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Automated Report

Technical Report for

Anderson, Mulholland & Associates

BMSMC, Building 5 Area, PR

BM16.00.09

SGS Accutest Job Number: JC18972R

Sampling Dates: 04/20/16 - 04/21/16

Report to:

Anderson, Mulholland & Associates
2700 Westchester Avenue Suite 417
Purchase, NY 10577
ttaylor@amaiconsult.com

ATTN: Terry Taylor

Total number of pages in report: **86**

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

Nancy Cole
Laboratory Director

Client Service contact: Tammy McCloskey 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), AK (UST-103), AZ (AZ0786), PA, RI, SC, TN, TX, VA, WV, DoD ELAP (L-A-B L2248)

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Test results relate only to samples analyzed.

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Sample Summary

Anderson, Mulholland & Associates

Job No: JC18972R

BMSMC, Building 5 Area, PR
Project No: BM16.00.09

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC18972-1AR	04/20/16	16:00	TT	04/25/16	SO	Soil	RA16 (17.5-18.5)
JC18972-2AR	04/21/16	11:00	RO	04/25/16	SO	Soil	S-35D (14-15)

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	Anderson, Mulholland & Associates	**Job No**	JC18972R
Site:	BMSMC, Building 5 Area, PR	**Report Date**	5/26/2016 3:55:21 PM

On 04/25/2016, 2 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at Accutest Laboratories at a maximum corrected temperature of 16.2 C. Samples were intact and chemically preserved, unless noted below. An Accutest Job Number of JC18972R 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. *** Samples rec'd @ 17.2 degrees C and ok to proceed with all analysis.

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 GC By Method SW846-8015C (DAI)

Matrix: SO **Batch ID:** GGH5293

- All method blanks for this batch meet method specific criteria.
- Sample(s) JC20528-1AMS, JC20528-1AMSD were used as the QC samples indicated.
- JC18972-2AR: Sample analyzed outside the holding time per client's request.
- JC18972-1AR: Sample analyzed outside the holding time per client's request.

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: JC18972R
Account: Anderson, Mulholland & Associates
Project: BMSMC, Building 5 Area, PR
Collected: 04/20/16 thru 04/21/16

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC18972-1AR	**RA16 (17.5-18.5)**					

No hits reported in this sample.

JC18972-2AR	**S-35D (14-15)**

No hits reported in this sample.

Sample Results

Report of Analysis

SGS Accutest

Report of Analysis

Client Sample ID:	RA16 (17.5-18.5)		
Lab Sample ID:	JC18972-1AR	**Date Sampled:**	04/20/16
Matrix:	SO - Soil	**Date Received:**	04/25/16
Method:	SW846-8015C (DAI)	**Percent Solids:**	80.9
Project:	BMSMC, Building 5 Area, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	GH105134.D	1	05/20/16	XPL	n/a	n/a	GGH5293
Run #2							

	Initial Weight
Run #1	5.1 g
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
67-63-0	Isopropyl Alcohol	ND	120	69	ug/kg	
78-92-2	sec-Butyl Alcohol	ND	120	65	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
111-27-3	Hexanol	109%		52-141%
111-27-3	Hexanol	109%		52-141%

(a) Sample analyzed outside the holding time per client's request.

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

SGS Accutest

Report of Analysis

Client Sample ID:	S-35D (14-15)		
Lab Sample ID:	JC18972-2AR	**Date Sampled:**	04/21/16
Matrix:	SO - Soil	**Date Received:**	04/25/16
Method:	SW846-8015C (DAI)	**Percent Solids:**	78.7
Project:	BMSMC, Building 5 Area, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	GH105135.D	1	05/20/16	XPL	n/a	n/a	GGH5293
Run #2							

	Initial Weight
Run #1	5.0 g
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
67-63-0	Isopropyl Alcohol	ND	130	73	ug/kg	
78-92-2	sec-Butyl Alcohol	ND	130	68	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
111-27-3	Hexanol	110%		52-141%
111-27-3	Hexanol	111%		52-141%

(a) Sample analyzed outside the holding time per client's request.

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

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

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

SO
GW

SGS ACCUTEST-NJ

CHAIN OF CUSTODY

SGS Accutest - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

PAGE 1 OF 1 PN

SGS Accutest Quote # 801219536154
Bottle Order Control #
SGS Accutest Job # JC18972

Client / Reporting Information

Company Name: Anderson Mulholland Ass. Inc.
Street Address: 2700 Westchester
City State Zip: Purchase NY
Project Contact: Terry Taylor
E-mail:
Phone #: 914-257-0400
Fax #:
Sampler(s) Name(s): N. Rivera, T. Taylor, D. Lindstrand, R. O'Reilly
Phone #:

Project Information

Project Name: BMS Release Assessment
Street:
City State: Humacao PR
Project #:
Client Purchase Order #:
Project Manager:
Attention:

Billing Information (if different from Report to)
Company Name:
Street Address:
City State Zip:

Requested Analysis (see TEST CODE sheet)

SGS Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	SVOC - Method 8270 D	LMA - Method 8015B	Pesticides - Method 8081B	1,4 Dioxane + Naphthalene by Method 8270D SIM	LAB USE ONLY
1	RA16 (17.5-18.5)		4/20/16	1600	TT	SO	2					X				X	X	X	X	E17
2	S-35D (14-15)		4/21/16	1100	RO	SO	2					2				X	X	X	X	V134
3	S-41S (8-9)		4/21/16	1115	NR	SO	2					2				X	X	X	X	D14
4	RA16-GW5	☆	4/21/16	1215	TT	GW	7	3				4				X	X	X	X	H2F1 F52

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

INITIAL ASESSMENT RL 2A
LABEL VERIFICATION OK

Turnaround Time (Business days)

- [x] Std. 10 Business Days For soil
- [ ] 5 Day RUSH
- [ ] 3 Day RUSH
- [ ] 2 Day RUSH
- [x] 1 Day RUSH For Aqueous
- [ ] other

Approved By (SGS Accutest PM): / Date:

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [x] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NJ Data of Known Quality Protocol Reporting
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only, Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Add to Report: 1-methyl naphthalene with SVOC by Method 8270D
Do not analyze S-41S(8-9) for LMA
☆ Rec'd 2x 30ml NP for PEST on 4/21/16
Sample inventory is verified upon receipt in the Laboratory

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

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 [signature]	4/21/16 1500	1 Fed EX	2 FEDEX	4-25-16 9:20	2 DL
3		3	4		4
5		5			

Custody Seal # 618 [x] Intact [ ] Not intact
Preserved where applicable [ ]
On Ice [x]
Cooler Temp. 15.8°C
IP

JC18972R: Chain of Custody
Page 1 of 4

SGS Accutest Sample Receipt Summary

Job Number: JC18972 **Client:** ANDERSON MULHOLLAND **Project:** BMS RELEASE

Date / Time Received: 4/25/2016 9:20:00 AM **Delivery Method:** FedEx **Airbill #'s:** 801219536154

Cooler Temps (Raw Measured) °C: Cooler 1: (15.8);

Cooler Temps (Corrected) °C: Cooler 1: (16.2);

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:	No Ice	
4. No, Coolers	1	

Quality Control Preservation	Y	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	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

1) Samples rec'd @ 17.2 degrees C, melted ice water in bags.

2) -3: 60ml soil sample time on label 1255 doesn't match coc 1145, ID and date match.

5.1

5

JC18972R: Chain of Custody

Page 2 of 4

Sample Receipt Summary - Problem Resolution

Job Number: JC18972

Initiator: DAVEH

CSR: Tammy McCloskey

Response Date 4/25/2016

Response: 1) Proceed with all analysis.

2) use sample time of 12:55

per David Lindstrand

5.1

5

JC18972R: Chain of Custody
Page 3 of 4

Job Change Order: JC18972

Requested Date:	5/19/2016	**Received Date:**	4/25/2016
Account Name:	Anderson, Mulholland & Associate	**Due Date:**	5/9/2016
Project Description:	BMSMC, Building 5 Area, PR	**Deliverable:**	FULT1
CSR:	tammym	**TAT (Days):**	7

==========

Sample #: JC18972-1A, 2A

Dept:

TAT: 7

Change:
relog for D8015SBA, DGC+IPA. Ok out of hold time

==========

Above Changes Per: Terry Taylor

Date/Time: 5/19/2016 1:16:55 PM

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

Internal Sample Tracking Chronicle

Anderson, Mulholland & Associates

Job No: JC18972R

BMSMC, Building 5 Area, PR
Project No: BM16.00.09

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC18972-1A	Collected: 20-APR-16 16:00 By: TT RA16 (17.5-18.5)		Received: 25-APR-16 By: DDH			
JC18972-1A	RW846-8015C (DAI)	20-MAY-16 11:24	XPL			D8015SBA,DGC + IPA
JC18972-2A	Collected: 21-APR-16 11:00 By: RO S-35D (14-15)		Received: 25-APR-16 By: DDH			
JC18972-2A	RW846-8015C (DAI)	20-MAY-16 11:39	XPL			D8015SBA,DGC + IPA

SGS Accutest Internal Chain of Custody

Job Number: JC18972R
Account: AMANYWP Anderson, Mulholland & Associates
Project: BMSMC, Building 5 Area, PR
Received: 04/25/16

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC18972-1.1	Secured Storage	Alfredo Crespo	04/28/16 11:33	Retrieve from Storage
JC18972-1.1	Alfredo Crespo	Secured Staging Area	04/28/16 11:33	Return to Storage
JC18972-1.1	Secured Storage	Luis Villanueva	04/28/16 15:54	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JC18972-1.1	Luis Villanueva	Secured Staging Area	04/28/16 15:54	Return to Storage
JC18972-1.1	Secured Staging Area	Allan Chung-yew	04/28/16 15:57	Retrieve from Storage
JC18972-1.1	Allan Chung-yew	Secured Storage	04/28/16 16:36	Return to Storage
JC18972-1.1	Secured Storage	Rebecca Gluckman	04/28/16 17:56	Retrieve from Storage
JC18972-1.1	Rebecca Gluckman	Secured Storage	04/28/16 18:30	Return to Storage
JC18972-1.1	Secured Storage	Todd Shoemaker	04/29/16 10:12	Retrieve from Storage
JC18972-1.1	Todd Shoemaker	Secured Staging Area	04/29/16 10:12	Return to Storage
JC18972-1.1	Secured Staging Area	Todd Shoemaker	04/29/16 10:15	Retrieve from Storage
JC18972-1.1	Todd Shoemaker	Secured Storage	04/29/16 10:15	Return to Storage
JC18972-1.1	Secured Storage	Todd Shoemaker	04/29/16 10:20	Retrieve from Storage
JC18972-1.1	Todd Shoemaker	Secured Staging Area	04/29/16 10:20	Return to Storage
JC18972-1.1	Secured Staging Area	Kruti Patel	04/29/16 15:50	Retrieve from Storage
JC18972-1.1	Kruti Patel	Secured Storage	04/29/16 16:29	Return to Storage
JC18972-1.1	Secured Storage	Xu Liu	05/19/16 14:30	Retrieve from Storage
JC18972-1.1	Xu Liu	Secured Storage	05/19/16 15:33	Return to Storage
JC18972-1.1.1	Allan Chung-yew	Organics Prep	04/28/16 15:57	Extract from JC18972-1.1
JC18972-1.1.1	Organics Prep	Allan Chung-yew	04/28/16 22:58	Extract from JC18972-1.1
JC18972-1.1.1	Allan Chung-yew	Extract Storage	04/28/16 22:58	Return to Storage
JC18972-1.1.1	Extract Storage	Julius Johnson	04/29/16 01:13	Retrieve from Storage
JC18972-1.1.1	Julius Johnson	GCMSZ	04/29/16 01:13	Load on Instrument
JC18972-1.1.1	GCMSZ	Arielle Cocozza	04/29/16 09:55	Unload from Instrument
JC18972-1.1.1	Arielle Cocozza	Extract Freezer	04/29/16 09:55	Return to Storage
JC18972-1.1.2	Rebecca Gluckman	Organics Prep	04/28/16 17:56	Extract from JC18972-1.1
JC18972-1.1.2	Organics Prep	Rebecca Gluckman	04/28/16 21:24	Extract from JC18972-1.1
JC18972-1.1.2	Rebecca Gluckman	Extract Storage	04/28/16 21:24	Return to Storage
JC18972-1.1.2	Extract Storage	Brittany Piercy	04/29/16 10:19	Retrieve from Storage
JC18972-1.1.2	Brittany Piercy	GC1G	04/29/16 10:19	Load on Instrument
JC18972-1.1.2	GC1G	Brittany Piercy	05/04/16 09:21	Unload from Instrument
JC18972-1.1.2	Brittany Piercy	Extract Freezer	05/04/16 09:21	Return to Storage
JC18972-1.2	Secured Storage	Luis Villanueva	04/26/16 13:20	Retrieve from Storage
JC18972-1.2	Luis Villanueva	Secured Staging Area	04/26/16 13:20	Return to Storage
JC18972-1.2	Secured Storage	Dawan Currie	04/26/16 15:49	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JC18972-1.2	Dawan Currie	Secured Staging Area	04/26/16 15:49	Return to Storage
JC18972-1.2	Dawan Currie	Secured Storage	04/26/16 15:53	Return to Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JC18972-1.2	Secured Storage	Oleg Berenzon	04/26/16 15:58	Retrieve from Storage

SGS Accutest Internal Chain of Custody

Job Number: JC18972R
Account: AMANYWP Anderson, Mulholland & Associates
Project: BMSMC, Building 5 Area, PR
Received: 04/25/16

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC18972-1.2	Oleg Berenzon		04/26/16 15:59	Subcontract
JC18972-2.1	Secured Storage	Alfredo Crespo	04/28/16 11:33	Retrieve from Storage
JC18972-2.1	Alfredo Crespo	Secured Staging Area	04/28/16 11:33	Return to Storage
JC18972-2.1	Secured Storage	Luis Villanueva	04/28/16 15:54	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JC18972-2.1	Luis Villanueva	Secured Staging Area	04/28/16 15:54	Return to Storage
JC18972-2.1	Secured Staging Area	Allan Chung-yew	04/28/16 15:57	Retrieve from Storage
JC18972-2.1	Allan Chung-yew	Secured Storage	04/28/16 16:36	Return to Storage
JC18972-2.1	Secured Storage	Rebecca Gluckman	04/28/16 17:56	Retrieve from Storage
JC18972-2.1	Rebecca Gluckman	Secured Storage	04/28/16 18:30	Return to Storage
JC18972-2.1	Secured Storage	Todd Shoemaker	04/29/16 10:12	Retrieve from Storage
JC18972-2.1	Todd Shoemaker	Secured Staging Area	04/29/16 10:12	Return to Storage
JC18972-2.1	Secured Staging Area	Todd Shoemaker	04/29/16 10:15	Retrieve from Storage
JC18972-2.1	Todd Shoemaker	Secured Storage	04/29/16 10:15	Return to Storage
JC18972-2.1	Secured Storage	Todd Shoemaker	04/29/16 10:20	Retrieve from Storage
JC18972-2.1	Todd Shoemaker	Secured Staging Area	04/29/16 10:20	Return to Storage
JC18972-2.1	Secured Staging Area	Kruti Patel	04/29/16 15:50	Retrieve from Storage
JC18972-2.1	Kruti Patel	Secured Storage	04/29/16 16:29	Return to Storage
JC18972-2.1	Secured Storage	Xu Liu	05/19/16 14:30	Retrieve from Storage
JC18972-2.1	Xu Liu	Secured Storage	05/19/16 15:33	Return to Storage
JC18972-2.1.1	Allan Chung-yew	Organics Prep	04/28/16 15:57	Extract from JC18972-2.1
JC18972-2.1.1	Organics Prep	Allan Chung-yew	04/28/16 22:58	Extract from JC18972-2.1
JC18972-2.1.1	Allan Chung-yew	Extract Storage	04/28/16 22:58	Return to Storage
JC18972-2.1.1	Extract Storage	Julius Johnson	04/29/16 01:13	Retrieve from Storage
JC18972-2.1.1	Julius Johnson	GCMSZ	04/29/16 01:13	Load on Instrument
JC18972-2.1.1	GCMSZ	Arielle Cocozza	04/29/16 09:55	Unload from Instrument
JC18972-2.1.1	Arielle Cocozza	Extract Freezer	04/29/16 09:55	Return to Storage
JC18972-2.1.2	Rebecca Gluckman	Organics Prep	04/28/16 17:56	Extract from JC18972-2.1
JC18972-2.1.2	Organics Prep	Rebecca Gluckman	04/28/16 21:24	Extract from JC18972-2.1
JC18972-2.1.2	Rebecca Gluckman	Extract Storage	04/28/16 21:24	Return to Storage
JC18972-2.1.2	Extract Storage	Brittany Piercy	04/29/16 10:19	Retrieve from Storage
JC18972-2.1.2	Brittany Piercy	GC1G	04/29/16 10:19	Load on Instrument
JC18972-2.1.2	GC1G	Brittany Piercy	05/04/16 09:21	Unload from Instrument
JC18972-2.1.2	Brittany Piercy	Extract Freezer	05/04/16 09:21	Return to Storage
JC18972-2.2	Secured Storage	Luis Villanueva	04/26/16 13:20	Retrieve from Storage
JC18972-2.2	Luis Villanueva	Secured Staging Area	04/26/16 13:20	Return to Storage
JC18972-2.2	Secured Storage	Dawan Currie	04/26/16 15:49	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JC18972-2.2	Dawan Currie	Secured Staging Area	04/26/16 15:49	Return to Storage
JC18972-2.2	Dawan Currie	Secured Storage	04/26/16 15:53	Return to Storage

SGS Accutest Internal Chain of Custody

Job Number: JC18972R
Account: AMANYWP Anderson, Mulholland & Associates
Project: BMSMC, Building 5 Area, PR
Received: 04/25/16

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
Bottle was returned to secure storage, but inadvertently not scanned.				
JC18972-2.2	Secured Storage	Oleg Berenzon	04/26/16 15:58	Retrieve from Storage
JC18972-2.2	Oleg Berenzon		04/26/16 15:59	Subcontract

GC Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: JC18972R
Account: AMANYWP Anderson, Mulholland & Associates
Project: BMSMC, Building 5 Area, PR

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGH5293-MB2	GH105132.D	1	05/20/16	XPL	n/a	n/a	GGH5293

The QC reported here applies to the following samples: **Method:** SW846-8015C (DAI)

JC18972-1AR, JC18972-2AR

CAS No.	Compound	Result	RL	MDL	Units	Q
67-63-0	Isopropyl Alcohol	ND	100	57	ug/kg	
78-92-2	sec-Butyl Alcohol	ND	100	53	ug/kg	

CAS No.	Surrogate Recoveries		Limits
111-27-3	Hexanol	95%	52-141%
111-27-3	Hexanol	98%	52-141%

Method Blank Summary

Job Number: JC18972R
Account: AMANYWP Anderson, Mulholland & Associates
Project: BMSMC, Building 5 Area, PR

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGH5293-MB1	GH105122.D	1	05/20/16	XPL	n/a	n/a	GGH5293

The QC reported here applies to the following samples: **Method:** SW846-8015C (DAI)

GGH5293-BS, JC20528-1AMS, JC20528-1AMSD

CAS No.	Compound	Result	RL	MDL	Units	Q
67-63-0	Isopropyl Alcohol	ND	100	57	ug/kg	
78-92-2	sec-Butyl Alcohol	ND	100	53	ug/kg	

CAS No.	Surrogate Recoveries		Limits
111-27-3	Hexanol	99%	52-141%
111-27-3	Hexanol	97%	52-141%

Blank Spike Summary

Job Number: JC18972R
Account: AMANYWP Anderson, Mulholland & Associates
Project: BMSMC, Building 5 Area, PR

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGH5293-BS	GH105123.D	1	05/20/16	XPL	n/a	n/a	GGH5293

The QC reported here applies to the following samples: **Method:** SW846-8015C (DAI)

JC18972-1AR, JC18972-2AR

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
67-63-0	Isopropyl Alcohol	5000	4460	89	76-122
78-92-2	sec-Butyl Alcohol	5000	4940	99	73-120

CAS No.	Surrogate Recoveries	BSP	Limits
111-27-3	Hexanol	103%	52-141%
111-27-3	Hexanol	103%	52-141%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC18972R
Account: AMANYWP Anderson, Mulholland & Associates
Project: BMSMC, Building 5 Area, PR

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC20528-1AMS	GH105125.D	1	05/20/16	XPL	n/a	n/a	GGH5293
JC20528-1AMSD	GH105126.D	1	05/20/16	XPL	n/a	n/a	GGH5293
JC20528-1A	GH105124.D	1	05/20/16	XPL	n/a	n/a	GGH5293

The QC reported here applies to the following samples: **Method:** SW846-8015C (DAI)

JC18972-1AR, JC18972-2AR

CAS No.	Compound	JC20528-1A ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
67-63-0	Isopropyl Alcohol	ND		5560	5000	90	5560	5620	101	12	69-131/23
78-92-2	sec-Butyl Alcohol	ND		5560	5690	102	5560	5700	102	0	67-131/30

CAS No.	Surrogate Recoveries	MS	MSD	JC20528-1A	Limits
111-27-3	Hexanol	92%	92%	104%	52-141%
111-27-3	Hexanol	91%	94%	106%	52-141%

* = Outside of Control Limits.

GC Identification Summary

Job Number: JC18972R
Account: AMANYWP Anderson, Mulholland & Associates
Project: BMSMC, Building 5 Area, PR

Check Std:	GGH5293-CC5288	**Injection Date:**	05/20/16
Lab File ID:	GH105121.D	**Injection Time:**	07:17
Instrument ID:	GCGH	**Method:**	SW846-8015C (DAI)

Sample ID:	GGH5293-BS	**Injection Date:**	05/20/16
Lab File ID:	GH105123.D	**Injection Time:**	07:53
Client ID:	Blank Spike		

Compound	Column	RT	StdRT	Conc	Q	Units	RPD Conc
Isopropyl Alcohol	1	1.76	1.77	5160		ug/kg	14.6
Isopropyl Alcohol	2 [a]	1.41	1.41	4460		ug/kg	
sec-Butyl Alcohol	1 [a]	2.95	2.96	4940		ug/kg	0.6
sec-Butyl Alcohol	2	2.57	2.57	4970		ug/kg	

(a) QC results reported from this column.

GC Identification Summary

Job Number: JC18972R
Account: AMANYWP Anderson, Mulholland & Associates
Project: BMSMC, Building 5 Area, PR

Check Std:	GGH5293-CC5288	**Injection Date:**	05/20/16
Lab File ID:	GH105121.D	**Injection Time:**	07:17
Instrument ID:	GCGH	**Method:**	SW846-8015C (DAI)

Sample ID:	JC20528-1AMS	**Injection Date:**	05/20/16
Lab File ID:	GH105125.D	**Injection Time:**	08:41
Client ID:	Matrix Spike		

Compound	Column	RT	StdRT	Conc	Q	Units	RPD Conc
Isopropyl Alcohol	1	1.76	1.77	6020		ug/kg	18.5
Isopropyl Alcohol	2 [a]	1.40	1.41	5000		ug/kg	
sec-Butyl Alcohol	1	2.95	2.96	5620		ug/kg	1.2
sec-Butyl Alcohol	2 [a]	2.57	2.57	5690		ug/kg	

(a) QC results reported from this column.

GC Identification Summary

Job Number: JC18972R
Account: AMANYWP Anderson, Mulholland & Associates
Project: BMSMC, Building 5 Area, PR

Check Std:	GGH5293-CC5288	**Injection Date:**	05/20/16
Lab File ID:	GH105121.D	**Injection Time:**	07:17
Instrument ID:	GCGH	**Method:**	SW846-8015C (DAI)

Sample ID:	JC20528-1AMSD	**Injection Date:**	05/20/16
Lab File ID:	GH105126.D	**Injection Time:**	09:00
Client ID:	Matrix Spike Duplicate		

Compound	Column	RT	StdRT	Conc	Q	Units	RPD Conc
Isopropyl Alcohol	1	1.75	1.77	5610		ug/kg	0.2
Isopropyl Alcohol	2 [a]	1.40	1.41	5620		ug/kg	
sec-Butyl Alcohol	1	2.94	2.96	5580		ug/kg	2.1
sec-Butyl Alcohol	2 [a]	2.57	2.57	5700		ug/kg	

(a) QC results reported from this column.

Volatile Surrogate Recovery Summary

Job Number: JC18972R
Account: AMANYWP Anderson, Mulholland & Associates
Project: BMSMC, Building 5 Area, PR

Method: SW846-8015C (DAI) **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]
JC18972-1AR	GH105134.D	109	109
JC18972-2AR	GH105135.D	110	111
GGH5293-BS	GH105123.D	103	103
GGH5293-MB2	GH105132.D	95	98
JC20528-1AMS	GH105125.D	92	91
JC20528-1AMSD	GH105126.D	92	94
GGH5293-MB1	GH105122.D	99	97

Surrogate Compounds	Recovery Limits
S1 = Hexanol	52-141%

(a) Recovery from GC signal #2
(b) Recovery from GC signal #1

GC Surrogate Retention Time Summary

Job Number: JC18972R
Account: AMANYWP Anderson, Mulholland & Associates
Project: BMSMC, Building 5 Area, PR

Check Std:	GGH5293-CC5288	**Injection Date:**	05/20/16
Lab File ID:	GH105121.D	**Injection Time:**	07:17
Instrument ID:	GCGH	**Method:**	SW846-8015C (DAI)

	S1 [a] RT	S1 [b] RT
Check Std	5.50	5.58

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
GGH5293-MB1	GH105122.D	05/20/16	07:38	5.50	5.57
GGH5293-BS	GH105123.D	05/20/16	07:53	5.51	5.57
JC20528-1A	GH105124.D	05/20/16	08:21	5.50	5.57
JC20528-1AMS	GH105125.D	05/20/16	08:41	5.50	5.57
JC20528-1AMSD	GH105126.D	05/20/16	09:00	5.50	5.57
ZZZZZZ	GH105127.D	05/20/16	09:14	5.50	5.57
ZZZZZZ	GH105128.D	05/20/16	09:32	5.50	5.57
ZZZZZZ	GH105129.D	05/20/16	09:46	5.50	5.57
ZZZZZZ	GH105130.D	05/20/16	10:05	5.50	5.56

Surrogate Compounds

S1 = Hexanol

(a) Retention time from GC signal #2
(b) Retention time from GC signal #1

GC Surrogate Retention Time Summary

Job Number: JC18972R
Account: AMANYWP Anderson, Mulholland & Associates
Project: BMSMC, Building 5 Area, PR

Check Std:	GGH5293-CC5288	**Injection Date:**	05/20/16
Lab File ID:	GH105131.D	**Injection Time:**	10:20
Instrument ID:	GCGH	**Method:**	SW846-8015C (DAI)

	S1 [a] RT	S1 [b] RT
Check Std	5.50	5.56

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
GGH5293-MB2	GH105132.D	05/20/16	10:52	5.50	5.56
ZZZZZZ	GH105133.D	05/20/16	11:10	5.50	5.56
JC18972-1AR	GH105134.D	05/20/16	11:24	5.50	5.56
JC18972-2AR	GH105135.D	05/20/16	11:39	5.50	5.56
ZZZZZZ	GH105136.D	05/20/16	11:53	5.50	5.56
ZZZZZZ	GH105137.D	05/20/16	12:15	5.50	5.56
ZZZZZZ	GH105138.D	05/20/16	12:29	5.50	5.56
ZZZZZZ	GH105139.D	05/20/16	12:44	5.50	5.56
ZZZZZZ	GH105140.D	05/20/16	12:58	5.50	5.56

Surrogate Compounds

S1 = Hexanol

(a) Retention time from GC signal #2
(b) Retention time from GC signal #1

Initial Calibration Summary

Job Number: JC18972R
Account: AMANYWP Anderson, Mulholland & Associates
Project: BMSMC, Building 5 Area, PR
Sample: GGH5288-ICC5288
Lab FileID: GH105020.D

Response Factor Report GCGH

Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title : METHOD SW846-8015C (DAI)
Last Update : Wed May 18 08:55:49 2016
Response via : Initial Calibration

Calibration Files
0.5 =GH105018.D 1 =GH105019.D 5 =GH105020.D 10 =GH105021.D
50 =GH105022.D 100 =GH105023.D 0.1 =GH105017.D =

Compound	0.5	1	5	10	50	100	0.1	Avg	%RSD
1) Methanol	1.474	1.617	1.549	1.574	1.441	1.381	1.784	1.546 E1	8.59
2) Ethanol	1.481	1.886	1.989	2.027	1.870	1.914	2.099	1.895 E1	10.57
3) Tert-Butyl A	2.644	2.895	2.860	2.948	2.724	2.958	2.806	2.833 E1	4.12
4) 1-Propanol	2.265	2.525	2.568	2.579	2.395	2.511	2.187	2.433 E1	6.38
5) 2-Propanol	1.765	2.050	2.101	2.139	1.981	2.028	1.888	1.993 E1	6.50
6) Isobutanol	2.804	2.950	2.948	2.988	2.739	2.927	2.784	2.877 E1	3.42
7) 1-Butanol	2.898	2.941	2.862	2.890	2.632	2.755	3.014	2.856 E1	4.42
8) 2-Butanol	2.368	2.558	2.588	2.626	2.424	2.540	2.840	2.563 E1	5.95
9) Hexanol	6.661	6.854	6.904	7.104	6.883		6.152	6.760 E1	4.87

Signal #2

1) Methanol	3.395	2.969	3.474	3.464	3.153	3.141	2.982	3.225 E1	6.76
2) Ethanol	4.063	3.635	4.347	4.327	3.993	4.176	3.361	3.986 E1	9.18
3) Tert-Butyl A	6.528	6.375	6.640	6.640	6.134	6.562	5.629	6.358 E1	5.79
4) 1-Propanol	5.216	5.281	5.494	5.499	5.155	5.488	3.458	5.084 E1	14.38
5) 2-Propanol	4.929	4.342	4.733	4.727	4.363	4.597	4.004	4.528 E1	6.88
6) Isobutanol	6.364	5.960	6.233	6.327	5.766	6.160	6.044	6.122 E1	3.48
7) 1-Butanol	7.458	7.365	6.389	6.043	5.678	5.940	7.445	6.617 E1	11.83
8) 2-Butanol	5.511	5.860	5.620	5.660	5.265	5.573	4.510	5.428 E1	8.15
9) Hexanol	1.546	1.555	1.589	1.628	1.578		1.424	1.553 E2	4.50

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

MGH5288.M Wed May 18 09:03:27 2016 GCGH

Initial Calibration Verification

Job Number: JC18972R
Account: AMANYWP Anderson, Mulholland & Associates
Project: BMSMC, Building 5 Area, PR
Sample: GGH5288-ICV5288
Lab FileID: GH105024.D

Evaluate Continuing Calibration Report

```
Data File : C:\HPCHEM\1\DATA\GH105024.D\FID1A.CH        Vial: 9
Acq On    : 17 May 2016   6:02 pm                   Operator: XULIU
Sample    : ICV5288-5000                            Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105024.D\FID2B.CH        Vial: 9
Acq On    : 17 May 2016   6:24 pm                   Operator: XULIU
Sample    : ICV5288-5000                            Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                Multiplr: 1.00
IntFile   : autoint2.e

Method       : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Wed May 18 08:55:49 2016
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	Methanol	15.459	13.025	15.7	84	0.00	1.09- 1.15
2	Ethanol	18.950	20.029	-5.7	101	0.00	1.41- 1.50
3	Tert-Butyl Alcohol	28.335	29.971	-5.8	105	0.00	1.96- 2.08
4	1-Propanol	24.326	25.536	-5.0	99	0.00	2.46- 2.58
5	2-Propanol	19.931	21.074	-5.7	100	0.00	1.71- 1.80
6	Isobutanol	28.771	30.222	-5.0	103	0.00	3.27- 3.36
7	1-Butanol	28.561	29.118	-2.0	102	0.00	3.73- 3.79
8	2-Butanol	25.634	26.603	-3.8	103	0.00	2.89- 3.01
9 S	Hexanol	67.597	69.942	-3.5	101	0.00	5.54- 5.60
*****	Signal #2 *****						
1	Methanol	32.254	34.546	-7.1	99	0.00	0.87- 0.93
2	Ethanol	39.861	45.328	-13.7	104	0.00	1.13- 1.19
3	Tert-Butyl Alcohol	63.583	66.584	-4.7	100	0.00	1.63- 1.69
4	1-Propanol	50.842	57.021	-12.2	104	0.01	1.99- 2.06
5	2-Propanol	45.279	47.646	-5.2	101	0.00	1.38- 1.44
6	Isobutanol	61.221	66.607	-8.8	107	0.00	2.91- 2.97
7	1-Butanol	66.170	65.238	1.4	102	0.01	3.39- 3.45
8	2-Butanol	54.284	60.860	-12.1	108	0.00	2.54- 2.60
9 S	Hexanol	155.348	158.160	-1.8	100	0.00	5.47- 5.53

(#) = Out of Range SPCC's out = 0 CCC's out = 0
GH105020.D MGH5288.M Wed May 18 09:09:59 2016 GCGH

Continuing Calibration Summary

Job Number: JC18972R
Account: AMANYWP Anderson, Mulholland & Associates
Project: BMSMC, Building 5 Area, PR
Sample: GGH5293-CC5288
Lab FileID: GH105121.D

Evaluate Continuing Calibration Report

```
Data File : C:\HPCHEM\1\DATA\GH105121.D\FID1A.CH         Vial: 92
Acq On    : 20 May 2016   7:17 am                    Operator: XULIU
Sample    : CC5288-5000                              Inst    : GCGH
Misc      : GC48459,GGH5293,5.0,,,,1                 Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105121.D\FID2B.CH         Vial: 92
Acq On    : 20 May 2016   7:38 am                    Operator: XULIU
Sample    : CC5288-5000                              Inst    : GCGH
Misc      : GC48459,GGH5293,5.0,,,,1                 Multiplr: 1.00
IntFile   : autoint2.e

Method       : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Wed May 18 08:55:49 2016
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	Methanol	15.459	12.989	16.0	84	0.00	1.10- 1.16
2	Ethanol	18.950	17.302	8.7	87	0.00	1.42- 1.51
3	Tert-Butyl Alcohol	28.335	27.010	4.7	94	0.00	1.97- 2.09
4	1-Propanol	24.326	23.253	4.4	91	0.00	2.47- 2.59
5	2-Propanol	19.931	19.737	1.0	94	0.00	1.72- 1.81
6	Isobutanol	28.771	27.895	3.0	95	0.00	3.28- 3.37
7	1-Butanol	28.561	26.474	7.3	93	0.00	3.75- 3.81
8	2-Butanol	25.634	24.725	3.5	96	0.00	2.90- 3.02
9 S	Hexanol	67.597	63.449	6.1	92	0.00	5.55- 5.61

***** Signal #2 *****

1	Methanol	32.254	28.672	11.1	83	0.00	0.87- 0.93
2	Ethanol	39.861	38.190	4.2	88	0.00	1.12- 1.18
3	Tert-Butyl Alcohol	63.583	63.449	0.2	96	0.00	1.62- 1.68
4	1-Propanol	50.842	49.571	2.5	90	0.00	1.97- 2.04
5	2-Propanol	45.279	44.432	1.9	94	0.00	1.38- 1.44
6	Isobutanol	61.221	55.807	8.8	90	0.00	2.91- 2.97
7	1-Butanol	66.170	57.635	12.9	90	0.00	3.39- 3.45
8	2-Butanol	54.284	53.242	1.9	95	0.00	2.54- 2.60
9 S	Hexanol	155.348	144.902	6.7	91	0.00	5.47- 5.53

(#) = Out of Range SPCC's out = 0 CCC's out = 0
GH105020.D MGH5288.M Fri May 20 10:13:44 2016 GCGH

Continuing Calibration Summary

Job Number: JC18972R
Account: AMANYWP Anderson, Mulholland & Associates
Project: BMSMC, Building 5 Area, PR
Sample: GGH5293-CC5288
Lab FileID: GH105131.D

Evaluate Continuing Calibration Report

```
Data File : C:\HPCHEM\1\DATA\GH105131.D\FID1A.CH        Vial: 95
Acq On    : 20 May 2016  10:20 am                   Operator: XULIU
Sample    : CC5288-10000                            Inst    : GCGH
Misc      : GC48459,GGH5293,5.0,,,,1                Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105131.D\FID2B.CH        Vial: 95
Acq On    : 20 May 2016  10:33 am                   Operator: XULIU
Sample    : CC5288-10000                            Inst    : GCGH
Misc      : GC48459,GGH5293,5.0,,,,1                Multiplr: 1.00
IntFile   : autoint2.e

Method       : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Wed May 18 08:55:49 2016
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	Methanol	15.459	14.691	5.0	93	0.00	1.09- 1.15
2	Ethanol	18.950	18.884	0.3	93	0.00	1.40- 1.50
3	Tert-Butyl Alcohol	28.335	27.392	3.3	93	0.00	1.95- 2.07
4	1-Propanol	24.326	25.668	-5.5	100	0.00	2.45- 2.57
5	2-Propanol	19.931	19.744	0.9	92	0.00	1.70- 1.79
6	Isobutanol	28.771	28.622	0.5	96	0.00	3.26- 3.35
7	1-Butanol	28.561	25.875	9.4	90	0.00	3.73- 3.79
8	2-Butanol	25.634	25.039	2.3	95	0.00	2.88- 3.00
9 S	Hexanol	67.597	63.801	5.6	90	0.00	5.53- 5.59
*****	Signal #2 *****						
1	Methanol	32.254	30.429	5.7	88	0.00	0.86- 0.92
2	Ethanol	39.861	34.804	12.7	80	0.00	1.12- 1.18
3	Tert-Butyl Alcohol	63.583	55.495	12.7	84	0.00	1.62- 1.68
4	1-Propanol	50.842	43.932	13.6	80	0.00	1.97- 2.04
5	2-Propanol	45.279	38.991	13.9	82	0.00	1.38- 1.44
6	Isobutanol	61.221	55.037	10.1	87	0.00	2.91- 2.97
7	1-Butanol	66.170	58.152	12.1	96	0.00	3.39- 3.45
8	2-Butanol	54.284	55.886	-3.0	99	0.00	2.54- 2.60
9 S	Hexanol	155.348	144.490	7.0	89	0.00	5.47- 5.53

(#) = Out of Range SPCC's out = 0 CCC's out = 0
GH105021.D MGH5288.M Fri May 20 10:48:30 2016 GCGH

Continuing Calibration Summary

Job Number: JC18972R
Account: AMANYWP Anderson, Mulholland & Associates
Project: BMSMC, Building 5 Area, PR
Sample: GGH5293-CC5288
Lab FileID: GH105141.D

Evaluate Continuing Calibration Report

```
Data File : C:\HPCHEM\1\DATA\GH105141.D\FID1A.CH        Vial: 95
Acq On    : 20 May 2016   1:20 pm                   Operator: XULIU
Sample    : CC5288-5000                             Inst    : GCGH
Misc      : GC48459,GGH5293,5.0,,,,1                Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105141.D\FID2B.CH        Vial: 95
Acq On    : 20 May 2016   1:34 pm                   Operator: XULIU
Sample    : CC5288-5000                             Inst    : GCGH
Misc      : GC48459,GGH5293,5.0,,,,1                Multiplr: 1.00
IntFile   : autoint2.e

Method       : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Wed May 18 08:55:49 2016
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	Methanol	15.459	14.594	5.6	94	0.00	1.09- 1.15
2	Ethanol	18.950	19.852	-4.8	100	0.00	1.40- 1.49
3	Tert-Butyl Alcohol	28.335	29.548	-4.3	103	0.00	1.95- 2.07
4	1-Propanol	24.326	24.241	0.3	94	0.00	2.44- 2.56
5	2-Propanol	19.931	21.290	-6.8	101	0.00	1.70- 1.79
6	Isobutanol	28.771	28.285	1.7	96	0.00	3.26- 3.35
7	1-Butanol	28.561	27.267	4.5	95	0.00	3.72- 3.78
8	2-Butanol	25.634	25.030	2.4	97	0.00	2.88- 3.00
9 S	Hexanol	67.597	62.977	6.8	91	0.00	5.53- 5.59
*****	Signal #2 *****						
1	Methanol	32.254	30.238	6.3	87	0.00	0.86- 0.92
2	Ethanol	39.861	38.927	2.3	90	0.00	1.12- 1.18
3	Tert-Butyl Alcohol	63.583	64.342	-1.2	97	0.00	1.62- 1.68
4	1-Propanol	50.842	51.041	-0.4	93	0.00	1.96- 2.03
5	2-Propanol	45.279	44.179	2.4	93	0.00	1.37- 1.43
6	Isobutanol	61.221	58.018	5.2	93	0.00	2.91- 2.97
7	1-Butanol	66.170	55.383	16.3	87	0.00	3.39- 3.45
8	2-Butanol	54.284	53.072	2.2	94	0.00	2.54- 2.60
9 S	Hexanol	155.348	142.300	8.4	90	0.00	5.47- 5.53

(#) = Out of Range SPCC's out = 0 CCC's out = 0
GH105020.D MGH5288.M Fri May 20 13:58:31 2016 GCGH

GC Volatiles

Raw Data

Quantitation Report (QT Reviewed)

```
Data File : C:\HPCHEM\1\DATA\GH105134.D\FID1A.CH          Vial: 16
Acq On    : 20 May 2016  11:24 am                     Operator: XULIU
Sample    : JC18972-1AR                               Inst    : GCGH
Misc      : GC48459,GGH5293,5.1,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105134.D\FID2B.CH          Vial: 16
Acq On    : 20 May 2016  11:39 am                     Operator: XULIU
Sample    : JC18972-1AR                               Inst    : GCGH
Misc      : GC48459,GGH5293,5.1,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 20 13:46 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Wed May 18 08:55:49 2016
Response via : Initial Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um
```

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
9) S Hexanol	5.56	5.50	368348	843090	5449.197	5427.125
Spiked Amount 5000.000			Recovery	=	108.98%	108.54%
Target Compounds						

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

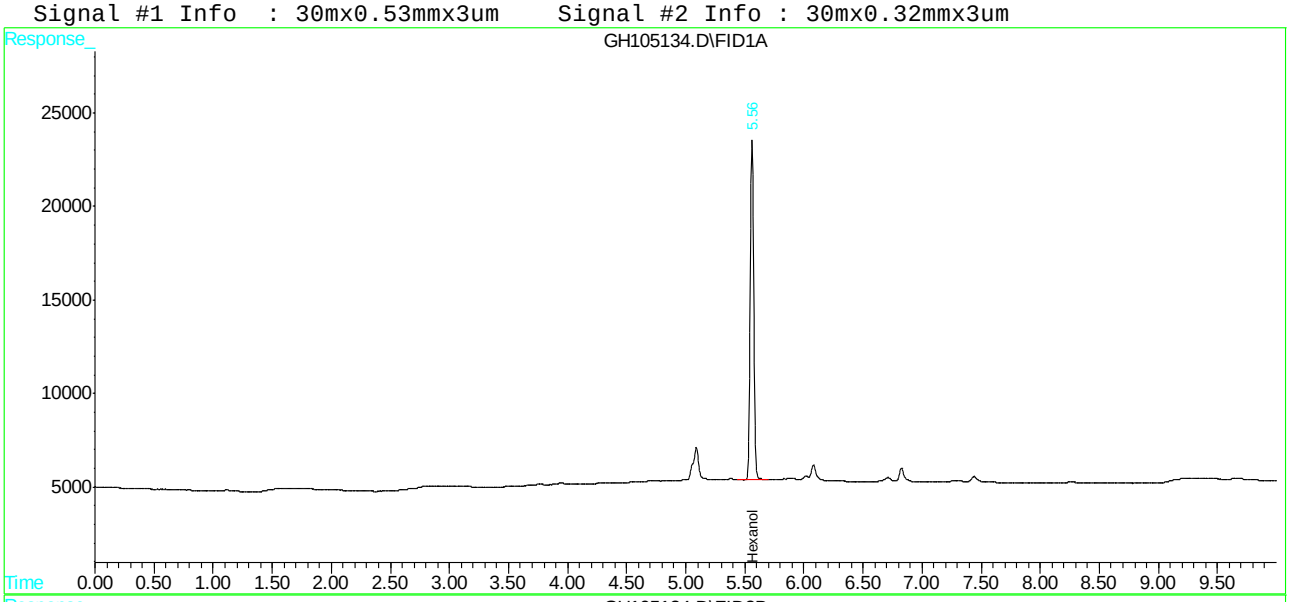
Quantitation Report (QT Reviewed)

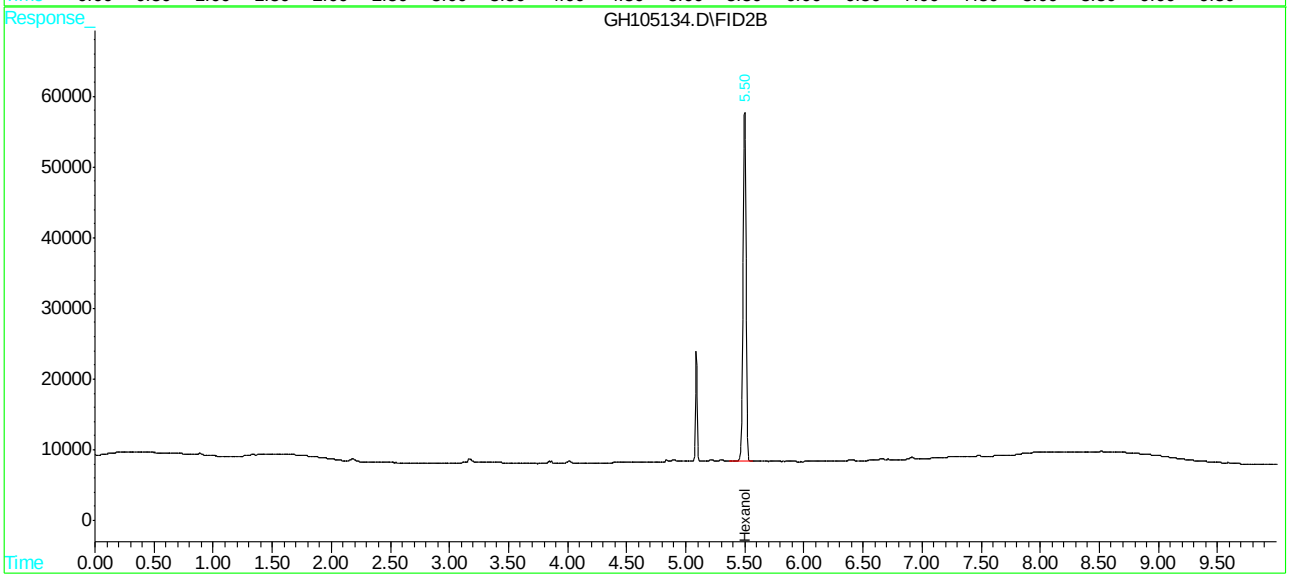
```
Data File : C:\HPCHEM\1\DATA\GH105134.D\FID1A.CH          Vial: 16
Acq On    : 20 May 2016  11:24 am                     Operator: XULIU
Sample    : JC18972-1AR                               Inst    : GCGH
Misc      : GC48459,GGH5293,5.1,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105134.D\FID2B.CH          Vial: 16
Acq On    : 20 May 2016  11:39 am                     Operator: XULIU
Sample    : JC18972-1AR                               Inst    : GCGH
Misc      : GC48459,GGH5293,5.1,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 20 13:46 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Wed May 18 08:55:49 2016
Response via : Multiple Level Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um
```





Quantitation Report (QT Reviewed)

```
Data File : C:\HPCHEM\1\DATA\GH105135.D\FID1A.CH          Vial: 17
Acq On    : 20 May 2016  11:39 am                     Operator: XULIU
Sample    : JC18972-2AR                               Inst    : GCGH
Misc      : GC48459,GGH5293,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105135.D\FID2B.CH          Vial: 17
Acq On    : 20 May 2016  11:53 am                     Operator: XULIU
Sample    : JC18972-2AR                               Inst    : GCGH
Misc      : GC48459,GGH5293,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 20 13:46 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Wed May 18 08:55:49 2016
Response via : Initial Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um

 Compound          RT#1   RT#2    Resp#1   Resp#2     PPB       PPB
---------------------------------------------------------------------

System Monitoring Compounds
9) S   Hexanol           5.56   5.50    375303   851595 5552.094  5481.868
 Spiked Amount   5000.000                  Recovery     =  111.04%   109.64%

Target Compounds
```

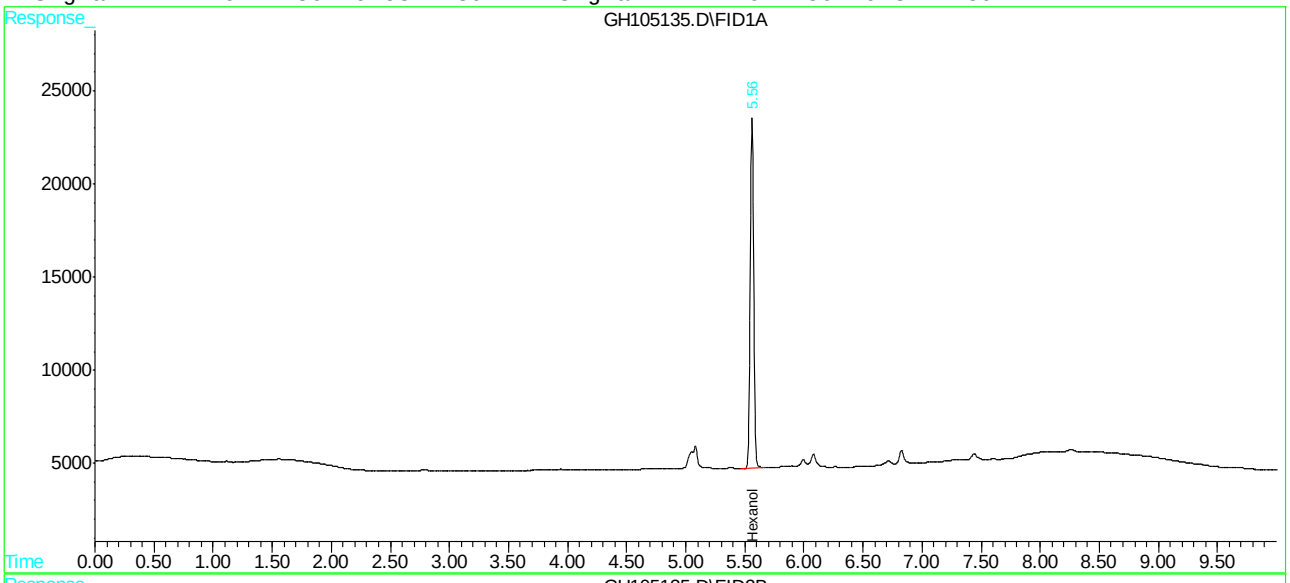
Quantitation Report (QT Reviewed)

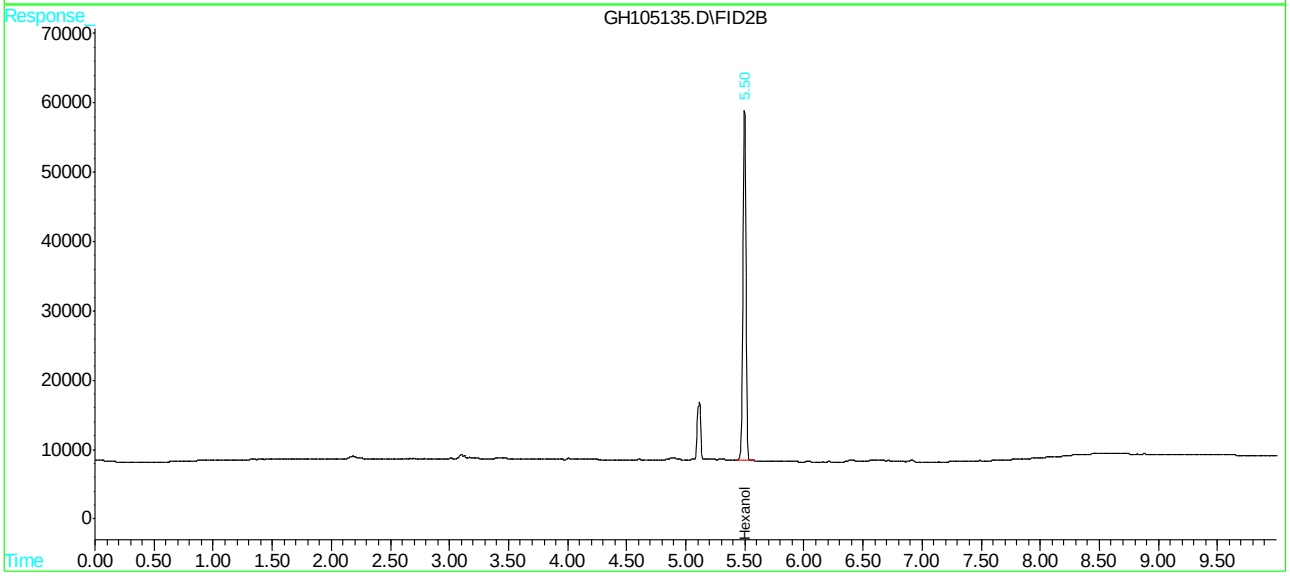
Data File : C:\HPCHEM\1\DATA\GH105135.D\FID1A.CH Vial: 17
Acq On : 20 May 2016 11:39 am Operator: XULIU
Sample : JC18972-2AR Inst : GCGH
Misc : GC48459,GGH5293,5.0,,,,1 Multiplr: 1.00
IntFile : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105135.D\FID2B.CH Vial: 17
Acq On : 20 May 2016 11:53 am Operator: XULIU
Sample : JC18972-2AR Inst : GCGH
Misc : GC48459,GGH5293,5.0,,,,1 Multiplr: 1.00
IntFile : autoint2.e
Quant Time: May 20 13:46 2016 Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title : METHOD SW846-8015C (DAI)
Last Update : Wed May 18 08:55:49 2016
Response via : Multiple Level Calibration
DataAcq Meth : MGH5288.M

Volume Inj. : 2ul
Signal #1 Phase : ZB-624 Signal #2 Phase: RTX-1
Signal #1 Info : 30mx0.53mmx3um Signal #2 Info : 30mx0.32mmx3um





Quantitation Report (QT Reviewed)

```
Data File : C:\HPCHEM\1\DATA\GH105132.D\FID1A.CH        Vial: 91
Acq On    : 20 May 2016  10:52 am                   Operator: XULIU
Sample    : MB2                                     Inst    : GCGH
Misc      : GC48459,GGH5293,5.0,,,,1                Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105132.D\FID2B.CH        Vial: 91
Acq On    : 20 May 2016  11:10 am                   Operator: XULIU
Sample    : MB2                                     Inst    : GCGH
Misc      : GC48459,GGH5293,5.0,,,,1                Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 20 13:45 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Fri May 20 10:06:09 2016
Response via : Initial Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um

 Compound          RT#1   RT#2    Resp#1   Resp#2     PPB       PPB
---------------------------------------------------------------------

System Monitoring Compounds
9) S   Hexanol           5.56   5.50    331429   734088 4903.029  4725.453
 Spiked Amount   5000.000                 Recovery     =   98.06%    94.51%

Target Compounds
```

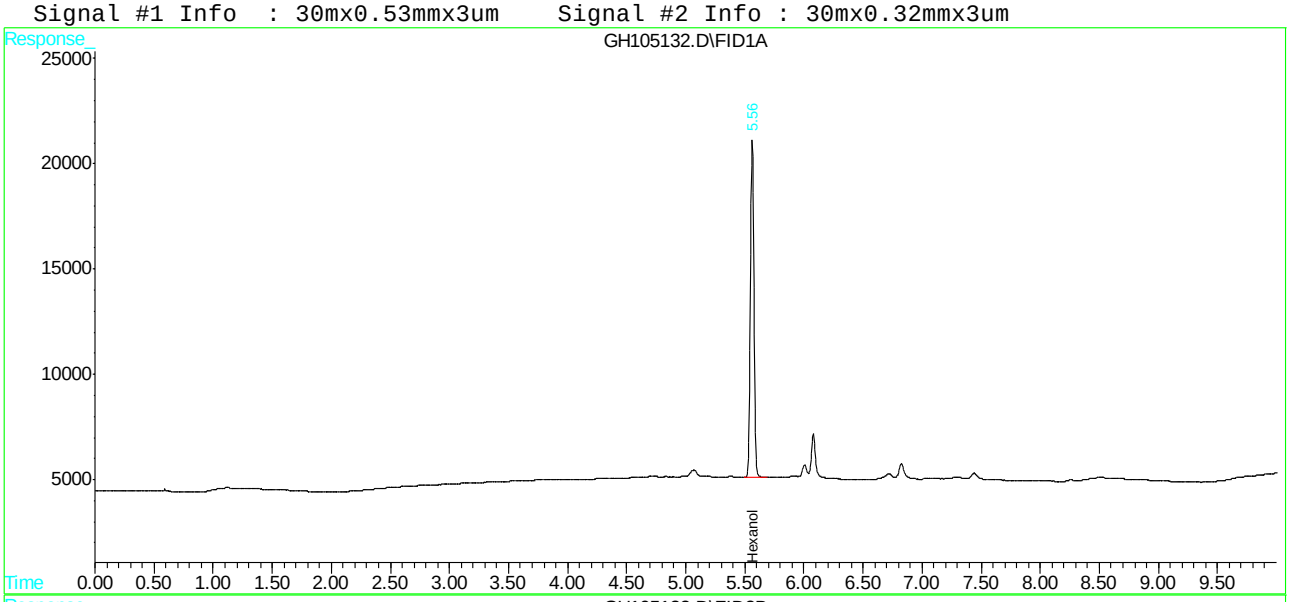
Quantitation Report (QT Reviewed)

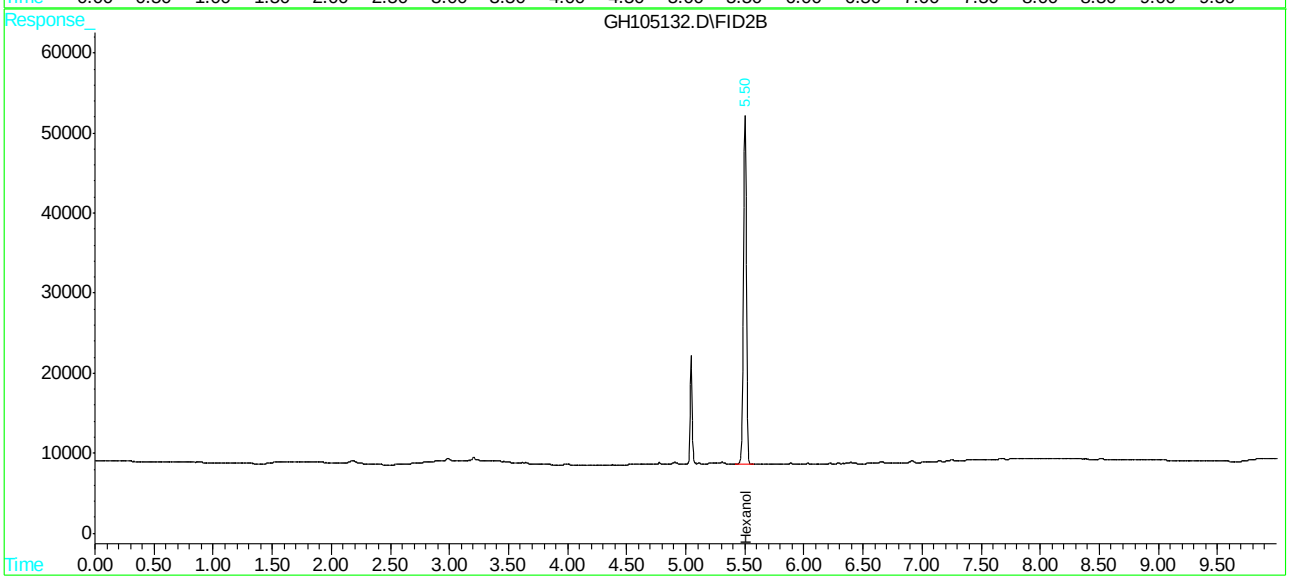
```
Data File : C:\HPCHEM\1\DATA\GH105132.D\FID1A.CH          Vial: 91
Acq On    : 20 May 2016  10:52 am                     Operator: XULIU
Sample    : MB2                                       Inst    : GCGH
Misc      : GC48459,GGH5293,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105132.D\FID2B.CH          Vial: 91
Acq On    : 20 May 2016  11:10 am                     Operator: XULIU
Sample    : MB2                                       Inst    : GCGH
Misc      : GC48459,GGH5293,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 20 13:45 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Fri May 20 10:06:09 2016
Response via : Multiple Level Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um
```





SGS ACCUTEST JC18972R

Quantitation Report (QT Reviewed)

```
Data File : C:\HPCHEM\1\DATA\GH105122.D\FID1A.CH          Vial: 93
Acq On    : 20 May 2016   7:38 am                     Operator: XULIU
Sample    : MB1                                       Inst    : GCGH
Misc      : GC48459,GGH5293,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105122.D\FID2B.CH          Vial: 93
Acq On    : 20 May 2016   7:53 am                     Operator: XULIU
Sample    : MB1                                       Inst    : GCGH
Misc      : GC48459,GGH5293,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 20 10:01 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Wed May 18 08:55:49 2016
Response via : Initial Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um

 Compound          RT#1   RT#2    Resp#1   Resp#2     PPB       PPB
---------------------------------------------------------------------

System Monitoring Compounds
9) S   Hexanol           5.57   5.50    328797   765340 4864.104  4926.633
 Spiked Amount   5000.000                 Recovery     =   97.28%    98.53%

Target Compounds
```

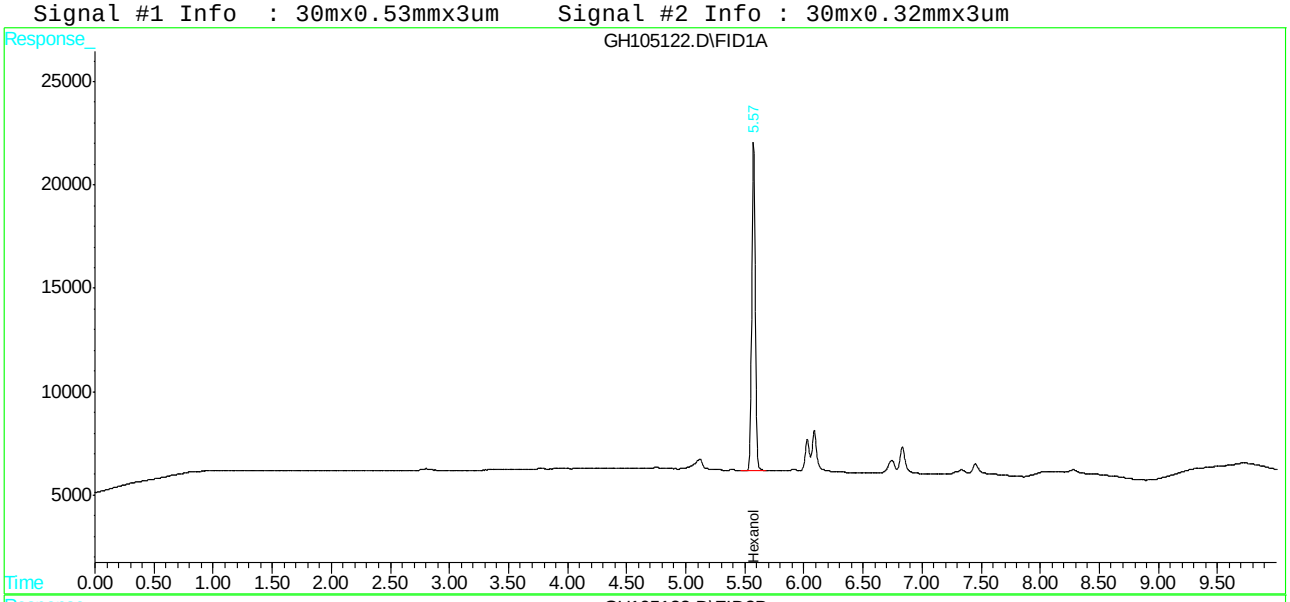
Quantitation Report (QT Reviewed)

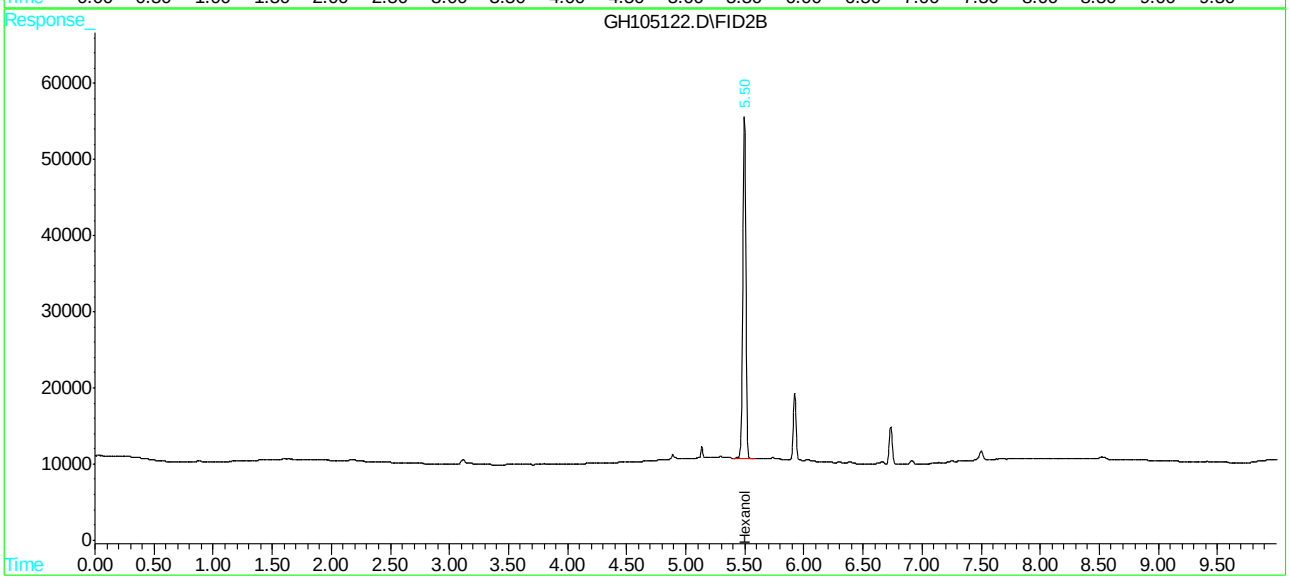
```
Data File : C:\HPCHEM\1\DATA\GH105122.D\FID1A.CH          Vial: 93
Acq On    : 20 May 2016   7:38 am                     Operator: XULIU
Sample    : MB1                                       Inst    : GCGH
Misc      : GC48459,GGH5293,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105122.D\FID2B.CH          Vial: 93
Acq On    : 20 May 2016   7:53 am                     Operator: XULIU
Sample    : MB1                                       Inst    : GCGH
Misc      : GC48459,GGH5293,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 20 10:01 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Wed May 18 08:55:49 2016
Response via : Multiple Level Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um
```





SGS ACCUTEST JC18972R

Quantitation Report (QT Reviewed)

```
Data File : C:\HPCHEM\1\DATA\GH105123.D\FID1A.CH          Vial: 94
Acq On    : 20 May 2016   7:53 am                     Operator: XULIU
Sample    : BS                                        Inst    : GCGH
Misc      : GC48459,GGH5293,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105123.D\FID2B.CH          Vial: 94
Acq On    : 20 May 2016   8:07 am                     Operator: XULIU
Sample    : BS                                        Inst    : GCGH
Misc      : GC48459,GGH5293,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 20 10:06 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Fri May 20 10:06:09 2016
Response via : Initial Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um
```

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
9) S	Hexanol	5.57	5.51	347562	796402	5141.699	5126.585
	Spiked Amount 5000.000			Recovery	=	102.83%	102.53%
	Target Compounds						
1)	Methanol	1.13	0.89	71787	154555	4643.803	4791.768
2)	Ethanol	1.46	1.15	93168	177046	4916.441	4441.593
3)	Tert-Butyl Alcoh	2.03	1.65	140673	283628	4964.653	4460.765
4)	1-Propanol	2.52	2.01	125384	218761	5154.294	4302.715
5)	2-Propanol	1.76	1.41	102902	201847	5162.927	4457.840
6)	Isobutanol	3.32	2.94	142030	282022	4936.565	4606.609
7)	1-Butanol	3.77	3.42	137114	279294	4800.789	4220.857
8)	2-Butanol	2.95	2.57	126610	269614	4939.045	4966.685

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

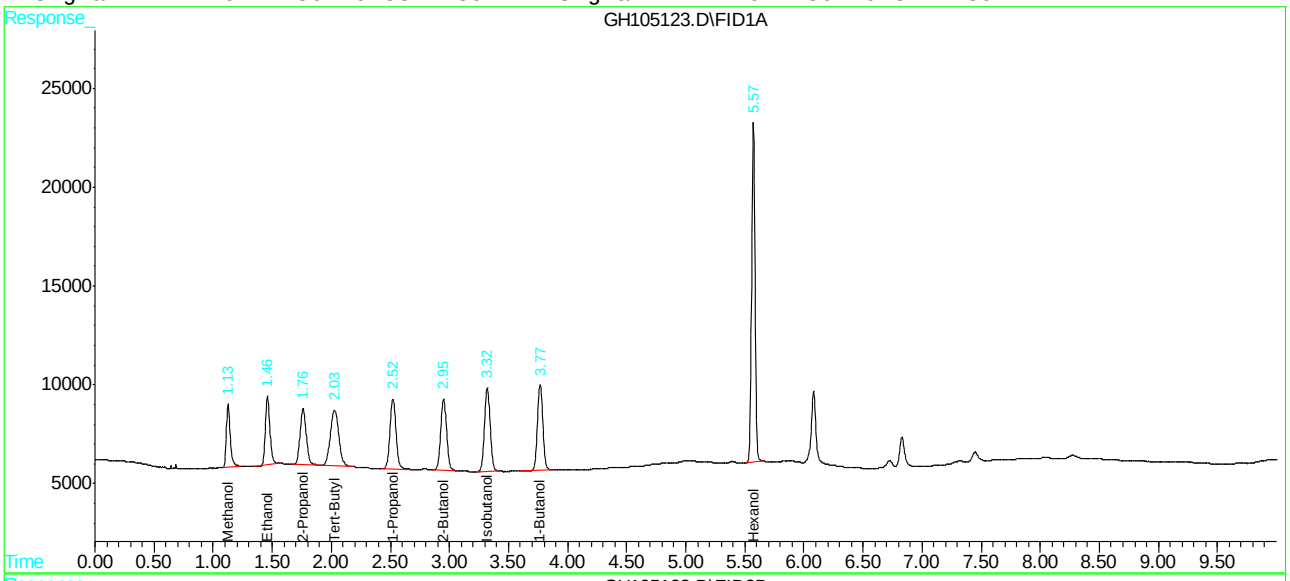
Quantitation Report (QT Reviewed)

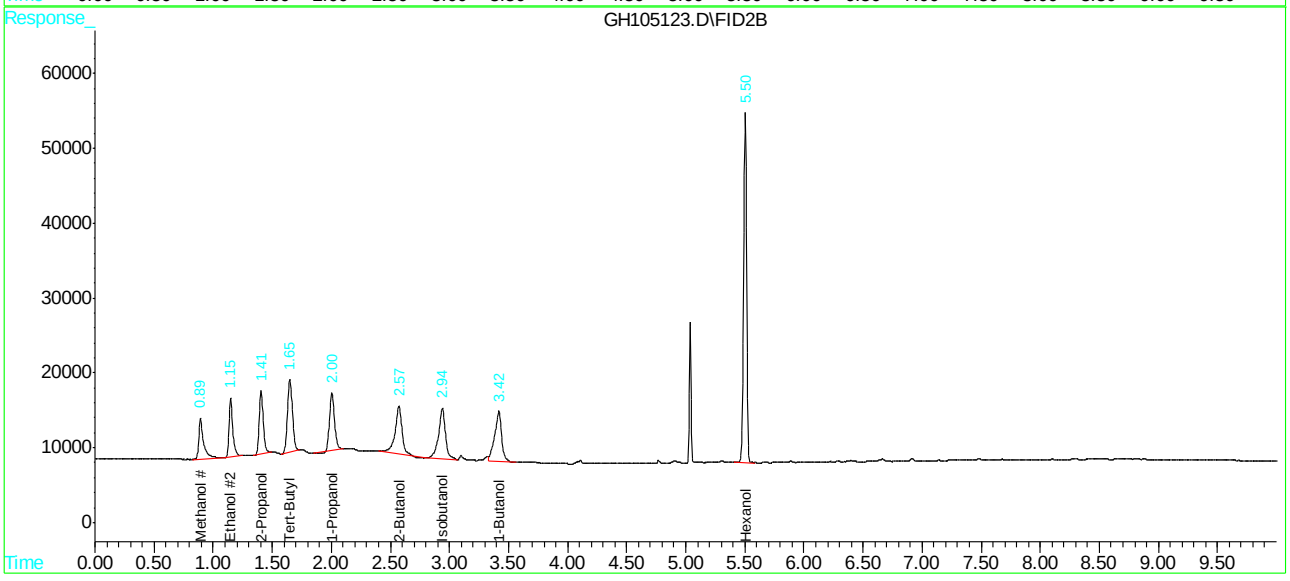
```
Data File : C:\HPCHEM\1\DATA\GH105123.D\FID1A.CH          Vial: 94
Acq On    : 20 May 2016   7:53 am                     Operator: XULIU
Sample    : BS                                        Inst    : GCGH
Misc      : GC48459,GGH5293,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105123.D\FID2B.CH          Vial: 94
Acq On    : 20 May 2016   8:07 am                     Operator: XULIU
Sample    : BS                                        Inst    : GCGH
Misc      : GC48459,GGH5293,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 20 10:06 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Fri May 20 10:06:09 2016
Response via : Multiple Level Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um
```





SGS ACCUTEST JC18972R

Quantitation Report (QT Reviewed)

```
Data File : C:\HPCHEM\1\DATA\GH105125.D\FID1A.CH          Vial: 26
Acq On    : 20 May 2016   8:41 am                     Operator: XULIU
Sample    : JC20528-1AMS                              Inst    : GCGH
Misc      : GC48457,GGH5293,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105125.D\FID2B.CH          Vial: 26
Acq On    : 20 May 2016   9:00 am                     Operator: XULIU
Sample    : JC20528-1AMS                              Inst    : GCGH
Misc      : GC48457,GGH5293,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 20 10:18 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Fri May 20 10:06:09 2016
Response via : Initial Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um
```

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
9) S	Hexanol	5.57	5.50	306547	715913	4534.948	4608.459
Spiked Amount	5000.000			Recovery	=	90.70%	92.17%
	Target Compounds						
1)	Methanol	1.12	0.89	74674	148926	4830.514	4617.243
2)	Ethanol	1.46	1.15	103763	186933	5475.577	4689.639
3)	Tert-Butyl Alcoh	2.02	1.65	159570	292459	5631.571	4599.649
4)	1-Propanol	2.52	2.00	126294	236950	5191.686	4660.468
5)	2-Propanol	1.76	1.40	107783	203386	5407.774	4491.822
6)	Isobutanol	3.32	2.94	145388	312058	5053.301	5097.228
7)	1-Butanol	3.77	3.42	138327	286549	4843.268	4330.498
8)	2-Butanol	2.95	2.57	129558	277838	5054.066	5118.200

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

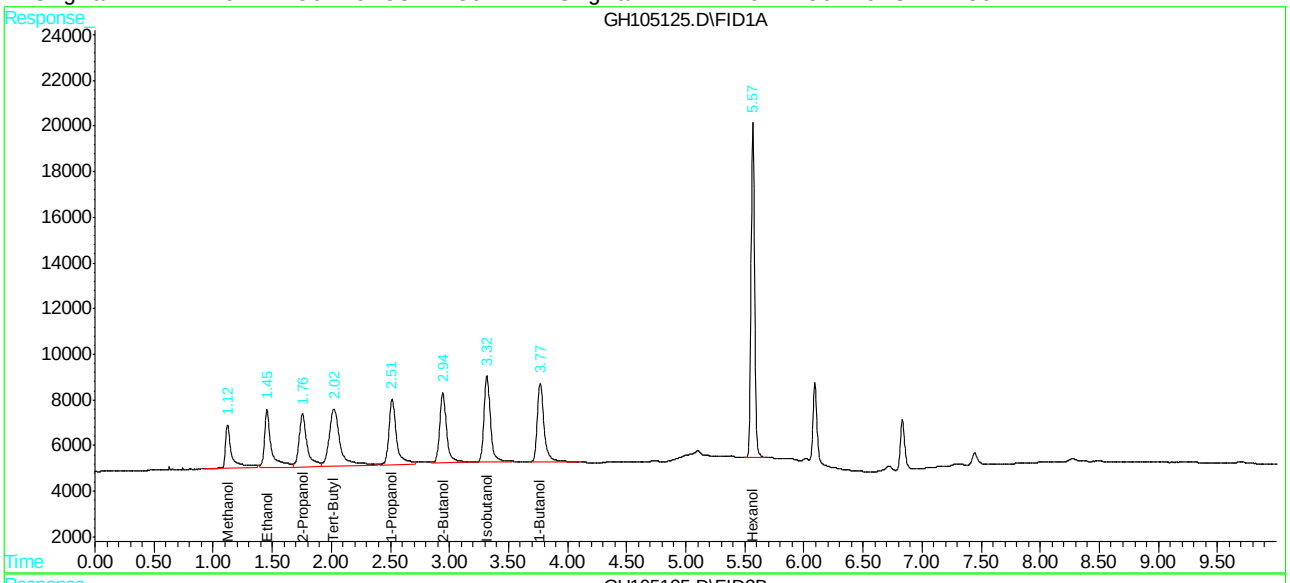
Quantitation Report (QT Reviewed)

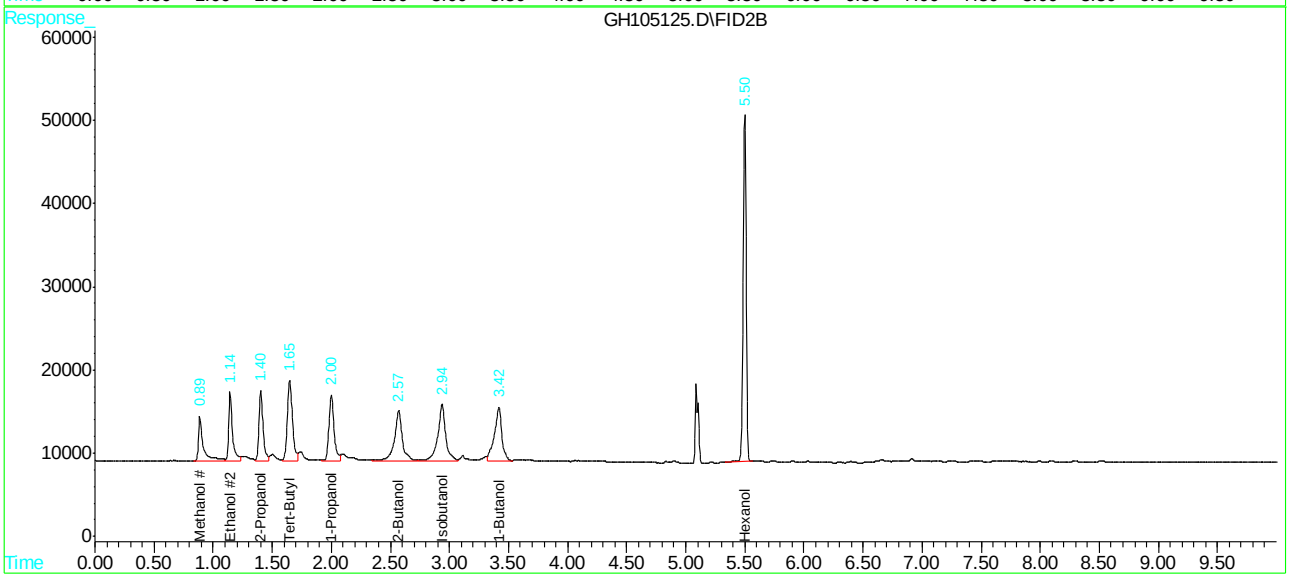
Data File : C:\HPCHEM\1\DATA\GH105125.D\FID1A.CH Vial: 26
Acq On : 20 May 2016 8:41 am Operator: XULIU
Sample : JC20528-1AMS Inst : GCGH
Misc : GC48457,GGH5293,5.0,,,,1 Multiplr: 1.00
IntFile : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105125.D\FID2B.CH Vial: 26
Acq On : 20 May 2016 9:00 am Operator: XULIU
Sample : JC20528-1AMS Inst : GCGH
Misc : GC48457,GGH5293,5.0,,,,1 Multiplr: 1.00
IntFile : autoint2.e
Quant Time: May 20 10:18 2016 Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title : METHOD SW846-8015C (DAI)
Last Update : Fri May 20 10:06:09 2016
Response via : Multiple Level Calibration
DataAcq Meth : MGH5288.M

Volume Inj. : 2ul
Signal #1 Phase : ZB-624 Signal #2 Phase: RTX-1
Signal #1 Info : 30mx0.53mmx3um Signal #2 Info : 30mx0.32mmx3um





SGS ACCUTEST JC18972R

Quantitation Report (QT Reviewed)

```
Data File : C:\HPCHEM\1\DATA\GH105126.D\FID1A.CH          Vial: 27
Acq On    : 20 May 2016   9:00 am                     Operator: XULIU
Sample    : JC20528-1AMSD                             Inst    : GCGH
Misc      : GC48457,GGH5293,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105126.D\FID2B.CH          Vial: 27
Acq On    : 20 May 2016   9:14 am                     Operator: XULIU
Sample    : JC20528-1AMSD                             Inst    : GCGH
Misc      : GC48457,GGH5293,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 20 10:19 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Fri May 20 10:06:09 2016
Response via : Initial Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um
```

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
9) S	Hexanol	5.57	5.50	316192	714785	4677.621	4601.200
Spiked Amount	5000.000			Recovery	=	93.55%	92.02%
	Target Compounds						
1)	Methanol	1.12	0.89	68649	156606	4440.802	4855.368
2)	Ethanol	1.45	1.15	94390	208227	4980.945	5223.840
3)	Tert-Butyl Alcoh	2.02	1.65	144334	328285	5093.884	5163.095
4)	1-Propanol	2.51	2.00	126232	268751	5189.151	5285.952
5)	2-Propanol	1.75	1.40	100438	228825	5039.259	5053.658
6)	Isobutanol	3.31	2.94	150459	313697	5229.550	5123.999
7)	1-Butanol	3.76	3.41	142519	314184	4990.053	4748.132
8)	2-Butanol	2.94	2.57	128609	278132	5017.048	5123.602

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

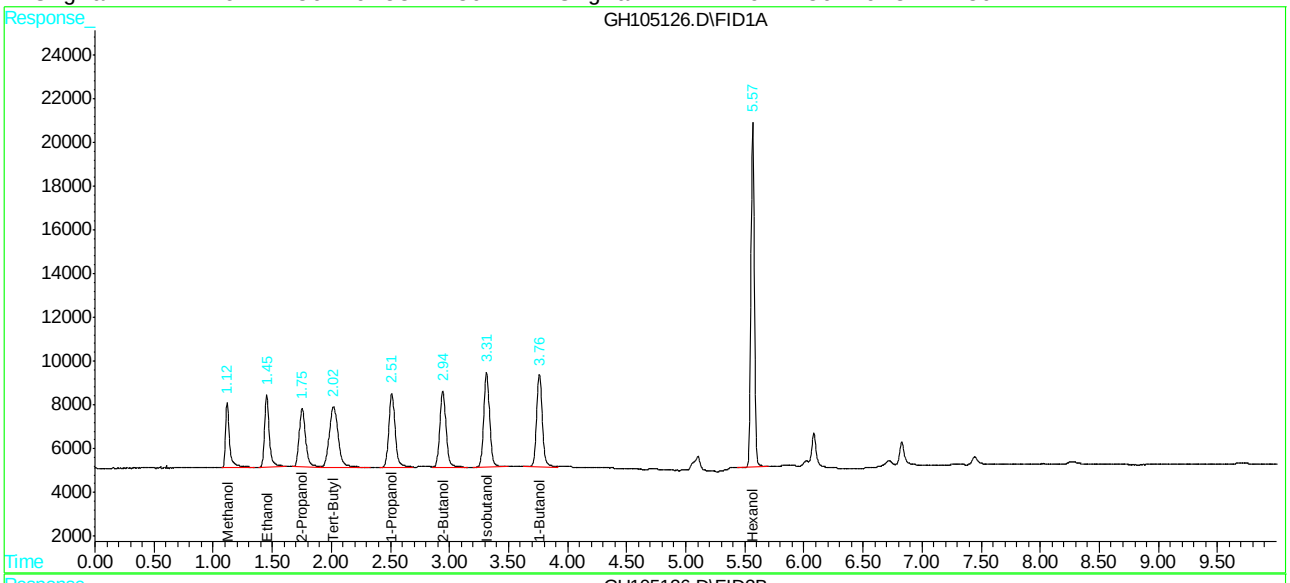
Quantitation Report (QT Reviewed)

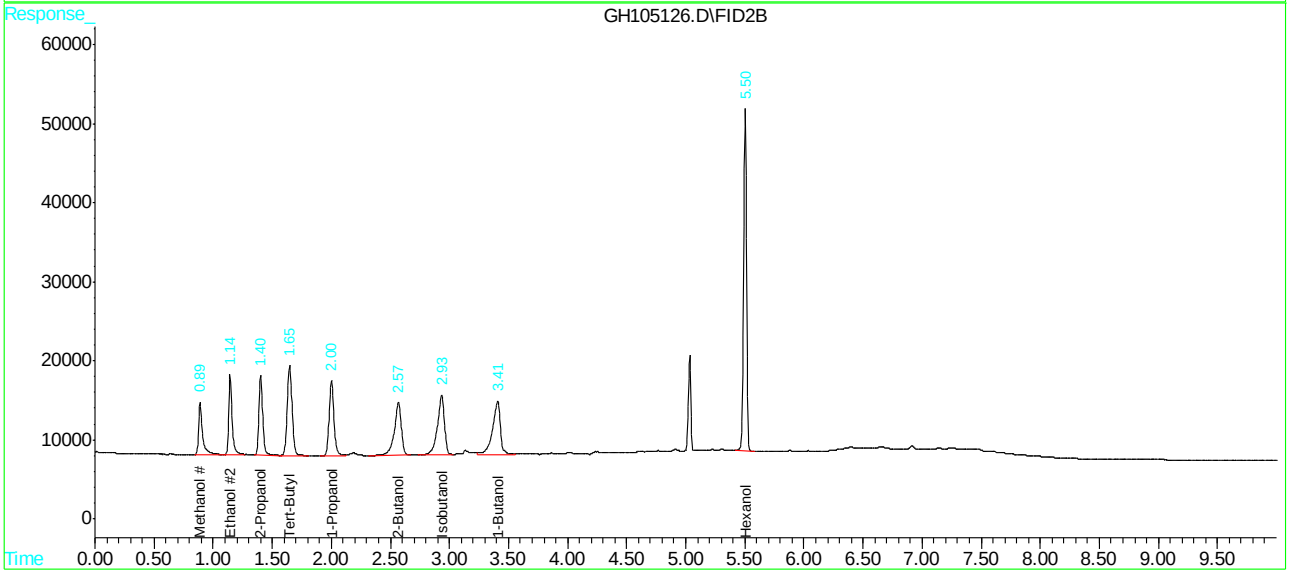
```
Data File : C:\HPCHEM\1\DATA\GH105126.D\FID1A.CH          Vial: 27
Acq On    : 20 May 2016   9:00 am                     Operator: XULIU
Sample    : JC20528-1AMSD                             Inst    : GCGH
Misc      : GC48457,GGH5293,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105126.D\FID2B.CH          Vial: 27
Acq On    : 20 May 2016   9:14 am                     Operator: XULIU
Sample    : JC20528-1AMSD                             Inst    : GCGH
Misc      : GC48457,GGH5293,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 20 10:19 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Fri May 20 10:06:09 2016
Response via : Multiple Level Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um
```





Manual Integrations APPROVED (compounds with "m" flag)
Owen McKenna
05/18/16 09:16

Quantitation Report (QT Reviewed)

```
Data File : C:\HPCHEM\1\DATA\GH105017.D\FID1A.CH          Vial: 2
Acq On    : 17 May 2016   4:14 pm                     Operator: XULIU
Sample    : IC5288-100                                Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105017.D\FID2B.CH          Vial: 2
Acq On    : 17 May 2016   4:28 pm                     Operator: XULIU
Sample    : IC5288-100                                Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 18  8:50 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Wed May 18 07:34:35 2016
Response via : Initial Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um
```

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
9) S	Hexanol	5.57	5.50	49213	113892	786.392	792.225
Spiked Amount	5000.000			Recovery	=	15.73%	15.84%
	Target Compounds						
1)	Methanol	1.12	0.89f	1784	2982	115.427	93.713m
2)	Ethanol	1.45	1.15	2099	3361	110.763	84.901m
3)	Tert-Butyl Alcoh	2.01	1.66	2806	5629	99.020	88.524
4)	1-Propanol	2.52	2.03	2187	3458	89.885	69.117m
5)	2-Propanol	1.75	1.41	1888	4004	94.702	88.437
6)	Isobutanol	3.32	2.95f	2784	6044	96.777	98.728
7)	1-Butanol	3.76	3.42	3014	7445	105.546	113.606m
8)	2-Butanol	2.95	2.57	2840	4510	121.739m	83.638m

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.
GH105017.D MGH5288.M Wed May 18 08:50:53 2016 GCGH

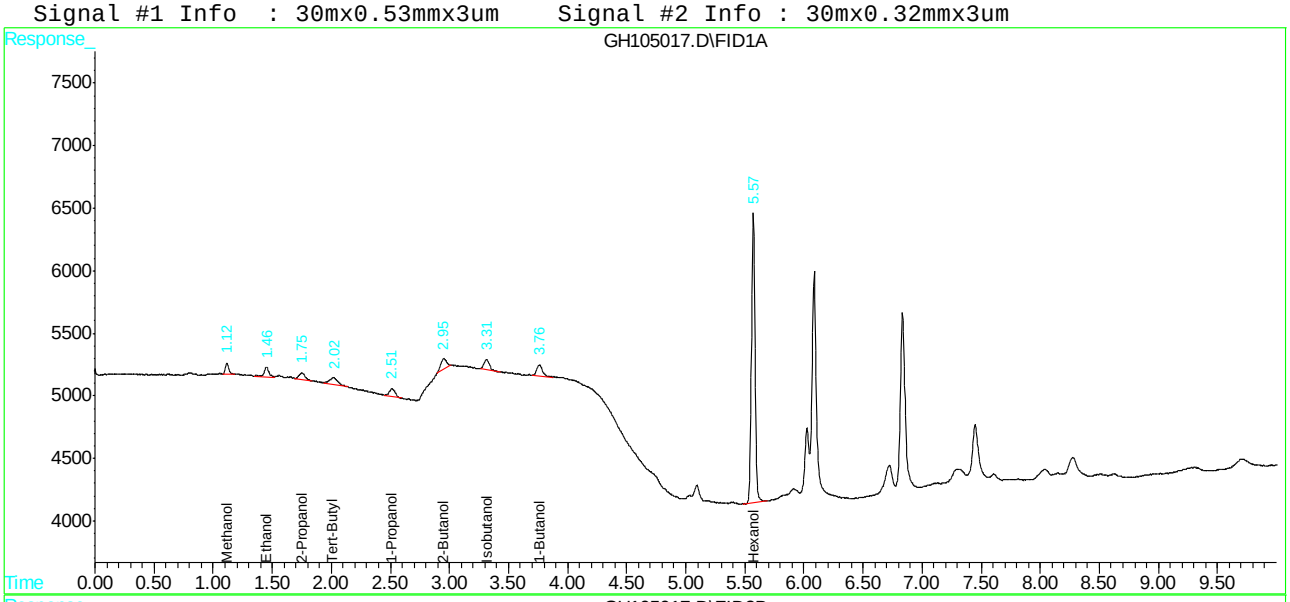
Quantitation Report (QT Reviewed)

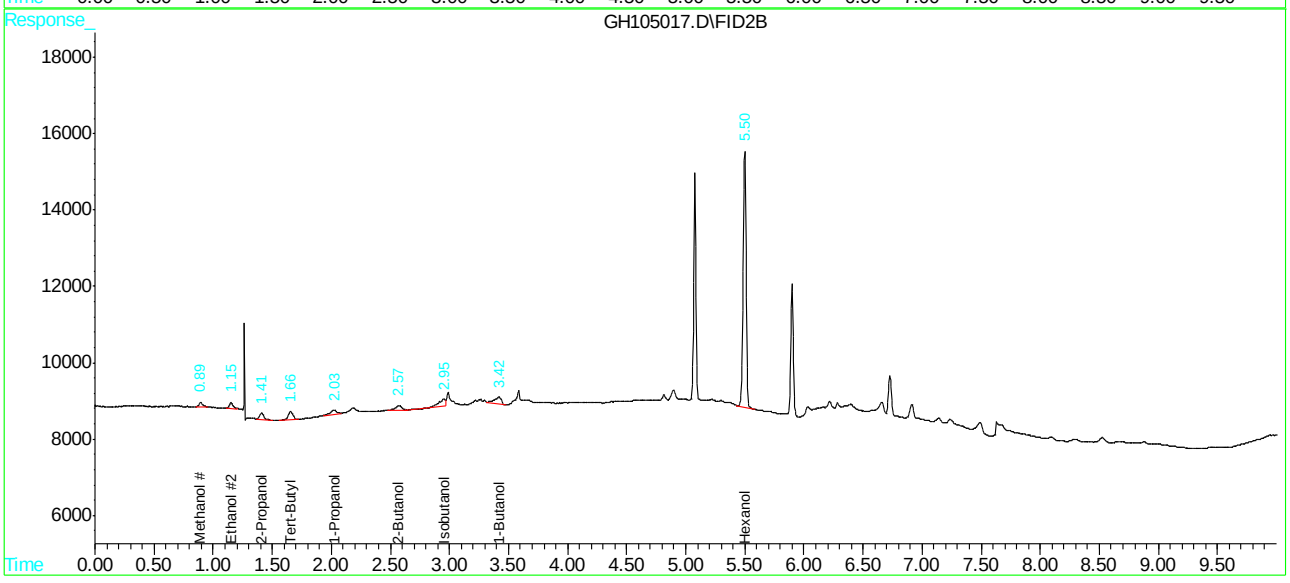
```
Data File : C:\HPCHEM\1\DATA\GH105017.D\FID1A.CH          Vial: 2
Acq On    : 17 May 2016   4:14 pm                     Operator: XULIU
Sample    : IC5288-100                                Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105017.D\FID2B.CH          Vial: 2
Acq On    : 17 May 2016   4:28 pm                     Operator: XULIU
Sample    : IC5288-100                                Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 18  8:50 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Wed May 18 07:34:35 2016
Response via : Multiple Level Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um
```





Manual Integration Approval Summary

Sample Number:	GGH5288-IC5288	**Method:**	SW846-8015C (DAI)
Lab FileID:	GH105017.D	**Analyst approved:**	05/18/16 09:10 Xu Liu
Injection Time:	05/17/16 16:14	**Supervisor approved:**	05/18/16 09:16 Owen McKenna

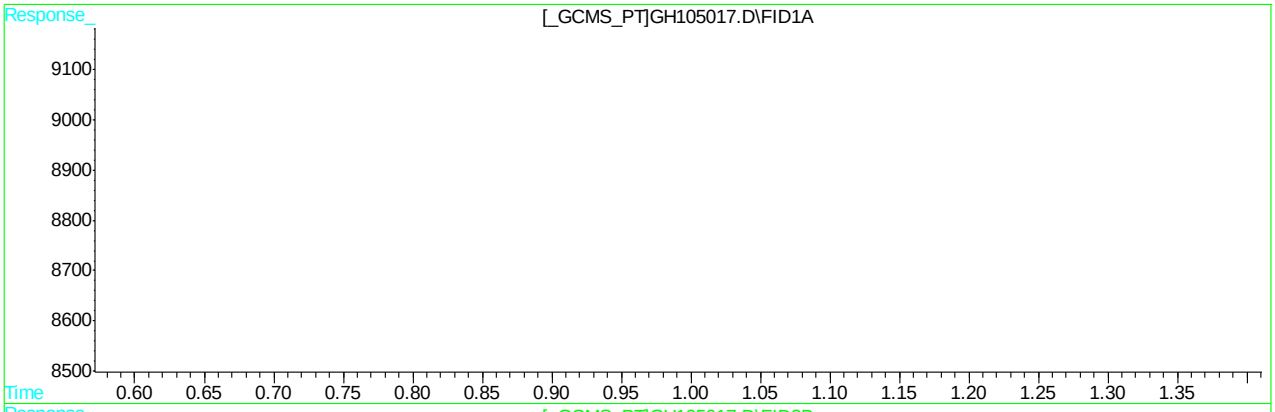
Parameter	CAS	Sig#	R.T. (min.)	Reason
Methanol	67-56-1	2	0.89	Poor instrument integration
Ethanol	64-17-5	2	1.15	Poor instrument integration
n-Propyl Alcohol	71-23-8	2	2.03	Poor instrument integration
sec-Butyl Alcohol	78-92-2	2	2.57	Poor instrument integration
sec-Butyl Alcohol	78-92-2	1	2.95	Poor instrument integration
n-Butyl Alcohol	71-36-3	2	3.42	Poor instrument integration

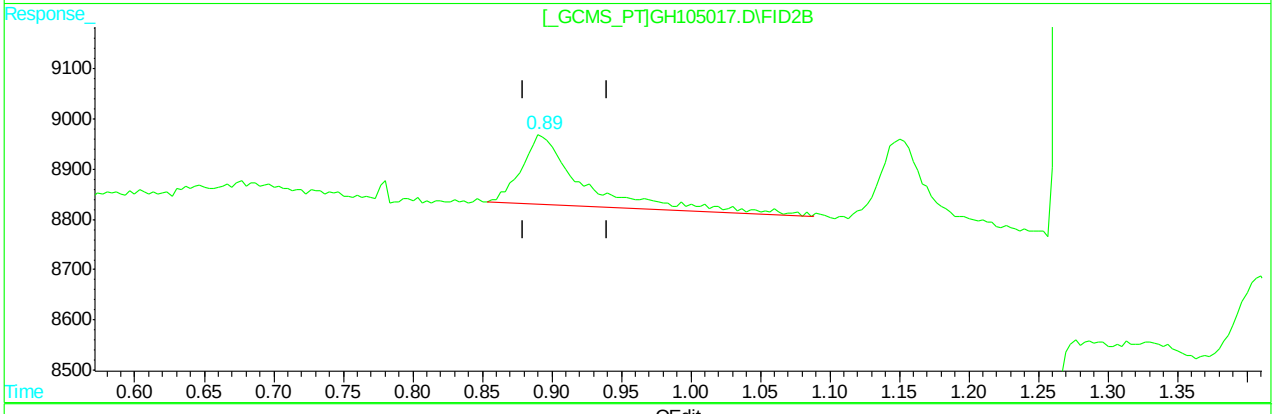
Quantitation Report (Qedit)

```
Data File : C:\HPCHEM\1\DATA\GH105017.D\FID1A.CH          Vial: 2
Acq On    : 17 May 2016   4:14 pm                     Operator: XULIU
Sample    : IC5288-100                                Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105017.D\FID2B.CH          Vial: 2
Acq On    : 17 May 2016   4:28 pm                     Operator: XULIU
Sample    : IC5288-100                                Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 18  7:37 2016  Quant Results File: MGH5288.RES


Method       : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Wed May 18 07:34:35 2016
Response via : Multiple Level Calibration
```





QEdit

(1) Methanol

1.12min 115.427PPB

response 1784

(1) Methanol #2

0.89min 132.645PPB

response 4221

(+) = Expected Retention Time

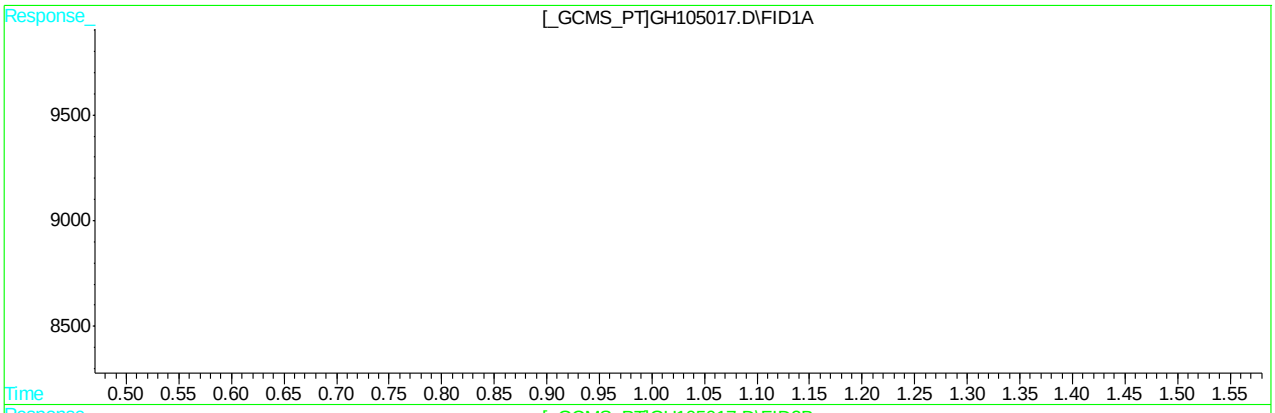
GH105017.D MGH5288.M Wed May 18 08:43:56 2016 GCGH

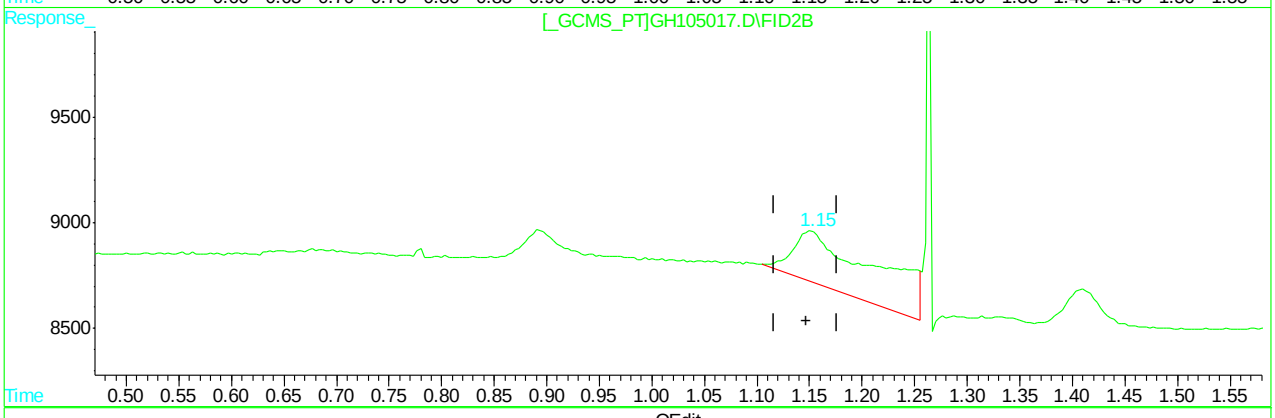
Quantitation Report (Qedit)

```
Data File : C:\HPCHEM\1\DATA\GH105017.D\FID1A.CH          Vial: 2
Acq On    : 17 May 2016   4:14 pm                     Operator: XULIU
Sample    : IC5288-100                                Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105017.D\FID2B.CH          Vial: 2
Acq On    : 17 May 2016   4:28 pm                     Operator: XULIU
Sample    : IC5288-100                                Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 18  7:37 2016  Quant Results File: MGH5288.RES


Method       : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Wed May 18 07:34:35 2016
Response via : Multiple Level Calibration
```





QEdit

(2) Ethanol

1.45min 110.763PPB

response 2099

(2) Ethanol #2

1.15min 367.751PPB

response 14557

(+) = Expected Retention Time

GH105017.D MGH5288.M Wed May 18 08:44:26 2016 GCGH

7.5.1.3

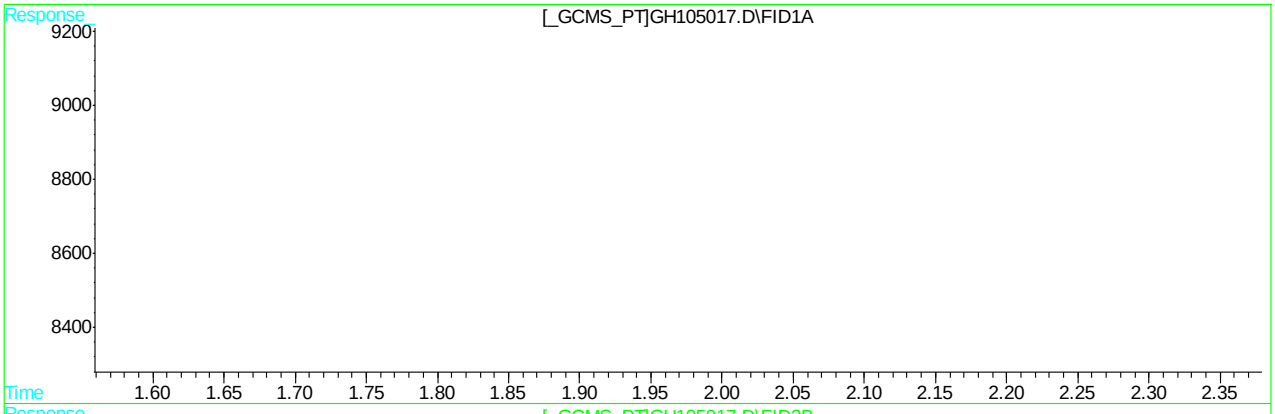
7

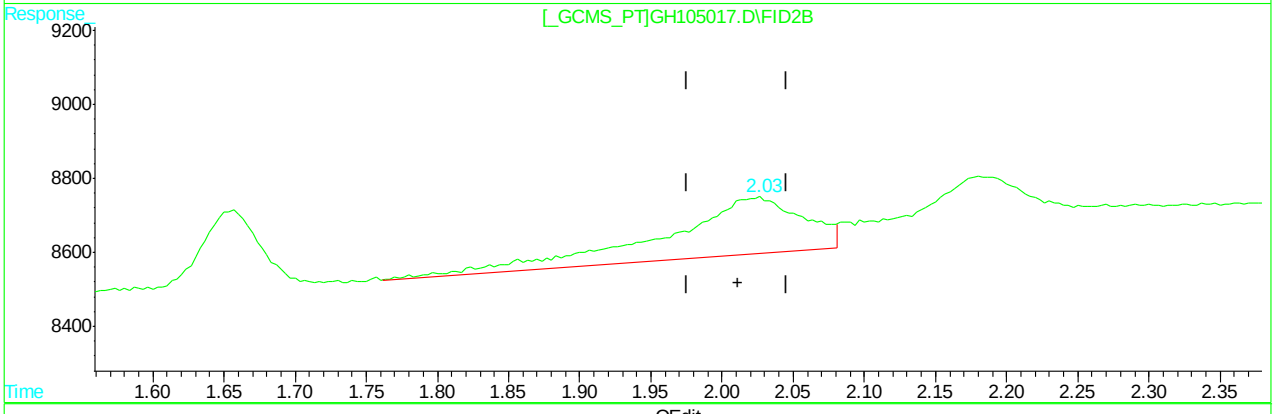
Quantitation Report (Qedit)

```
Data File : C:\HPCHEM\1\DATA\GH105017.D\FID1A.CH          Vial: 2
Acq On    : 17 May 2016   4:14 pm                     Operator: XULIU
Sample    : IC5288-100                                Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105017.D\FID2B.CH          Vial: 2
Acq On    : 17 May 2016   4:28 pm                     Operator: XULIU
Sample    : IC5288-100                                Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 18  7:37 2016  Quant Results File: MGH5288.RES


Method       : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Wed May 18 07:34:35 2016
Response via : Multiple Level Calibration
```





QEdit

(4) 1-Propanol

2.52min 89.885PPB

response 2187

(4) 1-Propanol #2

2.03min 209.050PPB

response 10460

(+) = Expected Retention Time

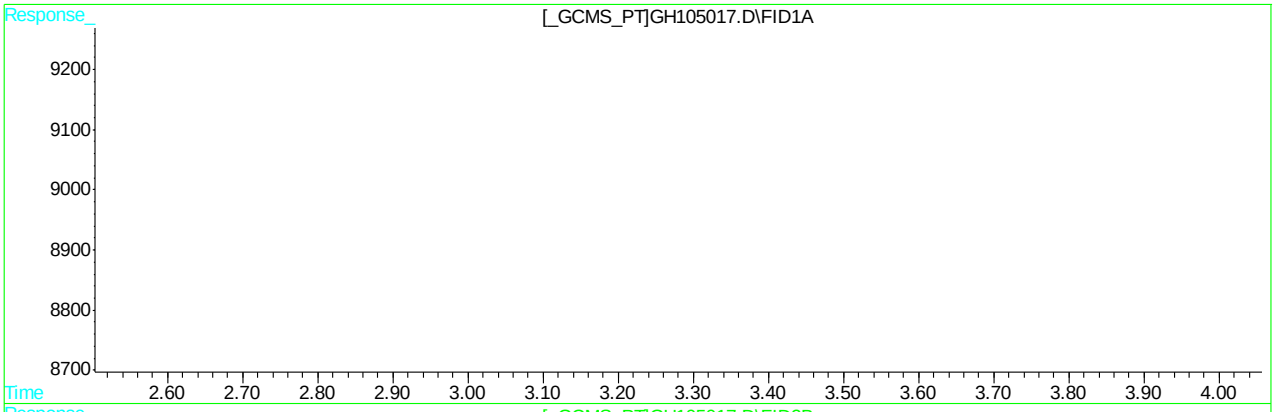
GH105017.D MGH5288.M Wed May 18 08:44:42 2016 GCGH

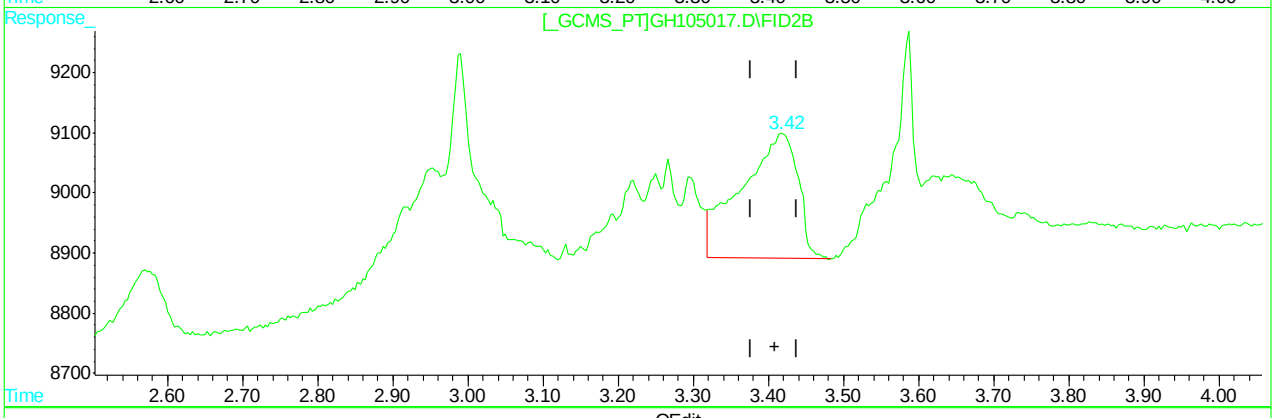
Quantitation Report (Qedit)

```
Data File : C:\HPCHEM\1\DATA\GH105017.D\FID1A.CH          Vial: 2
Acq On    : 17 May 2016   4:14 pm                     Operator: XULIU
Sample    : IC5288-100                                Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105017.D\FID2B.CH          Vial: 2
Acq On    : 17 May 2016   4:28 pm                     Operator: XULIU
Sample    : IC5288-100                                Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 18  7:37 2016  Quant Results File: MGH5288.RES


Method       : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Wed May 18 07:34:35 2016
Response via : Multiple Level Calibration
```





QEdit

(7) 1-Butanol

3.76min 105.546PPB

response 3014

(7) 1-Butanol #2

3.42min 167.388PPB

response 10970

(+) = Expected Retention Time

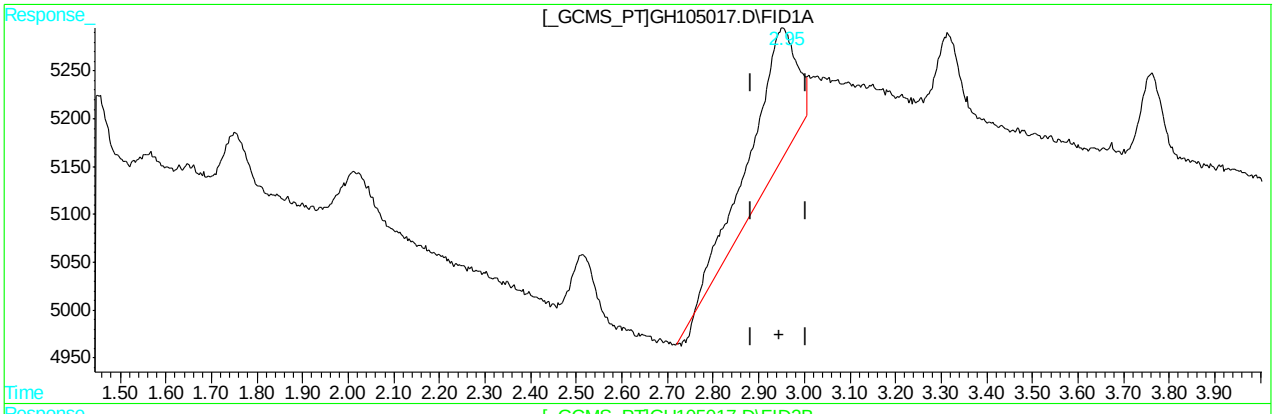
GH105017.D MGH5288.M Wed May 18 08:45:02 2016 GCGH

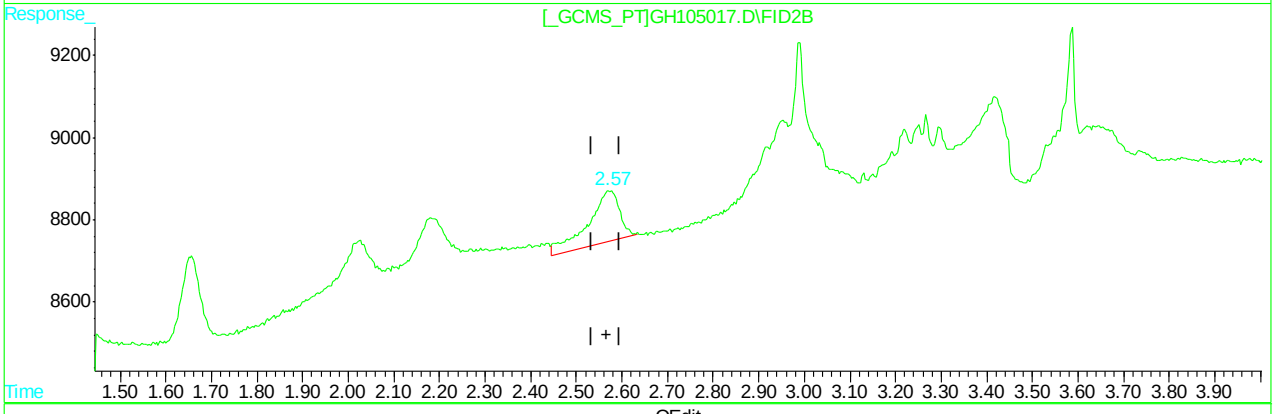
Quantitation Report (Qedit)

```
Data File : C:\HPCHEM\1\DATA\GH105017.D\FID1A.CH          Vial: 2
Acq On    : 17 May 2016   4:14 pm                     Operator: XULIU
Sample    : IC5288-100                                Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105017.D\FID2B.CH          Vial: 2
Acq On    : 17 May 2016   4:28 pm                     Operator: XULIU
Sample    : IC5288-100                                Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 18  7:37 2016  Quant Results File: MGH5288.RES


Method       : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Wed May 18 07:34:35 2016
Response via : Multiple Level Calibration
```





QEdit

(8) 2-Butanol

2.95min 395.696PPB

response 9232

(8) 2-Butanol #2

2.57min 109.800PPB

response 5921

(+) = Expected Retention Time

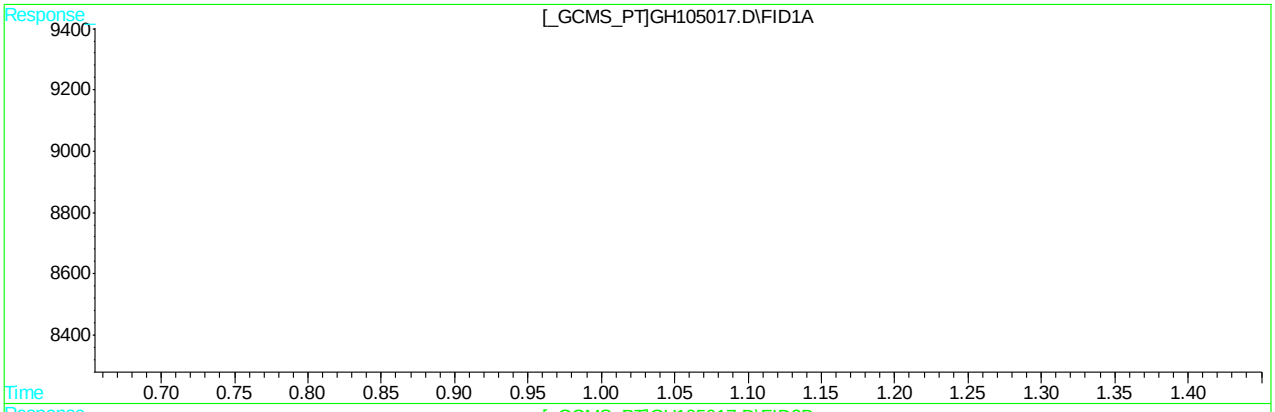
GH105017.D MGH5288.M Wed May 18 08:45:09 2016 GCGH

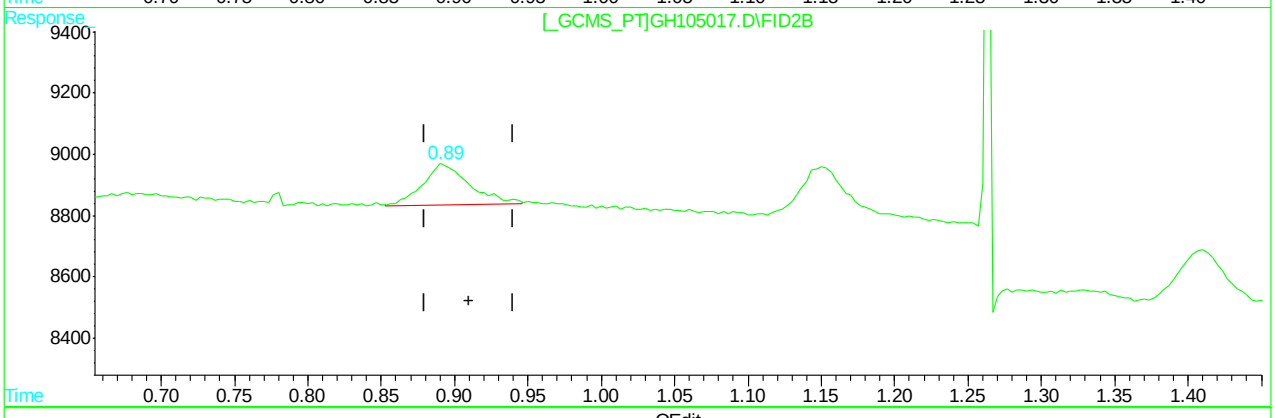
Quantitation Report (Qedit)

```
Data File : C:\HPCHEM\1\DATA\GH105017.D\FID1A.CH          Vial: 2
Acq On    : 17 May 2016   4:14 pm                     Operator: XULIU
Sample    : IC5288-100                                Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105017.D\FID2B.CH          Vial: 2
Acq On    : 17 May 2016   4:28 pm                     Operator: XULIU
Sample    : IC5288-100                                Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 18  7:37 2016  Quant Results File: MGH5288.RES


Method       : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Wed May 18 07:34:35 2016
Response via : Multiple Level Calibration
```





QEdit

(1) Methanol

1.12min 115.427PPB

response 1784

(1) Methanol #2

0.89min 93.713PPB m

response 2982

(+) = Expected Retention Time

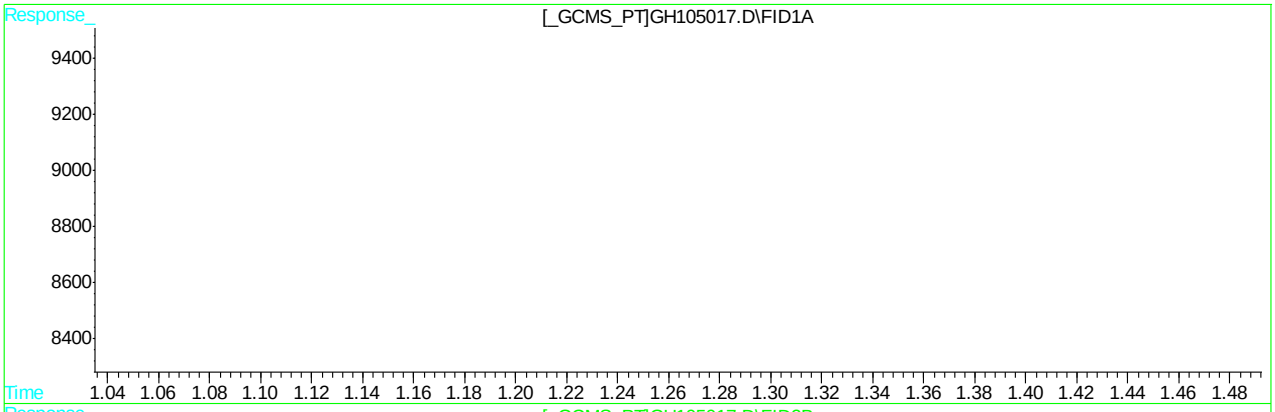
GH105017.D MGH5288.M Wed May 18 08:46:19 2016 GCGH

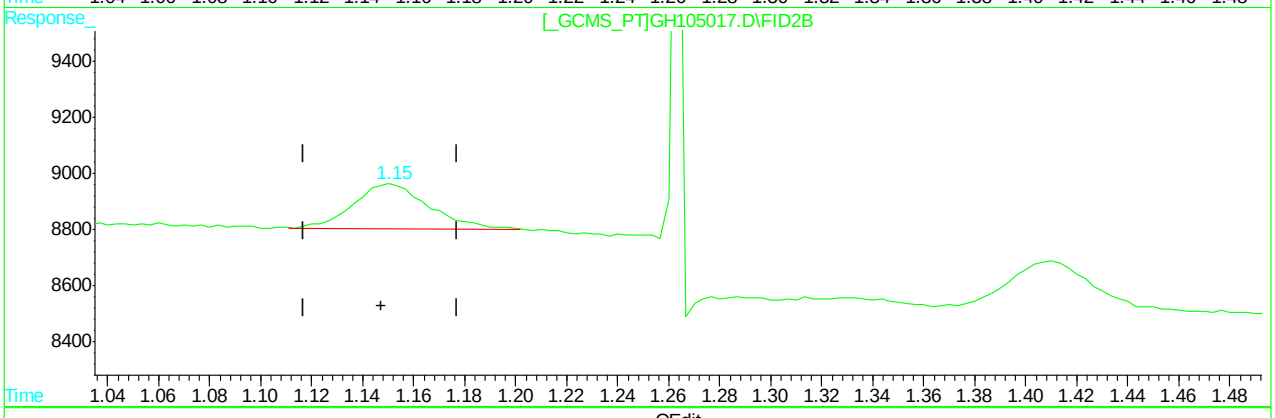
Quantitation Report (Qedit)

```
Data File : C:\HPCHEM\1\DATA\GH105017.D\FID1A.CH          Vial: 2
Acq On    : 17 May 2016   4:14 pm                     Operator: XULIU
Sample    : IC5288-100                                Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105017.D\FID2B.CH          Vial: 2
Acq On    : 17 May 2016   4:28 pm                     Operator: XULIU
Sample    : IC5288-100                                Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 18  7:37 2016  Quant Results File: MGH5288.RES


Method       : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Wed May 18 07:34:35 2016
Response via : Multiple Level Calibration
```





QEdit

(2) Ethanol

1.45min 110.763PPB

response 2099

(2) Ethanol #2

1.15min 84.901PPB m

response 3361

(+) = Expected Retention Time

GH105017.D MGH5288.M Wed May 18 08:46:55 2016 GCGH

7.5.1.8

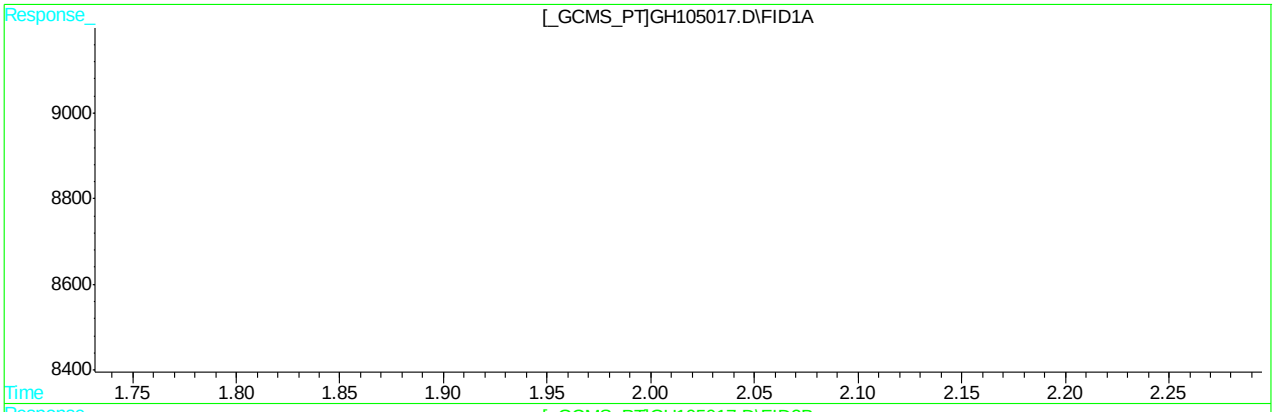
7

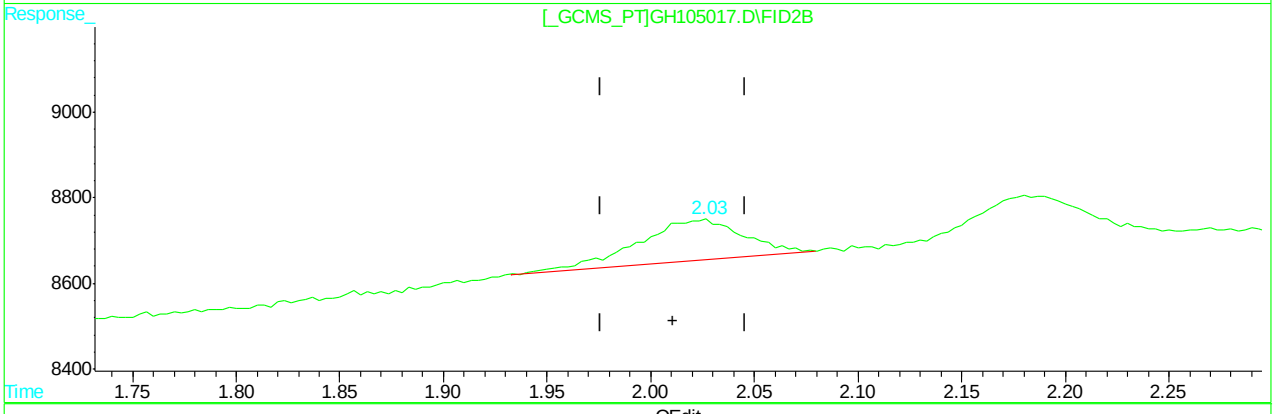
Quantitation Report (Qedit)

```
Data File : C:\HPCHEM\1\DATA\GH105017.D\FID1A.CH          Vial: 2
Acq On    : 17 May 2016   4:14 pm                     Operator: XULIU
Sample    : IC5288-100                                Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105017.D\FID2B.CH          Vial: 2
Acq On    : 17 May 2016   4:28 pm                     Operator: XULIU
Sample    : IC5288-100                                Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 18  7:37 2016  Quant Results File: MGH5288.RES


Method       : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Wed May 18 07:34:35 2016
Response via : Multiple Level Calibration
```





QEdit

(4) 1-Propanol

2.52min 89.885PPB

response 2187

(4) 1-Propanol #2

2.03min 69.117PPB m

response 3458

(+) = Expected Retention Time

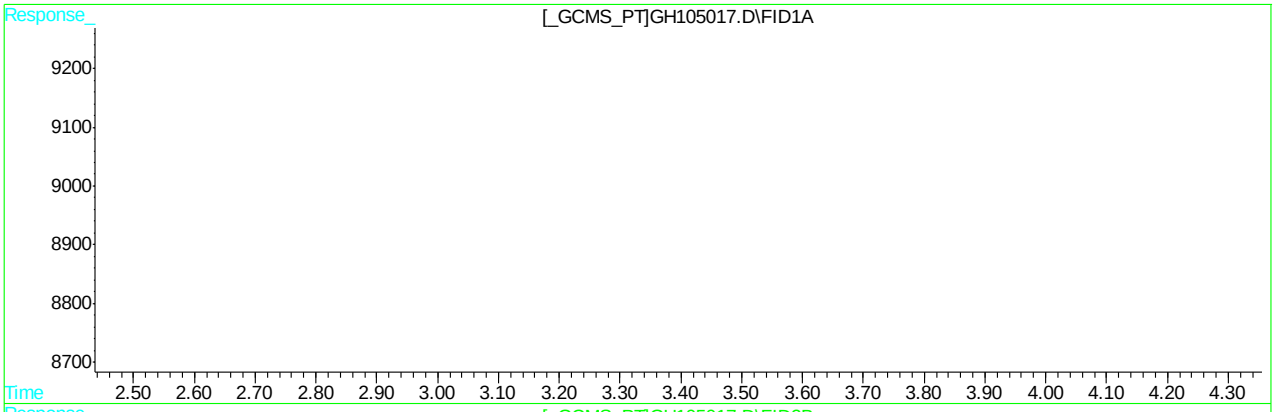
GH105017.D MGH5288.M Wed May 18 08:48:45 2016 GCGH

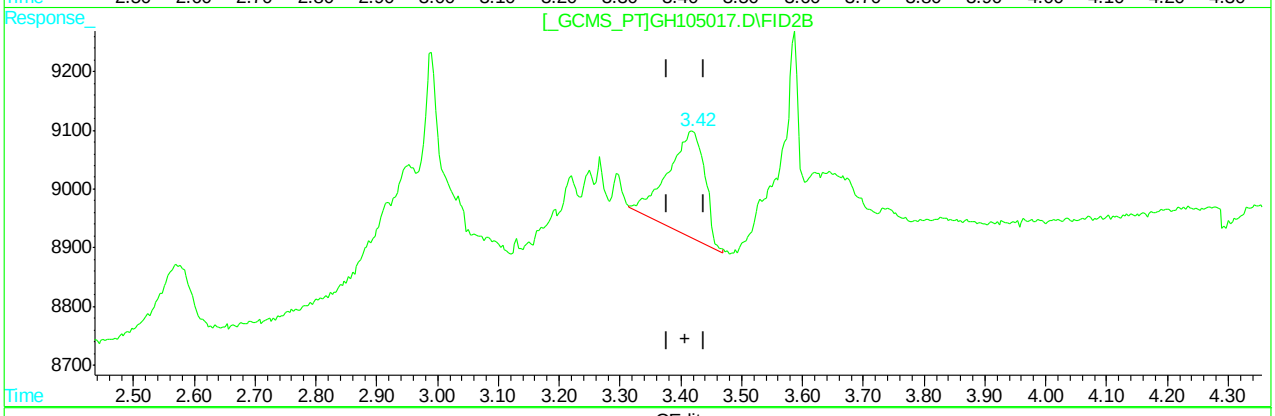
Quantitation Report (Qedit)

```
Data File : C:\HPCHEM\1\DATA\GH105017.D\FID1A.CH          Vial: 2
Acq On    : 17 May 2016   4:14 pm                     Operator: XULIU
Sample    : IC5288-100                                Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105017.D\FID2B.CH          Vial: 2
Acq On    : 17 May 2016   4:28 pm                     Operator: XULIU
Sample    : IC5288-100                                Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 18  7:37 2016  Quant Results File: MGH5288.RES


Method       : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Wed May 18 07:34:35 2016
Response via : Multiple Level Calibration
```





QEdit

(7) 1-Butanol

3.76min 105.546PPB

response 3014

(7) 1-Butanol #2

3.42min 113.606PPB m

response 7445

(+) = Expected Retention Time

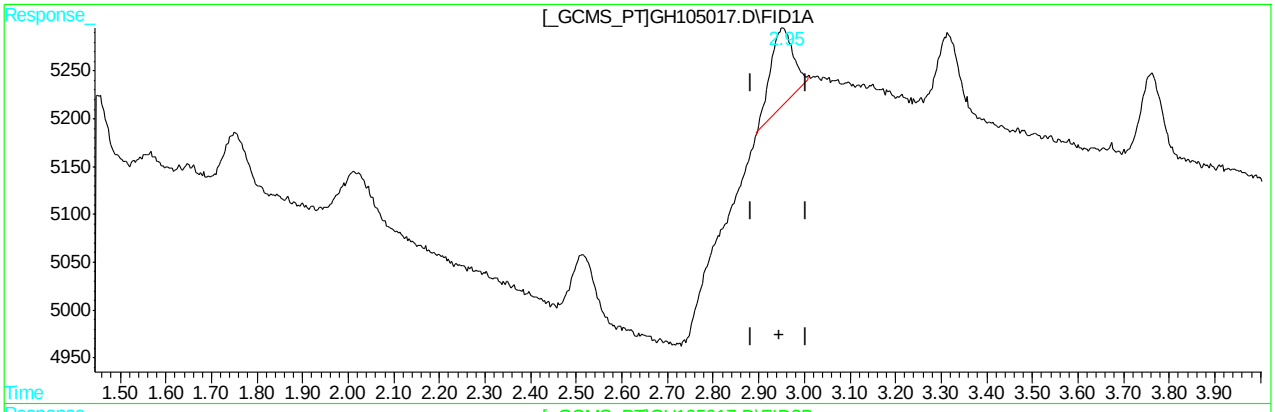
GH105017.D MGH5288.M Wed May 18 08:49:10 2016 GCGH

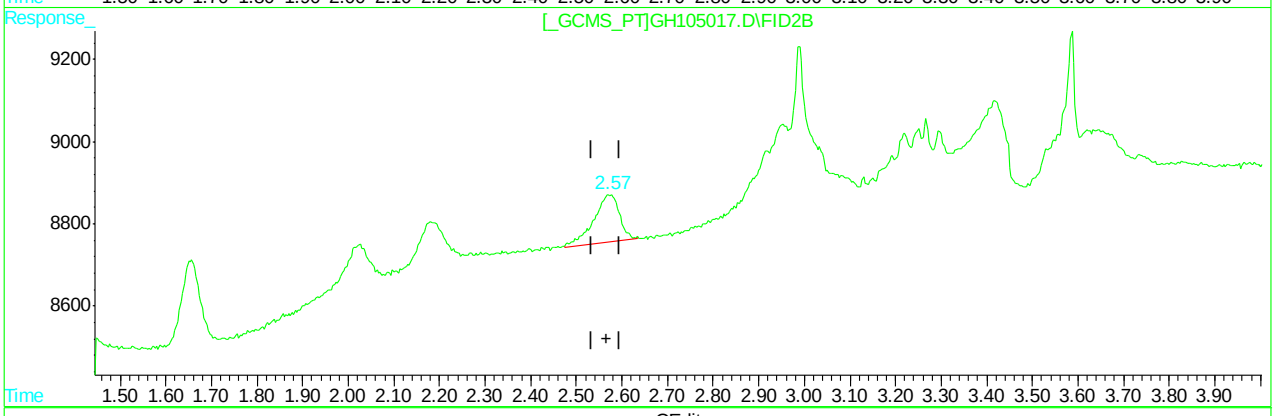
Quantitation Report (Qedit)

```
Data File : C:\HPCHEM\1\DATA\GH105017.D\FID1A.CH          Vial: 2
Acq On    : 17 May 2016   4:14 pm                     Operator: XULIU
Sample    : IC5288-100                                Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105017.D\FID2B.CH          Vial: 2
Acq On    : 17 May 2016   4:28 pm                     Operator: XULIU
Sample    : IC5288-100                                Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 18  7:37 2016  Quant Results File: MGH5288.RES


Method       : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Wed May 18 07:34:35 2016
Response via : Multiple Level Calibration
```





QEdit

(8) 2-Butanol

2.95min 121.739PPB m

response 2840

(8) 2-Butanol #2

2.57min 83.638PPB m

response 4510

(+) = Expected Retention Time

GH105017.D MGH5288.M Wed May 18 08:50:46 2016 GCGH

7.5.1.11

7

Quantitation Report (QT Reviewed)

```
Data File : C:\HPCHEM\1\DATA\GH105018.D\FID1A.CH          Vial: 3
Acq On    : 17 May 2016   4:28 pm                     Operator: XULIU
Sample    : IC5288-500                                Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105018.D\FID2B.CH          Vial: 3
Acq On    : 17 May 2016   4:43 pm                     Operator: XULIU
Sample    : IC5288-500                                Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 18  7:23 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Wed May 18 07:22:56 2016
Response via : Initial Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um
```

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
9) S	Hexanol	5.57	5.50	133226	309222	2149.239	2179.587
Spiked Amount	5000.000			Recovery	=	42.98%	43.59%
	Target Compounds						
1)	Methanol	1.12	0.90	7371	16974	487.375	523.867
2)	Ethanol	1.45	1.15	7403	20315	382.175	495.986
3)	Tert-Butyl Alcoh	2.02	1.65	13219	32642	459.462	504.499
4)	1-Propanol	2.52	2.01	11323	26078	450.160	484.442
5)	2-Propanol	1.75	1.41	8826	24643	428.510	541.309
6)	Isobutanol	3.32	2.95f	14018	31821	481.673	522.579
7)	1-Butanol	3.76	3.41	14489	37291	514.513	593.512
8)	2-Butanol	2.95	2.57	11839	27554	464.803	492.431

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

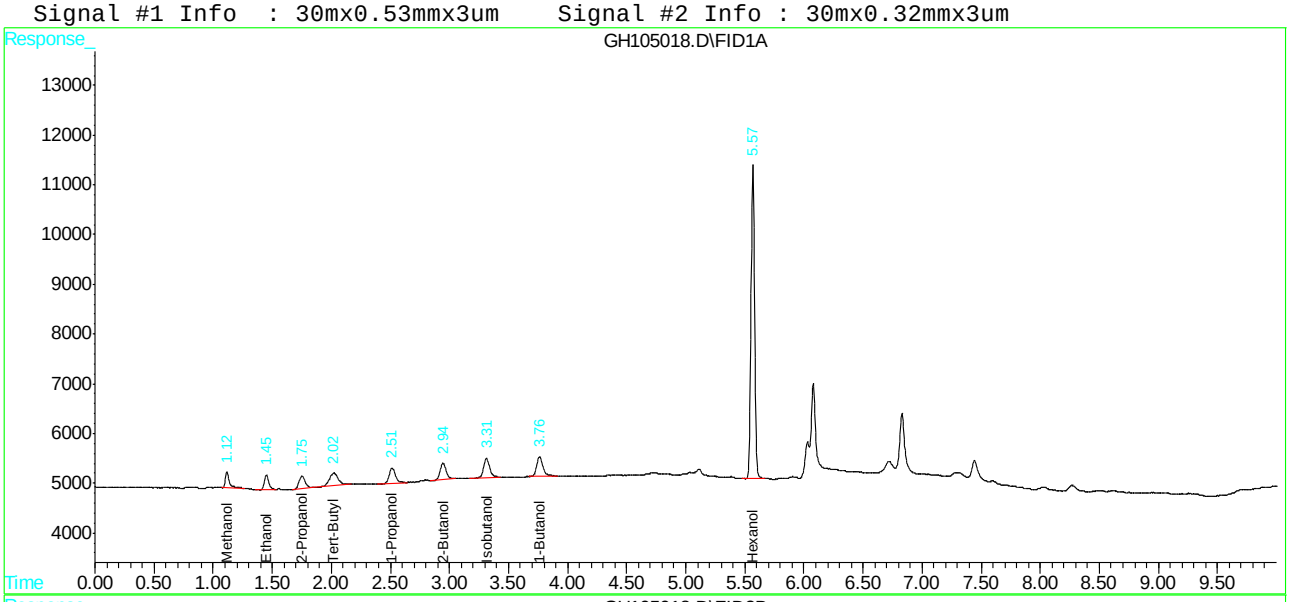
Quantitation Report (QT Reviewed)

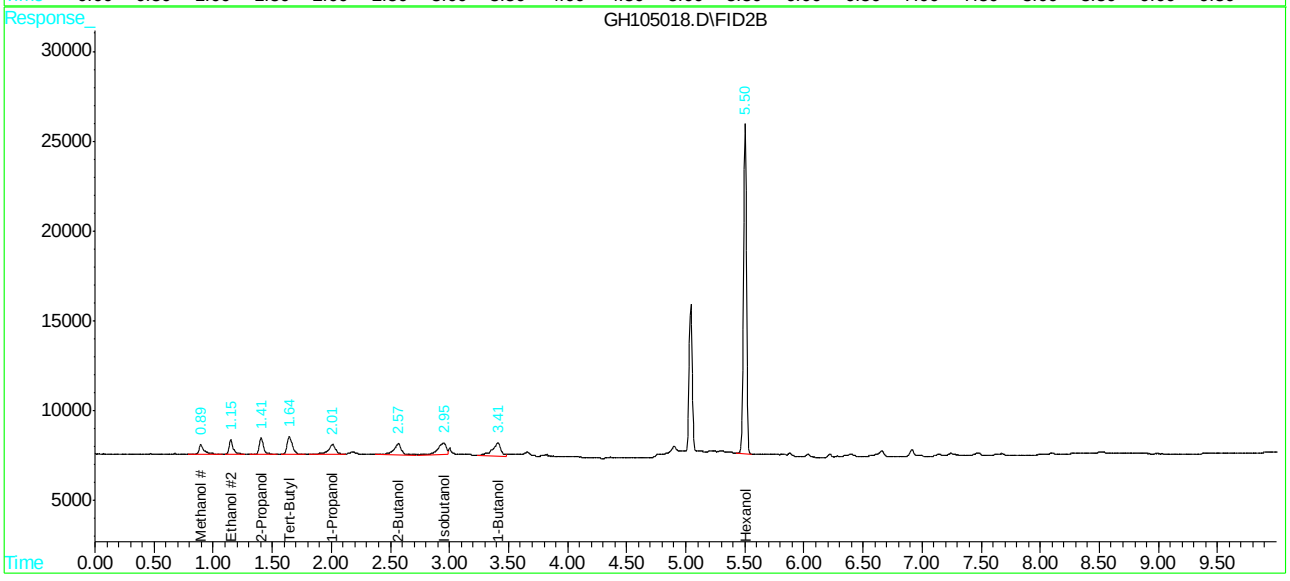
```
Data File : C:\HPCHEM\1\DATA\GH105018.D\FID1A.CH          Vial: 3
Acq On    : 17 May 2016   4:28 pm                     Operator: XULIU
Sample    : IC5288-500                                Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105018.D\FID2B.CH          Vial: 3
Acq On    : 17 May 2016   4:43 pm                     Operator: XULIU
Sample    : IC5288-500                                Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 18  7:23 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Wed May 18 07:22:56 2016
Response via : Multiple Level Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um
```





Quantitation Report (QT Reviewed)

```
Data File : C:\HPCHEM\1\DATA\GH105019.D\FID1A.CH          Vial: 4
Acq On    : 17 May 2016   4:43 pm                     Operator: XULIU
Sample    : IC5288-1000                               Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105019.D\FID2B.CH          Vial: 4
Acq On    : 17 May 2016   4:57 pm                     Operator: XULIU
Sample    : IC5288-1000                               Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 18  7:22 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Wed May 18 07:22:21 2016
Response via : Initial Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um
```

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
9) S Hexanol	5.57	5.51	274171	622051	4543.104	4492.586
Spiked Amount 5000.000			Recovery	=	90.86%	89.85%
Target Compounds						
1) Methanol	1.12	0.92	16166	29685	1087.516	897.349
2) Ethanol	1.45	1.17f	18855	36354	966.928	863.337
3) Tert-Butyl Alcoh	2.01	1.66	28949	63750	1007.774	981.673
4) 1-Propanol	2.51	2.02	25248	52807	1004.669	976.309
5) 2-Propanol	1.75	1.42	20497	43421	993.892	942.889
6) Isobutanol	3.31	2.94	29498	59602	1017.007	973.641
7) 1-Butanol	3.76	3.42	29408	73648	1055.991	1224.889
8) 2-Butanol	2.94	2.57	25576	58599	1005.126	1059.749

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

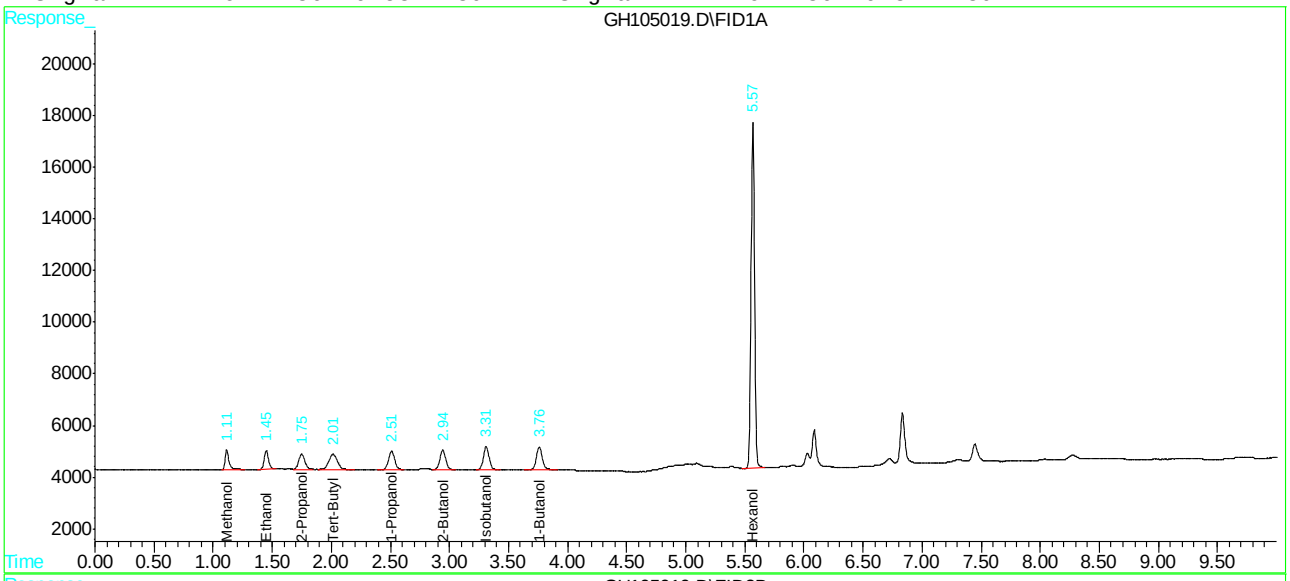
Quantitation Report (QT Reviewed)

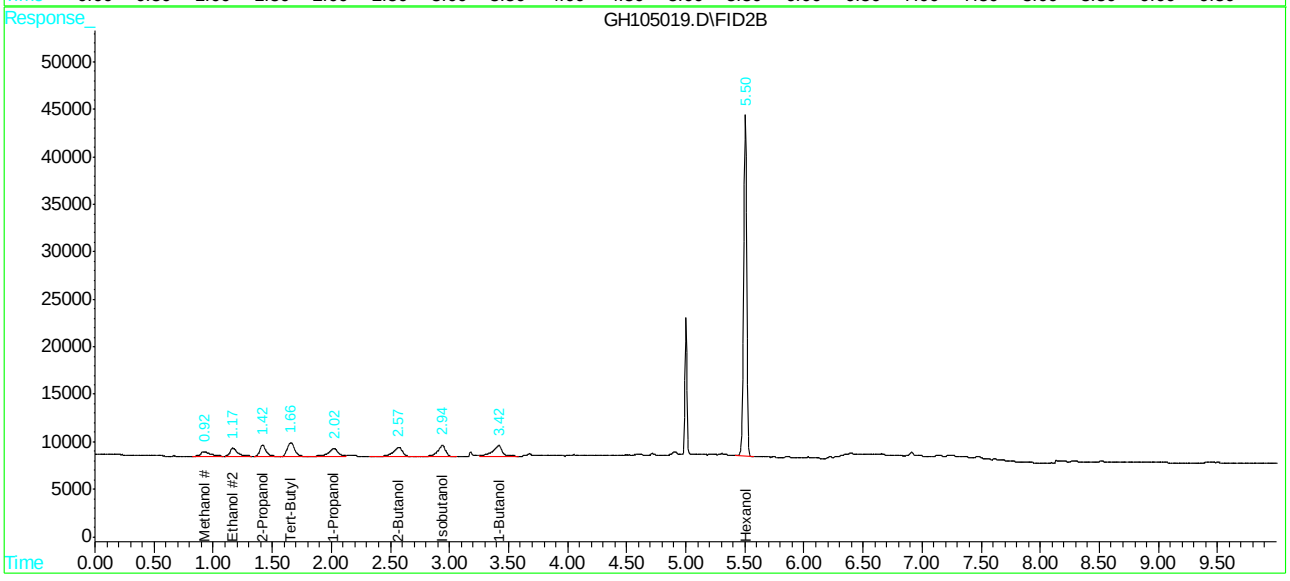
```
Data File : C:\HPCHEM\1\DATA\GH105019.D\FID1A.CH          Vial: 4
Acq On    : 17 May 2016   4:43 pm                     Operator: XULIU
Sample    : IC5288-1000                               Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105019.D\FID2B.CH          Vial: 4
Acq On    : 17 May 2016   4:57 pm                     Operator: XULIU
Sample    : IC5288-1000                               Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 18  7:22 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Wed May 18 07:22:21 2016
Response via : Multiple Level Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um
```





Quantitation Report (QT Reviewed)

```
Data File : C:\HPCHEM\1\DATA\GH105020.D\FID1A.CH          Vial: 5
Acq On    : 17 May 2016   4:57 pm                     Operator: XULIU
Sample    : ICC5288-5000                              Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105020.D\FID2B.CH          Vial: 5
Acq On    : 17 May 2016   5:19 pm                     Operator: XULIU
Sample    : ICC5288-5000                              Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 18  7:09 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Tue May 17 15:45:13 2016
Response via : Initial Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um
```

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
9) S	Hexanol	5.57	5.50	345209	794669	4511.712	4828.644
Spiked Amount	5000.000			Recovery	=	90.23%	96.57%
	Target Compounds						
1)	Methanol	1.12	0.89	77443	173699	5243.603	8544.414 #
2)	Ethanol	1.45	1.15	99445	217347	5314.412	6840.346
3)	Tert-Butyl Alcoh	2.01	1.65	142996	332018	5237.321	5085.028
4)	1-Propanol	2.51	2.01	128385	274702	5760.408	5575.380
5)	2-Propanol	1.75	1.41	105046	236654	5062.425	5660.735
6)	Isobutanol	3.31	2.94	147383	311633	5362.003	5023.429
7)	1-Butanol	3.76	3.42	143097	319465	5843.923	6171.241
8)	2-Butanol	2.94	2.57	129413	280976	5135.753	5686.138

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

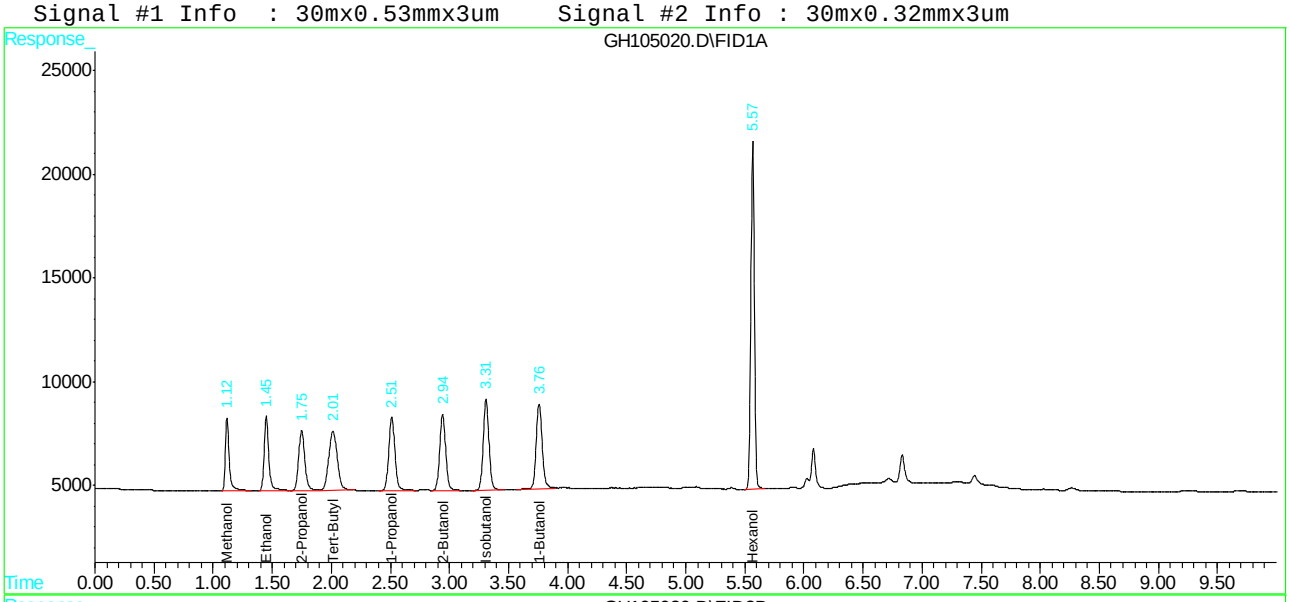
Quantitation Report (QT Reviewed)

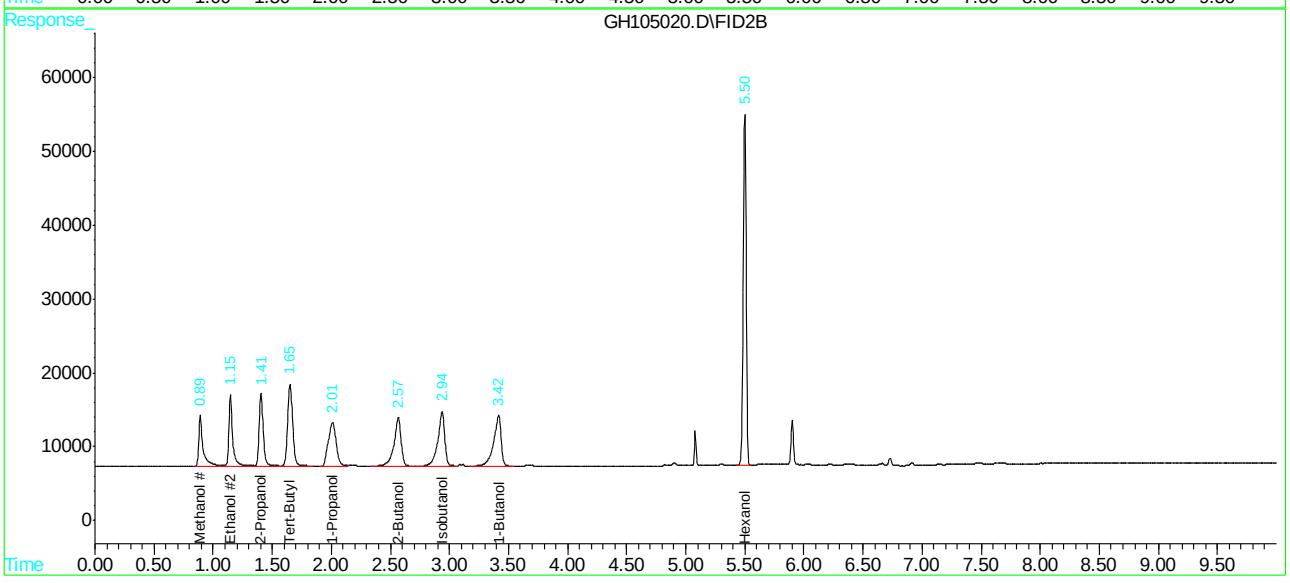
```
Data File : C:\HPCHEM\1\DATA\GH105020.D\FID1A.CH          Vial: 5
Acq On    : 17 May 2016   4:57 pm                     Operator: XULIU
Sample    : ICC5288-5000                              Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105020.D\FID2B.CH          Vial: 5
Acq On    : 17 May 2016   5:19 pm                     Operator: XULIU
Sample    : ICC5288-5000                              Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 18  7:09 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Tue May 17 15:45:13 2016
Response via : Multiple Level Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um
```





SGS ACCUTEST JC18972R

Quantitation Report (QT Reviewed)

```
Data File : C:\HPCHEM\1\DATA\GH105021.D\FID1A.CH          Vial: 6
Acq On    : 17 May 2016   5:19 pm                     Operator: XULIU
Sample    : IC5288-10000                              Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105021.D\FID2B.CH          Vial: 6
Acq On    : 17 May 2016   5:33 pm                     Operator: XULIU
Sample    : IC5288-10000                              Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 18  7:09 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Tue May 17 15:45:13 2016
Response via : Initial Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um
```

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
9) S	Hexanol	5.57	5.50	355196	814101	4642.238	4946.724
Spiked Amount	5000.000			Recovery	=	92.84%	98.93%
	Target Compounds						
1)	Methanol	1.12	0.89	157448	346407	10660.697	17040.107 #
2)	Ethanol	1.45	1.15	202728	432745	10833.939	13619.358
3)	Tert-Butyl Alcoh	2.02	1.65	294805	663970	10797.389	10169.042
4)	1-Propanol	2.51	2.02	257894	549862	11571.266	11160.064
5)	2-Propanol	1.75	1.41	213932	472748	10309.866	11308.075
6)	Isobutanol	3.31	2.95	298782	632695	10870.134	10198.859
7)	1-Butanol	3.76	3.41	289038	604299	11803.967	11673.499
8)	2-Butanol	2.94	2.57	262599	566046	10421.277	11455.123

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

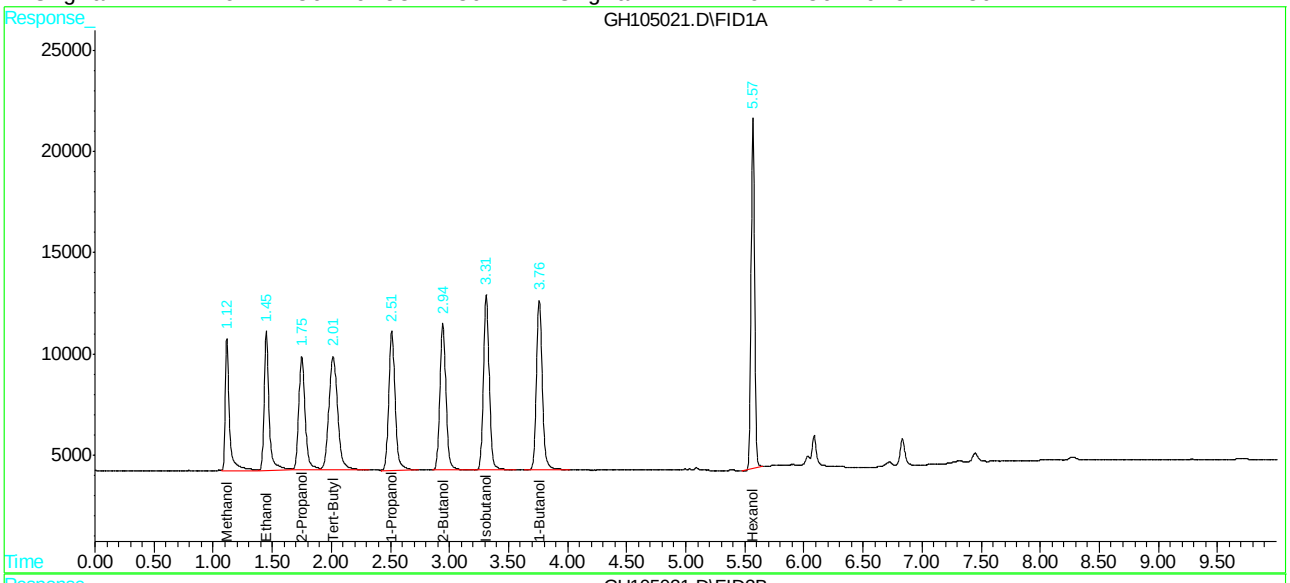
Quantitation Report (QT Reviewed)

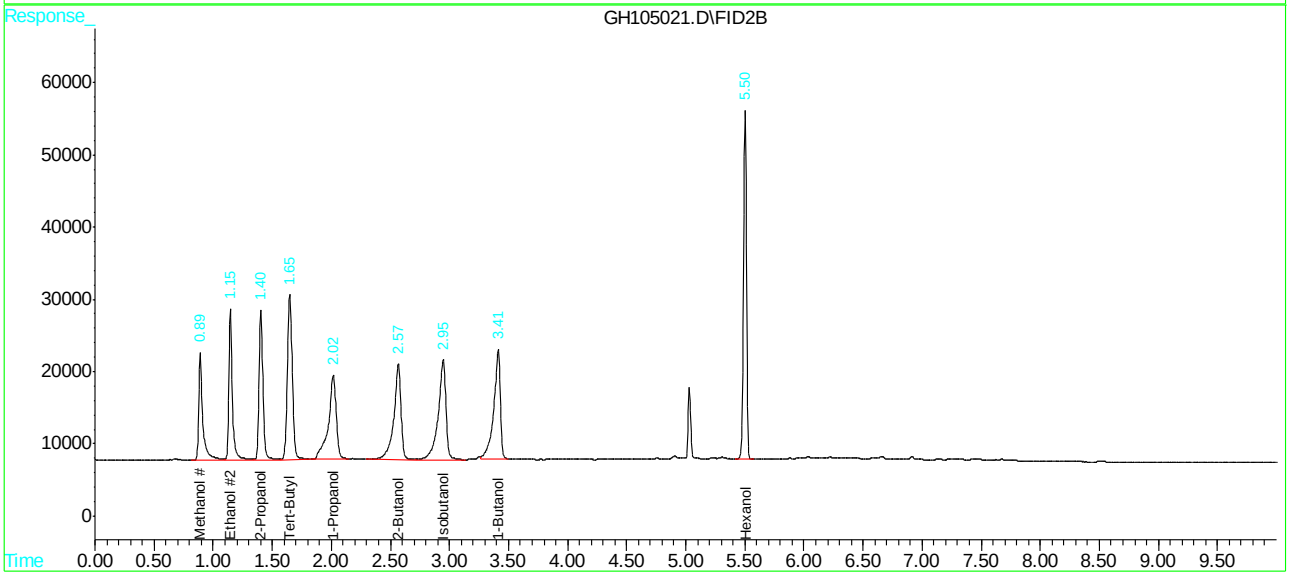
```
Data File : C:\HPCHEM\1\DATA\GH105021.D\FID1A.CH          Vial: 6
Acq On    : 17 May 2016   5:19 pm                     Operator: XULIU
Sample    : IC5288-10000                              Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105021.D\FID2B.CH          Vial: 6
Acq On    : 17 May 2016   5:33 pm                     Operator: XULIU
Sample    : IC5288-10000                              Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 18  7:09 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Tue May 17 15:45:13 2016
Response via : Multiple Level Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um
```





Quantitation Report (QT Reviewed)

```
Data File : C:\HPCHEM\1\DATA\GH105022.D\FID1A.CH          Vial: 7
Acq On    : 17 May 2016   5:33 pm                     Operator: XULIU
Sample    : IC5288-50000                              Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105022.D\FID2B.CH          Vial: 7
Acq On    : 17 May 2016   5:48 pm                     Operator: XULIU
Sample    : IC5288-50000                              Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 18  7:10 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Tue May 17 15:45:13 2016
Response via : Initial Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um
```

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
9) S	Hexanol	5.57	5.50	412961	947054	5397.192	5754.582
	Spiked Amount 5000.000			Recovery	=	107.94%	115.09%
	Target Compounds						
1)	Methanol	1.12	0.89	720543	1576706	48787.500	77559.774 #
2)	Ethanol	1.45	1.15	934936	1996365	49963.655	62829.557
3)	Tert-Butyl Alcoh	2.02	1.65	1362114	3066977	49888.133	46972.339
4)	1-Propanol	2.51	2.02	1197382	2577415	53724.608	52311.489
5)	2-Propanol	1.75	1.41	990575	2181490	47738.100	52180.934
6)	Isobutanol	3.31	2.94	1369639	2883211	49829.464	46476.511
7)	1-Butanol	3.76	3.42	1316221	2839006	53752.804	54842.255
8)	2-Butanol	2.94	2.57	1212229	2632402	48107.436	53272.148

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

GH105022.D MGH5288.M Wed May 18 08:53:10 2016 GCGH

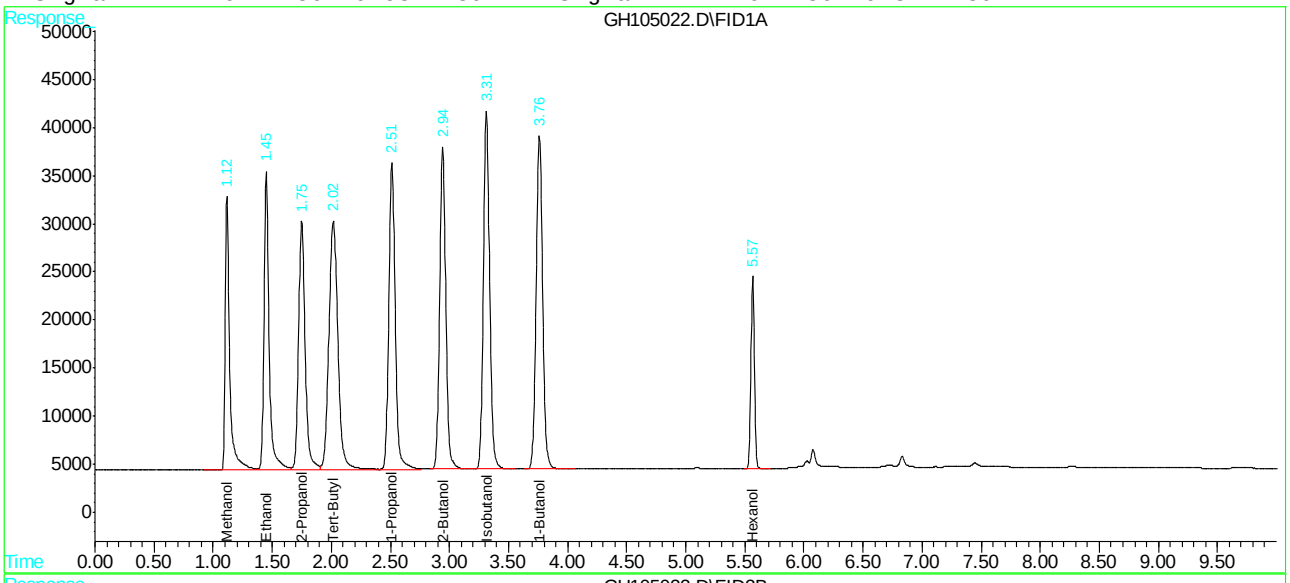
Quantitation Report (QT Reviewed)

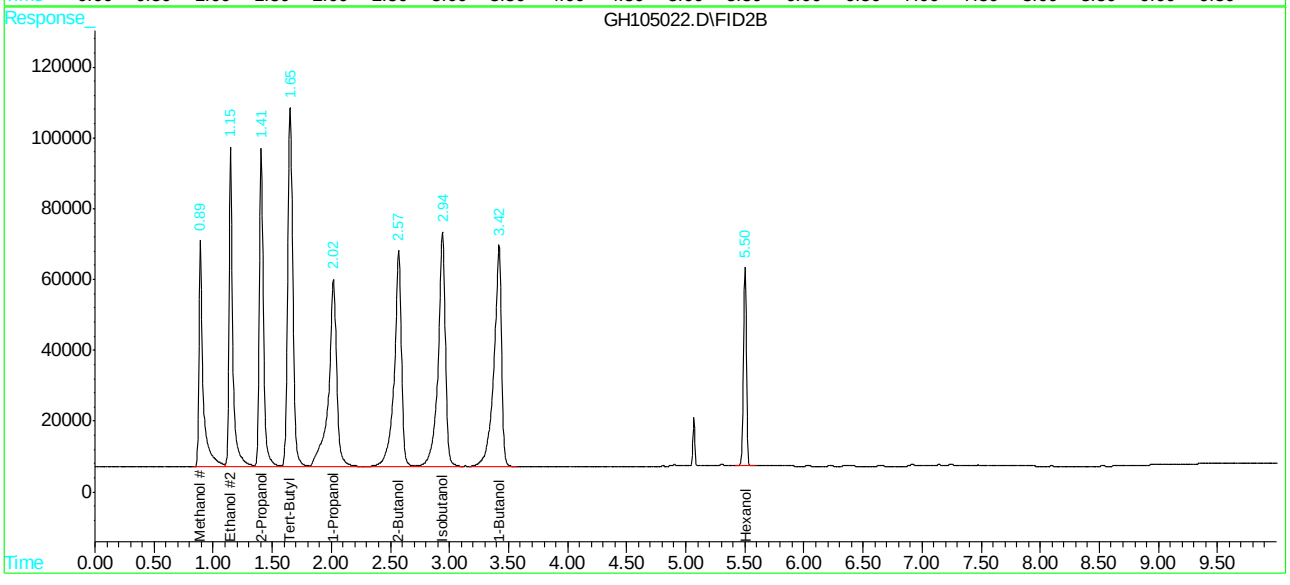
```
Data File : C:\HPCHEM\1\DATA\GH105022.D\FID1A.CH          Vial: 7
Acq On    : 17 May 2016   5:33 pm                     Operator: XULIU
Sample    : IC5288-50000                              Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105022.D\FID2B.CH          Vial: 7
Acq On    : 17 May 2016   5:48 pm                     Operator: XULIU
Sample    : IC5288-50000                              Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 18  7:10 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Tue May 17 15:45:13 2016
Response via : Multiple Level Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um
```





Quantitation Report (QT Reviewed)

```
Data File : C:\HPCHEM\1\DATA\GH105023.D\FID1A.CH          Vial: 8
Acq On    : 17 May 2016   5:48 pm                     Operator: XULIU
Sample    : IC5288-100000                             Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105023.D\FID2B.CH          Vial: 8
Acq On    : 17 May 2016   6:02 pm                     Operator: XULIU
Sample    : IC5288-100000                             Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 18  7:10 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Tue May 17 15:45:13 2016
Response via : Initial Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um
```

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
9) S	Hexanol	5.57	5.50	259897	594005	3396.729	3609.352
	Spiked Amount 5000.000			Recovery	=	67.93%	72.19%
	Target Compounds						
1)	Methanol	1.12	0.89	1381464	3140971	93538.113	154507.580 #
2)	Ethanol	1.45	1.15	1913963	4176473	102283.537	131441.900
3)	Tert-Butyl Alcoh	2.02	1.66	2957875	6562015	108333.721	100500.651
4)	1-Propanol	2.51	2.03	2510870	5487726	112658.677	111379.470
5)	2-Propanol	1.76	1.41	2027830	4596795	97725.857	109954.692
6)	Isobutanol	3.32	2.96f	2927116	6160124	106492.774	99299.394
7)	1-Butanol	3.76	3.42	2754661	5940276	112496.937	114750.761
8)	2-Butanol	2.95	2.57	2539551	5573181	100782.352	112784.937

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

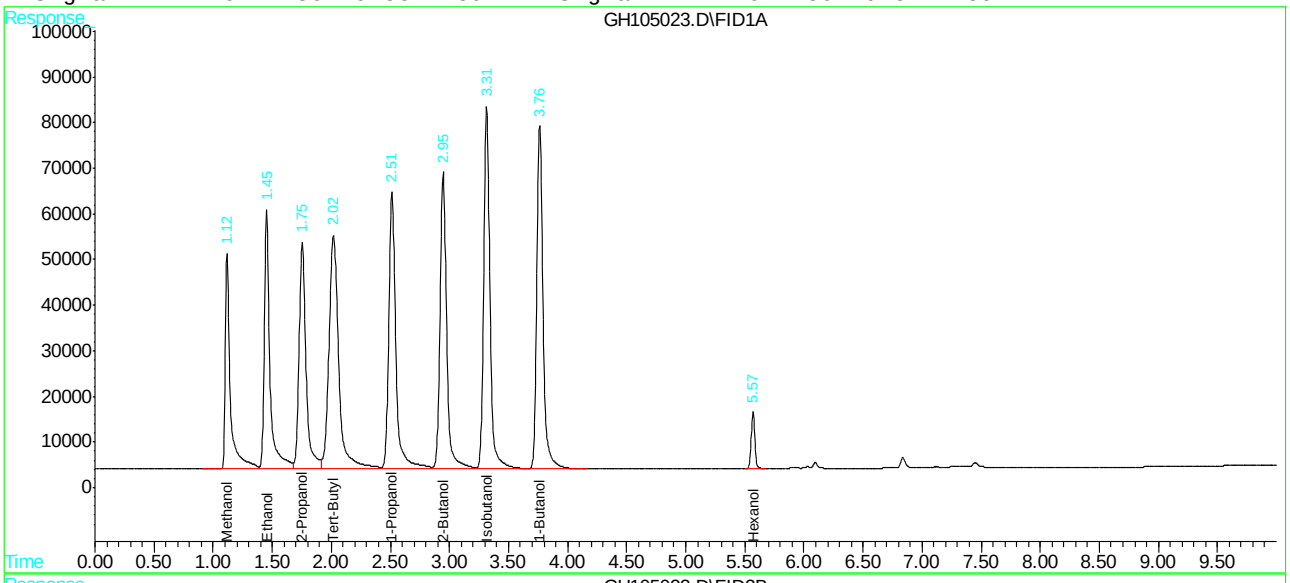
Quantitation Report (QT Reviewed)

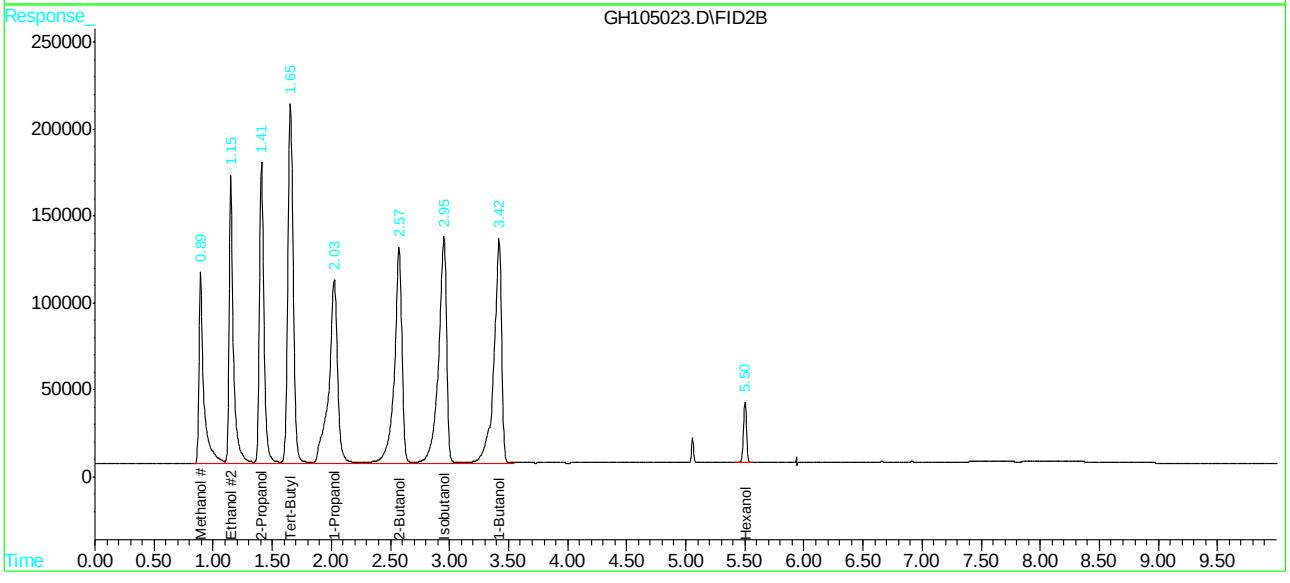
```
Data File : C:\HPCHEM\1\DATA\GH105023.D\FID1A.CH          Vial: 8
Acq On    : 17 May 2016   5:48 pm                     Operator: XULIU
Sample    : IC5288-100000                             Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105023.D\FID2B.CH          Vial: 8
Acq On    : 17 May 2016   6:02 pm                     Operator: XULIU
Sample    : IC5288-100000                             Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 18  7:10 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Tue May 17 15:45:13 2016
Response via : Multiple Level Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um
```





Quantitation Report (QT Reviewed)

```
Data File : C:\HPCHEM\1\DATA\GH105024.D\FID1A.CH        Vial: 9
Acq On    : 17 May 2016   6:02 pm                   Operator: XULIU
Sample    : ICV5288-5000                            Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105024.D\FID2B.CH        Vial: 9
Acq On    : 17 May 2016   6:24 pm                   Operator: XULIU
Sample    : ICV5288-5000                            Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 18  9:07 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Wed May 18 08:55:49 2016
Response via : Initial Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um
```

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
9) S	Hexanol	5.57	5.50	349710	790800	5173.481	5090.525
Spiked Amount	5000.000			Recovery	=	103.47%	101.81%
	Target Compounds						
1)	Methanol	1.12	0.90	65127	172731	4212.940	5355.287
2)	Ethanol	1.45	1.16	100143	226641	5284.554	5685.787
3)	Tert-Butyl Alcoh	2.02	1.66	149854	332921	5288.674	5236.015
4)	1-Propanol	2.52	2.02	127682	285106	5248.735	5607.628
5)	2-Propanol	1.75	1.41	105368	238229	5286.625	5261.345
6)	Isobutanol	3.31	2.94	151110	333033	5252.180	5439.828
7)	1-Butanol	3.76	3.42	145592	326188	5097.649	4929.542
8)	2-Butanol	2.95	2.57	133016	304299	5188.956	5605.638

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

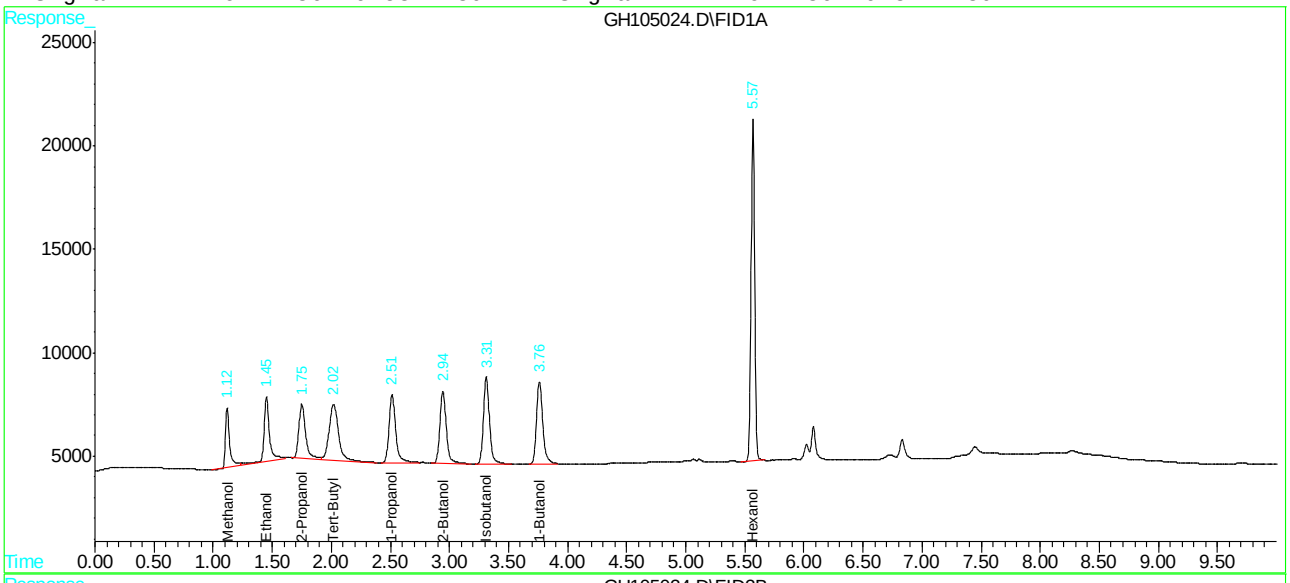
Quantitation Report (QT Reviewed)

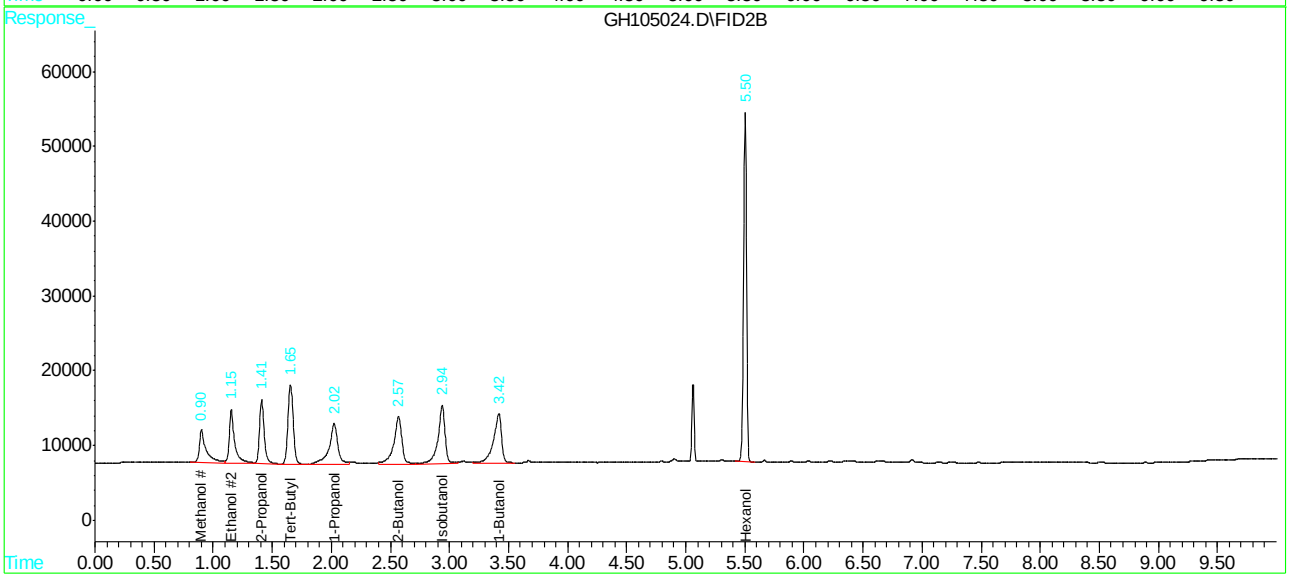
```
Data File : C:\HPCHEM\1\DATA\GH105024.D\FID1A.CH          Vial: 9
Acq On    : 17 May 2016   6:02 pm                     Operator: XULIU
Sample    : ICV5288-5000                              Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105024.D\FID2B.CH          Vial: 9
Acq On    : 17 May 2016   6:24 pm                     Operator: XULIU
Sample    : ICV5288-5000                              Inst    : GCGH
Misc      : GC48422,GGH5288,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 18  9:07 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Wed May 18 08:55:49 2016
Response via : Multiple Level Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um
```





Quantitation Report (QT Reviewed)

```
Data File : C:\HPCHEM\1\DATA\GH105121.D\FID1A.CH        Vial: 92
Acq On    : 20 May 2016   7:17 am                   Operator: XULIU
Sample    : CC5288-5000                             Inst    : GCGH
Misc      : GC48459,GGH5293,5.0,,,,1                Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105121.D\FID2B.CH        Vial: 92
Acq On    : 20 May 2016   7:38 am                   Operator: XULIU
Sample    : CC5288-5000                             Inst    : GCGH
Misc      : GC48459,GGH5293,5.0,,,,1                Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 20 10:05 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Fri May 20 10:04:02 2016
Response via : Initial Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um
```

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
9) S	Hexanol	5.58	5.50	317243	724510	4693.173	4663.803
Spiked Amount	5000.000			Recovery	=	93.86%	93.28%
	Target Compounds						
1)	Methanol	1.13	0.90	64944	143361	4201.150	4444.711
2)	Ethanol	1.47	1.15	86512	190949	4565.229	4790.372
3)	Tert-Butyl Alcoh	2.03	1.65	135052	317245	4766.308	4989.476
4)	1-Propanol	2.53	2.01	116263	247856	4779.336	4874.973
5)	2-Propanol	1.77	1.41	98684	222160	4951.255	4906.446
6)	Isobutanol	3.33	2.94	139475	279033	4847.757	4557.782
7)	1-Butanol	3.78	3.42	132370	288176	4634.684	4355.082
8)	2-Butanol	2.96	2.57	123627	266209	4822.701	4903.976

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

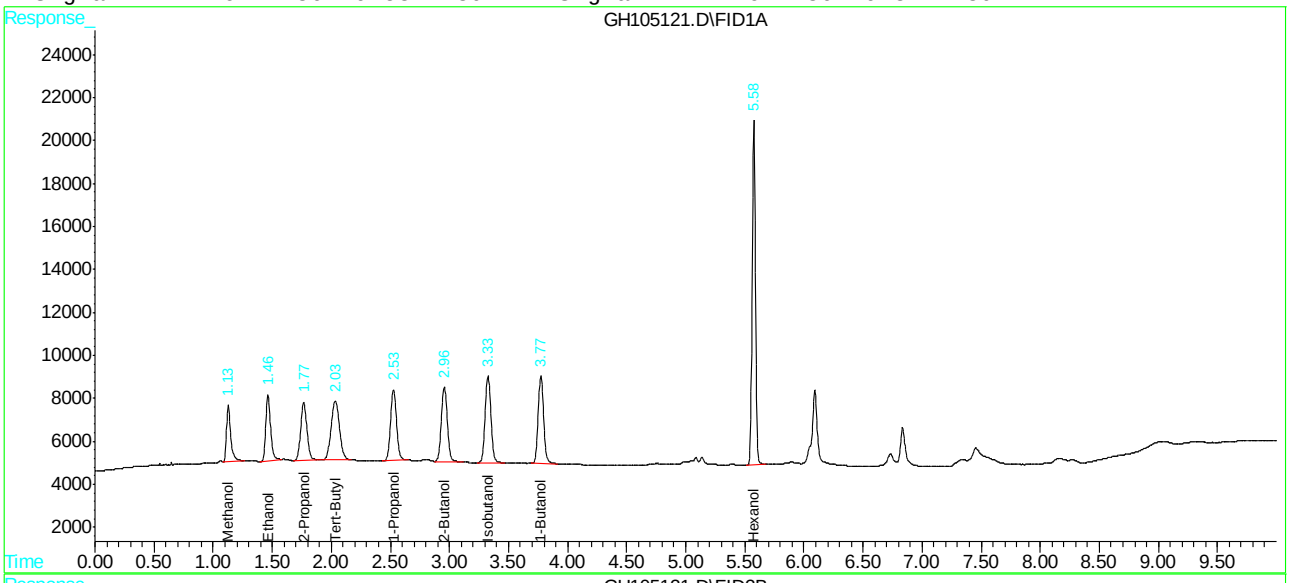
Quantitation Report (QT Reviewed)

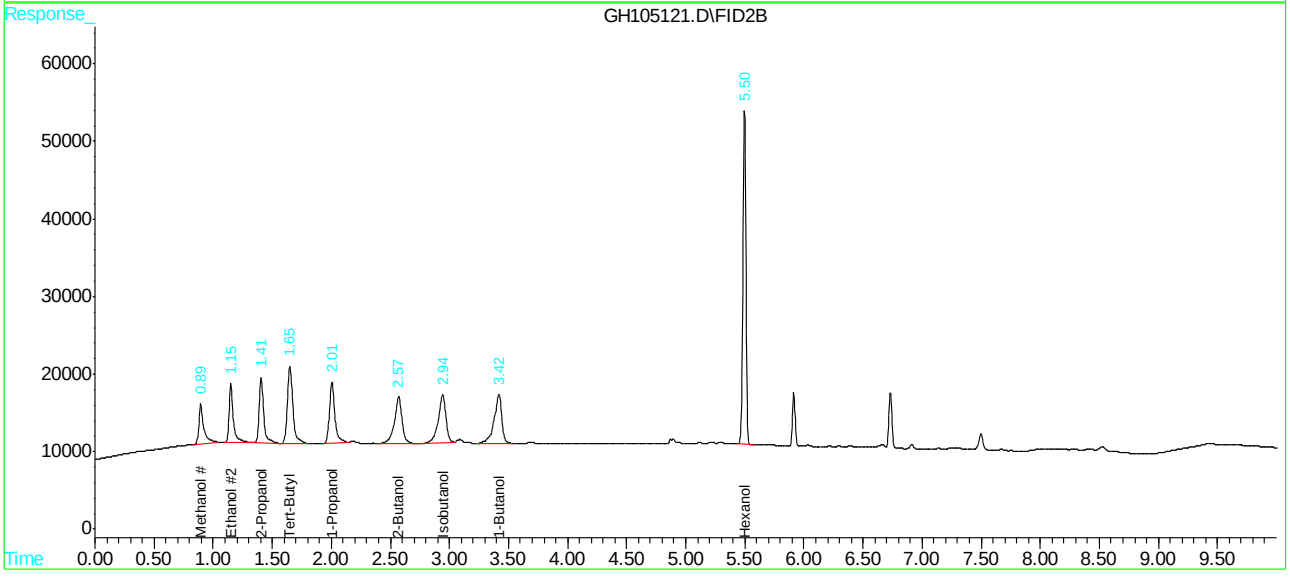
Data File : C:\HPCHEM\1\DATA\GH105121.D\FID1A.CH Vial: 92
Acq On : 20 May 2016 7:17 am Operator: XULIU
Sample : CC5288-5000 Inst : GCGH
Misc : GC48459,GGH5293,5.0,,,,1 Multiplr: 1.00
IntFile : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105121.D\FID2B.CH Vial: 92
Acq On : 20 May 2016 7:38 am Operator: XULIU
Sample : CC5288-5000 Inst : GCGH
Misc : GC48459,GGH5293,5.0,,,,1 Multiplr: 1.00
IntFile : autoint2.e
Quant Time: May 20 10:05 2016 Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title : METHOD SW846-8015C (DAI)
Last Update : Fri May 20 10:04:02 2016
Response via : Multiple Level Calibration
DataAcq Meth : MGH5288.M

Volume Inj. : 2ul
Signal #1 Phase : ZB-624 Signal #2 Phase: RTX-1
Signal #1 Info : 30mx0.53mmx3um Signal #2 Info : 30mx0.32mmx3um





Quantitation Report (QT Reviewed)

```
Data File : C:\HPCHEM\1\DATA\GH105131.D\FID1A.CH          Vial: 95
Acq On    : 20 May 2016  10:20 am                     Operator: XULIU
Sample    : CC5288-10000                              Inst    : GCGH
Misc      : GC48459,GGH5293,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105131.D\FID2B.CH          Vial: 95
Acq On    : 20 May 2016  10:33 am                     Operator: XULIU
Sample    : CC5288-10000                              Inst    : GCGH
Misc      : GC48459,GGH5293,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 20 10:45 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Fri May 20 10:06:09 2016
Response via : Initial Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um
```

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
9) S	Hexanol	5.56	5.50	319006	722449	4719.258	4650.536
Spiked Amount	5000.000			Recovery	=	94.39%	93.01%
	Target Compounds						
1)	Methanol	1.12	0.89	146913	304287	9503.557	9434.028
2)	Ethanol	1.45	1.15	188835	348040	9964.808	8731.352
3)	Tert-Butyl Alcoh	2.01	1.65	273922	554951	9667.344	8727.988
4)	1-Propanol	2.51	2.00	256678	439320	10551.519	8640.798
5)	2-Propanol	1.75	1.41	197435	389909	9905.931	8611.240
6)	Isobutanol	3.31	2.94	286215	550365	9948.046	8989.787
7)	1-Butanol	3.76	3.42	258746	581522	9059.512	8788.304
8)	2-Butanol	2.94	2.57	250392	558864	9767.809	10295.113

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

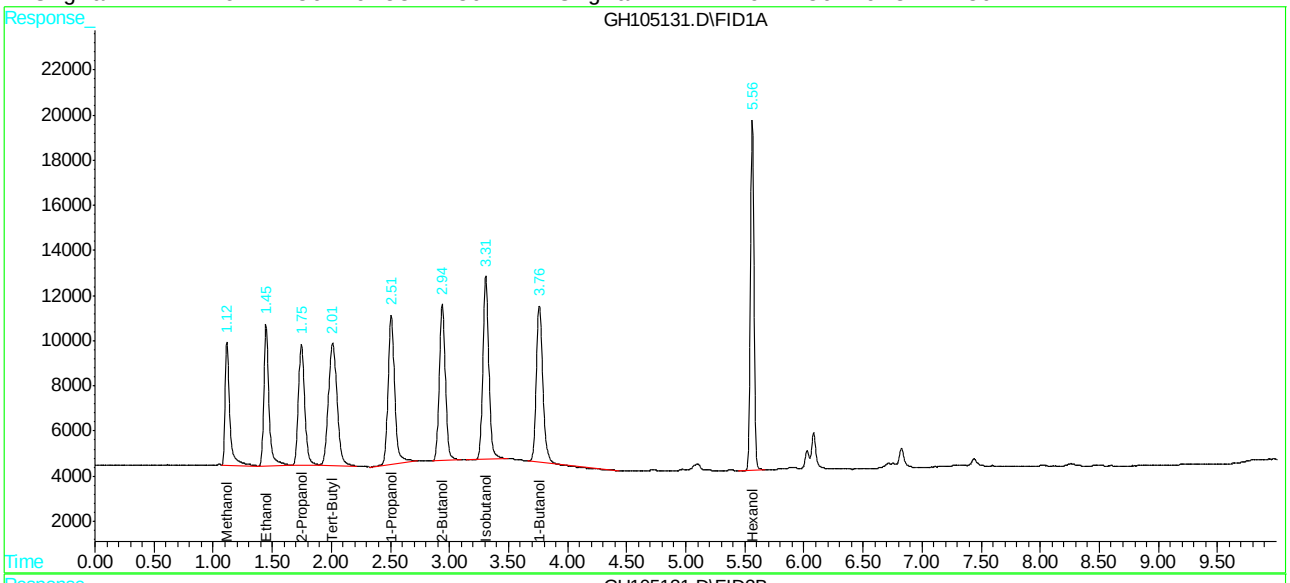
Quantitation Report (QT Reviewed)

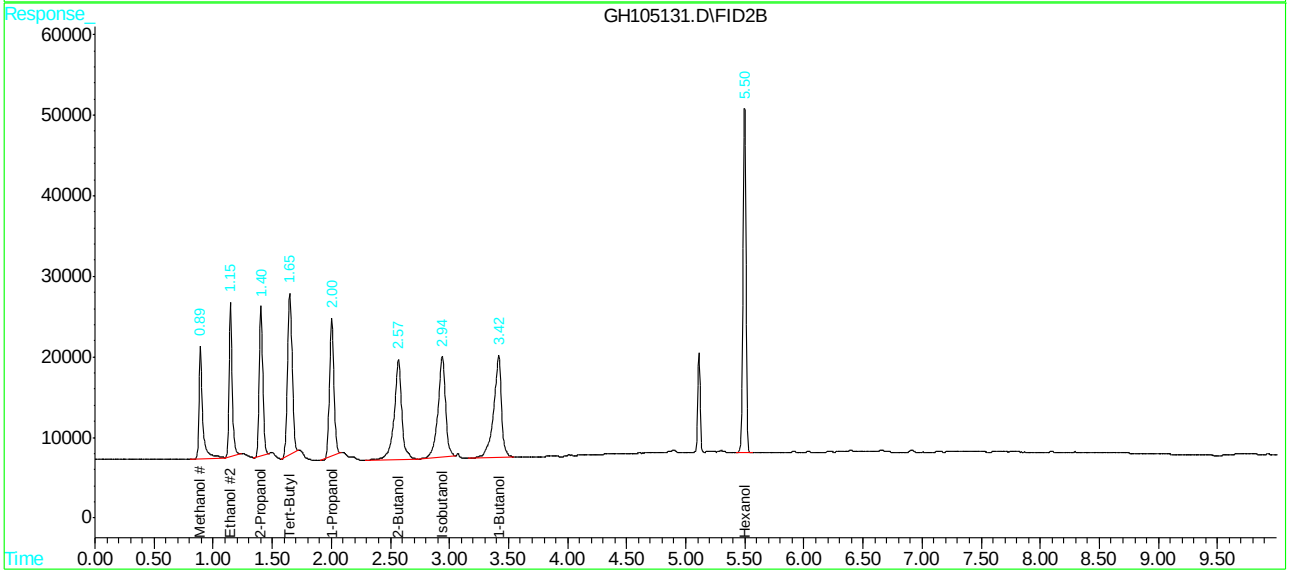
Data File : C:\HPCHEM\1\DATA\GH105131.D\FID1A.CH Vial: 95
Acq On : 20 May 2016 10:20 am Operator: XULIU
Sample : CC5288-10000 Inst : GCGH
Misc : GC48459,GGH5293,5.0,,,,1 Multiplr: 1.00
IntFile : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105131.D\FID2B.CH Vial: 95
Acq On : 20 May 2016 10:33 am Operator: XULIU
Sample : CC5288-10000 Inst : GCGH
Misc : GC48459,GGH5293,5.0,,,,1 Multiplr: 1.00
IntFile : autoint2.e
Quant Time: May 20 10:45 2016 Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title : METHOD SW846-8015C (DAI)
Last Update : Fri May 20 10:06:09 2016
Response via : Multiple Level Calibration
DataAcq Meth : MGH5288.M

Volume Inj. : 2ul
Signal #1 Phase : ZB-624 Signal #2 Phase: RTX-1
Signal #1 Info : 30mx0.53mmx3um Signal #2 Info : 30mx0.32mmx3um





Quantitation Report (QT Reviewed)

```
Data File : C:\HPCHEM\1\DATA\GH105141.D\FID1A.CH          Vial: 95
Acq On    : 20 May 2016   1:20 pm                     Operator: XULIU
Sample    : CC5288-5000                               Inst    : GCGH
Misc      : GC48459,GGH5293,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105141.D\FID2B.CH          Vial: 95
Acq On    : 20 May 2016   1:34 pm                     Operator: XULIU
Sample    : CC5288-5000                               Inst    : GCGH
Misc      : GC48459,GGH5293,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 20 13:43 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Fri May 20 13:43:34 2016
Response via : Initial Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um
```

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
9) S	Hexanol	5.56	5.50	314884	711501	4658.277	4580.057
Spiked Amount	5000.000			Recovery	=	93.17%	91.60%
	Target Compounds						
1)	Methanol	1.12	0.89	72968	151191	4720.212	4687.467
2)	Ethanol	1.45	1.15	99259	194636	5237.869	4882.879
3)	Tert-Butyl Alcoh	2.01	1.65	147740	321708	5214.096	5059.667
4)	1-Propanol	2.50	2.00	121204	255204	4982.459	5019.507
5)	2-Propanol	1.74	1.40	106448	220894	5340.830	4878.498
6)	Isobutanol	3.30	2.94	141425	290092	4915.551	4738.429
7)	1-Butanol	3.75	3.42	136333	276915	4773.468	4184.896
8)	2-Butanol	2.94	2.57	125148	265361	4882.033	4888.341

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

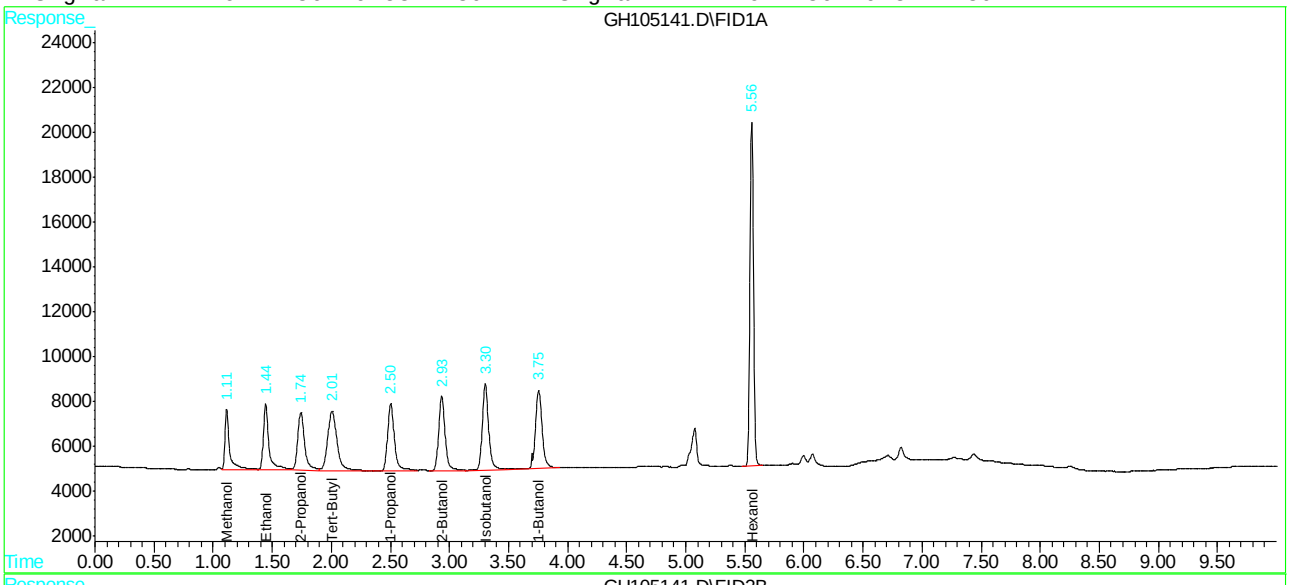
Quantitation Report (QT Reviewed)

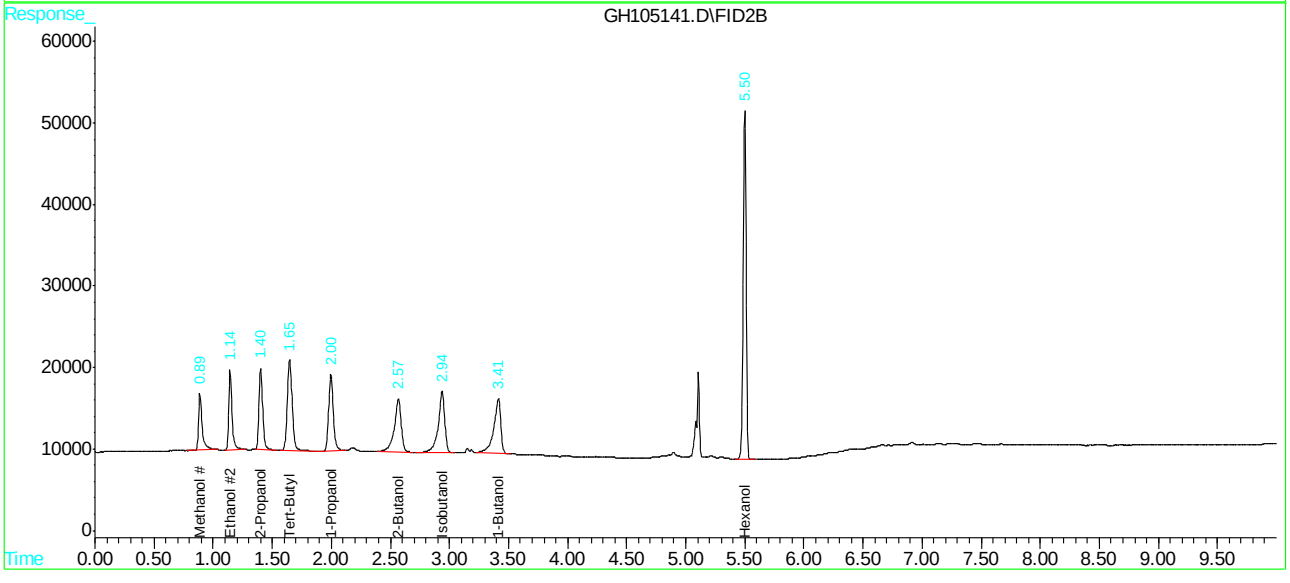
```
Data File : C:\HPCHEM\1\DATA\GH105141.D\FID1A.CH          Vial: 95
Acq On    : 20 May 2016   1:20 pm                     Operator: XULIU
Sample    : CC5288-5000                               Inst    : GCGH
Misc      : GC48459,GGH5293,5.0,,,,1                  Multiplr: 1.00
IntFile   : AUTOINT1.E

Data File : C:\HPCHEM\1\DATA\GH105141.D\FID2B.CH          Vial: 95
Acq On    : 20 May 2016   1:34 pm                     Operator: XULIU
Sample    : CC5288-5000                               Inst    : GCGH
Misc      : GC48459,GGH5293,5.0,,,,1                  Multiplr: 1.00
IntFile   : autoint2.e
Quant Time: May 20 13:43 2016  Quant Results File: MGH5288.RES

Quant Method : C:\HPCHEM\1\METHODS\MGH5288.M (Chemstation Integrator)
Title        : METHOD SW846-8015C (DAI)
Last Update  : Fri May 20 13:43:34 2016
Response via : Multiple Level Calibration
DataAcq Meth : MGH5288.M

Volume Inj.     : 2ul
Signal #1 Phase : ZB-624            Signal #2 Phase: RTX-1
Signal #1 Info  : 30mx0.53mmx3um    Signal #2 Info : 30mx0.32mmx3um
```





SGS ACCUTEST JC18972R

SGS ACCUTEST

VOLATILE ANALYSIS LOG

Batch ID: GGH 5288

Print Analyst Name: Xu Gu

Analyst Signature:

Date: 5/17/16

Columns: ZB624 / RTX-1 (30m x0.53mm x3μm) (30m x0.32mm x3μm)

Method 8015C All

Initial Cal. Method mCal 5288

Standard Data

Lot #	Description	Conc.

Standard Data

Lot #	Description	Conc.
015M4128	All Sur (5/15)	2000 ppm
015M4517	All STD (5/15)	100 ppm
015M4130	All SD012 (5/15)	100 ppm

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

Supervisor Signature: _____ Date: 5/19/16

R	Data File	Sample ID	Test	MTX	Vial #	ALS #	Samp. Amt (ml or g)	MOH amt. (ul)	Secondary dilution	L+	IS	SU	Status (Data)	Comments	pH* < 2
	Cal 105015	ZB					1					✓	not well		
	105016	ZB					1					✓	ok		
	105017	2C5288-100					1					✓	ok	10μl STD, 4μl SW / 10 ml	
	105018	2C5288-500					1					✓	ok	5μl STD, 1μl SW / 10 ml	
	105019	2C5288-1000					1					✓	ok	10μl STD, 2.5μl SW / ml	
	105020	2C5288-5000					1					✓	ok	50μl STD, 2.5μl SW / ml	
	105021	2C5288-10,000					1					✓	ok	100μl STD, 2.5μl SW / ml	
	105022	2C5288-50,000					1					✓	ok	500μl STD, 3μl SW / ml	
	105023	2C5288-100,000					1					✓	ok	1000μl STD, 4μl SW / ml	
	105024	2C5288-50000					1					✓	ok	2.5μl SW 50μl STD (1:10) / ml	

MTX = Matrix Designate W for water, S for soil, O for oil. L+ =Library Search. IS = Internal Standard Area. SU = Surrogate.
Sample Amt = Volume (ML) or Weight (g); MOH amt.= volume (ul) extract injected * IF pH > 2, comment on sample result.
All strike outs must be initialed, dated and reason code applied as follows: 1 = reviewer correction error; 2 = transcription error; 3 = computer miscalculation; 4 = analyst's correction error

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Form: OR001-10
Rev. Date: 1/19/16

SGS ACCUTEST

VOLATILE ANALYSIS LOG

Batch ID: GGH5293

Print Analyst Name: Xulin

Analyst Signature:

Date: 5/20/16

Columns: 2B6 VX / RTX-1 (30m x0.53mm x3μm) (30m x0.32mm x3μ)

Method 8015C ALC

Initial Cal. Method MGH5288

Standard Data

Lot #	Description	Conc.

Standard Data

Lot #	Description	Conc.
015W4128	ALL SUR (5/25)	2000 ppm
015W4128	ALL (MD) (5/25)	100 ppm
015W4130	ALL (MD2) (5/25)	100 ppm

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

Supervisor Signature: _____ **Date:** 5/23/16

R	Data File	Sample ID	Test	MTX	Vial #	ALS #	Samp. Amt (ml or g)	MOH amt. (ul)	Secondary dilution	L+	IS	SU	Status (Data)	Comments	pH* < 2
	GG105120	2B3											✓ OK		
	105121	CC5288-5000											✓ OK	50µl 5000/1mL	
	105122	MB1											✓ OK		
	105123	BS											✓ OK	50µl 5000/1mL	
	105124	JC20528-1A	48457 MeOH	S	4		5.0/5						✓ OK		
	105125	JC20528-1AMS	✓	S	4		5.0/5						✓ OK	50µl 5000/1mL sample	
	105126	JC20528-1AMSD	✓	S	4		5.0/5						✓ OK	50µl 5000/1mL sample	
	105127	JC20528-2A	✓	S	3		5.0/5						✓ OK		
	105128	JC20528-3A	✓	S	3		5.1/5						✓ OK		
	105129	JC18516-2AR	48459 SBA.IPA	S	1		5.0/5						✓ OK		
	105130	JC18516-3AR	✓	S	1		5.0/5						✓ OK		
	105131	CC5288-10000											✓ OK	100µl 5000/1mL H2O	
	105132	MB2											✓ OK		
	105133	JC18649-3R	48459 IPA.SBA	S	1		5.0/5						✓ OK		
	105134	JC18972-1AR	✓	S	1		5.1/5						✓ OK		
	105135	JC18972-2AR	✓	S	1		5.0/5						✓ OK		
	105136	JC18023-1R	✓	S	1		5.1/5						✓ OK		

MTX = Matrix Designate W for water, S for soil, O for oil. L+ =Library Search. IS = Internal Standard Area. SU = Surrogate.
Sample Amt = Volume (ML) or Weight (g); MOH amt.= volume (ul) extract injected * IF pH > 2, comment on sample result.
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OBL

Form: OR001-10
Rev. Date: 1/19/16

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7.6.2

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SGS ACCUTEST

VOLATILE ANALYSIS LOG

Batch ID: GGH5293

Print Analyst Name: Xu Lin

Date: 5/20/16

Analyst Signature:

Columns: ZB624 (30m x 0.53mm x 3μm) / RTX-1 (30m x 0.32mm x 2μm)

Method 8015C AK

Initial Cal. Method MGH5288

Standard Data

Lot #	Description	Conc.

Standard Data

Lot #	Description	Conc.

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

Supervisor Signature: Date: 5/27/16

R	Data File	Sample ID	Test	MTX	Vial #	ALS #	Samp. Amt (ml or g)	MOH amt. (ul)	Secondary dilution	L+	IS	SU	Status (Data)	Comments	pH* < 2
	GH105137	JC18023-2R	48459 28A.5A	S	1		5.0/5					✓	OK		
	105138	JC18023-4R	✓	S	1		5.0/5					✓	OK		
	105139	JC18423-1R	✓	S	1		5.0/5					✓	OK		
	105140	JC18423-3R	✓	S	1		5.0/5					✓	OK		
	105141	CC5288-500										✓	OK	500ug/ml	

MTX = Matrix Designate W for water, S for soil, O for oil. L+ =Library Search. IS = Internal Standard Area. SU = Surrogate.
Sample Amt = Volume (ML) or Weight (g); MOH amt.= volume (ul) extract injected * IF pH > 2, comment on sample result.
All strike outs must be initialed, dated and reason code applied as follows: 1 = reviewer correction error; 2 = transcription error; 3 = computer miscalculation; 4 = analyst's correction error

Form: OR001-10
Rev. Date: 1/19/16

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Percent Solids Raw Data Summary

Percent Solids Raw Data Summary

Job Number: JC18972R
Account: AMANYWP Anderson, Mulholland & Associates
Project: BMSMC, Building 5 Area, PR

Sample: JC18972-1 **Analyzed:** 30-APR-16 by KP **Method:** SM2540 G-97
ClientID: RA16 (17.5-18.5)

Wet Weight (Total)	33.26	g
Tare Weight	28.23	g
Dry Weight (Total)	32.3	g
Solids, Percent	80.9	%

Sample: JC18972-2 **Analyzed:** 30-APR-16 by KP **Method:** SM2540 G-97
ClientID: S-35D (14-15)

Wet Weight (Total)	26.31	g
Tare Weight	18.56	g
Dry Weight (Total)	24.66	g
Solids, Percent	78.7	%