (ChemStation Integrator)
Title : METHOD V8015 DG by GC-FID
Last Update : Sat Oct 05 09:04:38 2013
Response via : Initial Calibration

Calibration Files
200 =AA38035.D 100 =AA38034.D 20 =AA38033.D 10 =AA38032.D
2 =AA38031.D 1 =AA38030.D 500 =AA38036.D 1000=AA38037.D
2000=AA38039.D = = =

Compound	200	100	20	10	2	1	500	1000	2000	Avg	%RSD
1) Methane	3.306	3.142	2.860	2.592	3.428	4.946	2.900	2.357		3.191 E4	24.84
2) Ethane	6.390	6.049	5.147	4.497	5.339	5.842	5.584	4.537		5.423 E4	12.57
3) Ethene	6.370	6.048	5.131	4.390	5.275	5.629	5.577	4.529		5.369 E4	12.80
4) Propane	9.215	8.631	7.254	6.645	7.361	7.712	8.041	6.538		7.675 E4	12.12
5) Propylene										0.000	-1.00
6) Isobutane										0.000	-1.00
7) n-Butane	1.239	1.134	0.935	0.924	0.919	0.936	1.084	0.884		1.007 E5	12.78
8) Acetylene										0.000	-1.00
9) n-Pentane	1.507	1.322	1.049	1.193	1.254	0.994	1.331	1.086		1.217 E5	14.07
10) Hexane	1.668	1.343	0.986	1.487	0.854	1.006	1.491	1.210		1.255 E5	23.04

(#) = Out of Range ### Number of calibration levels exceeded format ###

MAA301.M Thu Apr 10 12:17:46 2014 S

8.8.1

8

Initial Calibration Verification

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: GAA301-ICV301
Lab FileID: AA38040.D

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\
Data File : AA38040.D
Signal(s) : Signal #1: FID1A.ch Signal #2: FID2B.ch
Acq On   : 30 Sep 2013   6:02 pm
Operator : [redacted]H
Sample   : ICV301-100
Misc   : GC42030,GAA301,,,,,1
ALS Vial : 21   Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Oct 03 15:03:46 2013
Quant Method : C:\MSDCHEM\1\METHODS\MAA301.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Thu Oct 03 15:03:24 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj.   : 0.5 ml
Signal #1 Phase : Rt-Alumina BOND/N Signal #2 Phase: Rt-Alumina BOND/Na2SO4
Signal #1 Info : 50m x 0.53 mm ID Signal #2 Info : 0 .53 mm ID

Min. RRF   :   0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15%   Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
1	Methane	31.913	30.329 E3	5.0	97	0.00
2	Ethane	54.232	56.491 E3	-4.2	93	0.00
3	Ethene	53.686	56.457 E3	-5.2	93	0.00

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

MAA301.M Thu Oct 03 15:11:01 2013 S

8.8.2

8

Continuing Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: GAA510-CC301
Lab FileID: AA42419.D

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\
Data File : AA42419.D
Signal(s) : FID1A.ch
Acq On : 9 Sep 2014 8:10 am
Operator : [redacted]
Sample : CC301-100
Misc : GC44391,GAA510,,,,,1
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 10 12:25:22 2014
Quant Method : C:\MSDCHEM\1\METHODS\MAA301.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Thu Oct 03 15:03:24 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
1	Methane	31.913	27.623 E3	13.4	88	0.00
2	Ethane	54.232	53.303 E3	1.7	88	0.01
3	Ethene	53.686	52.947 E3	1.4	88	0.07
4	Propane	76.746	78.628 E3	-2.5	91	0.03
7	n-Butane	100.677	107.114 E3	-6.4	94	0.03
9	n-Pentane	121.699	127.534 E3	-4.8	96	0.04
10	Hexane	125.540	141.622 E3	-12.8	105	0.09

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

MAA301.M Wed Sep 10 14:47:37 2014 S

Continuing Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: GAA510-ECC301
Lab FileID: AA42435.D

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\
Data File : AA42435.D
Signal(s) : FID1A.ch
Acq On : 9 Sep 2014 3:58 pm
Operator : [redacted]H
Sample : ECC301-100
Misc : GC44409,GAA510,,,,,1
ALS Vial : 17 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 10 12:35:13 2014
Quant Method : C:\MSDCHEM\1\METHODS\MAA301.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Thu Oct 03 15:03:24 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
1	Methane	31.913	28.642 E3	10.2	91	0.00
2	Ethane	54.232	56.392 E3	-4.0	93	0.01
3	Ethene	53.686	55.819 E3	-4.0	92	0.07
4	Propane	76.746	85.618 E3	-11.6	99	0.04
7	n-Butane	100.677	120.695 E3	-19.9#	106	0.04
9	n-Pentane	121.699	139.845 E3	-14.9	106	0.04
10	Hexane	125.540	138.896 E3	-10.6	103	0.08

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

MAA301.M Wed Sep 10 14:46:47 2014 S

Initial Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: GUV4556-ICC4556
Lab FileID: UV15193.D

Response Factor Report GCUV

Method : C:\HPCHEM\1\METHODS\MUV4556.M (Chemstation Integrator)
Title : Method SW846 8015B (GRO)
Last Update : Mon Apr 14 16:09:39 2014
Response via : Initial Calibration

Calibration Files
0.2 =UV15190.D 0.8 =UV15191.D 4 =UV15192.D
8 =UV15193.D 20 =UV15194.D 40 =UV15196.D 30 =UV15195.D

Compound	0.2	0.8	4	8	20	40	30	Avg	%RSD
1)H TPH-GRO (C6-C10)	2.152	1.857	1.618	1.814	1.884	1.995	1.892	1.887 E4	8.67
2)H TPH-GRO (C6-C12)	2.432	1.932	1.637	1.781	1.840	1.961	1.846	1.919 E4	13.03
3)S a,a,a-Trifluoroto	2.146	2.035	2.302	2.459	2.354	2.706	2.512	2.359 E4	9.59

Average % RSD = 10.4

(100.0 %) 3 of 3 compounds'% RSD > 0

(#) = Out of Range

MUV4556.M Mon Apr 14 16:10:33 2014 GCSY

8.8.5

8

Initial Calibration Verification

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: GUV4556-ICV4556
Lab FileID: UV15198.D

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\UV15198.D Vial: 12
Acq On : 14 Apr 2014 4:08 pm Operator: [redacted]
Sample : ICV4556-8000 Inst : GCUV
Misc : GC43484,GUV4556,5.0,,,,1 Multiplr: 1.00
IntFile : autoint1.e

Method : C:\HPCHEM\1\METHODS\MUV4556.M (Chemstation Integrator)
Title : Method SW846 8015B (GRO)
Last Update : Mon Apr 14 16:09:39 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
1	H	TPH-GRO (C6-C10)	18.873	18.122 E3	4.0	100	0.00
2	H	TPH-GRO (C6-C12)	19.186	19.457 E3	-1.4	109	0.00
3	S	a,a,a-Trifluorotoluene	23.591	24.786 E3	-5.1	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
UV15193.D MUV4556.M Tue Apr 15 08:08:42 2014 GCSY

8.8.6

Continuing Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: GUV4700-CC4556
Lab FileID: UV18606.D

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\UV18606.D Vial: 33
Acq On : 10 Sep 2014 9:25 am Operator: [redacted]
Sample : CC4556-4000 Inst : GCUV
Misc : GC44402,GUV4700,5.0,,,,1 Multiplr: 1.00
IntFile : autoint1.e

Method : C:\HPCHEM\1\METHODS\MUV4556.M (Chemstation Integrator)
Title : Method SW846 8015B (GRO)
Last Update : Tue Jul 08 08:59:49 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
1	H	TPH-GRO (C6-C10)	18.873	21.947 E3	-16.3	136	0.00
2	H	TPH-GRO (C6-C12)	19.186	21.308 E3	-11.1	130	0.00
3	S	a,a,a-Trifluorotoluene	23.591	20.848 E3	11.6	91	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
UV15192.D MUV4556.M Wed Sep 10 10:57:58 2014 GCSY

8.8.7

8

Continuing Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: GUV4701-CC4556
Lab FileID: UV18609.D

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\UV18609.D Vial: 3
Acq On : 10 Sep 2014 10:57 am Operator: [redacted]O
Sample : CC4556-4000 Inst : GCUV
Misc : GC44402,GUV4701,5.0,,,,1 Multiplr: 1.00
IntFile : autoint1.e

Method : C:\HPCHEM\1\METHODS\MUV4556.M (Chemstation Integrator)
Title : Method SW846 8015B (GRO)
Last Update : Tue Jul 08 08:59:49 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
1	H	TPH-GRO (C6-C10)	18.873	19.374 E3	-2.7	120	0.00
2	H	TPH-GRO (C6-C12)	19.186	18.452 E3	3.8	113	0.00
3	S	a,a,a-Trifluorotoluene	23.591	20.498 E3	13.1	89	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
UV15192.D MUV4556.M Wed Sep 10 16:00:58 2014 GCSY

Continuing Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: GUV4701-CC4556
Lab FileID: UV18616.D

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\UV18616.D Vial: 10
Acq On : 10 Sep 2014 2:43 pm Operator: [redacted]
Sample : CC4556-8000 Inst : GCUV
Misc : GC44401,GUV4701,5.0,,,,1 Multiplr: 1.00
IntFile : autoint1.e

Method : C:\HPCHEM\1\METHODS\MUV4556.M (Chemstation Integrator)
Title : Method SW846 8015B (GRO)
Last Update : Tue Jul 08 08:59:49 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
1	H	TPH-GRO (C6-C10)	18.873	20.620 E3	-9.3	114	0.00
2	H	TPH-GRO (C6-C12)	19.186	19.524 E3	-1.8	110	0.00
3	S	a,a,a-Trifluorotoluene	23.591	23.126 E3	2.0	94	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
UV15193.D MUV4556.M Wed Sep 10 16:04:44 2014 GCSY

8.8.9

8

Continuing Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: GUV4701-CC4556
Lab FileID: UV18627.D

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\UV18627.D Vial: 21
Acq On : 10 Sep 2014 8:09 pm Operator: [redacted]O
Sample : CC4556-4000 Inst : GCUV
Misc : GC44407,GUV4701,5.0,,,,1 Multiplr: 1.00
IntFile : autoint1.e

Method : C:\HPCHEM\1\METHODS\MUV4556.M (Chemstation Integrator)
Title : Method SW846 8015B (GRO)
Last Update : Tue Jul 08 08:59:49 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
1	H	TPH-GRO (C6-C10)	18.873	20.176 E3	-6.9	125	0.00
2	H	TPH-GRO (C6-C12)	19.186	19.183 E3	0.0	117	0.00
3	S	a,a,a-Trifluorotoluene	23.591	20.711 E3	12.2	90	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
UV15192.D MUV4556.M Thu Sep 11 11:07:47 2014 GCSY

8.8.10

Continuing Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: GUV4701-CC4556
Lab FileID: UV18638.D

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\UV18638.D Vial: 32
Acq On : 11 Sep 2014 1:42 am Operator: [redacted]
Sample : CC4556-8000 Inst : GCUV
Misc : GC44421,GUV4701,5.0,,,,1 Multiplr: 1.00
IntFile : autoint1.e

Method : C:\HPCHEM\1\METHODS\MUV4556.M (Chemstation Integrator)
Title : Method SW846 8015B (GRO)
Last Update : Tue Jul 08 08:59:49 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
1	H	TPH-GRO (C6-C10)	18.873	20.745 E3	-9.9	114	0.00
2	H	TPH-GRO (C6-C12)	19.186	19.604 E3	-2.2	110	0.00
3	S	a,a,a-Trifluorotoluene	23.591	22.709 E3	3.7	92	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
UV15193.D MUV4556.M Thu Sep 11 11:46:44 2014 GCSY

8.8.11

8

Continuing Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: GUV4702-CC4556
Lab FileID: UV18642.D

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\UV18642.D Vial: 4
Acq On : 11 Sep 2014 9:54 am Operator: [redacted]
Sample : CC4556-4000 Inst : GCUV
Misc : GC44421,GUV4702,5.0,,,,1 Multiplr: 1.00
IntFile : autoint1.e

Method : C:\HPCHEM\1\METHODS\MUV4556.M (Chemstation Integrator)
Title : Method SW846 8015B (GRO)
Last Update : Tue Jul 08 08:59:49 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
1 H	TPH-GRO (C6-C10)	18.873	17.776 E3	5.8	110	0.00
2 H	TPH-GRO (C6-C12)	19.186	17.593 E3	8.3	107	0.00
3 S	a,a,a-Trifluorotoluene	23.591	20.461 E3	13.3	89	0.00

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)

(#) = Out of Range SPCC's out = 0 CCC's out = 0
UV15192.D MUV4556.M Thu Sep 11 14:26:12 2014 GCSY

8.8.12

8

Continuing Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: GUV4702-CC4556
Lab FileID: UV18652.D

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\UV18652.D Vial: 13
Acq On : 11 Sep 2014 3:40 pm Operator: [redacted]
Sample : CC4556-8000 Inst : GCUV
Misc : GC44407,GUV4702,5.0,,,,1 Multiplr: 1.00
IntFile : autoint1.e

Method : C:\HPCHEM\1\METHODS\MUV4556.M (Chemstation Integrator)
Title : Method SW846 8015B (GRO)
Last Update : Tue Jul 08 08:59:49 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
1 H	TPH-GRO (C6-C10)	18.873	18.705 E3	0.9	103	0.00
2 H	TPH-GRO (C6-C12)	19.186	18.428 E3	4.0	103	0.00
3 S	a,a,a-Trifluorotoluene	23.591	21.900 E3	7.2	89	0.00

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)

(#) = Out of Range SPCC's out = 0 CCC's out = 0
UV15193.D MUV4556.M Thu Sep 11 16:12:53 2014 GCSY

8.8.13

8

GC Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\UV18649.D Vial: 10
Acq On : 11 Sep 2014 2:13 pm Operator: [redacted]
Sample : JB75730-1 Inst : GCUV
Misc : GC44407,GUV4702,5.0,,,,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Sep 11 16:11 2014 Quant Results File: MUV4556.RES

Quant Method : C:\HPCHEM\1\METHODS\MUV4556.M (Chemstation Integrator)
Title : Method SW846 8015B (GRO)
Last Update : Tue Jul 08 08:59:49 2014
Response via : Initial Calibration
DataAcq Meth : MUV4556.M

Volume Inj. :
Signal Phase : crossbond phenylmethyl polysiloxane
Signal Info : DB-624 75m x 0.53mm x 3.0um

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) S a,a,a-Trifluorotoluene	7.60	5731827	242.966 ug/l
Spiked Amount 300.000		Recovery =	80.99%
Target Compounds			
1) H TPH-GRO (C6-C10)	9.00	15218984	806.393 ug/l

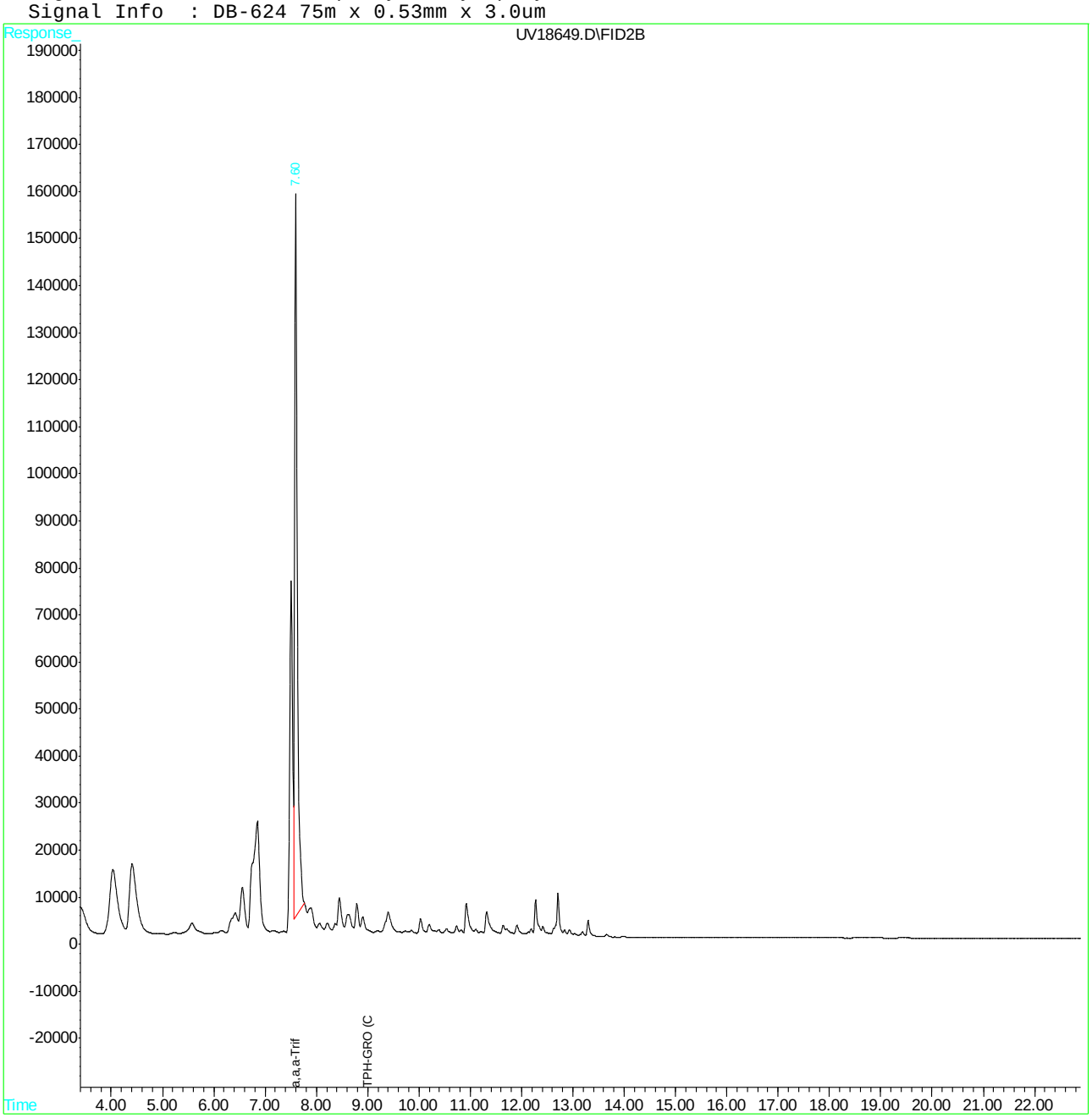
(f)=RT Delta > 1/2 Window (m)=manual int.
UV18649.D MUV4556.M Thu Sep 11 16:13:43 2014 GCSY

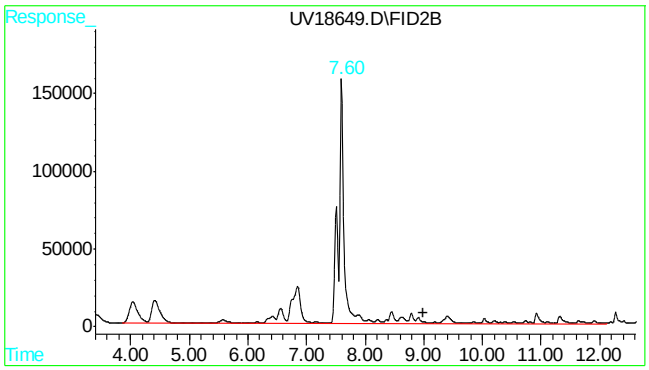
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\UV18649.D Vial: 10
Acq On : 11 Sep 2014 2:13 pm Operator: [redacted]
Sample : JB75730-1 Inst : GCUV
Misc : GC44407,GUV4702,5.0,,,,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Sep 11 16:11 2014 Quant Results File: MUV4556.RES

Quant Method : C:\HPCHEM\1\METHODS\MUV4556.M (Chemstation Integrator)
Title : Method SW846 8015B (GRO)
Last Update : Tue Jul 08 08:59:49 2014
Response via : Multiple Level Calibration
DataAcq Meth : MUV4556.M

Volume Inj. :
Signal Phase : crossbond phenylmethyl polysiloxane
Signal Info : DB-624 75m x 0.53mm x 3.0um





#1 TPH-GRO (C6-C10)

R.T.: 9.000 min
Delta R.T.: 0.000 min
Response: 15218984
Conc: 806.39 ug/l m

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\UV18625.D Vial: 19
Acq On : 10 Sep 2014 7:11 pm Operator: [redacted]
Sample : JB75730-2 Inst : GCUV
Misc : GC44407,GUV4701,5.0,,,,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Sep 11 11:07 2014 Quant Results File: MUV4556.RES

Quant Method : C:\HPCHEM\1\METHODS\MUV4556.M (Chemstation Integrator)
Title : Method SW846 8015B (GRO)
Last Update : Tue Jul 08 08:59:49 2014
Response via : Initial Calibration
DataAcq Meth : MUV4556.M

Volume Inj. :
Signal Phase : crossbond phenylmethyl polysiloxane
Signal Info : DB-624 75m x 0.53mm x 3.0um

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) S a,a,a-Trifluorotoluene	7.60	5767968	244.498 ug/l
Spiked Amount 300.000		Recovery =	81.50%
Target Compounds			
1) H TPH-GRO (C6-C10)	9.00	14731095	780.542 ug/l

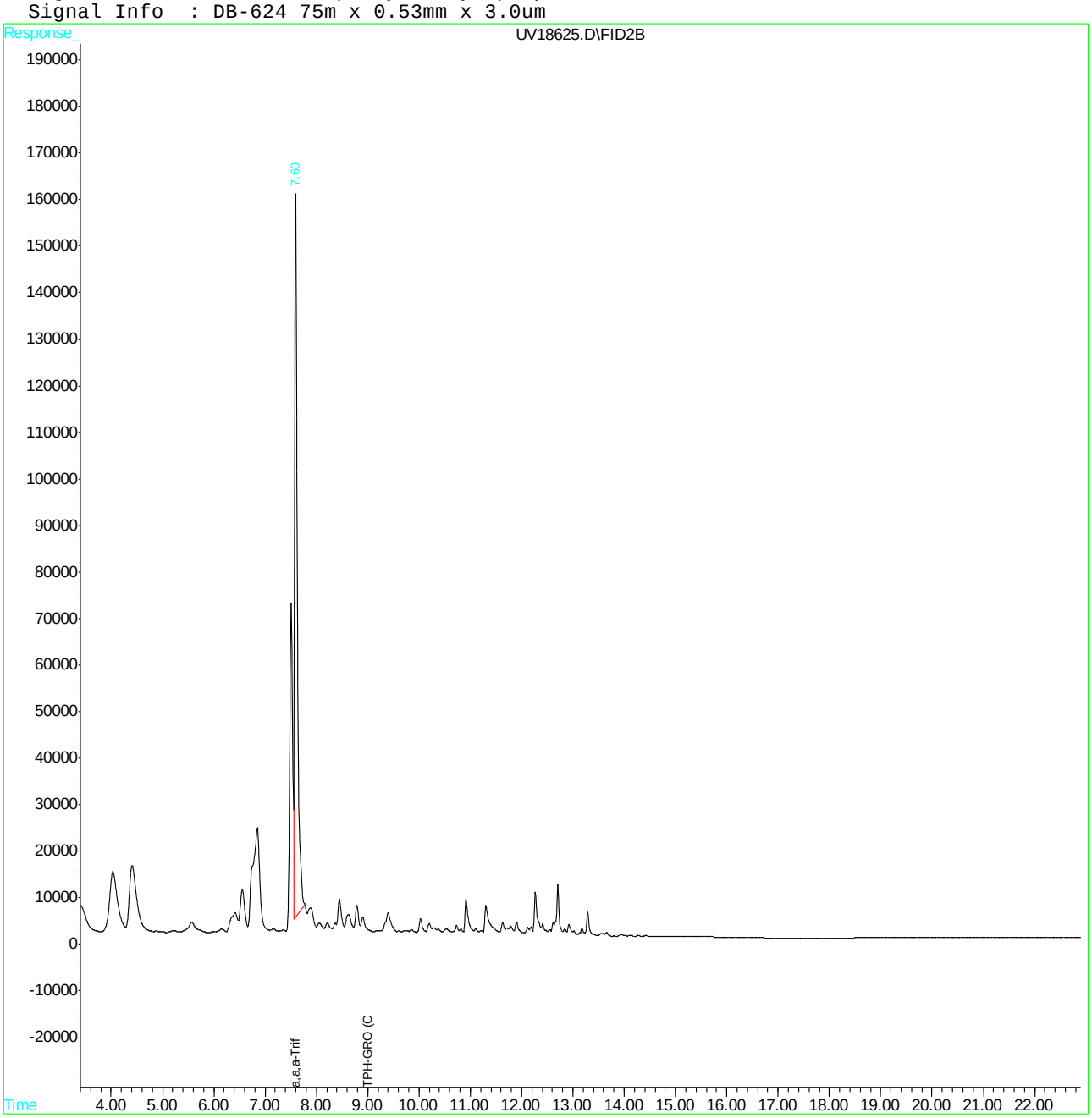
(f)=RT Delta > 1/2 Window (m)=manual int.
UV18625.D MUV4556.M Thu Sep 11 11:07:14 2014 GCSY Page 1

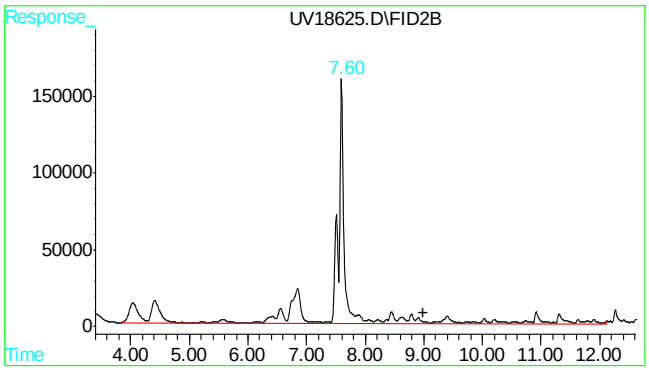
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\UV18625.D Vial: 19
Acq On : 10 Sep 2014 7:11 pm Operator: [redacted]
Sample : JB75730-2 Inst : GCUV
Misc : GC44407,GUV4701,5.0,,,,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Sep 11 11:07 2014 Quant Results File: MUV4556.RES

Quant Method : C:\HPCHEM\1\METHODS\MUV4556.M (Chemstation Integrator)
Title : Method SW846 8015B (GRO)
Last Update : Tue Jul 08 08:59:49 2014
Response via : Multiple Level Calibration
DataAcq Meth : MUV4556.M

Volume Inj. :
Signal Phase : crossbond phenylmethyl polysiloxane
Signal Info : DB-624 75m x 0.53mm x 3.0um





#1 TPH-GRO (C6-C10)

R.T.: 9.000 min
Delta R.T.: 0.000 min
Response: 14731095
Conc: 780.54 ug/l m

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\UV18626.D Vial: 20
Acq On : 10 Sep 2014 7:40 pm Operator: W[redacted]O
Sample : JB75730-3 Inst : GCUV
Misc : GC44407,GUV4701,5.0,,,,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Sep 11 11:07 2014 Quant Results File: MUV4556.RES

Quant Method : C:\HPCHEM\1\METHODS\MUV4556.M (Chemstation Integrator)
Title : Method SW846 8015B (GRO)
Last Update : Tue Jul 08 08:59:49 2014
Response via : Initial Calibration
DataAcq Meth : MUV4556.M

Volume Inj. :
Signal Phase : crossbond phenylmethyl polysiloxane
Signal Info : DB-624 75m x 0.53mm x 3.0um

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) S a,a,a-Trifluorotoluene	7.60	5440048	230.598 ug/l
Spiked Amount 300.000		Recovery =	76.87%
Target Compounds			

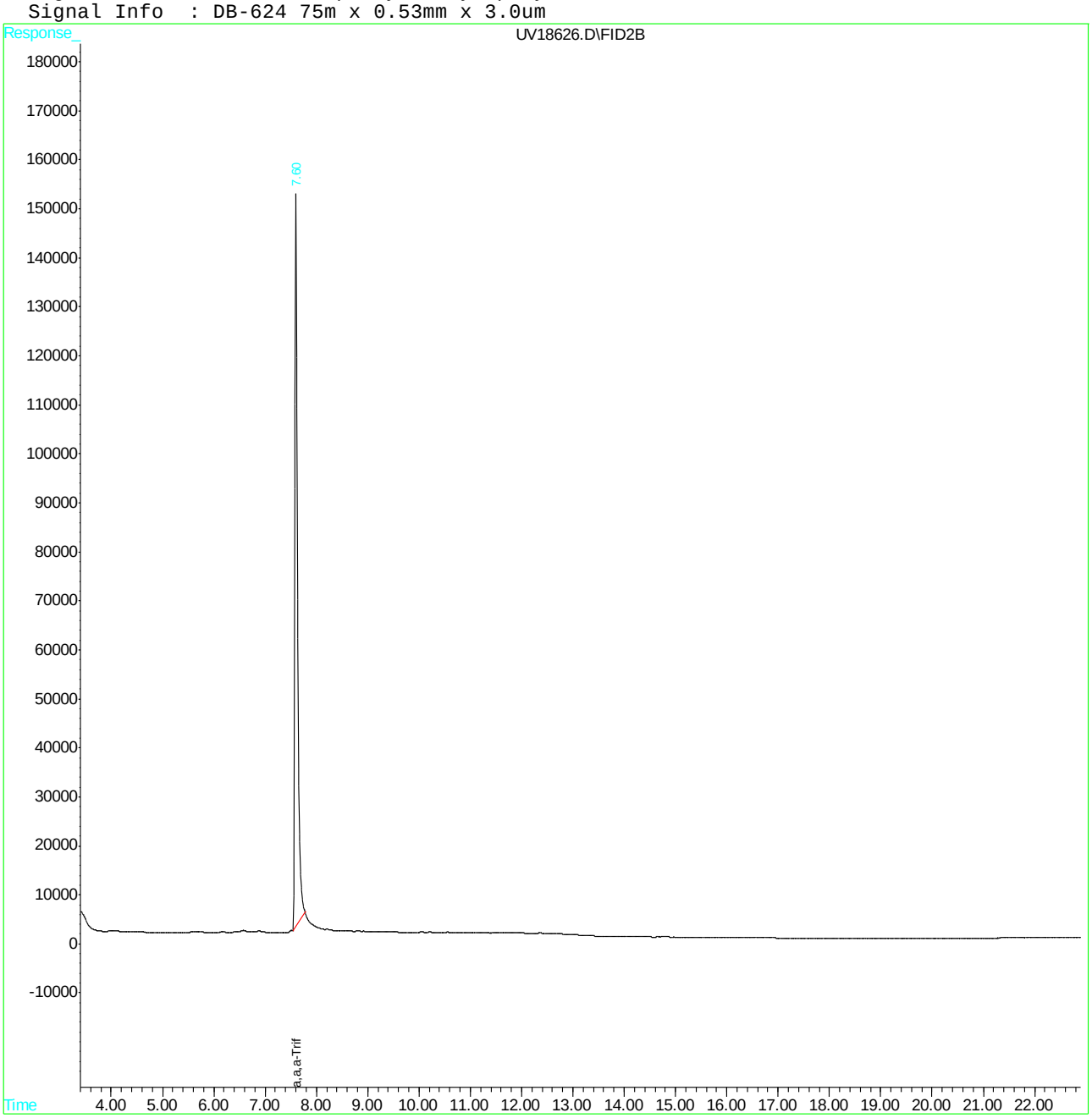
(f)=RT Delta > 1/2 Window (m)=manual int.
UV18626.D MUV4556.M Thu Sep 11 11:07:28 2014 GCSY Page 1

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\UV18626.D Vial: 20
Acq On : 10 Sep 2014 7:40 pm Operator: [redacted]O
Sample : JB75730-3 Inst : GCUV
Misc : GC44407,GUV4701,5.0,,,,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Sep 11 11:07 2014 Quant Results File: MUV4556.RES

Quant Method : C:\HPCHEM\1\METHODS\MUV4556.M (Chemstation Integrator)
Title : Method SW846 8015B (GRO)
Last Update : Tue Jul 08 08:59:49 2014
Response via : Multiple Level Calibration
DataAcq Meth : MUV4556.M

Volume Inj. :
Signal Phase : crossbond phenylmethyl polysiloxane
Signal Info : DB-624 75m x 0.53mm x 3.0um



Manual Integrations APPROVED (compounds with "m" flag)
[redacted]
09/11/14 09:12

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : AA42424.D
Signal(s) : FID1A.ch
Acq On : 9 Sep 2014 10:32 am
Operator : [redacted]
Sample : JB75730-1
Misc : GC44409,GAA510,,,,,1
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 10 12:27:46 2014
Quant Method : C:\MSDCHEM\1\METHODS\MAA301.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Thu Oct 03 15:03:24 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Methane	1.330	22101156	692.534	PPMV
2)	Ethane	1.761	6805	0.125	PPMV m
7)	n-Butane	4.163	46978	0.467	PPMV
9)	n-Pentane	5.205	393696	3.235	PPMV

(f)=RT Delta > 1/2 Window (m)=manual int.

9.1.4

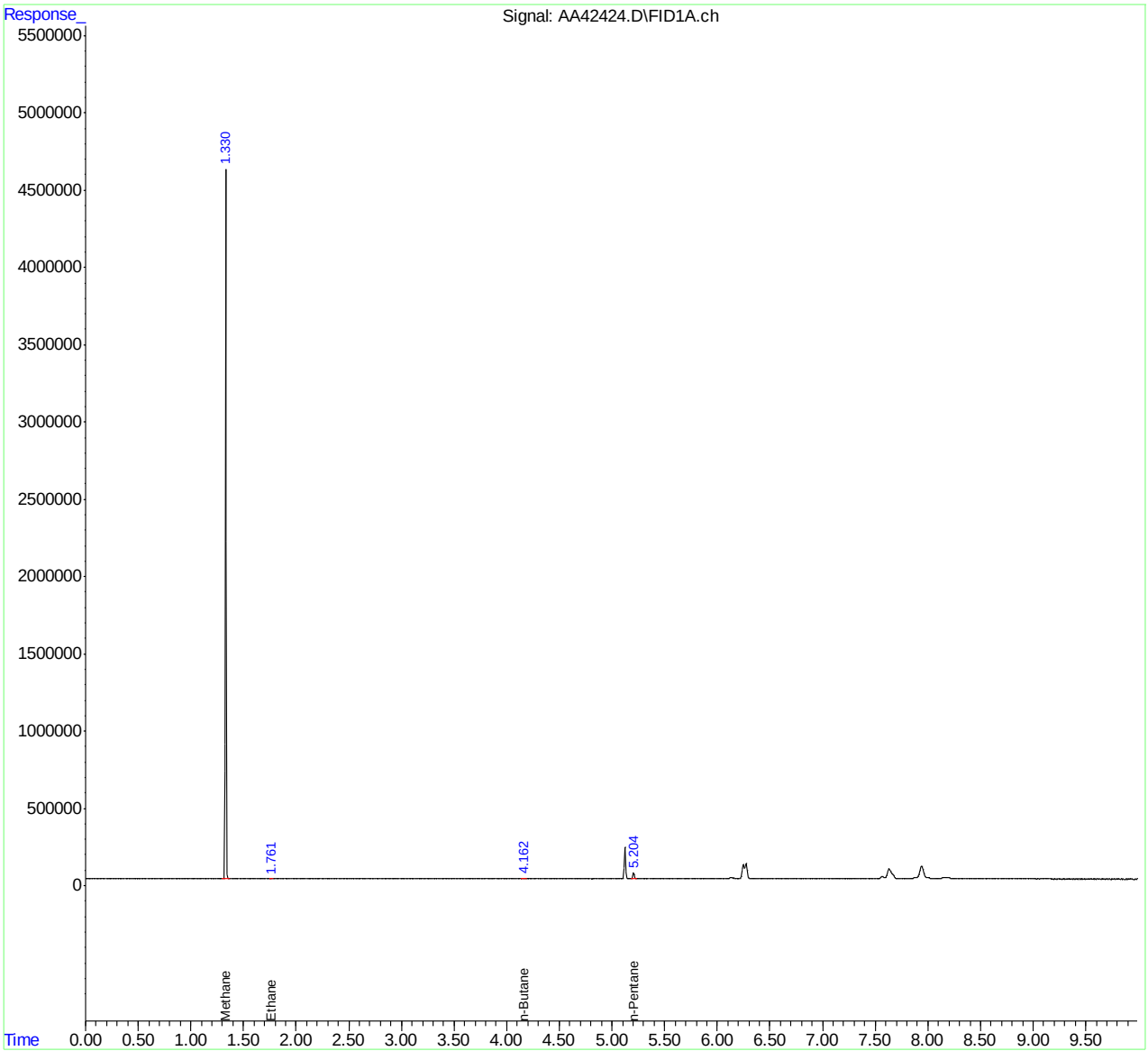
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : AA42424.D
Signal(s) : FID1A.ch
Acq On : 9 Sep 2014 10:32 am
Operator : [redacted]
Sample : JB75730-1
Misc : GC44409,GAA510,,,,,1
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 10 12:27:46 2014
Quant Method : C:\MSDCHEM\1\METHODS\MAA301.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Thu Oct 03 15:03:24 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df



Dissolved Gas Calculation Worksheet

Data File Name **AA42424.D**
Date Acquired **9/9/2014 10:32**
Sample Name **JB75730-1**
Sample Multiplier **1**
Temperature(C) **24**
Headspace Vol. (cc) **5**
Sample Vol(cc) **37**

Compound	MW	Molar Volume(L)	Water g-moles/L	Temp K	Corrected Gas dens.	Peak Area	Helium Blank	Headspace (ppmv)*	Headspace (ug/l)	Water (ug/l)	Henry's Constant	Saturation Conc.(ug/l)	Total (ug/L)	RL (ug/l)	Report (ug/l)
Methane	16	22.4	55.5	297	24.37	22101156	88125	689.77	452.88	61.20	40560	15.102	76.30	0.10	**76.30**
Ethane	30	22.4	55.5	297	24.37	6805	7702	-0.02	-0.02	0.00	29420	-0.001	-0.004	0.12	**ND**
Ethene	28	22.4	55.5	297	24.37	0	0	#DIV/0!	#DIV/0!	#DIV/0!	11160	#DIV/0!	#DIV/0!	0.16	**#DIV/0!**
Propane	44	22.4	55.5	297	24.37	0	0	#DIV/0!	#DIV/0!	#DIV/0!	35857	#DIV/0!	#DIV/0!	0.17	**#DIV/0!**
Propylene	42	22.4	55.5	297	24.37	0	0	#DIV/0!	#DIV/0!	#DIV/0!	13981	#DIV/0!	#DIV/0!	0.17	**#DIV/0!**
Isobutane	58	22.4	55.5	297	24.37	0	0	#DIV/0!	#DIV/0!	#DIV/0!	61993	#DIV/0!	#DIV/0!	0.17	**#DIV/0!**
n-Butane	58	22.4	55.5	297	24.37	46978	0	0.47	1.11	0.15	43947	0.03	0.18	0.17	**0.18**

*** ppmv is corrected for helium blank background peak area**

Definitions,

Molar Volume	The volume of 1 mole of any gas at standard temperature and pressure(STP)
Water g/Moles	1 Liter of water is equal to 55.5g-moles
Temp-kelvin	Is defined as 273 + degress C
Corrected Gas Density	Gas density corrected for temperature is equal to (molar volume) x (temp-k/273)
Headspace conc(ug/l)	Is equal to (ppmv reading) x (mw/corrected gas density)
Water Concentration(ug/l)	Is equal to headspace conc(ug/l) x headspace vol/sample vol
Saturation Concentration(ug/l)	Gas which remains at equilibrium in the sample is equal to (headspace conc-ppm) x (mw) x (55.5)/(Henry's Constant)

Henry's Constants

temp-c	20	21	22	23	24	25	26	27	28	29	30
Methane	37600	38340	39080	39820	40560	41300	42020	42740	43460	44180	44900
Ethane	26300	27080	27860	28640	29420	30200	31000	31800	32600	33400	34200
Ethene	10200	10440	10680	10920	11160	11400	11660	11920	12180	12440	12700
Propane	31474	32552	33643	34744	35857	36978	38107	39244	40387	41535	42688
Proylene	11959	12440	12937	13451	13981	14529	15094	15677	16279	16899	17539
IsoButane	54757	56501	58287	60118	61993	63913	65879	67892	69953	72062	74220
n-Butane	38111	39507	40945	42425	43947	45514	47125	48782	50486	52238	52239
Oxygen	40100	40840	41580	42320	43060	43800	44540	45280	46020	46760	47500
CO	52600	53680	54760	55840	56920	58000	58800	59600	60400	61200	62000
CO2	14200	14640	15080	15520	15960	16400	16840	17280	17720	18160	18600
Nitrogen	80400	81620	82840	84060	85280	86500	87680	88860	90040	91220	92400
Hydrogen	68300	68780	69260	69740	70220	70700	71140	71580	72020	72460	72900

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : AA42426.D
Signal(s) : FID1A.ch
Acq On : 9 Sep 2014 11:24 am
Operator : [redacted]
Sample : JB75730-2
Misc : GC44409,GAA510,,,,,1
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 10 12:28:45 2014
Quant Method : C:\MSDCHEM\1\METHODS\MAA301.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Thu Oct 03 15:03:24 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Methane	1.333	14369340	450.259	PPMV
7)	n-Butane	4.164	34721	0.345	PPMV
9)	n-Pentane	5.219	279527	2.297	PPMV

(f)=RT Delta > 1/2 Window (m)=manual int.

9.1.6

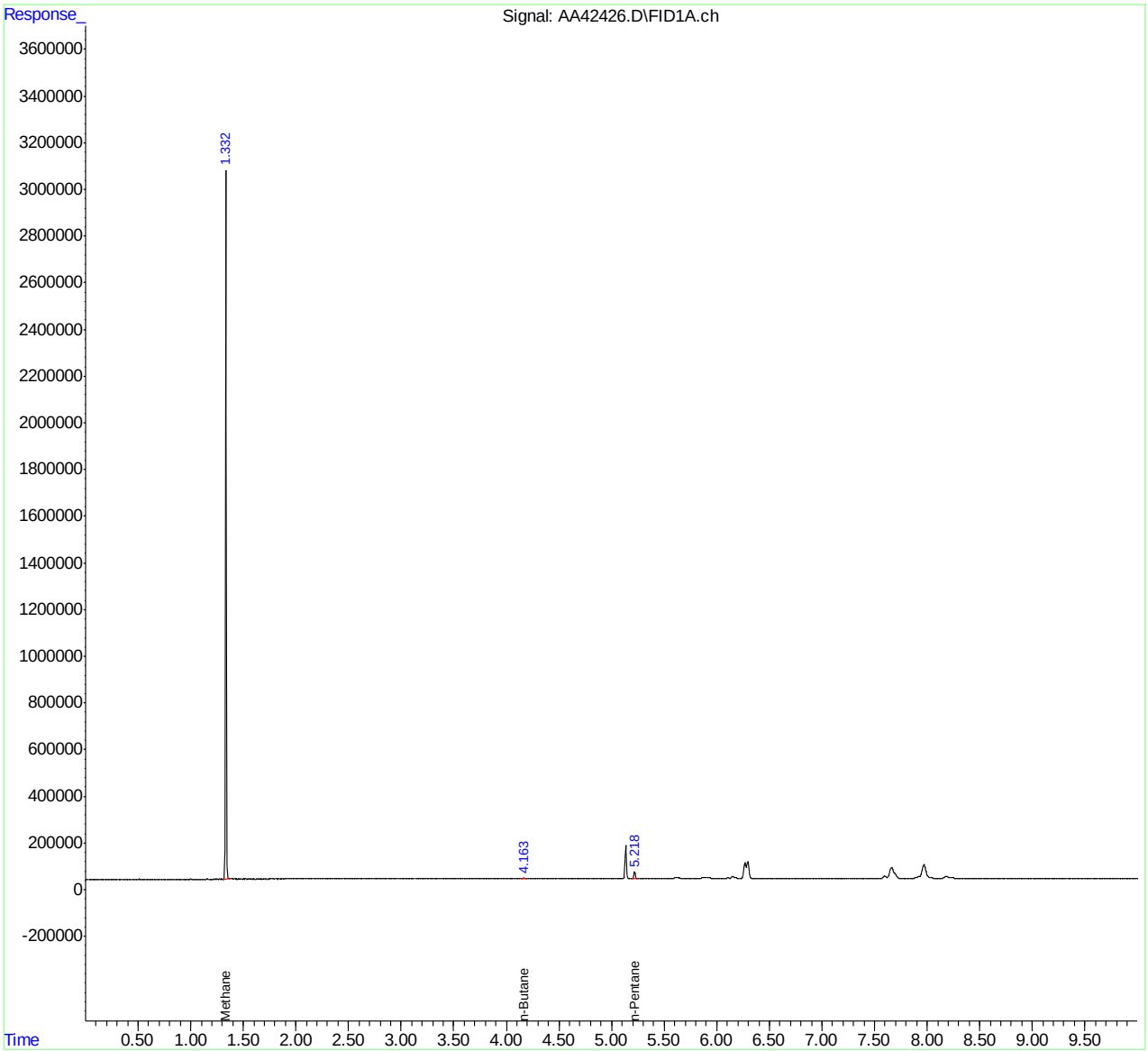
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : AA42426.D
Signal(s) : FID1A.ch
Acq On : 9 Sep 2014 11:24 am
Operator : [redacted]
Sample : JB75730-2
Misc : GC44409,GAA510,,,,,1
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 10 12:28:45 2014
Quant Method : C:\MSDCHEM\1\METHODS\MAA301.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Thu Oct 03 15:03:24 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df



Dissolved Gas Calculation Worksheet

Data File Name **AA42426.D**
Date Acquired **9/9/2014 11:24**
Sample Name **JB75730-2**
Sample Multiplier **1**
Temperature(C) **24**
Headspace Vol. (cc) **5**
Sample Vol(cc) **37**

Compound	MW	Molar Volume(L)	Water g-moles/L	Temp K	Corrected Gas dens.	Peak Area	Helium Blank	Headspace (ppmv)*	Headspace (ug/l)	Water (ug/l)	Henry's Constant	Saturation Conc.(ug/l)	Total (ug/L)	RL (ug/l)	Report (ug/l)
Methane	16	22.4	55.5	297	24.37	14369340	88125	447.50	293.81	39.70	40560	9.797	49.50	0.10	**49.50**
Ethane	30	22.4	55.5	297	24.37	0	7702	#DIV/0!	#DIV/0!	#DIV/0!	29420	#DIV/0!	#DIV/0!	0.12	**#DIV/0!**
Ethene	28	22.4	55.5	297	24.37	0	0	#DIV/0!	#DIV/0!	#DIV/0!	11160	#DIV/0!	#DIV/0!	0.16	**#DIV/0!**
Propane	44	22.4	55.5	297	24.37	0	0	#DIV/0!	#DIV/0!	#DIV/0!	35857	#DIV/0!	#DIV/0!	0.17	**#DIV/0!**
Propylene	42	22.4	55.5	297	24.37	0	0	#DIV/0!	#DIV/0!	#DIV/0!	13981	#DIV/0!	#DIV/0!	0.17	**#DIV/0!**
Isobutane	58	22.4	55.5	297	24.37	0	0	#DIV/0!	#DIV/0!	#DIV/0!	61993	#DIV/0!	#DIV/0!	0.17	**#DIV/0!**
n-Butane	58	22.4	55.5	297	24.37	34721	0	0.34	0.82	0.11	43947	0.03	0.14	0.17	**ND**

*** ppmv is corrected for helium blank background peak area**

Definitions,

Molar Volume	The volume of 1 mole of any gas at standard temperature and pressure(STP)
Water g/Moles	1 Liter of water is equal to 55.5g-moles
Temp-kelvin	Is defined as 273 + degress C
Corrected Gas Density	Gas density corrected for temperature is equal to (molar volume) x (temp-k/273)
Headspace conc(ug/l)	Is equal to (ppmv reading) x (mw/corrected gas density)
Water Concentration(ug/l)	Is equal to headspace conc(ug/l) x headspace vol/sample vol
Saturation Concentration(ug/l)	Gas which remains at equilibrium in the sample is equal to (headspace conc-ppm) x (mw) x (55.5)/(Henry's Constant)

Henry's Constants

temp-c	20	21	22	23	24	25	26	27	28	29	30
Methane	37600	38340	39080	39820	40560	41300	42020	42740	43460	44180	44900
Ethane	26300	27080	27860	28640	29420	30200	31000	31800	32600	33400	34200
Ethene	10200	10440	10680	10920	11160	11400	11660	11920	12180	12440	12700
Propane	31474	32552	33643	34744	35857	36978	38107	39244	40387	41535	42688
Proylene	11959	12440	12937	13451	13981	14529	15094	15677	16279	16899	17539
IsoButane	54757	56501	58287	60118	61993	63913	65879	67892	69953	72062	74220
n-Butane	38111	39507	40945	42425	43947	45514	47125	48782	50486	52238	52239
Oxygen	40100	40840	41580	42320	43060	43800	44540	45280	46020	46760	47500
CO	52600	53680	54760	55840	56920	58000	58800	59600	60400	61200	62000
CO2	14200	14640	15080	15520	15960	16400	16840	17280	17720	18160	18600
Nitrogen	80400	81620	82840	84060	85280	86500	87680	88860	90040	91220	92400
Hydrogen	68300	68780	69260	69740	70220	70700	71140	71580	72020	72460	72900

Manual Integrations APPROVED (compounds with "m" flag)
[redacted]
09/11/14 09:16

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : AA42427.D
Signal(s) : FID1A.ch
Acq On : 9 Sep 2014 11:41 am
Operator : [redacted]
Sample : JB75730-3
Misc : GC44409,GAA510,,,,,1
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 10 12:29:20 2014
Quant Method : C:\MSDCHEM\1\METHODS\MAA301.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Thu Oct 03 15:03:24 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Methane	1.327	12608279	395.077	PPMV
2)	Ethane	1.761	8547	0.158	PPMV m
9)	n-Pentane	5.131	123413	1.014	PPMV

(f)=RT Delta > 1/2 Window (m)=manual int.

9.1.8

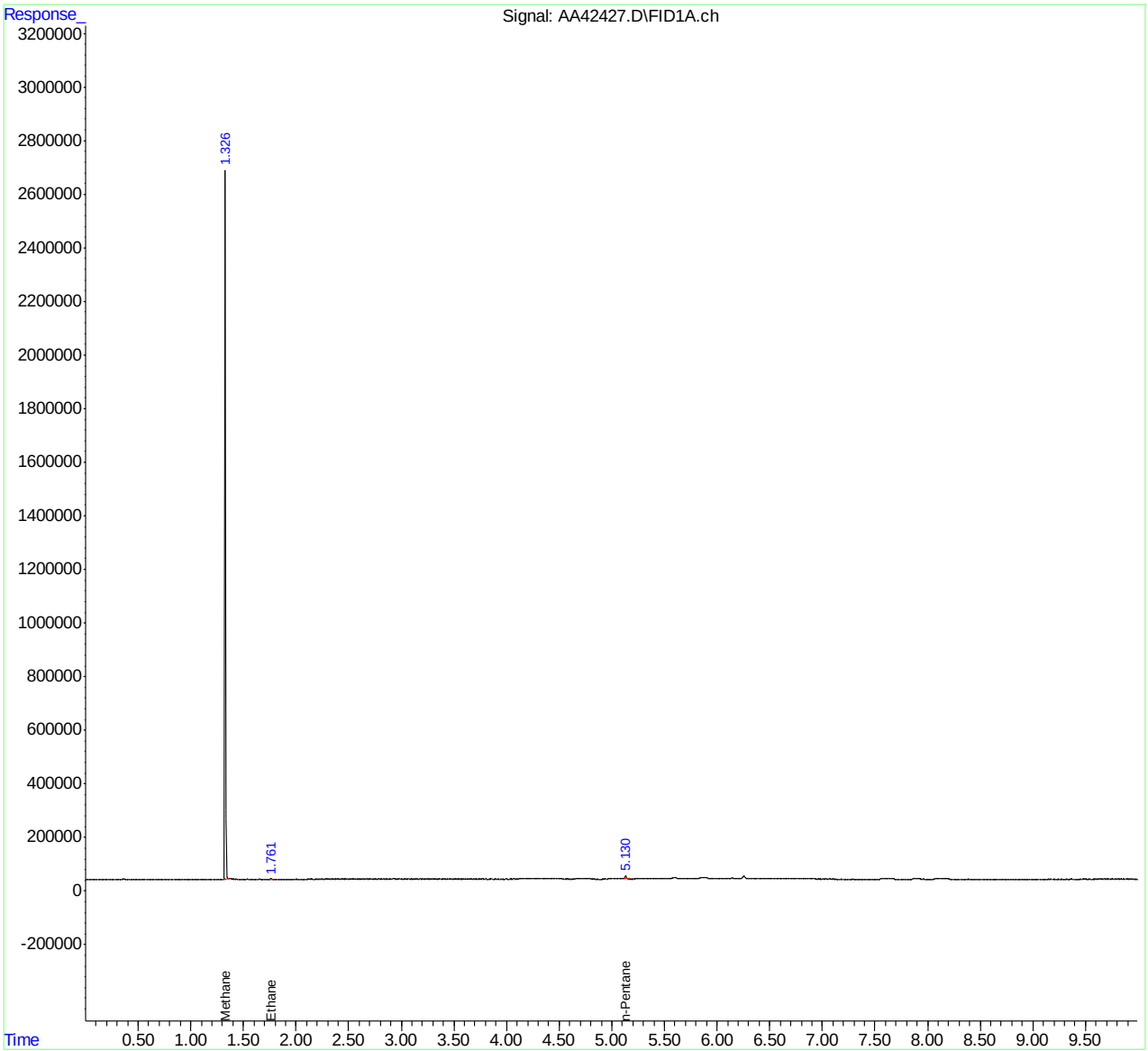
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : AA42427.D
Signal(s) : FID1A.ch
Acq On : 9 Sep 2014 11:41 am
Operator : [redacted]H
Sample : JB75730-3
Misc : GC44409,GAA510,,,,,1
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 10 12:29:20 2014
Quant Method : C:\MSDCHEM\1\METHODS\MAA301.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Thu Oct 03 15:03:24 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df



Dissolved Gas Calculation Worksheet

Data File Name **AA42427.D**
Date Acquired **9/9/2014 11:41**
Sample Name **JB75730-3**
Sample Multiplier **1**
Temperature(C) **24**
Headspace Vol. (cc) **5**
Sample Vol(cc) **37**

Compound	MW	Molar Volume(L)	Water g-moles/L	Temp K	Corrected Gas dens.	Peak Area	Helium Blank	Headspace (ppmv)*	Headspace (ug/l)	Water (ug/l)	Henry's Constant	Saturation Conc.(ug/l)	Total (ug/L)	RL (ug/l)	Report (ug/l)
Methane	16	22.4	55.5	297	24.37	12608279	88125	392.32	257.58	34.81	40560	8.589	43.40	0.10	**43.40**
Ethane	30	22.4	55.5	297	24.37	8547	7702	0.02	0.02	0.00	29420	0.001	0.003	0.12	**ND**
Ethene	28	22.4	55.5	297	24.37	0	0	#DIV/0!	#DIV/0!	#DIV/0!	11160	#DIV/0!	#DIV/0!	0.16	**#DIV/0!**
Propane	44	22.4	55.5	297	24.37	0	0	#DIV/0!	#DIV/0!	#DIV/0!	35857	#DIV/0!	#DIV/0!	0.17	**#DIV/0!**
Propylene	42	22.4	55.5	297	24.37	0	0	#DIV/0!	#DIV/0!	#DIV/0!	13981	#DIV/0!	#DIV/0!	0.17	**#DIV/0!**
Isobutane	58	22.4	55.5	297	24.37	0	0	#DIV/0!	#DIV/0!	#DIV/0!	61993	#DIV/0!	#DIV/0!	0.17	**#DIV/0!**
n-Butane	58	22.4	55.5	297	24.37	0	0	#DIV/0!	#DIV/0!	#DIV/0!	43947	#DIV/0!	#DIV/0!	0.17	**#DIV/0!**

*** ppmv is corrected for helium blank background peak area**

Definitions,

Molar Volume	The volume of 1 mole of any gas at standard temperature and pressure(STP)
Water g/Moles	1 Liter of water is equal to 55.5g-moles
Temp-kelvin	Is defined as 273 + degress C
Corrected Gas Density	Gas density corrected for temperature is equal to (molar volume) x (temp-k/273)
Headspace conc(ug/l)	Is equal to (ppmv reading) x (mw/corrected gas density)
Water Concentration(ug/l)	Is equal to headspace conc(ug/l) x headspace vol/sample vol
Saturation Concentration(ug/l)	Gas which remains at equilibrium in the sample is equal to (headspace conc-ppm) x (mw) x (55.5)/(Henry's Constant)

Henry's Constants

temp-c	20	21	22	23	24	25	26	27	28	29	30
Methane	37600	38340	39080	39820	40560	41300	42020	42740	43460	44180	44900
Ethane	26300	27080	27860	28640	29420	30200	31000	31800	32600	33400	34200
Ethene	10200	10440	10680	10920	11160	11400	11660	11920	12180	12440	12700
Propane	31474	32552	33643	34744	35857	36978	38107	39244	40387	41535	42688
Proylene	11959	12440	12937	13451	13981	14529	15094	15677	16279	16899	17539
IsoButane	54757	56501	58287	60118	61993	63913	65879	67892	69953	72062	74220
n-Butane	38111	39507	40945	42425	43947	45514	47125	48782	50486	52238	52239
Oxygen	40100	40840	41580	42320	43060	43800	44540	45280	46020	46760	47500
CO	52600	53680	54760	55840	56920	58000	58800	59600	60400	61200	62000
CO2	14200	14640	15080	15520	15960	16400	16840	17280	17720	18160	18600
Nitrogen	80400	81620	82840	84060	85280	86500	87680	88860	90040	91220	92400
Hydrogen	68300	68780	69260	69740	70220	70700	71140	71580	72020	72460	72900

Manual Integrations APPROVED (compounds with "m" flag)
[redacted]
09/11/14 09:11

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : AA42422.D
Signal(s) : FID1A.ch
Acq On : 9 Sep 2014 10:06 am
Operator : [redacted]
[redacted] B
Misc : GC44391,GAA510,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 10 12:26:41 2014
Quant Method : C:\MSDCHEM\1\METHODS\MAA301.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Thu Oct 03 15:03:24 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df

Compound	R.T.	Response	Conc	Units
Target Compounds				
1) Methane	1.336	77996	2.444	PPMV
2) Ethane	1.763	5912	0.109	PPMV m

(f)=RT Delta > 1/2 Window (m)=manual int.

9.2.1

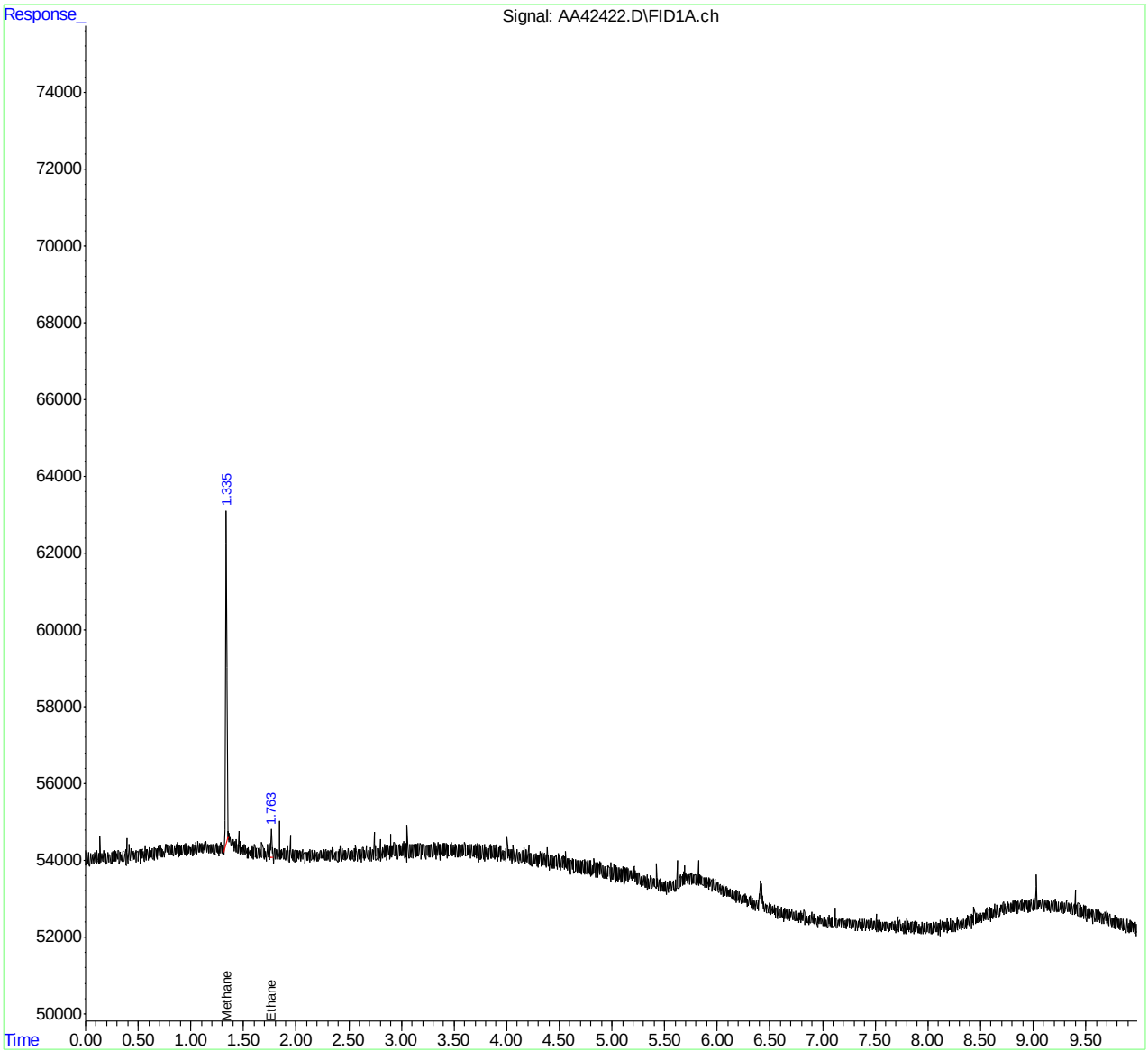
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : AA42422.D
Signal(s) : FID1A.ch
Acq On : 9 Sep 2014 10:06 am
Operator : [redacted]
Sample : MB
Misc : GC44391,GAA510,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 10 12:26:41 2014
Quant Method : C:\MSDCHEM\1\METHODS\MAA301.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Thu Oct 03 15:03:24 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df



Dissolved Gas Calculation Worksheet

Data File Name **AA42422.D**
Date Acquired **9/9/2014 10:06**
Sample Name **MB**
Sample Multiplier **1**
Temperature(C) **24**
Headspace Vol. (cc) **5**
Sample Vol(cc) **37**

Compound	MW	Molar Volume(L)	Water g-moles/L	Temp K	Corrected Gas dens.	Peak Area	Helium Blank	Headspace (ppmv)*	Headspace (ug/l)	Water (ug/l)	Henry's Constant	Saturation Conc.(ug/l)	Total (ug/L)	RL (ug/l)	Report (ug/l)
Methane	16	22.4	55.5	297	24.37	77996	88125	-0.32	-0.21	-0.03	40560	-0.007	-0.04	0.10	ND
Ethane	30	22.4	55.5	297	24.37	5912	7702	-0.03	-0.04	-0.01	29420	-0.002	-0.007	0.12	ND
Ethene	28	22.4	55.5	297	24.37	0	0	#DIV/0!	#DIV/0!	#DIV/0!	11160	#DIV/0!	#DIV/0!	0.16	#DIV/0!
Propane	44	22.4	55.5	297	24.37	0	0	#DIV/0!	#DIV/0!	#DIV/0!	35857	#DIV/0!	#DIV/0!	0.17	#DIV/0!
Propylene	42	22.4	55.5	297	24.37	0	0	#DIV/0!	#DIV/0!	#DIV/0!	13981	#DIV/0!	#DIV/0!	0.17	#DIV/0!
Isobutane	58	22.4	55.5	297	24.37	0	0	#DIV/0!	#DIV/0!	#DIV/0!	61993	#DIV/0!	#DIV/0!	0.17	#DIV/0!
n-Butane	58	22.4	55.5	297	24.37	0	0	#DIV/0!	#DIV/0!	#DIV/0!	43947	#DIV/0!	#DIV/0!	0.17	#DIV/0!

*** ppmv is corrected for helium blank background peak area**

Definitions,

Molar Volume	The volume of 1 mole of any gas at standard temperature and pressure(STP)
Water g/Moles	1 Liter of water is equal to 55.5g-moles
Temp-kelvin	Is defined as 273 + degress C
Corrected Gas Density	Gas density corrected for temperature is equal to (molar volume) x (temp-k/273)
Headspace conc(ug/l)	Is equal to (ppmv reading) x (mw/corrected gas density)
Water Concentration(ug/l)	Is equal to headspace conc(ug/l) x headspace vol/sample vol
Saturation Concentration(ug/l)	Gas which remains at equilibrium in the sample is equal to (headspace conc-ppm) x (mw) x (55.5)/(Henry's Constant)

Henry's Constants

temp-c	20	21	22	23	24	25	26	27	28	29	30
Methane	37600	38340	39080	39820	40560	41300	42020	42740	43460	44180	44900
Ethane	26300	27080	27860	28640	29420	30200	31000	31800	32600	33400	34200
Ethene	10200	10440	10680	10920	11160	11400	11660	11920	12180	12440	12700
Propane	31474	32552	33643	34744	35857	36978	38107	39244	40387	41535	42688
Proylene	11959	12440	12937	13451	13981	14529	15094	15677	16279	16899	17539
IsoButane	54757	56501	58287	60118	61993	63913	65879	67892	69953	72062	74220
n-Butane	38111	39507	40945	42425	43947	45514	47125	48782	50486	52238	52239
Oxygen	40100	40840	41580	42320	43060	43800	44540	45280	46020	46760	47500
CO	52600	53680	54760	55840	56920	58000	58800	59600	60400	61200	62000
CO2	14200	14640	15080	15520	15960	16400	16840	17280	17720	18160	18600
Nitrogen	80400	81620	82840	84060	85280	86500	87680	88860	90040	91220	92400
Hydrogen	68300	68780	69260	69740	70220	70700	71140	71580	72020	72460	72900

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\UV18617.D Vial: 11
Acq On : 10 Sep 2014 3:12 pm Operator: [redacted]
Sample : MB2 Inst : GCUV
Misc : GC44404,GUV4701,5.0,,,,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Sep 11 11:03 2014 Quant Results File: MUV4556.RES

Quant Method : C:\HPCHEM\1\METHODS\MUV4556.M (Chemstation Integrator)
Title : Method SW846 8015B (GRO)
Last Update : Tue Jul 08 08:59:49 2014
Response via : Initial Calibration
DataAcq Meth : MUV4556.M

Volume Inj. :
Signal Phase : crossbond phenylmethyl polysiloxane
Signal Info : DB-624 75m x 0.53mm x 3.0um

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) S a,a,a-Trifluorotoluene	7.60	5524644	234.184 ug/l
Spiked Amount 300.000		Recovery =	78.06%
Target Compounds			

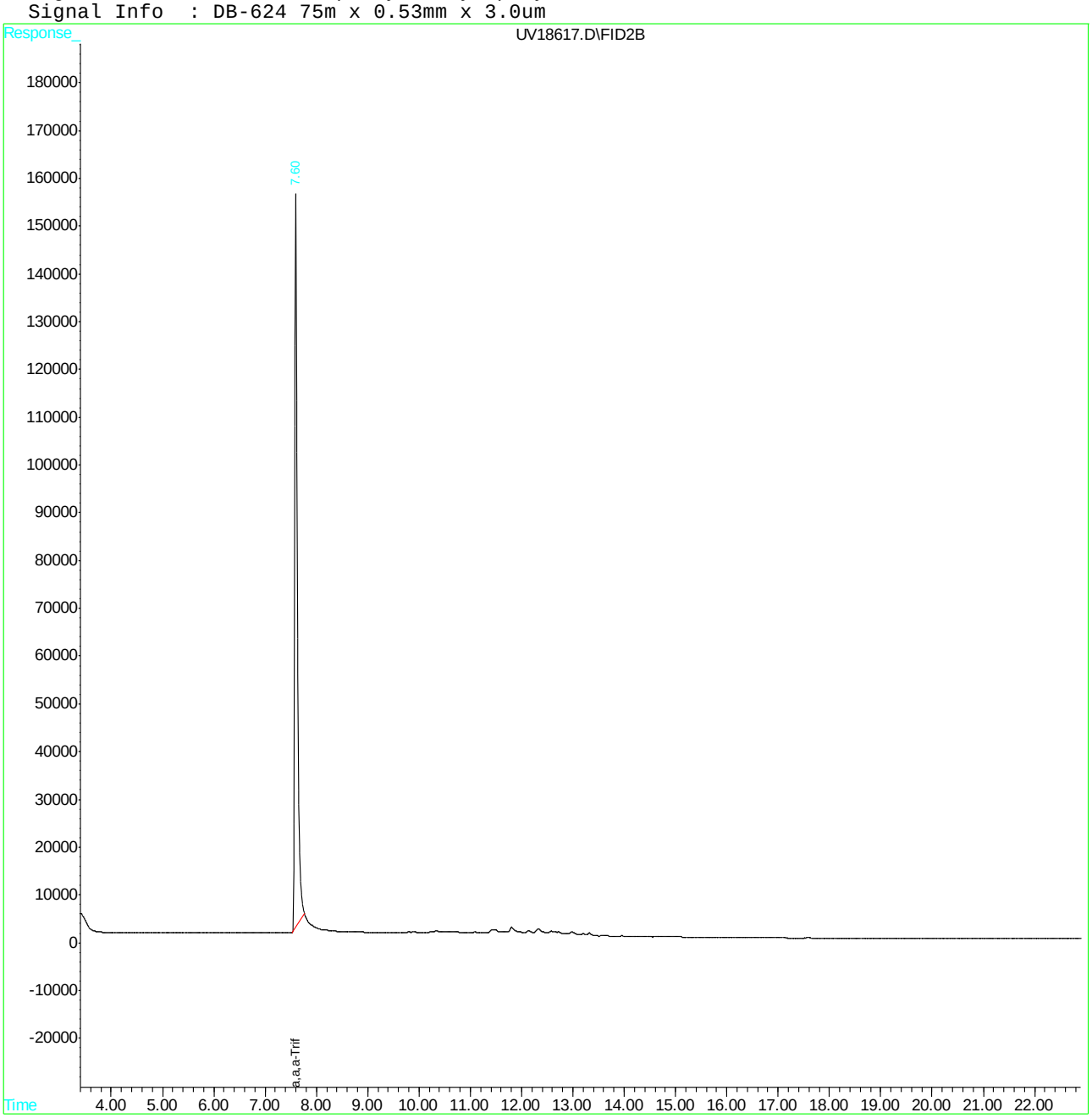
(f)=RT Delta > 1/2 Window (m)=manual int.
UV18617.D MUV4556.M Thu Sep 11 11:03:24 2014 GCSY Page 1

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\UV18617.D Vial: 11
Acq On : 10 Sep 2014 3:12 pm Operator: [redacted]O
Sample : MB2 Inst : GCUV
Misc : GC44404,GUV4701,5.0,,,,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Sep 11 11:03 2014 Quant Results File: MUV4556.RES

Quant Method : C:\HPCHEM\1\METHODS\MUV4556.M (Chemstation Integrator)
Title : Method SW846 8015B (GRO)
Last Update : Tue Jul 08 08:59:49 2014
Response via : Multiple Level Calibration
DataAcq Meth : MUV4556.M

Volume Inj. :
Signal Phase : crossbond phenylmethyl polysiloxane
Signal Info : DB-624 75m x 0.53mm x 3.0um



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\UV18643.D Vial: 5
Acq On : 11 Sep 2014 10:23 am Operator: W[redacted]
Sample : MB1 Inst : GCUV
Misc : GC44421,GUV4702,5.0,,,,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Sep 11 14:25 2014 Quant Results File: MUV4556.RES

Quant Method : C:\HPCHEM\1\METHODS\MUV4556.M (Chemstation Integrator)
Title : Method SW846 8015B (GRO)
Last Update : Tue Jul 08 08:59:49 2014
Response via : Initial Calibration
DataAcq Meth : MUV4556.M

Volume Inj. :
Signal Phase : crossbond phenylmethyl polysiloxane
Signal Info : DB-624 75m x 0.53mm x 3.0um

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
3) S a,a,a-Trifluorotoluene	7.60	5507351	233.451 ug/l
Spiked Amount 300.000		Recovery =	77.82%
Target Compounds			

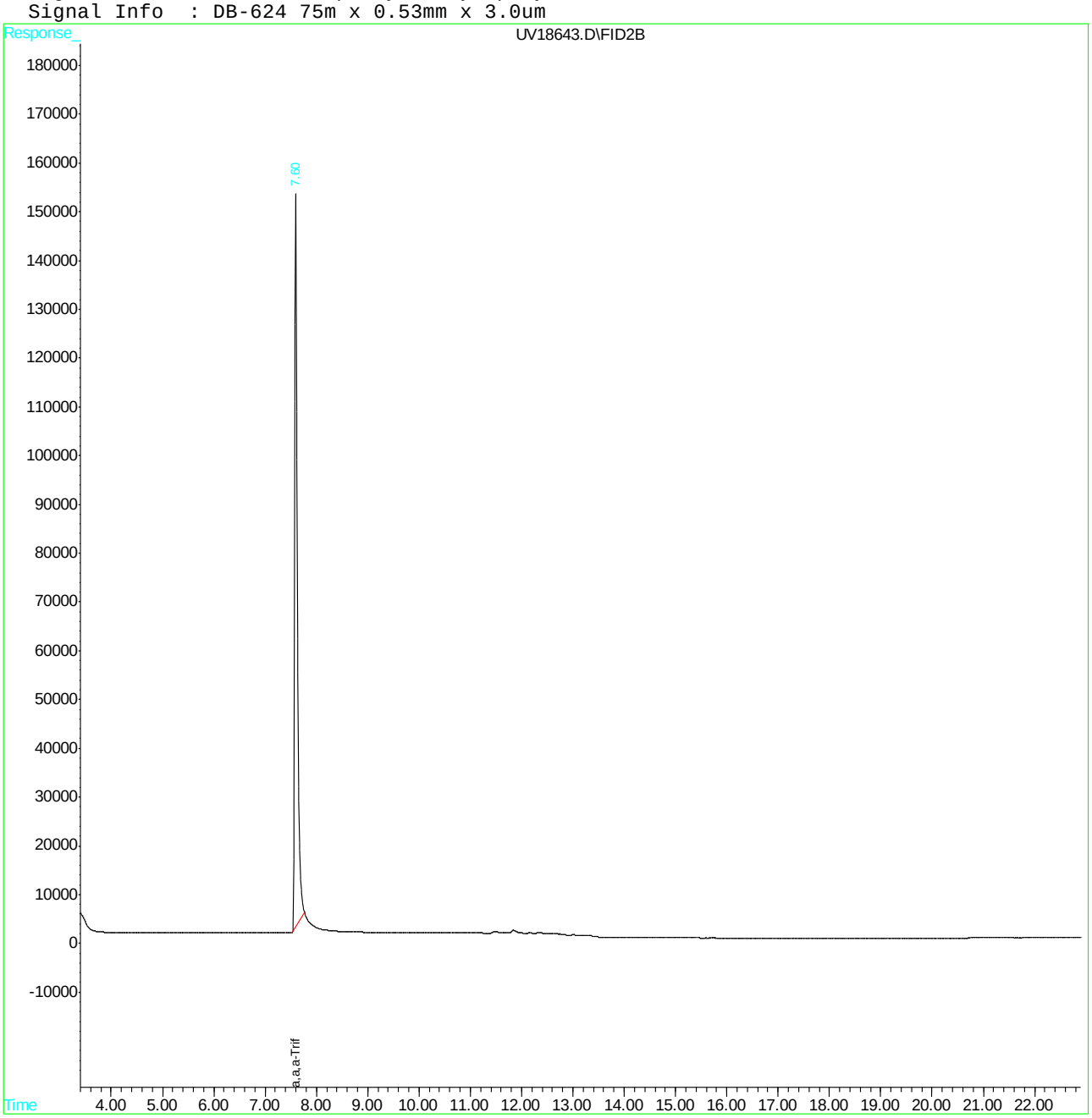
(f)=RT Delta > 1/2 Window (m)=manual int.
UV18643.D MUV4556.M Thu Sep 11 14:29:59 2014 GCSY

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\UV18643.D Vial: 5
Acq On : 11 Sep 2014 10:23 am Operator: [redacted]
Sample : MB1 Inst : GCUV
Misc : GC44421,GUV4702,5.0,,,,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Sep 11 14:25 2014 Quant Results File: MUV4556.RES

Quant Method : C:\HPCHEM\1\METHODS\MUV4556.M (Chemstation Integrator)
Title : Method SW846 8015B (GRO)
Last Update : Tue Jul 08 08:59:49 2014
Response via : Multiple Level Calibration
DataAcq Meth : MUV4556.M

Volume Inj. :
Signal Phase : crossbond phenylmethyl polysiloxane
Signal Info : DB-624 75m x 0.53mm x 3.0um



New Jersey ACCUTEST LABORATORIES

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries
- GC Surrogate Retention Time Summaries
- Initial and Continuing Calibration Summaries

Method Blank Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP77917-MB1	7Y6377.D	1	09/11/14	JM	09/10/14	OP77917	G7Y240

The QC reported here applies to the following samples: **Method:** SW846 8015C

JB75730-1, JB75730-2, JB75730-3

CAS No.	Compound	Result	RL	Units	Q
	TPH-DRO (C10-C28)	ND	0.025	mg/l	
	TPH-ORO (> C28-C40)	ND	0.025	mg/l	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	86%	36-144%
16416-32-3	Tetracosane-d50	62%	32-138%
438-22-2	5a-Androstane	62%	31-136%

Blank Spike Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP77917-BS1	7Y6378.D	1	09/11/14	JM	09/10/14	OP77917	G7Y240

The QC reported here applies to the following samples: **Method:** SW846 8015C

JB75730-1, JB75730-2, JB75730-3

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-DRO (C10-C28)	1	0.882	88	15-111
	TPH-ORO (> C28-C40)		ND		50-150 [a]

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	94%	36-144%
16416-32-3	Tetracosane-d50	82%	32-138%
438-22-2	5a-Androstane	86%	31-136%

(a) Advisory control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP77917-MS	7Y6379.D	1	09/11/14	JM	09/10/14	OP77917	G7Y240
OP77917-MSD	7Y6380.D	1	09/11/14	JM	09/10/14	OP77917	G7Y240
JB75730-1	7Y6381.D	1	09/11/14	JM	09/10/14	OP77917	G7Y240

The QC reported here applies to the following samples: **Method:** SW846 8015C

JB75730-1, JB75730-2, JB75730-3

CAS No.	Compound	JB75730-1 mg/l	Q	Spike mg/l	MS mg/l	MS %	Spike mg/l	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	0.114		2.22	2.04	86	2.22	1.87	78	9	23-160/31
	TPH-ORO (> C28-C40)	ND			0.265			0.270		2	-/5

CAS No.	Surrogate Recoveries	MS	MSD	JB75730-1	Limits
84-15-1	o-Terphenyl	89%	90%	58%	36-144%
16416-32-3	Tetracosane-d50	78%	76%	41%	32-138%
438-22-2	5a-Androstane	81%	83%	41%	31-136%

* = Outside of Control Limits.

Semivolatile Surrogate Recovery Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Method: SW846 8015C **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S2 [a]	S3 [a]
JB75730-1	7Y6381.D	58	41	41
JB75730-2	7Y6382.D	86	62	63
JB75730-3	7Y6386.D	92	70	70
OP77917-BS1	7Y6378.D	94	82	86
OP77917-MB1	7Y6377.D	86	62	62
OP77917-MS	7Y6379.D	89	78	81
OP77917-MSD	7Y6380.D	90	76	83

Surrogate Compounds	Recovery Limits
S1 = o-Terphenyl	36-144%
S2 = Tetracosane-d50	32-138%
S3 = 5a-Androstane	31-136%

(a) Recovery from GC signal #1

GC Surrogate Retention Time Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Check Std:	G7Y240-CC238	**Injection Date:**	09/11/14
Lab File ID:	7Y6374.D	**Injection Time:**	04:10
Instrument ID:	GC7Y	**Method:**	SW846 8015C

	S1 [a] RT	S2 [a] RT	S3 [a] RT
Check Std	8.65	10.62	9.35

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S2 [a] RT	S3 [a] RT
G7Y240-RT	7Y6376.D	09/11/14	05:17			
OP77917-MB1	7Y6377.D	09/11/14	05:51	8.65	10.62	9.35
OP77917-BS1	7Y6378.D	09/11/14	06:25	8.65	10.62	9.35
OP77917-MS	7Y6379.D	09/11/14	06:59	8.65	10.62	9.35
OP77917-MSD	7Y6380.D	09/11/14	07:33	8.65	10.62	9.35
JB75730-1	7Y6381.D	09/11/14	08:07	8.65	10.62	9.35
JB75730-2	7Y6382.D	09/11/14	08:41	8.65	10.62	9.35

Surrogate Compounds

S1 = o-Terphenyl
S2 = Tetracosane-d50
S3 = 5a-Androstane

(a) Retention time from GC signal #1

GC Surrogate Retention Time Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Check Std:	G7Y240-CC238	**Injection Date:**	09/11/14
Lab File ID:	7Y6384.D	**Injection Time:**	09:50
Instrument ID:	GC7Y	**Method:**	SW846 8015C

	S1 [a] RT	S2 [a] RT	S3 [a] RT
Check Std	8.66	10.62	9.35

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S2 [a] RT	S3 [a] RT
JB75730-3	7Y6386.D	09/11/14	11:17	8.65	10.62	9.35
ZZZZZZ	7Y6387.D	09/11/14	11:51	8.65	10.62	9.35
ZZZZZZ	7Y6388.D	09/11/14	12:26	8.67	10.63	9.37
ZZZZZZ	7Y6389.D	09/11/14	13:00	8.65	10.62	9.35

Surrogate Compounds

S1 = o-Terphenyl
S2 = Tetracosane-d50
S3 = 5a-Androstane

(a) Retention time from GC signal #1

Initial Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: G7Y238-ICC238
Lab FileID: 7Y6314.D

Response Factor Report HP G1530A

Method : C:\MSDCHEM\1\METHODS\DRO7Y238.M (Chemstation Integrator)
Title :
Last Update : Wed Sep 10 09:36:35 2014
Response via : Initial Calibration

Calibration Files
250 =7y6312.D 500 =7y6313.D 1000=7y6314.D 2500=7y6315.D
5000=7y6316.D 100 =7y6311.D 10k =7y6317.D 50k =7y6318.D 25 =7y6309.D 50 =7y6310.D

Compound	250	500	1000	2500	5000	100	10k	50k	25	50	Avg	%RSD
1) TPH-DRO	1.355	1.385	1.352	1.375	1.306	1.053	1.209	1.235	1.348	1.234	1.285 E6	8.07
2) TPH-DRO (C10	1.355	1.385	1.352	1.375	1.306	1.053	1.209	1.235	1.348	1.234	1.285 E6	8.07
3) TPH-ORO (>C2	1.355	1.385	1.352	1.375	1.306	1.053	1.209	1.235	1.348	1.234	1.285 E6	8.07
4) TPH-HRO (C18	1.355	1.385	1.352	1.375	1.306	1.053	1.209	1.235	1.348	1.234	1.285 E6	8.07
5) TPH-DRO (C10	1.355	1.385	1.352	1.375	1.306	1.053	1.209	1.235	1.348	1.234	1.285 E6	8.07
6) TPH-ORO (C20	1.355	1.385	1.352	1.375	1.306	1.053	1.209	1.235	1.348	1.234	1.285 E6	8.07
7) TPH (c12-c40	1.355	1.385	1.352	1.375	1.306	1.053	1.209	1.235	1.348	1.234	1.285 E6	8.07
8) o-Terphenyl	1.668	1.620	1.643	1.657	1.627	1.310			1.584	1.768	1.610 E6	8.23
9) 5a-Androstan	1.590	1.554	1.508	1.543	1.507	1.461			1.598	1.666	1.553 E6	4.13
10) Tetracosane-	1.412	1.332	1.322	1.309	1.290				1.399	1.403	1.353 E6	3.73

(#) = Out of Range ### Number of calibration levels exceeded format ###

DRO7Y238.M Wed Sep 10 09:38:15 2014

10.6.1 10

Initial Calibration Verification

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: G7Y238-ICV238
Lab FileID: 7Y6319.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\7y238\7y6319.D Vial: 13
Acq On : 09 Sep 2014 8:39 pm Operator: [redacted]
Sample : icv238-1000 Inst : HP G1530A
Misc : op77849,g7y238,10.3,,,1,1 Multiplr: 1.00
IntFile : events.e

Method : C:\MSDCHEM\1\METHODS\DRO7Y238.M (Chemstation Integrator)
Title :
Last Update : Wed Sep 10 09:36:35 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT Window
1	H	TPH-DRO	1.285	1.254 E6	2.4	93	0.00	2.77-12.15
2	H	TPH-DRO (C10-C44)		----------NA----------				
3	H	TPH-ORO (>C28-C40)		----------NA----------				
4	H	TPH-HRO (C18-C36)		----------NA----------				
5	H	TPH-DRO (C10-C20)		----------NA----------				
6	H	TPH-ORO (C20-C34)		----------NA----------				
7	h	TPH (c12-c40)		----------NA----------				
8	S	o-Terphenyl		----------NA----------				
9	S	5a-Androstane		----------NA----------				
10	S	Tetracosane-d50		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
7y6314.D DRO7Y238.M Wed Sep 10 09:38:04 2014

10.6.2 10

Continuing Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: G7Y240-CC238
Lab FileID: 7Y6374.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\7y240\7y6374.D Vial: 4
Acq On : 11 Sep 2014 4:10 am Operator: [redacted]
Sample : cc238-1000 Inst : HP G1530A
Misc : op77864,g7y240,300,,,1,1 Multiplr: 1.00
IntFile : events.e

Method : C:\MSDCHEM\1\METHODS\DRO7Y238.M (Chemstation Integrator)
Title :
Last Update : Wed Sep 10 09:36:35 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT Window
1	H	TPH-DRO	1.285	1.332 E6	-3.7	99	0.00	2.77-12.15
2	H	TPH-DRO (C10-C44)		----------NA----------				
3	H	TPH-ORO (>C28-C40)		----------NA----------				
4	H	TPH-HRO (C18-C36)		----------NA----------				
5	H	TPH-DRO (C10-C20)		----------NA----------				
6	H	TPH-ORO (C20-C34)		----------NA----------				
7	h	TPH (c12-c40)		----------NA----------				
8	S	o-Terphenyl	1.610	1.653 E6	-2.7	101	0.00	8.62- 8.68
9	S	5a-Androstane	1.553	1.522 E6	2.0	101	0.00	9.32- 9.38
10	S	Tetracosane-d50	1.353	1.356 E6	-0.2	103	0.00	10.59-10.65

(#) = Out of Range SPCC's out = 0 CCC's out = 0
7y6314.D DRO7Y238.M Thu Sep 11 09:33:55 2014

10.6.3 10

Continuing Calibration Summary

Job Number: JB75730 **Sample:** G7Y240-CC238
Account: SHELLWIC Shell Oil Products US **Lab FileID:** 7Y6384.D
Project: URSMDG:SAP#171356, New Hope, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\7y240\7y6384.D Vial: 3
Acq On : 11 Sep 2014 9:50 am Operator: [redacted]
Sample : cc238-500 Inst : HP G1530A
Misc : op77917,g7y240,960,,,1,1 Multiplr: 1.00
IntFile : events.e

Method : C:\MSDCHEM\1\METHODS\DRO7Y238.M (Chemstation Integrator)
Title :
Last Update : Thu Sep 11 16:13:38 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT Window
1	H	TPH-DRO	1.285	1.322 E6	-2.9	95	0.00	2.77-12.15
2	H	TPH-DRO (C10-C44)		----------NA----------				
3	H	TPH-ORO (>C28-C40)		----------NA----------				
4	H	TPH-HRO (C18-C36)		----------NA----------				
5	H	TPH-DRO (C10-C20)		----------NA----------				
6	H	TPH-ORO (C20-C34)		----------NA----------				
7	h	TPH (c12-c40)		----------NA----------				
8	S	o-Terphenyl	1.610	1.603 E6	0.4	99	0.00	8.63- 8.69
9	S	5a-Androstane	1.553	1.560 E6	-0.5	100	0.00	9.32- 9.38
10	S	Tetracosane-d50	1.353	1.366 E6	-1.0	103	0.00	10.59-10.65

(#) = Out of Range SPCC's out = 0 CCC's out = 0
7y6313.D DRO7Y238.M Thu Sep 11 16:30:52 2014

10.6.4 10

Continuing Calibration Summary

Job Number: JB75730
Account: SHELLWIC Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Sample: G7Y240-CC238
Lab FileID: 7Y6391.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\7y240\7y6391.D Vial: 4
Acq On : 11 Sep 2014 2:49 pm Operator: [redacted]
Sample : cc238-1000 Inst : HP G1530A
Misc : op77917,g7y240,950,,,1,1 Multiplr: 1.00
IntFile : events.e

Method : C:\MSDCHEM\1\METHODS\DRO7Y238.M (Chemstation Integrator)
Title :
Last Update : Thu Sep 11 16:13:38 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT Window
1	H	TPH-DRO	1.285	1.322 E6	-2.9	98	0.00	2.77-12.15
2	H	TPH-DRO (C10-C44)		----------NA----------				
3	H	TPH-ORO (>C28-C40)		----------NA----------				
4	H	TPH-HRO (C18-C36)		----------NA----------				
5	H	TPH-DRO (C10-C20)		----------NA----------				
6	H	TPH-ORO (C20-C34)		----------NA----------				
7	h	TPH (c12-c40)		----------NA----------				
8	S	o-Terphenyl	1.610	1.602 E6	0.5	98	0.00	8.62- 8.68
9	S	5a-Androstane	1.553	1.478 E6	4.8	98	0.00	9.32- 9.38
10	S	Tetracosane-d50	1.353	1.319 E6	2.5	100	0.00	10.59-10.65

(#) = Out of Range SPCC's out = 0 CCC's out = 0
7y6377.D DRO7Y238.M Thu Sep 11 16:30:35 2014

10.6.5 10

New Jersey ACCUTEST LABORATORIES

GC Semi-volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
[redacted]
09/15/14 11:35

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\7y240\
Data File : 7y6381.D
Signal(s) : FID1A.CH
Acq On : 11 Sep 2014 8:07 am
Operator : j[redacted]m
Sample : jb75730-1
Misc : op77917,g7y240,900,,,1,1
ALS Vial : 28 Sample Multiplier: 1

Integration File: events.e
Quant Time: Sep 15 10:01:53 2014
Quant Method : C:\MSDCHEM\1\METHODS\DRO7Y238.M
Quant Title :
QLast Update : Mon Sep 15 09:48:52 2014
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1UL
Signal Phase : RTX-1
Signal Info : 30mX0.25mmX0.25um

	Compound	R.T.	Response	Conc	Units	
System Monitoring Compounds						
8) S	o-Terphenyl	8.649	46921443	29.153	PPM	
9) S	5a-Androstane	9.349	32061284	20.639	PPM	
10) S	Tetracosane-d50	10.620	27975570	20.682	PPM	m
Target Compounds						
1) H	TPH-DRO	7.455	132018428	102.717	PPM	
2) H	TPH-DRO (C10-C44)	12.356	253252683	197.043	PPM	

(f)=RT Delta > 1/2 Window (m)=manual int.

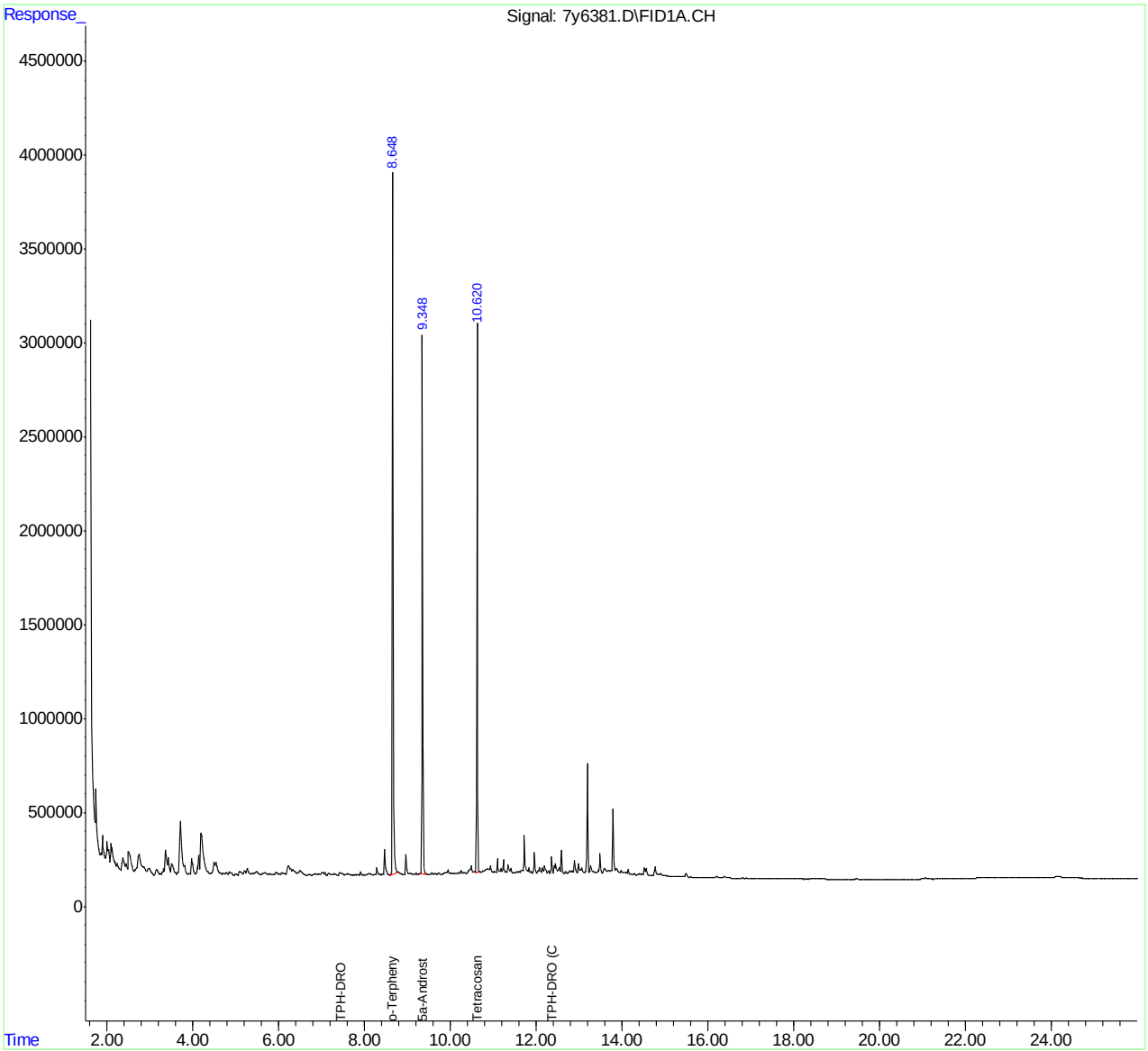
11.1.1 11

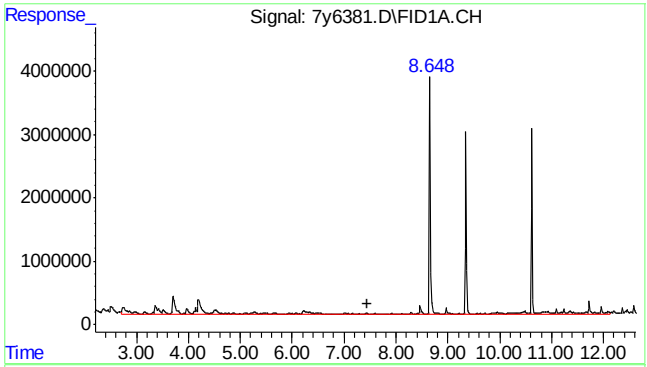
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\7y240\
Data File : 7y6381.D
Signal(s) : FID1A.CH
Acq On : 11 Sep 2014 8:07 am
Operator : [redacted]
Sample : jb75730-1
Misc : op77917,g7y240,900,,,1,1
ALS Vial : 28 Sample Multiplier: 1

Integration File: events.e
Quant Time: Sep 15 10:01:53 2014
Quant Method : C:\MSDCHEM\1\METHODS\DRO7Y238.M
Quant Title :
QLast Update : Mon Sep 15 09:48:52 2014
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

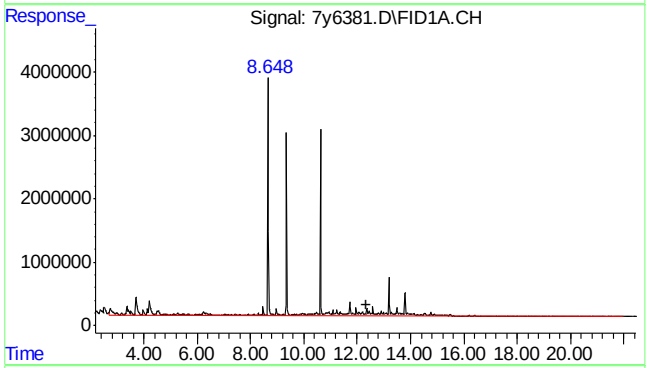
Volume Inj. : 1UL
Signal Phase : RTX-1
Signal Info : 30mX0.25mmX0.25um





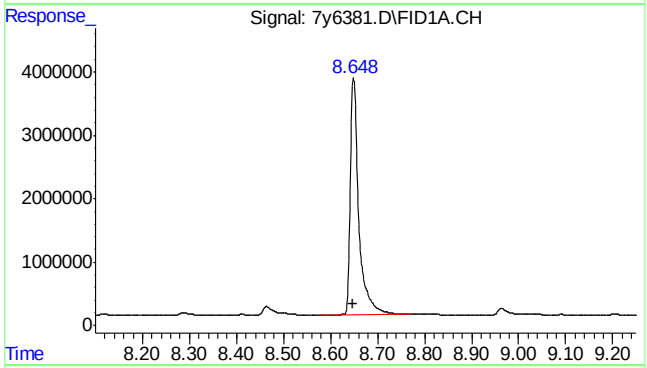
#1 TPH-DRO

R.T.: 7.455 min
Delta R.T.: 0.000 min
Response: 132018428
Conc: 102.72 PPM m



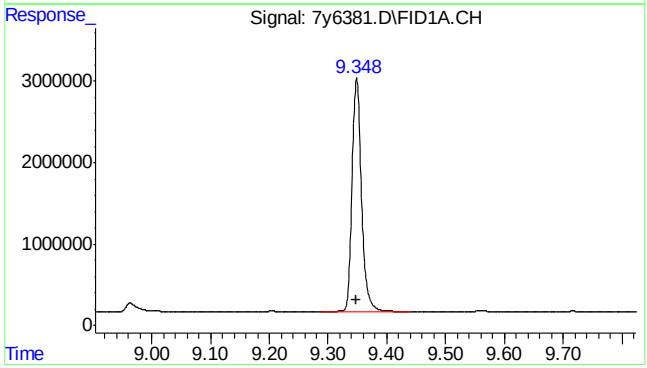
#2 TPH-DRO (C10-C44)

R.T.: 12.356 min
Delta R.T.: 0.000 min
Response: 253252683
Conc: 197.04 PPM m



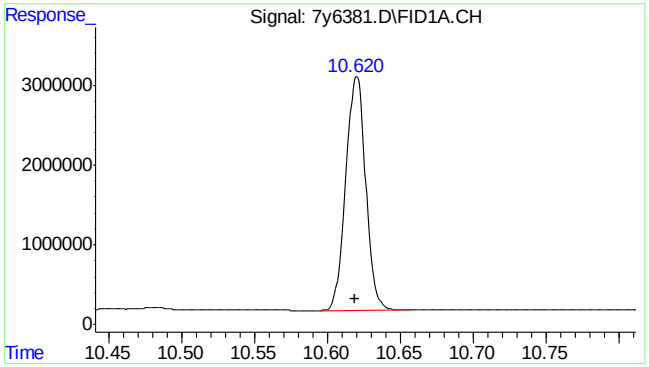
#8 o-Terphenyl

R.T.: 8.649 min
Delta R.T.: 0.002 min
Response: 46921443
Conc: 29.15 PPM



#9 5a-Androstane

R.T.: 9.349 min
Delta R.T.: 0.002 min
Response: 32061284
Conc: 20.64 PPM



#10 Tetracosane-d50

R.T.:	10.620 min
Delta R.T.:	0.001 min
Response:	27975570
Conc:	20.68 PPM m

Manual Integrations APPROVED (compounds with "m" flag)
[redacted]
09/15/14 11:35

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\7y240\
Data File : 7y6382.D
Signal(s) : FID1A.CH
Acq On : 11 Sep 2014 8:41 am
Operator [redacted]
[redacted] b75730-2
Misc : op77917,g7y240,960,,,1,1
ALS Vial : 29 Sample Multiplier: 1

Integration File: events.e
Quant Time: Sep 15 09:54:58 2014
Quant Method : C:\MSDCHEM\1\METHODS\DRO7Y238.M
Quant Title :
QLast Update : Mon Sep 15 09:48:52 2014
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1UL
Signal Phase : RTX-1
Signal Info : 30mX0.25mmX0.25um

	Compound	R.T.	Response	Conc	Units	
	System Monitoring Compounds					
8) S	o-Terphenyl	8.649	69551349	43.213	PPM	m
9) S	5a-Androstane	9.347	48629332	31.304	PPM	
10) S	Tetracosane-d50	10.621	41948137	31.012	PPM	m
	Target Compounds					
1) H	TPH-DRO	7.455	185419727	144.266	PPM	
2) H	TPH-DRO (C10-C44)	12.356	367308433	285.784	PPM	

(f)=RT Delta > 1/2 Window (m)=manual int.

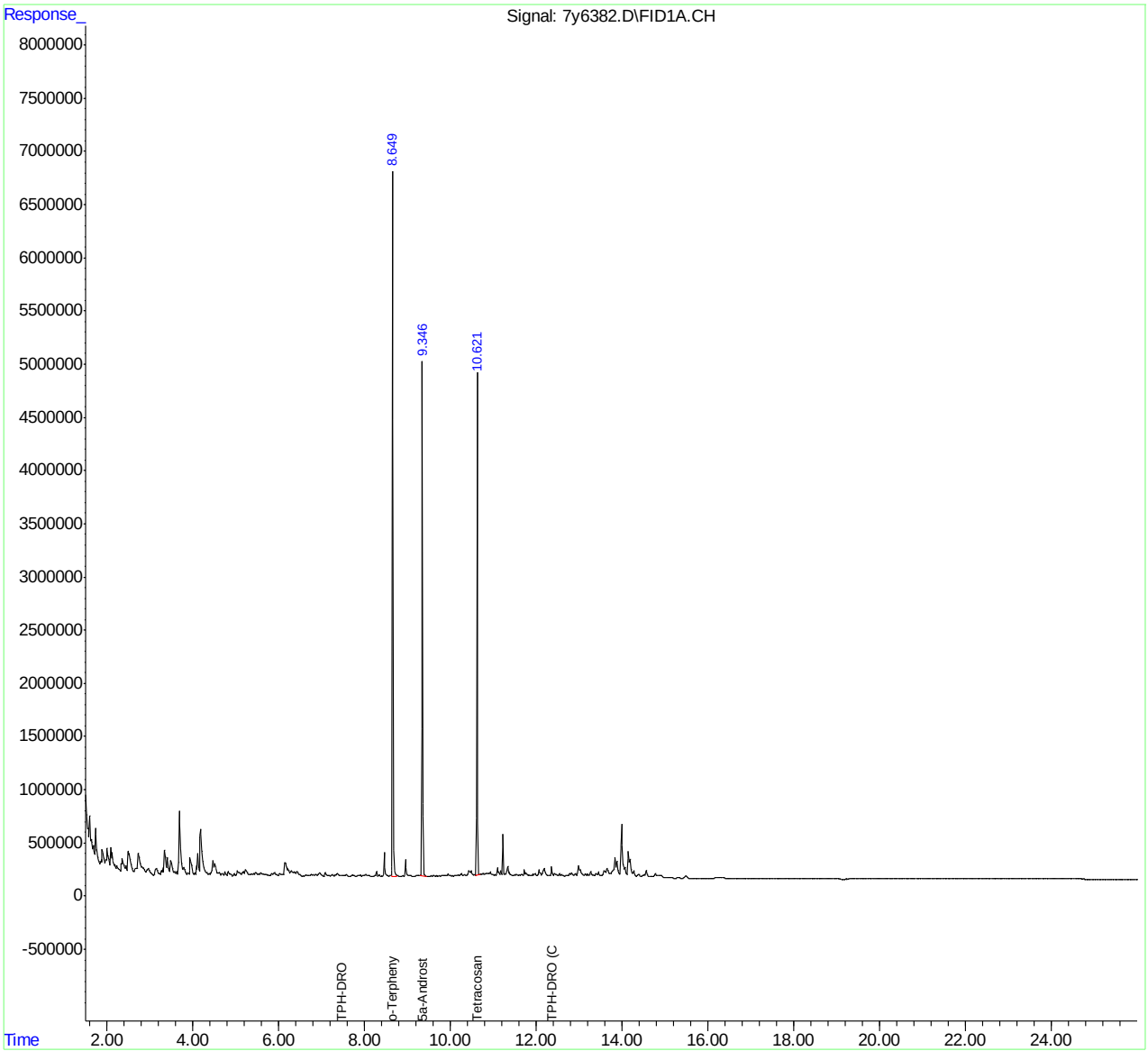
11.1.2 11

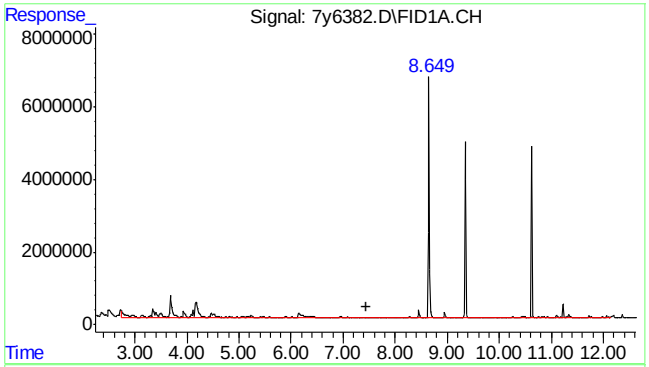
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\7y240\
Data File : 7y6382.D
Signal(s) : FID1A.CH
Acq On : 11 Sep 2014 8:41 am
Operator : [redacted]
[redacted]-2
Misc : op77917,g7y240,960,,,1,1
ALS Vial : 29 Sample Multiplier: 1

Integration File: events.e
Quant Time: Sep 15 09:54:58 2014
Quant Method : C:\MSDCHEM\1\METHODS\DRO7Y238.M
Quant Title :
QLast Update : Mon Sep 15 09:48:52 2014
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

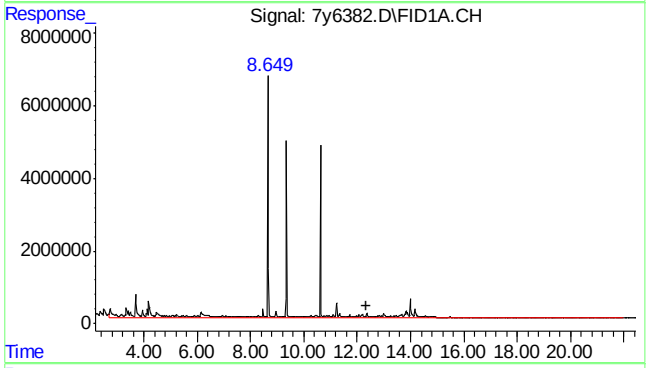
Volume Inj. : 1UL
Signal Phase : RTX-1
Signal Info : 30mX0.25mmX0.25um





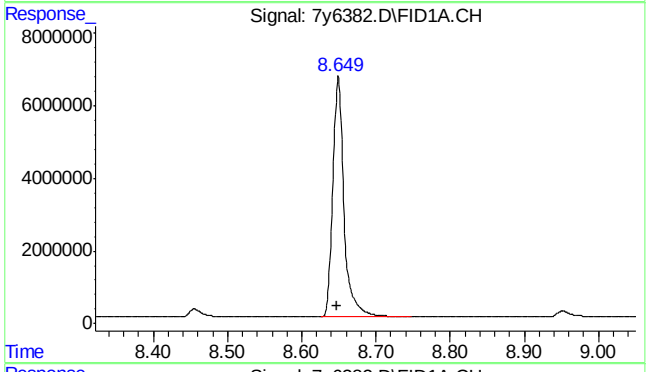
#1 TPH-DRO

R.T.: 7.455 min
Delta R.T.: 0.000 min
Response: 185419727
Conc: 144.27 PPM m



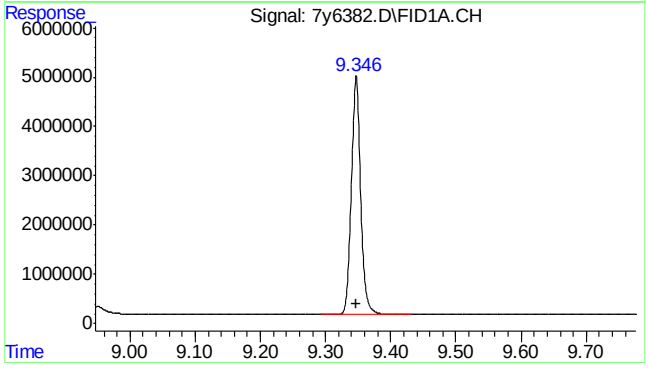
#2 TPH-DRO (C10-C44)

R.T.: 12.356 min
Delta R.T.: 0.000 min
Response: 367308433
Conc: 285.78 PPM m



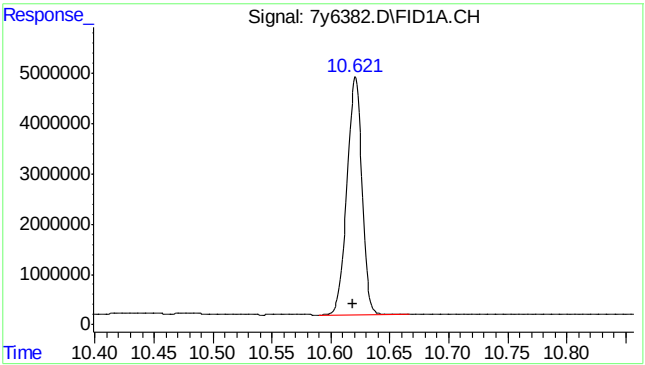
#8 o-Terphenyl

R.T.: 8.649 min
Delta R.T.: 0.001 min
Response: 69551349
Conc: 43.21 PPM m



#9 5a-Androstane

R.T.: 9.347 min
Delta R.T.: 0.000 min
Response: 48629332
Conc: 31.30 PPM



#10 Tetracosane-d50

R.T.:	10.621 min
Delta R.T.:	0.002 min
Response:	41948137
Conc:	31.01 PPM m

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\7y240\
Data File : 7y6386.D
Signal(s) : FID1A.CH
Acq On : 11 Sep 2014 11:17 am
Operator : j[redacted]
Sample : jb75730-3
Misc : op77917,g7y240,960,,,1,1
ALS Vial : 30 Sample Multiplier: 1

Integration File: events.e
Quant Time: Sep 15 09:56:38 2014
Quant Method : C:\MSDCHEM\1\METHODS\DRO7Y238.M
Quant Title :
QLast Update : Mon Sep 15 09:48:52 2014
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1UL
Signal Phase : RTX-1
Signal Info : 30mX0.25mmX0.25um

	Compound	R.T.	Response	Conc	Units
	System Monitoring Compounds				
8) S	o-Terphenyl	8.651	73672327	45.773	PPM
9) S	5a-Androstane	9.349	54593908	35.144	PPM
10) S	Tetracosane-d50	10.623	47151253	34.859	PPM
	Target Compounds				
1) H	TPH-DRO	7.455	221507008	172.344	PPM
2) H	TPH-DRO (C10-C44)	12.356	434653181	338.182	PPM
3) H	TPH-ORO (>C28-C40)	14.778	162216137	126.212	PPM

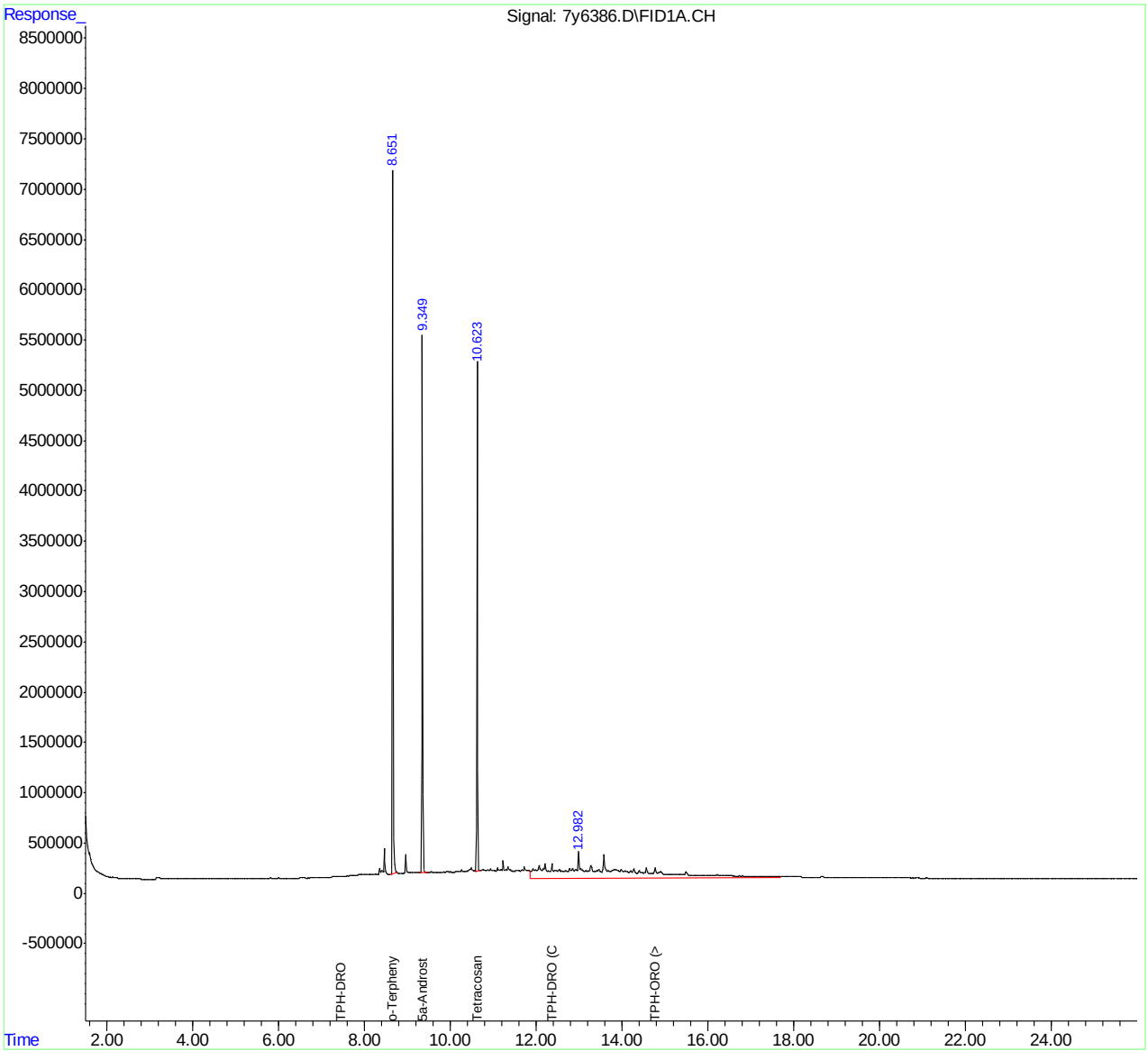
(f)=RT Delta > 1/2 Window (m)=manual int.

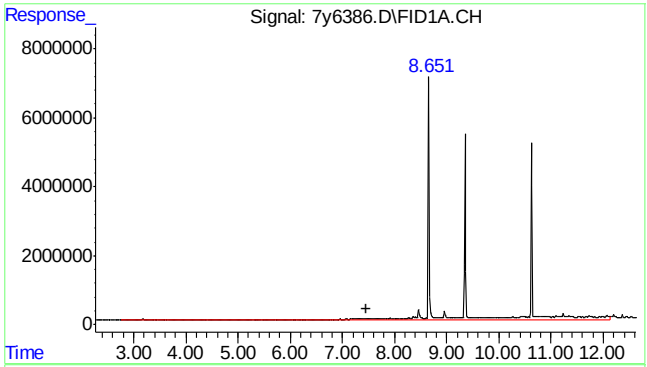
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\7y240\
Data File : 7y6386.D
Signal(s) : FID1A.CH
Acq On : 11 Sep 2014 11:17 am
Operator [redacted]
[redacted] jb75730-3
Misc : op77917,g7y240,960,,,1,1
ALS Vial : 30 Sample Multiplier: 1

Integration File: events.e
Quant Time: Sep 15 09:56:38 2014
Quant Method : C:\MSDCHEM\1\METHODS\DRO7Y238.M
Quant Title :
QLast Update : Mon Sep 15 09:48:52 2014
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

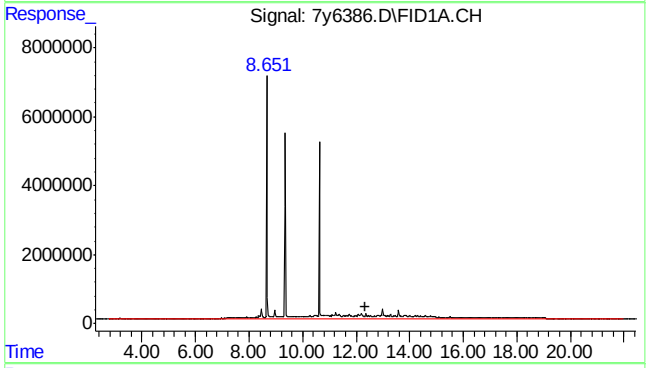
Volume Inj. : 1UL
Signal Phase : RTX-1
Signal Info : 30mX0.25mmX0.25um





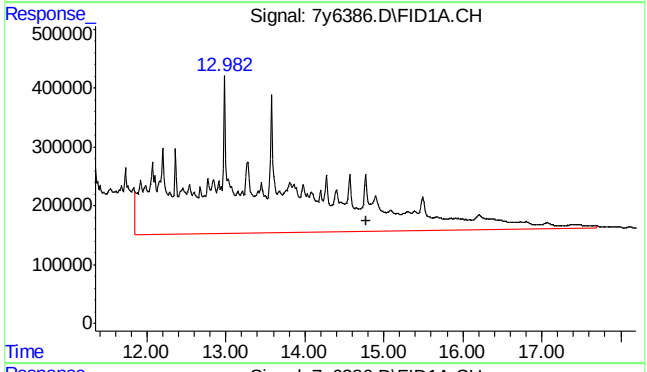
#1 TPH-DRO

R.T.: 7.455 min
Delta R.T.: 0.000 min
Response: 221507008
Conc: 172.34 PPM m



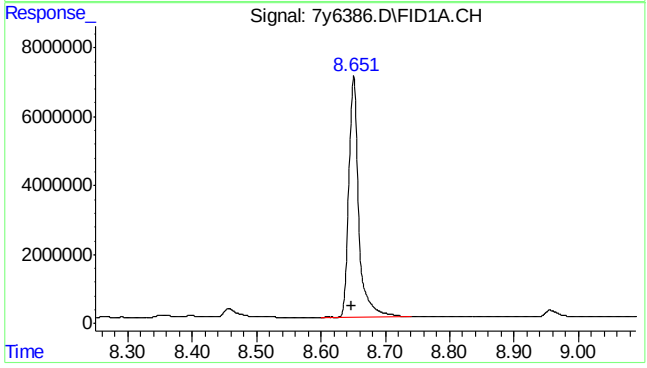
#2 TPH-DRO (C10-C44)

R.T.: 12.356 min
Delta R.T.: 0.000 min
Response: 434653181
Conc: 338.18 PPM m



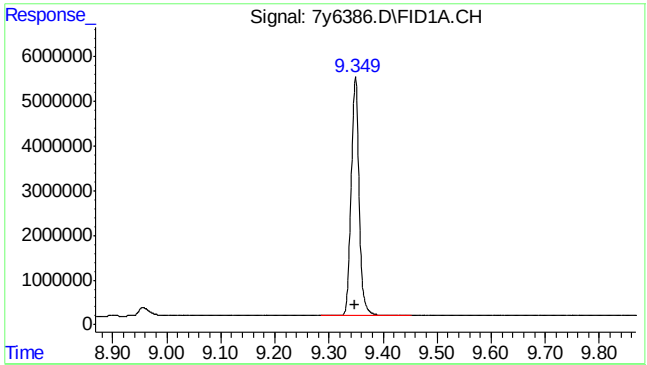
#3 TPH-ORO (>C28-C40)

R.T.: 14.778 min
Delta R.T.: 0.000 min
Response: 162216137
Conc: 126.21 PPM m



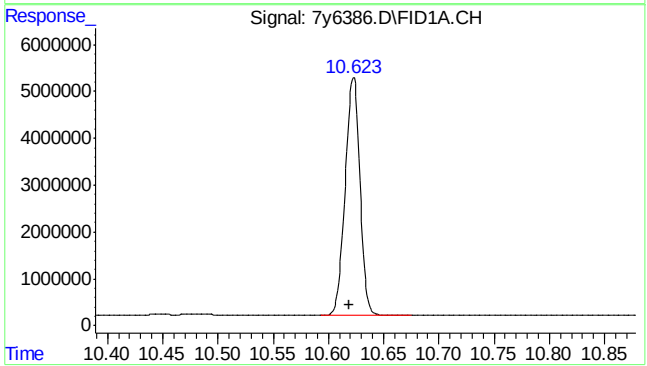
#8 o-Terphenyl

R.T.: 8.651 min
Delta R.T.: 0.003 min
Response: 73672327
Conc: 45.77 PPM



#9 5a-Androstane

R.T.: 9.349 min
Delta R.T.: 0.002 min
Response: 54593908
Conc: 35.14 PPM



#10 Tetracosane-d50

R.T.: 10.623 min
Delta R.T.: 0.004 min
Response: 47151253
Conc: 34.86 PPM

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\7y240\
Data File : 7y6377.D
Signal(s) : FID1A.CH
Acq On : 11 Sep 2014 5:51 am
Operator [redacted]
[redacted] p77917-mb1
Misc : op77917,g7y240,1000,,,1,1
ALS Vial : 24 Sample Multiplier: 1

Integration File: events.e
Quant Time: Sep 11 10:07:22 2014
Quant Method : C:\MSDCHEM\1\METHODS\DRO7Y238.M
Quant Title :
QLast Update : Wed Sep 10 09:36:35 2014
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1UL
Signal Phase : RTX-1
Signal Info : 30mX0.25mmX0.25um

	Compound	R.T.	Response	Conc Units
	System Monitoring Compounds			
8) S	o-Terphenyl	8.650	69540818	43.206 PPM
9) S	5a-Androstane	9.348	48526067	31.238 PPM
10) S	Tetracosane-d50	10.621	41944781	31.010 PPM
	Target Compounds			

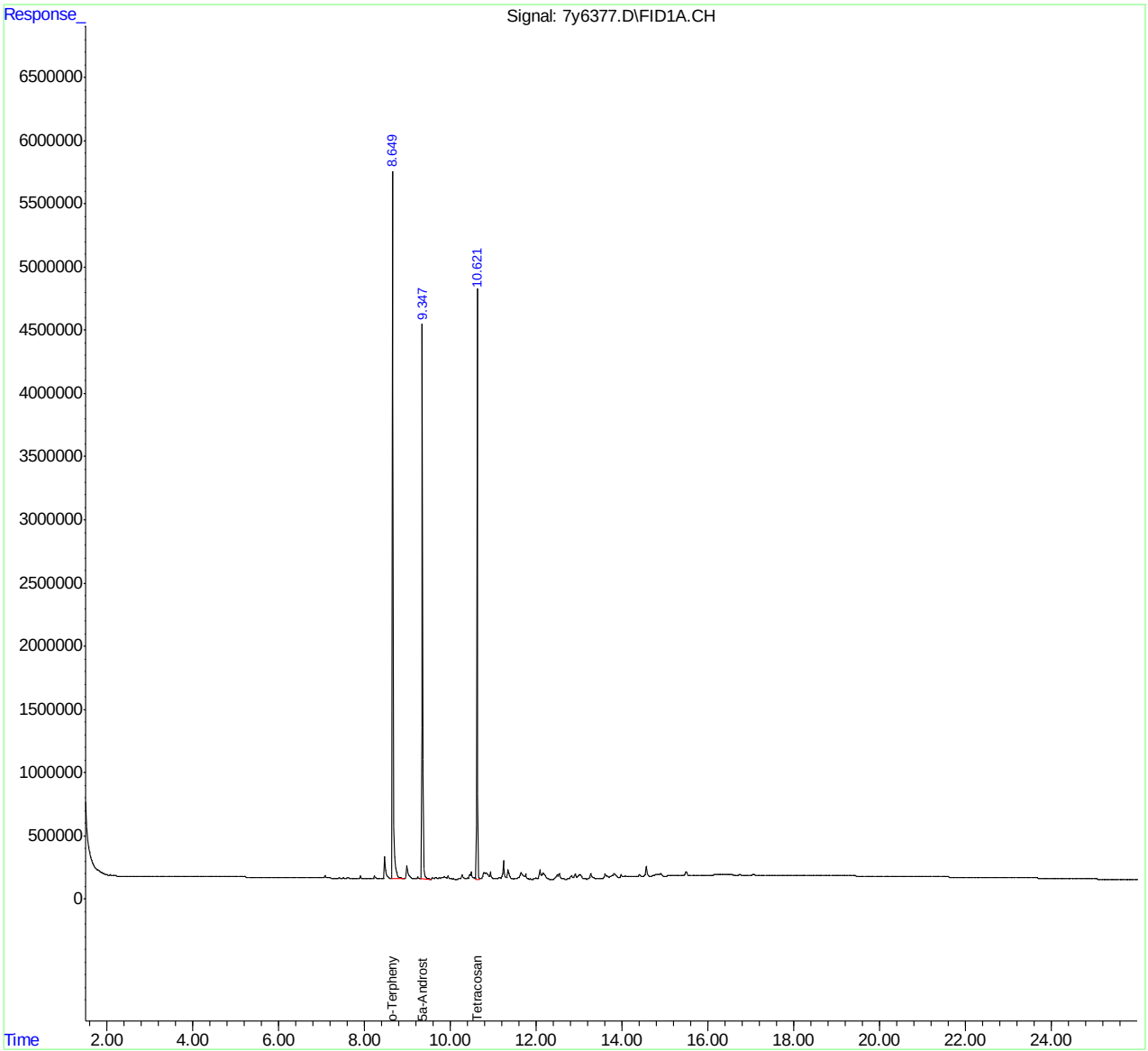
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\7y240\
Data File : 7y6377.D
Signal(s) : FID1A.CH
Acq On : 11 Sep 2014 5:51 am
Operator : [redacted]
[redacted] op77917-mb1
Misc : op77917,g7y240,1000,,,1,1
ALS Vial : 24 Sample Multiplier: 1

Integration File: events.e
Quant Time: Sep 11 10:07:22 2014
Quant Method : C:\MSDCHEM\1\METHODS\DRO7Y238.M
Quant Title :
QLast Update : Wed Sep 10 09:36:35 2014
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. : 1UL
Signal Phase : RTX-1
Signal Info : 30mX0.25mmX0.25um



New Jersey ACCUTEST LABORATORIES

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries
- Instrument Runlogs/QC

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JB75730
Account: SHELLWIC - Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Sulfate	GP83085/GN11748	10	0.0	mg/l	80	80.9	101.1	90-110%
Sulfide	GN11449	2.0	0.0	mg/l	5.1	5.0	98.0	80-120%

Associated Samples:
Batch GN11449: JB75730-1, JB75730-2, JB75730-3
Batch GP83085: JB75730-1, JB75730-2, JB75730-3
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JB75730
Account: SHELLWIC - Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Sulfate	GP83085/GN11748	JB76197-1	mg/l	2430	2430	12.2	0-20%
Sulfide	GN11449	JB75689-3	mg/l	0.0	0.0	0.0	0-12.3%

Associated Samples:
Batch GN11449: JB75730-1, JB75730-2, JB75730-3
Batch GP83085: JB75730-1, JB75730-2, JB75730-3
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JB75730
Account: SHELLWIC - Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Sulfate	GP83085/GN11748	JB76197-1	mg/l	2430	1600	3950	112.5	80-120%
Sulfide	GN11449	JB75689-4	mg/l	0.0	3.64	4.0	109.9	52.2-125.4%

Associated Samples:
Batch GN11449: JB75730-1, JB75730-2, JB75730-3
Batch GP83085: JB75730-1, JB75730-2, JB75730-3
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

Accutest Laboratories Instrument Runlog
Inorganics Analyses

Login Number: JB75730
Account: SHELLWIC - Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

File ID: 214091501.TXT Date Analyzed: 09/15/14 Methods: EPA 300/SW846 9056A
Analyst: [redacted] Run ID: GN11748
Parameters: Sulfate

Time	Sample Description	Dilution Factor	PS Recov	Comments
15:01	GN11748-STD1	1		STDA
15:27	GN11748-STD2	1		STDB
15:55	GN11748-STD3	1		STDC
16:49	GN11748-STD4	1		STDD
17:44	GN11748-STD5	1		STDE
18:10	GN11748-STD6	1		STDF
18:38	GN11748-STD7	1		STDG
10:51	GN11748-ICV1	1		
11:15	GN11748-CCV1	1		
11:39	GN11748-CCB1	1		
12:03	GP83085-MB1	1		
12:03	GP83092-MB1	1		
12:27	GP83085-B1	1		
12:27	GP83092-B1	1		
12:50	GP83085-S1	1		SO4 overrange. Rerun at 1:20 dilution.
13:14	GP83085-D1	1		SO4 overrange. Rerun at 1:10 dilution.
13:38	JB76197-1	1		(sample used for QC only; not part of login JB75730)
14:02	ZZZZZZ	1		
14:26	JB75730-1	1		
14:50	JB75730-2	1		
15:14	JB75730-3	1		
15:38	GP83085-S1	20		
16:02	GP83085-D1	10		
16:26	JB76197-1	10		(sample used for QC only; not part of login JB75730)
16:50	GN11748-CCV2	1		
17:14	GN11748-CCB2	1		
17:38	ZZZZZZ	3		
18:01	ZZZZZZ	2		
18:25	ZZZZZZ	1		
18:49	GP83086-MB1	1		
19:18	GP83086-B1	1		
19:42	GP83086-S1	1		
20:06	GP83086-D1	1		

Accutest Laboratories Instrument Runlog
Inorganics Analyses

Login Number: JB75730
Account: SHELLWIC - Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

File ID: 214091501.TXT Date Analyzed: 09/15/14 Methods: EPA 300/SW846 9056A
Analyst: [redacted] Run ID: GN11748
Parameters: Sulfate

Time	Sample Description	Dilution Factor	PS Recov	Comments
20:29	JB75323-4	1		(sample used for QC only; not part of login JB75730)
20:53	ZZZZZZ	1		
21:17	ZZZZZZ	1		
21:41	GN11748-CCV3	1		
22:05	GN11748-CCB3	1		
22:29	GP83086-S2	1		
22:53	JB75249-1	1		(sample used for QC only; not part of login JB75730)
23:17	ZZZZZZ	1		
23:41	ZZZZZZ	1		
00:05	ZZZZZZ	1		
00:29	ZZZZZZ	1		
00:53	ZZZZZZ	1		
01:17	ZZZZZZ	1		
01:41	ZZZZZZ	1		
02:04	ZZZZZZ	1		
02:28	GN11748-CCV4	1		
02:52	GN11748-CCB4	1		
03:16	ZZZZZZ	1		
03:40	ZZZZZZ	1		
04:04	ZZZZZZ	1		
04:28	ZZZZZZ	1		
04:52	ZZZZZZ	1		
05:16	ZZZZZZ	1		
05:40	ZZZZZZ	1		
06:04	ZZZZZZ	1		
06:28	GN11748-CCV5	1		
06:52	GN11748-CCB5	1		

Refer to raw data for calibration curve and standards.

Instrument QC Summary
Inorganics Analyses

Login Number: JB75730
Account: SHELLWIC - Shell Oil Products US
Project: URSMDG:SAP#171356, New Hope, PA

File ID: 214091501.TXT Date Analyzed: 09/15/14 Methods: EPA 300/SW846 9056A
Run ID: GN11748 Units: mg/l

Sample Number	Parameter	Result	RL	IDL/MDL	True Value	% Recov.	QC Limits
GN11748-ICV1	Sulfate	105	10	0.077	100	105.0	90-110
GN11748-CCV1	Sulfate	205	10	0.077	200	102.5	90-110
GN11748-CCB1	Sulfate	0.077 U	10	0.077			
GN11748-CCV2	Sulfate	204	10	0.077	200	102.0	90-110
GN11748-CCB2	Sulfate	0.53	10	0.077			
GN11748-CCV3	Sulfate	206	10	0.077	200	103.0	90-110
GN11748-CCB3	Sulfate	0.42	10	0.077			
GN11748-CCV4	Sulfate	207	10	0.077	200	103.5	90-110
GN11748-CCB4	Sulfate	0.53	10	0.077			
GN11748-CCV5	Sulfate	208	10	0.077	200	104.0	90-110
GN11748-CCB5	Sulfate	0.61	10	0.077			

(!) Outside of QC limits