

## Atmospheric Analysis & Consulting, Inc.

CLIENT : SWAPE  
PROJECT NAME : Bridgeton Sanitary Landfill Quality Assessment  
AAC PROJECT NO. : 130744  
REPORT DATE : 06/20/2013

On June 18, 2013, Atmospheric Analysis & Consulting, Inc. received four (4) Six-Liter Summa Canisters for Total Reduced Sulfur analysis by ASTM D-5504. Upon receipt, the samples were assigned unique Laboratory ID numbers as follows:


Client ID	Lab No.	Return Pressure (mmHgA)
D-1 IN Canister	130744-63722	446.0
D-2 CM Canister	130744-63723	694.0
D-3 W5 Canister	130744-63724	395.9
U-1 W7 Canister	130744-63725	695.7

ASTM D-5504 Analysis - Up to a 1 mL aliquot of sample is injected into the GC/SCD for analysis following ASTM D-5504 as specified in the SOW.

No problems were encountered during receiving, preparation, and/ or analysis of these samples. The test results included in this report meet all requirements of the NELAC Standards and/or AAC SOP# AACI-ASTM D-5504.

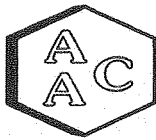
I certify that this data is technically accurate, complete, and in compliance with the terms and conditions of the contract. The Laboratory Director or his designee, as verified by the following signature, has authorized release of the data contained in this hardcopy data package.

If you have any questions or require further explanation of data results, please contact the undersigned.

  
Marcus Hueppe  
Laboratory Director

This report consists of 33 pages.





**SAMPLE RECEIPT / LOG-IN REPORT**

**AAC Project 130744**

**Received By: J. Zachman**

<u>Sample Receipt Date</u>	<u>Project Desc</u>	<u>Clients ID</u>	<u>Matrix</u>	<u>Sampling Date/Time</u>	<u>Sampled By</u>	<u>Sample #</u>	<u>Analysis Requested</u>
6/18/2013 1430	Soil Water Air Protection Enterprise (SWAPE) Bridgeton Sanitary Landfill Air Quality Assessment	D-1 IN Canister	Summa Canister	6/13/2013	Client	63722	TO15 ASTM D5504
6/18/2013 1430	Soil Water Air Protection Enterprise (SWAPE) Bridgeton Sanitary Landfill Air Quality Assessment	D-2 CM Canister	Summa Canister	6/13/2013	Client	63723	TO15 ASTM D5504
6/18/2013 1140	Soil Water Air Protection Enterprise (SWAPE) Bridgeton Sanitary Landfill Air Quality Assessment	D-3 W5 Canister	Summa Canister	6/13/2013	Client	63724	TO15 ASTM D5504
6/18/2013 1140	Soil Water Air Protection Enterprise (SWAPE) Bridgeton Sanitary Landfill Air Quality Assessment	U-1 W7 Canister	Summa Canister	6/13/2013	Client	63725	TO15 ASTM D5504

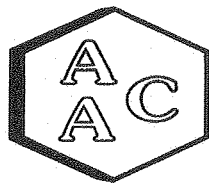
**TURN AROUND TIME:** Normal (10days)

Lab Due Date: 6/25/2013

Total Samples: 4

**REMARKS:**

Client returned 4 x Summa canisters + 8 x Flows. "Standard TAT for all analyses. If possible deliver report within 2 weeks. Provide Level IV QC package for all analyses."



**CANISTER PRESSURE LOG**

Client: Soil Water Air Protection Ent      Project No.: 130744  
Date:

Canister #	Sample #	Initial Pressure	Final Pressure
801	63722	446.0	1018.7
671	63723	694.0	1014.8
697	63724	395.9	1035.9
668	63725	695.7	1014.8

ARC # 130744

**CHAIN OF CUSTODY RECORD / ANALYTICAL REQUEST FORM**

Bridgeton Sanitary Landfill Air Quality Assessment

Client Name: SOIL / WATER AIR PROTECTION ENTERPRISE				Telephone No. / Fax No.: (310) 434-0110 / (310) 434-0011				Date: May		Page 1 of 1													
Project Manager: PAUL ROSENFELD, PH.D.				REQUESTED TESTS / ANALYSES																			
Address: 1640 FIFTH STREET, SUITE 204, SANTA MONICA, CA 90401																							
Project Name and Location: BRIDGETON SANITARY LANDFILL AIR QUALITY ASSESSMENT				Special Instructions / Conditions of Receipt																			
Sampled By: John Blank		Sampler Signature: <i>John Blank</i>																					
LAB ID	SAMPLE ID NUMBER	Type	Date	Time	VOCS - EPA TO-15	Reduced Sulfur Compounds - ASTM D5504	Carbonyls - EPA TO-11A	Carboxylic Acids - Tube GC-MS	HCL - NIOSH 7903	Ammonia - OSHA ID-188	SO2 - OSHA ID-200	HCN - NIOSH 6010	Amines - NIOSH 2010M	Fixed Gases - EPA 3C	PAHs / Dioxins EPA TO-13A / 9A	Mercury - NIOSH 6009	Odor Evaluation	Flow #					
63722	D-1 IN	Canister	13-Jun	4 HR	X	X												Canister # 801	710				
63723	D-2 CM	Canister	13-Jun	4 HR	X	X												Canister # 671	807				
63724	D-3 W5	Canister	13-Jun	4 HR	X	X												Canister # 692	717				
63725	U-1 W7	Canister	13-Jun	4 HR	X	X												Canister # 668	806				
Requested Turnaround Time:				OC Requirements:				Standard turn-around for all analyses. If possible deliver report within 2 weeks.								Provide Level IV OC Package for all Analyses.							
Relinquished By: John Blank				Date: 6/12/13				Received By: <i>[Signature]</i>				Date: 6/18/13				Time: 12 Noon				Time: 1140			
Relinquished By:				Date:				Received By:				Date:				Time:							
Relinquished By:				Date:				Received By:				Date:				Time:							

# Atmospheric Analysis and Consulting Inc.

## Canister Sampling Field Data Sheet

### GENERAL INFORMATION

Project Name and/or ID No.: **Bridgeton Sanitary Landfill**

Site Address and/or ID No: **13570 St Charles Rock Rd, Bridgeton, MO 63044**

Sample Name and/or ID No.: **D-1 IN Canister #801**

AAC Batch ID: 130744 AAC Sample ID: 63722

### SAMPLING INFORMATION

Start Date/Time: **June 13<sup>th</sup>, 2013 – 7:05:00** Stop Date/Time: **June 13<sup>th</sup>, 2013 – 11:05:00**

Start Temp/Pressure\*: **19C / 29.9 psi** Stop Temp/Pressure\*: **21C / 29.96 psi**

Initial Can Pressure\*\*: **- 31** Final Can Pressure\*\*: **- 12.5**

\* Ambient Barometric Reading where sample is being taken (C / inHg) \*\* Flow Controller Gauge Reading (inHg)

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



John Blank  
*Sampler Name (Print)*

**June 13th, 2013**  
*Sampler Signature/Date*

### LABORATORY INFORMATION

Canister Size: 6 – Liter

Sampling Period: 4 – Hour

Canister Serial No.: 801

Flow Controller Serial No.: 710

Initial Pressure: 4.2

Certified Flow Rate: 18.0

Return Pressure: 446.0

Certified By/Date: WJH 6/5/2013

Final Pressure: 1018.7

Flow Rate upon Return: 13.5

Date Shipped From Lab: 5/16/2013

Shipped By: [Signature]

Date Returned to Lab: 6/18/2013

Received By: [Signature]

Flow Controller Certification File ID: MS03/000413260

Canister Certification File ID: MS03/05151329

Certification Type: SIM  SCAN  NJLL  PAMS  Other

[Signature] 06/19/13  
*Chemist Signature/Date*

[Signature] 6/21/13  
*Lab Manager Signature/Date*

*Sampler is required to fill out all highlighted sections during sampling.*  
*All remaining sections will be completed upon return by the laboratory.* Page 5

# Atmospheric Analysis and Consulting Inc.

## Canister Sampling Field Data Sheet

### GENERAL INFORMATION

Project Name and/or ID No.: **Bridgeton Sanitary Landfill**

Site Address and/or ID No: **13570 St Charles Rock Rd, Bridgeton, MO 63044**

Sample Name and/or ID No.: **D-2 CM Canister #671**

AAC Batch ID: B0744 AAC Sample ID: 63723

### SAMPLING INFORMATION

Start Date/Time: **June 13<sup>th</sup>, 2013 – 7:25:00** Stop Date/Time: **June 13<sup>th</sup>, 2013 – 11:25:00**

Start Temp/Pressure\*: **19C / 29.9 psi** Stop Temp/Pressure\*: **21C / 29.96 psi**

Initial Can Pressure\*\*: **- 32** Final Can Pressure\*\*: **- 8**

\* Ambient Barometric Reading where sample is being taken (C / inHg) \*\* Flow Controller Gauge Reading (inHg)

Comments: **NOTE: The Flow Control Pressure Gage did not operate correctly.**

**Value for vacuum pressure was taken from the Tank Pressure Gage**



John Blank

June 13th, 2013

*Sampler Name (Print)*

*Sampler Signature/Date*

### LABORATORY INFORMATION

Canister Size: 6 – Liter

Sampling Period: 4 – Hour

Canister Serial No.: 671

Flow Controller Serial No: 807

Initial Pressure: 2.9

Certified Flow Rate: 18.0


Return Pressure: 694.0

Certified By/Date: WH 6/5/2013

Final Pressure: 1014.8

Flow Rate upon Return: 25.5

Date Shipped From Lab: 6/5/2013

Shipped By: 

Date Returned to Lab: 6/18/2013

Received By: 

Flow Controller Certification File ID: 1303/06091326

Canister Certification File ID: 1303/05301317

Certification Type: SIM  SCAN  NJLL  PAMS  Other

  
*Chemist Signature/Date*

  
*Lab Manager Signature/Date*

**Sampler is required to fill out all highlighted sections during sampling. Page 6**  
**All remaining sections will be completed upon return by the laboratory.**

# Atmospheric Analysis and Consulting Inc.

## Canister Sampling Field Data Sheet

### GENERAL INFORMATION

Project Name and/or ID No.: **Bridgeton Sanitary Landfill**

Site Address and/or ID No: **13570 St Charles Rock Rd, Bridgeton, MO 63044**

Sample Name and/or ID No.: **D-3 W5 Canister #697**

AAC Batch ID: 130744 AAC Sample ID: 63724

### SAMPLING INFORMATION

Start Date/Time: **June 13, 2013 - 7:42:00** Stop Date/Time: **June 13, 2013 - 11:42:00**

Start Temp/Pressure\*: **19C / 29.9 psi** Stop Temp/Pressure\*: **21 C / 29.96 psi**

Initial Can Pressure\*\*: **- 31** Final Can Pressure\*\*: **- 15.5**

\* Ambient Barometric Reading where sample is being taken (C / inHg) \*\* Flow Controller Gauge Reading (inHg)

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

  
\_\_\_\_\_  
John Blank  
*Sampler Name (Print)*

**June 13, 2013**  
*Sampler Signature/Date*

### LABORATORY INFORMATION

Canister Size: 6 - Liter

Sampling Period: 4 - Hour

Canister Serial No.: 697

Flow Controller Serial No: 717

Initial Pressure: 3.2

Certified Flow Rate: 18.0

Return Pressure: 395.9

Certified By/Date: WH 6/5/2013

Final Pressure: 1035.9

Flow Rate upon Return: 12.0

Date Shipped From Lab: 6/5/2013

Shipped By: ZZ

Date Returned to Lab: 6/18/2013

Received By: ZZ

Flow Controller Certification File ID: 4803/00041326

Canister Certification File ID: 4803/05301313

Certification Type: SIM  SCAN  NJLL  PAMS  Other

  
\_\_\_\_\_  
*Chemist Signature/Date*

  
\_\_\_\_\_  
*Lab Manager Signature/Date*

*Sampler is required to fill out all highlighted sections during sampling.*

*All remaining sections will be completed upon return by the laboratory. Page 7*

# Atmospheric Analysis and Consulting Inc.

## Canister Sampling Field Data Sheet

### GENERAL INFORMATION

Project Name and/or ID No.: **Bridgeton Sanitary Landfill**

Site Address and/or ID No: **13570 St Charles Rock Rd, Bridgeton, MO 63044**

Sample Name and/or ID No.: **U- 1 W7**      **Canister #668**

AAC Batch ID: 130744      AAC Sample ID: 63725

### SAMPLING INFORMATION

Start Date/Time: **June 13<sup>th</sup>, 2013 -8:22:00**    Stop Date/Time: **June 13<sup>th</sup>, 2013 - 12:22:00**

Start Temp/Pressure\*: **19C / 29.9** psi    Stop Temp/Pressure\*: **21C / 29.96** psi

Initial Can Pressure\*\*: **- 31**      Final Can Pressure\*\*: **- 5**

\* Ambient Barometric Reading where sample is being taken (C / inHg)    \*\* Flow Controller Gauge Reading (inHg)

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



John Blank  
*Sampler Name (Print)*

**June 13<sup>th</sup>, 2013**  
*Sampler Signature/Date*

### LABORATORY INFORMATION

Canister Size: 6 - Liter

Sampling Period: 4 - Hour

Canister Serial No.: 668

Flow Controller Serial No: 806

Initial Pressure: 4.2

Certified Flow Rate: 18.0

Return Pressure: 695.7

Certified By/Date: WH 6/5/2013

Final Pressure: 1014.8

Flow Rate upon Return: 26.3

Date Shipped From Lab: 5/16/2013

Shipped By: JJ

Date Returned to Lab: 6/13/2013

Received By: JJ

Flow Controller Certification File ID: 1603/06041326

Canister Certification File ID: 1603/05151324

Certification Type: SIM \_\_\_\_\_ SCAN  NJLL \_\_\_\_\_ PAMS \_\_\_\_\_ Other \_\_\_\_\_

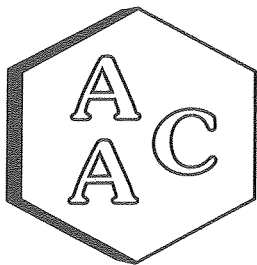
  
*Chemist Signature/Date*

  
*Lab Manager Signature/Date*

*Sampler is required to fill out all highlighted sections during sampling.*  
*All remaining sections will be completed upon return by the laboratory.* Page 8



# Results



# Atmospheric Analysis & Consulting, Inc.

## LABORATORY ANALYSIS REPORT


CLIENT : SWAPE  
PROJECT NO. : 130744  
MATRIX : AIR  
UNITS : ppbV

SAMPLING DATE : 06/13/2013  
RECEIVING DATE : 06/18/2013  
ANALYSIS DATE : 06/19/2013  
REPORT DATE : 06/20/2013

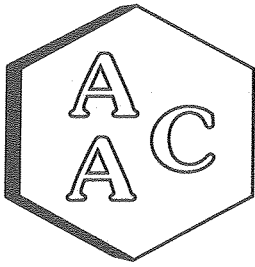
### Sulfur Compounds by ASTM D-5504

Client ID	D-1 IN Canister	D-2 CM Canister	D-3 W5 Canister	U-1 W7 Canister
AAC ID	130744-63722	130744-63723	130744-63724	130744-63725
Canister Dil. Fac.	2.28	1.46	2.62	1.46
Analyte	Result	Result	Result	Result
Hydrogen Sulfide	< 22.8	< 14.6	< 26.2	< 14.6
Carbonyl Sulfide	< 22.8	< 14.6	< 26.2	< 14.6
Sulfur Dioxide	< 22.8	< 14.6	< 26.2	< 14.6
Methyl Mercaptan	< 22.8	< 14.6	< 26.2	< 14.6
Ethyl Mercaptan	< 22.8	< 14.6	< 26.2	< 14.6
Dimethyl Sulfide	< 22.8	< 14.6	< 26.2	< 14.6
Carbon Disulfide	< 11.4	< 7.3	< 13.1	< 7.3
Isopropyl Mercaptan	< 22.8	< 14.6	< 26.2	< 14.6
tert-Butyl Mercaptan	< 22.8	< 14.6	< 26.2	< 14.6
n-Propyl Mercaptan	< 22.8	< 14.6	< 26.2	< 14.6
Methylethylsulfide	< 22.8	< 14.6	< 26.2	< 14.6
sec-Butyl Mercaptan	< 22.8	< 14.6	< 26.2	< 14.6
Thiophene	< 22.8	< 14.6	< 26.2	< 14.6
iso-Butyl Mercaptan	< 22.8	< 14.6	< 26.2	< 14.6
Diethyl Sulfide	< 22.8	< 14.6	< 26.2	< 14.6
n-Butyl Mercaptan	< 22.8	< 14.6	< 26.2	< 14.6
Dimethyl Disulfide	< 11.4	< 7.3	< 13.1	< 7.3
2-Methylthiophene	< 22.8	< 14.6	< 26.2	< 14.6
3-Methylthiophene	< 22.8	< 14.6	< 26.2	< 14.6
Tetrahydrothiophene	< 22.8	< 14.6	< 26.2	< 14.6
Bromothiophene	< 22.8	< 14.6	< 26.2	< 14.6
Thiophenol	< 22.8	< 14.6	< 26.2	< 14.6
Diethyl disulfide	< 11.4	< 7.3	< 13.1	< 7.3
Total Unidentified Sulfur	< 22.8	< 14.6	< 26.2	< 14.6

All unidentified sulfur compound's concentrations expressed in terms of  $\mu\text{S}$   
Sample Quantitation Limit (SQL) is equal to the Quantitation Limit x Canister Dil. Fac. x Analysis Dil. Fac.

  
Marcus Hueppe  
Laboratory Director





# Atmospheric Analysis & Consulting, Inc.

## LABORATORY ANALYSIS REPORT

CLIENT : SWAPE  
 PROJECT NO. : 130744  
 MATRIX : AIR  
 UNITS : ug/m<sup>3</sup>

SAMPLING DATE : 06/13/2013  
 RECEIVING DATE : 06/18/2013  
 ANALYSIS DATE : 06/19/2013  
 REPORT DATE : 06/20/2013

### Sulfur Compounds by ASTM D-5504

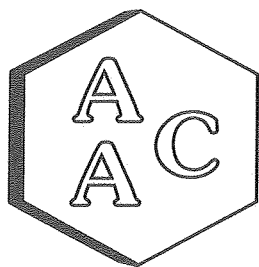
Client ID	D-1 IN Canister	D-2 CM Canister	D-3 W5 Canister	U-1 W7 Canister
AAC ID	130744-63722	130744-63723	130744-63724	130744-63725
Canister Dil. Fac.	2.28	1.46	2.62	1.46
Analyte	Result	Result	Result	Result
Hydrogen Sulfide	< 31.8	< 20.4	< 36.5	< 20.3
Carbonyl Sulfide	< 56.1	< 35.9	< 64.3	< 35.8
Sulfur Dioxide	< 59.8	< 38.3	< 68.6	< 38.2
Methyl Mercaptan	< 44.9	< 28.8	< 51.5	< 28.7
Ethyl Mercaptan	< 58.0	< 37.2	< 66.5	< 37.1
Dimethyl Sulfide	< 58.0	< 37.2	< 66.5	< 37.1
Carbon Disulfide	< 35.6	< 22.8	< 40.7	< 22.7
Isopropyl Mercaptan	< 71.1	< 45.5	< 81.5	< 45.4
tert-Butyl Mercaptan	< 84.3	< 53.9	< 96.5	< 53.8
n-Propyl Mercaptan	< 71.1	< 45.5	< 81.5	< 45.4
Methylethylsulfide	< 71.1	< 45.5	< 81.5	< 45.4
sec-Butyl Mercaptan	< 84.3	< 53.9	< 96.5	< 53.8
Thiophene	< 78.6	< 50.3	< 90.0	< 50.2
iso-Butyl Mercaptan	< 84.3	< 53.9	< 96.5	< 53.8
Diethyl Sulfide	< 84.3	< 53.9	< 96.5	< 53.8
n-Butyl Mercaptan	< 84.3	< 53.9	< 96.5	< 53.8
Dimethyl Disulfide	< 44.0	< 28.2	< 50.4	< 28.1
2-Methylthiophene	< 91.7	< 58.7	< 105	< 58.6
3-Methylthiophene	< 91.7	< 58.7	< 105	< 58.6
Tetrahydrothiophene	< 82.4	< 52.7	< 94.4	< 52.6
Bromothiophene	< 152	< 97.5	< 174	< 97.3
Thiophenol	< 103	< 65.9	< 118	< 65.7
Diethyl disulfide	< 57.1	< 36.6	< 65.4	< 36.5
Total Unidentified Sulfur	< 31.8	< 20.4	< 36.5	< 20.3

All unidentified sulfur compound's concentrations expressed in terms of  $\mu\text{S}$   
 Sample Quantitation Limit (SQL) is equal to the Quantitation Limit x Canister Dil. Fac. x Analysis Dil. Fac.

  
 Marcus Hueppe  
 Laboratory Director



# **QA/QC Summary**



# Atmospheric Analysis & Consulting, Inc.

## Quality Control/Quality Assurance Report ASTM D-5504

Date Analyzed: 06/19/13  
Analyst: DH

Instrument ID: SCD#10  
Calb. Date: 5/14/2013

### Opening Calibration Verification Standard

	Resp. (area)	Result (ppbV)	% Rec *	% RPD ****
Initial	16787	498	99.6	NA
Duplicate	16711	496	99.1	0.5
Triplicate	16984	504	100.7	1.2

### Method Blank

Analyte	Result
H2S	ND

### Matrix Spike & Duplicate

Sample ID 130744-63722

Analyte	Sample Conc.	Spike Added	MS Result	MSD Result	MS % Rec **	MSD % Rec **	% RPD ***
H2S	0	250	246	240	98.3	96.1	2.3

### Duplicate Analysis

Sample ID 130744-63722

Analyte	Sample Result	Duplicate Result	Mean	% RPD ***
H2S	0	0	0	0.0

### Closing Calibration Verification Standard

Analyte	Std. Conc.	Result	%Recovery **
H2S	500	500.3	100.1

\* Must be 95-105%

\*\* Must be 90-110%

\*\*\* Must be < 10%

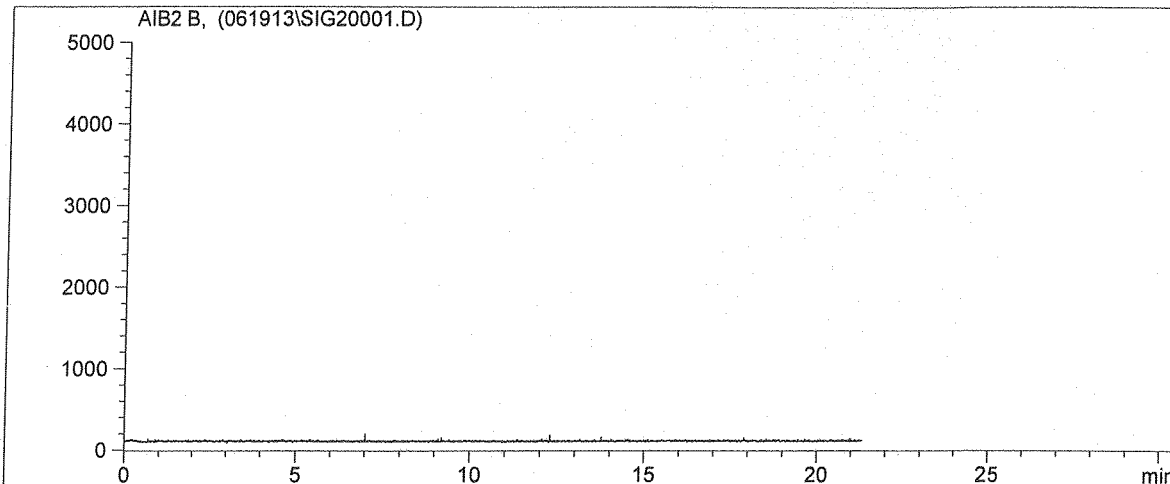
\*\*\*\* must be < 5% RPD from Initial result.

  
 \_\_\_\_\_  
 Marcus Hueppe  
 Laboratory Director



# Raw Data

Injection Date : 6/19/2013 6:18:11 AM      Seq. Line : 1  
Sample Name : System Blank      Inj. Vol. : Manually  
Multiplier : 1.00  
Dilution : 1.00  
Acq Operator : DH  
Acq. Instrument : GC/SCD #10  
Acq. Method : ASTM5504.M  
Analysis Method : C:\HPCHEM\1\METHODS\D051413.M



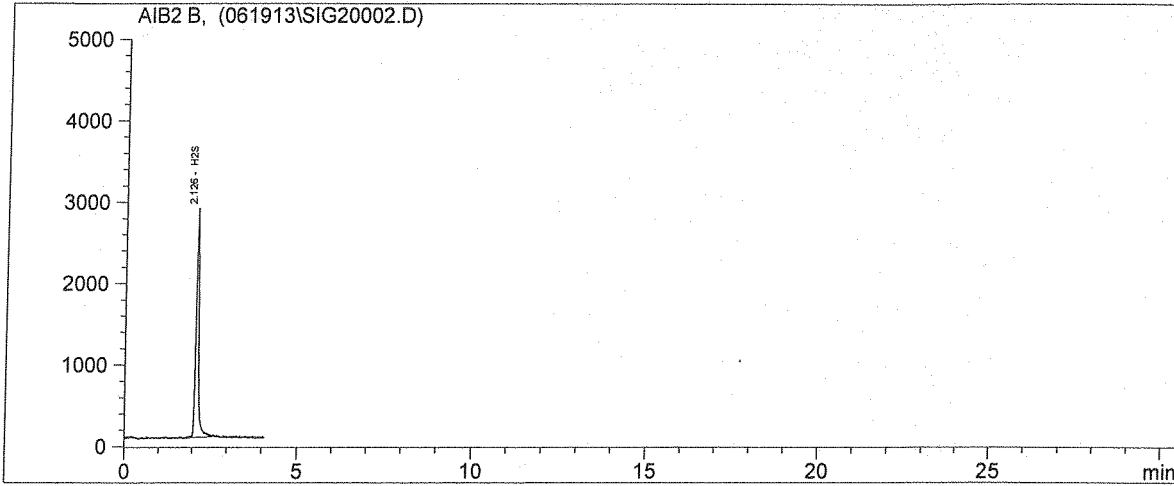
Uncalibrated Peaks : using compound H2S

Ret Time [min]	Area	Amount [ppbV]	Name
0.000	0	0.000	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
0.000	0	0.000	Ethyl Methyl Sulfide
0.000	0	0.000	Sec-butyl Mercaptan
0.000	0	0.000	Thiophene
0.000	0	0.000	Iso-butyl Mercaptan
0.000	0	0.000	Diethyl Sulfide
0.000	0	0.000	N-butyl Mercaptan
0.000	0	0.000	Dimethyl Disulfide
0.000	0	0.000	2-Methylthiophene
0.000	0	0.000	3-Methylthiophene
0.000	0	0.000	Tetrahydrothiophene
0.000	0	0.000	n-Pentyl Mercaptan
0.000	0	0.000	2-Ethylthiophene
0.000	0	0.000	2,5-Dimethylthiophene
0.000	0	0.000	Diethyl Disulfide
0.000	0	0.000	n-Hexyl Mercaptan
0.000	0	0.000	2-Propylthiophene
0.000	0	0.000	Dimethyl Trisulfide
0.000	0	0.000	n-Heptyl Mercaptan
0.000	0	0.000	2-Butylthiophene
0.000	0	0.000	Dipropyl Disulfide
0.000	0	0.000	n-Octyl Mercaptan
0.000	0	0.000	Dipropyl Trisulfide

Totals: 0.000

\*\*\* End of Report \*\*\*

Injection Date : 6/19/2013 6:47:30 AM      Seq. Line : 2  
 Sample Name : CCV 500ppbV      SS0677      ->Inj. Vol. : Manually  
 Multiplier : 1.00  
 Dilution : 1.00  
 Acq Operator : DH  
 Acq. Instrument : GC/SCD #10  
 Acq. Method : ASTM5504.M  
 Analysis Method : C:\HPCHEM\1\METHODS\D051413.M



Uncalibrated Peaks : using compound H2S

Ret Time [min]	Area	Amount [ppbV]	Name
2.126	16787	497.879	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
0.000	0	0.000	Ethyl Methyl Sulfide
0.000	0	0.000	Sec-butyl Mercaptan
0.000	0	0.000	Thiophene
0.000	0	0.000	Iso-butyl Mercaptan
0.000	0	0.000	Diethyl Sulfide
0.000	0	0.000	N-butyl Mercaptan
0.000	0	0.000	Dimethyl Disulfide
0.000	0	0.000	2-Methylthiophene
0.000	0	0.000	3-Methylthiophene
0.000	0	0.000	Tetrahydrothiophene
0.000	0	0.000	n-Pentyl Mercaptan
0.000	0	0.000	2-Ethylthiophene
0.000	0	0.000	2,5-Dimethylthiophene
0.000	0	0.000	Diethyl Disulfide
0.000	0	0.000	n-Hexyl Mercaptan
0.000	0	0.000	2-Propylthiophene
0.000	0	0.000	Dimethyl Trisulfide
0.000	0	0.000	n-Heptyl Mercaptan
0.000	0	0.000	2-Butylthiophene
0.000	0	0.000	Dipropyl Disulfide
0.000	0	0.000	n-Octyl Mercaptan
0.000	0	0.000	Dipropyl Trisulfide

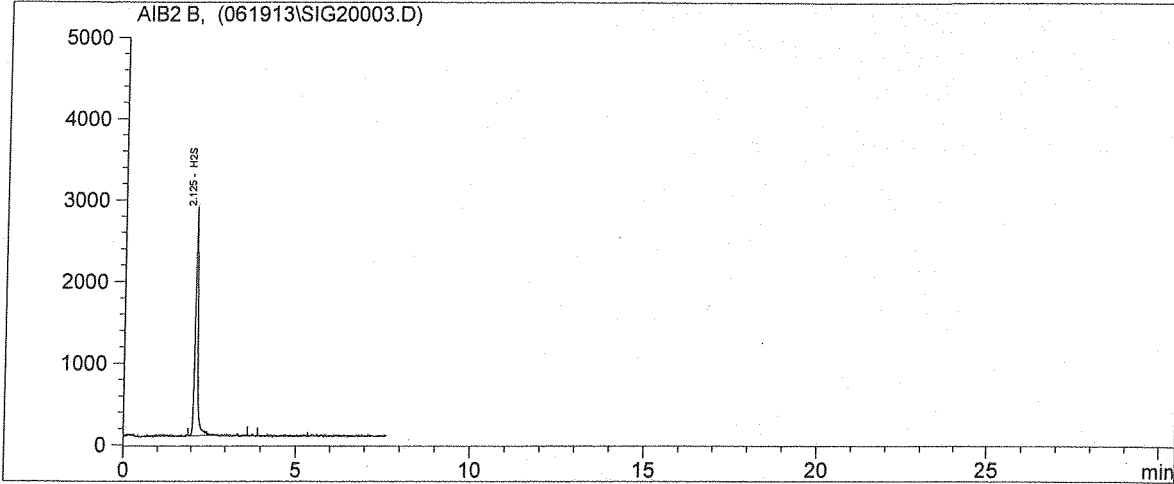
Totals: 497.879

\*\*\* End of Report \*\*\*

*DH*  
6/19/13



Injection Date : 6/19/2013 6:52:25 AM                      Seq. Line : 3  
 Sample Name : CCV 500ppbV dp SS0677                      ->Inj. Vol. :Manually  
 Multiplier : 1.00  
 Dilution : 1.00  
 Acq Operator : DH  
 Acq. Instrument : GC/SCD #10  
 Acq. Method : ASTM5504.M  
 Analysis Method : C:\HPCHEM\1\METHODS\D051413.M



Uncalibrated Peaks : using compound H2S

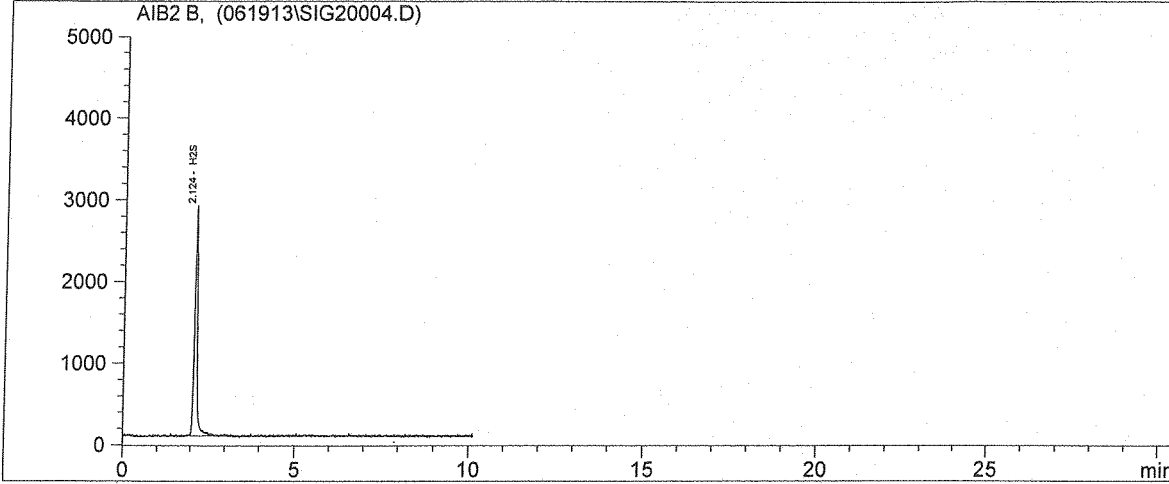
Ret Time [min]	Area	Amount [ppbV]	Name
2.125	16711	495.629	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
0.000	0	0.000	Ethyl Methyl Sulfide
0.000	0	0.000	Sec-butyl Mercaptan
0.000	0	0.000	Thiophene
0.000	0	0.000	Iso-butyl Mercaptan
0.000	0	0.000	Diethyl Sulfide
0.000	0	0.000	N-butyl Mercaptan
0.000	0	0.000	Dimethyl Disulfide
0.000	0	0.000	2-Methylthiophene
0.000	0	0.000	3-Methylthiophene
0.000	0	0.000	Tetrahydrothiophene
0.000	0	0.000	n-Pentyl Mercaptan
0.000	0	0.000	2-Ethylthiophene
0.000	0	0.000	2,5-Dimethylthiophene
0.000	0	0.000	Diethyl Disulfide
0.000	0	0.000	n-Hexyl Mercaptan
0.000	0	0.000	2-Propylthiophene
0.000	0	0.000	Dimethyl Trisulfide
0.000	0	0.000	n-Heptyl Mercaptan
0.000	0	0.000	2-Butylthiophene
0.000	0	0.000	Dipropyl Disulfide
0.000	0	0.000	n-Octyl Mercaptan
0.000	0	0.000	Dipropyl Trisulfide

Totals: 495.629

\*\*\* End of Report \*\*\*

*MME*  
6/19/13

Injection Date : 6/19/2013 7:01:07 AM                      Seq. Line : 4  
Sample Name : CCV 500ppbV tp    SS0677                      ->Inj. Vol. : Manually  
Multiplier : 1.00  
Dilution : 1.00  
Acq Operator : DH  
Acq. Instrument : GC/SCD #10  
Acq. Method : ASTM5504.M  
Analysis Method : C:\HPCHEM\1\METHODS\D051413.M



Uncalibrated Peaks : using compound H2S

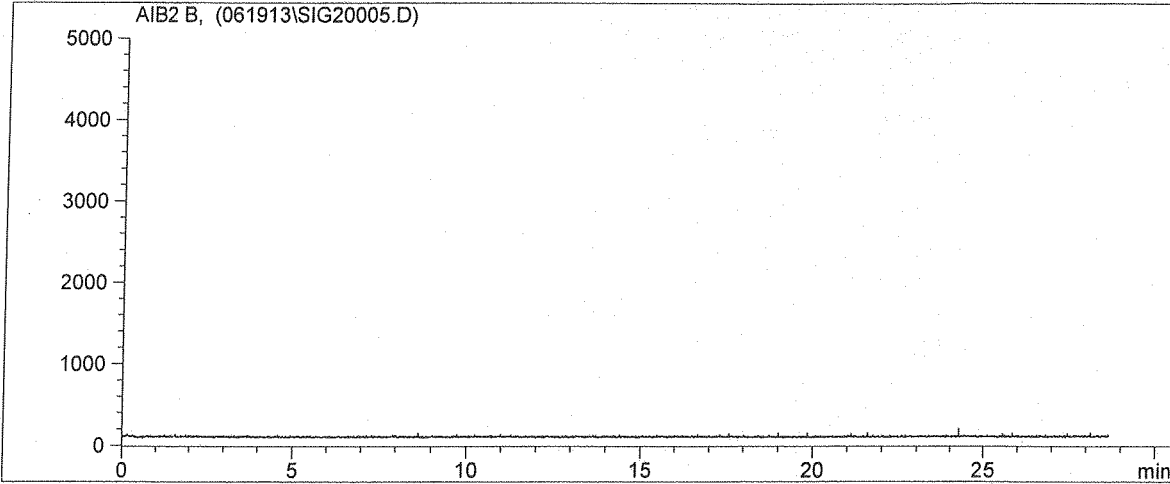
Ret Time [min]	Area	Amount [ppbV]	Name
2.124	16984	503.730	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
0.000	0	0.000	Ethyl Methyl Sulfide
0.000	0	0.000	Sec-butyl Mercaptan
0.000	0	0.000	Thiophene
0.000	0	0.000	Iso-butyl Mercaptan
0.000	0	0.000	Diethyl Sulfide
0.000	0	0.000	N-butyl Mercaptan
0.000	0	0.000	Dimethyl Disulfide
0.000	0	0.000	2-Methylthiophene
0.000	0	0.000	3-Methylthiophene
0.000	0	0.000	Tetrahydrothiophene
0.000	0	0.000	n-Pentyl Mercaptan
0.000	0	0.000	2-Ethylthiophene
0.000	0	0.000	2,5-Dimethylthiophene
0.000	0	0.000	Diethyl Disulfide
0.000	0	0.000	n-Hexyl Mercaptan
0.000	0	0.000	2-Propylthiophene
0.000	0	0.000	Dimethyl Trisulfide
0.000	0	0.000	n-Heptyl Mercaptan
0.000	0	0.000	2-Butylthiophene
0.000	0	0.000	Dipropyl Disulfide
0.000	0	0.000	n-Octyl Mercaptan
0.000	0	0.000	Dipropyl Trisulfide

Totals: 503.730

\*\*\* End of Report \*\*\*

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6/19/13

Injection Date : 6/19/2013 7:12:09 AM      Seq. Line : 5  
 Sample Name : Method Blank      Inj. Vol. : Manually  
 Multiplier : 1.00  
 Dilution : 1.00  
 Acq Operator : DH  
 Acq. Instrument : GC/SCD #10  
 Acq. Method : ASTM5504.M  
 Analysis Method : C:\HPCHEM\1\METHODS\D051413.M



Uncalibrated Peaks : using compound H2S

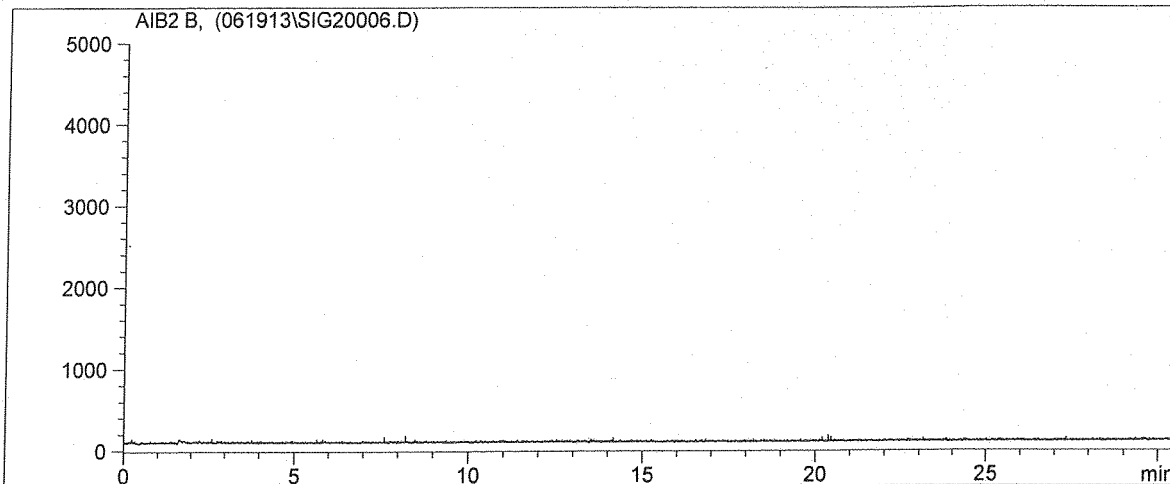
Ret Time [min]	Area	Amount [ppbV]	Name
0.000	0	0.000	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
0.000	0	0.000	Ethyl Methyl Sulfide
0.000	0	0.000	Sec-butyl Mercaptan
0.000	0	0.000	Thiophene
0.000	0	0.000	Iso-butyl Mercaptan
0.000	0	0.000	Diethyl Sulfide
0.000	0	0.000	N-butyl Mercaptan
0.000	0	0.000	Dimethyl Disulfide
0.000	0	0.000	2-Methylthiophene
0.000	0	0.000	3-Methylthiophene
0.000	0	0.000	Tetrahydrothiophene
0.000	0	0.000	n-Pentyl Mercaptan
0.000	0	0.000	2-Ethylthiophene
0.000	0	0.000	2,5-Dimethylthiophene
0.000	0	0.000	Diethyl Disulfide
0.000	0	0.000	n-Hexyl Mercaptan
0.000	0	0.000	2-Propylthiophene
0.000	0	0.000	Dimethyl Trisulfide
0.000	0	0.000	n-Heptyl Mercaptan
0.000	0	0.000	2-Butylthiophene
0.000	0	0.000	Dipropyl Disulfide
0.000	0	0.000	n-Octyl Mercaptan
0.000	0	0.000	Dipropyl Trisulfide

Totals: 0.000

\*\*\* End of Report \*\*\*

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6/19/13

Injection Date : 6/19/2013 7:48:49 AM                                Seq. Line : 6  
 Sample Name : 130744-63722     Inj. Vol. : Manually  
 Multiplier : 1.00  
 Dilution : 1.00  
 Acq Operator : DH  
 Acq. Instrument : GC/SCD #10  
 Acq. Method : ASTM5504.M  
 Analysis Method : C:\HPCHEM\1\METHODS\D051413.M



Uncalibrated Peaks : using compound H2S

Ret Time [min]	Area	Amount [ppbV]	Name
0.000	0	0.000	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
0.000	0	0.000	Ethyl Methyl Sulfide
0.000	0	0.000	Sec-butyl Mercaptan
0.000	0	0.000	Thiophene
0.000	0	0.000	Iso-butyl Mercaptan
0.000	0	0.000	Diethyl Sulfide
0.000	0	0.000	N-butyl Mercaptan
0.000	0	0.000	Dimethyl Disulfide
0.000	0	0.000	2-Methylthiophene
0.000	0	0.000	3-Methylthiophene
0.000	0	0.000	Tetrahydrothiophene
0.000	0	0.000	n-Pentyl Mercaptan
0.000	0	0.000	2-Ethylthiophene
0.000	0	0.000	2,5-Dimethylthiophene
0.000	0	0.000	Diethyl Disulfide
0.000	0	0.000	n-Hexyl Mercaptan
0.000	0	0.000	2-Propylthiophene
0.000	0	0.000	Dimethyl Trisulfide
0.000	0	0.000	n-Heptyl Mercaptan
0.000	0	0.000	2-Butylthiophene
0.000	0	0.000	Dipropyl Disulfide
0.000	0	0.000	n-Octyl Mercaptan
0.000	0	0.000	Dipropyl Trisulfide

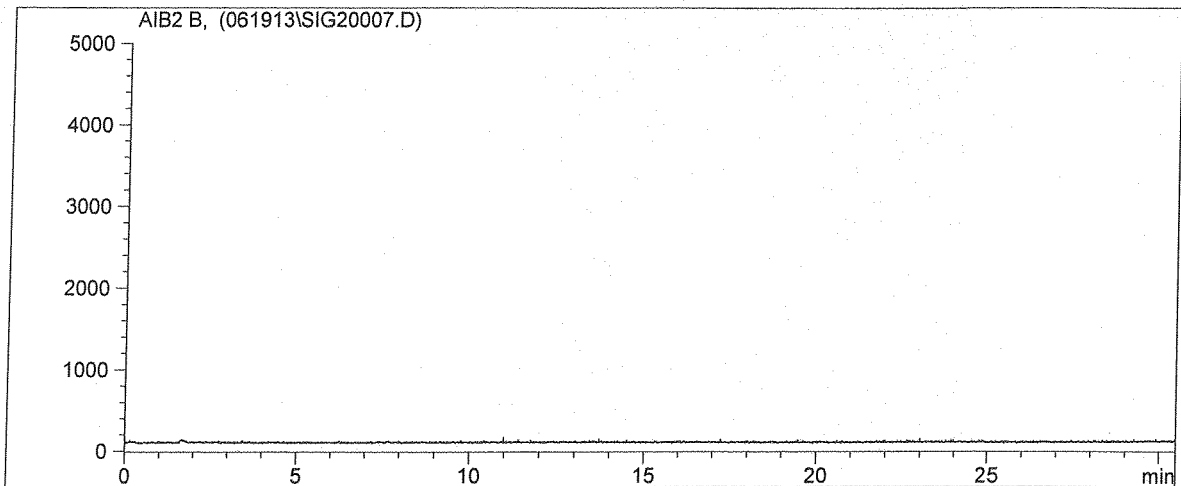
Totals: 0.000

\*\*\* End of Report \*\*\*

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6/19/13

Injection Date : 6/19/2013 8:33:05 AM  
 Sample Name : 130744-63722 dp  
 Multiplier : 1.00  
 Dilution : 1.00  
 Acq Operator : DH  
 Acq. Instrument : GC/SCD #10  
 Acq. Method : ASTM5504.M  
 Analysis Method : C:\HPCHEM\1\METHODS\D051413.M

Seq. Line : 7  
 ->Inj. Vol. : Manually



Uncalibrated Peaks : using compound H2S

Ret Time [min]	Area	Amount [ppbV]	Name
0.000	0	0.000	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
0.000	0	0.000	Ethyl Methyl Sulfide
0.000	0	0.000	Sec-butyl Mercaptan
0.000	0	0.000	Thiophene
0.000	0	0.000	Iso-butyl Mercaptan
0.000	0	0.000	Diethyl Sulfide
0.000	0	0.000	N-butyl Mercaptan
0.000	0	0.000	Dimethyl Disulfide
0.000	0	0.000	2-Methylthiophene
0.000	0	0.000	3-Methylthiophene
0.000	0	0.000	Tetrahydrothiophene
0.000	0	0.000	n-Pentyl Mercaptan
0.000	0	0.000	2-Ethylthiophene
0.000	0	0.000	2,5-Dimethylthiophene
0.000	0	0.000	Diethyl Disulfide
0.000	0	0.000	n-Hexyl Mercaptan
0.000	0	0.000	2-Propylthiophene
0.000	0	0.000	Dimethyl Trisulfide
0.000	0	0.000	n-Heptyl Mercaptan
0.000	0	0.000	2-Butylthiophene
0.000	0	0.000	Dipropyl Disulfide
0.000	0	0.000	n-Octyl Mercaptan
0.000	0	0.000	Dipropyl Trisulfide

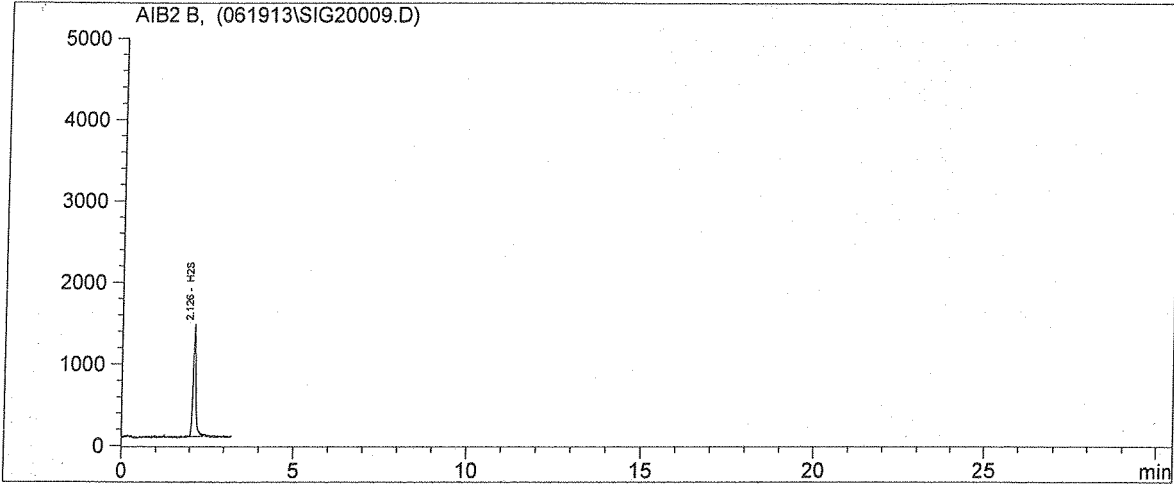
Totals: 0.000

\*\*\* End of Report \*\*\*

*MK*  
6/19/13



Injection Date : 6/19/2013 9:15:19 AM      Seq. Line : 9  
 Sample Name : MSD 63722      SS0677      ->Inj. Vol. : Manually  
 Multiplier : 1.00  
 Dilution : 1.00  
 Acq Operator : DH  
 Acq. Instrument : GC/SCD #10  
 Acq. Method : ASTM5504.M  
 Analysis Method : C:\HPCHEM\1\METHODS\D051413.M



Uncalibrated Peaks : using compound H2S

Ret Time [min]	Area	Amount [ppbV]	Name
2.126	8097	240.139	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
0.000	0	0.000	Ethyl Methyl Sulfide
0.000	0	0.000	Sec-butyl Mercaptan
0.000	0	0.000	Thiophene
0.000	0	0.000	Iso-butyl Mercaptan
0.000	0	0.000	Diethyl Sulfide
0.000	0	0.000	N-butyl Mercaptan
0.000	0	0.000	Dimethyl Disulfide
0.000	0	0.000	2-Methylthiophene
0.000	0	0.000	3-Methylthiophene
0.000	0	0.000	Tetrahydrothiophene
0.000	0	0.000	n-Pentyl Mercaptan
0.000	0	0.000	2-Ethylthiophene
0.000	0	0.000	2,5-Dimethylthiophene
0.000	0	0.000	Diethyl Disulfide
0.000	0	0.000	n-Hexyl Mercaptan
0.000	0	0.000	2-Propylthiophene
0.000	0	0.000	Dimethyl Trisulfide
0.000	0	0.000	n-Heptyl Mercaptan
0.000	0	0.000	2-Butylthiophene
0.000	0	0.000	Dipropyl Disulfide
0.000	0	0.000	n-Octyl Mercaptan
0.000	0	0.000	Dipropyl Trisulfide

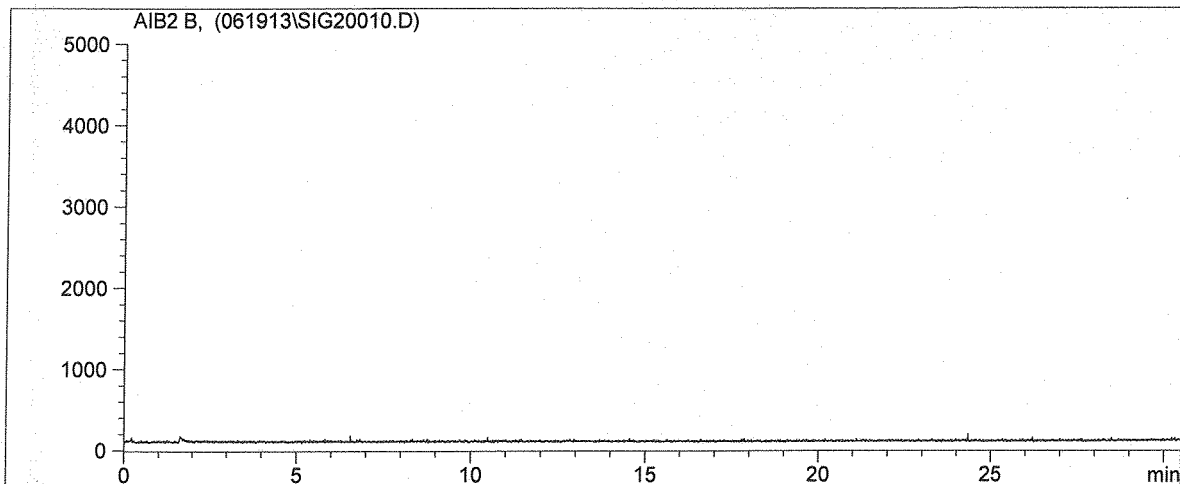
Totals: 240.139

\*\*\* End of Report \*\*\*

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 11A  
 6/19/13

Customized Report: D5504

Injection Date : 6/19/2013 9:22:04 AM                   Seq. Line : 10  
Sample Name : 130744-63723                             Inj. Vol. : Manually  
Multiplier : 1.00  
Dilution : 1.00  
Acq Operator : DH  
Acq. Instrument : GC/SCD #10  
Acq. Method : ASTM5504.M  
Analysis Method : C:\HPCHEM\1\METHODS\D051413.M



Uncalibrated Peaks : using compound H2S

Ret Time [min]	Area	Amount [ppbV]	Name
0.000	0	0.000	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
0.000	0	0.000	Ethyl Methyl Sulfide
0.000	0	0.000	Sec-butyl Mercaptan
0.000	0	0.000	Thiophene
0.000	0	0.000	Iso-butyl Mercaptan
0.000	0	0.000	Diethyl Sulfide
0.000	0	0.000	N-butyl Mercaptan
0.000	0	0.000	Dimethyl Disulfide
0.000	0	0.000	2-Methylthiophene
0.000	0	0.000	3-Methylthiophene
0.000	0	0.000	Tetrahydrothiophene
0.000	0	0.000	n-Pentyl Mercaptan
0.000	0	0.000	2-Ethylthiophene
0.000	0	0.000	2,5-Dimethylthiophene
0.000	0	0.000	Diethyl Disulfide
0.000	0	0.000	n-Hexyl Mercaptan
0.000	0	0.000	2-Propylthiophene
0.000	0	0.000	Dimethyl Trisulfide
0.000	0	0.000	n-Heptyl Mercaptan
0.000	0	0.000	2-Butylthiophene
0.000	0	0.000	Dipropyl Disulfide
0.000	0	0.000	n-Octyl Mercaptan
0.000	0	0.000	Dipropyl Trisulfide

Totals: 0.000

\*\*\* End of Report \*\*\*

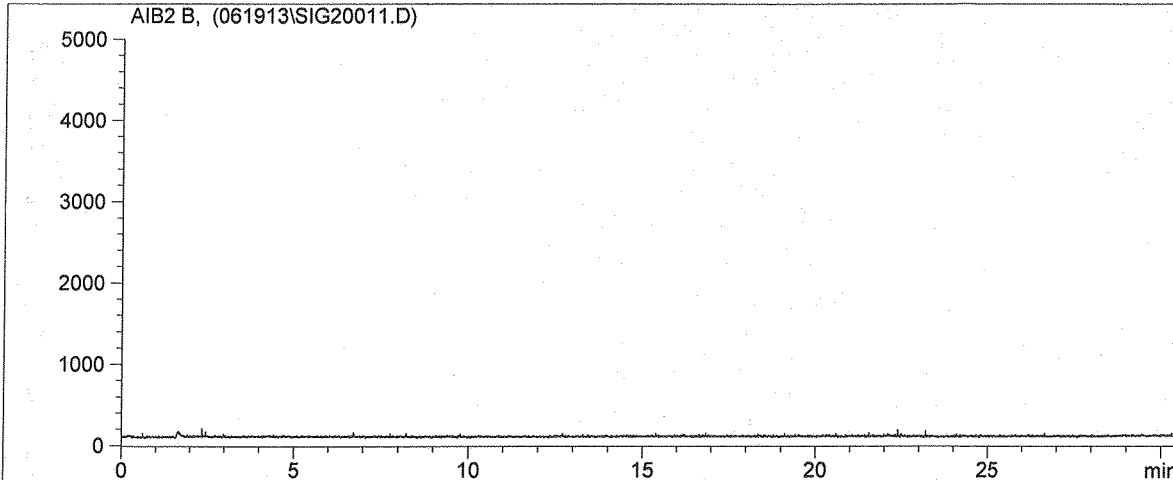
Page 24

*MW*  
*6/19/13*



Customized Report: D5504

Injection Date : 6/19/2013 9:57:17 AM
Sample Name : 130744-63723 dp
Multiplier : 1.00
Dilution : 1.00
Acq Operator : DH
Acq. Instrument : GC/SCD #10
Acq. Method : ASTM5504.M
Analysis Method : C:\HPCHEM\1\METHODS\D051413.M



Uncalibrated Peaks : using compound H2S

Table with 4 columns: Ret Time [min], Area, Amount [ppbV], Name. Lists various sulfur compounds like H2S, COS, Methyl Mercaptan, etc., with values of 0.000.

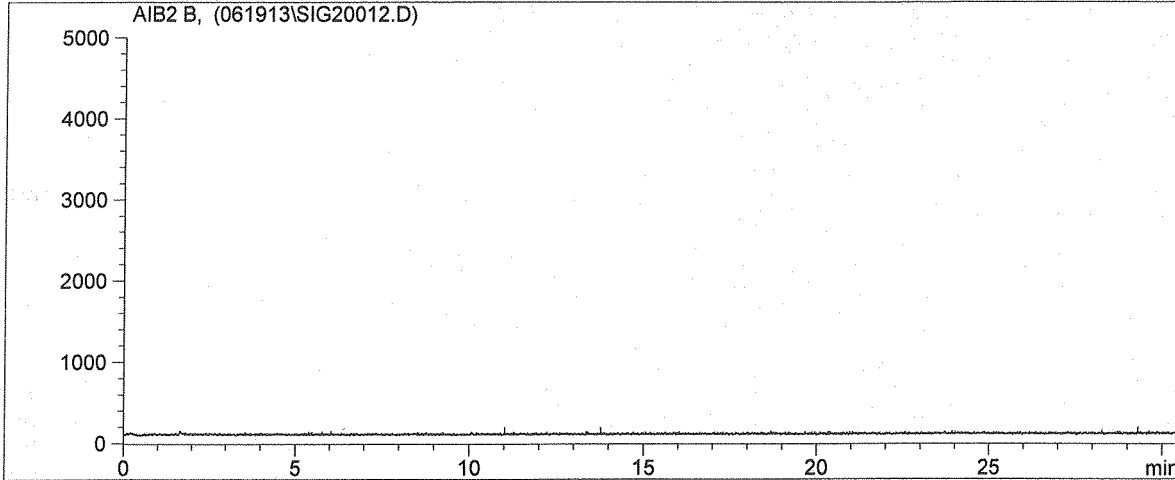
Totals: 0.000

\*\*\* End of Report \*\*\*

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Customized Report: D5504

Injection Date : 6/19/2013 10:32:10 AM                      Seq. Line : 12  
Sample Name : 130744-63724                                      Inj. Vol. : Manually  
Multiplier : 1.00  
Dilution : 1.00  
Acq Operator : DH  
Acq. Instrument : GC/SCD #10  
Acq. Method : ASTM5504.M  
Analysis Method : C:\HPCHEM\1\METHODS\D051413.M



Uncalibrated Peaks : using compound H2S

Ret Time [min]	Area	Amount [ppbV]	Name
0.000	0	0.000	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
0.000	0	0.000	Ethyl Methyl Sulfide
0.000	0	0.000	Sec-butyl Mercaptan
0.000	0	0.000	Thiophene
0.000	0	0.000	Iso-butyl Mercaptan
0.000	0	0.000	Diethyl Sulfide
0.000	0	0.000	N-butyl Mercaptan
0.000	0	0.000	Dimethyl Disulfide
0.000	0	0.000	2-Methylthiophene
0.000	0	0.000	3-Methylthiophene
0.000	0	0.000	Tetrahydrothiophene
0.000	0	0.000	n-Pentyl Mercaptan
0.000	0	0.000	2-Ethylthiophene
0.000	0	0.000	2,5-Dimethylthiophene
0.000	0	0.000	Diethyl Disulfide
0.000	0	0.000	n-Hexyl Mercaptan
0.000	0	0.000	2-Propylthiophene
0.000	0	0.000	Dimethyl Trisulfide
0.000	0	0.000	n-Heptyl Mercaptan
0.000	0	0.000	2-Butylthiophene
0.000	0	0.000	Dipropyl Disulfide
0.000	0	0.000	n-Octyl Mercaptan
0.000	0	0.000	Dipropyl Trisulfide

Totals: 0.000

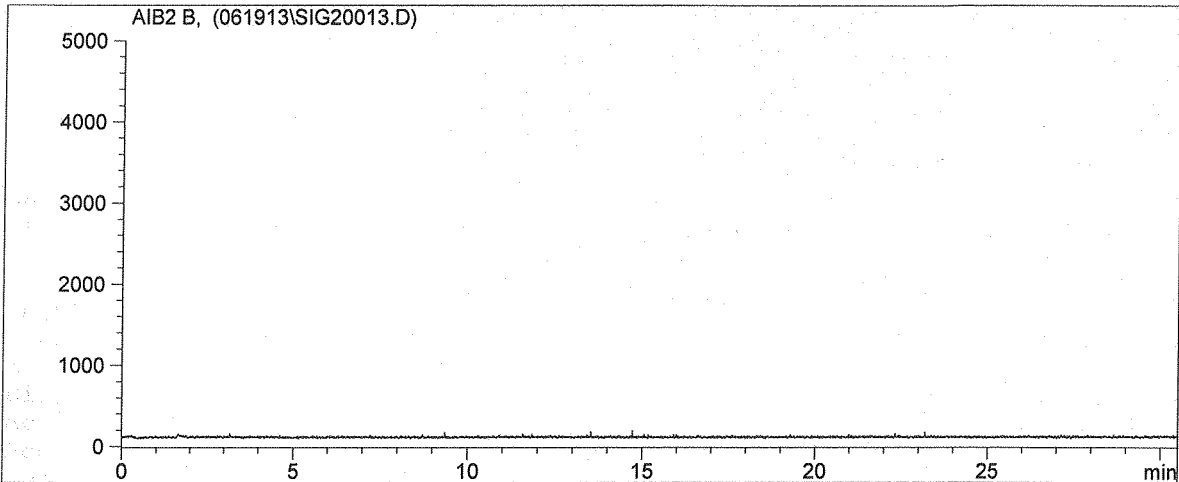
\*\*\* End of Report \*\*\*

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6/19/13

## Customized Report: D5504

Injection Date : 6/19/2013 11:07:12 AM                      Seq. Line : 13  
Sample Name : 130744-63724                      dp                      ->Inj. Vol. : Manually  
Multiplier : 1.00  
Dilution : 1.00  
Acq Operator : DH  
Acq. Instrument : GC/SCD #10  
Acq. Method : ASTM5504.M  
Analysis Method : C:\HPCHEM\1\METHODS\D051413.M



Uncalibrated Peaks : using compound H2S

Ret Time [min]	Area	Amount [ppbV]	Name
0.000	0	0.000	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
0.000	0	0.000	Ethyl Methyl Sulfide
0.000	0	0.000	Sec-butyl Mercaptan
0.000	0	0.000	Thiophene
0.000	0	0.000	Iso-butyl Mercaptan
0.000	0	0.000	Diethyl Sulfide
0.000	0	0.000	N-butyl Mercaptan
0.000	0	0.000	Dimethyl Disulfide
0.000	0	0.000	2-Methylthiophene
0.000	0	0.000	3-Methylthiophene
0.000	0	0.000	Tetrahydrothiophene
0.000	0	0.000	n-Pentyl Mercaptan
0.000	0	0.000	2-Ethylthiophene
0.000	0	0.000	2,5-Dimethylthiophene
0.000	0	0.000	Diethyl Disulfide
0.000	0	0.000	n-Hexyl Mercaptan
0.000	0	0.000	2-Propylthiophene
0.000	0	0.000	Dimethyl Trisulfide
0.000	0	0.000	n-Heptyl Mercaptan
0.000	0	0.000	2-Butylthiophene
0.000	0	0.000	Dipropyl Disulfide
0.000	0	0.000	n-Octyl Mercaptan
0.000	0	0.000	Dipropyl Trisulfide

Totals: 0.000

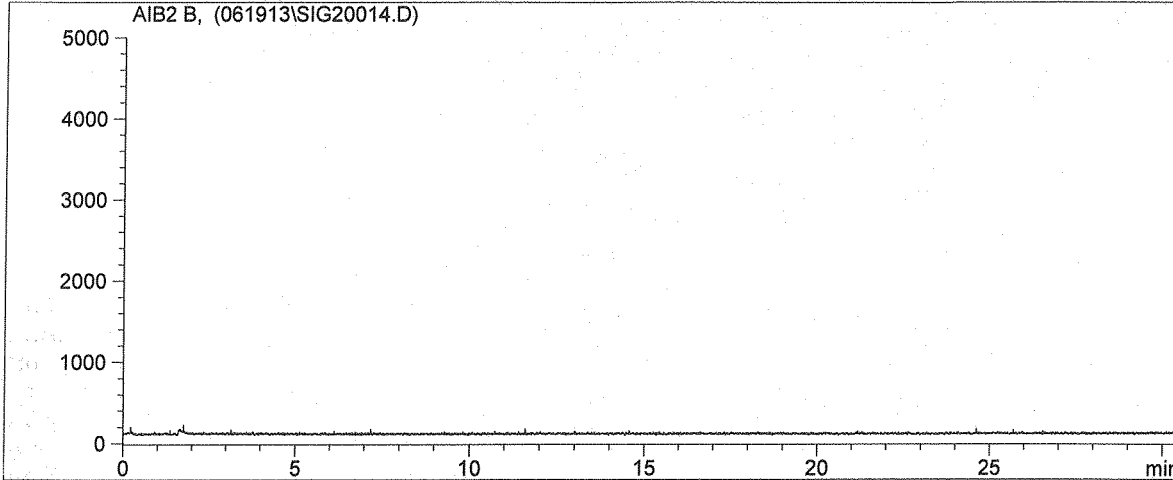
\*\*\* End of Report \*\*\*

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*MLL*  
6/19/13

Customized Report: D5504

Injection Date : 6/19/2013 12:02:37 PM      Seq. Line : 14  
 Sample Name : 130744-63725                      Inj. Vol. : Manually  
 Multiplier : 1.00  
 Dilution : 1.00  
 Acq Operator : DH  
 Acq. Instrument : GC/SCD #10  
 Acq. Method : ASTM5504.M  
 Analysis Method : C:\HPCHEM\1\METHODS\D051413.M



Uncalibrated Peaks : using compound H2S

Ret Time [min]	Area	Amount [ppbV]	Name
0.000	0	0.000	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
0.000	0	0.000	Ethyl Methyl Sulfide
0.000	0	0.000	Sec-butyl Mercaptan
0.000	0	0.000	Thiophene
0.000	0	0.000	Iso-butyl Mercaptan
0.000	0	0.000	Diethyl Sulfide
0.000	0	0.000	N-butyl Mercaptan
0.000	0	0.000	Dimethyl Disulfide
0.000	0	0.000	2-Methylthiophene
0.000	0	0.000	3-Methylthiophene
0.000	0	0.000	Tetrahydrothiophene
0.000	0	0.000	n-Pentyl Mercaptan
0.000	0	0.000	2-Ethylthiophene
0.000	0	0.000	2,5-Dimethylthiophene
0.000	0	0.000	Diethyl Disulfide
0.000	0	0.000	n-Hexyl Mercaptan
0.000	0	0.000	2-Propylthiophene
0.000	0	0.000	Dimethyl Trisulfide
0.000	0	0.000	n-Heptyl Mercaptan
0.000	0	0.000	2-Butylthiophene
0.000	0	0.000	Dipropyl Disulfide
0.000	0	0.000	n-Octyl Mercaptan
0.000	0	0.000	Dipropyl Trisulfide

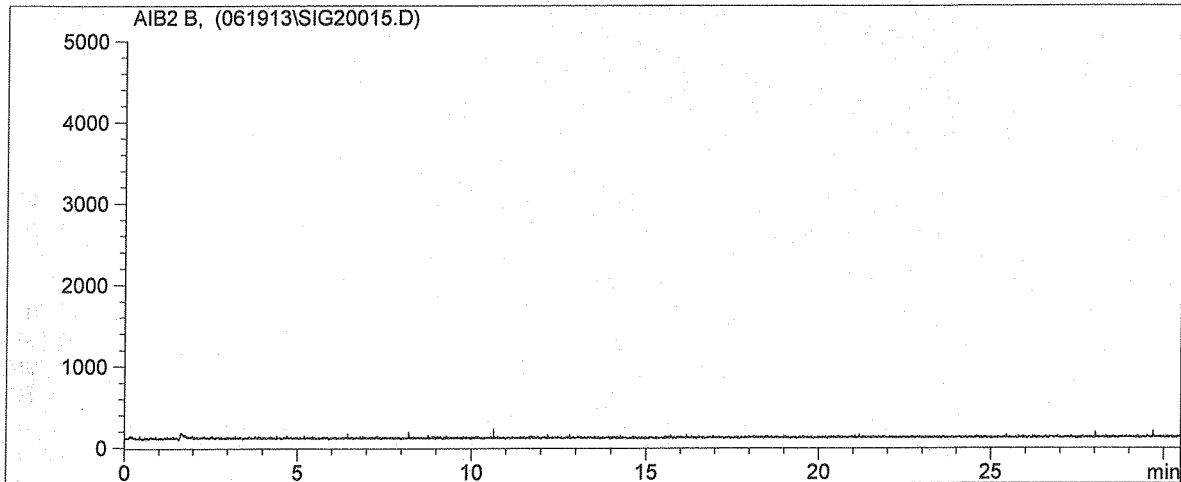
Totals: 0.000

\*\*\* End of Report \*\*\*

*Handwritten signature and date:*  
 6/19/13

=====  
Customized Report: D5504

Injection Date : 6/19/2013 12:37:13 PM                   Seq. Line : 15  
Sample Name : 130744-63725               dp                   ->Inj. Vol. : Manually  
Multiplier : 1.00  
Dilution : 1.00  
Acq Operator : DH  
Acq. Instrument : GC/SCD #10  
Acq. Method : ASTM5504.M  
Analysis Method : C:\HPCHEM\1\METHODS\D051413.M



Uncalibrated Peaks : using compound H2S

Ret Time [min]	Area	Amount [ppbV]	Name
0.000	0	0.000	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
0.000	0	0.000	Ethyl Methyl Sulfide
0.000	0	0.000	Sec-butyl Mercaptan
0.000	0	0.000	Thiophene
0.000	0	0.000	Iso-butyl Mercaptan
0.000	0	0.000	Diethyl Sulfide
0.000	0	0.000	N-butyl Mercaptan
0.000	0	0.000	Dimethyl Disulfide
0.000	0	0.000	2-Methylthiophene
0.000	0	0.000	3-Methylthiophene
0.000	0	0.000	Tetrahydrothiophene
0.000	0	0.000	n-Pentyl Mercaptan
0.000	0	0.000	2-Ethylthiophene
0.000	0	0.000	2,5-Dimethylthiophene
0.000	0	0.000	Diethyl Disulfide
0.000	0	0.000	n-Hexyl Mercaptan
0.000	0	0.000	2-Propylthiophene
0.000	0	0.000	Dimethyl Trisulfide
0.000	0	0.000	n-Heptyl Mercaptan
0.000	0	0.000	2-Butylthiophene
0.000	0	0.000	Dipropyl Disulfide
0.000	0	0.000	n-Octyl Mercaptan
0.000	0	0.000	Dipropyl Trisulfide

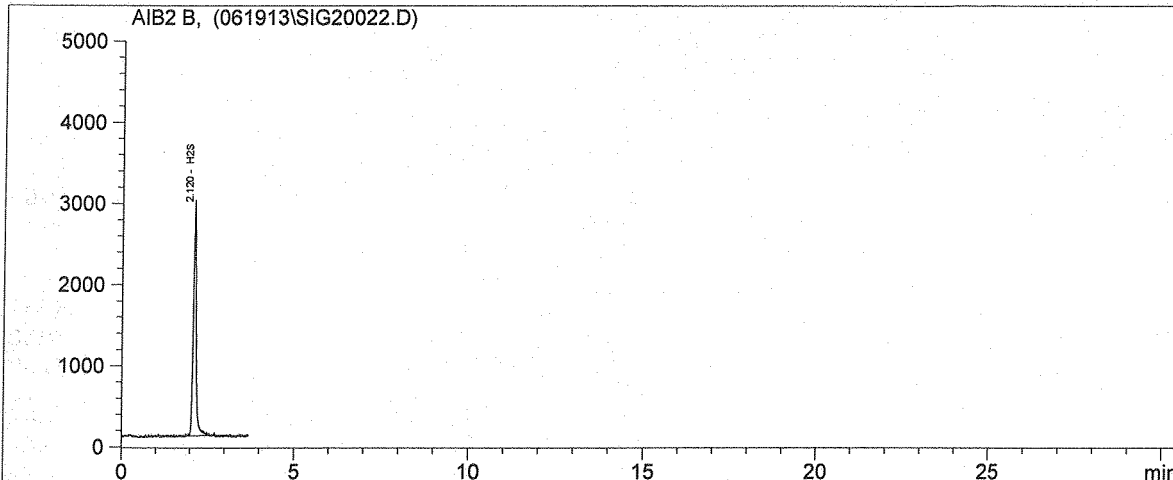
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Totals:    0.000

\*\*\* End of Report \*\*\*

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Customized Report: D5504

Injection Date : 6/19/2013 3:47:27 PM                      Seq. Line : 22  
 Sample Name : CCV 500ppbV                                  SS0677                      ->Inj. Vol. : Manually  
 Multiplier : 1.00  
 Dilution : 1.00  
 Acq Operator : DH  
 Acq. Instrument : GC/SCD #10  
 Acq. Method : ASTM5504.M  
 Analysis Method : C:\HPCHEM\1\METHODS\D051413.M



Uncalibrated Peaks : using compound H2S

Ret Time [min]	Area	Amount [ppbV]	Name
2.120	16867	500.259	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
0.000	0	0.000	Ethyl Methyl Sulfide
0.000	0	0.000	Sec-butyl Mercaptan
0.000	0	0.000	Thiophene
0.000	0	0.000	Iso-butyl Mercaptan
0.000	0	0.000	Diethyl Sulfide
0.000	0	0.000	N-butyl Mercaptan
0.000	0	0.000	Dimethyl Disulfide
0.000	0	0.000	2-Methylthiophene
0.000	0	0.000	3-Methylthiophene
0.000	0	0.000	Tetrahydrothiophene
0.000	0	0.000	n-Pentyl Mercaptan
0.000	0	0.000	2-Ethylthiophene
0.000	0	0.000	2,5-Dimethylthiophene
0.000	0	0.000	Diethyl Disulfide
0.000	0	0.000	n-Hexyl Mercaptan
0.000	0	0.000	2-Propylthiophene
0.000	0	0.000	Dimethyl Trisulfide
0.000	0	0.000	n-Heptyl Mercaptan
0.000	0	0.000	2-Butylthiophene
0.000	0	0.000	Dipropyl Disulfide
0.000	0	0.000	n-Octyl Mercaptan
0.000	0	0.000	Dipropyl Trisulfide

Totals: 500.259

\*\*\* End of Report \*\*\*

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6/19/23

# Calibration Summary

Analysis Date: 5/14/2013

Analyst: DHMH

Units: ppbv

**SCAQMD 307.91 / ASTM D-5504 INITIAL CALIBRATION SUMMARY**

**CALIBRATION CURVE RAW DATA:**

Standard Concentration (ppbv)	Retention time (min)	Response (Area)	RPD from Initial result (< 5%)	Std Deviation	Standard Concentration	Mean Response (Area)	Calculated Concentration (From Mean)	Mean % Recovery (+/- 5%)
0.0	0.00	0						
0.0	0.00	0	0.0	0	0.0	0	0.0	0.0
0.0	0.00	0	0.0					
25.0	2.096	836						
25.0	2.094	855	2.2	12	25.0	842	25.0	99.9
25.0	2.093	834	0.2					
100.0	2.091	3222						
100.0	2.090	3374	4.6	82	100.0	3316	98.4	98.4
100.0	2.091	3353	4.0					
500.0	2.091	17233						
500.0	2.090	17453	1.3	272	500.0	17486	518.6	103.7
500.0	2.089	17773	3.1					
2500.0	2.087	85533						
2500.0	2.088	83551	2.3	1182	2500.0	84170	2496.3	99.9
2500.0	2.087	83425	2.5					

Avg. Ret: 2.091

**Calibration Verification Check Standards:**

Check Standard Concentration: 500 ppbv

	Resp. (area)	Result (ppbv)	% Rec *	% RPD
Initial	17273	512.3	102.5	NA
Duplicate	17117	507.7	101.5	0.9
Triplicate	17378	515.4	103.1	0.6

\* All CV's must have +/- 5 % Recovery and < 5% RPD from Initial result.

Linear Slope:

X = Y/

33.7172

R2 value:

0.9999

Must be > 0.990

Laboratory Director (signature/date)

*[Signature]* 5/14/13



SCAQMD 307.91/ASTM D-5504 INITIAL CALIBRATION SUMMARY

Area (mean) vs. Conc. (theor)

$Y = 33.7172X$   
 $R^2 = 0.9999$

