Atmospheric Analysis & Consulting, Inc.

CLIENT : SWAPE
PROJECT NAME : Bridgeton Sanitary Landfill Quality Assessment
AAC PROJECT NO. : 130827
REPORT DATE : 07/08/2013

On July 3, 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)
U-1 V Canister	130827-64122	550.0
U-2 W1 Canister	130827-64123	538.8
D-1 IN Canister	130827-64124	493.0
D-2 W5 Canister	130827-64125	726.1

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.

Sample U-1 V Canister was found to contain a peak at the known retention time for COS/SO2. Given the fact that this is an ambient air sample in which COS should not be present the results were reported as SO2.

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

ACCREDITED IN ACCORDANCE WITH nelac Certificate #E87837

This report consists of 32 pages.

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Atmospheric Analysis & Consulting, Inc.

SAMPLE RECEIPT / LOG-IN REPORT

AAC Project **130827** **Received By: J. Zachman**

Sample Receipt Date	Project Desc	Clients ID	Matrix	Sampling Date/Time	Sampled By	Sample #	Analysis Requested
7/3/2013 1130	Soil Water Air Protection Enterprise (SWAPE) Bridgeton Sanitary Landfill Air Quality Assessment	U-1 V Canister	Summa Canister	6/27/2013	Client	64122	TO15 ASTM D5504
7/3/2013 1130	Soil Water Air Protection Enterprise (SWAPE) Bridgeton Sanitary Landfill Air Quality Assessment	U-2 W1 Canister	Summa Canister	6/27/2013	Client	64123	TO15 ASTM D5504
7/3/2013 1130	Soil Water Air Protection Enterprise (SWAPE) Bridgeton Sanitary Landfill Air Quality Assessment	D-1 IN Canister	Summa Canister	6/27/2013	Client	64124	TO15 ASTM D5504
7/3/2013 1130	Soil Water Air Protection Enterprise (SWAPE) Bridgeton Sanitary Landfill Air Quality Assessment	D-2 W5 Canister	Summa Canister	6/27/2013	Client	64125	TO15 ASTM D5504

TURN AROUND TIME: Normal (10days)

Lab Due Date: 7/10/2013

Total Samples: 4

REMARKS:

Client returned 4 x Summma canisters + 4 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.: 130827

Date: 7/3/2013

Canister #	Sample #	Initial Pressure	Final Pressure
784	64122	550.0	1014.6
792	64123	538.8	1019.9
802	64124	493.0	1021.6
761	64125	726.1	1019.1

1

AAC# 130827

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: 27-Jun-13 — 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		
Sampled By: John Blank — Sampler Signature: John Blank		

LAB ID	SAMPLE ID NUMBER		Type	Date	Time	VOCS - EPA TO-15	Reduced Sulfur Compounds - ASTM D5504	Carbonyls - EPA TO-11A	Carboxlyic 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 / 8A	Mercury - NIOSH 6009	Odor Evaluation	Special Instructions / Conditions of Receipt		
																					Flow #
64122	U-1 V	Canister		27-Jun	4 Hr	X	X												Canister #	784	803
64123	U-2 W1	Canister		27-Jun	4 Hr	X	X												Canister #	792	804
64124	D-1 IN	Canister		27-Jun	4 Hr	X	X												Canister #	802	718
64125	D-2 W5	Canister		27-Jun	4 Hr	X	X												Canister #	761	813

Requested Turnaround Time: Standard turn-around for all analyses. If possible deliver report within 2 weeks.			QC Requirements: Provide Level IV QC Package for all Analyses.		
Relinquished By: John Blank	Date: 6/27/2013	12 Noon	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date: 7/3/13	Time: 1130

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 V** **Canister #784** **Flow #803**

AAC Batch ID: 130827 AAC Sample ID: 64122

SAMPLING INFORMATION

Start Date/Time: **June 27th, 2013 -13:05** Stop Date/Time: **June 27th, 2013 – 17:05**

Start Temp/Pressure*: **33 C / 29.9** psi Stop Temp/Pressure*: **34 C / 29.9** psi

Initial Can Pressure**: **- 30** Final Can Pressure**: **- 8**

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

Comments: _____

John Blank
Sampler Name (Print)

June 27th, 2013
Sampler Signature/Date

LABORATORY INFORMATION

Canister Size: 6 – Liter Sampling Period: 4 – Hour

Canister Serial No.: 784 Flow Controller Serial No: 803

Initial Pressure: 5.0 Certified Flow Rate: 18.0

Return Pressure: 550.0 Certified By/Date: 6/3/2013

Final Pressure: 1014.6 Flow Rate upon Return: 20.5

Date Shipped From Lab: 5/23/2013 Shipped By:

Date Returned to Lab: 7/3/2013 Received By:

Flow Controller Certification File ID: 1403/0530131C

Canister Certification File ID: 1303/052113J3

Certification Type: SIM ____ SCAN ✓ NJLL ____ PAMS ____ Other ____

07/08/13 7/1/13

Chemist Signature/Date *Lab Manager Signature/Date*

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

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-2 W1** **Canister #792** **Flow # 804**

AAC Batch ID: 130827 AAC Sample ID: 64123

SAMPLING INFORMATION

Start Date/Time: **June 27th, 2023 – 13:20** Stop Date/Time: **June 27th, 2013 – 17:20**

Start Temp/Pressure*: **33 C / 29.90 psi** Stop Temp/Pressure*: **34 C / 29.9 psi**

Initial Can Pressure**: **- 30** Final Can Pressure**: **- 8**

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

Comments: ______

John Blank
Sampler Name (Print)

June 27th, 2013
Sampler Signature/Date

LABORATORY INFORMATION

Canister Size: 6 – Liter Sampling Period: 4 – Hour

Canister Serial No.: **792** Flow Controller Serial No: **804**

Initial Pressure: 5.0 Certified Flow Rate: 18.0

Return Pressure: 538.8 Certified By/Date: JJ 6/3/2013

Final Pressure: 1019.9 Flow Rate upon Return: 20.7

Date Shipped From Lab: 5/23/2013 Shipped By: JJ

Date Returned to Lab: 7/3/2013 Received By: JJ

Flow Controller Certification File ID: 1303/053013/2

Canister Certification File ID: 1303/052113 27

Certification Type: SIM ____ SCAN ✓ NJLL ____ PAMS ____ Other ____

07/08/13
Chemist Signature/Date

7/8/13
Lab Manager Signature/Date

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

Atmospheric Analysis and Consulting Inc.
Canister Sampling Field Data Sheet

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

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 #802** **Flow Control #718**

AAC Batch ID: 130827 AAC Sample ID: 04124

SAMPLING INFORMATION

Start Date/Time: **June 27th, 2013 – 12:30** Stop Date/Time: **June 27th, 2013 – 16:30**

Start Temp/Pressure*: **32 C / 29.9 psi** Stop Temp/Pressure*: **34 C / 29.96 psi**

Initial Can Pressure**: **- 30** Final Can Pressure**: **- 10**

** 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 27th, 2013**

LABORATORY INFORMATION

Canister Size: 6 – Liter Sampling Period: 4 – Hour

Canister Serial No.: **802** Flow Controller Serial No: **718**

Initial Pressure: 4.5 Certified Flow Rate: 18.0

Return Pressure: 493.6 Certified By/Date: JJ 5/17/2013

Final Pressure: 1021.6 Flow Rate upon Return: 17.0

Date Shipped From Lab: 5/23/2013 Shipped By: JJ

Date Returned to Lab: 7/3/2013 Received By: JJ

Flow Controller Certification File ID: 1403/05141322

Canister Certification File ID: 1403/05201319

Certification Type: SIM ___ SCAN ✓ NJLL ___ PAMS ___ Other ___

07/08/13 7/9/13

Chemist Signature/Date *Lab Manager Signature/Date*

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

Atmospheric Analysis and Consulting Inc.
Canister Sampling Field Data Sheet

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

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 W5** **Canister # 761** **Flow Control # 813**

AAC Batch ID: 130827 AAC Sample ID: 64125

SAMPLING INFORMATION

Start Date/Time: **June 27, 2013** - 12:45 Stop Date/Time: **June 13, 2013** – 16:45

Start Temp/Pressure*: **32 C / 29.9 psi** Stop Temp/Pressure*: **34 C / 29.96 psi**

Initial Can Pressure**: **- 30** Final Can Pressure**: **- 1**

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

Comments: _____

John Blank
Sampler Name (Print)

June 27, 2013
Sampler Signature/Date

LABORATORY INFORMATION

Canister Size: 6 – Liter Sampling Period: 4 – Hour

Canister Serial No.: **761** Flow Controller Serial No: **813**

Initial Pressure: 4.9 Certified Flow Rate: 18.0

Return Pressure: 726.1 Certified By/Date: 6/3/2013

Final Pressure: 1019.1 Flow Rate upon Return: 20.0

Date Shipped From Lab: 5/23/2013 Shipped By: _____

Date Returned to Lab: 7/3/2013 Received By: _____

Flow Controller Certification File ID: 4503/052713C5

Canister Certification File ID: 1408/052113C4

Certification Type: SIM ____ SCAN ✓ NJLL ____ PAMS ____ Other ____

7/8/13
Chemist Signature/Date

7/9/13
Lab Manager Signature/Date

Results

LABORATORY ANALYSIS REPORT

CLIENT	**: SWAPE**
PROJECT NO.	**: 130783**
MATRIX	**: AIR**
UNITS	**: ppbV**

SAMPLING DATE	**: 06/27/2013**
RECEIVING DATE	**: 07/03/2013**
ANALYSIS DATE	**: 07/03/2013**
REPORT DATE	**: 07/08/2013**

Sulfur Compounds by ASTM D-5504

Client ID	U-1 V Canister	U-2 W1 Canister	D-1 IN Canister	D-2 W5 Canister
AAC ID	130827-64122	130827-64123	130827-64124	130827-64125
Canister Dil. Fac.	1.84	1.89	2.07	1.40
Analyte	Result	Result	Result	Result
Hydrogen Sulfide	< 18.4	< 18.9	< 20.7	< 14.0
Carbonyl Sulfide	< 18.4	< 18.9	< 20.7	< 14.0
Sulfur Dioxide	**45.0**	< 18.9	< 20.7	< 14.0
Methyl Mercaptan	< 18.4	< 18.9	< 20.7	< 14.0
Ethyl Mercaptan	< 18.4	< 18.9	< 20.7	< 14.0
Dimethyl Sulfide	< 18.4	< 18.9	< 20.7	< 14.0
Carbon Disulfide	< 9.2	< 9.5	< 10.4	< 7.0
Isopropyl Mercaptan	< 18.4	< 18.9	< 20.7	< 14.0
tert-Butyl Mercaptan	< 18.4	< 18.9	< 20.7	< 14.0
n-Propyl Mercaptan	< 18.4	< 18.9	< 20.7	< 14.0
Methylethylsulfide	< 18.4	< 18.9	< 20.7	< 14.0
sec-Butyl Mercaptan	< 18.4	< 18.9	< 20.7	< 14.0
Thiophene	< 18.4	< 18.9	< 20.7	< 14.0
iso-Butyl Mercaptan	< 18.4	< 18.9	< 20.7	< 14.0
Diethyl Sulfide	< 18.4	< 18.9	< 20.7	< 14.0
n-Butyl Mercaptan	< 18.4	< 18.9	< 20.7	< 14.0
Dimethyl Disulfide	< 9.2	< 9.5	< 10.4	< 7.0
2-Methylthiophene	< 18.4	< 18.9	< 20.7	< 14.0
3-Methylthiophene	< 18.4	< 18.9	< 20.7	< 14.0
Tetrahydrothiophene	< 18.4	< 18.9	< 20.7	< 14.0
Bromothiophene	< 18.4	< 18.9	< 20.7	< 14.0
Thiophenol	< 18.4	< 18.9	< 20.7	< 14.0
Diethyl disulfide	< 9.2	< 9.5	< 10.4	< 7.0
Total Unidentified Sulfur	< 18.4	< 18.9	< 20.7	< 14.0

All unidentified sulfur compound's concentrations expressed in terms of H_2S
Sample Quantitation Limit (SQL) is equal to the Quantitation Limit x Canister Dil. Fac. x Analysis Dil. Fac.

Marcus Hueppe
Laboratory Director

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LABORATORY ANALYSIS REPORT

CLIENT	: SWAPE
PROJECT NO.	: 130783
MATRIX	: AIR
UNITS	: ug/m^3

SAMPLING DATE	: 06/27/2013
RECEIVING DATE	: 07/03/2013
ANALYSIS DATE	: 07/03/2013
REPORT DATE	: 07/08/2013

Sulfur Compounds by ASTM D-5504

Client ID	U-1 V Canister	U-2 W1 Canister	D-1 IN Canister	D-2 W5 Canister
AAC ID	130827-64122	130827-64123	130827-64124	130827-64125
Canister Dil. Fac.	1.84	1.89	2.07	1.40
Analyte	Result	Result	Result	Result
Hydrogen Sulfide	< 25.7	< 26.4	< 28.9	< 19.6
Carbonyl Sulfide	< 45.3	< 46.5	< 50.9	< 34.5
Sulfur Dioxide	118	< 49.6	< 54.3	< 36.8
Methyl Mercaptan	< 36.3	< 37.2	< 40.8	< 27.6
Ethyl Mercaptan	< 46.9	< 48.1	< 52.7	< 35.7
Dimethyl Sulfide	< 46.9	< 48.1	< 52.7	< 35.7
Carbon Disulfide	< 28.7	< 29.5	< 32.3	< 21.9
Isopropyl Mercaptan	< 57.5	< 59.0	< 64.5	< 43.7
tert-Butyl Mercaptan	< 68.0	< 69.8	< 76.4	< 51.8
n-Propyl Mercaptan	< 57.5	< 59.0	< 64.5	< 43.7
Methylethylsulfide	< 57.5	< 59.0	< 64.5	< 43.7
sec-Butyl Mercaptan	< 68.0	< 69.8	< 76.4	< 51.8
Thiophene	< 63.5	< 65.1	< 71.3	< 48.3
iso-Butyl Mercaptan	< 68.0	< 69.8	< 76.4	< 51.8
Diethyl Sulfide	< 68.0	< 69.8	< 76.4	< 51.8
n-Butyl Mercaptan	< 68.0	< 69.8	< 76.4	< 51.8
Dimethyl Disulfide	< 35.5	< 36.5	< 39.9	< 27.0
2-Methylthiophene	< 74.1	< 76.0	< 83.2	< 56.3
3-Methylthiophene	< 74.1	< 76.0	< 83.2	< 56.3
Tetrahydrothiophene	< 66.5	< 68.3	< 74.7	< 50.6
Bromothiophene	< 123	< 126	< 138	< 93.6
Thiophenol	< 83.1	< 85.3	< 93.4	< 63.2
Diethyl disulfide	< 46.1	< 47.3	< 51.8	< 35.1
Total Unidentified Sulfur	< 25.7	< 26.4	< 28.9	< 19.6

All unidentified sulfur compound's concentrations expressed in terms of H_2S
Sample Quantitation Limit (SQL) is equal to the Quantitation Limit x Canister Dil. Fac. x Analysis Dil. Fac.

Marcus Hueppe
Laboratory Director

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QA/QC Summary

Quality Control/Quality Assurance Report
ASTM D-5504

Date Analyzed: 07/03/13
Analyst: DH

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

Opening Calibration Verification Standard

	Resp. (area)	Result (ppbV)	% Rec *	% RPD ****
Initial	17052	506	101.1	NA
Duplicate	17580	521	104.3	3.0
Triplicate	17477	518	103.7	2.5

Method Blank

Analyte	Result
H2S	ND

Matrix Spike & Duplicate **Sample ID 130823-64080 x10**

Analyte	Sample Conc.	Spike Added	MS Result	MSD Result	MS % Rec **	MSD % Rec **	% RPD ***
H2S	228.8	250.0	505.8	495.3	105.6	103.4	2.1

Duplicate Analysis **Sample ID 130823-64080**

Analyte	Sample Result	Duplicate Result	Mean	% RPD ***
H2S	2183.4	2393.6	2288.5	9.2

Closing Calibration Verification Standard

Analyte	Std. Conc.	Result	%Recovery **
H2S	500	475.3	95.1

** Must be 95-105%*

*** Must be 90-110%*

**** Must be < 10%*

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

Marcus Hueppe
Laboratory Director

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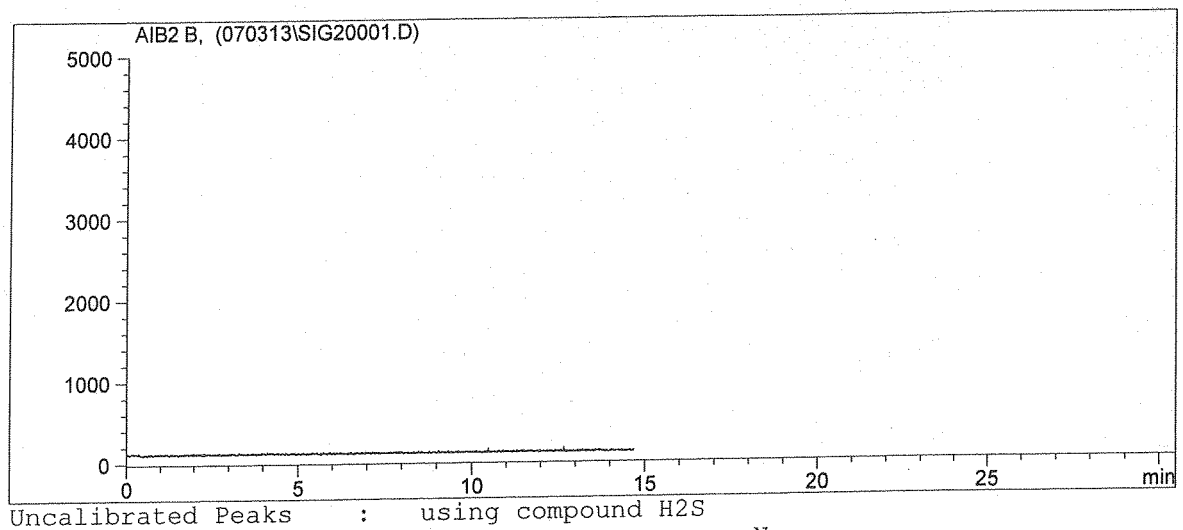
Raw Data

Customized Report: D5504

Injection Date : 7/3/2013 6:10:12 AM
Sample Name : System Blank
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 : 1
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	

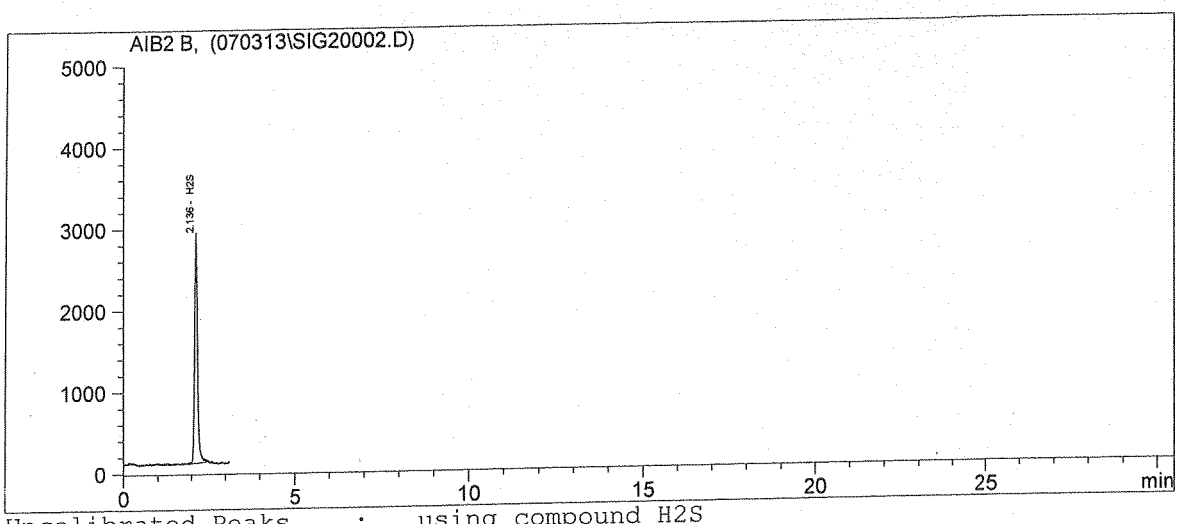
*** End of Report ***

7/3/13

Data file : C:\HPCHEM\1\DATA\070313\SIG20002.D

Customized Report: D5504

Injection Date : 7/3/2013 6:37:05 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

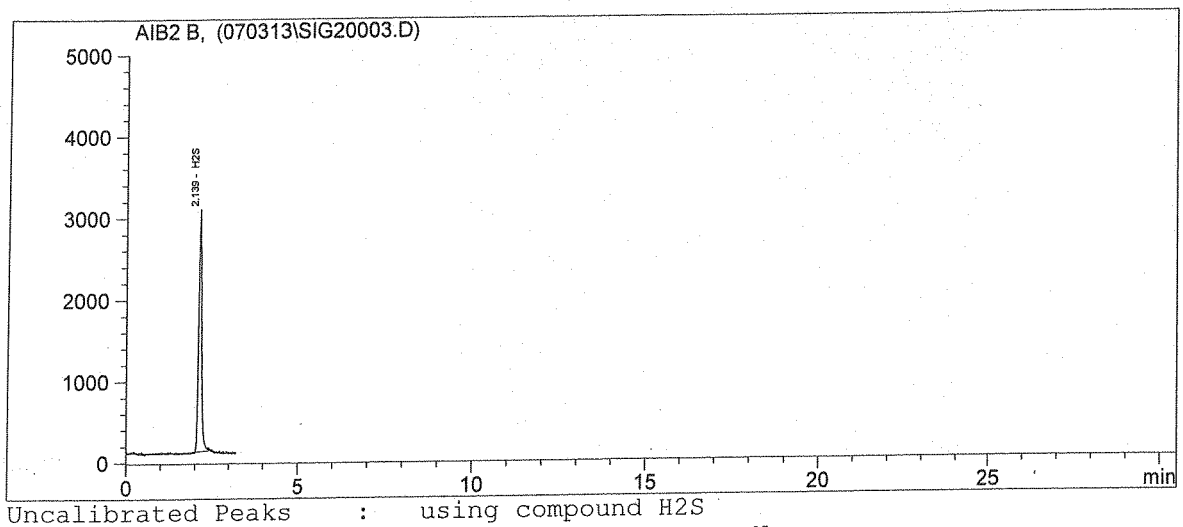
Ret Time [min]	Area	Amount [ppbV]	Name
2.136	17052	505.741	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
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:		505.741	

*** End of Report ***

7/3/17

Customized Report: D5504

Injection Date : 7/3/2013 6:29:16 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

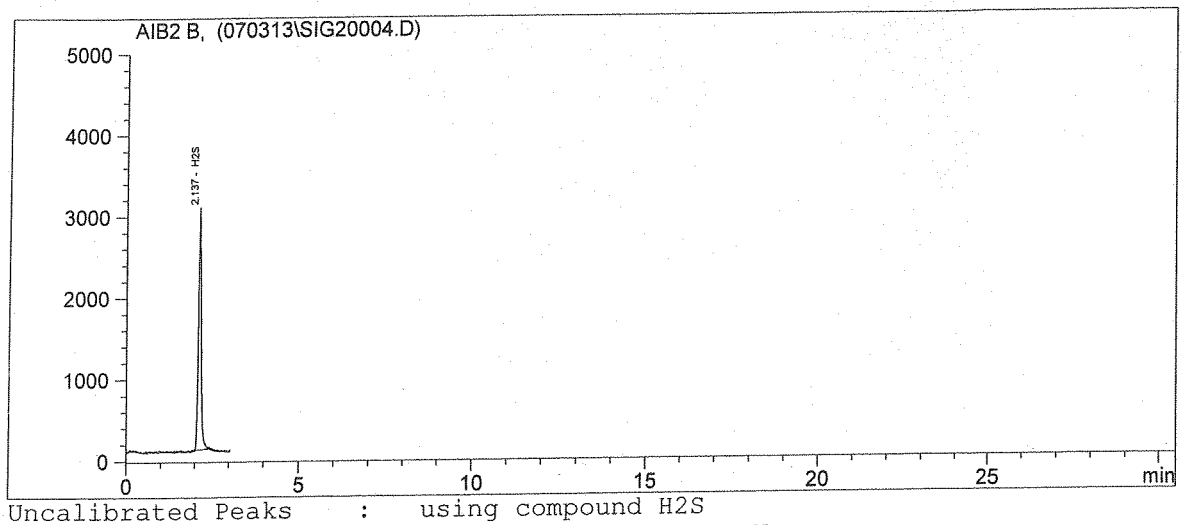
Ret Time [min]	Area	Amount [ppbV]	Name
2.139	17580	521.389	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
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:		521.389	

*** End of Report ***

DH 7/3/13

Customized Report: D5504

Injection Date : 7/3/2013 6:33:01 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
2.137	17477	518.347	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:		518.347	

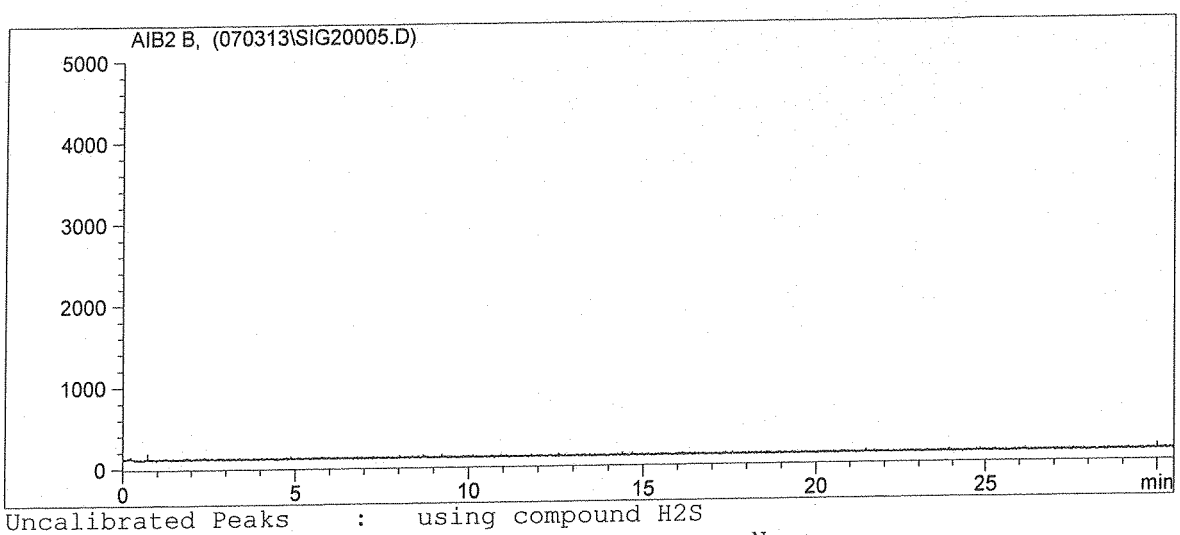
*** End of Report ***

DA 7/3/13

Customized Report: D5504

Injection Date : 7/3/2013 6:41:32 AM
Sample Name : Method Blank
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 : 5
Inj. Vol. :Manually



Uncalibrated Peaks : using compound H2S

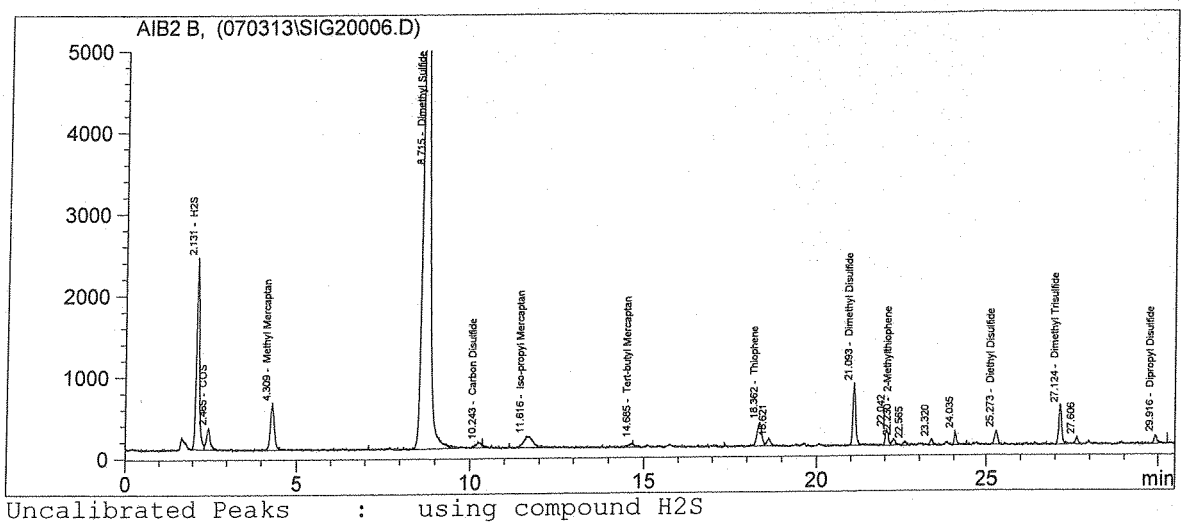
Ret Time [min]	Area	Amount [ppbV]	Name
0.000	0	0.000	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
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 ***

DA 7/3/13

Customized Report: D5504

Injection Date : 7/3/2013 11:03:56 AM Seq. Line : 6
Sample Name : 24in header x5 130823-64080 Inj. Vol. :Manually
Multiplier : 1.00
Dilution : 5.00
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
2.131	14723	2183.373	H2S
2.465	2073	307.438	COS
4.309	4624	685.689	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
8.715	86704	12857.646	Dimethyl Sulfide
10.243	1020	151.229	Carbon Disulfide
11.616	2468	366.048	Iso-propyl Mercaptan
14.685	697	103.349	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
18.362	2700	400.357	Thiophene
18.621	693	102.699	
0.000	0	0.000	Iso-butyl Mercaptan
0.000	0	0.000	Diethyl Sulfide
0.000	0	0.000	N-butyl Mercaptan
21.093	4563	676.652	Dimethyl Disulfide
22.042	1173	173.930	
22.230	482	71.465	2-Methylthiophene
0.000	0	0.000	3-Methylthiophene
22.565	321	47.601	
0.000	0	0.000	Tetrahydrothiophene
0.000	0	0.000	n-Pentyl Mercaptan
23.320	407	60.412	
24.035	925	137.156	
0.000	0	0.000	2-Ethylthiophene
0.000	0	0.000	2,5-Dimethylthiophene
25.273	960	142.431	Diethyl Disulfide
0.000	0	0.000	n-Hexyl Mercaptan
0.000	0	0.000	2-Propylthiophene
27.124	2655	393.746	Dimethyl Trisulfide
27.606	503	74.528	
0.000	0	0.000	n-Heptyl Mercaptan
0.000	0	0.000	2-Butylthiophene
29.916	683	101.337	Dipropyl Disulfide
0.000	0	0.000	n-Octyl Mercaptan

7/3/13

Data file : C:\HPCHEM\1\DATA\070313\SIG20006.D

Ret Time [min]	Area	Amount [ppbV]	Name
0.000	0	0.000	Dipropyl Trisulfide
Totals:		19037.087	

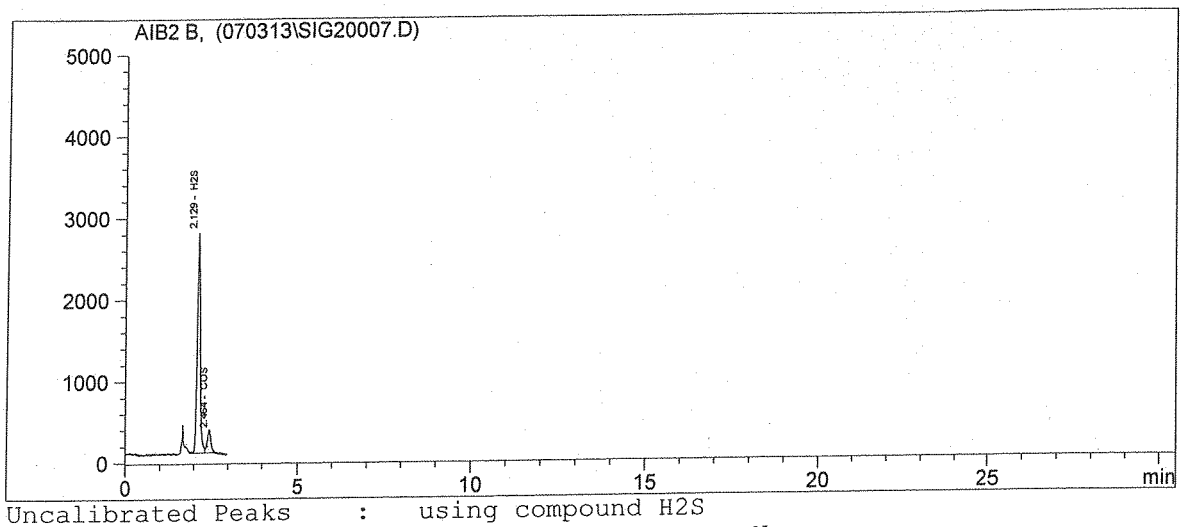
*** End of Report ***

DH 7/3/13

Data file : C:\HPCHEM\1\DATA\070313\SIG20007.D

Customized Report: D5504

Injection Date : 7/3/2013 11:57:50 AM Seq. Line : 7
Sample Name : 130823-64080 x5 dp ->Inj. Vol. :Manually
Multiplier : 1.00
Dilution : 5.00
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

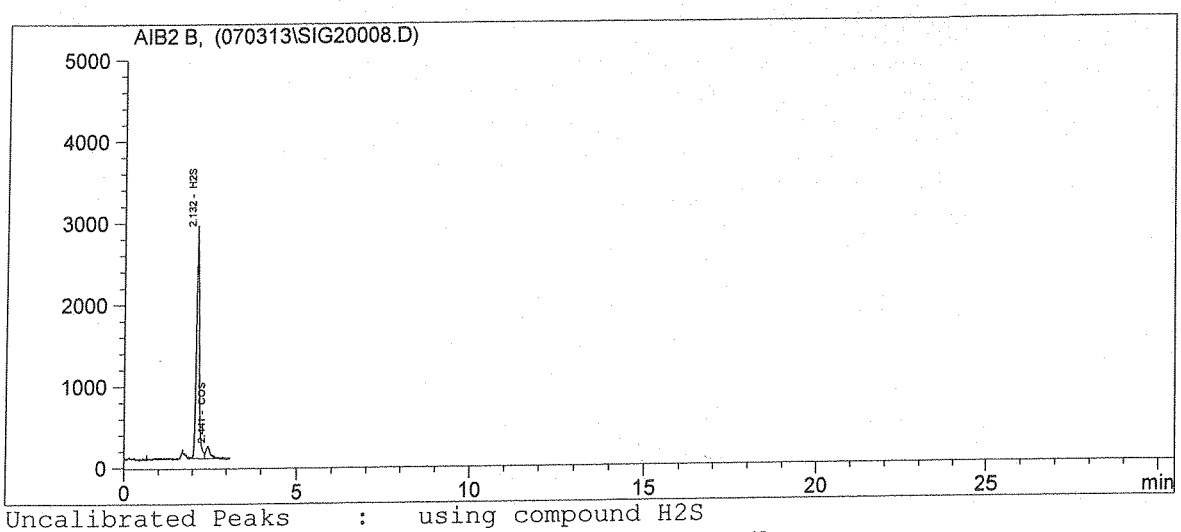
Ret Time [min]	Area	Amount [ppbV]	Name
2.129	16141	2393.601	H2S
2.464	1997	296.158	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl 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:		2689.759	

*** End of Report ***

DH 7/3/13

Customized Report: D5504

Injection Date : 7/3/2013 12:11:02 PM Seq. Line : 8
Sample Name : MS 64080 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

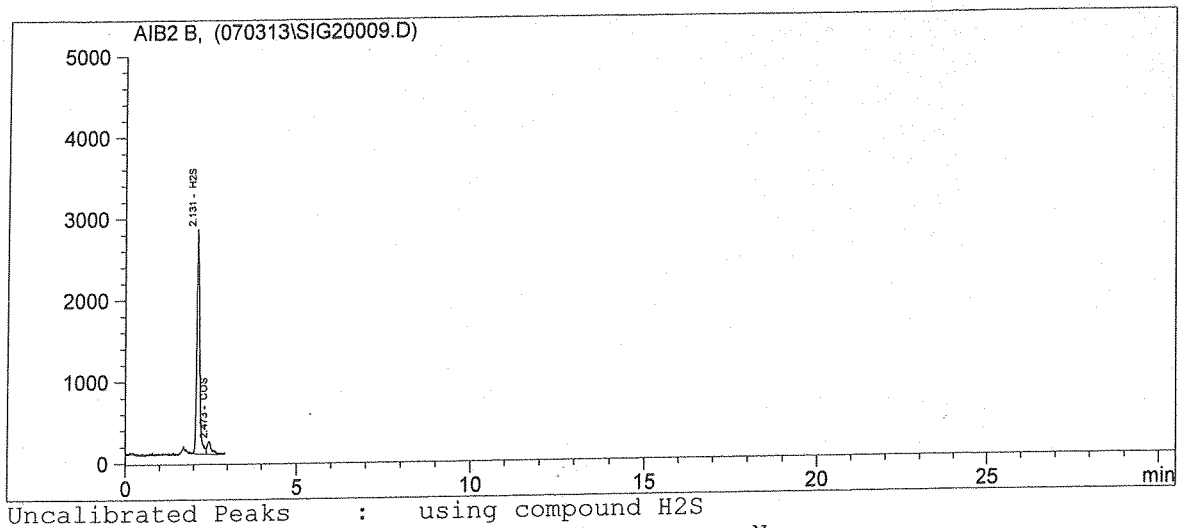
Ret Time [min]	Area	Amount [ppbV]	Name
2.132	17055	505.811	H2S
2.441	1333	39.536	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl 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:		545.347	

*** End of Report ***

7/3/13

Customized Report: D5504

Injection Date : 7/3/2013 12:22:29 PM Seq. Line : 9
Sample Name : MSD 64080 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
2.131	16699	495.257	H2S
2.473	1355	40.201	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:		535.457	

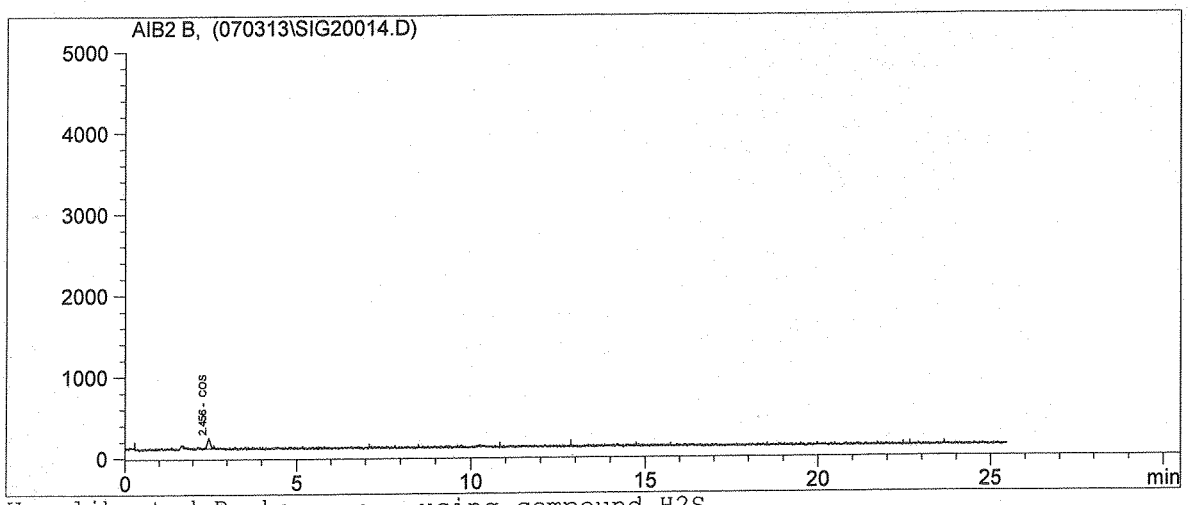
*** End of Report ***

7/3/13

Customized Report: D5504

Injection Date : 7/3/2013 2:44:43 PM
Sample Name : 130827-64122 x1
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 : 14
Inj. Vol. :Manually



Uncalibrated Peaks : using compound H2S

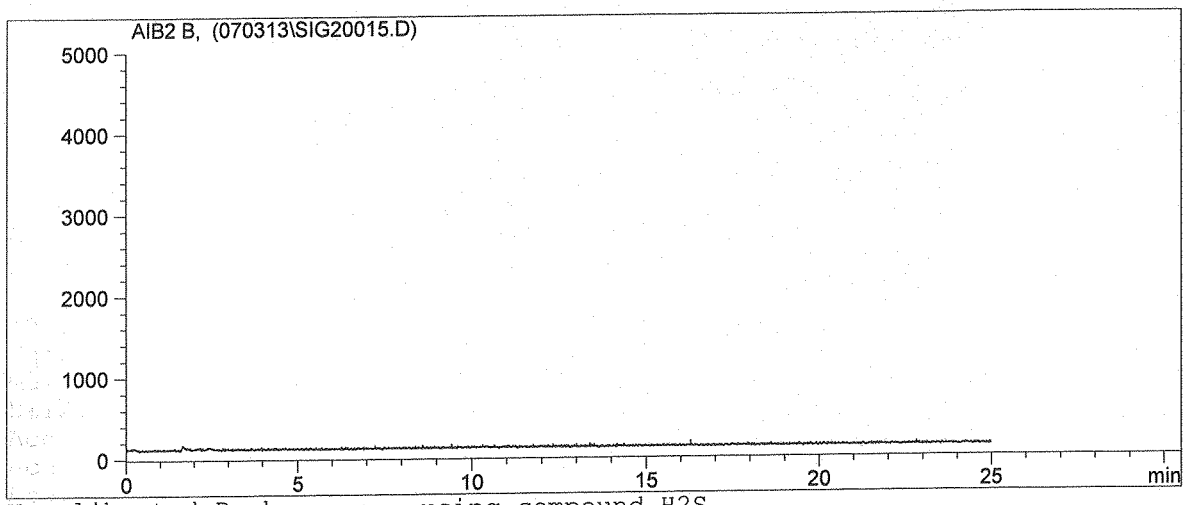
Ret Time [min]	Area	Amount [ppbV]	Name
0.000	0	0.000	H2S
2.456	823	24.418	COS/SO2
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
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:		24.418	

*** End of Report ***

Customized Report: D5504

Injection Date : 7/3/2013 3:13:37 PM
Sample Name : 130827-64123 x1
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 : 15
Inj. Vol. :Manually



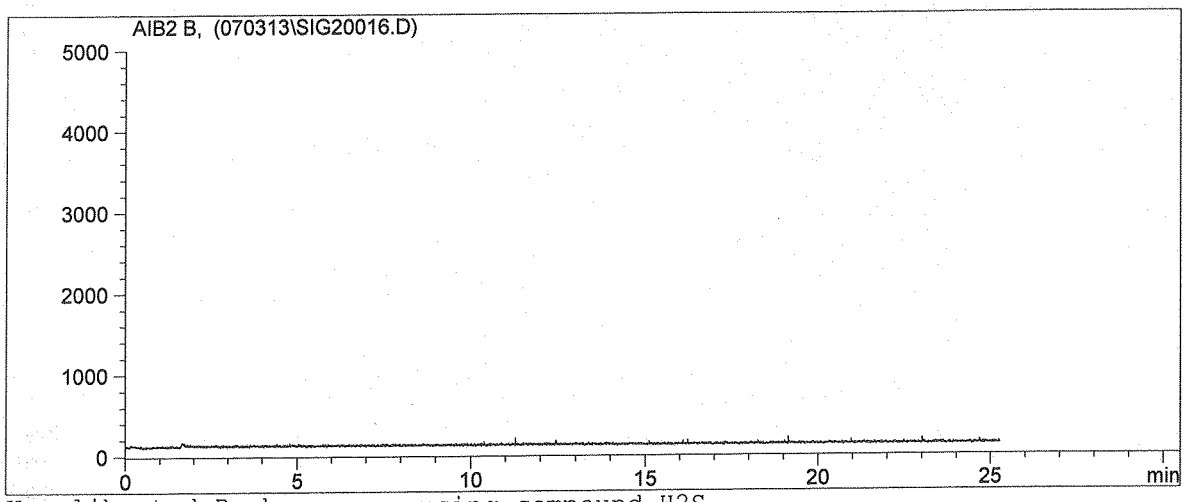
Uncalibrated Peaks : using compound H2S

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 ***

Customized Report: D5504

Injection Date : 7/3/2013 3:41:59 PM Seq. Line : 16
Sample Name : 130827-64124 x1 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 ***

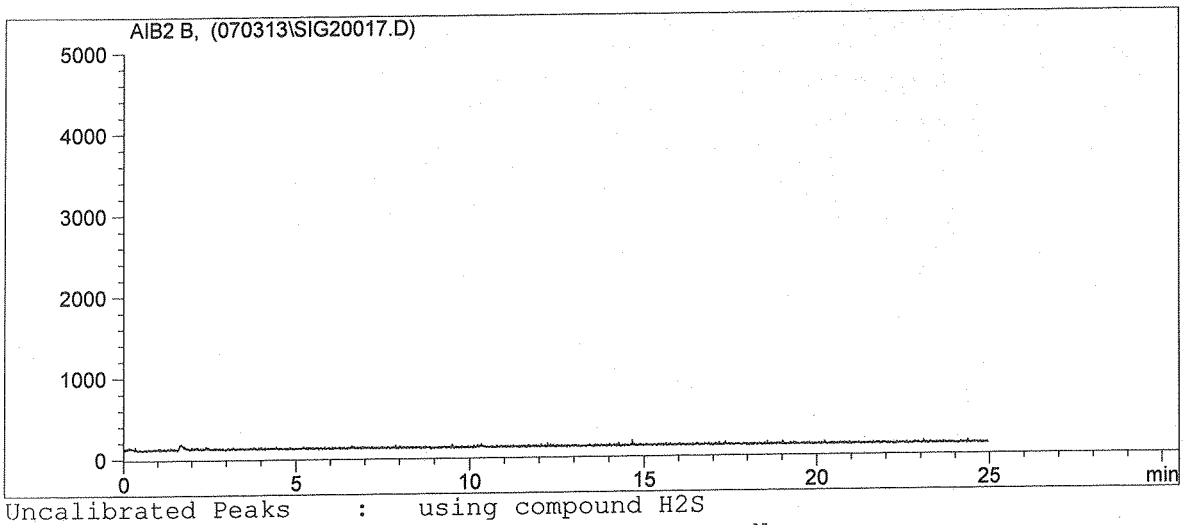
7/3/14

Data file : C:\HPCHEM\1\DATA\070313\SIG20017.D

Customized Report: D5504

Injection Date : 7/3/2013 4:10:58 PM
Sample Name : 130827-64125 x1
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 : 17
Inj. Vol. :Manually



Uncalibrated Peaks : using compound H2S

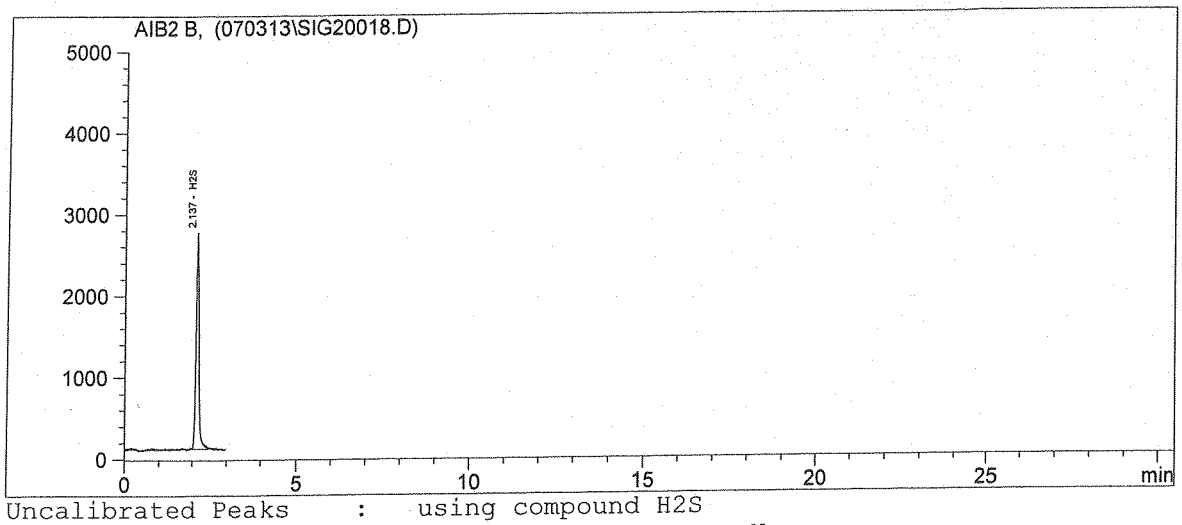
Ret Time [min]	Area	Amount [ppbV]	Name
0.000	0	0.000	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
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 ***

7/3/13

Customized Report: D5504

Injection Date : 7/3/2013 4:44:37 PM Seq. Line : 18
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
2.137	16027	475.336	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:		475.336	

*** End of Report ***

7/3/13

Calibration Summary

SCAQMD 307.91 / ASTM D-5504 INITIAL CALIBRATION SUMMARY

Analysis Date: 5/14/2013 **Analyst:** DH/MH **Units:** ppbV

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*

5/14/17

Laboratory Director (signature/date)

SCAQMD 307.91/ASTM D-5504 INITIAL CALIBRATION SUMMARY