

Atmospheric Analysis & Consulting, Inc.

CLIENT : SWAPE
PROJECT NAME : Bridgeton Sanitary Landfill Quality Assessment
AAC PROJECT NO. : 130653
REPORT DATE : 05/31/2013

On May 31, 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 W4 Canister	130653-63265	474.0
U-2 K Canister	130653-63266	548.9
D-1 W6 Canister	130653-63267	583.7
D-2 W6E Canister	130653-63268	525.3

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.

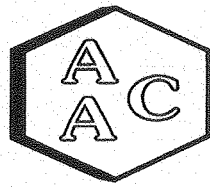
I certify that this data is technically accurate, complete, and in compliance with the terms and conditions of the contract. The Laboratory Director or his designee, as verified by the following signature, has authorized release of the data contained in this hardcopy data package.

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

Marcus Hueppe
Laboratory Director

This report consists of 30 pages.





CANISTER PRESSURE LOG

Client: Soil Water Air Protection Ent Project No.: 130653
Date: 5/31/2013

Canister #	Sample #	Initial Pressure	Final Pressure
800	63265	474.0	1014.1
732	63266	548.9	1014.7
741	63267	583.7	1015.2
672	63268	525.3	1015.7

AACT# 138653

CHAIN OF CUSTODY RECORD / ANALYTICAL REQUEST FORM

Bridgeton Sanitary Landfill Air Quality Assessment

Client Name: SOIL / WATER AIR PROTECTION ENTERPRISE
 Project Manager: PAUL ROSENFELD, PH.D.
 Address: 1640 FIFTH STREET, SUITE 204, SANTA MONICA, CA 90401
 Telephone No. / Fax No.: (310) 434-0110 / (310) 434-0011
 Date: May 24th
 Page 1 of 1

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.

Requested By: **John Blank** Date: May 24th Time: 12 Noon
 Received By: _____ Date: _____ Time: _____
 Relinquished By: _____ Date: _____ Time: _____

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	Special Instructions / Conditions of Receipt
63265	U-1 W4	Canister	May 24th	4 Hr	X	X												Canister # 800
63266	U-2 K	Canister	May 24th	4 Hr	X	X												Canister # 732
63267	D-1 W6	Canister	May 24th	4 Hr	X	X												Canister # 741
63268	D-2 W6E	Canister	May 24th	4 Hr	X	X												Canister # 672

Atmospheric Analysis and Consulting Inc.

Canister Sampling Field Data Sheet

GENERAL INFORMATION

Project Name and/or ID No.: SWAPE Project: 601 Bridgeton Landfill
 Site Address and/or ID No.: Bridgeton Sanitary Landfill, Bridgeton, Missouri
 Sampler Name and/or ID No.: V-1 W4 Canister
 AAC Batch ID: 130653 AAC Sample ID: 63265

SAMPLING INFORMATION

Start Date/Time: 5/24/13 9:25 Stop Date/Time: 5/24/13 13:25
 Start Temp/Pressure*: 14°C / 30.43 Stop Temp/Pressure*: 19°C / 30.40
 Initial Can Pressure**: -30 Final Can Pressure**: -13

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

John Blank
 Sampler Name (Print)

[Signature]
 Sampler Signature/Date

LABORATORY INFORMATION

Canister Size: 6-Liter Sampling Period: 4-Hour
 Canister Serial No.: 800 Flow Controller Serial No.: 717
 Initial Pressure: 4.2 Certified Flow Rate: 18.0
 Return Pressure: 474.0 Certified By/Date: AA 5/24/2013
 Final Pressure: 1014.1 Flow Rate upon Return: 16.3

Date Shipped From Lab: 05/16/2013 Shipped By: AA
 Date Returned to Lab: 05/31/2013 Received By: AA

Flow Controller Certification File ID: M503/05201310
 Canister Certification File ID: M503/05151328
 Certification Type: SIM _____ SCAN NULL _____ PAMS _____ Other _____

[Signature] 06/03/13
 Chemist Signature/Date

[Signature] 6/5/13
 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.*

Atmospheric Analysis and Consulting Inc.

Canister Sampling Field Data Sheet

GENERAL INFORMATION

Project Name and/or ID No.: SWAPE Project: 601 Bridgeton Landfill
 Site Address and/or ID No.: Bridgeton Sanitary Landfill, Bridgeton, Missouri
 Sample Name and/or ID No.: U-2 K Canister
 AAC Batch ID: 130653 AAC Sample ID: 63266

SAMPLING INFORMATION

Start Date/Time: 5/24/13 9:40 Stop Date/Time: 5/24/13 13:40
 Start Temp/Pressure*: 14°C / 30.93 Stop Temp/Pressure*: 19°C / 30.40
 Initial Can Pressure** : -29.5 Final Can Pressure** : -9

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

Sampler Name (Print) _____

[Signature]
 Sampler Signature/Date _____

LABORATORY INFORMATION

Canister Size: 6-Liter Sampling Period: 4-Hour
 Canister Serial No.: 732 Flow Controller Serial No: 710
 Initial Pressure: 4.2 Certified Flow Rate: 18.2
 Return Pressure: 548.9 Certified By/Date: 19 5/20/2013
 Final Pressure: 1014.7 Flow Rate upon Return: 17.5

Date Shipped From Lab: 05/16/2013 Shipped By: 19
 Date Returned to Lab: 05/31/2013 Received By: 19

Flow Controller Certification File ID: MS03/05201310
 Canister Certification File ID: MS03/05151323
 Certification Type: SIM SCAN NILL PAMS Other

[Signature] 06/2/13
 Chemist Signature/Date

[Signature] 6/5/13
 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.*

Atmospheric Analysis and Consulting Inc.

Canister Sampling Field Data Sheet

GENERAL INFORMATION

Project Name and/or ID No.: SWAPE Project: 601 Bridgeton Landfill
 Site Address and/or ID No.: Bridgeton Sanitary Landfill, Bridgeton, Missouri
 Sample Name and/or ID No.: D-1 W6 Canister
 AAC Batch ID: 130653 AAC Sample ID: 63267

SAMPLING INFORMATION

Start Date/Time: 5/24/13 11:00 Stop Date/Time: 5/24/13 15:00
 Start Temp/Pressure*: 14°C/30.43 Stop Temp/Pressure*: 20°C/30.4
 Initial Can Pressure**: -29 Final Can Pressure**: -7

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

JOHN BLANK _____
 Sampler Name (Print) Sampler Signature/Date

LABORATORY INFORMATION

Canister Size: 6-Liter Sampling Period: 4-Hour
 Canister Serial No.: 741 Flow Controller Serial No.: 715
 Initial Pressure: 4.2 Certified Flow Rate: 18.0
 Return Pressure: 583.7 Certified By/Date: AA 5/20/2013
 Final Pressure: 1015.2 Flow Rate upon Return: 18.4

Date Shipped From Lab: 05/16/2013 Shipped By: AA
 Date Returned to Lab: 05/31/2013 Received By: AA
 Flow Controller Certification File ID: MS03/05201310
 Canister Certification File ID: MS03/05151325
 Certification Type: SIM _____ SCAN NILL _____ PAMS _____ Other _____

John Blank 05/03/13 _____
 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.*

Atmospheric Analysis and Consulting Inc.

Canister Sampling Field Data Sheet

GENERAL INFORMATION

Project Name and/or ID No.: SWAPE Project: 601 Bridgeton Landfill
 Site Address and/or ID No.: Bridgeton Sanitary Landfill, Bridgeton, Missouri
 Sample Name and/or ID No.: D-2 W6E Canister
 AAC Batch ID: 130653 AAC Sample ID: 65268

SAMPLING INFORMATION

Start Date/Time: 5/24/13 11:05 Stop Date/Time: 5/24/13 15:05
 Start Temp/Pressure*: 14°C/30.43 Stop Temp/Pressure*: 20°C/30.4
 Initial Can Pressure**: -29.5 Final Can Pressure**: -9

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

Comments: _____

John Blank
 Sampler Name (Print)

[Signature]
 Sampler Signature/Date

LABORATORY INFORMATION

Canister Size: 6-Liter Sampling Period: 4-Hour
 Canister Serial No.: 672 Flow Controller Serial No.: 694
 Initial Pressure: 4.2 Certified Flow Rate: 18.0
 Return Pressure: 525.3 Certified By/Date: 11/ 5/20/2013
 Final Pressure: 1015.7 Flow Rate upon Return: 18.8

Date Shipped From Lab: 05/14/2013 Shipped By: 11

Date Returned to Lab: 05/31/2013 Received By: 11

Flow Controller Certification File ID: 14603/05201318

Canister Certification File ID: 14603/0517322

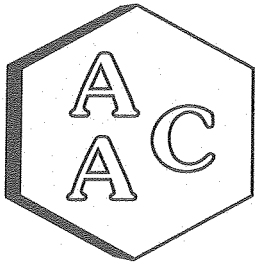
Certification Type: SIM _____ SCAN NJLI _____ PAMS _____ Other _____

[Signature] 06/2/13
 Chemist Signature/Date

[Signature] 6/5/13
 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.*

Results



Atmospheric Analysis & Consulting, Inc.

LABORATORY ANALYSIS REPORT

CLIENT : SWAPE
 PROJECT NO. : 130653
 MATRIX : AIR
 UNITS : ppbV

SAMPLING DATE : 05/24/2013
 RECEIVING DATE : 05/31/2013
 ANALYSIS DATE : 05/31/2013
 REPORT DATE : 05/31/2013

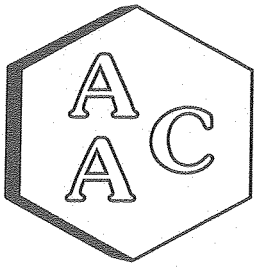
Sulfur Compounds by ASTM D-5504

Client ID	U-1 W4 Canister	U-2 K Canister	D-1 W6 Canister	D-2 W6E Canister
AAC ID	130653-63265	130653-63266	130653-63267	130653-63268
Canister Dil. Fac.	2.14	1.85	1.74	1.93
Analyte	Result	Result	Result	Result
Hydrogen Sulfide	< 21.4	< 18.5	< 17.4	< 19.3
Carbonyl Sulfide	< 21.4	< 18.5	< 17.4	< 19.3
Sulfur Dioxide	< 21.4	< 18.5	< 17.4	< 19.3
Methyl Mercaptan	< 21.4	< 18.5	< 17.4	< 19.3
Ethyl Mercaptan	< 21.4	< 18.5	< 17.4	< 19.3
Dimethyl Sulfide	< 21.4	< 18.5	< 17.4	< 19.3
Carbon Disulfide	< 10.7	< 9.2	< 8.7	< 9.7
Isopropyl Mercaptan	< 21.4	< 18.5	< 17.4	< 19.3
tert-Butyl Mercaptan	< 21.4	< 18.5	< 17.4	< 19.3
n-Propyl Mercaptan	< 21.4	< 18.5	< 17.4	< 19.3
Methylethylsulfide	< 21.4	< 18.5	< 17.4	< 19.3
sec-Butyl Mercaptan	< 21.4	< 18.5	< 17.4	< 19.3
Thiophene	< 21.4	< 18.5	< 17.4	< 19.3
iso-Butyl Mercaptan	< 21.4	< 18.5	< 17.4	< 19.3
Diethyl Sulfide	< 21.4	< 18.5	< 17.4	< 19.3
n-Butyl Mercaptan	< 21.4	< 18.5	< 17.4	< 19.3
Dimethyl Disulfide	< 10.7	< 9.2	< 8.7	< 9.7
2-Methylthiophene	< 21.4	< 18.5	< 17.4	< 19.3
3-Methylthiophene	< 21.4	< 18.5	< 17.4	< 19.3
Tetrahydrothiophene	< 21.4	< 18.5	< 17.4	< 19.3
Bromothiophene	< 21.4	< 18.5	< 17.4	< 19.3
Thiophenol	< 21.4	< 18.5	< 17.4	< 19.3
Diethyl disulfide	< 10.7	< 9.2	< 8.7	< 9.7
Total Unidentified Sulfur	< 21.4	< 18.5	< 17.4	< 19.3

All unidentified sulfur compound's concentrations expressed in terms of μS
 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. : 130653
 MATRIX : AIR
 UNITS : ug/m³

SAMPLING DATE : 05/24/2013
 RECEIVING DATE : 05/31/2013
 ANALYSIS DATE : 05/31/2013
 REPORT DATE : 05/31/2013

Sulfur Compounds by ASTM D-5504

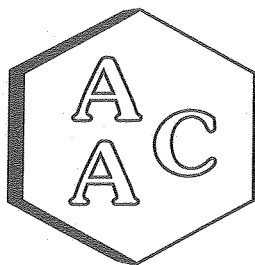
Client ID	U-1 W4 Canister	U-2 K Canister	D-1 W6 Canister	D-2 W6E Canister
AAC ID	130653-63265	130653-63266	130653-63267	130653-63268
Canister Dil. Fac.	2.14	1.85	1.74	1.93
Analyte	Result	Result	Result	Result
Hydrogen Sulfide	< 29.8	< 25.8	< 24.2	< 27.0
Carbonyl Sulfide	< 52.6	< 45.4	< 42.7	< 47.5
Sulfur Dioxide	< 56.1	< 48.4	< 45.6	< 50.7
Methyl Mercaptan	< 42.1	< 36.4	< 34.2	< 38.0
Ethyl Mercaptan	< 54.4	< 47.0	< 44.2	< 49.1
Dimethyl Sulfide	< 54.4	< 47.0	< 44.2	< 49.1
Carbon Disulfide	< 33.3	< 28.8	< 27.1	< 30.1
Isopropyl Mercaptan	< 66.6	< 57.6	< 54.2	< 60.2
tert-Butyl Mercaptan	< 78.9	< 68.2	< 64.2	< 71.3
n-Propyl Mercaptan	< 66.6	< 57.6	< 54.2	< 60.2
Methylethylsulfide	< 66.6	< 57.6	< 54.2	< 60.2
sec-Butyl Mercaptan	< 78.9	< 68.2	< 64.2	< 71.3
Thiophene	< 73.6	< 63.6	< 59.9	< 66.5
iso-Butyl Mercaptan	< 78.9	< 68.2	< 64.2	< 71.3
Diethyl Sulfide	< 78.9	< 68.2	< 64.2	< 71.3
n-Butyl Mercaptan	< 78.9	< 68.2	< 64.2	< 71.3
Dimethyl Disulfide	< 41.2	< 35.6	< 33.5	< 37.2
2-Methylthiophene	< 85.9	< 74.2	< 69.8	< 77.6
3-Methylthiophene	< 85.9	< 74.2	< 69.8	< 77.6
Tetrahydrothiophene	< 77.2	< 66.7	< 62.7	< 69.7
Bromothiophene	< 142.7	< 123.3	< 116.0	< 128.9
Thiophenol	< 96.4	< 83.3	< 78.4	< 87.1
Diethyl disulfide	< 53.5	< 46.2	< 43.5	< 48.3
Total Unidentified Sulfur	< 29.8	< 25.8	< 24.2	< 27.0

All unidentified sulfur compound's concentrations expressed in terms of $\frac{1}{2}$ 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: 05/31/13

Analyst: DH

Instrument ID: SCD#10

Calb. Date: 5/14/2013

Opening Calibration Verification Standard

	Resp. (area)	Result (ppbV)	% Rec *	% RPD ****
Initial	16653	494	98.8	NA
Duplicate	16848	500	99.9	1.2
Triplicate	16645	494	98.7	0.0

Method Blank

Analyte	Result
H2S	ND

Matrix Spike & Duplicate

Sample ID 130647-63193 x2

Analyte	Sample Conc.	Spike Added	MS Result	MSD Result	MS % Rec **	MSD % Rec **	% RPD ***
H2S	0	250	242	247	96.7	98.6	2.0

Duplicate Analysis

Sample ID 130647-63193

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

Closing Calibration Verification Standard

Analyte	Std. Conc.	Result	%Recovery **
H2S	500	461.3	100.8

* Must be 95-105%

** Must be 90-110%

*** Must be < 10%

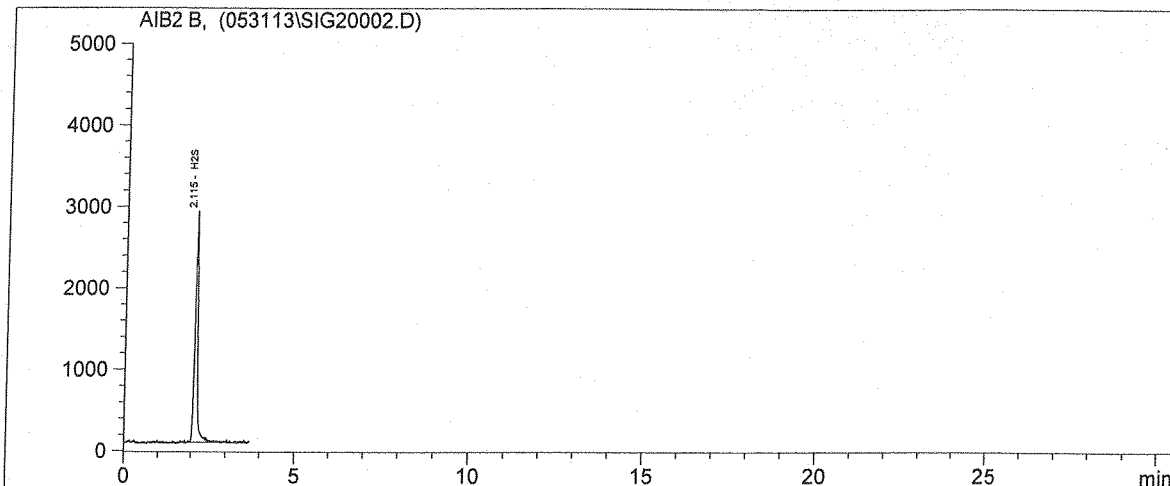
**** must be < 5% RPD from Initial result.

 Marcus Hueppe
 Laboratory Director



Raw Data

Injection Date : 5/31/2013 6:21:57 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

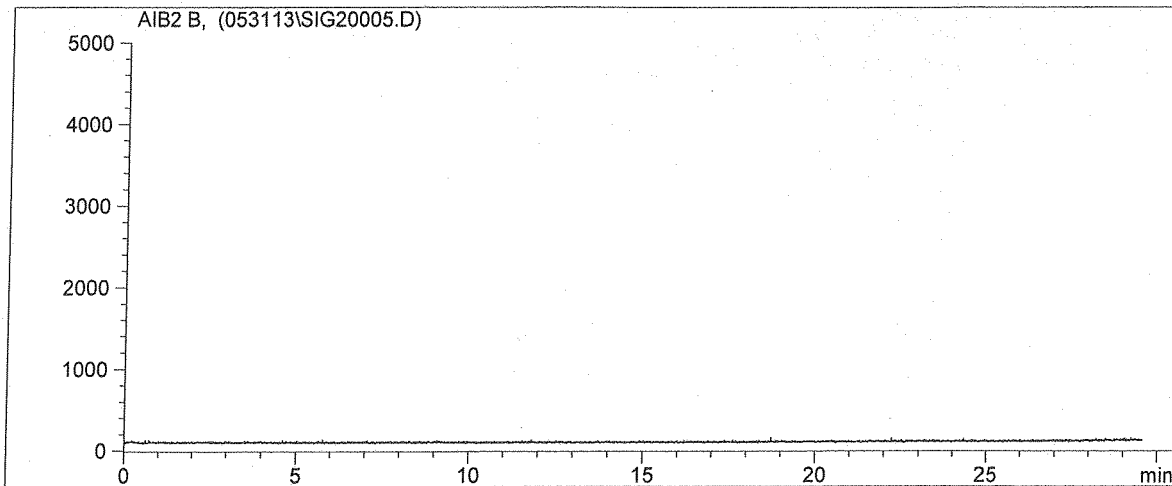
Ret Time [min]	Area	Amount [ppbV]	Name
2.115	16653	493.898	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan
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: 493.898

*** End of Report ***

MH
5/31/13

Injection Date : 5/31/2013 6:40:34 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

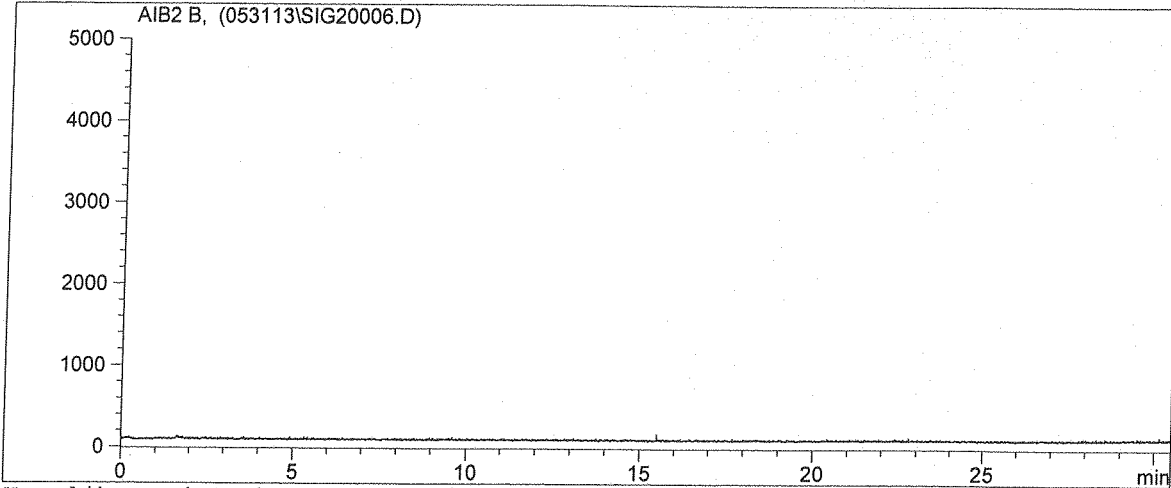
Ret Time [min]	Area	Amount [ppbV]	Name
0.000	0	0.000	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan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

Handwritten signature and date:
 5/31/13

Injection Date : 5/31/2013 7:14:09 AM Seq. Line : 6
 Sample Name : 130647-63193 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



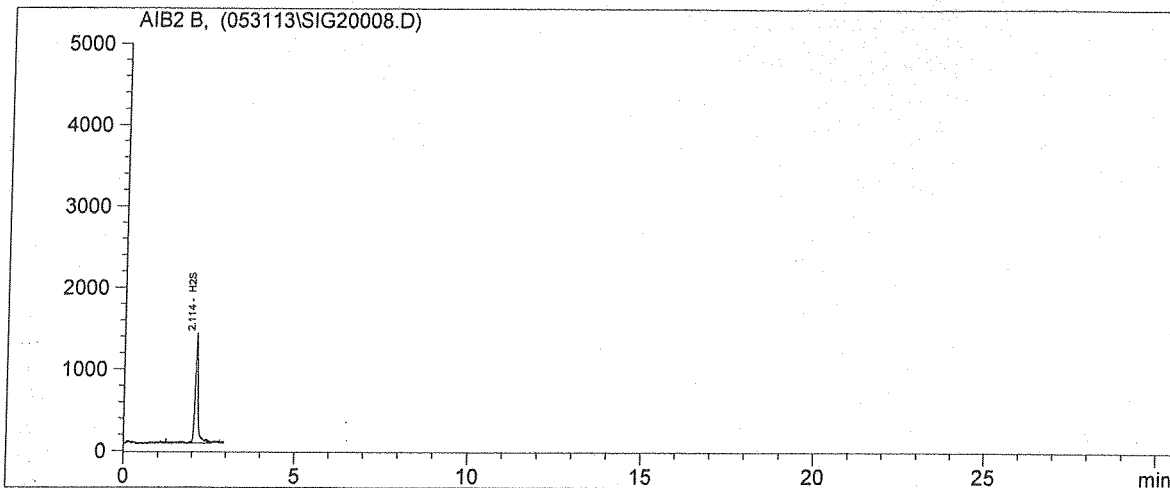
Uncalibrated Peaks : using compound H2S

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 : 5/31/2013 8:27:32 AM Seq. Line : 8
 Sample Name : MS 63193 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



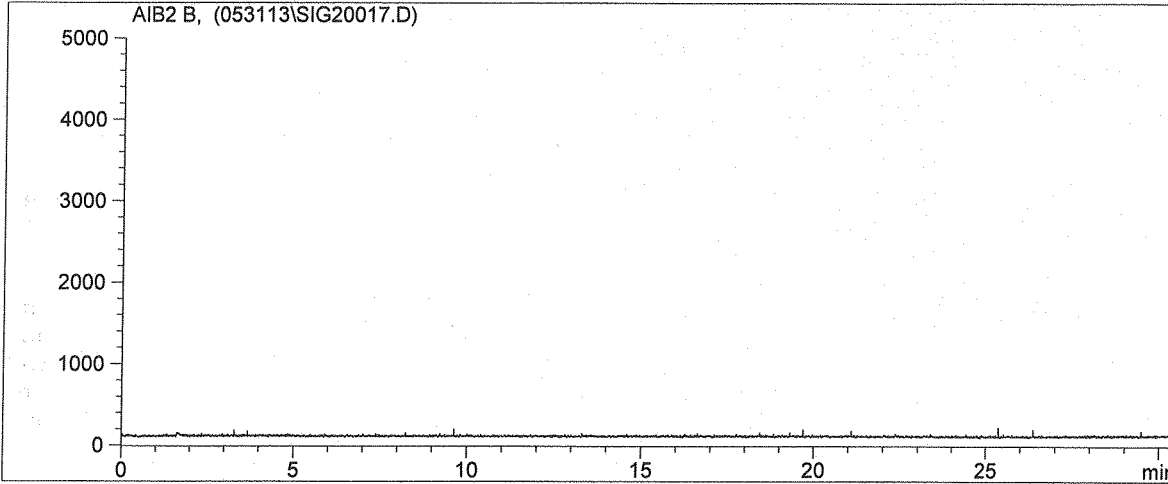
Uncalibrated Peaks : using compound H2S

Ret Time [min]	Area	Amount [ppbV]	Name
2.114	8151	241.741	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: 241.741

*** End of Report ***

Injection Date : 5/31/2013 12:59:37 PM Seq. Line : 17
 Sample Name : 130653-63265 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

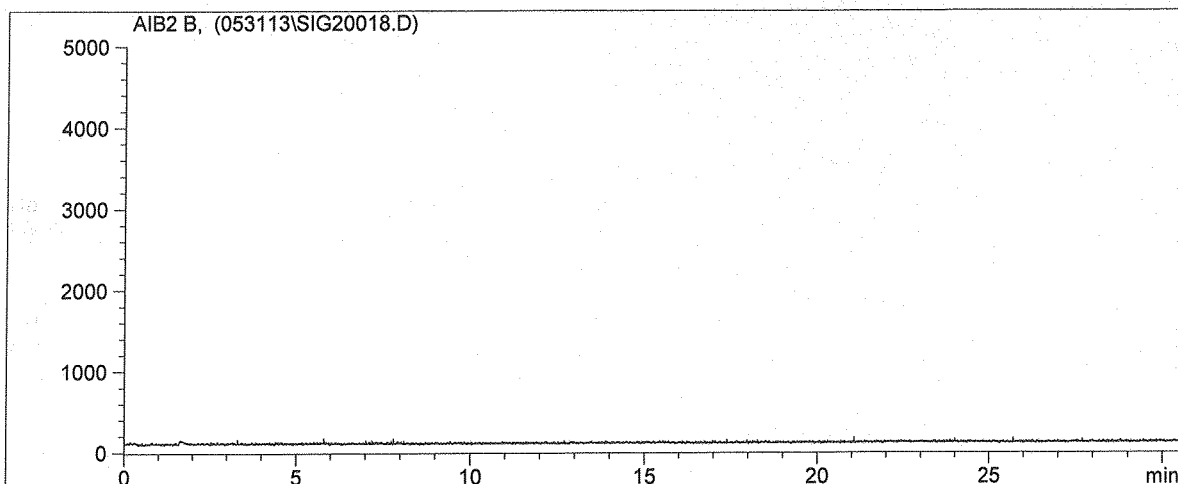
Ret Time [min]	Area	Amount [ppbV]	Name
0.000	0	0.000	H2S
0.000	0	0.000	COS
0.000	0	0.000	Methyl Mercaptan
0.000	0	0.000	Ethyl Mercaptan
0.000	0	0.000	Dimethyl Sulfide
0.000	0	0.000	Carbon Disulfide
0.000	0	0.000	Iso-propyl Mercaptan
0.000	0	0.000	Tert-butyl Mercaptan
0.000	0	0.000	N-propyl Mercaptan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

Customized Report: D5504

Injection Date : 5/31/2013 1:34:06 PM Seq. Line : 18
 Sample Name : 130653-63266 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 ***

Calibration Summary

Analysis Date: 5/14/2013

Analyst: DH/MMH

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)  5/14/13

SCAQMD 307.91/ASTM D-5504 INITIAL CALIBRATION SUMMARY

Area (mean) vs. Conc. (theor)

$y = 33.7172x$
 $R^2 = 0.9999$

