

# Report of Mercury and Methylmercury Analyses in Sediment Samples

**Project:** Anchor/Newtown Creek  
(Alpha Job Number L1208741)  
**Samples Collected:** May 16-17, 2012  
**Report Date:** June 26, 2012

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Project ID: AAL-MN1101



## Table of Contents

Case Narrative .....	3
Report Information.....	6
Sample Information .....	7
Batch Summary.....	7
Sample Results .....	8
Accuracy & Precision Summary .....	10
Method Blanks & Reporting Limits .....	14
Instrument Calibration .....	18
Sample Containers.....	21
Shipping Containers .....	23
Sample Calculations.....	24
Chain-of-Custody Forms .....	26
Waybills.....	28
Total Mercury Water Data Sequence 1200414, Batch B120915.....	30
Total Mercury Sediment Data Sequence 1200442, Batch B120919 .....	51
Methylmercury Sediment Data Sequence 1200444, Batch B120831.....	93
Percent Total Solids Batch B120922.....	130

## Case Narrative

Revision 1: Sample 1220019-08 has been updated for MeHg to 0.058 ng/g, B qualified.

### Shipping and Receiving

Sediment and water samples included in this report were received by Brooks Rand Labs (BRL) on two (2) days and logged-in to one (1) work order:

BRL Work Order Number	Date Received	Time Received	Number of Samples	Cooler Temp
1220019	5/18/2012	10:30 AM	10	3.3°C
	5/19/2012	9:00 AM	5	3.4°C

The chain-of-custody (COC) forms requested analysis for total mercury (Hg), methylmercury (MeHg), and percent total solids (%TS). The samples were received and stored securely according to BRL standard operating procedures (SOP) and EPA methodology.

### Preservation and Holding Time

All method and SOP requirements for preservation and holding time were satisfied.

### Total Mercury in Water by EPA Method 1631 (BRL SOP #BR-0006)

All samples are prepared and analyzed in accordance with EPA Method 1631. Samples are oxidized with bromine monochloride (BrCl) and then analyzed with stannous chloride (SnCl<sub>2</sub>) reduction, single gold amalgamation, and cold vapor atomic fluorescence spectroscopy (CVAFS) detection using a BRL Model III CVAFS Mercury Analyzer.

The results have not been method blank-corrected, contrary to the method described in the calculations section of the relevant BRL SOPs and may have been evaluated using reporting limits that have been adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

### Sequence 1200414, Batch B120915

Instrument calibration, meeting all quality control criteria, was successfully achieved on the day of sample analysis.

The Hg concentration in the rinse blanks *SG-RB-20120516* (1220019-10) and *SG-RB-20120517* (1220019-15) yielded Hg concentrations of 1.11 ng/L and 0.86 ng/L, respectively. The samples were re-analyzed and confirmed the reported results. Although these field blanks yielded detectable Hg concentrations, the results associated with these blanks were much greater than 10x the rinse blank results and contamination was considered insignificant.

### Total Mercury in Sediment/Soil by EPA Method 1631 (SOP BR-0002)

All samples are prepared and analyzed in accordance with EPA Method 1631. Samples are digested with aqua regia at room temperature, oxidized with bromine monochloride (BrCl) and then analyzed with stannous chloride (SnCl<sub>2</sub>) reduction, single gold amalgamation, and cold

vapor atomic fluorescence spectroscopy (CVAFS) detection using a BRL Model III CVAFS Mercury Analyzer.

The results have not been method blank-corrected, contrary to the method described in the calculations section of the relevant BRL SOPs and may have been evaluated using reporting limits that have been adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

#### **Sequence 1200442, Batch B120919**

Instrument calibration, meeting all quality control criteria, was successfully achieved on the day of sample analysis.

The matrix spike duplicate (MSD) prepared from sample *NC023ASC-100230-20120516* (1220019-03) yielded a recovery below the acceptance criteria. Therefore, the result for this sample has been qualified **N**.

#### **Methylmercury in Sediment/Soil by EPA Method 1630, Modified (SOP BR-0011)**

Sediment samples are prepared by an acid bromide/dichloromethane extraction. Prepared samples are analyzed by ethylation, Tenax trap collection, gas chromatography separation, isothermal decomposition, and cold vapor fluorescence spectroscopy (CVAFS).

The results have not been method blank-corrected, contrary to the method described in the calculations section of the relevant BRL SOPs and may have been evaluated using reporting limits that have been adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

#### **Sequence 1200444, Batch B120831**

The results of the first two continuing calibration blanks (CCB1 and CCB2) were greater than the low calibration standard. Neither CCB bracketed the analysis of client samples nor was there further evidence of carryover or contamination.

Instrument calibration, meeting all quality control criteria, was successfully achieved on the day of sample analysis.

All data was reported without qualification and all associated quality control sample results met the acceptance criteria.

#### **Percent Total Solids in Solids by SM 2540G (SOP BR-1501)**

A solid sample is homogenized and an aliquot is measured into a pre-weighed vessel, dried in an oven overnight, weighed again, and the percent of dried solid material is calculated.

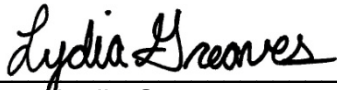
The results may have been evaluated using reporting limits that have been adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

#### **Batch B120922**

All data was reported without qualification and all associated quality control sample results met the acceptance criteria.

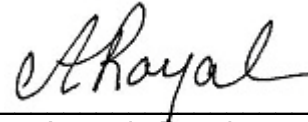
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We certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. BRL, an accredited laboratory, certifies that the reported results of all analyses for which BRL is NELAP accredited meet all NELAP requirements. For more details, please see the *Report Information* page in your report. Please feel free to contact us if you have any questions regarding this report.



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## Report Information

### Laboratory Accreditation

BRL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BRL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksrand.com/default.asp?contentID=586>. Results reported relate only to the samples listed in the report.

### Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

### Common Abbreviations

<b>BLK</b>	method blank	<b>MS</b>	matrix spike
<b>BRL</b>	Brooks Rand Labs	<b>MSD</b>	matrix spike duplicate
<b>BS</b>	laboratory fortified blank	<b>ND</b>	non-detect
<b>CAL</b>	calibration standard	<b>NR</b>	non-reportable
<b>CCV</b>	continuing calibration verification	<b>PS</b>	post preparation spike
<b>COC</b>	chain of custody record	<b>REC</b>	percent recovery
<b>CRM</b>	certified reference material	<b>RPD</b>	relative percent difference
<b>D</b>	dissolved fraction	<b>RSD</b>	relative standard deviation
<b>DUP</b>	duplicate	<b>SCV</b>	secondary calibration verification
<b>ICV</b>	initial calibration verification	<b>SOP</b>	standard operating procedure
<b>MDL</b>	method detection limit	<b>SRM</b>	standard reference material
<b>MRL</b>	method reporting limit	<b>T</b>	total recoverable fraction

### Definition of Data Qualifiers

(Effective 9/23/09)

<b>B</b>	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
<b>E</b>	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
<b>H</b>	Holding time and/or preservation requirements not met. Result is estimated.
<b>J</b>	Estimated value. A full explanation is presented in the narrative.
<b>J-M</b>	Duplicate precision (RPD) for associated QC sample was not within acceptance criteria. Result is estimated.
<b>J-N</b>	Spike recovery for associated QC sample was not within acceptance criteria. Result is estimated.
<b>M</b>	Duplicate precision (RPD) was not within acceptance criteria. Result is estimated.
<b>N</b>	Spike recovery was not within acceptance criteria. Result is estimated.
<b>R</b>	Rejected, unusable value. A full explanation is presented in the narrative.
<b>U</b>	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
<b>X</b>	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.

These qualifiers are based on those previously utilized by Brooks Rand, Ltd., those found in the EPA SOW\_ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses; USEPA; July 2002. These supersede all previous qualifiers ever employed by BRL.



## Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
NC023ASC-015060-20120516	1220019-01	Sediment	Sample	05/16/2012	05/18/2012
NC023ASC-060100-20120516	1220019-02	Sediment	Sample	05/16/2012	05/18/2012
NC023ASC-100230-20120516	1220019-03	Sediment	Sample	05/16/2012	05/18/2012
NC023ASC-230283-20120516	1220019-04	Sediment	Sample	05/16/2012	05/18/2012
NC022ASC-015060-20120516	1220019-05	Sediment	Sample	05/16/2012	05/18/2012
NC022ASC-060100-20120516	1220019-06	Sediment	Sample	05/16/2012	05/18/2012
NC022ASC-100200-20120516	1220019-07	Sediment	Sample	05/16/2012	05/18/2012
NC022ASC-200253-20120516	1220019-08	Sediment	Sample	05/16/2012	05/18/2012
NC022ASC-253295-20120516	1220019-09	Sediment	Sample	05/16/2012	05/18/2012
SC-RB-20120516	1220019-10	DIW	Rinse Blank	05/16/2012	05/18/2012
NC021ASC-015060-20120517	1220019-11	Sediment	Sample	05/17/2012	05/19/2012
NC021ASC-060100-20120517	1220019-12	Sediment	Sample	05/17/2012	05/19/2012
NC021ASC-100149-20120517	1220019-13	Sediment	Sample	05/17/2012	05/19/2012
NC021ASC-149211-20120517	1220019-14	Sediment	Sample	05/17/2012	05/19/2012
SC-RB-20120517	1220019-15	DIW	Rinse Blank	05/17/2012	05/19/2012

## Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
%TS	Soil/Sediment	SM 2540G	06/08/2012	06/11/2012	B120922	N/A
Hg	Soil/Sediment	EPA 1631 Appendix	06/08/2012	06/13/2012	B120919	1200442
MeHg	Soil/Sediment	EPA 1630	06/12/2012	06/13/2012	B120831	1200444
Hg	Water	EPA 1631	05/25/2012	06/05/2012	B120915	1200414



## Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<b>NC021ASC-015060-20120517, L1208741-26</b>										
1220019-11	%TS	Sediment	NA	34.61		0.30	1.00	%	B120922	N/A
1220019-11	Hg	Sediment	dry	1890		15.9	53.1	ng/g	B120919	1200442
<b>NC021ASC-060100-20120517, L1208741-28</b>										
1220019-12	%TS	Sediment	NA	36.55		0.30	1.00	%	B120922	N/A
1220019-12	Hg	Sediment	dry	2030		15.5	51.5	ng/g	B120919	1200442
<b>NC021ASC-100149-20120517, L1208741-30</b>										
1220019-13	%TS	Sediment	NA	43.90		0.30	1.00	%	B120922	N/A
1220019-13	Hg	Sediment	dry	2310		13.4	44.7	ng/g	B120919	1200442
<b>NC021ASC-149211-20120517, L1208741-32</b>										
1220019-14	%TS	Sediment	NA	76.62		0.30	1.00	%	B120922	N/A
1220019-14	Hg	Sediment	dry	12.6		0.38	1.28	ng/g	B120919	1200442
<b>NC022ASC-015060-20120516, L1208741-10</b>										
1220019-05	%TS	Sediment	NA	38.09		0.30	1.00	%	B120922	N/A
1220019-05	Hg	Sediment	dry	1380		15.6	52.0	ng/g	B120919	1200442
1220019-05	MeHg	Sediment	dry	0.782		0.108	0.339	ng/g	B120831	1200444
<b>NC022ASC-060100-20120516, L1208741-12</b>										
1220019-06	%TS	Sediment	NA	36.92		0.30	1.00	%	B120922	N/A
1220019-06	Hg	Sediment	dry	3690		14.5	48.4	ng/g	B120919	1200442
1220019-06	MeHg	Sediment	dry	0.400		0.099	0.310	ng/g	B120831	1200444
<b>NC022ASC-100200-20120516, L1208741-14</b>										
1220019-07	%TS	Sediment	NA	51.02		0.30	1.00	%	B120922	N/A
1220019-07	Hg	Sediment	dry	2800		11.8	39.4	ng/g	B120919	1200442
1220019-07	MeHg	Sediment	dry	0.286		0.078	0.242	ng/g	B120831	1200444
<b>NC022ASC-200253-20120516, L1208741-16</b>										
1220019-08	%TS	Sediment	NA	64.13		0.30	1.00	%	B120922	N/A
1220019-08	Hg	Sediment	dry	2500		8.73	29.1	ng/g	B120919	1200442
1220019-08	MeHg	Sediment	dry	0.057	Ó	0.057	0.177	ng/g	B120831	1200444





## Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<b>NC022ASC-253295-20120516, L1208741-18</b>										
1220019-09	%TS	Sediment	NA	79.64		0.30	1.00	%	B120922	N/A
1220019-09	Hg	Sediment	dry	20.5		0.35	1.16	ng/g	B120919	1200442
1220019-09	MeHg	Sediment	dry	0.157	U	0.050	0.157	ng/g	B120831	1200444
<b>NC023ASC-015060-20120516, L1208741-02</b>										
1220019-01	%TS	Sediment	NA	48.71		0.30	1.00	%	B120922	N/A
1220019-01	Hg	Sediment	dry	1570		11.1	36.9	ng/g	B120919	1200442
<b>NC023ASC-060100-20120516, L1208741-04</b>										
1220019-02	%TS	Sediment	NA	72.32		0.30	1.00	%	B120922	N/A
1220019-02	Hg	Sediment	dry	1840		7.74	25.8	ng/g	B120919	1200442
<b>NC023ASC-100230-20120516, L1208741-06</b>										
1220019-03	%TS	Sediment	NA	48.10		0.30	1.00	%	B120922	N/A
1220019-03	Hg	Sediment	dry	5370	N	12.5	41.7	ng/g	B120919	1200442
<b>NC023ASC-230283-20120516, L1208741-08</b>										
1220019-04	%TS	Sediment	NA	82.54		0.30	1.00	%	B120922	N/A
1220019-04	Hg	Sediment	dry	8.70		0.36	1.21	ng/g	B120919	1200442
<b>SC-RB-20120516, L1208741-20</b>										
1220019-10	Hg	DIW	T	1.11		0.15	0.40	ng/L	B120915	1200414
<b>SC-RB-20120517, L1208741-34</b>										
1220019-15	Hg	DIW	T	0.86		0.15	0.40	ng/L	B120915	1200414



## Accuracy & Precision Summary

**Batch:** B120831  
**Lab Matrix:** Soil/Sediment  
**Method:** EPA 1630

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
<b>B120831-SRM1</b>	<b>Certified Reference Material (1103013, SRM SQC-1238 MeHg in Sediment)</b> MeHg		10.00	11.69	ng/g	117% 65-135	
<b>B120831-SRM2</b>	<b>Certified Reference Material (1103013, SRM SQC-1238 MeHg in Sediment)</b> MeHg		10.00	12.81	ng/g	128% 65-135	
<b>B120831-SRM3</b>	<b>Certified Reference Material (1103013, SRM SQC-1238 MeHg in Sediment)</b> MeHg		10.00	10.64	ng/g	106% 65-135	
<b>B120831-DUP4</b>	<b>Duplicate (1220019-05)</b> MeHg	0.782		0.629	ng/g dry		22% 35
<b>B120831-MS4</b>	<b>Matrix Spike (1220019-05)</b> MeHg	0.782	12.21	13.84	ng/g dry	107% 65-135	
<b>B120831-MSD4</b>	<b>Matrix Spike Duplicate (1220019-05)</b> MeHg	0.782	12.33	11.38	ng/g dry	86% 65-135	20% 35
<b>B120831-PS4</b>	<b>Post Spike (1220019-05)</b> MeHg	0.782	6.387	8.468	ng/g dry	120% 67-133	



## Accuracy & Precision Summary

Batch: B120915  
 Lab Matrix: Water  
 Method: EPA 1631

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
<b>B120915-SRM1</b>	<b>Certified Reference Material (1221029, NIST 1641d 1000x dilution)</b> Hg		15.68	16.16	ng/L	103% 85-115	
<b>B120915-MS2</b>	<b>Matrix Spike (1221038-01)</b> Hg	4.53	21.32	28.66	ng/L	113% 71-125	
<b>B120915-MSD2</b>	<b>Matrix Spike Duplicate (1221038-01)</b> Hg	4.53	21.57	30.18	ng/L	119% 71-125	5% 24



## Accuracy & Precision Summary

**Batch:** B120919  
**Lab Matrix:** Soil/Sediment  
**Method:** EPA 1631 Appendix

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
<b>B120919-SRM1</b>	<b>Certified Reference Material (1209037, MESS-3)</b> Hg		91.00	75.42	ng/g	83% 75-125	
<b>B120919-SRM2</b>	<b>Certified Reference Material (1209037, MESS-3)</b> Hg		91.00	89.80	ng/g	99% 75-125	
<b>B120919-DUP1</b>	<b>Duplicate (1220019-03)</b> Hg	5375		4509	ng/g dry		18% 30
<b>B120919-MS1</b>	<b>Matrix Spike (1220019-03)</b> Hg	5375	9844	15170	ng/g dry	99% 70-130	
<b>B120919-MSD1</b>	<b>Matrix Spike Duplicate (1220019-03)</b> Hg	5375	10250	12460	ng/g dry	69% 70-130	20% 30
<b>B120919-DUP2</b>	<b>Duplicate (1220019-11)</b> Hg	1889		1837	ng/g dry		3% 30
<b>B120919-MS2</b>	<b>Matrix Spike (1220019-11)</b> Hg	1889	13110	14450	ng/g dry	96% 70-130	
<b>B120919-MSD2</b>	<b>Matrix Spike Duplicate (1220019-11)</b> Hg	1889	13920	13030	ng/g dry	80% 70-130	10% 30



## Accuracy & Precision Summary

Batch: B120922  
Lab Matrix: Soil/Sediment  
Method: SM 2540G

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B120922-DUP1	Duplicate (1220019-03) %TS	48.10		48.10	%		0.005% 15
B120922-DUP2	Duplicate (1220019-11) %TS	34.61		35.98	%		4% 15



## Method Blanks & Reporting Limits

**Batch:** B120831  
**Matrix:** Soil/Sediment  
**Method:** EPA 1630  
**Analyte:** MeHg

Sample	Result	Units		
B120831-BLK1	0.0005	ng/g		
B120831-BLK2	0.001	ng/g		
B120831-BLK3	0.0008	ng/g		
B120831-BLK4	0.0005	ng/g		
<b>Average:</b> 0.001			<b>Standard Deviation:</b> 0.000	<b>MDL:</b> 0.008
<b>Limit:</b> 0.016			<b>Limit:</b> 0.005	<b>MRL:</b> 0.024



## Method Blanks & Reporting Limits

**Batch:** B120915  
**Matrix:** Water  
**Method:** EPA 1631  
**Analyte:** Hg

Sample	Result	Units		
B120915-BLK1	0.08	ng/L		
B120915-BLK2	0.08	ng/L		
B120915-BLK3	0.09	ng/L		
B120915-BLK4	0.08	ng/L		
	<b>Average:</b> 0.08		<b>Standard Deviation:</b> 0.01	<b>MDL:</b> 0.15
	<b>Limit:</b> 0.50		<b>Limit:</b> 0.10	<b>MRL:</b> 0.40



## Method Blanks & Reporting Limits

**Batch:** B120919  
**Matrix:** Soil/Sediment  
**Method:** EPA 1631 Appendix  
**Analyte:** Hg

Sample	Result	Units		
B120919-BLK1	0.08	ng/g		
B120919-BLK2	0.09	ng/g		
B120919-BLK3	0.07	ng/g		
B120919-BLK4	0.09	ng/g		
	<b>Average:</b> 0.08		<b>Standard Deviation:</b> 0.01	<b>MDL:</b> 0.15
	<b>Limit:</b> 0.30		<b>Limit:</b> 0.10	<b>MRL:</b> 0.50





## Method Blanks & Reporting Limits

**Batch:** B120922  
**Matrix:** Soil/Sediment  
**Method:** SM 2540G  
**Analyte:** %TS

<b>Sample</b>	<b>Result</b>	<b>Units</b>	
B120922-BLK1	0.00	%	
B120922-BLK2	0.00	%	
	<b>Average:</b> 0.00		<b>MDL:</b> 0.30
	<b>Limit:</b> 1.00		<b>MRL:</b> 1.00



## Instrument Calibration

Sequence: 1200414  
Instrument: THG-05  
Date: 06/05/2012  
Analyte: Hg

Total Mercury and Mercury Speciation by CVAFS  
Method: EPA 1631

Lab ID	True Value	Result	Units	REC & Limits
1200414-IBL1		6.16	pg of Hg	
1200414-IBL2		6.45	pg of Hg	
1200414-IBL3		6.85	pg of Hg	
1200414-IBL4		4.97	pg of Hg	
1200414-CAL1	25.00	24.79	pg of Hg	99%
1200414-CAL2	100.0	98.88	pg of Hg	99%
1200414-CAL3	500.0	501.8	pg of Hg	100%
1200414-CAL4	2500	2506	pg of Hg	100%
1200414-CAL5	10000	10140	pg of Hg	101%
1200414-ICV1	1568	1616	pg of Hg	103% 85-115
1200414-CCV1	500.0	519.3	pg of Hg	104% 77-123
1200414-CCB1		13.1	pg of Hg	
1200414-CCV2	500.0	511.8	pg of Hg	102% 77-123



## Instrument Calibration

Sequence: 1200442  
 Instrument: THG-06(MerxT)  
 Date: 06/13/2012  
 Analyte: Hg

Total Mercury and Mercury Speciation by CVAFS  
 Method: EPA 1631 Appendix

Lab ID	True Value	Result	Units	REC & Limits
1200442-IBL1		1.35	pg of Hg	
1200442-IBL2		3.26	pg of Hg	
1200442-IBL3		3.82	pg of Hg	
1200442-IBL4		3.20	pg of Hg	
1200442-CAL1	10.00	9.82	pg of Hg	98%
1200442-CAL2	25.00	28.00	pg of Hg	112%
1200442-CAL3	100.0	91.41	pg of Hg	91%
1200442-CAL4	500.0	529.7	pg of Hg	106%
1200442-CAL5	2500	2278	pg of Hg	91%
1200442-CAL6	10000	10490	pg of Hg	105%
1200442-ICV1	1568	1433	pg of Hg	91% 80-120
1200442-CCB1		8.57	pg of Hg	
1200442-CCV1	500.0	462.0	pg of Hg	92% 67-133
1200442-CCB2		6.35	pg of Hg	
1200442-CCB3		3.91	pg of Hg	
1200442-CCB4		4.09	pg of Hg	
1200442-CCV2	500.0	438.0	pg of Hg	88% 67-133
1200442-CCB5		4.80	pg of Hg	
1200442-CCV3	500.0	460.0	pg of Hg	92% 67-133
1200442-CCB6		4.11	pg of Hg	
1200442-CCV4	500.0	433.2	pg of Hg	87% 67-133
1200442-CCB7		4.64	pg of Hg	
1200442-CCV5	500.0	455.3	pg of Hg	91% 67-133
1200442-CCB8		3.66	pg of Hg	
1200442-CCV6	500.0	530.1	pg of Hg	106% 67-133
1200442-CCB9		4.29	pg of Hg	
1200442-CCV7	500.0	450.5	pg of Hg	90% 67-133
1200442-CCBA		4.79	pg of Hg	
1200442-ICV2	1568	1438	pg of Hg	92% 80-120



## Instrument Calibration

Sequence: 1200444  
 Instrument: MMHG-09  
 Date: 06/13/2012  
 Analyte: MeHg

Total Mercury and Mercury Speciation by CVAFS  
 Method: EPA 1630

Lab ID	True Value	Result	Units	REC & Limits
1200444-IBL1		0.133	pg MeHg	
1200444-IBL2		0.201	pg MeHg	
1200444-IBL3		0.152	pg MeHg	
1200444-CAL1	0.5005	0.456	pg MeHg	91%
1200444-CAL2	1.001	1.021	pg MeHg	102%
1200444-CAL3	2.002	2.037	pg MeHg	102%
1200444-CAL4	10.01	8.426	pg MeHg	84%
1200444-CAL5	50.05	53.91	pg MeHg	108%
1200444-CAL6	250.2	265.0	pg MeHg	106%
1200444-CAL7	1001	1129	pg MeHg	113%
1200444-CCB1		0.997	pg MeHg	
1200444-ICV1	99.99	106.9	pg MeHg	107% 80-120
1200444-CCB2		1.32	pg MeHg	
1200444-CCV1	25.02	26.27	pg MeHg	105% 67-133
1200444-CCB3		0.406	pg MeHg	
1200444-CCB4		0.360	pg MeHg	
1200444-CCB5		0.182	pg MeHg	
1200444-CCV2	25.02	25.58	pg MeHg	102% 67-133
1200444-CCB6		0.209	pg MeHg	
1200444-CCV3	25.02	25.58	pg MeHg	102% 67-133
1200444-CCB7		0.182	pg MeHg	
1200444-CCV4	25.02	26.39	pg MeHg	105% 67-133
1200444-CCB8		0.250	pg MeHg	
1200444-CCV5	25.02	27.15	pg MeHg	109% 67-133
1200444-CCB9		0.239	pg MeHg	
1200444-CCV6	25.02	26.92	pg MeHg	108% 67-133
1200444-CCBA		0.186	pg MeHg	



## Sample Containers

<b>Lab ID:</b> 1220019-01 <b>Sample:</b> NC023ASC-015060-20120516	<b>Report Matrix:</b> Sediment <b>Sample Type:</b> Sample	<b>Collected:</b> 05/16/2012 <b>Received:</b> 05/18/2012
<b>Des</b> <b>Container</b> <b>Size</b>	<b>Lot</b> <b>Preservation</b>	<b>P-Lot</b> <b>pH</b> <b>Ship. Cont.</b>
A   Jar HDPE                              4 oz	51216                      none	n/a                                                   Cooler
<b>Lab ID:</b> 1220019-02 <b>Sample:</b> NC023ASC-060100-20120516	<b>Report Matrix:</b> Sediment <b>Sample Type:</b> Sample	<b>Collected:</b> 05/16/2012 <b>Received:</b> 05/18/2012
<b>Des</b> <b>Container</b> <b>Size</b>	<b>Lot</b> <b>Preservation</b>	<b>P-Lot</b> <b>pH</b> <b>Ship. Cont.</b>
A   Jar HDPE                              4 oz	51216                      none	n/a                                                   Cooler
<b>Lab ID:</b> 1220019-03 <b>Sample:</b> NC023ASC-100230-20120516	<b>Report Matrix:</b> Sediment <b>Sample Type:</b> Sample	<b>Collected:</b> 05/16/2012 <b>Received:</b> 05/18/2012
<b>Des</b> <b>Container</b> <b>Size</b>	<b>Lot</b> <b>Preservation</b>	<b>P-Lot</b> <b>pH</b> <b>Ship. Cont.</b>
A   Jar HDPE                              4 oz	51216                      none	n/a                                                   Cooler
<b>Lab ID:</b> 1220019-04 <b>Sample:</b> NC023ASC-230283-20120516	<b>Report Matrix:</b> Sediment <b>Sample Type:</b> Sample	<b>Collected:</b> 05/16/2012 <b>Received:</b> 05/18/2012
<b>Des</b> <b>Container</b> <b>Size</b>	<b>Lot</b> <b>Preservation</b>	<b>P-Lot</b> <b>pH</b> <b>Ship. Cont.</b>
A   Jar HDPE                              4 oz	51216                      none	n/a                                                   Cooler
<b>Lab ID:</b> 1220019-05 <b>Sample:</b> NC022ASC-015060-20120516	<b>Report Matrix:</b> Sediment <b>Sample Type:</b> Sample	<b>Collected:</b> 05/16/2012 <b>Received:</b> 05/18/2012
<b>Des</b> <b>Container</b> <b>Size</b>	<b>Lot</b> <b>Preservation</b>	<b>P-Lot</b> <b>pH</b> <b>Ship. Cont.</b>
A   Jar HDPE                              4 oz	51216                      none	n/a                                                   Cooler
<b>Lab ID:</b> 1220019-06 <b>Sample:</b> NC022ASC-060100-20120516	<b>Report Matrix:</b> Sediment <b>Sample Type:</b> Sample	<b>Collected:</b> 05/16/2012 <b>Received:</b> 05/18/2012
<b>Des</b> <b>Container</b> <b>Size</b>	<b>Lot</b> <b>Preservation</b>	<b>P-Lot</b> <b>pH</b> <b>Ship. Cont.</b>
A   Jar HDPE                              4 oz	51216                      none	n/a                                                   Cooler
<b>Lab ID:</b> 1220019-07 <b>Sample:</b> NC022ASC-100200-20120516	<b>Report Matrix:</b> Sediment <b>Sample Type:</b> Sample	<b>Collected:</b> 05/16/2012 <b>Received:</b> 05/18/2012
<b>Des</b> <b>Container</b> <b>Size</b>	<b>Lot</b> <b>Preservation</b>	<b>P-Lot</b> <b>pH</b> <b>Ship. Cont.</b>
A   Jar HDPE                              4 oz	51216                      none	n/a                                                   Cooler

Project ID: AAL-MN1101  
PM: Amanda Royal



BRL Report 1220019 Rev.1  
Client PM: Cindy McQueen  
Client PO: Signed LSA

## Sample Containers

<b>Lab ID:</b> 1220019-08 <b>Sample:</b> NC022ASC-200253-20120516	<b>Report Matrix:</b> Sediment <b>Sample Type:</b> Sample	<b>Collected:</b> 05/16/2012 <b>Received:</b> 05/18/2012
<b>Des</b> <b>Container</b> <b>Size</b>	<b>Lot</b> <b>Preservation</b>	<b>P-Lot</b> <b>pH</b> <b>Ship. Cont.</b>
A   Jar HDPE                                  4 oz	51216                      none	n/a                                                   Cooler
<b>Lab ID:</b> 1220019-09 <b>Sample:</b> NC022ASC-253295-20120516	<b>Report Matrix:</b> Sediment <b>Sample Type:</b> Sample	<b>Collected:</b> 05/16/2012 <b>Received:</b> 05/18/2012
<b>Des</b> <b>Container</b> <b>Size</b>	<b>Lot</b> <b>Preservation</b>	<b>P-Lot</b> <b>pH</b> <b>Ship. Cont.</b>
A   Jar HDPE                                  4 oz	51216                      none	n/a                                                   Cooler
<b>Lab ID:</b> 1220019-10 <b>Sample:</b> SC-RB-20120516	<b>Report Matrix:</b> DIW <b>Sample Type:</b> Rinse Blank	<b>Collected:</b> 05/16/2012 <b>Received:</b> 05/18/2012
<b>Des</b> <b>Container</b> <b>Size</b>	<b>Lot</b> <b>Preservation</b>	<b>P-Lot</b> <b>pH</b> <b>Ship. Cont.</b>
A   Bottle FLPE Hg-T                      250 mL	Not Provided	n/a                                                   Cooler
<b>Lab ID:</b> 1220019-11 <b>Sample:</b> NC021ASC-015060-20120517	<b>Report Matrix:</b> Sediment <b>Sample Type:</b> Sample	<b>Collected:</b> 05/17/2012 <b>Received:</b> 05/19/2012
<b>Des</b> <b>Container</b> <b>Size</b>	<b>Lot</b> <b>Preservation</b>	<b>P-Lot</b> <b>pH</b> <b>Ship. Cont.</b>
A   Jar HDPE                                  4 oz	51216                      none	n/a                                                   Cooler 2
<b>Lab ID:</b> 1220019-12 <b>Sample:</b> NC021ASC-060100-20120517	<b>Report Matrix:</b> Sediment <b>Sample Type:</b> Sample	<b>Collected:</b> 05/17/2012 <b>Received:</b> 05/19/2012
<b>Des</b> <b>Container</b> <b>Size</b>	<b>Lot</b> <b>Preservation</b>	<b>P-Lot</b> <b>pH</b> <b>Ship. Cont.</b>
A   Jar HDPE                                  4 oz	51216                      none	n/a                                                   Cooler 2
<b>Lab ID:</b> 1220019-13 <b>Sample:</b> NC021ASC-100149-20120517	<b>Report Matrix:</b> Sediment <b>Sample Type:</b> Sample	<b>Collected:</b> 05/17/2012 <b>Received:</b> 05/19/2012
<b>Des</b> <b>Container</b> <b>Size</b>	<b>Lot</b> <b>Preservation</b>	<b>P-Lot</b> <b>pH</b> <b>Ship. Cont.</b>
A   Jar HDPE                                  4 oz	51216                      none	n/a                                                   Cooler 2
<b>Lab ID:</b> 1220019-14 <b>Sample:</b> NC021ASC-149211-20120517	<b>Report Matrix:</b> Sediment <b>Sample Type:</b> Sample	<b>Collected:</b> 05/17/2012 <b>Received:</b> 05/19/2012
<b>Des</b> <b>Container</b> <b>Size</b>	<b>Lot</b> <b>Preservation</b>	<b>P-Lot</b> <b>pH</b> <b>Ship. Cont.</b>
A   Jar HDPE                                  4 oz	51216                      none	n/a                                                   Cooler 2

**Project ID:** AAL-MN1101  
**PM:** Amanda Royal



BRL Report 1220019 Rev.1  
**Client PM:** Cindy McQueen  
**Client PO:** Signed LSA

## Sample Containers

**Lab ID:** 1220019-15  
**Sample:** SC-RB-20120517

**Report Matrix:** DIW  
**Sample Type:** Rinse Blank

**Collected:** 05/17/2012  
**Received:** 05/19/2012

<b>Des</b>	<b>Container</b>	<b>Size</b>	<b>Lot</b>	<b>Preservation</b>	<b>P-Lot</b>	<b>pH</b>	<b>Ship. Cont.</b>
A	Bottle FLPE Hg-T	250 mL	Not Provided	none	n/a		Cooler 2

## Shipping Containers

### Cooler

**Received:** May 18, 2012 10:30  
**Tracking No:** 1Z 19E 18E 01 4959 2031 via UPS  
**Coolant Type:** Ice  
**Temperature:** 3.3 °C

**Description:** Cooler  
**Damaged in transit?** No  
**Returned to client?** No

**Custody seals present?** Yes  
**Custody seals intact?** Yes  
**COC present?** Yes

### Cooler 2

**Received:** May 19, 2012 9:00  
**Tracking No:** 1Z19E18E4449977269 via UPS  
**Coolant Type:** Ice  
**Temperature:** 3.4 °C

**Description:** Cooler 2  
**Damaged in transit?** No  
**Returned to client?** No

**Custody seals present?** Yes  
**Custody seals intact?** Yes  
**COC present?** Yes

**CVAFS****EPA 1631, Water**

$$\frac{\frac{CFD}{A * I}}{1 - (R_{BrCl}/100\%)} - \left( \frac{B_f}{A_{AV}} * R_{BrCl} \right)$$

C – result produced at the instrument, pg

F – final volume of the sample preparation, mL

D – dilution factor of any dilution of the preparation made at the instrument

A – analyzed volume of the prep or dilution of the prep, mL

B<sub>f</sub> - the mean of the method blank instrument results, pg

A<sub>AV</sub> - the mean of the analyzed volumes of the method blanks, mL

R<sub>BrCl</sub> – percentage of BrCl in the sample preparation

I – aliquot of sample prepared, mL.

**EPA 1631, Sediment\***

$$\frac{\frac{CFD}{A} - \frac{BF_d}{A_d}}{I * 1000}$$

C – result produced at the instrument, pg

F – final volume of the sample preparation, mL

D – dilution factor of any dilution of the preparation made at the instrument

A – analyzed volume of the prep or dilution of the prep, mL

B - the mean of the method blank instrument result, pg

F<sub>d</sub> – default final prep volume for the method used for the method blanks, 40 mL

A<sub>d</sub> – default analyzed volume for the method used for the method blanks, 10 mL

I – aliquot of sample prepared, g.

\* If requested, the final result is dry weight corrected by dividing it by the percent total solids result

**EPA 1630, Water**

$$\frac{\frac{CFD}{A} - \frac{BF_d}{A_d}}{I} * E$$

C – result produced at the instrument, pg

F – final volume of the sample preparation, mL

D – dilution factor of any dilution of the preparation made at the instrument

A – analyzed volume of the prep or dilution of the prep, mL

B – the mean of the method blank instrument result, pg

F<sub>d</sub> – default final prep volume for the method used for the method blanks, 58 mL

A<sub>d</sub> – default analyzed volume for the method used for the method blanks, 30 mL

E – the empirically derived correction factor

I – aliquot of sample prepared, mL.



**EPA 1630, Sediment\***

$$\frac{\frac{CDFE_{ext}}{AE_{rec}} - (B_f * I_d * 1000)}{I * 1000}$$

C – result produced at the instrument, pg

F – final volume of the sample preparation, mL

D – dilution factor of any dilution of the preparation made at the instrument

A – analyzed volume of the prep or dilution of the prep, mL

E<sub>ext</sub> – The mass of DCM added to the sample, g

E<sub>rec</sub> – The mass of DCM recovered from the sample, g

B<sub>f</sub> – the mean of the method blank final result, ng/g

I<sub>d</sub> – the default aliquot prepared used for method blanks, 2.5g

I – aliquot of sample prepared, g.

\* If requested, the final result is dry weight corrected by dividing it by the percent total solids result

1220019-1

# CHAIN OF CUSTODY

PAGE 1 OF 1



Westborough, MA    Mansfield, MA  
 TEL: 508-898-9220    TEL: 508-822-9300  
 FAX: 508-898-9193    FAX: 508-822-3288

## Project Information

Project Name: Newtown Creek

## Client Information

Client: Alpha Analytical

Project Location:

Project #:

Address: 320 Forbes Blvd

Project Manager: Chris Anderson

Mansfield, MA 02048

ALPHA Quote #:

Phone: 508-844-4122

## Turn-Around Time

Fax: 508-822-3288

Standard     Rush (ONLY IF PRE-APPROVED)

Email: canderson@alphalab.com

Due Date:    Time:

These samples have been Previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

Please provide ANCHOR EQUIS EDD and reference Newtown Creek

Date Rec'd in Lab:    ALPHA Job #:

**Report Information**    **Data Deliverables**    **Billing Information**

FAX     EMAIL     Same as Client info    PO #:

ADEx     Add'l Deliverables

**Regulatory Requirements/Report Limits**

State/Fed Program    Criteria

**MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS**

Yes     No    Are MCP Analytical Methods Required?

Yes     No    Are CT RCP (Reasonable Confidence Protocols) Required?

## ANALYSIS

MERCURY	METHYL MERCURY															SAMPLE HANDLING Filtration <input type="checkbox"/> Done <input type="checkbox"/> Not Needed <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do (Please specify below)	TOTAL # BOTTLES	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L1208741-02	1
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L1208741-04	1
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L1208741-06	1
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L1208741-08	1
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L1208741-10	1
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L1208741-12	1
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L1208741-14	1
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L1208741-16	1
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L1208741-18	1
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L1208741-20	1

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials
		Date	Time		
	NC023ASC-015060-20120516	5/16/12	1117	sediment	
	NC023ASC-060100-20120516	5/16/12	1119	sediment	
	NC023ASC-100230-20120516	5/16/12	1120	sediment	
	NC023ASC-230283-20120516	5/16/12	1121	sediment	
	NC022ASC-015060-20120516	5/16/12	1559	sediment	
	NC022ASC-060100-20120516	5/16/12	1601	sediment	
	NC022ASC-100200-20120516	5/16/12	1602	sediment	
	NC022ASC-200253-20120516	5/16/12	1604	sediment	
	NC022ASC-253295-20120516	5/16/12	1606	sediment	
	SC-RB-20120516	5/16/12	1702	water	

PLEASE ANSWER QUESTIONS ABOVE!

Container Type	-	-	-	-	-	-	-	-	-	-	-	-	-
Preservative	-	-	-	-	-	-	-	-	-	-	-	-	-

IS YOUR PROJECT MA MCP or CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
	5/17/12 1335	UPS	5/18/12 1035

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(1) (rev. 30-JUL-07)

1220019-2

# CHAIN OF CUSTODY



Westborough, MA    Mansfield, MA  
 TEL: 508-898-9220    TEL: 508-822-9300  
 FAX: 508-898-9193    FAX: 508-822-3288

## Project Information

Project Name: Newtown Creek

## Client Information

Client: Alpha Analytical

Address: 320 Forbes Blvd

Mansfield, MA 02048

Phone: 508-844-4122

Fax: 508-822-3288

Email: canderson@alphalab.com

These samples have been Previously analyzed by Alpha

Project Location: .

Project #:

Project Manager: Chris Anderson

ALPHA Quote #:

## Turn-Around Time

Standard     Rush (ONLY IF PRE-APPROVED)

Due Date:    Time:

Other Project Specific Requirements/Comments/Detection Limits:

Please provide ANCHOR EQUIS EDD and reference Newtown Creek

ALPHA Lab ID (Lab Use Only)	Sample ID	ollection		Sample Matrix	Sampler's Initials
		Date	Time		

	NC021ASC-015060-20120517	5/17/12	1356	sediment	
	NC021ASC-060100-20120517	5/17/12	1358	sediment	
	NC021ASC-100149-20120517	5/17/12	1359	sediment	
	NC021ASC-149211-20120517	5/17/12	1402	sediment	
	SC-RB-20120517	5/17/12	1450	water	

Date Rec'd in Lab:    ALPHA Job #:

Report Information	Data Deliverables	Billing Information	
<input type="checkbox"/> FAX	<input type="checkbox"/> EMAIL	<input type="checkbox"/> Same as Client info	PO #:
<input type="checkbox"/> ADEx	<input type="checkbox"/> Add'l Deliverables		

**Regulatory Requirements/Report Limits**  
 State/Fed Program    Criteria

## MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

Yes     No    Are MCP Analytical Methods Required?  
 Yes     No    Are CT RCP (Reasonable Confidence Protocols) Required?

## ANALYSIS

MERCURY															SAMPLE HANDLING Filtration <input type="checkbox"/> Done <input type="checkbox"/> Not Needed <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do (Please specify below)  Sample Specific Comments	TOTAL # BOTTLES	
																L1208741-28	1
																L1208741-30	1
																L1208741-32	1
																L1208741-34	1

PLEASE ANSWER QUESTIONS ABOVE!

Container Type	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Preservative	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**IS YOUR PROJECT MA MCP or CT RCP?**

FORM NO: 01-01(1)  
(rev. 30-JUL-07)

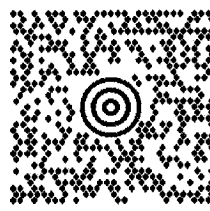
Relinquished By:	Date/Time	Received By:	Date/Time
	5/18/12 1410	UPS	
	5/19/12 900		

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

28 LBS

1 OF 1

**FROM:**  
DIANNE JANAK  
(508) 844-4137  
ALPHA ANALYTICAL  
320 FORBES BLVD  
MANSFIELD MA 02048



**WA 981 9-02**  
BRL Report 1220019 Rev.1



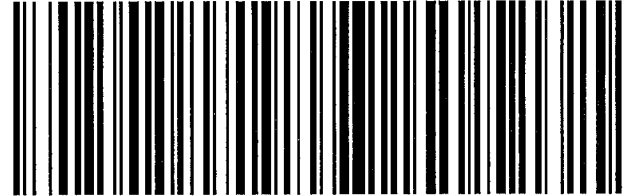
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AMANDA ROYAL  
BROOKS RAND  
3950 SIXTH AVENUE NW  
**SEATTLE WA 98107-5056**

**UPS NEXT DAY AIR**

TRACKING #: 1Z 19E 18E 01 4959 2031

**1**



REF 1:L1208741 (2,4,6,8,10,12,14,16,18,20)

BILLING: P/P

WS 15.0.16 HP LaserJet 4 27.0A 04/2012

Fold here and place in label pouch

3.3°C

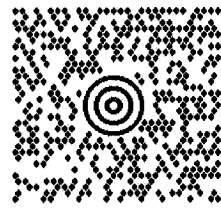
51216

1220019-1

**FROM:**  
DIANNE JANAK  
(508) 844-4137  
ALPHA ANALYTICAL  
320 FORBES BLVD  
MANSFIELD MA 02048

10 LBS

1 OF 1



**WA 981 9-02**  
BRI Report 1220019 Rev.1



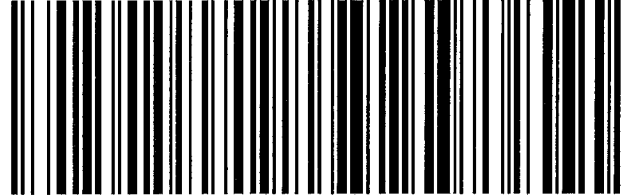
**SHIP TO:**

AMANDA ROYAL  
BROOKS RAND  
3950 SIXTH AVENUE NW  
**SEATTLE WA 98107-5056**

**UPS NEXT DAY AIR**

TRACKING #: 1Z 19E 18E 44 4997 7269

**1 S**



REF 1:L1208741 (26,28,30,32,34)

BILLING: P/P

WS 16.0.16 HP LaserJet 4 27.0A 04/2012

Fold here and place in label pouch

## ANALYSIS SEQUENCE

BRL Report 1220019 Rev.1

Brooks Rand Labs

1200414

Instrument: THG-05

Lab Number	Batch #	Analysis	Order	STD ID	Source ID	BRL Project #	Due	Comments
1200414-IBL1	1200414	QC	1		-			
1200414-IBL2	1200414	QC	2		-			
1200414-IBL3	1200414	QC	3		-			
1200414-IBL4	1200414	QC	4		-			
1200414-CAL1	1200414	QC	5	1221022	-			
1200414-CAL2	1200414	QC	6	1221023	-			
1200414-CAL3	1200414	QC	7	1221024	-			
1200414-CAL4	1200414	QC	8	1221025	-			
1200414-CAL5	1200414	QC	9	1221026	-			
1200414-ICV1	1200414	QC	10	1221028	-			
B120915-SRM1	B120915	QC	11		-			
1200414-CCV1	1200414	QC	12	1221027	-			
B120915-BLK1	B120915	QC	13		-			
1200414-CCB1	1200414	QC	14		-			
B120915-BLK2	B120915	QC	15		-			
B120915-BLK3	B120915	QC	16		-			
B120915-BLK4	B120915	QC	17		-			
1220019-10	B120915	Hg-W-BrCl-CVAFS-NoMB-TR	18			AAL-MN1101	6/18/2012	
1220019-15	B120915	Hg-W-BrCl-CVAFS-NoMB-TR	19			AAL-MN1101	6/18/2012	
1221015-09	B120915	Hg-W-BrCl-CVAFS-NoMB-TR	20			AAL-MN1101	6/22/2012	
1221011-01	B120915	Hg-W-BrCl-CVAFS-NoMB-TR	21			ARI-TU1003	1/1/1980	BatchQC
1221011-01	B120915	Hg-W-BrCl-CVAFS-Diss	22			ARI-TU1003	1/1/1980	BatchQC
1221011-01	B120915	Hg-W-BrCl-CVAFS-TR	23			ARI-TU1003	6/13/2012	Stormwater Sample
1221022-03	B120915	Hg-W-BrCl-CVAFS-TR	24			MMC-LI0801	6/15/2012	
1221022-04	B120915	Hg-W-BrCl-CVAFS-TR	25			MMC-LI0801	6/15/2012	
1221026-05	B120915	Hg-W-BrCl-CVAFS-TR	26			ORS-CN1201	6/15/2012	

## ANALYSIS SEQUENCE

BRL Report 1220019 Rev.1

1200414

## Brooks Rand Labs

Instrument: THG-05

Lab Number	Batch #	Analysis	Order	STD ID	Source ID	BRL Project #	Due	Comments
1221038-01	B120915	Hg-W-BrCl-CVAFS-NoMB-TR	27			MEL-YA0801	1/1/1980	BatchQC
1221038-01	B120915	Hg-W-BrCl-CVAFS-Diss	28			MEL-YA0801	1/1/1980	BatchQC
1221038-01	B120915	Hg-W-BrCl-CVAFS-TR	29			MEL-YA0801	6/6/2012	
1221016-01	B120915	Hg-W-BrCl-CVAFS-TR	30			TRC-WD1101	6/14/2012	
1221035-01	B120915	Hg-W-BrCl-CVAFS-NoMB-TR	31			SPE-TA1001	1/1/1980	BatchQC
1221035-01	B120915	Hg-W-BrCl-CVAFS-Diss	32			SPE-TA1001	1/1/1980	BatchQC
1221035-01	B120915	Hg-W-BrCl-CVAFS-TR	33			SPE-TA1001	6/6/2012	
1220019-10RE1	B120915	Hg-W-BrCl-CVAFS-NoMB-TR	34			AAL-MN1101	6/18/2012	Added 6/5/2012 by M_H
1221016-02	B120915	Hg-W-BrCl-CVAFS-TR	35			TRC-WD1101	6/14/2012	
1220019-15RE1	B120915	Hg-W-BrCl-CVAFS-NoMB-TR	36			AAL-MN1101	6/18/2012	Added 6/5/2012 by M_H
1221016-03	B120915	Hg-W-BrCl-CVAFS-TR	37			TRC-WD1101	6/14/2012	
1221016-08	B120915	Hg-W-BrCl-CVAFS-TR	38			TRC-WD1101	6/14/2012	
1221016-10	B120915	Hg-W-BrCl-CVAFS-TR	39			TRC-WD1101	6/14/2012	
1221016-07	B120915	Hg-W-BrCl-CVAFS-TR	40			TRC-WD1101	6/14/2012	
1221037-01	B120915	Hg-W-BrCl-CVAFS-TR	41			MEL-YA0801	6/6/2012	
1221039-01	B120915	Hg-W-BrCl-CVAFS-TR	42			MEL-YA0801	6/6/2012	
B120915-MS1	B120915	QC	43		1221011-01			
B120915-MSD1	B120915	QC	44		1221011-01			
B120915-MS2	B120915	QC	45		1221038-01			
B120915-MSD2	B120915	QC	46		1221038-01			
1221016-08RE1	B120915	Hg-W-BrCl-CVAFS-TR	47			TRC-WD1101	6/14/2012	Added 6/5/2012 by M_H
B120915-MS3	B120915	QC	48		1221035-01			
B120915-MSD3	B120915	QC	49		1221035-01			
1221016-10RE1	B120915	Hg-W-BrCl-CVAFS-TR	50			TRC-WD1101	6/14/2012	Added 6/5/2012 by M_H
1200414-CCV2	1200414	QC	51	1221027	-			
1221023-01	B120915	Hg-W-BrCl-CVAFS-TR	52			TRC-WD1101	6/15/2012	

SOP(s) / Rev#(s): 0006-001eHg Analysis Sheet : T-Hg / Other: \_\_\_\_\_Page 1 of 3Sequence: 1200414 Batch(es): B120915Analyst: MCH Date: 10/5/12 Instrument ID: THg-0510ng/mL std ID: 1221004 1ng/mL std ID: 1221003 ICV std ID: 1221005NH<sub>2</sub>OH·HCl #: 1220065 SnCl<sub>2</sub> #: 1222002Initial offset: 10,003 Initial PMT: 988.7 Trap Serial #: 2024

Run #	Split Bottle	Trap	Bubb.	Brooks Rand Sample ID	Analy. Vol. (mL)	Dilution Factor	Analysis comments / For spiked QC: Source sample, standard ID, and spiked volume (mL)
1	1	13	1	SEQ-IBL1	---		
2	2	14	2	SEQ-IBL2	---		
3	3	17	3	SEQ-IBL3	---		
4	4	18	4	SEQ-IBL4	---		
5	1	21	1	SEQ-CAL1	0.025		1ng/mL
6	2	22	2	SEQ-CAL2	0.100		1ng/mL
7	3	1	3	SEQ-CAL3	0.050		10ng/mL
8	4	2	4	SEQ-CAL4	0.250		10ng/mL
9	1	5	1	SEQ-CAL5	1.00		10ng/mL
10	2	6	2	SEQ-ICV1	1.00		NIST 1641d
11	3	9	3	SEQ-CCV	0.050		10ng/mL
12	4	10	4	B120915-BLK1	99.40		
13	1	13	1	SEQ-CCB1	---		
14	2	14	2	B120915-BLK2	99.35		
15	3	17	3	B120915-BLK3	99.82		
16	4	18	4	B120915-BLK4	100.25		
17	1	21	1	1220019-10	100.72		HIGH BLANKS: WILL REVIEW
18	2	22	2	↓ -15	100.97		L
19	3	1	3	1221015-09	99.41		
20	4	2	4	1221011-01	5.00		
21	1	5	1	1221022-03	100.05		
22	2	6	2	↓ -04	99.64		
23	3	9	3	1221026-05	99.30		
24	4	10	4	1221038-01	24.15		

Comments: A CLEAN PIPET FELL INTO + IS STILL IN SAMPLE 1221035-01  
FROM 25 HOUR CHECK.

Balance ID: BL-02



SOP(s) / Rev#(s): 0006-004cHg Analysis Sheet: T-Hg / Other: \_\_\_\_\_Page 2 of 3Sequence: 1200414Analyst: MLHDate: 6/5/12

Run #	Split Bottle	Trap	Bubb.	Brooks Rand Sample ID	Analy. Vol. (mL)	Dilution Factor	Analysis comments / For spiked QC: Source sample, standard ID, and spiked volume (mL)
25	1	13	1	1221016-01	100.36		
26	2	14	2	BLANK-A	99.54		10% BrCl: 1223021
27	3	17	3	↓ -B	99.97		↓
28	4	18	4	1221035-01	75.86		
29	1	21	1	BLANK-1	100.84		10% BrCl: 1223022
30	2	22	2	↓ -2	100.10		
31	3	1	3	1220019-10RET	100.72		
32	4	2	4	1221016-02	0.500		
33	1	5	1	1220019-15RET	100.56		
34	2	6	2	1221016-03	0.100		
35	3	9	3	↓ -08	0.500		NON DETECT: WILL REKW
36	4	10	4	↓ -10	0.500		↓
37	1	13	1	↓ -07	100.13		
38	2	14	2	1221037-01	25.65		
39	3	17	3	1221039-01	1.00		
40	4	18	4	B120915-MS1	5.00		NATIVE: 1221011-01 + 700 (700µL of 1ng/mL)
41	1	21	1	↓ -MSD1	5.00		↓
42	2	22	2	↓ -MS2	25.61		NATIVE: 1221038-01 + 535 (535µL of 1ng/mL)
43	3	1	3	↓ -MSD2	25.31		↓
44	4	2	4	1221016-08RET	99.59		
45	1	5	1	B120915-MS3	75.21		NATIVE: 1221035-01 + 1700 (170µL of 10ng/mL)
46	2	6	2	↓ -MSD3	74.92		
47	3	9	3	1221016-10RET	100.95		
48	4	10	4	SED-CCV	0.050		10ng/mL
49	1	13	1	1221023-01	99.90		
50	2	14	2	1221016-04	0.100		
51	3	17	3	↓ -05	0.100		
52	4	18	4	↓ -06	0.100		
53	1	21	1	1221016-09	99.20		
54	2	22	2	↓ -11	99.98		
55	3	1	3	1221022-01	79.84		
56	4	2	4	↓ -02	100.35		

Comments:

**Brooks Rand Labs**  
 THg Water Prep Benchsheet  
 SOP / Rev #: BR-0006 Rev 004e

BRL Report 1220019 Rev.1

Prepped By: TE Batch: B120915  
 Prep Start Date/Time\*: 5-26-12 15:30 BrCl ID: 1219018 1<sup>st</sup> - 24 hr Check Date/Time: 9:20 6/5/12  
 Prep End Date/Time\*\*: 5-25-12 15:50 2<sup>nd</sup> - 24 hr Check Date/Time: \_\_\_\_\_

\* Time when the first reagents are added.  
 \*\* Time when the last sample is brought up to volume.

Sample ID	Sample Aliquot (mL)	BrCl added (mL)	%BrCl	24 hr Check (initials)	only fill out if additional BrCl is added		
					Additional BrCl Added (mL)	2nd - 24 hr Check (initials)	Adjusted %BrCl
1220019-10	250	2.5	1	MLH			
1220019-15							
1221015-09							
1221011-01		5	2				
1221037-01	250	12.5	5				
1221038-01		5	2				
1221039-01							
1221022-01		2.5	1				
1221022-02							
1221022-03							
1221022-04							
1221026-01		5	2				
1221026-02		2.5	1				
1221026-03		5	2				
1221026-04		2.5	1				
1221026-05							
1221035-01		5	2				
1221036-01							
1221036-02		5	2				
1221016-01	500	5	1				
1221016-02							
1221016-03		2.5	5				
1221016-04							
1221016-05	400	20.25	5.25				
1221016-06	450	22.5	1				
1221016-07	500	10	2				
1221016-08							
1221016-09		5	1				
1221016-10							
1221016-11							
1221023-01							
1221023-02							
1221023-03							
1221023-04							
B120915-BLK1	500						
B120915-BLK2							
B120915-BLK3							
B120915-BLK4							

5 y.  
 Br  
 6/12

Oven ID: \_\_\_\_\_ Thermometer ID: \_\_\_\_\_  
 Date/Time in: \_\_\_\_\_ Oven Temp (measured / corrected): \_\_\_\_\_ / \_\_\_\_\_  
 Date/Time out: \_\_\_\_\_ Oven Temp (measured / corrected): \_\_\_\_\_ / \_\_\_\_\_

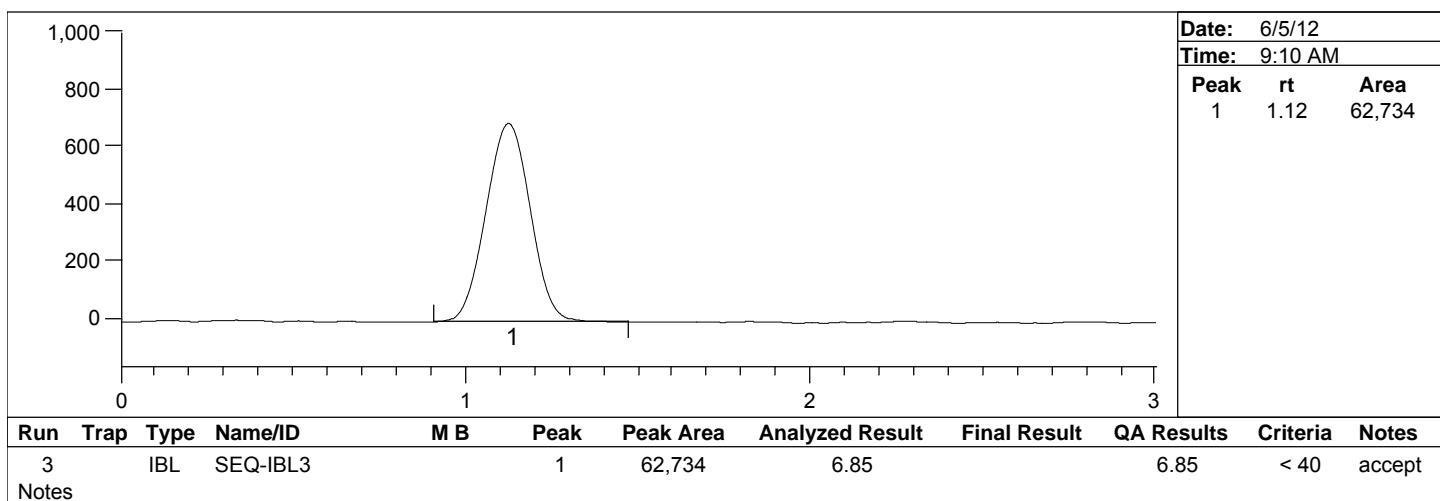
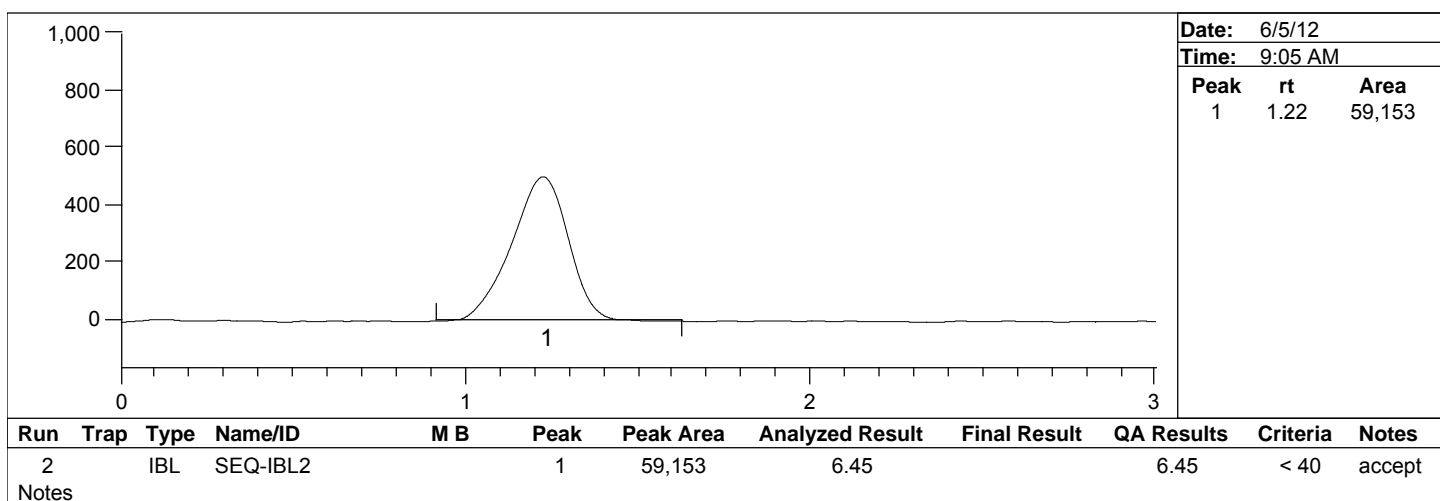
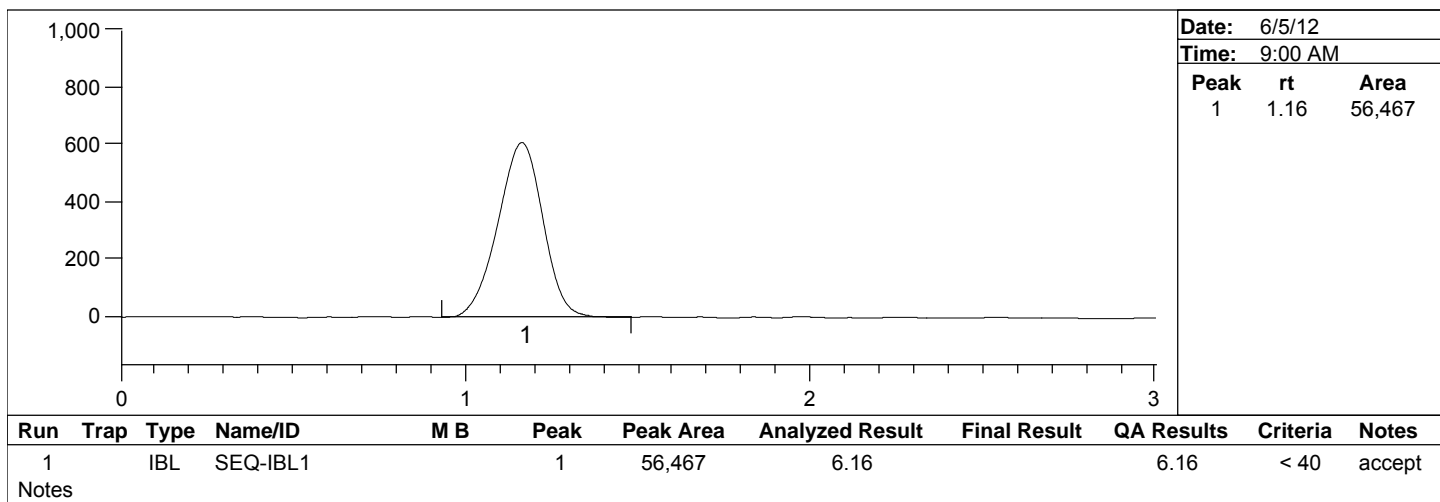
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# Peak Report

Batch Number: B120915  
 Method Number: CVAFS BR-0006

Project Number(s): 1200414  
 Instrument ID: THG-05

Date Analyzed: 6/5/12  
 Analyst Name: MLH

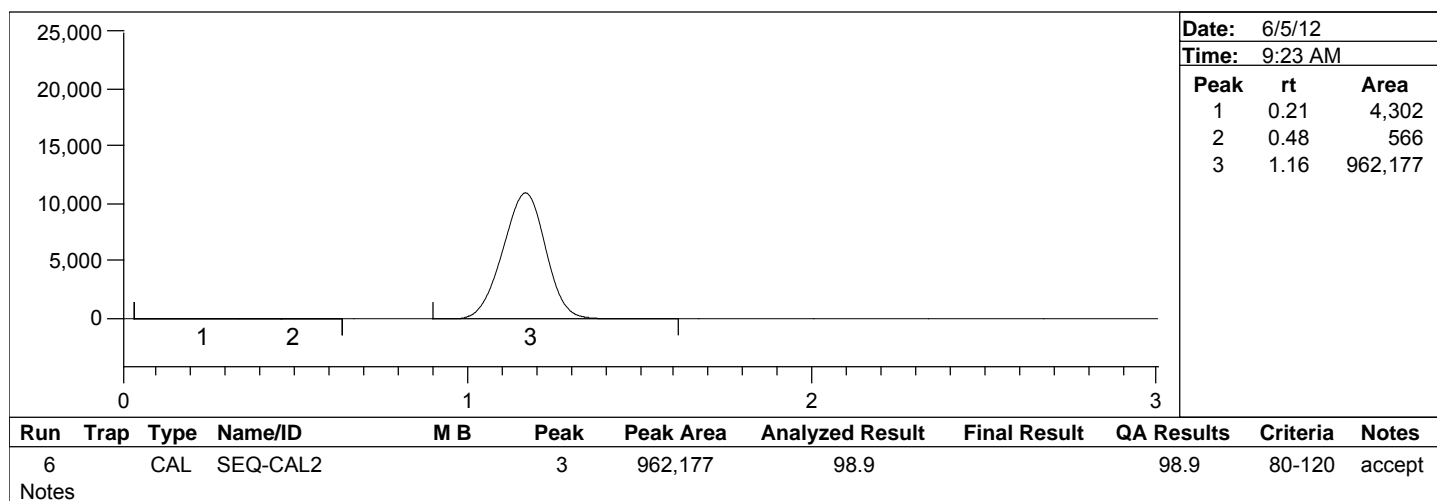
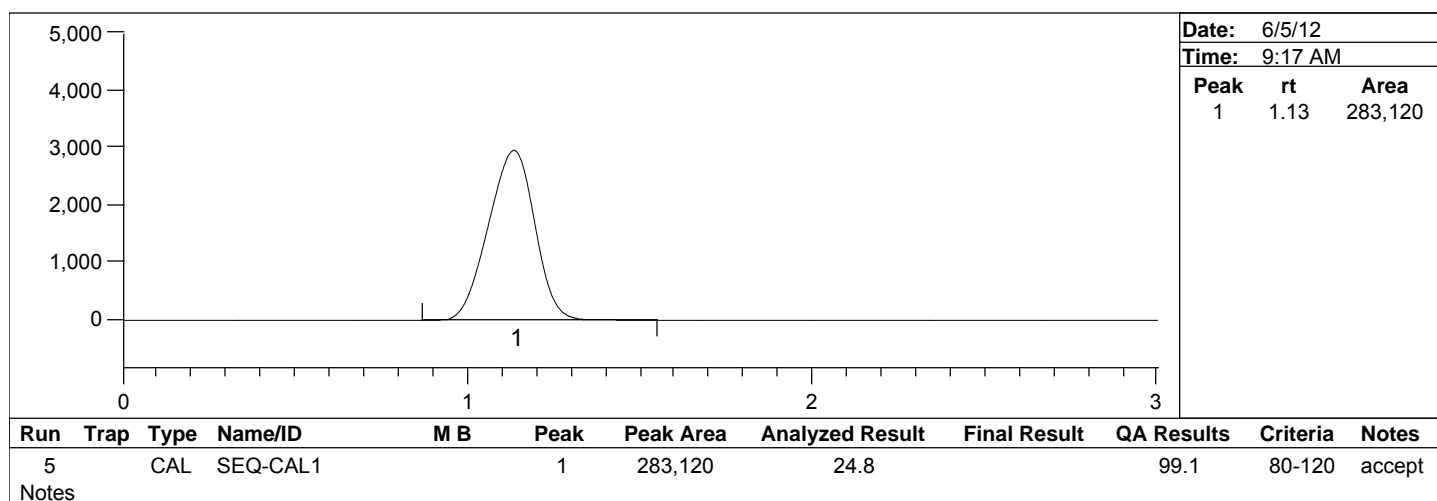
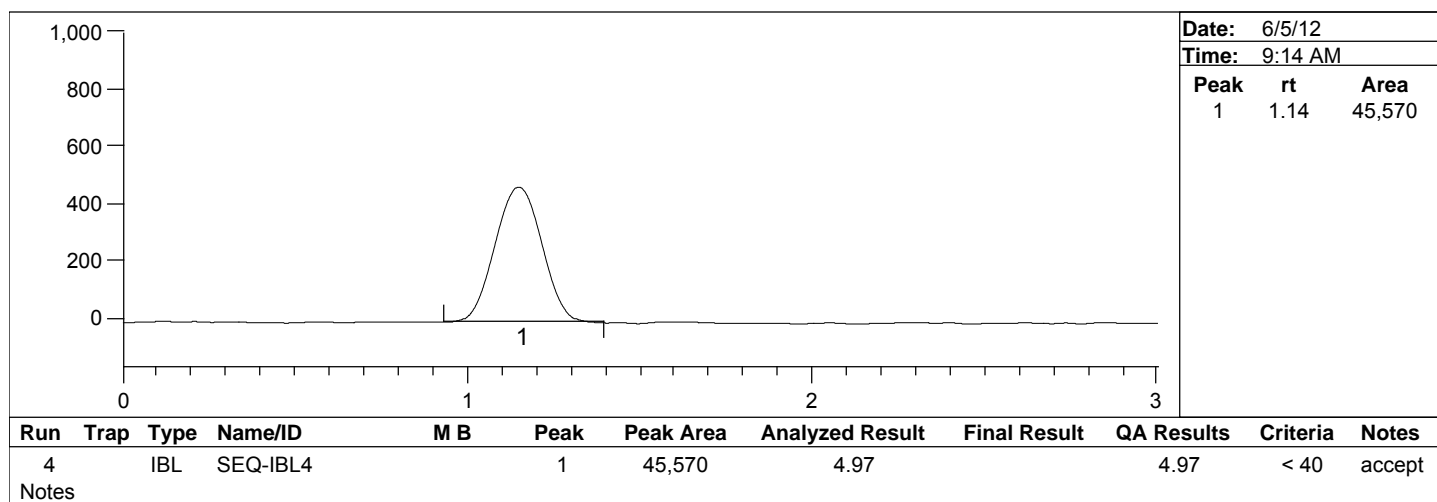


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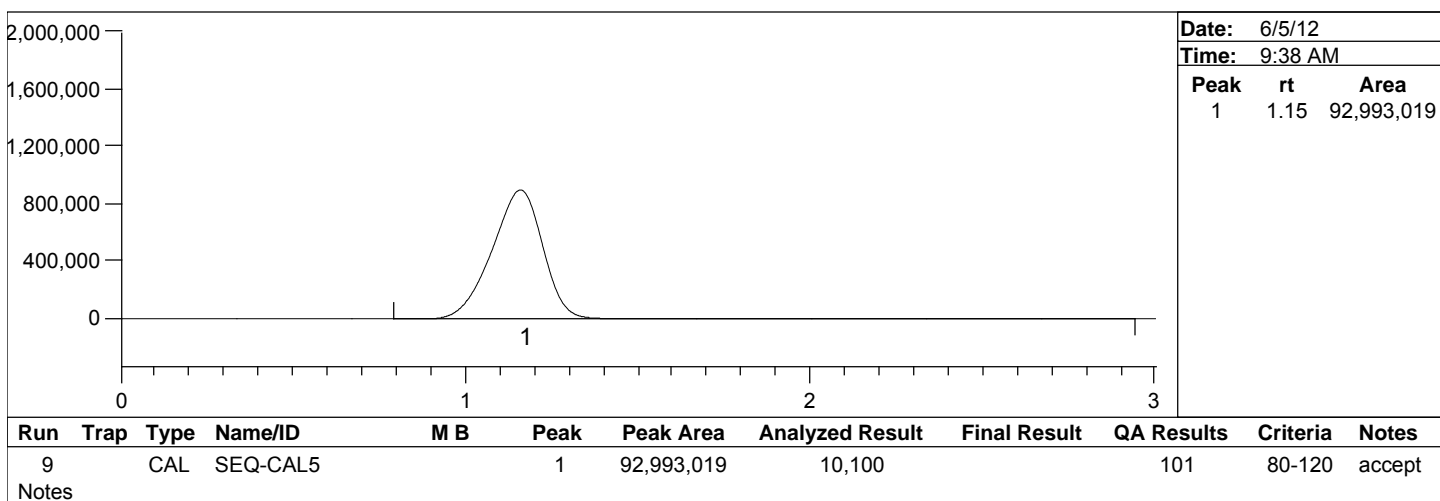
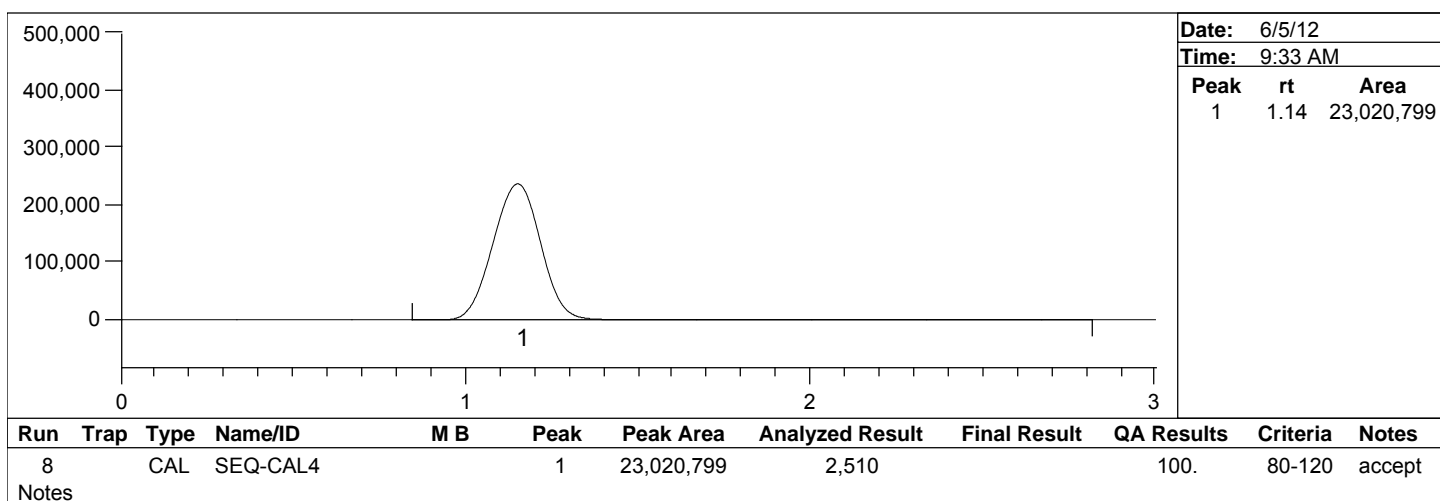
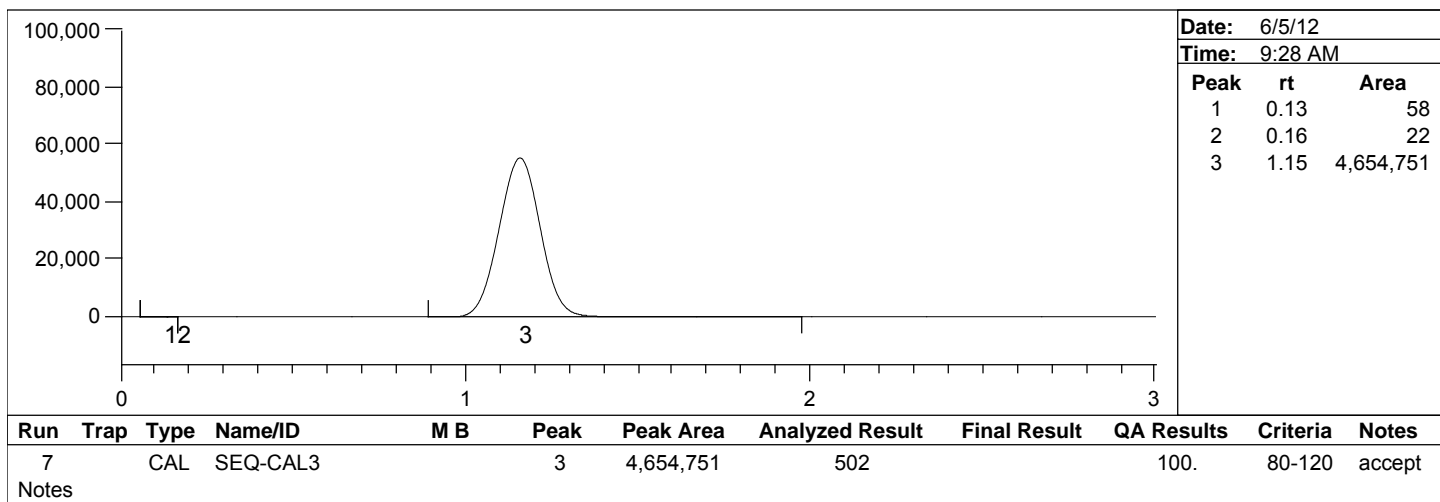


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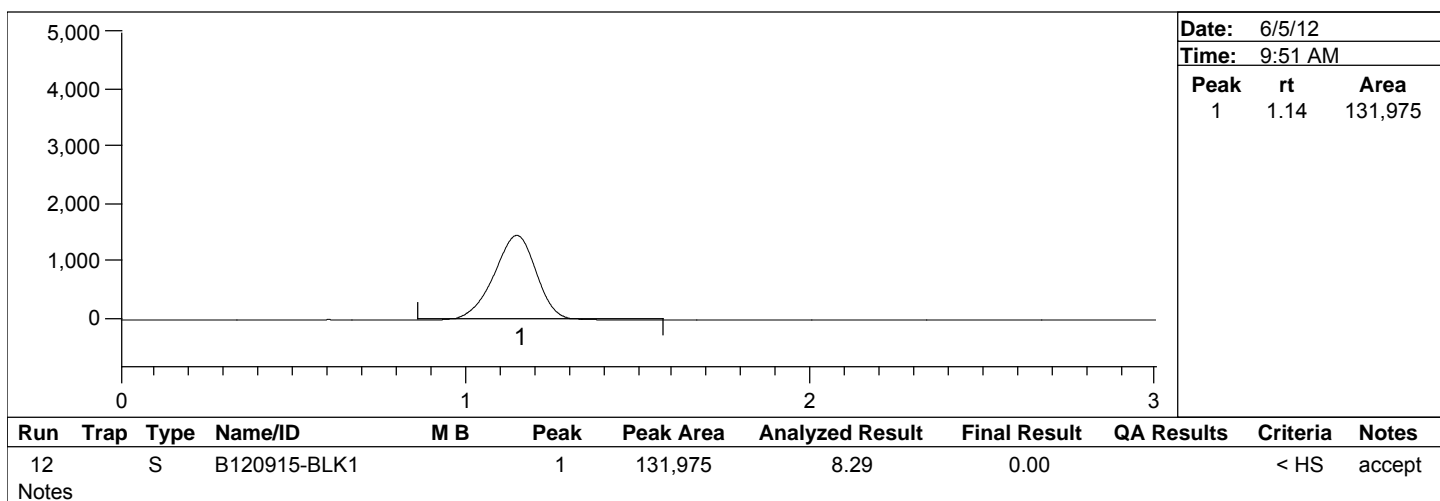
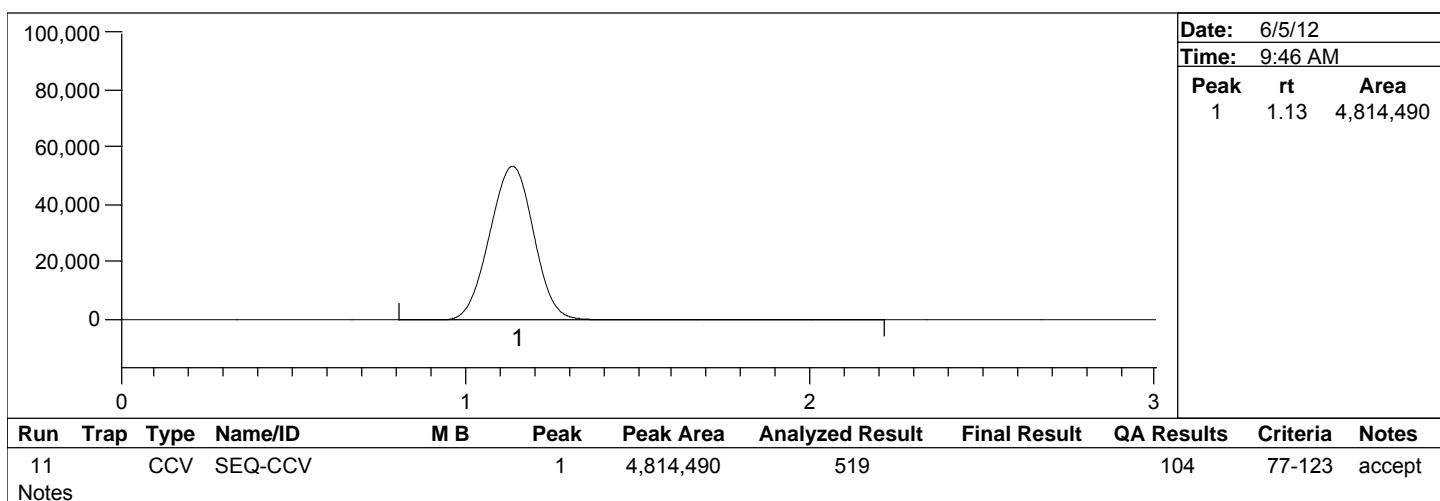
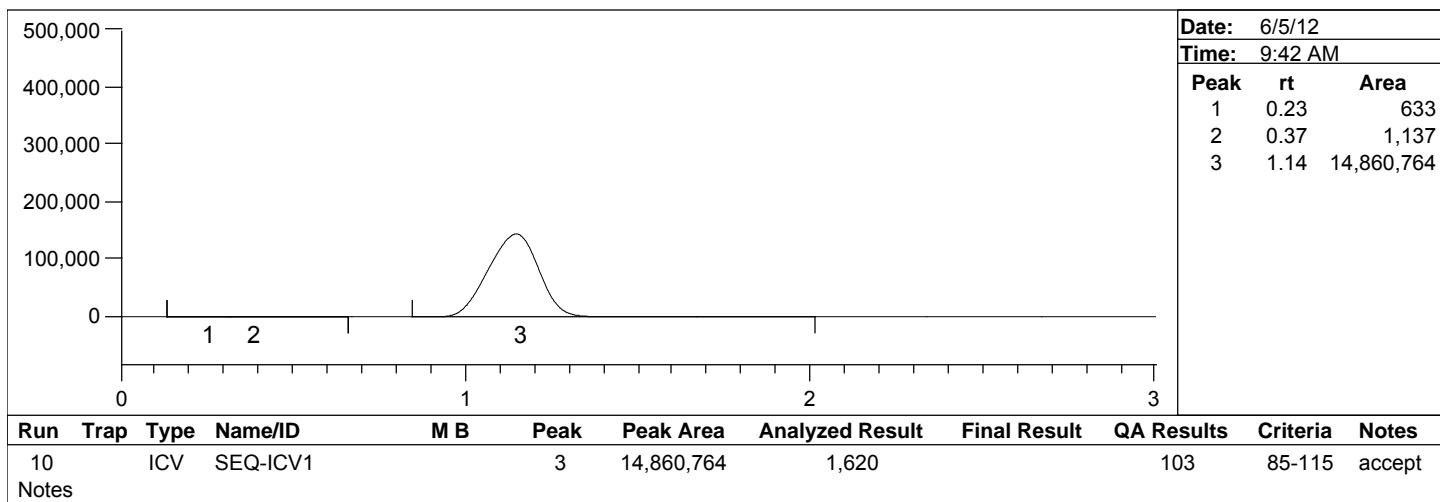


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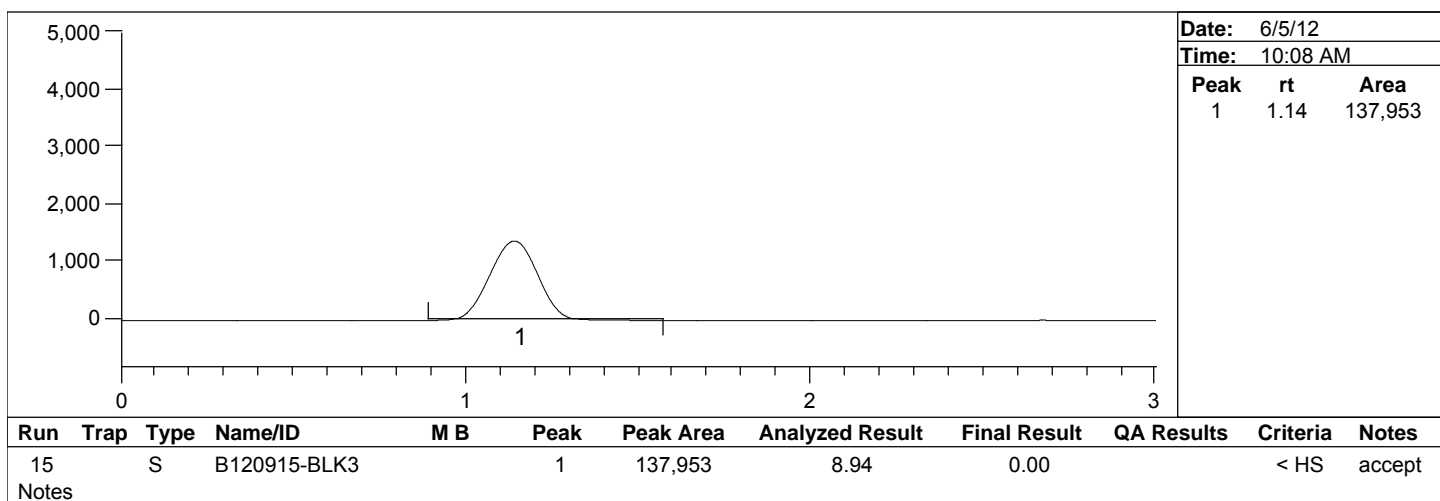
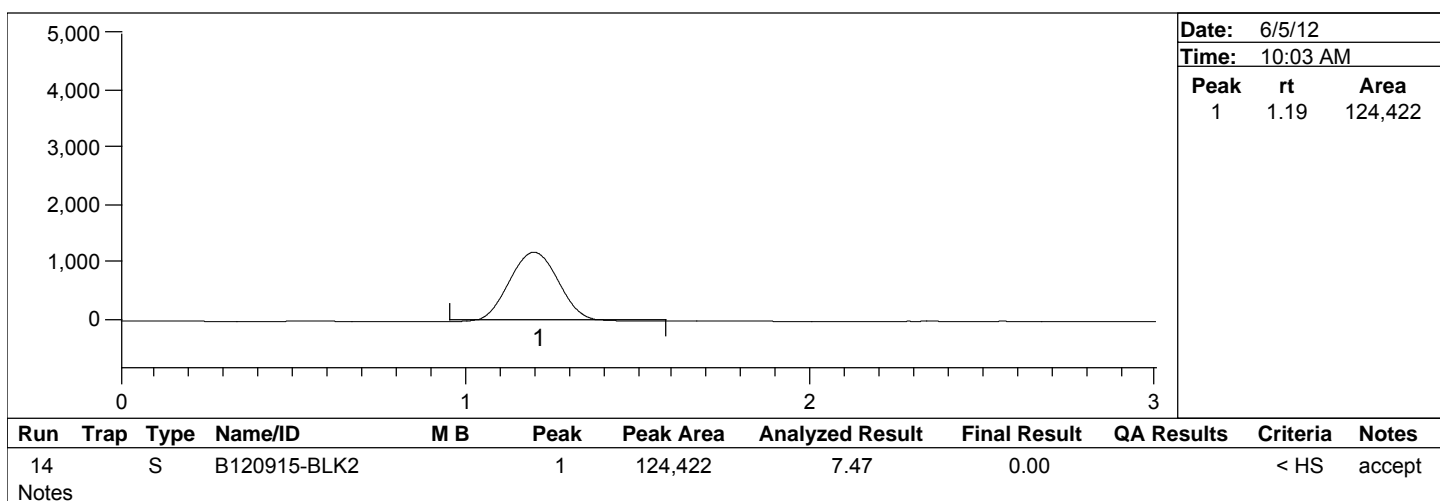
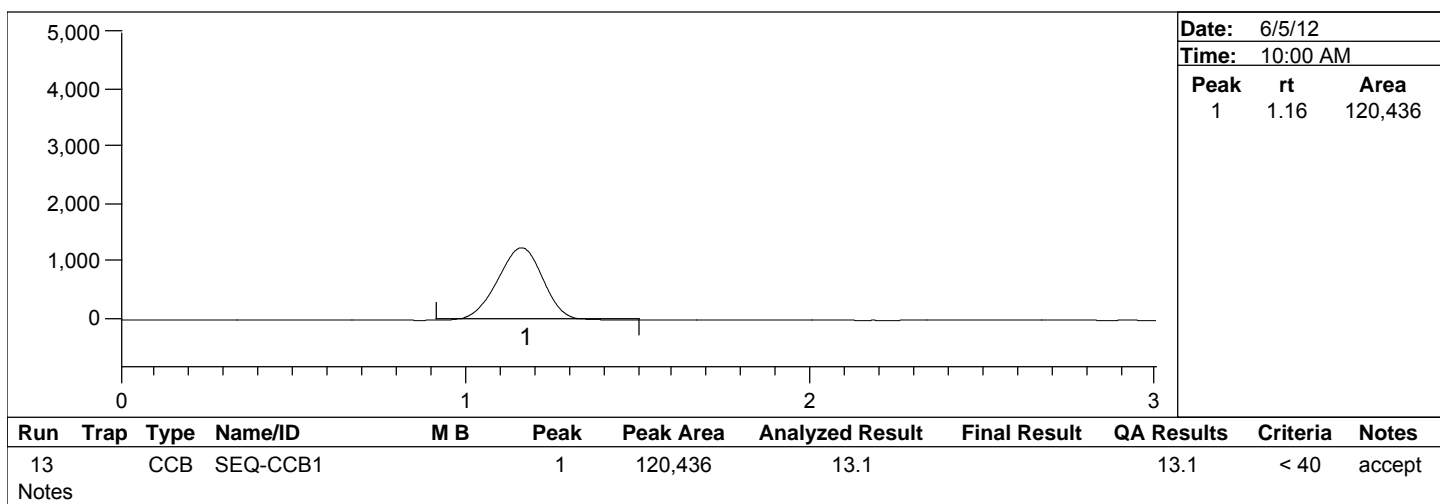


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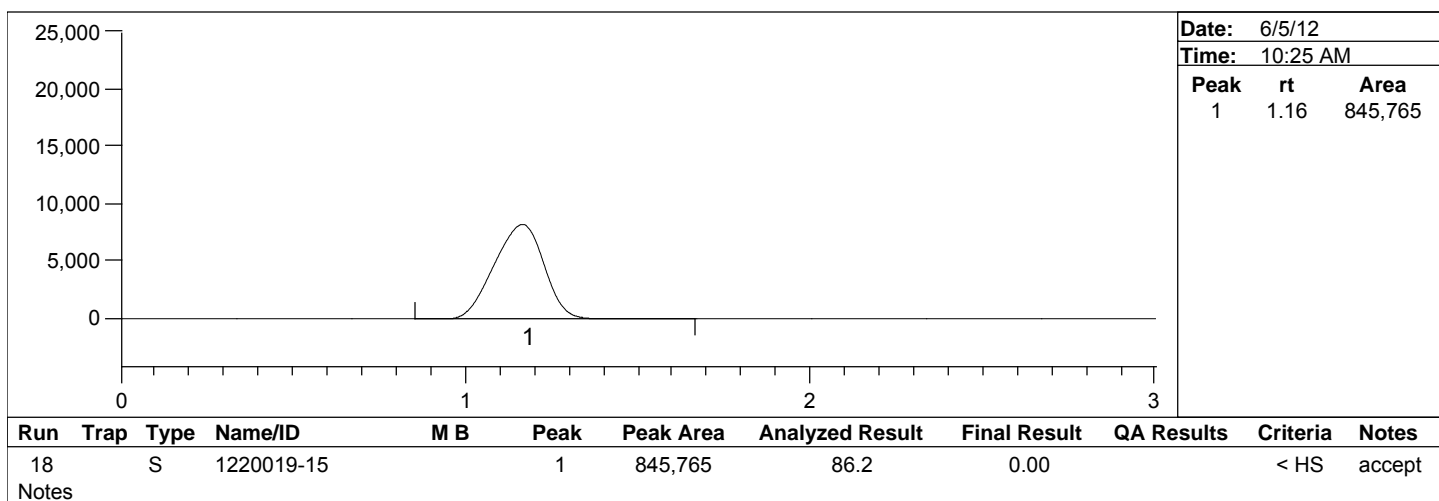
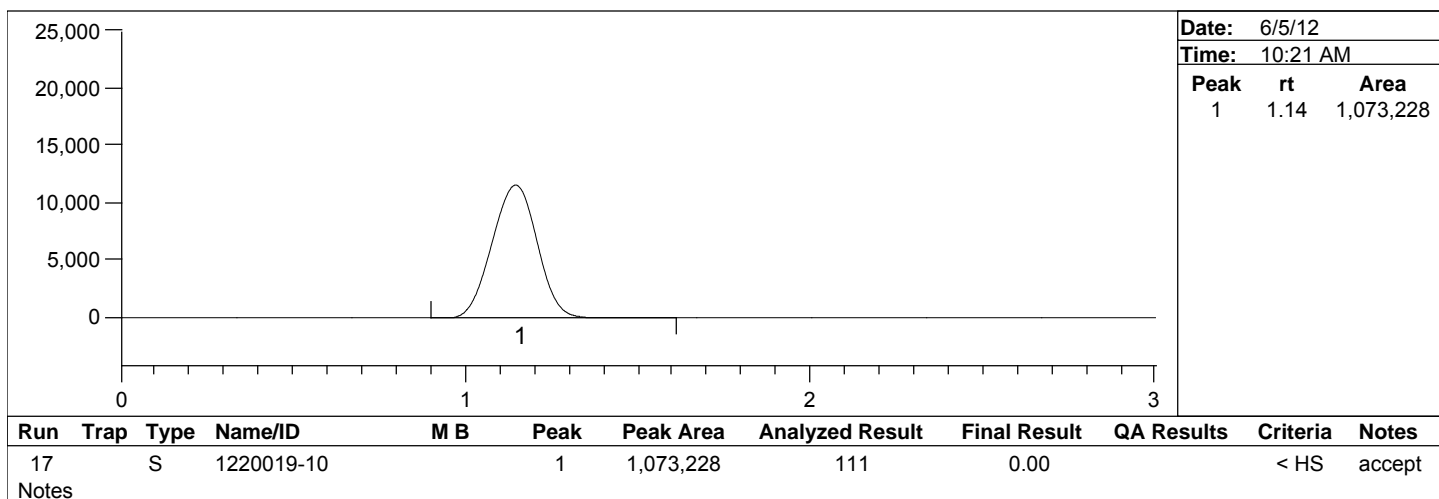
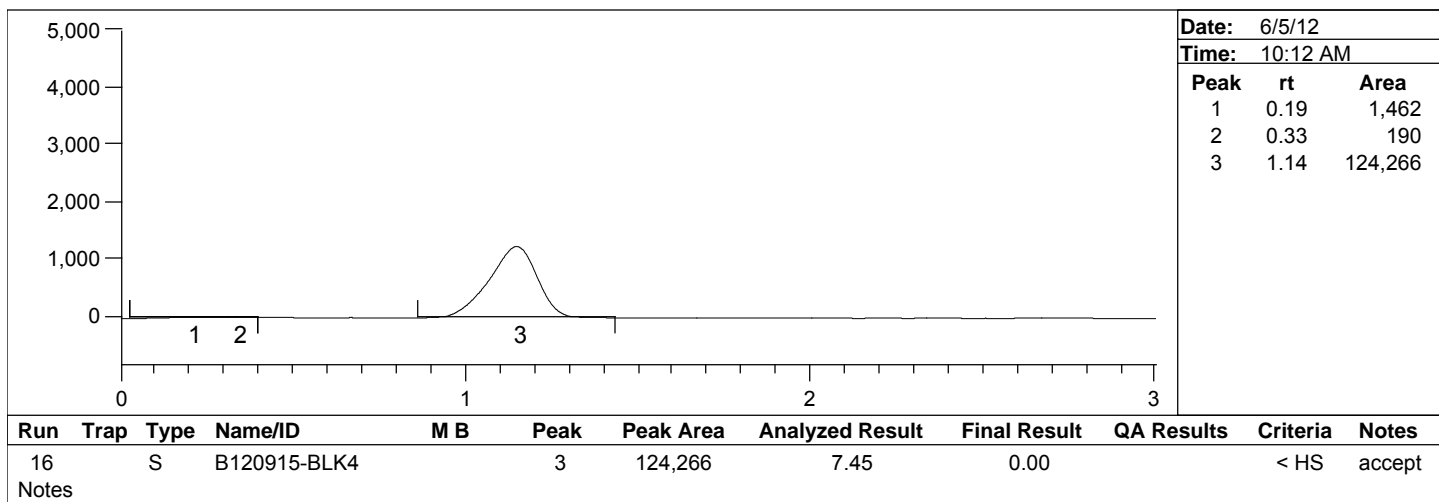


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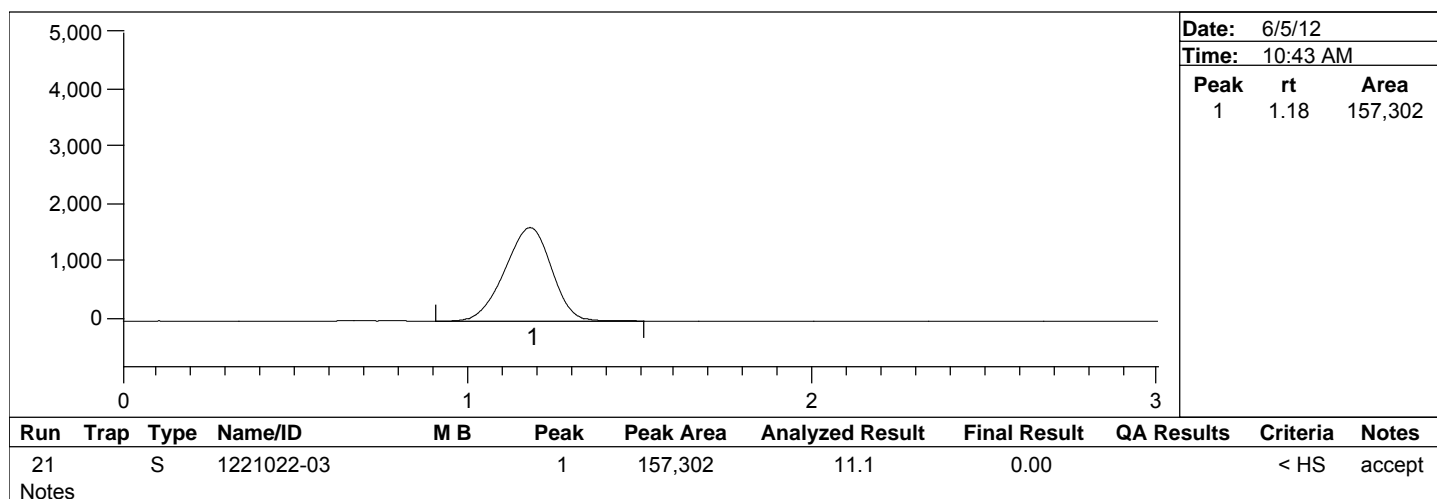
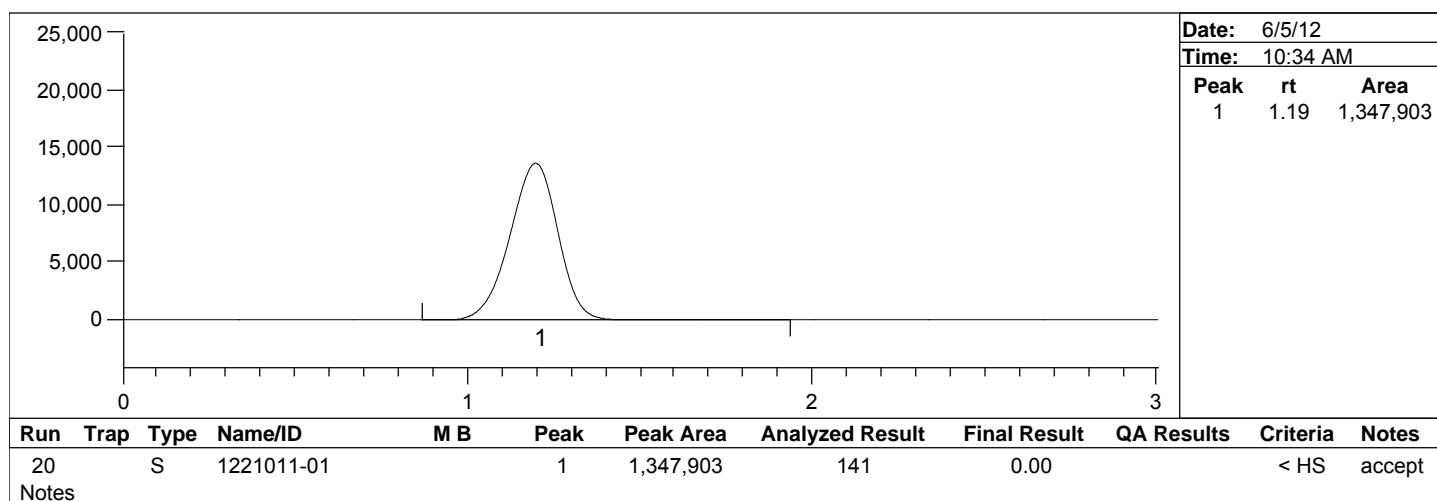
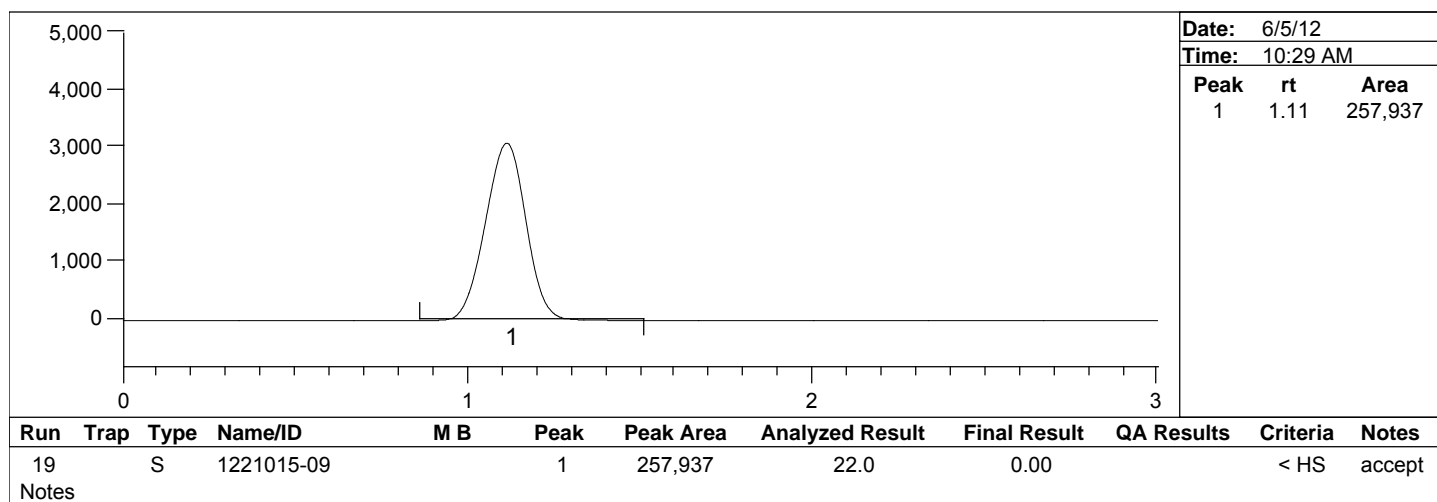


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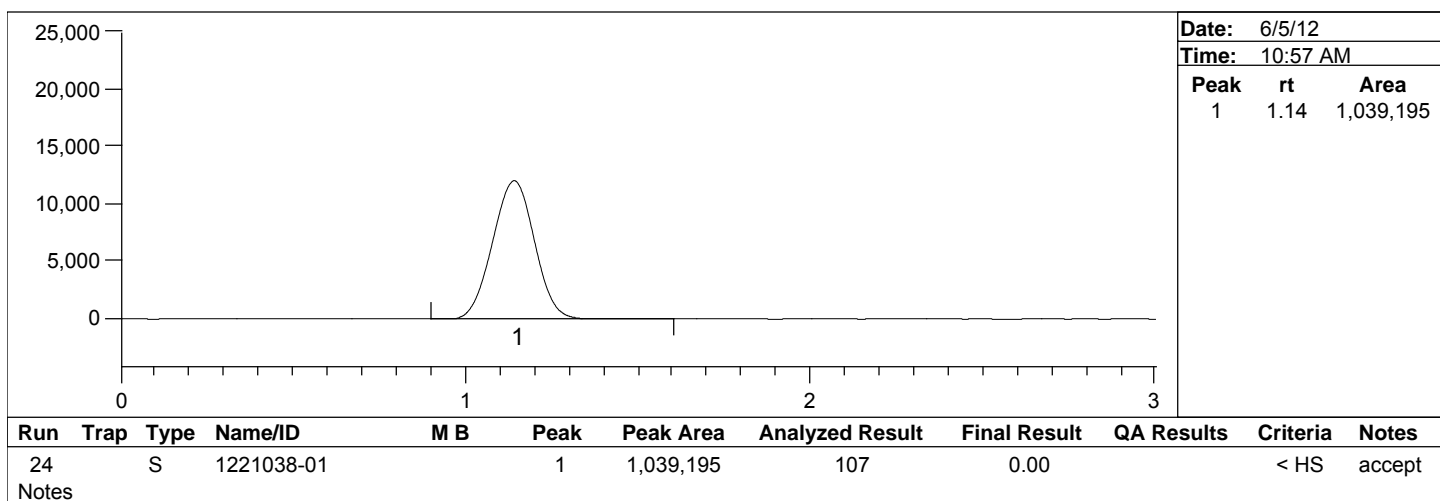
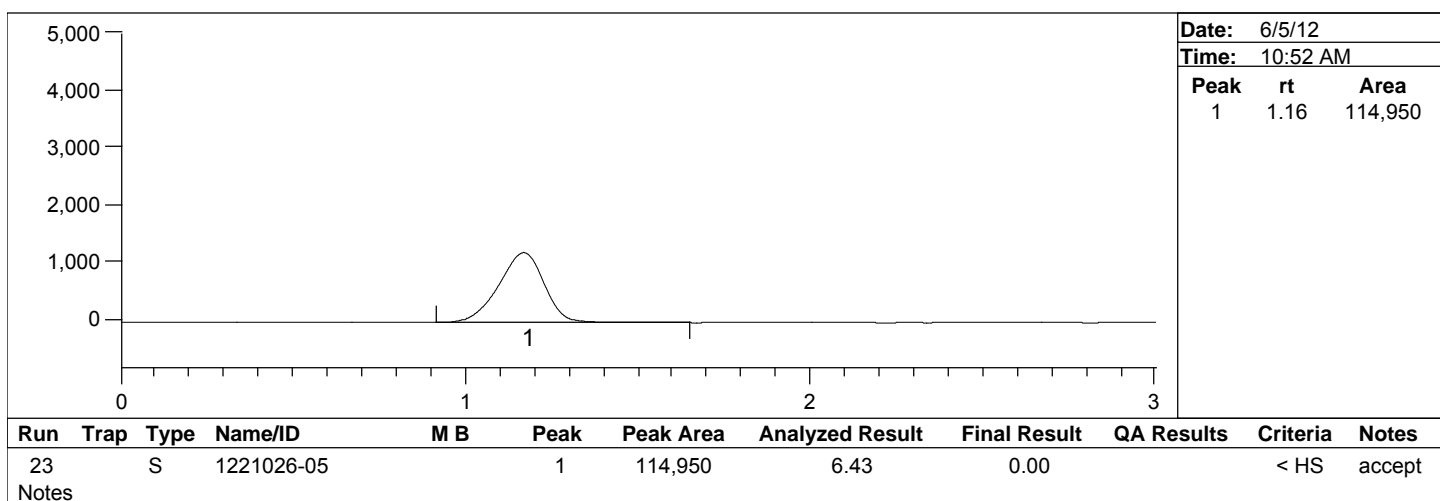
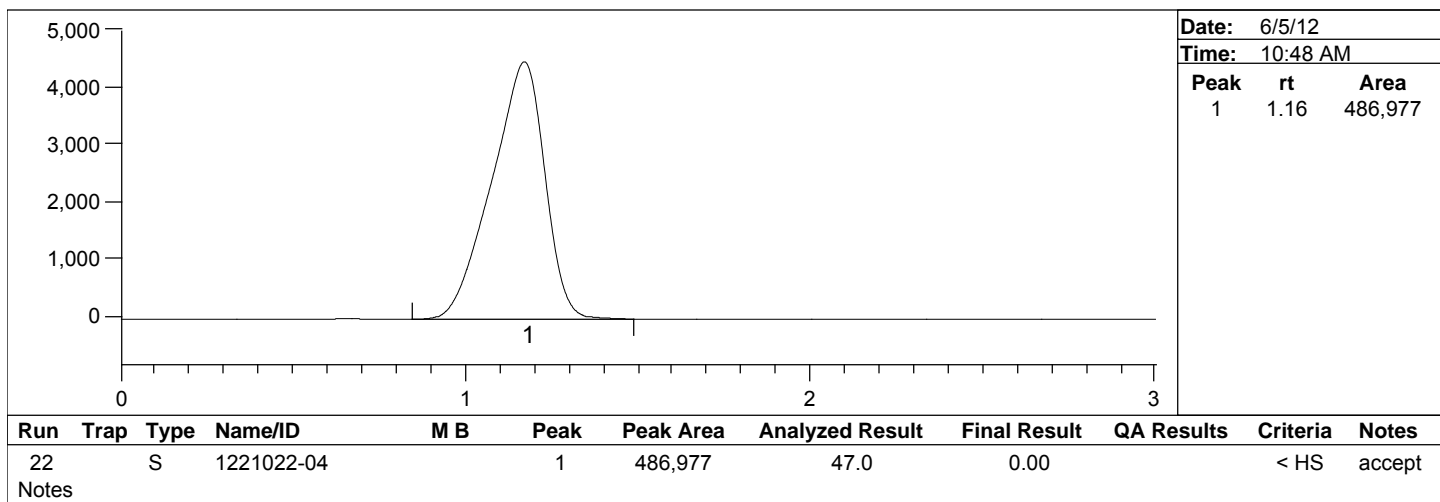


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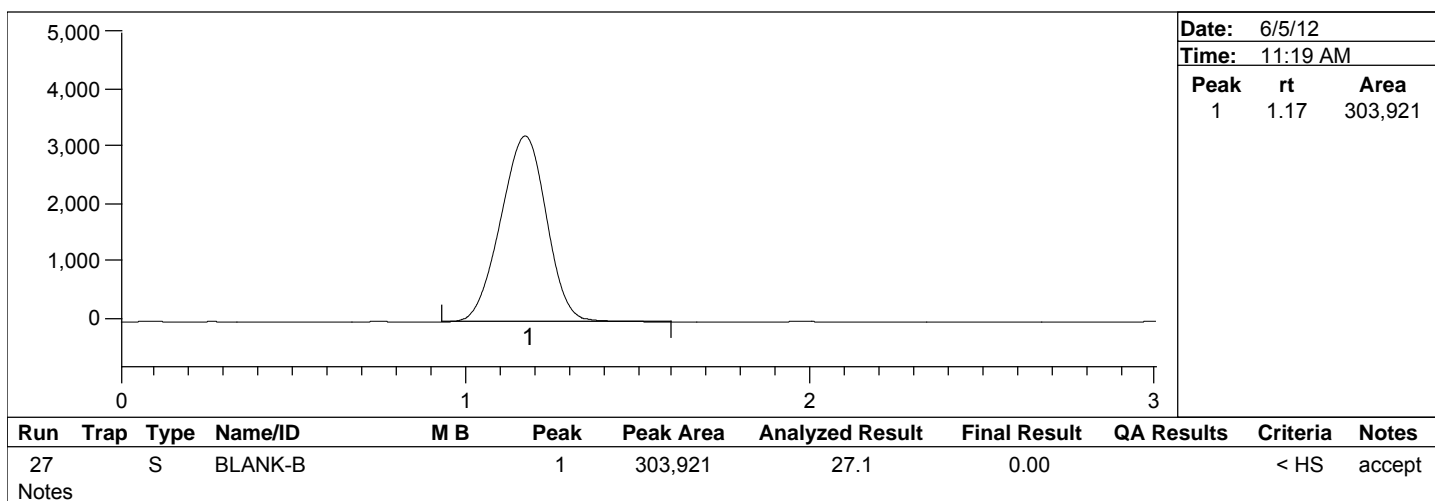
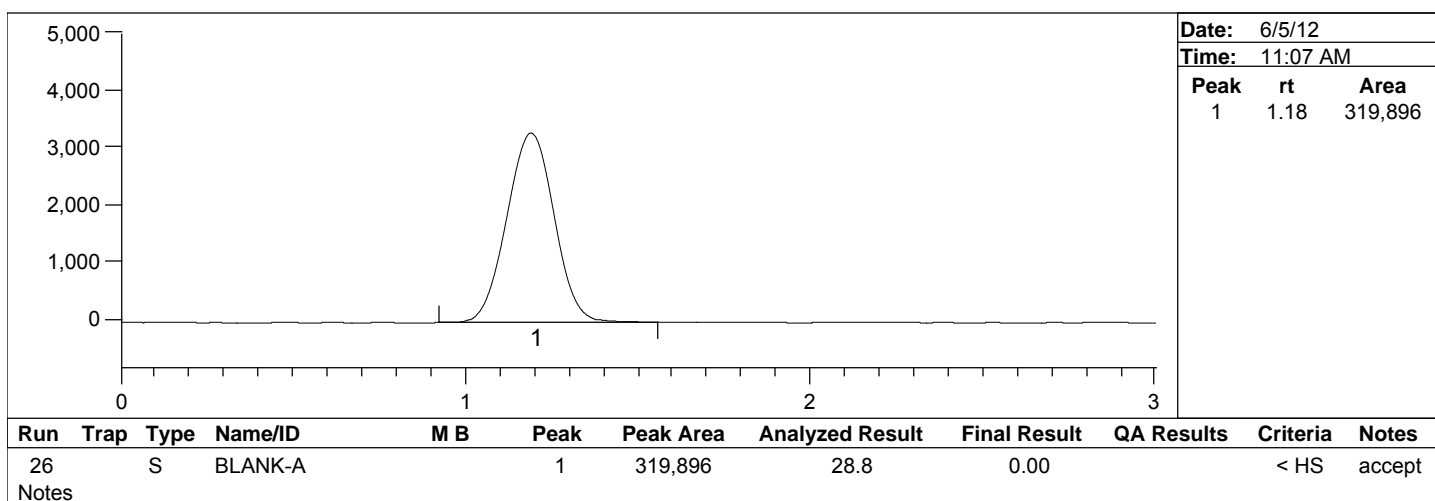
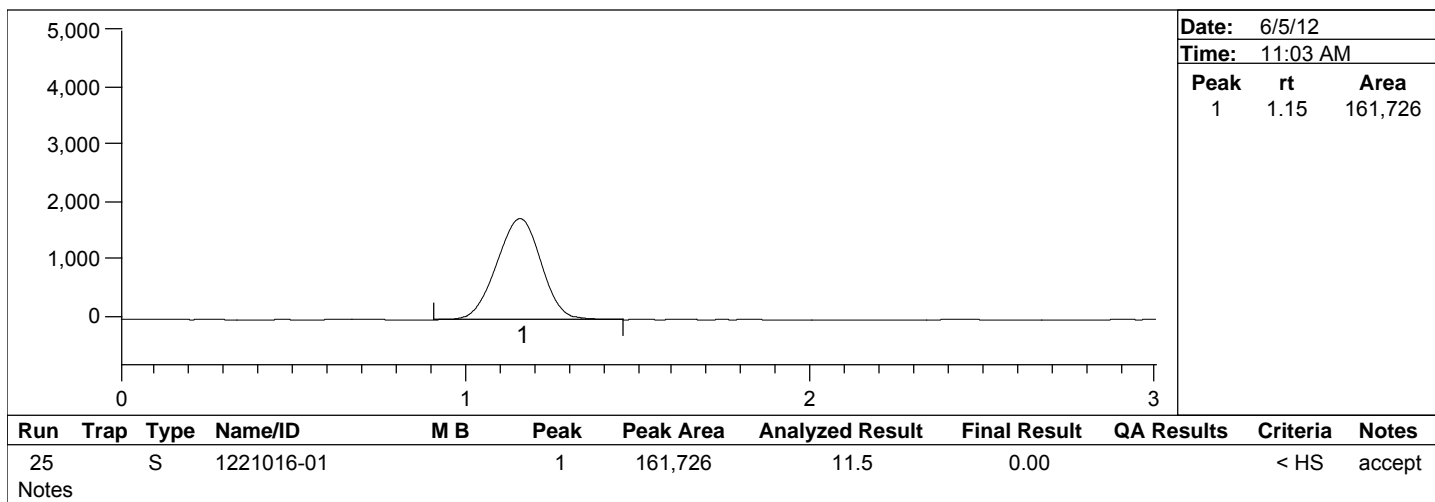


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Analyst Name: MLH

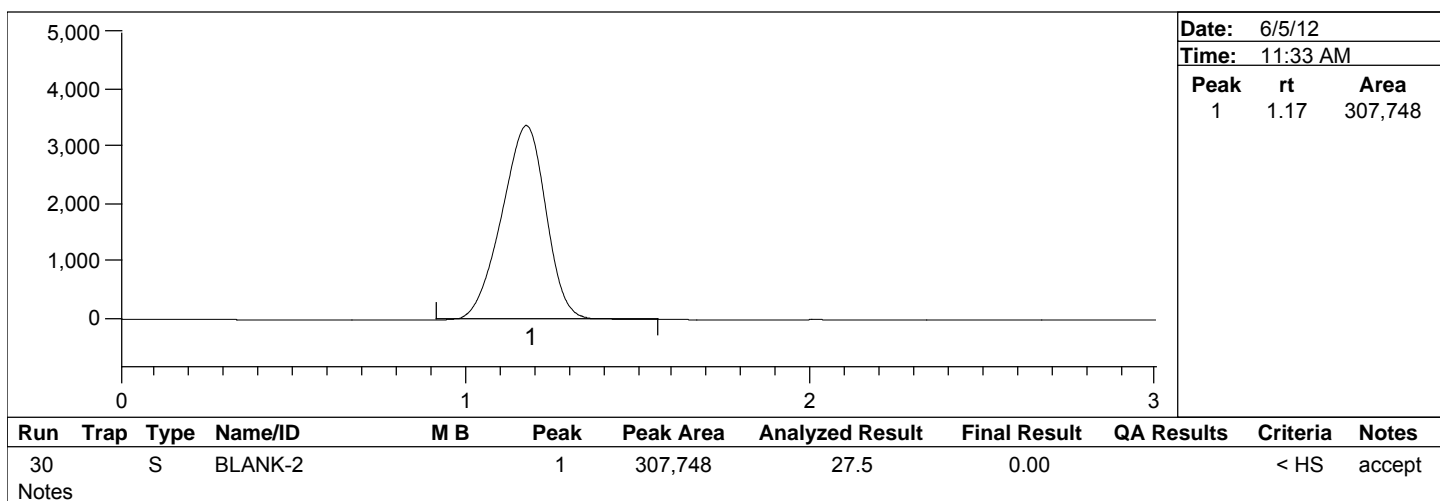
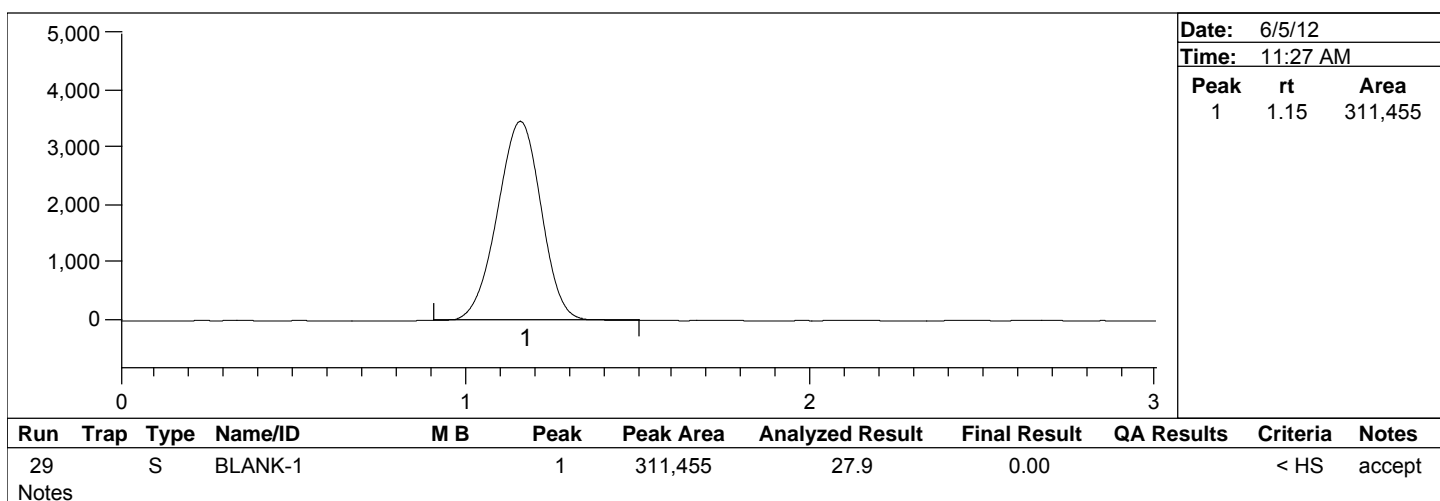
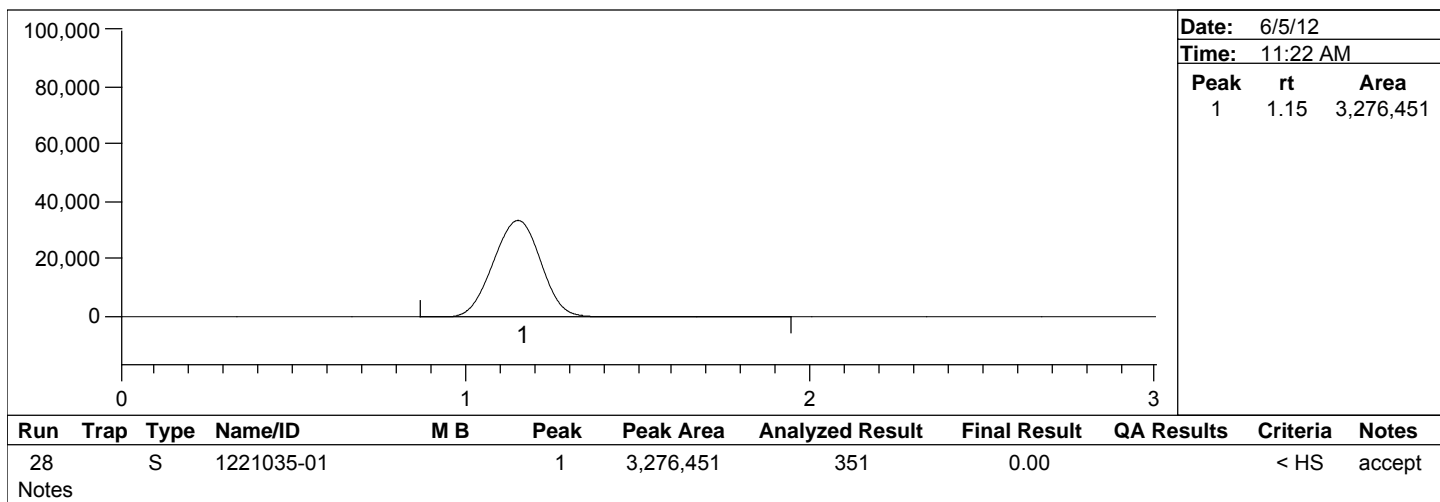


# Peak Report

Batch Number: B120915  
Method Number: CVAFS BR-0006

Project Number(s): 1200414  
Instrument ID: THG-05

Date Analyzed: 6/5/12  
Analyst Name: MLH

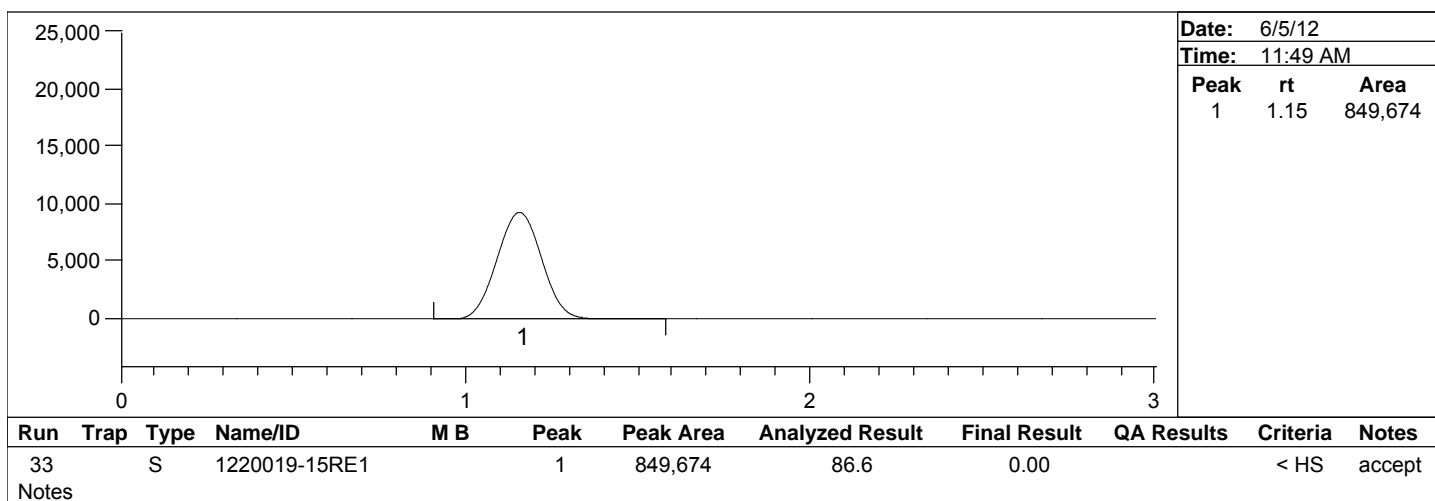
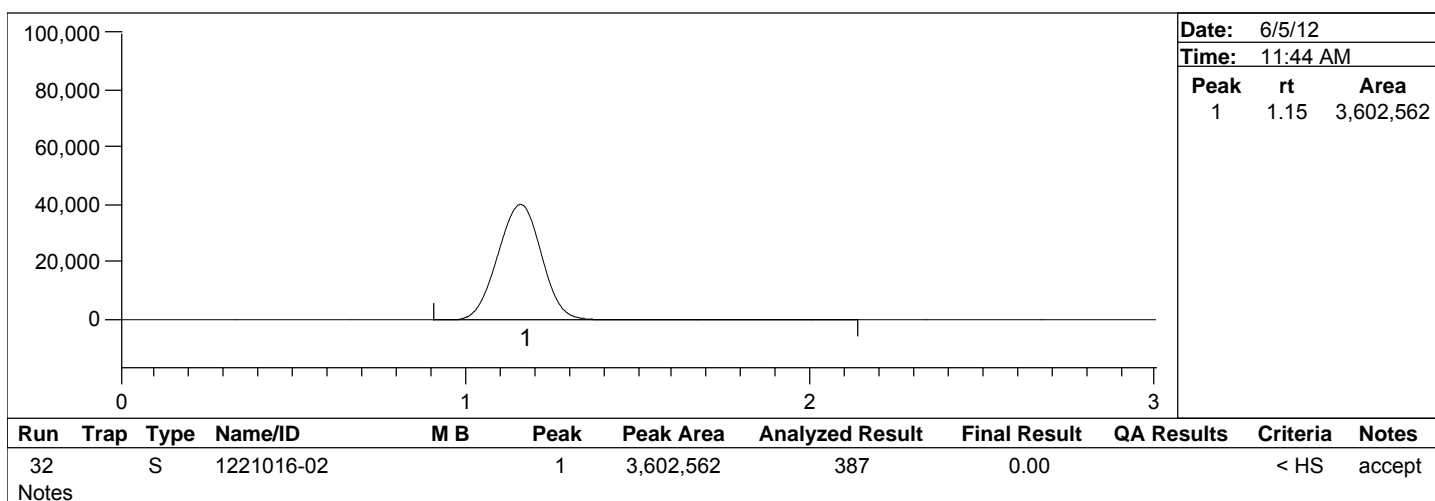
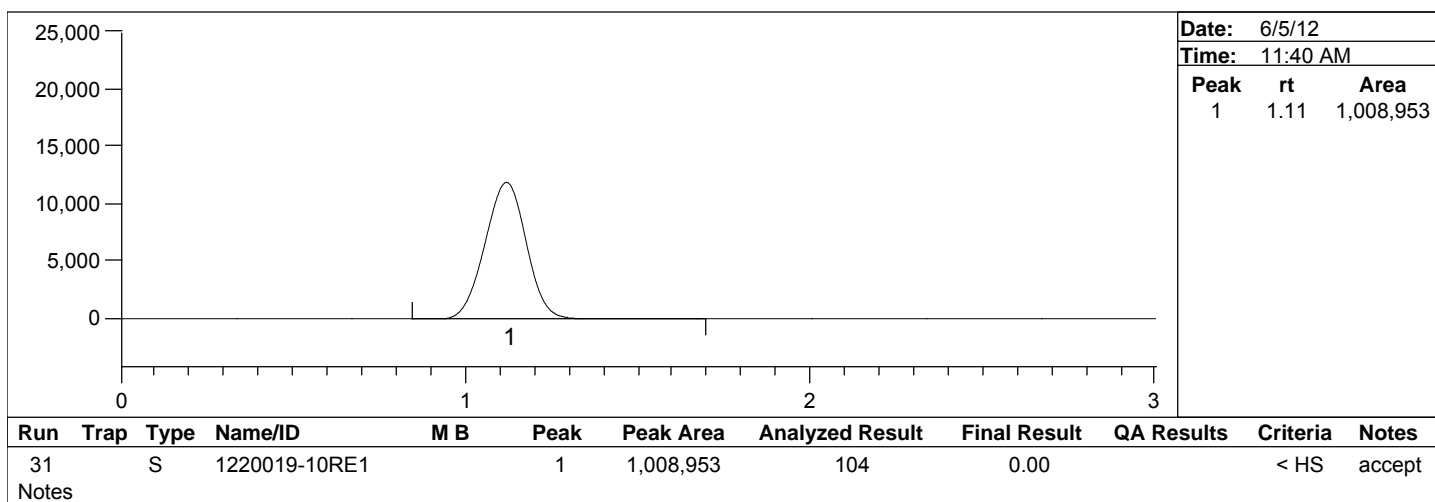


# Peak Report

Batch Number: B120915  
Method Number: CVAFS BR-0006

Project Number(s): 1200414  
Instrument ID: THG-05

Date Analyzed: 6/5/12  
Analyst Name: MLH

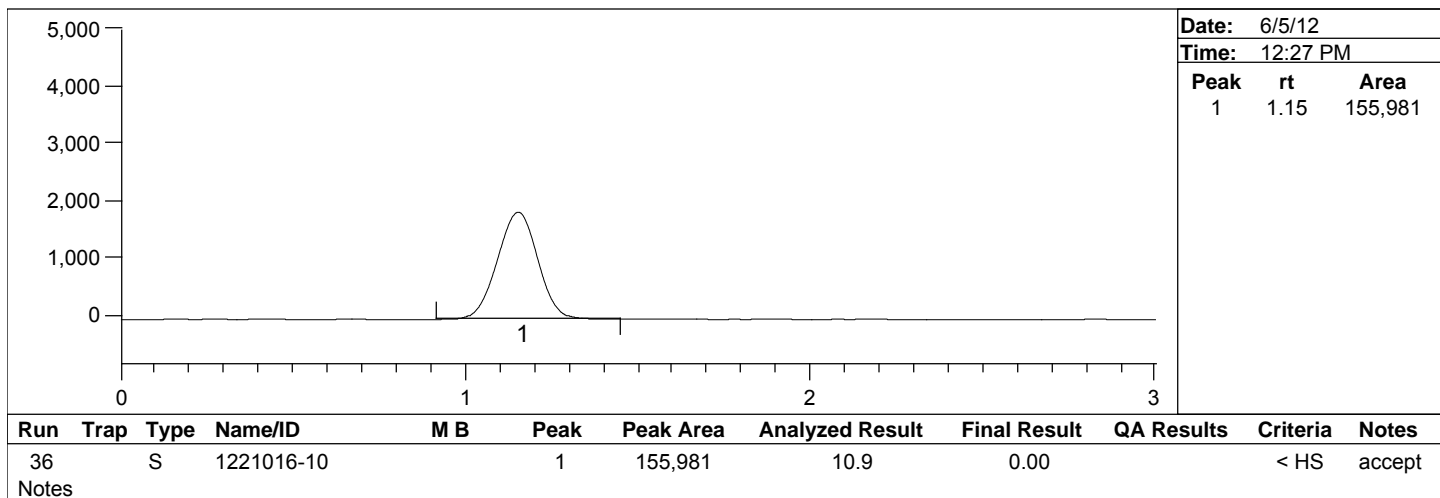
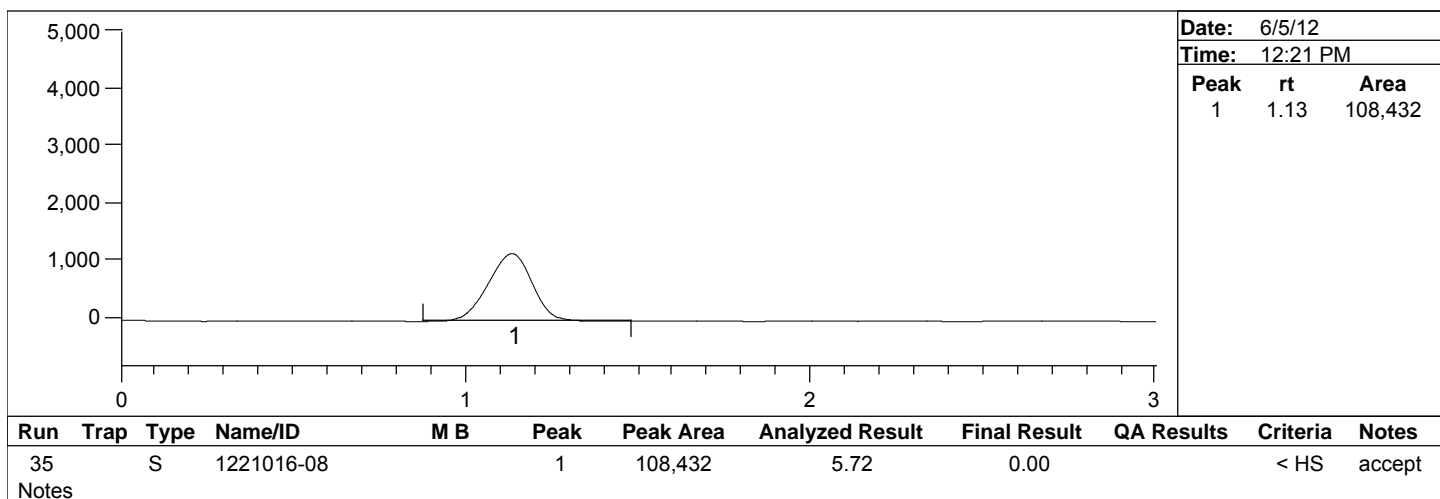
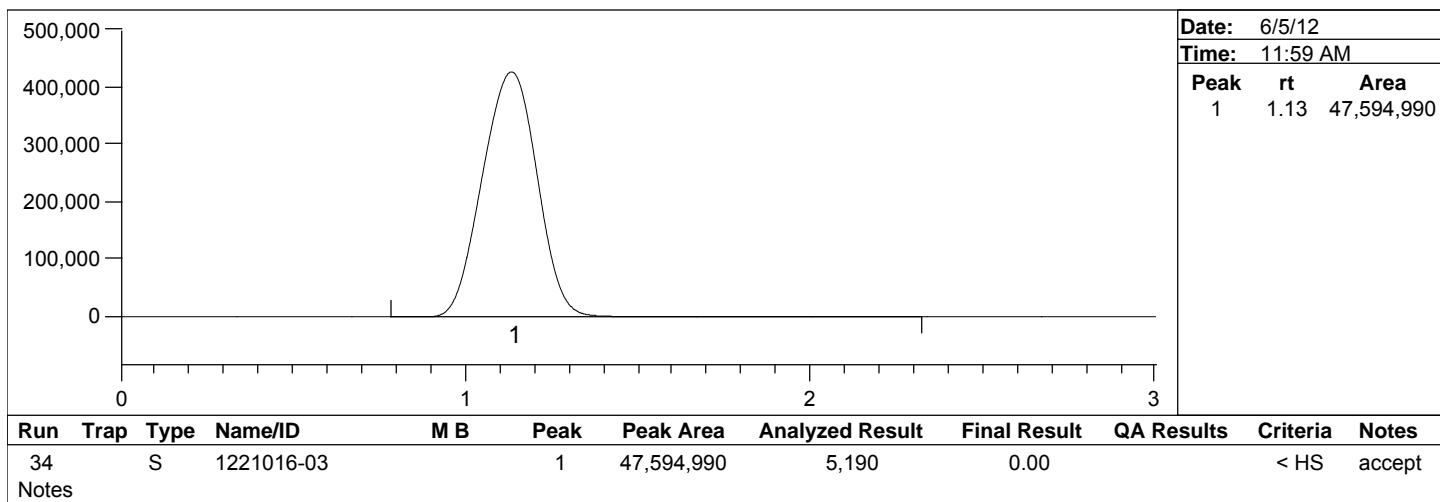


# Peak Report

Batch Number: B120915  
Method Number: CVAFS BR-0006

Project Number(s): 1200414  
Instrument ID: THG-05

Date Analyzed: 6/5/12  
Analyst Name: MLH

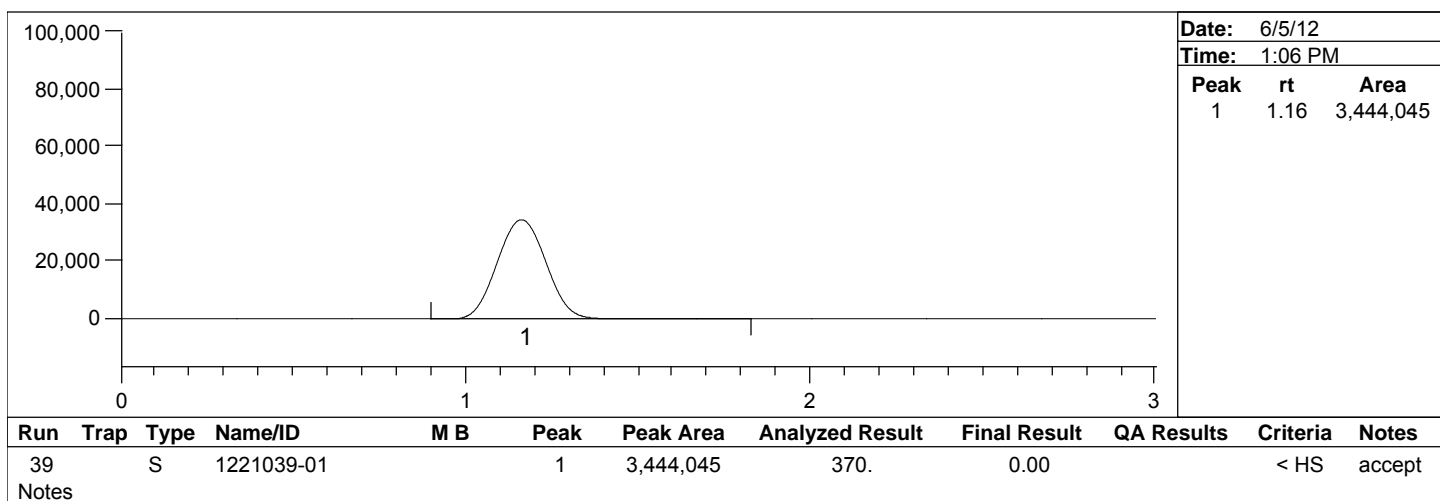
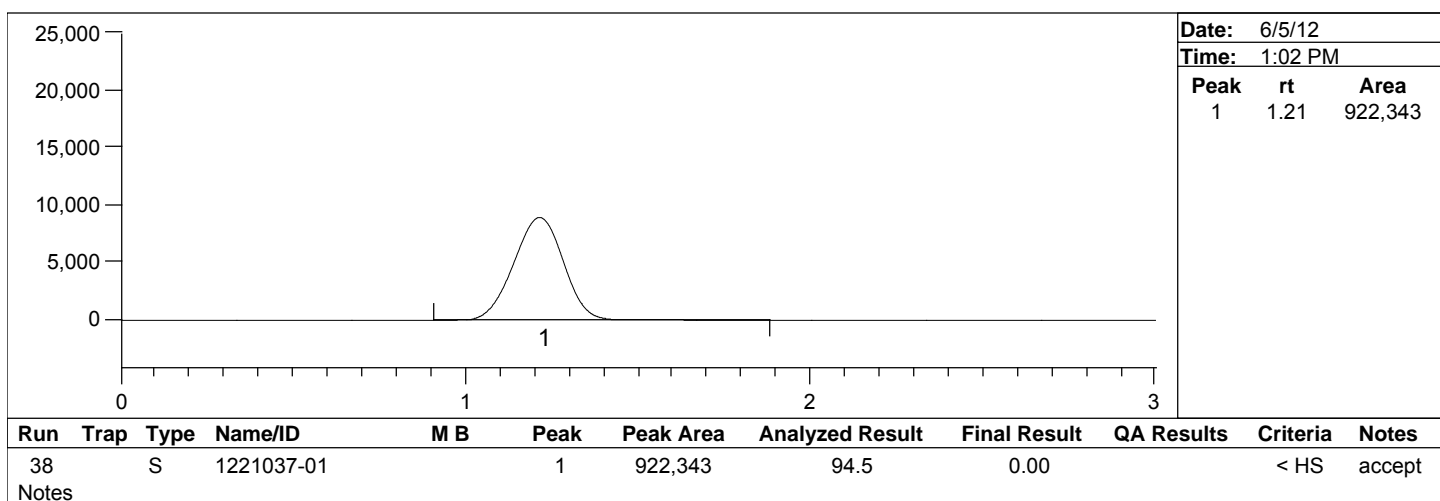
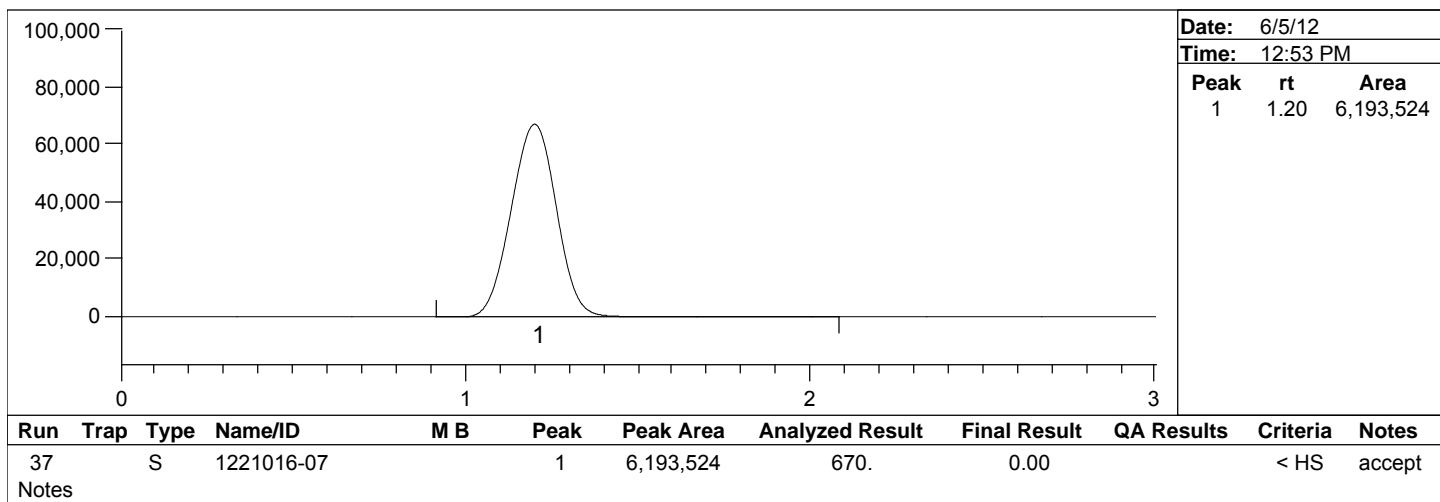


# Peak Report

Batch Number: B120915  
 Method Number: CVAFS BR-0006

Project Number(s): 1200414  
 Instrument ID: THG-05

Date Analyzed: 6/5/12  
 Analyst Name: MLH

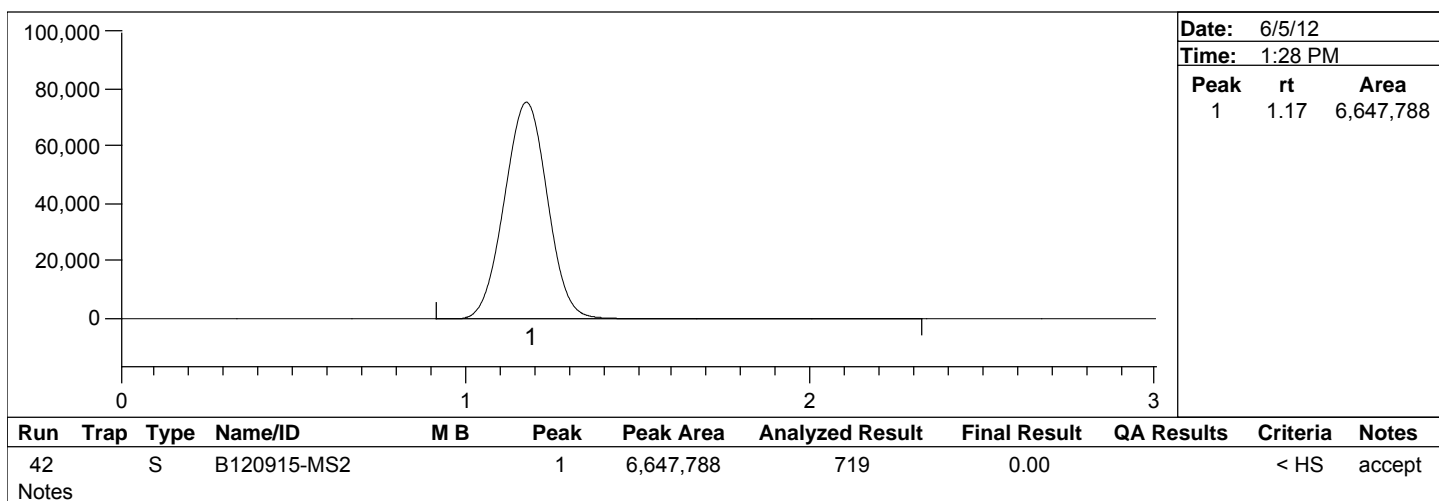
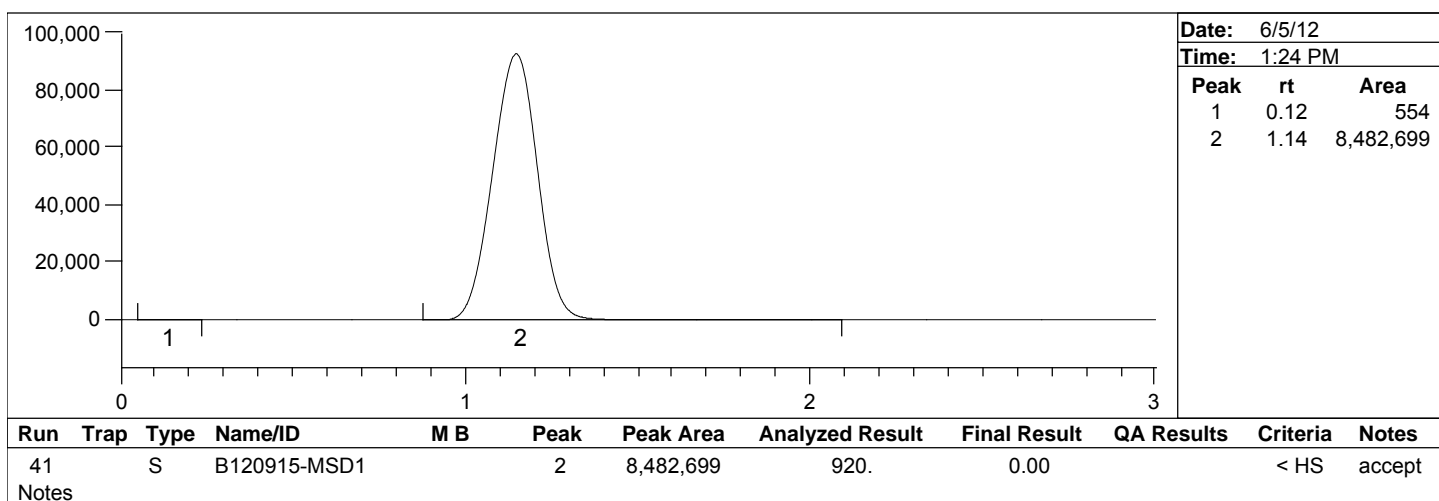
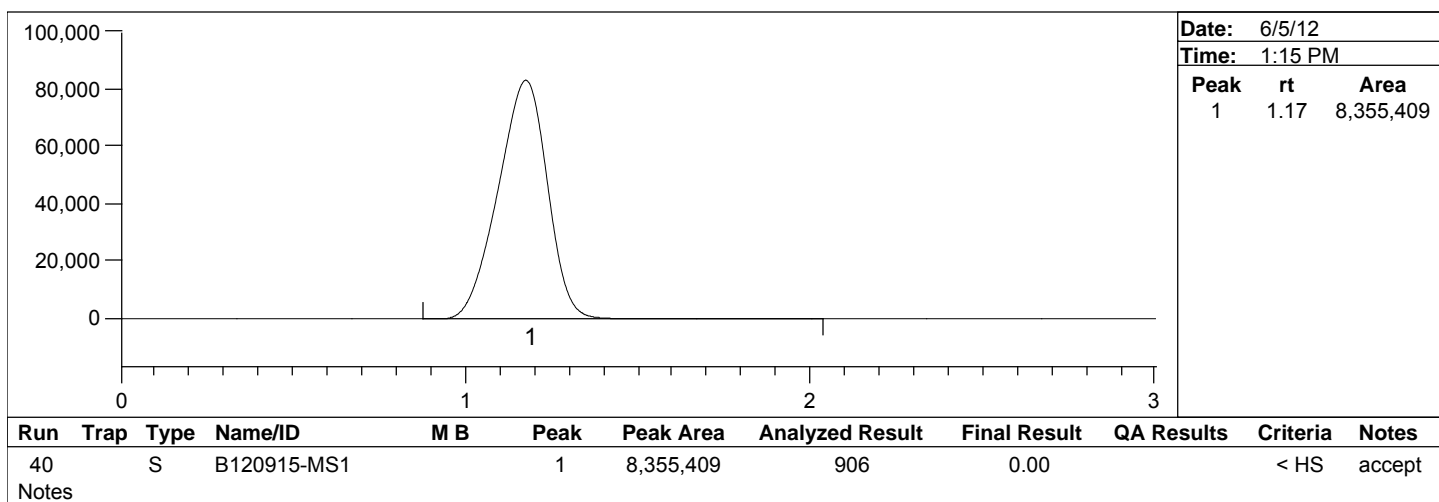


# Peak Report

Batch Number: B120915  
Method Number: CVAFS BR-0006

Project Number(s): 1200414  
Instrument ID: THG-05

Date Analyzed: 6/5/12  
Analyst Name: MLH



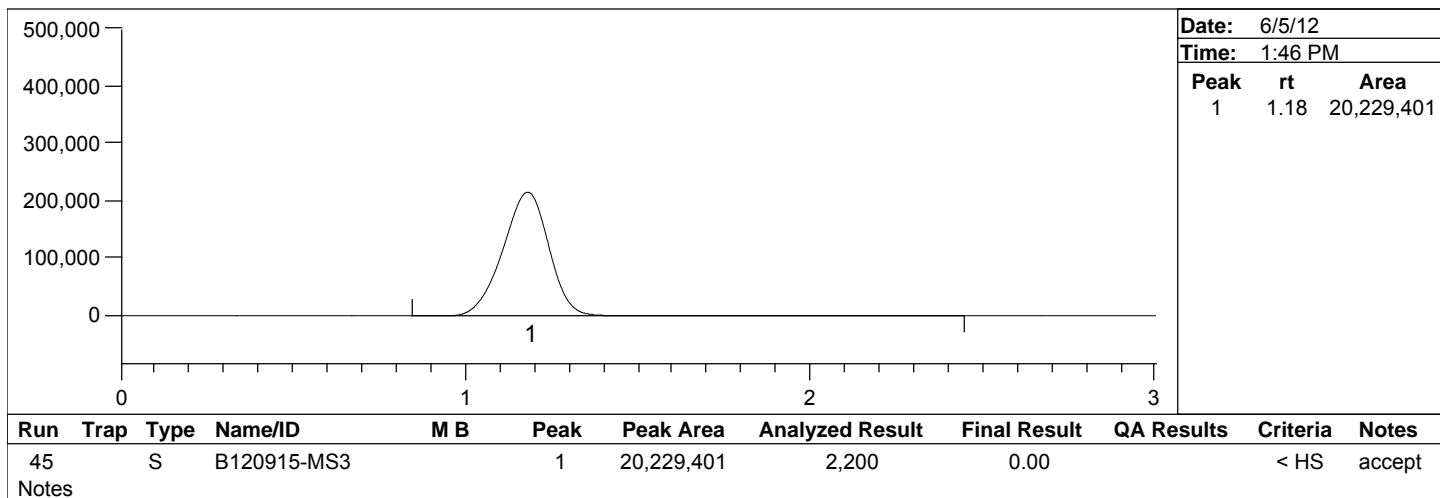
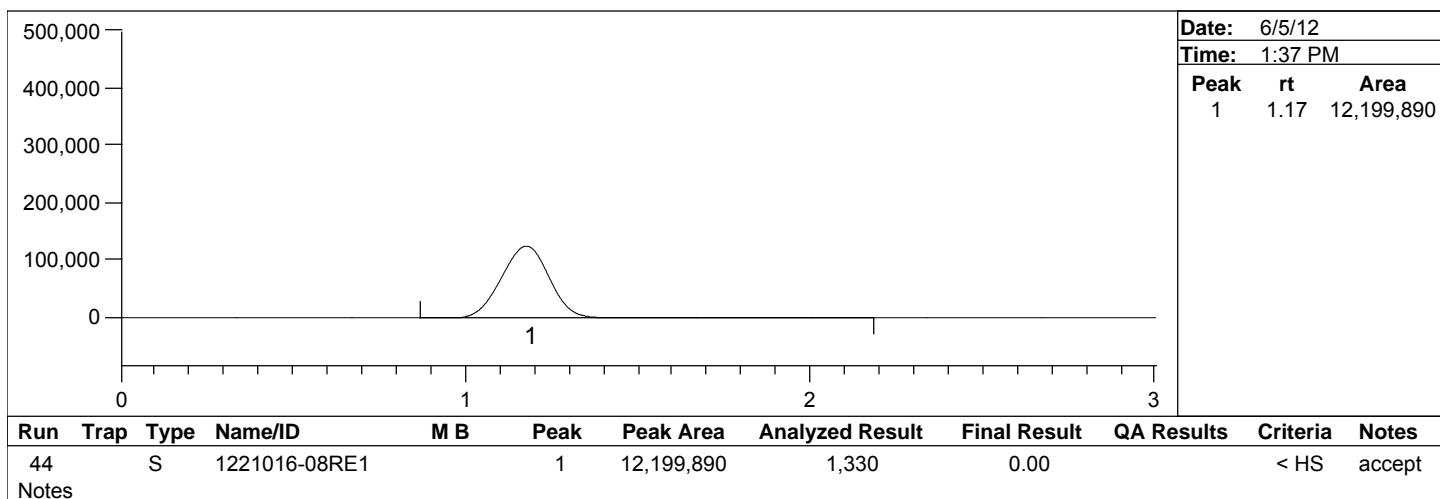
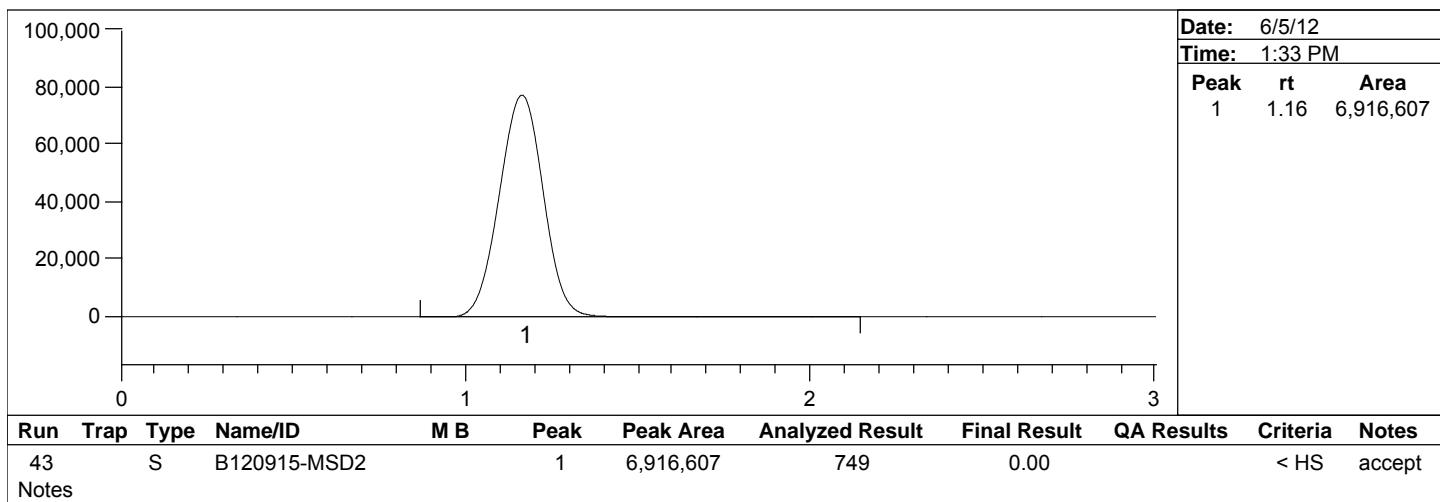


# Peak Report

Batch Number: B120915  
Method Number: CVAFS BR-0006

Project Number(s): 1200414  
Instrument ID: THG-05

Date Analyzed: 6/5/12  
Analyst Name: MLH

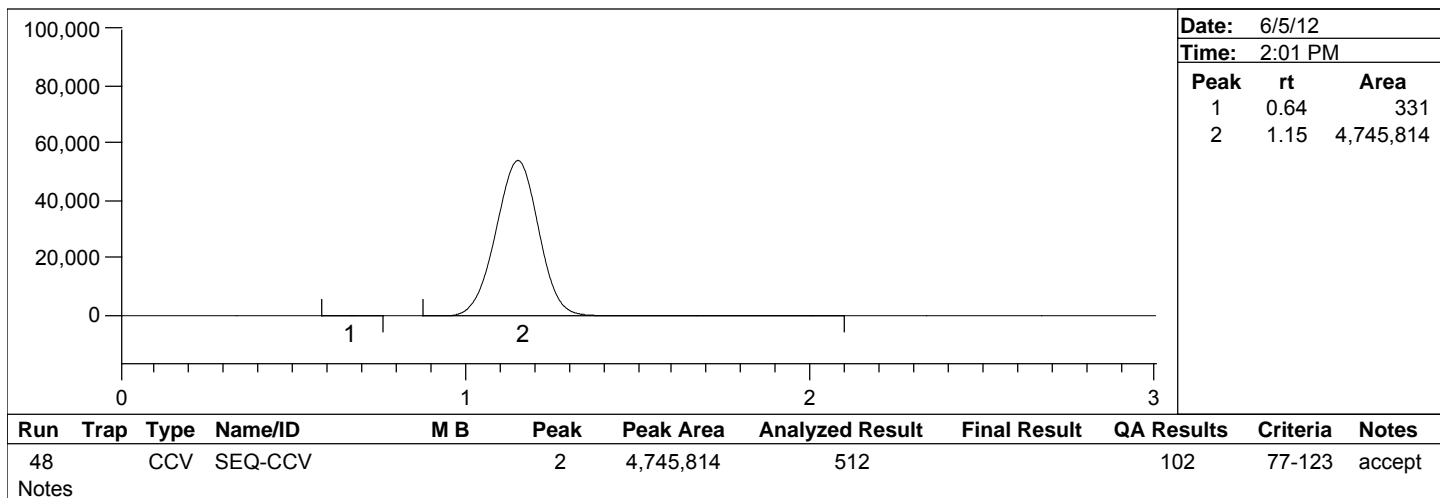
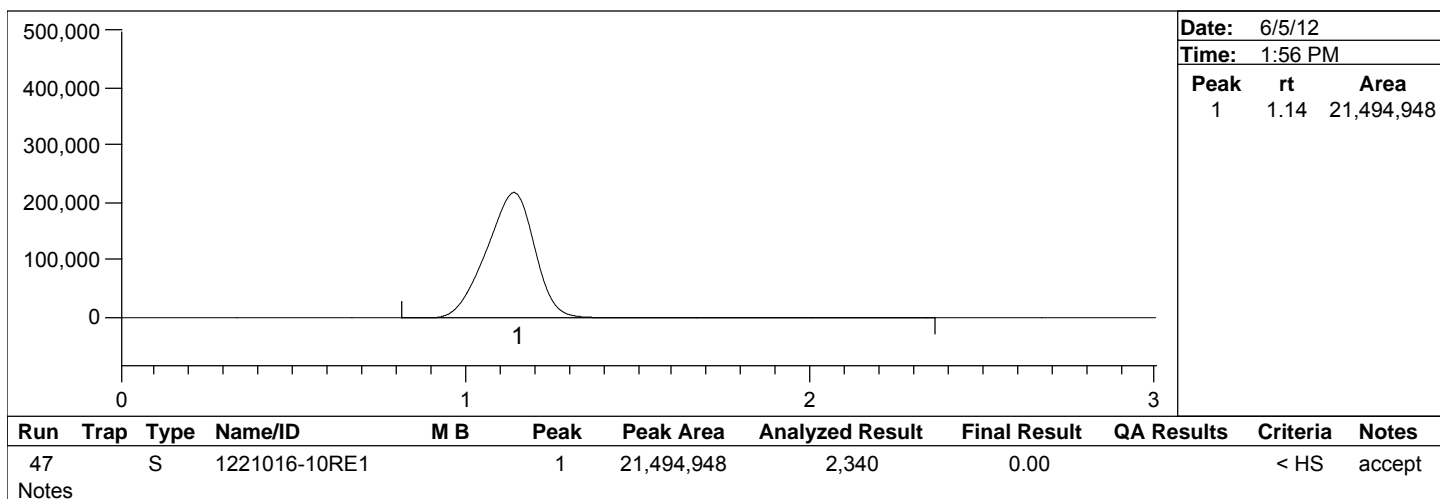
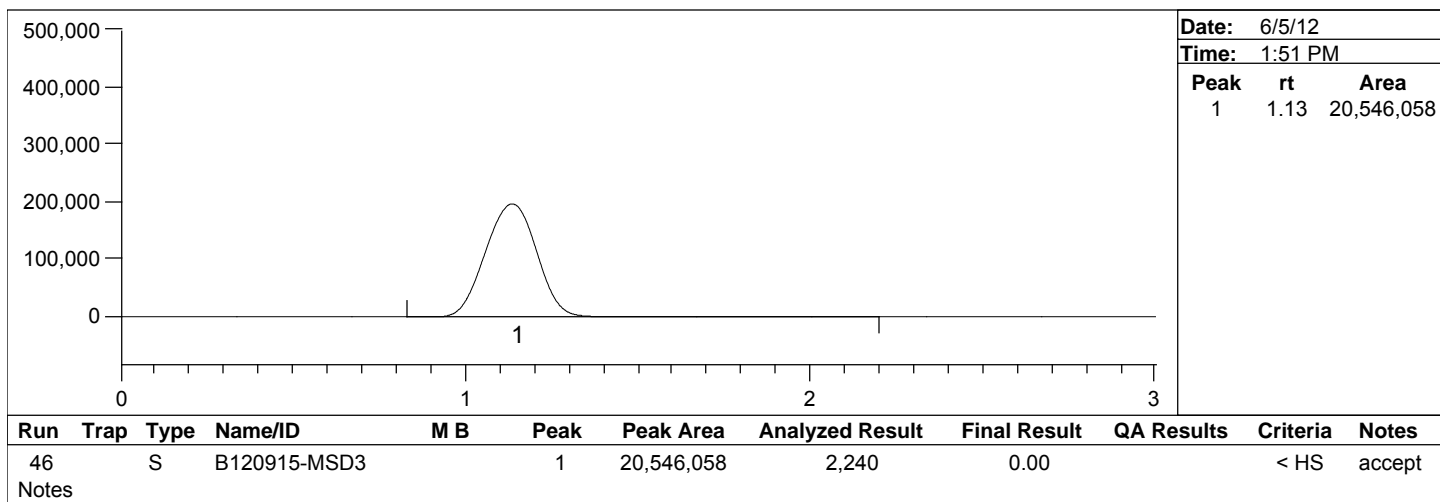


# Peak Report

Batch Number: B120915  
 Method Number: CVAFS BR-0006

Project Number(s): 1200414  
 Instrument ID: THG-05

Date Analyzed: 6/5/12  
 Analyst Name: MLH



## ANALYSIS SEQUENCE

BRL Report 1220019 Rev.1

Brooks Rand Labs

1200442

Instrument: THG-06(MerxT)

Lab Number	Batch #	Analysis	Order	STD ID	Source ID	BRL Project #	Due	Comments
1200442-IBL1	1200442	QC	1		-			
1200442-IBL2	1200442	QC	2		-			
1200442-IBL3	1200442	QC	3		-			
1200442-IBL4	1200442	QC	4		-			
1200442-CAL1	1200442	QC	5	1221021	-			
1200442-CAL2	1200442	QC	6	1221022	-			
1200442-CAL3	1200442	QC	7	1221023	-			
1200442-CAL4	1200442	QC	8	1221024	-			
1200442-CAL5	1200442	QC	9	1221025	-			
1200442-CAL6	1200442	QC	10	1221026	-			
1200442-ICV1	1200442	QC	11	1221028	-			
1200442-CCB1	1200442	QC	12		-			
1200442-CCV1	1200442	QC	13	1221027	-			
1200442-CCB2	1200442	QC	14		-			
1200442-CCB3	1200442	QC	15		-			
1200442-CCB4	1200442	QC	16		-			
B120919-BLK1	B120919	QC	17		-			
B120919-BLK2	B120919	QC	18		-			
B120919-BLK3	B120919	QC	19		-			
B120919-BLK4	B120919	QC	20		-			
B120919-SRM1	B120919	QC	21		-			
B120919-SRM2	B120919	QC	22		-			
1220016-01	B120919	Hg-S-AR-MERX-CVAFS	23			PAC-MI1201	6/11/2012	
1220019-01	B120919	Hg-S-AR-NoMB-MERX-CVAFS	24			AAL-MN1101	6/18/2012	
1220019-02	B120919	Hg-S-AR-NoMB-MERX-CVAFS	25			AAL-MN1101	6/18/2012	
1220019-03	B120919	Hg-S-AR-MERX-CVAFS	26			AAL-MN1101	1/1/1980	BatchQC

## ANALYSIS SEQUENCE

BRL Report 1220019 Rev.1

1200442

## Brooks Rand Labs

Instrument: THG-06(MerxT)

Lab Number	Batch #	Analysis	Order	STD ID	Source ID	BRL Project #	Due	Comments
1220019-03	B120919	Hg-S-AR-NoMB-MERX-CVAFS	27			AAL-MN1101	6/18/2012	
1200442-CCV2	1200442	QC	28	1221027	-			
1200442-CCB5	1200442	QC	29		-			
B120919-DUP1	B120919	QC	30		1220019-03			
B120919-MS1	B120919	QC	31		1220019-03			
B120919-MSD1	B120919	QC	32		1220019-03			
1220019-04	B120919	Hg-S-AR-NoMB-MERX-CVAFS	33			AAL-MN1101	6/18/2012	
1220019-05	B120919	Hg-S-AR-NoMB-MERX-CVAFS	34			AAL-MN1101	6/18/2012	
1220019-06	B120919	Hg-S-AR-NoMB-MERX-CVAFS	35			AAL-MN1101	6/18/2012	
1220019-07	B120919	Hg-S-AR-NoMB-MERX-CVAFS	36			AAL-MN1101	6/18/2012	
1220019-08	B120919	Hg-S-AR-NoMB-MERX-CVAFS	37			AAL-MN1101	6/18/2012	
1220019-09	B120919	Hg-S-AR-NoMB-MERX-CVAFS	38			AAL-MN1101	6/18/2012	
1220019-11	B120919	Hg-S-AR-MERX-CVAFS	39			AAL-MN1101	1/1/1980	BatchQC
1220019-11	B120919	Hg-S-AR-NoMB-MERX-CVAFS	40			AAL-MN1101	6/18/2012	
1200442-CCV3	1200442	QC	41	1221027	-			
1200442-CCB6	1200442	QC	42		-			
B120919-DUP2	B120919	QC	43		1220019-11			
B120919-MS2	B120919	QC	44		1220019-11			
B120919-MSD2	B120919	QC	45		1220019-11			
1220019-12	B120919	Hg-S-AR-NoMB-MERX-CVAFS	46			AAL-MN1101	6/18/2012	
1220019-13	B120919	Hg-S-AR-NoMB-MERX-CVAFS	47			AAL-MN1101	6/18/2012	
1220019-14	B120919	Hg-S-AR-NoMB-MERX-CVAFS	48			AAL-MN1101	6/18/2012	
1221015-01	B120919	Hg-S-AR-NoMB-MERX-CVAFS	49			AAL-MN1101	6/25/2012	
1221015-02	B120919	Hg-S-AR-NoMB-MERX-CVAFS	50			AAL-MN1101	6/25/2012	
1221015-03	B120919	Hg-S-AR-MERX-CVAFS	51			AAL-MN1101	1/1/1980	BatchQC
1221015-03	B120919	Hg-S-AR-NoMB-MERX-CVAFS	52			AAL-MN1101	6/25/2012	

## ANALYSIS SEQUENCE

BRL Report 1220019 Rev.1

1200442

## Brooks Rand Labs

Instrument: THG-06(MerxT)

Lab Number	Batch #	Analysis	Order	STD ID	Source ID	BRL Project #	Due	Comments
B120919-DUP3	B120919	QC	53		1221015-03			
1200442-CCV4	1200442	QC	54	1221027	-			
1200442-CCB7	1200442	QC	55		-			
B120919-MS3	B120919	QC	56		1221015-03			
B120919-MSD3	B120919	QC	57		1221015-03			
1221015-04	B120919	Hg-S-AR-NoMB-MERX-CVAFS	58			AAL-MN1101	6/25/2012	
1221015-05	B120919	Hg-S-AR-NoMB-MERX-CVAFS	59			AAL-MN1101	6/25/2012	
1221015-06	B120919	Hg-S-AR-NoMB-MERX-CVAFS	60			AAL-MN1101	6/25/2012	
1221015-07	B120919	Hg-S-AR-NoMB-MERX-CVAFS	61			AAL-MN1101	6/25/2012	
1221015-08	B120919	Hg-S-AR-NoMB-MERX-CVAFS	62			AAL-MN1101	6/25/2012	
1221015-10	B120919	Hg-S-AR-NoMB-MERX-CVAFS	63			AAL-MN1101	6/25/2012	
1221015-11	B120919	Hg-S-AR-MERX-CVAFS	64			AAL-MN1101	1/1/1980	BatchQC
1221015-11	B120919	Hg-S-AR-NoMB-MERX-CVAFS	65			AAL-MN1101	6/25/2012	
B120919-DUP4	B120919	QC	66		1221015-11			
1200442-CCV5	1200442	QC	67	1221027	-			
1200442-CCB8	1200442	QC	68		-			
B120919-MS4	B120919	QC	69		1221015-11			
B120919-MSD4	B120919	QC	70		1221015-11			
1221015-12	B120919	Hg-S-AR-NoMB-MERX-CVAFS	71			AAL-MN1101	6/25/2012	
1200442-CCV6	1200442	QC	72	1221027	-			
1200442-CCB9	1200442	QC	73		-			
1220019-04RE1	B120919	Hg-S-AR-NoMB-MERX-CVAFS	74			AAL-MN1101	6/18/2012	Added 6/13/2012 by BJT
1220019-09RE1	B120919	Hg-S-AR-NoMB-MERX-CVAFS	75			AAL-MN1101	6/18/2012	Added 6/13/2012 by BJT
1220019-14RE1	B120919	Hg-S-AR-NoMB-MERX-CVAFS	76			AAL-MN1101	6/18/2012	Added 6/13/2012 by BJT
1221015-03RE1	B120919	Hg-S-AR-MERX-CVAFS	77			AAL-MN1101	1/1/1980	Added 6/13/2012 by BJT
1221015-03RE1	B120919	Hg-S-AR-NoMB-MERX-CVAFS	78			AAL-MN1101	6/25/2012	Added 6/13/2012 by BJT

## ANALYSIS SEQUENCE

BRL Report 1220019 Rev.1

Brooks Rand Labs

1200442

Instrument: THG-06(MerxT)

Lab Number	Batch #	Analysis	Order	STD ID	Source ID	BRL Project #	Due	Comments
B120919-DUP5	B120919	QC	79		1221015-03RE1			
1221015-05RE1	B120919	Hg-S-AR-NoMB-MERX-CVAFS	80			AAL-MN1101	6/25/2012	Added 6/13/2012 by BJT
1221015-08RE1	B120919	Hg-S-AR-NoMB-MERX-CVAFS	81			AAL-MN1101	6/25/2012	Added 6/13/2012 by BJT
1221015-11RE1	B120919	Hg-S-AR-MERX-CVAFS	82			AAL-MN1101	1/1/1980	Added 6/13/2012 by BJT
1221015-11RE1	B120919	Hg-S-AR-NoMB-MERX-CVAFS	83			AAL-MN1101	6/25/2012	Added 6/13/2012 by BJT
B120919-DUP6	B120919	QC	84		1221015-11RE1			
1200442-CCV7	1200442	QC	85	1221027	-			
1200442-CCBA	1200442	QC	86		-			
1200442-ICV2	1200442	QC	87	1217008	-			
1200442-CCV8	1200442	QC	88	1221027	-			
1200442-CCBB	1200442	QC	89		-			
1221015-12RE1	B120919	Hg-S-AR-NoMB-MERX-CVAFS	90			AAL-MN1101	6/25/2012	Added 6/14/2012 by BJT
1200442-CCV9	1200442	QC	91	1221027	-			
1200442-CCBC	1200442	QC	92		-			

## Hg Analysis Sheet : T-Hg MERX-T: \_\_\_\_\_

Page 1 of 4Sequence: 1200442 Batch(es): B120919Analyst: BJT Date: 6/13/12 Instrument ID: THg06 (Merx-T)10ng/mL std ID: 1221004 1ng/mL std ID: 1221003 ICV std ID: 1221005NH<sub>2</sub>OH-HCl #: 1223046 SnCl<sub>2</sub> #: 1222002Initial offset: 9901 Initial PMT: 497

Run #/ Pos #	Brooks Rand Sample ID	Analy. Vol. (mL)	Dilution Factor	Analysis comments / For spiked QC: Source sample, standard ID, and spiked volume (mL)
1	Rinse	---		
2	Rinse	---		
3	SEQ-IBL1	---		
4	SEQ-IBL2	---		
5	SEQ-IBL3	---		
6	SEQ-IBL4	---		
7	SEQ-CAL1	0.010		1ng/mL
8	SEQ-CAL2	0.025		1ng/mL
9	SEQ-CAL3	0.100		1ng/mL
10	SEQ-CAL4	0.050		10ng/mL
11	SEQ-CAL5	0.250		10ng/mL
12	SEQ-CAL6	1.000		10ng/mL
13	SEQ-ICV1	1.000		NIST 1641d
14	SEQ-CCB	---		
15	SEQ-CCV	0.050		10ng/mL
16	SEQ-CCB	---		
17	SEQ-CCB	---		
18	SEQ-CCB	---		
19	B120919.BK1	1.00		
20	BK2			
21	BK3			
22	BK4			
23	SRM1			
24	SRM2			

Comments: \_\_\_\_\_

Balance ID: \_\_\_\_\_

Hg Analysis Sheet : (T-Hg) / Other: \_\_\_\_\_

Sequence: 120042

Analyst: BJT

Date: 6/13/12

Run #/ Pos #	Brooks Rand Sample ID	Analy. Vol. (mL)	Dilution Factor	Analysis comments / For spiked QC: Source sample, standard ID, and spiked volume (mL)
25	1220016-01	1.00		
26	1220019-01	0.050		
27	↓ -02	↓		
28	↓ -03	↓		
29	CV	↓		10ng/ml
30	CVB			
31	B120919 DUP1	0.050		
32	↓ MS1	↓		
33	↓ MSD1	↓		
34	1220019-04			
35	↓ -05	↓		
36	↓ -06	↓		
37	↓ -07	↓		
38	↓ -08	↓		
39	↓ -09	↓		
40	↓ -11	↓		
41	CV	↓		
42	CVB			
43	B120919 DUP2	0.050		10ng/ml
44	↓ MS2	↓		
45	↓ MSD2	↓		
46	1220019-12			
47	↓ -13	↓		
48	↓ -14	↓		

Comments: \_\_\_\_\_

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Hg Analysis Sheet: T-Hg / Other: \_\_\_\_\_

Sequence: <sup>13JT</sup> ~~122~~ 1200442

Analyst: 13JT

Date: 6/13/12

Run #/ Pos #	Brooks Rand Sample ID	Analy. Vol. (mL)	Dilution Factor	Analysis comments / For spiked QC: Source sample, standard ID, and spiked volume (mL)
49	1221015-01	0.050		
50	↓ -02	↓		
51	↓ -03	↓		
52	B120919 DUP3	↓		
53	CU	↓		long/ml
54	CUB			
55	B120919 MS3	0.050		
56	↓ MS03	↓		
57	1221015-024	↓		
58	-05	↓		
59	-06	↓		
60	-07	↓		
61	-08	↓		
62	-10	↓		
63	↓ -11	↓		
64	B120919 DUP4	↓		
65	CU	↓		long/ml
66	CUB			
67	B120919 MS4	0.050		
68	↓ MS04	↓		
69	1221015-12	↓		
70	CU	↓		long/ml
71	CUB			
72	WASTE			

73 WASTE  
TE 6/13/12

Comments: \_\_\_\_\_

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Hg Analysis Sheet: (T-Hg) / Other: \_\_\_\_\_

Sequence: 1200442

Analyst: BJT

Date: 6/13/12

Run #/ Pos #	Brooks Rand Sample ID	Analy. Vol. (mL)	Dilution Factor	Analysis comments / For spiked QC: Source sample, standard ID, and spiked volume (mL)
72	122019-04 RE1	1		
73	-09 RE1			
74	-14 RE1			
75	122105-03 RE1	0.05		
76	B120919-DUP5	1		RE of DUP3
77	122105-65 RE1	1		
78	-08 RE1			
79	-11 RE1			
80	B120919-DUP6	1		RE of DUP4
81	CEV	0.05		10ng/ml
82	CCB	0		
83	Waste			
84	Waste			
85	Rinse			
86				
87				
88				
89				
90	↓			
91	UV	1.00		
92	CEV	0.050		10ng/ml
93	CCB			
94	122105-12 RE1	1.00		
95	UV	0.050		10ng/ml
96	CCB			

Comments: \_\_\_\_\_

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**Brooks Rand Labs**

THg Sed/Soil Prep Benchsheet

Page 1 of 1

SOP / Rev #: BR-0002 Rev 010d

Prepped By: AAP

Batch: B120919

Preparation Start Date/Time\*:

6.8.12/1416

Preparation End Date/Time\*\*:

6.10.12/1844

\* Time is when the first reagents are added.

\*\* Time is when the last sample is brought up to volume

Sample ID	Sample Mass (g)
1220016-01	0.991
1220019-01	0.557
1220019-02	0.536
*1220019-03	0.499
1220019-04	0.502
1220019-05	0.505
1220019-06	0.560
1220019-07	0.498
1220019-08	0.536
1220019-09	0.540
*1220019-11	0.544
1220019-12	0.531
1220019-13	0.510
1220019-14	0.511
1221015-01	0.529

Sample ID	Sample Mass (g)
1221015-02	0.562
*1221015-03	0.547
1221015-04	0.511
1221015-05	0.538
1221015-06	0.496 0.512
1221015-07	0.510
1221015-08	0.510
1221015-10	0.527
*1221015-11	0.524
1221015-12	0.555
B120919-BLK1	—
B120919-BLK2	—
B120919-BLK3	—
B120919-BLK4	—
B120919-DUP1	0.502

Sample ID	Sample Mass (g)
B120919-DUP2	0.517
B120919-DUP3	0.539
B120919-DUP4	0.539
B120919-MS1	0.528
B120919-MS2	0.551
B120919-MS3	0.536
B120919-MS4	0.507
B120919-MSD1	0.507
B120919-MSD2	0.519
B120919-MSD3	0.537
B120919-MSD4	0.546
B120919-SRM1	0.199
B120919-SRM2	0.207

Batch QC ID	Sample Source	Spike vol (uL)	Spike conc (ng/mL)	Spike/CRM ID	Spike Witness
MS/D 1	1220019-03	250	10,000	1223068	6/18/12 MJT
MS/D 2	1 - 11	1	1	1	1
MS/D 3	1221015-03	1	1	1	1
MS/D 4	1 - 11	1	1	1	1
SRM 1/2	ME55-3	—	—	1209037	—

Reagent	ID
8mL HCl	1218063
2mL HNO <sub>3</sub>	1218046
Balance ID	BL-06

0.5 mL BrCl	1223021
Final Dilution Vol	40mL

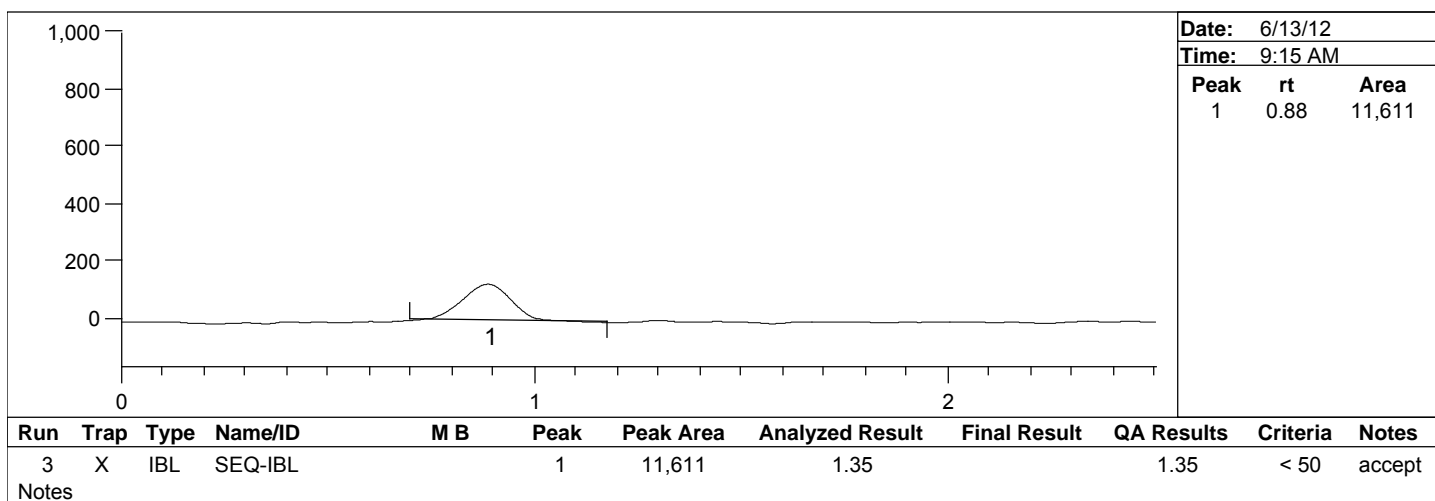
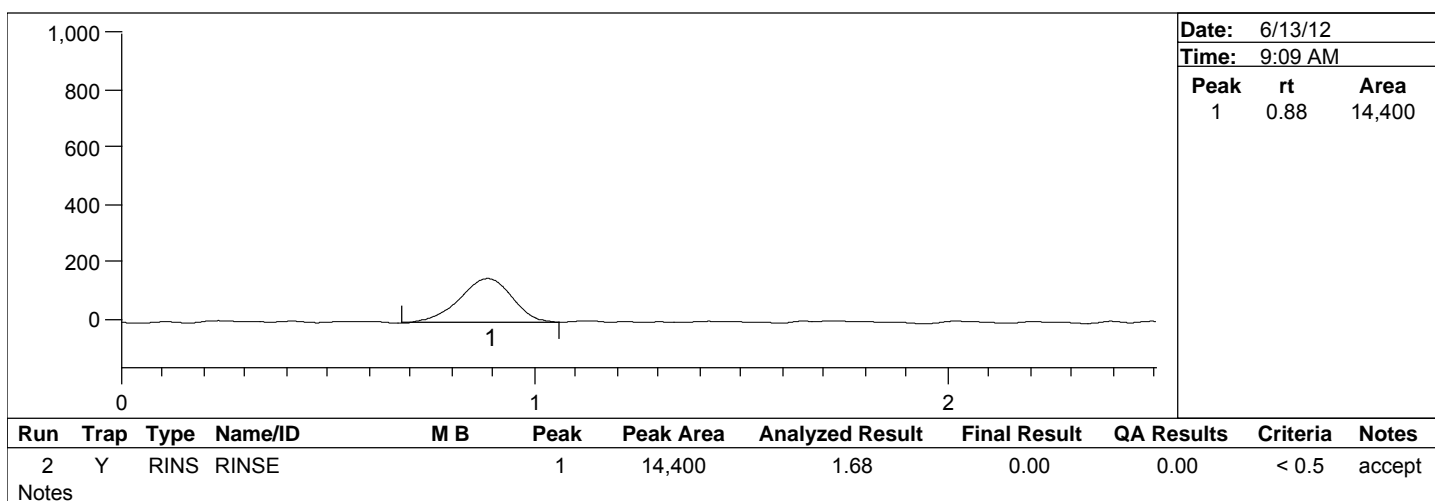
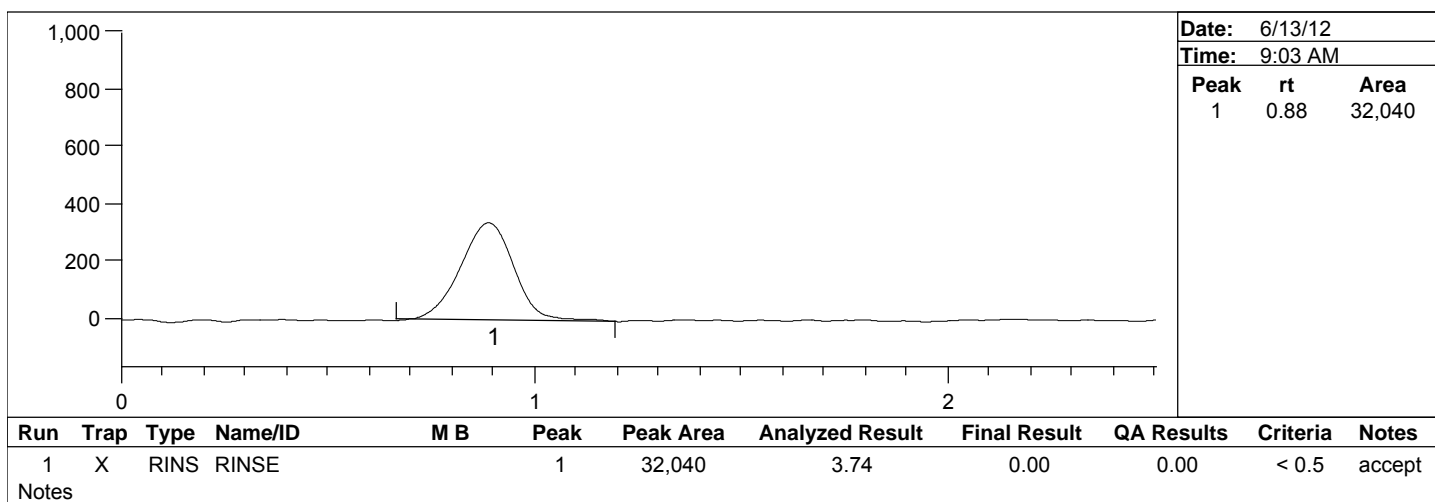
- AAL samples (w.o. 1220019 & 1221015) will be weighed at 0.5g if they appear oily 6.8.12 AAP
- MSD1 - tip needed to be rinsed w/ DIW when spiking

# Peak Report

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Project Number(s): 1200442  
Instrument ID: THG-06

Date Analyzed: 6/13/12  
Analyst Name: BJT

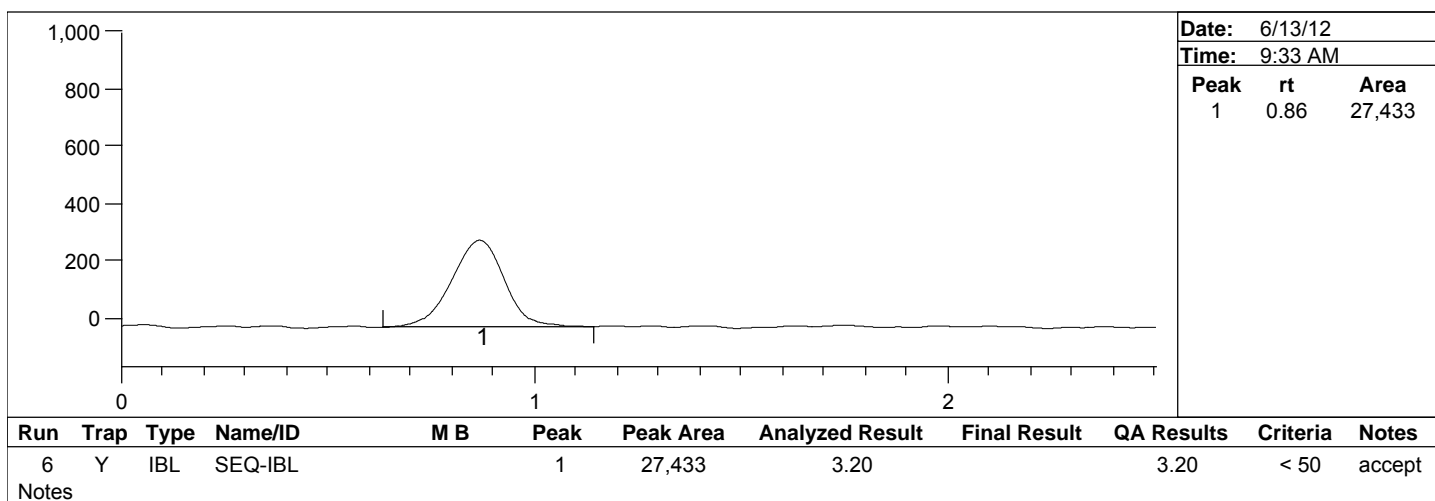
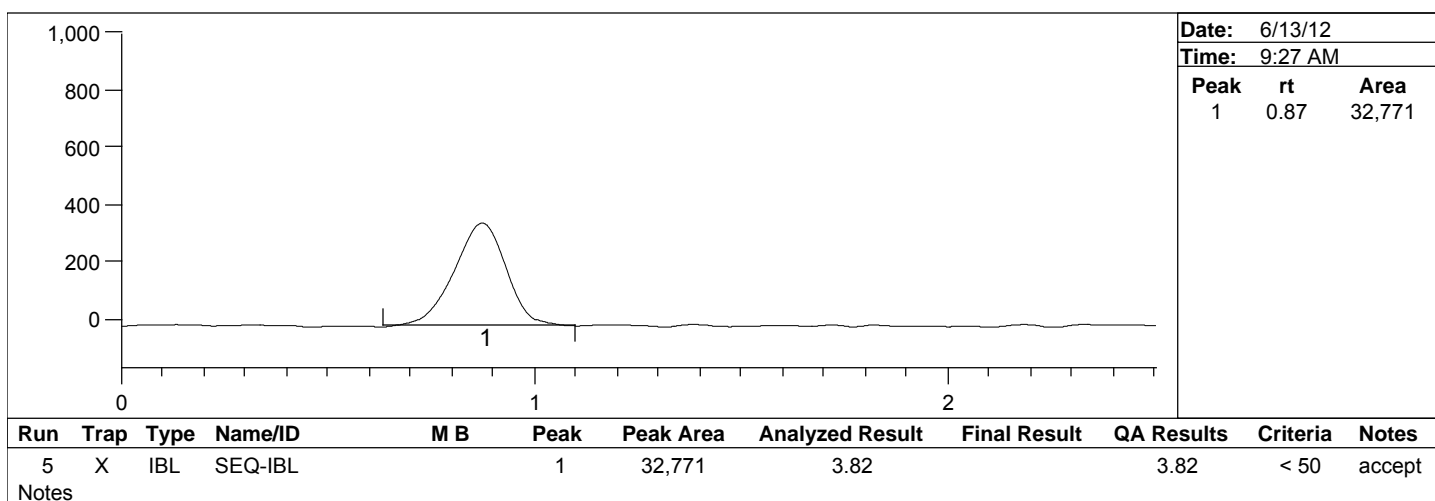
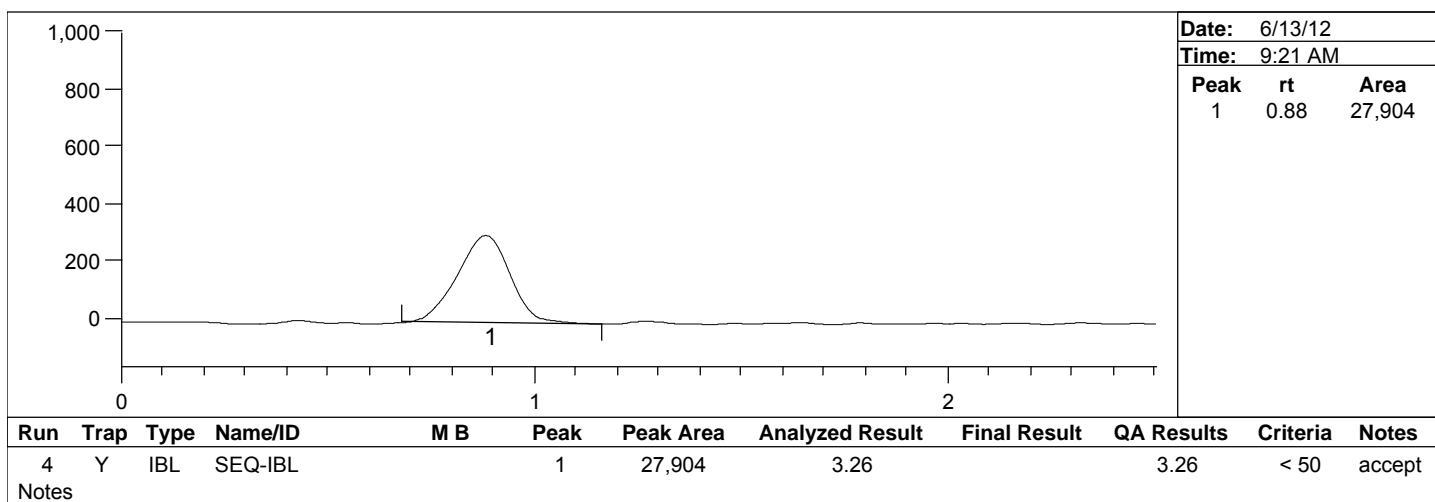


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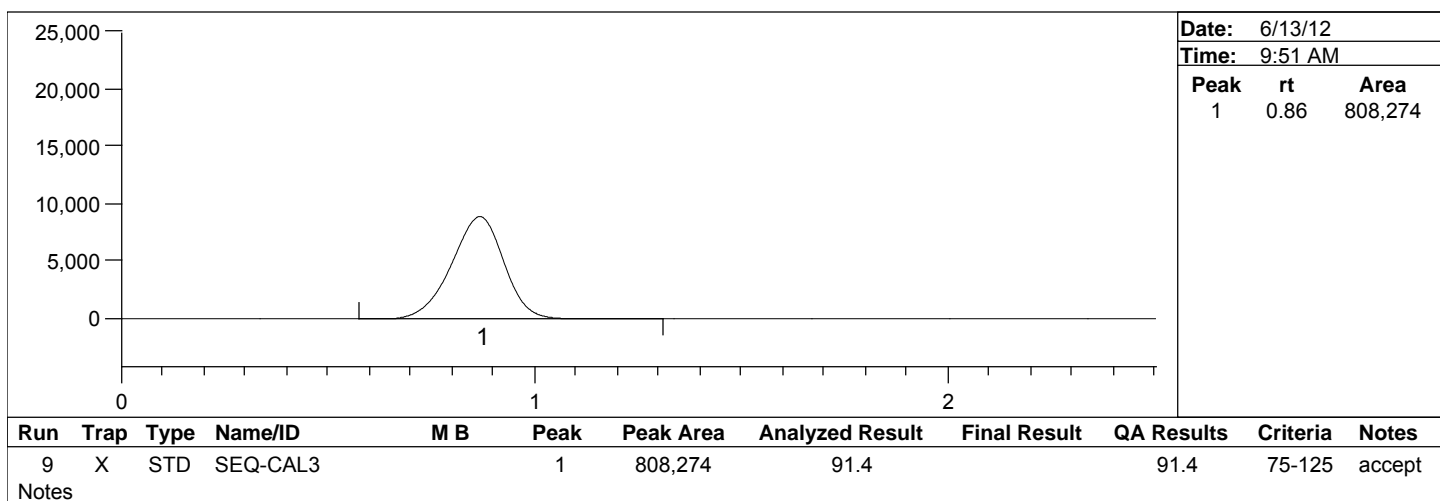
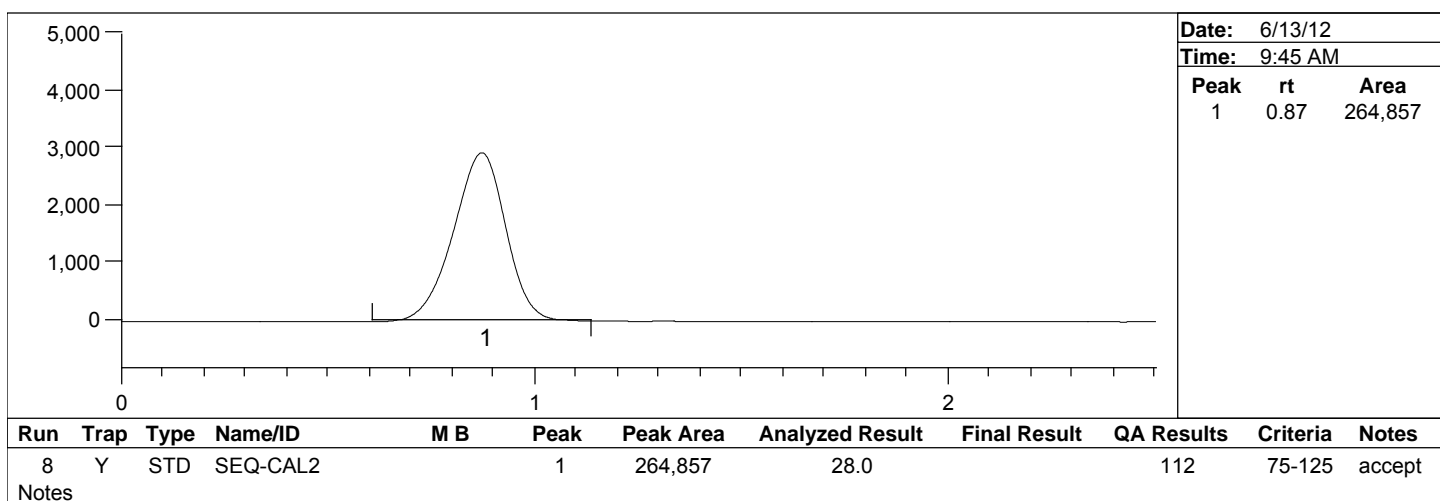
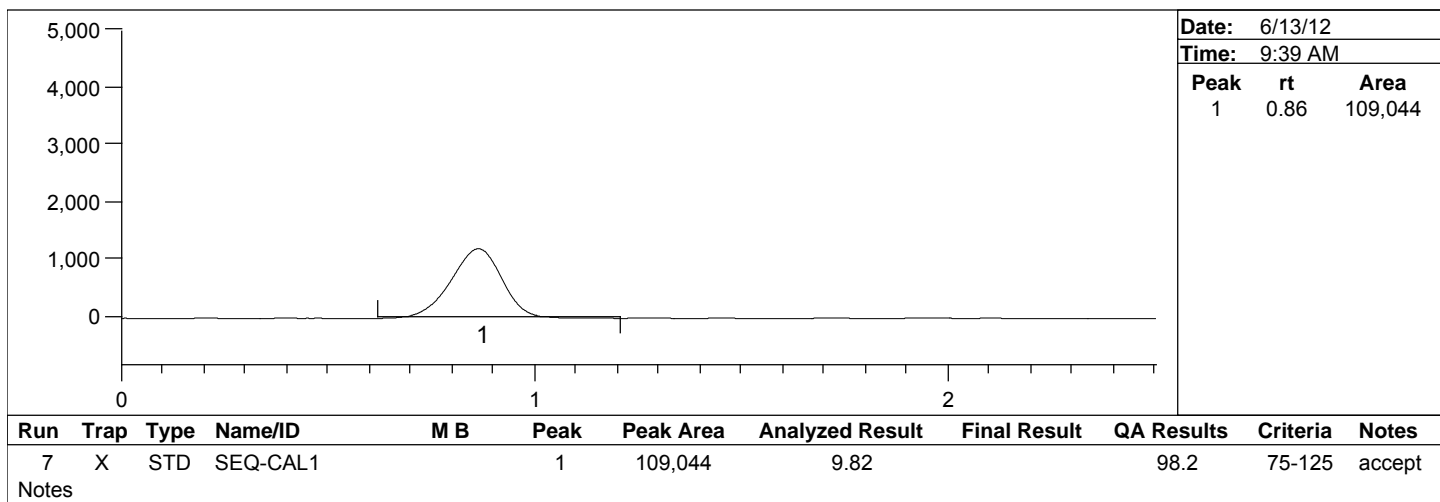


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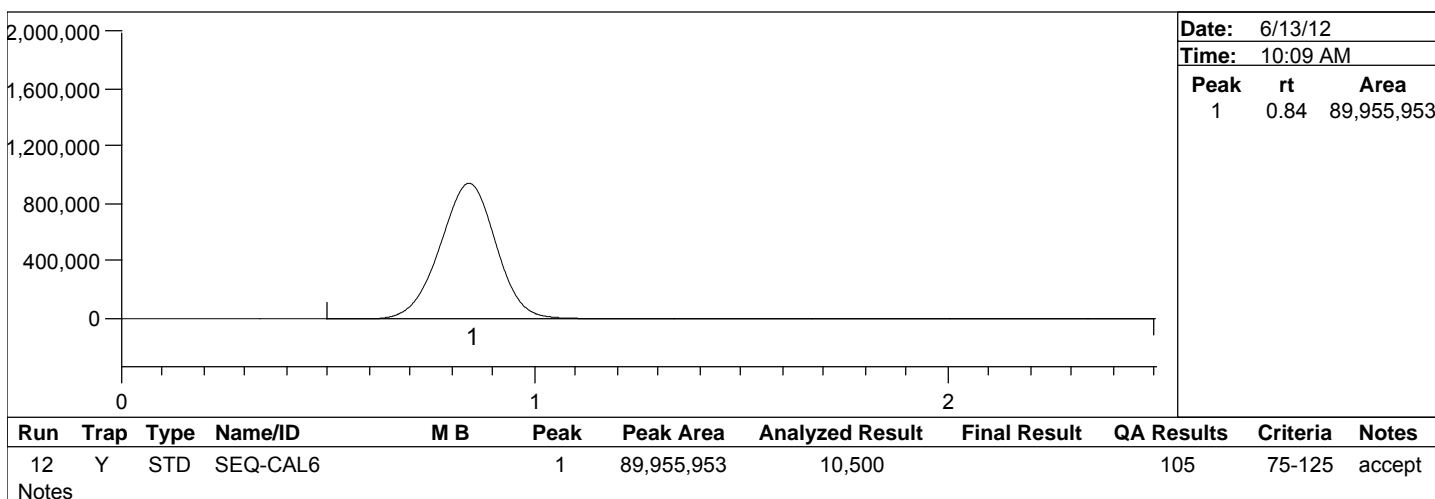
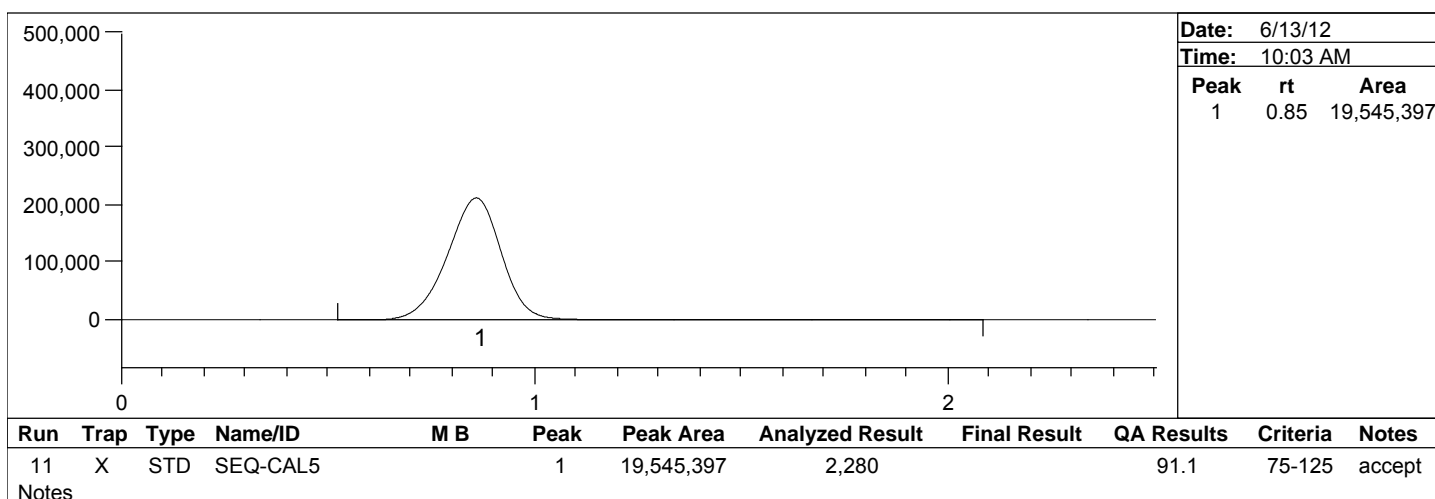
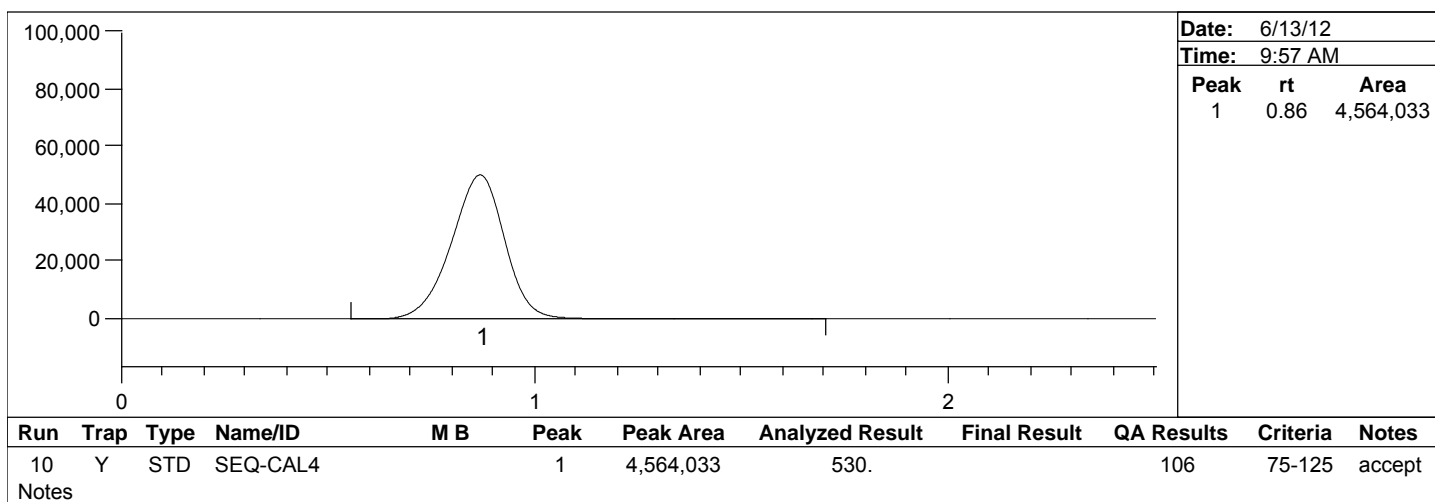


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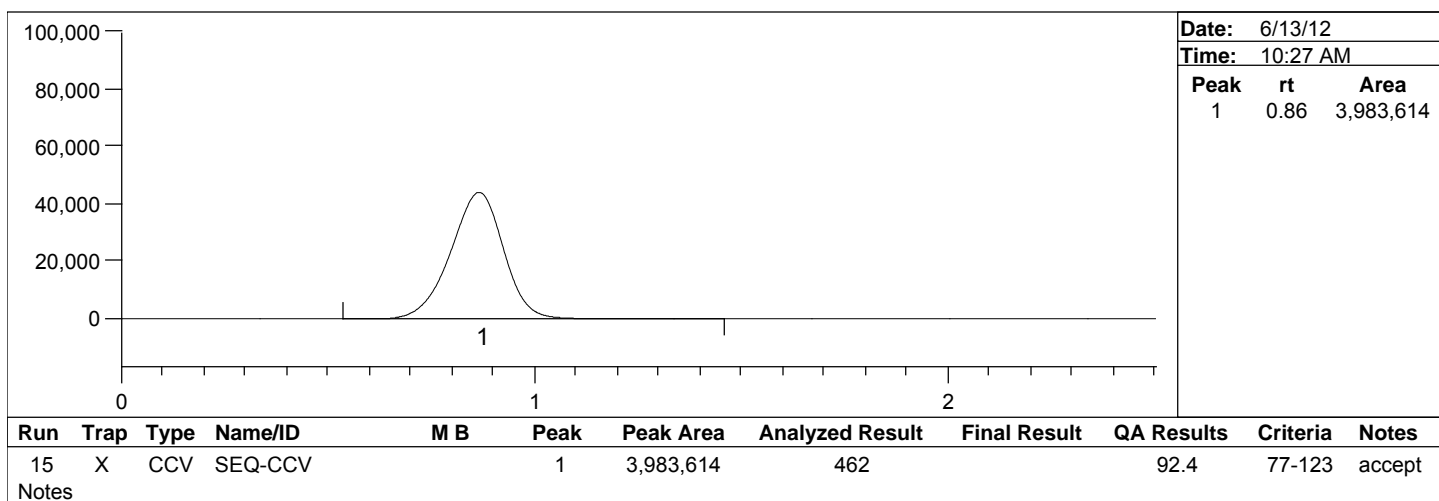
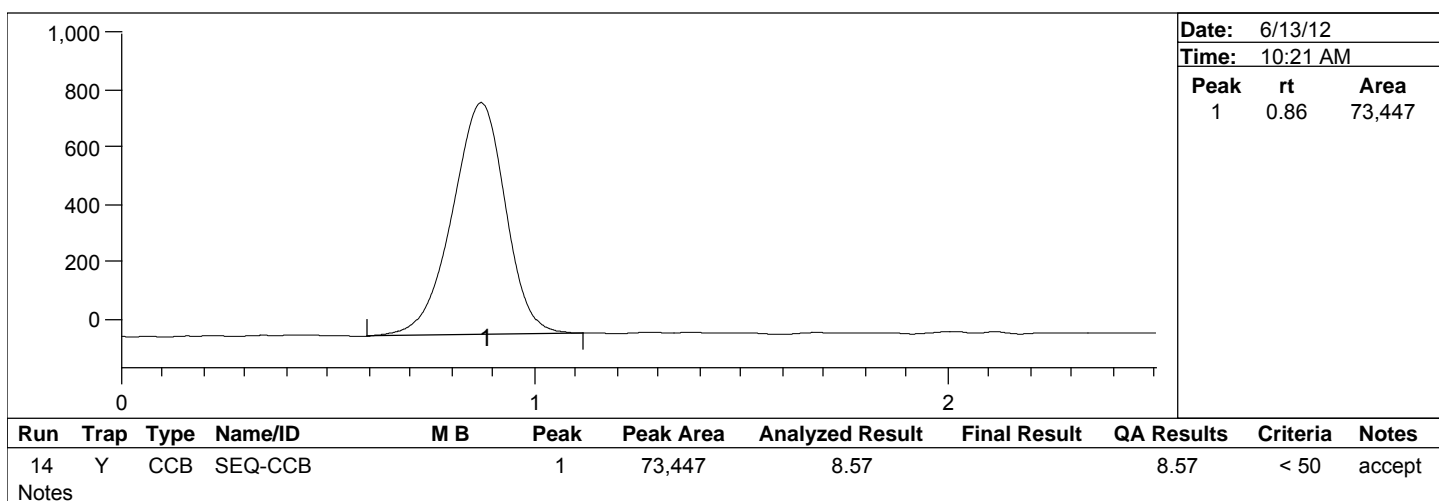
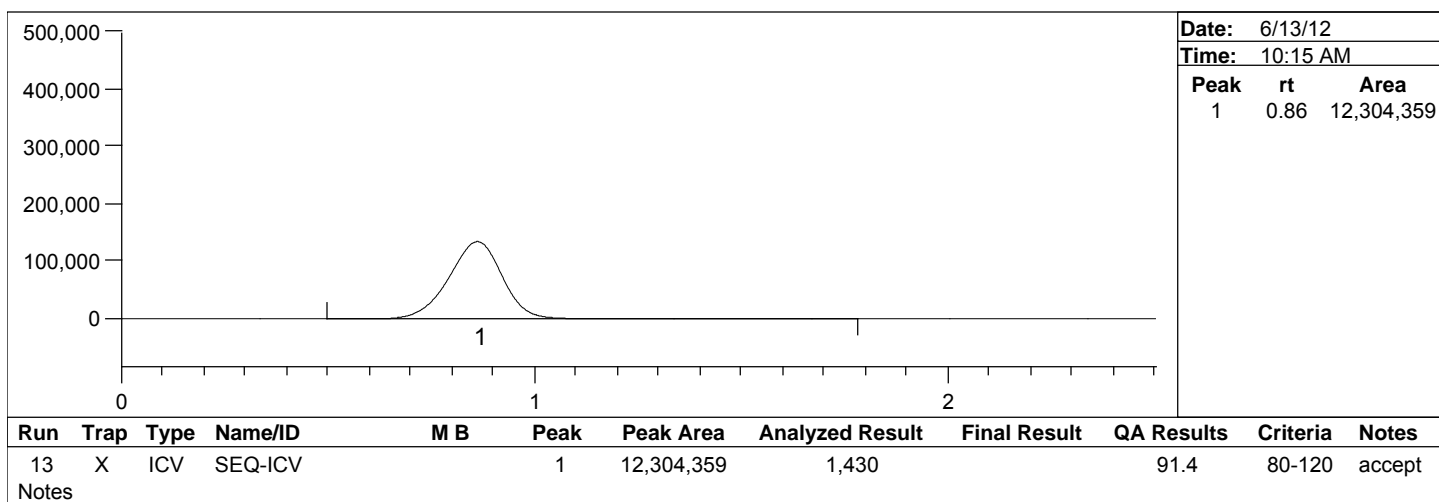


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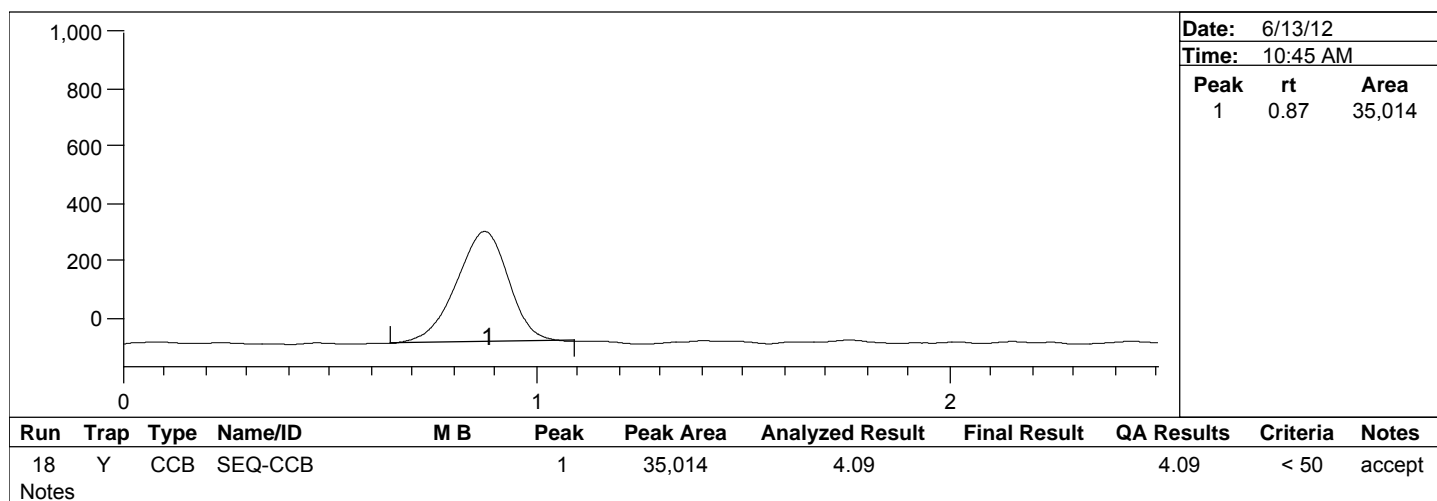
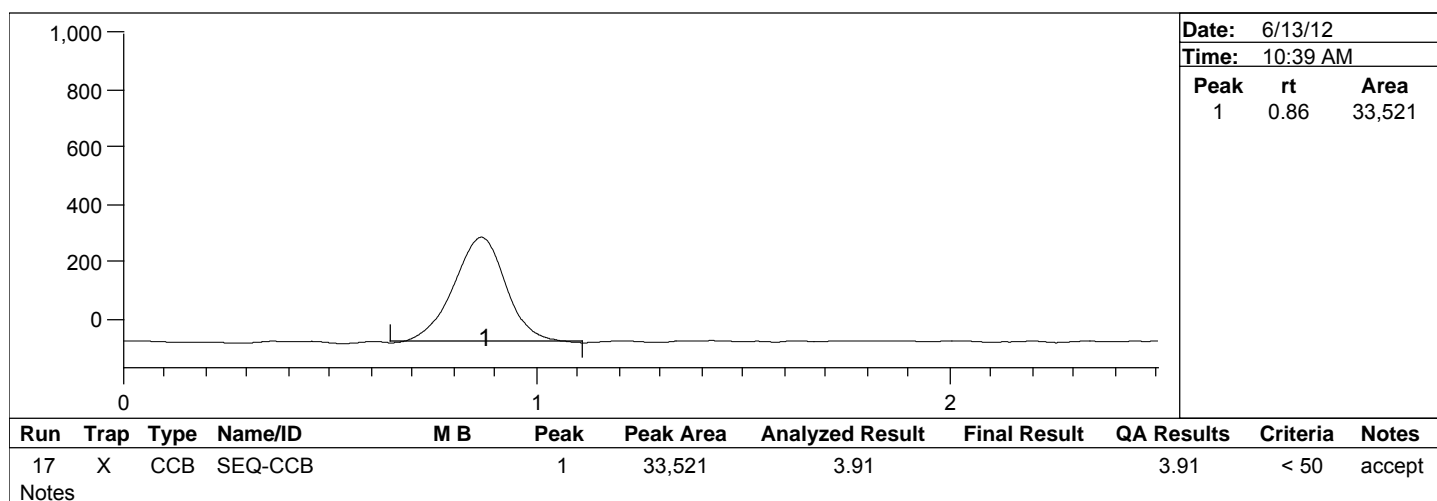
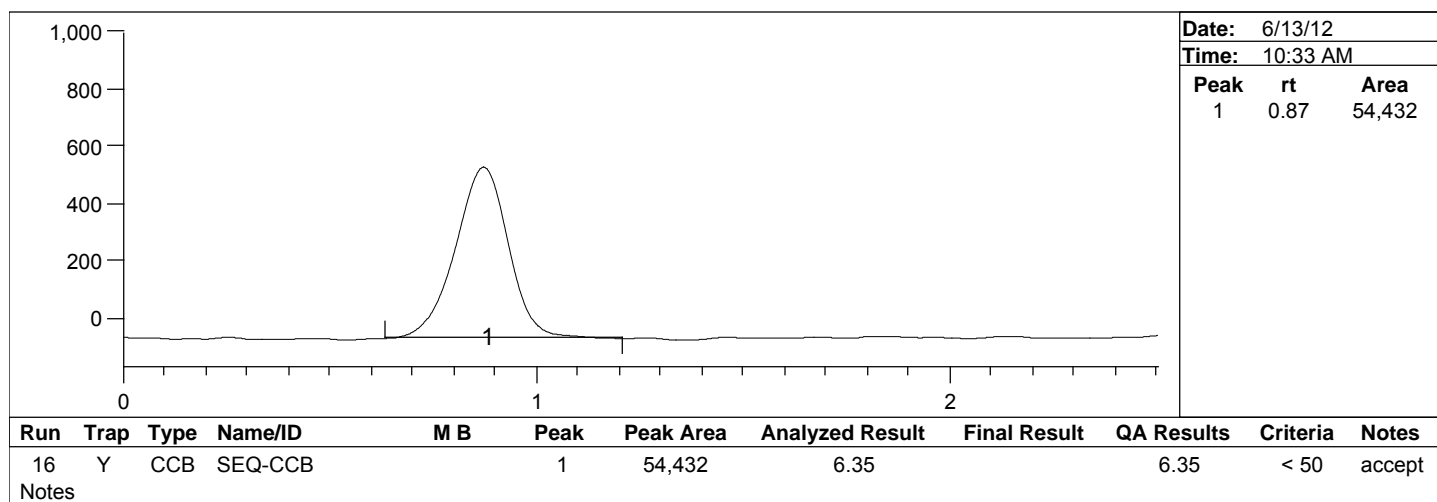


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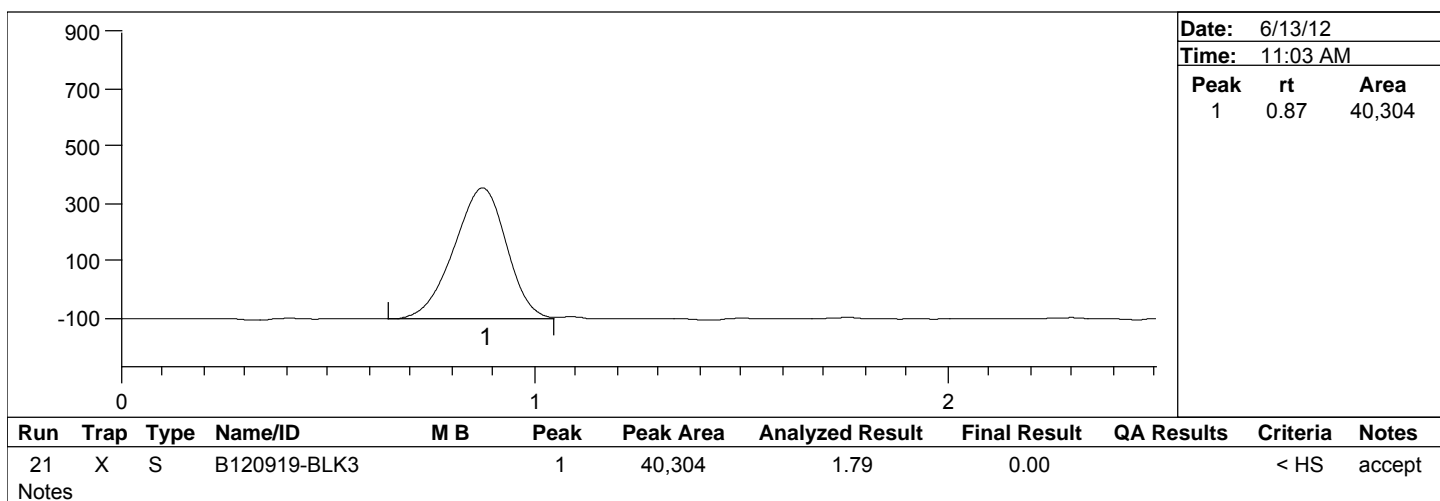
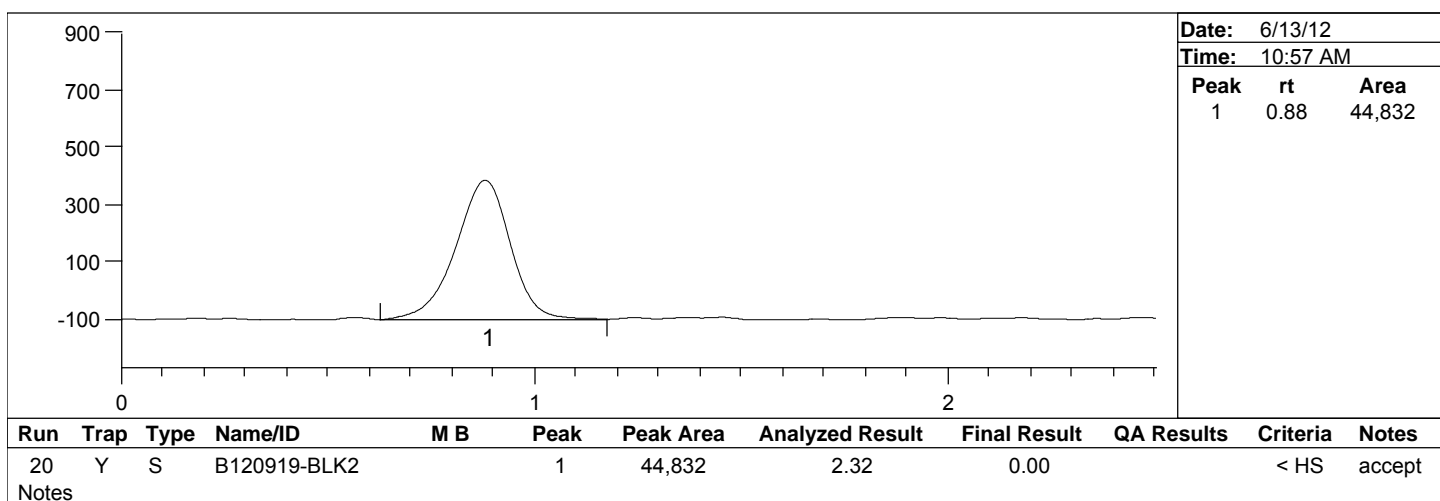
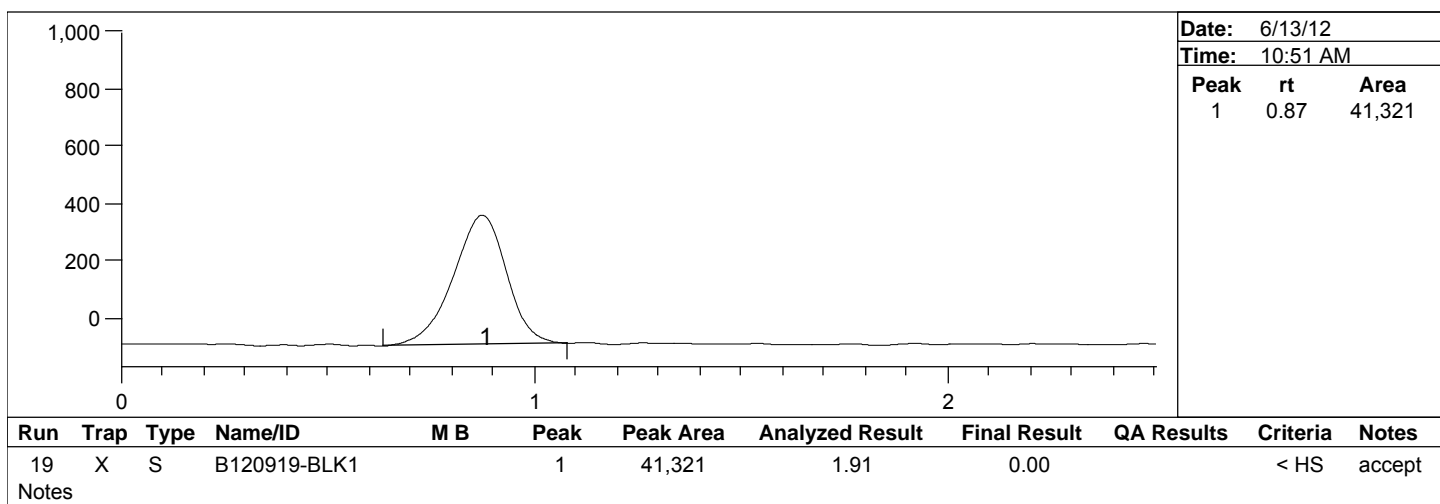


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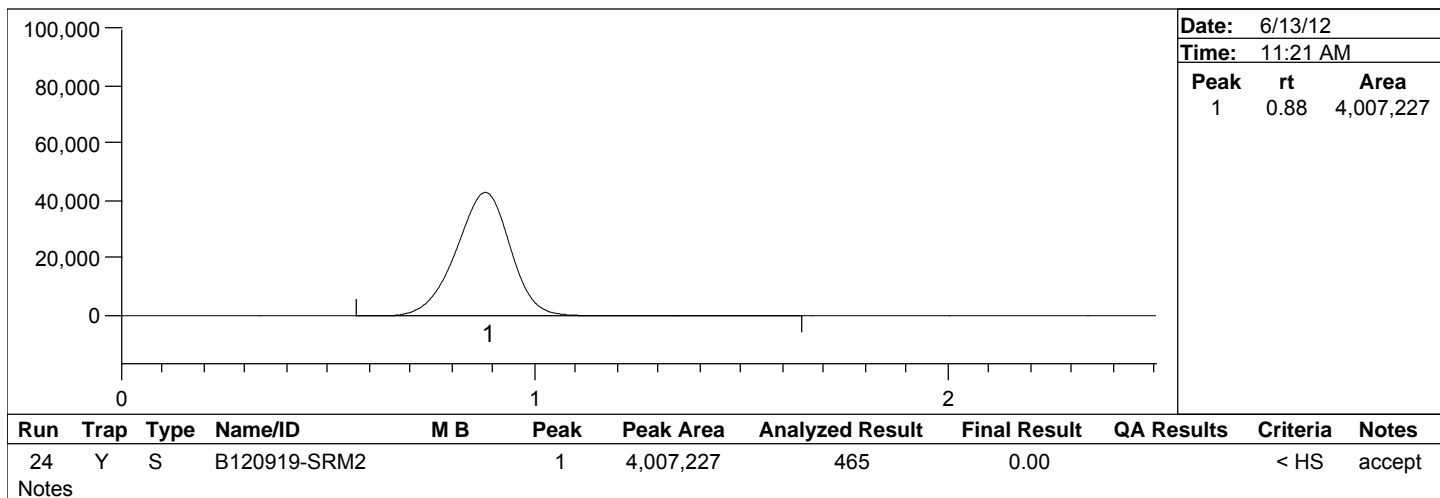
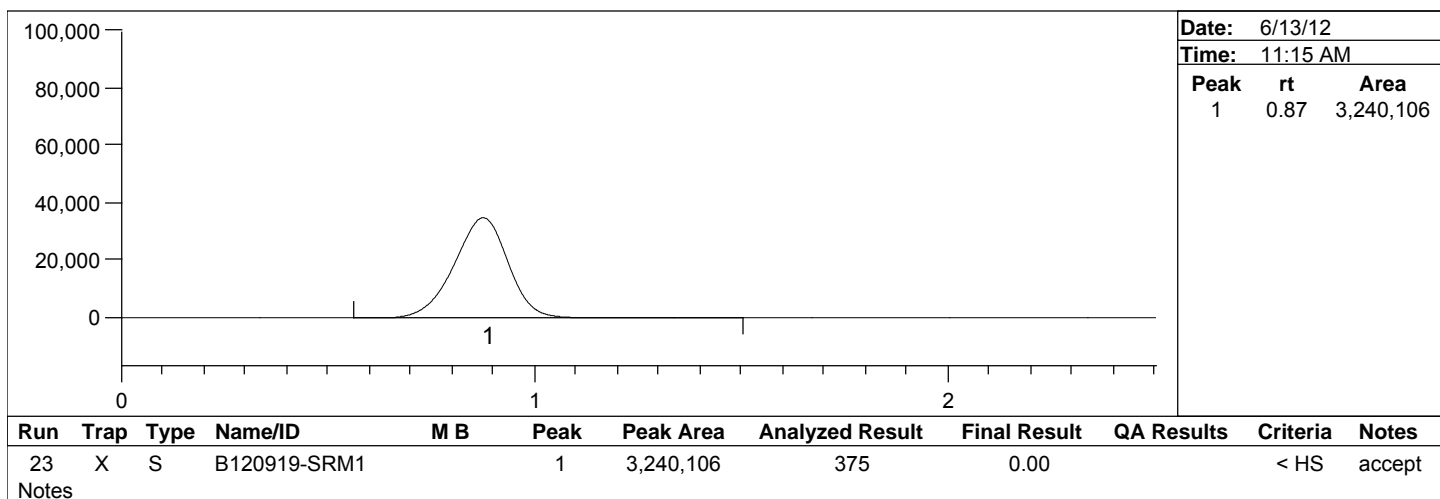
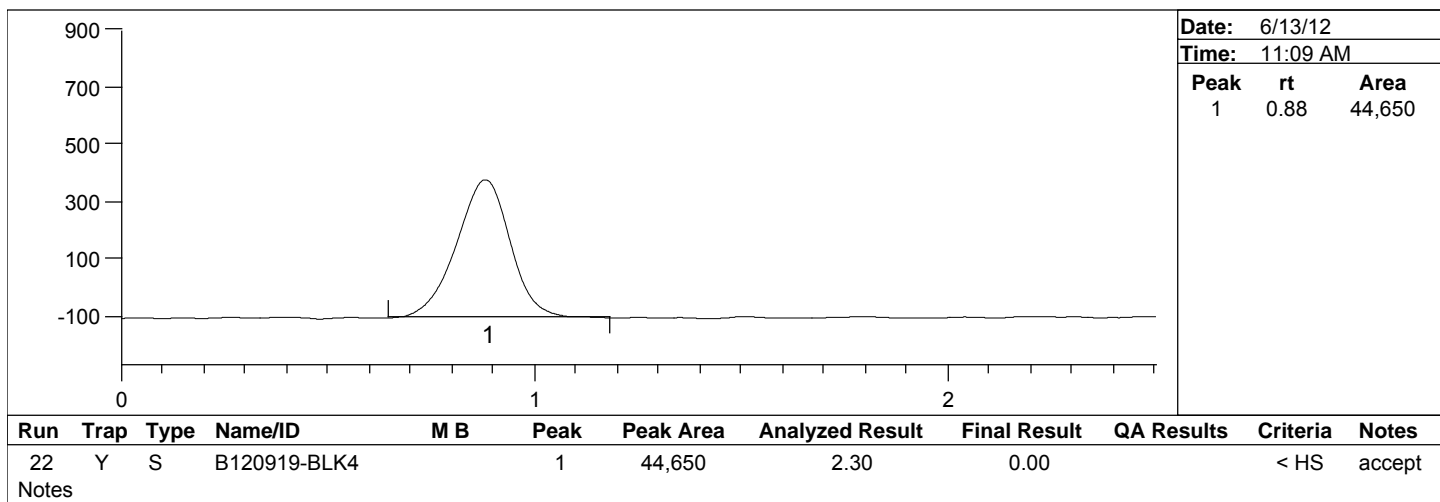


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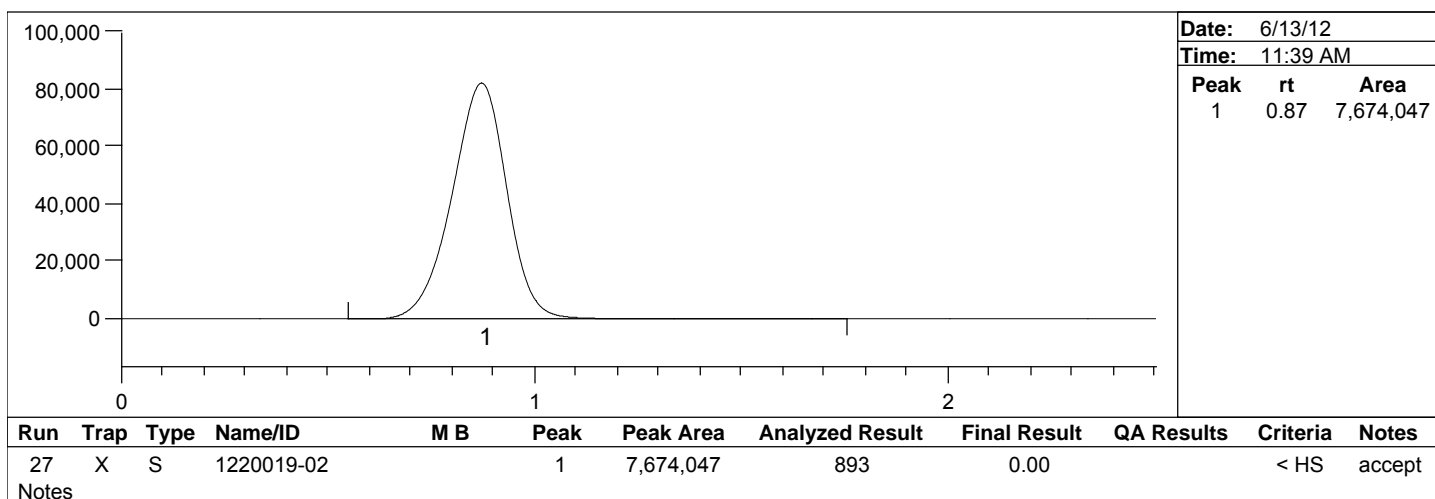
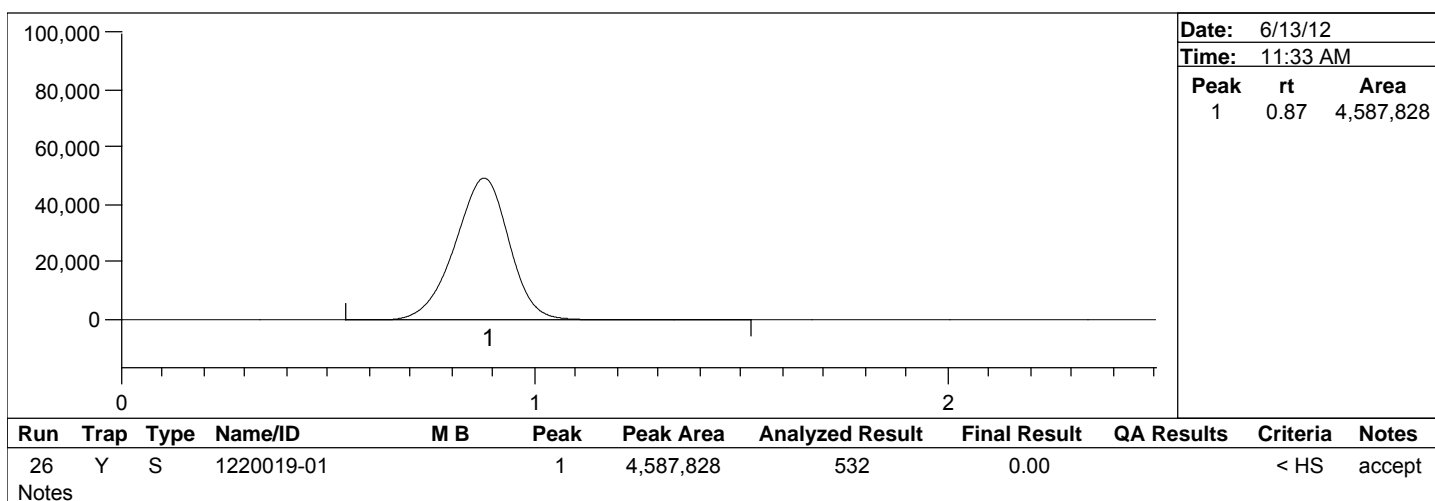
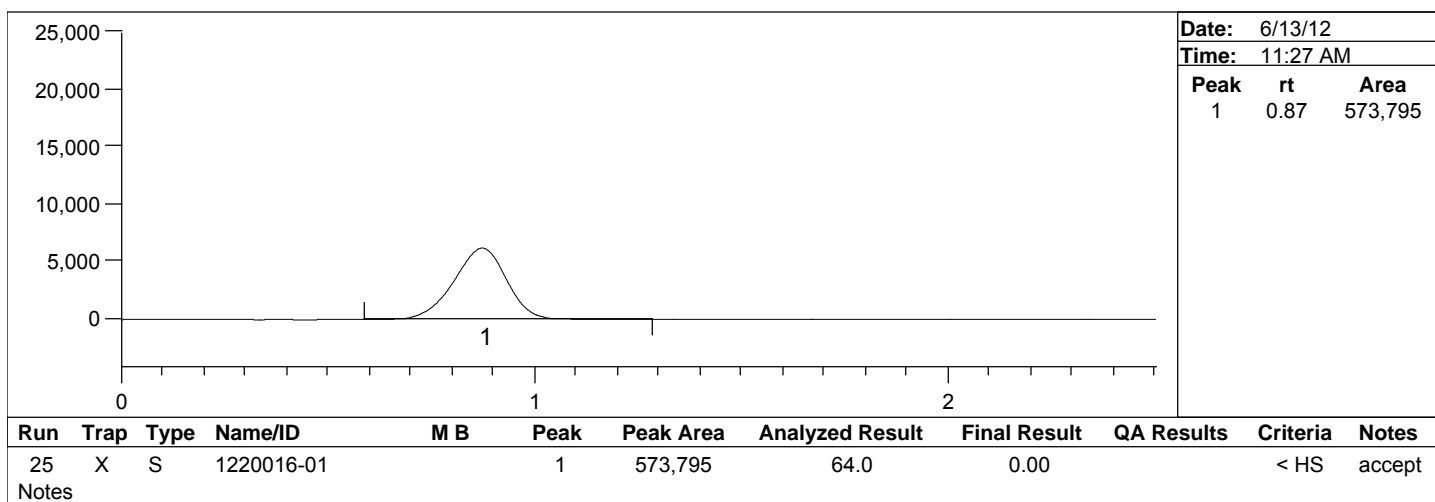


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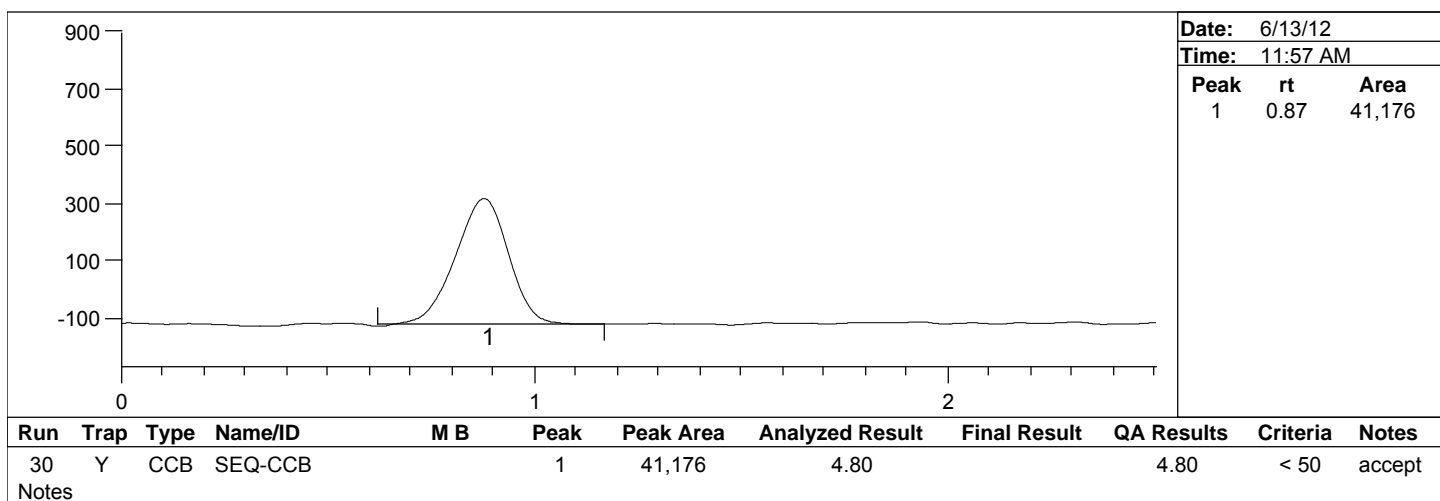
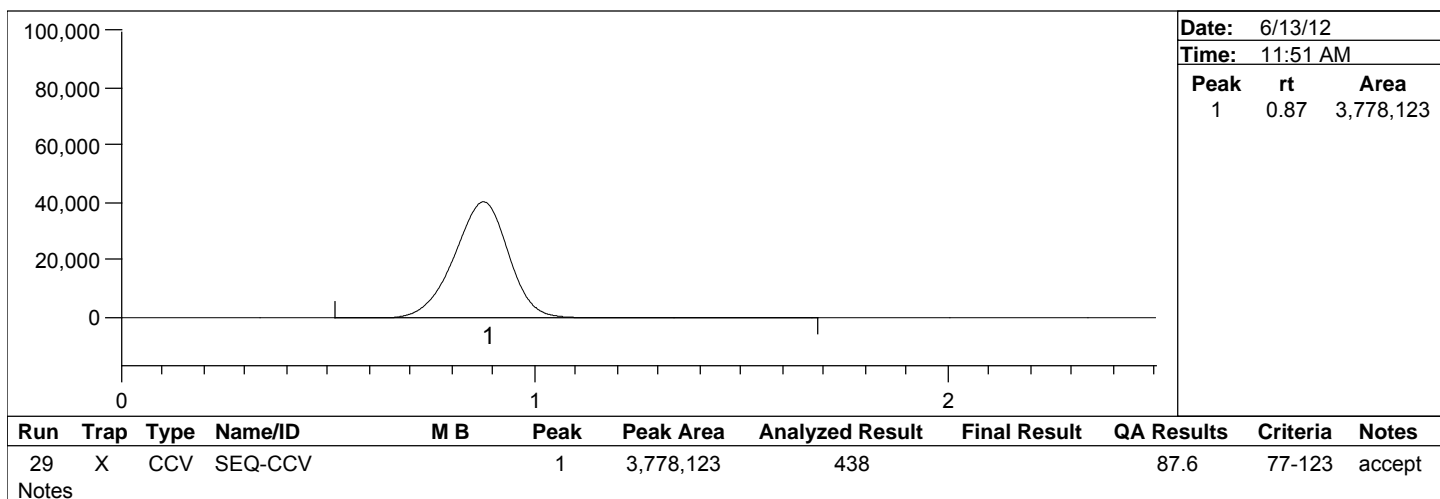
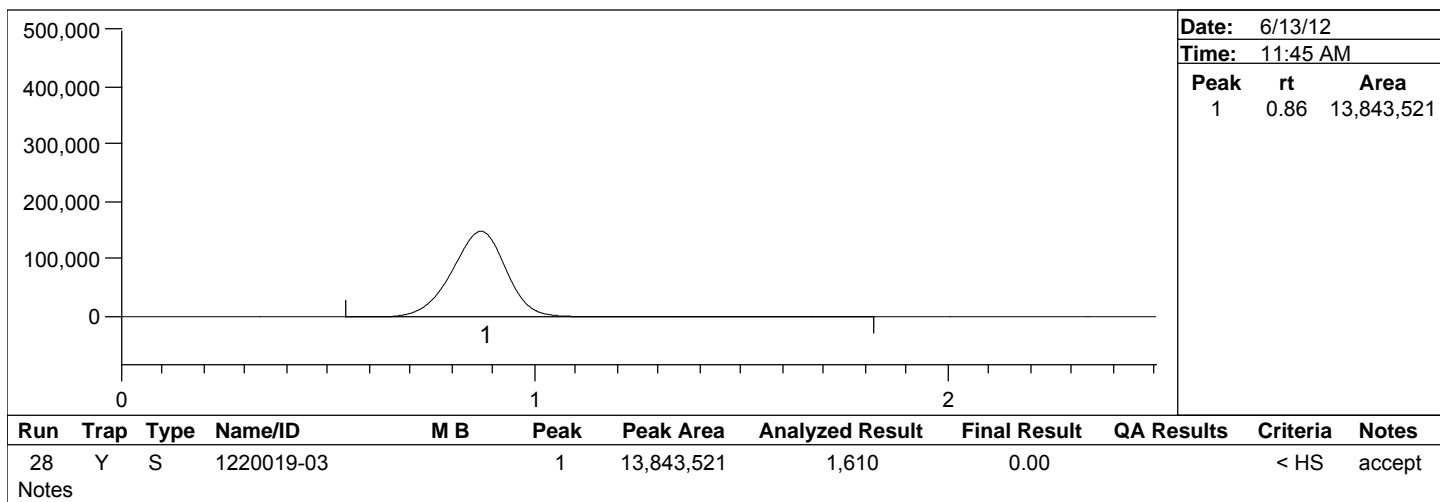


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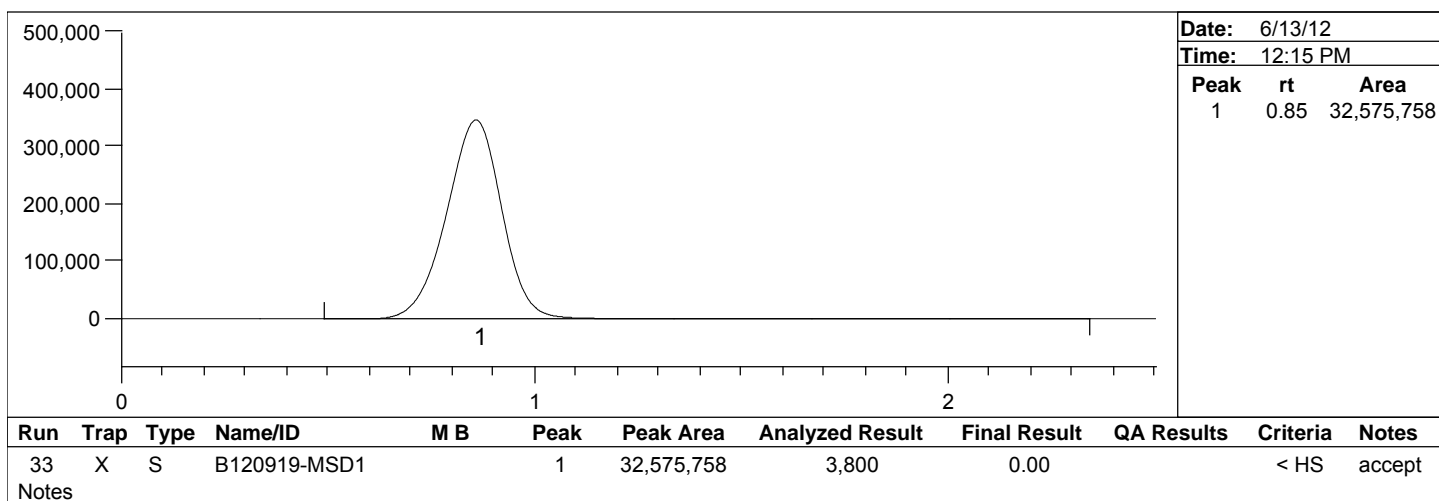
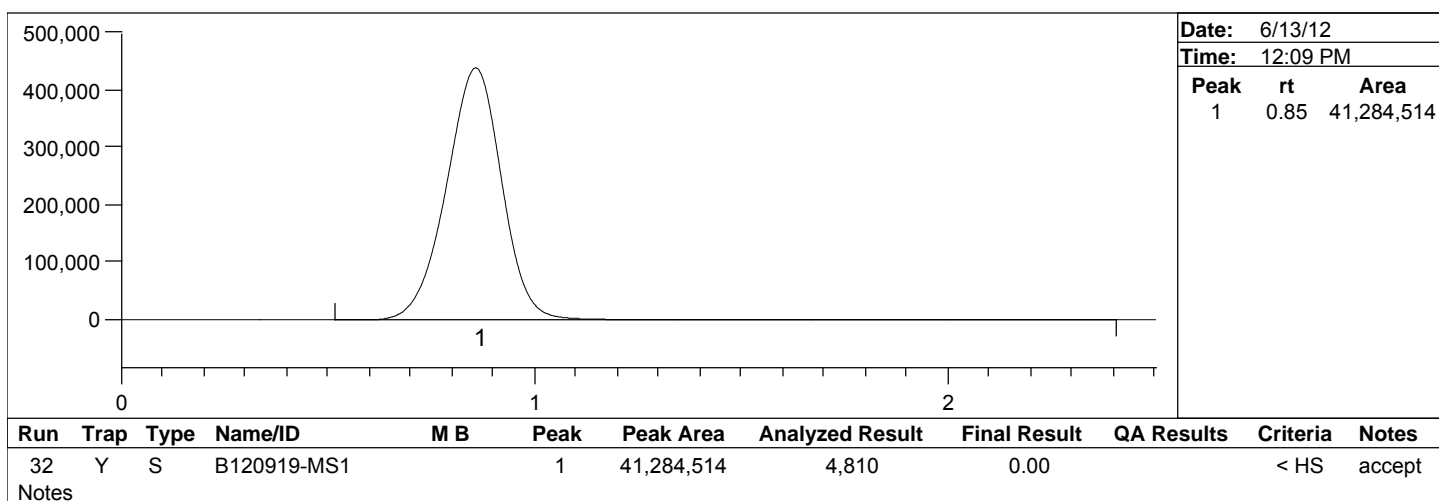
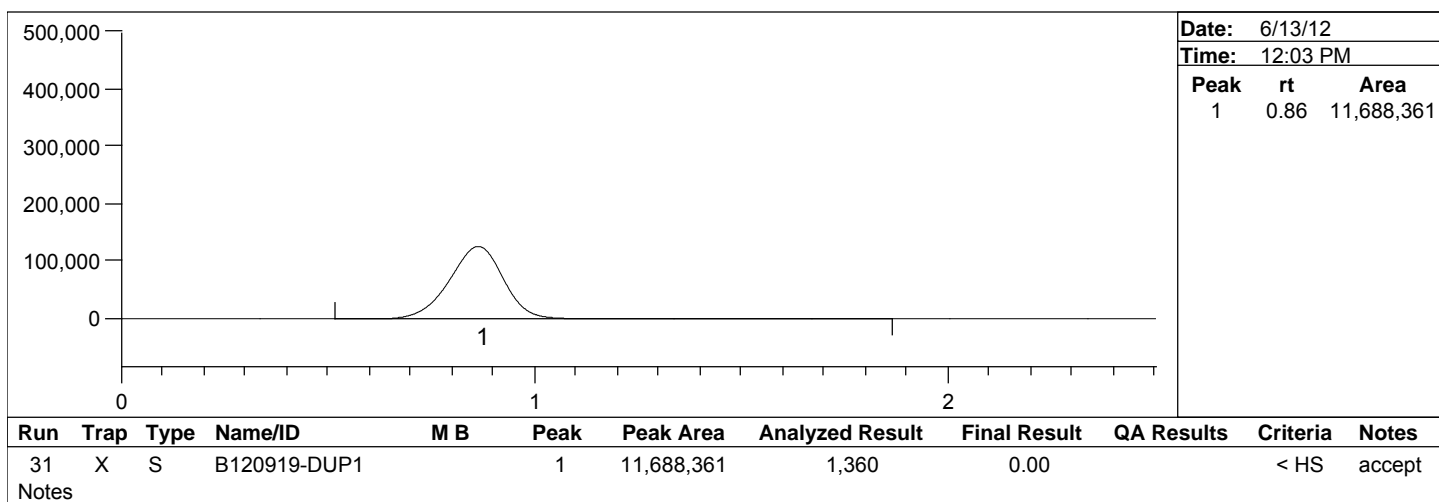


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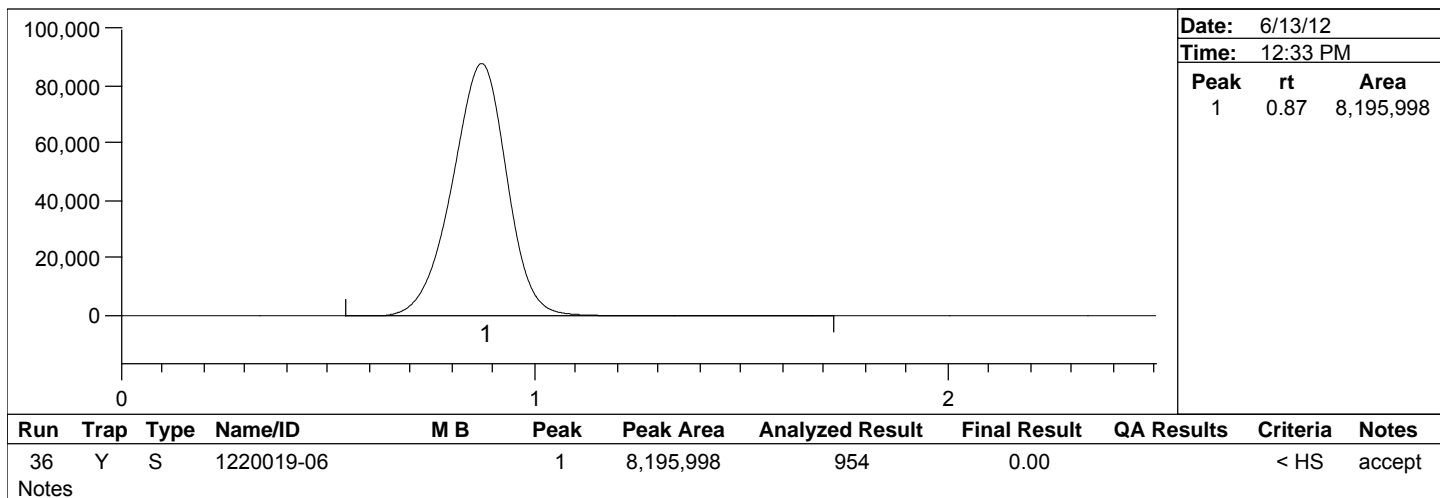
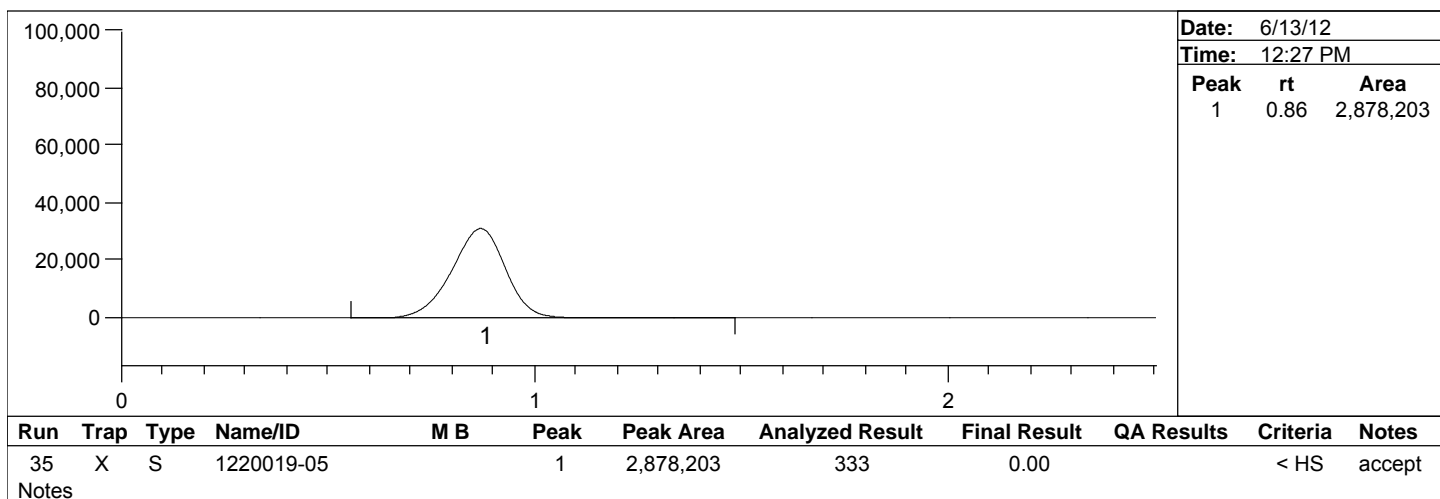
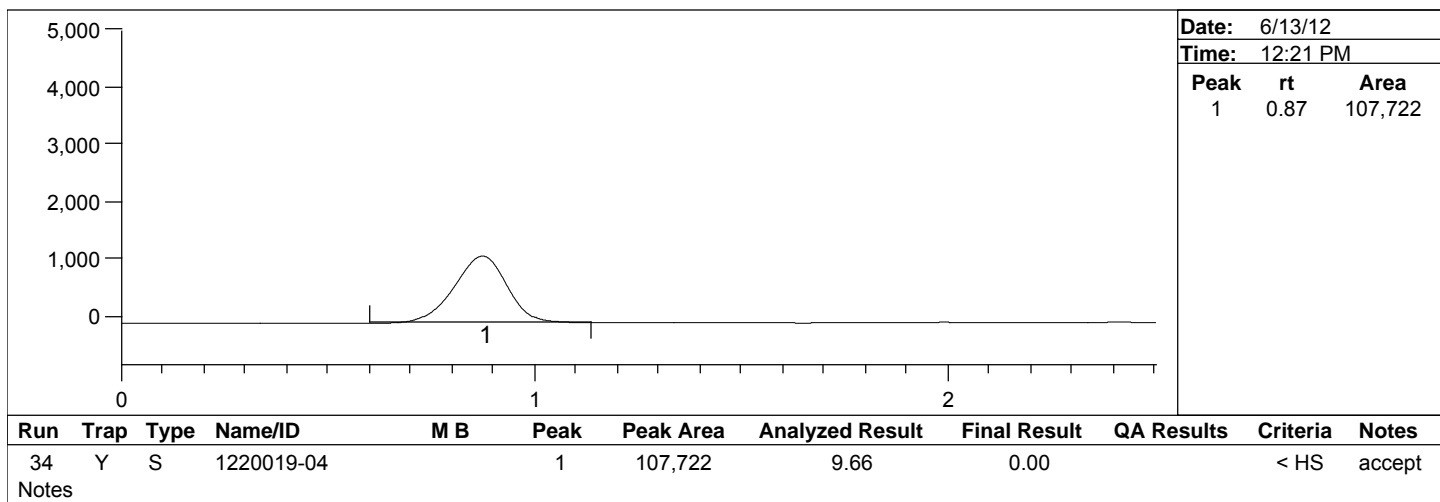


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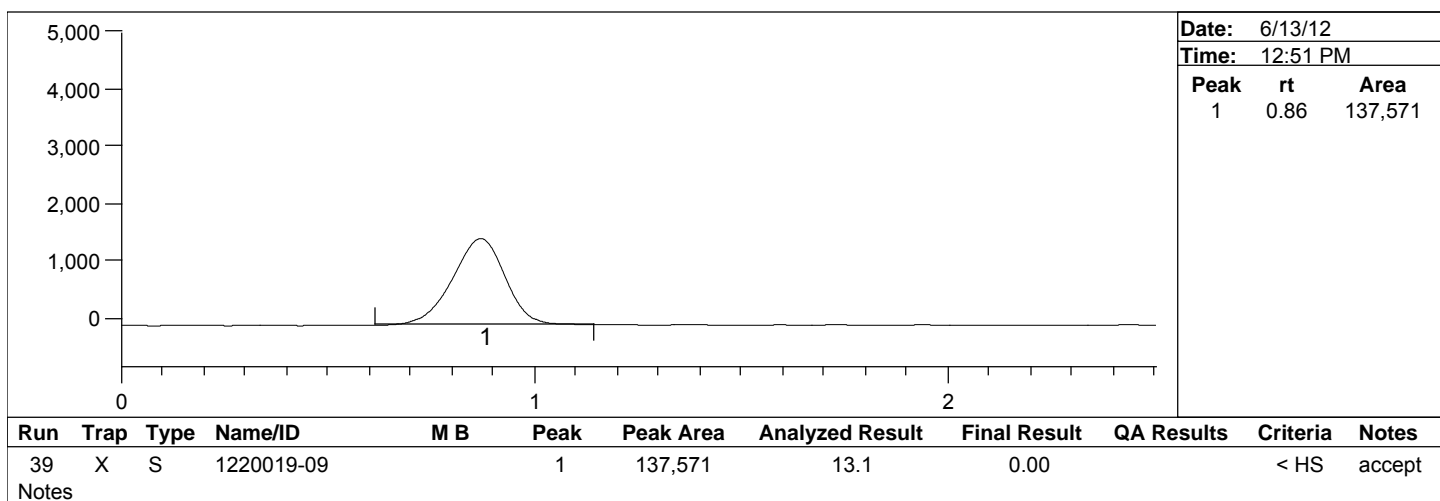
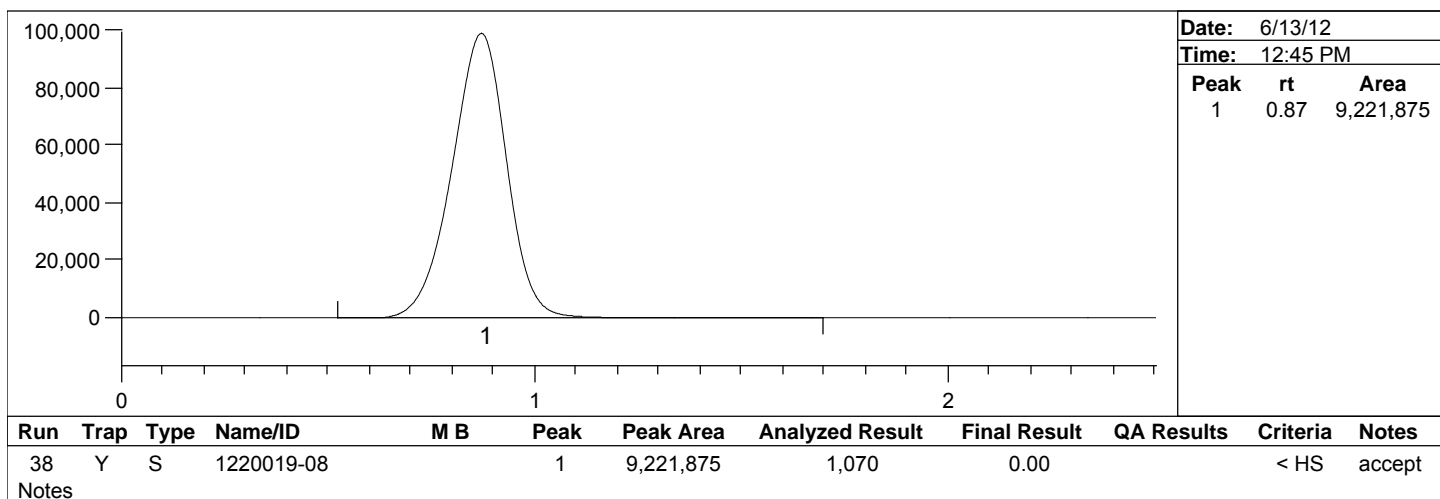
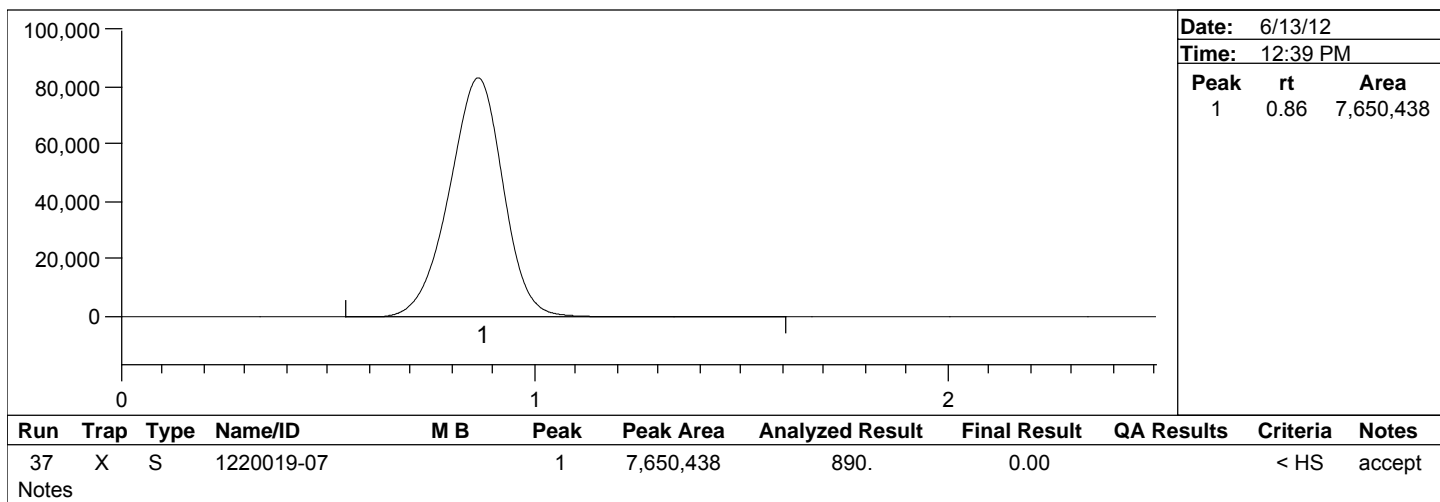


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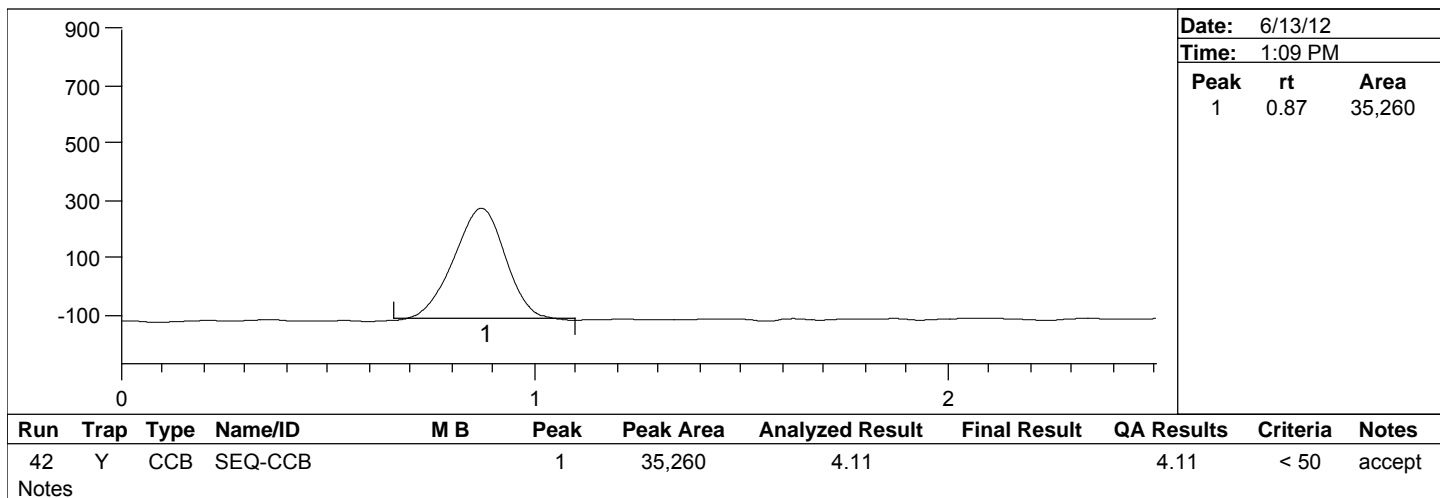
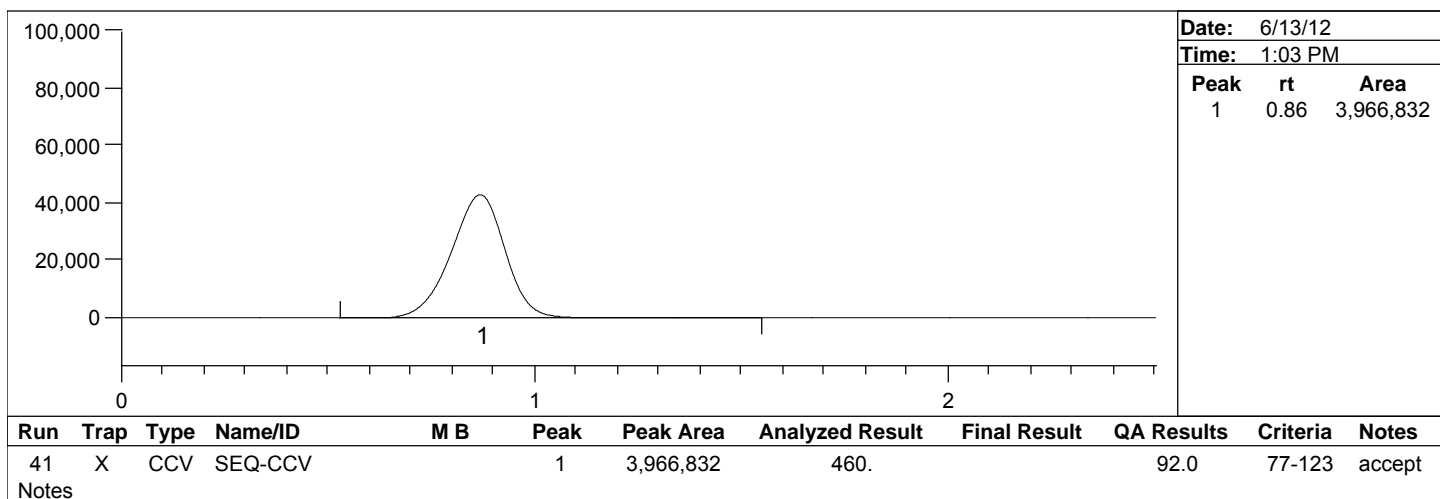
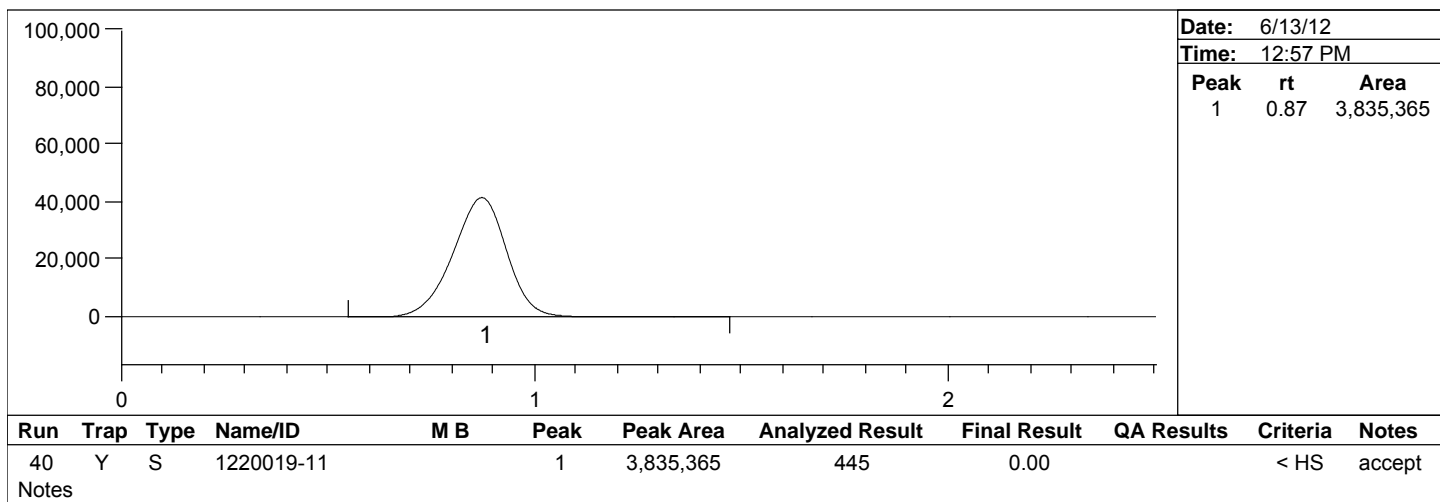


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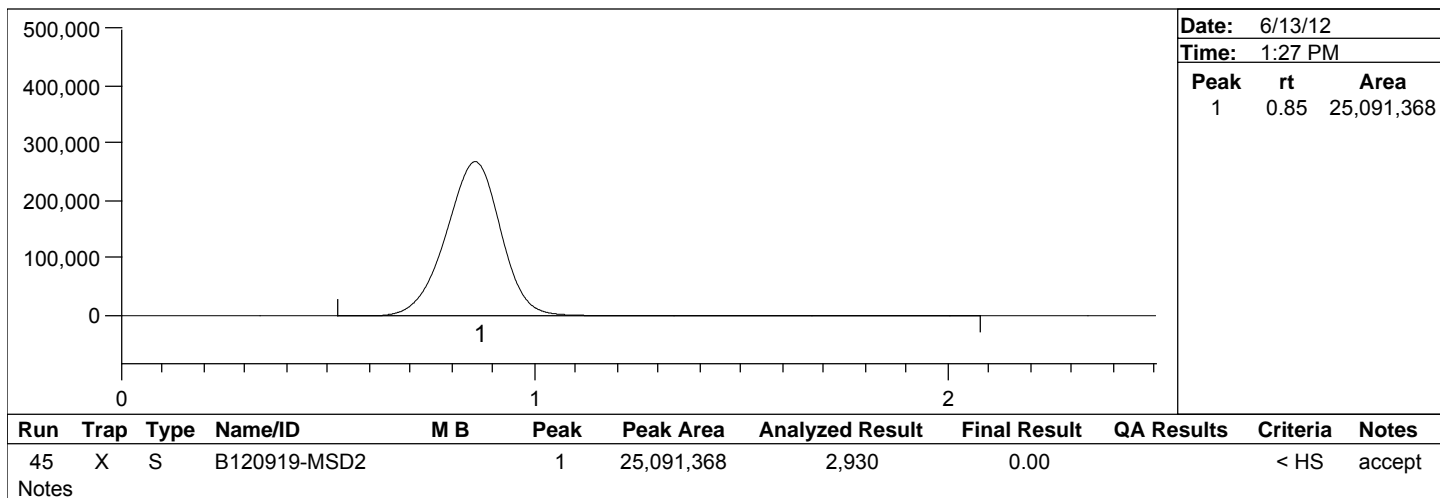
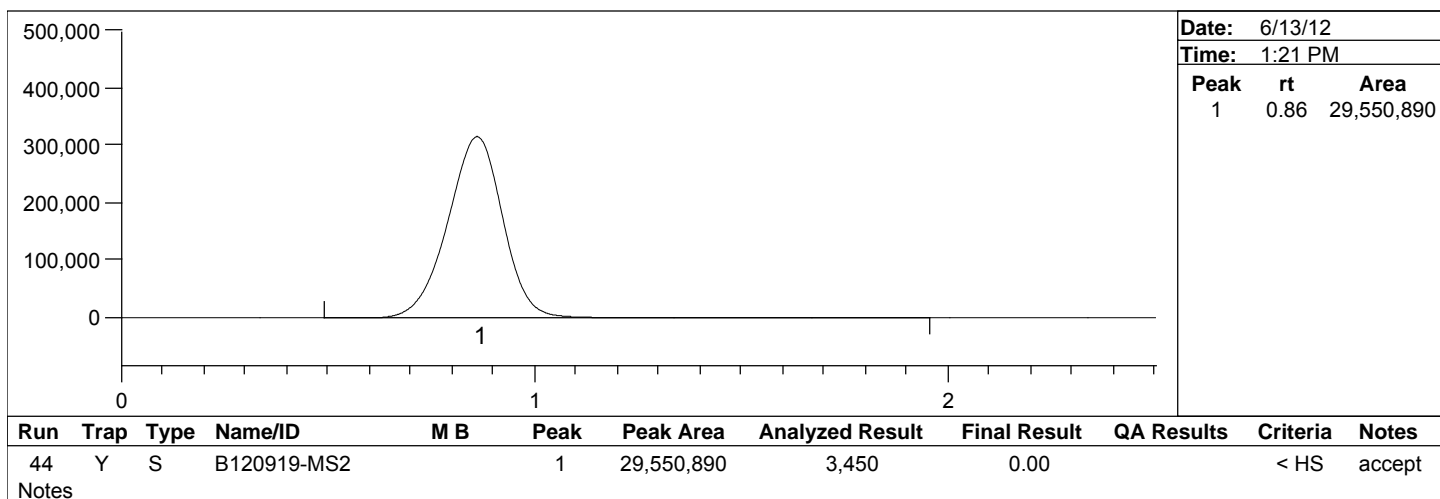
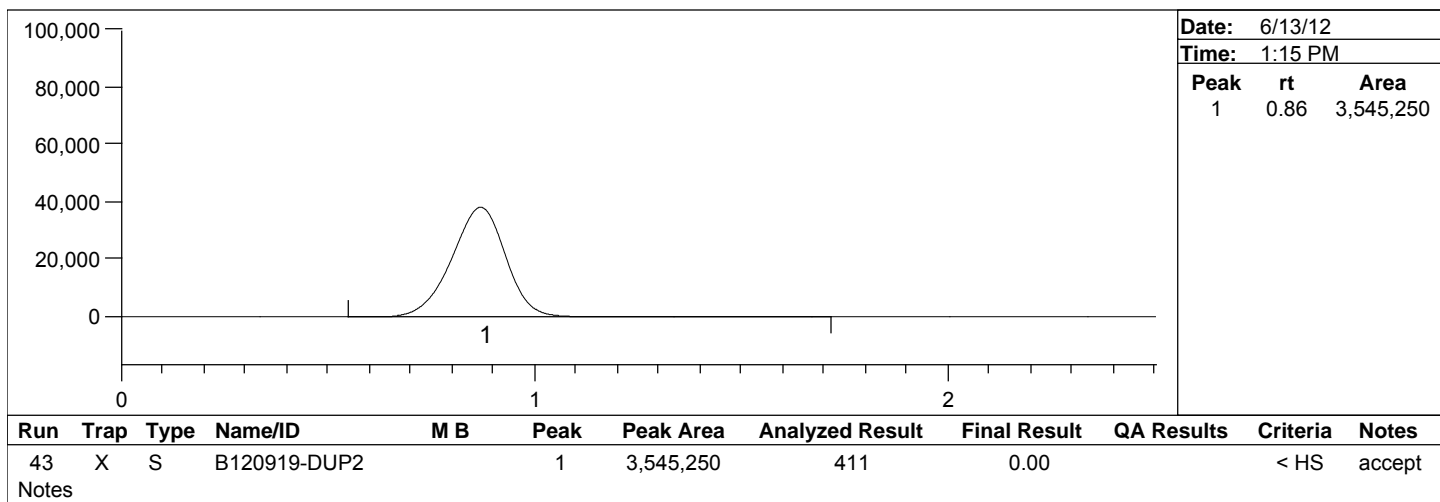


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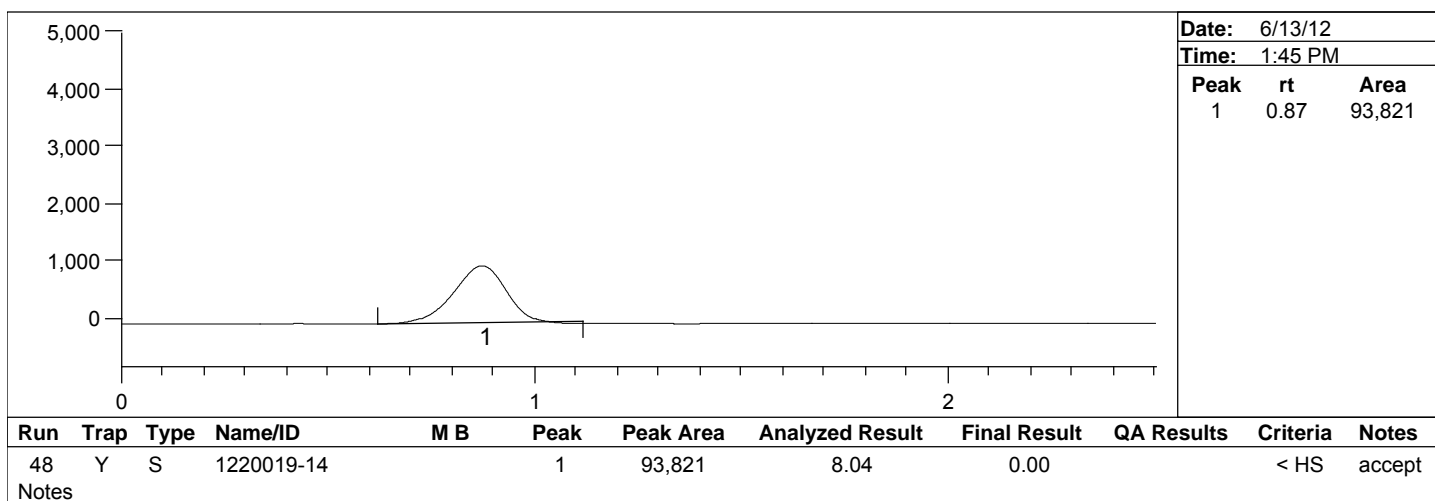
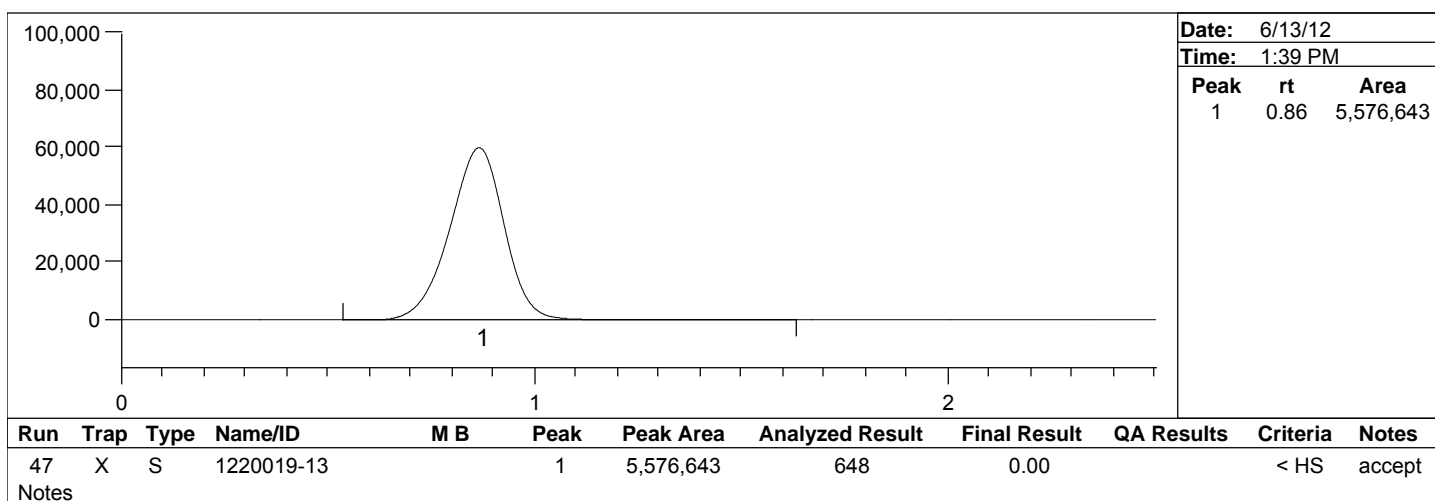
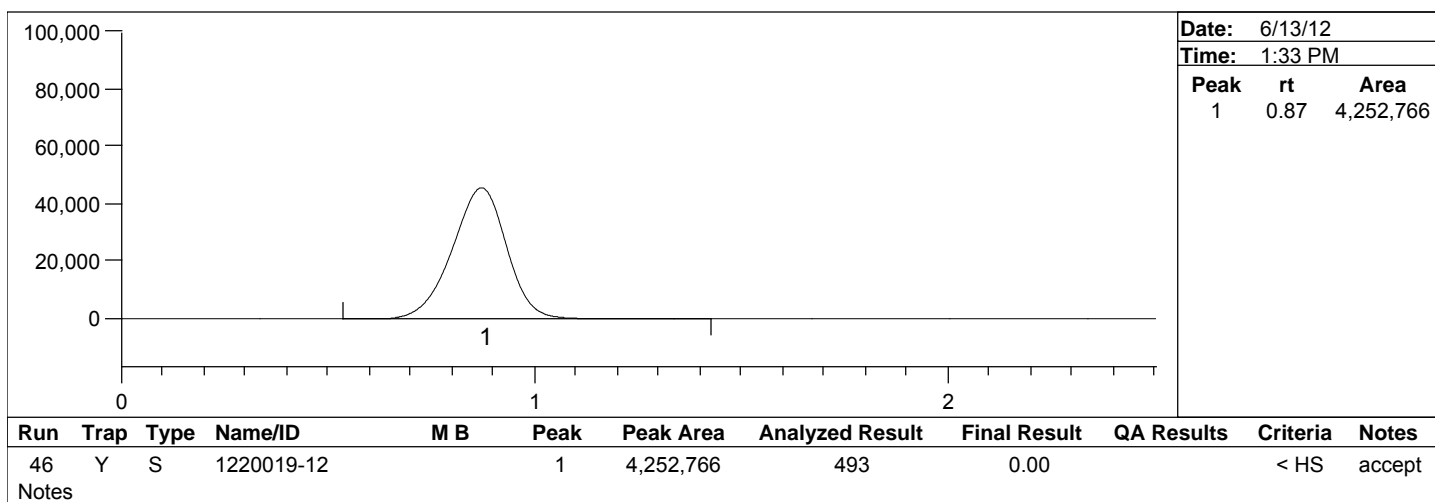


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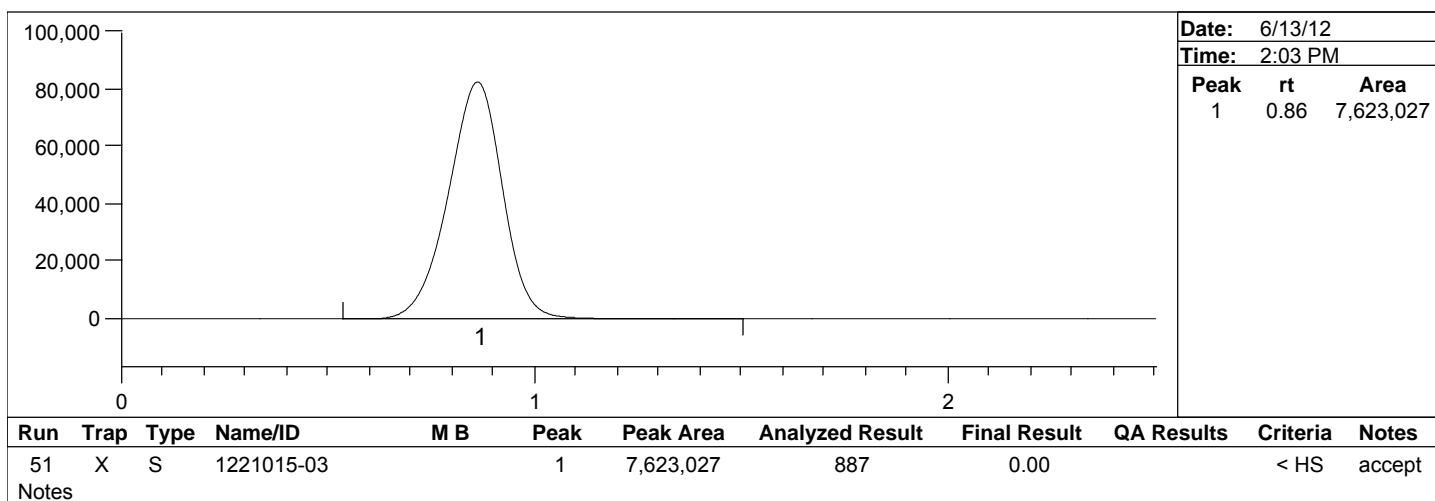
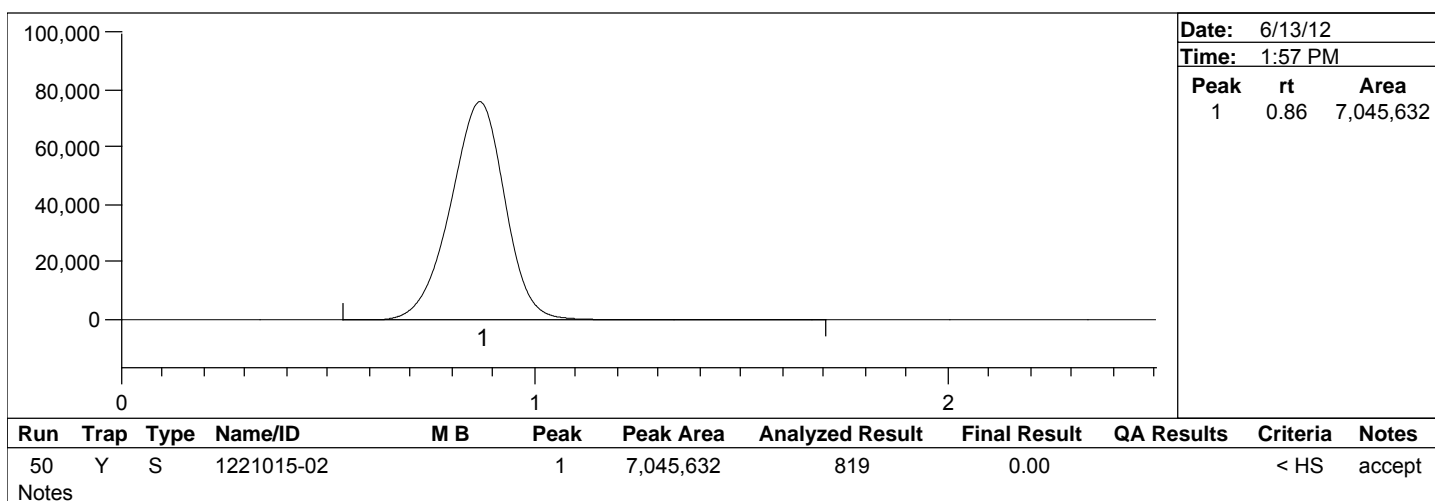
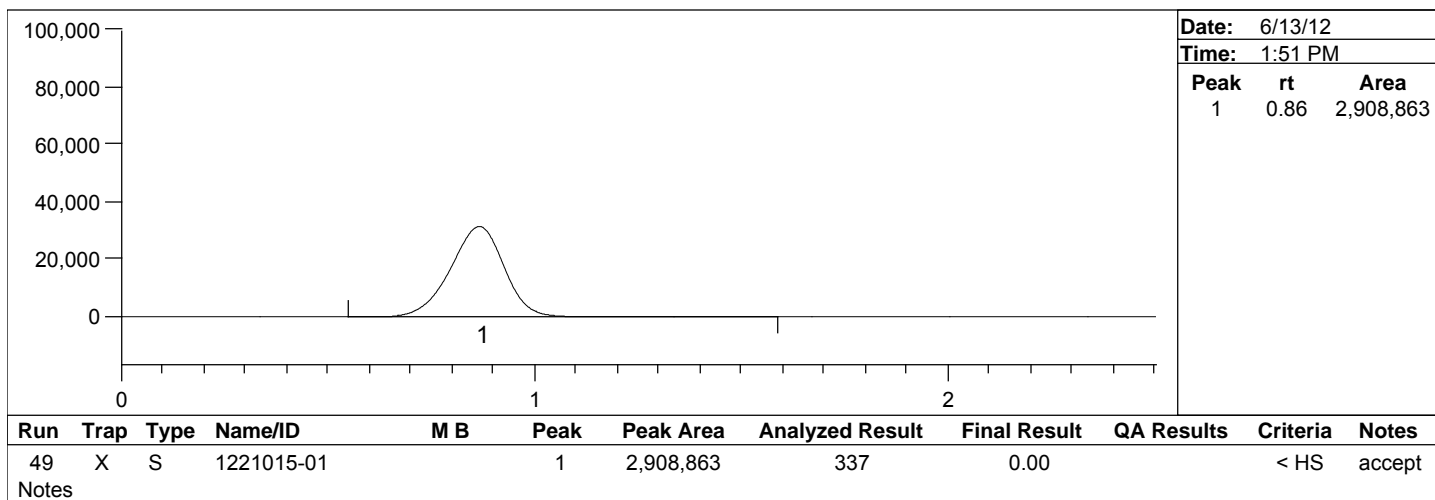


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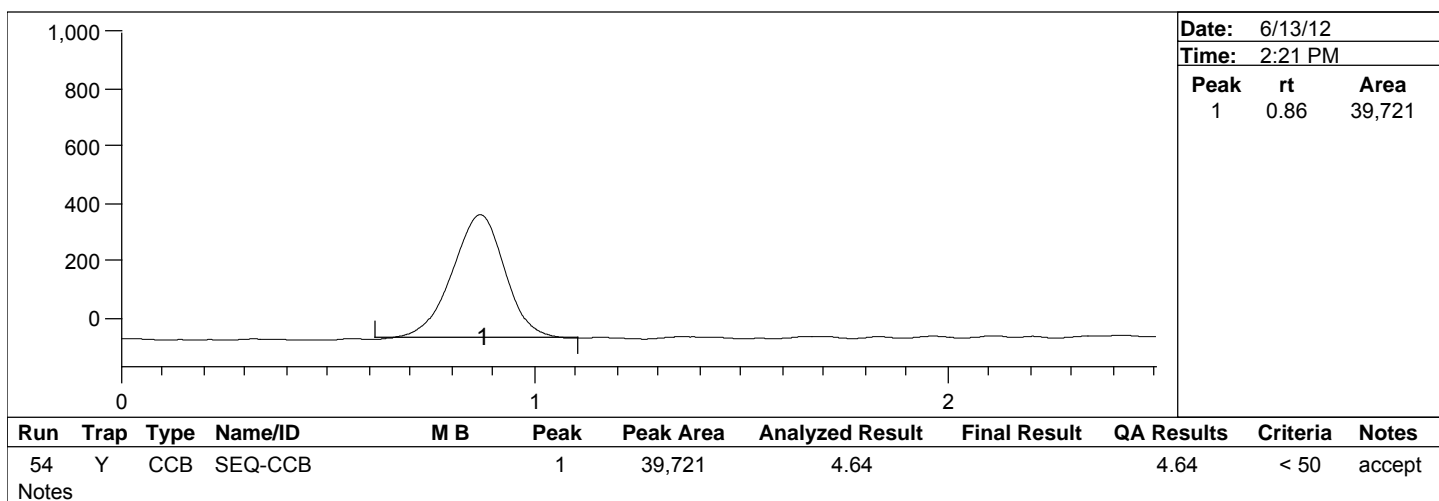
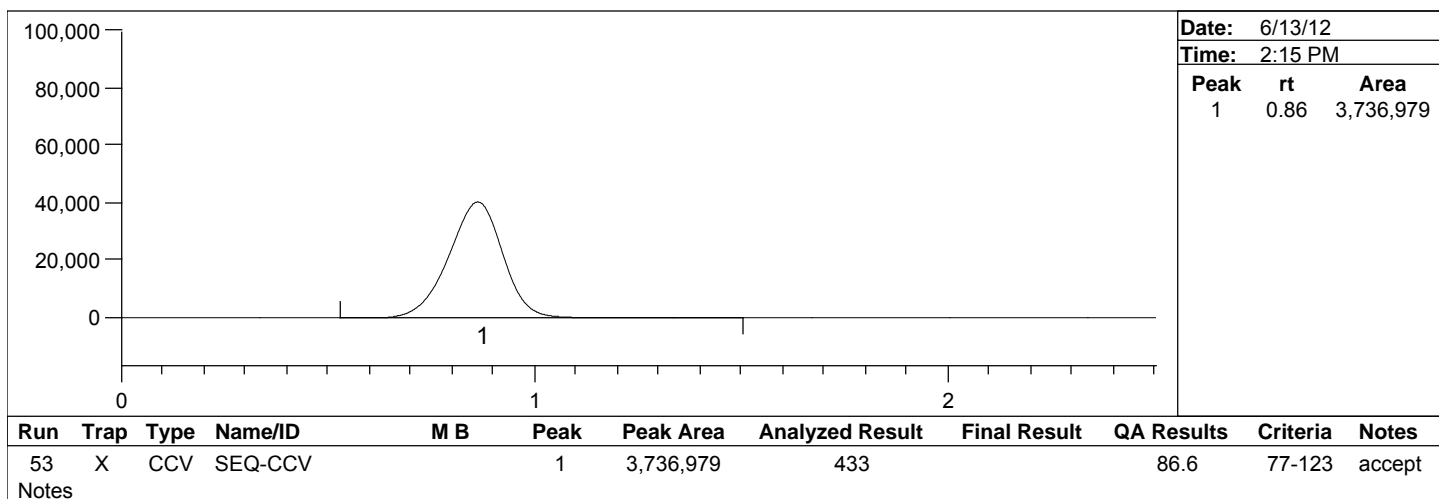
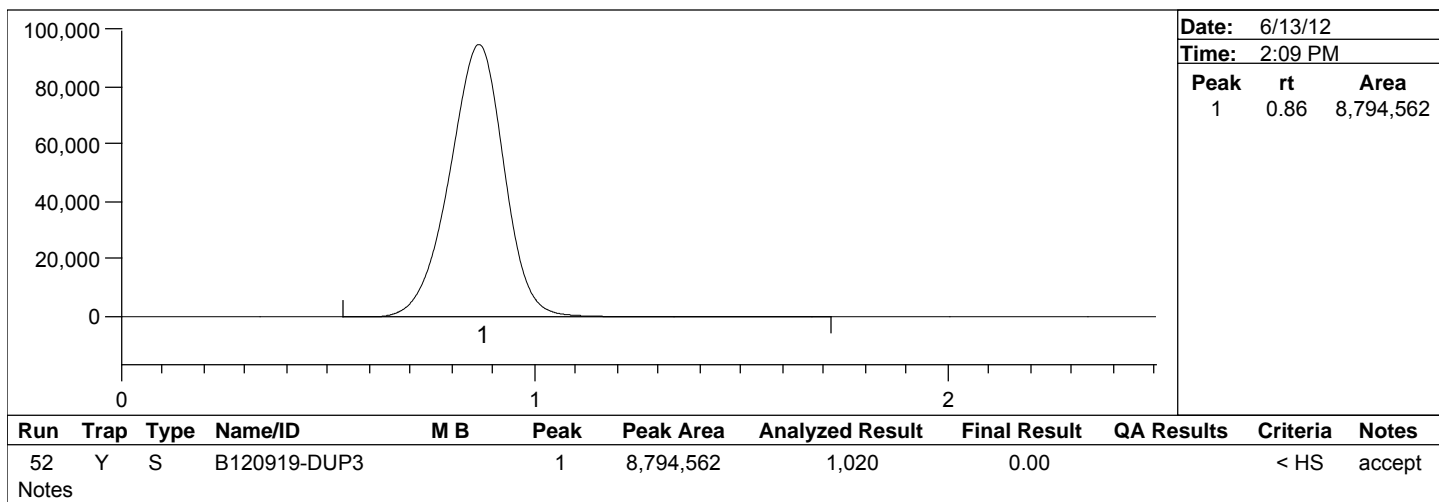


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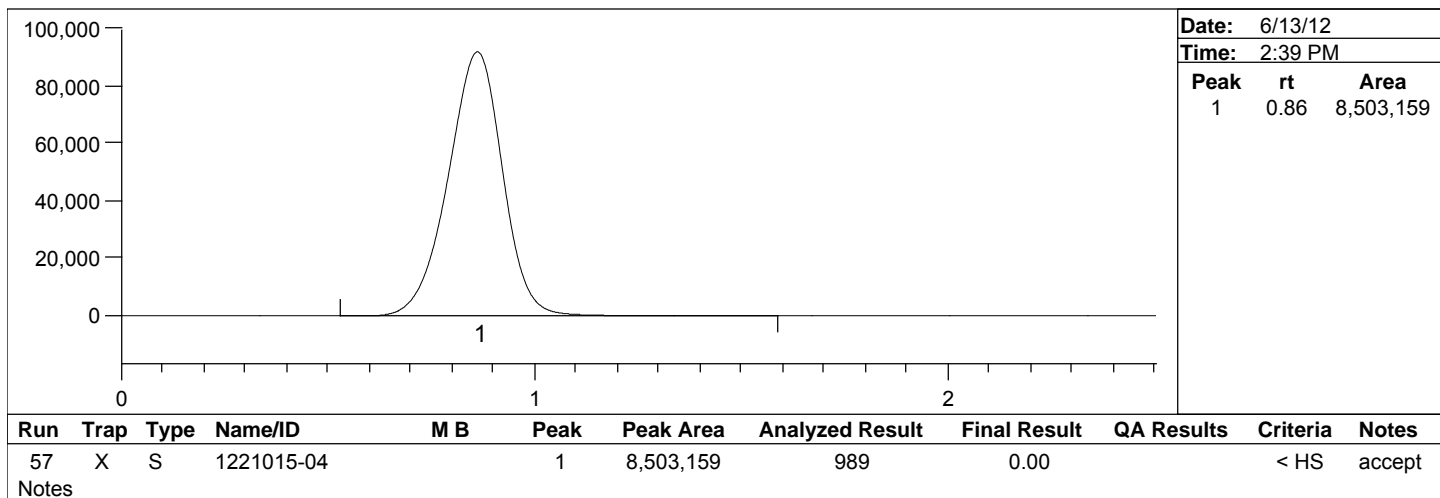
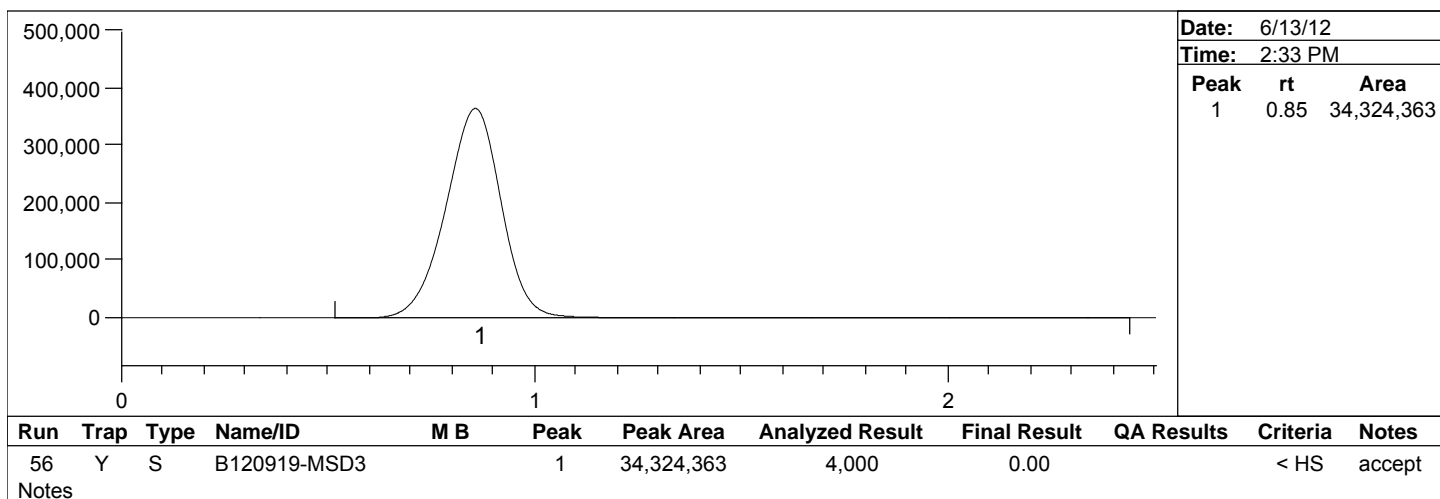
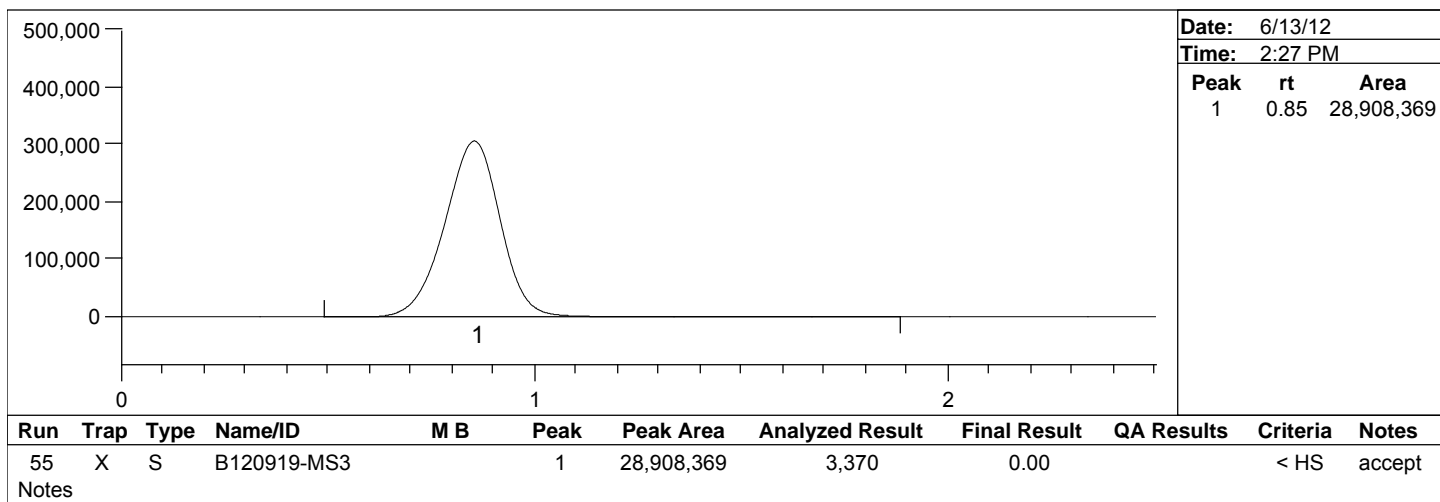


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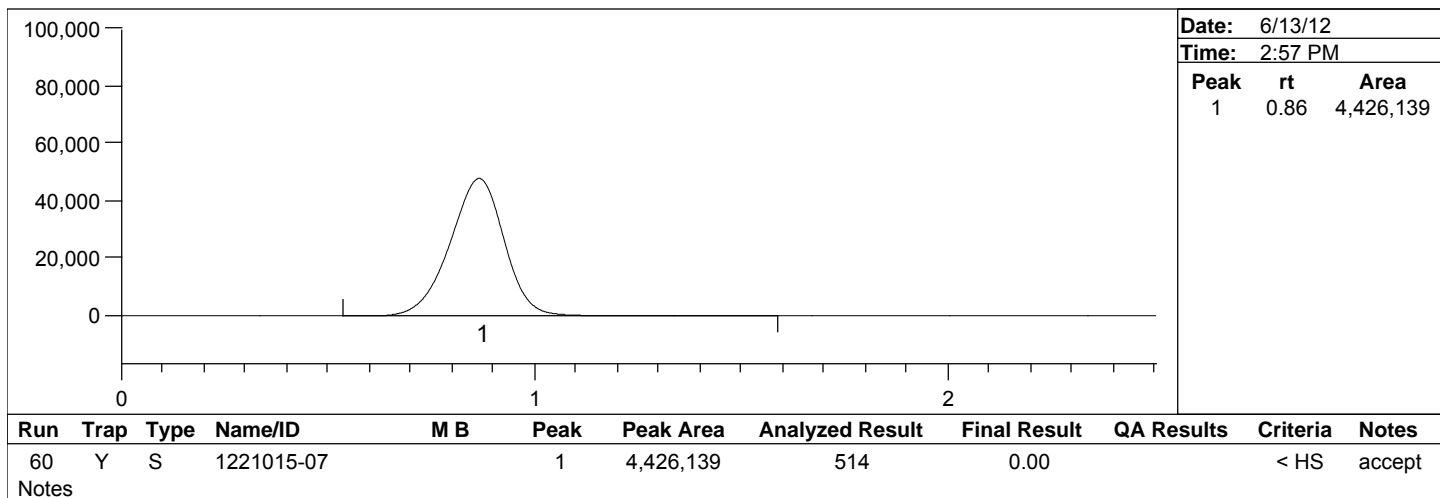
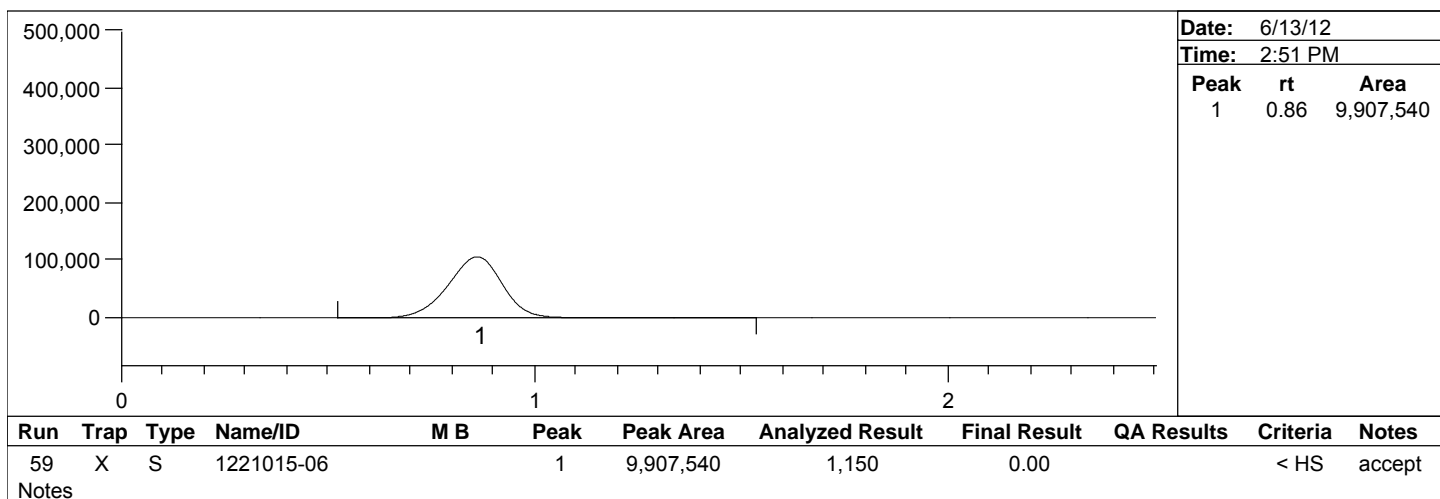
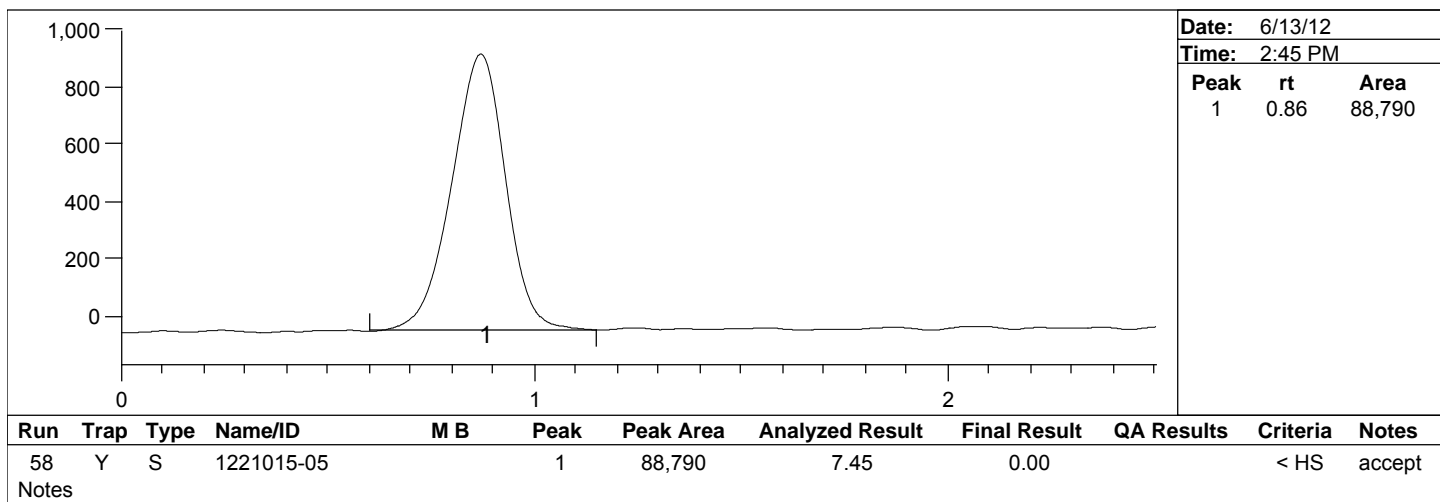


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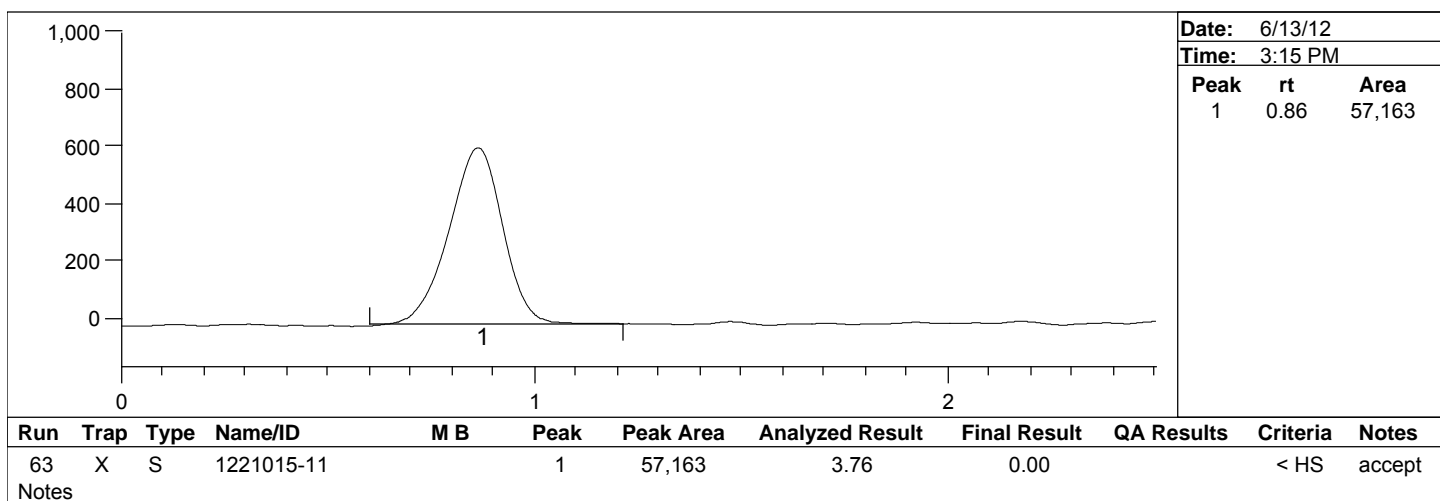
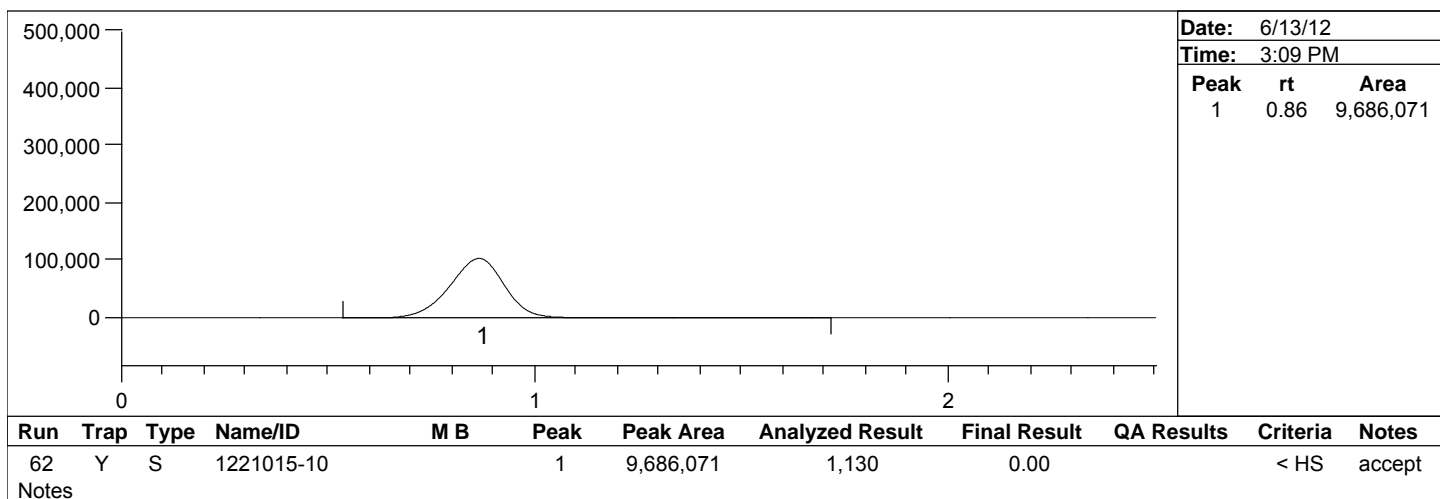
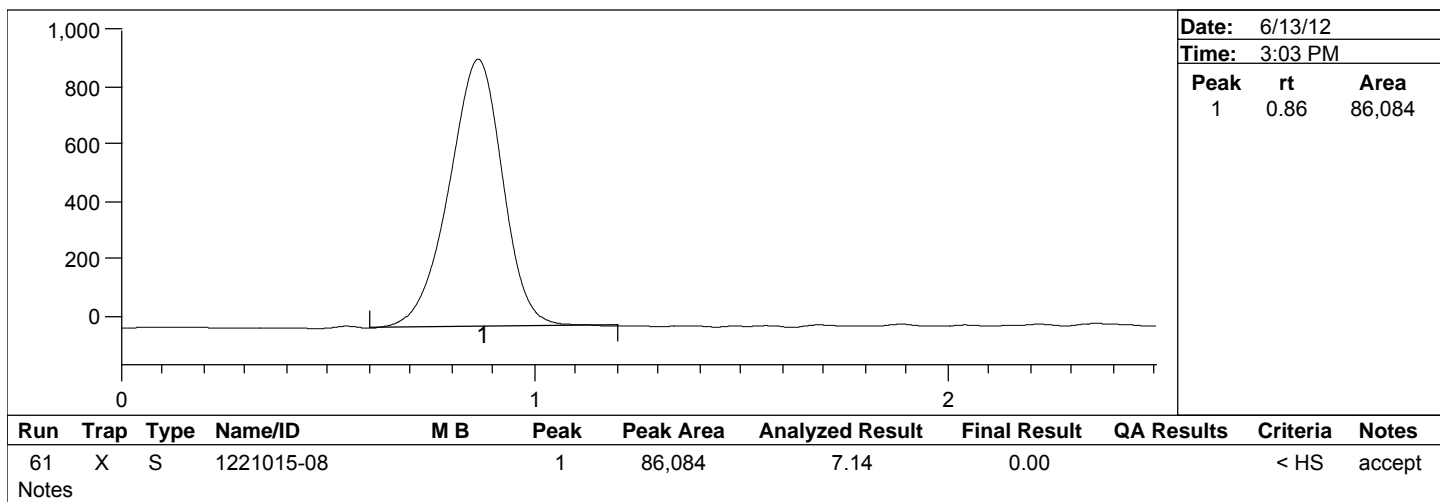


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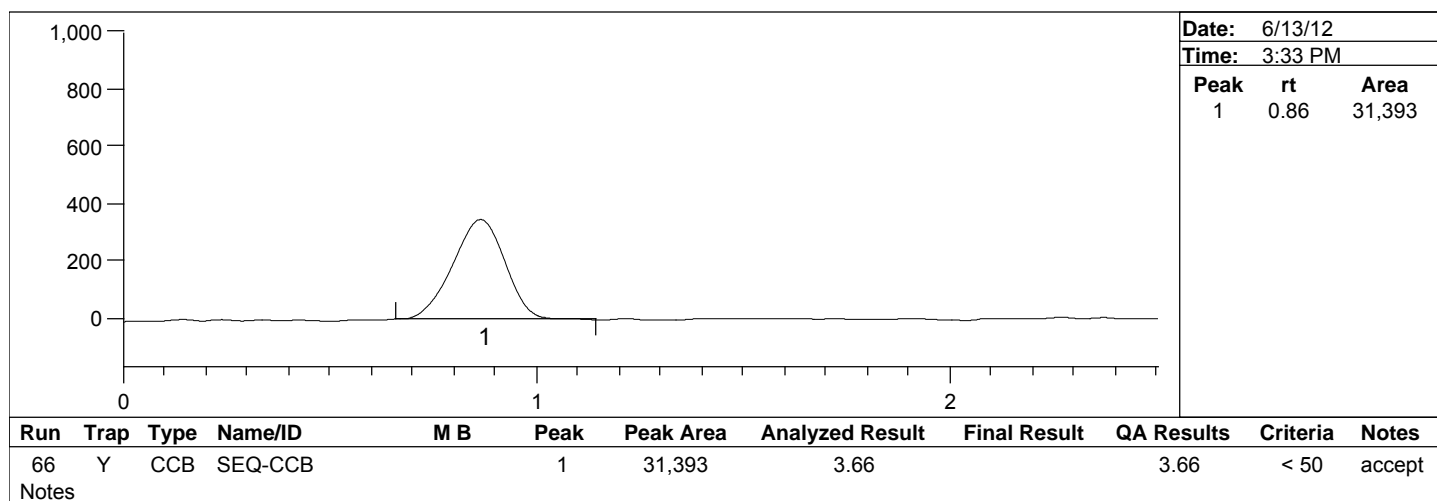
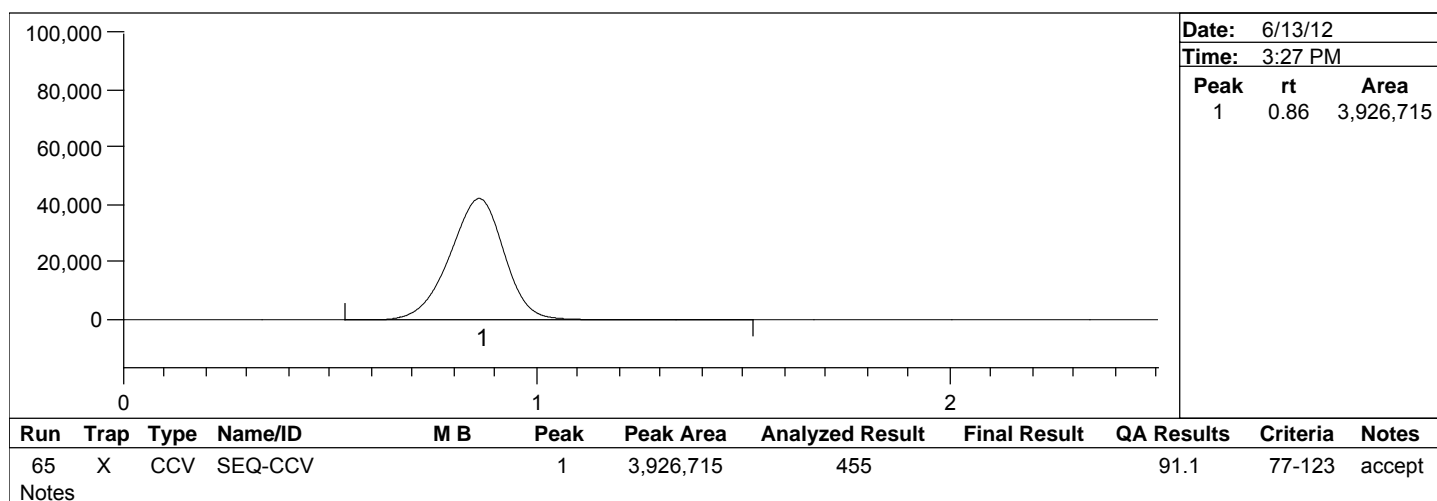
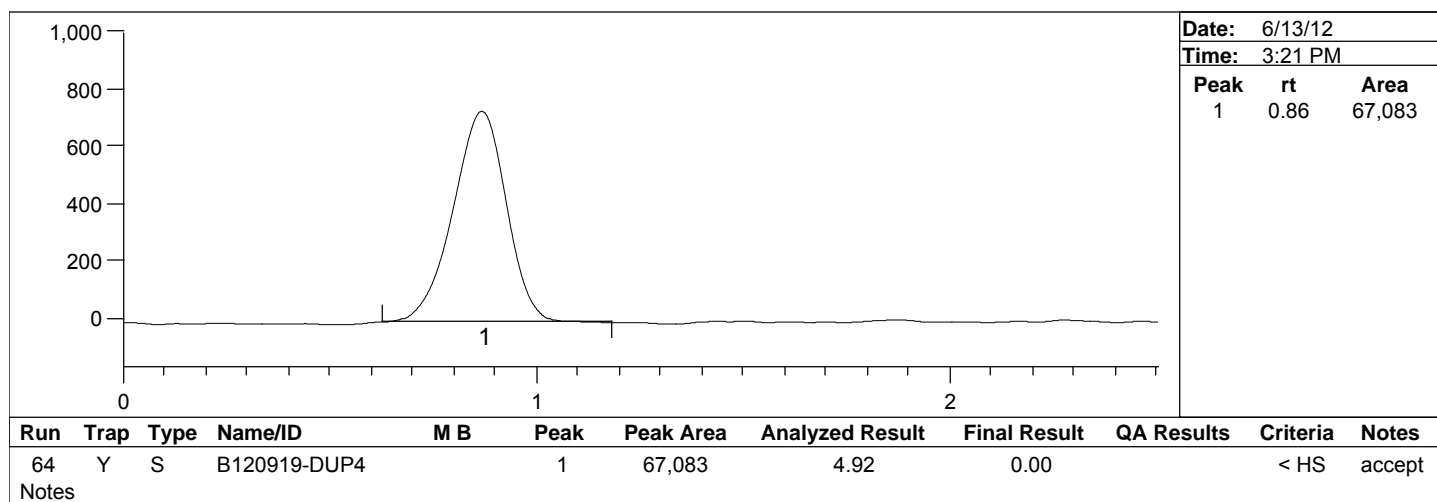


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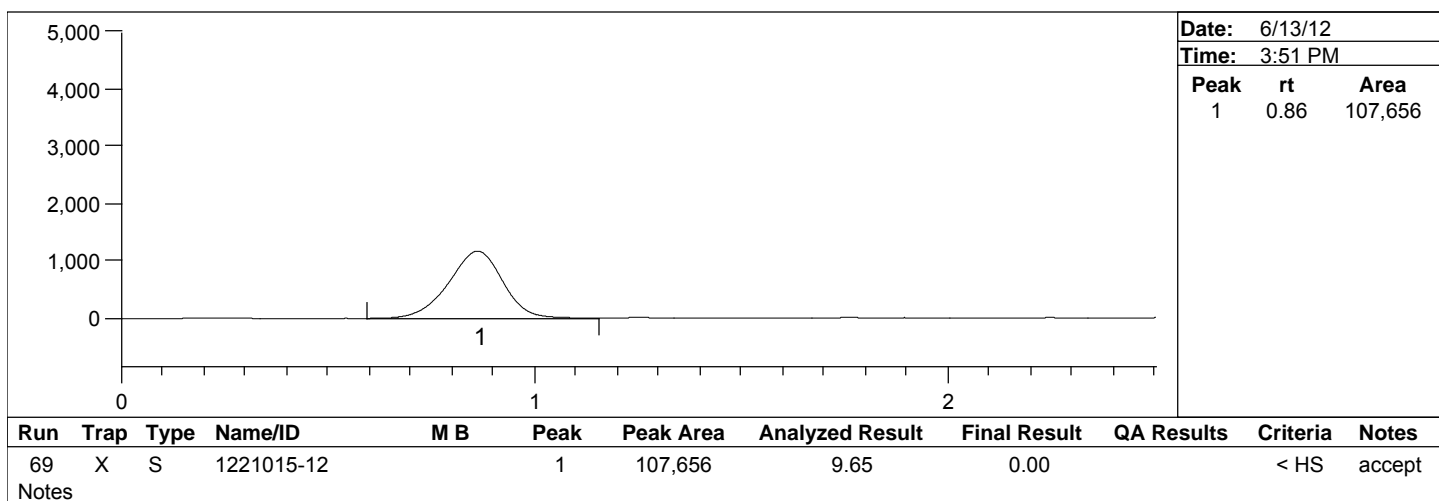
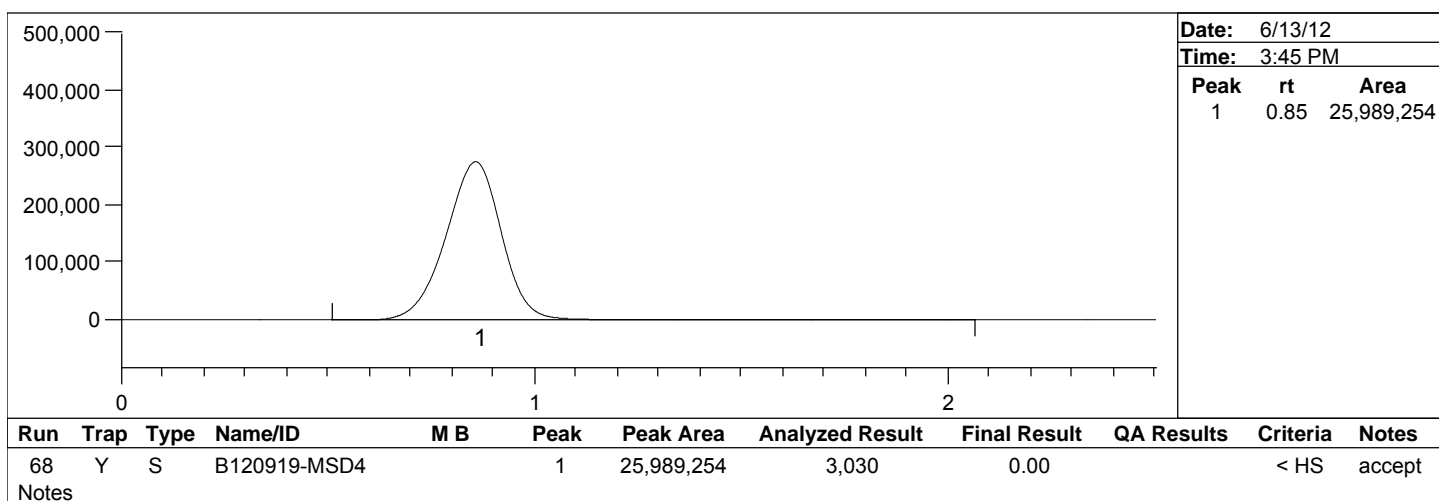
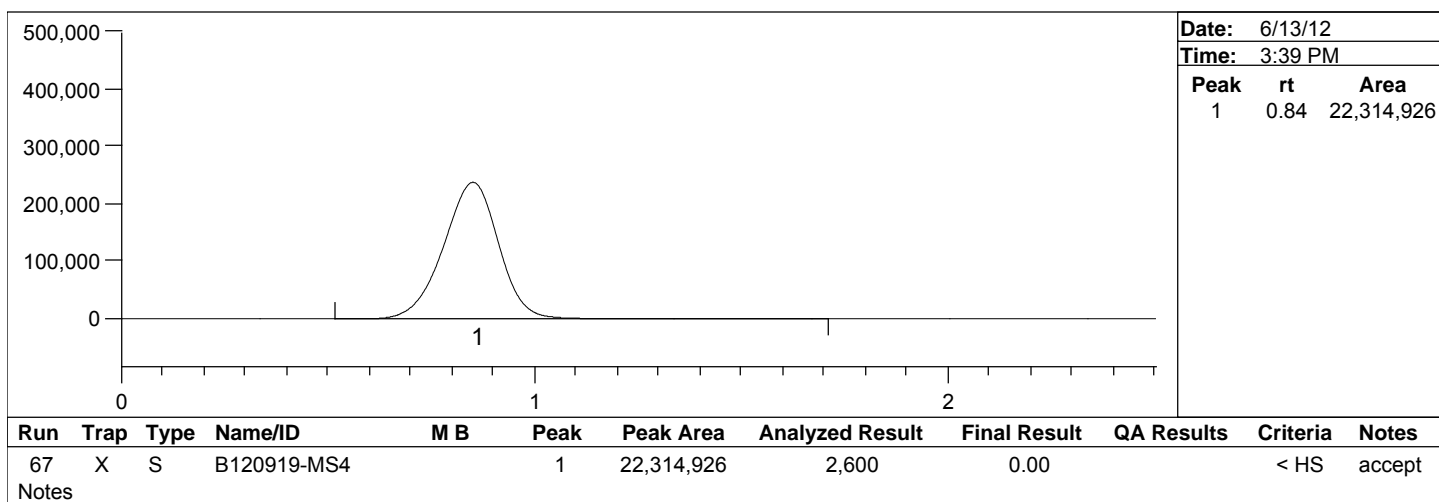


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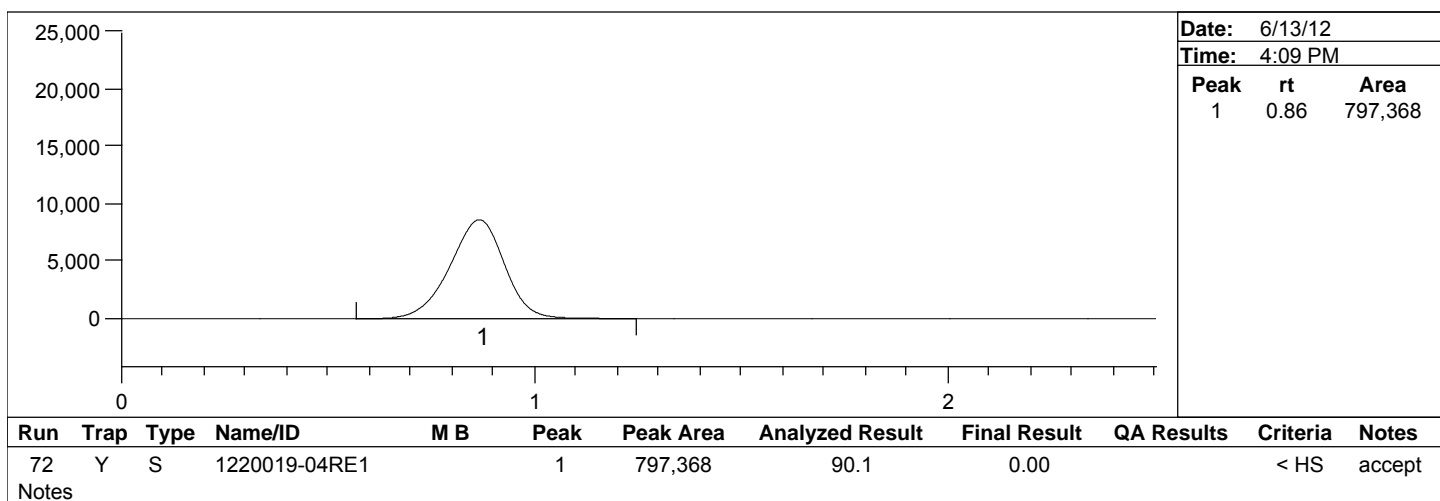
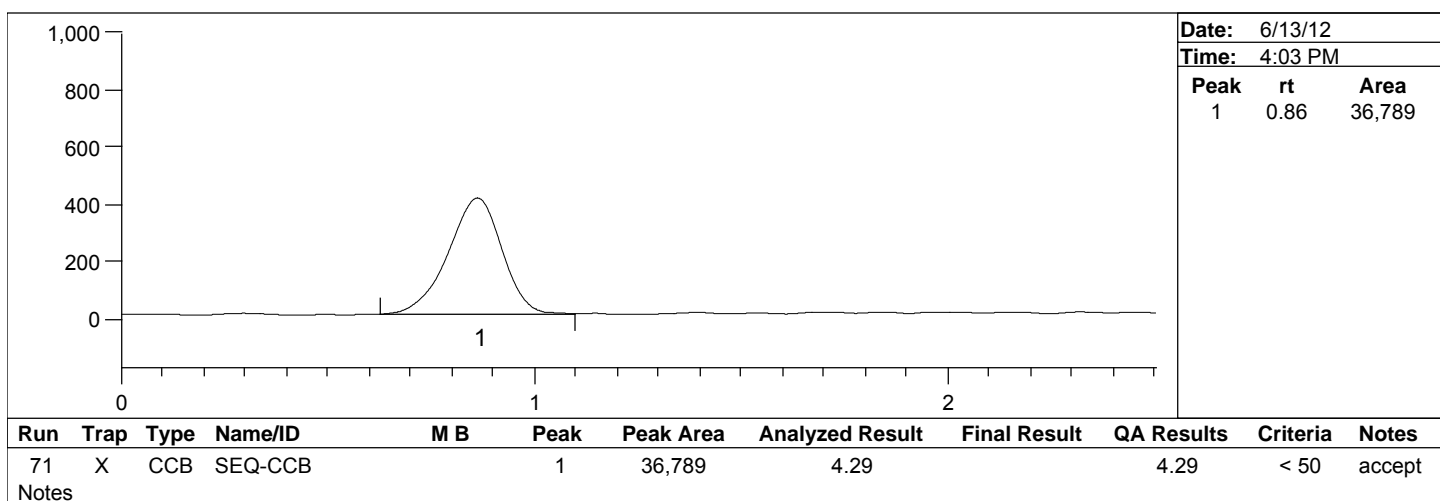
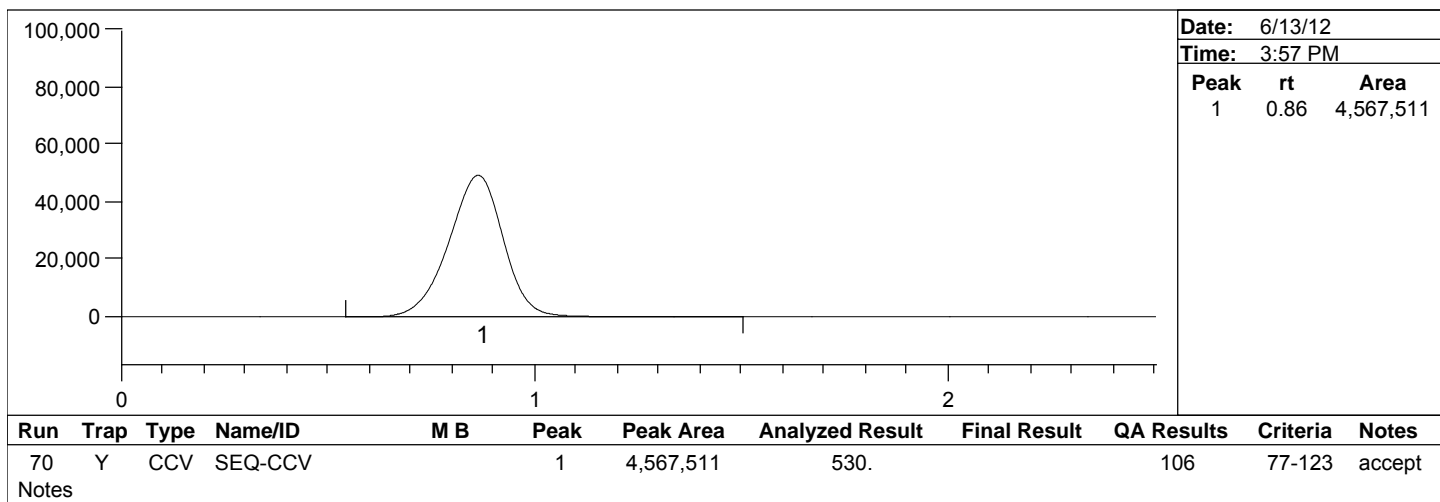


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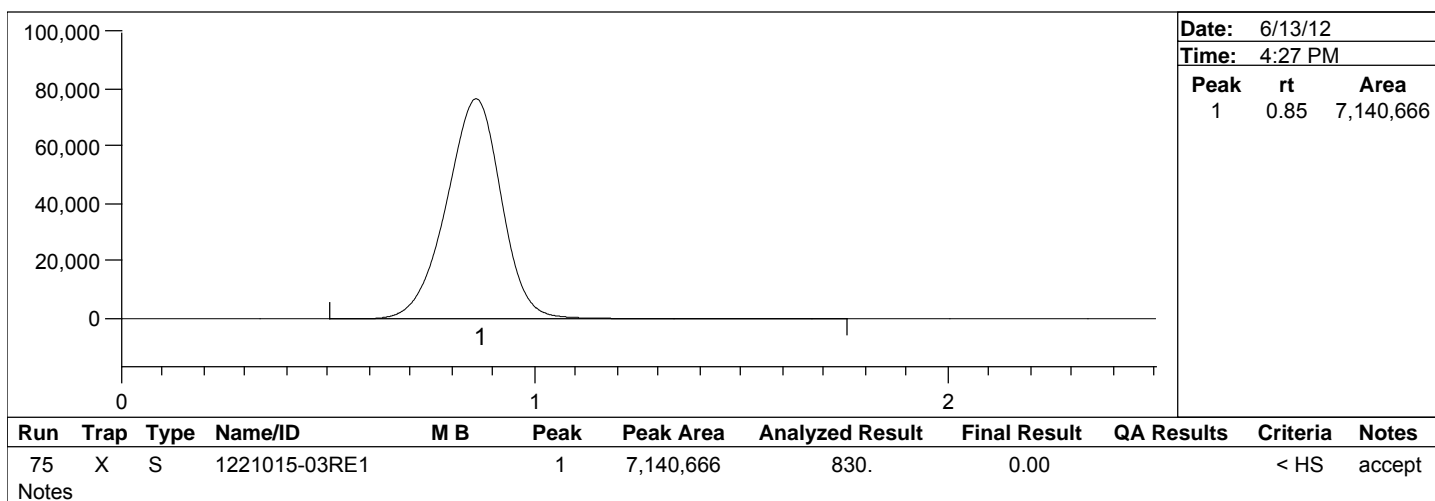
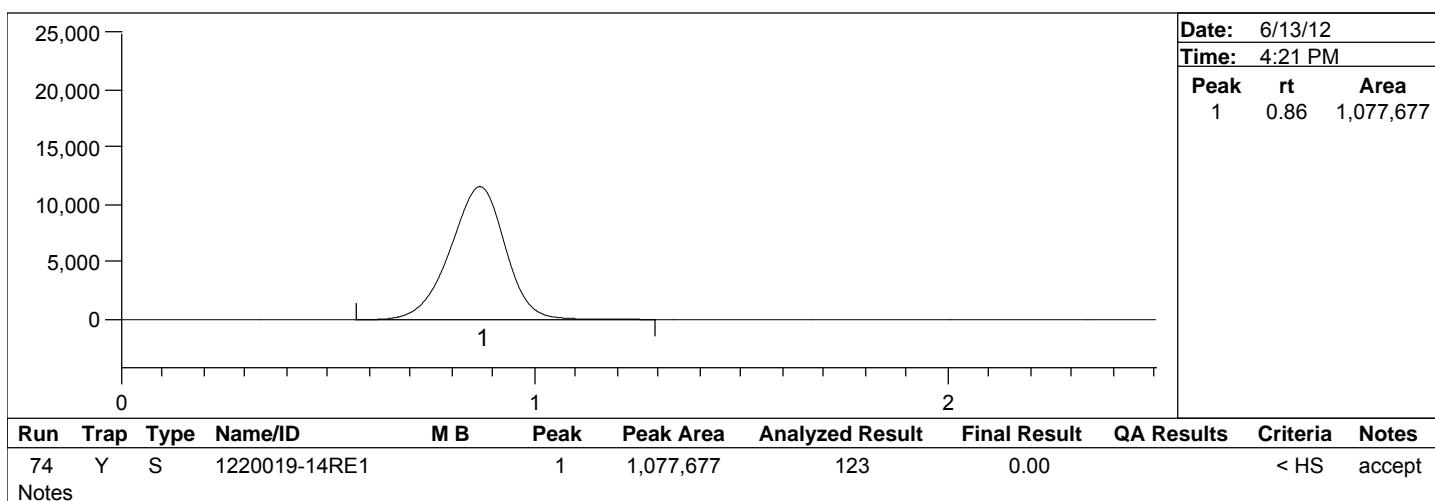
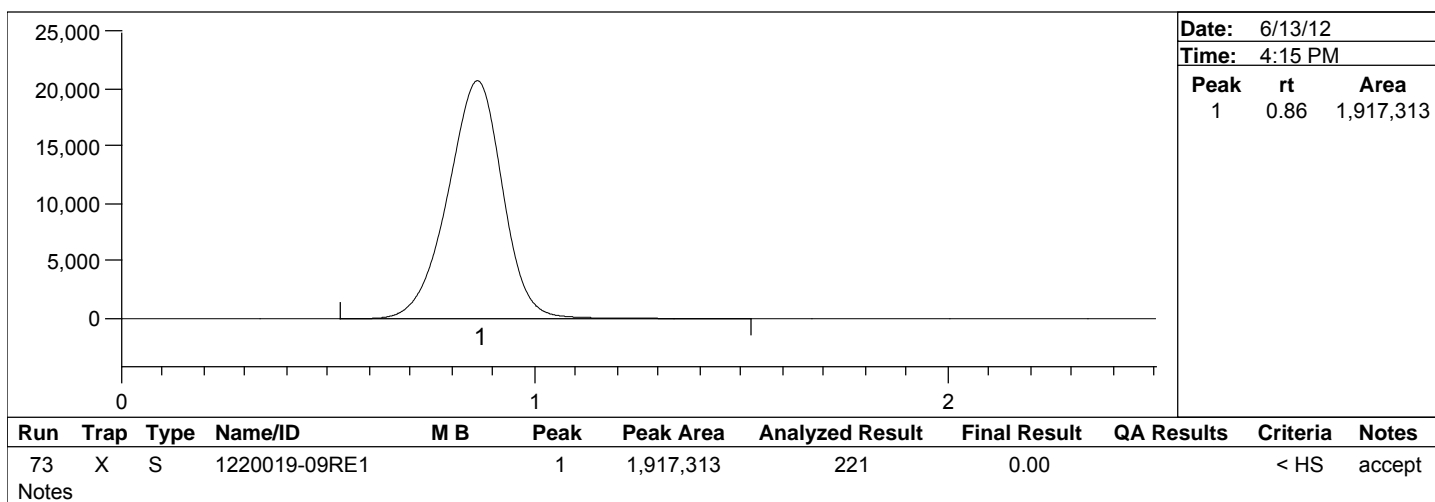


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Date Analyzed: 6/13/12  
Analyst Name: BJT

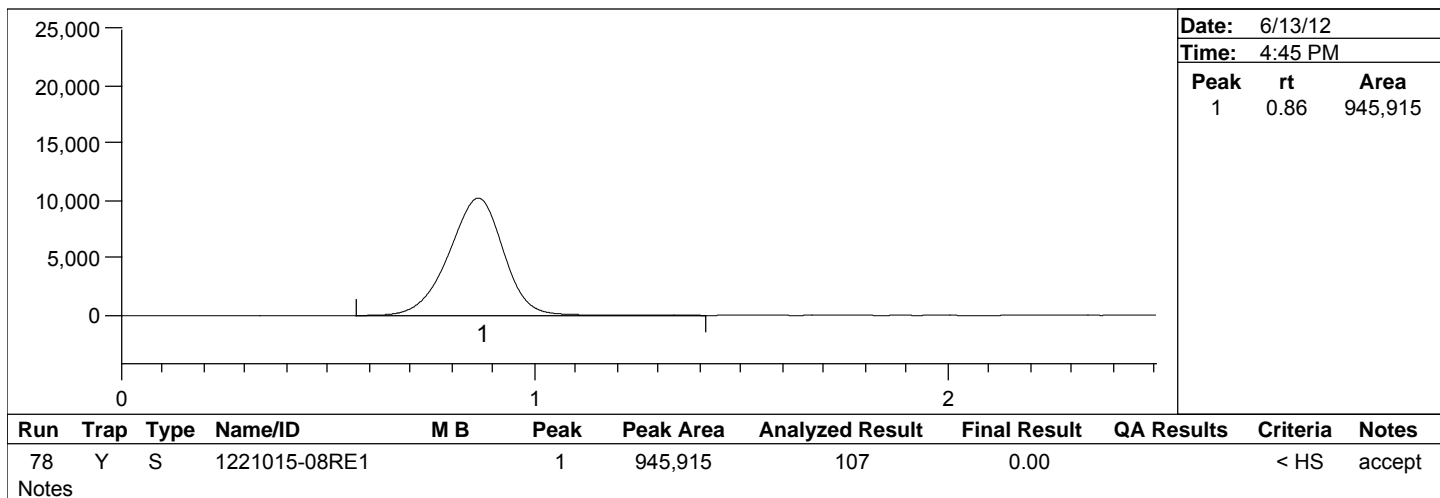
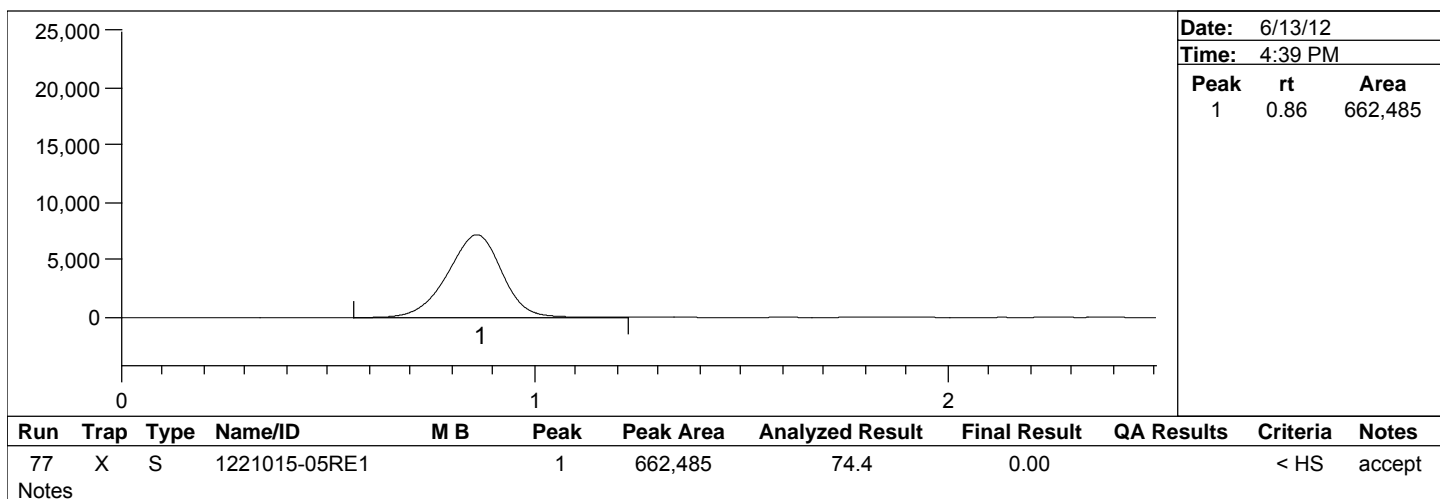
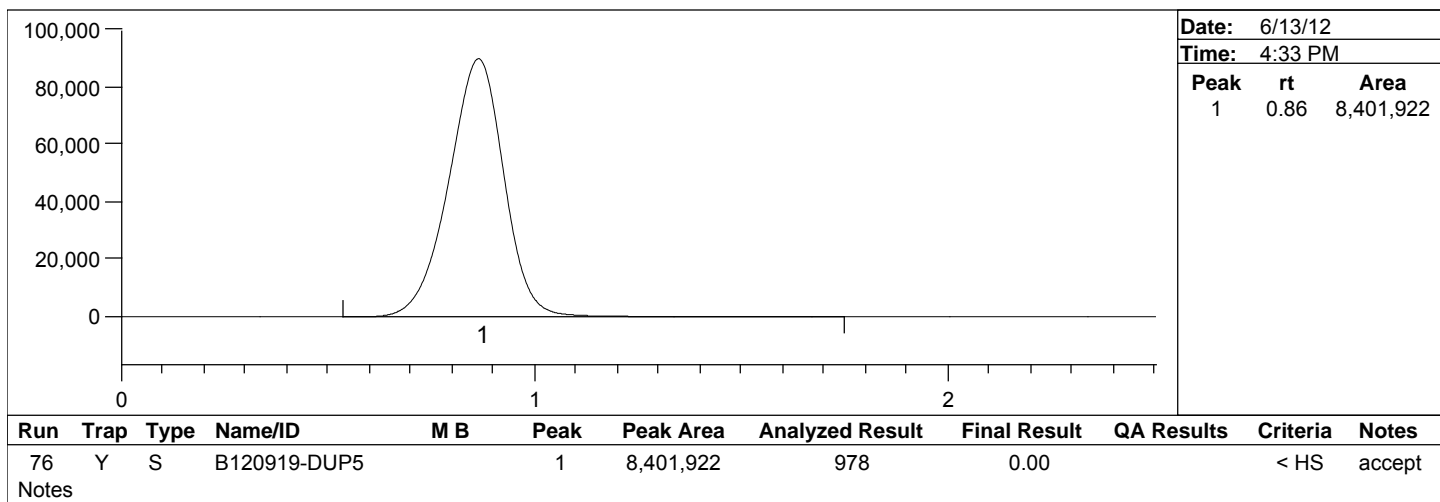


# Peak Report

Batch Number: B120919  
Method Number: CVAFS BR-0002

Project Number(s): 1200442  
Instrument ID: THG-06

Date Analyzed: 6/13/12  
Analyst Name: BJT

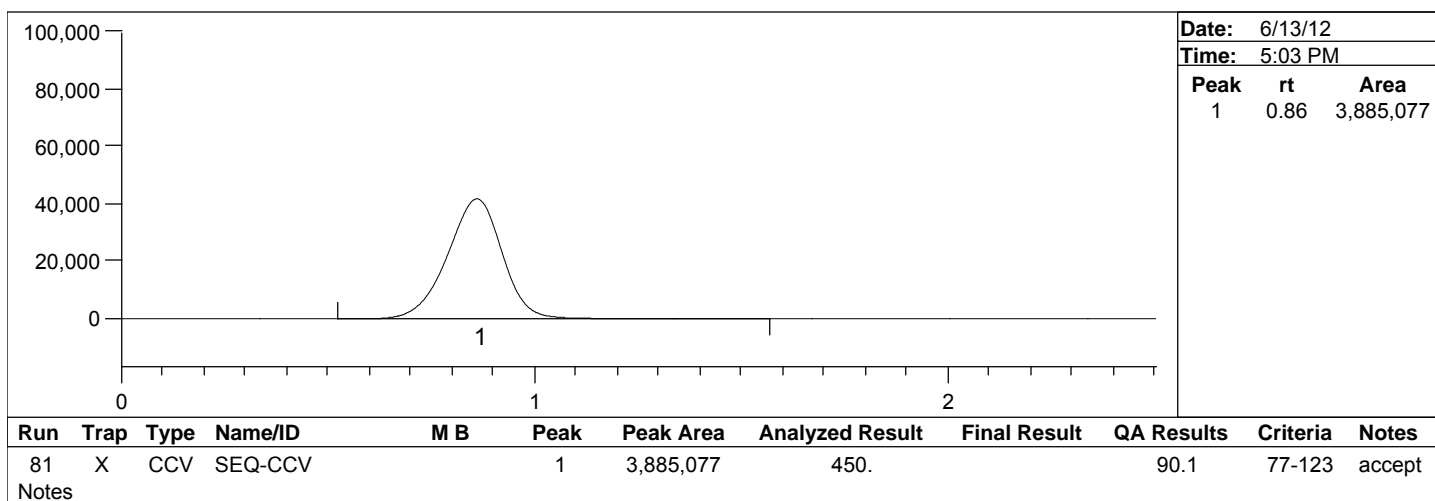
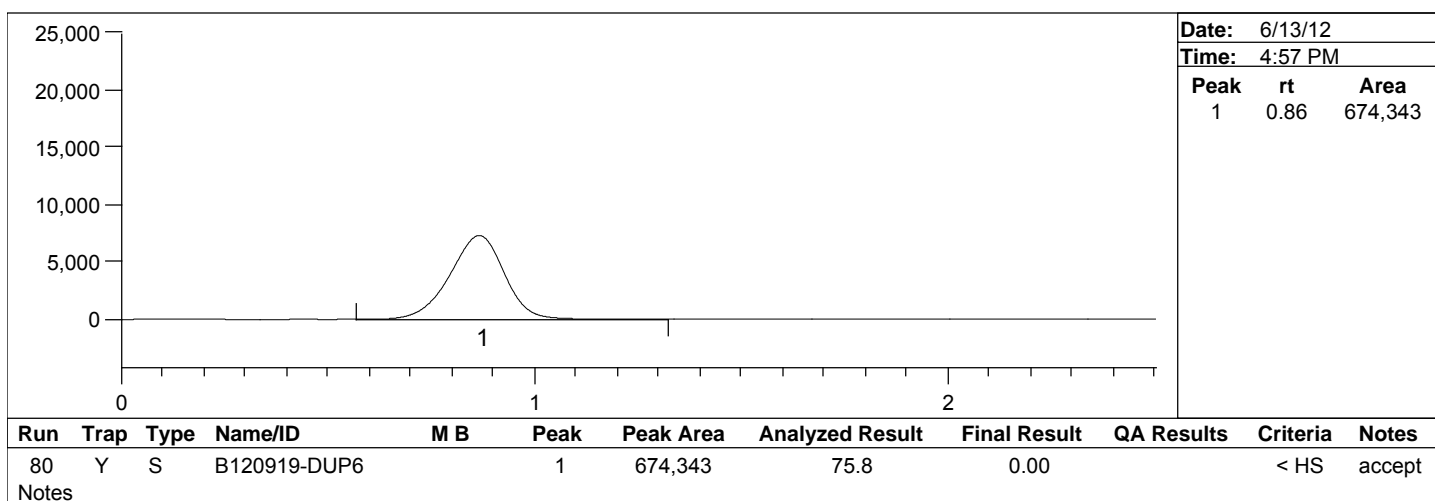
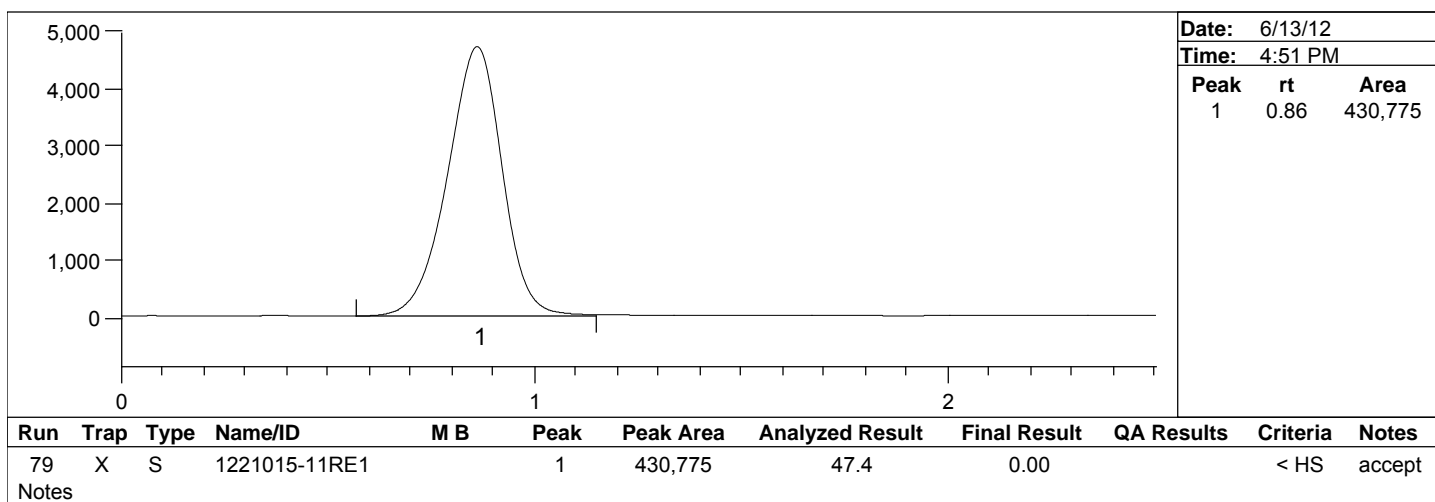


# Peak Report

Batch Number: B120919  
Method Number: CVAFS BR-0002

Project Number(s): 1200442  
Instrument ID: THG-06

Date Analyzed: 6/13/12  
Analyst Name: BJT

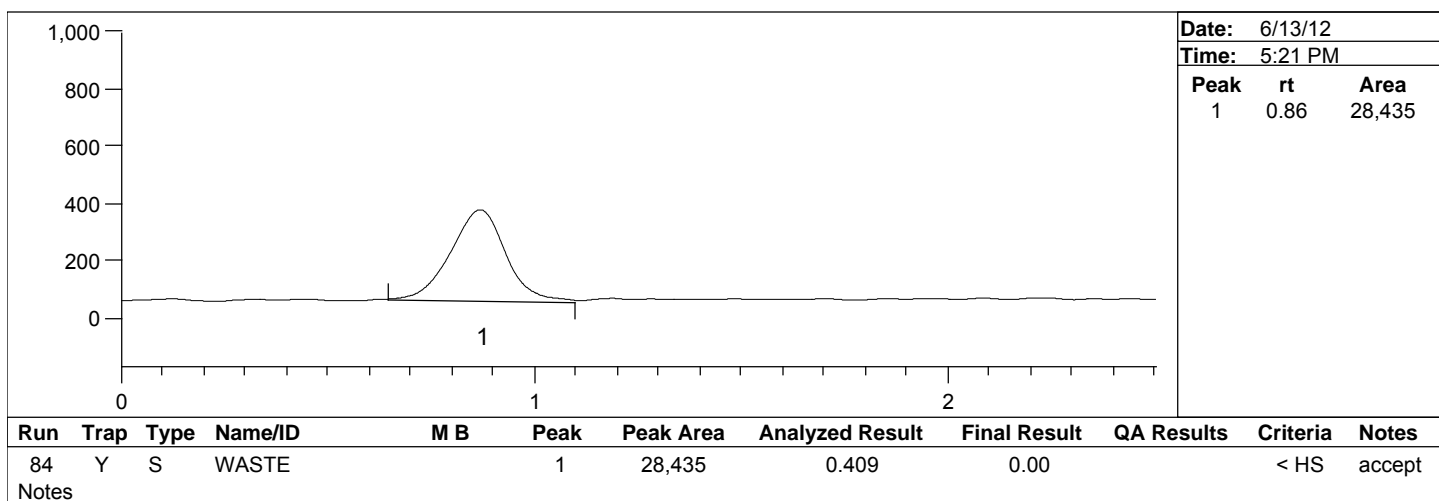
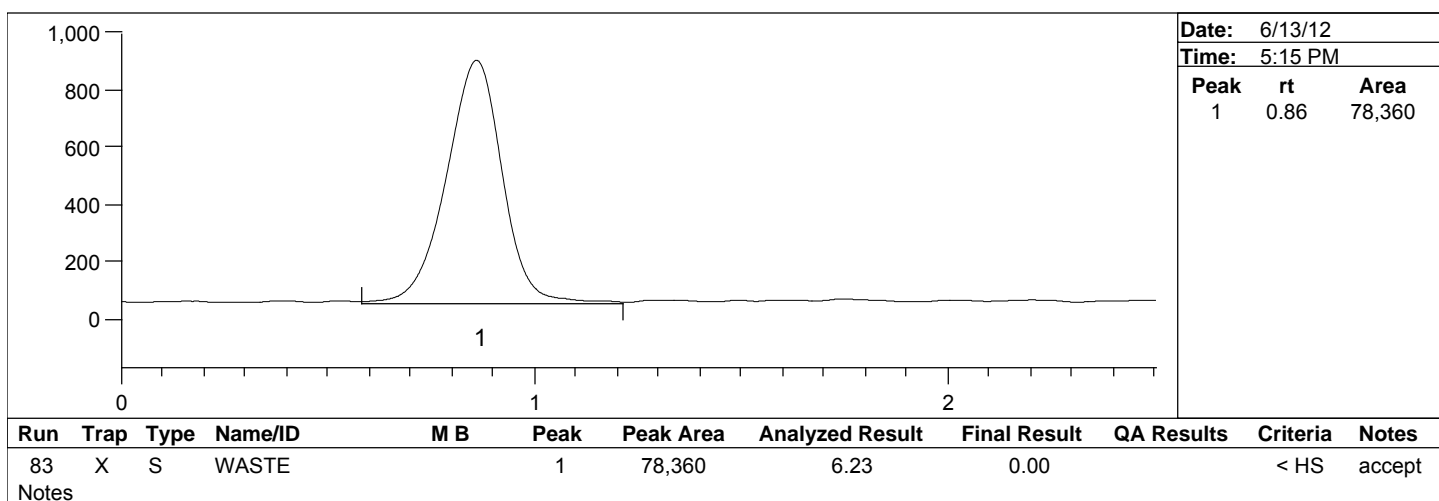
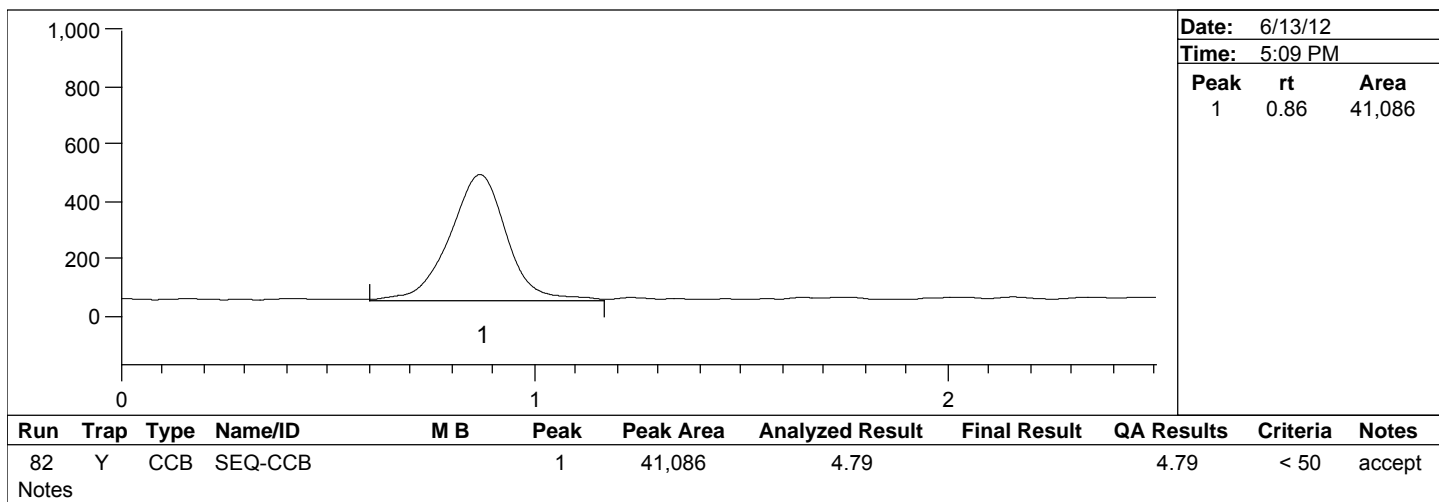


# Peak Report

Batch Number: B120919  
Method Number: CVAFS BR-0002

Project Number(s): 1200442  
Instrument ID: THG-06

Date Analyzed: 6/13/12  
Analyst Name: BJT

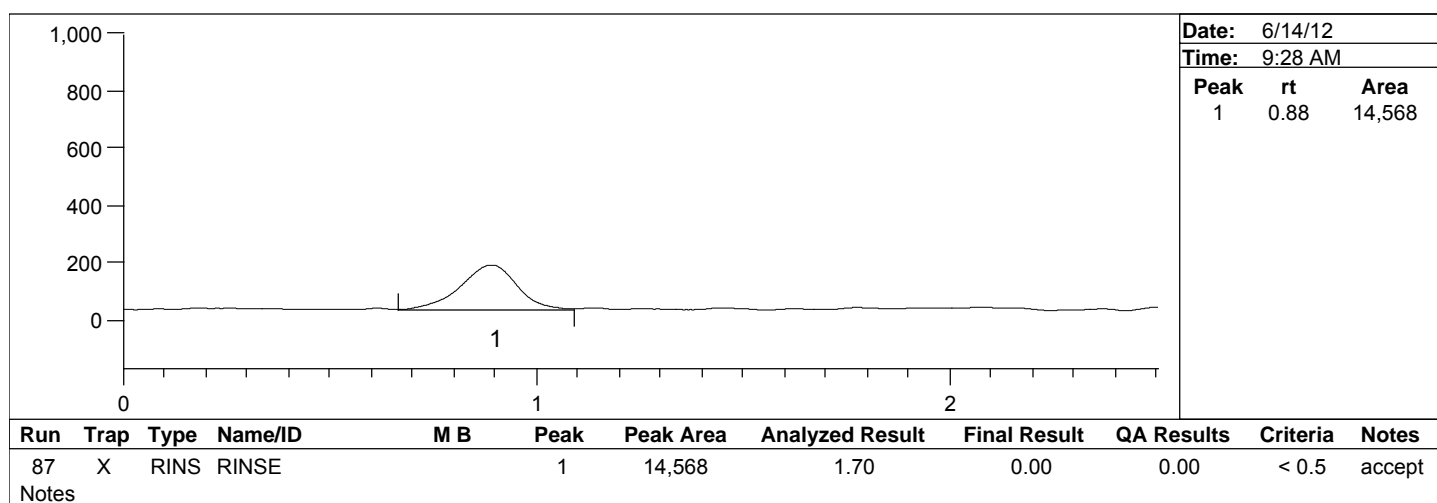
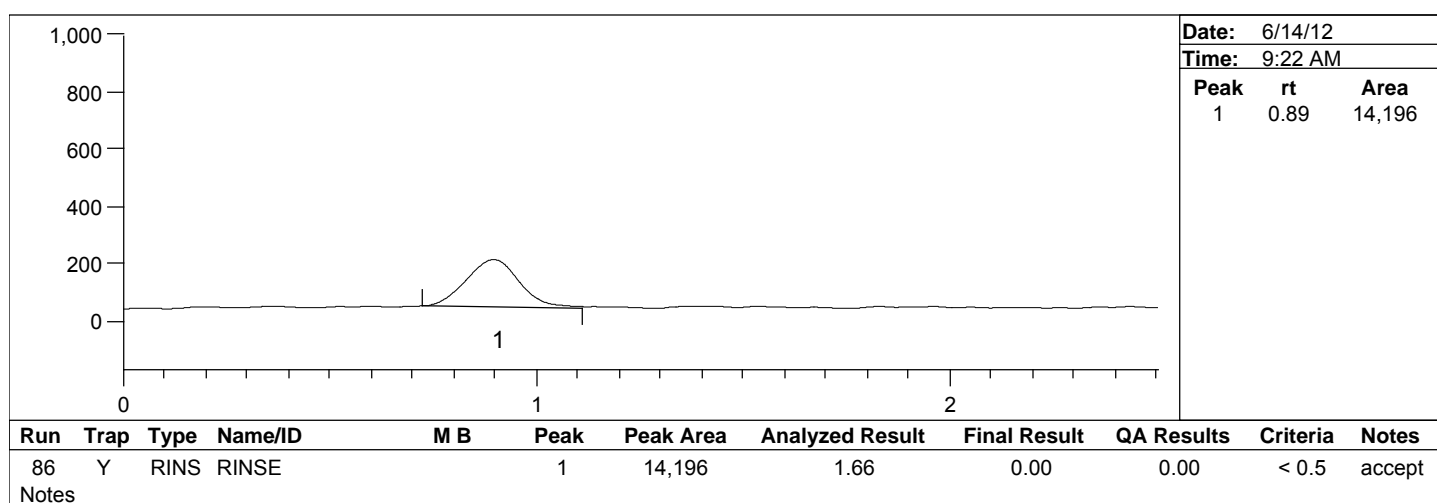
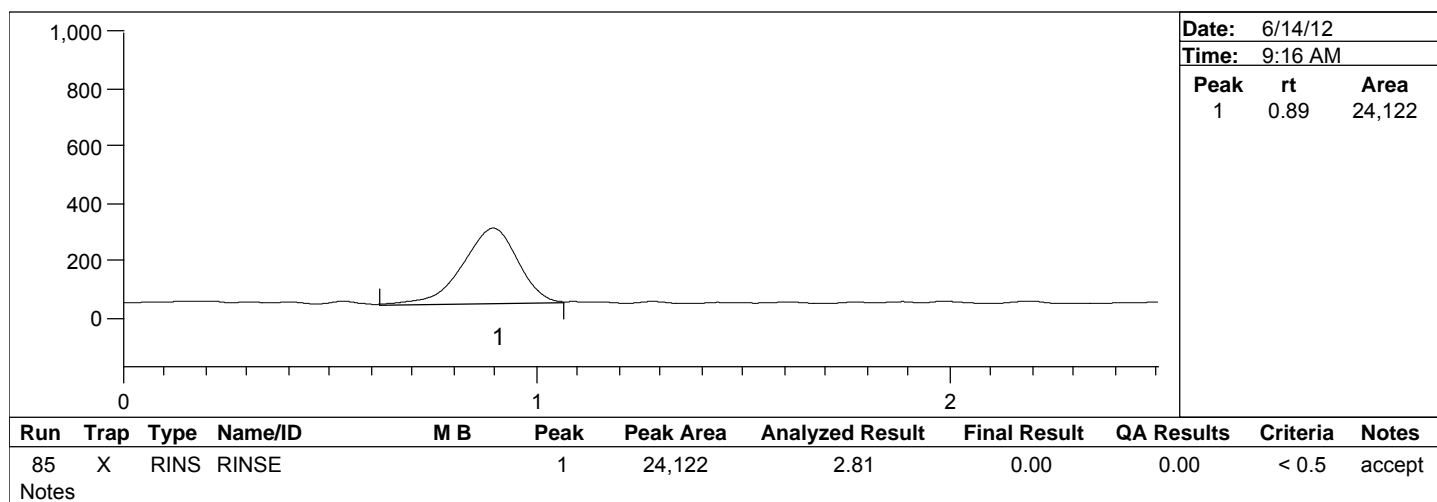


# Peak Report

Batch Number: B120919  
Method Number: CVAFS BR-0002

Project Number(s): 1200442  
Instrument ID: THG-06

Date Analyzed: 6/13/12  
Analyst Name: BJT



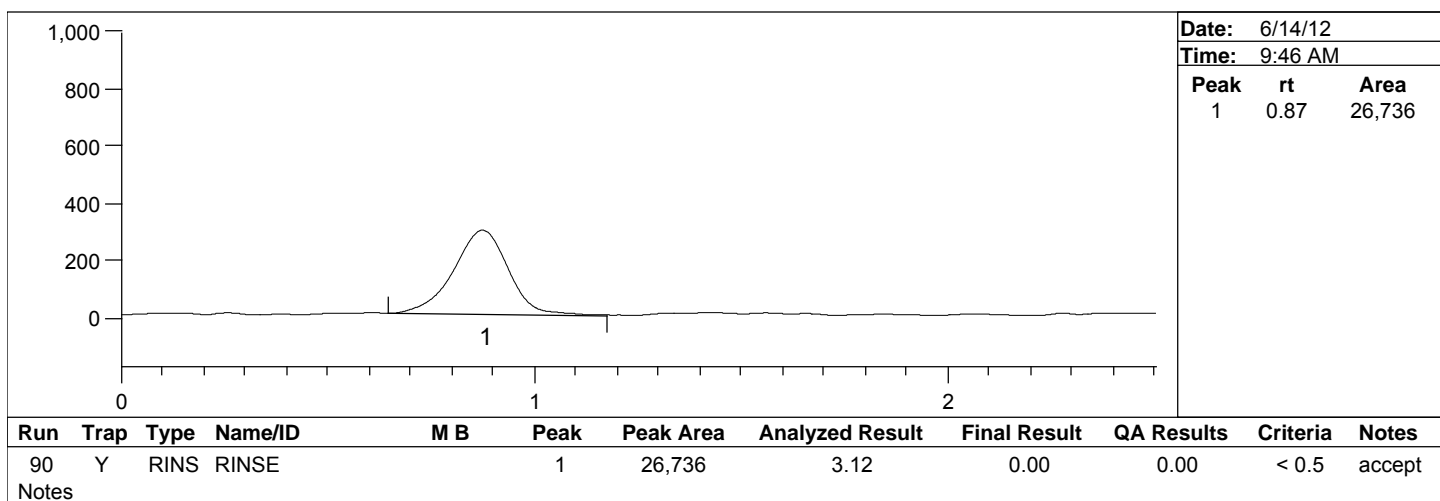
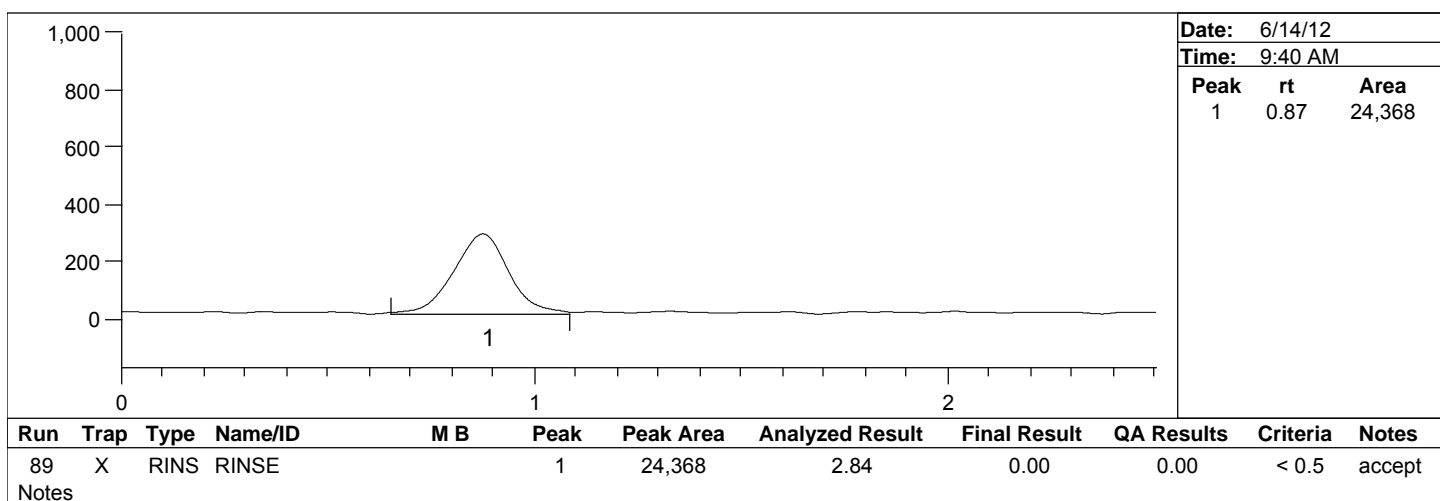
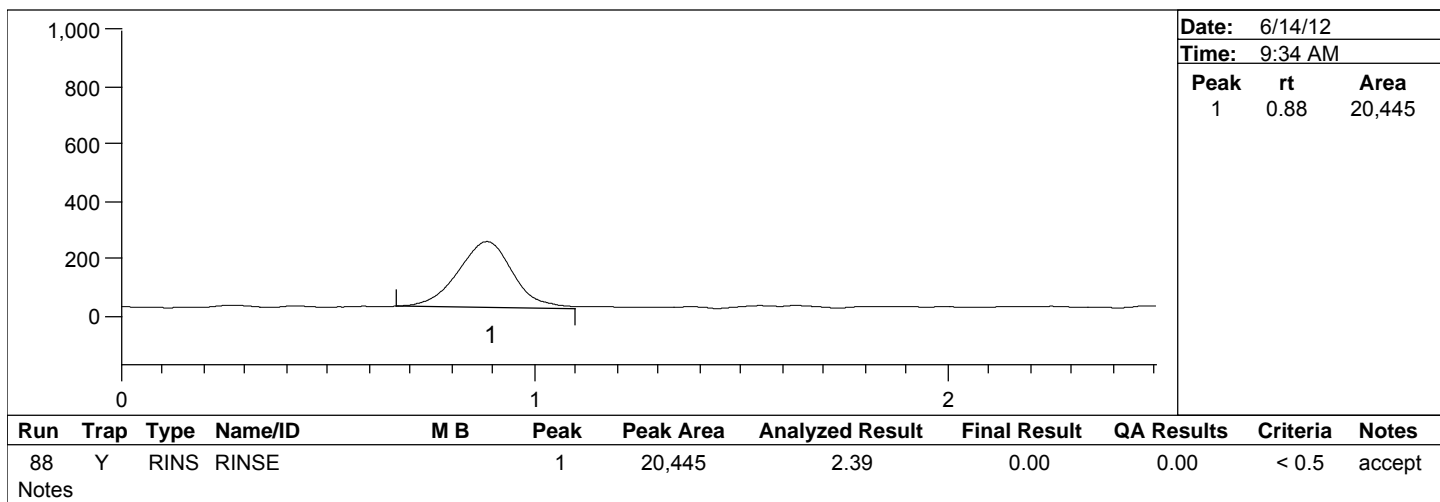


# Peak Report

Batch Number: B120919  
Method Number: CVAFS BR-0002

Project Number(s): 1200442  
Instrument ID: THG-06

Date Analyzed: 6/13/12  
Analyst Name: BJT

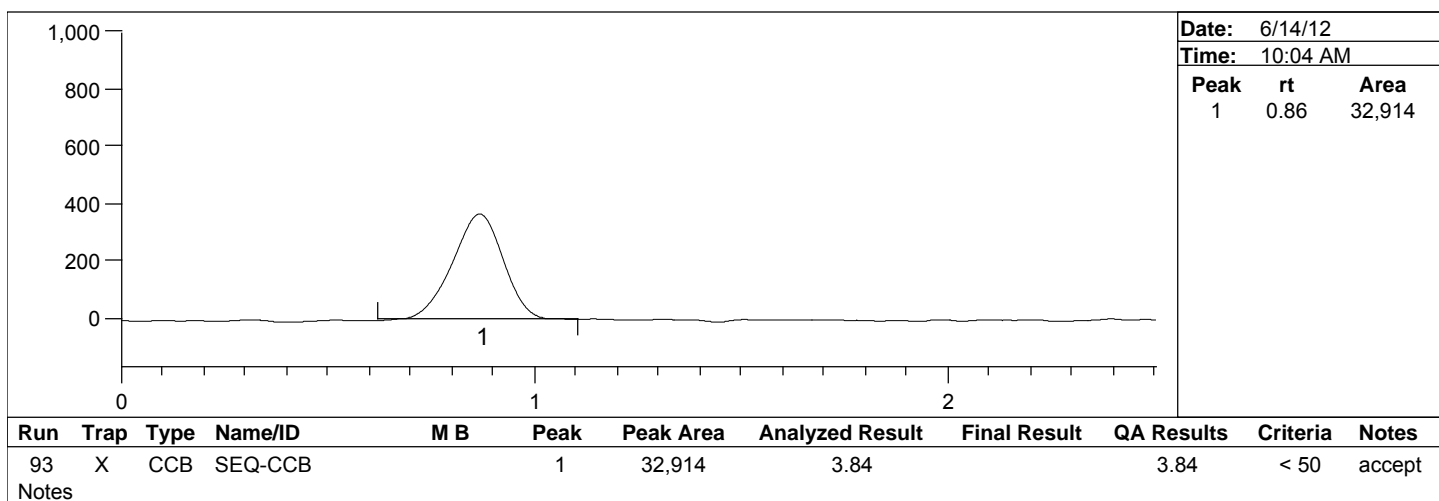
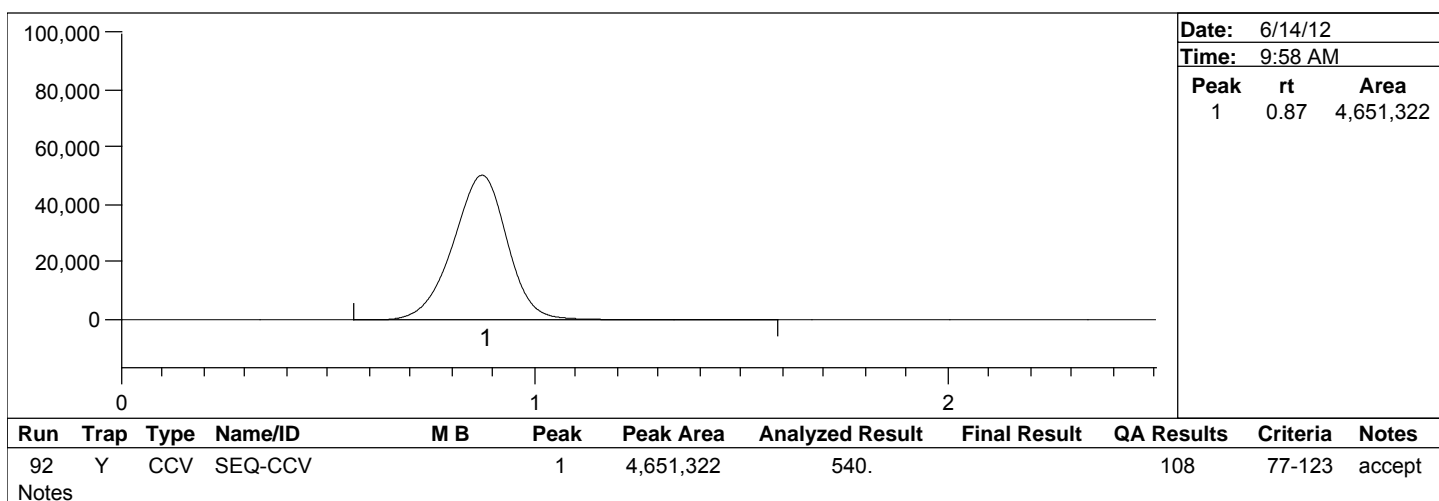
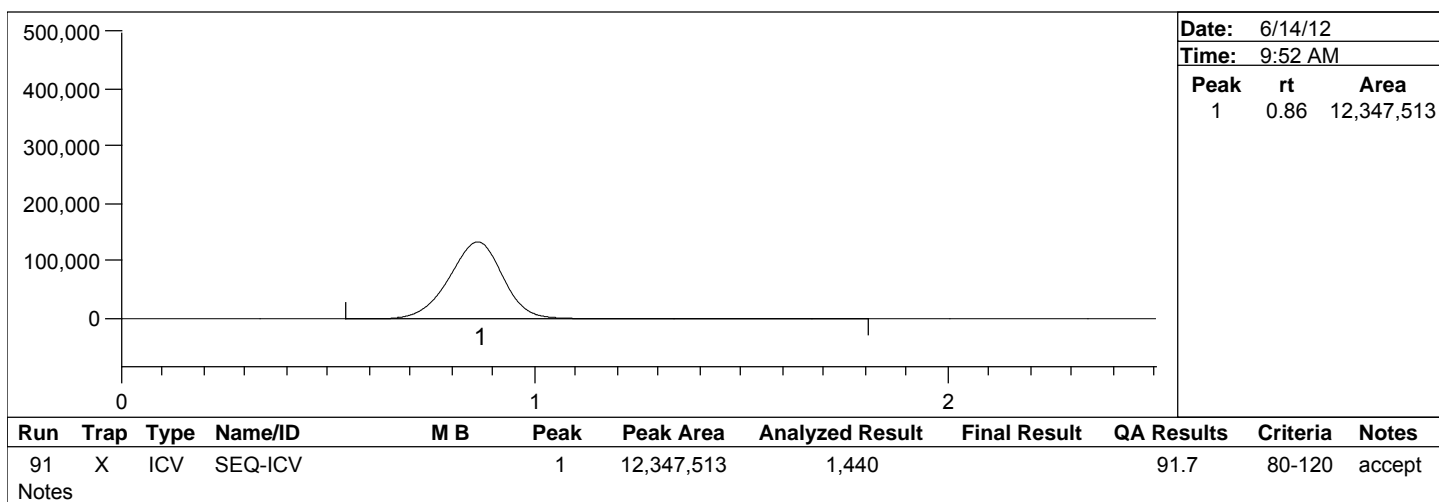


# Peak Report

Batch Number: B120919  
Method Number: CVAFS BR-0002

Project Number(s): 1200442  
Instrument ID: THG-06

Date Analyzed: 6/13/12  
Analyst Name: BJT

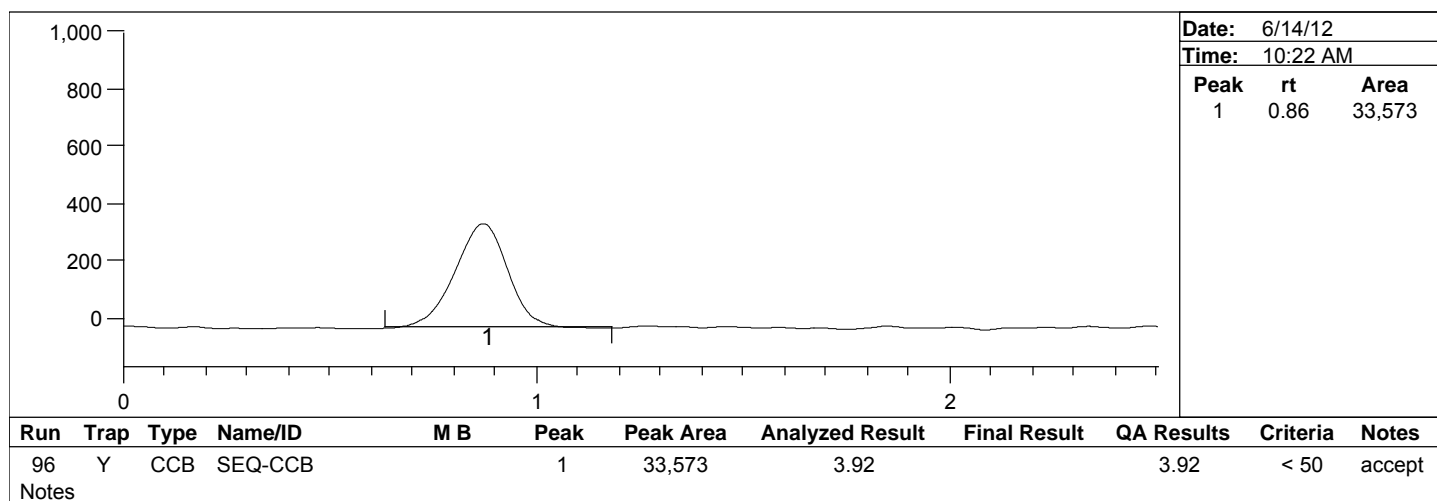
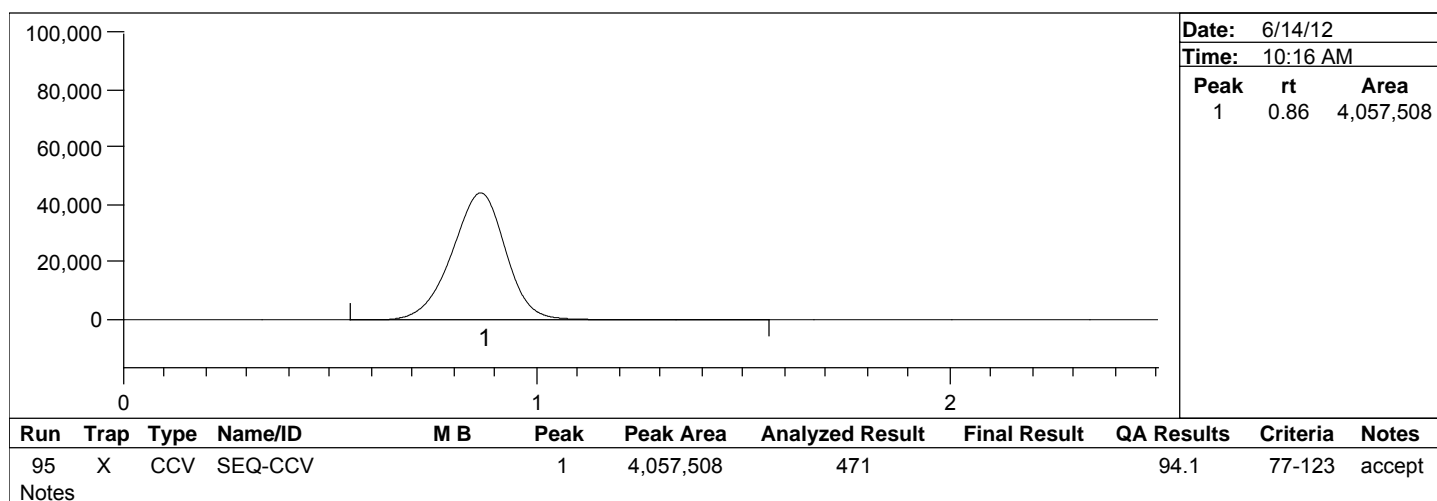
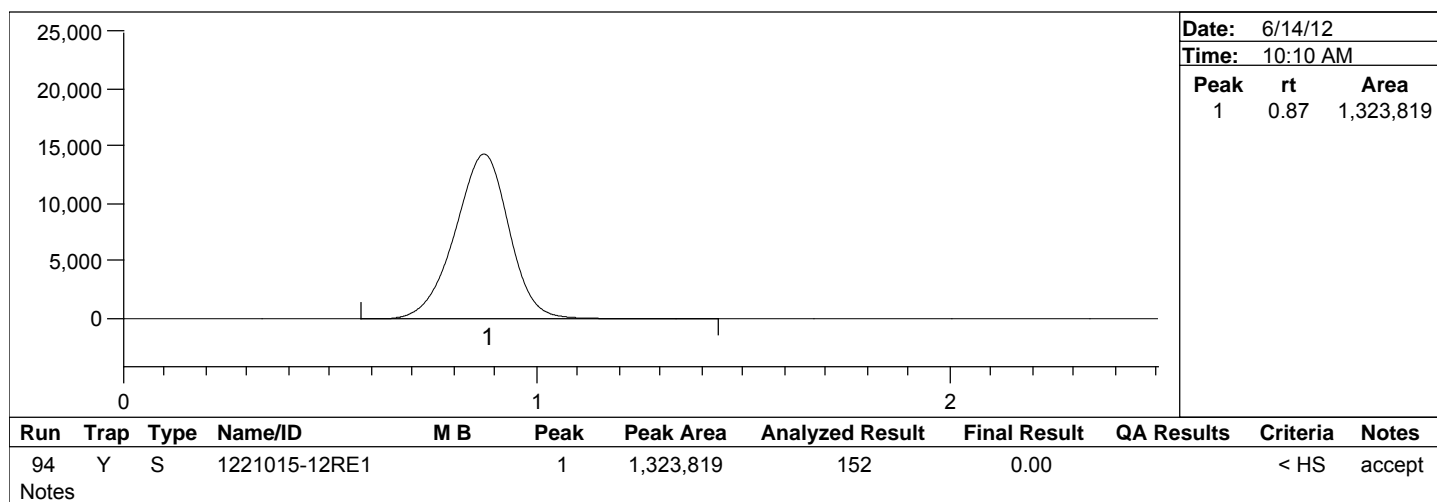


# Peak Report

Batch Number: B120919  
Method Number: CVAFS BR-0002

Project Number(s): 1200442  
Instrument ID: THG-06

Date Analyzed: 6/13/12  
Analyst Name: BJT

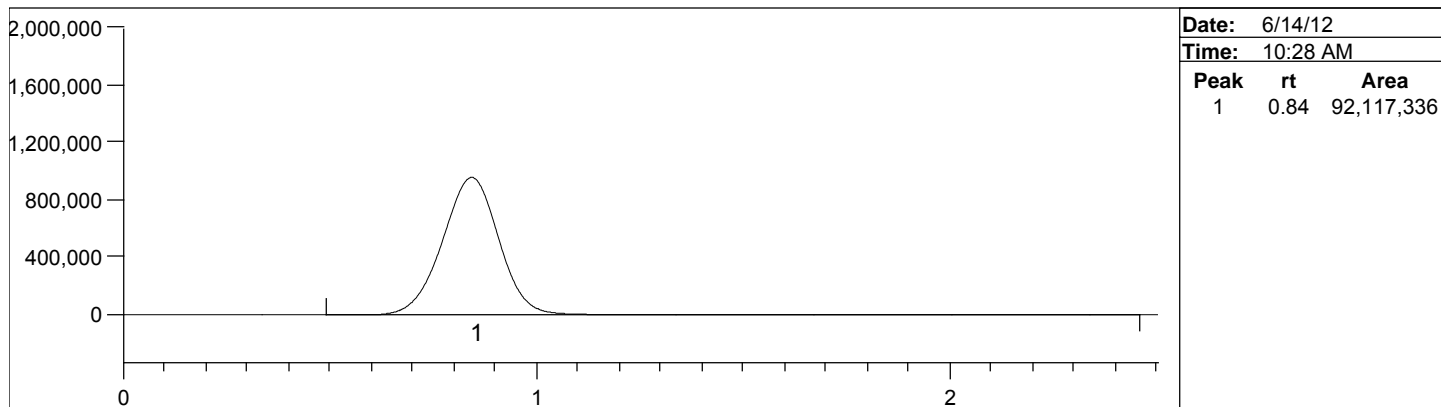


# Peak Report

Batch Number: B120919  
 Method Number: CVAFS BR-0002

Project Number(s): 1200442  
 Instrument ID: THG-06

Date Analyzed: 6/13/12  
 Analyst Name: BJT



Run	Trap	Type	Name/ID	MB	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
97	X	S	WASTE		1	92,117,336	10,700	0.00		< HS	reject

Notes

## ANALYSIS SEQUENCE

BRL Report 1220019 Rev.1

Brooks Rand Labs

1200444

Instrument: MMHG-09

Lab Number	Batch #	Analysis	Order	STD ID	Source ID	BRL Project #	Due	Comments
1200444-IBL1	1200444	QC	1		-			
1200444-IBL2	1200444	QC	2		-			
1200444-IBL3	1200444	QC	3		-			
1200444-CAL1	1200444	QC	4	1220035	-			
1200444-CAL2	1200444	QC	5	1220036	-			
1200444-CAL3	1200444	QC	6	1220037	-			
1200444-CAL4	1200444	QC	7	1220038	-			
1200444-CAL5	1200444	QC	8	1220039	-			
1200444-CAL6	1200444	QC	9	1220040	-			
1200444-CAL7	1200444	QC	10	1220041	-			
1200444-CCB1	1200444	QC	11		-			
1200444-ICV1	1200444	QC	12	1220043	-			
1200444-CCB2	1200444	QC	13		-			
1200444-CCV1	1200444	QC	14	1220042	-			
1200444-CCB3	1200444	QC	15		-			
1200444-CCB4	1200444	QC	16		-			
1200444-CCB5	1200444	QC	17		-			
B120831-BLK1	B120831	QC	18		-			
B120831-BLK2	B120831	QC	19		-			
B120831-BLK3	B120831	QC	20		-			
B120831-BLK4	B120831	QC	21		-			
B120831-SRM1	B120831	QC	22		-			
B120831-SRM2	B120831	QC	23		-			
B120831-SRM3	B120831	QC	24		-			
1218052-02	B120831	MeHg-S-NoMB-MeCl	25			AAL-MN1101	6/8/2012	
B120831-DUP1	B120831	QC	26		1218052-02			

## ANALYSIS SEQUENCE

BRL Report 1220019 Rev.1

Brooks Rand Labs

1200444

Instrument: MMHG-09

Lab Number	Batch #	Analysis	Order	STD ID	Source ID	BRL Project #	Due	Comments
B120831-MS1	B120831	QC	27		1218052-02			
1200444-CCV2	1200444	QC	28	1220042	-			
1200444-CCB6	1200444	QC	29		-			
B120831-MSD1	B120831	QC	30		1218052-02			
B120831-PS1	B120831	QC	31		1218052-02			
1218052-07	B120831	MeHg-S-NoMB-MeCl	32			AAL-MN1101	6/8/2012	
1218052-11	B120831	MeHg-S-NoMB-MeCl	33			AAL-MN1101	6/8/2012	
1218052-16	B120831	MeHg-S-NoMB-MeCl	34			AAL-MN1101	6/8/2012	
1218052-18	B120831	MeHg-S-NoMB-MeCl	35			AAL-MN1101	6/8/2012	
1219023-01	B120831	MeHg-S-NoMB-MeCl	36			AAL-MN1101	6/11/2012	
1219023-04	B120831	MeHg-S-NoMB-MeCl	37			AAL-MN1101	6/11/2012	
1219023-08	B120831	MeHg-S-NoMB-MeCl	38			AAL-MN1101	6/11/2012	
B120831-DUP3	B120831	QC	39		1219023-08			
1200444-CCV3	1200444	QC	40	1220042	-			
1200444-CCB7	1200444	QC	41		-			
B120831-MS3	B120831	QC	42		1219023-08			
B120831-MSD3	B120831	QC	43		1219023-08			
B120831-PS3	B120831	QC	44		1219023-08			
1219023-16	B120831	MeHg-S-NoMB-MeCl	45			AAL-MN1101	6/11/2012	
1219023-18	B120831	MeHg-S-NoMB-MeCl	46			AAL-MN1101	6/11/2012	
1219050-03	B120831	MeHg-S-NoMB-MeCl	47			AAL-MN1101	6/12/2012	
1219050-04	B120831	MeHg-S-NoMB-MeCl	48			AAL-MN1101	6/12/2012	
B120831-DUP2	B120831	QC	49		1219050-04			
B120831-MS2	B120831	QC	50		1219050-04			
B120831-MSD2	B120831	QC	51		1219050-04			
1200444-CCV4	1200444	QC	52	1220042	-			

## ANALYSIS SEQUENCE

BRL Report 1220019 Rev.1

Brooks Rand Labs

1200444

Instrument: MMHG-09

Lab Number	Batch #	Analysis	Order	STD ID	Source ID	BRL Project #	Due	Comments
1200444-CCB8	1200444	QC	53		-			
B120831-PS2	B120831	QC	54		1219050-04			
1219050-06	B120831	MeHg-S-NoMB-MeCl	55			AAL-MN1101	6/12/2012	
1219050-12	B120831	MeHg-S-NoMB-MeCl	56			AAL-MN1101	6/12/2012	
1219050-14	B120831	MeHg-S-NoMB-MeCl	57			AAL-MN1101	6/12/2012	
1220019-05	B120831	MeHg-S-NoMB-MeCl	58			AAL-MN1101	6/18/2012	
B120831-DUP4	B120831	QC	59		1220019-05			
B120831-MS4	B120831	QC	60		1220019-05			
B120831-MSD4	B120831	QC	61		1220019-05			
B120831-PS4	B120831	QC	62		1220019-05			
1220019-06	B120831	MeHg-S-NoMB-MeCl	63			AAL-MN1101	6/18/2012	
1200444-CCV5	1200444	QC	64	1220042	-			
1200444-CCB9	1200444	QC	65		-			
1220019-07	B120831	MeHg-S-NoMB-MeCl	66			AAL-MN1101	6/18/2012	
1220019-08	B120831	MeHg-S-NoMB-MeCl	67			AAL-MN1101	6/18/2012	
1220019-09	B120831	MeHg-S-NoMB-MeCl	68			AAL-MN1101	6/18/2012	
1221015-10	B120831	MeHg-S-NoMB-MeCl	69			AAL-MN1101	6/25/2012	
1221015-11	B120831	MeHg-S-NoMB-MeCl	70			AAL-MN1101	6/25/2012	
1221015-12	B120831	MeHg-S-NoMB-MeCl	71			AAL-MN1101	6/25/2012	
B120831-DUP5	B120831	QC	72		1221015-12			
B120831-MS5	B120831	QC	73		1221015-12			
B120831-MSD5	B120831	QC	74		1221015-12			
B120831-PS5	B120831	QC	75		1221015-12			
1200444-CCV6	1200444	QC	76	1220042	-			
1200444-CCBA	1200444	QC	77		-			
B121024-BLK1	B121024	QC	78		-			

### MeHg-Autoanalyzer Analysis Sheet

Sequence: 1200444

Batch: B120831, 1024

Analyst: BJT

Instrument ID # MMHg 09

Standards: 1 ng/mL: 1223065

0.01 ng/mL: 122033

Date: 6/13/12

Buffer: 1214045

NaBEt<sub>4</sub>: 122 0034

ICV: 1223067

Run/ Vial Position	Sample ID	Analyzed volume	Dilution Factor	Comments
1	EB-1	---		NaBEt <sub>4</sub> ID and time out: #1301515
2	EB-2	---		
3	EB-3	---		
4	IBL1	---		
5	IBL2	---		
6	IBL3	---		
7	0.5 pg	0.050		0.01 ng/mL
8	1 pg	0.100		0.01 ng/mL
9	2 pg	0.200		0.01 ng/mL
10	10 pg	1.00		0.01 ng/mL
11	50 pg	0.050		1.0 ng/mL
12	250 pg	0.250		1.0 ng/mL
13	1000 pg	1.00		1.0 ng/mL
14	CCB	---		
15	ICV	0.100		1.0 ng/mL MeHgOH
16	CCB	---		
17	CCV	0.025		1.0 ng/mL
18	CCB	---		
19	CCB	---		
20	CCB	---		
21	B120831 BUK1	5.00		
22	↓ BUK2	↓		
23	↓ BUK3	↓		
24	↓ BUK4	↓		

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Balance ID / Pipette ID used for sample vol (if applicable): \_\_\_\_\_



## MeHg-Autoanalyzer Analysis Sheet

Page 2 of 5

Sequence: 1200444

Analyst: VBJT

Date: 6/13/12

Run/ Vial Position	Sample ID	Analyzed volume	Dilution Factor	Comments NaBEt <sub>4</sub> ID and time out
25	B120831 SRM1	5.00		
26	↓ SRM2	↓		
27	↓ SRM3	↓		
28	1218052-02	↓		
29	B120831 DUP1	↓		
30	↓ MS1	↓		
31	CW	0.025		1ng/ml
32	CUB			
33	B120831 MSD1	5.00		
34	↓ PS1	↓		Native 1218052-02 0.050mL of 1ng/ml
35	1218052-07	↓		
36	↓ -11	↓		
37	↓ -16	↓		
38	↓ -18	↓		
39	1219023-01	↓		
40	↓ -04	↓		
41	↓ -08	↓		
42	B120831 DUP3	↓		
43	CW	0.025		1ng/ml
44	CUB			
45	B120831 MS3	5.00		
46	↓ MS3	↓		
47	↓ PS3	↓		Native 1219023-08 0.050mL of 1ng/ml
48	1219023-16	↓		

Comments:

## MeHg-Autoanalyzer Analysis Sheet

Page 3 of 5

Sequence: 120044

Analyst: BJT

Date: 4/13/12

Run/ Vial Position	Sample ID	Analyzed volume	Dilution Factor	Comments NaBEt <sub>4</sub> ID and time out
49	1219023-18	5.00		
50	1219050-03	↓		
51	↓ -04	↓		
52	B120831 DUP2	↓		
53	↓ MS2	↓		
54	↓ MSD2	↓		
55	CUV	0.025		1ng/mL
56	CU3			
57	B120831 PS2	5.00		NAME 1219050-04 50 μL of 1ng/mL
58	1219050-06	↓		
59	↓ -12	↓		
60	↓ -14	↓		
61	1220019-05	↓		
62	B120831 DUP4	↓		
63	↓ MS4	↓		
64	↓ MSD4	↓		
65	↓ PS4	↓		NAME 1220019-05 50 μL of 1ng/mL
66	1220019-06	↓		
67	CUV	0.025		1ng/mL
68	CU3			
69	1220019-07	5.00		
70	↓ -08	↓		
71	↓ -09	↓		
72	1221015-10	↓		

Comments: \_\_\_\_\_

\_\_\_\_\_

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## MeHg-Autoanalyzer Analysis Sheet

Page 4 of 5

Sequence: 1200444

Analyst: VBT

Date: 6/13/12

Run/ Vial Position	Sample ID	Analyzed volume	Dilution Factor	Comments NaBEt, ID and time out
73	1221015-11	5.00		# 25 @ 1730
74	↓ -12			
75	B120831 DUPS			
76	MS5			
77	MSDS			
78	↓ PSS			
79	CV	0.025		Note 1221015-12 50 $\mu$ g of 10 $\mu$ g/ml 1 ng/ml
80	CVB			
81	<sup>6/13/12 11:57</sup> B121024 BUK1	5.00		(*)
82	↓ BUK2			
83	↓ SRM1			
84	1218052-02RE1			
85	B121024 DUP1			
86	↓ MS1			
87	↓ MSD1			
88	1219023-08RE1			
89	B121024 DUP2			
90	↓ MS2			
91	CV	0.025		1 ng/ml
92	CVB			
93	B121024 MSD2	5.00		
94	CV	0.025		1 ng/ml
95	CVB			
96	1 ng/ml CVB	0.025		1 ng/ml (***) 1219060

Comments: (\*) Not Reported (red) only!

(\*\*) started batch w/ old standards. Tested new vs old at end of batch, both recovered w/in 1% of each other

Prepped By: BJT  
Preparation Start Date/Time\*: 6/12/12 10:15

Batch: B120831

Preparation End Date/Time\*: 6/13/12 08:45

\* Time is when the first reagents are added.

\*\* Time is when the last sample is brought upto volume

Sample ID	Sample mass (g)	Original vol. (g)	vial plus DCM (g)	EXINFO 1 EXTRACT DCM (g)	EXINFO 2 Empty Bottle (g)	EXINFO 3 - Bottle + DCM (g)	Recovered DCM (for LIMS rates)	Rec. DCM ext. DCM
1218052-02	0.5890	55.449	75.659	0.000	38.142	55.267	0.000	#DIV/0!
1218052-07	0.586	55.327	75.330	0.000	40.629	57.251	0.000	#DIV/0!
1218052-11	0.541	57.104	77.056	0.000	43.376	59.977	0.000	#DIV/0!
1218052-16	0.534	55.198	75.492	0.000	39.696	56.317	0.000	#DIV/0!
1218052-18	0.543	55.827	75.632	0.000	40.448	57.350	0.000	#DIV/0!
1219023-01	0.505	57.378	77.861	0.000	40.344	56.429	0.000	#DIV/0!
1219023-04	0.540	55.590	76.436	0.000	40.443	63.840	0.000	#DIV/0!
1219023-08	0.510	55.844	75.988	0.000	42.115	58.608	0.000	#DIV/0!
1219023-16	0.578	55.487	75.636	0.000	41.734	58.871	0.000	#DIV/0!
1219023-18	0.537	56.978	77.681	0.000	42.239	60.052	0.000	#DIV/0!
1219050-03	0.548	57.172	77.246	0.000	40.761	57.587	0.000	#DIV/0!
1219050-04	0.504	55.210	76.255	0.000	39.935	57.610	0.000	#DIV/0!
1219050-06	0.538	54.859	75.003	0.000	41.976	61.664	0.000	#DIV/0!
1219050-12	0.539	57.162	78.028	0.000	42.474	60.187	0.000	#DIV/0!
1219050-14	0.521	57.156	77.728	0.000	39.617	57.145	0.000	#DIV/0!
1220019-05	0.500	57.531	77.723	0.000	42.242	58.660	0.000	#DIV/0!
1220019-06	0.563	55.096	75.410	0.000	43.006	59.734	0.000	#DIV/0!
1220019-07	0.515	57.168	77.667	0.000	38.758	55.863	0.000	#DIV/0!
1220019-08	0.562	55.620	76.282	0.000	44.699	61.944	0.000	#DIV/0!
1220019-09	0.508	56.954	77.639	0.000	41.486	58.775	0.000	#DIV/0!
1221015-10	0.560	55.691	76.260	0.000	39.888	56.201	0.000	#DIV/0!
1221015-11	0.562	57.043	77.521	0.000	40.149	57.367	0.000	#DIV/0!
1221015-12	0.593	55.315	76.210	0.000	44.482	62.234	0.000	#DIV/0!
B120831-BLK1		55.030	75.516	0.000	40.785	58.316	0.000	#DIV/0!
B120831-BLK2		54.707	75.473	0.000	40.644	58.529	0.000	#DIV/0!
B120831-BLK3		54.696	75.057	0.000	35.988	53.272	0.000	#DIV/0!
B120831-BLK4		55.332	75.608	0.000	39.846	57.480	0.000	#DIV/0!
B120831-DUP1	0.561	57.041	77.616	0.000	44.976	61.818	0.000	#DIV/0!
B120831-DUP2	0.548	57.131	77.989	0.000	40.464	56.576	0.000	#DIV/0!
B120831-DUP3	0.531	57.367	78.435	0.000	38.904	56.089	0.000	#DIV/0!
B120831-DUP4	0.519	55.705	76.100	0.000	38.451	56.022	0.000	#DIV/0!
B120831-DUP5	0.578	55.405	74.728	0.000	40.133	55.726	0.000	#DIV/0!
B120831-MS1	0.537	57.784	78.207	0.000	41.808	59.178	0.000	#DIV/0!
B120831-MS2	0.510	55.790	76.537	0.000	44.490	62.304	0.000	#DIV/0!
B120831-MS3	0.525	55.587	75.366	0.000	45.965	62.712	0.000	#DIV/0!
B120831-MS4	0.538	55.383	75.863	0.000	46.228	63.651	0.000	#DIV/0!
B120831-MS5	0.584	55.478	75.836	0.000	44.669	62.156	0.000	#DIV/0!
B120831-MSD1	0.529	55.391	76.201	0.000	39.173	56.695	0.000	#DIV/0!
B120831-MSD2	0.550	54.967	75.077	0.000	44.755	61.683	0.000	#DIV/0!
B120831-MSD3	0.519	55.588	75.982	0.000	40.429	57.641	0.000	#DIV/0!
B120831-MSD4	0.533	55.663	76.074	0.000	42.352	59.571	0.000	#DIV/0!
B120831-MSD5	0.568	55.949	76.298	0.000	38.535	55.367	0.000	#DIV/0!
B120831-SRM1	0.560	55.746	76.218	0.000	39.390	56.372	0.000	#DIV/0!
B120831-SRM2	0.498	54.809	75.291	0.000	40.714	56.631	0.000	#DIV/0!
B120831-SRM3	0.4929	55.622	75.206	0.000	42.153	58.398	0.000	#DIV/0!
				0.000			0.000	#DIV/0!
				0.000			0.000	#DIV/0!

Batch QC ID	Sample Source	Spike vol (uL)	Spike conc (ng/mL)	Spike/CRM ID	Spike Witness
MS/MSD1	1218052-02	250	10ng/mL	1221009	AAP 6/12/12
MS/MSD2	1219050-04	↓	↓	↓	↓
MS/MSD3	1219023-08	↓	↓	↓	↓
MS/MSD4	1220019-05	↓	↓	↓	↓
MS/MSD5	1221015-12	↓	↓	↓	↓
SRM1&2	SQC-1238			1103013	

Reagent ID	
CuSO4	1220004
KBr/H2SO4	1223036
DCM	1214030
Balance ID:	BL-07
Thermometer ID:	BR-02 Preplab
Hotplate Temp (measured / corrected):	62 / 60
Date/Time On:	1440
Date/Time Off:	2040 TIMER
Final Dilution Vol:	100 mL

discarded, dark liquid.



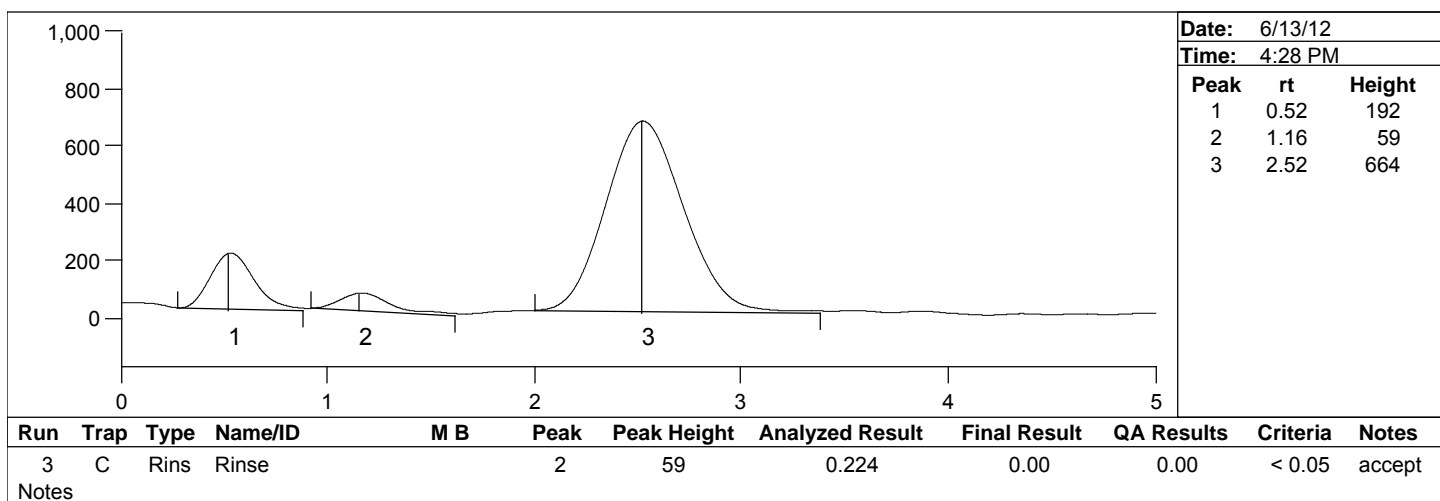
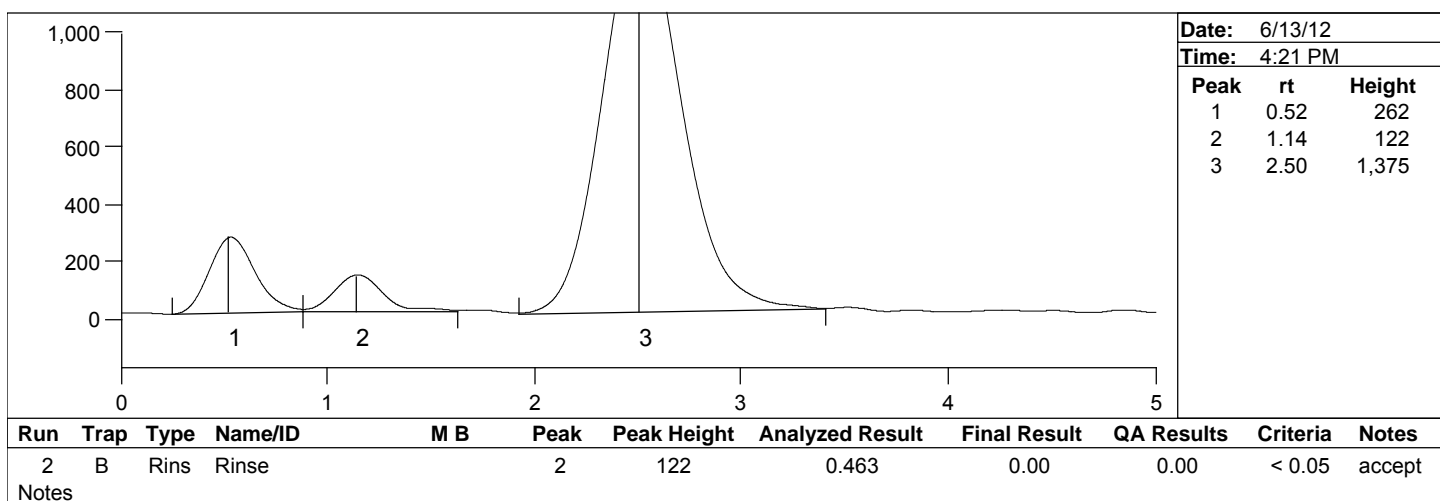
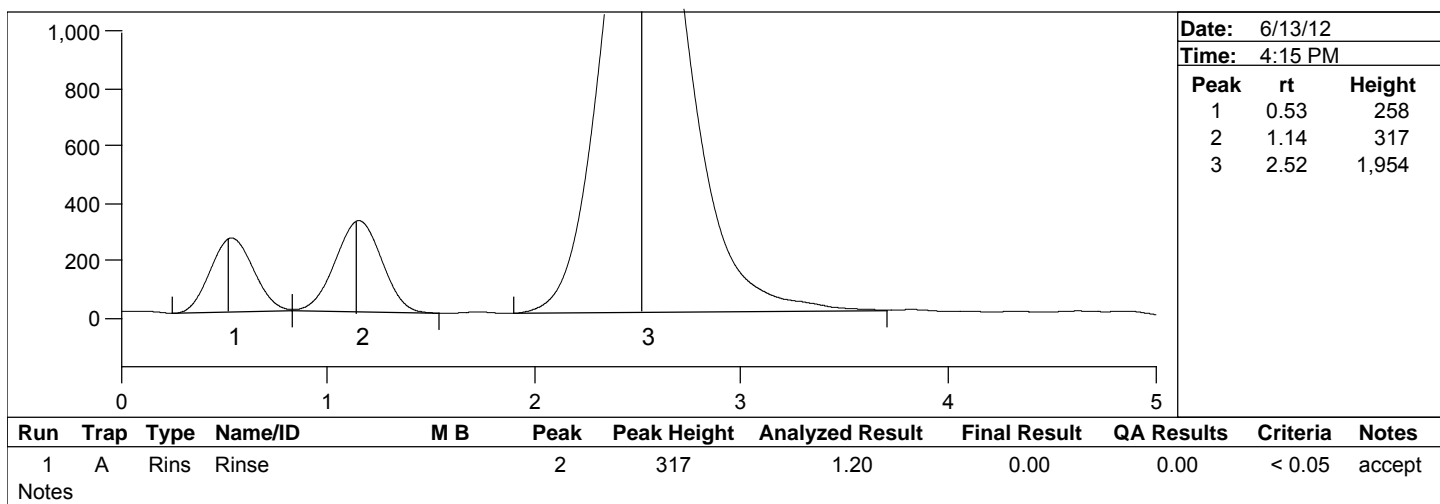


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Batch Number: B120831  
 Method Number: CVAFS BR-0011

Project Number(s): 1200444  
 Instrument ID: MMHG-09

Date Analyzed: 6/13/12  
 Analyst Name: BJT

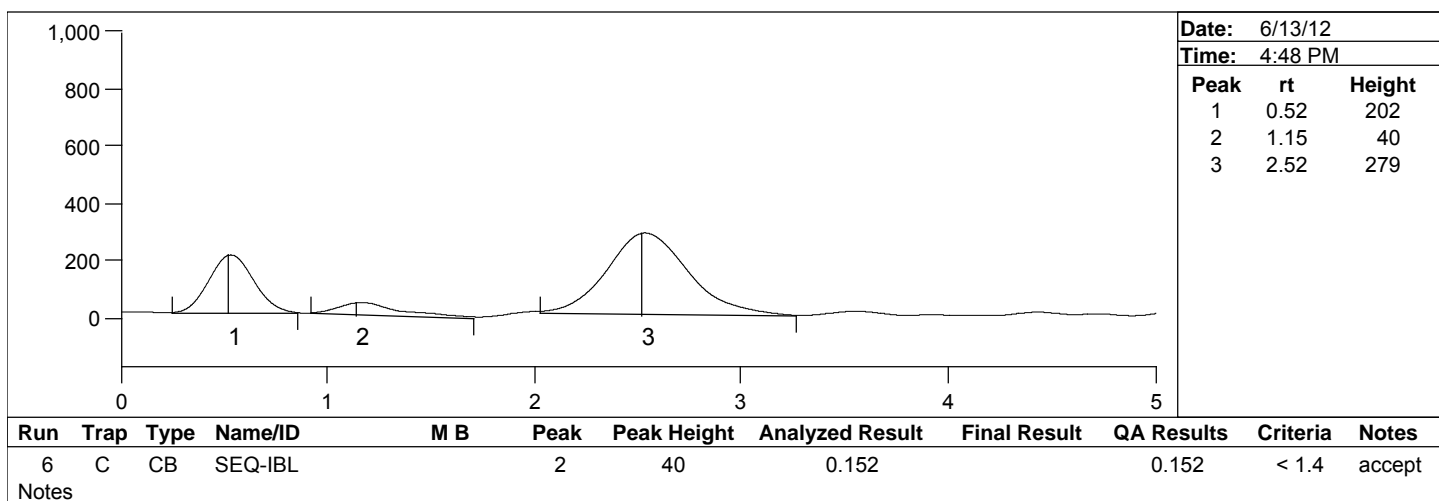
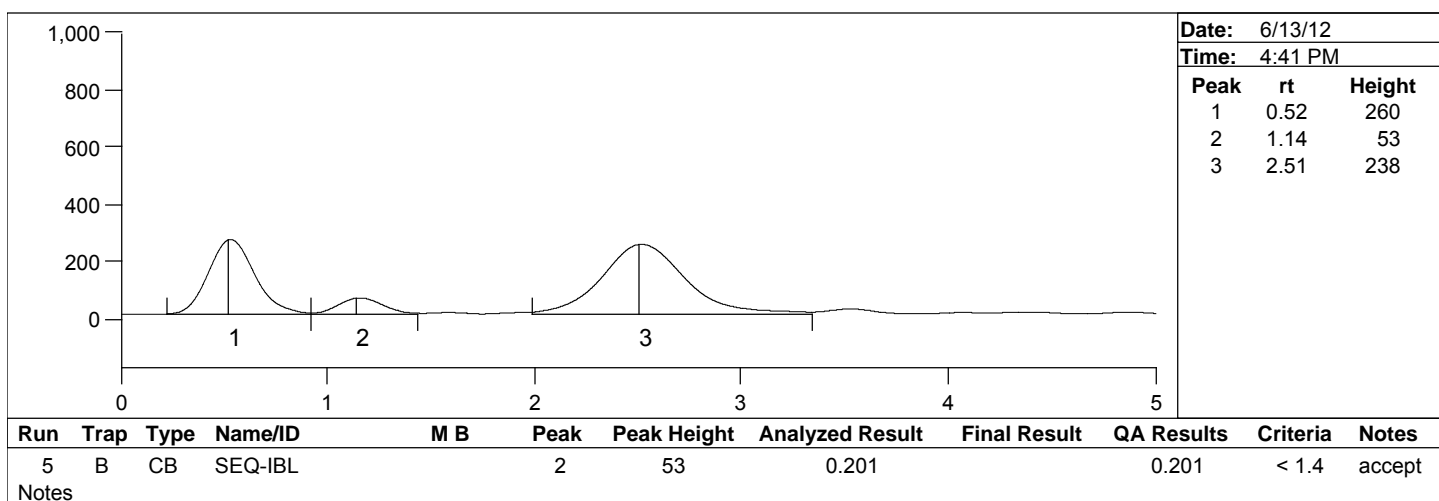
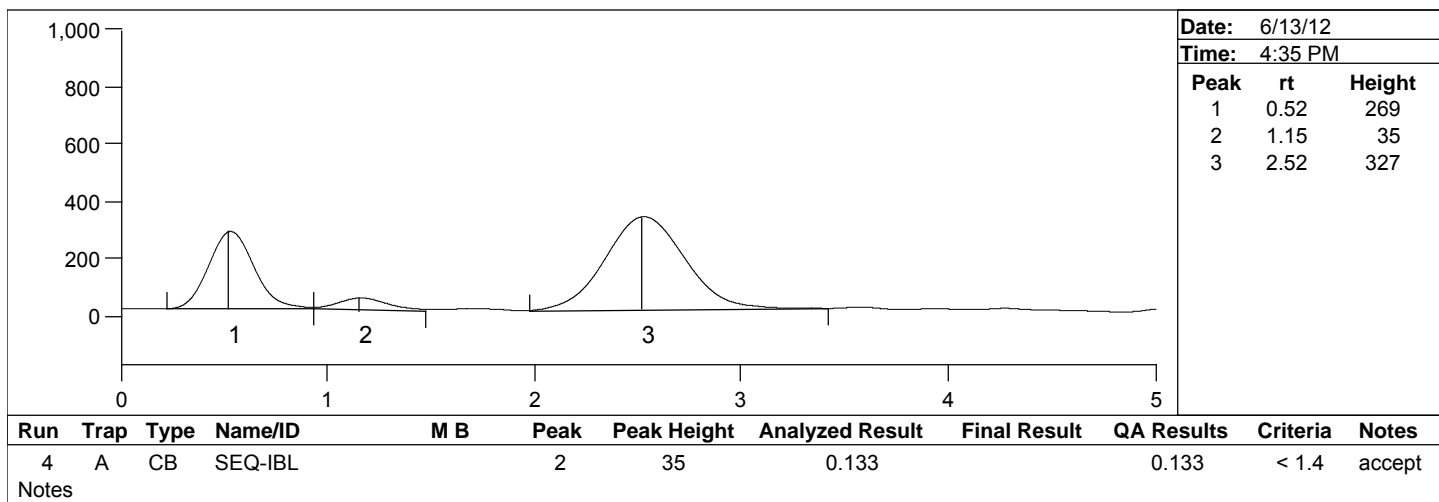


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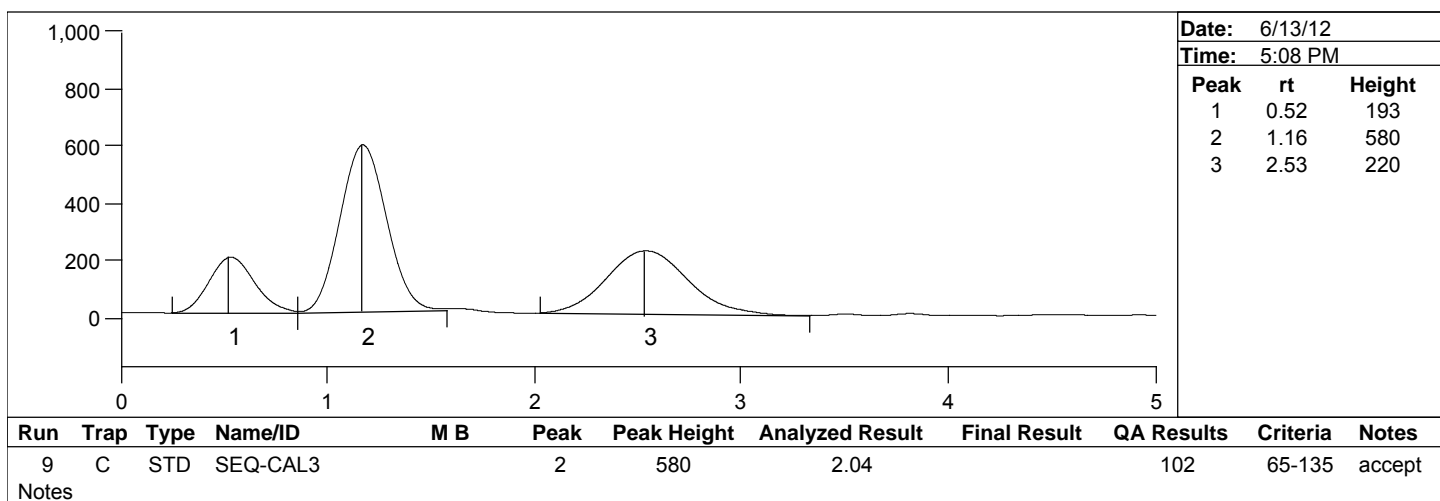
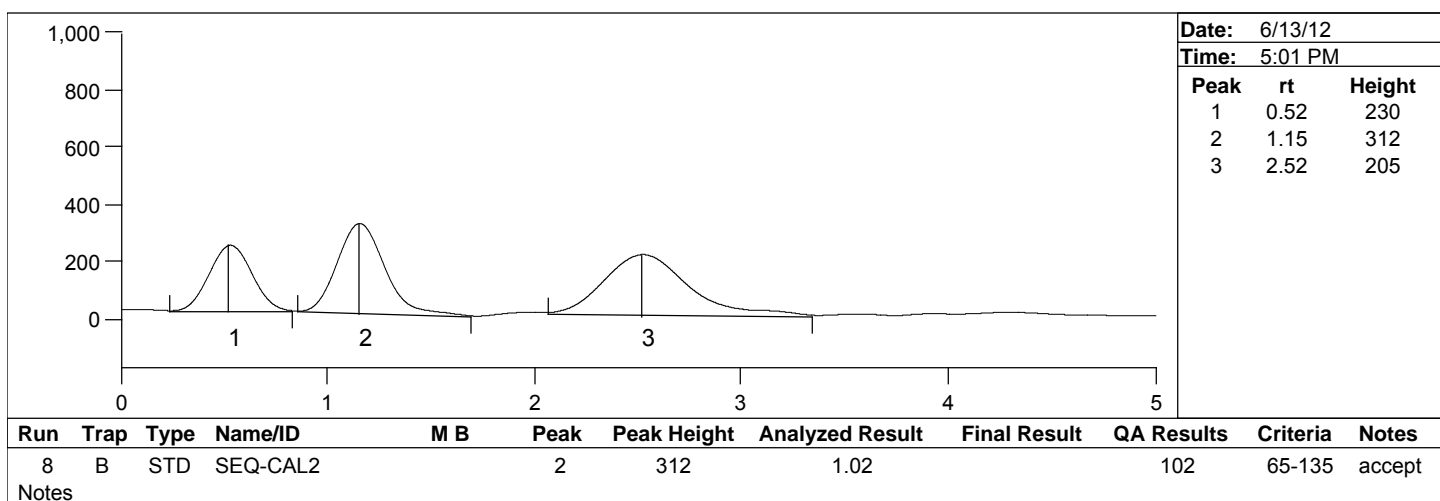
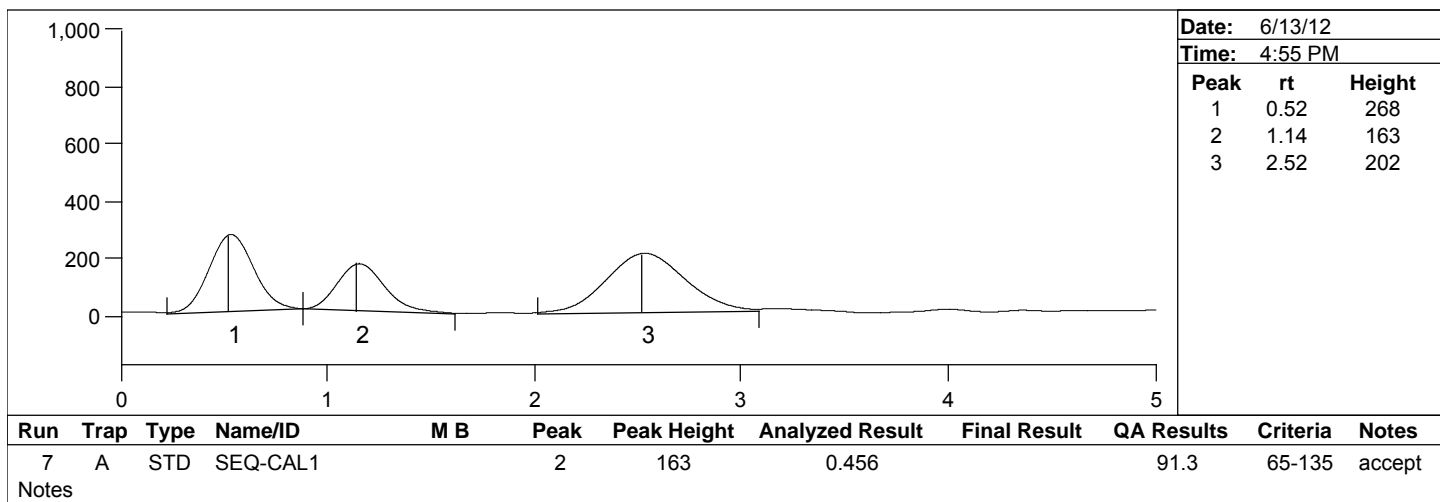


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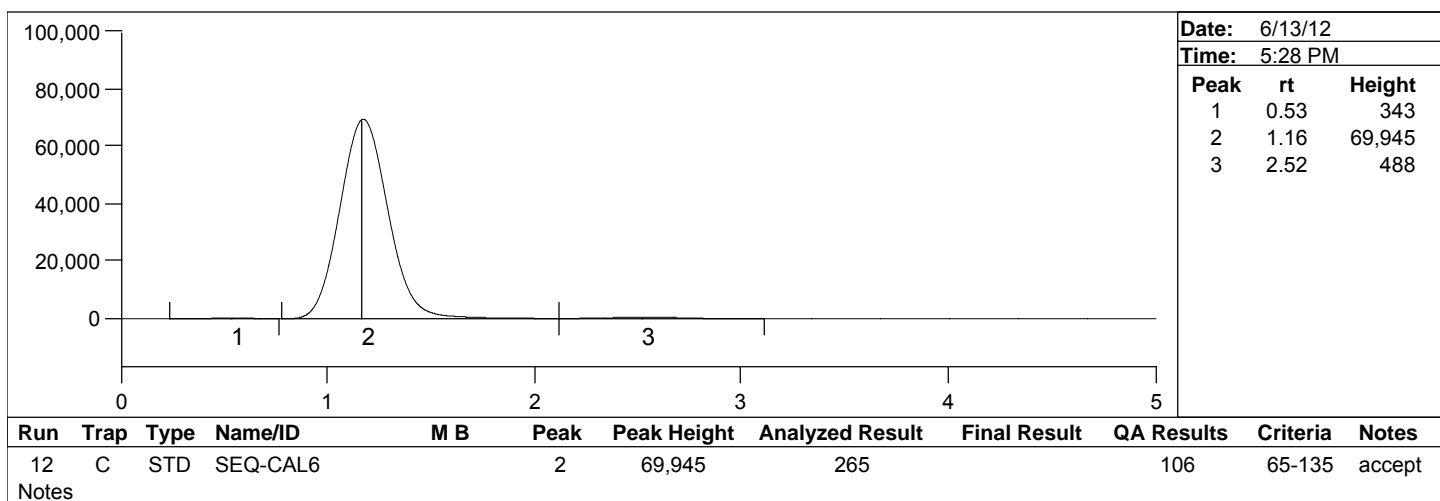
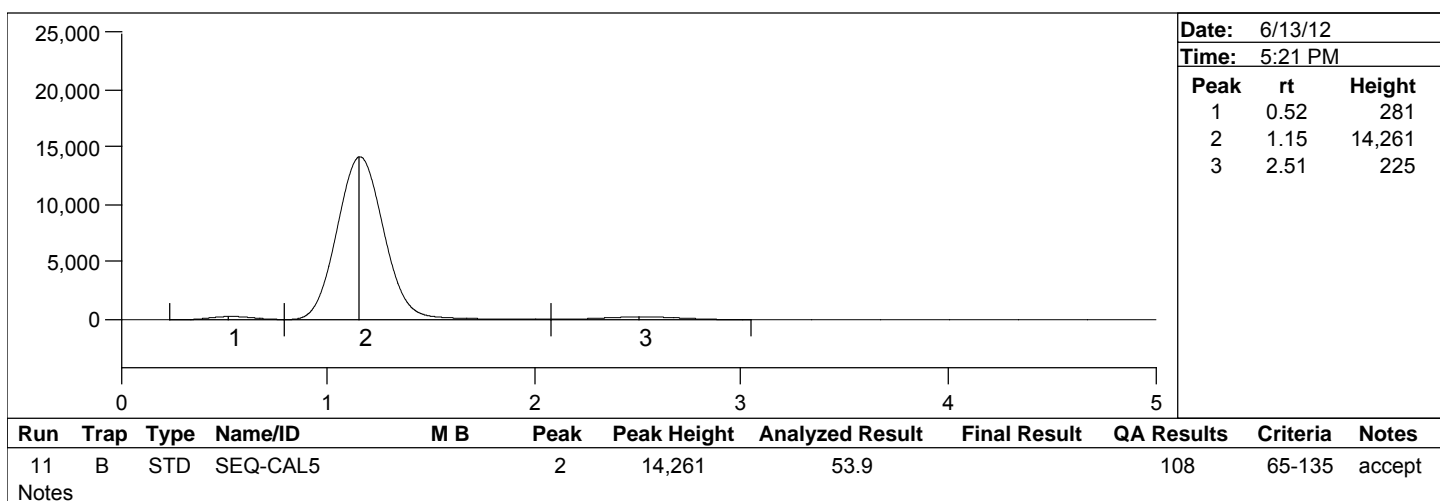
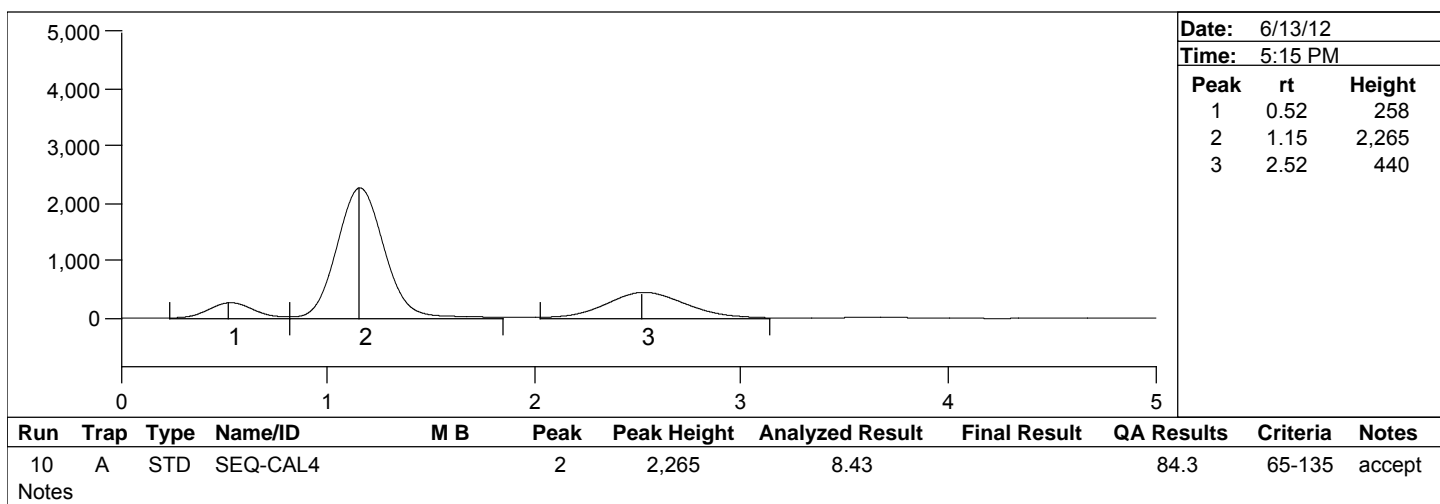


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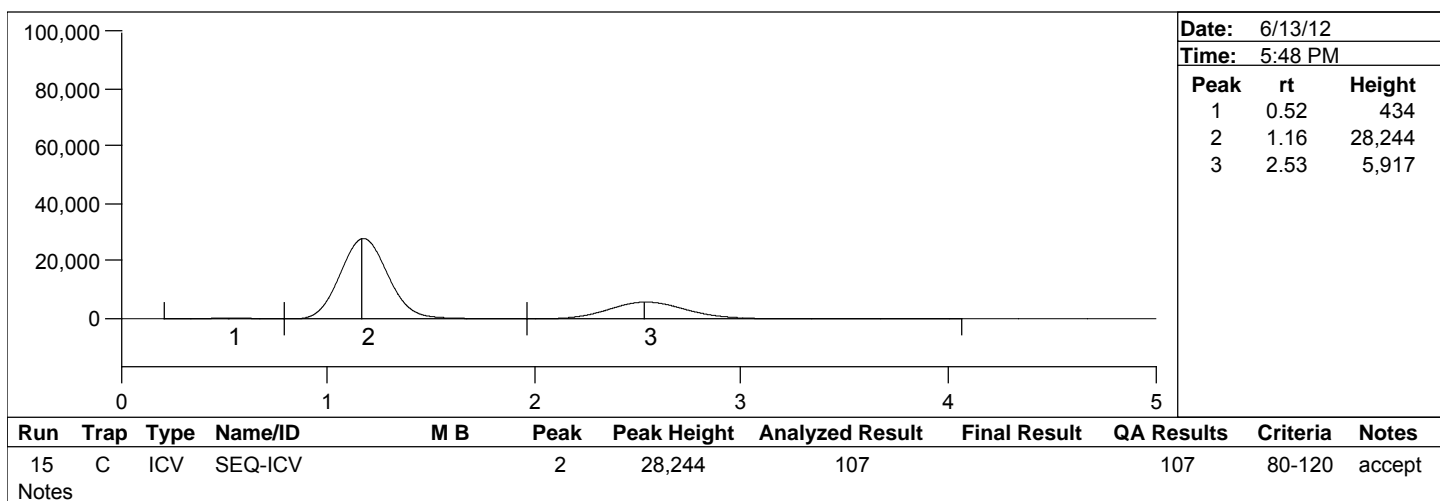
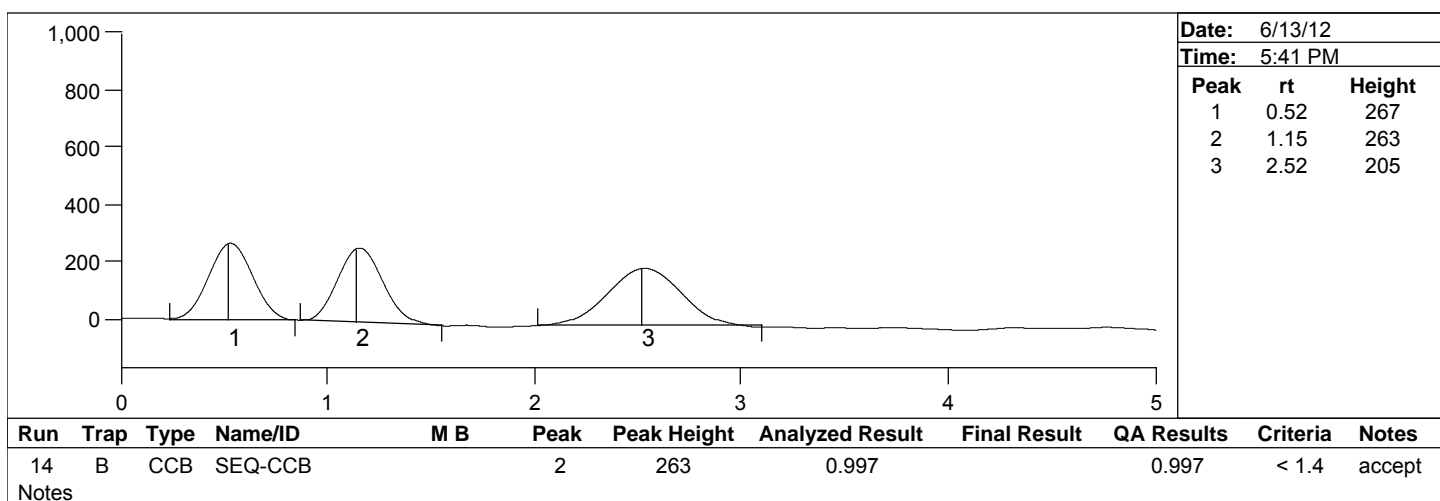
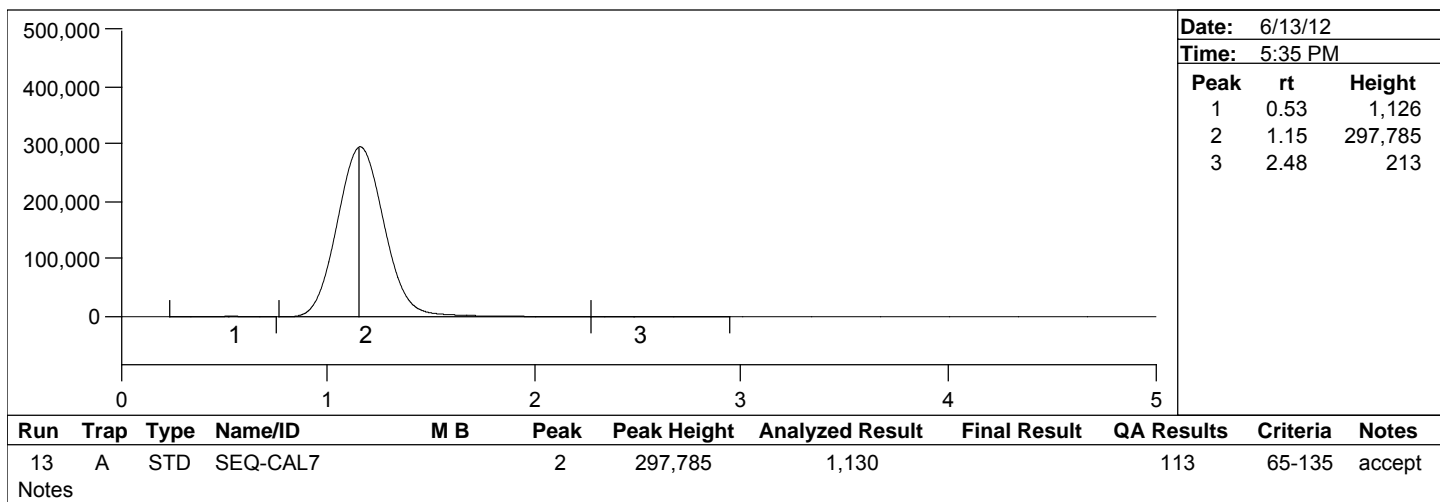


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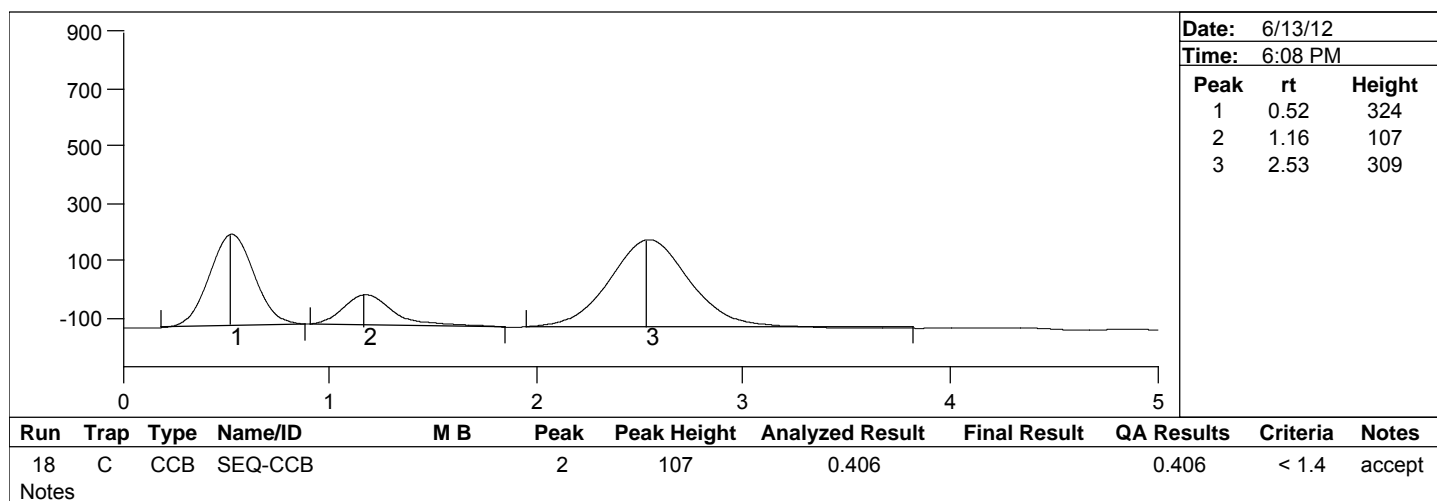
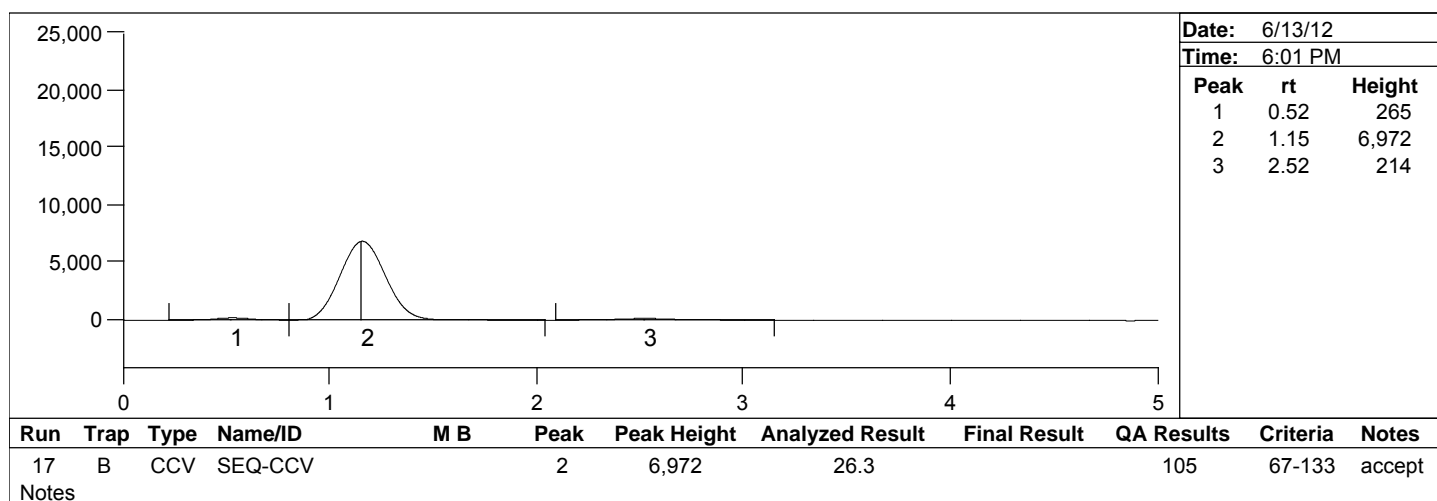
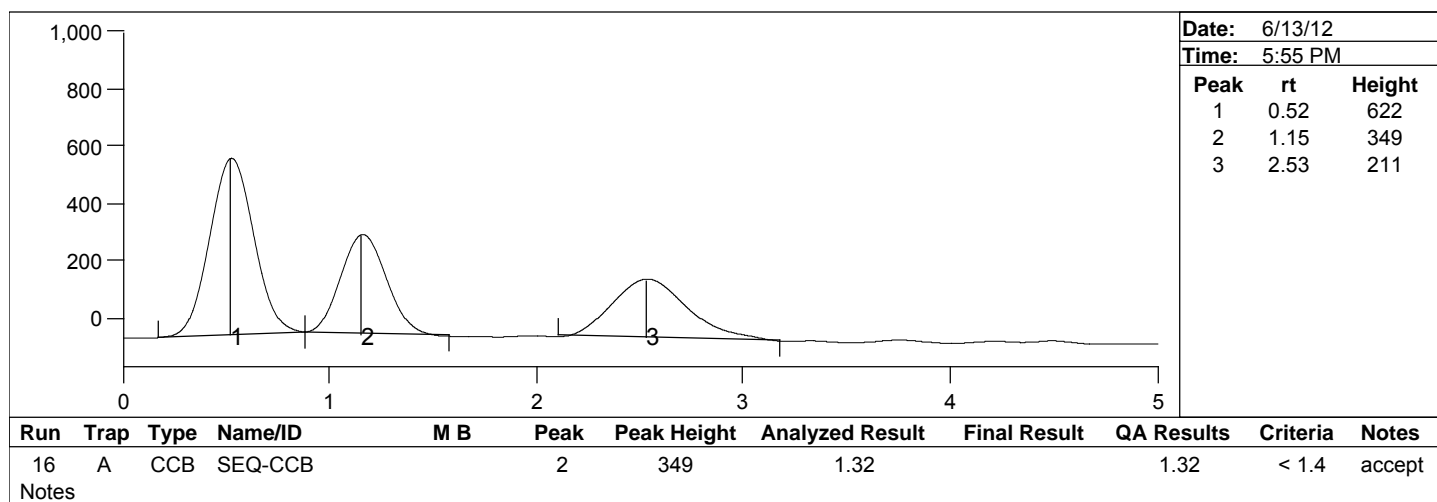


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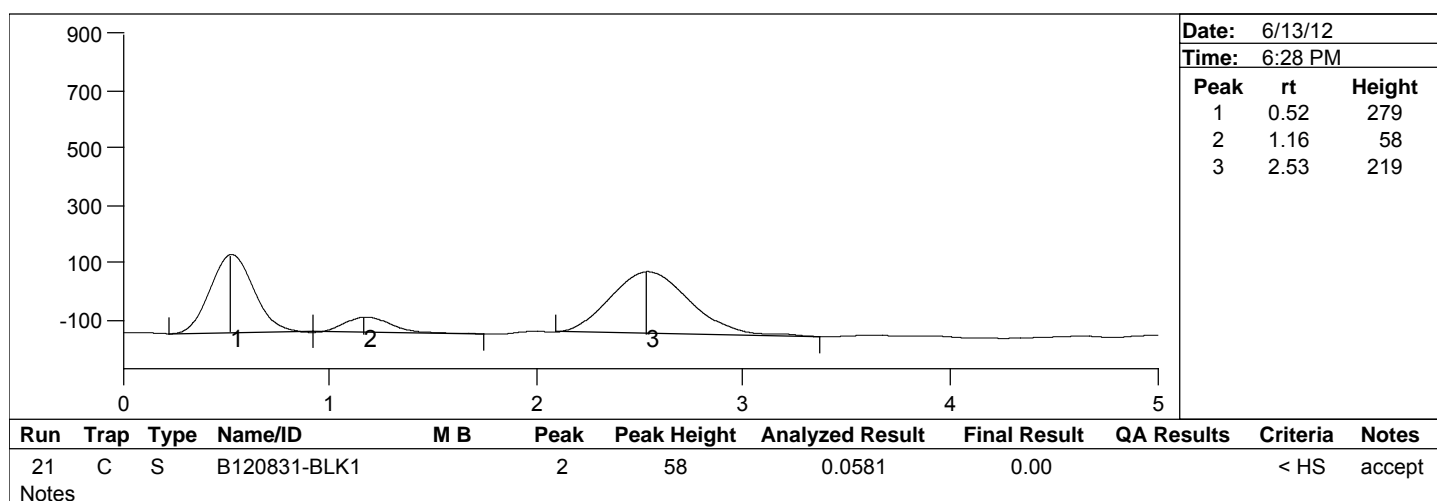
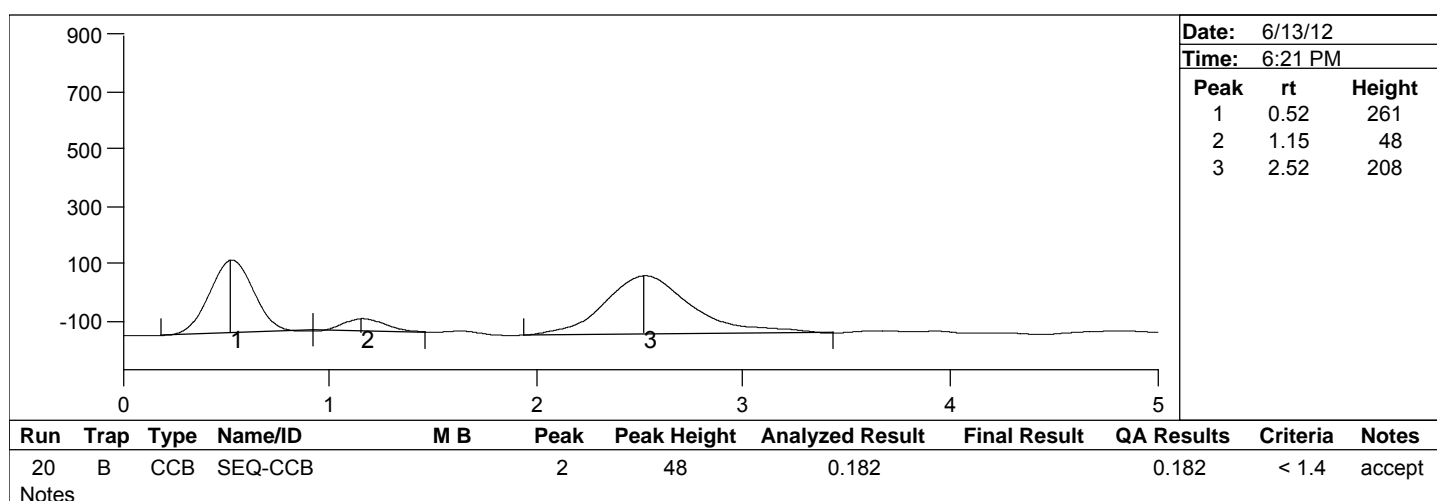
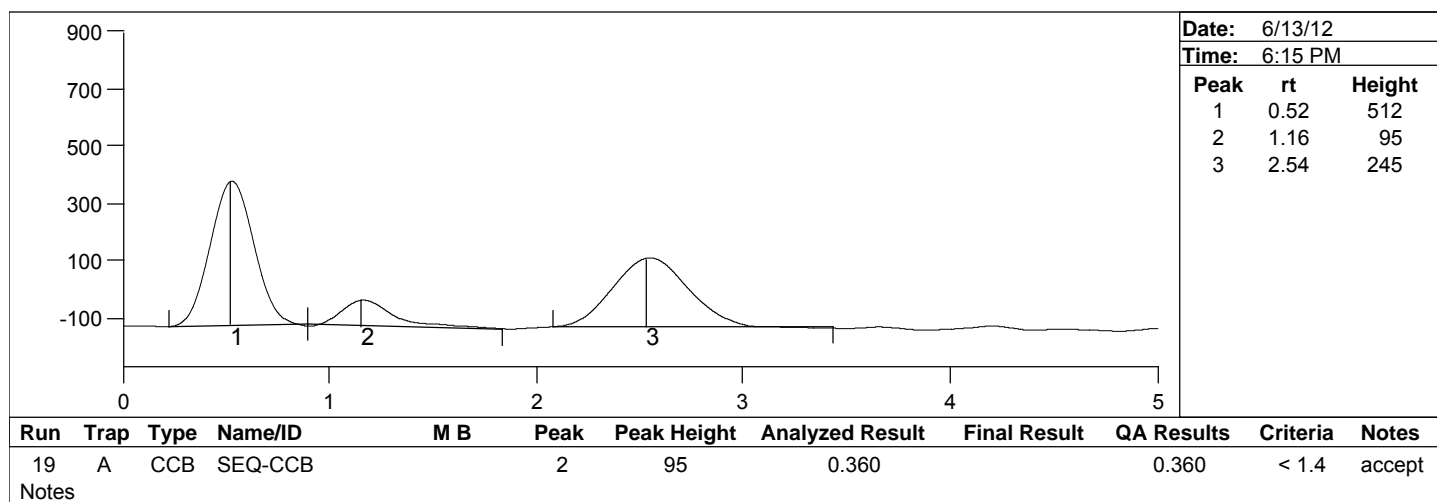


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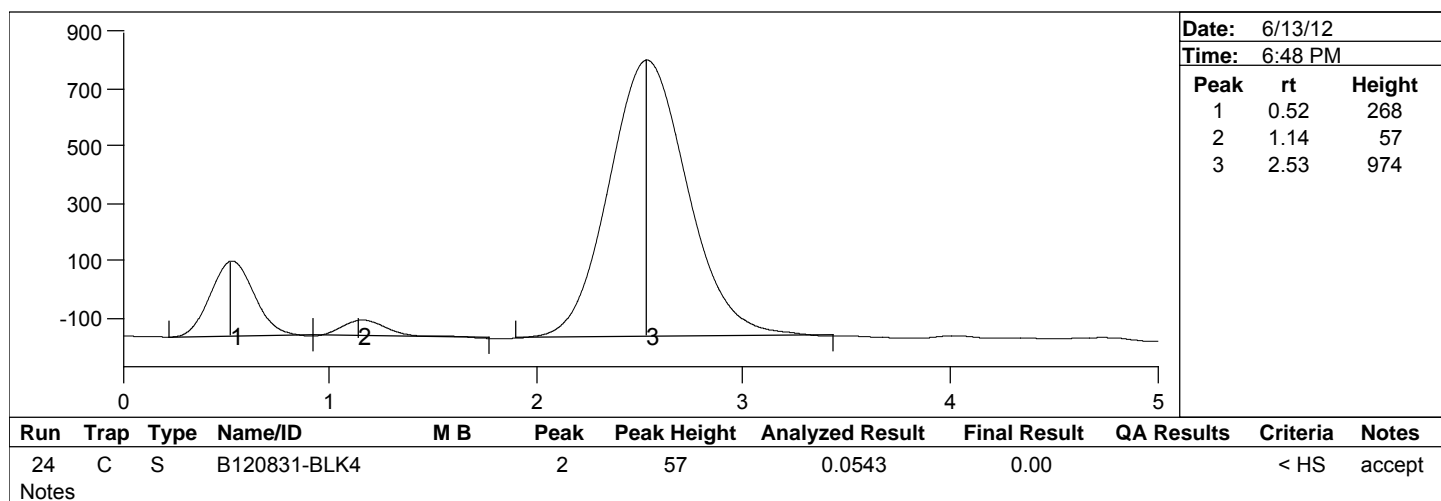
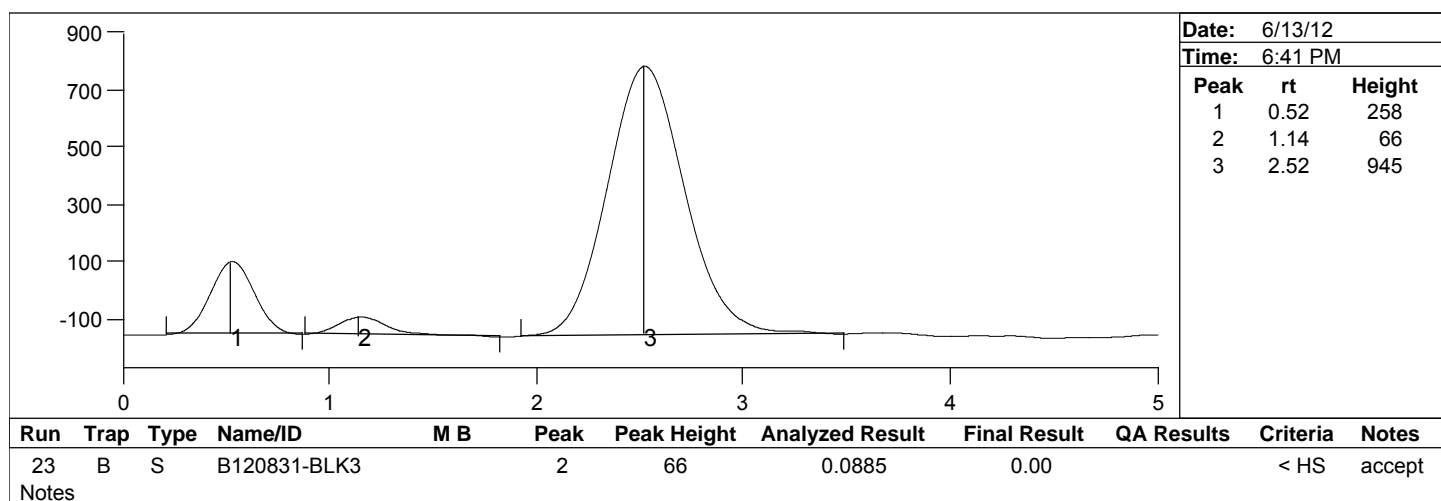
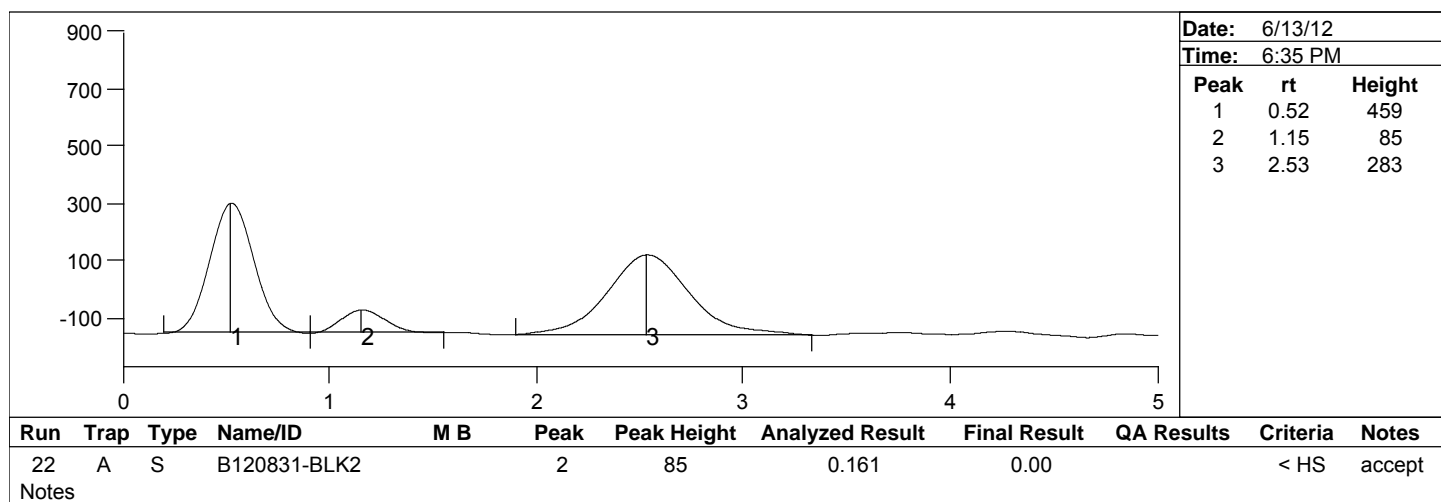


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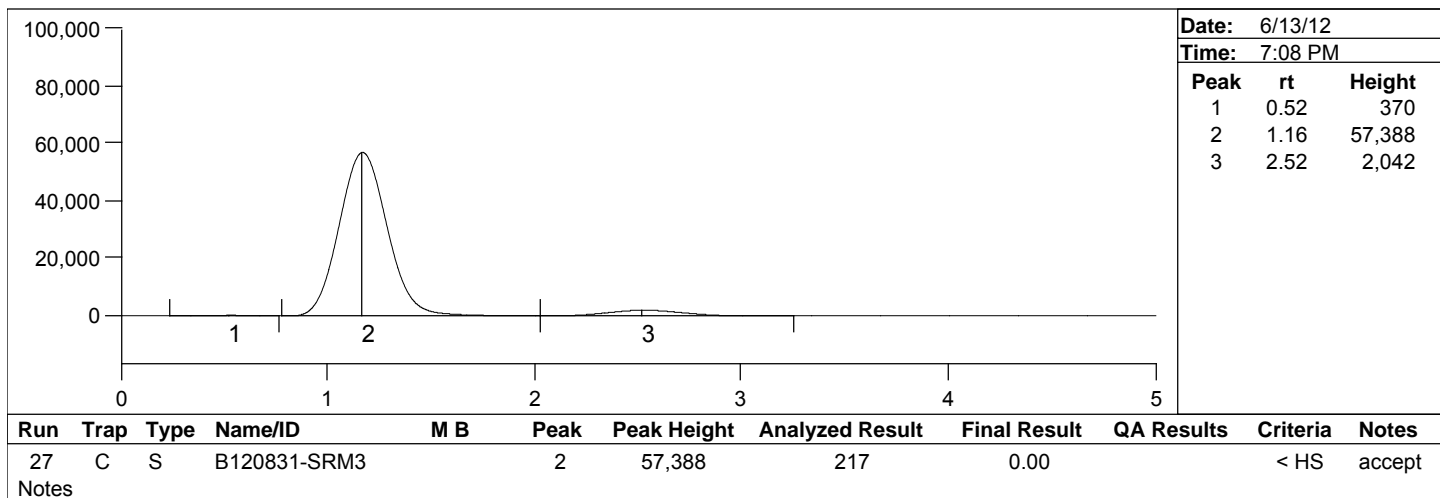
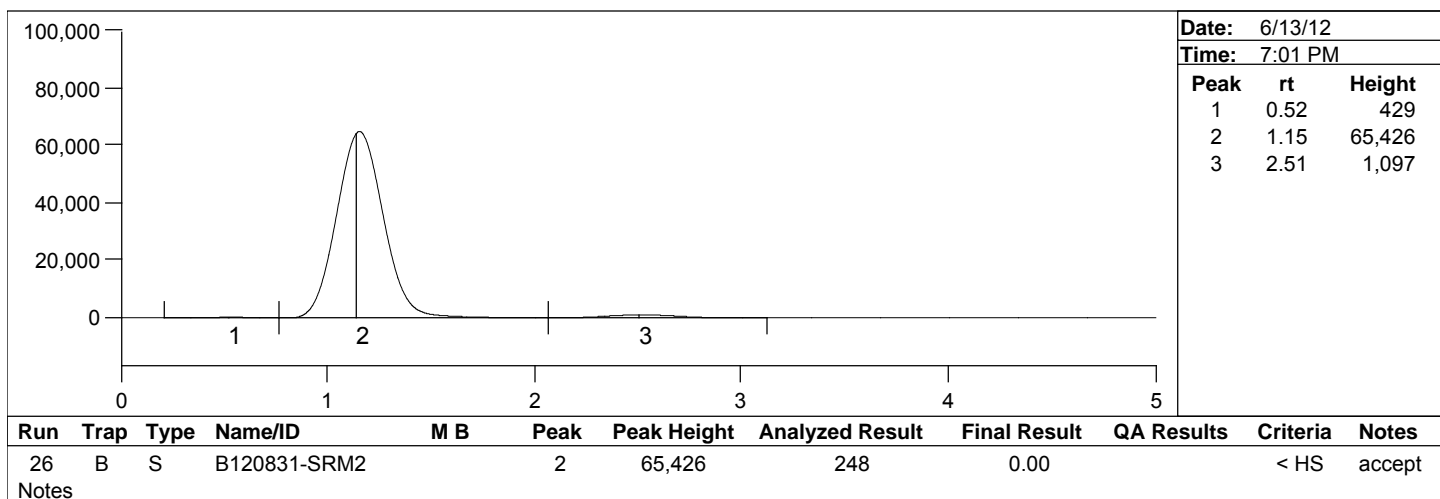
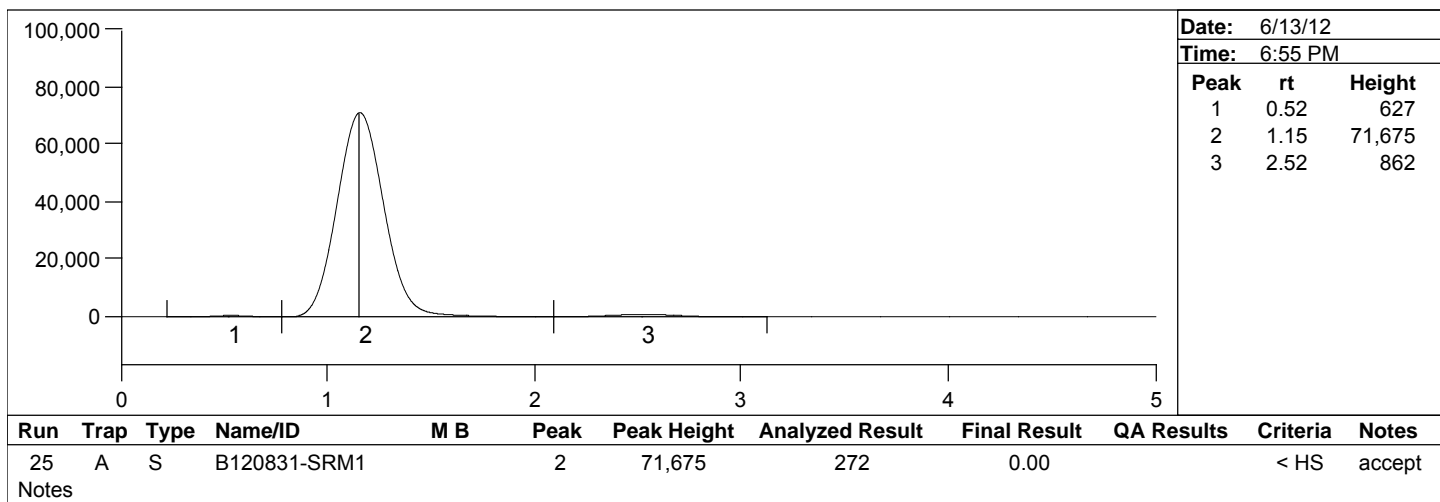


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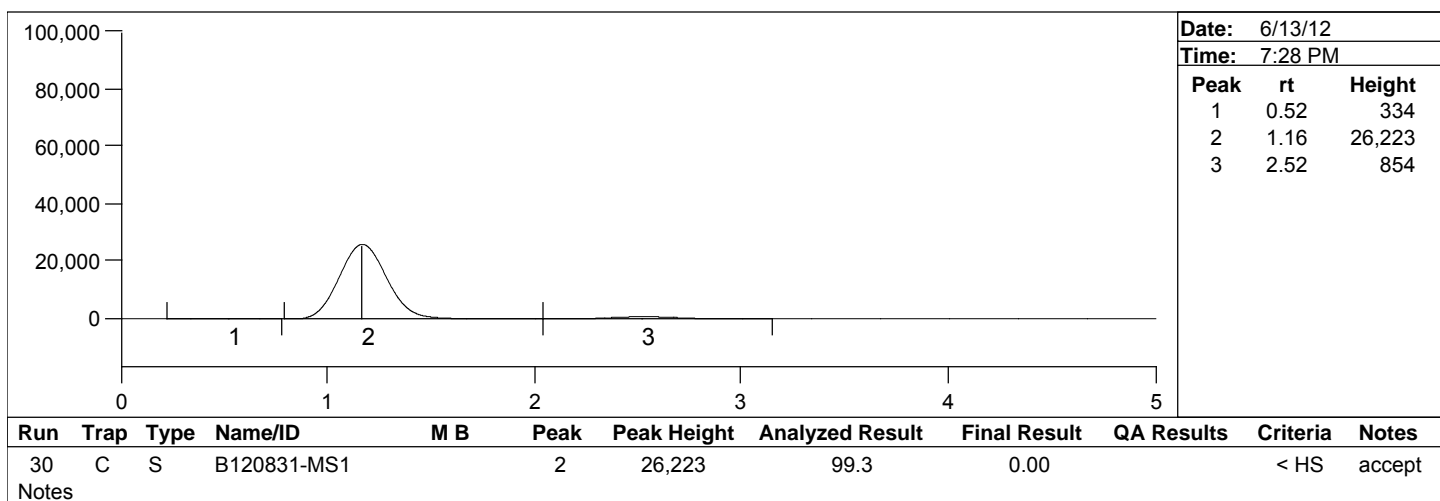
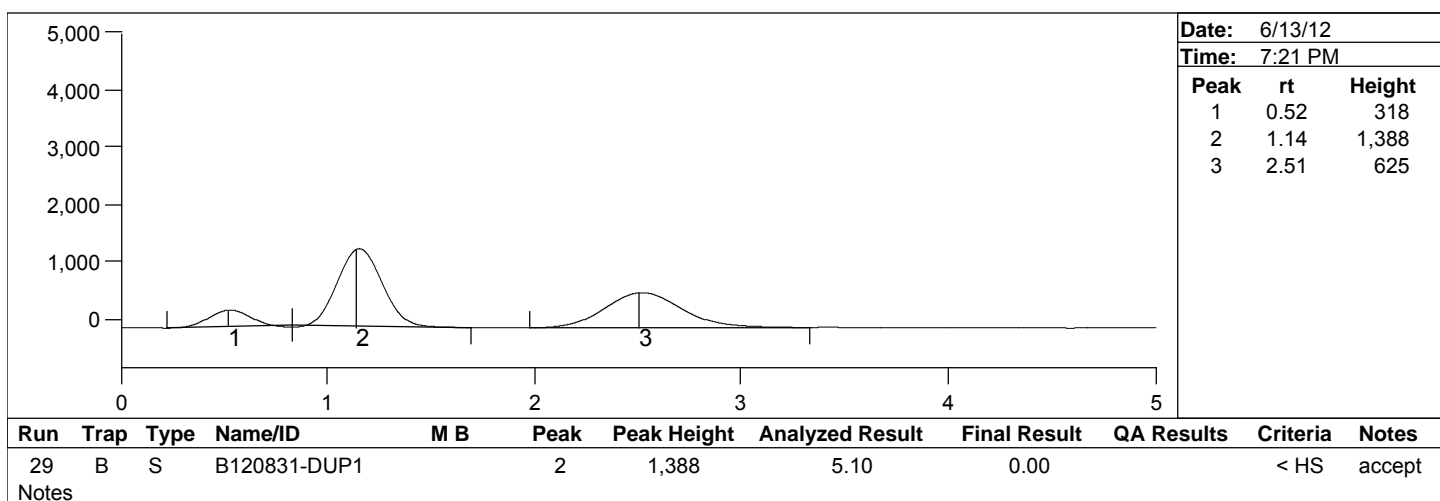
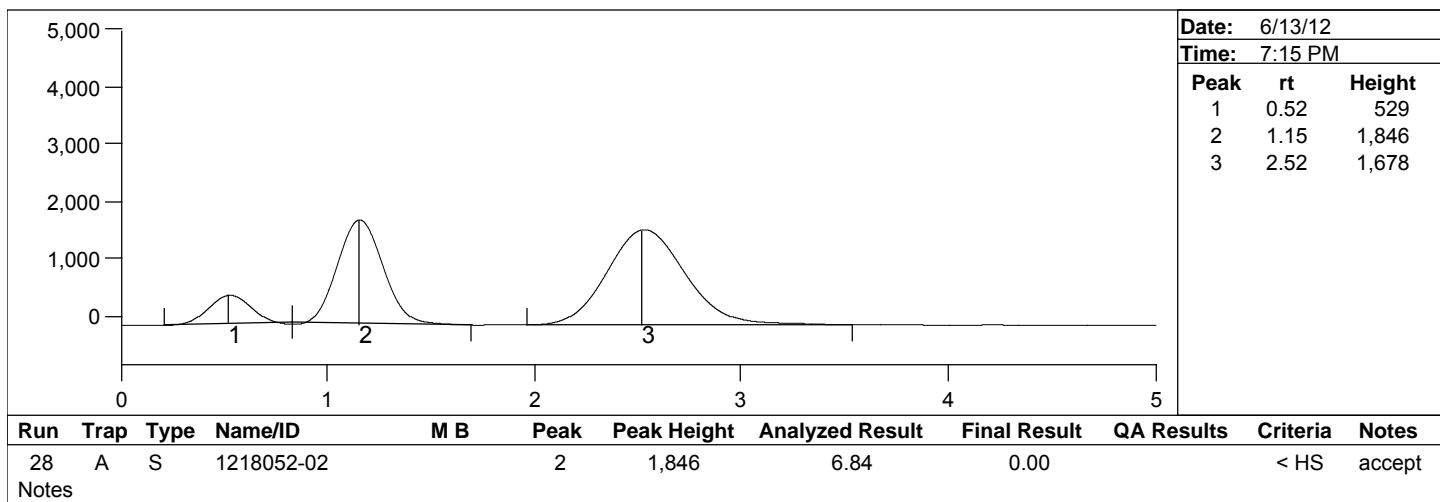


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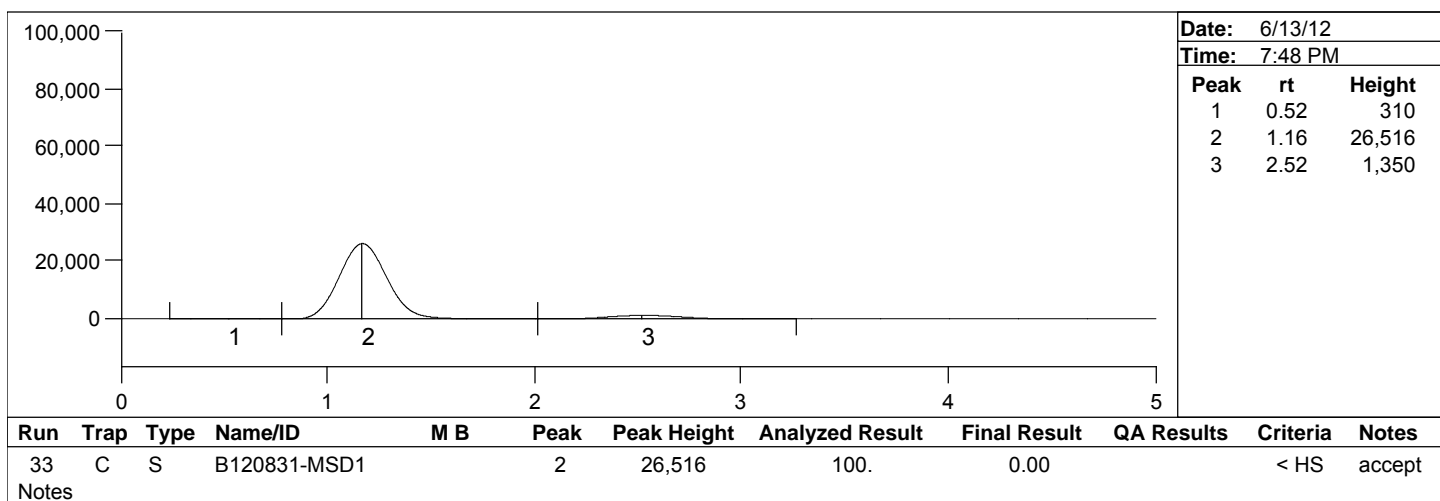
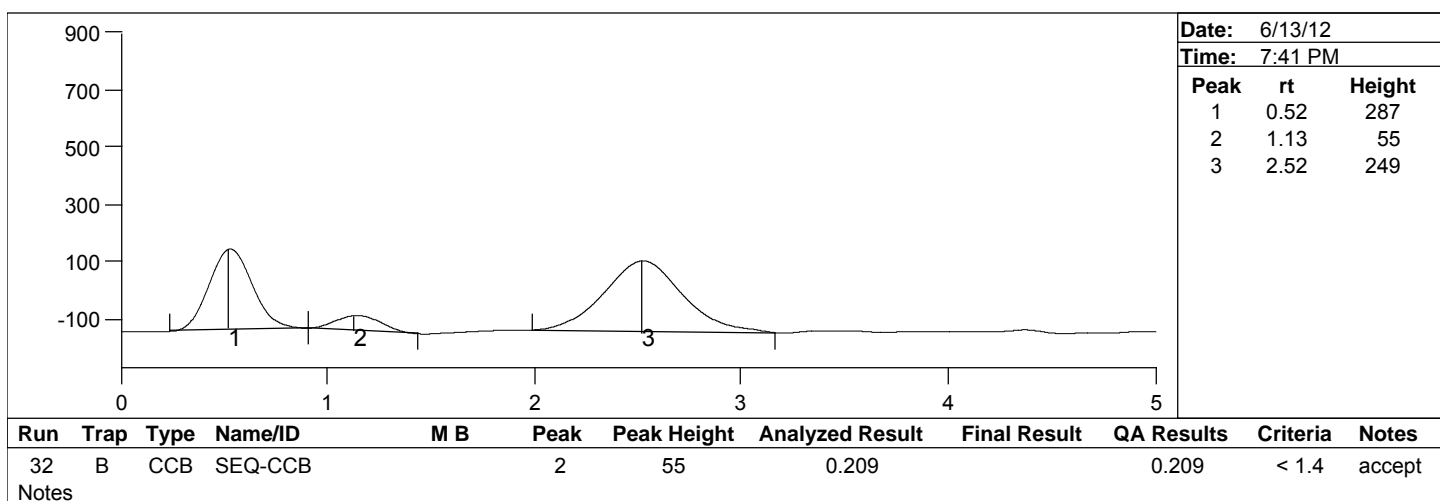
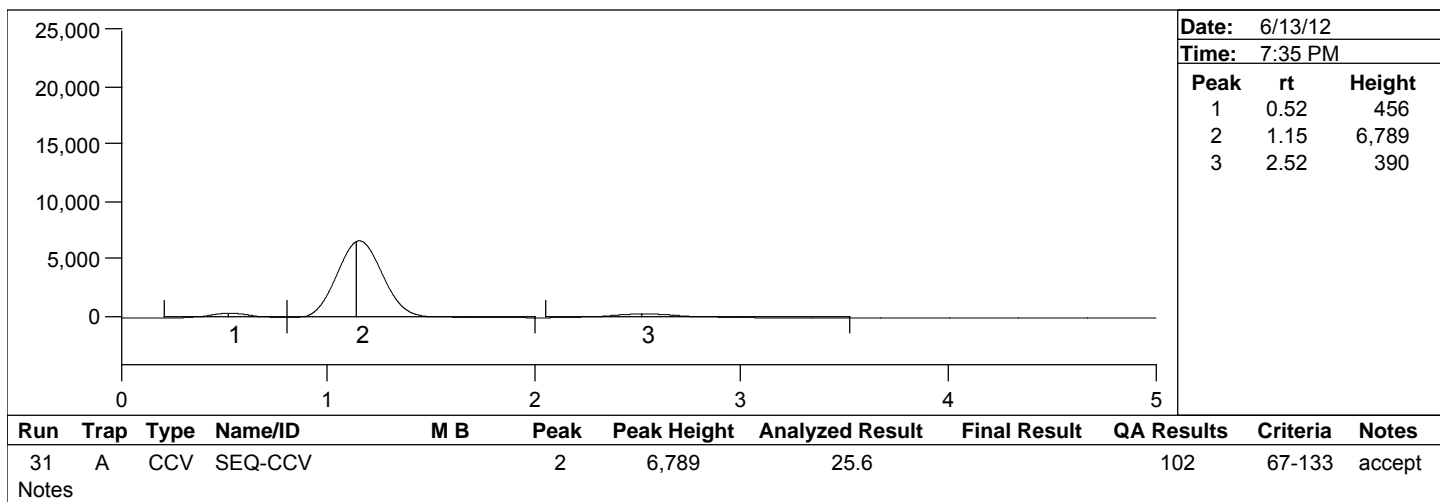


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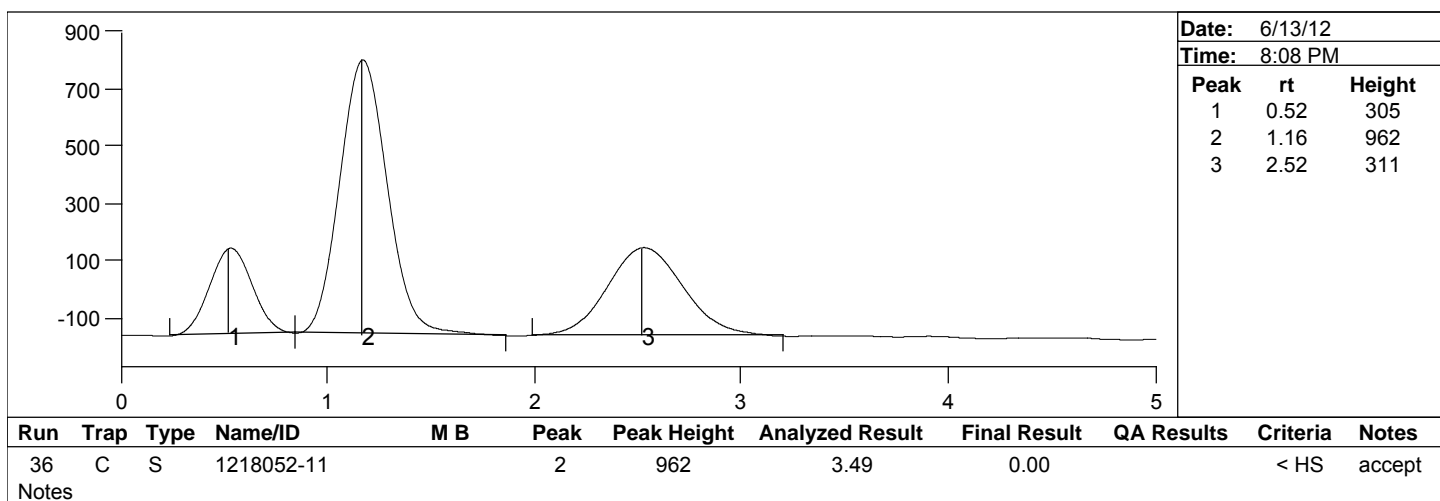
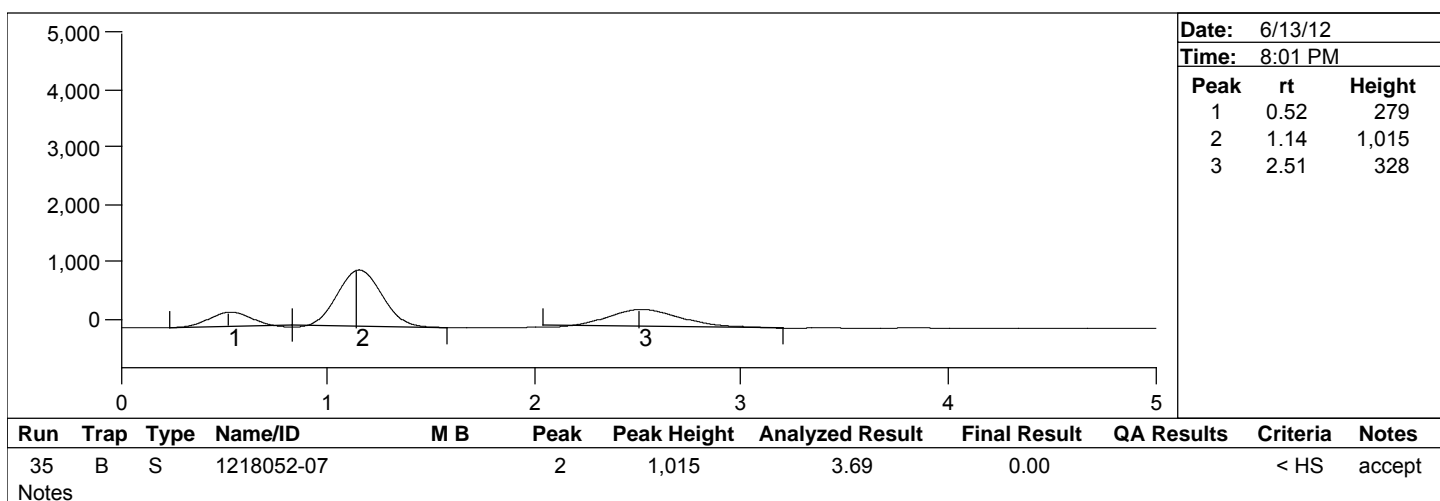
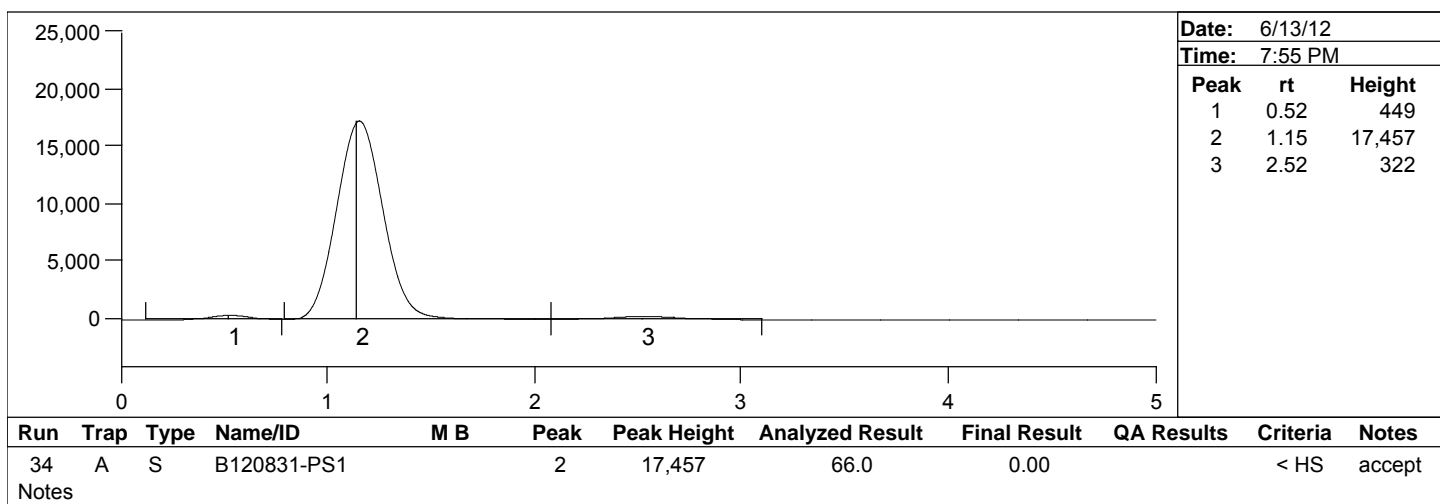


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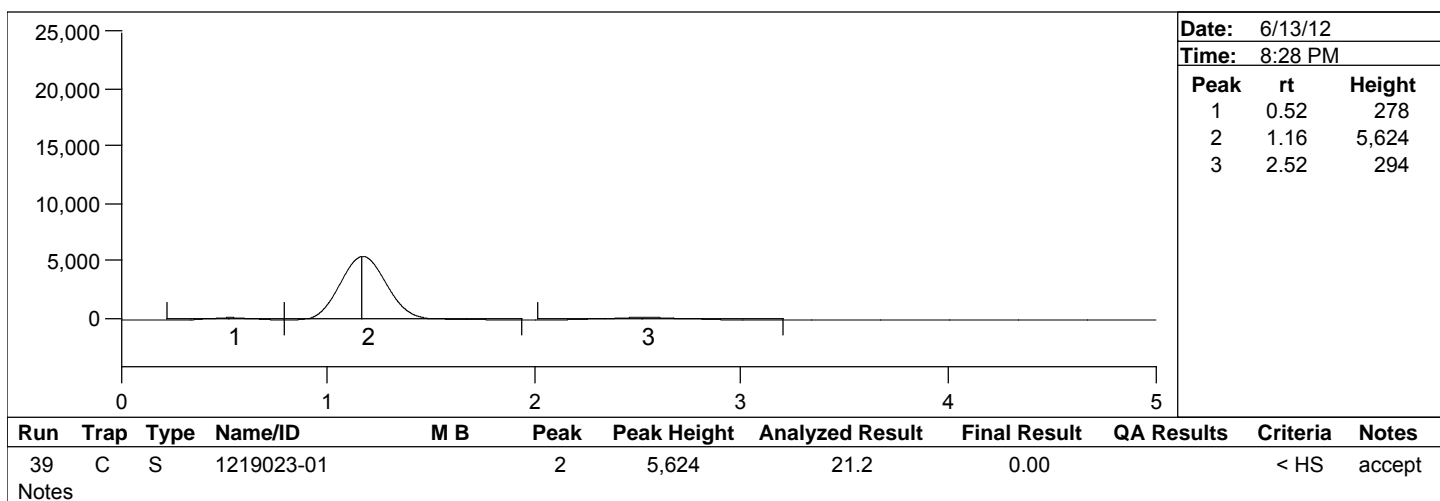
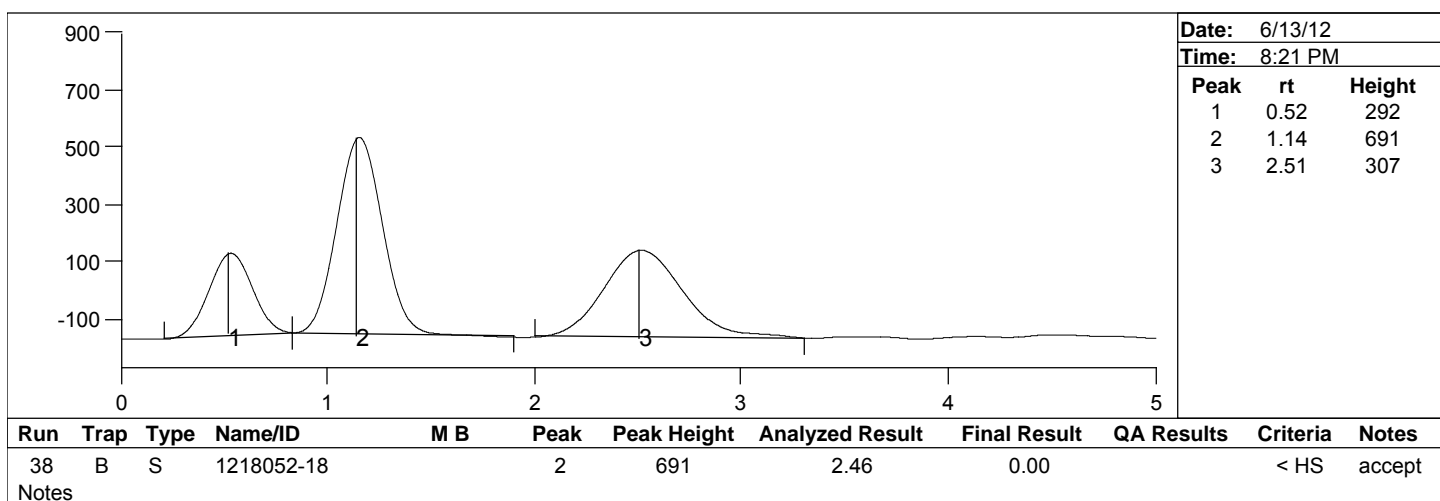
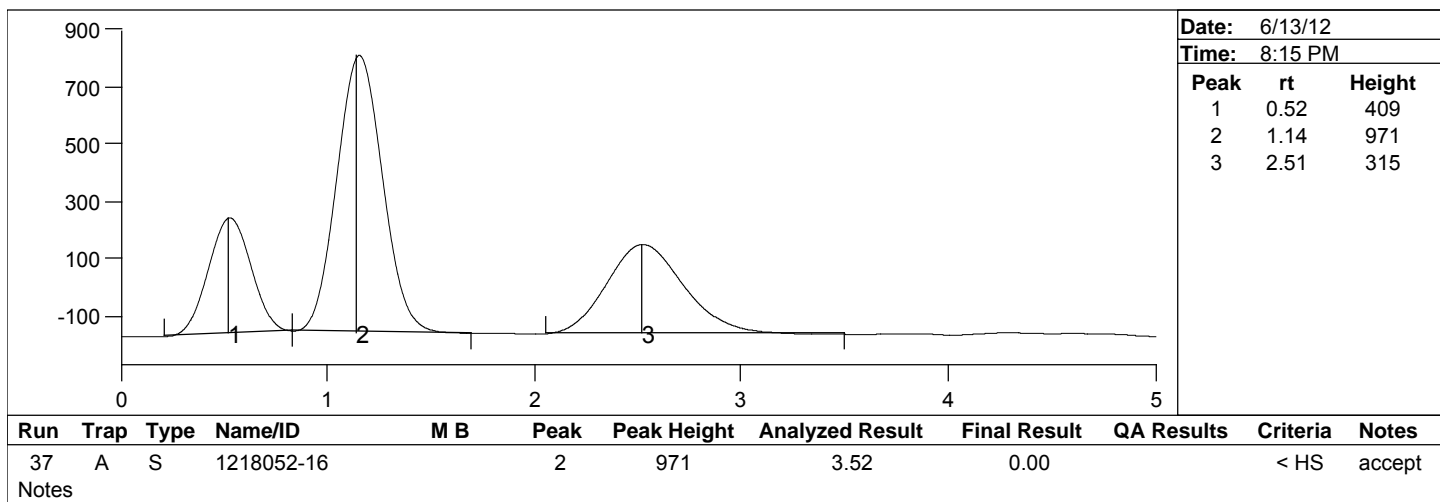


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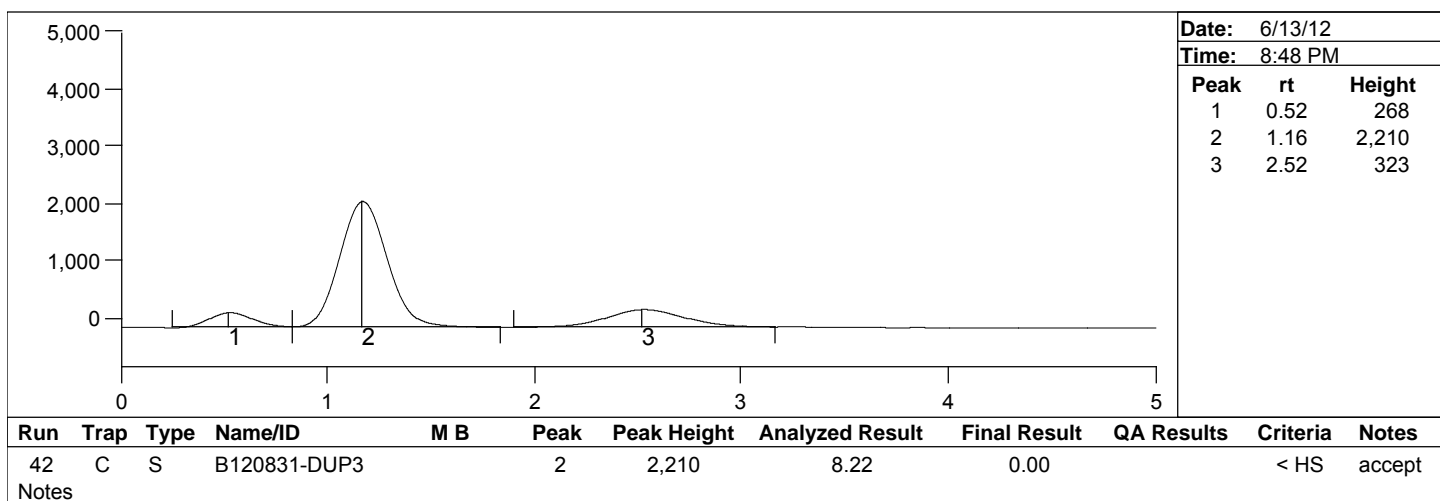
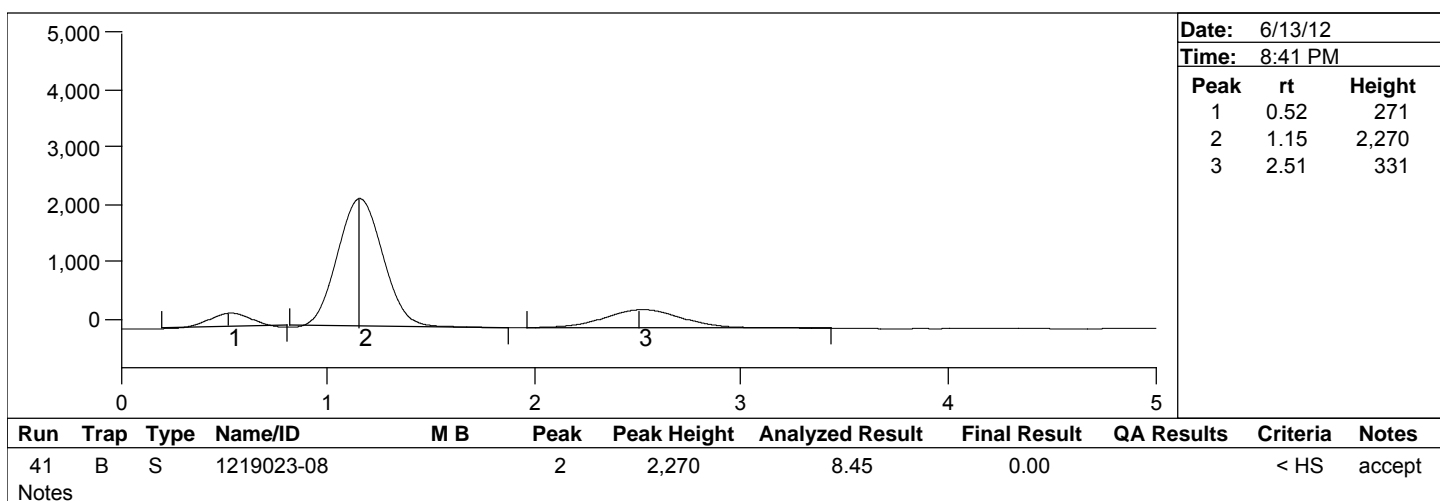
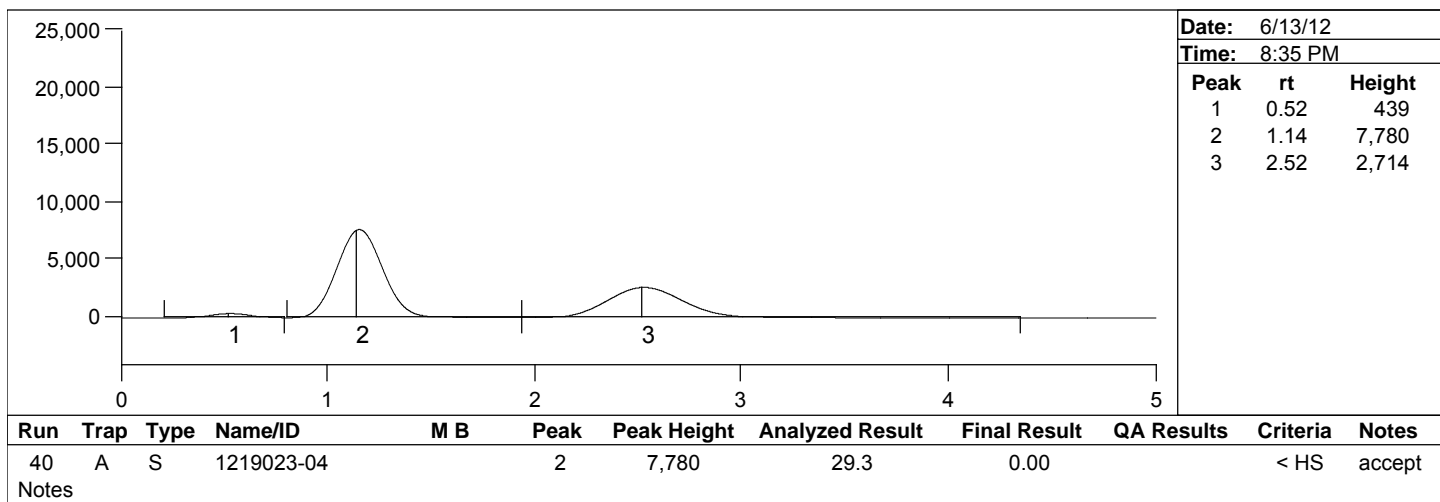


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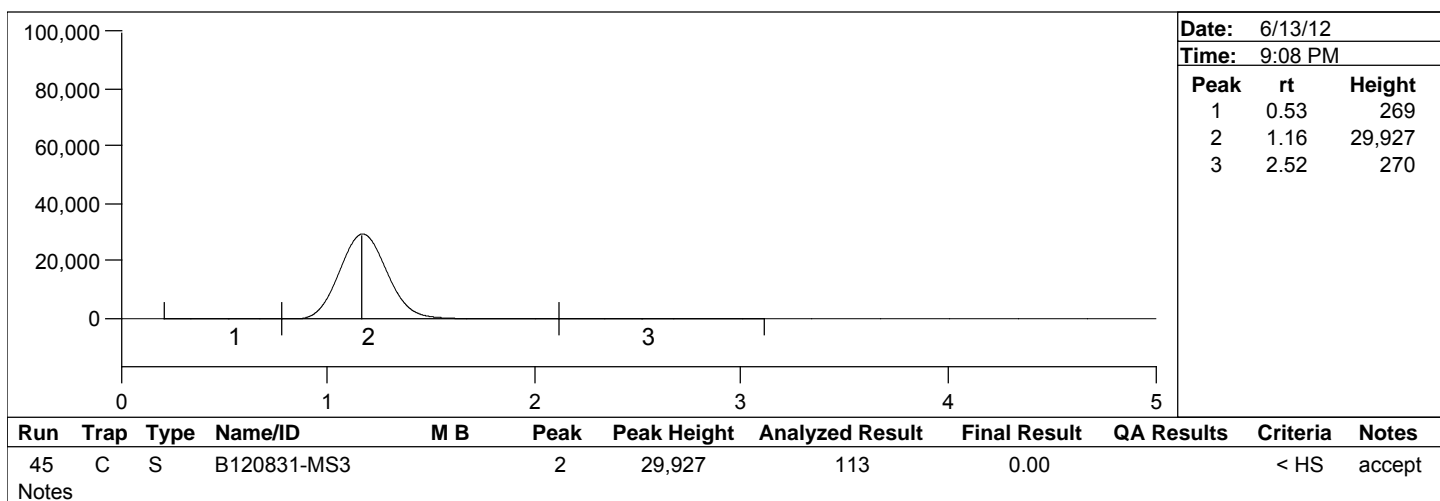
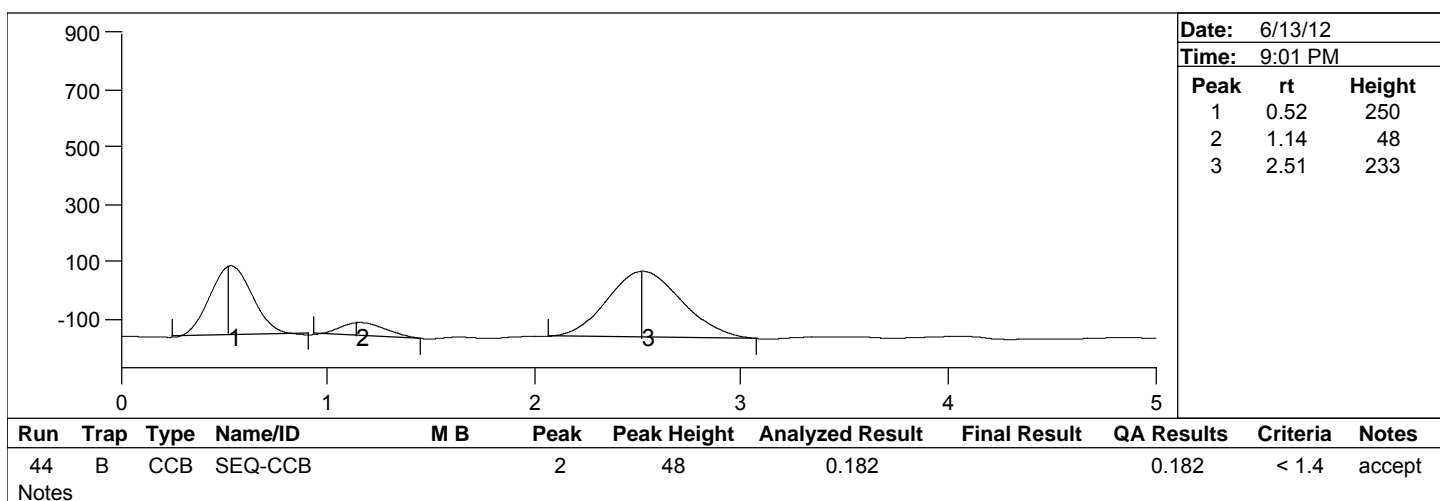
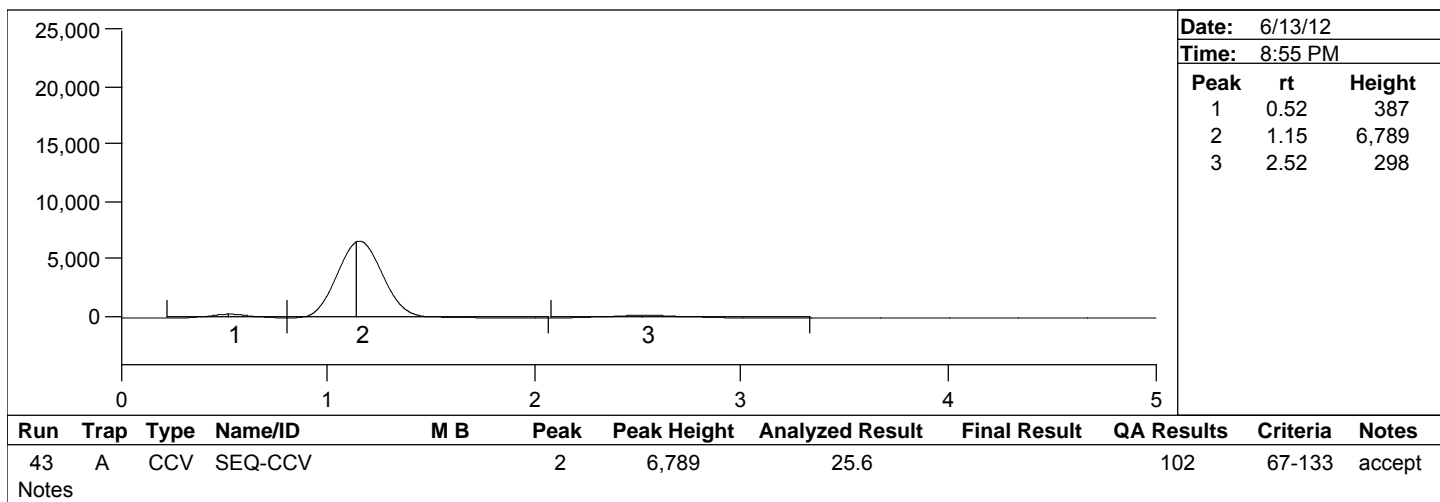


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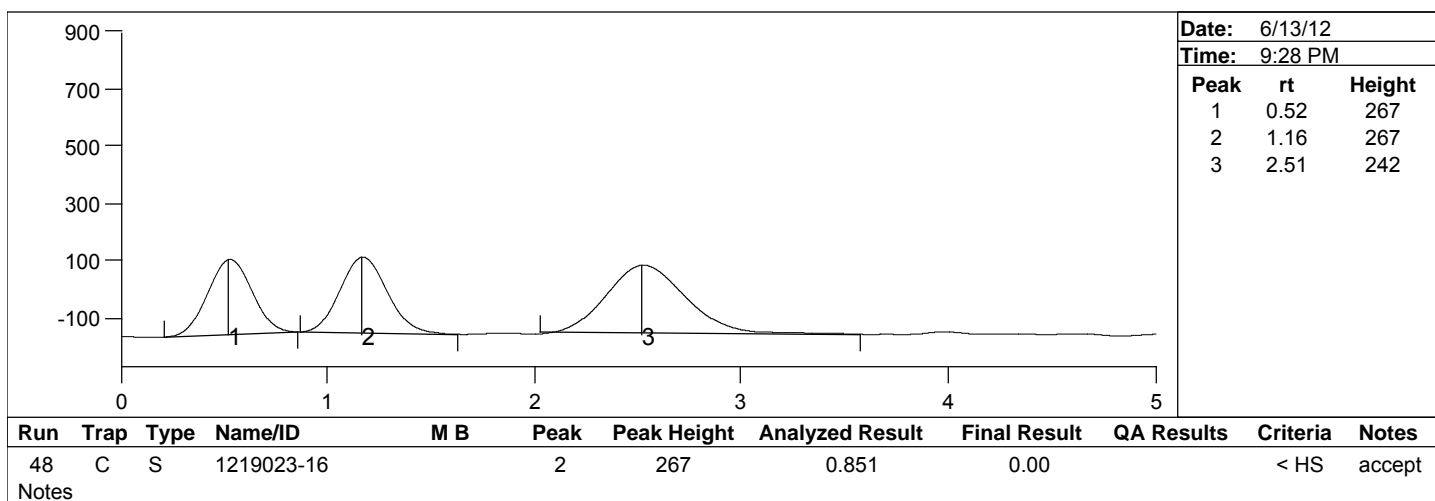
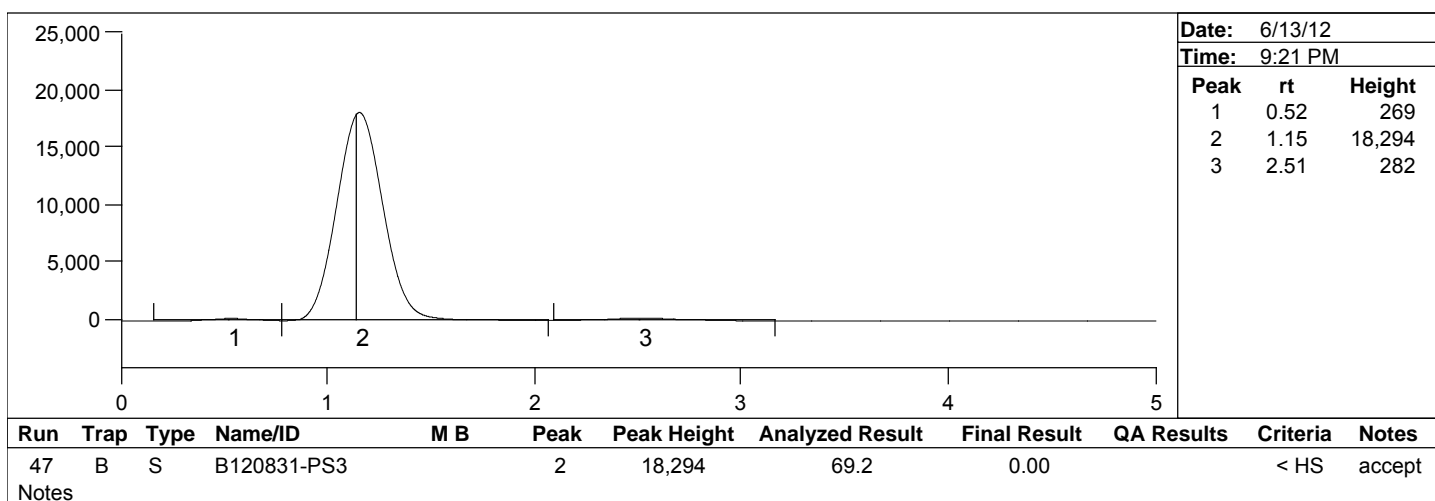
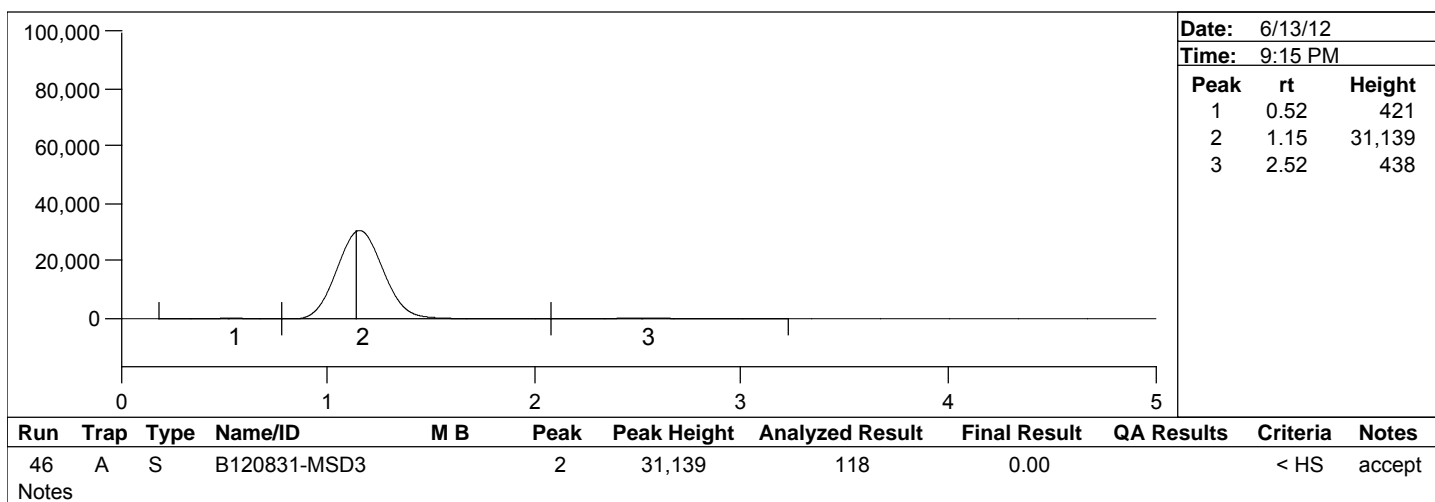


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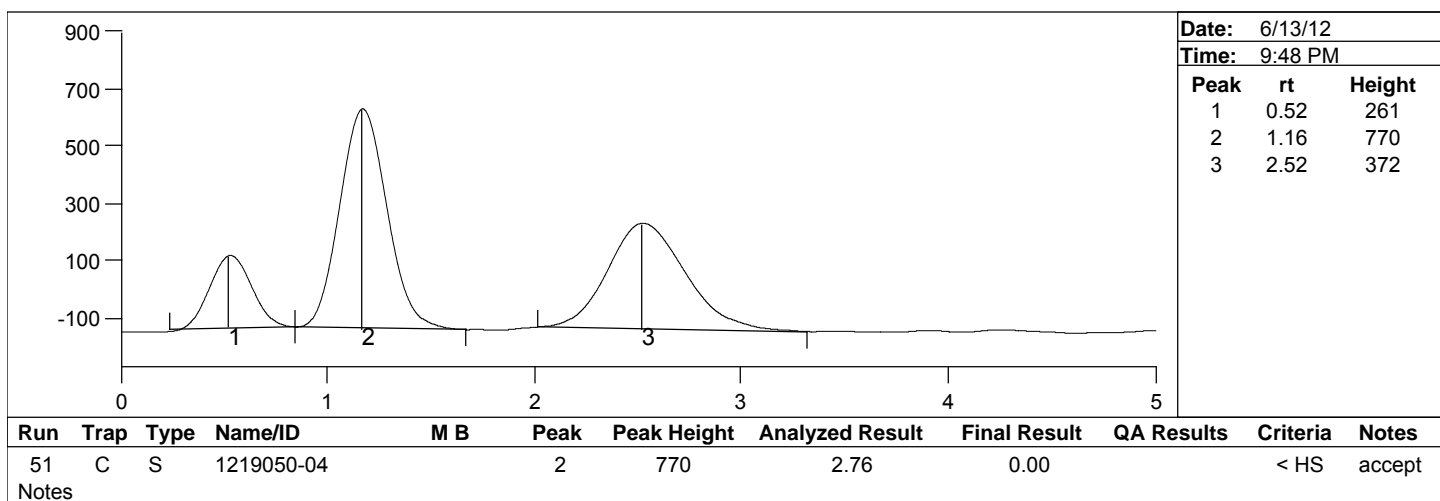
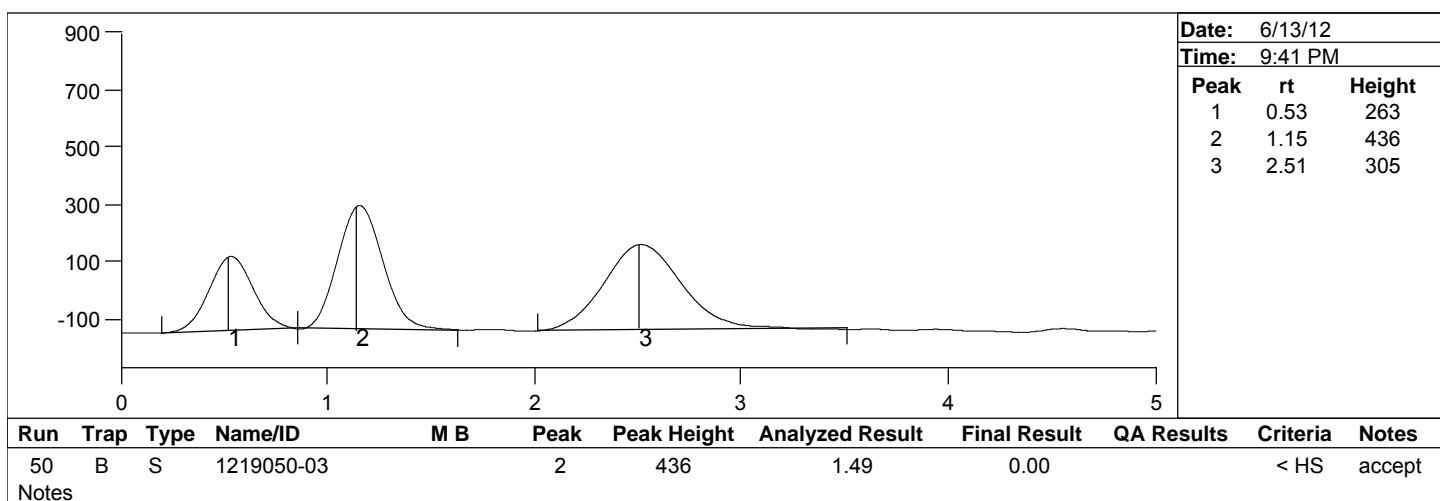
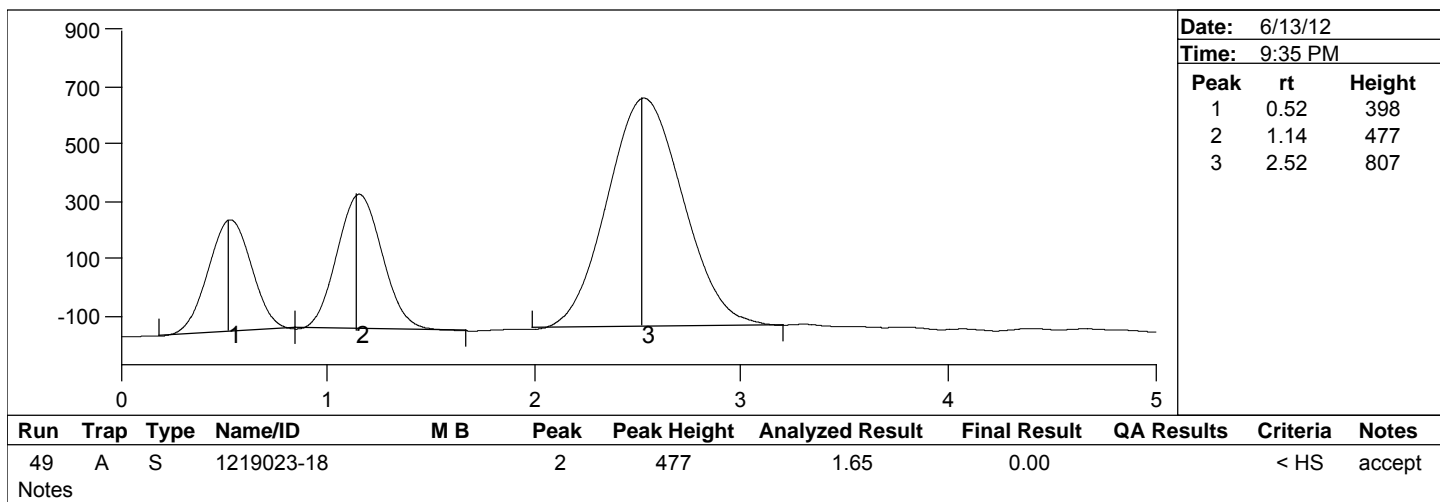


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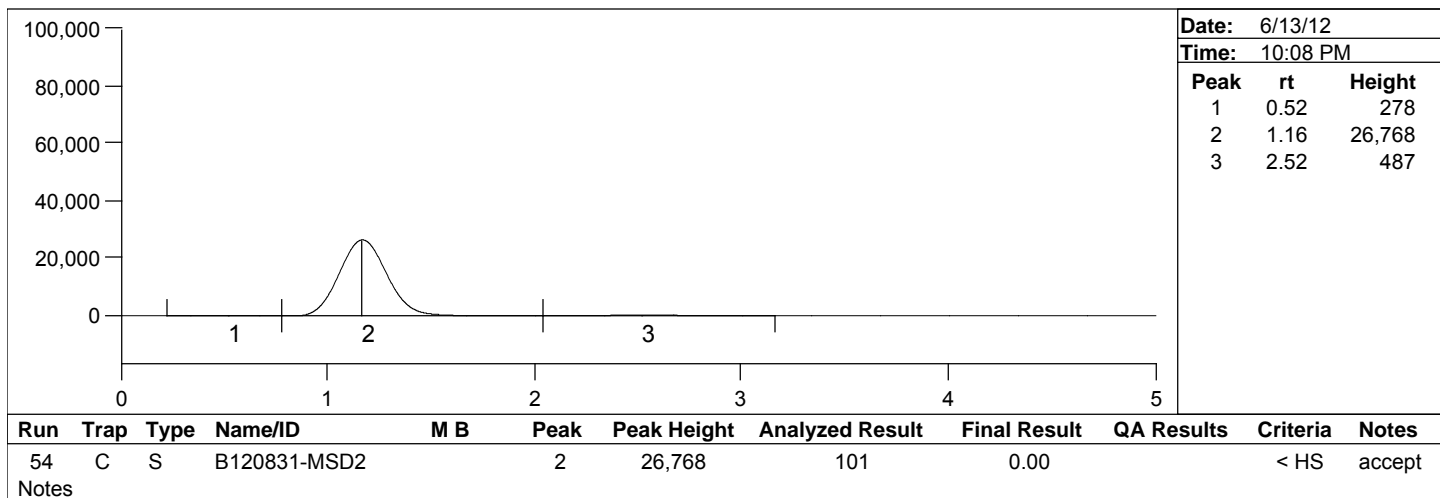
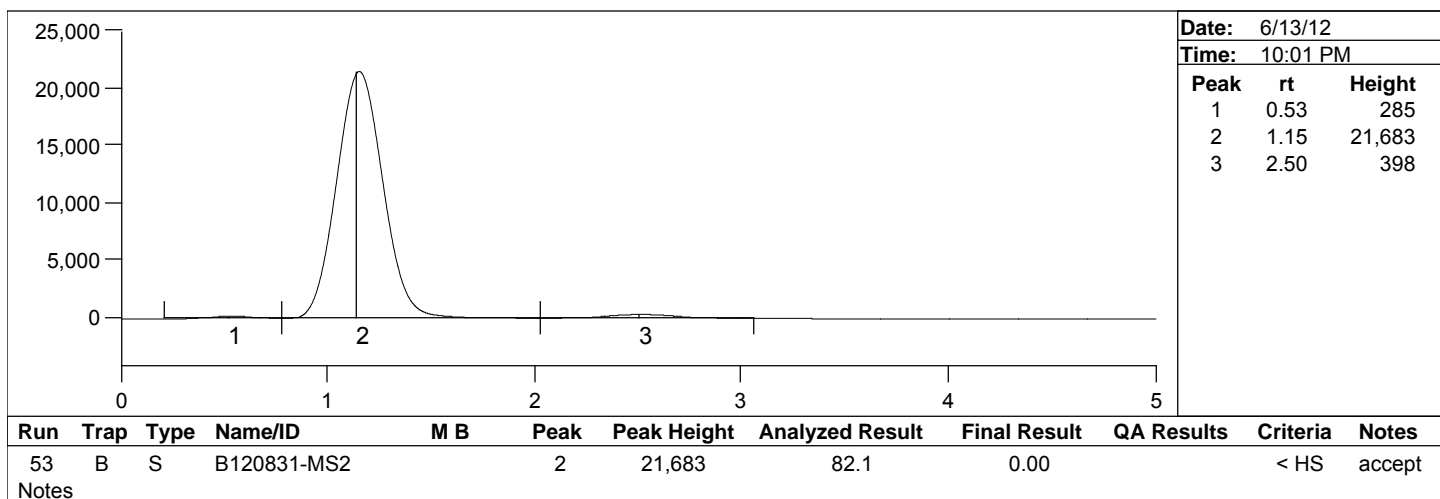
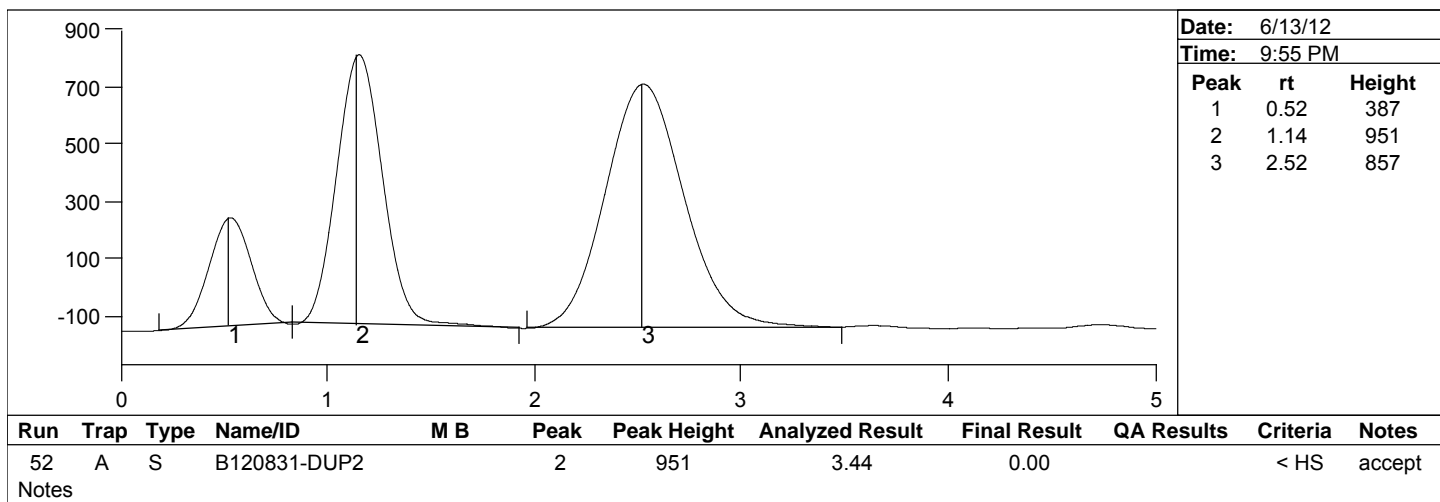


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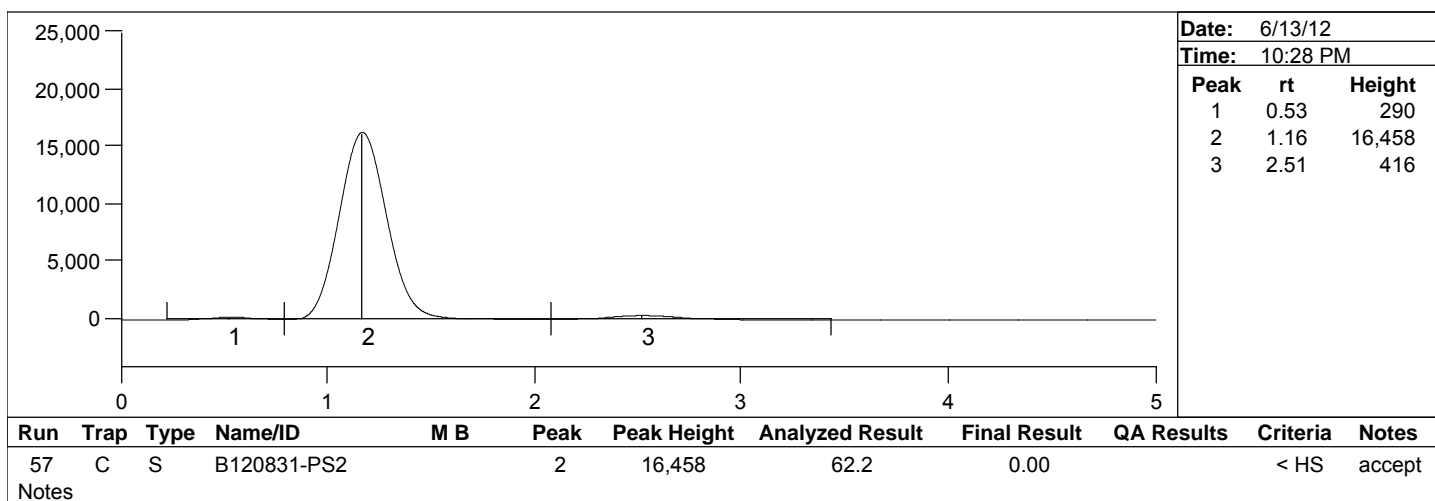
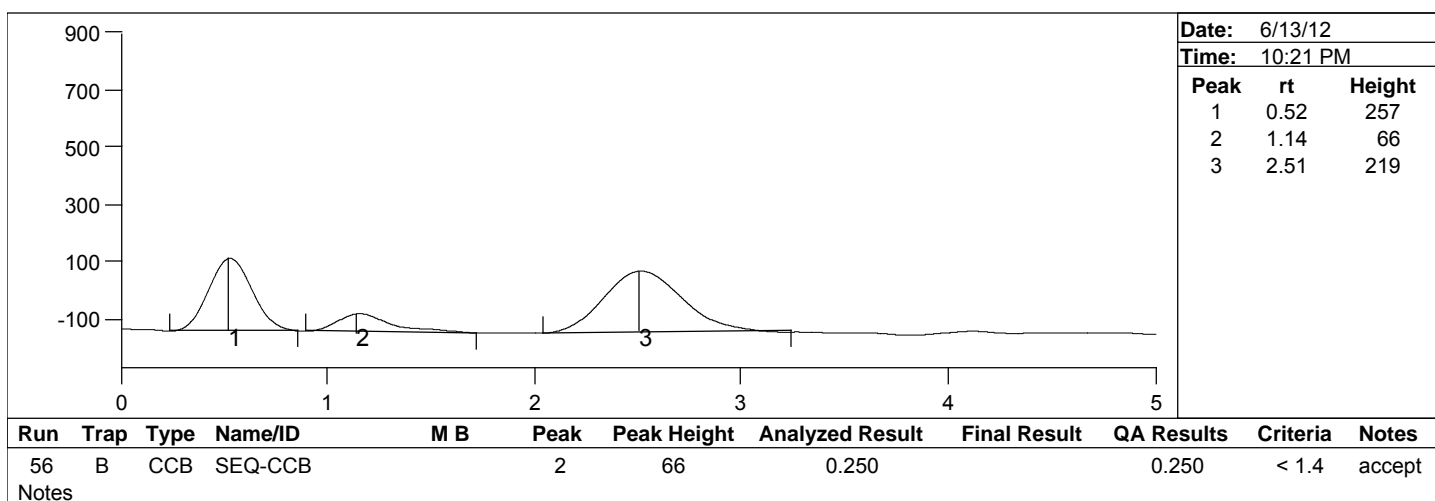
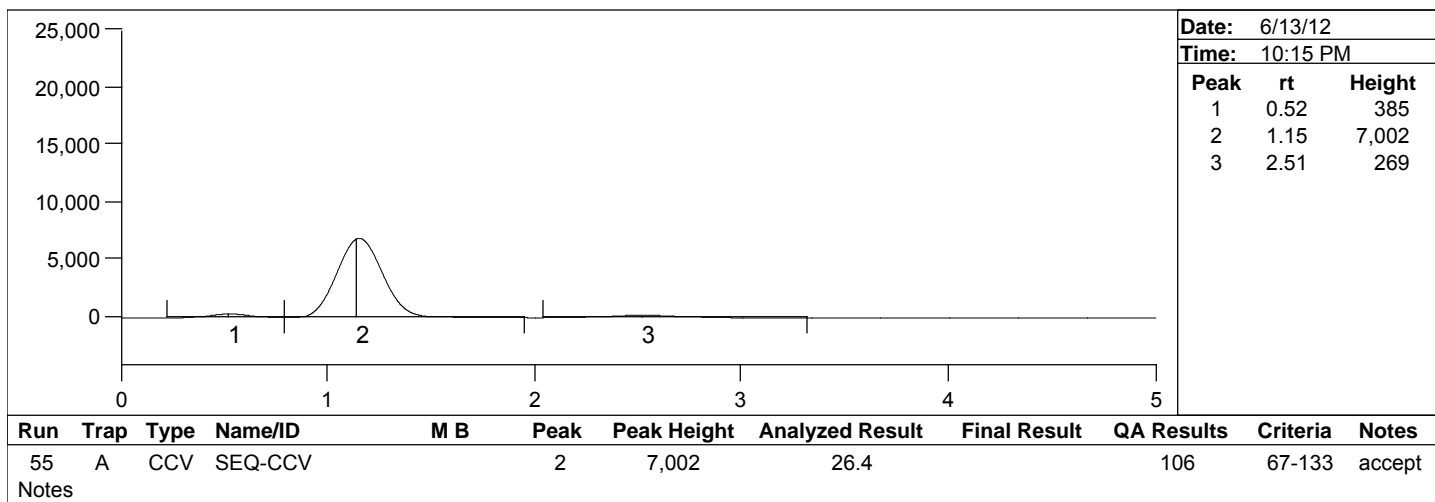


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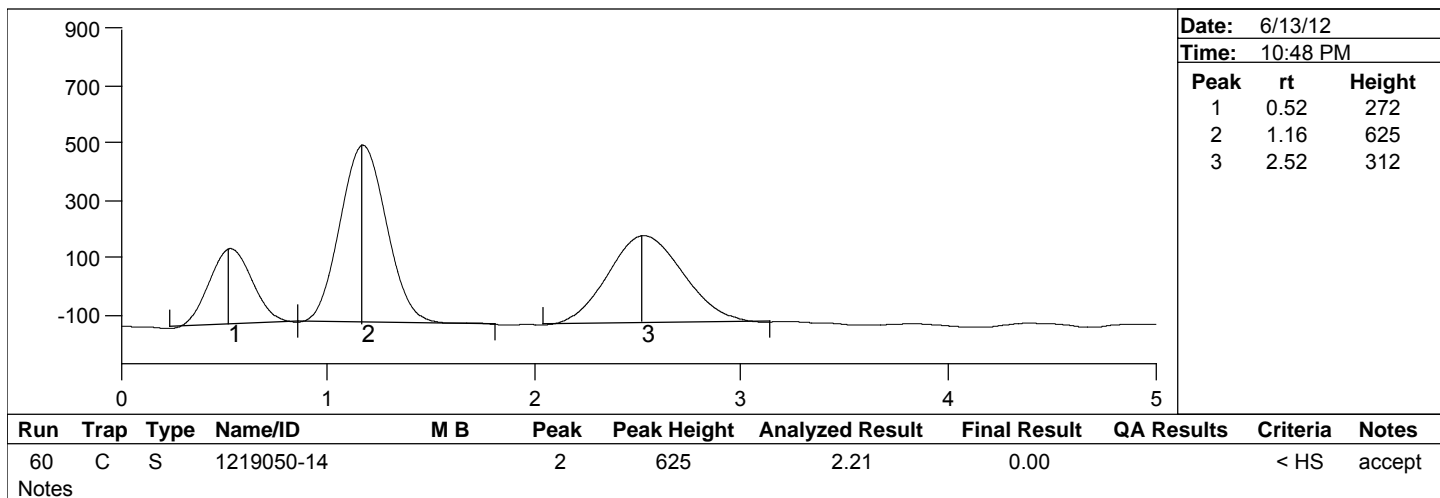
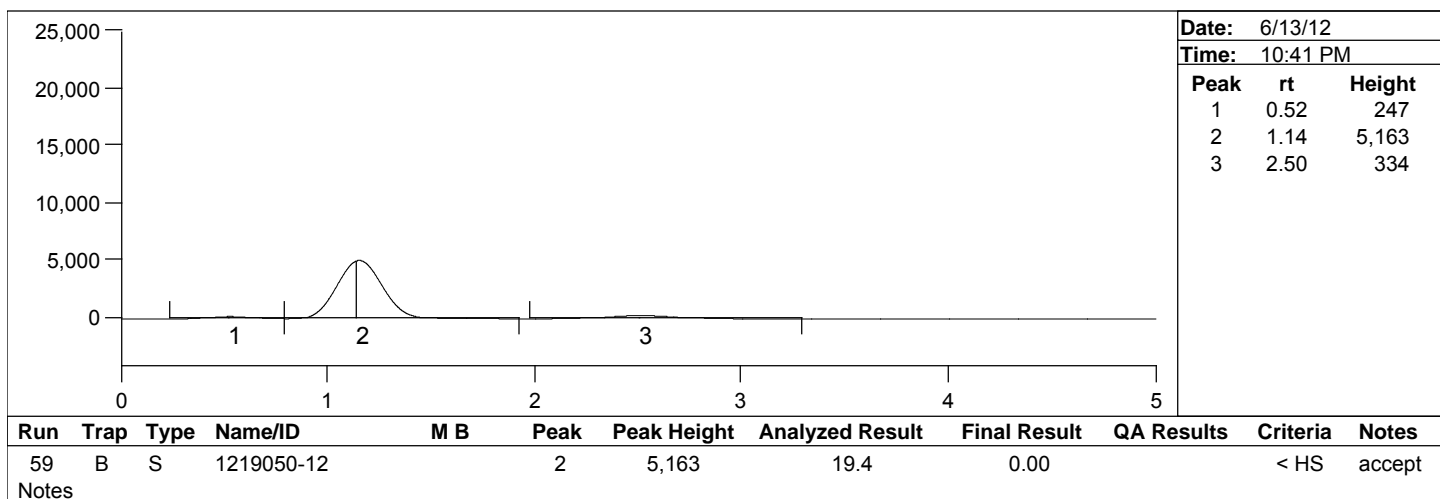
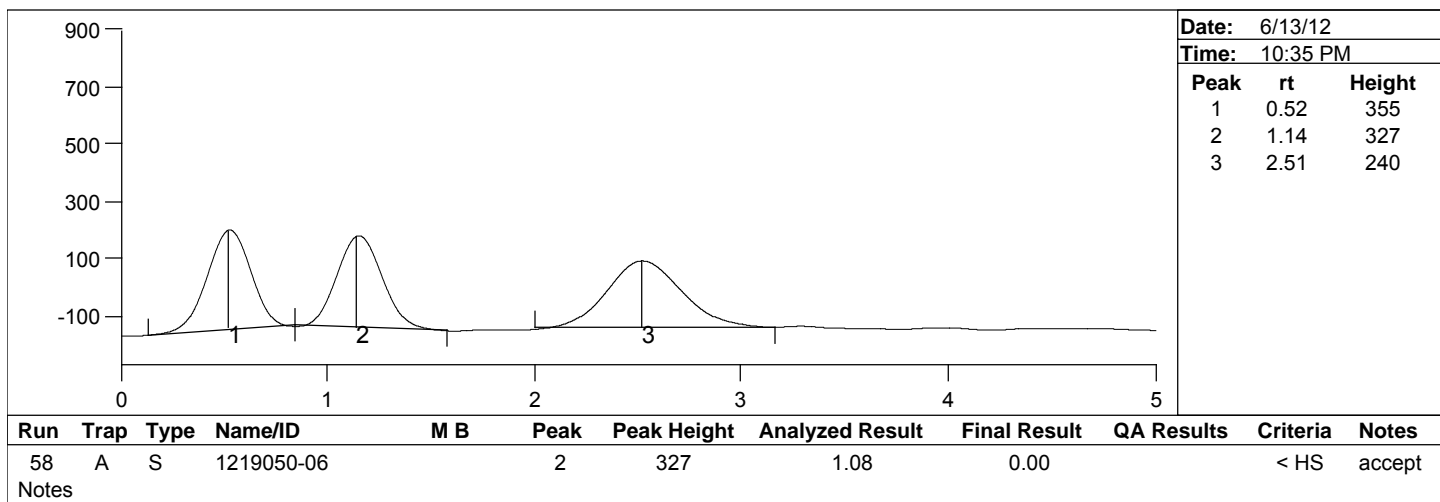


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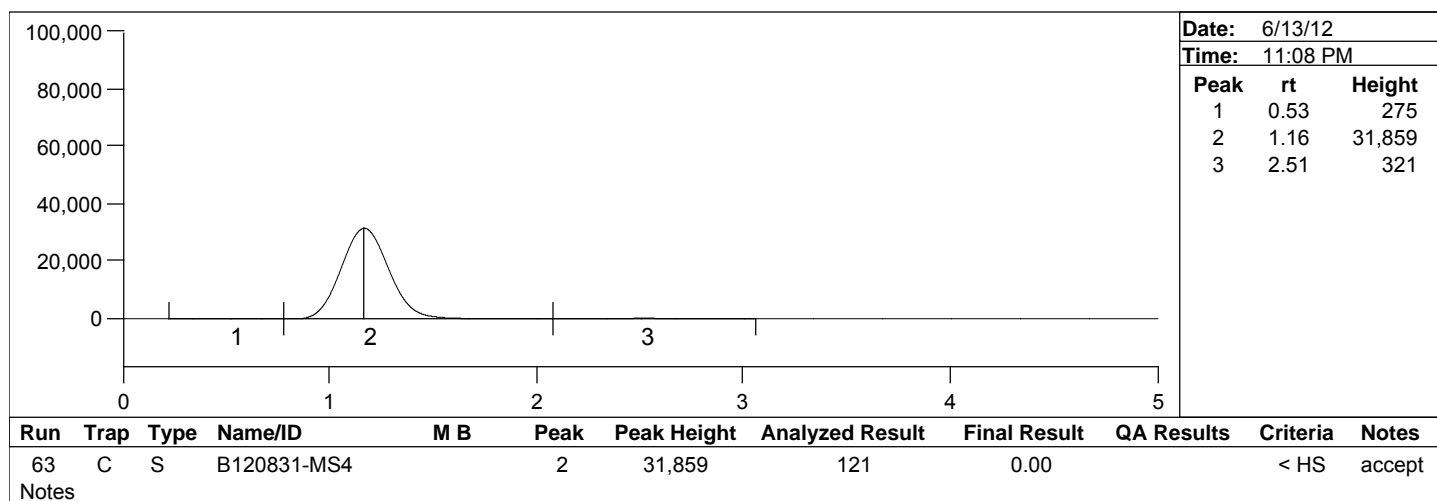
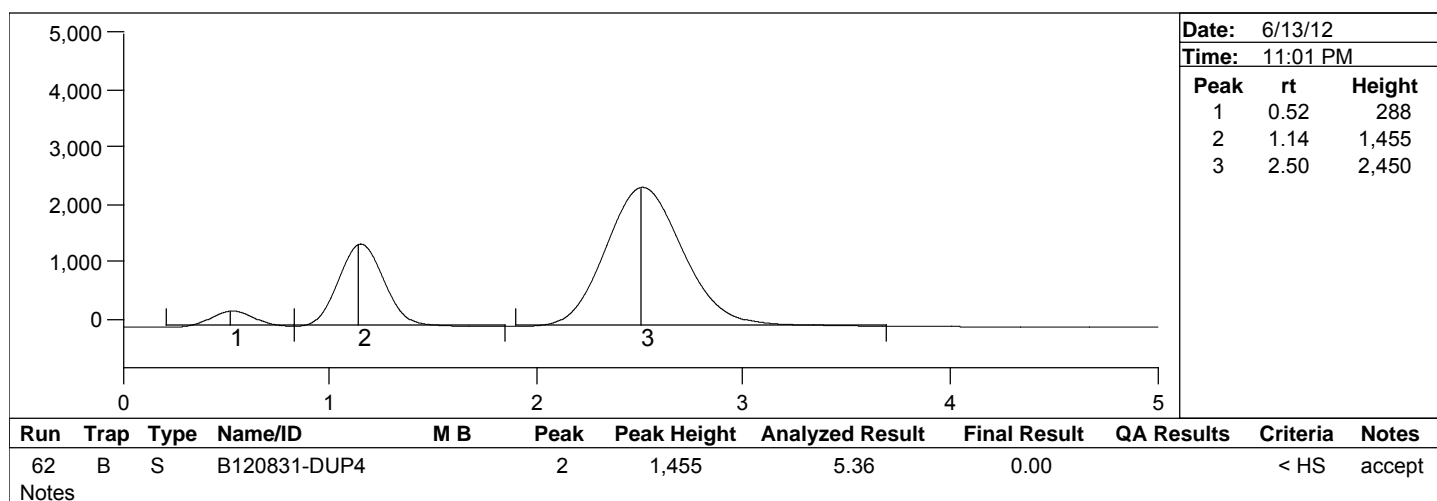
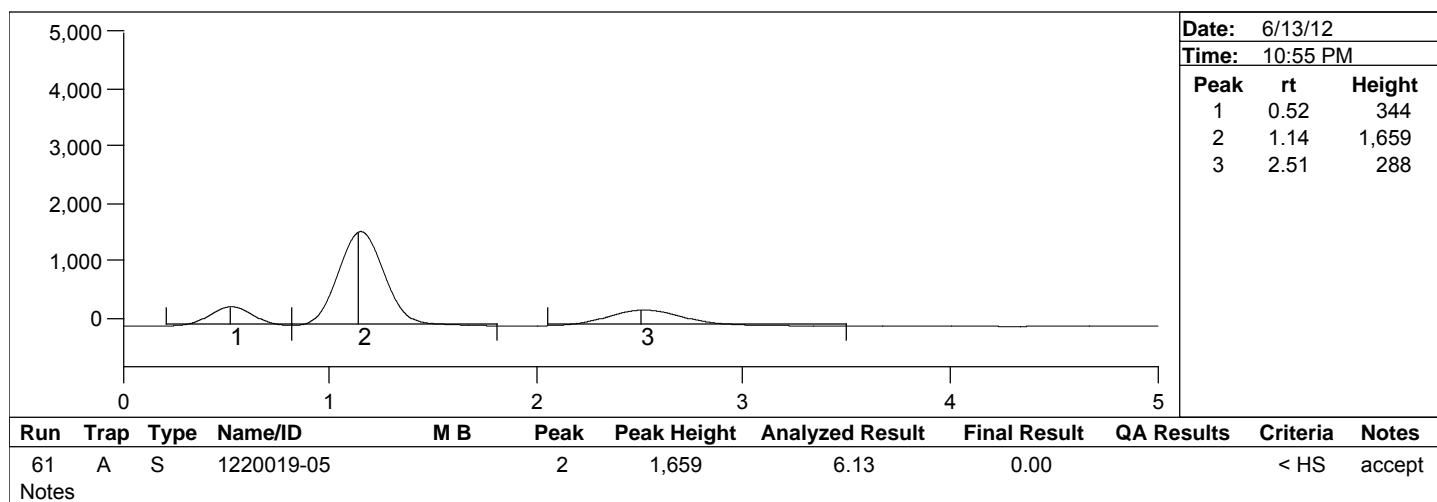


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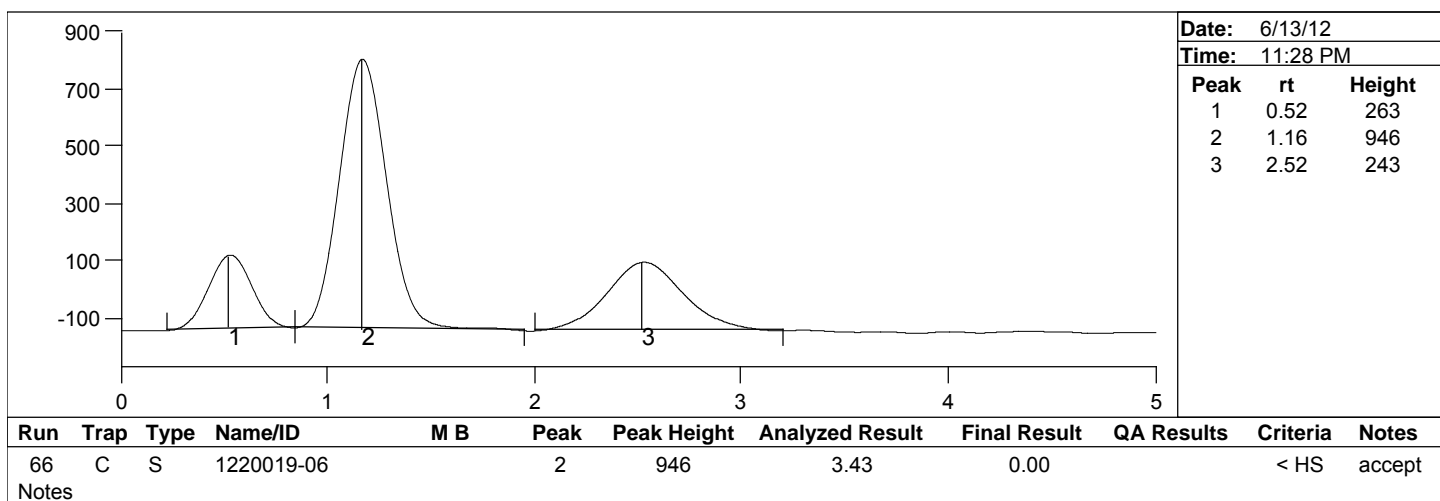
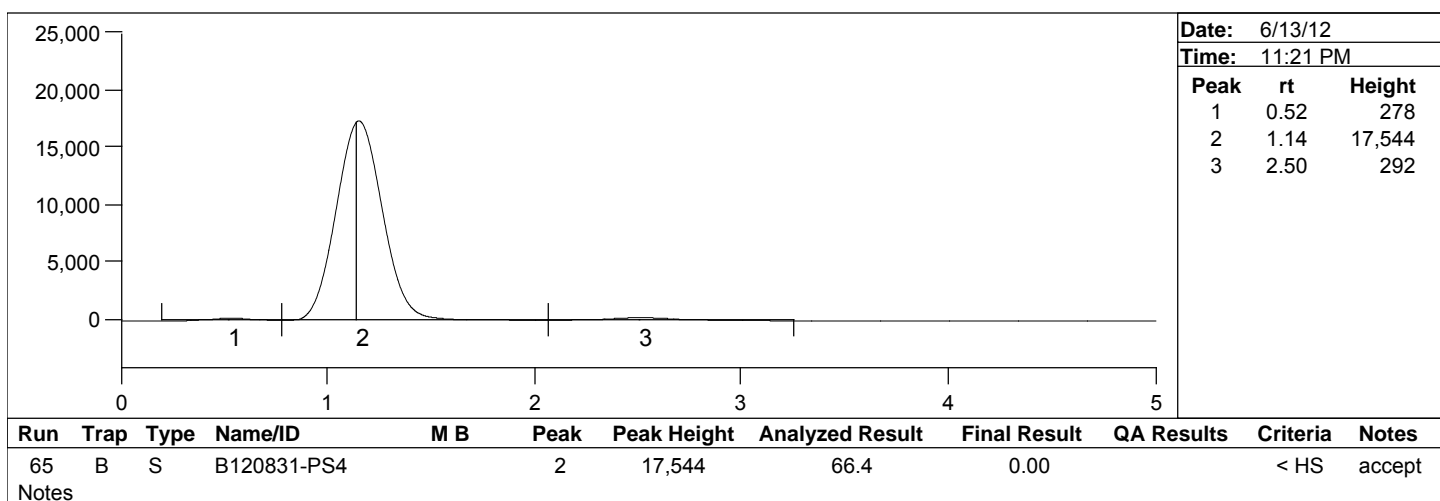
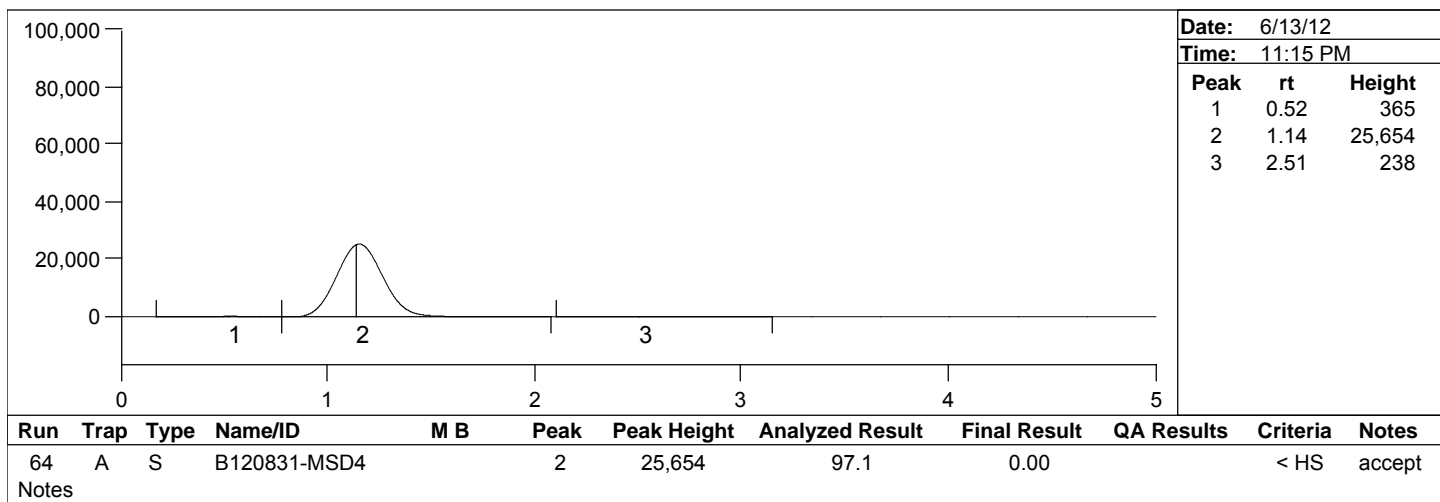


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 Analyst Name: BJT

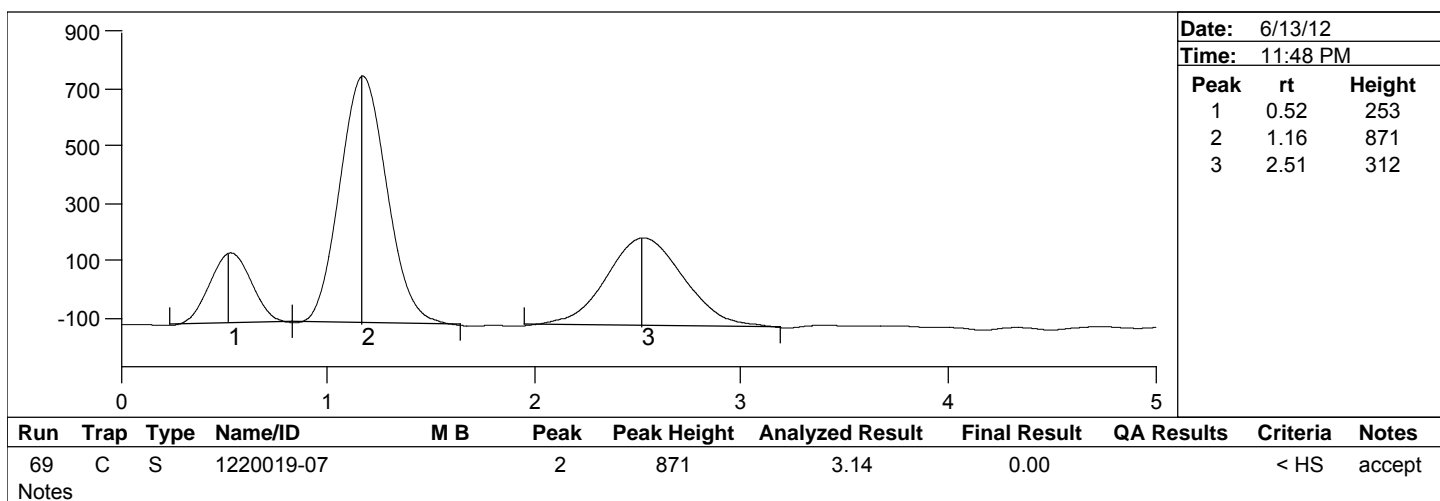
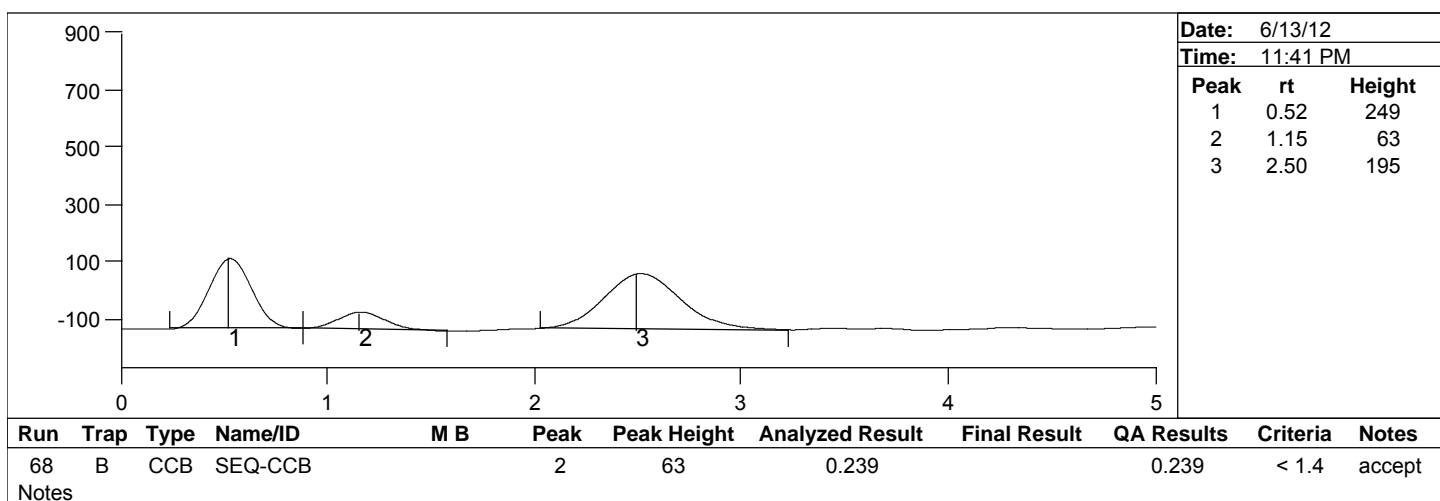
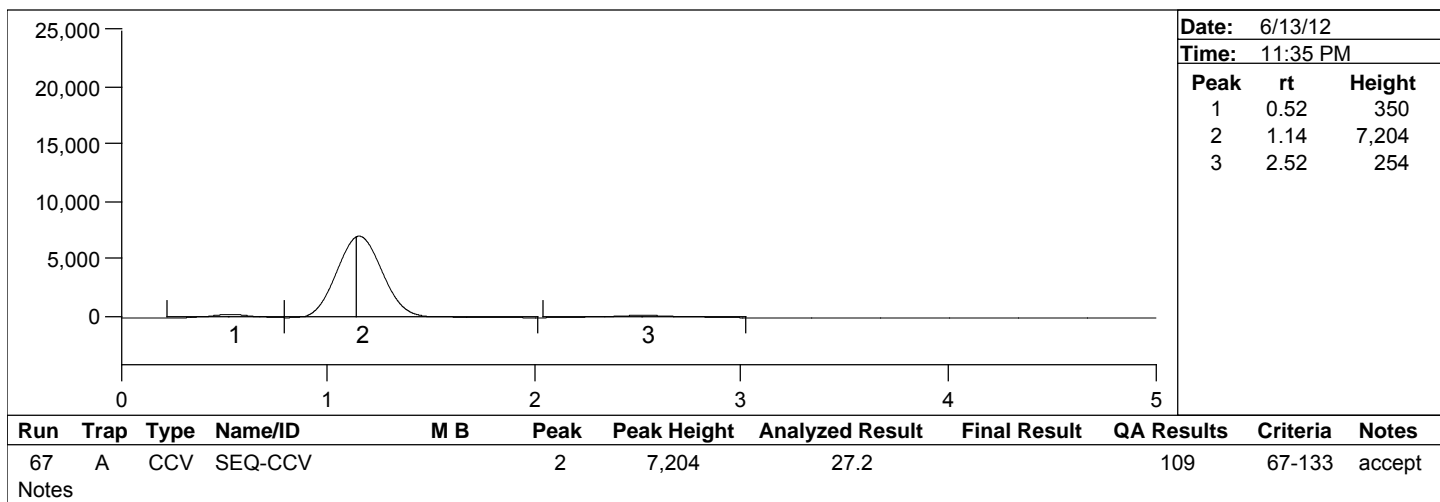


# Peak Report

Batch Number: B120831  
 Method Number: CVAFS BR-0011

Project Number(s): 1200444  
 Instrument ID: MMHG-09

Date Analyzed: 6/13/12  
 Analyst Name: BJT

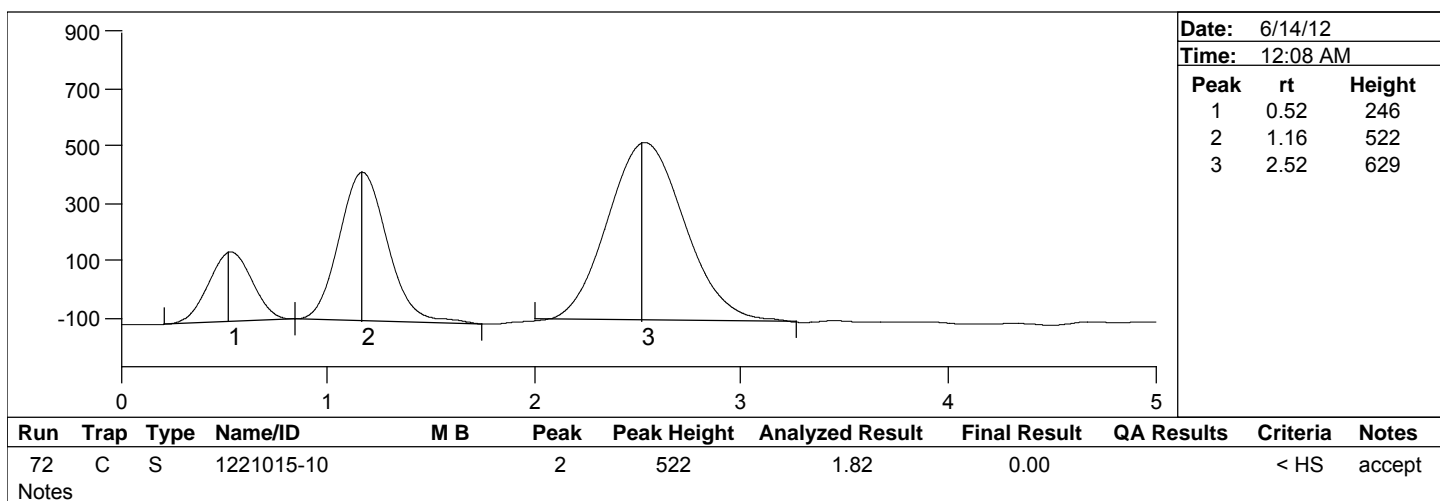
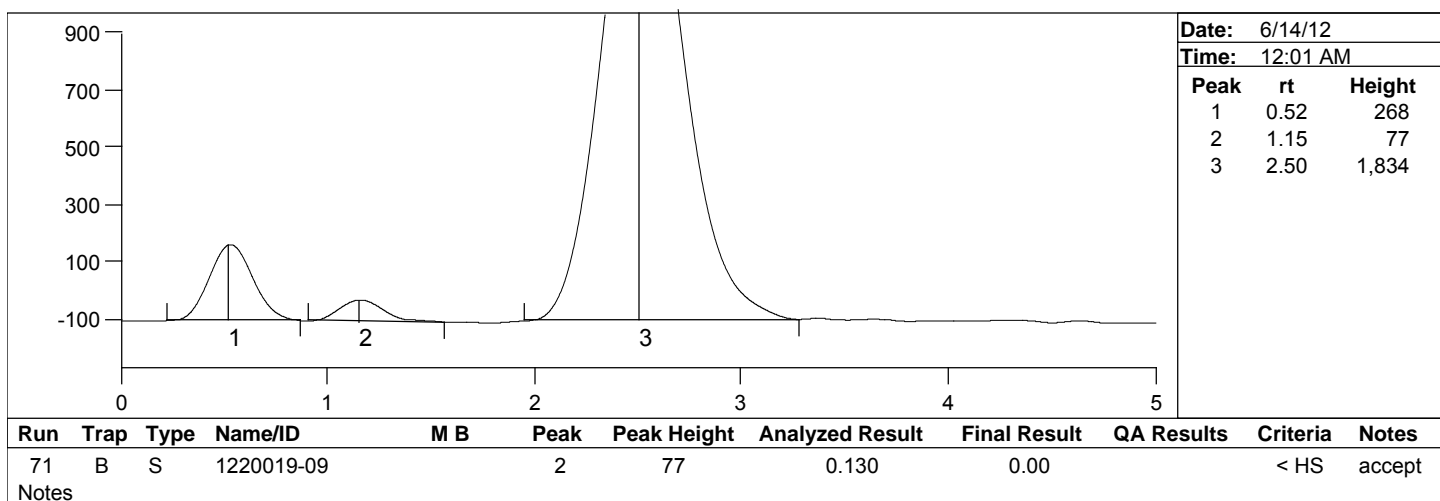
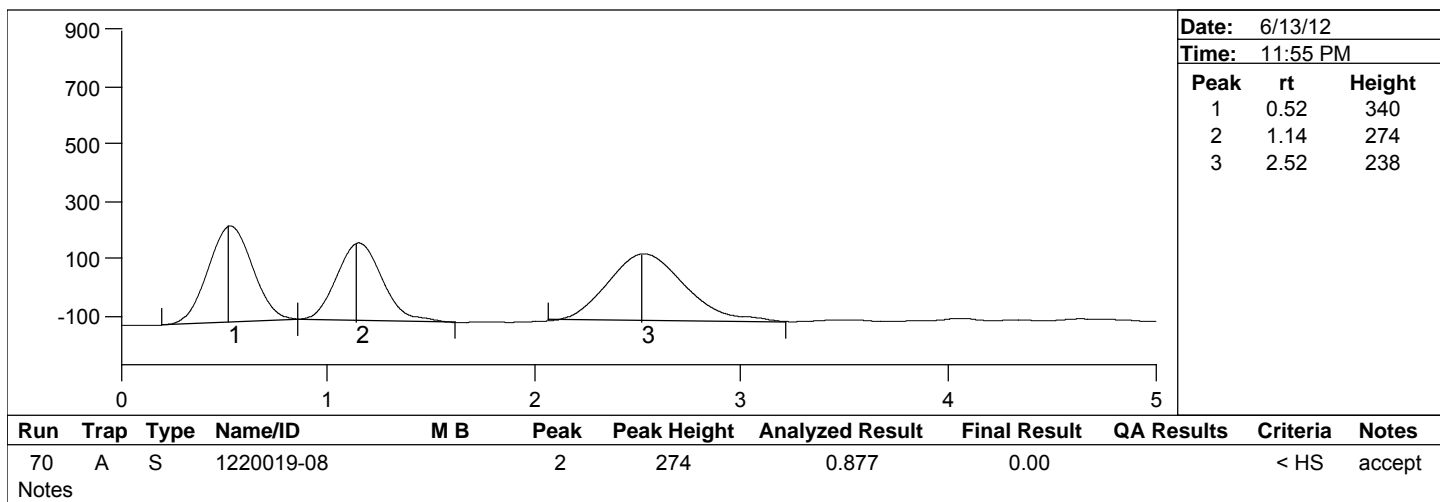


# Peak Report

Batch Number: B120831  
Method Number: CVAFS BR-0011

Project Number(s): 1200444  
Instrument ID: MMHG-09

Date Analyzed: 6/13/12  
Analyst Name: BJT

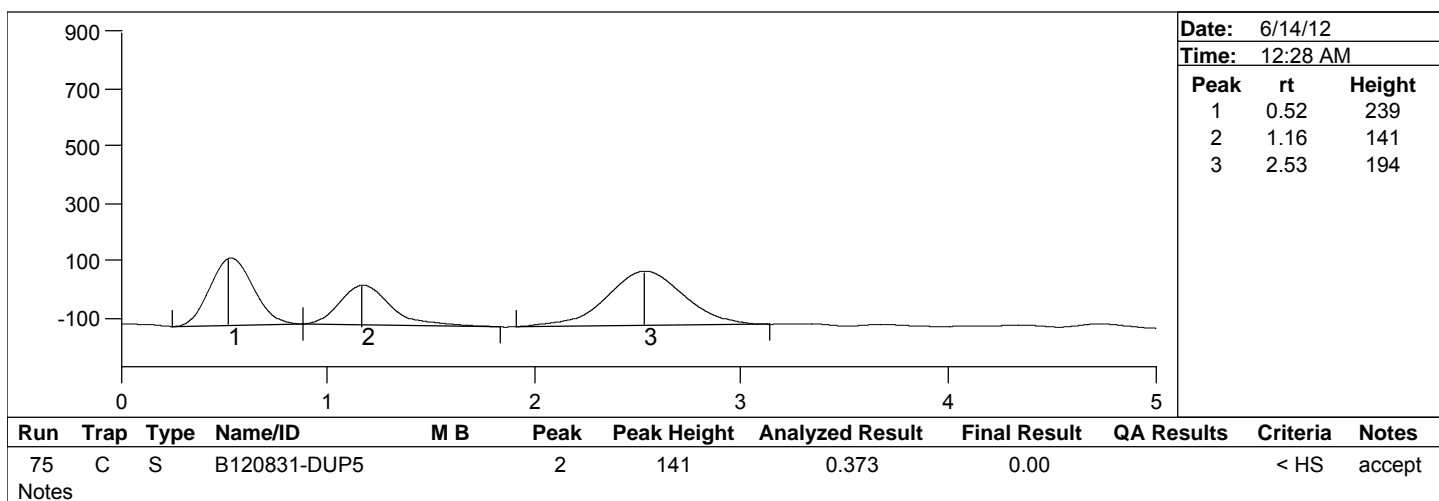
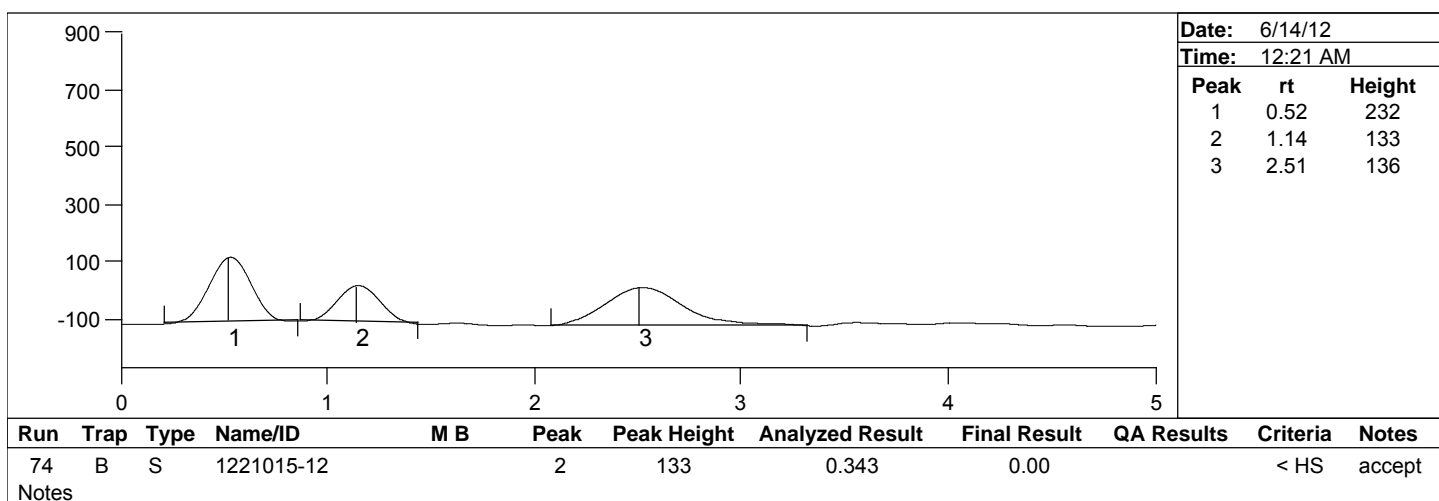
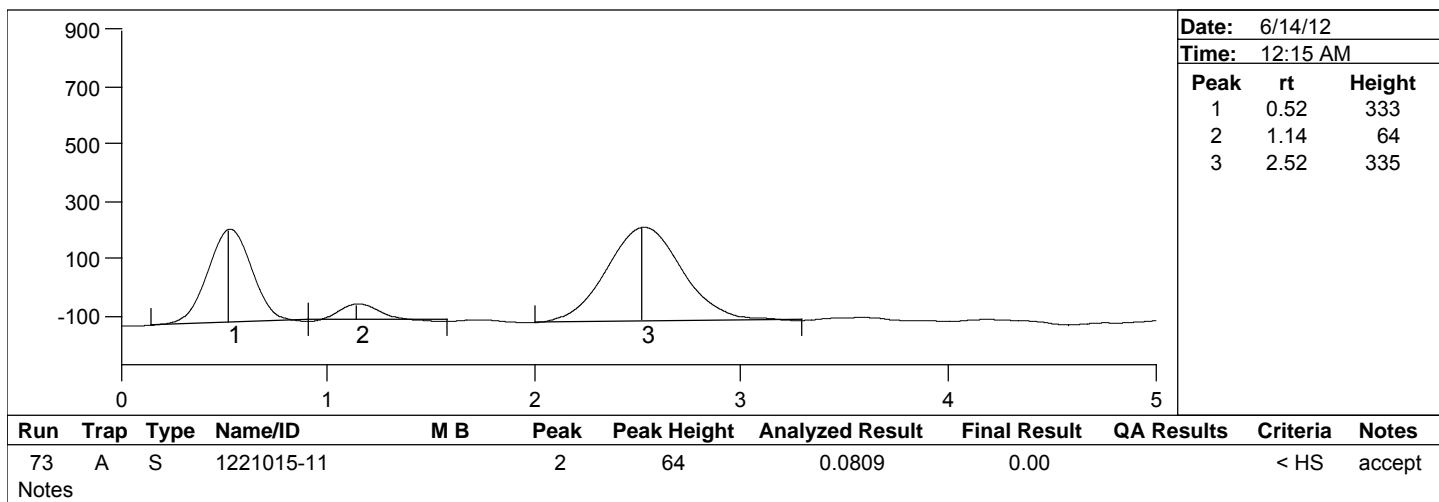


# Peak Report

Batch Number: B120831  
Method Number: CVAFS BR-0011

Project Number(s): 1200444  
Instrument ID: MMHG-09

Date Analyzed: 6/13/12  
Analyst Name: BJT

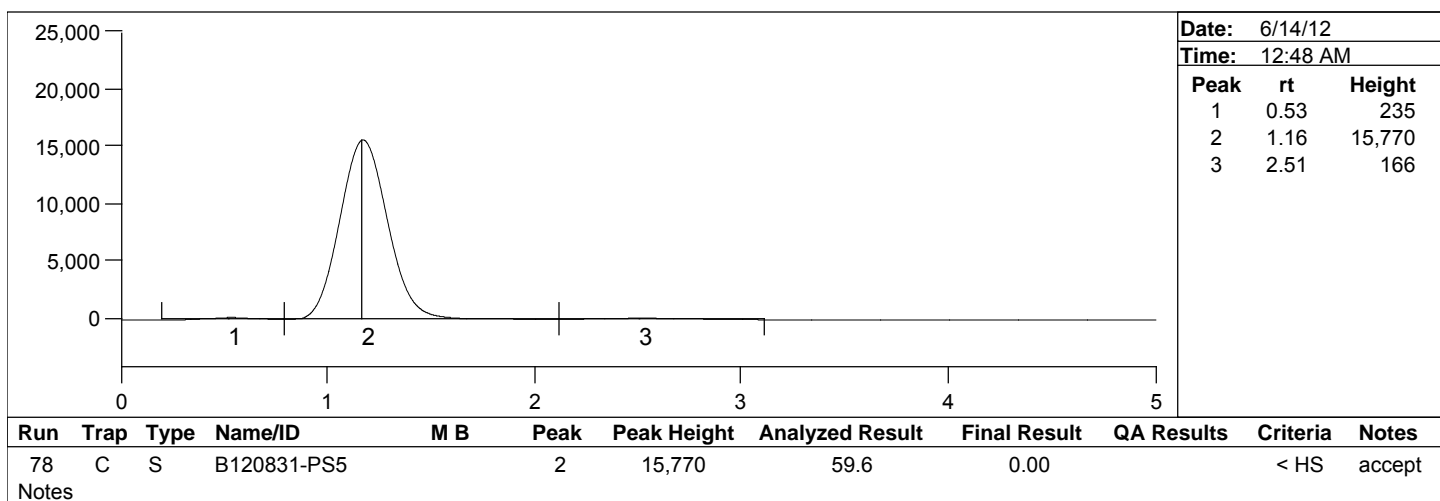
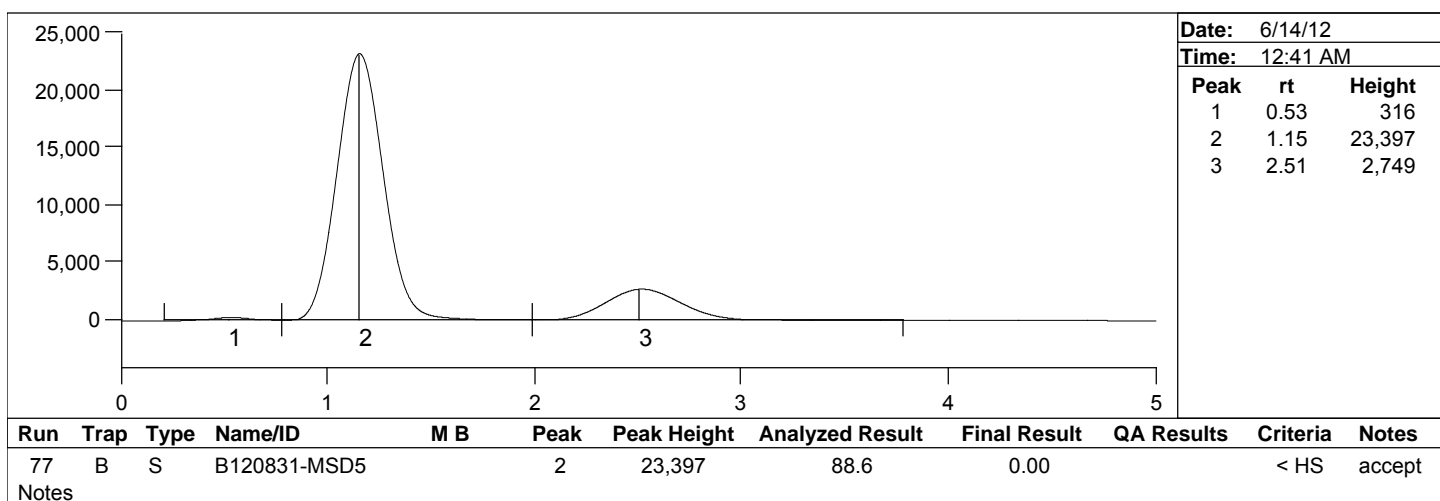
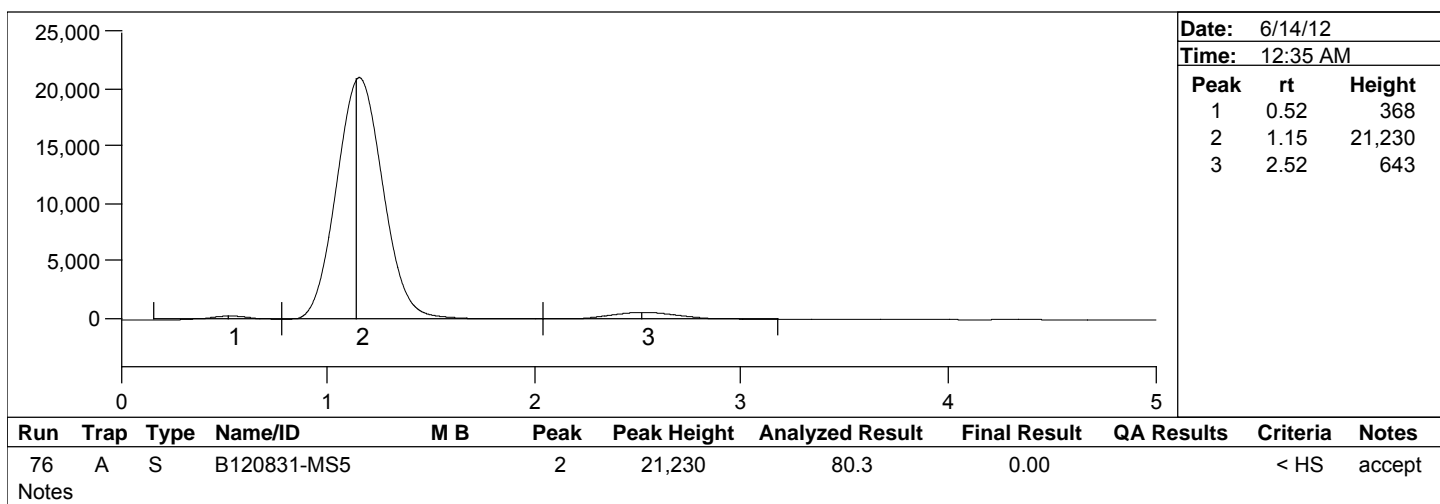


# Peak Report

Batch Number: B120831  
 Method Number: CVAFS BR-0011

Project Number(s): 1200444  
 Instrument ID: MMHG-09

Date Analyzed: 6/13/12  
 Analyst Name: BJT



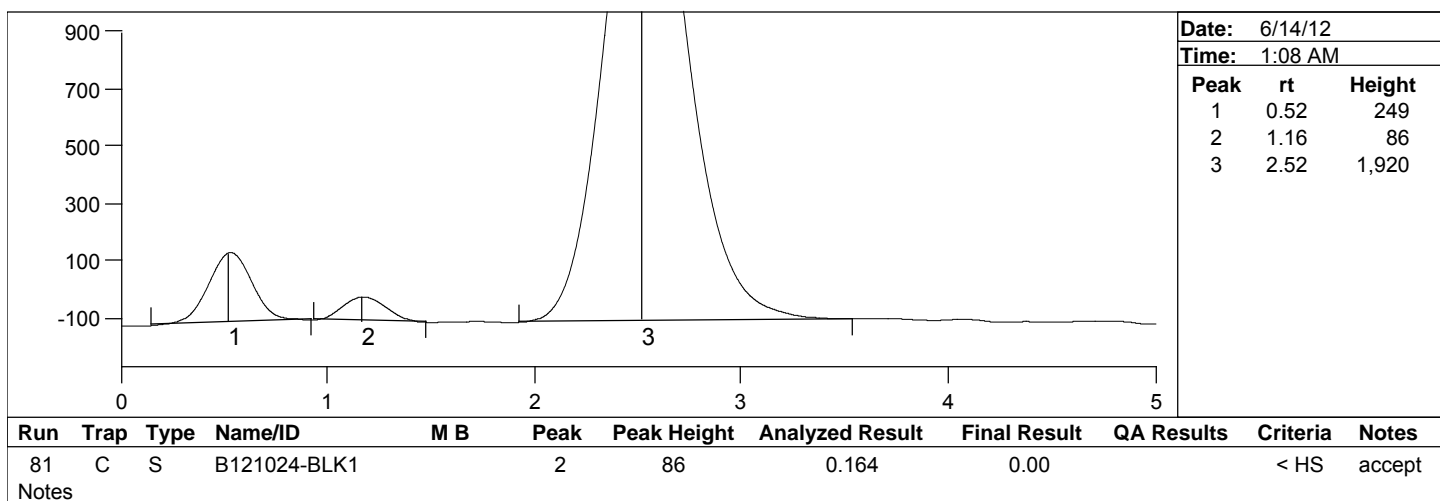
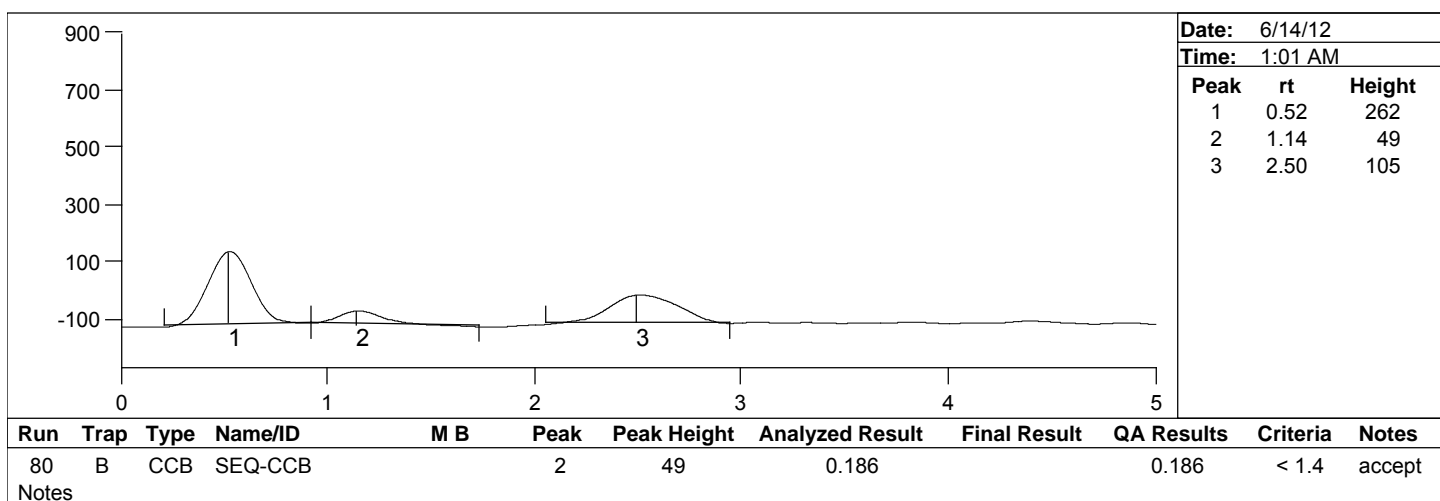
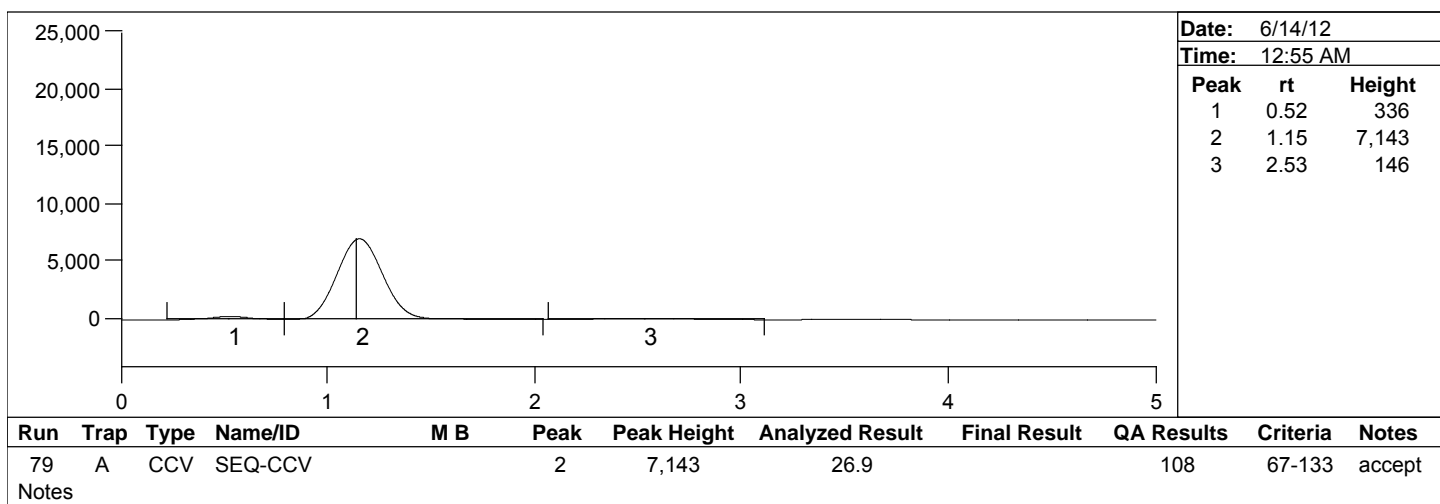


# Peak Report

Batch Number: B120831  
 Method Number: CVAFS BR-0011

Project Number(s): 1200444  
 Instrument ID: MMHG-09

Date Analyzed: 6/13/12  
 Analyst Name: BJT



Batch:	B120922	Analyte:	%TS	Date:	6/8/12	MDL:	0.06	BRL Report 1220019 Rev.1 0.20
Analyst:	AAP	Matrix:	SED	MRL:				
<b>NOTE: To simplify and ensure correct upload of data to the LIMS, always order your samples in this spreadsheet from lowest WO/sample ID # to highest WO/sample ID #, BLKs, and finally DUPs.</b>								
Work Order #	Dish ID	Tare Wt. (g)	Gross Wet Wt. (g)	Gross Dry Wt. (g)	Net Wet Wt. (g)	Net Dry Wt. (g)	Dry Wt. %	Comments
1220016-01		1.010	5.938	5.909	4.928	4.899	99.41	
1220019-01		1.046	6.102	3.509	5.056	2.463	48.71	
1220019-02		1.021	5.920	4.564	4.899	3.543	72.32	
1220019-03		1.023	5.915	3.376	4.892	2.353	48.10	
1220019-04		1.040	6.126	5.238	5.086	4.198	82.54	
1220019-05		1.039	6.032	2.941	4.993	1.902	38.09	
1220019-06		1.028	6.079	2.893	5.051	1.865	36.92	
1220019-07		1.032	6.022	3.578	4.990	2.546	51.02	
1220019-08		1.016	6.067	4.255	5.051	3.239	64.13	
1220019-09		1.043	6.186	5.139	5.143	4.096	79.64	
1220019-11		1.004	6.034	2.745	5.030	1.741	34.61	
1220019-12		1.024	5.993	2.840	4.969	1.816	36.55	
1220019-13		1.030	6.105	3.258	5.075	2.228	43.90	
1220019-14		1.074	6.015	4.860	4.941	3.786	76.62	
1221015-01		1.030	6.102	2.872	5.072	1.842	36.32	
1221015-02		1.036	6.026	2.853	4.990	1.817	36.41	
1221015-03		1.068	6.194	4.197	5.126	3.129	61.04	
1221015-04		1.049	6.052	3.808	5.003	2.759	55.15	
1221015-05		1.034	6.121	5.097	5.087	4.063	79.87	
1221015-06		1.042	6.097	3.396	5.055	2.354	46.57	
1221015-07		1.060	6.143	4.939	5.083	3.879	76.31	
1221015-08		1.061	6.120	4.975	5.059	3.914	77.37	
1221015-10		1.019	5.952	2.838	4.933	1.819	36.87	
1221015-11		1.018	6.113	5.397	5.095	4.379	85.95	
1221015-12		1.021	6.120	5.090	5.099	4.069	79.80	
B120922-BLK1		1.048		1.048		0.000	0.00	0.00 = MB Avg
B120922-BLK2		1.048		1.048		0.000	0.00	0.00 = MB StDev
B120922-DUP1		1.043	6.020	3.437	4.977	2.394	48.10	0%
B120922-DUP2		1.025	5.972	2.805	4.947	1.780	35.98	4%
B120922-DUP3		1.045	6.011	4.049	4.966	3.004	60.49	1%
B120922-DUP4		1.029	6.075	5.367	5.046	4.338	85.97	0%
								5 = Rep. Wt.

**Dry Weight (% Solids) Bench Sheet (BR-1501 Rev 005)**

Batch #: B120922

Analyst: AAP

Date: 6.8.12

Sample ID#	Dish # (if diff. from Sample ID)	Tare Wt. (g)	Gross Wet Wt. (g)	Initial Gross Dry Wt. (g)	Verification Gross Dry Wt. #1* (g)	Verification Gross Dry Wt. #2 (g)
1220019-01		1.046	6.102	3.509		
-02		1.021	5.920	4.564		
-03		1.013	5.915	3.376		
-04		1.040	6.126	5.238		
-05		1.039	6.032	2.941		
-06		1.028	6.079	2.893		
-07		1.032	6.022	3.578		
-08		1.016	6.067	4.255		
-09		1.043	6.186	5.139		
-10		6.5.12 AAP				
-11		1.004	6.034	2.745		
-12		1.024	5.993	2.840		
-13		1.030	6.105	3.258		
-14		1.074	6.015	4.860		
1221015-01	A	1.030	6.102	2.872		
-02	B	1.036	6.026	2.853		
-03	C	1.068	6.194	4.197		
-04	D	1.049	6.052	3.808		
-05	E	1.034	6.121	5.097		
-06	F	1.042	6.097	3.392		
-07	G	1.060	6.143	4.939		
-08	H	1.061	6.120	4.975		
-09	I	6.5.12 AAP				
-10	J	1.019	5.952	2.838		

\* Verification dry weight (net) must be within 4% of or < 0.5 mg less than the previous dry weight measurement; whichever is stricter.

Balance ID: BL-06

Oven ID: OV-02

Thermometer ID: 009182

1) Time / Date / Temp\*\* in: 12/11/6.8.12/102, 102

Time / Date / Temp\*\* out: 6.11.12/1006 113°, 113°

2) Time / Date / Temp\*\* in: \_\_\_\_\_

Time / Date / Temp\*\* out: \_\_\_\_\_

3) Time / Date / Temp\*\* in: \_\_\_\_\_

Time / Date / Temp\*\* out: \_\_\_\_\_ (if necessary)

Reweigh Analyst: AAP

Verification Analyst: \_\_\_\_\_ (if necessary)

\*\* Both the measured and the corrected temperatures must be recorded. Record the measured temperature first and then the corrected temperature.

# Dry Weight (% Solids) Bench Sheet (BR-1501 Rev 005)

Batch #: B120922

Analyst: AAP

Date: 6-8-12

Sample ID#	Dish # (if diff. from Sample ID)	Tare Wt. (g)	Gross Wet Wt. (g)	Initial Gross Dry Wt. (g)	Verification Gross Dry Wt. #1* (g)	Verification Gross Dry Wt. #2 (g)
1221015-11	K	1.018	6.113	5.397		
I -12	L	1.021	6.120	5.090		
1220016-01	M	1.010	5.938	5.909		
B120922-BLK1		1.048	-	1.048		
-BLK2		1.048	-	1.048		
1220019-03	-DUP1	1.043	6.020	3.437		
I -11	-DUP2	1.025	5.972	2.805		
1221015-03	-DUP3	1.045	6.011	4.049		
I -11	-DUP4	1.029	6.015	5.367		
<div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); opacity: 0.5;"> <p>Cancelled 6/14/12</p> </div>						

\* Verification dry weight (net) must be within 4% of or < 0.5 mg less than the previous dry weight measurement; whichever is stricter.

Balance ID: \_\_\_\_\_

Oven ID: \_\_\_\_\_

Thermometer ID: \_\_\_\_\_

- 1) Time / Date / Temp\*\* in: \_\_\_\_\_ Time / Date / Temp\*\* out: \_\_\_\_\_
- 2) Time / Date / Temp\*\* in: same as Time / Date / Temp\*\* out: Page 1
- 3) Time / Date / Temp\*\* in: \_\_\_\_\_ Time / Date / Temp\*\* out: \_\_\_\_\_ (if necessary)

Reweigh Analyst: \_\_\_\_\_ Verification Analyst: \_\_\_\_\_ (if necessary)

\*\* Both the measured and the corrected temperatures must be recorded. Record the measured temperature first and then the corrected temperature.

# Sample Characteristics Log (Soil/Sediment)

Form Report 1220019 Rev.1

(BR-0106 Rev 003)

Batch(es): B120922

Initials: AAP

Date: 6.8.12

Key: Rock = Rk, Sand = Sd, Silt = St, Clay = Cl, Organic Matter = OM

Write a 1 - 10 (indicating approximate percentage of constituent) below each descriptor. The numbers should always add up to 10. For example Rk 2, Sd 5, OM 3

Sample ID	Decanted	Matrix (1 - 10)					Comments Color, odor, homogeneity, rock size, etc.	
		Rk	Sd	St	Cl	OM		
1220019-01	X	4		6			Dark brown, wet, smooth, oily, smelly (petroleum)	
-02		8		2				
-03				7		3	Very strong petrol. smell	
-04		1			9		Light brown, stiff, squishy	
-05	X			9		1	Dark brown, wet, smooth, smells like sulfur	
-06	X			8		2	Dark smooth, wet, oily, smell petroleum	
-07	X	1		9				
-08		2		8				
-09	<del>X</del>	<del>9</del>		<del>9</del>			Light brown, stiff, crumbly	
-10		6.8.12 AAP						
-11	X			10			Dark brown, smooth, wet, petroleum smell	
-12	X			10				
-13	X	1		9				
-14					10		Light brown, stiff, crumbly	
122015-01	X	1		9			Dark brown, smooth, wet, oily sheen, petroleum smell	
-02	X			10				
-03	X	1		9				
-04		4		6				
-05				10			Grey-brown, stiff, glittery flecks,	
-06	X	1		8		1	Dark brown, smooth, wet, oily sheen, petroleum smell	
-07		1		9				
-08					10		Light brown, stiff, moist, crumbly	
-09	<del>X</del>	<del>6.8.12 AAP</del>		<del>10</del>			Dark brown, wet, smooth, oily sheen, petrol. smell	
-10	X			10				
-11			X10				Dark grey, wet sand	
-12					10		Grey-brown, stiff, moist, crumbly	
1220016-01				X10			Grey, powdery, light	
							Cont. of 14/15/12 - one 14/12	

Comments:

⓪ No sample 9, description for sample 10

Page 1 of 1