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December 17, 2018

SENT VIA: ELECTRONIC MAIL AND US MAIL

Mr. Jeffrey Thomas
Remedial Project Manager
U.S. Environmental Protection Agency
Hazardous Site Cleanup Division, 3HS23
1650 Arch Street
Philadelphia, PA 19103

RE: QUARTERLY PROGRESS REPORT FOR THE AVTEX FIBERS SUPERFUND SITE FOR THE PERIOD 1 JANUARY TO 31 MARCH 2018

Dear Mr. Thomas,

FMC Corporation (FMC) has enclosed one clipped copy of the Quarterly Progress Report for remedial activities undertaken by FMC at the Avtex Fibers Superfund Site, Front Royal, Virginia (Site). This Quarterly progress report addresses the reporting requirements in 1999 Consent Decree between the United States of America and FMC Corporation to conduct removal and remedial actions. In accordance with Section XI, Paragraph 45 of the Consent Decree, FMC has prepared this progress report to describe actions taken pursuant to the Consent Decree during the previous quarter.

If you have any questions or comments, please call me at 215-299-6047.

Sincerely,

Brian McGinnis
EHS, Remediation Manager

Enclosure (1)
cc: W. Jordan, B. Kiracofe, VADEQ
H. Philip, Parsons
M. Robinson, Parsons

QUARTERLY PROGRESS REPORT
for the Avtex Fibers Superfund Site, Front Royal, Virginia
for the Period January 1 to March 31, 2018

1.0 INTRODUCTION

FMC Corporation (FMC) has conducted removal and remedial activities at the Avtex Fibers Superfund Site, Front Royal, Virginia (Site). The removal action, remedial design, and remedial action activities were performed pursuant to the 1999 Consent Decree between the United States of America and FMC Corporation (effective 21 October 1999).

On August 29, 2014, USEPA issued a document titled, "Superfund Preliminary Close-out Report," which documented construction completion at the Site. The completion of construction at the Site marked its transition into the O&M phase. Full-scale operations and maintenance were achieved when the Groundwater and Leachate Treatment Plant (GLTP) began operating in continuous biological mode in September 2015. During the September 8, 2014 monthly call between EPA and FMC, EPA agreed that the former monthly progress reporting for the site could be reduced to quarterly during O&M phase as specified in paragraph 45 in Consent Decree. In accordance with Section XI, Paragraph 45 of the Consent Decree, FMC has prepared this quarterly progress report to describe actions taken pursuant to both the Areas of Concern (AOC) and Consent Decree during the months of January, February, and March 2018.

This report includes progress towards full completion of removal and remedial activities, and follows formatting consistent with previous reports. Daily operations and maintenance activities will be ongoing and will follow requirements in the Site-Wide O&M Plan (FMC, May 2015), which will include the Operations and Maintenance Manual Groundwater and Leachate Treatment Plant (Parsons, May 2015), and the Operations, Maintenance and Monitoring Manual Groundwater and Leachate Extraction System (Parsons, May 2015) with any major deviations reported in the sections below. The Site-Wide O&M Plan replaces prior response action specific O&M Plans, such as those presented in the various design documents.

In accordance with Section XI of the Consent Decree, this quarterly progress report contains the following:

- Description of actions taken during the previous quarter;

- Summary of data generated by FMC during the previous quarter;
- Actions scheduled for the next quarter;
- Description of problems and actions taken to mitigate the problems;
- Update on the schedule of actions and percentage completion of tasks;
- Modification to the Work Plans or other schedules; and
- Activities undertaken in support of the EPA Community Relations Plan.

Attachment 1 lists correspondence and deliverables transmitted from FMC or FMC contractors to EPA, and from EPA or EPA contractors to FMC for the previous quarter.

The remainder of the quarterly progress report is divided into seven sections (these sections will be removed and updated when actions are completed for the section):

- *Section 2.0 – OU-7/ROD 5 RD/RA*. This section describes remedial design and remedial action activities being conducted under Paragraph 23 in the Consent Decree. The units covered under OU-7 include Viscose Basins (VB) 9-11, site-wide ground water and surface water.
- *Section 3.0 – OU-10/ROD 4 RD/RA*. This section describes remedial design and remedial action activities being conducted under Paragraph 24 in the Consent Decree. The units covered under OU-10 include VB 1-8, the New Landfill, Wastewater Treatment Plant (WWTP) Closure, and Plant Area Soils.
- *Section 4.0 - Non-Time-Critical Removal Actions (NTCRA) for the Buildings*. This section describes the activities being conducted under Paragraph 21.A in the Consent Decree. The scope of the NTCRA-Buildings project is to decontaminate the remaining structures and remove the sewers and manholes.
- *Section 5.0 - Basin Closure*. This section describes the activities being conducted as a NTCRA under Paragraph 22 of the Consent Decree. The scope of this action consists of the closure of the Sulfate Basins, WWTP Basins, Fly Ash Basins, and the Stockpile (Mountain).
- *Section 6.0 – Groundwater and Leachate Treatment Plant O&M*. This section describes the Operations and Maintenance (O&M)

activities being conducted to address the discharge requirements for the GLTP.

- *Section 7.0 - Other Site Support Documents.* This section describes site-wide activities that cross over all of management units.
- *Section 8.0 – Community Relations Support*. This section describes activities undertaken in support of community relations in accordance with the Consent Decree requirement.

2.0 OU-7/ROD 5 (VB 9-11, GROUND WATER, SURFACE WATER) REMEDIAL DESIGN/REMEDIAL ACTION

2.1 Actions Taken and Reports Prepared in Previous Period

- Completed quarterly inspection as described in Section 6 of Part 1 of the Site-Wide O&M Plan.
- Completed quarterly monitoring of gas vents as described in Section 3.0 of Part 1 of the Site-Wide O&M Plan and as amended by the February 28, 2018 letter from Jeff Thomas of EPA with the subject "Proposed Modification to the Passive Gas Vent and Gas Vent Filter System Inspection, Monitoring and Maintenance Section of the Site-Wide Post Closure Care Operations and Maintenance Plan (May 2015)."
- Completed quarterly post-closure OU-7 and site perimeter real time air monitoring as required by Section 2.2 of the Air Monitoring Plan Operable Unit 7, Avtex Fibers Superfund Site, Front Royal, Virginia, October 2011. The results are presented in Attachment 2.
- The first quarter water level measurements as described in Section 2 of the GMP were collected in March.
- Resampled wells 115, 210, 215, 336, and 603 for metals analysis. Outlying lab QC issues during the ICP-MS analysis for metals were discovered for these locations during validation of the samples collected in July and August 2017. The errors required resampling the wells.
- Collected annual plant influent samples from VB-9, VB-10, and VB-11. These locations were dry in August when the other influent samples were collected. The results of this sampling will be included in the Annual O&M report for 2018.

2.2 *Data Generated in Previous Period*

As required by the Air Monitoring Plan, post construction quarterly air monitoring for hydrogen sulfide and organic vapor was completed. The results and a map showing the sample locations is provided in Attachment 2. No volatile organic compounds (VOCs) were detected at any of the monitoring locations. A single detection of hydrogen sulfide was measured at the OU-7 SE Perimeter location. The measured result of 0.007 parts per million, exceeds the OU-7-Perimeter Post Construction Indicator Value of 0.006 ppm (which is the EPA RSL for Industrial exposure). The battery was running low on the instrument, once charged and another reading was obtained approximately one hour later. The second reading was 0.009 ppm. Daily monitoring was then conducted for the next week. The daily monitoring included this location as well as a downwind location that varied based on the wind direction. No additional detections were observed. The exceedance is believed to be a result of the maintenance being performed on the odor scrubber.

Results from the annual post construction air sampling for 2017 are included as Attachment 6. Low levels of carbon disulfide were detected at two locations (OU-7-Perim-S and PERIM-s). The detected concentrations (16 and 17 $\mu g/m^3$, respectively) are well below the EPA RSLs of 3,100 $\mu g/m^3$ and 730 $\mu g/m^3$ for industrial and residential exposure. No other constituents were detected in the Samples.

The following instruments were utilized to collect the real-time readings:

- Hydrogen Sulfide: Jerome 613X.
- Organic Vapor: MiniRAE 3000

2.3 *Actions to be Completed Next Period*

- Complete quarterly water level measurements as described in Section 2 of the GMP.
- Complete quarterly inspection as described in Section 6 of Part 1 of the Site-Wide O&M Plan.
- Complete quarterly monitoring of gas vents as described in Section 3.0 of Part 1 of the Site-Wide O&M Plan and as amended by the February 28, 2018 letter from Jeff Thomas of EPA with the subject "Proposed Modification to the Passive Gas Vent and Gas Vent Filter System Inspection, Monitoring and Maintenance Section of the Site-

Wide Post Closure Care Operations and Maintenance Plan (May 2015)."

- Complete quarterly post-closure OU-7 and site perimeter real time air monitoring as required by Section 2.2 of the Air Monitoring Plan Operable Unit 7, Avtex Fibers Superfund Site, Front Royal, Virginia, October 2011.

2.4 Problems Encountered and Remedies

No problems were encountered during the previous period.

2.5 Schedule Update

All remedial design and remedial action work associated with OU-7 is complete based on EPA's approvals of the remedial action reports for the GLTP component and Viscose Basins 9-11 cap system and groundwater and leachate extraction component of OU-7.

3.0 OU-10/ROD 4 (VB 1-8, NEW LANDFILL, PLANT AREA SOILS AND WWTP CLOSURE) REMEDIAL DESIGN/REMEDIAL ACTION

3.1 Actions Taken and Reports Prepared in Previous Period

- Completed routine monitoring of gas vents as described in Section 3.0 of Part 1 of the Site-Wide O&M Plan and as amended by the February 28, 2018 letter from Jeff Thomas of EPA with the subject "Proposed Modification to the Passive Gas Vent and Gas Vent Filter System Inspection, Monitoring and Maintenance Section of the Site-Wide Post Closure Care Operations and Maintenance Plan (May 2015)."
- Resampled well 130R for metals analysis. Outlying lab QC issues during the ICP-MS analysis for metals were discovered at this location during validation of the samples collected last summer. The errors required resampling the well.
- Completed quarterly inspection as described in Section 6 of Part 1 of the Site-Wide O&M Plan.
- VB sump electrical conduit was installed from the VB building to VB-9, 10, and 11 sumps to facilitate the installation of larger-capacity electric driven leachate transfer pumps to be utilized within the larger sumps of each of the three VB basins. The remaining electrical work is scheduled for completion in January 2018.

3.2 *Data Generated in Previous Period*

None.

3.3 *Actions to be Completed Next Period*

- Complete routine monitoring of gas vents as described in Section 3.0 of Part 1 of the Site-Wide O&M Plan and as amended by the February 28, 2018 letter from Jeff Thomas of EPA with the subject "Proposed Modification to the Passive Gas Vent and Gas Vent Filter System Inspection, Monitoring and Maintenance Section of the Site-Wide Post Closure Care Operations and Maintenance Plan (May 2015)."
- Complete quarterly inspection as described in Section 6 of Part 1 of the Site-Wide O&M Plan.

3.4 *Problems Encountered and Remedies*

No problems were encountered during the previous period.

3.5 *Schedule Update*

All remedial design and remedial action work associated with OU-10 is complete based on EPA's approvals of the remedial action reports for plant area soils, WWTP and VB 1-8 and New Landfill.

4.0 *NON-TIME-CRITICAL REMOVAL ACTIONS (NTCRA) BUILDINGS*

4.1 *Actions Taken and Reports Prepared in Previous Period*

No actions were completed during the previous period because EPA issued a Certificate of Completion.

4.2 *Data Generated in Previous Period*

No new analytical data were generated during the previous month.

4.3 *Actions to be Completed Next Period*

No actions will be completed during the next period because EPA issued a Certificate of Completion.

4.4 Problems Encountered and Remedies

No problems were encountered during the previous month.

4.5 Schedule Update

All removal action work associated with NTCRA-Buildings is complete.

5.0 NON-TIME-CRITICAL REMOVAL ACTIONS (NTCRA) - BASIN CLOSURE

5.1 Actions Taken and Reports Prepared in Previous Period

- Completed quarterly inspection as described in Section 6 of Part 1 of the Site-Wide O&M Plan.

- Completed routine monitoring of gas vents as described in Section 3.0 of Part 1 of the Site-Wide O&M Plan and as amended by the February 28, 2018 letter from Jeff Thomas of EPA with the subject "Proposed Modification to the Passive Gas Vent and Gas Vent Filter System Inspection, Monitoring and Maintenance Section of the Site-Wide Post Closure Care Operations and Maintenance Plan (May 2015)."

- Completed annual basin mowing for 2018 for Polishing Basin #3, Sulfate Basin #2, and Sulfate Basin #1 cells #1-4. An annual mowing photo log is provided in Attachment 5.

- Completed maintenance to repair site access road. As well as the removal of wind damaged and fallen trees from Polishing Basin #3, final outfall, and Sulfate Basin #2.

- Resampled well 110R for metals analysis. Outlying lab QC issues during the ICP-MS analysis for metals were discovered at this location during validation of the samples collected last summer. The errors required resampling the well.

5.2 Data Generated in Previous Period

None.

5.3 Actions to be Completed Next Period

- Complete quarterly inspection as described in Section 6 of Part 1 of the Site-Wide O&M Plan.

- Complete routine monitoring of gas vents as described in Section 3.0 of Part 1 of the Site-Wide O&M Plan

5.4 Problems Encountered and Remedies

No problems were encountered during the previous month.

5.5 Schedule Update

All removal action work associated with NTCRA-Basins is complete.

6.0 GROUNDWATER AND LEACHATE TREATMENT PLANT O&M

6.1 Actions Taken and Reports Prepared in Previous Period

- Maintenance cleaning was performed on the odor scrubber and chemical wash.
  Completed quarterly wet sprinkler test as well as annual safety lighting and fire extinguisher inspections.

- The GLTP operated and discharged to the South Fork Shenandoah River (River) for 90 days from January 1 to March 31, 2018.

Discharge Monitoring

Discharge monitoring was completed as required by the July 24, 2014 VADEQ final Fact Sheet and Applicable or Relevant and Appropriate Requirements (ARARs) for the discharge of effluent from the GLTP. Monthly discharge monitoring included: flow, pH, TSS, BOD_5, and carbon disulfide. The daily and monthly flow and chemical data are listed in the Discharge Monitoring Reports (DMRs) submitted during the first quarter of 2018 provided in Attachment 3 and summarized below.

Table 1.0 Summary of 1Q18 Monthly Effluent Sampling

	Permitted Limits	**January 2018 (month avg/ daily max)**	**February 2018 (month avg/ daily max)**	**March 2018 (month avg/ daily max)**
Flow(gpd)	0.396 MGD	0.062/0.083	0.085/0.127	0.085/0.089
pH (range)	6.5 – 9.0	6.61-8.32	7.77-8.69	7.82-8.37
TSS (mg/L)	40 / 130	0.4/1.7	1.8/2.9	0.5/1.5

BOD_5 (mg/L)	24 / 64	1.0/4.0	4.5/7.0	1.2/3.0
CS2 (ug/L)	No limit established. 0.1mg/l action level	<QL	<QL	<QL

*Where parameters non-detect, the value '0' was used for calculating average and maximum concentrations.

- *Flow*. Flow during discharge was monitored continuously. Additionally, flow rates for the lift stations, test wells and viscose basins for the months of January, February, and March are provided in Table 3.2 (Attachment 3).
- *pH*. pH was monitored continuously during the days that discharge occurred. The pH monitoring results for each month are included in Attachment 3 with the monthly DMRs. The effluent pH was within the range of 6.5 to 9.0 specified in the ARARs.
- *TSS*. TSS was monitored weekly. The permitted monthly daily average limit for TSS of 40 mg/l and the permitted monthly maximum daily limit of 130 mg/l for TSS were not exceeded during this reporting period.
- *BOD_5.* BOD_5 was monitored weekly. The permitted monthly daily average limit for BOD_5 of 24 mg/l and the permitted monthly maximum daily limit of 64 mg/l for BOD_5 were not exceeded during this reporting period.
- *Carbon Disulfide.* Carbon Disulfide was monitored monthly and no limit is established in the ARARs. The results for the monthly samples collected in the first quarter of 2018 were less than the 0.1 mg/l monthly action level specified in the ARARs.

<u>Rainfall Data</u>

Table 3.1 (Attachment 3) shows that a total of 4.6 inches of precipitation fell on the Site during the first quarter of 2018 (Jan., Feb., Mar.). The total precipitation for 2018 to-date is 30.4 inches, representing to-date 12% of the average Site total yearly precipitation (39.6 inches).

6.2 *Data Generated in Previous Period*

Discharge monitoring, rainfall data and flow totals for the lift stations, test wells and viscose basin are contained in Attachment 3. DMRs were submitted by the tenth of each month.

6.3 Actions to be Taken Next Period

- Continue GLTP operations and maintenance and operate the GLTP biological system in continuous mode.

6.4 Problems Encountered and Remedies

None.

6.5 Schedule Update

The GLTP will continue to operate in full continuous mode.

7.0 OTHER SITE SUPPORT DOCUMENTS

7.1 Actions Taken and Reports Prepared in Previous Period

- Quarterly inspections (e.g. seep areas, river berms, gas vents, etc.) and inspection reports completed.

7.2 Actions to be Taken Next Period

- Quarterly inspections (e.g. seep areas, river berms, gas vents, etc.) and inspection reports to be completed.

8.0 COMMUNITY RELATIONS SUPPORT

- No activity during the previous period.

ATTACHMENTS

1 Summary of Monthly Correspondence

2 OU-7 and Site Perimeter Air Monitoring Results

3 GLTP Discharge Monitoring and Information

Discharge Monitoring Reports, 1 January to 31 March 2018

Table 3.1 – Site Rainfall Data

Table 3.2 - Monthly Flow Totals Avtex Site Lift Stations, Test Wells and Viscose Basin

4 Preliminary Site-Wide Quarterly Inspection (with repairs photo log)

5 Annual Mowing Photo Log

6 Annual Air Monitoring Results

Attachment 1
Summary of Quarterly Correspondence

ATTACHMENT 1 – LIST OF CORRESPONDENCE AND DELIVERABLES FOR THE PERIOD JANUARY 1, 2018 TO MARCH 31, 2018, AVTEX FIBERS SUPERFUND SITE, FRONT ROYAL, VIRGINIA

FMC to VADEQ

January 2, 2018. Discharge Monitoring Report – November 2017 submitted to VADEQ and EPA

January 5, 2018. Discharge Monitoring Report – December 2017 submitted to VADEQ and EPA

February 5, 2018. Discharge Monitoring Report – Revised November 2017 submitted to VADEQ and EPA

February 9, 2018. Discharge Monitoring Report – January 2018 submitted to VADEQ and EPA

March 8, 2018. Discharge Monitoring Report – February 2018 submitted to VADEQ and EPA

FMC to EPA

January 2, 2018. 4Q17 Quarterly Progress Report submitted to EPA.

February 1, 2018. Responses to EPA's comments on the 2016 Site-Wide Operations and Maintenance (O&M) Report submitted to EPA.

March 9, 2018. Notification of perimeter air monitoring exceedance submitted to EPA.

March 13, 2018. 2017 Annual Site-Wide Operations and Maintenance (O&M) Report submitted to EPA.

March 23, 2018. Air Monitoring Report for March 10 through March 16, 2018 submitted to EPA.

VADEQ to FMC

January 10, 2018. VADEQ request for revisions to the November 2017 Discharge Monthly Report.

EPA to FMC

February 28, 2018. EPA approval to modify Gas Vent Monitoring Plan submitted to FMC.

March 28, 2018. EPA's Fifth Five-Year Review Report submitted to FMC.

Attachment 2

OU-7 and Site Perimeter Air Monitoring Results

Table 4 - Example Air Monitoring Form

Date: 3/9/18

Technician: MARC HARDER

Gas Monitoring Devices:

	Used (Y/N)	Calibrated (Y/N)	Date Calibrated	Initials
Jerome 631X (low-level H_2S)		YES	1/22/18	MWH
MiniRAE PLUS with 10.6 eV lamp				
CS2 Drager with qualitative ppm tube				
MiniRAE PLUS with LEL				

Air Samples Collected?
- ☐ yes
- X no

Weather Conditions:

Precipitation (current) ☐ rain ☐ snow ☐ sleet ☐ mix X other – NONE
☐ light ☐ moderate ☐ heavy

Temperature (current) 40° F

Wind Direction (blowing from) [redacted] X variable – W/NW

Approximate Wind Speed 12 mph

Cloud Cover X clear ☐ lt. clouds ☐ overcast ☐ foggy

Barometric Pressure 29.87 inches

Monitoring Location	Time	H_2S ppm	O_2 %	LEL ppm	Methane %	Comments
OU-7 Perimeter						
N	1130	0	0	—	—	
NE	1125	0	0	—	—	
SE	1120	.007	0	—	—	.009 (2nd reading)
S	1145	0	0	—	—	
SW	1140	0	0	—	—	
NW	1135	0	0	—	—	
Site Perimeter W	1115	0	0	—	—	
N	1110	0	0	—	—	
NE	1030	0	0	—	—	
E	1035	0	0	—	—	
SE	1040	0	0	—	—	
S	1055	0	0	—	—	
SW	1100	0	0	—	—	
NW	1105	0	0	—	—	
Downwind (note location X)	1050	0	0	—	—	

Summarize activities occurring on-site that might relate to air emissions:

Table 4 - Example Air Monitoring Form

Date: 3/10/18
Technician: Adam Pugh

Gas Monitoring Devices:	Used (Y/N)	Calibrated (Y/N)	Date Calibrated	Initials
Jerome 631X (low-level H_2S)	Y	Y	3-8-18	AP
MiniRAE PLUS with 10.6 eV lamp				
CS2 Drager with qualitative ppm tube				
MiniRAE PLUS with LEL				

Air Samples Collected?
- ☐ yes
- ☒ no

Weather Conditions:

Precipitation (current) ☐ rain ☐ snow ☐ sleet ☐ mix ☐ other
☐ light ☐ moderate ☐ heavy

Temperature (current) 44 F

Wind Direction (blowing from) ☒ N ☐ NE ☐ E ☐ SE ☐ variable
☐ S ☐ SW ☐ W ☐ NW

Approximate Wind Speed 2 mph

Cloud Cover ☐ clear ☒ lt. clouds ☐ overcast ☐ foggy

Barometric Pressure 30.04 inches

Monitoring Location	Time	H_2S (ppm)	Organic (ppm)	CS2 (ppm)	Methane (% LEL)	Comments
OU-7 Perimeter						
N	11:45a	0	0	—	—	
NE	11:58a	0	0	—	—	
SE	12:04p	0	0	—	—	
S	12:10p	0	0	—	—	
SW	12:15p	0	0	—	—	
NW	12:20p	0	0	—	—	
Site Perimeter W						
N						
NE						
E						
SE						
S						
SW						
NW						
Downwind (note location N)	12:25	0	0	—		

Summarize activities occurring on-site that might relate to air emissions:

Table 4 - Example Air Monitoring Form

Date: 3-11-18
Technician: Adam Pugh

Gas Monitoring Devices:

	Used (Y/N)	Calibrated (Y/N)	Date Calibrated	Initials
Jerome 631X (low-level H_2S)	Y	Y	3-8-10	ARP
MiniRAE PLUS with 10.6 eV lamp				
CS2 Drager with qualitative ppm tube				
MiniRAE PLUS with LEL				

Air Samples Collected?
☐ yes
☒ no

Weather Conditions:

Precipitation (current) ☐ rain ☐ snow ☐ sleet ☐ mix ☐ other
☐ light ☐ moderate ☐ heavy
Temperature (current) 40 F
Wind Direction (blowing from) ☐ N ☐ NE ☐ E ☐ SE ☐ variable
☐ S ☐ SW ☐ W ☒ NW
Approximate Wind Speed 4 mph
Cloud Cover ☒ clear ☐ lt. clouds ☐ overcast ☐ foggy
Barometric Pressure 30.12 inches

Monitoring Location	Time	H_2S (ppm)	Organic (ppm)	CS2 (ppm)	Methane (% LEL)	Comments
OU-7 Perimeter	11:00 AM					
N	11:00 AM	0	0	—	—	
NE	11:10 AM	0	0	—	—	
SE	11:15 AM	0	0	—	—	
S	11:20 AM	0	0	—	—	
SW	11:25 AM	0	0	—	—	
NW	11:30 AM	0	0	—	—	
Site Perimeter W						
N						
NE						
E						
SE						
S						
SW						
NW						
Downwind (note location NW)	11:41	0	0	—	—	

Summarize activities occurring on-site that might relate to air emissions:

Table 4 - Example Air Monitoring Form

Date: 3-12-18
Technician: Adam Pugh

Gas Monitoring Devices:	Used (Y/N)	Calibrated (Y/N)	Date Calibrated	Initials
Jerome 631X (low-level H_2S)	Y	Y	3-8-18	ARP
MiniRAE PLUS with 10.6 eV lamp				
CS2 Drager with qualitative ppm tube				
MiniRAE PLUS with LEL				

Air Samples Collected?
□ yes
☒ no

Weather Conditions:

Precipitation (current) □ rain □ snow □ sleet □ mix □ other
□ light □ moderate □ heavy
Temperature (current) 40 F
Wind Direction (blowing from) ☒ N □ NE □ E □ SE □ variable
□ S □ SW □ W □ NW
Approximate Wind Speed 2 mph
Cloud Cover □ clear □ lt. clouds ☒ overcast □ foggy
Barometric Pressure 29.89 inches

Monitoring Location	Time	H_2S (ppm)	Organic (ppm)	CS2 (ppm)	Methane (%LEL)	Comments
OU-7 Perimeter						
N	12:45	0	0	—	—	
NE	12:48	0	0	—	—	
SE	12:51	0	0	—	—	
S	12:54	0	0	—	—	
SW	12:58	0	0	—	—	
NW	1:04	0	0	—	—	
Site Perimeter W						
N						
NE						
E						
SE						
S						
SW						
NW						
Downwind (note location N)	1:10	0	0	—	—	

Summarize activities occurring on-site that might relate to air emissions:

Table 4 - Example Air Monitoring Form

Date: 3-13-18

Technician: Adam Pugh

Gas Monitoring Devices:

	Used (Y/N)	Calibrated (Y/N)	Date Calibrated	Initials
Jerome 631X (low-level H_2S)	Y	Y	3-8-18	ARP
MiniRAE PLUS with 10.6 eV lamp				
CS2 Drager with qualitative ppm tube				
MiniRAE PLUS with LEL				

Air Samples Collected?

☐ yes

☒ no

Weather Conditions:

Precipitation (current) ☐ rain ☐ snow ☐ sleet ☐ mix ☐ other

☐ light ☐ moderate ☐ heavy

Temperature (current) 34 F

Wind Direction (blowing from) ☐ N ☐ NE ☐ E ☐ SE ☒ variable N-NW

☐ S ☐ SW ☐ W ☐ NW

Approximate Wind Speed 5-8 mph

Cloud Cover ☐ clear ☐ lt. clouds ☒ overcast ☐ foggy

Barometric Pressure 29.90 inches

Monitoring Location	Time	H_2S (ppm)	Organic (ppm)	CS2 (ppm)	Methane (% LEL)	Comments
OU-7 Perimeter						
N	9:45	0	0	—	—	
NE	9:48	0	0	—	—	
SE	9:52	0	0	—	—	
S	9:55	0	0	—	—	
SW	9:56	0	0	—	—	
NW	10:06	0	0	—	—	
Site Perimeter W						
N						
NE						
E						
SE						
S						
SW						
NW						
Downwind (note location N)	10:10	0	0	—	—	

Summarize activities occurring on-site that might relate to air emissions:

Table 4 - Example Air Monitoring Form

Date: 3-14-18
Technician: JH

Gas Monitoring Devices:	Used (Y/N)	Calibrated (Y/N)	Date Calibrated	Initials
Jerome 631X (low-level H_2S)	Y	Y		JH
MiniRAE PLUS with 10.6 eV lamp				
CS2 Drager with qualitative ppm tube				
MiniRAE PLUS with LEL				

Air Samples Collected?
☒ yes
☐ no

Weather Conditions:

Precipitation (current) ☐ rain ☐ snow ☐ sleet ☐ mix ☐ other
☐ light ☐ moderate ☐ heavy

Temperature (current) 33 F

Wind Direction (blowing from) ☐ N ☐ NE ☐ E ☐ SE ☐ variable
☐ S ☐ SW ☒ W ☐ NW

Approximate Wind Speed 16 mph

Cloud Cover ☒ clear ☐ lt. clouds ☐ overcast ☐ foggy

Barometric Pressure 29.87 inches

Monitoring Location	Time	H_2S (ppm)	Organic (ppm)	CS2 (ppm)	Methane (% LEL)	Comments
OU-7 Perimeter						
N	11:50	0	0	—	—	
NE	11:54	0	0	—	—	
SE	11:57	0	0	—	—	
S	12:00	0	0	—	—	
SW	12:05	0	0	—	—	
NW	12:10	0	0	—	—	
Site Perimeter W						
N						
NE						
E						
SE						
S						
SW						
NW						
Downwind (note location W)	12:20	0	0	—	—	

Summarize activities occurring on-site that might relate to air emissions:

Table 4 - Example Air Monitoring Form

March 15th 2018
Air Readings taken between 8:55-9:30

Date: 3-15-18
Technician: TJ

Gas Monitoring Devices:	Used (Y/N)	Calibrated (Y/N)	Date Calibrated	Initials
Jerome 631X (low-level H_2S)	Y	Y		TJ
MiniRAE PLUS with 10.6 eV lamp				
CS2 Drager with qualitative ppm tube				
MiniRAE PLUS with LEL				

Air Samples Collected?
☑ yes
☐ no

Weather Conditions:

Precipitation (current) ☐ rain ☐ snow ☐ sleet ☐ mix ☐ other
☐ light ☐ moderate ☐ heavy
Temperature (current) 35° F
Wind Direction (blowing from) ☐ N ☐ NE ☐ E ☐ SE ☐ variable
☐ S ☑ SW ☐ W ☐ NW
Approximate Wind Speed 7 mph
Cloud Cover ☐ clear ☐ lt. clouds ☐ overcast ☐ foggy
Barometric Pressure 29.81 inches

Monitoring Location	Time	H_2S (ppm)	Organic (ppm)	CS2 (ppm)	Methane (%LEL)	Comments
OU-7 Perimeter						
N	8:58	0	0	—	—	
NE	9:02	0	0	—	—	
SE	9:08	0	0	—	—	
S	9:11	0	0	—	—	
SW	9:15	0	0	—	—	
NW	9:21	0	0	—	—	
Site Perimeter W						
N						
NE						
E						
SE						
S						
SW						
NW						
Downwind (note location W)	9:30	0	0	—	—	

Summarize activities occurring on-site that might relate to air emissions:

Table 4 - Example Air Monitoring Form

Date: 3/16/18
Technician: TJ

Gas Monitoring Devices:	Used (Y/N)	Calibrated (Y/N)	Date Calibrated	Initials
Jerome 631X (low-level H_2S)	Y	Y		TJ
MiniRAE PLUS with 10.6 eV lamp				
CS2 Drager with qualitative ppm tube				
MiniRAE PLUS with LEL				

Air Samples Collected?
☑ yes
☐ no

Weather Conditions:

Precipitation (current) ☐ rain ☐ snow ☐ sleet ☐ mix ☐ other
☐ light ☐ moderate ☐ heavy
Temperature (current) 40° F
Wind Direction (blowing from) ☐ N ☐ NE ☐ E ☐ SE ☐ variable
☐ S ☐ SW ☐ W ☑ NW
Approximate Wind Speed 15 mph
Cloud Cover ☑ clear ☐ lt. clouds ☐ overcast ☐ foggy
Barometric Pressure 30.0 inches

Monitoring Location	Time	H_2S (ppm)	Organic (ppm)	CS2 (ppm)	Methane (% LEL)	Comments
OU-7 Perimeter						
3 N	1:46	0	0			
1 NE	1:41	0	0			
2 SE	1:43	0	0			
6 S	1:51	0	0			
5 SW	1:49	0	0			
4 NW	1:48	0	0			
Site Perimeter W						
N						
NE						
E						
SE						
S						
SW						
NW						
Downwind (note location W)	1:52	0	0			

Summarize activities occurring on-site that might relate to air emissions:

FIGURE 1
AIR MONITORING LOCATIONS DURING OU-7 WORK
AVTEX FIBERS SUPERFUND SITE
FRONT ROYAL, VIRGINIA

LEGEND

PROPERTY BOUNDARY

SITE PERIMETER LOCATION

OU-7 PERIMETER LOCATION

NOTE: DOWNWIND LOCATION TO BE DETERMINED BASED ON FIELD CONDITIONS.

500 250 0 500

SCALE IN FEET

G:\CAD\Drawings\FMC_Avtex Front Royal\0122736\A207.dwg

MLB/4-6-11

ERM, INC.

Attachment 3

GLTP Discharge Monitoring and Information

FMC Corporation
2929 Walnut Street
Philadelphia, PA 19104
USA

215.299.6000
fmc.com

Transmitted via Email

February 9, 2018

Department of Environmental Quality - CO
Office of Remediation Program
P.O. Box 1105
Richmond, VA 23218

Re: Submission of Discharge Monitoring Report – January 2018
Avtex Fibers Superfund Site
Front Royal, Virginia

Dear Ms. Payne:

In accordance with the Applicable or Relevant and Appropriate Requirements (ARARs) and Fact Sheet provided July 22, 2014, FMC Corporation (FMC) is submitting the Discharge Monitoring Report (DMR) for the month of January 2018. The permit is for the discharge from the Groundwater and Leachate Treatment Plant (GLTP) located at 404 Kendrick Lane, Front Royal, VA. Analysis of effluent concentrations yielded results within the allowable limits for all parameters.

It should be noted that at approximately 8:30AM on 1/21/18 a low pH alarm condition was initiated. Effluent discharge from the GLTP was terminated during this time. A manual sample was taken and showed that the effluent was within acceptable limits and that the pH probe was not reading correctly. Effluent discharge only resumed once the pH probe had been checked, calibrated, and levels observed from the probe returned to acceptable discharge values. Manual readings were taken daily to verify discharge compliance until a new probe could be installed. Measures are being taken to install a redundant pH probe as backup to prevent similar incidents in the future.

Please do not hesitate to call if there are any questions.

Sincerely,
FMC Corporation

Brian M. McGinnis, P.E.
Manager, Environmental Remediation

cc: via Email
Brandon Kiracofe, DEQ
Jeffrey Thomas, USEPA
Heather Philip, Parsons

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

OMB No. 2040-004

PERMITTEE NAME/ADDRESS: (Include Facility Name/Location if different)

NAME:	Avtex Fibers	NA				004			**DMR MAILING ZIP CODE:**			23218
ADDRESS:	404 Kendrick Lane	**PERMIT NUMBER**				**DISCHARGE NUMBER**						
	Front Royal, VA 22630								DESCRIPTION:			
		MONITORING PERIOD							GLTP EFFLUENT (OUTFALL 004)			
FACILITY:	AVTEX FIBERS	**YEAR**	**MO**	**DAY**		**YEAR**	**MO**	**DAY**	External Outfall			
LOCATION:	FRONT ROYAL, VA	**FROM** 18	01	01	TO	18	01	31				**No Discharge**
ATTN:												

PARAMETER		QUANTITY OR LOADING VALUE	QUANTITY OR LOADING VALUE	UNITS	QUALITY OR CONCENTRATION VALUE	QUALITY OR CONCENTRATION VALUE	QUALITY OR CONCENTRATION VALUE	UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
FLOW	SAMPLE MEASUREMENT	0.062	0.083	MGD	*****	*****	*****		0	CONTINUOUS	TIRE
00056 1 0 EFFLUENT GROSS	PERMIT REQUIREMENT	REPORT MONTHLY AV	REPORT DAILY MAX		******	******	******			CONTINUOUS	TIRE
PH	SAMPLE MEASUREMENT	*****	*****		6.6	*****	8.3		0	CONTINUOUS	GRAB
00400 1 0 EFFLUENT GROSS	PERMIT REQUIREMENT	******	******		6.5 MINIMUM	******	9.0 MAXIMUM	SU		CONTINUOUS	GRAB
BOD, 5-DAY	SAMPLE MEASUREMENT	0.26	1.06	kg/d	*****	1.00	4.00	mg/L	0	1/7	8 HC
00318 1 0 EFFLUENT GROSS	PERMIT REQUIREMENT	36 MONTHLY AV	96 DAILY MAX		******	24 MONTHLY AV	64 DAILY MX			1/7	8 HC
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	0.11	0.45	kg/d	*****	0.43	1.70	mg/L	0	1/7	8 HC
03603 1 0 EFFLUENT GROSS	PERMIT REQUIREMENT	60 MONTHLY AV	190 DAILY MAX		******	40 MONTHLY AV	130 DAILY MX			1/7	8 HC
CARBON DISULFIDE	SAMPLE MEASUREMENT	<QL	<QL	kg/d	*****	<QL	<QL	mg/L	0	1/30	8 HC
77041 1 0 EFFLUENT GROSS	PERMIT REQUIREMENT	NL MONTHLY AV	NL DAILY MAX		******	NL MONTHLY AV	NL DAILY MX			1/30	8 HC
WHOLE EFFLUENT TOXICITY - ***Ceriodaphnia dubia***	SAMPLE MEASUREMENT	*****	*****	TUa	*****	*****	*****	TUa			8 HC
22414 1 0 EFFLUENT GROSS	PERMIT REQUIREMENT	*****	*****		*****	*****	*****			1/90	8 HC
WHOLE EFFLUENT TOXICITY - ***Pimephales promelas***	SAMPLE MEASUREMENT	*****	*****	TUa	*****	*****	*****	TUa			8 HC
22414 1 0 EFFLUENT GROSS	PERMIT REQUIREMENT	*****	*****		*****	*****	*****			1/90	8 HC

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER		TELEPHONE		DATE		
Brian McGinnis	I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.			18	02	09
Manager, Environmental Remediation						
TYPED OR PRINTED	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA 215	NUMBER 299-6047	YEAR	MO	DAY

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

Attachment: pH compliance monitoring summary (monthly)

Carbon disulfide: No limit established; monitored monthly; 0.1 mg/L action level

Avtex Fibers
Front Royal, VA
Outfall 004
January 2018 DMR

pH Calculations:

Date And Time	pH	Date And Time	pH	Date And Time	pH
1/1/2018 12:00 AM	7.96	1/2/2018 12:00 AM	8.15	1/3/2018 12:00 AM	8.13
1/1/2018 12:15 AM	8.06	1/2/2018 12:15 AM	8.14	1/3/2018 12:15 AM	8.13
1/1/2018 12:30 AM		1/2/2018 12:30 AM	8.13	1/3/2018 12:30 AM	8.13
1/1/2018 12:45 AM	8.11	1/2/2018 12:45 AM	8.13	1/3/2018 12:45 AM	8.13
1/1/2018 1:00 AM	8.11	1/2/2018 1:00 AM	8.13	1/3/2018 1:00 AM	8.13
1/1/2018 1:15 AM	8.11	1/2/2018 1:15 AM	8.12	1/3/2018 1:15 AM	8.13
1/1/2018 1:30 AM	8.10	1/2/2018 1:30 AM	8.12	1/3/2018 1:30 AM	8.12
1/1/2018 1:45 AM	8.10	1/2/2018 1:45 AM	8.12	1/3/2018 1:45 AM	8.12
1/1/2018 2:00 AM	8.09	1/2/2018 2:00 AM	8.05	1/3/2018 2:00 AM	8.12
1/1/2018 2:15 AM	8.09	1/2/2018 2:15 AM	8.02	1/3/2018 2:15 AM	8.12
1/1/2018 2:30 AM	8.09	1/2/2018 2:30 AM	8.02	1/3/2018 2:30 AM	8.12
1/1/2018 2:45 AM	8.08	1/2/2018 2:45 AM	8.01	1/3/2018 2:45 AM	8.12
1/1/2018 3:00 AM	8.08	1/2/2018 3:00 AM	7.93	1/3/2018 3:00 AM	8.12
1/1/2018 3:15 AM	8.08	1/2/2018 3:15 AM	8.07	1/3/2018 3:15 AM	8.12
1/1/2018 3:30 AM	8.01	1/2/2018 3:30 AM	8.14	1/3/2018 3:30 AM	8.12
1/1/2018 3:45 AM	7.98	1/2/2018 3:45 AM	8.16	1/3/2018 3:45 AM	8.12
1/1/2018 4:00 AM	7.98	1/2/2018 4:00 AM	8.16	1/3/2018 4:00 AM	8.12
1/1/2018 4:15 AM	7.97	1/2/2018 4:15 AM	8.16	1/3/2018 4:15 AM	8.12
1/1/2018 4:30 AM	7.97	1/2/2018 4:30 AM	8.15	1/3/2018 4:30 AM	8.12
1/1/2018 4:45 AM	8.07	1/2/2018 4:45 AM	8.15	1/3/2018 4:45 AM	8.12
1/1/2018 5:00 AM	8.12	1/2/2018 5:00 AM	8.14	1/3/2018 5:00 AM	8.08
1/1/2018 5:15 AM	8.13	1/2/2018 5:15 AM	8.14	1/3/2018 5:15 AM	8.06
1/1/2018 5:30 AM	8.13	1/2/2018 5:30 AM	8.14	1/3/2018 5:30 AM	8.04
1/1/2018 5:45 AM	8.12	1/2/2018 5:45 AM	8.14	1/3/2018 5:45 AM	8.04
1/1/2018 6:00 AM	8.11	1/2/2018 6:00 AM	8.13	1/3/2018 6:00 AM	7.96
1/1/2018 6:15 AM	8.11	1/2/2018 6:15 AM	8.13	1/3/2018 6:15 AM	8.10
1/1/2018 6:30 AM	8.10	1/2/2018 6:30 AM	8.05	1/3/2018 6:30 AM	8.16
1/1/2018 6:45 AM	8.10	1/2/2018 6:45 AM	8.03	1/3/2018 6:45 AM	8.18
1/1/2018 7:00 AM	8.10	1/2/2018 7:00 AM	8.02	1/3/2018 7:00 AM	8.19
1/1/2018 7:15 AM	8.10	1/2/2018 7:15 AM	8.02	1/3/2018 7:15 AM	8.18
1/1/2018 7:30 AM	8.09	1/2/2018 7:30 AM	8.03	1/3/2018 7:30 AM	8.18
1/1/2018 7:45 AM	8.09	1/2/2018 7:45 AM	8.13	1/3/2018 7:45 AM	8.17
1/1/2018 8:00 AM	8.02	1/2/2018 8:00 AM	8.16	1/3/2018 8:00 AM	8.17
1/1/2018 8:15 AM	7.99	1/2/2018 8:15 AM	8.17	1/3/2018 8:15 AM	8.16
1/1/2018 8:30 AM	7.98	1/2/2018 8:30 AM	8.16	1/3/2018 8:30 AM	8.16
1/1/2018 8:45 AM	7.97	1/2/2018 8:45 AM	8.15	1/3/2018 8:45 AM	8.15
1/1/2018 9:00 AM	7.96	1/2/2018 9:00 AM	8.14	1/3/2018 9:00 AM	8.14
1/1/2018 9:15 AM	8.00	1/2/2018 9:15 AM	8.13	1/3/2018 9:15 AM	8.13
1/1/2018 9:30 AM	8.08	1/2/2018 9:30 AM	8.13	1/3/2018 9:30 AM	8.07
1/1/2018 9:45 AM	8.12	1/2/2018 9:45 AM	8.12	1/3/2018 9:45 AM	8.04
1/1/2018 10:00 AM	8.12	1/2/2018 10:00 AM	8.12	1/3/2018 10:00 AM	8.03
1/1/2018 10:15 AM	8.12	1/2/2018 10:15 AM	8.12	1/3/2018 10:15 AM	8.02
1/1/2018 10:30 AM	8.11	1/2/2018 10:30 AM	8.12	1/3/2018 10:30 AM	8.02
1/1/2018 10:45 AM	8.11	1/2/2018 10:45 AM	8.12	1/3/2018 10:45 AM	8.08
1/1/2018 11:00 AM	8.11	1/2/2018 11:00 AM	8.08	1/3/2018 11:00 AM	8.09

1/1/2018 11:15 AM	8.10	1/2/2018 11:15 AM	8.03	1/3/2018 11:15 AM	8.06
1/1/2018 11:30 AM	8.09	1/2/2018 11:30 AM	8.01	1/3/2018 11:30 AM	8.05
1/1/2018 11:45 AM	8.09	1/2/2018 11:45 AM	7.96	1/3/2018 11:45 AM	8.04
1/1/2018 12:00 PM	8.09	1/2/2018 12:00 PM	8.07	1/3/2018 12:00 PM	8.04
1/1/2018 12:15 PM	8.08	1/2/2018 12:15 PM	8.13	1/3/2018 12:15 PM	8.04
1/1/2018 12:30 PM	8.05	1/2/2018 12:30 PM	8.14	1/3/2018 12:30 PM	7.99
1/1/2018 12:45 PM	8.00	1/2/2018 12:45 PM	8.14	1/3/2018 12:45 PM	8.13
1/1/2018 1:00 PM	7.99	1/2/2018 1:00 PM	8.14	1/3/2018 1:00 PM	8.19
1/1/2018 1:15 PM	7.92	1/2/2018 1:15 PM	8.13	1/3/2018 1:15 PM	8.20
1/1/2018 1:30 PM	8.04	1/2/2018 1:30 PM	8.12	1/3/2018 1:30 PM	8.20
1/1/2018 1:45 PM	8.08	1/2/2018 1:45 PM	8.11	1/3/2018 1:45 PM	8.19
1/1/2018 2:00 PM	8.11	1/2/2018 2:00 PM	8.11	1/3/2018 2:00 PM	8.13
1/1/2018 2:15 PM	8.12	1/2/2018 2:15 PM	8.10	1/3/2018 2:15 PM	8.09
1/1/2018 2:30 PM	8.12	1/2/2018 2:30 PM	8.10	1/3/2018 2:30 PM	8.07
1/1/2018 2:45 PM	8.11	1/2/2018 2:45 PM	8.10	1/3/2018 2:45 PM	8.06
1/1/2018 3:00 PM	8.11	1/2/2018 3:00 PM	8.10	1/3/2018 3:00 PM	8.07
1/1/2018 3:15 PM	8.10	1/2/2018 3:15 PM	8.09	1/3/2018 3:15 PM	8.06
1/1/2018 3:30 PM	8.10	1/2/2018 3:30 PM	8.08	1/3/2018 3:30 PM	8.06
1/1/2018 3:45 PM	8.10	1/2/2018 3:45 PM	8.04	1/3/2018 3:45 PM	8.12
1/1/2018 4:00 PM	8.09	1/2/2018 4:00 PM	8.03	1/3/2018 4:00 PM	8.19
1/1/2018 4:15 PM	8.09	1/2/2018 4:15 PM	8.02	1/3/2018 4:15 PM	8.21
1/1/2018 4:30 PM	8.09	1/2/2018 4:30 PM	8.02	1/3/2018 4:30 PM	8.21
1/1/2018 4:45 PM	8.09	1/2/2018 4:45 PM	8.01	1/3/2018 4:45 PM	8.21
1/1/2018 5:00 PM	8.03	1/2/2018 5:00 PM	8.09	1/3/2018 5:00 PM	8.20
1/1/2018 5:15 PM	8.00	1/2/2018 5:15 PM	8.13	1/3/2018 5:15 PM	8.20
1/1/2018 5:30 PM	7.99	1/2/2018 5:30 PM	8.14	1/3/2018 5:30 PM	8.19
1/1/2018 5:45 PM	7.99	1/2/2018 5:45 PM	8.14	1/3/2018 5:45 PM	8.19
1/1/2018 6:00 PM	7.93	1/2/2018 6:00 PM	8.14	1/3/2018 6:00 PM	8.18
1/1/2018 6:15 PM	8.05	1/2/2018 6:15 PM	8.14	1/3/2018 6:15 PM	8.18
1/1/2018 6:30 PM	8.11	1/2/2018 6:30 PM	8.13	1/3/2018 6:30 PM	8.18
1/1/2018 6:45 PM	8.13	1/2/2018 6:45 PM	8.13	1/3/2018 6:45 PM	8.17
1/1/2018 7:00 PM	8.13	1/2/2018 7:00 PM	8.12	1/3/2018 7:00 PM	8.16
1/1/2018 7:15 PM	8.13	1/2/2018 7:15 PM	8.12	1/3/2018 7:15 PM	8.16
1/1/2018 7:30 PM	8.12	1/2/2018 7:30 PM	8.12	1/3/2018 7:30 PM	8.16
1/1/2018 7:45 PM	8.12	1/2/2018 7:45 PM	8.11	1/3/2018 7:45 PM	8.16
1/1/2018 8:00 PM	8.11	1/2/2018 8:00 PM	8.07	1/3/2018 8:00 PM	8.16
1/1/2018 8:15 PM	8.11	1/2/2018 8:15 PM	8.05	1/3/2018 8:15 PM	8.15
1/1/2018 8:30 PM	8.11	1/2/2018 8:30 PM	8.03	1/3/2018 8:30 PM	8.15
1/1/2018 8:45 PM	8.10	1/2/2018 8:45 PM	8.03	1/3/2018 8:45 PM	8.15
1/1/2018 9:00 PM	8.10	1/2/2018 9:00 PM	7.98	1/3/2018 9:00 PM	8.14
1/1/2018 9:15 PM	8.10	1/2/2018 9:15 PM	8.09	1/3/2018 9:15 PM	8.14
1/1/2018 9:30 PM	8.03	1/2/2018 9:30 PM	8.15	1/3/2018 9:30 PM	8.14
1/1/2018 9:45 PM	8.01	1/2/2018 9:45 PM	8.16	1/3/2018 9:45 PM	8.14
1/1/2018 10:00 PM	8.00	1/2/2018 10:00 PM	8.16	1/3/2018 10:00 PM	8.13
1/1/2018 10:15 PM	7.99	1/2/2018 10:15 PM	8.16	1/3/2018 10:15 PM	8.13
1/1/2018 10:30 PM	7.99	1/2/2018 10:30 PM	8.16	1/3/2018 10:30 PM	8.13
1/1/2018 10:45 PM	7.98	1/2/2018 10:45 PM	8.15	1/3/2018 10:45 PM	8.13
1/1/2018 11:00 PM	8.09	1/2/2018 11:00 PM	8.15	1/3/2018 11:00 PM	8.13
1/1/2018 11:15 PM	8.14	1/2/2018 11:15 PM	8.14	1/3/2018 11:15 PM	8.12
1/1/2018 11:30 PM	8.15	1/2/2018 11:30 PM	8.14	1/3/2018 11:30 PM	8.12
1/1/2018 11:45 PM	8.15	1/2/2018 11:45 PM	8.14	1/3/2018 11:45 PM	8.12
AVG	8.07	AVG	8.10	AVG	8.13

Note: Communications loss on 1/1/2018 at 12:30AM data for this time is not included in the average.

Date And Time	pH	Date And Time	pH	Date And Time	pH
1/4/2018 12:00 AM	8.12	1/5/2018 12:00 AM	8.24	1/6/2018 12:00 AM	8.25
1/4/2018 12:15 AM	8.11	1/5/2018 12:15 AM	8.24	1/6/2018 12:15 AM	8.24
1/4/2018 12:30 AM	8.11	1/5/2018 12:30 AM	8.23	1/6/2018 12:30 AM	8.18
1/4/2018 12:45 AM	8.11	1/5/2018 12:45 AM	8.23	1/6/2018 12:45 AM	8.14
1/4/2018 1:00 AM	8.11	1/5/2018 1:00 AM	8.23	1/6/2018 1:00 AM	8.13
1/4/2018 1:15 AM	8.11	1/5/2018 1:15 AM	8.22	1/6/2018 1:15 AM	8.13
1/4/2018 1:30 AM	8.10	1/5/2018 1:30 AM	8.22	1/6/2018 1:30 AM	8.12
1/4/2018 1:45 AM	8.10	1/5/2018 1:45 AM	8.22	1/6/2018 1:45 AM	8.12
1/4/2018 2:00 AM	8.10	1/5/2018 2:00 AM	8.15	1/6/2018 2:00 AM	8.12
1/4/2018 2:15 AM	8.10	1/5/2018 2:15 AM	8.12	1/6/2018 2:15 AM	8.22
1/4/2018 2:30 AM	8.09	1/5/2018 2:30 AM	8.10	1/6/2018 2:30 AM	8.27
1/4/2018 2:45 AM	8.09	1/5/2018 2:45 AM	8.10	1/6/2018 2:45 AM	8.28
1/4/2018 3:00 AM	8.09	1/5/2018 3:00 AM	8.10	1/6/2018 3:00 AM	8.28
1/4/2018 3:15 AM	8.09	1/5/2018 3:15 AM	8.10	1/6/2018 3:15 AM	8.28
1/4/2018 3:30 AM	8.11	1/5/2018 3:30 AM	8.12	1/6/2018 3:30 AM	8.27
1/4/2018 3:45 AM	8.10	1/5/2018 3:45 AM	8.21	1/6/2018 3:45 AM	8.27
1/4/2018 4:00 AM	8.08	1/5/2018 4:00 AM	8.25	1/6/2018 4:00 AM	8.26
1/4/2018 4:15 AM	8.07	1/5/2018 4:15 AM	8.26	1/6/2018 4:15 AM	8.26
1/4/2018 4:30 AM	8.06	1/5/2018 4:30 AM	8.26	1/6/2018 4:30 AM	8.26
1/4/2018 4:45 AM	8.06	1/5/2018 4:45 AM	8.25	1/6/2018 4:45 AM	8.25
1/4/2018 5:00 AM	8.04	1/5/2018 5:00 AM	8.25	1/6/2018 5:00 AM	8.19
1/4/2018 5:15 AM	8.12	1/5/2018 5:15 AM	8.24	1/6/2018 5:15 AM	8.15
1/4/2018 5:30 AM	8.16	1/5/2018 5:30 AM	8.24	1/6/2018 5:30 AM	8.14
1/4/2018 5:45 AM	8.17	1/5/2018 5:45 AM	8.23	1/6/2018 5:45 AM	8.14
1/4/2018 6:00 AM	8.18	1/5/2018 6:00 AM	8.23	1/6/2018 6:00 AM	8.13
1/4/2018 6:15 AM	8.18	1/5/2018 6:15 AM	8.23	1/6/2018 6:15 AM	8.13
1/4/2018 6:30 AM	8.17	1/5/2018 6:30 AM	8.16	1/6/2018 6:30 AM	8.15
1/4/2018 6:45 AM	8.17	1/5/2018 6:45 AM	8.13	1/6/2018 6:45 AM	8.24
1/4/2018 7:00 AM	8.17	1/5/2018 7:00 AM	8.11	1/6/2018 7:00 AM	8.28
1/4/2018 7:15 AM	8.17	1/5/2018 7:15 AM	8.11	1/6/2018 7:15 AM	8.29
1/4/2018 7:30 AM	8.16	1/5/2018 7:30 AM	8.11	1/6/2018 7:30 AM	8.29
1/4/2018 7:45 AM	8.16	1/5/2018 7:45 AM	8.21	1/6/2018 7:45 AM	8.28
1/4/2018 8:00 AM	8.16	1/5/2018 8:00 AM	8.25	1/6/2018 8:00 AM	8.27
1/4/2018 8:15 AM	8.10	1/5/2018 8:15 AM	8.26	1/6/2018 8:15 AM	8.26
1/4/2018 8:30 AM	8.08	1/5/2018 8:30 AM	8.25	1/6/2018 8:30 AM	8.26
1/4/2018 8:45 AM	8.07	1/5/2018 8:45 AM	8.25	1/6/2018 8:45 AM	8.25
1/4/2018 9:00 AM	8.06	1/5/2018 9:00 AM	8.24	1/6/2018 9:00 AM	8.25
1/4/2018 9:15 AM	8.06	1/5/2018 9:15 AM	8.23	1/6/2018 9:15 AM	8.24
1/4/2018 9:30 AM	8.02	1/5/2018 9:30 AM	8.23	1/6/2018 9:30 AM	8.18
1/4/2018 9:45 AM	8.13	1/5/2018 9:45 AM	8.23	1/6/2018 9:45 AM	8.15
1/4/2018 10:00 AM	8.19	1/5/2018 10:00 AM	8.22	1/6/2018 10:00 AM	8.13
1/4/2018 10:15 AM	8.20	1/5/2018 10:15 AM	8.22	1/6/2018 10:15 AM	8.13
1/4/2018 10:30 AM	8.21	1/5/2018 10:30 AM	8.22	1/6/2018 10:30 AM	8.13
1/4/2018 10:45 AM	8.20	1/5/2018 10:45 AM	8.22	1/6/2018 10:45 AM	8.06
1/4/2018 11:00 AM	8.20	1/5/2018 11:00 AM	8.22	1/6/2018 11:00 AM	8.19
1/4/2018 11:15 AM	8.19	1/5/2018 11:15 AM	8.22	1/6/2018 11:15 AM	8.26
1/4/2018 11:30 AM	8.19	1/5/2018 11:30 AM	8.21	1/6/2018 11:30 AM	8.27
1/4/2018 11:45 AM	8.19	1/5/2018 11:45 AM	8.21	1/6/2018 11:45 AM	8.28
1/4/2018 12:00 PM	8.18	1/5/2018 12:00 PM	8.20	1/6/2018 12:00 PM	8.27
1/4/2018 12:15 PM	8.18	1/5/2018 12:15 PM	8.20	1/6/2018 12:15 PM	8.27
1/4/2018 12:30 PM	8.16	1/5/2018 12:30 PM	8.20	1/6/2018 12:30 PM	8.26
1/4/2018 12:45 PM	8.10	1/5/2018 12:45 PM	8.20	1/6/2018 12:45 PM	8.26
1/4/2018 1:00 PM	8.08	1/5/2018 1:00 PM	8.20	1/6/2018 1:00 PM	8.26
1/4/2018 1:15 PM	8.07	1/5/2018 1:15 PM	8.20	1/6/2018 1:15 PM	8.25
1/4/2018 1:30 PM	8.07	1/5/2018 1:30 PM	8.20	1/6/2018 1:30 PM	8.25
1/4/2018 1:45 PM	8.06	1/5/2018 1:45 PM	8.20	1/6/2018 1:45 PM	8.24
1/4/2018 2:00 PM	8.04	1/5/2018 2:00 PM	8.19	1/6/2018 2:00 PM	8.18
1/4/2018 2:15 PM	8.15	1/5/2018 2:15 PM	8.19	1/6/2018 2:15 PM	8.15
1/4/2018 2:30 PM	8.20	1/5/2018 2:30 PM	8.20	1/6/2018 2:30 PM	8.14
1/4/2018 2:45 PM	8.22	1/5/2018 2:45 PM	8.20	1/6/2018 2:45 PM	8.14
1/4/2018 3:00 PM	8.22	1/5/2018 3:00 PM	8.20	1/6/2018 3:00 PM	8.14
1/4/2018 3:15 PM	8.22	1/5/2018 3:15 PM	8.19	1/6/2018 3:15 PM	8.13
1/4/2018 3:30 PM	8.21	1/5/2018 3:30 PM	8.15	1/6/2018 3:30 PM	8.18
1/4/2018 3:45 PM	8.20	1/5/2018 3:45 PM	8.13	1/6/2018 3:45 PM	8.25
1/4/2018 4:00 PM	8.20	1/5/2018 4:00 PM	8.11	1/6/2018 4:00 PM	8.28
1/4/2018 4:15 PM	8.20	1/5/2018 4:15 PM	8.11	1/6/2018 4:15 PM	8.28
1/4/2018 4:30 PM	8.19	1/5/2018 4:30 PM	8.04	1/6/2018 4:30 PM	8.28
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1/4/2018 6:30 PM	8.06	1/5/2018 6:30 PM	8.24	1/6/2018 6:30 PM	8.19
1/4/2018 6:45 PM	8.17	1/5/2018 6:45 PM	8.24	1/6/2018 6:45 PM	8.16
1/4/2018 7:00 PM	8.22	1/5/2018 7:00 PM	8.24	1/6/2018 7:00 PM	8.15

1/4/2018 7:15 PM	8.24	1/5/2018 7:15 PM	8.23	1/6/2018 7:15 PM	8.14
1/4/2018 7:30 PM	8.24	1/5/2018 7:30 PM	8.23	1/6/2018 7:30 PM	8.14
1/4/2018 7:45 PM	8.23	1/5/2018 7:45 PM	8.23	1/6/2018 7:45 PM	8.14
1/4/2018 8:00 PM	8.23	1/5/2018 8:00 PM	8.17	1/6/2018 8:00 PM	8.13
1/4/2018 8:15 PM	8.22	1/5/2018 8:15 PM	8.13	1/6/2018 8:15 PM	8.23
1/4/2018 8:30 PM	8.22	1/5/2018 8:30 PM	8.12	1/6/2018 8:30 PM	8.28
1/4/2018 8:45 PM	8.21	1/5/2018 8:45 PM	8.12	1/6/2018 8:45 PM	8.29
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1/4/2018 9:30 PM	8.14	1/5/2018 9:30 PM	8.11	1/6/2018 9:30 PM	8.29
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1/4/2018 10:00 PM	8.09	1/5/2018 10:00 PM	8.20	1/6/2018 10:00 PM	8.28
1/4/2018 10:15 PM	8.09	1/5/2018 10:15 PM	8.25	1/6/2018 10:15 PM	8.27
1/4/2018 10:30 PM	8.09	1/5/2018 10:30 PM	8.27	1/6/2018 10:30 PM	8.27
1/4/2018 10:45 PM	8.08	1/5/2018 10:45 PM	8.27	1/6/2018 10:45 PM	8.27
1/4/2018 11:00 PM	8.11	1/5/2018 11:00 PM	8.27	1/6/2018 11:00 PM	8.21
1/4/2018 11:15 PM	8.20	1/5/2018 11:15 PM	8.26	1/6/2018 11:15 PM	8.17
1/4/2018 11:30 PM	8.24	1/5/2018 11:30 PM	8.26	1/6/2018 11:30 PM	8.15
1/4/2018 11:45 PM	8.25	1/5/2018 11:45 PM	8.25	1/6/2018 11:45 PM	8.15
AVG	8.14	AVG	8.20	AVG	8.22

Date And Time	pH	Date And Time	pH	Date And Time	pH
1/7/2018 12:00 AM	8.14	1/8/2018 12:00 AM	8.29	1/9/2018 12:00 AM	8.22
1/7/2018 12:15 AM	8.11	1/8/2018 12:15 AM	8.28	1/9/2018 12:15 AM	8.21
1/7/2018 12:30 AM	8.22	1/8/2018 12:30 AM	8.28	1/9/2018 12:30 AM	8.21
1/7/2018 12:45 AM	8.28	1/8/2018 12:45 AM	8.27	1/9/2018 12:45 AM	8.20
1/7/2018 1:00 AM	8.30	1/8/2018 1:00 AM	8.27	1/9/2018 1:00 AM	8.20
1/7/2018 1:15 AM	8.30	1/8/2018 1:15 AM	8.26	1/9/2018 1:15 AM	8.20
1/7/2018 1:30 AM	8.30	1/8/2018 1:30 AM	8.26	1/9/2018 1:30 AM	8.19
1/7/2018 1:45 AM	8.29	1/8/2018 1:45 AM	8.25	1/9/2018 1:45 AM	8.19
1/7/2018 2:00 AM	8.29	1/8/2018 2:00 AM	8.21	1/9/2018 2:00 AM	8.19
1/7/2018 2:15 AM	8.29	1/8/2018 2:15 AM	8.18	1/9/2018 2:15 AM	8.18
1/7/2018 2:30 AM	8.28	1/8/2018 2:30 AM	8.17	1/9/2018 2:30 AM	8.18
1/7/2018 2:45 AM	8.28	1/8/2018 2:45 AM	8.15	1/9/2018 2:45 AM	8.17
1/7/2018 3:00 AM	8.27	1/8/2018 3:00 AM	8.15	1/9/2018 3:00 AM	8.17
1/7/2018 3:15 AM	8.23	1/8/2018 3:15 AM	8.15	1/9/2018 3:15 AM	8.17
1/7/2018 3:30 AM	8.18	1/8/2018 3:30 AM	8.17	1/9/2018 3:30 AM	8.17
1/7/2018 3:45 AM	8.17	1/8/2018 3:45 AM	8.25	1/9/2018 3:45 AM	8.16
1/7/2018 4:00 AM	8.16	1/8/2018 4:00 AM	8.28	1/9/2018 4:00 AM	8.16
1/7/2018 4:15 AM	8.17	1/8/2018 4:15 AM	8.29	1/9/2018 4:15 AM	8.16
1/7/2018 4:30 AM	8.26	1/8/2018 4:30 AM	8.29	1/9/2018 4:30 AM	8.15
1/7/2018 4:45 AM	8.30	1/8/2018 4:45 AM	8.28	1/9/2018 4:45 AM	8.15
1/7/2018 5:00 AM	8.31	1/8/2018 5:00 AM	8.28	1/9/2018 5:00 AM	8.21
1/7/2018 5:15 AM	8.31	1/8/2018 5:15 AM	8.27	1/9/2018 5:15 AM	8.20
1/7/2018 5:30 AM	8.21	1/8/2018 5:30 AM	8.27	1/9/2018 5:30 AM	8.18
1/7/2018 5:45 AM	8.18	1/8/2018 5:45 AM	8.26	1/9/2018 5:45 AM	8.16
1/7/2018 6:00 AM	8.17	1/8/2018 6:00 AM	8.26	1/9/2018 6:00 AM	8.10
1/7/2018 6:15 AM	8.21	1/8/2018 6:15 AM	8.26	1/9/2018 6:15 AM	8.18
1/7/2018 6:30 AM	8.29	1/8/2018 6:30 AM	8.26	1/9/2018 6:30 AM	8.21
1/7/2018 6:45 AM	8.31	1/8/2018 6:45 AM	8.19	1/9/2018 6:45 AM	8.23
1/7/2018 7:00 AM	8.32	1/8/2018 7:00 AM	8.17	1/9/2018 7:00 AM	8.23
1/7/2018 7:15 AM	8.32	1/8/2018 7:15 AM	8.16	1/9/2018 7:15 AM	8.23
1/7/2018 7:30 AM	8.31	1/8/2018 7:30 AM	8.15	1/9/2018 7:30 AM	8.23
1/7/2018 7:45 AM	8.31	1/8/2018 7:45 AM	8.15	1/9/2018 7:45 AM	8.23
1/7/2018 8:00 AM	8.30	1/8/2018 8:00 AM	8.09	1/9/2018 8:00 AM	8.22
1/7/2018 8:15 AM	8.31	1/8/2018 8:15 AM	8.20	1/9/2018 8:15 AM	8.22
1/7/2018 8:30 AM	8.19	1/8/2018 8:30 AM	8.26	1/9/2018 8:30 AM	8.21
1/7/2018 8:45 AM	8.17	1/8/2018 8:45 AM	8.28	1/9/2018 8:45 AM	8.21
1/7/2018 9:00 AM	8.15	1/8/2018 9:00 AM	8.28	1/9/2018 9:00 AM	8.20
1/7/2018 9:15 AM	8.15	1/8/2018 9:15 AM	8.28	1/9/2018 9:15 AM	8.24
1/7/2018 9:30 AM	8.19	1/8/2018 9:30 AM	8.27	1/9/2018 9:30 AM	8.17
1/7/2018 9:45 AM	8.26	1/8/2018 9:45 AM	8.27	1/9/2018 9:45 AM	8.14
1/7/2018 10:00 AM	8.21	1/8/2018 10:00 AM	8.26	1/9/2018 10:00 AM	8.13
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1/7/2018 10:30 AM	8.25	1/8/2018 10:30 AM	8.25	1/9/2018 10:30 AM	8.12
1/7/2018 10:45 AM	8.30	1/8/2018 10:45 AM	8.25	1/9/2018 10:45 AM	8.11
1/7/2018 11:00 AM	8.31	1/8/2018 11:00 AM	8.24	1/9/2018 11:00 AM	8.11
1/7/2018 11:15 AM	8.31	1/8/2018 11:15 AM	8.20	1/9/2018 11:15 AM	8.11
1/7/2018 11:30 AM	8.29	1/8/2018 11:30 AM	8.17	1/9/2018 11:30 AM	8.13
1/7/2018 11:45 AM	8.29	1/8/2018 11:45 AM	8.16	1/9/2018 11:45 AM	8.20
1/7/2018 12:00 PM	8.28	1/8/2018 12:00 PM	8.15	1/9/2018 12:00 PM	8.23
1/7/2018 12:15 PM	8.28	1/8/2018 12:15 PM	8.14	1/9/2018 12:15 PM	8.23
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1/7/2018 1:15 PM	8.25	1/8/2018 1:15 PM	8.27	1/9/2018 1:15 PM	8.22
1/7/2018 1:30 PM	8.25	1/8/2018 1:30 PM	8.27	1/9/2018 1:30 PM	8.21
1/7/2018 1:45 PM	8.24	1/8/2018 1:45 PM	8.27	1/9/2018 1:45 PM	8.18
1/7/2018 2:00 PM	8.23	1/8/2018 2:00 PM	8.26	1/9/2018 2:00 PM	8.15
1/7/2018 2:15 PM	8.23	1/8/2018 2:15 PM	8.26	1/9/2018 2:15 PM	8.14
1/7/2018 2:30 PM	8.23	1/8/2018 2:30 PM	8.25	1/9/2018 2:30 PM	8.13
1/7/2018 2:45 PM	8.22	1/8/2018 2:45 PM	8.25	1/9/2018 2:45 PM	8.11
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1/7/2018 3:15 PM	8.22	1/8/2018 3:15 PM	8.24	1/9/2018 3:15 PM	8.20
1/7/2018 3:30 PM	8.21	1/8/2018 3:30 PM	8.23	1/9/2018 3:30 PM	8.21
1/7/2018 3:45 PM	8.21	1/8/2018 3:45 PM	8.23	1/9/2018 3:45 PM	8.21
1/7/2018 4:00 PM	8.21	1/8/2018 4:00 PM	8.23	1/9/2018 4:00 PM	8.21
1/7/2018 4:15 PM	8.20	1/8/2018 4:15 PM	8.22	1/9/2018 4:15 PM	8.21
1/7/2018 4:30 PM	8.20	1/8/2018 4:30 PM	8.22	1/9/2018 4:30 PM	8.20
1/7/2018 4:45 PM	8.20	1/8/2018 4:45 PM	8.22	1/9/2018 4:45 PM	8.20
1/7/2018 5:00 PM	8.21	1/8/2018 5:00 PM	8.21	1/9/2018 5:00 PM	8.20
1/7/2018 5:15 PM	8.18	1/8/2018 5:15 PM	8.21	1/9/2018 5:15 PM	8.19
1/7/2018 5:30 PM	8.17	1/8/2018 5:30 PM	8.21	1/9/2018 5:30 PM	8.19
1/7/2018 5:45 PM	8.16	1/8/2018 5:45 PM	8.20	1/9/2018 5:45 PM	8.20
1/7/2018 6:00 PM	8.16	1/8/2018 6:00 PM	8.20	1/9/2018 6:00 PM	8.20
1/7/2018 6:15 PM	8.15	1/8/2018 6:15 PM	8.20	1/9/2018 6:15 PM	8.20
1/7/2018 6:30 PM	8.12	1/8/2018 6:30 PM	8.19	1/9/2018 6:30 PM	8.20
1/7/2018 6:45 PM	8.21	1/8/2018 6:45 PM	8.19	1/9/2018 6:45 PM	8.20
1/7/2018 7:00 PM	8.25	1/8/2018 7:00 PM	8.19	1/9/2018 7:00 PM	8.19

1/7/2018 7:15 PM	8.27	1/8/2018 7:15 PM	8.19	1/9/2018 7:15 PM	8.19
1/7/2018 7:30 PM	8.27	1/8/2018 7:30 PM	8.18	1/9/2018 7:30 PM	8.19
1/7/2018 7:45 PM	8.27	1/8/2018 7:45 PM	8.18	1/9/2018 7:45 PM	8.18
1/7/2018 8:00 PM	8.26	1/8/2018 8:00 PM	8.20	1/9/2018 8:00 PM	8.18
1/7/2018 8:15 PM	8.26	1/8/2018 8:15 PM	8.19	1/9/2018 8:15 PM	8.18
1/7/2018 8:30 PM	8.26	1/8/2018 8:30 PM	8.17	1/9/2018 8:30 PM	8.17
1/7/2018 8:45 PM	8.25	1/8/2018 8:45 PM	8.16	1/9/2018 8:45 PM	8.17
1/7/2018 9:00 PM	8.25	1/8/2018 9:00 PM	8.07	1/9/2018 9:00 PM	8.17
1/7/2018 9:15 PM	8.28	1/8/2018 9:15 PM	8.17	1/9/2018 9:15 PM	8.16
1/7/2018 9:30 PM	8.20	1/8/2018 9:30 PM	8.21	1/9/2018 9:30 PM	8.16
1/7/2018 9:45 PM	8.17	1/8/2018 9:45 PM	8.23	1/9/2018 9:45 PM	8.16
1/7/2018 10:00 PM	8.16	1/8/2018 10:00 PM	8.24	1/9/2018 10:00 PM	8.16
1/7/2018 10:15 PM	8.16	1/8/2018 10:15 PM	8.23	1/9/2018 10:15 PM	8.15
1/7/2018 10:30 PM	8.15	1/8/2018 10:30 PM	8.23	1/9/2018 10:30 PM	8.15
1/7/2018 10:45 PM	8.15	1/8/2018 10:45 PM	8.23	1/9/2018 10:45 PM	8.15
1/7/2018 11:00 PM	8.18	1/8/2018 11:00 PM	8.23	1/9/2018 11:00 PM	8.18
1/7/2018 11:15 PM	8.25	1/8/2018 11:15 PM	8.22	1/9/2018 11:15 PM	8.16
1/7/2018 11:30 PM	8.28	1/8/2018 11:30 PM	8.22	1/9/2018 11:30 PM	8.15
1/7/2018 11:45 PM	8.29	1/8/2018 11:45 PM	8.22	1/9/2018 11:45 PM	8.14
AVG	8.23	AVG	8.22	AVG	8.18

Date And Time	pH	Date And Time	pH	Date And Time	pH
1/10/2018 12:00 AM	8.13	1/11/2018 12:00 AM	8.11	1/12/2018 12:00 AM	8.07
1/10/2018 12:15 AM	8.12	1/11/2018 12:15 AM	8.11	1/12/2018 12:15 AM	8.06
1/10/2018 12:30 AM	8.13	1/11/2018 12:30 AM	8.11	1/12/2018 12:30 AM	8.07
1/10/2018 12:45 AM	8.19	1/11/2018 12:45 AM	8.10	1/12/2018 12:45 AM	8.07
1/10/2018 1:00 AM	8.21	1/11/2018 1:00 AM	8.10	1/12/2018 1:00 AM	8.08
1/10/2018 1:15 AM	8.22	1/11/2018 1:15 AM	8.10	1/12/2018 1:15 AM	8.08
1/10/2018 1:30 AM	8.22	1/11/2018 1:30 AM	8.10	1/12/2018 1:30 AM	8.07
1/10/2018 1:45 AM	8.22	1/11/2018 1:45 AM	8.09	1/12/2018 1:45 AM	8.06
1/10/2018 2:00 AM	8.22	1/11/2018 2:00 AM	8.15	1/12/2018 2:00 AM	8.06
1/10/2018 2:15 AM	8.22	1/11/2018 2:15 AM	8.14	1/12/2018 2:15 AM	8.05
1/10/2018 2:30 AM	8.21	1/11/2018 2:30 AM	8.12	1/12/2018 2:30 AM	8.05
1/10/2018 2:45 AM	8.21	1/11/2018 2:45 AM	8.11	1/12/2018 2:45 AM	8.05
1/10/2018 3:00 AM	8.20	1/11/2018 3:00 AM	8.08	1/12/2018 3:00 AM	8.05
1/10/2018 3:15 AM	8.23	1/11/2018 3:15 AM	8.08	1/12/2018 3:15 AM	8.05
1/10/2018 3:30 AM	8.16	1/11/2018 3:30 AM	8.07	1/12/2018 3:30 AM	8.06
1/10/2018 3:45 AM	8.14	1/11/2018 3:45 AM	8.13	1/12/2018 3:45 AM	8.12
1/10/2018 4:00 AM	8.13	1/11/2018 4:00 AM	8.16	1/12/2018 4:00 AM	8.04
1/10/2018 4:15 AM	8.12	1/11/2018 4:15 AM	8.17	1/12/2018 4:15 AM	8.02
1/10/2018 4:30 AM	8.08	1/11/2018 4:30 AM	8.17	1/12/2018 4:30 AM	8.00
1/10/2018 4:45 AM	8.17	1/11/2018 4:45 AM	8.17	1/12/2018 4:45 AM	7.99
1/10/2018 5:00 AM	8.21	1/11/2018 5:00 AM	8.16	1/12/2018 5:00 AM	7.98
1/10/2018 5:15 AM	8.23	1/11/2018 5:15 AM	8.16	1/12/2018 5:15 AM	7.97
1/10/2018 5:30 AM	8.24	1/11/2018 5:30 AM	8.15	1/12/2018 5:30 AM	7.96
1/10/2018 5:45 AM	8.23	1/11/2018 5:45 AM	8.15	1/12/2018 5:45 AM	7.95
1/10/2018 6:00 AM	8.23	1/11/2018 6:00 AM	8.15	1/12/2018 6:00 AM	8.05
1/10/2018 6:15 AM	8.22	1/11/2018 6:15 AM	8.15	1/12/2018 6:15 AM	8.09
1/10/2018 6:30 AM	8.22	1/11/2018 6:30 AM	8.15	1/12/2018 6:30 AM	8.11
1/10/2018 6:45 AM	8.21	1/11/2018 6:45 AM	8.14	1/12/2018 6:45 AM	8.11
1/10/2018 7:00 AM	8.21	1/11/2018 7:00 AM	8.14	1/12/2018 7:00 AM	8.10
1/10/2018 7:15 AM	8.21	1/11/2018 7:15 AM	8.14	1/12/2018 7:15 AM	8.09
1/10/2018 7:30 AM	8.20	1/11/2018 7:30 AM	8.13	1/12/2018 7:30 AM	8.08
1/10/2018 7:45 AM	8.24	1/11/2018 7:45 AM	8.13	1/12/2018 7:45 AM	8.07
1/10/2018 8:00 AM	8.15	1/11/2018 8:00 AM	8.13	1/12/2018 8:00 AM	8.06
1/10/2018 8:15 AM	8.13	1/11/2018 8:15 AM	8.12	1/12/2018 8:15 AM	8.05
1/10/2018 8:30 AM	8.11	1/11/2018 8:30 AM	8.12	1/12/2018 8:30 AM	8.05
1/10/2018 8:45 AM	8.11	1/11/2018 8:45 AM	8.12	1/12/2018 8:45 AM	8.04
1/10/2018 9:00 AM	8.04	1/11/2018 9:00 AM	8.11	1/12/2018 9:00 AM	8.03
1/10/2018 9:15 AM	8.14	1/11/2018 9:15 AM	8.11	1/12/2018 9:15 AM	8.03
1/10/2018 9:30 AM	8.20	1/11/2018 9:30 AM	8.11	1/12/2018 9:30 AM	8.03
1/10/2018 9:45 AM	8.22	1/11/2018 9:45 AM	8.10	1/12/2018 9:45 AM	8.03
1/10/2018 10:00 AM	8.22	1/11/2018 10:00 AM	8.10	1/12/2018 10:00 AM	8.04
1/10/2018 10:15 AM	8.22	1/11/2018 10:15 AM	8.09	1/12/2018 10:15 AM	8.07
1/10/2018 10:30 AM	8.21	1/11/2018 10:30 AM	8.09	1/12/2018 10:30 AM	8.07
1/10/2018 10:45 AM	8.21	1/11/2018 10:45 AM	8.09	1/12/2018 10:45 AM	8.06
1/10/2018 11:00 AM	8.21	1/11/2018 11:00 AM	8.08	1/12/2018 11:00 AM	8.04
1/10/2018 11:15 AM	8.20	1/11/2018 11:15 AM	8.07	1/12/2018 11:15 AM	8.03
1/10/2018 11:30 AM	8.19	1/11/2018 11:30 AM	8.07	1/12/2018 11:30 AM	8.03
1/10/2018 11:45 AM	8.19	1/11/2018 11:45 AM	8.09	1/12/2018 11:45 AM	8.04
1/10/2018 12:00 PM	8.19	1/11/2018 12:00 PM	8.10	1/12/2018 12:00 PM	8.03
1/10/2018 12:15 PM	8.18	1/11/2018 12:15 PM	8.10	1/12/2018 12:15 PM	8.02
1/10/2018 12:30 PM	8.15	1/11/2018 12:30 PM	8.10	1/12/2018 12:30 PM	8.00
1/10/2018 12:45 PM	8.12	1/11/2018 12:45 PM	8.09	1/12/2018 12:45 PM	8.00
1/10/2018 1:00 PM	8.10	1/11/2018 1:00 PM	8.07	1/12/2018 1:00 PM	8.06
1/10/2018 1:15 PM	8.09	1/11/2018 1:15 PM	8.07	1/12/2018 1:15 PM	8.04
1/10/2018 1:30 PM	8.00	1/11/2018 1:30 PM	8.12	1/12/2018 1:30 PM	8.02
1/10/2018 1:45 PM	8.11	1/11/2018 1:45 PM	8.13	1/12/2018 1:45 PM	7.98
1/10/2018 2:00 PM	8.16	1/11/2018 2:00 PM	8.02	1/12/2018 2:00 PM	7.95
1/10/2018 2:15 PM	8.18	1/11/2018 2:15 PM	8.02	1/12/2018 2:15 PM	7.94
1/10/2018 2:30 PM	8.18	1/11/2018 2:30 PM	8.03	1/12/2018 2:30 PM	7.93
1/10/2018 2:45 PM	8.18	1/11/2018 2:45 PM	8.11	1/12/2018 2:45 PM	7.93
1/10/2018 3:00 PM	8.18	1/11/2018 3:00 PM	8.09	1/12/2018 3:00 PM	7.84
1/10/2018 3:15 PM	8.18	1/11/2018 3:15 PM	8.07	1/12/2018 3:15 PM	7.96
1/10/2018 3:30 PM	8.17	1/11/2018 3:30 PM	8.05	1/12/2018 3:30 PM	8.04
1/10/2018 3:45 PM	8.17	1/11/2018 3:45 PM	8.04	1/12/2018 3:45 PM	8.06
1/10/2018 4:00 PM	8.16	1/11/2018 4:00 PM	8.02	1/12/2018 4:00 PM	8.07
1/10/2018 4:15 PM	8.15	1/11/2018 4:15 PM	8.02	1/12/2018 4:15 PM	8.06
1/10/2018 4:30 PM	8.15	1/11/2018 4:30 PM	8.01	1/12/2018 4:30 PM	8.06
1/10/2018 4:45 PM	8.14	1/11/2018 4:45 PM	8.01	1/12/2018 4:45 PM	8.05
1/10/2018 5:00 PM	8.14	1/11/2018 5:00 PM	8.03	1/12/2018 5:00 PM	8.00
1/10/2018 5:15 PM	8.12	1/11/2018 5:15 PM	8.08	1/12/2018 5:15 PM	7.99
1/10/2018 5:30 PM	8.10	1/11/2018 5:30 PM	8.10	1/12/2018 5:30 PM	7.97
1/10/2018 5:45 PM	8.09	1/11/2018 5:45 PM	8.10	1/12/2018 5:45 PM	7.96
1/10/2018 6:00 PM	8.09	1/11/2018 6:00 PM	8.10	1/12/2018 6:00 PM	7.93
1/10/2018 6:15 PM	8.08	1/11/2018 6:15 PM	8.10	1/12/2018 6:15 PM	8.01
1/10/2018 6:30 PM	8.08	1/11/2018 6:30 PM	8.10	1/12/2018 6:30 PM	8.04
1/10/2018 6:45 PM	8.15	1/11/2018 6:45 PM	8.11	1/12/2018 6:45 PM	8.05
1/10/2018 7:00 PM	8.18	1/11/2018 7:00 PM	8.05	1/12/2018 7:00 PM	8.05

1/10/2018 7:15 PM	8.19	1/11/2018 7:15 PM	8.03	1/12/2018 7:15 PM	8.04
1/10/2018 7:30 PM	8.19	1/11/2018 7:30 PM	8.08	1/12/2018 7:30 PM	8.03
1/10/2018 7:45 PM	8.18	1/11/2018 7:45 PM	8.10	1/12/2018 7:45 PM	8.02
1/10/2018 8:00 PM	8.18	1/11/2018 8:00 PM	8.10	1/12/2018 8:00 PM	8.01
1/10/2018 8:15 PM	8.18	1/11/2018 8:15 PM	8.10	1/12/2018 8:15 PM	8.01
1/10/2018 8:30 PM	8.17	1/11/2018 8:30 PM	8.10	1/12/2018 8:30 PM	8.00
1/10/2018 8:45 PM	8.17	1/11/2018 8:45 PM	8.09	1/12/2018 8:45 PM	7.99
1/10/2018 9:00 PM	8.17	1/11/2018 9:00 PM	8.09	1/12/2018 9:00 PM	7.99
1/10/2018 9:15 PM	8.16	1/11/2018 9:15 PM	8.09	1/12/2018 9:15 PM	7.98
1/10/2018 9:30 PM	8.15	1/11/2018 9:30 PM	8.09	1/12/2018 9:30 PM	7.97
1/10/2018 9:45 PM	8.15	1/11/2018 9:45 PM	8.09	1/12/2018 9:45 PM	7.98
1/10/2018 10:00 PM	8.14	1/11/2018 10:00 PM	8.08	1/12/2018 10:00 PM	7.96
1/10/2018 10:15 PM	8.14	1/11/2018 10:15 PM	8.08	1/12/2018 10:15 PM	7.95
1/10/2018 10:30 PM	8.14	1/11/2018 10:30 PM	8.07	1/12/2018 10:30 PM	7.93
1/10/2018 10:45 PM	8.13	1/11/2018 10:45 PM	8.07	1/12/2018 10:45 PM	7.92
1/10/2018 11:00 PM	8.13	1/11/2018 11:00 PM	8.07	1/12/2018 11:00 PM	7.91
1/10/2018 11:15 PM	8.13	1/11/2018 11:15 PM	8.07	1/12/2018 11:15 PM	7.91
1/10/2018 11:30 PM	8.12	1/11/2018 11:30 PM	8.07	1/12/2018 11:30 PM	7.89
1/10/2018 11:45 PM	8.12	1/11/2018 11:45 PM	8.07	1/12/2018 11:45 PM	7.98
AVG	8.17	AVG	8.10	AVG	8.02

Date And Time	pH	Date And Time	pH	Date And Time	pH
1/13/2018 12:00 AM	8.01	1/14/2018 12:00 AM	7.95	1/15/2018 12:00 AM	7.87
1/13/2018 12:15 AM	8.02	1/14/2018 12:15 AM	7.93	1/15/2018 12:15 AM	7.87
1/13/2018 12:30 AM	8.02	1/14/2018 12:30 AM	7.87	1/15/2018 12:30 AM	7.86
1/13/2018 12:45 AM	8.02	1/14/2018 12:45 AM	7.85	1/15/2018 12:45 AM	7.86
1/13/2018 1:00 AM	8.02	1/14/2018 1:00 AM	7.84	1/15/2018 1:00 AM	7.86
1/13/2018 1:15 AM	8.01	1/14/2018 1:15 AM	7.84	1/15/2018 1:15 AM	7.86
1/13/2018 1:30 AM	8.01	1/14/2018 1:30 AM	7.88	1/15/2018 1:30 AM	7.86
1/13/2018 1:45 AM	8.00	1/14/2018 1:45 AM	7.95	1/15/2018 1:45 AM	7.86
1/13/2018 2:00 AM	7.94	1/14/2018 2:00 AM	7.97	1/15/2018 2:00 AM	7.86
1/13/2018 2:15 AM	7.93	1/14/2018 2:15 AM	7.98	1/15/2018 2:15 AM	7.85
1/13/2018 2:30 AM	7.91	1/14/2018 2:30 AM	7.97	1/15/2018 2:30 AM	7.85
1/13/2018 2:45 AM	7.91	1/14/2018 2:45 AM	7.97	1/15/2018 2:45 AM	7.85
1/13/2018 3:00 AM	7.86	1/14/2018 3:00 AM	7.96	1/15/2018 3:00 AM	7.85
1/13/2018 3:15 AM	7.97	1/14/2018 3:15 AM	7.96	1/15/2018 3:15 AM	7.85
1/13/2018 3:30 AM	8.02	1/14/2018 3:30 AM	7.95	1/15/2018 3:30 AM	7.85
1/13/2018 3:45 AM	8.03	1/14/2018 3:45 AM	7.95	1/15/2018 3:45 AM	7.85
1/13/2018 4:00 AM	8.04	1/14/2018 4:00 AM	7.95	1/15/2018 4:00 AM	7.85
1/13/2018 4:15 AM	8.03	1/14/2018 4:15 AM	7.94	1/15/2018 4:15 AM	7.85
1/13/2018 4:30 AM	8.03	1/14/2018 4:30 AM	7.94	1/15/2018 4:30 AM	7.85
1/13/2018 4:45 AM	8.03	1/14/2018 4:45 AM	7.94	1/15/2018 4:45 AM	7.83
1/13/2018 5:00 AM	8.02	1/14/2018 5:00 AM	7.94	1/15/2018 5:00 AM	7.79
1/13/2018 5:15 AM	8.02	1/14/2018 5:15 AM	7.94	1/15/2018 5:15 AM	7.78
1/13/2018 5:30 AM	8.01	1/14/2018 5:30 AM	7.93	1/15/2018 5:30 AM	7.73
1/13/2018 5:45 AM	8.00	1/14/2018 5:45 AM	7.93	1/15/2018 5:45 AM	7.83
1/13/2018 6:00 AM	8.00	1/14/2018 6:00 AM	7.93	1/15/2018 6:00 AM	7.87
1/13/2018 6:15 AM	8.00	1/14/2018 6:15 AM	7.93	1/15/2018 6:15 AM	7.89
1/13/2018 6:30 AM	7.94	1/14/2018 6:30 AM	7.93	1/15/2018 6:30 AM	7.89
1/13/2018 6:45 AM	7.93	1/14/2018 6:45 AM	7.93	1/15/2018 6:45 AM	7.88
1/13/2018 7:00 AM	7.91	1/14/2018 7:00 AM	7.93	1/15/2018 7:00 AM	7.88
1/13/2018 7:15 AM	7.91	1/14/2018 7:15 AM	7.93	1/15/2018 7:15 AM	7.88
1/13/2018 7:30 AM	7.90	1/14/2018 7:30 AM	7.92	1/15/2018 7:30 AM	7.87
1/13/2018 7:45 AM	7.92	1/14/2018 7:45 AM	7.92	1/15/2018 7:45 AM	7.87
1/13/2018 8:00 AM	7.99	1/14/2018 8:00 AM	7.92	1/15/2018 8:00 AM	7.86
1/13/2018 8:15 AM	8.02	1/14/2018 8:15 AM	7.91	1/15/2018 8:15 AM	7.86
1/13/2018 8:30 AM	8.02	1/14/2018 8:30 AM	7.91	1/15/2018 8:30 AM	7.85
1/13/2018 8:45 AM	8.02	1/14/2018 8:45 AM	7.90	1/15/2018 8:45 AM	7.84
1/13/2018 9:00 AM	8.02	1/14/2018 9:00 AM	7.90	1/15/2018 9:00 AM	7.84
1/13/2018 9:15 AM	8.01	1/14/2018 9:15 AM	7.91	1/15/2018 9:15 AM	7.83
1/13/2018 9:30 AM	8.01	1/14/2018 9:30 AM	7.84	1/15/2018 9:30 AM	7.83
1/13/2018 9:45 AM	8.01	1/14/2018 9:45 AM	7.82	1/15/2018 9:45 AM	7.83
1/13/2018 10:00 AM	8.00	1/14/2018 10:00 AM	7.80	1/15/2018 10:00 AM	7.82
1/13/2018 10:15 AM	8.00	1/14/2018 10:15 AM	7.76	1/15/2018 10:15 AM	7.83
1/13/2018 10:30 AM	7.99	1/14/2018 10:30 AM	7.87	1/15/2018 10:30 AM	7.83
1/13/2018 10:45 AM	7.98	1/14/2018 10:45 AM	7.92	1/15/2018 10:45 AM	7.83
1/13/2018 11:00 AM	7.93	1/14/2018 11:00 AM	7.94	1/15/2018 11:00 AM	7.83
1/13/2018 11:15 AM	7.91	1/14/2018 11:15 AM	7.94	1/15/2018 11:15 AM	7.80
1/13/2018 11:30 AM	7.89	1/14/2018 11:30 AM	7.93	1/15/2018 11:30 AM	7.76
1/13/2018 11:45 AM	7.88	1/14/2018 11:45 AM	7.93	1/15/2018 11:45 AM	7.74
1/13/2018 12:00 PM	7.88	1/14/2018 12:00 PM	7.92	1/15/2018 12:00 PM	7.74
1/13/2018 12:15 PM	7.92	1/14/2018 12:15 PM	7.92	1/15/2018 12:15 PM	7.73
1/13/2018 12:30 PM	7.98	1/14/2018 12:30 PM	7.91	1/15/2018 12:30 PM	7.73
1/13/2018 12:45 PM	8.00	1/14/2018 12:45 PM	7.91	1/15/2018 12:45 PM	7.73
1/13/2018 1:00 PM	8.01	1/14/2018 1:00 PM	7.90	1/15/2018 1:00 PM	7.76
1/13/2018 1:15 PM	8.01	1/14/2018 1:15 PM	7.90	1/15/2018 1:15 PM	7.83
1/13/2018 1:30 PM	8.00	1/14/2018 1:30 PM	7.90	1/15/2018 1:30 PM	7.86
1/13/2018 1:45 PM	7.99	1/14/2018 1:45 PM	7.89	1/15/2018 1:45 PM	7.86
1/13/2018 2:00 PM	7.99	1/14/2018 2:00 PM	7.89	1/15/2018 2:00 PM	7.86
1/13/2018 2:15 PM	7.99	1/14/2018 2:15 PM	7.88	1/15/2018 2:15 PM	7.86
1/13/2018 2:30 PM	7.98	1/14/2018 2:30 PM	7.89	1/15/2018 2:30 PM	7.85
1/13/2018 2:45 PM	7.98	1/14/2018 2:45 PM	7.88	1/15/2018 2:45 PM	7.85
1/13/2018 3:00 PM	7.98	1/14/2018 3:00 PM	7.88	1/15/2018 3:00 PM	7.84
1/13/2018 3:15 PM	7.97	1/14/2018 3:15 PM	7.88	1/15/2018 3:15 PM	7.84
1/13/2018 3:30 PM	7.97	1/14/2018 3:30 PM	7.88	1/15/2018 3:30 PM	7.84
1/13/2018 3:45 PM	7.96	1/14/2018 3:45 PM	7.87	1/15/2018 3:45 PM	7.77
1/13/2018 4:00 PM	7.96	1/14/2018 4:00 PM	7.87	1/15/2018 4:00 PM	7.74
1/13/2018 4:15 PM	7.96	1/14/2018 4:15 PM	7.87	1/15/2018 4:15 PM	7.80
1/13/2018 4:30 PM	7.96	1/14/2018 4:30 PM	7.87	1/15/2018 4:30 PM	7.83
1/13/2018 4:45 PM	7.95	1/14/2018 4:45 PM	7.87	1/15/2018 4:45 PM	7.84
1/13/2018 5:00 PM	7.95	1/14/2018 5:00 PM	7.87	1/15/2018 5:00 PM	7.84
1/13/2018 5:15 PM	7.95	1/14/2018 5:15 PM	7.86	1/15/2018 5:15 PM	7.84
1/13/2018 5:30 PM	7.95	1/14/2018 5:30 PM	7.86	1/15/2018 5:30 PM	7.79
1/13/2018 5:45 PM	7.94	1/14/2018 5:45 PM	7.86	1/15/2018 5:45 PM	7.76
1/13/2018 6:00 PM	7.94	1/14/2018 6:00 PM	7.86	1/15/2018 6:00 PM	7.74
1/13/2018 6:15 PM	7.94	1/14/2018 6:15 PM	7.88	1/15/2018 6:15 PM	7.73
1/13/2018 6:30 PM	7.94	1/14/2018 6:30 PM	7.83	1/15/2018 6:30 PM	7.73
1/13/2018 6:45 PM	7.93	1/14/2018 6:45 PM	7.81	1/15/2018 6:45 PM	7.72
1/13/2018 7:00 PM	7.93	1/14/2018 7:00 PM	7.79	1/15/2018 7:00 PM	7.68

1/13/2018 7:15 PM	7.93	1/14/2018 7:15 PM	7.78	1/15/2018 7:15 PM	7.77
1/13/2018 7:30 PM	7.93	1/14/2018 7:30 PM	7.78	1/15/2018 7:30 PM	7.82
1/13/2018 7:45 PM	7.97	1/14/2018 7:45 PM	7.79	1/15/2018 7:45 PM	7.83
1/13/2018 8:00 PM	7.90	1/14/2018 8:00 PM	7.87	1/15/2018 8:00 PM	7.84
1/13/2018 8:15 PM	7.88	1/14/2018 8:15 PM	7.90	1/15/2018 8:15 PM	7.77
1/13/2018 8:30 PM	7.87	1/14/2018 8:30 PM	7.90	1/15/2018 8:30 PM	7.67
1/13/2018 8:45 PM	7.86	1/14/2018 8:45 PM	7.90	1/15/2018 8:45 PM	7.74
1/13/2018 9:00 PM	7.85	1/14/2018 9:00 PM	7.90	1/15/2018 9:00 PM	7.80
1/13/2018 9:15 PM	7.79	1/14/2018 9:15 PM	7.89	1/15/2018 9:15 PM	7.82
1/13/2018 9:30 PM	7.89	1/14/2018 9:30 PM	7.89	1/15/2018 9:30 PM	7.82
1/13/2018 9:45 PM	7.95	1/14/2018 9:45 PM	7.89	1/15/2018 9:45 PM	7.81
1/13/2018 10:00 PM	7.97	1/14/2018 10:00 PM	7.89	1/15/2018 10:00 PM	7.80
1/13/2018 10:15 PM	7.98	1/14/2018 10:15 PM	7.88	1/15/2018 10:15 PM	7.78
1/13/2018 10:30 PM	7.97	1/14/2018 10:30 PM	7.88	1/15/2018 10:30 PM	7.74
1/13/2018 10:45 PM	7.97	1/14/2018 10:45 PM	7.88	1/15/2018 10:45 PM	7.72
1/13/2018 11:00 PM	7.97	1/14/2018 11:00 PM	7.88	1/15/2018 11:00 PM	7.72
1/13/2018 11:15 PM	7.96	1/14/2018 11:15 PM	7.87	1/15/2018 11:15 PM	7.71
1/13/2018 11:30 PM	7.96	1/14/2018 11:30 PM	7.87	1/15/2018 11:30 PM	7.68
1/13/2018 11:45 PM	7.96	1/14/2018 11:45 PM	7.87	1/15/2018 11:45 PM	7.76
AVG	7.96	AVG	7.89	AVG	7.81

Date And Time	pH	Date And Time	pH	Date And Time	pH
1/16/2018 12:00 AM	7.79	1/17/2018 12:00 AM	7.60	1/18/2018 12:00 AM	7.31
1/16/2018 12:15 AM	7.80	1/17/2018 12:15 AM	7.60	1/18/2018 12:15 AM	7.30
1/16/2018 12:30 AM	7.83	1/17/2018 12:30 AM	7.59	1/18/2018 12:30 AM	7.29
1/16/2018 12:45 AM	7.76	1/17/2018 12:45 AM	7.58	1/18/2018 12:45 AM	7.28
1/16/2018 1:00 AM	7.73	1/17/2018 1:00 AM	7.57	1/18/2018 1:00 AM	7.27
1/16/2018 1:15 AM	7.68	1/17/2018 1:15 AM	7.55	1/18/2018 1:15 AM	7.27
1/16/2018 1:30 AM	7.75	1/17/2018 1:30 AM	7.54	1/18/2018 1:30 AM	7.26
1/16/2018 1:45 AM	7.79	1/17/2018 1:45 AM	7.53	1/18/2018 1:45 AM	7.24
1/16/2018 2:00 AM	7.80	1/17/2018 2:00 AM	7.52	1/18/2018 2:00 AM	7.24
1/16/2018 2:15 AM	7.80	1/17/2018 2:15 AM	7.51	1/18/2018 2:15 AM	7.23
1/16/2018 2:30 AM	7.79	1/17/2018 2:30 AM	7.50	1/18/2018 2:30 AM	7.22
1/16/2018 2:45 AM	7.77	1/17/2018 2:45 AM	7.48	1/18/2018 2:45 AM	7.21
1/16/2018 3:00 AM	7.77	1/17/2018 3:00 AM	7.47	1/18/2018 3:00 AM	7.20
1/16/2018 3:15 AM	7.76	1/17/2018 3:15 AM	7.66	1/18/2018 3:15 AM	7.19
1/16/2018 3:30 AM	7.76	1/17/2018 3:30 AM	7.63	1/18/2018 3:30 AM	7.19
1/16/2018 3:45 AM	7.74	1/17/2018 3:45 AM	7.61	1/18/2018 3:45 AM	7.18
1/16/2018 4:00 AM	7.74	1/17/2018 4:00 AM	7.60	1/18/2018 4:00 AM	7.17
1/16/2018 4:15 AM	7.74	1/17/2018 4:15 AM	7.59	1/18/2018 4:15 AM	7.16
1/16/2018 4:30 AM	7.73	1/17/2018 4:30 AM	7.59	1/18/2018 4:30 AM	7.16
1/16/2018 4:45 AM	7.73	1/17/2018 4:45 AM	7.58	1/18/2018 4:45 AM	7.15
1/16/2018 5:00 AM	7.72	1/17/2018 5:00 AM	7.58	1/18/2018 5:00 AM	7.14
1/16/2018 5:15 AM	7.72	1/17/2018 5:15 AM	7.50	1/18/2018 5:15 AM	7.14
1/16/2018 5:30 AM	7.71	1/17/2018 5:30 AM	7.55	1/18/2018 5:30 AM	7.13
1/16/2018 5:45 AM	7.71	1/17/2018 5:45 AM	7.59	1/18/2018 5:45 AM	7.12
1/16/2018 6:00 AM	7.71	1/17/2018 6:00 AM	7.61	1/18/2018 6:00 AM	7.11
1/16/2018 6:15 AM	7.70	1/17/2018 6:15 AM	7.61	1/18/2018 6:15 AM	7.11
1/16/2018 6:30 AM	7.70	1/17/2018 6:30 AM	7.59	1/18/2018 6:30 AM	7.11
1/16/2018 6:45 AM	7.69	1/17/2018 6:45 AM	7.58	1/18/2018 6:45 AM	7.10
1/16/2018 7:00 AM	7.69	1/17/2018 7:00 AM	7.56	1/18/2018 7:00 AM	7.09
1/16/2018 7:15 AM	7.69	1/17/2018 7:15 AM	7.54	1/18/2018 7:15 AM	7.09
1/16/2018 7:30 AM	7.69	1/17/2018 7:30 AM	7.53	1/18/2018 7:30 AM	7.09
1/16/2018 7:45 AM	7.69	1/17/2018 7:45 AM	7.52	1/18/2018 7:45 AM	7.08
1/16/2018 8:00 AM	7.68	1/17/2018 8:00 AM	7.50	1/18/2018 8:00 AM	7.07
1/16/2018 8:15 AM	7.68	1/17/2018 8:15 AM	7.49	1/18/2018 8:15 AM	7.07
1/16/2018 8:30 AM	7.68	1/17/2018 8:30 AM	7.48	1/18/2018 8:30 AM	7.06
1/16/2018 8:45 AM	7.67	1/17/2018 8:45 AM	7.47	1/18/2018 8:45 AM	7.06
1/16/2018 9:00 AM	7.67	1/17/2018 9:00 AM	7.46	1/18/2018 9:00 AM	7.05
1/16/2018 9:15 AM	7.79	1/17/2018 9:15 AM	7.60	1/18/2018 9:15 AM	7.05
1/16/2018 9:30 AM	7.72	1/17/2018 9:30 AM	7.57	1/18/2018 9:30 AM	7.04
1/16/2018 9:45 AM	7.70	1/17/2018 9:45 AM	7.56	1/18/2018 9:45 AM	7.04
1/16/2018 10:00 AM	7.62	1/17/2018 10:00 AM	7.55	1/18/2018 10:00 AM	7.03
1/16/2018 10:15 AM	7.68	1/17/2018 10:15 AM	7.51	1/18/2018 10:15 AM	7.02
1/16/2018 10:30 AM	7.70	1/17/2018 10:30 AM	7.56	1/18/2018 10:30 AM	7.02
1/16/2018 10:45 AM	7.72	1/17/2018 10:45 AM	7.57	1/18/2018 10:45 AM	7.02
1/16/2018 11:00 AM	7.71	1/17/2018 11:00 AM	7.57	1/18/2018 11:00 AM	7.02
1/16/2018 11:15 AM	7.69	1/17/2018 11:15 AM	7.56	1/18/2018 11:15 AM	7.00
1/16/2018 11:30 AM	7.69	1/17/2018 11:30 AM	7.54	1/18/2018 11:30 AM	7.00
1/16/2018 11:45 AM	7.70	1/17/2018 11:45 AM	7.52	1/18/2018 11:45 AM	6.99
1/16/2018 12:00 PM	7.69	1/17/2018 12:00 PM	7.51	1/18/2018 12:00 PM	7.42
1/16/2018 12:15 PM	7.75	1/17/2018 12:15 PM	7.49	1/18/2018 12:15 PM	7.44
1/16/2018 12:30 PM	7.69	1/17/2018 12:30 PM	7.61	1/18/2018 12:30 PM	7.43
1/16/2018 12:45 PM	7.68	1/17/2018 12:45 PM	7.53	1/18/2018 12:45 PM	7.41
1/16/2018 1:00 PM	7.66	1/17/2018 1:00 PM	7.55	1/18/2018 1:00 PM	7.40
1/16/2018 1:15 PM	7.65	1/17/2018 1:15 PM	7.55	1/18/2018 1:15 PM	7.39
1/16/2018 1:30 PM	7.65	1/17/2018 1:30 PM	7.54	1/18/2018 1:30 PM	7.38
1/16/2018 1:45 PM	7.64	1/17/2018 1:45 PM	7.53	1/18/2018 1:45 PM	7.38
1/16/2018 2:00 PM	7.64	1/17/2018 2:00 PM	7.52	1/18/2018 2:00 PM	7.32
1/16/2018 2:15 PM	7.58	1/17/2018 2:15 PM	7.50	1/18/2018 2:15 PM	7.44
1/16/2018 2:30 PM	7.65	1/17/2018 2:30 PM	7.49	1/18/2018 2:30 PM	7.42
1/16/2018 2:45 PM	7.68	1/17/2018 2:45 PM	7.48	1/18/2018 2:45 PM	7.40
1/16/2018 3:00 PM	7.68	1/17/2018 3:00 PM	7.46	1/18/2018 3:00 PM	7.39
1/16/2018 3:15 PM	7.68	1/17/2018 3:15 PM	7.45	1/18/2018 3:15 PM	7.38
1/16/2018 3:30 PM	7.67	1/17/2018 3:30 PM	7.44	1/18/2018 3:30 PM	7.38
1/16/2018 3:45 PM	7.66	1/17/2018 3:45 PM	7.42	1/18/2018 3:45 PM	7.38
1/16/2018 4:00 PM	7.71	1/17/2018 4:00 PM	7.41	1/18/2018 4:00 PM	7.37
1/16/2018 4:15 PM	7.66	1/17/2018 4:15 PM	7.40	1/18/2018 4:15 PM	7.35
1/16/2018 4:30 PM	7.65	1/17/2018 4:30 PM	7.39	1/18/2018 4:30 PM	7.37
1/16/2018 4:45 PM	7.56	1/17/2018 4:45 PM	7.58	1/18/2018 4:45 PM	7.36
1/16/2018 5:00 PM	7.60	1/17/2018 5:00 PM	7.55	1/18/2018 5:00 PM	7.35
1/16/2018 5:15 PM	7.65	1/17/2018 5:15 PM	7.53	1/18/2018 5:15 PM	7.33
1/16/2018 5:30 PM	7.66	1/17/2018 5:30 PM	7.53	1/18/2018 5:30 PM	7.32
1/16/2018 5:45 PM	7.66	1/17/2018 5:45 PM	7.45	1/18/2018 5:45 PM	7.37
1/16/2018 6:00 PM	7.65	1/17/2018 6:00 PM	7.50	1/18/2018 6:00 PM	7.41
1/16/2018 6:15 PM	7.64	1/17/2018 6:15 PM	7.54	1/18/2018 6:15 PM	7.38
1/16/2018 6:30 PM	7.72	1/17/2018 6:30 PM	7.59	1/18/2018 6:30 PM	7.37
1/16/2018 6:45 PM	7.66	1/17/2018 6:45 PM	7.55	1/18/2018 6:45 PM	7.36
1/16/2018 7:00 PM	7.58	1/17/2018 7:00 PM	7.49	1/18/2018 7:00 PM	7.35

1/16/2018 7:15 PM	7.61	1/17/2018 7:15 PM	7.53	1/18/2018 7:15 PM	7.34
1/16/2018 7:30 PM	7.64	1/17/2018 7:30 PM	7.55	1/18/2018 7:30 PM	7.34
1/16/2018 7:45 PM	7.65	1/17/2018 7:45 PM	7.55	1/18/2018 7:45 PM	7.31
1/16/2018 8:00 PM	7.65	1/17/2018 8:00 PM	7.53	1/18/2018 8:00 PM	7.35
1/16/2018 8:15 PM	7.63	1/17/2018 8:15 PM	7.51	1/18/2018 8:15 PM	7.38
1/16/2018 8:30 PM	7.62	1/17/2018 8:30 PM	7.49	1/18/2018 8:30 PM	7.36
1/16/2018 8:45 PM	7.61	1/17/2018 8:45 PM	7.48	1/18/2018 8:45 PM	7.30
1/16/2018 9:00 PM	7.59	1/17/2018 9:00 PM	7.46	1/18/2018 9:00 PM	7.35
1/16/2018 9:15 PM	7.58	1/17/2018 9:15 PM	7.44	1/18/2018 9:15 PM	7.37
1/16/2018 9:30 PM	7.57	1/17/2018 9:30 PM	7.43	1/18/2018 9:30 PM	7.34
1/16/2018 9:45 PM	7.56	1/17/2018 9:45 PM	7.42	1/18/2018 9:45 PM	7.31
1/16/2018 10:00 PM	7.54	1/17/2018 10:00 PM	7.40	1/18/2018 10:00 PM	7.29
1/16/2018 10:15 PM	7.53	1/17/2018 10:15 PM	7.39	1/18/2018 10:15 PM	7.25
1/16/2018 10:30 PM	7.52	1/17/2018 10:30 PM	7.38	1/18/2018 10:30 PM	7.25
1/16/2018 10:45 PM	7.69	1/17/2018 10:45 PM	7.37	1/18/2018 10:45 PM	7.23
1/16/2018 11:00 PM	7.64	1/17/2018 11:00 PM	7.35	1/18/2018 11:00 PM	7.21
1/16/2018 11:15 PM	7.63	1/17/2018 11:15 PM	7.34	1/18/2018 11:15 PM	7.19
1/16/2018 11:30 PM	7.55	1/17/2018 11:30 PM	7.33	1/18/2018 11:30 PM	7.17
1/16/2018 11:45 PM	7.59	1/17/2018 11:45 PM	7.32	1/18/2018 11:45 PM	7.16
AVG	7.68	AVG	7.51	AVG	7.24

Date And Time	pH	Date And Time	pH	Date And Time	pH
1/19/2018 12:00 AM	7.14	1/20/2018 12:00 AM	6.91	1/21/2018 12:00 AM	6.92
1/19/2018 12:15 AM	7.11	1/20/2018 12:15 AM	6.89	1/21/2018 12:15 AM	6.87
1/19/2018 12:30 AM	7.11	1/20/2018 12:30 AM	7.18	1/21/2018 12:30 AM	6.92
1/19/2018 12:45 AM	7.09	1/20/2018 12:45 AM	7.17	1/21/2018 12:45 AM	6.93
1/19/2018 1:00 AM	7.07	1/20/2018 1:00 AM	7.16	1/21/2018 1:00 AM	6.92
1/19/2018 1:15 AM	7.33	1/20/2018 1:15 AM	7.07	1/21/2018 1:15 AM	6.90
1/19/2018 1:30 AM	7.34	1/20/2018 1:30 AM	7.10	1/21/2018 1:30 AM	6.89
1/19/2018 1:45 AM	7.32	1/20/2018 1:45 AM	7.12	1/21/2018 1:45 AM	6.87
1/19/2018 2:00 AM	7.31	1/20/2018 2:00 AM	7.12	1/21/2018 2:00 AM	6.96
1/19/2018 2:15 AM	7.24	1/20/2018 2:15 AM	7.11	1/21/2018 2:15 AM	6.92
1/19/2018 2:30 AM	7.26	1/20/2018 2:30 AM	7.08	1/21/2018 2:30 AM	6.90
1/19/2018 2:45 AM	7.28	1/20/2018 2:45 AM	7.06	1/21/2018 2:45 AM	6.84
1/19/2018 3:00 AM	7.25	1/20/2018 3:00 AM	7.04	1/21/2018 3:00 AM	6.89
1/19/2018 3:15 AM	7.23	1/20/2018 3:15 AM	7.03	1/21/2018 3:15 AM	6.90
1/19/2018 3:30 AM	7.22	1/20/2018 3:30 AM	7.19	1/21/2018 3:30 AM	6.89
1/19/2018 3:45 AM	7.20	1/20/2018 3:45 AM	7.17	1/21/2018 3:45 AM	6.87
1/19/2018 4:00 AM	7.19	1/20/2018 4:00 AM	7.15	1/21/2018 4:00 AM	6.84
1/19/2018 4:15 AM	7.16	1/20/2018 4:15 AM	7.06	1/21/2018 4:15 AM	6.84
1/19/2018 4:30 AM	7.15	1/20/2018 4:30 AM	7.10	1/21/2018 4:30 AM	6.83
1/19/2018 4:45 AM	7.13	1/20/2018 4:45 AM	7.11	1/21/2018 4:45 AM	6.82
1/19/2018 5:00 AM	7.12	1/20/2018 5:00 AM	7.10	1/21/2018 5:00 AM	6.80
1/19/2018 5:15 AM	7.10	1/20/2018 5:15 AM	7.09	1/21/2018 5:15 AM	6.79
1/19/2018 5:30 AM	7.09	1/20/2018 5:30 AM	7.05	1/21/2018 5:30 AM	6.77
1/19/2018 5:45 AM	7.08	1/20/2018 5:45 AM	7.04	1/21/2018 5:45 AM	6.75
1/19/2018 6:00 AM	7.06	1/20/2018 6:00 AM	7.03	1/21/2018 6:00 AM	6.74
1/19/2018 6:15 AM	7.05	1/20/2018 6:15 AM	7.02	1/21/2018 6:15 AM	6.72
1/19/2018 6:30 AM	7.03	1/20/2018 6:30 AM	7.00	1/21/2018 6:30 AM	6.70
1/19/2018 6:45 AM	7.01	1/20/2018 6:45 AM	6.97	1/21/2018 6:45 AM	6.69
1/19/2018 7:00 AM	6.99	1/20/2018 7:00 AM	6.92	1/21/2018 7:00 AM	6.68
1/19/2018 7:15 AM	6.98	1/20/2018 7:15 AM	6.91	1/21/2018 7:15 AM	6.67
1/19/2018 7:30 AM	6.97	1/20/2018 7:30 AM	6.88	1/21/2018 7:30 AM	6.65
1/19/2018 7:45 AM	6.96	1/20/2018 7:45 AM	6.86	1/21/2018 7:45 AM	6.64
1/19/2018 8:00 AM	6.94	1/20/2018 8:00 AM	7.12	1/21/2018 8:00 AM	6.63
1/19/2018 8:15 AM	6.90	1/20/2018 8:15 AM	7.10	1/21/2018 8:15 AM	6.61
1/19/2018 8:30 AM	6.87	1/20/2018 8:30 AM	7.08	1/21/2018 8:30 AM	6.57
1/19/2018 8:45 AM	6.86	1/20/2018 8:45 AM	7.06	1/21/2018 8:45 AM	6.56
1/19/2018 9:00 AM	6.84	1/20/2018 9:00 AM	7.05	1/21/2018 9:05 AM	7.02
1/19/2018 9:15 AM	6.84	1/20/2018 9:15 AM	7.04	1/21/2018 9:15 AM	6.55
1/19/2018 9:30 AM	6.82	1/20/2018 9:30 AM	6.96	1/21/2018 9:30 AM	6.52
1/19/2018 9:45 AM	7.12	1/20/2018 9:45 AM	6.99	1/21/2018 9:45 AM	6.50
1/19/2018 10:00 AM	7.28	1/20/2018 10:00 AM	7.01	1/21/2018 10:00 AM	6.48
1/19/2018 10:15 AM	7.27	1/20/2018 10:15 AM	7.00	1/21/2018 10:15 AM	6.47
1/19/2018 10:30 AM	7.26	1/20/2018 10:30 AM	6.98	1/21/2018 10:30 AM	6.45
1/19/2018 10:45 AM	7.25	1/20/2018 10:45 AM	6.97	1/21/2018 10:45 AM	6.43
1/19/2018 11:00 AM	7.17	1/20/2018 11:00 AM	6.96	1/21/2018 11:00 AM	6.43
1/19/2018 11:15 AM	7.19	1/20/2018 11:15 AM	6.94	1/21/2018 11:15 AM	6.43
1/19/2018 11:30 AM	7.14	1/20/2018 11:30 AM	6.91	1/21/2018 11:30 AM	6.43
1/19/2018 11:45 AM	7.12	1/20/2018 11:45 AM	6.89	1/21/2018 11:45 AM	6.43
1/19/2018 12:00 PM	7.11	1/20/2018 12:00 PM	6.85	1/21/2018 12:00 PM	7.08
1/19/2018 12:15 PM	7.10	1/20/2018 12:15 PM	6.80	1/21/2018 12:15 PM	7.08
1/19/2018 12:30 PM	7.10	1/20/2018 12:30 PM	6.77	1/21/2018 12:30 PM	7.08
1/19/2018 12:45 PM	7.07	1/20/2018 12:45 PM	6.76	1/21/2018 12:45 PM	7.08
1/19/2018 1:00 PM	7.04	1/20/2018 1:00 PM	6.78	1/21/2018 1:00 PM	7.08
1/19/2018 1:15 PM	7.04	1/20/2018 1:15 PM	6.85	1/21/2018 1:15 PM	7.08
1/19/2018 1:30 PM	7.10	1/20/2018 1:30 PM	6.88	1/21/2018 1:30 PM	7.08
1/19/2018 1:45 PM	7.12	1/20/2018 1:45 PM	6.88	1/21/2018 1:45 PM	7.08

1/19/2018 2:00 PM	7.09	1/20/2018 2:00 PM	7.12	1/21/2018 2:00 PM	7.08
1/19/2018 2:15 PM	7.07	1/20/2018 2:15 PM	7.05	1/21/2018 2:15 PM	7.08
1/19/2018 2:30 PM	7.04	1/20/2018 2:30 PM	6.94	1/21/2018 2:30 PM	7.08
1/19/2018 2:45 PM	7.01	1/20/2018 2:45 PM	6.87	1/21/2018 2:45 PM	7.08
1/19/2018 3:00 PM	6.98	1/20/2018 3:00 PM	6.82	1/21/2018 3:00 PM	7.08
1/19/2018 3:15 PM	6.95	1/20/2018 3:15 PM	6.79	1/21/2018 3:15 PM	7.08
1/19/2018 3:30 PM	6.92	1/20/2018 3:30 PM	6.77	1/21/2018 3:30 PM	7.08
1/19/2018 3:45 PM	6.90	1/20/2018 3:45 PM	6.75	1/21/2018 3:45 PM	7.08
1/19/2018 4:00 PM	6.86	1/20/2018 4:00 PM	6.73	1/21/2018 4:00 PM	7.08
1/19/2018 4:15 PM	6.82	1/20/2018 4:15 PM	6.71	1/21/2018 4:15 PM	7.08
1/19/2018 4:30 PM	6.83	1/20/2018 4:30 PM	6.68	1/21/2018 4:30 PM	7.08
1/19/2018 4:45 PM	6.80	1/20/2018 4:45 PM	6.65	1/21/2018 4:45 PM	7.08
1/19/2018 5:00 PM	6.81	1/20/2018 5:00 PM	7.03	1/21/2018 5:00 PM	7.08
1/19/2018 5:15 PM	6.80	1/20/2018 5:15 PM	7.06	1/21/2018 5:15 PM	7.08
1/19/2018 5:30 PM	6.80	1/20/2018 5:30 PM	6.91	1/21/2018 5:30 PM	7.08
1/19/2018 5:45 PM	6.79	1/20/2018 5:45 PM	6.91	1/21/2018 5:45 PM	7.08
1/19/2018 6:00 PM	6.76	1/20/2018 6:00 PM	6.89	1/21/2018 6:00 PM	7.08
1/19/2018 6:15 PM	7.06	1/20/2018 6:15 PM	6.85	1/21/2018 6:15 PM	7.08
1/19/2018 6:30 PM	7.27	1/20/2018 6:30 PM	6.85	1/21/2018 6:30 PM	7.08
1/19/2018 6:45 PM	7.27	1/20/2018 6:45 PM	6.87	1/21/2018 6:45 PM	7.08
1/19/2018 7:00 PM	7.25	1/20/2018 7:00 PM	7.01	1/21/2018 7:00 PM	7.08
1/19/2018 7:15 PM	7.22	1/20/2018 7:15 PM	7.00	1/21/2018 7:15 PM	7.08
1/19/2018 7:30 PM	7.21	1/20/2018 7:30 PM	6.90	1/21/2018 7:30 PM	7.08
1/19/2018 7:45 PM	7.20	1/20/2018 7:45 PM	6.90	1/21/2018 7:45 PM	7.08
1/19/2018 8:00 PM	7.19	1/20/2018 8:00 PM	6.90	1/21/2018 8:00 PM	7.08
1/19/2018 8:15 PM	7.18	1/20/2018 8:15 PM	6.90	1/21/2018 8:15 PM	7.08
1/19/2018 8:30 PM	7.12	1/20/2018 8:30 PM	6.89	1/21/2018 8:30 PM	7.08
1/19/2018 8:45 PM	7.16	1/20/2018 8:45 PM	6.87	1/21/2018 8:45 PM	7.08
1/19/2018 9:00 PM	7.16	1/20/2018 9:00 PM	6.85	1/21/2018 9:00 PM	7.08
1/19/2018 9:15 PM	7.16	1/20/2018 9:15 PM	6.84	1/21/2018 9:15 PM	7.08
1/19/2018 9:30 PM	7.14	1/20/2018 9:30 PM	7.01	1/21/2018 9:30 PM	7.08
1/19/2018 9:45 PM	7.11	1/20/2018 9:45 PM	6.99	1/21/2018 9:45 PM	7.08
1/19/2018 10:00 PM	7.10	1/20/2018 10:00 PM	6.97	1/21/2018 10:00 PM	7.08
1/19/2018 10:15 PM	7.08	1/20/2018 10:15 PM	6.96	1/21/2018 10:15 PM	7.08
1/19/2018 10:30 PM	7.07	1/20/2018 10:30 PM	6.94	1/21/2018 10:30 PM	7.08
1/19/2018 10:45 PM	7.05	1/20/2018 10:45 PM	6.93	1/21/2018 10:45 PM	7.08
1/19/2018 11:00 PM	7.02	1/20/2018 11:00 PM	6.88	1/21/2018 11:00 PM	7.08
1/19/2018 11:15 PM	6.98	1/20/2018 11:15 PM	6.92	1/21/2018 11:15 PM	7.08
1/19/2018 11:30 PM	6.98	1/20/2018 11:30 PM	6.96	1/21/2018 11:30 PM	7.08
1/19/2018 11:45 PM	6.93	1/20/2018 11:45 PM	6.93	1/21/2018 11:45 PM	7.08
AVG	7.08	AVG	6.96	AVG	6.97

It should be noted that at approximately 8:30AM on 1/21/18 a low pH alarm condition was initiated. Effluent discharge from the GLTP was automatically terminated as programmed to occur. A pH grab sample was then taken that showed that the effluent pH was within acceptable limits (7.02) This grab sample showed that the pH probe was not reading correctly. During the period of low pH probe readings, effluent discharge was off-line and only resumed once the pH probe had been checked and calibrated, and the pH reading levels observed from the probe returned to within acceptable discharge values. Note that pH values below the discharge limit when the plant was not discharging, have not been included in the average. After the pH probe calibration, it was noted that the probe was reading correctly, but a slope error was causing the probe to only register larger fluctuations (.25-.35 pH point changes).This is why little to no change is seen from 1/21/18 at 12:00PM through 1/31/18 at 11:45PM. Manual readings were taken daily to spot check and verify discharge compliance and that probe was still operating within the discharge limits until a new probe could be installed. Due to the short shelf life of the site pH probes, a back-up was not readily available at this time and needed to be ordered. The new pH probe has since been installed. Measures are being taken to install a redundant pH probe as backup to prevent similar incidents in the future.

Date And Time	pH
1/22/2018 12:00 AM	7.08
1/22/2018 12:15 AM	7.08
1/22/2018 12:30 AM	7.08
1/22/2018 12:45 AM	7.08
1/22/2018 1:00 AM	7.08
1/22/2018 1:15 AM	7.08
1/22/2018 1:30 AM	7.08
1/22/2018 1:45 AM	7.08
1/22/2018 2:00 AM	7.08
1/22/2018 2:15 AM	7.08
1/22/2018 2:30 AM	7.08
1/22/2018 2:45 AM	7.08
1/22/2018 3:00 AM	7.08
1/22/2018 3:15 AM	7.08
1/22/2018 3:30 AM	7.08
1/22/2018 3:45 AM	7.08
1/22/2018 4:00 AM	7.08
1/22/2018 4:15 AM	7.08
1/22/2018 4:30 AM	7.08
1/22/2018 4:45 AM	7.08
1/22/2018 5:00 AM	7.08
1/22/2018 5:15 AM	7.08
1/22/2018 5:30 AM	7.08
1/22/2018 5:45 AM	7.08
1/22/2018 6:00 AM	7.08
1/22/2018 6:15 AM	7.08
1/22/2018 6:30 AM	7.08
1/22/2018 6:45 AM	7.08
1/22/2018 7:00 AM	7.08
1/22/2018 7:15 AM	7.08
1/22/2018 7:30 AM	7.78
1/22/2018 7:45 AM	7.08
1/22/2018 8:00 AM	7.08
1/22/2018 8:15 AM	7.08
1/22/2018 8:30 AM	7.08
1/22/2018 8:45 AM	7.08
1/22/2018 9:00 AM	7.08
1/22/2018 9:15 AM	7.08
1/22/2018 9:30 AM	7.08
1/22/2018 9:45 AM	7.08
1/22/2018 10:00 AM	7.08
1/22/2018 10:15 AM	7.08
1/22/2018 10:30 AM	7.08
1/22/2018 10:45 AM	7.08
1/22/2018 11:00 AM	7.08
1/22/2018 11:15 AM	7.08
1/22/2018 11:30 AM	7.08
1/22/2018 11:45 AM	7.08
1/22/2018 12:00 PM	7.08
1/22/2018 12:15 PM	7.08
1/22/2018 12:30 PM	7.08
1/22/2018 12:45 PM	7.08
1/22/2018 1:00 PM	7.08
1/22/2018 1:15 PM	7.08
1/22/2018 1:30 PM	7.08
1/22/2018 1:45 PM	7.08
1/22/2018 2:00 PM	7.08
1/22/2018 2:15 PM	7.08
1/22/2018 2:30 PM	7.08
1/22/2018 2:45 PM	7.08
1/22/2018 3:00 PM	7.08
1/22/2018 3:15 PM	7.08

Date And Time	pH
1/23/2018 12:00 AM	7.08
1/23/2018 12:15 AM	7.08
1/23/2018 12:30 AM	7.08
1/23/2018 12:45 AM	7.08
1/23/2018 1:00 AM	7.08
1/23/2018 1:15 AM	7.08
1/23/2018 1:30 AM	7.08
1/23/2018 1:45 AM	7.08
1/23/2018 2:00 AM	7.08
1/23/2018 2:15 AM	7.08
1/23/2018 2:30 AM	7.08
1/23/2018 2:45 AM	7.08
1/23/2018 3:00 AM	7.08
1/23/2018 3:15 AM	7.08
1/23/2018 3:30 AM	7.08
1/23/2018 3:45 AM	7.08
1/23/2018 4:00 AM	7.08
1/23/2018 4:15 AM	7.08
1/23/2018 4:30 AM	7.08
1/23/2018 4:45 AM	7.08
1/23/2018 5:00 AM	7.08
1/23/2018 5:15 AM	7.08
1/23/2018 5:30 AM	7.08
1/23/2018 5:45 AM	7.08
1/23/2018 6:00 AM	7.08
1/23/2018 6:15 AM	7.08
1/23/2018 6:30 AM	7.08
1/23/2018 6:45 AM	7.08
1/23/2018 7:00 AM	7.08
1/23/2018 7:15 AM	7.08
1/23/2018 7:30 AM	7.08
1/23/2018 7:45 AM	7.08
1/23/2018 8:00 AM	7.08
1/23/2018 8:15 AM	7.08
1/23/2018 8:30 AM	6.68
1/23/2018 8:45 AM	7.08
1/23/2018 9:00 AM	7.08
1/23/2018 9:15 AM	7.08
1/23/2018 9:30 AM	7.08
1/23/2018 9:45 AM	7.08
1/23/2018 10:00 AM	7.08
1/23/2018 10:15 AM	7.08
1/23/2018 10:30 AM	7.08
1/23/2018 10:45 AM	7.08
1/23/2018 11:00 AM	7.08
1/23/2018 11:15 AM	7.08
1/23/2018 11:30 AM	7.08
1/23/2018 11:45 AM	7.08
1/23/2018 12:00 PM	7.08
1/23/2018 12:15 PM	7.08
1/23/2018 12:30 PM	7.08
1/23/2018 12:45 PM	7.08
1/23/2018 1:00 PM	7.08
1/23/2018 1:15 PM	7.08
1/23/2018 1:30 PM	7.08
1/23/2018 1:45 PM	7.08
1/23/2018 2:00 PM	7.08
1/23/2018 2:15 PM	7.08
1/23/2018 2:30 PM	7.08
1/23/2018 2:45 PM	7.08
1/23/2018 3:00 PM	7.08
1/23/2018 3:15 PM	7.08

Date And Time	pH
1/24/2018 12:00 AM	7.08
1/24/2018 12:15 AM	7.08
1/24/2018 12:30 AM	7.08
1/24/2018 12:45 AM	7.08
1/24/2018 1:00 AM	7.08
1/24/2018 1:15 AM	7.08
1/24/2018 1:30 AM	7.08
1/24/2018 1:45 AM	7.08
1/24/2018 2:00 AM	7.08
1/24/2018 2:15 AM	7.08
1/24/2018 2:30 AM	7.08
1/24/2018 2:45 AM	7.08
1/24/2018 3:00 AM	7.08
1/24/2018 3:15 AM	7.08
1/24/2018 3:30 AM	7.08
1/24/2018 3:45 AM	7.08
1/24/2018 4:00 AM	7.08
1/24/2018 4:15 AM	7.08
1/24/2018 4:30 AM	7.08
1/24/2018 4:45 AM	7.08
1/24/2018 5:00 AM	7.08
1/24/2018 5:15 AM	7.08
1/24/2018 5:30 AM	7.08
1/24/2018 5:45 AM	7.08
1/24/2018 6:00 AM	7.08
1/24/2018 6:15 AM	7.08
1/24/2018 6:30 AM	7.08
1/24/2018 6:45 AM	7.08
1/24/2018 7:00 AM	7.08
1/24/2018 7:15 AM	7.08
1/24/2018 7:30 AM	7.08
1/24/2018 7:45 AM	7.08
1/24/2018 8:00 AM	7.73
1/24/2018 8:15 AM	7.08
1/24/2018 8:30 AM	7.08
1/24/2018 8:45 AM	7.08
1/24/2018 9:00 AM	7.08
1/24/2018 9:15 AM	7.08
1/24/2018 9:30 AM	7.08
1/24/2018 9:45 AM	7.08
1/24/2018 10:00 AM	7.08
1/24/2018 10:15 AM	7.08
1/24/2018 10:30 AM	7.08
1/24/2018 10:45 AM	7.08
1/24/2018 11:00 AM	7.08
1/24/2018 11:15 AM	7.08
1/24/2018 11:30 AM	7.08
1/24/2018 11:45 AM	7.08
1/24/2018 12:00 PM	7.08
1/24/2018 12:15 PM	7.08
1/24/2018 12:30 PM	7.08
1/24/2018 12:45 PM	7.08
1/24/2018 1:00 PM	7.08
1/24/2018 1:15 PM	7.26
1/24/2018 1:30 PM	7.77
1/24/2018 1:45 PM	7.77
1/24/2018 2:00 PM	7.77
1/24/2018 2:15 PM	7.77
1/24/2018 2:30 PM	7.77
1/24/2018 2:45 PM	7.77
1/24/2018 3:00 PM	7.77
1/24/2018 3:15 PM	7.77

1/22/2018 3:30 PM	7.08	1/23/2018 3:30 PM	7.08	1/24/2018 3:30 PM	7.77
1/22/2018 3:45 PM	7.08	1/23/2018 3:45 PM	7.08	1/24/2018 3:45 PM	7.77
1/22/2018 4:00 PM	7.08	1/23/2018 4:00 PM	7.08	1/24/2018 4:00 PM	7.77
1/22/2018 4:15 PM	7.08	1/23/2018 4:15 PM	7.08	1/24/2018 4:15 PM	7.77
1/22/2018 4:30 PM	7.08	1/23/2018 4:30 PM	7.08	1/24/2018 4:30 PM	7.77
1/22/2018 4:45 PM	7.08	1/23/2018 4:45 PM	7.08	1/24/2018 4:45 PM	7.77
1/22/2018 5:00 PM	7.08	1/23/2018 5:00 PM	7.08	1/24/2018 5:00 PM	7.77
1/22/2018 5:15 PM	7.08	1/23/2018 5:15 PM	7.08	1/24/2018 5:15 PM	7.77
1/22/2018 5:30 PM	7.08	1/23/2018 5:30 PM	7.08	1/24/2018 5:30 PM	7.77
1/22/2018 5:45 PM	7.08	1/23/2018 5:45 PM	7.08	1/24/2018 5:45 PM	7.77
1/22/2018 6:00 PM	7.08	1/23/2018 6:00 PM	7.08	1/24/2018 6:00 PM	7.77
1/22/2018 6:15 PM	7.08	1/23/2018 6:15 PM	7.08	1/24/2018 6:15 PM	7.77
1/22/2018 6:30 PM	7.08	1/23/2018 6:30 PM	7.08	1/24/2018 6:30 PM	7.77
1/22/2018 6:45 PM	7.08	1/23/2018 6:45 PM	7.08	1/24/2018 6:45 PM	7.77
1/22/2018 7:00 PM	7.08	1/23/2018 7:00 PM	7.08	1/24/2018 7:00 PM	7.77
1/22/2018 7:15 PM	7.08	1/23/2018 7:15 PM	7.08	1/24/2018 7:15 PM	7.77
1/22/2018 7:30 PM	7.08	1/23/2018 7:30 PM	7.08	1/24/2018 7:30 PM	7.77
1/22/2018 7:45 PM	7.08	1/23/2018 7:45 PM	7.08	1/24/2018 7:45 PM	7.77
1/22/2018 8:00 PM	7.08	1/23/2018 8:00 PM	7.08	1/24/2018 8:00 PM	7.77
1/22/2018 8:15 PM	7.08	1/23/2018 8:15 PM	7.08	1/24/2018 8:15 PM	7.77
1/22/2018 8:30 PM	7.08	1/23/2018 8:30 PM	7.08	1/24/2018 8:30 PM	7.77
1/22/2018 8:45 PM	7.08	1/23/2018 8:45 PM	7.08	1/24/2018 8:45 PM	7.77
1/22/2018 9:00 PM	7.08	1/23/2018 9:00 PM	7.08	1/24/2018 9:00 PM	7.77
1/22/2018 9:15 PM	7.08	1/23/2018 9:15 PM	7.08	1/24/2018 9:15 PM	7.77
1/22/2018 9:30 PM	7.08	1/23/2018 9:30 PM	7.08	1/24/2018 9:30 PM	7.77
1/22/2018 9:45 PM	7.08	1/23/2018 9:45 PM	7.08	1/24/2018 9:45 PM	7.77
1/22/2018 10:00 PM	7.08	1/23/2018 10:00 PM	7.08	1/24/2018 10:00 PM	7.77
1/22/2018 10:15 PM	7.08	1/23/2018 10:15 PM	7.08	1/24/2018 10:15 PM	7.77
1/22/2018 10:30 PM	7.08	1/23/2018 10:30 PM	7.08	1/24/2018 10:30 PM	7.77
1/22/2018 10:45 PM	7.08	1/23/2018 10:45 PM	7.08	1/24/2018 10:45 PM	7.77
1/22/2018 11:00 PM	7.08	1/23/2018 11:00 PM	7.08	1/24/2018 11:00 PM	7.77
1/22/2018 11:15 PM	7.08	1/23/2018 11:15 PM	7.08	1/24/2018 11:15 PM	7.77
1/22/2018 11:30 PM	7.08	1/23/2018 11:30 PM	7.08	1/24/2018 11:30 PM	7.77
1/22/2018 11:45 PM	7.08	1/23/2018 11:45 PM	7.08	1/24/2018 11:45 PM	7.77
AVG	7.09	AVG	7.08	AVG	7.39

It should be noted that at approximately 8:30AM on 1/21/18 a low pH alarm condition was initiated. Effluent discharge from the GLTP was automatically terminated as programmed to occur. A pH grab sample was then taken that showed that the effluent pH was within acceptable limits (7.02) This grab sample showed that the pH probe was not reading correctly. During the period of low pH probe readings, effluent discharge was off-line and only resumed once the pH probe had been checked and calibrated, and the pH reading levels observed from the probe returned to within acceptable discharge values. Note that pH values below the discharge limit when the plant was not discharging, have not been included in the average. After the pH probe calibration, it was noted that the probe was reading correctly, but a slope error was causing the probe to only register larger fluctuations (.25-.35 pH point changes).This is why little to no change is seen from 1/21/18 at 12:00PM through 1/31/18 at 11:45PM. Manual readings were taken daily to spot check and verify discharge compliance and that probe was still operating within the discharge limits until a new probe could be installed. Due to the short shelf life of the site pH probes, a back-up was not readily available at this time and needed to be ordered. The new pH probe has since been installed. Measures are being taken to install a redundant pH probe as backup to prevent similar incidents in the future.

Date And Time	pH	Date And Time	pH	Date And Time	pH
1/25/2018 12:00 AM	7.77	1/26/2018 12:00 AM	7.77	1/27/2018 12:00 AM	7.77
1/25/2018 12:15 AM	7.77	1/26/2018 12:15 AM	7.77	1/27/2018 12:15 AM	7.77
1/25/2018 12:30 AM	7.77	1/26/2018 12:30 AM	7.77	1/27/2018 12:30 AM	7.77
1/25/2018 12:45 AM	7.77	1/26/2018 12:45 AM	7.77	1/27/2018 12:45 AM	7.77
1/25/2018 1:00 AM	7.77	1/26/2018 1:00 AM	7.77	1/27/2018 1:00 AM	7.77
1/25/2018 1:15 AM	7.77	1/26/2018 1:15 AM	7.77	1/27/2018 1:15 AM	7.77
1/25/2018 1:30 AM	7.77	1/26/2018 1:30 AM	7.77	1/27/2018 1:30 AM	7.77
1/25/2018 1:45 AM	7.77	1/26/2018 1:45 AM	7.77	1/27/2018 1:45 AM	7.77
1/25/2018 2:00 AM	7.77	1/26/2018 2:00 AM	7.77	1/27/2018 2:00 AM	7.77
1/25/2018 2:15 AM	7.77	1/26/2018 2:15 AM	7.77	1/27/2018 2:15 AM	7.77
1/25/2018 2:30 AM	7.77	1/26/2018 2:30 AM	7.77	1/27/2018 2:30 AM	7.77
1/25/2018 2:45 AM	7.77	1/26/2018 2:45 AM	7.77	1/27/2018 2:45 AM	7.77
1/25/2018 3:00 AM	7.77	1/26/2018 3:00 AM	7.77	1/27/2018 3:00 AM	7.77
1/25/2018 3:15 AM	7.77	1/26/2018 3:15 AM	7.77	1/27/2018 3:15 AM	7.77
1/25/2018 3:30 AM	7.77	1/26/2018 3:30 AM	7.77	1/27/2018 3:30 AM	7.77
1/25/2018 3:45 AM	7.77	1/26/2018 3:45 AM	7.77	1/27/2018 3:45 AM	7.77
1/25/2018 4:00 AM	7.77	1/26/2018 4:00 AM	7.77	1/27/2018 4:00 AM	7.77
1/25/2018 4:15 AM	7.77	1/26/2018 4:15 AM	7.77	1/27/2018 4:15 AM	7.77
1/25/2018 4:30 AM	7.77	1/26/2018 4:30 AM	7.77	1/27/2018 4:30 AM	7.77
1/25/2018 4:45 AM	7.77	1/26/2018 4:45 AM	7.77	1/27/2018 4:45 AM	7.77
1/25/2018 5:00 AM	7.77	1/26/2018 5:00 AM	7.77	1/27/2018 5:00 AM	7.77
1/25/2018 5:15 AM	7.77	1/26/2018 5:15 AM	7.77	1/27/2018 5:15 AM	7.77
1/25/2018 5:30 AM	7.77	1/26/2018 5:30 AM	7.77	1/27/2018 5:30 AM	7.77
1/25/2018 5:45 AM	7.77	1/26/2018 5:45 AM	7.77	1/27/2018 5:45 AM	7.77
1/25/2018 6:00 AM	7.77	1/26/2018 6:00 AM	7.77	1/27/2018 6:00 AM	7.77
1/25/2018 6:15 AM	7.77	1/26/2018 6:15 AM	7.77	1/27/2018 6:15 AM	7.77
1/25/2018 6:30 AM	7.77	1/26/2018 6:30 AM	7.77	1/27/2018 6:30 AM	7.77
1/25/2018 6:45 AM	7.77	1/26/2018 6:45 AM	7.77	1/27/2018 6:45 AM	7.77
1/25/2018 7:00 AM	7.77	1/26/2018 7:00 AM	7.11	1/27/2018 7:00 AM	7.77
1/25/2018 7:15 AM	7.77	1/26/2018 7:15 AM	7.77	1/27/2018 7:15 AM	7.77
1/25/2018 7:30 AM	7.77	1/26/2018 7:30 AM	7.77	1/27/2018 7:30 AM	7.77
1/25/2018 7:45 AM	7.77	1/26/2018 7:45 AM	7.77	1/27/2018 7:45 AM	7.77
1/25/2018 8:00 AM	7.77	1/26/2018 8:00 AM	7.77	1/27/2018 8:00 AM	7.77
1/25/2018 8:15 AM	7.77	1/26/2018 8:15 AM	7.77	1/27/2018 8:15 AM	7.77
1/25/2018 8:30 AM	7.77	1/26/2018 8:30 AM	7.77	1/27/2018 8:30 AM	7.77
1/25/2018 8:45 AM	7.77	1/26/2018 8:45 AM	7.77	1/27/2018 8:45 AM	7.77
1/25/2018 9:00 AM	7.09	1/26/2018 9:00 AM	7.77	1/27/2018 9:00 AM	7.77
1/25/2018 9:15 AM	7.77	1/26/2018 9:15 AM	7.77	1/27/2018 9:15 AM	7.77
1/25/2018 9:30 AM	7.77	1/26/2018 9:30 AM	7.77	1/27/2018 9:30 AM	7.77
1/25/2018 9:45 AM	7.77	1/26/2018 9:45 AM	7.77	1/27/2018 9:45 AM	7.77
1/25/2018 10:00 AM	7.77	1/26/2018 10:00 AM	7.77	1/27/2018 10:00 AM	7.77
1/25/2018 10:15 AM	7.77	1/26/2018 10:15 AM	7.77	1/27/2018 10:15 AM	7.77
1/25/2018 10:30 AM	7.77	1/26/2018 10:30 AM	7.77	1/27/2018 10:30 AM	7.77
1/25/2018 10:45 AM	7.77	1/26/2018 10:45 AM	7.77	1/27/2018 10:45 AM	7.77
1/25/2018 11:00 AM	7.77	1/26/2018 11:00 AM	7.77	1/27/2018 11:00 AM	7.77
1/25/2018 11:15 AM	7.77	1/26/2018 11:15 AM	7.77	1/27/2018 11:15 AM	7.77
1/25/2018 11:30 AM	7.77	1/26/2018 11:30 AM	7.77	1/27/2018 11:30 AM	7.77
1/25/2018 11:45 AM	7.77	1/26/2018 11:45 AM	7.77	1/27/2018 11:45 AM	7.77
1/25/2018 12:00 PM	7.77	1/26/2018 12:00 PM	7.77	1/27/2018 12:00 PM	7.77
1/25/2018 12:15 PM	7.77	1/26/2018 12:15 PM	7.77	1/27/2018 12:15 PM	7.77
1/25/2018 12:30 PM	7.77	1/26/2018 12:30 PM	7.77	1/27/2018 12:30 PM	7.77
1/25/2018 12:45 PM	7.77	1/26/2018 12:45 PM	7.77	1/27/2018 12:45 PM	7.77
1/25/2018 1:00 PM	7.77	1/26/2018 1:00 PM	7.77	1/27/2018 1:00 PM	7.77
1/25/2018 1:15 PM	7.77	1/26/2018 1:15 PM	7.77	1/27/2018 1:15 PM	7.77
1/25/2018 1:30 PM	7.77	1/26/2018 1:30 PM	7.77	1/27/2018 1:30 PM	7.77
1/25/2018 1:45 PM	7.77	1/26/2018 1:45 PM	7.77	1/27/2018 1:45 PM	7.77
1/25/2018 2:00 PM	7.77	1/26/2018 2:00 PM	7.77	1/27/2018 2:00 PM	7.77
1/25/2018 2:15 PM	7.77	1/26/2018 2:15 PM	7.77	1/27/2018 2:15 PM	7.77
1/25/2018 2:30 PM	7.77	1/26/2018 2:30 PM	7.77	1/27/2018 2:30 PM	7.77
1/25/2018 2:45 PM	7.77	1/26/2018 2:45 PM	7.77	1/27/2018 2:45 PM	7.77
1/25/2018 3:00 PM	7.77	1/26/2018 3:00 PM	7.77	1/27/2018 3:00 PM	7.77
1/25/2018 3:15 PM	7.77	1/26/2018 3:15 PM	7.77	1/27/2018 3:15 PM	7.77
1/25/2018 3:30 PM	7.77	1/26/2018 3:30 PM	7.77	1/27/2018 3:30 PM	7.77
1/25/2018 3:45 PM	7.77	1/26/2018 3:45 PM	7.77	1/27/2018 3:45 PM	7.77
1/25/2018 4:00 PM	7.77	1/26/2018 4:00 PM	7.77	1/27/2018 4:00 PM	7.77
1/25/2018 4:15 PM	7.77	1/26/2018 4:15 PM	7.77	1/27/2018 4:15 PM	7.77
1/25/2018 4:30 PM	7.77	1/26/2018 4:30 PM	7.77	1/27/2018 4:30 PM	7.77
1/25/2018 4:45 PM	7.77	1/26/2018 4:45 PM	7.77	1/27/2018 4:45 PM	7.77
1/25/2018 5:00 PM	7.77	1/26/2018 5:00 PM	7.77	1/27/2018 5:00 PM	7.77
1/25/2018 5:15 PM	7.77	1/26/2018 5:15 PM	7.77	1/27/2018 5:15 PM	7.77
1/25/2018 5:30 PM	7.77	1/26/2018 5:30 PM	7.77	1/27/2018 5:30 PM	7.77
1/25/2018 5:45 PM	7.77	1/26/2018 5:45 PM	7.77	1/27/2018 5:45 PM	7.77
1/25/2018 6:00 PM	7.77	1/26/2018 6:00 PM	7.77	1/27/2018 6:00 PM	7.77
1/25/2018 6:15 PM	7.77	1/26/2018 6:15 PM	7.77	1/27/2018 6:15 PM	7.77
1/25/2018 6:30 PM	7.77	1/26/2018 6:30 PM	7.77	1/27/2018 6:30 PM	7.77
1/25/2018 6:45 PM	7.77	1/26/2018 6:45 PM	7.77	1/27/2018 6:45 PM	7.77
1/25/2018 7:00 PM	7.77	1/26/2018 7:00 PM	7.77	1/27/2018 7:00 PM	7.77

1/25/2018 7:15 PM	7.77	1/26/2018 7:15 PM	7.77	1/27/2018 7:15 PM	7.77
1/25/2018 7:30 PM	7.77	1/26/2018 7:30 PM	7.77	1/27/2018 7:30 PM	7.77
1/25/2018 7:45 PM	7.77	1/26/2018 7:45 PM	7.77	1/27/2018 7:45 PM	7.77
1/25/2018 8:00 PM	7.77	1/26/2018 8:00 PM	7.77	1/27/2018 8:00 PM	7.77
1/25/2018 8:15 PM	7.77	1/26/2018 8:15 PM	7.77	1/27/2018 8:15 PM	7.77
1/25/2018 8:30 PM	7.77	1/26/2018 8:30 PM	7.77	1/27/2018 8:30 PM	7.77
1/25/2018 8:45 PM	7.77	1/26/2018 8:45 PM	7.77	1/27/2018 8:45 PM	7.77
1/25/2018 9:00 PM	7.77	1/26/2018 9:00 PM	7.77	1/27/2018 9:00 PM	7.77
1/25/2018 9:15 PM	7.77	1/26/2018 9:15 PM	7.77	1/27/2018 9:15 PM	7.77
1/25/2018 9:30 PM	7.77	1/26/2018 9:30 PM	7.77	1/27/2018 9:30 PM	7.77
1/25/2018 9:45 PM	7.77	1/26/2018 9:45 PM	7.77	1/27/2018 9:45 PM	7.77
1/25/2018 10:00 PM	7.77	1/26/2018 10:00 PM	7.77	1/27/2018 10:00 PM	7.77
1/25/2018 10:15 PM	7.77	1/26/2018 10:15 PM	7.77	1/27/2018 10:15 PM	7.77
1/25/2018 10:30 PM	7.77	1/26/2018 10:30 PM	7.77	1/27/2018 10:30 PM	7.77
1/25/2018 10:45 PM	7.77	1/26/2018 10:45 PM	7.77	1/27/2018 10:45 PM	7.77
1/25/2018 11:00 PM	7.77	1/26/2018 11:00 PM	7.77	1/27/2018 11:00 PM	7.77
1/25/2018 11:15 PM	7.77	1/26/2018 11:15 PM	7.77	1/27/2018 11:15 PM	7.77
1/25/2018 11:30 PM	7.77	1/26/2018 11:30 PM	7.77	1/27/2018 11:30 PM	7.77
1/25/2018 11:45 PM	7.77	1/26/2018 11:45 PM	7.77	1/27/2018 11:45 PM	7.77
AVG	7.76	AVG	7.76	AVG	7.77

It should be noted that at approximately 8:30AM on 1/21/18 a low pH alarm condition was initiated. Effluent discharge from the GLTP was automatically terminated as programmed to occur. A pH grab sample was then taken that showed that the effluent pH was within acceptable limits (7.02) This grab sample showed that the pH probe was not reading correctly. During the period of low pH probe readings, effluent discharge was off-line and only resumed once the pH probe had been checked and calibrated, and the pH reading levels observed from the probe returned to within acceptable discharge values. Note that pH values below the discharge limit when the plant was not discharging, have not been included in the average. After the pH probe calibration, it was noted that the probe was reading correctly, but a slope error was causing the probe to only register larger fluctuations (.25-.35 pH point changes).This is why little to no change is seen from 1/21/18 at 12:00PM through 1/31/18 at 11:45PM. Manual readings were taken daily to spot check and verify discharge compliance and that probe was still operating within the discharge limits until a new probe could be installed. Due to the short shelf life of the site pH probes, a back-up was not readily available at this time and needed to be ordered. The new pH probe has since been installed. Measures are being taken to install a redundant pH probe as backup to prevent similar incidents in the future.

Date And Time	pH	Date And Time	pH	Date And Time	pH
1/28/2018 12:00 AM	7.77	1/29/2018 12:00 AM	7.77	1/30/2018 12:00 AM	7.77
1/28/2018 12:15 AM	7.77	1/29/2018 12:15 AM	7.77	1/30/2018 12:15 AM	7.77
1/28/2018 12:30 AM	7.77	1/29/2018 12:30 AM	7.77	1/30/2018 12:30 AM	7.77
1/28/2018 12:45 AM	7.77	1/29/2018 12:45 AM	7.77	1/30/2018 12:45 AM	7.77
1/28/2018 1:00 AM	7.77	1/29/2018 1:00 AM	7.77	1/30/2018 1:00 AM	7.77
1/28/2018 1:15 AM	7.77	1/29/2018 1:15 AM	7.77	1/30/2018 1:15 AM	7.77
1/28/2018 1:30 AM	7.77	1/29/2018 1:30 AM	7.77	1/30/2018 1:30 AM	7.77
1/28/2018 1:45 AM	7.77	1/29/2018 1:45 AM	7.77	1/30/2018 1:45 AM	7.77
1/28/2018 2:00 AM	7.77	1/29/2018 2:00 AM	7.77	1/30/2018 2:00 AM	7.77
1/28/2018 2:15 AM	7.77	1/29/2018 2:15 AM	7.77	1/30/2018 2:15 AM	7.77
1/28/2018 2:30 AM	7.77	1/29/2018 2:30 AM	7.77	1/30/2018 2:30 AM	7.77
1/28/2018 2:45 AM	7.77	1/29/2018 2:45 AM	7.77	1/30/2018 2:45 AM	7.77
1/28/2018 3:00 AM	7.77	1/29/2018 3:00 AM	7.77	1/30/2018 3:00 AM	7.77
1/28/2018 3:15 AM	7.77	1/29/2018 3:15 AM	7.77	1/30/2018 3:15 AM	7.77
1/28/2018 3:30 AM	7.77	1/29/2018 3:30 AM	7.77	1/30/2018 3:30 AM	7.77
1/28/2018 3:45 AM	7.77	1/29/2018 3:45 AM	7.77	1/30/2018 3:45 AM	7.77
1/28/2018 4:00 AM	7.77	1/29/2018 4:00 AM	7.77	1/30/2018 4:00 AM	7.77
1/28/2018 4:15 AM	7.77	1/29/2018 4:15 AM	7.77	1/30/2018 4:15 AM	7.77
1/28/2018 4:30 AM	7.77	1/29/2018 4:30 AM	7.77	1/30/2018 4:30 AM	7.77
1/28/2018 4:45 AM	7.77	1/29/2018 4:45 AM	7.77	1/30/2018 4:45 AM	7.77
1/28/2018 5:00 AM	7.77	1/29/2018 5:00 AM	7.77	1/30/2018 5:00 AM	7.77
1/28/2018 5:15 AM	7.77	1/29/2018 5:15 AM	7.77	1/30/2018 5:15 AM	7.77
1/28/2018 5:30 AM	7.77	1/29/2018 5:30 AM	7.77	1/30/2018 5:30 AM	7.77
1/28/2018 5:45 AM	7.77	1/29/2018 5:45 AM	7.77	1/30/2018 5:45 AM	7.77
1/28/2018 6:00 AM	7.77	1/29/2018 6:00 AM	7.77	1/30/2018 6:00 AM	7.77
1/28/2018 6:15 AM	7.77	1/29/2018 6:15 AM	7.77	1/30/2018 6:15 AM	7.77
1/28/2018 6:30 AM	7.77	1/29/2018 6:30 AM	7.77	1/30/2018 6:30 AM	7.77
1/28/2018 6:45 AM	7.77	1/29/2018 6:45 AM	7.77	1/30/2018 6:45 AM	7.77
1/28/2018 7:00 AM	7.77	1/29/2018 7:00 AM	7.77	1/30/2018 7:00 AM	7.77
1/28/2018 7:15 AM	7.77	1/29/2018 7:15 AM	7.77	1/30/2018 7:15 AM	7.77
1/28/2018 7:30 AM	7.77	1/29/2018 7:30 AM	7.77	1/30/2018 7:30 AM	7.77
1/28/2018 7:45 AM	7.77	1/29/2018 7:45 AM	7.77	1/30/2018 7:45 AM	7.09
1/28/2018 8:00 AM	7.77	1/29/2018 8:00 AM	7.77	1/30/2018 8:00 AM	7.77
1/28/2018 8:15 AM	7.77	1/29/2018 8:15 AM	7.77	1/30/2018 8:15 AM	7.77
1/28/2018 8:30 AM	7.77	1/29/2018 8:30 AM	7.77	1/30/2018 8:30 AM	7.77
1/28/2018 8:45 AM	7.77	1/29/2018 8:45 AM	7.77	1/30/2018 8:45 AM	7.77
1/28/2018 9:00 AM	7.77	1/29/2018 9:00 AM	7.07	1/30/2018 9:00 AM	7.77
1/28/2018 9:15 AM	7.77	1/29/2018 9:15 AM	7.77	1/30/2018 9:15 AM	7.77
1/28/2018 9:30 AM	7.77	1/29/2018 9:30 AM	7.77	1/30/2018 9:30 AM	7.77
1/28/2018 9:45 AM	7.77	1/29/2018 9:45 AM	7.77	1/30/2018 9:45 AM	7.77
1/28/2018 10:00 AM	7.77	1/29/2018 10:00 AM	7.77	1/30/2018 10:00 AM	7.77
1/28/2018 10:15 AM	7.77	1/29/2018 10:15 AM	7.77	1/30/2018 10:15 AM	7.77
1/28/2018 10:30 AM	7.77	1/29/2018 10:30 AM	7.77	1/30/2018 10:30 AM	7.77
1/28/2018 10:45 AM	7.77	1/29/2018 10:45 AM	7.77	1/30/2018 10:45 AM	7.77
1/28/2018 11:00 AM	7.77	1/29/2018 11:00 AM	7.77	1/30/2018 11:00 AM	7.77
1/28/2018 11:15 AM	7.77	1/29/2018 11:15 AM	7.77	1/30/2018 11:15 AM	7.77
1/28/2018 11:30 AM	7.77	1/29/2018 11:30 AM	7.77	1/30/2018 11:30 AM	7.77
1/28/2018 11:45 AM	7.77	1/29/2018 11:45 AM	7.77	1/30/2018 11:45 AM	7.77
1/28/2018 12:00 PM	7.77	1/29/2018 12:00 PM	7.77	1/30/2018 12:00 PM	7.77
1/28/2018 12:15 PM	7.77	1/29/2018 12:15 PM	7.77	1/30/2018 12:15 PM	7.77
1/28/2018 12:30 PM	7.77	1/29/2018 12:30 PM	7.77	1/30/2018 12:30 PM	7.77
1/28/2018 12:45 PM	7.77	1/29/2018 12:45 PM	7.77	1/30/2018 12:45 PM	7.77
1/28/2018 1:00 PM	7.77	1/29/2018 1:00 PM	7.77	1/30/2018 1:00 PM	7.77
1/28/2018 1:15 PM	7.77	1/29/2018 1:15 PM	7.77	1/30/2018 1:15 PM	7.77
1/28/2018 1:30 PM	7.77	1/29/2018 1:30 PM	7.77	1/30/2018 1:30 PM	7.77
1/28/2018 1:45 PM	7.77	1/29/2018 1:45 PM	7.77	1/30/2018 1:45 PM	7.77
1/28/2018 2:00 PM	7.77	1/29/2018 2:00 PM	7.77	1/30/2018 2:00 PM	7.77

1/28/2018 2:15 PM	7.77	1/29/2018 2:15 PM	7.77	1/30/2018 2:15 PM	7.77
1/28/2018 2:30 PM	7.77	1/29/2018 2:30 PM	7.77	1/30/2018 2:30 PM	7.77
1/28/2018 2:45 PM	7.77	1/29/2018 2:45 PM	7.77	1/30/2018 2:45 PM	7.77
1/28/2018 3:00 PM	7.77	1/29/2018 3:00 PM	7.77	1/30/2018 3:00 PM	7.77
1/28/2018 3:15 PM	7.77	1/29/2018 3:15 PM	7.77	1/30/2018 3:15 PM	7.77
1/28/2018 3:30 PM	7.77	1/29/2018 3:30 PM	7.77	1/30/2018 3:30 PM	7.77
1/28/2018 3:45 PM	7.77	1/29/2018 3:45 PM	7.77	1/30/2018 3:45 PM	7.77
1/28/2018 4:00 PM	7.77	1/29/2018 4:00 PM	7.77	1/30/2018 4:00 PM	7.77
1/28/2018 4:15 PM	7.77	1/29/2018 4:15 PM	7.77	1/30/2018 4:15 PM	7.77
1/28/2018 4:30 PM	7.77	1/29/2018 4:30 PM	7.77	1/30/2018 4:30 PM	7.77
1/28/2018 4:45 PM	7.77	1/29/2018 4:45 PM	7.77	1/30/2018 4:45 PM	7.77
1/28/2018 5:00 PM	7.77	1/29/2018 5:00 PM	7.77	1/30/2018 5:00 PM	7.77
1/28/2018 5:15 PM	7.77	1/29/2018 5:15 PM	7.77	1/30/2018 5:15 PM	7.77
1/28/2018 5:30 PM	7.77	1/29/2018 5:30 PM	7.77	1/30/2018 5:30 PM	7.77
1/28/2018 5:45 PM	7.77	1/29/2018 5:45 PM	7.77	1/30/2018 5:45 PM	7.77
1/28/2018 6:00 PM	7.77	1/29/2018 6:00 PM	7.77	1/30/2018 6:00 PM	7.77
1/28/2018 6:15 PM	7.77	1/29/2018 6:15 PM	7.77	1/30/2018 6:15 PM	7.77
1/28/2018 6:30 PM	7.77	1/29/2018 6:30 PM	7.77	1/30/2018 6:30 PM	7.77
1/28/2018 6:45 PM	7.77	1/29/2018 6:45 PM	7.77	1/30/2018 6:45 PM	7.77
1/28/2018 7:00 PM	7.77	1/29/2018 7:00 PM	7.77	1/30/2018 7:00 PM	7.77
1/28/2018 7:15 PM	7.77	1/29/2018 7:15 PM	7.77	1/30/2018 7:15 PM	7.77
1/28/2018 7:30 PM	7.77	1/29/2018 7:30 PM	7.77	1/30/2018 7:30 PM	7.77
1/28/2018 7:45 PM	7.77	1/29/2018 7:45 PM	7.77	1/30/2018 7:45 PM	7.77
1/28/2018 8:00 PM	7.77	1/29/2018 8:00 PM	7.77	1/30/2018 8:00 PM	7.77
1/28/2018 8:15 PM	7.77	1/29/2018 8:15 PM	7.77	1/30/2018 8:15 PM	7.77
1/28/2018 8:30 PM	7.77	1/29/2018 8:30 PM	7.77	1/30/2018 8:30 PM	7.77
1/28/2018 8:45 PM	7.77	1/29/2018 8:45 PM	7.77	1/30/2018 8:45 PM	7.77
1/28/2018 9:00 PM	7.77	1/29/2018 9:00 PM	7.77	1/30/2018 9:00 PM	7.77
1/28/2018 9:15 PM	7.77	1/29/2018 9:15 PM	7.77	1/30/2018 9:15 PM	7.77
1/28/2018 9:30 PM	7.77	1/29/2018 9:30 PM	7.77	1/30/2018 9:30 PM	7.77
1/28/2018 9:45 PM	7.77	1/29/2018 9:45 PM	7.77	1/30/2018 9:45 PM	7.77
1/28/2018 10:00 PM	7.77	1/29/2018 10:00 PM	7.77	1/30/2018 10:00 PM	7.77
1/28/2018 10:15 PM	7.77	1/29/2018 10:15 PM	7.77	1/30/2018 10:15 PM	7.77
1/28/2018 10:30 PM	7.77	1/29/2018 10:30 PM	7.77	1/30/2018 10:30 PM	7.77
1/28/2018 10:45 PM	7.77	1/29/2018 10:45 PM	7.77	1/30/2018 10:45 PM	7.77
1/28/2018 11:00 PM	7.77	1/29/2018 11:00 PM	7.77	1/30/2018 11:00 PM	7.77
1/28/2018 11:15 PM	7.77	1/29/2018 11:15 PM	7.77	1/30/2018 11:15 PM	7.77
1/28/2018 11:30 PM	7.77	1/29/2018 11:30 PM	7.77	1/30/2018 11:30 PM	7.77
1/28/2018 11:45 PM	7.77	1/29/2018 11:45 PM	7.77	1/30/2018 11:45 PM	7.77
AVG	7.77	AVG	7.76	AVG	7.76

It should be noted that at approximately 8:30AM on 1/21/18 a low pH alarm condition was initiated. Effluent discharge from the GLTP was automatically terminated as programmed to occur. A pH grab sample was then taken that showed that the effluent pH was within acceptable limits (7.02) This grab sample showed that the pH probe was not reading correctly. During the period of low pH probe readings, effluent discharge was off-line and only resumed once the pH probe had been checked and calibrated, and the pH reading levels observed from the probe returned to within acceptable discharge values. Note that pH values below the discharge limit when the plant was not discharging, have not been included in the average. After the pH probe calibration, it was noted that the probe was reading correctly, but a slope error was causing the probe to only register larger fluctuations (.25-.35 pH point changes).This is why little to no change is seen from 1/21/18 at 12:00PM through 1/31/18 at 11:45PM. Manual readings were taken daily to spot check and verify discharge compliance and that probe was still operating within the discharge limits until a new probe could be installed. Due to the short shelf life of the site pH probes, a back-up was not readily available at this time and needed to be ordered. The new pH probe has since been installed. Measures are being taken to install a redundant pH probe as backup to prevent similar incidents in the future.

Date And Time	pH
1/31/2018 12:00 AM	7.77
1/31/2018 12:15 AM	7.77
1/31/2018 12:30 AM	7.77
1/31/2018 12:45 AM	7.77
1/31/2018 1:00 AM	7.77
1/31/2018 1:15 AM	7.77
1/31/2018 1:30 AM	7.77
1/31/2018 1:45 AM	7.77
1/31/2018 2:00 AM	7.77
1/31/2018 2:15 AM	7.77
1/31/2018 2:30 AM	7.77
1/31/2018 2:45 AM	7.77
1/31/2018 3:00 AM	7.77
1/31/2018 3:15 AM	7.77
1/31/2018 3:30 AM	7.77
1/31/2018 3:45 AM	7.77
1/31/2018 4:00 AM	7.77
1/31/2018 4:15 AM	7.77
1/31/2018 4:30 AM	7.77
1/31/2018 4:45 AM	7.77
1/31/2018 5:00 AM	7.77
1/31/2018 5:15 AM	7.77
1/31/2018 5:30 AM	7.77
1/31/2018 5:45 AM	7.77
1/31/2018 6:00 AM	7.77
1/31/2018 6:15 AM	7.76
1/31/2018 6:30 AM	7.76
1/31/2018 6:45 AM	7.76
1/31/2018 7:00 AM	7.76
1/31/2018 7:15 AM	7.21
1/31/2018 7:30 AM	7.77
1/31/2018 7:45 AM	7.77
1/31/2018 8:00 AM	7.77
1/31/2018 8:15 AM	7.77
1/31/2018 8:30 AM	7.77
1/31/2018 8:45 AM	7.77
1/31/2018 9:00 AM	7.77
1/31/2018 9:15 AM	7.77
1/31/2018 9:30 AM	7.77
1/31/2018 9:45 AM	7.77
1/31/2018 10:00 AM	7.77
1/31/2018 10:15 AM	7.77
1/31/2018 10:30 AM	7.77
1/31/2018 10:45 AM	7.77
1/31/2018 11:00 AM	7.77
1/31/2018 11:15 AM	7.77
1/31/2018 11:30 AM	7.77
1/31/2018 11:45 AM	7.77
1/31/2018 12:00 PM	7.77
1/31/2018 12:15 PM	7.77
1/31/2018 12:30 PM	7.77
1/31/2018 12:45 PM	7.77
1/31/2018 1:00 PM	7.77
1/31/2018 1:15 PM	7.77
1/31/2018 1:30 PM	7.77
1/31/2018 1:45 PM	7.77
1/31/2018 2:00 PM	7.77
1/31/2018 2:15 PM	7.77
1/31/2018 2:30 PM	7.77
1/31/2018 2:45 PM	7.77
1/31/2018 3:00 PM	7.77
1/31/2018 3:15 PM	7.77
1/31/2018 3:30 PM	7.77
1/31/2018 3:45 PM	7.77
1/31/2018 4:00 PM	7.77
1/31/2018 4:15 PM	7.77
1/31/2018 4:30 PM	7.77
1/31/2018 4:45 PM	7.77
1/31/2018 5:00 PM	7.77
1/31/2018 5:15 PM	7.77
1/31/2018 5:30 PM	7.77
1/31/2018 5:45 PM	7.77
1/31/2018 6:00 PM	7.77
1/31/2018 6:15 PM	7.77
1/31/2018 6:30 PM	7.77
1/31/2018 6:45 PM	7.77

MIN	**6.61**
MAX	**8.32**

1/31/2018 7:00 PM	7.77
1/31/2018 7:15 PM	7.77
1/31/2018 7:30 PM	7.77
1/31/2018 7:45 PM	7.77
1/31/2018 8:00 PM	7.77
1/31/2018 8:15 PM	7.77
1/31/2018 8:30 PM	7.77
1/31/2018 8:45 PM	7.77
1/31/2018 9:00 PM	7.77
1/31/2018 9:15 PM	7.77
1/31/2018 9:30 PM	7.77
1/31/2018 9:45 PM	7.77
1/31/2018 10:00 PM	7.77
1/31/2018 10:15 PM	7.77
1/31/2018 10:30 PM	7.77
1/31/2018 10:45 PM	7.77
1/31/2018 11:00 PM	7.77
1/31/2018 11:15 PM	7.77
1/31/2018 11:30 PM	7.77
1/31/2018 11:45 PM	7.77
AVG	7.76

Avtex Fibers
Front Royal, VA
Outfall 004
January 2018 DMR

Sample Date	Sample ID	BOD, mg/L	BOD, kg/d	TSS, mg/L	TSS, kg/d
1/4/2018	AF1-4FE	0.0	0.0	0.0	0.0
1/11/2018	AF1-11FE	0.0	0.0	0.0	0.0
1/18/2018	AF1-18FE	0.0	0.0	0.0	0.0
1/25/2018	AF1-25FE	4.0	1.1	1.7	0.4
	Daily Maximum:	4.0	1.1	1.7	0.4
	Monthly Avg:	1.0	0.3	0.4	0.1

Monthly Average – Compliance with the monthly average limitations and/or reporting requirements for the parameters listed in Part I.C.1 shall be determined as follows: All concentration data below the QL used for the analysis shall be treated as zero. All concentration data equal to or above the QL used for the analysis shall be treated as it is reported. An arithmetic average shall be calculated using all reported data for the month, including the defined zeros. This arithmetic average shall be reported on the Discharge Monitoring Report (DMR) as calculated. If all data are below the QL used for the analysis, then the average shall be reported as "<QL". If reporting for quantity is required on the DMR and the reported monthly average concentration is <QL, then report "<QL" for the quantity. Otherwise use the reported concentration data (including the defined zeros) and flow data for each sample day to determine the daily quantity and report the monthly average of the calculated daily quantities.

Daily Maximum – Compliance with the daily maximum limitations and/or reporting requirements for the parameters listed in Part I.C.1 shall be determined as follows: All concentration data below the QL used for the analysis shall be treated as zero. All concentration data equal to or above the QL used for the analysis shall be treated as reported. An arithmetic average shall be calculated using all reported data, including the defined zeros, collected within each day during the reporting month. The maximum value of these daily averages thus determined shall be reported on the DMR as the Daily Maximum. If all data are below the QL used for the analysis, then the maximum value of the daily averages shall be reported as "<QL". If reporting for quantity is required on the DMR and the reported daily maximum concentration is <QL, then report "<QL" for the quantity. Otherwise use the reported daily average concentrations (including the defined zeros) and corresponding daily flows to determine daily average quantities and report the maximum of the daily average quantities during the reporting month.

Loading Derivation
If 1 ppm (= 1 mg/L) and 1 MGD (= 1 MG/day)
--> (1 mg/L)(1 MG/day)(3.785 L/Gal)(10^6 Gal/MG)(1 lb/453,600 mg) = 8.34 lbs/day
--> lbs/day = ppm * 8.34 * MGD
--> kg/d = ppm * 8.34 * MGD * 0.4536*lb/d

Concentration Derivation
If 1 lb/d and 1 MGD (= 1 MG/day)
[(1 lbs/day)(453,600 mg/lb)] / [(1 MG/d)(10^6 Gal/MG)(3.785 L/Gal)]
--> ppm = lb/d * (1/8.34) * (1/MGD)

	BOD
1/4/2018	0
1/11/2018	0
1/18/2018	0
1/25/2018	1.057982835
AVG	0.264495709

	TSS
1/4/2018	0
1/11/2018	0
1/18/2018	0
1/25/2018	0.449642705
AVG	0.112410676

	CS2*	
1/25/2018	<QL	ug/L
1/25/2018	<QL	mg/L
1/25/2018	<QL	kg/d

*Note: CS2 EPA Test Method: 8260 MSV Low Level Analytical Method (EPA 8260)
Report Limit 2 ug/L
MDL 1.2 ug/L

FMC Corporation
2929 Walnut Street
Philadelphia, PA 19104
USA

215.299.6000
fmc.com

Transmitted via Email

March 8, 2018

Department of Environmental Quality - CO
Office of Remediation Program
P.O. Box 1105
Richmond, VA 23218

Re: Submission of Discharge Monitoring Report – February 2018
Avtex Fibers Superfund Site
Front Royal, Virginia

Dear Ms. Payne:

In accordance with the Applicable or Relevant and Appropriate Requirements (ARARs) and Fact Sheet provided July 22, 2014, FMC Corporation (FMC) is submitting the Discharge Monitoring Report (DMR) for the month of February 2018. The permit is for the discharge from the Groundwater and Leachate Treatment Plant (GLTP) located at 404 Kendrick Lane, Front Royal, VA. Analysis of effluent concentrations yielded results within the allowable limits for all parameters.

Please do not hesitate to call if there are any questions.

Sincerely,
FMC Corporation

Brian M. McGinnis, P.E.
Manager, Environmental Remediation

cc: via Email
Brandon Kiracofe, DEQ
Jeffrey Thomas, USEPA
Heather Philip, Parsons

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS: (Include Facility Name/Location if different)

OMB No. 2040-004

NAME:	Avtex Fibers	NA		004		**DMR MAILING ZIP CODE:**						23218
ADDRESS:	404 Kendrick Lane	**PERMIT NUMBER**		**DISCHARGE NUMBER**								
	Front Royal, VA 22630					DESCRIPTION:						
		MONITORING PERIOD				GLTP EFFLUENT (OUTFALL 004)						
FACILITY:	AVTEX FIBERS	**YEAR**	**MO**	**DAY**		**YEAR**	**MO**	**DAY**		External Outfall		
LOCATION:	FRONT ROYAL, VA	**FROM** 18	02	01	TO	18	02	28			**No Discharge**	
ATTN:												

PARAMETER		QUANTITY OR LOADING VALUE	QUANTITY OR LOADING VALUE	QUANTITY OR LOADING UNITS	QUALITY OR CONCENTRATION VALUE	QUALITY OR CONCENTRATION VALUE	QUALITY OR CONCENTRATION VALUE	QUALITY OR CONCENTRATION UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
FLOW	SAMPLE MEASUREMENT	0.085	0.127	MGD	*****	*****	*****		0	CONTINUOUS	TIRE
00056 1 0 EFFLUENT GROSS	PERMIT REQUIREMENT	REPORT MONTHLY AV	REPORT DAILY MAX		******	******	******			CONTINUOUS	TIRE
PH	SAMPLE MEASUREMENT	*****	*****		7.8	*****	8.7		0	CONTINUOUS	GRAB
00400 1 0 EFFLUENT GROSS	PERMIT REQUIREMENT	******	******		6.5 MINIMUM	******	9.0 MAXIMUM	SU		CONTINUOUS	GRAB
BOD, 5-DAY	SAMPLE MEASUREMENT	1.6	3.4		*****	4.5	7.0		0	1/7	8 HC
00318 1 0 EFFLUENT GROSS	PERMIT REQUIREMENT	36 MONTHLY AV	96 DAILY MAX	kg/d	******	24 MONTHLY AV	64 DAILY MX	mg/L		1/7	8 HC
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	0.6	1.4		*****	1.8	2.9		0	1/7	8 HC
03603 1 0 EFFLUENT GROSS	PERMIT REQUIREMENT	60 MONTHLY AV	190 DAILY MAX	kg/d	******	40 MONTHLY AV	130 DAILY MX	mg/L		1/7	8 HC
CARBON DISULFIDE	SAMPLE MEASUREMENT	<QL	<QL		*****	<QL	<QL		0	1/30	8 HC
77041 1 0 EFFLUENT GROSS	PERMIT REQUIREMENT	NL MONTHLY AV	NL DAILY MAX	kg/d	******	NL MONTHLY AV	NL DAILY MX	mg/L		1/30	8 HC
WHOLE EFFLUENT TOXICITY - *Ceriodaphnia dubia*	SAMPLE MEASUREMENT	*****	*****		*****	*****	*****				8 HC
22414 1 0 EFFLUENT GROSS	PERMIT REQUIREMENT	*****	*****	TUa	*****	*****	*****	TUa		1/90	8 HC
WHOLE EFFLUENT TOXICITY - *Pimephales promelas*	SAMPLE MEASUREMENT	*****	*****		*****	*****	*****				8 HC
22414 1 0 EFFLUENT GROSS	PERMIT REQUIREMENT	*****	*****	lp	*****	*****	*****	TUa		1/90	8 HC

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER		TELEPHONE		DATE		
Brian McGinnis	I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.			18	03	08
Manager, Environmental Remediation						
TYPED OR PRINTED	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	215	299-6047			
		AREA	NUMBER	YEAR	MO	DAY

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

Attachment: pH compliance monitoring summary (monthly)

Carbon disulfide: No limit established; monitored monthly; 0.1 mg/L action level

Avtex Fibers
Front Royal, VA
Outfall 004
February 2018 DMR

pH Calculations:

Date And Time	pH	Date And Time	pH	Date And Time	pH
2/1/2018 12:00 AM	7.77	2/2/2018 12:00 AM	8.07	2/3/2018 12:00 AM	8.25
2/1/2018 12:15 AM	7.77	2/2/2018 12:15 AM	8.05	2/3/2018 12:15 AM	8.25
2/1/2018 12:30 AM		2/2/2018 12:30 AM	8.04	2/3/2018 12:30 AM	8.25
2/1/2018 12:45 AM	7.77	2/2/2018 12:45 AM	8.04	2/3/2018 12:45 AM	8.25
2/1/2018 1:00 AM	7.77	2/2/2018 1:00 AM	8.03	2/3/2018 1:00 AM	8.25
2/1/2018 1:15 AM	7.77	2/2/2018 1:15 AM	8.11	2/3/2018 1:15 AM	8.26
2/1/2018 1:30 AM	7.77	2/2/2018 1:30 AM	8.11	2/3/2018 1:30 AM	8.26
2/1/2018 1:45 AM	7.77	2/2/2018 1:45 AM	8.11	2/3/2018 1:45 AM	8.26
2/1/2018 2:00 AM	7.77	2/2/2018 2:00 AM	8.11	2/3/2018 2:00 AM	8.26
2/1/2018 2:15 AM	7.77	2/2/2018 2:15 AM	8.11	2/3/2018 2:15 AM	8.25
2/1/2018 2:30 AM	7.77	2/2/2018 2:30 AM	8.11	2/3/2018 2:30 AM	8.24
2/1/2018 2:45 AM	7.77	2/2/2018 2:45 AM	8.11	2/3/2018 2:45 AM	8.23
2/1/2018 3:00 AM	7.77	2/2/2018 3:00 AM	8.11	2/3/2018 3:00 AM	8.22
2/1/2018 3:15 AM	7.77	2/2/2018 3:15 AM	8.13	2/3/2018 3:15 AM	8.22
2/1/2018 3:30 AM	7.77	2/2/2018 3:30 AM	8.12	2/3/2018 3:30 AM	8.21
2/1/2018 3:45 AM	7.77	2/2/2018 3:45 AM	8.12	2/3/2018 3:45 AM	8.20
2/1/2018 4:00 AM	7.77	2/2/2018 4:00 AM	8.11	2/3/2018 4:00 AM	8.20
2/1/2018 4:15 AM	7.77	2/2/2018 4:15 AM	8.10	2/3/2018 4:15 AM	8.27
2/1/2018 4:30 AM	7.77	2/2/2018 4:30 AM	8.09	2/3/2018 4:30 AM	8.26
2/1/2018 4:45 AM	7.77	2/2/2018 4:45 AM	8.09	2/3/2018 4:45 AM	8.25
2/1/2018 5:00 AM	7.77	2/2/2018 5:00 AM	8.08	2/3/2018 5:00 AM	8.25
2/1/2018 5:15 AM	7.77	2/2/2018 5:15 AM	8.07	2/3/2018 5:15 AM	8.25
2/1/2018 5:30 AM	7.77	2/2/2018 5:30 AM	8.13	2/3/2018 5:30 AM	8.25
2/1/2018 5:45 AM	7.77	2/2/2018 5:45 AM	8.13	2/3/2018 5:45 AM	8.25
2/1/2018 6:00 AM	7.77	2/2/2018 6:00 AM	8.13	2/3/2018 6:00 AM	8.25
2/1/2018 6:15 AM	7.77	2/2/2018 6:15 AM	8.13	2/3/2018 6:15 AM	8.26
2/1/2018 6:30 AM	7.77	2/2/2018 6:30 AM	8.13	2/3/2018 6:30 AM	8.27
2/1/2018 6:45 AM	7.77	2/2/2018 6:45 AM	8.14	2/3/2018 6:45 AM	8.27
2/1/2018 7:00 AM	7.77	2/2/2018 7:00 AM	8.13	2/3/2018 7:00 AM	8.26
2/1/2018 7:15 AM	7.77	2/2/2018 7:15 AM	8.14	2/3/2018 7:15 AM	8.26
2/1/2018 7:30 AM	7.77	2/2/2018 7:30 AM	8.12	2/3/2018 7:30 AM	8.25
2/1/2018 7:45 AM	7.77	2/2/2018 7:45 AM	8.15	2/3/2018 7:45 AM	8.25
2/1/2018 8:00 AM	7.77	2/2/2018 8:00 AM	8.15	2/3/2018 8:00 AM	8.24
2/1/2018 8:15 AM	7.77	2/2/2018 8:15 AM	8.14	2/3/2018 8:15 AM	8.23
2/1/2018 8:30 AM	7.77	2/2/2018 8:30 AM	8.14	2/3/2018 8:30 AM	8.22
2/1/2018 8:45 AM	7.77	2/2/2018 8:45 AM	8.13	2/3/2018 8:45 AM	8.26
2/1/2018 9:00 AM	7.77	2/2/2018 9:00 AM	8.12	2/3/2018 9:00 AM	8.26
2/1/2018 9:15 AM	7.77	2/2/2018 9:15 AM	8.11	2/3/2018 9:15 AM	8.26
2/1/2018 9:30 AM	7.77	2/2/2018 9:30 AM	8.10	2/3/2018 9:30 AM	8.26
2/1/2018 9:45 AM	7.77	2/2/2018 9:45 AM	8.10	2/3/2018 9:45 AM	8.26
2/1/2018 10:00 AM	7.77	2/2/2018 10:00 AM	8.10	2/3/2018 10:00 AM	8.25
2/1/2018 10:15 AM	7.77	2/2/2018 10:15 AM	8.10	2/3/2018 10:15 AM	8.25
2/1/2018 10:30 AM	7.77	2/2/2018 10:30 AM	8.09	2/3/2018 10:30 AM	8.27
2/1/2018 10:45 AM	7.77	2/2/2018 10:45 AM	8.09	2/3/2018 10:45 AM	8.27
2/1/2018 11:00 AM	7.77	2/2/2018 11:00 AM	8.08	2/3/2018 11:00 AM	8.27
2/1/2018 11:15 AM	7.77	2/2/2018 11:15 AM	8.08	2/3/2018 11:15 AM	8.27
2/1/2018 11:30 AM	7.77	2/2/2018 11:30 AM	8.18	2/3/2018 11:30 AM	8.26
2/1/2018 11:45 AM	7.77	2/2/2018 11:45 AM	8.17	2/3/2018 11:45 AM	8.21
2/1/2018 12:00 PM	7.77	2/2/2018 12:00 PM	8.17	2/3/2018 12:00 PM	8.24
2/1/2018 12:15 PM	7.77	2/2/2018 12:15 PM	8.17	2/3/2018 12:15 PM	8.24
2/1/2018 12:30 PM	7.77	2/2/2018 12:30 PM	8.17	2/3/2018 12:30 PM	8.22
2/1/2018 12:45 PM	7.77	2/2/2018 12:45 PM	8.17	2/3/2018 12:45 PM	8.21
2/1/2018 1:00 PM	7.77	2/2/2018 1:00 PM	8.15	2/3/2018 1:00 PM	8.20
2/1/2018 1:15 PM	7.77	2/2/2018 1:15 PM	8.14	2/3/2018 1:15 PM	8.18
2/1/2018 1:30 PM	7.77	2/2/2018 1:30 PM	8.14	2/3/2018 1:30 PM	8.17
2/1/2018 1:45 PM	7.77	2/2/2018 1:45 PM	8.13	2/3/2018 1:45 PM	8.17
2/1/2018 2:00 PM	8.07	2/2/2018 2:00 PM	8.13	2/3/2018 2:00 PM	8.15
2/1/2018 2:15 PM	8.08	2/2/2018 2:15 PM	8.12	2/3/2018 2:15 PM	8.15
2/1/2018 2:30 PM	8.08	2/2/2018 2:30 PM	8.13	2/3/2018 2:30 PM	8.14
2/1/2018 2:45 PM	8.07	2/2/2018 2:45 PM	8.12	2/3/2018 2:45 PM	8.14
2/1/2018 3:00 PM	8.07	2/2/2018 3:00 PM	8.12	2/3/2018 3:00 PM	8.29
2/1/2018 3:15 PM	8.08	2/2/2018 3:15 PM	8.12	2/3/2018 3:15 PM	8.30
2/1/2018 3:30 PM	8.08	2/2/2018 3:30 PM	8.11	2/3/2018 3:30 PM	8.27
2/1/2018 3:45 PM	8.08	2/2/2018 3:45 PM	8.11	2/3/2018 3:45 PM	8.28
2/1/2018 4:00 PM	8.07	2/2/2018 4:00 PM	8.11	2/3/2018 4:00 PM	8.28
2/1/2018 4:15 PM	8.08	2/2/2018 4:15 PM	8.10	2/3/2018 4:15 PM	8.27
2/1/2018 4:30 PM	8.08	2/2/2018 4:30 PM	8.10	2/3/2018 4:30 PM	8.26
2/1/2018 4:45 PM	8.09	2/2/2018 4:45 PM	8.10	2/3/2018 4:45 PM	8.24
2/1/2018 5:00 PM	8.09	2/2/2018 5:00 PM	8.10	2/3/2018 5:00 PM	8.24
2/1/2018 5:15 PM	8.09	2/2/2018 5:15 PM	8.09	2/3/2018 5:15 PM	8.23
2/1/2018 5:30 PM	8.09	2/2/2018 5:30 PM	8.09	2/3/2018 5:30 PM	8.22
2/1/2018 5:45 PM	8.08	2/2/2018 5:45 PM	8.09	2/3/2018 5:45 PM	8.29
2/1/2018 6:00 PM	8.09	2/2/2018 6:00 PM	8.09	2/3/2018 6:00 PM	8.28
2/1/2018 6:15 PM	8.09	2/2/2018 6:15 PM	8.08	2/3/2018 6:15 PM	8.28
2/1/2018 6:30 PM	8.10	2/2/2018 6:30 PM	8.08	2/3/2018 6:30 PM	8.28
2/1/2018 6:45 PM	8.10	2/2/2018 6:45 PM	8.07	2/3/2018 6:45 PM	8.27
2/1/2018 7:00 PM	8.10	2/2/2018 7:00 PM	8.07	2/3/2018 7:00 PM	8.28
2/1/2018 7:15 PM	8.09	2/2/2018 7:15 PM	8.31	2/3/2018 7:15 PM	8.28
2/1/2018 7:30 PM	8.09	2/2/2018 7:30 PM	8.25	2/3/2018 7:30 PM	8.27
2/1/2018 7:45 PM	8.08	2/2/2018 7:45 PM	8.23	2/3/2018 7:45 PM	8.28
2/1/2018 8:00 PM	8.07	2/2/2018 8:00 PM	8.22	2/3/2018 8:00 PM	8.30
2/1/2018 8:15 PM	8.06	2/2/2018 8:15 PM	8.22	2/3/2018 8:15 PM	8.29
2/1/2018 8:30 PM	8.07	2/2/2018 8:30 PM	8.21	2/3/2018 8:30 PM	8.28
2/1/2018 8:45 PM	8.10	2/2/2018 8:45 PM	8.21	2/3/2018 8:45 PM	8.28
2/1/2018 9:00 PM	8.10	2/2/2018 9:00 PM	8.21	2/3/2018 9:00 PM	8.28
2/1/2018 9:15 PM	8.09	2/2/2018 9:15 PM	8.22	2/3/2018 9:15 PM	8.27
2/1/2018 9:30 PM	8.09	2/2/2018 9:30 PM	8.22	2/3/2018 9:30 PM	8.26
2/1/2018 9:45 PM	8.09	2/2/2018 9:45 PM	8.21	2/3/2018 9:45 PM	8.25
2/1/2018 10:00 PM	8.10	2/2/2018 10:00 PM	8.21	2/3/2018 10:00 PM	8.30
2/1/2018 10:15 PM	8.09	2/2/2018 10:15 PM	8.21	2/3/2018 10:15 PM	8.30
2/1/2018 10:30 PM	8.11	2/2/2018 10:30 PM	8.20	2/3/2018 10:30 PM	8.29
2/1/2018 10:45 PM	8.10	2/2/2018 10:45 PM	8.19	2/3/2018 10:45 PM	8.29
2/1/2018 11:00 PM	8.09	2/2/2018 11:00 PM	8.18	2/3/2018 11:00 PM	8.28
2/1/2018 11:15 PM	8.09	2/2/2018 11:15 PM	8.16	2/3/2018 11:15 PM	8.28
2/1/2018 11:30 PM	8.08	2/2/2018 11:30 PM	8.16	2/3/2018 11:30 PM	8.28
2/1/2018 11:45 PM	8.08	2/2/2018 11:45 PM	8.26	2/3/2018 11:45 PM	8.28
AVG	7.90	AVG	8.13	AVG	8.25

Note: Communications loss on 1/1/2018 at 12:30AM data for this time is not included in the average.

Date And Time	pH	Date And Time	pH	Date And Time	pH
2/4/2018 12:00 AM	8.32	2/5/2018 12:00 AM	8.38	2/6/2018 12:00 AM	8.51
2/4/2018 12:15 AM	8.32	2/5/2018 12:15 AM	8.37	2/6/2018 12:15 AM	8.51
2/4/2018 12:30 AM	8.31	2/5/2018 12:30 AM	8.37	2/6/2018 12:30 AM	8.51
2/4/2018 12:45 AM	8.30	2/5/2018 12:45 AM	8.36	2/6/2018 12:45 AM	8.50
2/4/2018 1:00 AM	8.30	2/5/2018 1:00 AM	8.35	2/6/2018 1:00 AM	8.50
2/4/2018 1:15 AM	8.27	2/5/2018 1:15 AM	8.43	2/6/2018 1:15 AM	8.51
2/4/2018 1:30 AM	8.27	2/5/2018 1:30 AM	8.43	2/6/2018 1:30 AM	8.52
2/4/2018 1:45 AM	8.27	2/5/2018 1:45 AM	8.42	2/6/2018 1:45 AM	8.52
2/4/2018 2:00 AM	8.26	2/5/2018 2:00 AM	8.41	2/6/2018 2:00 AM	8.52
2/4/2018 2:15 AM	8.25	2/5/2018 2:15 AM	8.41	2/6/2018 2:15 AM	8.51
2/4/2018 2:30 AM	8.24	2/5/2018 2:30 AM	8.41	2/6/2018 2:30 AM	8.51
2/4/2018 2:45 AM	8.31	2/5/2018 2:45 AM	8.41	2/6/2018 2:45 AM	8.50
2/4/2018 3:00 AM	8.30	2/5/2018 3:00 AM	8.42	2/6/2018 3:00 AM	8.50
2/4/2018 3:15 AM	8.30	2/5/2018 3:15 AM	8.42	2/6/2018 3:15 AM	8.49
2/4/2018 3:30 AM	8.30	2/5/2018 3:30 AM	8.41	2/6/2018 3:30 AM	8.49
2/4/2018 3:45 AM	8.29	2/5/2018 3:45 AM	8.39	2/6/2018 3:45 AM	8.48
2/4/2018 4:00 AM	8.29	2/5/2018 4:00 AM	8.40	2/6/2018 4:00 AM	8.53
2/4/2018 4:15 AM	8.29	2/5/2018 4:15 AM	8.39	2/6/2018 4:15 AM	8.53
2/4/2018 4:30 AM	8.33	2/5/2018 4:30 AM	8.39	2/6/2018 4:30 AM	8.52
2/4/2018 4:45 AM	8.33	2/5/2018 4:45 AM	8.39	2/6/2018 4:45 AM	8.52
2/4/2018 5:00 AM	8.32	2/5/2018 5:00 AM	8.39	2/6/2018 5:00 AM	8.51
2/4/2018 5:15 AM	8.32	2/5/2018 5:15 AM	8.38	2/6/2018 5:15 AM	8.51
2/4/2018 5:30 AM	8.31	2/5/2018 5:30 AM	8.37	2/6/2018 5:30 AM	8.52
2/4/2018 5:45 AM	8.31	2/5/2018 5:45 AM	8.45	2/6/2018 5:45 AM	8.52
2/4/2018 6:00 AM	8.30	2/5/2018 6:00 AM	8.44	2/6/2018 6:00 AM	8.53
2/4/2018 6:15 AM	8.29	2/5/2018 6:15 AM	8.44	2/6/2018 6:15 AM	8.53
2/4/2018 6:30 AM	8.28	2/5/2018 6:30 AM	8.43	2/6/2018 6:30 AM	8.52
2/4/2018 6:45 AM	8.28	2/5/2018 6:45 AM	8.43	2/6/2018 6:45 AM	8.51
2/4/2018 7:00 AM	8.27	2/5/2018 7:00 AM	8.43	2/6/2018 7:00 AM	8.51
2/4/2018 7:15 AM	8.34	2/5/2018 7:15 AM	8.43	2/6/2018 7:15 AM	8.51
2/4/2018 7:30 AM	8.33	2/5/2018 7:30 AM	8.45	2/6/2018 7:30 AM	8.51
2/4/2018 7:45 AM	8.32	2/5/2018 7:45 AM	8.45	2/6/2018 7:45 AM	8.50
2/4/2018 8:00 AM	8.32	2/5/2018 8:00 AM	8.45	2/6/2018 8:00 AM	8.50
2/4/2018 8:15 AM	8.32	2/5/2018 8:15 AM	8.45	2/6/2018 8:15 AM	8.49
2/4/2018 8:30 AM	8.32	2/5/2018 8:30 AM	8.44	2/6/2018 8:30 AM	8.49
2/4/2018 8:45 AM	8.32	2/5/2018 8:45 AM	8.43	2/6/2018 8:45 AM	8.55
2/4/2018 9:00 AM	8.32	2/5/2018 9:00 AM	8.43	2/6/2018 9:00 AM	8.53
2/4/2018 9:15 AM	8.35	2/5/2018 9:15 AM	8.43	2/6/2018 9:15 AM	8.52
2/4/2018 9:30 AM	8.34	2/5/2018 9:30 AM	8.42	2/6/2018 9:30 AM	8.52
2/4/2018 9:45 AM	8.33	2/5/2018 9:45 AM	8.41	2/6/2018 9:45 AM	8.52
2/4/2018 10:00 AM	8.34	2/5/2018 10:00 AM	8.38	2/6/2018 10:00 AM	8.53
2/4/2018 10:15 AM	8.33	2/5/2018 10:15 AM	8.46	2/6/2018 10:15 AM	8.53
2/4/2018 10:30 AM	8.32	2/5/2018 10:30 AM	8.46	2/6/2018 10:30 AM	8.53
2/4/2018 10:45 AM	8.31	2/5/2018 10:45 AM	8.45	2/6/2018 10:45 AM	8.53
2/4/2018 11:00 AM	8.30	2/5/2018 11:00 AM	8.45	2/6/2018 11:00 AM	8.54
2/4/2018 11:15 AM	8.30	2/5/2018 11:15 AM	8.45	2/6/2018 11:15 AM	8.53
2/4/2018 11:30 AM	8.29	2/5/2018 11:30 AM	8.44	2/6/2018 11:30 AM	8.52
2/4/2018 11:45 AM	8.37	2/5/2018 11:45 AM	8.44	2/6/2018 11:45 AM	8.52
2/4/2018 12:00 PM	8.36	2/5/2018 12:00 PM	8.46	2/6/2018 12:00 PM	8.51
2/4/2018 12:15 PM	8.36	2/5/2018 12:15 PM	8.47	2/6/2018 12:15 PM	8.51
2/4/2018 12:30 PM	8.35	2/5/2018 12:30 PM	8.46	2/6/2018 12:30 PM	8.50
2/4/2018 12:45 PM	8.35	2/5/2018 12:45 PM	8.46	2/6/2018 12:45 PM	8.50
2/4/2018 1:00 PM	8.35	2/5/2018 1:00 PM	8.46	2/6/2018 1:00 PM	8.50
2/4/2018 1:15 PM	8.37	2/5/2018 1:15 PM	8.45	2/6/2018 1:15 PM	8.49
2/4/2018 1:30 PM	8.37	2/5/2018 1:30 PM	8.44	2/6/2018 1:30 PM	8.48
2/4/2018 1:45 PM	8.36	2/5/2018 1:45 PM	8.43	2/6/2018 1:45 PM	8.47
2/4/2018 2:00 PM	8.36	2/5/2018 2:00 PM	8.40	2/6/2018 2:00 PM	8.46
2/4/2018 2:15 PM	8.35	2/5/2018 2:15 PM	8.41	2/6/2018 2:15 PM	8.46
2/4/2018 2:30 PM	8.34	2/5/2018 2:30 PM	8.38	2/6/2018 2:30 PM	8.45
2/4/2018 2:45 PM	8.34	2/5/2018 2:45 PM	8.49	2/6/2018 2:45 PM	8.45
2/4/2018 3:00 PM	8.33	2/5/2018 3:00 PM	8.47	2/6/2018 3:00 PM	8.44
2/4/2018 3:15 PM	8.33	2/5/2018 3:15 PM	8.47	2/6/2018 3:15 PM	8.43
2/4/2018 3:30 PM	8.31	2/5/2018 3:30 PM	8.46	2/6/2018 3:30 PM	8.42
2/4/2018 3:45 PM	8.31	2/5/2018 3:45 PM	8.48	2/6/2018 3:45 PM	8.42
2/4/2018 4:00 PM	8.30	2/5/2018 4:00 PM	8.48	2/6/2018 4:00 PM	8.41
2/4/2018 4:15 PM	8.30	2/5/2018 4:15 PM	8.47	2/6/2018 4:15 PM	8.41
2/4/2018 4:30 PM	8.29	2/5/2018 4:30 PM	8.47	2/6/2018 4:30 PM	8.40
2/4/2018 4:45 PM	8.28	2/5/2018 4:45 PM	8.45	2/6/2018 4:45 PM	8.40
2/4/2018 5:00 PM	8.27	2/5/2018 5:00 PM	8.44	2/6/2018 5:00 PM	8.40
2/4/2018 5:15 PM	8.43	2/5/2018 5:15 PM	8.44	2/6/2018 5:15 PM	8.40
2/4/2018 5:30 PM	8.41	2/5/2018 5:30 PM	8.44	2/6/2018 5:30 PM	8.39
2/4/2018 5:45 PM	8.40	2/5/2018 5:45 PM	8.44	2/6/2018 5:45 PM	8.39
2/4/2018 6:00 PM	8.40	2/5/2018 6:00 PM	8.43	2/6/2018 6:00 PM	8.57
2/4/2018 6:15 PM	8.40	2/5/2018 6:15 PM	8.42	2/6/2018 6:15 PM	8.57
2/4/2018 6:30 PM	8.39	2/5/2018 6:30 PM	8.41	2/6/2018 6:30 PM	8.56
2/4/2018 6:45 PM	8.38	2/5/2018 6:45 PM	8.41	2/6/2018 6:45 PM	8.56
2/4/2018 7:00 PM	8.38	2/5/2018 7:00 PM	8.40	2/6/2018 7:00 PM	8.56
2/4/2018 7:15 PM	8.37	2/5/2018 7:15 PM	8.40	2/6/2018 7:15 PM	8.56
2/4/2018 7:30 PM	8.36	2/5/2018 7:30 PM	8.39	2/6/2018 7:30 PM	8.55
2/4/2018 7:45 PM	8.35	2/5/2018 7:45 PM	8.51	2/6/2018 7:45 PM	8.57
2/4/2018 8:00 PM	8.35	2/5/2018 8:00 PM	8.50	2/6/2018 8:00 PM	8.56
2/4/2018 8:15 PM	8.34	2/5/2018 8:15 PM	8.49	2/6/2018 8:15 PM	8.54
2/4/2018 8:30 PM	8.33	2/5/2018 8:30 PM	8.49	2/6/2018 8:30 PM	8.53
2/4/2018 8:45 PM	8.45	2/5/2018 8:45 PM	8.48	2/6/2018 8:45 PM	8.54
2/4/2018 9:00 PM	8.42	2/5/2018 9:00 PM	8.48	2/6/2018 9:00 PM	8.54
2/4/2018 9:15 PM	8.41	2/5/2018 9:15 PM	8.51	2/6/2018 9:15 PM	8.54
2/4/2018 9:30 PM	8.40	2/5/2018 9:30 PM	8.50	2/6/2018 9:30 PM	8.53
2/4/2018 9:45 PM	8.39	2/5/2018 9:45 PM	8.50	2/6/2018 9:45 PM	8.53
2/4/2018 10:00 PM	8.39	2/5/2018 10:00 PM	8.50	2/6/2018 10:00 PM	8.52
2/4/2018 10:15 PM	8.39	2/5/2018 10:15 PM	8.49	2/6/2018 10:15 PM	8.59
2/4/2018 10:30 PM	8.39	2/5/2018 10:30 PM	8.49	2/6/2018 10:30 PM	8.58
2/4/2018 10:45 PM	8.41	2/5/2018 10:45 PM	8.48	2/6/2018 10:45 PM	8.58
2/4/2018 11:00 PM	8.41	2/5/2018 11:00 PM	8.47	2/6/2018 11:00 PM	8.57
2/4/2018 11:15 PM	8.39	2/5/2018 11:15 PM	8.47	2/6/2018 11:15 PM	8.57
2/4/2018 11:30 PM	8.39	2/5/2018 11:30 PM	8.55	2/6/2018 11:30 PM	8.57
2/4/2018 11:45 PM	8.39	2/5/2018 11:45 PM	8.52	2/6/2018 11:45 PM	8.57
AVG	8.34	AVG	8.44	AVG	8.51

Date And Time	pH	Date And Time	pH	Date And Time	pH
2/7/2018 12:00 AM	8.59	2/8/2018 12:00 AM	8.63	2/9/2018 12:00 AM	8.24
2/7/2018 12:15 AM	8.58	2/8/2018 12:15 AM	8.63	2/9/2018 12:15 AM	8.24
2/7/2018 12:30 AM	8.57	2/8/2018 12:30 AM	8.62	2/9/2018 12:30 AM	8.24
2/7/2018 12:45 AM	8.57	2/8/2018 12:45 AM	8.62	2/9/2018 12:45 AM	8.24
2/7/2018 1:00 AM	8.57	2/8/2018 1:00 AM	8.61	2/9/2018 1:00 AM	8.24
2/7/2018 1:15 AM	8.57	2/8/2018 1:15 AM	8.67	2/9/2018 1:15 AM	8.24
2/7/2018 1:30 AM	8.56	2/8/2018 1:30 AM	8.66	2/9/2018 1:30 AM	8.25
2/7/2018 1:45 AM	8.55	2/8/2018 1:45 AM	8.66	2/9/2018 1:45 AM	8.25
2/7/2018 2:00 AM	8.54	2/8/2018 2:00 AM	8.66	2/9/2018 2:00 AM	8.25
2/7/2018 2:15 AM	8.54	2/8/2018 2:15 AM	8.66	2/9/2018 2:15 AM	8.25
2/7/2018 2:30 AM	8.53	2/8/2018 2:30 AM	8.66	2/9/2018 2:30 AM	8.24
2/7/2018 2:45 AM	8.61	2/8/2018 2:45 AM	8.66	2/9/2018 2:45 AM	8.24
2/7/2018 3:00 AM	8.60	2/8/2018 3:00 AM	8.66	2/9/2018 3:00 AM	8.23
2/7/2018 3:15 AM	8.59	2/8/2018 3:15 AM	8.66	2/9/2018 3:15 AM	8.23
2/7/2018 3:30 AM	8.59	2/8/2018 3:30 AM	8.66	2/9/2018 3:30 AM	8.22
2/7/2018 3:45 AM	8.59	2/8/2018 3:45 AM	8.66	2/9/2018 3:45 AM	8.22
2/7/2018 4:00 AM	8.59	2/8/2018 4:00 AM	8.66	2/9/2018 4:00 AM	8.21
2/7/2018 4:15 AM	8.59	2/8/2018 4:15 AM	8.65	2/9/2018 4:15 AM	8.21
2/7/2018 4:30 AM	8.61	2/8/2018 4:30 AM	8.64	2/9/2018 4:30 AM	8.20
2/7/2018 4:45 AM	8.61	2/8/2018 4:45 AM	8.64	2/9/2018 4:45 AM	8.20
2/7/2018 5:00 AM	8.60	2/8/2018 5:00 AM	8.63	2/9/2018 5:00 AM	8.19
2/7/2018 5:15 AM	8.60	2/8/2018 5:15 AM	8.63	2/9/2018 5:15 AM	8.19
2/7/2018 5:30 AM	8.60	2/8/2018 5:30 AM	8.62	2/9/2018 5:30 AM	8.26
2/7/2018 5:45 AM	8.58	2/8/2018 5:45 AM	8.68	2/9/2018 5:45 AM	8.27
2/7/2018 6:00 AM	8.59	2/8/2018 6:00 AM	8.67	2/9/2018 6:00 AM	8.26
2/7/2018 6:15 AM	8.58	2/8/2018 6:15 AM	8.66	2/9/2018 6:15 AM	8.26
2/7/2018 6:30 AM	8.56	2/8/2018 6:30 AM	8.66	2/9/2018 6:30 AM	8.26
2/7/2018 6:45 AM	8.56	2/8/2018 6:45 AM	8.66	2/9/2018 6:45 AM	8.26
2/7/2018 7:00 AM	8.55	2/8/2018 7:00 AM	8.66	2/9/2018 7:00 AM	8.26
2/7/2018 7:15 AM	8.63	2/8/2018 7:15 AM	8.66	2/9/2018 7:15 AM	8.26
2/7/2018 7:30 AM	8.62	2/8/2018 7:30 AM	8.66	2/9/2018 7:30 AM	8.25
2/7/2018 7:45 AM	8.62	2/8/2018 7:45 AM	8.68	2/9/2018 7:45 AM	8.25
2/7/2018 8:00 AM	8.62	2/8/2018 8:00 AM	8.67	2/9/2018 8:00 AM	8.24
2/7/2018 8:15 AM	8.62	2/8/2018 8:15 AM	8.66	2/9/2018 8:15 AM	8.23
2/7/2018 8:30 AM	8.61	2/8/2018 8:30 AM	8.67	2/9/2018 8:30 AM	8.23
2/7/2018 8:45 AM	8.62	2/8/2018 8:45 AM	8.67	2/9/2018 8:45 AM	8.27
2/7/2018 9:00 AM	8.63	2/8/2018 9:00 AM	8.66	2/9/2018 9:00 AM	8.26
2/7/2018 9:15 AM	8.62	2/8/2018 9:15 AM	8.66	2/9/2018 9:15 AM	8.25
2/7/2018 9:30 AM	8.62	2/8/2018 9:30 AM	8.64	2/9/2018 9:30 AM	8.25
2/7/2018 9:45 AM	8.62	2/8/2018 9:45 AM	8.63	2/9/2018 9:45 AM	8.25
2/7/2018 10:00 AM	8.61	2/8/2018 10:00 AM	8.63	2/9/2018 10:00 AM	8.25
2/7/2018 10:15 AM	8.61	2/8/2018 10:15 AM	8.69	2/9/2018 10:15 AM	8.25
2/7/2018 10:30 AM	8.60	2/8/2018 10:30 AM	8.68	2/9/2018 10:30 AM	8.26
2/7/2018 10:45 AM	8.59	2/8/2018 10:45 AM	8.68	2/9/2018 10:45 AM	8.26
2/7/2018 11:00 AM	8.58	2/8/2018 11:00 AM	8.68	2/9/2018 11:00 AM	8.26
2/7/2018 11:15 AM	8.58	2/8/2018 11:15 AM	8.68	2/9/2018 11:15 AM	8.25
2/7/2018 11:30 AM	8.57	2/8/2018 11:30 AM	8.68	2/9/2018 11:30 AM	8.25
2/7/2018 11:45 AM	8.64	2/8/2018 11:45 AM	8.68	2/9/2018 11:45 AM	8.24
2/7/2018 12:00 PM	8.63	2/8/2018 12:00 PM	8.22	2/9/2018 12:00 PM	8.23
2/7/2018 12:15 PM	8.63	2/8/2018 12:15 PM	8.22	2/9/2018 12:15 PM	8.22
2/7/2018 12:30 PM	8.63	2/8/2018 12:30 PM	8.21	2/9/2018 12:30 PM	8.21
2/7/2018 12:45 PM	8.62	2/8/2018 12:45 PM	8.22	2/9/2018 12:45 PM	8.21
2/7/2018 1:00 PM	8.62	2/8/2018 1:00 PM	8.19	2/9/2018 1:00 PM	8.19
2/7/2018 1:15 PM	8.63	2/8/2018 1:15 PM	8.19	2/9/2018 1:15 PM	8.27
2/7/2018 1:30 PM	8.64	2/8/2018 1:30 PM	8.18	2/9/2018 1:30 PM	8.27
2/7/2018 1:45 PM	8.63	2/8/2018 1:45 PM	8.16	2/9/2018 1:45 PM	8.26
2/7/2018 2:00 PM	8.62	2/8/2018 2:00 PM	8.15	2/9/2018 2:00 PM	8.26
2/7/2018 2:15 PM	8.62	2/8/2018 2:15 PM	8.16	2/9/2018 2:15 PM	8.25
2/7/2018 2:30 PM	8.62	2/8/2018 2:30 PM	8.15	2/9/2018 2:30 PM	8.26
2/7/2018 2:45 PM	8.61	2/8/2018 2:45 PM	8.23	2/9/2018 2:45 PM	8.27
2/7/2018 3:00 PM	8.60	2/8/2018 3:00 PM	8.22	2/9/2018 3:00 PM	8.26
2/7/2018 3:15 PM	8.60	2/8/2018 3:15 PM	8.21	2/9/2018 3:15 PM	8.25
2/7/2018 3:30 PM	8.59	2/8/2018 3:30 PM	8.21	2/9/2018 3:30 PM	8.23
2/7/2018 3:45 PM	8.58	2/8/2018 3:45 PM	8.21	2/9/2018 3:45 PM	8.23
2/7/2018 4:00 PM	8.58	2/8/2018 4:00 PM	8.21	2/9/2018 4:00 PM	8.23
2/7/2018 4:15 PM	8.65	2/8/2018 4:15 PM	8.22	2/9/2018 4:15 PM	8.22
2/7/2018 4:30 PM	8.64	2/8/2018 4:30 PM	8.23	2/9/2018 4:30 PM	8.22
2/7/2018 4:45 PM	8.64	2/8/2018 4:45 PM	8.21	2/9/2018 4:45 PM	8.21
2/7/2018 5:00 PM	8.63	2/8/2018 5:00 PM	8.21	2/9/2018 5:00 PM	8.21
2/7/2018 5:15 PM	8.63	2/8/2018 5:15 PM	8.21	2/9/2018 5:15 PM	8.20
2/7/2018 5:30 PM	8.63	2/8/2018 5:30 PM	8.20	2/9/2018 5:30 PM	8.19
2/7/2018 5:45 PM	8.63	2/8/2018 5:45 PM	8.19	2/9/2018 5:45 PM	8.29
2/7/2018 6:00 PM	8.63	2/8/2018 6:00 PM	8.18	2/9/2018 6:00 PM	8.29
2/7/2018 6:15 PM	8.65	2/8/2018 6:15 PM	8.18	2/9/2018 6:15 PM	8.28
2/7/2018 6:30 PM	8.64	2/8/2018 6:30 PM	8.18	2/9/2018 6:30 PM	8.28
2/7/2018 6:45 PM	8.63	2/8/2018 6:45 PM	8.17	2/9/2018 6:45 PM	8.28
2/7/2018 7:00 PM	8.62	2/8/2018 7:00 PM	8.16	2/9/2018 7:00 PM	8.28
2/7/2018 7:15 PM	8.62	2/8/2018 7:15 PM	8.25	2/9/2018 7:15 PM	8.28
2/7/2018 7:30 PM	8.61	2/8/2018 7:30 PM	8.24	2/9/2018 7:30 PM	8.28
2/7/2018 7:45 PM	8.61	2/8/2018 7:45 PM	8.23	2/9/2018 7:45 PM	8.29
2/7/2018 8:00 PM	8.61	2/8/2018 8:00 PM	8.23	2/9/2018 8:00 PM	8.27
2/7/2018 8:15 PM	8.59	2/8/2018 8:15 PM	8.23	2/9/2018 8:15 PM	8.26
2/7/2018 8:30 PM	8.59	2/8/2018 8:30 PM	8.23	2/9/2018 8:30 PM	8.26
2/7/2018 8:45 PM	8.59	2/8/2018 8:45 PM	8.23	2/9/2018 8:45 PM	8.26
2/7/2018 9:00 PM	8.58	2/8/2018 9:00 PM	8.23	2/9/2018 9:00 PM	8.25
2/7/2018 9:15 PM	8.58	2/8/2018 9:15 PM	8.24	2/9/2018 9:15 PM	8.24
2/7/2018 9:30 PM	8.58	2/8/2018 9:30 PM	8.23	2/9/2018 9:30 PM	8.24
2/7/2018 9:45 PM	8.57	2/8/2018 9:45 PM	8.23	2/9/2018 9:45 PM	8.23
2/7/2018 10:00 PM	8.66	2/8/2018 10:00 PM	8.23	2/9/2018 10:00 PM	8.23
2/7/2018 10:15 PM	8.67	2/8/2018 10:15 PM	8.23	2/9/2018 10:15 PM	8.30
2/7/2018 10:30 PM	8.66	2/8/2018 10:30 PM	8.23	2/9/2018 10:30 PM	8.30
2/7/2018 10:45 PM	8.66	2/8/2018 10:45 PM	8.22	2/9/2018 10:45 PM	8.29
2/7/2018 11:00 PM	8.66	2/8/2018 11:00 PM	8.22	2/9/2018 11:00 PM	8.29
2/7/2018 11:15 PM	8.65	2/8/2018 11:15 PM	8.21	2/9/2018 11:15 PM	8.29
2/7/2018 11:30 PM	8.64	2/8/2018 11:30 PM	8.21	2/9/2018 11:30 PM	8.28
2/7/2018 11:45 PM	8.64	2/8/2018 11:45 PM	8.25	2/9/2018 11:45 PM	8.28
AVG	8.61	AVG	8.43	AVG	8.25

Date And Time	pH	Date And Time	pH	Date And Time	pH
2/10/2018 12:00 AM	8.28	2/11/2018 12:00 AM	8.15	2/12/2018 12:00 AM	8.31
2/10/2018 12:15 AM	8.29	2/11/2018 12:15 AM	8.15	2/12/2018 12:15 AM	8.30
2/10/2018 12:30 AM	8.29	2/11/2018 12:30 AM	8.15	2/12/2018 12:30 AM	8.31
2/10/2018 12:45 AM	8.28	2/11/2018 12:45 AM	8.14	2/12/2018 12:45 AM	8.31
2/10/2018 1:00 AM	8.27	2/11/2018 1:00 AM	8.14	2/12/2018 1:00 AM	8.31
2/10/2018 1:15 AM	8.27	2/11/2018 1:15 AM	8.14	2/12/2018 1:15 AM	8.31
2/10/2018 1:30 AM	8.26	2/11/2018 1:30 AM	8.14	2/12/2018 1:30 AM	8.32
2/10/2018 1:45 AM	8.26	2/11/2018 1:45 AM	8.14	2/12/2018 1:45 AM	8.32
2/10/2018 2:00 AM	8.26	2/11/2018 2:00 AM	8.14	2/12/2018 2:00 AM	8.33
2/10/2018 2:15 AM	8.25	2/11/2018 2:15 AM	8.14	2/12/2018 2:15 AM	8.33
2/10/2018 2:30 AM	8.24	2/11/2018 2:30 AM	8.13	2/12/2018 2:30 AM	8.34
2/10/2018 2:45 AM	8.31	2/11/2018 2:45 AM	8.13	2/12/2018 2:45 AM	8.35
2/10/2018 3:00 AM	8.31	2/11/2018 3:00 AM	8.13	2/12/2018 3:00 AM	8.34
2/10/2018 3:15 AM	8.30	2/11/2018 3:15 AM	8.13	2/12/2018 3:15 AM	8.35
2/10/2018 3:30 AM	8.30	2/11/2018 3:30 AM	8.13	2/12/2018 3:30 AM	8.35
2/10/2018 3:45 AM	8.30	2/11/2018 3:45 AM	8.13	2/12/2018 3:45 AM	8.35
2/10/2018 4:00 AM	8.30	2/11/2018 4:00 AM	8.13	2/12/2018 4:00 AM	8.35
2/10/2018 4:15 AM	8.30	2/11/2018 4:15 AM	8.13	2/12/2018 4:15 AM	8.36
2/10/2018 4:30 AM	8.31	2/11/2018 4:30 AM	8.13	2/12/2018 4:30 AM	8.36
2/10/2018 4:45 AM	8.30	2/11/2018 4:45 AM	8.13	2/12/2018 4:45 AM	8.37
2/10/2018 5:00 AM	8.30	2/11/2018 5:00 AM	8.13	2/12/2018 5:00 AM	8.37
2/10/2018 5:15 AM	8.30	2/11/2018 5:15 AM	8.13	2/12/2018 5:15 AM	8.37
2/10/2018 5:30 AM	8.28	2/11/2018 5:30 AM	8.13	2/12/2018 5:30 AM	8.37
2/10/2018 5:45 AM	8.28	2/11/2018 5:45 AM	8.13	2/12/2018 5:45 AM	8.38
2/10/2018 6:00 AM	8.28	2/11/2018 6:00 AM	8.12	2/12/2018 6:00 AM	8.38
2/10/2018 6:15 AM	8.27	2/11/2018 6:15 AM	8.13	2/12/2018 6:15 AM	8.38
2/10/2018 6:30 AM	8.26	2/11/2018 6:30 AM	8.12	2/12/2018 6:30 AM	8.39
2/10/2018 6:45 AM	8.26	2/11/2018 6:45 AM	8.13	2/12/2018 6:45 AM	8.39
2/10/2018 7:00 AM	8.32	2/11/2018 7:00 AM	8.13	2/12/2018 7:00 AM	8.39
2/10/2018 7:15 AM	8.32	2/11/2018 7:15 AM	8.13	2/12/2018 7:15 AM	8.39
2/10/2018 7:30 AM	8.31	2/11/2018 7:30 AM	8.12	2/12/2018 7:30 AM	8.39
2/10/2018 7:45 AM	8.31	2/11/2018 7:45 AM	8.13	2/12/2018 7:45 AM	8.39
2/10/2018 8:00 AM	8.31	2/11/2018 8:00 AM	8.13	2/12/2018 8:00 AM	8.39
2/10/2018 8:15 AM	8.31	2/11/2018 8:15 AM	8.12	2/12/2018 8:15 AM	8.40
2/10/2018 8:30 AM	8.29	2/11/2018 8:30 AM	8.13	2/12/2018 8:30 AM	8.40
2/10/2018 8:45 AM	8.31	2/11/2018 8:45 AM	8.13	2/12/2018 8:45 AM	8.40
2/10/2018 9:00 AM	8.30	2/11/2018 9:00 AM	8.13	2/12/2018 9:00 AM	8.40
2/10/2018 9:15 AM	8.31	2/11/2018 9:15 AM	8.13	2/12/2018 9:15 AM	8.41
2/10/2018 9:30 AM	8.29	2/11/2018 9:30 AM	8.13	2/12/2018 9:30 AM	8.41
2/10/2018 9:45 AM	8.27	2/11/2018 9:45 AM	8.13	2/12/2018 9:45 AM	8.41
2/10/2018 10:00 AM	8.27	2/11/2018 10:00 AM	8.13	2/12/2018 10:00 AM	8.42
2/10/2018 10:15 AM	8.26	2/11/2018 10:15 AM	8.13	2/12/2018 10:15 AM	8.41
2/10/2018 10:30 AM	8.27	2/11/2018 10:30 AM	8.13	2/12/2018 10:30 AM	8.41
2/10/2018 10:45 AM	8.27	2/11/2018 10:45 AM	8.13	2/12/2018 10:45 AM	8.40
2/10/2018 11:00 AM	8.26	2/11/2018 11:00 AM	8.13	2/12/2018 11:00 AM	8.38
2/10/2018 11:15 AM	8.25	2/11/2018 11:15 AM	8.13	2/12/2018 11:15 AM	8.37
2/10/2018 11:30 AM	8.25	2/11/2018 11:30 AM	8.13	2/12/2018 11:30 AM	8.36
2/10/2018 11:45 AM	8.32	2/11/2018 11:45 AM	8.13	2/12/2018 11:45 AM	8.37
2/10/2018 12:00 PM	8.32	2/11/2018 12:00 PM	8.13	2/12/2018 12:00 PM	8.37
2/10/2018 12:15 PM	8.32	2/11/2018 12:15 PM	8.13	2/12/2018 12:15 PM	8.37
2/10/2018 12:30 PM	8.32	2/11/2018 12:30 PM	8.13	2/12/2018 12:30 PM	8.37
2/10/2018 12:45 PM	8.30	2/11/2018 12:45 PM	8.13	2/12/2018 12:45 PM	8.36
2/10/2018 1:00 PM	8.32	2/11/2018 1:00 PM	8.13	2/12/2018 1:00 PM	8.34
2/10/2018 1:15 PM	8.32	2/11/2018 1:15 PM	8.13	2/12/2018 1:15 PM	8.34
2/10/2018 1:30 PM	8.31	2/11/2018 1:30 PM	8.13	2/12/2018 1:30 PM	8.44
2/10/2018 1:45 PM	8.32	2/11/2018 1:45 PM	8.14	2/12/2018 1:45 PM	8.44
2/10/2018 2:00 PM	8.32	2/11/2018 2:00 PM	8.14	2/12/2018 2:00 PM	8.44
2/10/2018 2:15 PM	8.32	2/11/2018 2:15 PM	8.14	2/12/2018 2:15 PM	8.44
2/10/2018 2:30 PM	8.32	2/11/2018 2:30 PM	8.14	2/12/2018 2:30 PM	8.44
2/10/2018 2:45 PM	8.31	2/11/2018 2:45 PM	8.14	2/12/2018 2:45 PM	8.44
2/10/2018 3:00 PM	8.32	2/11/2018 3:00 PM	8.14	2/12/2018 3:00 PM	8.42
2/10/2018 3:15 PM	8.32	2/11/2018 3:15 PM	8.14	2/12/2018 3:15 PM	8.42
2/10/2018 3:30 PM	8.32	2/11/2018 3:30 PM	8.14	2/12/2018 3:30 PM	8.40
2/10/2018 3:45 PM	8.32	2/11/2018 3:45 PM	8.15	2/12/2018 3:45 PM	8.41
2/10/2018 4:00 PM	8.31	2/11/2018 4:00 PM	8.15	2/12/2018 4:00 PM	8.42
2/10/2018 4:15 PM	8.30	2/11/2018 4:15 PM	8.14	2/12/2018 4:15 PM	8.42
2/10/2018 4:30 PM	8.30	2/11/2018 4:30 PM	8.14	2/12/2018 4:30 PM	8.40
2/10/2018 4:45 PM	8.28	2/11/2018 4:45 PM	8.14	2/12/2018 4:45 PM	8.40
2/10/2018 5:00 PM	8.28	2/11/2018 5:00 PM	8.14	2/12/2018 5:00 PM	8.40
2/10/2018 5:15 PM	8.27	2/11/2018 5:15 PM	8.14	2/12/2018 5:15 PM	8.40
2/10/2018 5:30 PM	8.27	2/11/2018 5:30 PM	8.33	2/12/2018 5:30 PM	8.45
2/10/2018 5:45 PM	8.26	2/11/2018 5:45 PM	8.33	2/12/2018 5:45 PM	8.46
2/10/2018 6:00 PM	8.25	2/11/2018 6:00 PM	8.32	2/12/2018 6:00 PM	8.46
2/10/2018 6:15 PM	8.25	2/11/2018 6:15 PM	8.32	2/12/2018 6:15 PM	8.46
2/10/2018 6:30 PM	8.24	2/11/2018 6:30 PM	8.32	2/12/2018 6:30 PM	8.45
2/10/2018 6:45 PM	8.24	2/11/2018 6:45 PM	8.32	2/12/2018 6:45 PM	8.45
2/10/2018 7:00 PM	8.23	2/11/2018 7:00 PM	8.32	2/12/2018 7:00 PM	8.45
2/10/2018 7:15 PM	8.22	2/11/2018 7:15 PM	8.32	2/12/2018 7:15 PM	8.45
2/10/2018 7:30 PM	8.22	2/11/2018 7:30 PM	8.32	2/12/2018 7:30 PM	8.45
2/10/2018 7:45 PM	8.21	2/11/2018 7:45 PM	8.32	2/12/2018 7:45 PM	8.44
2/10/2018 8:00 PM	8.21	2/11/2018 8:00 PM	8.32	2/12/2018 8:00 PM	8.43
2/10/2018 8:15 PM	8.20	2/11/2018 8:15 PM	8.32	2/12/2018 8:15 PM	8.41
2/10/2018 8:30 PM	8.20	2/11/2018 8:30 PM	8.32	2/12/2018 8:30 PM	8.41
2/10/2018 8:45 PM	8.19	2/11/2018 8:45 PM	8.32	2/12/2018 8:45 PM	8.39
2/10/2018 9:00 PM	8.19	2/11/2018 9:00 PM	8.31	2/12/2018 9:00 PM	8.40
2/10/2018 9:15 PM	8.18	2/11/2018 9:15 PM	8.30	2/12/2018 9:15 PM	8.40
2/10/2018 9:30 PM	8.18	2/11/2018 9:30 PM	8.30	2/12/2018 9:30 PM	8.40
2/10/2018 9:45 PM	8.18	2/11/2018 9:45 PM	8.30	2/12/2018 9:45 PM	8.39
2/10/2018 10:00 PM	8.17	2/11/2018 10:00 PM	8.29	2/12/2018 10:00 PM	8.46
2/10/2018 10:15 PM	8.17	2/11/2018 10:15 PM	8.31	2/12/2018 10:15 PM	8.47
2/10/2018 10:30 PM	8.16	2/11/2018 10:30 PM	8.30	2/12/2018 10:30 PM	8.46
2/10/2018 10:45 PM	8.16	2/11/2018 10:45 PM	8.30	2/12/2018 10:45 PM	8.46
2/10/2018 11:00 PM	8.16	2/11/2018 11:00 PM	8.30	2/12/2018 11:00 PM	8.46
2/10/2018 11:15 PM	8.16	2/11/2018 11:15 PM	8.29	2/12/2018 11:15 PM	8.45
2/10/2018 11:30 PM	8.15	2/11/2018 11:30 PM	8.29	2/12/2018 11:30 PM	8.45
2/10/2018 11:45 PM	8.15	2/11/2018 11:45 PM	8.30	2/12/2018 11:45 PM	8.45
AVG	8.27	AVG	8.18	AVG	8.40

Date And Time	pH	Date And Time	pH	Date And Time	pH
2/13/2018 12:00 AM	8.45	2/14/2018 12:00 AM	8.41	2/15/2018 12:00 AM	8.50
2/13/2018 12:15 AM	8.46	2/14/2018 12:15 AM	8.41	2/15/2018 12:15 AM	8.49
2/13/2018 12:30 AM	8.45	2/14/2018 12:30 AM	8.41	2/15/2018 12:30 AM	8.49
2/13/2018 12:45 AM	8.44	2/14/2018 12:45 AM	8.40	2/15/2018 12:45 AM	8.49
2/13/2018 1:00 AM	8.44	2/14/2018 1:00 AM	8.40	2/15/2018 1:00 AM	8.49
2/13/2018 1:15 AM	8.42	2/14/2018 1:15 AM	8.46	2/15/2018 1:15 AM	8.49
2/13/2018 1:30 AM	8.42	2/14/2018 1:30 AM	8.45	2/15/2018 1:30 AM	8.50
2/13/2018 1:45 AM	8.43	2/14/2018 1:45 AM	8.45	2/15/2018 1:45 AM	8.50
2/13/2018 2:00 AM	8.42	2/14/2018 2:00 AM	8.44	2/15/2018 2:00 AM	8.50
2/13/2018 2:15 AM	8.42	2/14/2018 2:15 AM	8.43	2/15/2018 2:15 AM	8.49
2/13/2018 2:30 AM	8.46	2/14/2018 2:30 AM	8.45	2/15/2018 2:30 AM	8.47
2/13/2018 2:45 AM	8.47	2/14/2018 2:45 AM	8.44	2/15/2018 2:45 AM	8.47
2/13/2018 3:00 AM	8.47	2/14/2018 3:00 AM	8.46	2/15/2018 3:00 AM	8.46
2/13/2018 3:15 AM	8.47	2/14/2018 3:15 AM	8.45	2/15/2018 3:15 AM	8.48
2/13/2018 3:30 AM	8.47	2/14/2018 3:30 AM	8.45	2/15/2018 3:30 AM	8.49
2/13/2018 3:45 AM	8.46	2/14/2018 3:45 AM	8.44	2/15/2018 3:45 AM	8.49
2/13/2018 4:00 AM	8.46	2/14/2018 4:00 AM	8.43	2/15/2018 4:00 AM	8.49
2/13/2018 4:15 AM	8.46	2/14/2018 4:15 AM	8.43	2/15/2018 4:15 AM	8.51
2/13/2018 4:30 AM	8.46	2/14/2018 4:30 AM	8.41	2/15/2018 4:30 AM	8.51
2/13/2018 4:45 AM	8.45	2/14/2018 4:45 AM	8.41	2/15/2018 4:45 AM	8.50
2/13/2018 5:00 AM	8.45	2/14/2018 5:00 AM	8.41	2/15/2018 5:00 AM	8.50
2/13/2018 5:15 AM	8.45	2/14/2018 5:15 AM	8.40	2/15/2018 5:15 AM	8.50
2/13/2018 5:30 AM	8.44	2/14/2018 5:30 AM	8.40	2/15/2018 5:30 AM	8.50
2/13/2018 5:45 AM	8.44	2/14/2018 5:45 AM	8.46	2/15/2018 5:45 AM	8.50
2/13/2018 6:00 AM	8.43	2/14/2018 6:00 AM	8.45	2/15/2018 6:00 AM	8.51
2/13/2018 6:15 AM	8.42	2/14/2018 6:15 AM	8.44	2/15/2018 6:15 AM	8.50
2/13/2018 6:30 AM	8.42	2/14/2018 6:30 AM	8.46	2/15/2018 6:30 AM	8.51
2/13/2018 6:45 AM	8.42	2/14/2018 6:45 AM	8.45	2/15/2018 6:45 AM	8.51
2/13/2018 7:00 AM	8.41	2/14/2018 7:00 AM	8.42	2/15/2018 7:00 AM	8.50
2/13/2018 7:15 AM	8.41	2/14/2018 7:15 AM	8.46	2/15/2018 7:15 AM	8.50
2/13/2018 7:30 AM	8.41	2/14/2018 7:30 AM	8.46	2/15/2018 7:30 AM	8.50
2/13/2018 7:45 AM	8.40	2/14/2018 7:45 AM	8.44	2/15/2018 7:45 AM	8.50
2/13/2018 8:00 AM	8.44	2/14/2018 8:00 AM	8.44	2/15/2018 8:00 AM	8.48
2/13/2018 8:15 AM	8.47	2/14/2018 8:15 AM	8.43	2/15/2018 8:15 AM	8.48
2/13/2018 8:30 AM	8.48	2/14/2018 8:30 AM	8.44	2/15/2018 8:30 AM	8.47
2/13/2018 8:45 AM	8.47	2/14/2018 8:45 AM	8.43	2/15/2018 8:45 AM	8.52
2/13/2018 9:00 AM	8.45	2/14/2018 9:00 AM	8.42	2/15/2018 9:00 AM	8.50
2/13/2018 9:15 AM	8.43	2/14/2018 9:15 AM	8.41	2/15/2018 9:15 AM	8.49
2/13/2018 9:30 AM	8.44	2/14/2018 9:30 AM	8.40	2/15/2018 9:30 AM	8.48
2/13/2018 9:45 AM	8.44	2/14/2018 9:45 AM	8.39	2/15/2018 9:45 AM	8.48
2/13/2018 10:00 AM	8.43	2/14/2018 10:00 AM	8.38	2/15/2018 10:00 AM	8.47
2/13/2018 10:15 AM	8.42	2/14/2018 10:15 AM	8.38	2/15/2018 10:15 AM	8.47
2/13/2018 10:30 AM	8.41	2/14/2018 10:30 AM	8.37	2/15/2018 10:30 AM	8.48
2/13/2018 10:45 AM	8.41	2/14/2018 10:45 AM	8.36	2/15/2018 10:45 AM	8.47
2/13/2018 11:00 AM	8.39	2/14/2018 11:00 AM	8.36	2/15/2018 11:00 AM	8.46
2/13/2018 11:15 AM	8.38	2/14/2018 11:15 AM	8.37	2/15/2018 11:15 AM	8.46
2/13/2018 11:30 AM	8.38	2/14/2018 11:30 AM	8.48	2/15/2018 11:30 AM	8.46
2/13/2018 11:45 AM	8.47	2/14/2018 11:45 AM	8.48	2/15/2018 11:45 AM	8.45
2/13/2018 12:00 PM	8.46	2/14/2018 12:00 PM	8.48	2/15/2018 12:00 PM	8.45
2/13/2018 12:15 PM	8.45	2/14/2018 12:15 PM	8.46	2/15/2018 12:15 PM	8.45
2/13/2018 12:30 PM	8.45	2/14/2018 12:30 PM	8.45	2/15/2018 12:30 PM	8.44
2/13/2018 12:45 PM	8.45	2/14/2018 12:45 PM	8.45	2/15/2018 12:45 PM	8.46
2/13/2018 1:00 PM	8.44	2/14/2018 1:00 PM	8.44	2/15/2018 1:00 PM	8.47
2/13/2018 1:15 PM	8.44	2/14/2018 1:15 PM	8.45	2/15/2018 1:15 PM	8.52
2/13/2018 1:30 PM	8.44	2/14/2018 1:30 PM	8.43	2/15/2018 1:30 PM	8.50
2/13/2018 1:45 PM	8.44	2/14/2018 1:45 PM	8.45	2/15/2018 1:45 PM	8.48
2/13/2018 2:00 PM	8.43	2/14/2018 2:00 PM	8.43	2/15/2018 2:00 PM	8.47
2/13/2018 2:15 PM	8.42	2/14/2018 2:15 PM	8.45	2/15/2018 2:15 PM	8.47
2/13/2018 2:30 PM	8.43	2/14/2018 2:30 PM	8.43	2/15/2018 2:30 PM	8.48
2/13/2018 2:45 PM	8.42	2/14/2018 2:45 PM	8.48	2/15/2018 2:45 PM	8.49
2/13/2018 3:00 PM	8.41	2/14/2018 3:00 PM	8.48	2/15/2018 3:00 PM	8.50
2/13/2018 3:15 PM	8.41	2/14/2018 3:15 PM	8.47	2/15/2018 3:15 PM	8.49
2/13/2018 3:30 PM	8.41	2/14/2018 3:30 PM	8.47	2/15/2018 3:30 PM	8.49
2/13/2018 3:45 PM	8.40	2/14/2018 3:45 PM	8.47	2/15/2018 3:45 PM	8.49
2/13/2018 4:00 PM	8.40	2/14/2018 4:00 PM	8.47	2/15/2018 4:00 PM	8.49
2/13/2018 4:15 PM	8.46	2/14/2018 4:15 PM	8.48	2/15/2018 4:15 PM	8.49
2/13/2018 4:30 PM	8.45	2/14/2018 4:30 PM	8.47	2/15/2018 4:30 PM	8.49
2/13/2018 4:45 PM	8.44	2/14/2018 4:45 PM	8.48	2/15/2018 4:45 PM	8.49
2/13/2018 5:00 PM	8.44	2/14/2018 5:00 PM	8.47	2/15/2018 5:00 PM	8.49
2/13/2018 5:15 PM	8.44	2/14/2018 5:15 PM	8.48	2/15/2018 5:15 PM	8.48
2/13/2018 5:30 PM	8.44	2/14/2018 5:30 PM	8.47	2/15/2018 5:30 PM	8.48
2/13/2018 5:45 PM	8.44	2/14/2018 5:45 PM	8.47	2/15/2018 5:45 PM	8.53
2/13/2018 6:00 PM	8.44	2/14/2018 6:00 PM	8.46	2/15/2018 6:00 PM	8.52
2/13/2018 6:15 PM	8.44	2/14/2018 6:15 PM	8.44	2/15/2018 6:15 PM	8.51
2/13/2018 6:30 PM	8.44	2/14/2018 6:30 PM	8.43	2/15/2018 6:30 PM	8.51
2/13/2018 6:45 PM	8.42	2/14/2018 6:45 PM	8.44	2/15/2018 6:45 PM	8.51
2/13/2018 7:00 PM	8.41	2/14/2018 7:00 PM	8.44	2/15/2018 7:00 PM	8.51
2/13/2018 7:15 PM	8.42	2/14/2018 7:15 PM	8.51	2/15/2018 7:15 PM	8.51
2/13/2018 7:30 PM	8.41	2/14/2018 7:30 PM	8.50	2/15/2018 7:30 PM	8.50
2/13/2018 7:45 PM	8.41	2/14/2018 7:45 PM	8.49	2/15/2018 7:45 PM	8.49
2/13/2018 8:00 PM	8.40	2/14/2018 8:00 PM	8.50	2/15/2018 8:00 PM	8.49
2/13/2018 8:15 PM	8.40	2/14/2018 8:15 PM	8.49	2/15/2018 8:15 PM	8.50
2/13/2018 8:30 PM	8.40	2/14/2018 8:30 PM	8.50	2/15/2018 8:30 PM	8.50
2/13/2018 8:45 PM	8.45	2/14/2018 8:45 PM	8.50	2/15/2018 8:45 PM	8.50
2/13/2018 9:00 PM	8.44	2/14/2018 9:00 PM	8.49	2/15/2018 9:00 PM	8.50
2/13/2018 9:15 PM	8.44	2/14/2018 9:15 PM	8.50	2/15/2018 9:15 PM	8.50
2/13/2018 9:30 PM	8.44	2/14/2018 9:30 PM	8.50	2/15/2018 9:30 PM	8.50
2/13/2018 9:45 PM	8.44	2/14/2018 9:45 PM	8.50	2/15/2018 9:45 PM	8.50
2/13/2018 10:00 PM	8.44	2/14/2018 10:00 PM	8.49	2/15/2018 10:00 PM	8.49
2/13/2018 10:15 PM	8.44	2/14/2018 10:15 PM	8.49	2/15/2018 10:15 PM	8.53
2/13/2018 10:30 PM	8.44	2/14/2018 10:30 PM	8.49	2/15/2018 10:30 PM	8.53
2/13/2018 10:45 PM	8.42	2/14/2018 10:45 PM	8.48	2/15/2018 10:45 PM	8.52
2/13/2018 11:00 PM	8.42	2/14/2018 11:00 PM	8.48	2/15/2018 11:00 PM	8.52
2/13/2018 11:15 PM	8.42	2/14/2018 11:15 PM	8.48	2/15/2018 11:15 PM	8.51
2/13/2018 11:30 PM	8.43	2/14/2018 11:30 PM	8.47	2/15/2018 11:30 PM	8.51
2/13/2018 11:45 PM	8.42	2/14/2018 11:45 PM	8.50	2/15/2018 11:45 PM	8.51
AVG	8.43	AVG	8.45	AVG	8.49

Date And Time	pH	Date And Time	pH	Date And Time	pH
2/16/2018 12:00 AM	8.51	2/17/2018 12:00 AM	8.19	2/18/2018 12:00 AM	8.21
2/16/2018 12:15 AM	8.51	2/17/2018 12:15 AM	8.18	2/18/2018 12:15 AM	8.21
2/16/2018 12:30 AM	8.50	2/17/2018 12:30 AM	8.18	2/18/2018 12:30 AM	8.21
2/16/2018 12:45 AM	8.49	2/17/2018 12:45 AM	8.18	2/18/2018 12:45 AM	8.21
2/16/2018 1:00 AM	8.49	2/17/2018 1:00 AM	8.17	2/18/2018 1:00 AM	8.21
2/16/2018 1:15 AM	8.49	2/17/2018 1:15 AM	8.21	2/18/2018 1:15 AM	8.21
2/16/2018 1:30 AM	8.49	2/17/2018 1:30 AM	8.20	2/18/2018 1:30 AM	8.20
2/16/2018 1:45 AM	8.50	2/17/2018 1:45 AM	8.20	2/18/2018 1:45 AM	8.23
2/16/2018 2:00 AM	8.49	2/17/2018 2:00 AM	8.20	2/18/2018 2:00 AM	8.22
2/16/2018 2:15 AM	8.49	2/17/2018 2:15 AM	8.20	2/18/2018 2:15 AM	8.22
2/16/2018 2:30 AM	8.49	2/17/2018 2:30 AM	8.20	2/18/2018 2:30 AM	8.21
2/16/2018 2:45 AM	8.49	2/17/2018 2:45 AM	8.20	2/18/2018 2:45 AM	8.20
2/16/2018 3:00 AM	8.48	2/17/2018 3:00 AM	8.22	2/18/2018 3:00 AM	8.20
2/16/2018 3:15 AM	8.48	2/17/2018 3:15 AM	8.21	2/18/2018 3:15 AM	8.20
2/16/2018 3:30 AM	8.54	2/17/2018 3:30 AM	8.21	2/18/2018 3:30 AM	8.19
2/16/2018 3:45 AM	8.53	2/17/2018 3:45 AM	8.20	2/18/2018 3:45 AM	8.19
2/16/2018 4:00 AM	8.53	2/17/2018 4:00 AM	8.20	2/18/2018 4:00 AM	8.19
2/16/2018 4:15 AM	8.53	2/17/2018 4:15 AM	8.19	2/18/2018 4:15 AM	8.21
2/16/2018 4:30 AM	8.53	2/17/2018 4:30 AM	8.19	2/18/2018 4:30 AM	8.21
2/16/2018 4:45 AM	8.52	2/17/2018 4:45 AM	8.19	2/18/2018 4:45 AM	8.20
2/16/2018 5:00 AM	8.53	2/17/2018 5:00 AM	8.18	2/18/2018 5:00 AM	8.20
2/16/2018 5:15 AM	8.53	2/17/2018 5:15 AM	8.18	2/18/2018 5:15 AM	8.20
2/16/2018 5:30 AM	8.52	2/17/2018 5:30 AM	8.17	2/18/2018 5:30 AM	8.20
2/16/2018 5:45 AM	8.51	2/17/2018 5:45 AM	8.22	2/18/2018 5:45 AM	8.20
2/16/2018 6:00 AM	8.51	2/17/2018 6:00 AM	8.21	2/18/2018 6:00 AM	8.20
2/16/2018 6:15 AM	8.52	2/17/2018 6:15 AM	8.21	2/18/2018 6:15 AM	8.22
2/16/2018 6:30 AM	8.52	2/17/2018 6:30 AM	8.20	2/18/2018 6:30 AM	8.23
2/16/2018 6:45 AM	8.51	2/17/2018 6:45 AM	8.20	2/18/2018 6:45 AM	8.22
2/16/2018 7:00 AM	8.50	2/17/2018 7:00 AM	8.20	2/18/2018 7:00 AM	8.22
2/16/2018 7:15 AM	8.55	2/17/2018 7:15 AM	8.20	2/18/2018 7:15 AM	8.21
2/16/2018 7:30 AM	8.54	2/17/2018 7:30 AM	8.21	2/18/2018 7:30 AM	8.21
2/16/2018 7:45 AM	8.53	2/17/2018 7:45 AM	8.22	2/18/2018 7:45 AM	8.20
2/16/2018 8:00 AM	8.53	2/17/2018 8:00 AM	8.21	2/18/2018 8:00 AM	8.20
2/16/2018 8:15 AM	8.53	2/17/2018 8:15 AM	8.21	2/18/2018 8:15 AM	8.19
2/16/2018 8:30 AM	8.53	2/17/2018 8:30 AM	8.20	2/18/2018 8:30 AM	8.19
2/16/2018 8:45 AM	8.52	2/17/2018 8:45 AM	8.20	2/18/2018 8:45 AM	8.21
2/16/2018 9:00 AM	8.52	2/17/2018 9:00 AM	8.19	2/18/2018 9:00 AM	8.20
2/16/2018 9:15 AM	8.53	2/17/2018 9:15 AM	8.19	2/18/2018 9:15 AM	8.20
2/16/2018 9:30 AM	8.52	2/17/2018 9:30 AM	8.18	2/18/2018 9:30 AM	8.20
2/16/2018 9:45 AM	8.53	2/17/2018 9:45 AM	8.18	2/18/2018 9:45 AM	8.20
2/16/2018 10:00 AM	8.52	2/17/2018 10:00 AM	8.17	2/18/2018 10:00 AM	8.20
2/16/2018 10:15 AM	8.52	2/17/2018 10:15 AM	8.21	2/18/2018 10:15 AM	8.21
2/16/2018 10:30 AM	8.51	2/17/2018 10:30 AM	8.21	2/18/2018 10:30 AM	8.22
2/16/2018 10:45 AM	8.52	2/17/2018 10:45 AM	8.21	2/18/2018 10:45 AM	8.21
2/16/2018 11:00 AM	8.52	2/17/2018 11:00 AM	8.21	2/18/2018 11:00 AM	8.20
2/16/2018 11:15 AM	8.52	2/17/2018 11:15 AM	8.21	2/18/2018 11:15 AM	8.19
2/16/2018 11:30 AM	8.52	2/17/2018 11:30 AM	8.20	2/18/2018 11:30 AM	8.19
2/16/2018 11:45 AM	8.53	2/17/2018 11:45 AM	8.20	2/18/2018 11:45 AM	8.19
2/16/2018 12:00 PM	8.52	2/17/2018 12:00 PM	8.22	2/18/2018 12:00 PM	8.19
2/16/2018 12:15 PM	8.20	2/17/2018 12:15 PM	8.22	2/18/2018 12:15 PM	8.19
2/16/2018 12:30 PM	8.19	2/17/2018 12:30 PM	8.21	2/18/2018 12:30 PM	8.18
2/16/2018 12:45 PM	8.19	2/17/2018 12:45 PM	8.21	2/18/2018 12:45 PM	8.18
2/16/2018 1:00 PM	8.18	2/17/2018 1:00 PM	8.20	2/18/2018 1:00 PM	8.19
2/16/2018 1:15 PM	8.18	2/17/2018 1:15 PM	8.19	2/18/2018 1:15 PM	8.19
2/16/2018 1:30 PM	8.19	2/17/2018 1:30 PM	8.19	2/18/2018 1:30 PM	8.20
2/16/2018 1:45 PM	8.19	2/17/2018 1:45 PM	8.19	2/18/2018 1:45 PM	8.20
2/16/2018 2:00 PM	8.20	2/17/2018 2:00 PM	8.19	2/18/2018 2:00 PM	8.20
2/16/2018 2:15 PM	8.20	2/17/2018 2:15 PM	8.18	2/18/2018 2:15 PM	8.19
2/16/2018 2:30 PM	8.20	2/17/2018 2:30 PM	8.18	2/18/2018 2:30 PM	8.20
2/16/2018 2:45 PM	8.19	2/17/2018 2:45 PM	8.22	2/18/2018 2:45 PM	8.22
2/16/2018 3:00 PM	8.19	2/17/2018 3:00 PM	8.21	2/18/2018 3:00 PM	8.21
2/16/2018 3:15 PM	8.16	2/17/2018 3:15 PM	8.21	2/18/2018 3:15 PM	8.22
2/16/2018 3:30 PM	8.16	2/17/2018 3:30 PM	8.21	2/18/2018 3:30 PM	8.23
2/16/2018 3:45 PM	8.16	2/17/2018 3:45 PM	8.21	2/18/2018 3:45 PM	8.23
2/16/2018 4:00 PM	8.17	2/17/2018 4:00 PM	8.21	2/18/2018 4:00 PM	8.23
2/16/2018 4:15 PM	8.18	2/17/2018 4:15 PM	8.21	2/18/2018 4:15 PM	8.23
2/16/2018 4:30 PM	8.19	2/17/2018 4:30 PM	8.20	2/18/2018 4:30 PM	8.23
2/16/2018 4:45 PM	8.19	2/17/2018 4:45 PM	8.23	2/18/2018 4:45 PM	8.23
2/16/2018 5:00 PM	8.19	2/17/2018 5:00 PM	8.22	2/18/2018 5:00 PM	8.23
2/16/2018 5:15 PM	8.18	2/17/2018 5:15 PM	8.22	2/18/2018 5:15 PM	8.22
2/16/2018 5:30 PM	8.19	2/17/2018 5:30 PM	8.22	2/18/2018 5:30 PM	8.22
2/16/2018 5:45 PM	8.19	2/17/2018 5:45 PM	8.22	2/18/2018 5:45 PM	8.21
2/16/2018 6:00 PM	8.20	2/17/2018 6:00 PM	8.22	2/18/2018 6:00 PM	8.21
2/16/2018 6:15 PM	8.20	2/17/2018 6:15 PM	8.22	2/18/2018 6:15 PM	8.21
2/16/2018 6:30 PM	8.20	2/17/2018 6:30 PM	8.22	2/18/2018 6:30 PM	8.21
2/16/2018 6:45 PM	8.19	2/17/2018 6:45 PM	8.22	2/18/2018 6:45 PM	8.20
2/16/2018 7:00 PM	8.18	2/17/2018 7:00 PM	8.22	2/18/2018 7:00 PM	8.20
2/16/2018 7:15 PM	8.17	2/17/2018 7:15 PM	8.22	2/18/2018 7:15 PM	8.20
2/16/2018 7:30 PM	8.17	2/17/2018 7:30 PM	8.21	2/18/2018 7:30 PM	8.20
2/16/2018 7:45 PM	8.16	2/17/2018 7:45 PM	8.21	2/18/2018 7:45 PM	8.22
2/16/2018 8:00 PM	8.16	2/17/2018 8:00 PM	8.21	2/18/2018 8:00 PM	8.22
2/16/2018 8:15 PM	8.16	2/17/2018 8:15 PM	8.21	2/18/2018 8:15 PM	8.22
2/16/2018 8:30 PM	8.16	2/17/2018 8:30 PM	8.21	2/18/2018 8:30 PM	8.21
2/16/2018 8:45 PM	8.20	2/17/2018 8:45 PM	8.21	2/18/2018 8:45 PM	8.20
2/16/2018 9:00 PM	8.21	2/17/2018 9:00 PM	8.23	2/18/2018 9:00 PM	8.20
2/16/2018 9:15 PM	8.20	2/17/2018 9:15 PM	8.23	2/18/2018 9:15 PM	8.19
2/16/2018 9:30 PM	8.20	2/17/2018 9:30 PM	8.23	2/18/2018 9:30 PM	8.19
2/16/2018 9:45 PM	8.20	2/17/2018 9:45 PM	8.22	2/18/2018 9:45 PM	8.19
2/16/2018 10:00 PM	8.20	2/17/2018 10:00 PM	8.21	2/18/2018 10:00 PM	8.18
2/16/2018 10:15 PM	8.19	2/17/2018 10:15 PM	8.21	2/18/2018 10:15 PM	8.22
2/16/2018 10:30 PM	8.19	2/17/2018 10:30 PM	8.20	2/18/2018 10:30 PM	8.21
2/16/2018 10:45 PM	8.20	2/17/2018 10:45 PM	8.20	2/18/2018 10:45 PM	8.20
2/16/2018 11:00 PM	8.21	2/17/2018 11:00 PM	8.19	2/18/2018 11:00 PM	8.20
2/16/2018 11:15 PM	8.21	2/17/2018 11:15 PM	8.19	2/18/2018 11:15 PM	8.20
2/16/2018 11:30 PM	8.20	2/17/2018 11:30 PM	8.19	2/18/2018 11:30 PM	8.20
2/16/2018 11:45 PM	8.19	2/17/2018 11:45 PM	8.22	2/18/2018 11:45 PM	8.22
AVG	8.35	AVG	8.20	AVG	8.21

Date And Time	pH	Date And Time	pH	Date And Time	pH
2/19/2018 12:00 AM	8.22	2/20/2018 12:00 AM	8.20	2/21/2018 12:00 AM	8.16
2/19/2018 12:15 AM	8.22	2/20/2018 12:15 AM	8.20	2/21/2018 12:15 AM	8.16
2/19/2018 12:30 AM	8.21	2/20/2018 12:30 AM	8.20	2/21/2018 12:30 AM	8.16
2/19/2018 12:45 AM	8.20	2/20/2018 12:45 AM	8.20	2/21/2018 12:45 AM	8.16
2/19/2018 1:00 AM	8.20	2/20/2018 1:00 AM	8.20	2/21/2018 1:00 AM	8.16
2/19/2018 1:15 AM	8.19	2/20/2018 1:15 AM	8.19	2/21/2018 1:15 AM	8.15
2/19/2018 1:30 AM	8.19	2/20/2018 1:30 AM	8.18	2/21/2018 1:30 AM	8.15
2/19/2018 1:45 AM	8.18	2/20/2018 1:45 AM	8.17	2/21/2018 1:45 AM	8.17
2/19/2018 2:00 AM	8.18	2/20/2018 2:00 AM	8.17	2/21/2018 2:00 AM	8.17
2/19/2018 2:15 AM	8.18	2/20/2018 2:15 AM	8.17	2/21/2018 2:15 AM	8.17
2/19/2018 2:30 AM	8.18	2/20/2018 2:30 AM	8.16	2/21/2018 2:30 AM	8.17
2/19/2018 2:45 AM	8.22	2/20/2018 2:45 AM	8.16	2/21/2018 2:45 AM	8.17
2/19/2018 3:00 AM	8.21	2/20/2018 3:00 AM	8.19	2/21/2018 3:00 AM	8.16
2/19/2018 3:15 AM	8.20	2/20/2018 3:15 AM	8.19	2/21/2018 3:15 AM	8.16
2/19/2018 3:30 AM	8.20	2/20/2018 3:30 AM	8.20	2/21/2018 3:30 AM	8.16
2/19/2018 3:45 AM	8.20	2/20/2018 3:45 AM	8.20	2/21/2018 3:45 AM	8.16
2/19/2018 4:00 AM	8.20	2/20/2018 4:00 AM	8.20	2/21/2018 4:00 AM	8.19
2/19/2018 4:15 AM	8.20	2/20/2018 4:15 AM	8.20	2/21/2018 4:15 AM	8.17
2/19/2018 4:30 AM	8.19	2/20/2018 4:30 AM	8.19	2/21/2018 4:30 AM	8.17
2/19/2018 4:45 AM	8.21	2/20/2018 4:45 AM	8.18	2/21/2018 4:45 AM	8.16
2/19/2018 5:00 AM	8.20	2/20/2018 5:00 AM	8.19	2/21/2018 5:00 AM	8.16
2/19/2018 5:15 AM	8.20	2/20/2018 5:15 AM	8.18	2/21/2018 5:15 AM	8.16
2/19/2018 5:30 AM	8.19	2/20/2018 5:30 AM	8.18	2/21/2018 5:30 AM	8.16
2/19/2018 5:45 AM	8.19	2/20/2018 5:45 AM	8.18	2/21/2018 5:45 AM	8.16
2/19/2018 6:00 AM	8.19	2/20/2018 6:00 AM	8.19	2/21/2018 6:00 AM	8.18
2/19/2018 6:15 AM	8.18	2/20/2018 6:15 AM	8.19	2/21/2018 6:15 AM	8.18
2/19/2018 6:30 AM	8.18	2/20/2018 6:30 AM	8.20	2/21/2018 6:30 AM	8.18
2/19/2018 6:45 AM	8.17	2/20/2018 6:45 AM	8.18	2/21/2018 6:45 AM	8.18
2/19/2018 7:00 AM	8.17	2/20/2018 7:00 AM	8.17	2/21/2018 7:00 AM	8.18
2/19/2018 7:15 AM	8.20	2/20/2018 7:15 AM	8.18	2/21/2018 7:15 AM	8.17
2/19/2018 7:30 AM	8.19	2/20/2018 7:30 AM	8.19	2/21/2018 7:30 AM	8.17
2/19/2018 7:45 AM	8.19	2/20/2018 7:45 AM	8.20	2/21/2018 7:45 AM	8.17
2/19/2018 8:00 AM	8.19	2/20/2018 8:00 AM	8.19	2/21/2018 8:00 AM	8.17
2/19/2018 8:15 AM	8.19	2/20/2018 8:15 AM	8.19	2/21/2018 8:15 AM	8.16
2/19/2018 8:30 AM	8.19	2/20/2018 8:30 AM	8.19	2/21/2018 8:30 AM	8.16
2/19/2018 8:45 AM	8.19	2/20/2018 8:45 AM	8.18	2/21/2018 8:45 AM	8.17
2/19/2018 9:00 AM	8.19	2/20/2018 9:00 AM	8.18	2/21/2018 9:00 AM	8.16
2/19/2018 9:15 AM	8.20	2/20/2018 9:15 AM	8.17	2/21/2018 9:15 AM	8.16
2/19/2018 9:30 AM	8.21	2/20/2018 9:30 AM	8.18	2/21/2018 9:30 AM	8.15
2/19/2018 9:45 AM	8.21	2/20/2018 9:45 AM	8.18	2/21/2018 9:45 AM	8.14
2/19/2018 10:00 AM	8.20	2/20/2018 10:00 AM	8.18	2/21/2018 10:00 AM	8.13
2/19/2018 10:15 AM	8.20	2/20/2018 10:15 AM	8.17	2/21/2018 10:15 AM	8.13
2/19/2018 10:30 AM	8.19	2/20/2018 10:30 AM	8.16	2/21/2018 10:30 AM	8.14
2/19/2018 10:45 AM	8.19	2/20/2018 10:45 AM	8.14	2/21/2018 10:45 AM	8.15
2/19/2018 11:00 AM	8.18	2/20/2018 11:00 AM	8.13	2/21/2018 11:00 AM	8.15
2/19/2018 11:15 AM	8.17	2/20/2018 11:15 AM	8.13	2/21/2018 11:15 AM	8.15
2/19/2018 11:30 AM	8.17	2/20/2018 11:30 AM	8.12	2/21/2018 11:30 AM	8.14
2/19/2018 11:45 AM	8.21	2/20/2018 11:45 AM	8.11	2/21/2018 11:45 AM	8.14
2/19/2018 12:00 PM	8.20	2/20/2018 12:00 PM	8.12	2/21/2018 12:00 PM	8.16
2/19/2018 12:15 PM	8.19	2/20/2018 12:15 PM	8.14	2/21/2018 12:15 PM	8.17
2/19/2018 12:30 PM	8.19	2/20/2018 12:30 PM	8.15	2/21/2018 12:30 PM	8.17
2/19/2018 12:45 PM	8.18	2/20/2018 12:45 PM	8.16	2/21/2018 12:45 PM	8.17
2/19/2018 1:00 PM	8.18	2/20/2018 1:00 PM	8.17	2/21/2018 1:00 PM	8.17
2/19/2018 1:15 PM	8.18	2/20/2018 1:15 PM	8.17	2/21/2018 1:15 PM	8.17
2/19/2018 1:30 PM	8.20	2/20/2018 1:30 PM	8.18	2/21/2018 1:30 PM	8.15
2/19/2018 1:45 PM	8.21	2/20/2018 1:45 PM	8.18	2/21/2018 1:45 PM	8.13
2/19/2018 2:00 PM	8.21	2/20/2018 2:00 PM	8.18	2/21/2018 2:00 PM	8.12
2/19/2018 2:15 PM	8.21	2/20/2018 2:15 PM	8.18	2/21/2018 2:15 PM	8.13
2/19/2018 2:30 PM	8.21	2/20/2018 2:30 PM	8.18	2/21/2018 2:30 PM	8.16
2/19/2018 2:45 PM	8.21	2/20/2018 2:45 PM	8.17	2/21/2018 2:45 PM	8.17
2/19/2018 3:00 PM	8.21	2/20/2018 3:00 PM	8.15	2/21/2018 3:00 PM	8.17
2/19/2018 3:15 PM	8.21	2/20/2018 3:15 PM	8.15	2/21/2018 3:15 PM	8.17
2/19/2018 3:30 PM	8.21	2/20/2018 3:30 PM	8.15	2/21/2018 3:30 PM	8.18
2/19/2018 3:45 PM	8.21	2/20/2018 3:45 PM	8.15	2/21/2018 3:45 PM	8.17
2/19/2018 4:00 PM	8.21	2/20/2018 4:00 PM	8.15	2/21/2018 4:00 PM	8.17
2/19/2018 4:15 PM	8.20	2/20/2018 4:15 PM	8.15	2/21/2018 4:15 PM	8.17
2/19/2018 4:30 PM	8.19	2/20/2018 4:30 PM	8.16	2/21/2018 4:30 PM	8.17
2/19/2018 4:45 PM	8.19	2/20/2018 4:45 PM	8.17	2/21/2018 4:45 PM	8.16
2/19/2018 5:00 PM	8.18	2/20/2018 5:00 PM	8.17	2/21/2018 5:00 PM	8.16
2/19/2018 5:15 PM	8.18	2/20/2018 5:15 PM	8.17	2/21/2018 5:15 PM	8.16
2/19/2018 5:30 PM	8.18	2/20/2018 5:30 PM	8.18	2/21/2018 5:30 PM	8.15
2/19/2018 5:45 PM	8.18	2/20/2018 5:45 PM	8.18	2/21/2018 5:45 PM	8.15
2/19/2018 6:00 PM	8.19	2/20/2018 6:00 PM	8.18	2/21/2018 6:00 PM	8.15
2/19/2018 6:15 PM	8.19	2/20/2018 6:15 PM	8.17	2/21/2018 6:15 PM	8.15
2/19/2018 6:30 PM	8.19	2/20/2018 6:30 PM	8.17	2/21/2018 6:30 PM	8.14
2/19/2018 6:45 PM	8.19	2/20/2018 6:45 PM	8.17	2/21/2018 6:45 PM	8.14
2/19/2018 7:00 PM	8.19	2/20/2018 7:00 PM	8.19	2/21/2018 7:00 PM	8.14
2/19/2018 7:15 PM	8.19	2/20/2018 7:15 PM	8.17	2/21/2018 7:15 PM	8.21
2/19/2018 7:30 PM	8.20	2/20/2018 7:30 PM	8.16	2/21/2018 7:30 PM	8.19
2/19/2018 7:45 PM	8.19	2/20/2018 7:45 PM	8.16	2/21/2018 7:45 PM	8.20
2/19/2018 8:00 PM	8.19	2/20/2018 8:00 PM	8.16	2/21/2018 8:00 PM	8.20
2/19/2018 8:15 PM	8.19	2/20/2018 8:15 PM	8.16	2/21/2018 8:15 PM	8.20
2/19/2018 8:30 PM	8.19	2/20/2018 8:30 PM	8.16	2/21/2018 8:30 PM	8.20
2/19/2018 8:45 PM	8.19	2/20/2018 8:45 PM	8.15	2/21/2018 8:45 PM	8.20
2/19/2018 9:00 PM	8.18	2/20/2018 9:00 PM	8.16	2/21/2018 9:00 PM	8.20
2/19/2018 9:15 PM	8.18	2/20/2018 9:15 PM	8.17	2/21/2018 9:15 PM	8.20
2/19/2018 9:30 PM	8.17	2/20/2018 9:30 PM	8.18	2/21/2018 9:30 PM	8.20
2/19/2018 9:45 PM	8.17	2/20/2018 9:45 PM	8.17	2/21/2018 9:45 PM	8.20
2/19/2018 10:00 PM	8.17	2/20/2018 10:00 PM	8.17	2/21/2018 10:00 PM	8.20
2/19/2018 10:15 PM	8.17	2/20/2018 10:15 PM	8.17	2/21/2018 10:15 PM	8.20
2/19/2018 10:30 PM	8.17	2/20/2018 10:30 PM	8.17	2/21/2018 10:30 PM	8.19
2/19/2018 10:45 PM	8.20	2/20/2018 10:45 PM	8.17	2/21/2018 10:45 PM	8.20
2/19/2018 11:00 PM	8.20	2/20/2018 11:00 PM	8.17	2/21/2018 11:00 PM	8.19
2/19/2018 11:15 PM	8.20	2/20/2018 11:15 PM	8.17	2/21/2018 11:15 PM	8.20
2/19/2018 11:30 PM	8.20	2/20/2018 11:30 PM	8.18	2/21/2018 11:30 PM	8.20
2/19/2018 11:45 PM	8.20	2/20/2018 11:45 PM	8.17	2/21/2018 11:45 PM	8.21
AVG	8.19	AVG	8.17	AVG	8.17

Date And Time	pH	Date And Time	pH	Date And Time	pH
2/22/2018 12:00 AM	8.21	2/23/2018 12:00 AM	8.25	2/24/2018 12:00 AM	8.23
2/22/2018 12:15 AM	8.21	2/23/2018 12:15 AM	8.25	2/24/2018 12:15 AM	8.23
2/22/2018 12:30 AM	8.21	2/23/2018 12:30 AM	8.25	2/24/2018 12:30 AM	8.23
2/22/2018 12:45 AM	8.21	2/23/2018 12:45 AM	8.25	2/24/2018 12:45 AM	8.23
2/22/2018 1:00 AM	8.21	2/23/2018 1:00 AM	8.24	2/24/2018 1:00 AM	8.23
2/22/2018 1:15 AM	8.21	2/23/2018 1:15 AM	8.24	2/24/2018 1:15 AM	8.23
2/22/2018 1:30 AM	8.21	2/23/2018 1:30 AM	8.24	2/24/2018 1:30 AM	8.23
2/22/2018 1:45 AM	8.21	2/23/2018 1:45 AM	8.24	2/24/2018 1:45 AM	8.24
2/22/2018 2:00 AM	8.21	2/23/2018 2:00 AM	8.24	2/24/2018 2:00 AM	8.25
2/22/2018 2:15 AM	8.21	2/23/2018 2:15 AM	8.23	2/24/2018 2:15 AM	8.25
2/22/2018 2:30 AM	8.21	2/23/2018 2:30 AM	8.23	2/24/2018 2:30 AM	8.25
2/22/2018 2:45 AM	8.21	2/23/2018 2:45 AM	8.25	2/24/2018 2:45 AM	8.24
2/22/2018 3:00 AM	8.21	2/23/2018 3:00 AM	8.25	2/24/2018 3:00 AM	8.24
2/22/2018 3:15 AM	8.21	2/23/2018 3:15 AM	8.26	2/24/2018 3:15 AM	8.24
2/22/2018 3:30 AM	8.21	2/23/2018 3:30 AM	8.26	2/24/2018 3:30 AM	8.23
2/22/2018 3:45 AM	8.21	2/23/2018 3:45 AM	8.26	2/24/2018 3:45 AM	8.23
2/22/2018 4:00 AM	8.21	2/23/2018 4:00 AM	8.26	2/24/2018 4:00 AM	8.23
2/22/2018 4:15 AM	8.22	2/23/2018 4:15 AM	8.25	2/24/2018 4:15 AM	8.23
2/22/2018 4:30 AM	8.21	2/23/2018 4:30 AM	8.25	2/24/2018 4:30 AM	8.23
2/22/2018 4:45 AM	8.23	2/23/2018 4:45 AM	8.24	2/24/2018 4:45 AM	8.23
2/22/2018 5:00 AM	8.24	2/23/2018 5:00 AM	8.24	2/24/2018 5:00 AM	8.23
2/22/2018 5:15 AM	8.25	2/23/2018 5:15 AM	8.24	2/24/2018 5:15 AM	8.23
2/22/2018 5:30 AM	8.25	2/23/2018 5:30 AM	8.24	2/24/2018 5:30 AM	8.23
2/22/2018 5:45 AM	8.25	2/23/2018 5:45 AM	8.24	2/24/2018 5:45 AM	8.24
2/22/2018 6:00 AM	8.25	2/23/2018 6:00 AM	8.24	2/24/2018 6:00 AM	8.25
2/22/2018 6:15 AM	8.25	2/23/2018 6:15 AM	8.24	2/24/2018 6:15 AM	8.25
2/22/2018 6:30 AM	8.25	2/23/2018 6:30 AM	8.24	2/24/2018 6:30 AM	8.25
2/22/2018 6:45 AM	8.25	2/23/2018 6:45 AM	8.23	2/24/2018 6:45 AM	8.24
2/22/2018 7:00 AM	8.24	2/23/2018 7:00 AM	8.23	2/24/2018 7:00 AM	8.24
2/22/2018 7:15 AM	8.22	2/23/2018 7:15 AM	8.23	2/24/2018 7:15 AM	8.24
2/22/2018 7:30 AM	8.22	2/23/2018 7:30 AM	8.23	2/24/2018 7:30 AM	8.23
2/22/2018 7:45 AM	8.23	2/23/2018 7:45 AM	8.25	2/24/2018 7:45 AM	8.23
2/22/2018 8:00 AM	8.22	2/23/2018 8:00 AM	8.25	2/24/2018 8:00 AM	8.23
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2/22/2018 8:45 AM	8.22	2/23/2018 8:45 AM	8.25	2/24/2018 8:45 AM	8.23
2/22/2018 9:00 AM	8.22	2/23/2018 9:00 AM	8.24	2/24/2018 9:00 AM	8.23
2/22/2018 9:15 AM	8.25	2/23/2018 9:15 AM	8.24	2/24/2018 9:15 AM	8.22
2/22/2018 9:30 AM	8.26	2/23/2018 9:30 AM	8.24	2/24/2018 9:30 AM	8.22
2/22/2018 9:45 AM	8.26	2/23/2018 9:45 AM	8.23	2/24/2018 9:45 AM	8.22
2/22/2018 10:00 AM	8.27	2/23/2018 10:00 AM	8.23	2/24/2018 10:00 AM	8.22
2/22/2018 10:15 AM	8.26	2/23/2018 10:15 AM	8.24	2/24/2018 10:15 AM	8.22
2/22/2018 10:30 AM	8.26	2/23/2018 10:30 AM	8.23	2/24/2018 10:30 AM	8.22
2/22/2018 10:45 AM	8.26	2/23/2018 10:45 AM	8.23	2/24/2018 10:45 AM	8.24
2/22/2018 11:00 AM	8.26	2/23/2018 11:00 AM	8.23	2/24/2018 11:00 AM	8.25
2/22/2018 11:15 AM	8.26	2/23/2018 11:15 AM	8.23	2/24/2018 11:15 AM	8.24
2/22/2018 11:30 AM	8.26	2/23/2018 11:30 AM	8.23	2/24/2018 11:30 AM	8.24
2/22/2018 11:45 AM	8.23	2/23/2018 11:45 AM	8.23	2/24/2018 11:45 AM	8.24
2/22/2018 12:00 PM	8.23	2/23/2018 12:00 PM	8.23	2/24/2018 12:00 PM	8.23
2/22/2018 12:15 PM	8.23	2/23/2018 12:15 PM	8.25	2/24/2018 12:15 PM	8.23
2/22/2018 12:30 PM	8.23	2/23/2018 12:30 PM	8.25	2/24/2018 12:30 PM	8.22
2/22/2018 12:45 PM	8.23	2/23/2018 12:45 PM	8.24	2/24/2018 12:45 PM	8.22
2/22/2018 1:00 PM	8.23	2/23/2018 1:00 PM	8.24	2/24/2018 1:00 PM	8.21
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2/22/2018 2:30 PM	8.26	2/23/2018 2:30 PM	8.23	2/24/2018 2:30 PM	8.22
2/22/2018 2:45 PM	8.26	2/23/2018 2:45 PM	8.24	2/24/2018 2:45 PM	8.22
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2/22/2018 3:15 PM	8.26	2/23/2018 3:15 PM	8.23	2/24/2018 3:15 PM	8.24
2/22/2018 3:30 PM	8.25	2/23/2018 3:30 PM	8.23	2/24/2018 3:30 PM	8.24
2/22/2018 3:45 PM	8.24	2/23/2018 3:45 PM	8.23	2/24/2018 3:45 PM	8.24
2/22/2018 4:00 PM	8.24	2/23/2018 4:00 PM	8.23	2/24/2018 4:00 PM	8.24
2/22/2018 4:15 PM	8.25	2/23/2018 4:15 PM	8.24	2/24/2018 4:15 PM	8.24
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2/22/2018 4:45 PM	8.24	2/23/2018 4:45 PM	8.26	2/24/2018 4:45 PM	8.23
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2/22/2018 5:15 PM	8.24	2/23/2018 5:15 PM	8.26	2/24/2018 5:15 PM	8.22
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2/22/2018 5:45 PM	8.24	2/23/2018 5:45 PM	8.26	2/24/2018 5:45 PM	8.23
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2/22/2018 6:15 PM	8.26	2/23/2018 6:15 PM	8.26	2/24/2018 6:15 PM	8.22
2/22/2018 6:30 PM	8.26	2/23/2018 6:30 PM	8.26	2/24/2018 6:30 PM	8.22
2/22/2018 6:45 PM	8.26	2/23/2018 6:45 PM	8.26	2/24/2018 6:45 PM	8.22
2/22/2018 7:00 PM	8.25	2/23/2018 7:00 PM	8.26	2/24/2018 7:00 PM	8.22
2/22/2018 7:15 PM	8.25	2/23/2018 7:15 PM	8.24	2/24/2018 7:15 PM	8.22
2/22/2018 7:30 PM	8.25	2/23/2018 7:30 PM	8.23	2/24/2018 7:30 PM	8.24
2/22/2018 7:45 PM	8.25	2/23/2018 7:45 PM	8.23	2/24/2018 7:45 PM	8.24
2/22/2018 8:00 PM	8.24	2/23/2018 8:00 PM	8.23	2/24/2018 8:00 PM	8.24
2/22/2018 8:15 PM	8.24	2/23/2018 8:15 PM	8.23	2/24/2018 8:15 PM	8.24
2/22/2018 8:30 PM	8.24	2/23/2018 8:30 PM	8.23	2/24/2018 8:30 PM	8.24
2/22/2018 8:45 PM	8.24	2/23/2018 8:45 PM	8.23	2/24/2018 8:45 PM	8.24
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2/22/2018 9:15 PM	8.24	2/23/2018 9:15 PM	8.25	2/24/2018 9:15 PM	8.23
2/22/2018 9:30 PM	8.24	2/23/2018 9:30 PM	8.25	2/24/2018 9:30 PM	8.23
2/22/2018 9:45 PM	8.24	2/23/2018 9:45 PM	8.25	2/24/2018 9:45 PM	8.22
2/22/2018 10:00 PM	8.24	2/23/2018 10:00 PM	8.25	2/24/2018 10:00 PM	8.22
2/22/2018 10:15 PM	8.24	2/23/2018 10:15 PM	8.25	2/24/2018 10:15 PM	8.24
2/22/2018 10:30 PM	8.24	2/23/2018 10:30 PM	8.24	2/24/2018 10:30 PM	8.23
2/22/2018 10:45 PM	8.26	2/23/2018 10:45 PM	8.24	2/24/2018 10:45 PM	8.23
2/22/2018 11:00 PM	8.26	2/23/2018 11:00 PM	8.23	2/24/2018 11:00 PM	8.23
2/22/2018 11:15 PM	8.26	2/23/2018 11:15 PM	8.23	2/24/2018 11:15 PM	8.23
2/22/2018 11:30 PM	8.26	2/23/2018 11:30 PM	8.23	2/24/2018 11:30 PM	8.23
2/22/2018 11:45 PM	8.26	2/23/2018 11:45 PM	8.23	2/24/2018 11:45 PM	8.23
AVG	8.24	AVG	8.24	AVG	8.23

Date And Time	pH	Date And Time	pH	Date And Time	pH
2/25/2018 12:00 AM	8.23	2/26/2018 12:00 AM	8.27	2/27/2018 12:00 AM	8.24
2/25/2018 12:15 AM	8.25	2/26/2018 12:15 AM	8.27	2/27/2018 12:15 AM	8.24
2/25/2018 12:30 AM	8.25	2/26/2018 12:30 AM	8.27	2/27/2018 12:30 AM	8.24
2/25/2018 12:45 AM	8.25	2/26/2018 12:45 AM	8.27	2/27/2018 12:45 AM	8.24
2/25/2018 1:00 AM	8.24	2/26/2018 1:00 AM	8.27	2/27/2018 1:00 AM	8.24
2/25/2018 1:15 AM	8.24	2/26/2018 1:15 AM	8.25	2/27/2018 1:15 AM	8.24
2/25/2018 1:30 AM	8.24	2/26/2018 1:30 AM	8.24	2/27/2018 1:30 AM	8.25
2/25/2018 1:45 AM	8.23	2/26/2018 1:45 AM	8.24	2/27/2018 1:45 AM	8.25
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2/25/2018 2:15 AM	8.22	2/26/2018 2:15 AM	8.25	2/27/2018 2:15 AM	8.25
2/25/2018 2:30 AM	8.22	2/26/2018 2:30 AM	8.24	2/27/2018 2:30 AM	8.24
2/25/2018 2:45 AM	8.22	2/26/2018 2:45 AM	8.25	2/27/2018 2:45 AM	8.23
2/25/2018 3:00 AM	8.21	2/26/2018 3:00 AM	8.25	2/27/2018 3:00 AM	8.23
2/25/2018 3:15 AM	8.21	2/26/2018 3:15 AM	8.26	2/27/2018 3:15 AM	8.23
2/25/2018 3:30 AM	8.21	2/26/2018 3:30 AM	8.26	2/27/2018 3:30 AM	8.22
2/25/2018 3:45 AM	8.20	2/26/2018 3:45 AM	8.27	2/27/2018 3:45 AM	8.22
2/25/2018 4:00 AM	8.24	2/26/2018 4:00 AM	8.27	2/27/2018 4:00 AM	8.21
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2/25/2018 4:30 AM	8.24	2/26/2018 4:30 AM	8.26	2/27/2018 4:30 AM	8.24
2/25/2018 4:45 AM	8.24	2/26/2018 4:45 AM	8.25	2/27/2018 4:45 AM	8.23
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2/25/2018 5:15 AM	8.25	2/26/2018 5:15 AM	8.25	2/27/2018 5:15 AM	8.23
2/25/2018 5:30 AM	8.24	2/26/2018 5:30 AM	8.25	2/27/2018 5:30 AM	8.23
2/25/2018 5:45 AM	8.24	2/26/2018 5:45 AM	8.25	2/27/2018 5:45 AM	8.23
2/25/2018 6:00 AM	8.23	2/26/2018 6:00 AM	8.25	2/27/2018 6:00 AM	8.23
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2/25/2018 11:45 PM	8.27	2/26/2018 11:45 PM	8.24	2/27/2018 11:45 PM	8.22
AVG	8.24	AVG	8.25	AVG	8.23

Date And Time	pH
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2/28/2018 1:30 AM	8.22
2/28/2018 1:45 AM	8.21
2/28/2018 2:00 AM	8.21
2/28/2018 2:15 AM	8.21
2/28/2018 2:30 AM	8.20
2/28/2018 2:45 AM	8.20
2/28/2018 3:00 AM	8.20
2/28/2018 3:15 AM	8.19
2/28/2018 3:30 AM	8.19
2/28/2018 3:45 AM	8.18
2/28/2018 4:00 AM	8.18
2/28/2018 4:15 AM	8.23
2/28/2018 4:30 AM	8.23
2/28/2018 4:45 AM	8.24
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2/28/2018 6:30 AM	8.20
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2/28/2018 6:00 PM	8.25
2/28/2018 6:15 PM	8.25
2/28/2018 6:30 PM	8.25
2/28/2018 6:45 PM	8.25
2/28/2018 7:00 PM	8.25
2/28/2018 7:15 PM	8.24
2/28/2018 7:30 PM	8.24
2/28/2018 7:45 PM	8.24
2/28/2018 8:00 PM	8.24
2/28/2018 8:15 PM	8.24
2/28/2018 8:30 PM	8.25
2/28/2018 8:45 PM	8.23
2/28/2018 9:00 PM	8.23
2/28/2018 9:15 PM	8.23
2/28/2018 9:30 PM	8.23
2/28/2018 9:45 PM	8.23
2/28/2018 10:00 PM	8.23
2/28/2018 10:15 PM	8.23
2/28/2018 10:30 PM	8.23
2/28/2018 10:45 PM	8.24
2/28/2018 11:00 PM	8.25
2/28/2018 11:15 PM	8.25
2/28/2018 11:30 PM	8.25
2/28/2018 11:45 PM	8.25
AVG	8.23

MIN	7.77
MAX	8.69

Avtex Fibers
Front Royal, VA
Outfall 004
February 2018 DMR

Sample Date	Sample ID	BOD, mg/L	BOD, kg/d	TSS, mg/L	TSS, kg/d
2/1/2018	AF2-1FE	4.0	1.1	1.0	0.3
2/7/2018	AF2-7FE	4.0	1.1	2.1	0.6
2/13/2018	AF2-13FE	7.0	3.4	2.9	1.4
2/20/2018	AF2-20FE	3.0	0.9	1.0	0.3
	Daily Maximum:	7.0	3.4	2.9	1.4
	Monthly Avg:	4.5	1.6	1.8	0.6

Monthly Average – Compliance with the monthly average limitations and/or reporting requirements for the parameters listed in Part I.C.1 shall be determined as follows: All concentration data below the QL used for the analysis shall be treated as zero. All concentration data equal to or above the QL used for the analysis shall be treated as it is reported. An arithmetic average shall be calculated using all reported data for the month, including the defined zeros. This arithmetic average shall be reported on the Discharge Monitoring Report (DMR) as calculated. If all data are below the QL used for the analysis, then the average shall be reported as "<QL". If reporting for quantity is required on the DMR and the reported monthly average concentration is <QL, then report "<QL" for the quantity. Otherwise use the reported concentration data (including the defined zeros) and flow data for each sample day to determine the daily quantity and report the monthly average of the calculated daily quantities.

Daily Maximum – Compliance with the daily maximum limitations and/or reporting requirements for the parameters listed in Part I.C.1 shall be determined as follows: All concentration data below the QL used for the analysis shall be treated as zero. All concentration data equal to or above the QL used for the analysis shall be treated as reported. An arithmetic average shall be calculated using all reported data, including the defined zeros, collected within each day during the reporting month. The maximum value of these daily averages thus determined shall be reported on the DMR as the Daily Maximum. If all data are below the QL used for the analysis, then the maximum value of the daily averages shall be reported as "<QL". If reporting for quantity is required on the DMR and the reported daily maximum concentration is <QL, then report "<QL" for the quantity. Otherwise use the reported daily average concentrations (including the defined zeros) and corresponding daily flows to determine daily average quantities and report the maximum of the daily average quantities during the reporting month.

Loading Derivation
If 1 ppm (= 1 mg/L) and 1 MGD (= 1 MG/day)
--> (1 mg/L)(1 MG/day)(3.785 L/Gal)(10^6 Gal/MG)(1 lb/453,600 mg) = 8.34 lbs/day
--> lbs/day = ppm * 8.34 * MGD
--> kg/d = ppm * 8.34 * MGD * 0.4536*lb/d

Concentration Derivation
If 1 lb/d and 1 MGD (= 1 MG/day)
[(1 lbs/day)(453,600 mg/lb)] / [(1 MG/d)(10^6 Gal/MG)(3.785 L/Gal)]
--> ppm = lb/d * (1/8.34) * (1/MGD)

	BOD
2/1/2018	1.088852311
2/7/2018	1.093191085
2/13/2018	3.359449383
2/20/2018	0.942870705
AVG	1.621090871

	TSS
2/1/2018	0.272213078
2/7/2018	0.57392532
2/13/2018	1.391771887
2/20/2018	0.314290235
AVG	0.63805013

	CS2*	
2/13/2018	<QL	ug/L
2/13/2018	<QL	mg/L
2/13/2018	<QL	kg/d

*Note: CS2 EPA Test Method: 8260 MSV Low Level Analytical Method (EPA 8260)
Report Limit 2 ug/L
MDL 1.2 ug/L

FMC Corporation
2929 Walnut Street
Philadelphia, PA 19104
USA

215.299.6000
fmc.com

Transmitted via Email

April 6, 2018

Department of Environmental Quality - CO
Office of Remediation Program
P.O. Box 1105
Richmond, VA 23218

Re: Submission of Discharge Monitoring Report – March 2018
Avtex Fibers Superfund Site
Front Royal, Virginia

Dear Ms. Payne:

In accordance with the Applicable or Relevant and Appropriate Requirements (ARARs) and Fact Sheet provided July 22, 2014, FMC Corporation (FMC) is submitting the Discharge Monitoring Report (DMR) for the month of March 2018. The permit is for the discharge from the Groundwater and Leachate Treatment Plant (GLTP) located at 404 Kendrick Lane, Front Royal, VA. Analysis of effluent concentrations yielded results within the allowable limits for all parameters.

Please do not hesitate to call if there are any questions.

Sincerely,
FMC Corporation

Brian M. McGinnis, P.E.
Manager, Environmental Remediation

cc: via Email
Brandon Kiracofe, DEQ
Jeffrey Thomas, USEPA
Heather Philip, Parsons

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS: (Include Facility Name/Location if different)

OMB No. 2040-004

NAME:	Avtex Fibers		NA			004			**DMR MAILING ZIP CODE:**			23218	
ADDRESS:	404 Kendrick Lane		**PERMIT NUMBER**			**DISCHARGE NUMBER**							
	Front Royal, VA 22630								DESCRIPTION:				
			MONITORING PERIOD						GLTP EFFLUENT (OUTFALL 004)				
FACILITY:	AVTEX FIBERS		**YEAR**	**MO**	**DAY**		**YEAR**	**MO**	**DAY**	External Outfall			
LOCATION:	FRONT ROYAL, VA	**FROM**	18	03	01	TO	18	03	31			**No Discharge**	
ATTN:													

PARAMETER		QUANTITY OR LOADING VALUE	QUANTITY OR LOADING VALUE	QUANTITY OR LOADING UNITS	QUALITY OR CONCENTRATION VALUE	QUALITY OR CONCENTRATION VALUE	QUALITY OR CONCENTRATION VALUE	QUALITY OR CONCENTRATION UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
FLOW	SAMPLE MEASUREMENT	0.085	0.089	MGD	*****	*****	*****		0	CONTINUOUS	TIRE
00056 1 0 EFFLUENT GROSS	PERMIT REQUIREMENT	REPORT MONTHLY AV	REPORT DAILY MAX		******	******	******			CONTINUOUS	TIRE
PH	SAMPLE MEASUREMENT	*****	*****		7.8	*****	8.4	SU	0	CONTINUOUS	GRAB
00400 1 0 EFFLUENT GROSS	PERMIT REQUIREMENT	******	******		6.5 MINIMUM	******	9.0 MAXIMUM			CONTINUOUS	GRAB
BOD, 5-DAY	SAMPLE MEASUREMENT	0.4	1.0	kg/d	*****	1.2	3.0	mg/L	0	1/7	8 HC
00318 1 0 EFFLUENT GROSS	PERMIT REQUIREMENT	36 MONTHLY AV	96 DAILY MAX		******	24 MONTHLY AV	64 DAILY MX			1/7	8 HC
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	0.1	0.4	kg/d	*****	0.5	1.5	mg/L	0	1/7	8 HC
03603 1 0 EFFLUENT GROSS	PERMIT REQUIREMENT	60 MONTHLY AV	190 DAILY MAX		******	40 MONTHLY AV	130 DAILY MX			1/7	8 HC
CARBON DISULFIDE	SAMPLE MEASUREMENT	0.0001	0.0001	kg/d	*****	0.0002	0.0002	mg/L	0	1/30	8 HC
77041 1 0 EFFLUENT GROSS	PERMIT REQUIREMENT	NL MONTHLY AV	NL DAILY MAX		******	NL MONTHLY AV	NL DAILY MX			1/30	8 HC
WHOLE EFFLUENT TOXICITY - *Ceriodaphnia dubia*	SAMPLE MEASUREMENT	*****	*****	TUa	*****	*****	*****	TUa			8 HC
22414 1 0 EFFLUENT GROSS	PERMIT REQUIREMENT	*****	*****		*****	*****	*****			1/90	8 HC
WHOLE EFFLUENT TOXICITY - *Pimephales promelas*	SAMPLE MEASUREMENT	*****	*****	lp	*****	*****	*****	TUa			8 HC
22414 1 0 EFFLUENT GROSS	PERMIT REQUIREMENT	*****	*****		*****	*****	*****			1/90	8 HC

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER		TELEPHONE		DATE		
Brian McGinnis	I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.			18	04	06
Manager, Environmental Remediation						
TYPED OR PRINTED	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	215	299-6047	YEAR	MO	DAY
		AREA	NUMBER			

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

Attachment: pH compliance monitoring summary (monthly)

Carbon disulfide: No limit established; monitored monthly; 0.1 mg/L action level

Avtex Fibers
Front Royal, VA
Outfall 004
March 2018 DMR

pH Calculations:

Date And Time	pH	Date And Time	pH	Date And Time	pH
3/1/2018 12:00 AM	8.24	3/2/2018 12:00 AM	8.20	3/3/2018 12:00 AM	8.22
3/1/2018 12:15 AM	8.24	3/2/2018 12:15 AM	8.19	3/3/2018 12:15 AM	8.21
3/1/2018 12:30 AM		3/2/2018 12:30 AM	8.19	3/3/2018 12:30 AM	8.20
3/1/2018 12:45 AM	8.24	3/2/2018 12:45 AM	8.20	3/3/2018 12:45 AM	8.19
3/1/2018 1:00 AM	8.25	3/2/2018 1:00 AM	8.20	3/3/2018 1:00 AM	8.19
3/1/2018 1:15 AM	8.23	3/2/2018 1:15 AM	8.20	3/3/2018 1:15 AM	8.19
3/1/2018 1:30 AM	8.22	3/2/2018 1:30 AM	8.20	3/3/2018 1:30 AM	8.18
3/1/2018 1:45 AM	8.22	3/2/2018 1:45 AM	8.22	3/3/2018 1:45 AM	8.17
3/1/2018 2:00 AM	8.22	3/2/2018 2:00 AM	8.21	3/3/2018 2:00 AM	8.17
3/1/2018 2:15 AM	8.22	3/2/2018 2:15 AM	8.20	3/3/2018 2:15 AM	8.17
3/1/2018 2:30 AM	8.22	3/2/2018 2:30 AM	8.20	3/3/2018 2:30 AM	8.17
3/1/2018 2:45 AM	8.22	3/2/2018 2:45 AM	8.19	3/3/2018 2:45 AM	8.21
3/1/2018 3:00 AM	8.22	3/2/2018 3:00 AM	8.18	3/3/2018 3:00 AM	8.21
3/1/2018 3:15 AM	8.24	3/2/2018 3:15 AM	8.18	3/3/2018 3:15 AM	8.21
3/1/2018 3:30 AM	8.25	3/2/2018 3:30 AM	8.18	3/3/2018 3:30 AM	8.21
3/1/2018 3:45 AM	8.25	3/2/2018 3:45 AM	8.18	3/3/2018 3:45 AM	8.21
3/1/2018 4:00 AM	8.25	3/2/2018 4:00 AM	8.18	3/3/2018 4:00 AM	8.21
3/1/2018 4:15 AM	8.24	3/2/2018 4:15 AM	8.19	3/3/2018 4:15 AM	8.21
3/1/2018 4:30 AM	8.24	3/2/2018 4:30 AM	8.19	3/3/2018 4:30 AM	8.22
3/1/2018 4:45 AM	8.24	3/2/2018 4:45 AM	8.19	3/3/2018 4:45 AM	8.24
3/1/2018 5:00 AM	8.24	3/2/2018 5:00 AM	8.19	3/3/2018 5:00 AM	8.23
3/1/2018 5:15 AM	8.24	3/2/2018 5:15 AM	8.19	3/3/2018 5:15 AM	8.22
3/1/2018 5:30 AM	8.24	3/2/2018 5:30 AM	8.19	3/3/2018 5:30 AM	8.21
3/1/2018 5:45 AM	8.23	3/2/2018 5:45 AM	8.19	3/3/2018 5:45 AM	8.20
3/1/2018 6:00 AM	8.23	3/2/2018 6:00 AM	8.19	3/3/2018 6:00 AM	8.20
3/1/2018 6:15 AM	8.22	3/2/2018 6:15 AM	8.21	3/3/2018 6:15 AM	8.19
3/1/2018 6:30 AM	8.22	3/2/2018 6:30 AM	8.21	3/3/2018 6:30 AM	8.19
3/1/2018 6:45 AM	8.22	3/2/2018 6:45 AM	8.20	3/3/2018 6:45 AM	8.19
3/1/2018 7:00 AM	8.22	3/2/2018 7:00 AM	8.19	3/3/2018 7:00 AM	8.18
3/1/2018 7:15 AM	8.22	3/2/2018 7:15 AM	8.18	3/3/2018 7:15 AM	8.23
3/1/2018 7:30 AM	8.24	3/2/2018 7:30 AM	8.18	3/3/2018 7:30 AM	8.22
3/1/2018 7:45 AM	8.24	3/2/2018 7:45 AM	8.17	3/3/2018 7:45 AM	8.23
3/1/2018 8:00 AM	8.24	3/2/2018 8:00 AM	8.17	3/3/2018 8:00 AM	8.22
3/1/2018 8:15 AM	8.24	3/2/2018 8:15 AM	8.17	3/3/2018 8:15 AM	8.22
3/1/2018 8:30 AM	8.24	3/2/2018 8:30 AM	8.17	3/3/2018 8:30 AM	8.23
3/1/2018 8:45 AM	8.24	3/2/2018 8:45 AM	8.20	3/3/2018 8:45 AM	8.22
3/1/2018 9:00 AM	8.24	3/2/2018 9:00 AM	8.19	3/3/2018 9:00 AM	8.22
3/1/2018 9:15 AM	8.24	3/2/2018 9:15 AM	8.19	3/3/2018 9:15 AM	8.25
3/1/2018 9:30 AM	8.24	3/2/2018 9:30 AM	8.19	3/3/2018 9:30 AM	8.24
3/1/2018 9:45 AM	8.24	3/2/2018 9:45 AM	8.19	3/3/2018 9:45 AM	8.22
3/1/2018 10:00 AM	8.24	3/2/2018 10:00 AM	8.19	3/3/2018 10:00 AM	8.22
3/1/2018 10:15 AM	8.23	3/2/2018 10:15 AM	8.19	3/3/2018 10:15 AM	8.22
3/1/2018 10:30 AM	8.22	3/2/2018 10:30 AM	8.21	3/3/2018 10:30 AM	8.21
3/1/2018 10:45 AM	8.21	3/2/2018 10:45 AM	8.20	3/3/2018 10:45 AM	8.21
3/1/2018 11:00 AM	8.21	3/2/2018 11:00 AM	8.19	3/3/2018 11:00 AM	8.21
3/1/2018 11:15 AM	8.21	3/2/2018 11:15 AM	8.18	3/3/2018 11:15 AM	8.21
3/1/2018 11:30 AM	8.21	3/2/2018 11:30 AM	8.18	3/3/2018 11:30 AM	8.21
3/1/2018 11:45 AM	8.21	3/2/2018 11:45 AM	8.17	3/3/2018 11:45 AM	8.23
3/1/2018 12:00 PM	8.21	3/2/2018 12:00 PM	8.17	3/3/2018 12:00 PM	8.23
3/1/2018 12:15 PM	8.23	3/2/2018 12:15 PM	8.17	3/3/2018 12:15 PM	8.23
3/1/2018 12:30 PM	8.23	3/2/2018 12:30 PM	8.18	3/3/2018 12:30 PM	8.23
3/1/2018 12:45 PM	8.23	3/2/2018 12:45 PM	8.18	3/3/2018 12:45 PM	8.23
3/1/2018 1:00 PM	8.23	3/2/2018 1:00 PM	8.18	3/3/2018 1:00 PM	8.23
3/1/2018 1:15 PM	8.23	3/2/2018 1:15 PM	8.19	3/3/2018 1:15 PM	8.25
3/1/2018 1:30 PM	8.23	3/2/2018 1:30 PM	8.19	3/3/2018 1:30 PM	8.25
3/1/2018 1:45 PM	8.23	3/2/2018 1:45 PM	8.19	3/3/2018 1:45 PM	8.25
3/1/2018 2:00 PM	8.23	3/2/2018 2:00 PM	8.19	3/3/2018 2:00 PM	8.24
3/1/2018 2:15 PM	8.23	3/2/2018 2:15 PM	8.19	3/3/2018 2:15 PM	8.23
3/1/2018 2:30 PM	8.23	3/2/2018 2:30 PM	8.21	3/3/2018 2:30 PM	8.22
3/1/2018 2:45 PM	8.22	3/2/2018 2:45 PM	8.20	3/3/2018 2:45 PM	8.21
3/1/2018 3:00 PM	8.21	3/2/2018 3:00 PM	8.19	3/3/2018 3:00 PM	8.21
3/1/2018 3:15 PM	8.21	3/2/2018 3:15 PM	8.19	3/3/2018 3:15 PM	8.22
3/1/2018 3:30 PM	8.21	3/2/2018 3:30 PM	8.18	3/3/2018 3:30 PM	8.23
3/1/2018 3:45 PM	8.21	3/2/2018 3:45 PM	8.18	3/3/2018 3:45 PM	8.23
3/1/2018 4:00 PM	8.21	3/2/2018 4:00 PM	8.17	3/3/2018 4:00 PM	8.23
3/1/2018 4:15 PM	8.22	3/2/2018 4:15 PM	8.17	3/3/2018 4:15 PM	8.24
3/1/2018 4:30 PM	8.21	3/2/2018 4:30 PM	8.17	3/3/2018 4:30 PM	8.24
3/1/2018 4:45 PM	8.23	3/2/2018 4:45 PM	8.17	3/3/2018 4:45 PM	8.24
3/1/2018 5:00 PM	8.23	3/2/2018 5:00 PM	8.18	3/3/2018 5:00 PM	8.24
3/1/2018 5:15 PM	8.23	3/2/2018 5:15 PM	8.18	3/3/2018 5:15 PM	8.24
3/1/2018 5:30 PM	8.23	3/2/2018 5:30 PM	8.18	3/3/2018 5:30 PM	8.24
3/1/2018 5:45 PM	8.23	3/2/2018 5:45 PM	8.18	3/3/2018 5:45 PM	8.24
3/1/2018 6:00 PM	8.23	3/2/2018 6:00 PM	8.18	3/3/2018 6:00 PM	8.26
3/1/2018 6:15 PM	8.23	3/2/2018 6:15 PM	8.18	3/3/2018 6:15 PM	8.26
3/1/2018 6:30 PM	8.23	3/2/2018 6:30 PM	8.18	3/3/2018 6:30 PM	8.25
3/1/2018 6:45 PM	8.24	3/2/2018 6:45 PM	8.19	3/3/2018 6:45 PM	8.24
3/1/2018 7:00 PM	8.24	3/2/2018 7:00 PM	8.19	3/3/2018 7:00 PM	8.24
3/1/2018 7:15 PM	8.22	3/2/2018 7:15 PM	8.19	3/3/2018 7:15 PM	8.23
3/1/2018 7:30 PM	8.21	3/2/2018 7:30 PM	8.19	3/3/2018 7:30 PM	8.23
3/1/2018 7:45 PM	8.21	3/2/2018 7:45 PM	8.19	3/3/2018 7:45 PM	8.22
3/1/2018 8:00 PM	8.21	3/2/2018 8:00 PM	8.22	3/3/2018 8:00 PM	8.22
3/1/2018 8:15 PM	8.21	3/2/2018 8:15 PM	8.20	3/3/2018 8:15 PM	8.22
3/1/2018 8:30 PM	8.21	3/2/2018 8:30 PM	8.19	3/3/2018 8:30 PM	8.21
3/1/2018 8:45 PM	8.21	3/2/2018 8:45 PM	8.19	3/3/2018 8:45 PM	8.25
3/1/2018 9:00 PM	8.23	3/2/2018 9:00 PM	8.18	3/3/2018 9:00 PM	8.25
3/1/2018 9:15 PM	8.23	3/2/2018 9:15 PM	8.18	3/3/2018 9:15 PM	8.24
3/1/2018 9:30 PM	8.23	3/2/2018 9:30 PM	8.17	3/3/2018 9:30 PM	8.24
3/1/2018 9:45 PM	8.23	3/2/2018 9:45 PM	8.17	3/3/2018 9:45 PM	8.25
3/1/2018 10:00 PM	8.22	3/2/2018 10:00 PM	8.17	3/3/2018 10:00 PM	8.25
3/1/2018 10:15 PM	8.22	3/2/2018 10:15 PM	8.20	3/3/2018 10:15 PM	8.25
3/1/2018 10:30 PM	8.22	3/2/2018 10:30 PM	8.20	3/3/2018 10:30 PM	8.25
3/1/2018 10:45 PM	8.22	3/2/2018 10:45 PM	8.20	3/3/2018 10:45 PM	8.25
3/1/2018 11:00 PM	8.22	3/2/2018 11:00 PM	8.20	3/3/2018 11:00 PM	8.27
3/1/2018 11:15 PM	8.22	3/2/2018 11:15 PM	8.20	3/3/2018 11:15 PM	8.26
3/1/2018 11:30 PM	8.22	3/2/2018 11:30 PM	8.20	3/3/2018 11:30 PM	8.25
3/1/2018 11:45 PM	8.21	3/2/2018 11:45 PM	8.20	3/3/2018 11:45 PM	8.24
AVG	8.23	AVG	8.19	AVG	8.22

Note: Communications loss on 3/1/2018 at 12:30AM data for this time is not included in the average.

Date And Time	pH	Date And Time	pH	Date And Time	pH
3/4/2018 12:00 AM	8.23	3/5/2018 12:00 AM	8.22	3/6/2018 12:00 AM	8.27
3/4/2018 12:15 AM	8.23	3/5/2018 12:15 AM	8.22	3/6/2018 12:15 AM	8.28
3/4/2018 12:30 AM	8.23	3/5/2018 12:30 AM	8.22	3/6/2018 12:30 AM	8.28
3/4/2018 12:45 AM	8.22	3/5/2018 12:45 AM	8.22	3/6/2018 12:45 AM	8.27
3/4/2018 1:00 AM	8.22	3/5/2018 1:00 AM	8.26	3/6/2018 1:00 AM	8.27
3/4/2018 1:15 AM	8.26	3/5/2018 1:15 AM	8.27	3/6/2018 1:15 AM	8.26
3/4/2018 1:30 AM	8.26	3/5/2018 1:30 AM	8.26	3/6/2018 1:30 AM	8.25
3/4/2018 1:45 AM	8.26	3/5/2018 1:45 AM	8.26	3/6/2018 1:45 AM	8.25
3/4/2018 2:00 AM	8.26	3/5/2018 2:00 AM	8.28	3/6/2018 2:00 AM	8.24
3/4/2018 2:15 AM	8.26	3/5/2018 2:15 AM	8.28	3/6/2018 2:15 AM	8.24
3/4/2018 2:30 AM	8.26	3/5/2018 2:30 AM	8.27	3/6/2018 2:30 AM	8.23
3/4/2018 2:45 AM	8.26	3/5/2018 2:45 AM	8.26	3/6/2018 2:45 AM	8.28
3/4/2018 3:00 AM	8.28	3/5/2018 3:00 AM	8.25	3/6/2018 3:00 AM	8.27
3/4/2018 3:15 AM	8.27	3/5/2018 3:15 AM	8.24	3/6/2018 3:15 AM	8.27
3/4/2018 3:30 AM	8.26	3/5/2018 3:30 AM	8.24	3/6/2018 3:30 AM	8.26
3/4/2018 3:45 AM	8.25	3/5/2018 3:45 AM	8.23	3/6/2018 3:45 AM	8.26
3/4/2018 4:00 AM	8.25	3/5/2018 4:00 AM	8.23	3/6/2018 4:00 AM	8.26
3/4/2018 4:15 AM	8.24	3/5/2018 4:15 AM	8.27	3/6/2018 4:15 AM	8.26
3/4/2018 4:30 AM	8.24	3/5/2018 4:30 AM	8.27	3/6/2018 4:30 AM	8.26
3/4/2018 4:45 AM	8.23	3/5/2018 4:45 AM	8.27	3/6/2018 4:45 AM	8.29
3/4/2018 5:00 AM	8.23	3/5/2018 5:00 AM	8.26	3/6/2018 5:00 AM	8.28
3/4/2018 5:15 AM	8.23	3/5/2018 5:15 AM	8.26	3/6/2018 5:15 AM	8.27
3/4/2018 5:30 AM	8.22	3/5/2018 5:30 AM	8.26	3/6/2018 5:30 AM	8.26
3/4/2018 5:45 AM	8.27	3/5/2018 5:45 AM	8.26	3/6/2018 5:45 AM	8.25
3/4/2018 6:00 AM	8.27	3/5/2018 6:00 AM	8.28	3/6/2018 6:00 AM	8.24
3/4/2018 6:15 AM	8.26	3/5/2018 6:15 AM	8.28	3/6/2018 6:15 AM	8.24
3/4/2018 6:30 AM	8.26	3/5/2018 6:30 AM	8.27	3/6/2018 6:30 AM	8.23
3/4/2018 6:45 AM	8.26	3/5/2018 6:45 AM	8.27	3/6/2018 6:45 AM	8.23
3/4/2018 7:00 AM	8.26	3/5/2018 7:00 AM	8.26	3/6/2018 7:00 AM	8.23
3/4/2018 7:15 AM	8.26	3/5/2018 7:15 AM	8.25	3/6/2018 7:15 AM	8.27
3/4/2018 7:30 AM	8.26	3/5/2018 7:30 AM	8.24	3/6/2018 7:30 AM	8.27
3/4/2018 7:45 AM	8.28	3/5/2018 7:45 AM	8.24	3/6/2018 7:45 AM	8.26
3/4/2018 8:00 AM	8.27	3/5/2018 8:00 AM	8.24	3/6/2018 8:00 AM	8.26
3/4/2018 8:15 AM	8.26	3/5/2018 8:15 AM	8.23	3/6/2018 8:15 AM	8.26
3/4/2018 8:30 AM	8.25	3/5/2018 8:30 AM	8.23	3/6/2018 8:30 AM	8.26
3/4/2018 8:45 AM	8.25	3/5/2018 8:45 AM	8.27	3/6/2018 8:45 AM	8.28
3/4/2018 9:00 AM	8.24	3/5/2018 9:00 AM	8.27	3/6/2018 9:00 AM	8.28
3/4/2018 9:15 AM	8.24	3/5/2018 9:15 AM	8.26	3/6/2018 9:15 AM	8.26
3/4/2018 9:30 AM	8.23	3/5/2018 9:30 AM	8.26	3/6/2018 9:30 AM	8.26
3/4/2018 9:45 AM	8.23	3/5/2018 9:45 AM	8.26	3/6/2018 9:45 AM	8.25
3/4/2018 10:00 AM	8.23	3/5/2018 10:00 AM	8.26	3/6/2018 10:00 AM	8.24
3/4/2018 10:15 AM	8.27	3/5/2018 10:15 AM	8.26	3/6/2018 10:15 AM	8.24
3/4/2018 10:30 AM	8.26	3/5/2018 10:30 AM	8.28	3/6/2018 10:30 AM	8.23
3/4/2018 10:45 AM	8.26	3/5/2018 10:45 AM	8.27	3/6/2018 10:45 AM	8.23
3/4/2018 11:00 AM	8.25	3/5/2018 11:00 AM	8.26	3/6/2018 11:00 AM	8.23
3/4/2018 11:15 AM	8.25	3/5/2018 11:15 AM	8.26	3/6/2018 11:15 AM	8.22
3/4/2018 11:30 AM	8.25	3/5/2018 11:30 AM	8.26	3/6/2018 11:30 AM	8.23
3/4/2018 11:45 AM	8.26	3/5/2018 11:45 AM	8.26	3/6/2018 11:45 AM	8.26
3/4/2018 12:00 PM	8.28	3/5/2018 12:00 PM	8.25	3/6/2018 12:00 PM	8.26
3/4/2018 12:15 PM	8.27	3/5/2018 12:15 PM	8.25	3/6/2018 12:15 PM	8.26
3/4/2018 12:30 PM	8.26	3/5/2018 12:30 PM	8.25	3/6/2018 12:30 PM	8.26
3/4/2018 12:45 PM	8.26	3/5/2018 12:45 PM	8.25	3/6/2018 12:45 PM	8.26
3/4/2018 1:00 PM	8.26	3/5/2018 1:00 PM	8.25	3/6/2018 1:00 PM	8.26
3/4/2018 1:15 PM	8.26	3/5/2018 1:15 PM	8.26	3/6/2018 1:15 PM	8.26
3/4/2018 1:30 PM	8.25	3/5/2018 1:30 PM	8.26	3/6/2018 1:30 PM	8.25
3/4/2018 1:45 PM	8.25	3/5/2018 1:45 PM	8.26	3/6/2018 1:45 PM	8.25
3/4/2018 2:00 PM	8.26	3/5/2018 2:00 PM	8.26	3/6/2018 2:00 PM	8.25
3/4/2018 2:15 PM	8.25	3/5/2018 2:15 PM	8.26	3/6/2018 2:15 PM	8.25
3/4/2018 2:30 PM	8.25	3/5/2018 2:30 PM	8.26	3/6/2018 2:30 PM	8.28
3/4/2018 2:45 PM	8.27	3/5/2018 2:45 PM	8.26	3/6/2018 2:45 PM	8.27
3/4/2018 3:00 PM	8.27	3/5/2018 3:00 PM	8.26	3/6/2018 3:00 PM	8.26
3/4/2018 3:15 PM	8.26	3/5/2018 3:15 PM	8.28	3/6/2018 3:15 PM	8.25
3/4/2018 3:30 PM	8.26	3/5/2018 3:30 PM	8.27	3/6/2018 3:30 PM	8.24
3/4/2018 3:45 PM	8.27	3/5/2018 3:45 PM	8.26	3/6/2018 3:45 PM	8.24
3/4/2018 4:00 PM	8.27	3/5/2018 4:00 PM	8.26	3/6/2018 4:00 PM	8.27
3/4/2018 4:15 PM	8.27	3/5/2018 4:15 PM	8.25	3/6/2018 4:15 PM	8.26
3/4/2018 4:30 PM	8.28	3/5/2018 4:30 PM	8.25	3/6/2018 4:30 PM	8.26
3/4/2018 4:45 PM	8.28	3/5/2018 4:45 PM	8.24	3/6/2018 4:45 PM	8.26
3/4/2018 5:00 PM	8.28	3/5/2018 5:00 PM	8.24	3/6/2018 5:00 PM	8.26
3/4/2018 5:15 PM	8.28	3/5/2018 5:15 PM	8.24	3/6/2018 5:15 PM	8.26
3/4/2018 5:30 PM	8.27	3/5/2018 5:30 PM	8.24	3/6/2018 5:30 PM	8.26
3/4/2018 5:45 PM	8.27	3/5/2018 5:45 PM	8.27	3/6/2018 5:45 PM	8.26
3/4/2018 6:00 PM	8.27	3/5/2018 6:00 PM	8.26	3/6/2018 6:00 PM	8.28
3/4/2018 6:15 PM	8.27	3/5/2018 6:15 PM	8.26	3/6/2018 6:15 PM	8.27
3/4/2018 6:30 PM	8.26	3/5/2018 6:30 PM	8.26	3/6/2018 6:30 PM	8.26
3/4/2018 6:45 PM	8.26	3/5/2018 6:45 PM	8.26	3/6/2018 6:45 PM	8.25
3/4/2018 7:00 PM	8.25	3/5/2018 7:00 PM	8.26	3/6/2018 7:00 PM	8.25
3/4/2018 7:15 PM	8.27	3/5/2018 7:15 PM	8.28	3/6/2018 7:15 PM	8.24
3/4/2018 7:30 PM	8.26	3/5/2018 7:30 PM	8.28	3/6/2018 7:30 PM	8.23
3/4/2018 7:45 PM	8.26	3/5/2018 7:45 PM	8.27	3/6/2018 7:45 PM	8.23
3/4/2018 8:00 PM	8.26	3/5/2018 8:00 PM	8.27	3/6/2018 8:00 PM	8.23
3/4/2018 8:15 PM	8.26	3/5/2018 8:15 PM	8.26	3/6/2018 8:15 PM	8.23
3/4/2018 8:30 PM	8.26	3/5/2018 8:30 PM	8.25	3/6/2018 8:30 PM	8.22
3/4/2018 8:45 PM	8.26	3/5/2018 8:45 PM	8.25	3/6/2018 8:45 PM	8.27
3/4/2018 9:00 PM	8.26	3/5/2018 9:00 PM	8.24	3/6/2018 9:00 PM	8.26
3/4/2018 9:15 PM	8.28	3/5/2018 9:15 PM	8.24	3/6/2018 9:15 PM	8.25
3/4/2018 9:30 PM	8.27	3/5/2018 9:30 PM	8.23	3/6/2018 9:30 PM	8.26
3/4/2018 9:45 PM	8.26	3/5/2018 9:45 PM	8.23	3/6/2018 9:45 PM	8.27
3/4/2018 10:00 PM	8.25	3/5/2018 10:00 PM	8.23	3/6/2018 10:00 PM	8.26
3/4/2018 10:15 PM	8.25	3/5/2018 10:15 PM	8.28	3/6/2018 10:15 PM	8.25
3/4/2018 10:30 PM	8.24	3/5/2018 10:30 PM	8.27	3/6/2018 10:30 PM	8.24
3/4/2018 10:45 PM	8.23	3/5/2018 10:45 PM	8.26	3/6/2018 10:45 PM	8.23
3/4/2018 11:00 PM	8.23	3/5/2018 11:00 PM	8.27	3/6/2018 11:00 PM	8.23
3/4/2018 11:15 PM	8.22	3/5/2018 11:15 PM	8.26	3/6/2018 11:15 PM	8.22
3/4/2018 11:30 PM	8.23	3/5/2018 11:30 PM	8.26	3/6/2018 11:30 PM	8.22
3/4/2018 11:45 PM	8.23	3/5/2018 11:45 PM	8.27	3/6/2018 11:45 PM	8.21
AVG	8.26	AVG	8.26	AVG	8.25

Date And Time	pH	Date And Time	pH	Date And Time	pH
3/7/2018 12:00 AM	8.21	3/8/2018 12:00 AM	8.24	3/9/2018 12:00 AM	8.33
3/7/2018 12:15 AM	8.21	3/8/2018 12:15 AM	8.24	3/9/2018 12:15 AM	8.30
3/7/2018 12:30 AM	8.21	3/8/2018 12:30 AM	8.24	3/9/2018 12:30 AM	8.32
3/7/2018 12:45 AM	8.21	3/8/2018 12:45 AM	8.24	3/9/2018 12:45 AM	8.32
3/7/2018 1:00 AM	8.21	3/8/2018 1:00 AM	8.24	3/9/2018 1:00 AM	8.32
3/7/2018 1:15 AM	8.26	3/8/2018 1:15 AM	8.24	3/9/2018 1:15 AM	8.34
3/7/2018 1:30 AM	8.25	3/8/2018 1:30 AM	8.25	3/9/2018 1:30 AM	8.33
3/7/2018 1:45 AM	8.25	3/8/2018 1:45 AM	8.24	3/9/2018 1:45 AM	8.32
3/7/2018 2:00 AM	8.25	3/8/2018 2:00 AM	8.23	3/9/2018 2:00 AM	8.32
3/7/2018 2:15 AM	8.25	3/8/2018 2:15 AM	8.22	3/9/2018 2:15 AM	8.32
3/7/2018 2:30 AM	8.24	3/8/2018 2:30 AM	8.22	3/9/2018 2:30 AM	8.28
3/7/2018 2:45 AM	8.24	3/8/2018 2:45 AM	8.21	3/9/2018 2:45 AM	8.30
3/7/2018 3:00 AM	8.25	3/8/2018 3:00 AM	8.20	3/9/2018 3:00 AM	8.30
3/7/2018 3:15 AM	8.27	3/8/2018 3:15 AM	8.20	3/9/2018 3:15 AM	8.30
3/7/2018 3:30 AM	8.26	3/8/2018 3:30 AM	8.20	3/9/2018 3:30 AM	8.30
3/7/2018 3:45 AM	8.25	3/8/2018 3:45 AM	8.20	3/9/2018 3:45 AM	8.31
3/7/2018 4:00 AM	8.24	3/8/2018 4:00 AM	8.20	3/9/2018 4:00 AM	8.30
3/7/2018 4:15 AM	8.23	3/8/2018 4:15 AM	8.24	3/9/2018 4:15 AM	8.30
3/7/2018 4:30 AM	8.23	3/8/2018 4:30 AM	8.24	3/9/2018 4:30 AM	8.33
3/7/2018 4:45 AM	8.22	3/8/2018 4:45 AM	8.24	3/9/2018 4:45 AM	8.32
3/7/2018 5:00 AM	8.22	3/8/2018 5:00 AM	8.23	3/9/2018 5:00 AM	8.30
3/7/2018 5:15 AM	8.21	3/8/2018 5:15 AM	8.23	3/9/2018 5:15 AM	8.30
3/7/2018 5:30 AM	8.21	3/8/2018 5:30 AM	8.23	3/9/2018 5:30 AM	8.34
3/7/2018 5:45 AM	8.25	3/8/2018 5:45 AM	8.23	3/9/2018 5:45 AM	8.37
3/7/2018 6:00 AM	8.25	3/8/2018 6:00 AM	8.23	3/9/2018 6:00 AM	8.34
3/7/2018 6:15 AM	8.24	3/8/2018 6:15 AM	8.26	3/9/2018 6:15 AM	8.34
3/7/2018 6:30 AM	8.24	3/8/2018 6:30 AM	8.26	3/9/2018 6:30 AM	8.34
3/7/2018 6:45 AM	8.24	3/8/2018 6:45 AM	14.96	3/9/2018 6:45 AM	8.34
3/7/2018 7:00 AM	8.24	3/8/2018 7:00 AM	14.96	3/9/2018 7:00 AM	8.33
3/7/2018 7:15 AM	8.24	3/8/2018 7:15 AM	3.01	3/9/2018 7:15 AM	8.31
3/7/2018 7:30 AM	8.26	3/8/2018 7:30 AM	3.01	3/9/2018 7:30 AM	8.30
3/7/2018 7:45 AM	8.26	3/8/2018 7:45 AM	8.30	3/9/2018 7:45 AM	8.30
3/7/2018 8:00 AM	8.25	3/8/2018 8:00 AM	8.30	3/9/2018 8:00 AM	8.31
3/7/2018 8:15 AM	8.24	3/8/2018 8:15 AM	8.30	3/9/2018 8:15 AM	8.31
3/7/2018 8:30 AM	8.23	3/8/2018 8:30 AM	8.31	3/9/2018 8:30 AM	8.31
3/7/2018 8:45 AM	8.22	3/8/2018 8:45 AM	8.28	3/9/2018 8:45 AM	8.31
3/7/2018 9:00 AM	8.22	3/8/2018 9:00 AM	8.29	3/9/2018 9:00 AM	8.32
3/7/2018 9:15 AM	8.21	3/8/2018 9:15 AM	8.28	3/9/2018 9:15 AM	8.32
3/7/2018 9:30 AM	8.21	3/8/2018 9:30 AM	8.28	3/9/2018 9:30 AM	8.32
3/7/2018 9:45 AM	8.21	3/8/2018 9:45 AM	8.28	3/9/2018 9:45 AM	8.31
3/7/2018 10:00 AM	8.21	3/8/2018 10:00 AM	8.28	3/9/2018 10:00 AM	8.31
3/7/2018 10:15 AM	8.21	3/8/2018 10:15 AM	8.29	3/9/2018 10:15 AM	8.31
3/7/2018 10:30 AM	8.21	3/8/2018 10:30 AM	8.31	3/9/2018 10:30 AM	8.30
3/7/2018 10:45 AM	8.21	3/8/2018 10:45 AM	8.31	3/9/2018 10:45 AM	8.30
3/7/2018 11:00 AM	8.21	3/8/2018 11:00 AM	8.30	3/9/2018 11:00 AM	8.30
3/7/2018 11:15 AM	8.21	3/8/2018 11:15 AM	8.30	3/9/2018 11:15 AM	8.29
3/7/2018 11:30 AM	8.22	3/8/2018 11:30 AM	8.30	3/9/2018 11:30 AM	8.29
3/7/2018 11:45 AM	8.25	3/8/2018 11:45 AM	8.29	3/9/2018 11:45 AM	8.29
3/7/2018 12:00 PM	8.26	3/8/2018 12:00 PM	8.29	3/9/2018 12:00 PM	8.29
3/7/2018 12:15 PM	8.26	3/8/2018 12:15 PM	8.29	3/9/2018 12:15 PM	8.29
3/7/2018 12:30 PM	8.24	3/8/2018 12:30 PM	8.29	3/9/2018 12:30 PM	8.28
3/7/2018 12:45 PM	8.23	3/8/2018 12:45 PM	8.28	3/9/2018 12:45 PM	8.28
3/7/2018 1:00 PM	8.23	3/8/2018 1:00 PM	8.28	3/9/2018 1:00 PM	8.33
3/7/2018 1:15 PM	8.23	3/8/2018 1:15 PM	8.29	3/9/2018 1:15 PM	8.30
3/7/2018 1:30 PM	8.23	3/8/2018 1:30 PM	8.28	3/9/2018 1:30 PM	8.31
3/7/2018 1:45 PM	8.22	3/8/2018 1:45 PM	8.29	3/9/2018 1:45 PM	8.23
3/7/2018 2:00 PM	8.22	3/8/2018 2:00 PM	8.29	3/9/2018 2:00 PM	8.31
3/7/2018 2:15 PM	8.21	3/8/2018 2:15 PM	8.29	3/9/2018 2:15 PM	8.31
3/7/2018 2:30 PM	8.21	3/8/2018 2:30 PM	8.30	3/9/2018 2:30 PM	8.31
3/7/2018 2:45 PM	8.23	3/8/2018 2:45 PM	8.33	3/9/2018 2:45 PM	8.31
3/7/2018 3:00 PM	8.23	3/8/2018 3:00 PM	8.31	3/9/2018 3:00 PM	8.31
3/7/2018 3:15 PM	8.23	3/8/2018 3:15 PM	8.31	3/9/2018 3:15 PM	8.30
3/7/2018 3:30 PM	8.23	3/8/2018 3:30 PM	8.30	3/9/2018 3:30 PM	8.30
3/7/2018 3:45 PM	8.23	3/8/2018 3:45 PM	8.31	3/9/2018 3:45 PM	8.30
3/7/2018 4:00 PM	8.23	3/8/2018 4:00 PM	8.31	3/9/2018 4:00 PM	8.29
3/7/2018 4:15 PM	8.23	3/8/2018 4:15 PM	8.30	3/9/2018 4:15 PM	8.31
3/7/2018 4:30 PM	8.23	3/8/2018 4:30 PM	8.30	3/9/2018 4:30 PM	8.30
3/7/2018 4:45 PM	8.26	3/8/2018 4:45 PM	8.30	3/9/2018 4:45 PM	8.31
3/7/2018 5:00 PM	8.25	3/8/2018 5:00 PM	8.30	3/9/2018 5:00 PM	8.31
3/7/2018 5:15 PM	8.25	3/8/2018 5:15 PM	8.29	3/9/2018 5:15 PM	8.32
3/7/2018 5:30 PM	8.24	3/8/2018 5:30 PM	8.29	3/9/2018 5:30 PM	8.31
3/7/2018 5:45 PM	8.24	3/8/2018 5:45 PM	8.30	3/9/2018 5:45 PM	8.32
3/7/2018 6:00 PM	8.23	3/8/2018 6:00 PM	8.29	3/9/2018 6:00 PM	8.32
3/7/2018 6:15 PM	8.22	3/8/2018 6:15 PM	8.29	3/9/2018 6:15 PM	8.33
3/7/2018 6:30 PM	8.22	3/8/2018 6:30 PM	8.30	3/9/2018 6:30 PM	8.33
3/7/2018 6:45 PM	8.22	3/8/2018 6:45 PM	8.30	3/9/2018 6:45 PM	8.33
3/7/2018 7:00 PM	8.21	3/8/2018 7:00 PM	8.30	3/9/2018 7:00 PM	8.33
3/7/2018 7:15 PM	8.24	3/8/2018 7:15 PM	8.30	3/9/2018 7:15 PM	8.33
3/7/2018 7:30 PM	8.24	3/8/2018 7:30 PM	8.31	3/9/2018 7:30 PM	8.32
3/7/2018 7:45 PM	8.23	3/8/2018 7:45 PM	8.31	3/9/2018 7:45 PM	8.32
3/7/2018 8:00 PM	8.23	3/8/2018 8:00 PM	8.31	3/9/2018 8:00 PM	8.32
3/7/2018 8:15 PM	8.23	3/8/2018 8:15 PM	8.31	3/9/2018 8:15 PM	8.32
3/7/2018 8:30 PM	8.23	3/8/2018 8:30 PM	8.31	3/9/2018 8:30 PM	8.32
3/7/2018 8:45 PM	8.23	3/8/2018 8:45 PM	8.31	3/9/2018 8:45 PM	8.31
3/7/2018 9:00 PM	8.23	3/8/2018 9:00 PM	8.30	3/9/2018 9:00 PM	8.31
3/7/2018 9:15 PM	8.26	3/8/2018 9:15 PM	8.30	3/9/2018 9:15 PM	8.32
3/7/2018 9:30 PM	8.25	3/8/2018 9:30 PM	8.30	3/9/2018 9:30 PM	8.32
3/7/2018 9:45 PM	8.24	3/8/2018 9:45 PM	8.30	3/9/2018 9:45 PM	8.32
3/7/2018 10:00 PM	8.23	3/8/2018 10:00 PM	8.29	3/9/2018 10:00 PM	8.32
3/7/2018 10:15 PM	8.22	3/8/2018 10:15 PM	8.30	3/9/2018 10:15 PM	8.32
3/7/2018 10:30 PM	8.22	3/8/2018 10:30 PM	8.30	3/9/2018 10:30 PM	8.33
3/7/2018 10:45 PM	8.21	3/8/2018 10:45 PM	8.30	3/9/2018 10:45 PM	8.33
3/7/2018 11:00 PM	8.21	3/8/2018 11:00 PM	8.30	3/9/2018 11:00 PM	8.33
3/7/2018 11:15 PM	8.20	3/8/2018 11:15 PM	8.30	3/9/2018 11:15 PM	8.33
3/7/2018 11:30 PM	8.20	3/8/2018 11:30 PM	8.30	3/9/2018 11:30 PM	8.33
3/7/2018 11:45 PM	8.25	3/8/2018 11:45 PM	8.31	3/9/2018 11:45 PM	8.33
AVG	8.23	AVG	8.28	AVG	8.31

Note: pH probe malfunctioned at 6:45AM on 3/8/2018. During this time discharge was halted and only resumed once a new probe was installed at 7:45AM and pH readings leveled. Data for this time is not included in the average.

Date And Time	pH	Date And Time	pH	Date And Time	pH
3/10/2018 12:00 AM	8.32	3/11/2018 12:00 AM	8.30	3/12/2018 12:00 AM	8.28
3/10/2018 12:15 AM	8.33	3/11/2018 12:15 AM	8.28	3/12/2018 12:15 AM	8.29
3/10/2018 12:30 AM	8.32	3/11/2018 12:30 AM	8.31	3/12/2018 12:30 AM	8.30
3/10/2018 12:45 AM	8.32	3/11/2018 12:45 AM	8.29	3/12/2018 12:45 AM	8.30
3/10/2018 1:00 AM	8.33	3/11/2018 1:00 AM	8.30	3/12/2018 1:00 AM	8.30
3/10/2018 1:15 AM	8.32	3/11/2018 1:15 AM	8.30	3/12/2018 1:15 AM	8.31
3/10/2018 1:30 AM	8.31	3/11/2018 1:30 AM	8.30	3/12/2018 1:30 AM	8.31
3/10/2018 1:45 AM	8.31	3/11/2018 1:45 AM	8.31	3/12/2018 1:45 AM	8.31
3/10/2018 2:00 AM	8.31	3/11/2018 3:00 AM	8.31	3/12/2018 2:00 AM	8.32
3/10/2018 2:15 AM	8.32	3/11/2018 3:15 AM	8.31	3/12/2018 2:15 AM	8.32
3/10/2018 2:30 AM	8.33	3/11/2018 3:30 AM	8.32	3/12/2018 2:30 AM	8.32
3/10/2018 2:45 AM	8.32	3/11/2018 3:45 AM	8.32	3/12/2018 2:45 AM	8.32
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AVG	8.31	AVG	8.30	AVG	8.31

Date And Time	pH	Date And Time	pH	Date And Time	pH
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3/13/2018 7:15 PM	8.32	3/14/2018 7:15 PM	8.30	3/15/2018 7:15 PM	8.33
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3/13/2018 11:45 PM	8.33	3/14/2018 11:45 PM	8.30	3/15/2018 11:45 PM	8.32
AVG	8.31	AVG	8.31	AVG	8.32

Date And Time	pH	Date And Time	pH	Date And Time	pH
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3/16/2018 1:15 AM	8.35	3/17/2018 1:15 AM	8.32	3/18/2018 1:15 AM	8.32
3/16/2018 1:30 AM	8.35	3/17/2018 1:30 AM	8.32	3/18/2018 1:30 AM	8.32
3/16/2018 1:45 AM	8.35	3/17/2018 1:45 AM	8.32	3/18/2018 1:45 AM	8.33
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3/16/2018 2:15 AM	8.34	3/17/2018 2:15 AM	8.31	3/18/2018 2:15 AM	8.34
3/16/2018 2:30 AM	8.32	3/17/2018 2:30 AM	8.33	3/18/2018 2:30 AM	8.35
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3/16/2018 4:15 AM	8.33	3/17/2018 4:15 AM	8.36	3/18/2018 4:15 AM	8.32
3/16/2018 4:30 AM	8.32	3/17/2018 4:30 AM	8.36	3/18/2018 4:30 AM	8.31
3/16/2018 4:45 AM	8.33	3/17/2018 4:45 AM	8.35	3/18/2018 4:45 AM	8.32
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3/16/2018 5:15 AM	8.34	3/17/2018 5:15 AM	8.35	3/18/2018 5:15 AM	8.31
3/16/2018 5:30 AM	8.35	3/17/2018 5:30 AM	8.33	3/18/2018 5:30 AM	8.32
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3/16/2018 8:45 AM	8.34	3/17/2018 8:45 AM	8.35	3/18/2018 8:45 AM	8.30
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3/16/2018 12:00 PM	8.31	3/17/2018 12:00 PM	8.32	3/18/2018 12:00 PM	8.32
3/16/2018 12:15 PM	8.30	3/17/2018 12:15 PM	8.32	3/18/2018 12:15 PM	8.32
3/16/2018 12:30 PM	8.31	3/17/2018 12:30 PM	8.33	3/18/2018 12:30 PM	8.32
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3/16/2018 4:15 PM	8.31	3/17/2018 4:15 PM	8.32	3/18/2018 4:15 PM	8.33
3/16/2018 4:30 PM	8.30	3/17/2018 4:30 PM	8.31	3/18/2018 4:30 PM	8.33
3/16/2018 4:45 PM	8.30	3/17/2018 4:45 PM	8.32	3/18/2018 4:45 PM	8.33
3/16/2018 5:00 PM	8.34	3/17/2018 5:00 PM	8.32	3/18/2018 5:00 PM	8.32
3/16/2018 5:15 PM	8.33	3/17/2018 5:15 PM	8.33	3/18/2018 5:15 PM	8.33
3/16/2018 5:30 PM	8.32	3/17/2018 5:30 PM	8.33	3/18/2018 5:30 PM	8.31
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3/16/2018 11:15 PM	8.33	3/17/2018 11:15 PM	8.33	3/18/2018 11:15 PM	8.34
3/16/2018 11:30 PM	8.34	3/17/2018 11:30 PM	8.31	3/18/2018 11:30 PM	8.33
3/16/2018 11:45 PM	8.34	3/17/2018 11:45 PM	8.31	3/18/2018 11:45 PM	8.33
AVG	8.32	AVG	8.33	AVG	8.32

Date And Time	pH	Date And Time	pH	Date And Time	pH
3/19/2018 12:00 AM	8.32	3/20/2018 12:00 AM	8.35	3/21/2018 12:00 AM	8.32
3/19/2018 12:15 AM	8.34	3/20/2018 12:15 AM	8.36	3/21/2018 12:15 AM	8.32
3/19/2018 12:30 AM	8.33	3/20/2018 12:30 AM	8.35	3/21/2018 12:30 AM	8.32
3/19/2018 12:45 AM	8.33	3/20/2018 12:45 AM	8.34	3/21/2018 12:45 AM	8.31
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3/19/2018 2:30 AM	8.32	3/20/2018 2:30 AM	8.30	3/21/2018 2:30 AM	8.30
3/19/2018 2:45 AM	8.32	3/20/2018 2:45 AM	8.32	3/21/2018 2:45 AM	8.30
3/19/2018 3:00 AM	8.31	3/20/2018 3:00 AM	8.32	3/21/2018 3:00 AM	8.30
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3/19/2018 4:45 AM	8.33	3/20/2018 4:45 AM	8.35	3/21/2018 4:45 AM	8.26
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3/19/2018 5:15 AM	8.34	3/20/2018 5:15 AM	8.35	3/21/2018 5:15 AM	8.25
3/19/2018 5:30 AM	8.35	3/20/2018 5:30 AM	8.33	3/21/2018 5:30 AM	8.24
3/19/2018 5:45 AM	8.35	3/20/2018 5:45 AM	8.32	3/21/2018 5:45 AM	8.28
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3/19/2018 7:30 AM	8.33	3/20/2018 7:30 AM	8.32	3/21/2018 7:30 AM	8.29
3/19/2018 7:45 AM	8.32	3/20/2018 7:45 AM	8.34	3/21/2018 7:45 AM	8.29
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3/19/2018 8:15 AM	8.32	3/20/2018 8:15 AM	8.35	3/21/2018 8:15 AM	8.28
3/19/2018 8:30 AM	8.32	3/20/2018 8:30 AM	8.35	3/21/2018 8:30 AM	8.26
3/19/2018 8:45 AM	8.33	3/20/2018 8:45 AM	8.35	3/21/2018 8:45 AM	8.24
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3/19/2018 9:15 AM	8.33	3/20/2018 9:15 AM	8.35	3/21/2018 9:15 AM	8.23
3/19/2018 9:30 AM	8.33	3/20/2018 9:30 AM	8.35	3/21/2018 9:30 AM	8.23
3/19/2018 9:45 AM	8.34	3/20/2018 9:45 AM	8.34	3/21/2018 9:45 AM	8.23
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3/19/2018 10:15 AM	8.34	3/20/2018 10:15 AM	8.32	3/21/2018 10:15 AM	8.24
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3/19/2018 10:45 AM	8.33	3/20/2018 10:45 AM	8.31	3/21/2018 10:45 AM	8.26
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3/19/2018 12:30 PM	8.31	3/20/2018 12:30 PM	8.32	3/21/2018 12:30 PM	8.27
3/19/2018 12:45 PM	8.31	3/20/2018 12:45 PM	8.32	3/21/2018 12:45 PM	8.26
3/19/2018 1:00 PM	8.32	3/20/2018 1:00 PM	8.33	3/21/2018 1:00 PM	8.24
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3/19/2018 1:30 PM	8.31	3/20/2018 1:30 PM	8.34	3/21/2018 1:30 PM	8.23
3/19/2018 1:45 PM	8.32	3/20/2018 1:45 PM	8.34	3/21/2018 1:45 PM	8.22

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3/19/2018 2:45 PM	8.33	3/20/2018 2:45 PM	8.30	3/21/2018 2:45 PM	8.23
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3/19/2018 7:15 PM	8.34	3/20/2018 7:15 PM	8.29	3/21/2018 7:15 PM	8.22
3/19/2018 7:30 PM	8.35	3/20/2018 7:30 PM	8.27	3/21/2018 7:30 PM	8.21
3/19/2018 7:45 PM	8.35	3/20/2018 7:45 PM	8.28	3/21/2018 7:45 PM	8.20
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3/19/2018 8:15 PM	8.35	3/20/2018 8:15 PM	8.26	3/21/2018 8:15 PM	8.22
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3/19/2018 10:30 PM	8.33	3/20/2018 10:30 PM	8.32	3/21/2018 10:30 PM	8.17
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3/19/2018 11:45 PM	8.35	3/20/2018 11:45 PM	8.32	3/21/2018 11:45 PM	8.18
AVG	8.33	AVG	8.32	AVG	8.25

Date And Time	pH	Date And Time	pH	Date And Time	pH
3/22/2018 12:00 AM	8.18	3/23/2018 12:00 AM	8.09	3/24/2018 12:00 AM	7.94
3/22/2018 12:15 AM	8.19	3/23/2018 12:15 AM	8.08	3/24/2018 12:15 AM	7.94
3/22/2018 12:30 AM	8.20	3/23/2018 12:30 AM	8.09	3/24/2018 12:30 AM	7.95
3/22/2018 12:45 AM	8.21	3/23/2018 12:45 AM	8.07	3/24/2018 12:45 AM	7.95
3/22/2018 1:00 AM	8.21	3/23/2018 1:00 AM	8.05	3/24/2018 1:00 AM	7.95
3/22/2018 1:15 AM	8.21	3/23/2018 1:15 AM	8.03	3/24/2018 1:15 AM	7.99
3/22/2018 1:30 AM	8.21	3/23/2018 1:30 AM	8.03	3/24/2018 1:30 AM	7.98
3/22/2018 1:45 AM	8.21	3/23/2018 1:45 AM	8.03	3/24/2018 1:45 AM	7.96
3/22/2018 2:00 AM	8.20	3/23/2018 2:00 AM	8.02	3/24/2018 2:00 AM	7.96
3/22/2018 2:15 AM	8.21	3/23/2018 2:15 AM	8.01	3/24/2018 2:15 AM	7.96
3/22/2018 2:30 AM	8.19	3/23/2018 2:30 AM	8.06	3/24/2018 2:30 AM	7.97
3/22/2018 2:45 AM	8.17	3/23/2018 2:45 AM	8.04	3/24/2018 2:45 AM	7.98
3/22/2018 3:00 AM	8.16	3/23/2018 3:00 AM	8.04	3/24/2018 3:00 AM	7.98
3/22/2018 3:15 AM	8.15	3/23/2018 3:15 AM	8.04	3/24/2018 3:15 AM	7.98
3/22/2018 3:30 AM	8.15	3/23/2018 3:30 AM	8.05	3/24/2018 3:30 AM	7.98
3/22/2018 3:45 AM	8.14	3/23/2018 3:45 AM	8.06	3/24/2018 3:45 AM	7.97
3/22/2018 4:00 AM	8.13	3/23/2018 4:00 AM	8.07	3/24/2018 4:00 AM	7.94
3/22/2018 4:15 AM	8.17	3/23/2018 4:15 AM	8.07	3/24/2018 4:15 AM	7.93
3/22/2018 4:30 AM	8.16	3/23/2018 4:30 AM	8.07	3/24/2018 4:30 AM	7.93
3/22/2018 4:45 AM	8.17	3/23/2018 4:45 AM	8.06	3/24/2018 4:45 AM	7.93
3/22/2018 5:00 AM	8.17	3/23/2018 5:00 AM	8.07	3/24/2018 5:00 AM	7.93
3/22/2018 5:15 AM	8.18	3/23/2018 5:15 AM	8.06	3/24/2018 5:15 AM	7.93
3/22/2018 5:30 AM	8.19	3/23/2018 5:30 AM	8.03	3/24/2018 5:30 AM	7.98
3/22/2018 5:45 AM	8.19	3/23/2018 5:45 AM	8.01	3/24/2018 5:45 AM	7.96
3/22/2018 6:00 AM	8.19	3/23/2018 6:00 AM	8.01	3/24/2018 6:00 AM	7.96
3/22/2018 6:15 AM	8.19	3/23/2018 6:15 AM	8.01	3/24/2018 6:15 AM	7.96
3/22/2018 6:30 AM	8.19	3/23/2018 6:30 AM	8.00	3/24/2018 6:30 AM	7.97
3/22/2018 6:45 AM	8.17	3/23/2018 6:45 AM	8.00	3/24/2018 6:45 AM	7.98
3/22/2018 7:00 AM	8.14	3/23/2018 7:00 AM	8.01	3/24/2018 7:00 AM	7.99
3/22/2018 7:15 AM	8.13	3/23/2018 7:15 AM	8.04	3/24/2018 7:15 AM	7.99
3/22/2018 7:30 AM	8.13	3/23/2018 7:30 AM	8.02	3/24/2018 7:30 AM	7.99
3/22/2018 7:45 AM	8.12	3/23/2018 7:45 AM	8.01	3/24/2018 7:45 AM	7.99
3/22/2018 8:00 AM	8.11	3/23/2018 8:00 AM	8.01	3/24/2018 8:00 AM	7.99
3/22/2018 8:15 AM	8.11	3/23/2018 8:15 AM	8.01	3/24/2018 8:15 AM	7.98
3/22/2018 8:30 AM	8.11	3/23/2018 8:30 AM	8.02	3/24/2018 8:30 AM	7.96
3/22/2018 8:45 AM	8.15	3/23/2018 8:45 AM	8.02	3/24/2018 8:45 AM	7.94
3/22/2018 9:00 AM	8.13	3/23/2018 9:00 AM	8.03	3/24/2018 9:00 AM	7.93
3/22/2018 9:15 AM	8.13	3/23/2018 9:15 AM	8.03	3/24/2018 9:15 AM	7.92
3/22/2018 9:30 AM	8.14	3/23/2018 9:30 AM	8.03	3/24/2018 9:30 AM	7.92
3/22/2018 9:45 AM	8.14	3/23/2018 9:45 AM	8.02	3/24/2018 9:45 AM	7.92
3/22/2018 10:00 AM	8.16	3/23/2018 10:00 AM	8.00	3/24/2018 10:00 AM	7.92
3/22/2018 10:15 AM	8.15	3/23/2018 10:15 AM	7.97	3/24/2018 10:15 AM	7.95
3/22/2018 10:30 AM	8.16	3/23/2018 10:30 AM	7.97	3/24/2018 10:30 AM	7.93
3/22/2018 10:45 AM	8.16	3/23/2018 10:45 AM	7.97	3/24/2018 10:45 AM	7.93
3/22/2018 11:00 AM	8.16	3/23/2018 11:00 AM	7.96	3/24/2018 11:00 AM	7.93
3/22/2018 11:15 AM	8.14	3/23/2018 11:15 AM	7.96	3/24/2018 11:15 AM	7.94
3/22/2018 11:30 AM	8.12	3/23/2018 11:30 AM	7.99	3/24/2018 11:30 AM	7.94
3/22/2018 11:45 AM	8.09	3/23/2018 11:45 AM	7.98	3/24/2018 11:45 AM	7.95
3/22/2018 12:00 PM	8.09	3/23/2018 12:00 PM	7.97	3/24/2018 12:00 PM	7.95
3/22/2018 12:15 PM	8.09	3/23/2018 12:15 PM	7.97	3/24/2018 12:15 PM	7.94
3/22/2018 12:30 PM	8.08	3/23/2018 12:30 PM	7.98	3/24/2018 12:30 PM	7.94
3/22/2018 12:45 PM	8.12	3/23/2018 12:45 PM	7.99	3/24/2018 12:45 PM	7.97
3/22/2018 1:00 PM	8.11	3/23/2018 1:00 PM	8.00	3/24/2018 1:00 PM	7.94
3/22/2018 1:15 PM	8.10	3/23/2018 1:15 PM	8.00	3/24/2018 1:15 PM	7.93
3/22/2018 1:30 PM	8.11	3/23/2018 1:30 PM	8.00	3/24/2018 1:30 PM	7.91
3/22/2018 1:45 PM	8.12	3/23/2018 1:45 PM	8.00	3/24/2018 1:45 PM	7.91
3/22/2018 2:00 PM	8.12	3/23/2018 2:00 PM	8.00	3/24/2018 2:00 PM	7.91
3/22/2018 2:15 PM	8.13	3/23/2018 2:15 PM	7.99	3/24/2018 2:15 PM	7.91
3/22/2018 2:30 PM	8.13	3/23/2018 2:30 PM	7.99	3/24/2018 2:30 PM	7.93
3/22/2018 2:45 PM	8.12	3/23/2018 2:45 PM	7.99	3/24/2018 2:45 PM	7.92
3/22/2018 3:00 PM	8.12	3/23/2018 3:00 PM	7.99	3/24/2018 3:00 PM	7.91
3/22/2018 3:15 PM	8.12	3/23/2018 3:15 PM	7.98	3/24/2018 3:15 PM	7.92

3/22/2018 3:30 PM	8.12	3/23/2018 3:30 PM	7.98	3/24/2018 3:30 PM	7.93
3/22/2018 3:45 PM	8.14	3/23/2018 3:45 PM	7.98	3/24/2018 3:45 PM	7.94
3/22/2018 4:00 PM	8.11	3/23/2018 4:00 PM	7.98	3/24/2018 4:00 PM	7.95
3/22/2018 4:15 PM	8.09	3/23/2018 4:15 PM	7.97	3/24/2018 4:15 PM	7.95
3/22/2018 4:30 PM	8.09	3/23/2018 4:30 PM	7.97	3/24/2018 4:30 PM	7.95
3/22/2018 4:45 PM	8.08	3/23/2018 4:45 PM	7.97	3/24/2018 4:45 PM	7.96
3/22/2018 5:00 PM	8.07	3/23/2018 5:00 PM	7.96	3/24/2018 5:00 PM	7.99
3/22/2018 5:15 PM	8.08	3/23/2018 5:15 PM	7.96	3/24/2018 5:15 PM	7.95
3/22/2018 5:30 PM	8.07	3/23/2018 5:30 PM	7.96	3/24/2018 5:30 PM	7.93
3/22/2018 5:45 PM	8.10	3/23/2018 5:45 PM	7.95	3/24/2018 5:45 PM	7.92
3/22/2018 6:00 PM	8.09	3/23/2018 6:00 PM	7.95	3/24/2018 6:00 PM	7.91
3/22/2018 6:15 PM	8.08	3/23/2018 6:15 PM	7.94	3/24/2018 6:15 PM	7.90
3/22/2018 6:30 PM	8.08	3/23/2018 6:30 PM	7.94	3/24/2018 6:30 PM	7.91
3/22/2018 6:45 PM	8.09	3/23/2018 6:45 PM	7.94	3/24/2018 6:45 PM	7.91
3/22/2018 7:00 PM	8.10	3/23/2018 7:00 PM	7.94	3/24/2018 7:00 PM	7.94
3/22/2018 7:15 PM	8.11	3/23/2018 7:15 PM	7.93	3/24/2018 7:15 PM	7.92
3/22/2018 7:30 PM	8.11	3/23/2018 7:30 PM	8.01	3/24/2018 7:30 PM	7.92
3/22/2018 7:45 PM	8.11	3/23/2018 7:45 PM	7.98	3/24/2018 7:45 PM	7.92
3/22/2018 8:00 PM	8.11	3/23/2018 8:00 PM	7.98	3/24/2018 8:00 PM	7.93
3/22/2018 8:15 PM	8.11	3/23/2018 8:15 PM	7.97	3/24/2018 8:15 PM	7.94
3/22/2018 8:30 PM	8.10	3/23/2018 8:30 PM	7.97	3/24/2018 8:30 PM	7.94
3/22/2018 8:45 PM	8.10	3/23/2018 8:45 PM	7.97	3/24/2018 8:45 PM	7.94
3/22/2018 9:00 PM	8.10	3/23/2018 9:00 PM	8.00	3/24/2018 9:00 PM	7.95
3/22/2018 9:15 PM	8.10	3/23/2018 9:15 PM	7.99	3/24/2018 9:15 PM	7.94
3/22/2018 9:30 PM	8.11	3/23/2018 9:30 PM	7.98	3/24/2018 9:30 PM	7.97
3/22/2018 9:45 PM	8.09	3/23/2018 9:45 PM	7.97	3/24/2018 9:45 PM	7.95
3/22/2018 10:00 PM	8.07	3/23/2018 10:00 PM	7.97	3/24/2018 10:00 PM	7.93
3/22/2018 10:15 PM	8.07	3/23/2018 10:15 PM	7.97	3/24/2018 10:15 PM	7.92
3/22/2018 10:30 PM	8.09	3/23/2018 10:30 PM	7.97	3/24/2018 10:30 PM	7.91
3/22/2018 10:45 PM	8.09	3/23/2018 10:45 PM	7.97	3/24/2018 10:45 PM	7.90
3/22/2018 11:00 PM	8.09	3/23/2018 11:00 PM	8.00	3/24/2018 11:00 PM	7.90
3/22/2018 11:15 PM	8.08	3/23/2018 11:15 PM	7.95	3/24/2018 11:15 PM	7.90
3/22/2018 11:30 PM	8.09	3/23/2018 11:30 PM	7.94	3/24/2018 11:30 PM	7.90
3/22/2018 11:45 PM	8.09	3/23/2018 11:45 PM	7.94	3/24/2018 11:45 PM	7.93
AVG	8.13	AVG	8.00	AVG	7.94

Date And Time	pH	Date And Time	pH	Date And Time	pH
3/25/2018 12:00 AM	7.93	3/26/2018 12:00 AM	7.91	3/27/2018 12:00 AM	7.85
3/25/2018 12:15 AM	7.92	3/26/2018 12:15 AM	7.91	3/27/2018 12:15 AM	7.85
3/25/2018 12:30 AM	7.92	3/26/2018 12:30 AM	7.91	3/27/2018 12:30 AM	7.84
3/25/2018 12:45 AM	7.93	3/26/2018 12:45 AM	7.91	3/27/2018 12:45 AM	7.84
3/25/2018 1:00 AM	7.94	3/26/2018 1:00 AM	7.91	3/27/2018 1:00 AM	7.89
3/25/2018 1:15 AM	7.95	3/26/2018 1:15 AM	7.90	3/27/2018 1:15 AM	7.87
3/25/2018 1:30 AM	7.95	3/26/2018 1:30 AM	7.90	3/27/2018 1:30 AM	7.87
3/25/2018 1:45 AM	7.95	3/26/2018 1:45 AM	7.90	3/27/2018 1:45 AM	7.88
3/25/2018 2:00 AM	7.95	3/26/2018 2:00 AM	7.94	3/27/2018 2:00 AM	7.89
3/25/2018 2:15 AM	7.95	3/26/2018 2:15 AM	7.91	3/27/2018 2:15 AM	7.89
3/25/2018 2:30 AM	7.92	3/26/2018 2:30 AM	7.89	3/27/2018 2:30 AM	7.90
3/25/2018 2:45 AM	7.91	3/26/2018 2:45 AM	7.88	3/27/2018 2:45 AM	7.90
3/25/2018 3:00 AM	7.90	3/26/2018 3:00 AM	7.91	3/27/2018 3:00 AM	7.90
3/25/2018 3:15 AM	7.89	3/26/2018 3:15 AM	7.92	3/27/2018 3:15 AM	7.90
3/25/2018 3:30 AM	7.89	3/26/2018 3:30 AM	7.91	3/27/2018 3:30 AM	7.93
3/25/2018 3:45 AM	7.89	3/26/2018 3:45 AM	7.91	3/27/2018 3:45 AM	7.90
3/25/2018 4:00 AM	7.89	3/26/2018 4:00 AM	7.91	3/27/2018 4:00 AM	7.88
3/25/2018 4:15 AM	7.92	3/26/2018 4:15 AM	7.90	3/27/2018 4:15 AM	7.86
3/25/2018 4:30 AM	7.92	3/26/2018 4:30 AM	7.91	3/27/2018 4:30 AM	7.86
3/25/2018 4:45 AM	7.92	3/26/2018 4:45 AM	7.90	3/27/2018 4:45 AM	7.84
3/25/2018 5:00 AM	7.92	3/26/2018 5:00 AM	7.91	3/27/2018 5:00 AM	7.84
3/25/2018 5:15 AM	7.94	3/26/2018 5:15 AM	7.90	3/27/2018 5:15 AM	7.84
3/25/2018 5:30 AM	7.95	3/26/2018 5:30 AM	7.87	3/27/2018 5:30 AM	7.84
3/25/2018 5:45 AM	7.95	3/26/2018 5:45 AM	7.86	3/27/2018 5:45 AM	7.89
3/25/2018 6:00 AM	7.95	3/26/2018 6:00 AM	7.85	3/27/2018 6:00 AM	7.87
3/25/2018 6:15 AM	7.95	3/26/2018 6:15 AM	7.85	3/27/2018 6:15 AM	7.87
3/25/2018 6:30 AM	7.95	3/26/2018 6:30 AM	7.86	3/27/2018 6:30 AM	7.88
3/25/2018 6:45 AM	7.94	3/26/2018 6:45 AM	7.85	3/27/2018 6:45 AM	7.89
3/25/2018 7:00 AM	7.92	3/26/2018 7:00 AM	7.86	3/27/2018 7:00 AM	7.90
3/25/2018 7:15 AM	7.91	3/26/2018 7:15 AM	7.90	3/27/2018 7:15 AM	7.90
3/25/2018 7:30 AM	7.90	3/26/2018 7:30 AM	7.90	3/27/2018 7:30 AM	7.90
3/25/2018 7:45 AM	7.89	3/26/2018 7:45 AM	7.88	3/27/2018 7:45 AM	7.90
3/25/2018 8:00 AM	7.89	3/26/2018 8:00 AM	7.88	3/27/2018 8:00 AM	7.90
3/25/2018 8:15 AM	7.88	3/26/2018 8:15 AM	7.88	3/27/2018 8:15 AM	7.90
3/25/2018 8:30 AM	7.92	3/26/2018 8:30 AM	7.88	3/27/2018 8:30 AM	7.88
3/25/2018 8:45 AM	7.91	3/26/2018 8:45 AM	7.89	3/27/2018 8:45 AM	7.86
3/25/2018 9:00 AM	7.91	3/26/2018 9:00 AM	7.89	3/27/2018 9:00 AM	7.84
3/25/2018 9:15 AM	7.92	3/26/2018 9:15 AM	7.89	3/27/2018 9:15 AM	7.84
3/25/2018 9:30 AM	7.93	3/26/2018 9:30 AM	7.89	3/27/2018 9:30 AM	7.83
3/25/2018 9:45 AM	7.93	3/26/2018 9:45 AM	7.90	3/27/2018 9:45 AM	7.83
3/25/2018 10:00 AM	7.94	3/26/2018 10:00 AM	7.87	3/27/2018 10:00 AM	7.83
3/25/2018 10:15 AM	7.94	3/26/2018 10:15 AM	7.85	3/27/2018 10:15 AM	7.88
3/25/2018 10:30 AM	7.94	3/26/2018 10:30 AM	7.84	3/27/2018 10:30 AM	7.87
3/25/2018 10:45 AM	7.93	3/26/2018 10:45 AM	7.83	3/27/2018 10:45 AM	7.88
3/25/2018 11:00 AM	7.93	3/26/2018 11:00 AM	7.83	3/27/2018 11:00 AM	7.89
3/25/2018 11:15 AM	7.94	3/26/2018 11:15 AM	7.88	3/27/2018 11:15 AM	7.90
3/25/2018 11:30 AM	7.91	3/26/2018 11:30 AM	7.87	3/27/2018 11:30 AM	7.90
3/25/2018 11:45 AM	7.89	3/26/2018 11:45 AM	7.86	3/27/2018 11:45 AM	7.90
3/25/2018 12:00 PM	7.89	3/26/2018 12:00 PM	7.86	3/27/2018 12:00 PM	7.90
3/25/2018 12:15 PM	7.88	3/26/2018 12:15 PM	7.86	3/27/2018 12:15 PM	7.90
3/25/2018 12:30 PM	7.87	3/26/2018 12:30 PM	7.85	3/27/2018 12:30 PM	7.90
3/25/2018 12:45 PM	7.87	3/26/2018 12:45 PM	7.86	3/27/2018 12:45 PM	7.89
3/25/2018 1:00 PM	7.91	3/26/2018 1:00 PM	7.87	3/27/2018 1:00 PM	7.86
3/25/2018 1:15 PM	7.89	3/26/2018 1:15 PM	7.87	3/27/2018 1:15 PM	7.85
3/25/2018 1:30 PM	7.89	3/26/2018 1:30 PM	7.87	3/27/2018 1:30 PM	7.84
3/25/2018 1:45 PM	7.89	3/26/2018 1:45 PM	7.87	3/27/2018 1:45 PM	7.83
3/25/2018 2:00 PM	7.90	3/26/2018 2:00 PM	7.86	3/27/2018 2:00 PM	7.83
3/25/2018 2:15 PM	7.90	3/26/2018 2:15 PM	7.90	3/27/2018 2:15 PM	7.86
3/25/2018 2:30 PM	7.90	3/26/2018 2:30 PM	7.87	3/27/2018 2:30 PM	7.88
3/25/2018 2:45 PM	7.90	3/26/2018 2:45 PM	7.86	3/27/2018 2:45 PM	7.88
3/25/2018 3:00 PM	7.90	3/26/2018 3:00 PM	7.85	3/27/2018 3:00 PM	7.88
3/25/2018 3:15 PM	7.90	3/26/2018 3:15 PM	7.84	3/27/2018 3:15 PM	7.89
3/25/2018 3:30 PM	7.90	3/26/2018 3:30 PM	7.84	3/27/2018 3:30 PM	7.90
3/25/2018 3:45 PM	7.93	3/26/2018 3:45 PM	7.84	3/27/2018 3:45 PM	7.90
3/25/2018 4:00 PM	7.90	3/26/2018 4:00 PM	7.82	3/27/2018 4:00 PM	7.90
3/25/2018 4:15 PM	7.89	3/26/2018 4:15 PM	7.88	3/27/2018 4:15 PM	7.90
3/25/2018 4:30 PM	7.88	3/26/2018 4:30 PM	7.87	3/27/2018 4:30 PM	7.90
3/25/2018 4:45 PM	7.87	3/26/2018 4:45 PM	7.87	3/27/2018 4:45 PM	7.89
3/25/2018 5:00 PM	7.87	3/26/2018 5:00 PM	7.87	3/27/2018 5:00 PM	7.89
3/25/2018 5:15 PM	7.86	3/26/2018 5:15 PM	7.88	3/27/2018 5:15 PM	7.89
3/25/2018 5:30 PM	7.86	3/26/2018 5:30 PM	7.89	3/27/2018 5:30 PM	7.86
3/25/2018 5:45 PM	7.91	3/26/2018 5:45 PM	7.89	3/27/2018 5:45 PM	7.84
3/25/2018 6:00 PM	7.89	3/26/2018 6:00 PM	7.90	3/27/2018 6:00 PM	7.83
3/25/2018 6:15 PM	7.88	3/26/2018 6:15 PM	7.90	3/27/2018 6:15 PM	7.82
3/25/2018 6:30 PM	7.88	3/26/2018 6:30 PM	7.90	3/27/2018 6:30 PM	7.83
3/25/2018 6:45 PM	7.88	3/26/2018 6:45 PM	7.89	3/27/2018 6:45 PM	7.83
3/25/2018 7:00 PM	7.89	3/26/2018 7:00 PM	7.87	3/27/2018 7:00 PM	7.83
3/25/2018 7:15 PM	7.90	3/26/2018 7:15 PM	7.85	3/27/2018 7:15 PM	7.87
3/25/2018 7:30 PM	7.90	3/26/2018 7:30 PM	7.85	3/27/2018 7:30 PM	7.87
3/25/2018 7:45 PM	7.91	3/26/2018 7:45 PM	7.84	3/27/2018 7:45 PM	7.87
3/25/2018 8:00 PM	7.91	3/26/2018 8:00 PM	7.84	3/27/2018 8:00 PM	7.88
3/25/2018 8:15 PM	7.91	3/26/2018 8:15 PM	7.84	3/27/2018 8:15 PM	7.90
3/25/2018 8:30 PM	7.88	3/26/2018 8:30 PM	7.84	3/27/2018 8:30 PM	7.91
3/25/2018 8:45 PM	7.87	3/26/2018 8:45 PM	7.89	3/27/2018 8:45 PM	7.91
3/25/2018 9:00 PM	7.86	3/26/2018 9:00 PM	7.87	3/27/2018 9:00 PM	7.91
3/25/2018 9:15 PM	7.86	3/26/2018 9:15 PM	7.86	3/27/2018 9:15 PM	7.91
3/25/2018 9:30 PM	7.85	3/26/2018 9:30 PM	7.87	3/27/2018 9:30 PM	7.90
3/25/2018 9:45 PM	7.85	3/26/2018 9:45 PM	7.87	3/27/2018 9:45 PM	7.90
3/25/2018 10:00 PM	7.90	3/26/2018 10:00 PM	7.88	3/27/2018 10:00 PM	7.87
3/25/2018 10:15 PM	7.89	3/26/2018 10:15 PM	7.89	3/27/2018 10:15 PM	7.85
3/25/2018 10:30 PM	7.88	3/26/2018 10:30 PM	7.90	3/27/2018 10:30 PM	7.84
3/25/2018 10:45 PM	7.88	3/26/2018 10:45 PM	7.90	3/27/2018 10:45 PM	7.84
3/25/2018 11:00 PM	7.89	3/26/2018 11:00 PM	7.90	3/27/2018 11:00 PM	7.84
3/25/2018 11:15 PM	7.90	3/26/2018 11:15 PM	7.90	3/27/2018 11:15 PM	7.83
3/25/2018 11:30 PM	7.91	3/26/2018 11:30 PM	7.88	3/27/2018 11:30 PM	7.84
3/25/2018 11:45 PM	7.91	3/26/2018 11:45 PM	7.86	3/27/2018 11:45 PM	7.88
AVG	7.91	AVG	7.88	AVG	7.87

Date And Time	pH	Date And Time	pH	Date And Time	pH
3/28/2018 12:00 AM	7.88	3/29/2018 12:00 AM	7.94	3/30/2018 12:00 AM	7.86
3/28/2018 12:15 AM	7.91	3/29/2018 12:15 AM	7.94	3/30/2018 12:15 AM	7.86
3/28/2018 12:30 AM	7.92	3/29/2018 12:30 AM	7.94	3/30/2018 12:30 AM	7.87
3/28/2018 12:45 AM	7.92	3/29/2018 12:45 AM	7.91	3/30/2018 12:45 AM	7.87
3/28/2018 1:00 AM	7.92	3/29/2018 1:00 AM	7.88	3/30/2018 1:00 AM	7.87
3/28/2018 1:15 AM	7.92	3/29/2018 1:15 AM	7.87	3/30/2018 1:15 AM	7.86
3/28/2018 1:30 AM	7.91	3/29/2018 1:30 AM	7.86	3/30/2018 1:30 AM	7.87
3/28/2018 1:45 AM	7.91	3/29/2018 1:45 AM	7.86	3/30/2018 1:45 AM	7.88
3/28/2018 2:00 AM	7.91	3/29/2018 2:00 AM	7.87	3/30/2018 2:00 AM	7.89
3/28/2018 2:15 AM	7.89	3/29/2018 2:15 AM	7.87	3/30/2018 2:15 AM	7.90
3/28/2018 2:30 AM	7.87	3/29/2018 2:30 AM	7.87	3/30/2018 2:30 AM	7.91
3/28/2018 2:45 AM	7.85	3/29/2018 2:45 AM	7.89	3/30/2018 2:45 AM	7.92
3/28/2018 3:00 AM	7.84	3/29/2018 3:00 AM	7.90	3/30/2018 3:00 AM	7.92
3/28/2018 3:15 AM	7.84	3/29/2018 3:15 AM	7.92	3/30/2018 3:15 AM	7.92
3/28/2018 3:30 AM	7.84	3/29/2018 3:30 AM	7.93	3/30/2018 3:30 AM	7.92
3/28/2018 3:45 AM	7.87	3/29/2018 3:45 AM	7.93	3/30/2018 3:45 AM	7.90
3/28/2018 4:00 AM	7.89	3/29/2018 4:00 AM	7.93	3/30/2018 4:00 AM	7.87
3/28/2018 4:15 AM	7.90	3/29/2018 4:15 AM	7.93	3/30/2018 4:15 AM	7.87
3/28/2018 4:30 AM	7.91	3/29/2018 4:30 AM	7.92	3/30/2018 4:30 AM	7.87
3/28/2018 4:45 AM	7.91	3/29/2018 4:45 AM	7.92	3/30/2018 4:45 AM	7.87
3/28/2018 5:00 AM	7.92	3/29/2018 5:00 AM	7.91	3/30/2018 5:00 AM	7.87
3/28/2018 5:15 AM	7.91	3/29/2018 5:15 AM	7.91	3/30/2018 5:15 AM	7.88
3/28/2018 5:30 AM	7.91	3/29/2018 5:30 AM	7.88	3/30/2018 5:30 AM	7.87
3/28/2018 5:45 AM	7.91	3/29/2018 5:45 AM	7.87	3/30/2018 5:45 AM	7.88
3/28/2018 6:00 AM	7.91	3/29/2018 6:00 AM	7.87	3/30/2018 6:00 AM	7.89
3/28/2018 6:15 AM	7.90	3/29/2018 6:15 AM	7.87	3/30/2018 6:15 AM	7.90
3/28/2018 6:30 AM	7.90	3/29/2018 6:30 AM	7.87	3/30/2018 6:30 AM	7.90
3/28/2018 6:45 AM	7.90	3/29/2018 6:45 AM	7.84	3/30/2018 6:45 AM	7.90
3/28/2018 7:00 AM	7.89	3/29/2018 7:00 AM	7.90	3/30/2018 7:00 AM	7.90
3/28/2018 7:15 AM	7.89	3/29/2018 7:15 AM	7.90	3/30/2018 7:15 AM	7.90
3/28/2018 7:30 AM	7.88	3/29/2018 7:30 AM	7.92	3/30/2018 7:30 AM	7.90
3/28/2018 7:45 AM	7.88	3/29/2018 7:45 AM	7.93	3/30/2018 7:45 AM	7.90
3/28/2018 8:00 AM	7.88	3/29/2018 8:00 AM	7.93	3/30/2018 8:00 AM	7.90
3/28/2018 8:15 AM	7.89	3/29/2018 8:15 AM	7.93	3/30/2018 8:15 AM	7.90
3/28/2018 8:30 AM	7.87	3/29/2018 8:30 AM	7.93	3/30/2018 8:30 AM	7.89
3/28/2018 8:45 AM	7.85	3/29/2018 8:45 AM	7.92	3/30/2018 8:45 AM	7.89
3/28/2018 9:00 AM	7.90	3/29/2018 9:00 AM	7.92	3/30/2018 9:00 AM	7.88
3/28/2018 9:15 AM	7.91	3/29/2018 9:15 AM	7.91	3/30/2018 9:15 AM	7.88
3/28/2018 9:30 AM	7.90	3/29/2018 9:30 AM	7.91	3/30/2018 9:30 AM	7.88
3/28/2018 9:45 AM	7.90	3/29/2018 9:45 AM	7.91	3/30/2018 9:45 AM	7.88
3/28/2018 10:00 AM	7.90	3/29/2018 10:00 AM	7.88	3/30/2018 10:00 AM	7.87
3/28/2018 10:15 AM	7.89	3/29/2018 10:15 AM	7.87	3/30/2018 10:15 AM	7.88
3/28/2018 10:30 AM	7.89	3/29/2018 10:30 AM	7.87	3/30/2018 10:30 AM	7.88
3/28/2018 10:45 AM	7.89	3/29/2018 10:45 AM	7.87	3/30/2018 10:45 AM	7.88
3/28/2018 11:00 AM	7.89	3/29/2018 11:00 AM	7.87	3/30/2018 11:00 AM	7.87
3/28/2018 11:15 AM	7.87	3/29/2018 11:15 AM	7.87	3/30/2018 11:15 AM	7.87
3/28/2018 11:30 AM	7.85	3/29/2018 11:30 AM	7.87	3/30/2018 11:30 AM	7.88
3/28/2018 11:45 AM	7.85	3/29/2018 11:45 AM	7.87	3/30/2018 11:45 AM	7.89
3/28/2018 12:00 PM	7.84	3/29/2018 12:00 PM	7.89	3/30/2018 12:00 PM	7.89
3/28/2018 12:15 PM	7.84	3/29/2018 12:15 PM	7.88	3/30/2018 12:15 PM	7.87
3/28/2018 12:30 PM	7.85	3/29/2018 12:30 PM	7.91	3/30/2018 12:30 PM	7.86
3/28/2018 12:45 PM	7.85	3/29/2018 12:45 PM	7.91	3/30/2018 12:45 PM	7.87
3/28/2018 1:00 PM	7.85	3/29/2018 1:00 PM	7.91	3/30/2018 1:00 PM	7.87
3/28/2018 1:15 PM	7.89	3/29/2018 1:15 PM	7.90	3/30/2018 1:15 PM	7.87
3/28/2018 1:30 PM	7.88	3/29/2018 1:30 PM	7.91	3/30/2018 1:30 PM	7.87
3/28/2018 1:45 PM	7.89	3/29/2018 1:45 PM	7.89	3/30/2018 1:45 PM	7.87
3/28/2018 2:00 PM	7.89	3/29/2018 2:00 PM	7.88	3/30/2018 2:00 PM	7.87

3/28/2018 2:15 PM	7.90	3/29/2018 2:15 PM	7.86	3/30/2018 2:15 PM	7.90
3/28/2018 2:30 PM	7.90	3/29/2018 2:30 PM	7.85	3/30/2018 2:30 PM	7.89
3/28/2018 2:45 PM	7.90	3/29/2018 2:45 PM	7.84	3/30/2018 2:45 PM	7.92
3/28/2018 3:00 PM	7.90	3/29/2018 3:00 PM	7.84	3/30/2018 3:00 PM	7.92
3/28/2018 3:15 PM	7.90	3/29/2018 3:15 PM	7.85	3/30/2018 3:15 PM	7.93
3/28/2018 3:30 PM	7.91	3/29/2018 3:30 PM	7.86	3/30/2018 3:30 PM	7.93
3/28/2018 3:45 PM	7.90	3/29/2018 3:45 PM	7.85	3/30/2018 3:45 PM	7.93
3/28/2018 4:00 PM	7.87	3/29/2018 4:00 PM	7.86	3/30/2018 4:00 PM	7.93
3/28/2018 4:15 PM	7.85	3/29/2018 4:15 PM	7.87	3/30/2018 4:15 PM	7.93
3/28/2018 4:30 PM	7.85	3/29/2018 4:30 PM	7.88	3/30/2018 4:30 PM	7.93
3/28/2018 4:45 PM	7.85	3/29/2018 4:45 PM	7.89	3/30/2018 4:45 PM	7.93
3/28/2018 5:00 PM	7.85	3/29/2018 5:00 PM	7.90	3/30/2018 5:00 PM	7.93
3/28/2018 5:15 PM	7.86	3/29/2018 5:15 PM	7.91	3/30/2018 5:15 PM	7.88
3/28/2018 5:30 PM	7.89	3/29/2018 5:30 PM	7.90	3/30/2018 5:30 PM	7.88
3/28/2018 5:45 PM	7.89	3/29/2018 5:45 PM	7.89	3/30/2018 5:45 PM	7.88
3/28/2018 6:00 PM	7.91	3/29/2018 6:00 PM	7.88	3/30/2018 6:00 PM	7.89
3/28/2018 6:15 PM	7.92	3/29/2018 6:15 PM	7.88	3/30/2018 6:15 PM	7.90
3/28/2018 6:30 PM	7.93	3/29/2018 6:30 PM	7.88	3/30/2018 6:30 PM	7.91
3/28/2018 6:45 PM	7.93	3/29/2018 6:45 PM	7.87	3/30/2018 6:45 PM	7.91
3/28/2018 7:00 PM	7.93	3/29/2018 7:00 PM	7.85	3/30/2018 7:00 PM	7.91
3/28/2018 7:15 PM	7.93	3/29/2018 7:15 PM	7.85	3/30/2018 7:15 PM	7.90
3/28/2018 7:30 PM	7.93	3/29/2018 7:30 PM	7.85	3/30/2018 7:30 PM	7.91
3/28/2018 7:45 PM	7.93	3/29/2018 7:45 PM	7.85	3/30/2018 7:45 PM	7.91
3/28/2018 8:00 PM	7.93	3/29/2018 8:00 PM	7.89	3/30/2018 8:00 PM	7.92
3/28/2018 8:15 PM	7.90	3/29/2018 8:15 PM	7.89	3/30/2018 8:15 PM	7.93
3/28/2018 8:30 PM	7.87	3/29/2018 8:30 PM	7.90	3/30/2018 8:30 PM	7.94
3/28/2018 8:45 PM	7.86	3/29/2018 8:45 PM	7.91	3/30/2018 8:45 PM	7.94
3/28/2018 9:00 PM	7.86	3/29/2018 9:00 PM	7.91	3/30/2018 9:00 PM	7.95
3/28/2018 9:15 PM	7.86	3/29/2018 9:15 PM	7.92	3/30/2018 9:15 PM	7.94
3/28/2018 9:30 PM	7.86	3/29/2018 9:30 PM	7.92	3/30/2018 9:30 PM	7.94
3/28/2018 9:45 PM	7.86	3/29/2018 9:45 PM	7.91	3/30/2018 9:45 PM	7.90
3/28/2018 10:00 PM	7.86	3/29/2018 10:00 PM	7.91	3/30/2018 10:00 PM	7.89
3/28/2018 10:15 PM	7.89	3/29/2018 10:15 PM	7.91	3/30/2018 10:15 PM	7.89
3/28/2018 10:30 PM	7.89	3/29/2018 10:30 PM	7.91	3/30/2018 10:30 PM	7.89
3/28/2018 10:45 PM	7.91	3/29/2018 10:45 PM	7.91	3/30/2018 10:45 PM	7.89
3/28/2018 11:00 PM	7.93	3/29/2018 11:00 PM	7.91	3/30/2018 11:00 PM	7.90
3/28/2018 11:15 PM	7.94	3/29/2018 11:15 PM	7.88	3/30/2018 11:15 PM	7.91
3/28/2018 11:30 PM	7.94	3/29/2018 11:30 PM	7.86	3/30/2018 11:30 PM	7.92
3/28/2018 11:45 PM	7.94	3/29/2018 11:45 PM	7.86	3/30/2018 11:45 PM	7.93
AVG	7.89	AVG	7.89	AVG	7.90

Avtex Fibers
Front Royal, VA
Outfall 004
March 2018 DMR

Sample Date	Sample ID	BOD, mg/L	BOD, kg/d	TSS, mg/L	TSS, kg/d
3/1/2018	AF3-1FE	3.0	1.0	0.0	0.0
3/8/2018	AF3-8FE	3.0	1.0	0.0	0.0
3/13/2018	AF3-13FE	0.0	0.0	0.0	0.0
3/22/2018	AF3-22FE	0.0	0.0	1.1	0.4
3/27/2018	AF3-27FE	0.0	0.0	1.5	0.0
	Daily Maximum:	3.0	1.0	1.5	0.4
	Monthly Avg:	1.2	0.4	0.5	0.1

Monthly Average – Compliance with the monthly average limitations and/or reporting requirements for the parameters listed in Part I.C.1 shall be determined as follows: All concentration data below the QL used for the analysis shall be treated as zero. All concentration data equal to or above the QL used for the analysis shall be treated as it is reported. An arithmetic average shall be calculated using all reported data for the month, including the defined zeros. This arithmetic average shall be reported on the Discharge Monitoring Report (DMR) as calculated. If all data are below the QL used for the analysis, then the average shall be reported as "<QL". If reporting for quantity is required on the DMR and the reported monthly average concentration is <QL, then report "<QL" for the quantity. Otherwise use the reported concentration data (including the defined zeros) and flow data for each sample day to determine the daily quantity and report the monthly average of the calculated daily quantities.

Daily Maximum – Compliance with the daily maximum limitations and/or reporting requirements for the parameters listed in Part I.C.1 shall be determined as follows: All concentration data below the QL used for the analysis shall be treated as zero. All concentration data equal to or above the QL used for the analysis shall be treated as reported. An arithmetic average shall be calculated using all reported data, including the defined zeros, collected within each day during the reporting month. The maximum value of these daily averages thus determined shall be reported on the DMR as the Daily Maximum. If all data are below the QL used for the analysis, then the maximum value of the daily averages shall be reported as "<QL". If reporting for quantity is required on the DMR and the reported daily maximum concentration is <QL, then report "<QL" for the quantity. Otherwise use the reported daily average concentrations (including the defined zeros) and corresponding daily flows to determine daily average quantities and report the maximum of the daily average quantities during the reporting month.

Loading Derivation
If 1 ppm (= 1 mg/L) and 1 MGD (= 1 MG/day)
--> (1 mg/L)(1 MG/day)(3.785 L/Gal)(10^6 Gal/MG)(1 lb/453,600 mg) = 8.34 lbs/day
--> lbs/day = ppm * 8.34 * MGD
--> kg/d = ppm * 8.34 * MGD * 0.4536*lb/d

Concentration Derivation
If 1 lb/d and 1 MGD (= 1 MG/day)
[(1 lbs/day)(453,600 mg/lb)] / [(1 MG/d)(10^6 Gal/MG)(3.785 L/Gal)]
--> ppm = lb/d * (1/8.34) * (1/MGD)

	BOD
3/1/2018	0.954043157
3/8/2018	0.973300582
3/13/2018	0
3/22/2018	0
3/27/2018	0
AVG	0.385468748

	TSS
3/1/2018	0
3/8/2018	0
3/13/2018	0
3/22/2018	0.366273838
3/27/2018	0.498616912
AVG	0.17297815

	CS2*	
3/14/2018	0.227	ug/L
3/14/2018	0.0002	mg/L
3/14/2018	0.0001	kg/d

*Note: CS2 EPA Test Method: 8260 MSV Low Level Analytical Method (EPA 8260)
Report Limit 2 ug/L
MDL 1.2 ug/L

Table 3.1

Site Rainfall Data Avtex Fibers Superfund Site 1 January - March 31, 2018

Month	Average Rainfall for Winchester, VA (in)*	Average Site Rainfall 1990-2013 (in)	2006 Actual Rainfall (in)	2007 Actual Rainfall (in)	2008 Actual Rainfall (in)	2009 Actual Rainfall (in)	2010 Actual Rainfall (in)	2011 Actual Rainfall (in)	2012 Actual Rainfall (in)	2013 Actual Rainfall (in)	2014 Actual Rainfall (in)	2015 Actual Rainfall (in)	2016 Actual Rainfall (in)	2017 Actual Rainfall (in)	2018 Actual Rainfall (in)	Percent of Average Site Rainfall (%)
January	2.4	2.7	2.0	1.2	1.0	1.4	3.35	0.9	2.0	3.8	1.1	1.4	1.2	2.5	1.8	65%
February	2.5	2.3	1.7	1.9	2.3	0.0	4.35	1.4	2.3	0.9	3.2	0.7	2.2	0.8	2.0	87%
March	3.1	3.6	0.1	3.7	2.9	1.5	5.7	4.6	1.9	3.9	2.3	1.7	1.0	2.4	0.8	23%
April	3.1	3.2	2.8	3.4	6.2	3.2	1.59	6.5	2.5	1.3	1.5	2.9	1.3	1.7		0%
May	3.7	3.8	1.0	1.9	5.2	5.8	3.25	5.6	3.6	2.4	7.2	1.6	3.9	7.0		0%
June	3.9	4.4	9.7	3.5	4.3	4.6	0.6	4.0	3.6	5.2	1.5	3.9	3.8	1.3		0%
July	3.9	3.4	2.2	1.7	3.8	3.0	1.8	3.1	4.3	1.9	4.6	1.8	5.4	6.7		0%
August	3.5	3.1	1.3	2.8	3.5	2.1	3.3	3.4	5.2	2.6	3.7	1.0	2.3	2.1		0%
September	3.1	4.7	6.1	2.0	4.3	1.3	5.7	5.5	4.9	2.5	1.6	3.6	6.1	1.3		0%
October	3.2	3.0	4.3	4.1	1.2	2.7	0.65	3.9	4.3	5.1	5.17	1.65	0.6	3.5		0%
November	3.1	2.9	5.2	1.6	2.5	3.7	1.8	3.0	1.1	1.6	1.83	1.36	0.8	0.9		0%
December	2.5	2.6	0.7	2.8	1.4	5.0	2.0	3.6	1.55	1.5	3.02	2.46	1.5	0.4		0%
Totals to Date	**37.9**	**39.6**	**36.9**	**30.4**	**38.5**	**34.2**	**34.1**	**45.2**	**37.0**	**32.8**	**36.7**	**24.1**	**30.0**	**30.4**	**4.6**	**12%**

* Source: National Climate Data Center TD 9641 Clim 81

Table 3.2 Monthly Flow Totals

Avtex Site Lift Stations, Test Wells and Viscose Basin

January 2018

Lift Stations Flow Report		Test Wells Flow Report				Viscose Basin Flow Report			
Date	Total LS Flow (MGD)	Date	TW1 Flow (MGD)	TW2 Flow (MGD)	TW3 Flow (MGD)	Date	VB9 Flow (MGD)	VB10 Flow (MGD)	VB 11 Flow (MGD)
1/1/2018	0.002	1/1/2018	0.000	0.000	0.000	1/1/2018	0.013	0.001	0.004
1/2/2018	0.006	1/2/2018	0.000	0.000	0.000	1/2/2018	0.015	0.001	0.005
1/3/2018	0.006	1/3/2018	0.000	0.000	0.000	1/3/2018	0.017	0.001	0.005
1/4/2018	0.001	1/4/2018	0.000	0.000	0.000	1/4/2018	0.017	0.001	0.005
1/5/2018	0.001	1/5/2018	0.000	0.000	0.000	1/5/2018	0.017	0.001	0.005
1/6/2018	0.007	1/6/2018	0.000	0.000	0.000	1/6/2018	0.017	0.001	0.005
1/7/2018	0.007	1/7/2018	0.000	0.000	0.000	1/7/2018	0.017	0.001	0.005
1/8/2018	0.001	1/8/2018	0.000	0.000	0.000	1/8/2018	0.021	0.001	0.005
1/9/2018	0.001	1/9/2018	0.000	0.000	0.000	1/9/2018	0.021	0.001	0.006
1/10/2018	0.000	1/10/2018	0.000	0.000	0.000	1/10/2018	0.023	0.001	0.006
1/11/2018	0.007	1/11/2018	0.000	0.000	0.000	1/11/2018	0.023	0.002	0.006
1/12/2018	0.007	1/12/2018	0.000	0.000	0.000	1/12/2018	0.023	0.002	0.006
1/13/2018	0.000	1/13/2018	0.000	0.000	0.000	1/13/2018	0.023	0.002	0.006
1/14/2018	0.000	1/14/2018	0.000	0.000	0.000	1/14/2018	0.023	0.002	0.006
1/15/2018	0.000	1/15/2018	0.000	0.000	0.000	1/15/2018	0.023	0.002	0.006
1/16/2018	0.010	1/16/2018	0.000	0.000	0.000	1/16/2018	0.023	0.002	0.006
1/17/2018	0.017	1/17/2018	0.000	0.002	0.000	1/17/2018	0.023	0.002	0.006
1/18/2018	0.017	1/18/2018	0.040	0.021	0.000	1/18/2018	0.024	0.002	0.007
1/19/2018	0.001	1/19/2018	0.046	0.024	0.000	1/19/2018	0.029	0.002	0.007
1/20/2018	0.001	1/20/2018	0.059	0.005	0.000	1/20/2018	0.037	0.002	0.007
1/21/2018	0.008	1/21/2018	0.065	0.000	0.000	1/21/2018	0.037	0.002	0.007
1/22/2018	0.008	1/22/2018	0.061	0.003	0.000	1/22/2018	0.037	0.003	0.007
1/23/2018	0.012	1/23/2018	0.065	0.003	0.000	1/23/2018	0.037	0.003	0.007
1/24/2018	0.013	1/24/2018	0.065	0.000	0.000	1/24/2018	0.037	0.003	0.007
1/25/2018	0.010	1/25/2018	0.059	0.020	0.000	1/25/2018	0.003	0.000	0.000
1/26/2018	0.010	1/26/2018	0.065	0.023	0.000	1/26/2018	0.003	0.000	0.000
1/27/2018	0.003	1/27/2018	0.058	0.018	0.000	1/27/2018	0.003	0.000	0.000
1/28/2018	0.003	1/28/2018	0.064	0.025	0.000	1/28/2018	0.003	0.000	0.000
1/29/2018	0.011	1/29/2018	0.065	0.027	0.000	1/29/2018	0.006	0.000	0.000
1/30/2018	0.012	1/30/2018	0.059	0.015	0.000	1/30/2018	0.009	0.000	0.001
1/31/2018	0.006	1/31/2018	0.065	0.019	0.000	1/31/2018	0.010	0.000	0.001

Table 3.2 Monthly Flow Totals

Avtex Site Lift Stations, Test Wells and Viscose Basin

February 2018

Lift Stations Flow Report		Test Wells Flow Report				Viscose Basin Flow Report			
Date	Total LS Flow (MGD)	Date	TW1 Flow (MGD)	TW2 Flow (MGD)	TW3 Flow (MGD)	Date	VB9 Flow (MGD)	VB10 Flow (MGD)	VB 11 Flow (MGD)
2/1/2018	0.006	2/1/2018	0.065	0.022	0.000	2/1/2018	0.010	0.003	0.001
2/2/2018	0.003	2/2/2018	0.065	0.005	0.000	2/2/2018	0.005	0.004	0.001
2/3/2018	0.002	2/3/2018	0.065	0.007	0.000	2/3/2018	0.005	0.004	0.001
2/4/2018	0.002	2/4/2018	0.065	0.025	0.000	2/4/2018	0.005	0.004	0.001
2/5/2018	0.019	2/5/2018	0.065	0.027	0.000	2/5/2018	0.005	0.005	0.001
2/6/2018	0.019	2/6/2018	0.065	0.027	0.000	2/6/2018	0.003	0.002	0.000
2/7/2018	0.018	2/7/2018	0.049	0.021	0.000	2/7/2018	0.003	0.001	0.000
2/8/2018	0.016	2/8/2018	0.059	0.024	0.000	2/8/2018	0.003	0.001	0.000
2/9/2018	0.010	2/9/2018	0.065	0.027	0.000	2/9/2018	0.003	0.000	0.001
2/10/2018	0.007	2/10/2018	0.065	0.027	0.000	2/10/2018	0.003	0.000	0.001
2/11/2018	0.015	2/11/2018	0.065	0.027	0.000	2/11/2018	0.003	0.000	0.001
2/12/2018	0.017	2/12/2018	0.047	0.020	0.000	2/12/2018	0.003	0.001	0.001
2/13/2018	0.017	2/13/2018	0.059	0.022	0.000	2/13/2018	0.003	0.001	0.001
2/14/2018	0.010	2/14/2018	0.065	0.024	0.000	2/14/2018	0.006	0.001	0.001
2/15/2018	0.010	2/15/2018	0.065	0.027	0.000	2/15/2018	0.006	0.001	0.001
2/16/2018	0.005	2/16/2018	0.065	0.027	0.000	2/16/2018	0.002	0.000	0.000
2/17/2018	0.013	2/17/2018	0.058	0.024	0.000	2/17/2018	0.002	0.000	0.000
2/18/2018	0.013	2/18/2018	0.065	0.026	0.000	2/18/2018	0.002	0.000	0.000
2/19/2018	0.018	2/19/2018	0.064	0.026	0.000	2/19/2018	0.002	0.001	0.000
2/20/2018	0.018	2/20/2018	0.059	0.013	0.000	2/20/2018	0.002	0.003	0.000
2/21/2018	0.004	2/21/2018	0.065	0.024	0.000	2/21/2018	0.002	0.003	0.000
2/22/2018	0.010	2/22/2018	0.065	0.026	0.000	2/22/2018	0.002	0.000	0.000
2/23/2018	0.011	2/23/2018	0.065	0.019	0.004	2/23/2018	0.002	0.000	0.000
2/24/2018	0.011	2/24/2018	0.065	0.024	0.004	2/24/2018	0.002	0.000	0.000
2/25/2018	0.033	2/25/2018	0.065	0.026	0.000	2/25/2018	0.002	0.000	0.001
2/26/2018	0.033	2/26/2018	0.064	0.026	0.000	2/26/2018	0.003	0.002	0.001
2/27/2018	0.005	2/27/2018	0.059	0.019	0.000	2/27/2018	0.005	0.002	0.001
2/28/2018	0.016	2/28/2018	0.065	0.024	0.010	2/28/2018	0.007	0.002	0.001

Table 3.2 Monthly Flow Totals

Avtex Site Lift Stations, Test Wells and Viscose Basin

March 2018

Lift Stations Flow Report		Test Wells Flow Report				Viscose Basin Flow Report			
Date	Total LS Flow (MGD)	Date	TW1 Flow (MGD)	TW2 Flow (MGD)	TW3 Flow (MGD)	Date	VB9 Flow (MGD)	VB10 Flow (MGD)	VB 11 Flow (MGD)
3/1/2018	0.017	3/1/2018	0.065	0.026	0.010	3/1/2018	0.007	0.002	0.001
3/2/2018	0.003	3/2/2018	0.065	0.019	0.008	3/2/2018	0.002	0.000	0.001
3/3/2018	0.009	3/3/2018	0.065	0.023	0.008	3/3/2018	0.002	0.000	0.001
3/4/2018	0.009	3/4/2018	0.065	0.026	0.000	3/4/2018	0.000	0.000	0.001
3/5/2018	0.003	3/5/2018	0.065	0.026	0.000	3/5/2018	0.001	0.002	0.001
3/6/2018	0.002	3/6/2018	0.065	0.016	0.000	3/6/2018	0.001	0.002	0.001
3/7/2018	0.008	3/7/2018	0.065	0.023	0.010	3/7/2018	0.002	0.001	0.001
3/8/2018	0.008	3/8/2018	0.065	0.026	0.010	3/8/2018	0.003	0.000	0.001
3/9/2018	0.003	3/9/2018	0.065	0.025	0.000	3/9/2018	0.003	0.000	0.002
3/10/2018	0.002	3/10/2018	0.065	0.025	0.000	3/10/2018	0.001	0.000	0.002
3/11/2018	0.008	3/11/2018	0.065	0.025	0.000	3/11/2018	0.000	0.000	0.002
3/12/2018	0.008	3/12/2018	0.062	0.024	0.000	3/12/2018	0.001	0.002	0.002
3/13/2018	0.002	3/13/2018	0.065	0.019	0.011	3/13/2018	0.001	0.002	0.002
3/14/2018	0.001	3/14/2018	0.065	0.022	0.014	3/14/2018	0.001	0.000	0.002
3/15/2018	0.002	3/15/2018	0.064	0.025	0.006	3/15/2018	0.001	0.000	0.002
3/16/2018	0.006	3/16/2018	0.064	0.025	0.000	3/16/2018	0.002	0.000	0.002
3/17/2018	0.006	3/17/2018	0.064	0.022	0.000	3/17/2018	0.004	0.000	0.002
3/18/2018	0.000	3/18/2018	0.064	0.025	0.000	3/18/2018	0.006	0.000	0.002
3/19/2018	0.004	3/19/2018	0.065	0.025	0.000	3/19/2018	0.006	0.000	0.002
3/20/2018	0.004	3/20/2018	0.064	0.025	0.000	3/20/2018	0.001	0.000	0.003
3/21/2018	0.009	3/21/2018	0.064	0.024	0.000	3/21/2018	0.001	0.000	0.003
3/22/2018	0.018	3/22/2018	0.046	0.018	0.009	3/22/2018	0.001	0.000	0.003
3/23/2018	0.018	3/23/2018	0.059	0.022	0.009	3/23/2018	0.001	0.000	0.003
3/24/2018	0.013	3/24/2018	0.065	0.025	0.000	3/24/2018	0.001	0.000	0.003
3/25/2018	0.003	3/25/2018	0.065	0.025	0.000	3/25/2018	0.001	0.000	0.003
3/26/2018	0.008	3/26/2018	0.065	0.025	0.000	3/26/2018	0.001	0.000	0.003
3/27/2018	0.008	3/27/2018	0.065	0.025	0.000	3/27/2018	0.001	0.000	0.003
3/28/2018	0.007	3/28/2018	0.065	0.024	0.000	3/28/2018	0.001	0.002	0.003
3/29/2018	0.007	3/29/2018	0.065	0.024	0.000	3/29/2018	0.001	0.002	0.003
3/30/2018	0.009	3/30/2018	0.065	0.024	0.000	3/30/2018	0.001	0.000	0.003
3/31/2018	0.010	3/31/2018	0.048	0.019	0.000	3/31/2018	0.001	0.000	0.003

Attachment 4

Preliminary Site-Wide Quarterly Inspection

Quarterly Inspection Report

Inpected by: M. Robinson / T. Jobe
Report No.: 2018-03

Date: 03-14-2018
Areas Inspected: See Map

Questions	Response		Comments and Recommendations
1. Remediation/Restoration Areas			
Is settlement or standing water evident? If Yes, describe the degree of settlement(s) (slight, moderate, significant), record approximate dimensions, and indicate the location(s) on an attached map.	☑ Yes	☐ No	Slight to moderate settlement in small/isolated areas. Standing water present in three areas (SE of VB-2&3, near LS-2, and at SB-3) of the site during this inspection.
Is erosion evident? If Yes, describe the type of erosion (rills, gullies), record approximate dimensions (length, width, depth) and indicate location(s) on an attached map.	☑ Yes	☐ No	Minor erosion noted in a few isolated areas (see map for locations and details).
Are potential leachate seeps evident or migration of contamination? If Yes, describe the nature (size, color, flow rate), record location on an attached map, and photograph. [Note: Check former seep areas in unnamed tributary north of VB 4-6, check pond area north of VB 9, and check other likely areas (e.g., embankments of VBs, SBs)]	☑ Yes	☐ No	See map for locations. Potential seeps: -South of LS2 (standing water present) -SE of VB-2&3 (Standing water present) -NW of VB-7&8 (Dry)
Do landfill/basin embankments show signs of erosion, failure (e.g., cracking, sloughing) or migration of contamination (e.g., seeps, exposed waste)? If Yes, describe the nature (type, size), record location on an attached map, and photograph [Note: Check river-side of embankments along river, if safe to do so.]	☐ Yes	☑ No	
Is vegetation distressed or are bare areas evident? If Yes, describe the type of disorder (distressed, sparsely vegetated, bare), record approximate dimensions and indicate location(s) on an attached map.	☑ Yes	☐ No	Isolated/minor bare areas noted. See map for locations. With few exceptions, vegetation is filling in or the bare soil is the result of animal activities.

Quarterly Inspection Report

Inpected by: M. Robinson / T. Jobe

Date: 03-14-2018

Report No.: 2018-03

Areas Inspected: See Map

Questions	Response		Comments and Recommendations
Is there woody vegetation greater than 2 inches in diameter or 5 feet in height on the cover system(s)? If Yes, describe where and actions to be taken (refer to Section 4.2 of the O&M Plan).	☐ Yes	☑ No	
Is any other damage evident? If Yes, describe the type of damage(s) and indicate the location(s) on an attached map.	☐ Yes	☑ No	
Are obstruction(s) (brush, debris, timber, leaves, sediment) interfering with the proper functioning of ditches, gutters or flumes? If Yes, describe the type(s) of obstruction(s) and indicate the location(s) on an attached map.	☑ Yes	☐ No	Minor obstructions at one location: 1. Sediment building up at end of culvert southeast of VB-10 causing standing water in culvert. Issue to be monitored. Two samll trees noted at southern-most inlet at FAB-6.
Is sediment deposited in diversion berms, ditches gutters, flumes or culverts deeper than ¼ of the original channel depth (shown on the contract drawings) or culvert diameter? If Yes, record approximate dimensions and indicate locations on an attached map.	☐ Yes	☑ No	

Quarterly Inspection Report

Inpected by: M. Robinson / T. Jobe

Date: 03-14-2018

Report No.: 2018-03

Areas Inspected: See Map

Questions	Response		Comments and Recommendations
2. Surface Water Drainage and Erosion Control System			
Is erosion evident? If Yes, describe the drainage structure inspected (ditch, gutter, flume, culvert, outfall, rip-rap), the type of erosion (rills, gullies, washouts, slope failure), record approximate dimensions (length, width, depth) and indicate location(s) on an attached map.	☑ Yes	☐ No	Minor erosion noted in a few isolated areas. See map for locations. Rills forming across access road to LS-1 (west of VB-4, 5, & 6) due to flow exceeding capacity of culvert. Rills have also formed on north bank of the sediment basin between the NLF and VB-2&3. The rills in both locations appear to have stabilized.
Is overall shape, configuration, and alignment of the drainageway as shown on the drawings? If No, describe the type of distortion (damaged, eroded, slope failure), record approximate dimensions and indicate location(s) on an attached map.	☑ Yes	☐ No	
Is erosion evident at drainage outlet aprons? If Yes, record approximate dimensions and indicate location(s) on an attached map.	☐ Yes	☑ No	

Inspection Checklist (check items that were inspected; document concerns noted; refer to attached Drawings for specific areas)

Viscos Basins 1-3

☑ Vegetation	☑ Erosion	☑ Settlement	☑ Gas Vents
☑ Culvert Inlets & outles	☑ Rip-rap channels	☑ Access road near unit	☐

Viscos Basins 4-6

☑ Vegetation	☑ Erosion	☑ Settlement	☑ Gas Vents
☑ Culvert Inlets & outles - N, E, & W of VB 4-6; - Pond W of VB 4-6	☑ Rip-rap channels	☑ Down chutes	☑ Gas Vent Filter & Fence
☑ Former seep area - N of VB 4-6	☑ LS #1 & #2 and Fencing	☑ Access road near unit	☐

Viscos Basins 7-8

☑ Vegetation	☑ Erosion	☑ Settlement	☑ Gas Vents
☑ Culvert Inlets & outles (between VB-1 and VB-7)	☑ Rip-rap channels	☑ Down chutes	☑ Leachate Collection Manhole (MW VB7)
☑ Access road near unit	☐	☐	☐

Viscos Basins 9-11

☑ Vegetation	☑ Erosion	☑ Settlement	☑ Gas Vents
☑ Drop inlests on VB-11	☑ Culver inlets & outlets (S&W VB-11; N VB-11 & VB-9; and SW VB-10)	☑ Rip-rap channels	☑ Down chutes
☑ Access road near unit	☑ Seep area in pond north of VB-9	☑ VB 9-11 fence and gates	☑ LS #4 and Fencing

New Landfill

☑ Vegetation	☑ Erosion	☑ Settlement	☑ Gas Vents
☑ Culvert inlets & outlets (NE & SE of NLF)	☑ Rip-rap channels	☑ Down chutes	☑ LS #3 and Fencing
☑ Access road near unit	☐	☐	☐

SB-1

☑ Vegetation	☑ Erosion	☑ Settlement	☑ Gas Vents
☑ Culvert inlets & outlets (NE SB-1; SB-2; SE SB-3; NE SB-4; & S SB-4)	☑ Rip-rap channels & outlets by River	☑ Down chutes (SB-1 & SB-4)	☐
☑ Access road near unit	☐	☐	☐

Inspection Checklist (check items that were inspected; document concerns noted; refer to attached Drawings for specific areas)

SB-2

☑ Vegetation	☑ Erosion	☑ Settlement	☑ Culvert inlets & Outlets (S & W Sides)
☑ Berms along River (site & river side)	☑ Rip-rap channels & outlets by River	☑ Access road near unit	☐

SB-3

☑ Vegetation	☑ Erosion	☑ Settlement	☑ Gas Vents
☑ Culvert inlets & Outlets (SE))	☑ Rip-rap channels & outlets by River	☑ Drop inlets (W side)	☑ Access Road near unit
☐	☐	☐	☐

SB-4

☑ Vegetation	☑ Erosion	☑ Settlement	☑ Gas Vents
☑ Culvert inlets & outlets (NE & S sides)	☑ Down chutes (S Side)	☑ Drop inlet (N side)	☑ Berms along River (site & river side)
☑ Access road near unit	☐	☐	☐

SB-5

☑ Vegetation	☑ Erosion	☑ Settlement	☑ Gas Vents
☑ Berms along River and E side	☑ Access Road near unit	☐	☐
☐	☐	☐	☐

FAB 1-3

☑ Vegetation	☑ Erosion	☑ Settlement	☑ Culvert inlets & outlets (E & S FAB1-2; SW FAB3)
☑ Access Road near unit	☐	☐	☐

FAS & FARA

☑ Vegetation	☑ Erosion	☑ Settlement	☑ Culvert inlets & outlets (E & N FAS; E FARA)
☑ Access Road near unit	☐	☐	☐

EL, PB 1-2, PB-3

☑ Vegetation	☑ Erosion	☑ Settlement	☑ Rip-rap Channels
☑ Culvert inlets & outlets (E & W EL; NW PB-1-2; S PB-3)	☑ Access Road near unit	☐	☐

Quarterly Inspection Report Photographic Log
Avtex Superfund Site
Front Royal, Virginia

Photo Number: 1

Unit: *OU-10*

Basin/Landfill:

VB-4, 5, & 6

Date : 03/14/2018

Photo Description: 20’ x 40’ area of former standing water adjacent to LS-2 (wet but no standing water).

Photo Number: 2

Unit: *OU-10*

Basin/Landfill:

VB-4, 5, & 6

Date : 03/14/2018

Photo Description: 20’ x 40’ area of former standing water adjacent to LS-2

Quarterly Inspection Report Photographic Log
Avtex Superfund Site
Front Royal, Virginia

Photo Number: 3

Unit: *OU-10*

Basin/Landfill:

VB-4, 5, & 6

Date : 03/14/2018

Photo Description: Rills forming on access road to LS-1 west of VB-4, 5, & 6.

Photo Number: 4

Unit: *OU-10*

Basin/Landfill:

VB-2&3, and NLF

Date : 03/14/2018

Photo Description: Bare soil (~10' x30`) with rills southeast of VB-2&3 (Sediment basin between NLF and VB-2&3). Stabilized.

Quarterly Inspection Report Photographic Log
Avtex Superfund Site
Front Royal, Virginia

Photo Number: 5

Unit: *OU-10*

Basin/Landfill:

VB-2&3

Date : 03/14/2018

Photo Description: Standing water just southeast of VB-2&3.

Photo Number: 6

Unit: *OU-7*

Basin/Landfill:

VB-11

Date : 03/14/2018

Photo Description: Bare Soil (~4'x10') adjacent to downdrain north of VB-11.

Quarterly Inspection Report Photographic Log
Avtex Superfund Site
Front Royal, Virginia

Photo Number: 7

Unit: *OU-7*

Basin/Landfill:

VB-9

Date : 03/14/2018

Photo Description: Additional settlement observed to previously repaired area of settlement on VB-9 (30’ x 40’).

Photo Number: 8

Unit: *OU-7*

Basin/Landfill:

VB-9

Date : 03/14/2018

Photo Description: Additional settlement observed to previously repaired area of settlement on VB-9 (30’ x 40’).

Quarterly Inspection Report Photographic Log
Avtex Superfund Site
Front Royal, Virginia

Photo Number: 9

Unit: *OU-7*

Basin/Landfill:

VB-11

Date : 03/14/2018

Photo Description: Sediment building up at end of culvert under access road.

Photo Number: 10

Unit: *OU-7*

Basin/Landfill:

VB-10

Date : 03/14/2018

Photo Description: Bare patches and spotty vegetation in southeast corner of VB-10.

Quarterly Inspection Report Photographic Log
Avtex Superfund Site
Front Royal, Virginia

Photo Number: 11

Unit: *OU-7*

Basin/Landfill:

VB-10

Date : 03/14/2018

Photo Description: Bare patches and exposed matting at down chute in southeast corner of VB-10.

Photo Number: 12

Unit: *OU-7*

Basin/Landfill:

VB-10

Date : 03/14/2018

Photo Description: Bare patches and exposed matting at down chute in southwest corner of VB-10.

Quarterly Inspection Report Photographic Log
Avtex Superfund Site
Front Royal, Virginia

Photo Number: 13

Unit: *OU-7*

Basin/Landfill:

VB-10

Date : 03/14/2018

Photo Description: Bare soil (~20'x30') at the southwest corner of VB-10.

Photo Number: 14

Unit: *NTCRA Basins*

Basin/Landfill:

SB-3

Date : 03/14/2018

Photo Description: 20' x 40' area of standing water on SB-3 near northeast corner of SB-2. One to two inches deep.

Quarterly Inspection Report Photographic Log
Avtex Superfund Site
Front Royal, Virginia

Photo Number: 15

Unit: *NTCRA Basins*

Basin/Landfill:

SB-3

Date : 03/14/2018

Photo Description: Area of area of standing water on SB-3 (15’ x 20’).

Photo Number: 16

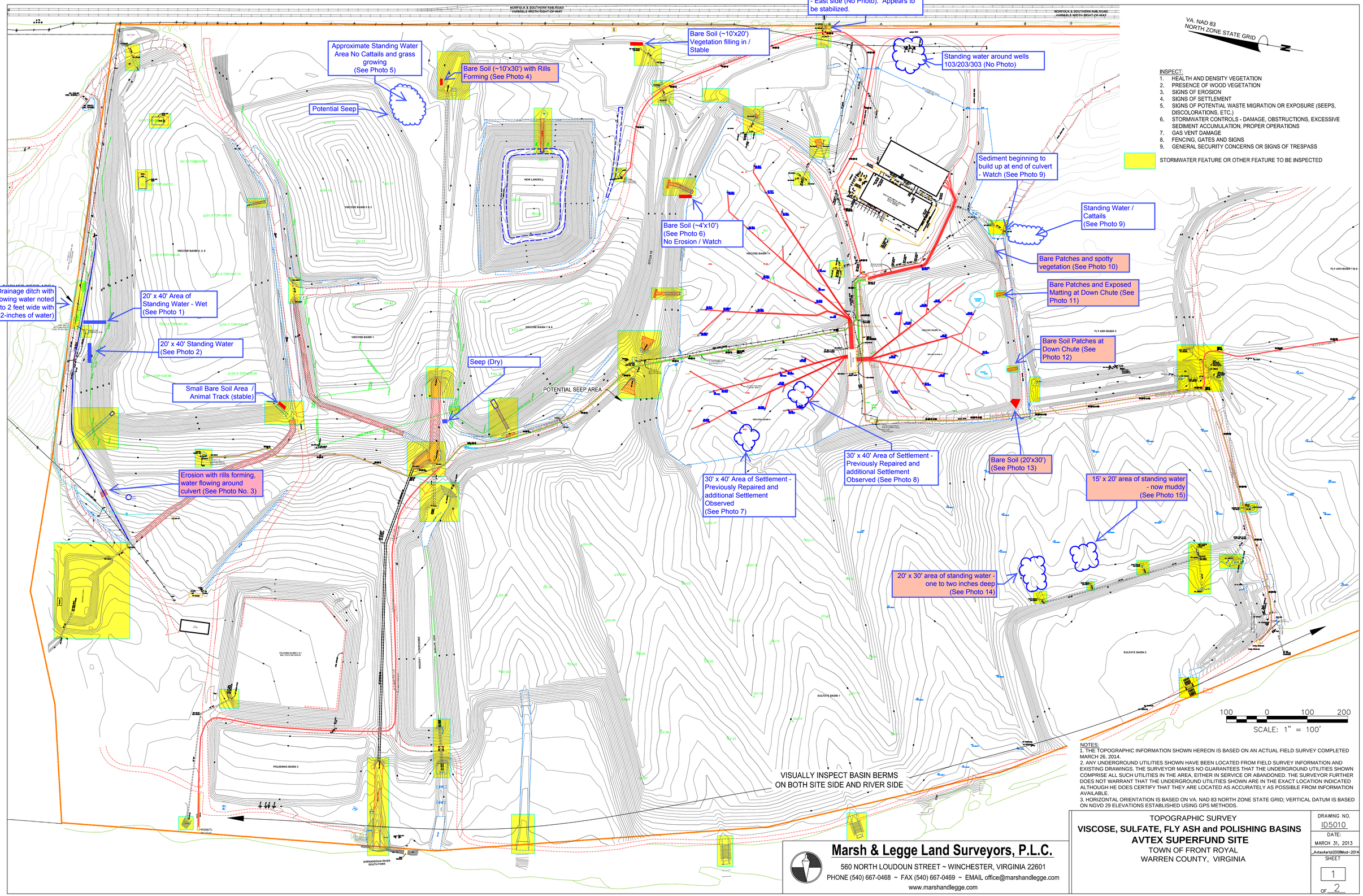
Unit: *NTCRA Basins*

Basin/Landfill:

FAB-6

Date : 03/14/2018

Photo Description: Small trees at inlet.



INSPECT:

1. HEALTH AND DENSITY VEGETATION
2. PRESENCE OF WOOD VEGETATION
3. SIGNS OF EROSION
4. SIGNS OF SETTLEMENT
5. SIGNS OF POTENTIAL WASTE MIGRATION OR EXPOSURE (SEEPS, DISCOLORATIONS, ETC.)
6. STORMWATER CONTROLS - DAMAGE, OBSTRUCTIONS, EXCESSIVE SEDIMENT ACCUMULATION, PROPER OPERATIONS
7. GAS VENT DAMAGE
8. FENCING, GATES AND SIGNS
9. GENERAL SECURITY CONCERNS OR SIGNS OF TRESPASS

STORMWATER FEATURE OR OTHER FEATURE TO BE INSPECTED

NOTES:

1. THE TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED ON AN ACTUAL FIELD SURVEY COMPLETED MARCH 26, 2014.
2. ANY UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE.
3. HORIZONTAL ORIENTATION IS BASED ON VA. NAD 83 NORTH ZONE STATE GRID; VERTICAL DATUM IS BASED ON NGVD 29 ELEVATIONS ESTABLISHED USING GPS METHODS.

Marsh & Legge Land Surveyors, P.L.C.

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TOPOGRAPHIC SURVEY

VISCOSE, SULFATE, FLY ASH and POLISHING BASINS

AVTEX SUPERFUND SITE

TOWN OF FRONT ROYAL

WARREN COUNTY, VIRGINIA

DRAWING NO. ID5010

DATE: MARCH 31, 2013

_AvtexAerial2008Mod--2014

SHEET 1 OF 2

VA. NAD 83
NORTH ZONE STATE GRID

NORFOLK & SOUTHERN RAILROAD
VARIABLE WIDTH RIGHT-OF-WAY

FLY ASH BASIN 6

Remove Small Trees
(See Photo 16)

See Sheet 1 of 2

FLY ASH BASIN 1 & 2

SULFATE BASIN 5

FLY ASH BASIN 3

SULFATE BASIN 4

SULFATE BASIN 3

VISUALLY INSPECT BASIN BERMS
ON BOTH SITE SIDE AND RIVER SIDE

SHENANDOAH RIVER

SULFATE BASIN 2

INSPECT:

1. HEALTH AND DENSITY VEGETATION
2. PRESENCE OF WOOD VEGETATION
3. SIGNS OF EROSION
4. SIGNS OF SETTLEMENT
5. SIGNS OF POTENTIAL WASTE MIGRATION OR EXPOSURE (SEEPS, DISCOLORATIONS, ETC.)
6. STORMWATER CONTROLS - DAMAGE, OBSTRUCTIONS, EXCESSIVE SEDIMENT ACCUMULATION, PROPER OPERATIONS
7. GAS VENT DAMAGE
8. FENCING, GATES AND SIGNS
9. GENERAL SECURITY CONCERNS OR SIGNS OF TRESPASS

STORMWATER FEATURE OR OTHER FEATURE TO BE INSPECTED

100 0 100 200

SCALE: 1" = 100'

Marsh & Legge Land Surveyors, P.L.C.

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TOPOGRAPHIC SURVEY

VISCOSE, SULFATE, FLY ASH and POLISHING BASINS

AVTEX SUPERFUND SITE

TOWN OF FRONT ROYAL

WARREN COUNTY, VIRGINIA

DRAWING NO. ID5010

DATE: MARCH 13, 2014

_Avtexterial2008Mod~2014

SHEET 2 OF 2

Attachment 5

Annual Mowing Photo Log

Annual Mowing Photographic Log
Avtex Superfund Site
Front Royal, Virginia

Photo Number: 1 **Unit:** **Basin/Landfill: Sulfate Basin #1 /**

Date: 3/12/18

Photo Description: North slope of VB #9 adjoining SB#1 looking south.

Annual Mowing Photographic Log
Avtex Superfund Site
Front Royal, Virginia

Photo Number: 2

Unit:

Basin/Landfill: Polishing Basin 3 Ditch

Date: 3/5/18

Photo Description: PB#3 Ditch looking west

Annual Mowing Photographic Log
Avtex Superfund Site
Front Royal, Virginia

Photo Number: 3 **Unit:** **Basin/Landfill: Polishing Basin 3**

Date: 3/5/18

Photo Description: Polishing Basin 3 looking north

Annual Mowing Photographic Log
Avtex Superfund Site
Front Royal, Virginia

Photo Number: 4 **Unit:** **Basin/Landfill: Sulfate Basin #2**

Date: 3/6/18

Photo Description: Sulfate Basin #2 looking south

Annual Mowing Photographic Log
Avtex Superfund Site
Front Royal, Virginia

Photo Number: 5 **Unit:** **Basin/Landfill: Sulfate Basin #2**

Date: 3/6/18

Photo Description: Sulfate Basin #2 looking north

Annual Mowing Photographic Log
Avtex Superfund Site
Front Royal, Virginia

Photo Number:6 **Unit:** **Basin/Landfill: Sulfate Basin #1**

Date: 3/7/18

Photo Description: Cell #1 Sulfate Basin #1 looking west

Annual Mowing Photographic Log
Avtex Superfund Site
Front Royal, Virginia

Photo Number:7 **Unit:** **Basin/Landfill: Sulfate Basin #1**

Date: 3/7/18

Photo Description: Cell #2 Sulfate Basin #1 looking northwest

Annual Mowing Photographic Log
Avtex Superfund Site
Front Royal, Virginia

Photo Number:8 **Unit:** **Basin/Landfill: Sulfate Basin #1**

Date: 3/8/18

Photo Description: Cell #3 Sulfate Basin #1 looking east

Annual Mowing Photographic Log
Avtex Superfund Site
Front Royal, Virginia

Photo Number:9 **Unit:** **Basin/Landfill: Sulfate Basin #1**

Date: 3/16/18

Photo Description: Cell #4 Sulfate Basin #1 looking northeast

Annual Mowing Photographic Log
Avtex Superfund Site
Front Royal, Virginia

Photo Number:10 **Unit:** **Basin/Landfill: Sulfate Basin #1**

Date: 3/19/18

Photo Description: Cell #4 Sulfate Basin #1 looking south

Attachment 6

2017 Annual Air Monitoring Results

TABLE

Air Monitoring Results
2017 Annual Post Construction Air Sampling
Avtex Fibers Superfund Site
Front Royal, Virginia

Parameters	EPA RSL (HQ=1)		Downwind-ESE	Downwind-NNE	OU-7-Perim-N	OU-7-Perim-N (Duplicate)	OU-7-Perim-NE
	Industrial	Residential	08/10/2017	09/19/2017	08/10/2017	08/10/2017	08/10/2017
	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³
1-Butanethiol (n-Butyl mercaptan)	--	--	41 U	32 U	25 U	46 U	25 U
1-Isobutanethiol	--	--	41 U	32 U	25 U	46 U	25 U
1-Propanethiol (Propyl mercaptan)	--	--	35 U	27 U	21 U	39 U	21 U
2,5-Dimethylthiophene	--	--	52 U	39 U	31 U	57 U	31 U
2-Ethylthiophene	--	--	52 U	39 U	31 U	57 U	31 U
2-Methyl-2-propanethiol (tert-Butyl mercaptan)	--	--	41 U	32 U	25 U	46 U	25 U
2-Propanethiol (Isopropyl mercaptan)	--	--	35 U	27 U	21 U	39 U	21 U
3-Methylthiophene	--	--	45 U	35 U	27 U	50 U	27 U
Carbon disulfide	3100	730	18 U	13 U	12 J	34 J	11 U
Carbonyl sulfide	4400	100	28 U	21 U	17 U	31 U	17 U
Diethyl disulfide	--	--	28 U	21 U	17 U	31 U	17 U
Diethyl sulfide	--	--	41 U	32 U	25 U	46 U	25 U
Ethyl mercaptan	--	--	29 U	22 U	17 U	32 U	17 U
Hydrogen sulfide	8.8	2.1	16 U	12 U	9.5 U	17 U	9.5 U
Methyl disulfide	--	--	22 U	17 U	13 U	24 U	13 U
Methyl ethyl sulfide	--	--	35 U	27 U	21 U	39 U	21 U
Methyl mercaptan	--	--	22 U	17 U	13 U	25 U	13 U
Methyl sulfide	--	--	29 U	22 U	17 U	32 U	17 U
Tetrahydro-Thiophene (Thiophane)	--	--	41 U	31 U	25 U	45 U	25 U
Thiophene	--	--	39 U	30 U	24 U	43 U	23 U

Notes:

U - Not detected at the associated reporting limit
J - Estimated concentration
UJ - Not detected, estimated reporting limit
HQ = Hazard Quotient

TABLE

Air Monitoring Results
2017 Annual Post Construction Air Sampling
Avtex Fibers Superfund Site
Front Royal, Virginia

Parameters	EPA RSL (HQ=1)		OU-7-Perim-NW	OU-7-Perim-S	OU-7-Perim-SE	OU-7-Perim-SW	Perim NE	PERIM-E
	Industrial	Residential	08/10/2017	09/19/2017	08/10/2017	08/10/2017	09/19/2017	08/10/2017
	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³
1-Butanethiol (n-Butyl mercaptan)	--	--	32 U	23 U	25 U	25 U	26 U	28 U
1-Isobutanethiol	--	--	32 U	23 U	25 U	25 U	26 U	28 U
1-Propanethiol (Propyl mercaptan)	--	--	27 U	19 U	21 U	21 U	22 U	24 U
2,5-Dimethylthiophene	--	--	39 U	29 U	31 U	32 U	32 U	35 U
2-Ethylthiophene	--	--	39 U	29 U	31 U	32 U	32 U	35 U
2-Methyl-2-propanethiol (tert-Butyl mercaptan)	--	--	32 U	23 U	25 U	25 U	26 U	28 U
2-Propanethiol (Isopropyl mercaptan)	--	--	27 U	19 U	21 U	21 U	22 U	24 U
3-Methylthiophene	--	--	34 U	25 U	27 U	28 U	28 U	30 U
Carbon disulfide	3100	730	13 U	**16**	11 U	11 U	11 U	8.2 J
Carbonyl sulfide	4400	100	21 U	15 U	17 U	17 U	17 U	19 U
Diethyl disulfide	--	--	21 U	16 U	17 U	17 U	17 U	19 U
Diethyl sulfide	--	--	32 U	23 U	25 U	25 U	26 U	28 U
Ethyl mercaptan	--	--	22 U	16 U	17 U	18 U	18 U	19 U
Hydrogen sulfide	8.8	2.1	12 U	8.7 U	9.4 U	9.6 U	9.8 U	11 U
Methyl disulfide	--	--	16 U	12 U	13 U	13 U	13 U	15 U
Methyl ethyl sulfide	--	--	27 U	19 U	21 U	21 U	22 U	24 U
Methyl mercaptan	--	--	17 U	12 U	13 U	14 U	14 U	15 U
Methyl sulfide	--	--	22 U	16 U	17 U	18 U	18 U	19 U
Tetrahydro-Thiophene (Thiophane)	--	--	31 U	23 U	24 U	25 U	25 U	27 U
Thiophene	--	--	29 U	21 U	23 U	24 U	24 U	26 U

Notes:

U - Not detected at the associated reporting limit
J - Estimated concentration
UJ - Not detected, estimated reporting limit
HQ = Hazard Quotient

TABLE

Air Monitoring Results
2017 Annual Post Construction Air Sampling
Avtex Fibers Superfund Site
Front Royal, Virginia

Parameters	EPA RSL (HQ=1)		PERIM-N	PERIM-NW	PERIM-S	PERIM-SE	PERIM-SW	PERIM-SW (Duplicate)	PERIM-W
	Industrial	Residential	09/19/2017	08/10/2017	09/19/2017	08/10/2017	08/10/2017	08/10/2017	09/19/2017
	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³
1-Butanethiol (n-Butyl mercaptan)	--	--	33 U	25 U	29 U	18 U	23 U	20 U	29 U
1-Isobutanethiol	--	--	33 U	25 U	29 U	18 U	23 U	20 U	29 U
1-Propanethiol (Propyl mercaptan)	--	--	28 U	21 U	24 U	16 U	19 U	17 U	24 U
2,5-Dimethylthiophene	--	--	41 U	31 U	36 U	23 U	28 U	25 U	36 U
2-Ethylthiophene	--	--	41 U	31 U	36 U	23 U	28 U	25 U	36 U
2-Methyl-2-propanethiol (tert-Butyl mercaptan)	--	--	33 U	25 U	29 U	18 U	23 U	20 U	29 U
2-Propanethiol (Isopropyl mercaptan)	--	--	28 U	21 U	24 U	16 U	19 U	17 U	24 U
3-Methylthiophene	--	--	36 U	27 U	32 U	20 U	25 U	22 U	31 U
Carbon disulfide	3100	730	14 U	10 U	**17**	7.8 U	9.6 UJ	27 J	12 U
Carbonyl sulfide	4400	100	22 U	16 U	13 J	12 U	15 UJ	31 J	19 U
Diethyl disulfide	--	--	22 U	17 U	20 U	12 U	15 U	14 U	19 U
Diethyl sulfide	--	--	33 U	25 U	29 U	18 U	23 U	20 U	29 U
Ethyl mercaptan	--	--	23 U	17 U	20 U	13 U	16 U	14 U	20 U
Hydrogen sulfide	8.8	2.1	12 U	9.3 U	11 U	7.0 U	8.6 UJ	39 J	11 U
Methyl disulfide	--	--	17 U	13 U	15 U	9.6 U	12 U	10 U	15 U
Methyl ethyl sulfide	--	--	28 U	21 U	24 U	16 U	19 U	17 U	24 U
Methyl mercaptan	--	--	18 U	13 U	15 U	9.8 U	12 U	11 U	15 U
Methyl sulfide	--	--	23 U	17 U	20 U	13 U	16 U	14 U	20 U
Tetrahydro-Thiophene (Thiophane)	--	--	32 U	24 U	28 U	18 U	22 U	20 U	28 U
Thiophene	--	--	31 U	23 U	27 U	17 U	21 U	19 U	27 U

Notes:

U - Not detected at the associated reporting limit
J - Estimated concentration
UJ - Not detected, estimated reporting limit
HQ = Hazard Quotient

Memorandum

November 1, 2017

To:	Michael Robinson	Ref. No.:	11119510-001
From:	Deb Andrasko/mkd/7-NF	Tel:	716 297 6150
CC:	Marisa Oriaku		

Subject: **Analytical Results and Full Validation**
Annual Air Monitoring
FMC Avtex Fibers Superfund Site
Front Royal, Virginia
August - September 2017

1. Introduction

This document details a validation of analytical results for air samples collected in support of the Annual Air Monitoring at the Avtex Fibers Superfund site during August and September 2017. Samples were submitted to ALS Laboratory, located in Simi Valley, California. A sample collection and analysis summary is presented in Table 1. The validated analytical results are summarized in Table 2. A summary of the analytical methodology is presented in Table 3.

Full Contract Laboratory Program (CLP) equivalent raw data deliverables were provided by the laboratory. Evaluation of the data was based on information obtained from the finished data sheets, raw data, chain of custody forms, calibration data, blank data, duplicate data, recovery data from laboratory control samples (LCS) samples, and field quality assurance/quality control (QA/QC) samples. The assessment of analytical and in-house data included checks for: data consistency (by observing comparability of duplicate analyses), adherence to accuracy and precision criteria, and transmittal errors.

The QA/QC criteria by which these data have been assessed are outlined in the analytical method referenced in Table 3 and applicable guidance from the document entitled "USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review", USEPA 540-R-08-01, June 2008, subsequently referred to as the "Guidelines" in this Memorandum.

2. Sample Holding Time and Preservation

The sample holding time criteria for the analysis is summarized in Table 3. Sample chain of custody documents and analytical reports were used to determine sample holding times. All samples were analyzed within the required holding times.

All samples were properly delivered and stored by the laboratory.

3. Initial Calibration – Gas Chromatograph (GC)

In order to quantify organic compounds of interest by GC, calibration of the gas chromatograph over a specific concentration range must be performed. Initially, a calibration curve consisting of a minimum of five concentration levels is analyzed for the method recommended sulfur compounds. Linearity of the calibration curve is acceptable if all relative standard deviations (RSDs) values are less than or equal to 25.0 percent.

A retention time standard is analyzed during the initial calibration to identify the target compounds and establish retention time windows. These retention times are then used to identify all compounds of interest in subsequent analyses.

All initial calibration standards were analyzed at the required frequencies. All retention time windows and linearity criteria were satisfied as specified in the method.

4. Continuing Calibration – Gas Chromatograph

To ensure that the calibration of the instrument for organic analyses by GC is valid throughout the sample analysis period, continuing calibration standards are analyzed and evaluated on a regular basis. To evaluate the continued linearity of the calibration,percent difference (%D) values are calculated and should not exceed 30%.

All continuing calibration standards were analyzed at the required frequency. All %D values and compound retention times met the above criteria, indicating acceptable instrument calibration throughout the analysis period.

5. Laboratory Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures

For this study, laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

All method blank results were non-detect, indicating that laboratory contamination was not a factor for this investigation.

6. Laboratory Control Sample (LCS) Analyses

LCS are prepared and analyzed as samples to assess the analytical efficiencies of the method employed, independent of sample matrix effects.

For this study, LCS were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

The LCS contained the method recommended compounds. All LCS recoveries were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision.

7. Field QA/QC Samples

The field QA/QC consisted of 2 field duplicate sample sets.

To assess the analytical and sampling protocol precision, field duplicate sample sets were collected and submitted "blind" to the laboratory, as specified in Table 1. The relative percent difference (RPDs) associated with these duplicate samples must be less than 25 percent for air samples. If the reported concentration in either the investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criteria is one times the RL value for air samples.

Some of the field duplicate results did not show acceptable agreement. The associated results were qualified as estimated based on the indicated variability (see Table 4).

8. Analyte Reporting

The laboratory reported detected results down to the laboratory's RL for each analyte. Positive analyte detections less than the RL but greater than the method detection limit (MDL) were reported as estimated (J) in Table 2 unless qualified otherwise in this memorandum. Non-detect results were presented as non-detect at the RL in Table 2.

9. Target Compound Identification

To minimize erroneous compound identification during organic analyses, qualitative criteria including compound retention time were evaluated according to the identification criteria established by the method. The samples identified in Table 1 were reviewed. The compounds reported adhered to the specified identification criteria.

10. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Table 2 are acceptable with the specific qualifications noted herein.

Table 1

Sample Collection and Analysis Summary
Annual Air Monitoring
FMC Avtex Fibers Superfund Site
Front Royal, Virginia
August - September 2017

Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis: Sulfur compounds (air)	Comments
Downwind-ESE	Downwind-ESE	Air	08/10/2017	11:28	X	
Downwind-NNE	Downwind-NNE	Air	09/19/2017	16:15	X	
OU-7-Perim-S	OU-7-Perim-S	Air	09/19/2017	15:30	X	
OU-7-Perim-N	OU-7-Perim-N	Air	08/10/2017	13:38	X	
Dup-080917-2	OU-7-Perim-N	Air	08/10/2017	00:00	X	FD (OU-7-Perim-N)
OU-7-Perim-NE	OU-7-Perim-NE	Air	08/10/2017	13:35	X	
OU-7-Perim-NW	OU-7-Perim-NW	Air	08/10/2017	13:45	X	
OU-7-Perim-SE	OU-7-Perim-SE	Air	08/10/2017	00:00	X	
OU-7-Perim-SW	OU-7-Perim-SW	Air	08/10/2017	00:00	X	
Perim NE	Perim NE	Air	09/19/2017	15:45	X	
PERIM-E	PERIM-E	Air	08/10/2017	11:24	X	
Perim-N	PERIM-N	Air	09/19/2017	16:20	X	
PERIM-NW	PERIM-NW	Air	08/10/2017	11:50	X	
Perim-S	PERIM-S	Air	09/19/2017	15:50	X	
PERIM-SE	PERIM-SE	Air	08/10/2017	8:37	X	
PERIM-SW	PERIM-SW	Air	08/10/2017	8:55	X	
DUP-080817-1	PERIM-SW	Air	08/10/2017	7:55	X	FD (Perim-SW)
Perim-W	PERIM-W	Air	09/19/2017	16:00	X	

Notes:

FD - Field Duplicate sample of sample in parenthesis

Table 2

Analytical Results Summary
Annual Air Monitoring
FMC Avtex Fibers Superfund Site
Front Royal, Virginia
August - September 2017

Location ID:		Downwind-ESE	Downwind-NNE	OU-7-Perim-N	OU-7-Perim-N	OU-7-Perim-NE	OU-7-Perim-NW	OU-7-Perim-S	OU-7-Perim-SE
Sample Name:		Downwind-ESE	Downwind-NNE	OU-7-Perim-N	Dup-080917-2	OU-7-Perim-NE	OU-7-Perim-NW	OU-7-Perim-S	OU-7-Perim-SE
Sample Date:		08/10/2017	09/19/2017	08/10/2017	08/10/2017	08/10/2017	08/10/2017	09/19/2017	08/10/2017
					Duplicate				
Parameters	**Unit**								
General Chemistry									
1-Butanethiol (n-Butyl mercaptan)	µg/m3	41 U	32 U	25 U	46 U	25 U	32 U	23 U	25 U
1-Isobutanethiol	µg/m3	41 U	32 U	25 U	46 U	25 U	32 U	23 U	25 U
1-Propanethiol (Propyl mercaptan)	µg/m3	35 U	27 U	21 U	39 U	21 U	27 U	19 U	21 U
2,5-Dimethylthiophene	µg/m3	52 U	39 U	31 U	57 U	31 U	39 U	29 U	31 U
2-Ethylthiophene	µg/m3	52 U	39 U	31 U	57 U	31 U	39 U	29 U	31 U
2-Methyl-2-propanethiol (tert-Butyl mercaptan)	µg/m3	41 U	32 U	25 U	46 U	25 U	32 U	23 U	25 U
2-Propanethiol (Isopropyl mercaptan)	µg/m3	35 U	27 U	21 U	39 U	21 U	27 U	19 U	21 U
3-Methylthiophene	µg/m3	45 U	35 U	27 U	50 U	27 U	34 U	25 U	27 U
Carbon disulfide	µg/m3	18 U	13 U	12 J	34 J	11 U	13 U	16	11 U
Carbonyl sulfide	µg/m3	28 U	21 U	17 U	31 U	17 U	21 U	15 U	17 U
Diethyl disulfide	µg/m3	28 U	21 U	17 U	31 U	17 U	21 U	16 U	17 U
Diethyl sulfide	µg/m3	41 U	32 U	25 U	46 U	25 U	32 U	23 U	25 U
Ethyl mercaptan	µg/m3	29 U	22 U	17 U	32 U	17 U	22 U	16 U	17 U
Hydrogen sulfide	µg/m3	16 U	12 U	9.5 U	17 U	9.5 U	12 U	8.7 U	9.4 U
Methyl disulfide	µg/m3	22 U	17 U	13 U	24 U	13 U	16 U	12 U	13 U
Methyl ethyl sulfide	µg/m3	35 U	27 U	21 U	39 U	21 U	27 U	19 U	21 U
Methyl mercaptan	µg/m3	22 U	17 U	13 U	25 U	13 U	17 U	12 U	13 U
Methyl sulfide	µg/m3	29 U	22 U	17 U	32 U	17 U	22 U	16 U	17 U
Tetrahydro-Thiophene (Thiophane)	µg/m3	41 U	31 U	25 U	45 U	25 U	31 U	23 U	24 U
Thiophene	µg/m3	39 U	30 U	24 U	43 U	23 U	29 U	21 U	23 U

Notes:

U - Not detected at the associated reporting limit
J - Estimated concentration
UJ - Not detected, estimated reporting limit

Table 2

Analytical Results Summary
Annual Air Monitoring
FMC Avtex Fibers Superfund Site
Front Royal, Virginia
August - September 2017

Location ID:		OU-7-Perim-SW	Perim NE	PERIM-E	PERIM-N	PERIM-NW	PERIM-S	PERIM-SE	PERIM-SW	PERIM-SW	PERIM-W
Sample Name:		OU-7-Perim-SW	Perim NE	PERIM-E	Perim-N	PERIM-NW	Perim-S	PERIM-SE	PERIM-SW	DUP-080817-1	Perim-W
Sample Date:		08/10/2017	09/19/2017	08/10/2017	09/19/2017	08/10/2017	09/19/2017	08/10/2017	08/10/2017	08/10/2017	09/19/2017
										Duplicate	
Parameters	**Unit**										
General Chemistry											
1-Butanethiol (n-Butyl mercaptan)	µg/m3	25 U	26 U	28 U	33 U	25 U	29 U	18 U	23 U	20 U	29 U
1-Isobutanethiol	µg/m3	25 U	26 U	28 U	33 U	25 U	29 U	18 U	23 U	20 U	29 U
1-Propanethiol (Propyl mercaptan)	µg/m3	21 U	22 U	24 U	28 U	21 U	24 U	16 U	19 U	17 U	24 U
2,5-Dimethylthiophene	µg/m3	32 U	32 U	35 U	41 U	31 U	36 U	23 U	28 U	25 U	36 U
2-Ethylthiophene	µg/m3	32 U	32 U	35 U	41 U	31 U	36 U	23 U	28 U	25 U	36 U
2-Methyl-2-propanethiol (tert-Butyl mercaptan)	µg/m3	25 U	26 U	28 U	33 U	25 U	29 U	18 U	23 U	20 U	29 U
2-Propanethiol (Isopropyl mercaptan)	µg/m3	21 U	22 U	24 U	28 U	21 U	24 U	16 U	19 U	17 U	24 U
3-Methylthiophene	µg/m3	28 U	28 U	30 U	36 U	27 U	32 U	20 U	25 U	22 U	31 U
Carbon disulfide	µg/m3	11 U	11 U	8.2 J	14 U	10 U	17	7.8 U	9.6 UJ	27 J	12 U
Carbonyl sulfide	µg/m3	17 U	17 U	19 U	22 U	16 U	13 J	12 U	15 UJ	31 J	19 U
Diethyl disulfide	µg/m3	17 U	17 U	19 U	22 U	17 U	20 U	12 U	15 U	14 U	19 U
Diethyl sulfide	µg/m3	25 U	26 U	28 U	33 U	25 U	29 U	18 U	23 U	20 U	29 U
Ethyl mercaptan	µg/m3	18 U	18 U	19 U	23 U	17 U	20 U	13 U	16 U	14 U	20 U
Hydrogen sulfide	µg/m3	9.6 U	9.8 U	11 U	12 U	9.3 U	11 U	7.0 U	8.6 UJ	39 J	11 U
Methyl disulfide	µg/m3	13 U	13 U	15 U	17 U	13 U	15 U	9.6 U	12 U	10 U	15 U
Methyl ethyl sulfide	µg/m3	21 U	22 U	24 U	28 U	21 U	24 U	16 U	19 U	17 U	24 U
Methyl mercaptan	µg/m3	14 U	14 U	15 U	18 U	13 U	15 U	9.8 U	12 U	11 U	15 U
Methyl sulfide	µg/m3	18 U	18 U	19 U	23 U	17 U	20 U	13 U	16 U	14 U	20 U
Tetrahydro-Thiophene (Thiophane)	µg/m3	25 U	25 U	27 U	32 U	24 U	28 U	18 U	22 U	20 U	28 U
Thiophene	µg/m3	24 U	24 U	26 U	31 U	23 U	27 U	17 U	21 U	19 U	27 U

Notes:

U - Not detected at the associated reporting limit
J - Estimated concentration
UJ - Not detected, estimated reporting limit

Table 3

Analytical Method
Annual Air Monitoring
FMC Avtex Fibers Superfund Site
Front Royal, Virginia
August - September 2017

Parameter	Method	Matrix	Collection to Analysis (Days)
Sulfur Compounds in Air	ASTM D 5504-12 [(1)]	Air	7

Notes:

ASTM - American Society for Testing and Materials
(1) - "ASTM Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Chemiluminescence".

Table 4

Qualified Sample Data Due to Variability in Field Duplicate Results
Annual Air Monitoring
FMC Avtex Fibers Superfund Site
Front Royal, Virginia
August - September 2017

Parameter	Analyte	RPD	Sample ID	Qualified Result	Field Duplicate Sample ID	Qualified Result	Units
Sulfur Compounds	Carbon disulfide	95	Perim-SW	9.6 UJ	DUP-080817-1	27 J	ug/m3
	Carbonyl sulfide	70	Perim-SW	15 UJ	DUP-080817-1	31 J	ug/m3
	Hydrogen sulfide	128	Perim-SW	8.6 UJ	DUP-080817-1	39 J	ug/m3
	Carbon disulfide	96	OU-7-PERIM-N	12 J	Dup-080917-2	34 J	ug/m3

Notes:

RPD - Relative Percent Difference
J - Estimated concentration
UJ - Not detected; associated reporting limit is estimated

2655 Park Center Dr., Suite A
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T: +1 805 526 7161
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www.alsglobal.com

LABORATORY REPORT

August 29, 2017

Deb Andrasko
GHD Services Inc.
2055 Niagara Falls Blvd., Suite 3
Niagara Falls, NY 14304

RE: Avtex Fibers Superfund Site / 11119510-001

Dear Deb:

Enclosed are the results of the samples submitted to our laboratory on August 16, 2017. For your reference, these analyses have been assigned our service request number P1703973.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

By Sue Anderson at 11:07 am, Aug 29, 2017

Sue Anderson
Project Manager

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F: +1 805 526 7270
www.alsglobal.com

Client:	GHD Services Inc.	Service Request No:	P1703973
Project:	Avtex Fibers Superfund Site / 11119510-001	New York Lab ID:	11221

CASE NARRATIVE

The samples were received intact under chain of custody on August 16, 2017 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

The analysis for the following samples were cancelled because they came in at full vacuum: PERIM-NE (P1703973-002), PERIM-NE (Backup) (P1703973-003), PERIM-S (P1703973-007), PERIM-S(Backup)(P1703973-008), PERIM-W (P1703973-010), PERIM-N (P1703973-013) and OU-7-Perim-S (P1703793-020)

Sulfur Analysis

The samples were analyzed for twenty sulfur compounds per ASTM D 5504-12 using a gas chromatograph equipped with a sulfur chemiluminescence detector (SCD). All compounds with the exception of hydrogen sulfide and carbonyl sulfide are quantitated against the initial calibration curve for methyl mercaptan. This method is included on the laboratory's NELAP scope of accreditation, however it is not part of the DoD-ELAP accreditation.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

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F: +1 805 526 7270
www.alsglobal.com

ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2016036
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1177034
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-004
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-17-8
Utah DOH (NELAP)	http://health.utah.gov/lab/environmental-lab-certification/	CA016272017-8
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: GHD Services Inc. Service Request: P1703973

Project ID: Avtex Fibers Superfund Site / 11119510-001

Date Received: 8/16/2017

Time Received: 09:30

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	ASTM D 5504-12 - Sulfur Can
PERIM-SE	P1703973-001	Air	8/10/2017	08:37	1SS00239	0.22	0.22	X
PERIM-E	P1703973-004	Air	8/10/2017	11:24	1SS00716	-3.94	1.54	X
Downwind-ESE	P1703973-005	Air	8/10/2017	11:28	1SS00030	-7.37	1.78	X
PERIM-SW	P1703973-009	Air	8/10/2017	08:55	1SS00075	0.03	3.44	X
PERIM-NW	P1703973-011	Air	8/10/2017	11:50	1SS00588	-2.83	1.24	X
DUP-080817-1	P1703973-014	Air	8/10/2017	07:55	1SS00776	0.02	1.29	X
OU-7-Perim-NE	P1703973-015	Air	8/10/2017	13:35	1SS00753	-0.12	5.06	X
OU-7-Perim-N	P1703973-017	Air	8/10/2017	13:38	1SS00036	-0.07	5.29	X
OU-7-Perim-NW	P1703973-018	Air	8/10/2017	13:45	1SS00124	-3.13	5.12	X
OU-7-Perim-SW	P1703973-019	Air	8/10/2017	00:00	1SS00720	0.20	5.80	X
OU-7-Perim-SE	P1703973-021	Air	8/10/2017	00:00	1SS00725	-0.05	5.06	X
Dup-080917-2	P1703973-022	Air	8/10/2017	00:00	1SS00233	-6.36	6.12	X

Air - Chain of Custody Record & Analytical Service Request

ALS
2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10-Day-Standard

ALS Project No: R703973

Company Name & Address (Reporting Information): Parsons, 4701 Hedgemore Dr, Charlotte, NC 28270

Project Name: FMC/Kutex Front Royal

Project Number: 450516.02000

Project Manager: Michael Robinson

P.O. # / Billing Information

Phone: 704-558-4255

Fax:

Email Address for Result Reporting: michael.robinson@parsons.com

Sampler (Print & Sign): Michael Robinson

ALS Contact:

Analysis Method: Reduced Sulfur Compounds ASTM D-5504

All Collected on 8-10-17

Client Sample ID	Laboratory ID Number	Date Collected (Start)	Time Collected (Start)	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	Reduced Sulfur Compounds ASTM D-5504		Comments e.g. Actual Preservative or specific instructions / End Time
PERIM-SE	1	8-9-17	1410	15500239	SFC00006	-29.25	Ø	1L	X		0837
PERIM-NE	2	8-9-17	1420	15500132	SFC00038	-32	-32	1L	X		1120
PERIM-NE (Backup)	3	8-9-17	1420	15500761	SFC00071	-32	-32	1L	X		1120 Hold
PERIM-E	4	8-9-17	1430	15500716	SFC00031	-29.75	-11.9	1L	X		1124
Downwind-ESE	5	8-9-17	1440	15500030	SFC00129	-30	-15	1L	X		1128
Downwind-ESE (Backup)	6	8-9-17	1440	15500090	SFC00149	-32	-32	1L	X		1128
PERIM-S	7	8-9-17	1450	15500170	SFC00043	-32	-32	1L	X		1138
PERIM-S (Backup)	8	8-9-17	1450	15500701	SFC00107	-32	-32	1L	X		1138 Hold
PERIM-SW	9	8-9-17	1500	15500075	SFC00076	-27	Ø	1L	X		0855
PERIM-W	10	8-9-17	1510	15500692	SFC00067	-29	-28	1L	X		1145
PERIM-NW	11	8-9-17	1520	15500588	SFC00186	-32	-7.2	1L	X		1150
PERIM-NW (Backup)	12	8-9-17	1520	15500277	SFC00202	-29.75	-0.9	1L	X		1150 Hold
PERIM-N	13	8-9-17	1530	15500693	SFC00203	-30	-28	1L	X		1600
DUP-080917-1	14	8-9-17	1400	15500776	SFC00126	-32	Ø	1L	X		0755

Report Tier Levels - please select
Tier I - Results (Default in not specified) ____
Tier II (Results + QC Summaries ____
Tier III (Results + QC & Calibration Summaries) ____
Tier IV (Date Validation Package) 10% Surcharge X

EDD required YES / No
Type: Equis Units: ____

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date: 8-10-17	Time: 1600	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date: 8-12-17	Time: 0930

Cooler / Blank Temperature ____ °C

Air - Chain of Custody Record & Analytical Service Request

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10-Day-Standard

ALS Project No. P1703973

Company Name & Address (Reporting Information): Parsons, 4701 Hedgemore Dr, Charlotte, NC 28270

Project Name: FMC/Autex Front Royal

Project Number: 450516.02000

Project Manager: Michael Robinson

P.O. # / Billing Information

Phone: 704-558-4255

Fax:

Email Address for Result Reporting: michael.robinson@parsons.com

Sampler (Print & Sign):

ALS Contact:

Analysis Method: Reduced Sulfur Compounds ASTM D-5504

Client Sample ID	Laboratory ID Number	Date Collected (Start)	Time Collected (Start)	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	Reduced Sulfur Compounds ASTM D-5504		Comments e.g. Actual Preservative or specific instructions / End Time
OU-7-Perim-NE	15	8-9-17	1540	15500757	SFC00134	-32	Ø	1L	X		1335
OU-7-Perim-NE (Backup)	16	8-9-17	1540	15500237	SFC00204	-32	-0.25	1L	X		1335 Hold
OU-7-Perim-N	17	8-9-17	1545	15500036	SFC00057	-32	-0.75	1L	X		1338
OU-7-Perim-NW	18	8-9-17	1555	15500124	SFC00114	-30.5	-7.2	1L	X		1345
OU-7-Perim-SW	19	8-9-17	1600	15500720	SFC00079	-32		1L	X		
OU-7-Perim-S	20	8-9-17	1610	15500704	SFC00056	-32		1L	X		
OU-7-Perim-SE	21	8-9-17	1620	15500725	SFC00182	-21		1L	X		
Dup-080917-2	22	8-9-17	1400	15500233	SFC00030	-28		1L	X		

Report Tier Levels - please select

Tier I - Results (Default in not specified) ____
Tier II (Results + QC Summaries ____
Tier III (Results + QC & Calibration Summaries) ____
Tier IV (Date Validation Package) 10% Surcharge X

EDD required YES / No
Type: Equis Units: ____

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
[signature]	8-10-17	1600	[signature]		
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
[signature]			[signature]	8-16-17	0930

Cooler / Blank Temperature ____ °C

ALS Environmental
Sample Acceptance Check Form

Client: GHD Services Inc. Work order: P1703973

Project: Avtex Fibers Superfund Site / 11119510-001

Sample(s) received on: 8/16/17 Date opened: 8/16/17 by: ADAVID

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1703973-001.01	1.0 L Source Silonite Canister					
P1703973-002.01	1.0 L Source Silonite Canister					
P1703973-003.01	1.0 L Source Silonite Canister					
P1703973-004.01	1.0 L Source Silonite Canister					
P1703973-005.01	1.0 L Source Silonite Canister					
P1703973-006.01	1.0 L Source Silonite Canister					
P1703973-007.01	1.0 L Source Silonite Canister					
P1703973-008.01	1.0 L Source Silonite Canister					
P1703973-009.01	1.0 L Source Silonite Canister					
P1703973-010.01	1.0 L Source Silonite Canister					
P1703973-011.01	1.0 L Source Silonite Canister					
P1703973-012.01	1.0 L Source Silonite Canister					
P1703973-013.01	1.0 L Source Silonite Canister					
P1703973-014.01	1.0 L Source Silonite Canister					
P1703973-015.01	1.0 L Source Silonite Canister					

Explain any discrepancies: (include lab sample ID numbers):

Project Name and number referenced from the SSOW documentation.

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS Environmental
Sample Acceptance Check Form

Client: GHD Services Inc. Work order: P1703973

Project: Avtex Fibers Superfund Site / 11119510-001

Sample(s) received on: 8/16/17 Date opened: 8/16/17 by: ADAVID

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1703973-016.01	1.0 L Source Silonite Canister					
P1703973-017.01	1.0 L Source Silonite Canister					
P1703973-018.01	1.0 L Source Silonite Canister					
P1703973-019.01	1.0 L Source Silonite Canister					
P1703973-020.01	1.0 L Source Silonite Canister					
P1703973-021.01	1.0 L Source Silonite Canister					
P1703973-022.01	1.0 L Source Silonite Canister					

Explain any discrepancies: (include lab sample ID numbers):

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **GHD Services Inc.**
Client Sample ID: **PERIM-SE** ALS Project ID: P1703973
Client Project ID: **Avtex Fibers Superfund Site / 11119510-001** ALS Sample ID: P1703973-001

Test Code: ASTM D 5504-12 Date Collected: 8/10/17
Instrument ID: Agilent 6890A/GC13/SCD Time Collected: 08:37
Analyst: Mike Conejo Date Received: 8/16/17
Sample Type: 1.0 L Silonite Summa Canister Date Analyzed: 8/16/17
Test Notes: Time Analyzed: 12:29
Container ID: 1SS00239 Volume(s) Analyzed: 1.0 ml(s)

Initial Pressure (psig): 0.22 Final Pressure (psig): 0.22

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	7.0	1.5	ND	5.0	1.1	
463-58-1	Carbonyl Sulfide	ND	12	2.1	ND	5.0	0.84	
74-93-1	Methyl Mercaptan	ND	9.8	2.4	ND	5.0	1.2	
75-08-1	Ethyl Mercaptan	ND	13	3.0	ND	5.0	1.2	
75-18-3	Dimethyl Sulfide	ND	13	3.0	ND	5.0	1.2	
75-15-0	Carbon Disulfide	ND	7.8	1.9	ND	2.5	0.60	
75-33-2	Isopropyl Mercaptan	ND	16	3.7	ND	5.0	1.2	
75-66-1	tert-Butyl Mercaptan	ND	18	4.4	ND	5.0	1.2	
107-03-9	n-Propyl Mercaptan	ND	16	3.7	ND	5.0	1.2	
624-89-5	Ethyl Methyl Sulfide	ND	16	3.7	ND	5.0	1.2	
110-02-1	Thiophene	ND	17	4.1	ND	5.0	1.2	
513-44-0	Isobutyl Mercaptan	ND	18	4.4	ND	5.0	1.2	
352-93-2	Diethyl Sulfide	ND	18	4.4	ND	5.0	1.2	
109-79-5	n-Butyl Mercaptan	ND	18	4.4	ND	5.0	1.2	
624-92-0	Dimethyl Disulfide	ND	9.6	2.3	ND	2.5	0.60	
616-44-4	3-Methylthiophene	ND	20	4.8	ND	5.0	1.2	
110-01-0	Tetrahydrothiophene	ND	18	4.3	ND	5.0	1.2	
638-02-8	2,5-Dimethylthiophene	ND	23	5.5	ND	5.0	1.2	
872-55-9	2-Ethylthiophene	ND	23	5.5	ND	5.0	1.2	
110-81-6	Diethyl Disulfide	ND	12	3.0	ND	2.5	0.60	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **GHD Services Inc.**
Client Sample ID: **PERIM-E** ALS Project ID: P1703973
Client Project ID: **Avtex Fibers Superfund Site / 11119510-001** ALS Sample ID: P1703973-004

Test Code: ASTM D 5504-12 Date Collected: 8/10/17
Instrument ID: Agilent 6890A/GC13/SCD Time Collected: 11:24
Analyst: Mike Conejo Date Received: 8/16/17
Sample Type: 1.0 L Silonite Summa Canister Date Analyzed: 8/16/17
Test Notes: Time Analyzed: 14:12
Container ID: 1SS00716 Volume(s) Analyzed: 1.0 ml(s)

Initial Pressure (psig): -3.94 Final Pressure (psig): 1.54

Container Dilution Factor: 1.51

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	11	2.3	ND	7.6	1.7	
463-58-1	Carbonyl Sulfide	ND	19	3.1	ND	7.6	1.3	
74-93-1	Methyl Mercaptan	ND	15	3.6	ND	7.6	1.8	
75-08-1	Ethyl Mercaptan	ND	19	4.6	ND	7.6	1.8	
75-18-3	Dimethyl Sulfide	ND	19	4.6	ND	7.6	1.8	
75-15-0	Carbon Disulfide	**8.2**	12	2.8	**2.6**	3.8	0.91	**J**
75-33-2	Isopropyl Mercaptan	ND	24	5.6	ND	7.6	1.8	
75-66-1	tert-Butyl Mercaptan	ND	28	6.7	ND	7.6	1.8	
107-03-9	n-Propyl Mercaptan	ND	24	5.6	ND	7.6	1.8	
624-89-5	Ethyl Methyl Sulfide	ND	24	5.6	ND	7.6	1.8	
110-02-1	Thiophene	ND	26	6.2	ND	7.6	1.8	
513-44-0	Isobutyl Mercaptan	ND	28	6.7	ND	7.6	1.8	
352-93-2	Diethyl Sulfide	ND	28	6.7	ND	7.6	1.8	
109-79-5	n-Butyl Mercaptan	ND	28	6.7	ND	7.6	1.8	
624-92-0	Dimethyl Disulfide	ND	15	3.5	ND	3.8	0.91	
616-44-4	3-Methylthiophene	ND	30	7.3	ND	7.6	1.8	
110-01-0	Tetrahydrothiophene	ND	27	6.5	ND	7.6	1.8	
638-02-8	2,5-Dimethylthiophene	ND	35	8.3	ND	7.6	1.8	
872-55-9	2-Ethylthiophene	ND	35	8.3	ND	7.6	1.8	
110-81-6	Diethyl Disulfide	ND	19	4.5	ND	3.8	0.91	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **GHD Services Inc.**
Client Sample ID: **Downwind-ESE** ALS Project ID: P1703973
Client Project ID: **Avtex Fibers Superfund Site / 11119510-001** ALS Sample ID: P1703973-005

Test Code: ASTM D 5504-12 Date Collected: 8/10/17
Instrument ID: Agilent 6890A/GC13/SCD Time Collected: 11:28
Analyst: Mike Conejo Date Received: 8/16/17
Sample Type: 1.0 L Silonite Summa Canister Date Analyzed: 8/16/17
Test Notes: Time Analyzed: 14:30
Container ID: 1SS00030 Volume(s) Analyzed: 1.0 ml(s)

Initial Pressure (psig): -7.37 Final Pressure (psig): 1.78

Container Dilution Factor: 2.25

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	16	3.4	ND	11	2.5	
463-58-1	Carbonyl Sulfide	ND	28	4.6	ND	11	1.9	
74-93-1	Methyl Mercaptan	ND	22	5.3	ND	11	2.7	
75-08-1	Ethyl Mercaptan	ND	29	6.9	ND	11	2.7	
75-18-3	Dimethyl Sulfide	ND	29	6.9	ND	11	2.7	
75-15-0	Carbon Disulfide	ND	18	4.2	ND	5.6	1.4	
75-33-2	Isopropyl Mercaptan	ND	35	8.4	ND	11	2.7	
75-66-1	tert-Butyl Mercaptan	ND	41	10	ND	11	2.7	
107-03-9	n-Propyl Mercaptan	ND	35	8.4	ND	11	2.7	
624-89-5	Ethyl Methyl Sulfide	ND	35	8.4	ND	11	2.7	
110-02-1	Thiophene	ND	39	9.3	ND	11	2.7	
513-44-0	Isobutyl Mercaptan	ND	41	10	ND	11	2.7	
352-93-2	Diethyl Sulfide	ND	41	10	ND	11	2.7	
109-79-5	n-Butyl Mercaptan	ND	41	10	ND	11	2.7	
624-92-0	Dimethyl Disulfide	ND	22	5.2	ND	5.6	1.4	
616-44-4	3-Methylthiophene	ND	45	11	ND	11	2.7	
110-01-0	Tetrahydrothiophene	ND	41	9.7	ND	11	2.7	
638-02-8	2,5-Dimethylthiophene	ND	52	12	ND	11	2.7	
872-55-9	2-Ethylthiophene	ND	52	12	ND	11	2.7	
110-81-6	Diethyl Disulfide	ND	28	6.7	ND	5.6	1.4	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **GHD Services Inc.**
Client Sample ID: **PERIM-SW** ALS Project ID: P1703973
Client Project ID: **Avtex Fibers Superfund Site / 11119510-001** ALS Sample ID: P1703973-009

Test Code:	ASTM D 5504-12	Date Collected:	8/10/17
Instrument ID:	Agilent 6890A/GC13/SCD	Time Collected:	08:55
Analyst:	Mike Conejo	Date Received:	8/16/17
Sample Type:	1.0 L Silonite Summa Canister	Date Analyzed:	8/16/17
Test Notes:		Time Analyzed:	15:49
Container ID:	1SS00075	Volume(s) Analyzed:	1.0 ml(s)

Initial Pressure (psig): 0.03 Final Pressure (psig): 3.44

Container Dilution Factor: 1.23

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	8.6	1.9	ND	6.2	1.4	
463-58-1	Carbonyl Sulfide	ND	15	2.5	ND	6.2	1.0	
74-93-1	Methyl Mercaptan	ND	12	2.9	ND	6.2	1.5	
75-08-1	Ethyl Mercaptan	ND	16	3.7	ND	6.2	1.5	
75-18-3	Dimethyl Sulfide	ND	16	3.7	ND	6.2	1.5	
75-15-0	Carbon Disulfide	ND	9.6	2.3	ND	3.1	0.74	
75-33-2	Isopropyl Mercaptan	ND	19	4.6	ND	6.2	1.5	
75-66-1	tert-Butyl Mercaptan	ND	23	5.4	ND	6.2	1.5	
107-03-9	n-Propyl Mercaptan	ND	19	4.6	ND	6.2	1.5	
624-89-5	Ethyl Methyl Sulfide	ND	19	4.6	ND	6.2	1.5	
110-02-1	Thiophene	ND	21	5.1	ND	6.2	1.5	
513-44-0	Isobutyl Mercaptan	ND	23	5.4	ND	6.2	1.5	
352-93-2	Diethyl Sulfide	ND	23	5.4	ND	6.2	1.5	
109-79-5	n-Butyl Mercaptan	ND	23	5.4	ND	6.2	1.5	
624-92-0	Dimethyl Disulfide	ND	12	2.8	ND	3.1	0.74	
616-44-4	3-Methylthiophene	ND	25	5.9	ND	6.2	1.5	
110-01-0	Tetrahydrothiophene	ND	22	5.3	ND	6.2	1.5	
638-02-8	2,5-Dimethylthiophene	ND	28	6.8	ND	6.2	1.5	
872-55-9	2-Ethylthiophene	ND	28	6.8	ND	6.2	1.5	
110-81-6	Diethyl Disulfide	ND	15	3.7	ND	3.1	0.74	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **GHD Services Inc.**
Client Sample ID: **PERIM-NW** ALS Project ID: P1703973
Client Project ID: **Avtex Fibers Superfund Site / 11119510-001** ALS Sample ID: P1703973-011

Test Code: ASTM D 5504-12 Date Collected: 8/10/17
Instrument ID: Agilent 7890A/GC22/SCD Time Collected: 11:50
Analyst: Mike Conejo Date Received: 8/16/17
Sample Type: 1.0 L Silonite Summa Canister Date Analyzed: 8/16/17
Test Notes: Time Analyzed: 15:54
Container ID: 1SS00588 Volume(s) Analyzed: 1.0 ml(s)

Initial Pressure (psig): -2.83 Final Pressure (psig): 1.24

Container Dilution Factor: 1.34

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	9.3	2.1	ND	6.7	1.5	
463-58-1	Carbonyl Sulfide	ND	16	2.8	ND	6.7	1.1	
74-93-1	Methyl Mercaptan	ND	13	3.2	ND	6.7	1.6	
75-08-1	Ethyl Mercaptan	ND	17	4.1	ND	6.7	1.6	
75-18-3	Dimethyl Sulfide	ND	17	4.1	ND	6.7	1.6	
75-15-0	Carbon Disulfide	ND	10	2.5	ND	3.4	0.80	
75-33-2	Isopropyl Mercaptan	ND	21	5.0	ND	6.7	1.6	
75-66-1	tert-Butyl Mercaptan	ND	25	5.9	ND	6.7	1.6	
107-03-9	n-Propyl Mercaptan	ND	21	5.0	ND	6.7	1.6	
624-89-5	Ethyl Methyl Sulfide	ND	21	5.0	ND	6.7	1.6	
110-02-1	Thiophene	ND	23	5.5	ND	6.7	1.6	
513-44-0	Isobutyl Mercaptan	ND	25	5.9	ND	6.7	1.6	
352-93-2	Diethyl Sulfide	ND	25	5.9	ND	6.7	1.6	
109-79-5	n-Butyl Mercaptan	ND	25	5.9	ND	6.7	1.6	
624-92-0	Dimethyl Disulfide	ND	13	3.1	ND	3.4	0.80	
616-44-4	3-Methylthiophene	ND	27	6.5	ND	6.7	1.6	
110-01-0	Tetrahydrothiophene	ND	24	5.8	ND	6.7	1.6	
638-02-8	2,5-Dimethylthiophene	ND	31	7.4	ND	6.7	1.6	
872-55-9	2-Ethylthiophene	ND	31	7.4	ND	6.7	1.6	
110-81-6	Diethyl Disulfide	ND	17	4.0	ND	3.4	0.80	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **GHD Services Inc.**
Client Sample ID: **DUP-080817-1**
Client Project ID: **Avtex Fibers Superfund Site / 11119510-001**

ALS Project ID: P1703973
ALS Sample ID: P1703973-014

Test Code: ASTM D 5504-12
Instrument ID: Agilent 6890A/GC13/SCD
Analyst: Mike Conejo
Sample Type: 1.0 L Silonite Summa Canister
Test Notes:
Container ID: 1SS00776

Date Collected: 8/10/17
Time Collected: 07:55
Date Received: 8/16/17
Date Analyzed: 8/16/17
Time Analyzed: 16:29
Volume(s) Analyzed: 1.0 ml(s)

Initial Pressure (psig): 0.02 Final Pressure (psig): 1.29

Container Dilution Factor: 1.09

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	**39**	7.6	1.7	**28**	5.5	1.2	
463-58-1	Carbonyl Sulfide	**31**	13	2.2	**13**	5.5	0.92	
74-93-1	Methyl Mercaptan	ND	11	2.6	ND	5.5	1.3	
75-08-1	Ethyl Mercaptan	ND	14	3.3	ND	5.5	1.3	
75-18-3	Dimethyl Sulfide	ND	14	3.3	ND	5.5	1.3	
75-15-0	Carbon Disulfide	**27**	8.5	2.0	**8.6**	2.7	0.65	
75-33-2	Isopropyl Mercaptan	ND	17	4.1	ND	5.5	1.3	
75-66-1	tert-Butyl Mercaptan	ND	20	4.8	ND	5.5	1.3	
107-03-9	n-Propyl Mercaptan	ND	17	4.1	ND	5.5	1.3	
624-89-5	Ethyl Methyl Sulfide	ND	17	4.1	ND	5.5	1.3	
110-02-1	Thiophene	ND	19	4.5	ND	5.5	1.3	
513-44-0	Isobutyl Mercaptan	ND	20	4.8	ND	5.5	1.3	
352-93-2	Diethyl Sulfide	ND	20	4.8	ND	5.5	1.3	
109-79-5	n-Butyl Mercaptan	ND	20	4.8	ND	5.5	1.3	
624-92-0	Dimethyl Disulfide	ND	10	2.5	ND	2.7	0.65	
616-44-4	3-Methylthiophene	ND	22	5.2	ND	5.5	1.3	
110-01-0	Tetrahydrothiophene	ND	20	4.7	ND	5.5	1.3	
638-02-8	2,5-Dimethylthiophene	ND	25	6.0	ND	5.5	1.3	
872-55-9	2-Ethylthiophene	ND	25	6.0	ND	5.5	1.3	
110-81-6	Diethyl Disulfide	ND	14	3.3	ND	2.7	0.65	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **GHD Services Inc.**
Client Sample ID: **OU-7-Perim-NE** ALS Project ID: P1703973
Client Project ID: **Avtex Fibers Superfund Site / 11119510-001** ALS Sample ID: P1703973-015

Test Code: ASTM D 5504-12 Date Collected: 8/10/17
Instrument ID: Agilent 6890A/GC13/SCD Time Collected: 13:35
Analyst: Mike Conejo Date Received: 8/16/17
Sample Type: 1.0 L Silonite Summa Canister Date Analyzed: 8/17/17
Test Notes: Time Analyzed: 08:39
Container ID: 1SS00753 Volume(s) Analyzed: 1.0 ml(s)

Initial Pressure (psig): -0.12 Final Pressure (psig): 5.06

Container Dilution Factor: 1.36

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	9.5	2.1	ND	6.8	1.5	
463-58-1	Carbonyl Sulfide	ND	17	2.8	ND	6.8	1.1	
74-93-1	Methyl Mercaptan	ND	13	3.2	ND	6.8	1.6	
75-08-1	Ethyl Mercaptan	ND	17	4.1	ND	6.8	1.6	
75-18-3	Dimethyl Sulfide	ND	17	4.1	ND	6.8	1.6	
75-15-0	Carbon Disulfide	ND	11	2.5	ND	3.4	0.82	
75-33-2	Isopropyl Mercaptan	ND	21	5.1	ND	6.8	1.6	
75-66-1	tert-Butyl Mercaptan	ND	25	6.0	ND	6.8	1.6	
107-03-9	n-Propyl Mercaptan	ND	21	5.1	ND	6.8	1.6	
624-89-5	Ethyl Methyl Sulfide	ND	21	5.1	ND	6.8	1.6	
110-02-1	Thiophene	ND	23	5.6	ND	6.8	1.6	
513-44-0	Isobutyl Mercaptan	ND	25	6.0	ND	6.8	1.6	
352-93-2	Diethyl Sulfide	ND	25	6.0	ND	6.8	1.6	
109-79-5	n-Butyl Mercaptan	ND	25	6.0	ND	6.8	1.6	
624-92-0	Dimethyl Disulfide	ND	13	3.1	ND	3.4	0.82	
616-44-4	3-Methylthiophene	ND	27	6.6	ND	6.8	1.6	
110-01-0	Tetrahydrothiophene	ND	25	5.9	ND	6.8	1.6	
638-02-8	2,5-Dimethylthiophene	ND	31	7.5	ND	6.8	1.6	
872-55-9	2-Ethylthiophene	ND	31	7.5	ND	6.8	1.6	
110-81-6	Diethyl Disulfide	ND	17	4.1	ND	3.4	0.82	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **GHD Services Inc.**
Client Sample ID: **OU-7-Perim-N** ALS Project ID: P1703973
Client Project ID: **Avtex Fibers Superfund Site / 11119510-001** ALS Sample ID: P1703973-017

Test Code: ASTM D 5504-12 Date Collected: 8/10/17
Instrument ID: Agilent 6890A/GC13/SCD Time Collected: 13:38
Analyst: Mike Conejo Date Received: 8/16/17
Sample Type: 1.0 L Silonite Summa Canister Date Analyzed: 8/17/17
Test Notes: Time Analyzed: 09:08
Container ID: 1SS00036 Volume(s) Analyzed: 1.0 ml(s)

Initial Pressure (psig): -0.07 Final Pressure (psig): 5.29

Container Dilution Factor: 1.37

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	9.5	2.1	ND	6.9	1.5	
463-58-1	Carbonyl Sulfide	ND	17	2.8	ND	6.9	1.2	
74-93-1	Methyl Mercaptan	ND	13	3.2	ND	6.9	1.6	
75-08-1	Ethyl Mercaptan	ND	17	4.2	ND	6.9	1.6	
75-18-3	Dimethyl Sulfide	ND	17	4.2	ND	6.9	1.6	
75-15-0	Carbon Disulfide	**12**	11	2.6	**3.7**	3.4	0.82	
75-33-2	Isopropyl Mercaptan	ND	21	5.1	ND	6.9	1.6	
75-66-1	tert-Butyl Mercaptan	ND	25	6.1	ND	6.9	1.6	
107-03-9	n-Propyl Mercaptan	ND	21	5.1	ND	6.9	1.6	
624-89-5	Ethyl Methyl Sulfide	ND	21	5.1	ND	6.9	1.6	
110-02-1	Thiophene	ND	24	5.7	ND	6.9	1.6	
513-44-0	Isobutyl Mercaptan	ND	25	6.1	ND	6.9	1.6	
352-93-2	Diethyl Sulfide	ND	25	6.1	ND	6.9	1.6	
109-79-5	n-Butyl Mercaptan	ND	25	6.1	ND	6.9	1.6	
624-92-0	Dimethyl Disulfide	ND	13	3.2	ND	3.4	0.82	
616-44-4	3-Methylthiophene	ND	27	6.6	ND	6.9	1.6	
110-01-0	Tetrahydrothiophene	ND	25	5.9	ND	6.9	1.6	
638-02-8	2,5-Dimethylthiophene	ND	31	7.5	ND	6.9	1.6	
872-55-9	2-Ethylthiophene	ND	31	7.5	ND	6.9	1.6	
110-81-6	Diethyl Disulfide	ND	17	4.1	ND	3.4	0.82	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **GHD Services Inc.**
Client Sample ID: **OU-7-Perim-NW** ALS Project ID: P1703973
Client Project ID: **Avtex Fibers Superfund Site / 11119510-001** ALS Sample ID: P1703973-018

Test Code:	ASTM D 5504-12	Date Collected:	8/10/17
Instrument ID:	Agilent 6890A/GC13/SCD	Time Collected:	13:45
Analyst:	Mike Conejo	Date Received:	8/16/17
Sample Type:	1.0 L Silonite Summa Canister	Date Analyzed:	8/17/17
Test Notes:		Time Analyzed:	09:23
Container ID:	1SS00124	Volume(s) Analyzed:	1.0 ml(s)

Initial Pressure (psig): -3.13 Final Pressure (psig): 5.12

Container Dilution Factor: 1.71

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	12	2.6	ND	8.6	1.9	
463-58-1	Carbonyl Sulfide	ND	21	3.5	ND	8.6	1.4	
74-93-1	Methyl Mercaptan	ND	17	4.0	ND	8.6	2.1	
75-08-1	Ethyl Mercaptan	ND	22	5.2	ND	8.6	2.1	
75-18-3	Dimethyl Sulfide	ND	22	5.2	ND	8.6	2.1	
75-15-0	Carbon Disulfide	ND	13	3.2	ND	4.3	1.0	
75-33-2	Isopropyl Mercaptan	ND	27	6.4	ND	8.6	2.1	
75-66-1	tert-Butyl Mercaptan	ND	32	7.6	ND	8.6	2.1	
107-03-9	n-Propyl Mercaptan	ND	27	6.4	ND	8.6	2.1	
624-89-5	Ethyl Methyl Sulfide	ND	27	6.4	ND	8.6	2.1	
110-02-1	Thiophene	ND	29	7.1	ND	8.6	2.1	
513-44-0	Isobutyl Mercaptan	ND	32	7.6	ND	8.6	2.1	
352-93-2	Diethyl Sulfide	ND	32	7.6	ND	8.6	2.1	
109-79-5	n-Butyl Mercaptan	ND	32	7.6	ND	8.6	2.1	
624-92-0	Dimethyl Disulfide	ND	16	4.0	ND	4.3	1.0	
616-44-4	3-Methylthiophene	ND	34	8.2	ND	8.6	2.1	
110-01-0	Tetrahydrothiophene	ND	31	7.4	ND	8.6	2.1	
638-02-8	2,5-Dimethylthiophene	ND	39	9.4	ND	8.6	2.1	
872-55-9	2-Ethylthiophene	ND	39	9.4	ND	8.6	2.1	
110-81-6	Diethyl Disulfide	ND	21	5.1	ND	4.3	1.0	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **GHD Services Inc.**
Client Sample ID: **OU-7-Perim-SW** ALS Project ID: P1703973
Client Project ID: **Avtex Fibers Superfund Site / 11119510-001** ALS Sample ID: P1703973-019

Test Code: ASTM D 5504-12 Date Collected: 8/10/17
Instrument ID: Agilent 7890A/GC22/SCD Time Collected: NA
Analyst: Mike Conejo Date Received: 8/16/17
Sample Type: 1.0 L Silonite Summa Canister Date Analyzed: 8/17/17
Test Notes: Time Analyzed: 09:48
Container ID: 1SS00720 Volume(s) Analyzed: 1.0 ml(s)

Initial Pressure (psig): 0.20 Final Pressure (psig): 5.80

Container Dilution Factor: 1.38

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	9.6	2.1	ND	6.9	1.5	
463-58-1	Carbonyl Sulfide	ND	17	2.8	ND	6.9	1.2	
74-93-1	Methyl Mercaptan	ND	14	3.3	ND	6.9	1.7	
75-08-1	Ethyl Mercaptan	ND	18	4.2	ND	6.9	1.7	
75-18-3	Dimethyl Sulfide	ND	18	4.2	ND	6.9	1.7	
75-15-0	Carbon Disulfide	ND	11	2.6	ND	3.5	0.83	
75-33-2	Isopropyl Mercaptan	ND	21	5.2	ND	6.9	1.7	
75-66-1	tert-Butyl Mercaptan	ND	25	6.1	ND	6.9	1.7	
107-03-9	n-Propyl Mercaptan	ND	21	5.2	ND	6.9	1.7	
624-89-5	Ethyl Methyl Sulfide	ND	21	5.2	ND	6.9	1.7	
110-02-1	Thiophene	ND	24	5.7	ND	6.9	1.7	
513-44-0	Isobutyl Mercaptan	ND	25	6.1	ND	6.9	1.7	
352-93-2	Diethyl Sulfide	ND	25	6.1	ND	6.9	1.7	
109-79-5	n-Butyl Mercaptan	ND	25	6.1	ND	6.9	1.7	
624-92-0	Dimethyl Disulfide	ND	13	3.2	ND	3.5	0.83	
616-44-4	3-Methylthiophene	ND	28	6.6	ND	6.9	1.7	
110-01-0	Tetrahydrothiophene	ND	25	6.0	ND	6.9	1.7	
638-02-8	2,5-Dimethylthiophene	ND	32	7.6	ND	6.9	1.7	
872-55-9	2-Ethylthiophene	ND	32	7.6	ND	6.9	1.7	
110-81-6	Diethyl Disulfide	ND	17	4.1	ND	3.5	0.83	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **GHD Services Inc.**
Client Sample ID: **OU-7-Perim-SE** ALS Project ID: P1703973
Client Project ID: **Avtex Fibers Superfund Site / 11119510-001** ALS Sample ID: P1703973-021

Test Code: ASTM D 5504-12 Date Collected: 8/10/17
Instrument ID: Agilent 7890A/GC22/SCD Time Collected: NA
Analyst: Mike Conejo Date Received: 8/16/17
Sample Type: 1.0 L Silonite Summa Canister Date Analyzed: 8/17/17
Test Notes: Time Analyzed: 09:18
Container ID: 1SS00725 Volume(s) Analyzed: 1.0 ml(s)

Initial Pressure (psig): -0.05 Final Pressure (psig): 5.06

Container Dilution Factor: 1.35

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	9.4	2.1	ND	6.8	1.5	
463-58-1	Carbonyl Sulfide	ND	17	2.8	ND	6.8	1.1	
74-93-1	Methyl Mercaptan	ND	13	3.2	ND	6.8	1.6	
75-08-1	Ethyl Mercaptan	ND	17	4.1	ND	6.8	1.6	
75-18-3	Dimethyl Sulfide	ND	17	4.1	ND	6.8	1.6	
75-15-0	Carbon Disulfide	ND	11	2.5	ND	3.4	0.81	
75-33-2	Isopropyl Mercaptan	ND	21	5.0	ND	6.8	1.6	
75-66-1	tert-Butyl Mercaptan	ND	25	6.0	ND	6.8	1.6	
107-03-9	n-Propyl Mercaptan	ND	21	5.0	ND	6.8	1.6	
624-89-5	Ethyl Methyl Sulfide	ND	21	5.0	ND	6.8	1.6	
110-02-1	Thiophene	ND	23	5.6	ND	6.8	1.6	
513-44-0	Isobutyl Mercaptan	ND	25	6.0	ND	6.8	1.6	
352-93-2	Diethyl Sulfide	ND	25	6.0	ND	6.8	1.6	
109-79-5	n-Butyl Mercaptan	ND	25	6.0	ND	6.8	1.6	
624-92-0	Dimethyl Disulfide	ND	13	3.1	ND	3.4	0.81	
616-44-4	3-Methylthiophene	ND	27	6.5	ND	6.8	1.6	
110-01-0	Tetrahydrothiophene	ND	24	5.8	ND	6.8	1.6	
638-02-8	2,5-Dimethylthiophene	ND	31	7.4	ND	6.8	1.6	
872-55-9	2-Ethylthiophene	ND	31	7.4	ND	6.8	1.6	
110-81-6	Diethyl Disulfide	ND	17	4.0	ND	3.4	0.81	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **GHD Services Inc.**
Client Sample ID: **Dup-080917-2** ALS Project ID: P1703973
Client Project ID: **Avtex Fibers Superfund Site / 11119510-001** ALS Sample ID: P1703973-022

Test Code: ASTM D 5504-12 Date Collected: 8/10/17
Instrument ID: Agilent 7890A/GC22/SCD Time Collected: NA
Analyst: Mike Conejo Date Received: 8/16/17
Sample Type: 1.0 L Silonite Summa Canister Date Analyzed: 8/17/17
Test Notes: Time Analyzed: 09:04
Container ID: 1SS00233 Volume(s) Analyzed: 1.0 ml(s)

Initial Pressure (psig): -6.36 Final Pressure (psig): 6.12

Container Dilution Factor: 2.50

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	17	3.8	ND	13	2.8	
463-58-1	Carbonyl Sulfide	ND	31	5.2	ND	13	2.1	
74-93-1	Methyl Mercaptan	ND	25	5.9	ND	13	3.0	
75-08-1	Ethyl Mercaptan	ND	32	7.6	ND	13	3.0	
75-18-3	Dimethyl Sulfide	ND	32	7.6	ND	13	3.0	
75-15-0	Carbon Disulfide	**34**	19	4.7	**11**	6.3	1.5	
75-33-2	Isopropyl Mercaptan	ND	39	9.3	ND	13	3.0	
75-66-1	tert-Butyl Mercaptan	ND	46	11	ND	13	3.0	
107-03-9	n-Propyl Mercaptan	ND	39	9.3	ND	13	3.0	
624-89-5	Ethyl Methyl Sulfide	ND	39	9.3	ND	13	3.0	
110-02-1	Thiophene	ND	43	10	ND	13	3.0	
513-44-0	Isobutyl Mercaptan	ND	46	11	ND	13	3.0	
352-93-2	Diethyl Sulfide	ND	46	11	ND	13	3.0	
109-79-5	n-Butyl Mercaptan	ND	46	11	ND	13	3.0	
624-92-0	Dimethyl Disulfide	ND	24	5.8	ND	6.3	1.5	
616-44-4	3-Methylthiophene	ND	50	12	ND	13	3.0	
110-01-0	Tetrahydrothiophene	ND	45	11	ND	13	3.0	
638-02-8	2,5-Dimethylthiophene	ND	57	14	ND	13	3.0	
872-55-9	2-Ethylthiophene	ND	57	14	ND	13	3.0	
110-81-6	Diethyl Disulfide	ND	31	7.5	ND	6.3	1.5	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **GHD Services Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Avtex Fibers Superfund Site / 11119510-001**

ALS Project ID: P1703973
ALS Sample ID: P170816-MB

Test Code: ASTM D 5504-12
Instrument ID: Agilent 6890A/GC13/SCD
Analyst: Mike Conejo
Sample Type: 1.0 L Silonite Summa Canister
Test Notes:

Date Collected: NA
Time Collected: NA
Date Received: NA
Date Analyzed: 8/16/17
Time Analyzed: 08:20
Volume(s) Analyzed: 1.0 ml(s)

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	7.0	1.5	ND	5.0	1.1	
463-58-1	Carbonyl Sulfide	ND	12	2.1	ND	5.0	0.84	
74-93-1	Methyl Mercaptan	ND	9.8	2.4	ND	5.0	1.2	
75-08-1	Ethyl Mercaptan	ND	13	3.0	ND	5.0	1.2	
75-18-3	Dimethyl Sulfide	ND	13	3.0	ND	5.0	1.2	
75-15-0	Carbon Disulfide	ND	7.8	1.9	ND	2.5	0.60	
75-33-2	Isopropyl Mercaptan	ND	16	3.7	ND	5.0	1.2	
75-66-1	tert-Butyl Mercaptan	ND	18	4.4	ND	5.0	1.2	
107-03-9	n-Propyl Mercaptan	ND	16	3.7	ND	5.0	1.2	
624-89-5	Ethyl Methyl Sulfide	ND	16	3.7	ND	5.0	1.2	
110-02-1	Thiophene	ND	17	4.1	ND	5.0	1.2	
513-44-0	Isobutyl Mercaptan	ND	18	4.4	ND	5.0	1.2	
352-93-2	Diethyl Sulfide	ND	18	4.4	ND	5.0	1.2	
109-79-5	n-Butyl Mercaptan	ND	18	4.4	ND	5.0	1.2	
624-92-0	Dimethyl Disulfide	ND	9.6	2.3	ND	2.5	0.60	
616-44-4	3-Methylthiophene	ND	20	4.8	ND	5.0	1.2	
110-01-0	Tetrahydrothiophene	ND	18	4.3	ND	5.0	1.2	
638-02-8	2,5-Dimethylthiophene	ND	23	5.5	ND	5.0	1.2	
872-55-9	2-Ethylthiophene	ND	23	5.5	ND	5.0	1.2	
110-81-6	Diethyl Disulfide	ND	12	3.0	ND	2.5	0.60	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **GHD Services Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Avtex Fibers Superfund Site / 11119510-001**

ALS Project ID: P1703973
ALS Sample ID: P170816-MB

Test Code: ASTM D 5504-12
Instrument ID: Agilent 7890A/GC22/SCD
Analyst: Mike Conejo
Sample Type: 1.0 L Silonite Summa Canister
Test Notes:

Date Collected: NA
Time Collected: NA
Date Received: NA
Date Analyzed: 8/16/17
Time Analyzed: 08:17
Volume(s) Analyzed: 1.0 ml(s)

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	7.0	1.5	ND	5.0	1.1	
463-58-1	Carbonyl Sulfide	ND	12	2.1	ND	5.0	0.84	
74-93-1	Methyl Mercaptan	ND	9.8	2.4	ND	5.0	1.2	
75-08-1	Ethyl Mercaptan	ND	13	3.0	ND	5.0	1.2	
75-18-3	Dimethyl Sulfide	ND	13	3.0	ND	5.0	1.2	
75-15-0	Carbon Disulfide	ND	7.8	1.9	ND	2.5	0.60	
75-33-2	Isopropyl Mercaptan	ND	16	3.7	ND	5.0	1.2	
75-66-1	tert-Butyl Mercaptan	ND	18	4.4	ND	5.0	1.2	
107-03-9	n-Propyl Mercaptan	ND	16	3.7	ND	5.0	1.2	
624-89-5	Ethyl Methyl Sulfide	ND	16	3.7	ND	5.0	1.2	
110-02-1	Thiophene	ND	17	4.1	ND	5.0	1.2	
513-44-0	Isobutyl Mercaptan	ND	18	4.4	ND	5.0	1.2	
352-93-2	Diethyl Sulfide	ND	18	4.4	ND	5.0	1.2	
109-79-5	n-Butyl Mercaptan	ND	18	4.4	ND	5.0	1.2	
624-92-0	Dimethyl Disulfide	ND	9.6	2.3	ND	2.5	0.60	
616-44-4	3-Methylthiophene	ND	20	4.8	ND	5.0	1.2	
110-01-0	Tetrahydrothiophene	ND	18	4.3	ND	5.0	1.2	
638-02-8	2,5-Dimethylthiophene	ND	23	5.5	ND	5.0	1.2	
872-55-9	2-Ethylthiophene	ND	23	5.5	ND	5.0	1.2	
110-81-6	Diethyl Disulfide	ND	12	3.0	ND	2.5	0.60	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **GHD Services Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Avtex Fibers Superfund Site / 11119510-001**

ALS Project ID: P1703973
ALS Sample ID: P170817-MB

Test Code: ASTM D 5504-12
Instrument ID: Agilent 6890A/GC13/SCD
Analyst: Mike Conejo
Sample Type: 1.0 L Silonite Summa Canister
Test Notes:

Date Collected: NA
Time Collected: NA
Date Received: NA
Date Analyzed: 8/17/17
Time Analyzed: 08:20
Volume(s) Analyzed: 1.0 ml(s)

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	7.0	1.5	ND	5.0	1.1	
463-58-1	Carbonyl Sulfide	ND	12	2.1	ND	5.0	0.84	
74-93-1	Methyl Mercaptan	ND	9.8	2.4	ND	5.0	1.2	
75-08-1	Ethyl Mercaptan	ND	13	3.0	ND	5.0	1.2	
75-18-3	Dimethyl Sulfide	ND	13	3.0	ND	5.0	1.2	
75-15-0	Carbon Disulfide	ND	7.8	1.9	ND	2.5	0.60	
75-33-2	Isopropyl Mercaptan	ND	16	3.7	ND	5.0	1.2	
75-66-1	tert-Butyl Mercaptan	ND	18	4.4	ND	5.0	1.2	
107-03-9	n-Propyl Mercaptan	ND	16	3.7	ND	5.0	1.2	
624-89-5	Ethyl Methyl Sulfide	ND	16	3.7	ND	5.0	1.2	
110-02-1	Thiophene	ND	17	4.1	ND	5.0	1.2	
513-44-0	Isobutyl Mercaptan	ND	18	4.4	ND	5.0	1.2	
352-93-2	Diethyl Sulfide	ND	18	4.4	ND	5.0	1.2	
109-79-5	n-Butyl Mercaptan	ND	18	4.4	ND	5.0	1.2	
624-92-0	Dimethyl Disulfide	ND	9.6	2.3	ND	2.5	0.60	
616-44-4	3-Methylthiophene	ND	20	4.8	ND	5.0	1.2	
110-01-0	Tetrahydrothiophene	ND	18	4.3	ND	5.0	1.2	
638-02-8	2,5-Dimethylthiophene	ND	23	5.5	ND	5.0	1.2	
872-55-9	2-Ethylthiophene	ND	23	5.5	ND	5.0	1.2	
110-81-6	Diethyl Disulfide	ND	12	3.0	ND	2.5	0.60	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **GHD Services Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Avtex Fibers Superfund Site / 11119510-001**

ALS Project ID: P1703973
ALS Sample ID: P170817-MB

Test Code: ASTM D 5504-12
Instrument ID: Agilent 7890A/GC22/SCD
Analyst: Mike Conejo
Sample Type: 1.0 L Silonite Summa Canister
Test Notes:

Date Collected: NA
Time Collected: NA
Date Received: NA
Date Analyzed: 8/17/17
Time Analyzed: 08:20
Volume(s) Analyzed: 1.0 ml(s)

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	7.0	1.5	ND	5.0	1.1	
463-58-1	Carbonyl Sulfide	ND	12	2.1	ND	5.0	0.84	
74-93-1	Methyl Mercaptan	ND	9.8	2.4	ND	5.0	1.2	
75-08-1	Ethyl Mercaptan	ND	13	3.0	ND	5.0	1.2	
75-18-3	Dimethyl Sulfide	ND	13	3.0	ND	5.0	1.2	
75-15-0	Carbon Disulfide	ND	7.8	1.9	ND	2.5	0.60	
75-33-2	Isopropyl Mercaptan	ND	16	3.7	ND	5.0	1.2	
75-66-1	tert-Butyl Mercaptan	ND	18	4.4	ND	5.0	1.2	
107-03-9	n-Propyl Mercaptan	ND	16	3.7	ND	5.0	1.2	
624-89-5	Ethyl Methyl Sulfide	ND	16	3.7	ND	5.0	1.2	
110-02-1	Thiophene	ND	17	4.1	ND	5.0	1.2	
513-44-0	Isobutyl Mercaptan	ND	18	4.4	ND	5.0	1.2	
352-93-2	Diethyl Sulfide	ND	18	4.4	ND	5.0	1.2	
109-79-5	n-Butyl Mercaptan	ND	18	4.4	ND	5.0	1.2	
624-92-0	Dimethyl Disulfide	ND	9.6	2.3	ND	2.5	0.60	
616-44-4	3-Methylthiophene	ND	20	4.8	ND	5.0	1.2	
110-01-0	Tetrahydrothiophene	ND	18	4.3	ND	5.0	1.2	
638-02-8	2,5-Dimethylthiophene	ND	23	5.5	ND	5.0	1.2	
872-55-9	2-Ethylthiophene	ND	23	5.5	ND	5.0	1.2	
110-81-6	Diethyl Disulfide	ND	12	3.0	ND	2.5	0.60	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **GHD Services Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1703973
Client Project ID: **Avtex Fibers Superfund Site / 11119510-001** ALS Sample ID: P170816-LCS

Test Code: ASTM D 5504-12 Date Collected: NA
Instrument ID: Agilent 6890A/GC13/SCD Date Received: NA
Analyst: Mike Conejo Date Analyzed: 8/16/17
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: NA ml(s)
Test Notes:

CAS #	**Compound**	Spike Amount ppbV	**Result ppbV**	**% Recovery**	ALS Acceptance Limits	Data Qualifier
7783-06-4	Hydrogen Sulfide	1,000	**952**	**95**	81-141	
463-58-1	Carbonyl Sulfide	1,000	**981**	**98**	81-147	
74-93-1	Methyl Mercaptan	1,000	**947**	**95**	80-144	

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **GHD Services Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1703973
Client Project ID: **Avtex Fibers Superfund Site / 11119510-001** ALS Sample ID: P170816-LCS

Test Code: ASTM D 5504-12 Date Collected: NA
Instrument ID: Agilent 7890A/GC22/SCD Date Received: NA
Analyst: Mike Conejo Date Analyzed: 8/16/17
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: NA ml(s)
Test Notes:

CAS #	**Compound**	Spike Amount ppbV	**Result ppbV**	**% Recovery**	ALS Acceptance Limits	Data Qualifier
7783-06-4	Hydrogen Sulfide	1,000	**914**	**91**	81-141	
463-58-1	Carbonyl Sulfide	1,000	**961**	**96**	81-147	
74-93-1	Methyl Mercaptan	1,000	**955**	**96**	80-144	

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **GHD Services Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1703973
Client Project ID: **Avtex Fibers Superfund Site / 11119510-001** ALS Sample ID: P170817-LCS

Test Code: ASTM D 5504-12 Date Collected: NA
Instrument ID: Agilent 6890A/GC13/SCD Date Received: NA
Analyst: Mike Conejo Date Analyzed: 8/17/17
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: NA ml(s)
Test Notes:

CAS #	Compound	Spike Amount ppbV	Result ppbV	% Recovery	ALS Acceptance Limits	Data Qualifier
7783-06-4	Hydrogen Sulfide	1,000	**962**	**96**	81-141	
463-58-1	Carbonyl Sulfide	1,000	**982**	**98**	81-147	
74-93-1	Methyl Mercaptan	1,000	**926**	**93**	80-144	

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **GHD Services Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1703973
Client Project ID: **Avtex Fibers Superfund Site / 11119510-001** ALS Sample ID: P170817-LCS

Test Code: ASTM D 5504-12 Date Collected: NA
Instrument ID: Agilent 7890A/GC22/SCD Date Received: NA
Analyst: Mike Conejo Date Analyzed: 8/17/17
Sample Type: 1.0 L Silonite Summa Canister Volume(s) Analyzed: NA ml(s)
Test Notes:

CAS #	Compound	Spike Amount ppbV	Result ppbV	% Recovery	ALS Acceptance Limits	Data Qualifier
7783-06-4	Hydrogen Sulfide	1,000	**1,030**	**103**	81-141	
463-58-1	Carbonyl Sulfide	1,000	**1,070**	**107**	81-147	
74-93-1	Methyl Mercaptan	1,000	**1,060**	**106**	80-144	

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\16\
Data File : 08161716.D
Signal(s) : AIB1B.CH
Acq On : 16 Aug 2017 12:29
Operator : MC
Sample : P1703973-001 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:45:33 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.000	0	N.D.	ppb
2)	W	Carbonyl_Sulfide	0.000	0	N.D.	ppb
3)	T	Methyl_Mercaptan	0.000	0	N.D.	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

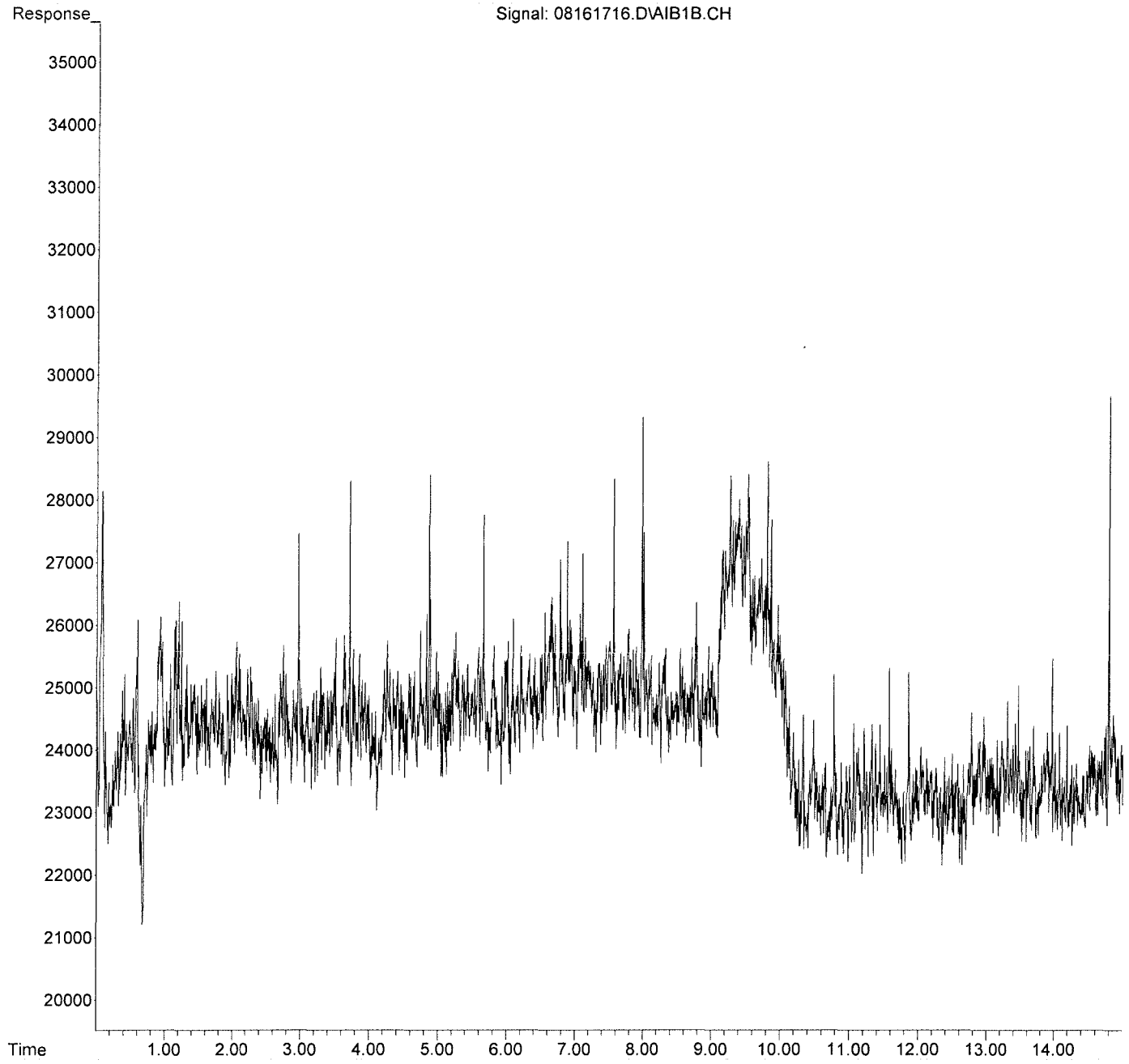
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\16\
Data File : 08161716.D
Signal(s) : AIB1B.CH
Acq On : 16 Aug 2017 12:29
Operator : MC
Sample : P1703973-001 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:45:33 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\16\
Data File : 08161719.D
Signal(s) : AIB1B.CH
Acq On : 16 Aug 2017 14:12
Operator : MC
Sample : P1703973-004 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:47:36 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.000	0	N.D.	ppb
2)	W	Carbonyl_Sulfide	0.000	0	N.D.	ppb
3)	T	Methyl_Mercaptan	0.000	0	N.D.	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	3.646	293708	1.746	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

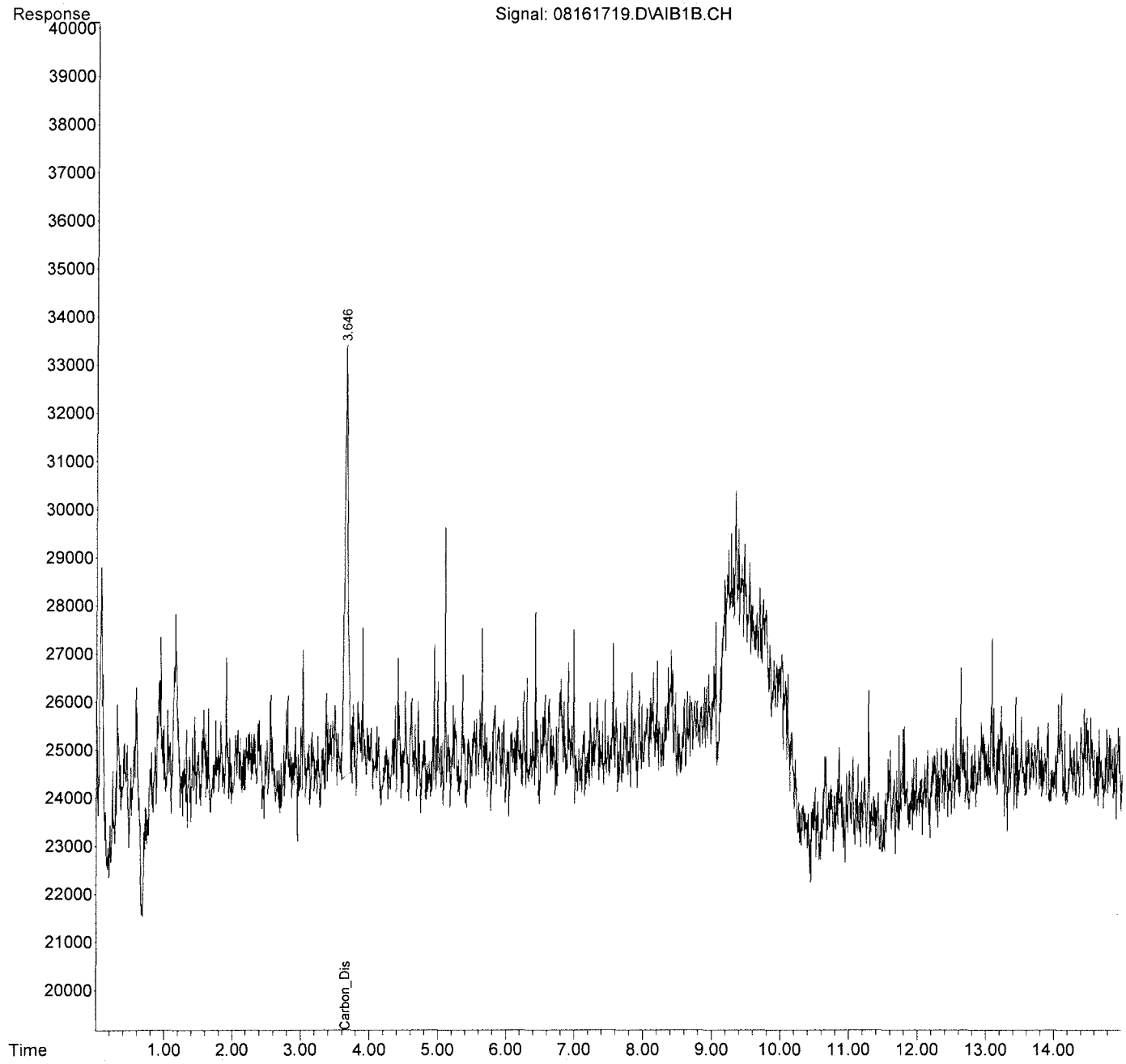
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\16\
Data File : 08161719.D
Signal(s) : AIB1B.CH
Acq On : 16 Aug 2017 14:12
Operator : MC
Sample : P1703973-004 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:47:36 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\16\
Data File : 08161720.D
Signal(s) : AIB1B.CH
Acq On : 16 Aug 2017 14:30
Operator : MC
Sample : P1703973-005 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:48:13 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.000	0	N.D.	ppb
2)	W	Carbonyl_Sulfide	0.000	0	N.D.	ppb
3)	T	Methyl_Mercaptan	0.000	0	N.D.	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

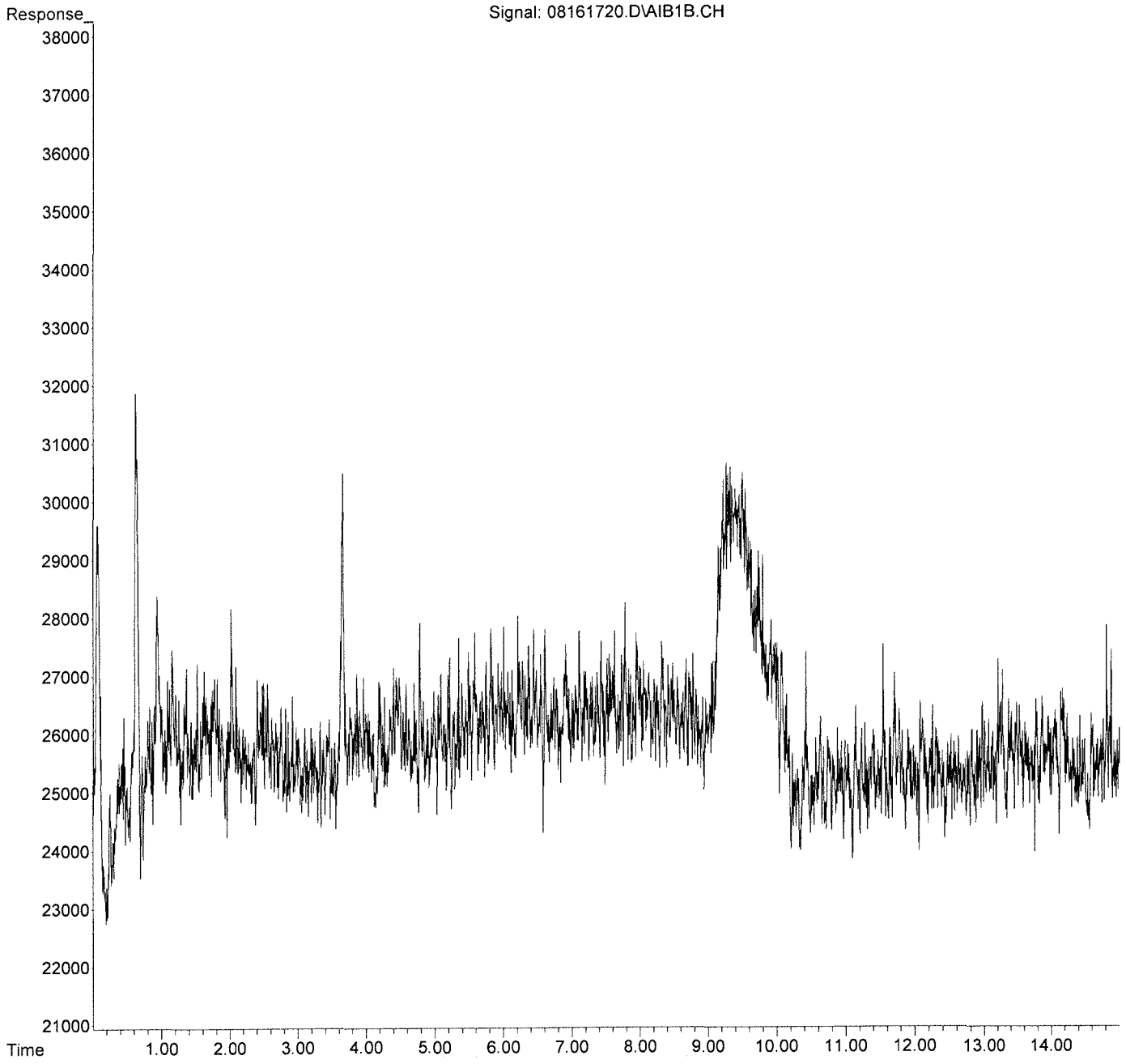
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\16\
Data File : 08161720.D
Signal(s) : AIB1B.CH
Acq On : 16 Aug 2017 14:30
Operator : MC
Sample : P1703973-005 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:48:13 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\16\
Data File : 08161724.D
Signal(s) : AIB1B.CH
Acq On : 16 Aug 2017 15:49
Operator : MC
Sample : P1703973-009 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:50:30 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units	
Target Compounds							
1)	Z	Hydrogen_Sulfide	0.000	0	N.D.	ppb	d
2)	W	Carbonyl_Sulfide	0.000	0	N.D.	ppb	
3)	T	Methyl_Mercaptan	0.000	0	N.D.	ppb	
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb	
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb	
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb	
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb	
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb	
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb	
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb	
11)	T	Thiophene	0.000	0	N.D.	ppb	
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb	
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb	
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb	
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb	
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb	
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb	
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb	
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb	
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb	
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb	
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb	

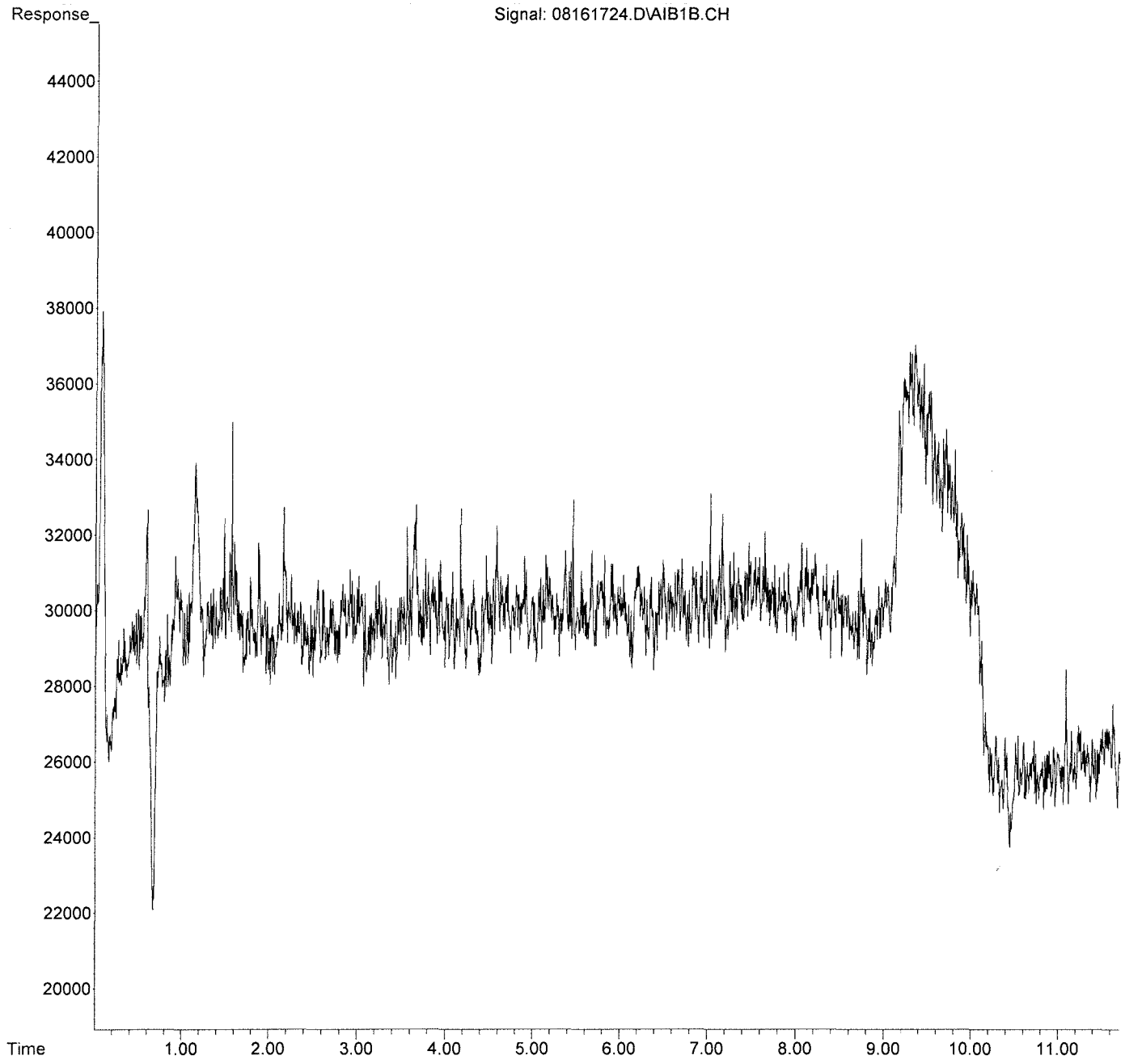
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\16\
Data File : 08161724.D
Signal(s) : AIB1B.CH
Acq On : 16 Aug 2017 15:49
Operator : MC
Sample : P1703973-009 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:50:30 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_08\16\
Data File : 08161722.d
Signal(s) : AIB1A.ch
Acq On : 16 Aug 2017 15:54
Operator : MC
Sample : P1703973-011 1ml
Misc :
ALS Vial : 22 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:23:15 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

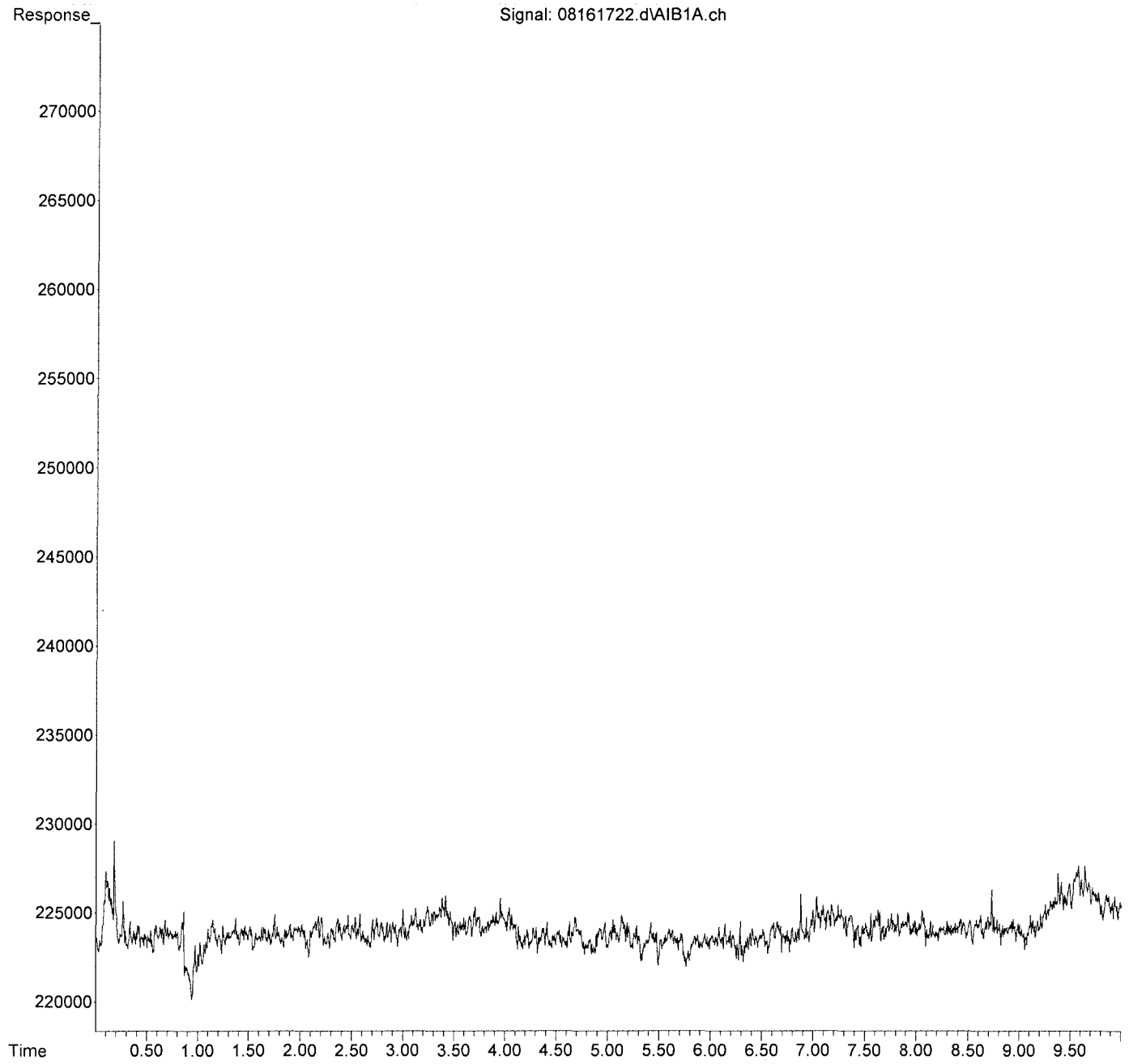
		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.000	0	N.D.	ppb
2)	W	Carbonyl_Sulfide	0.000	0	N.D.	ppb
3)	T	Methyl_Mercaptan	0.000	0	N.D.	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC22\DATA\SCD\2017_08\16\
Data File : 08161722.d
Signal(s) : AIB1A.ch
Acq On : 16 Aug 2017 15:54
Operator : MC
Sample : P1703973-011 1ml
Misc :
ALS Vial : 22 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:23:15 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\16\
Data File : 08161727.D
Signal(s) : AIB1B.CH
Acq On : 16 Aug 2017 16:29
Operator : MC
Sample : P1703973-014 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 16:45:30 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units	
Target Compounds							
1)	Z	Hydrogen_Sulfide	0.919	2116812	25.922	ppb	m
2)	W	Carbonyl_Sulfide	1.161	1028848	11.683	ppb	m
3)	T	Methyl_Mercaptan	0.000	0	N.D.	ppb	
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb	
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb	
6)	T	Carbon_Disulfide	3.653	1328602	7.900	ppb	m
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb	
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb	
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb	
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb	
11)	T	Thiophene	0.000	0	N.D.	ppb	
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb	
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb	
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb	
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb	
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb	
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb	
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb	
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb	
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb	
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb	
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb	

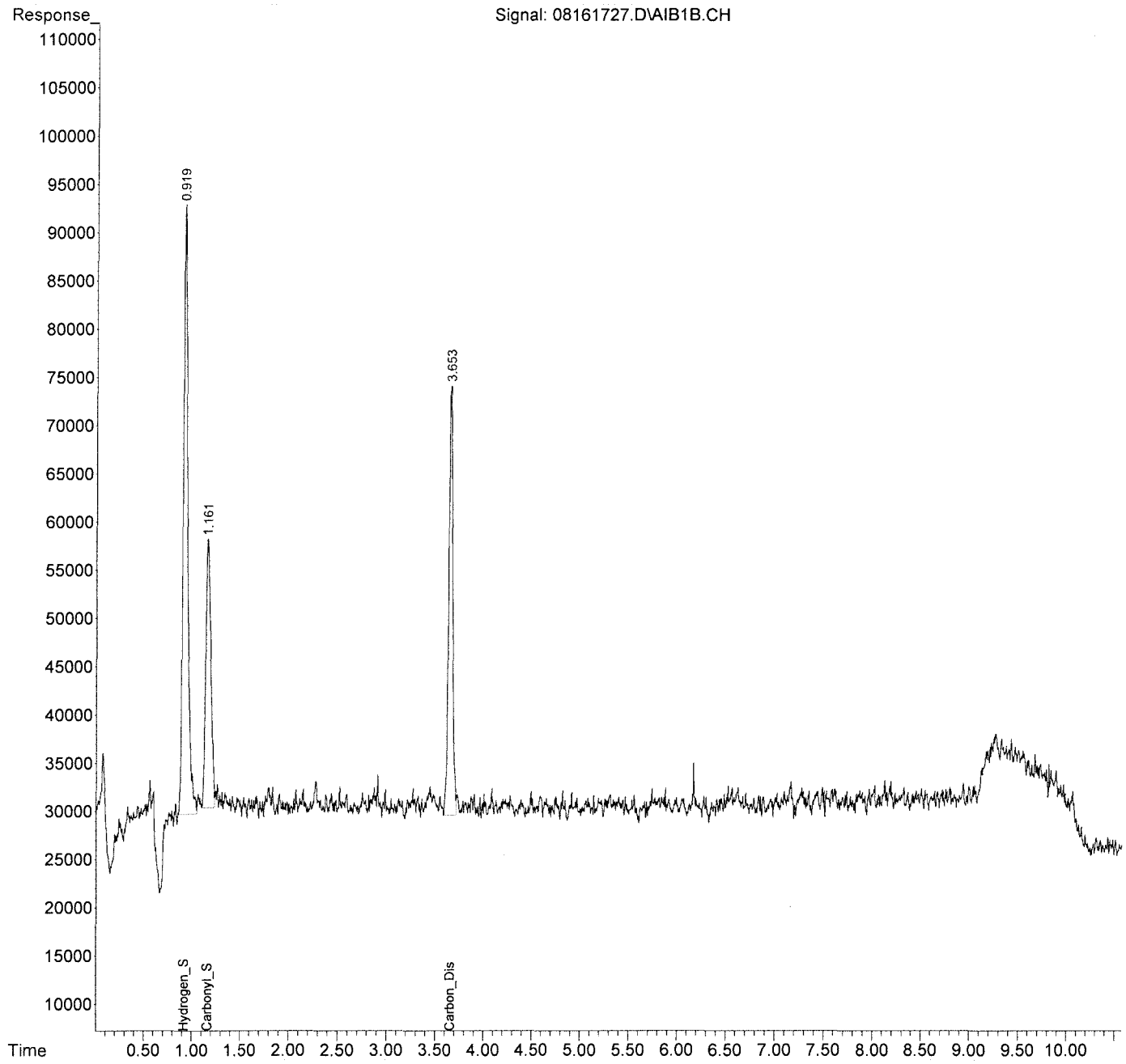
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\16\
Data File : 08161727.D
Signal(s) : AIB1B.CH
Acq On : 16 Aug 2017 16:29
Operator : MC
Sample : P1703973-014 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 16:45:30 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

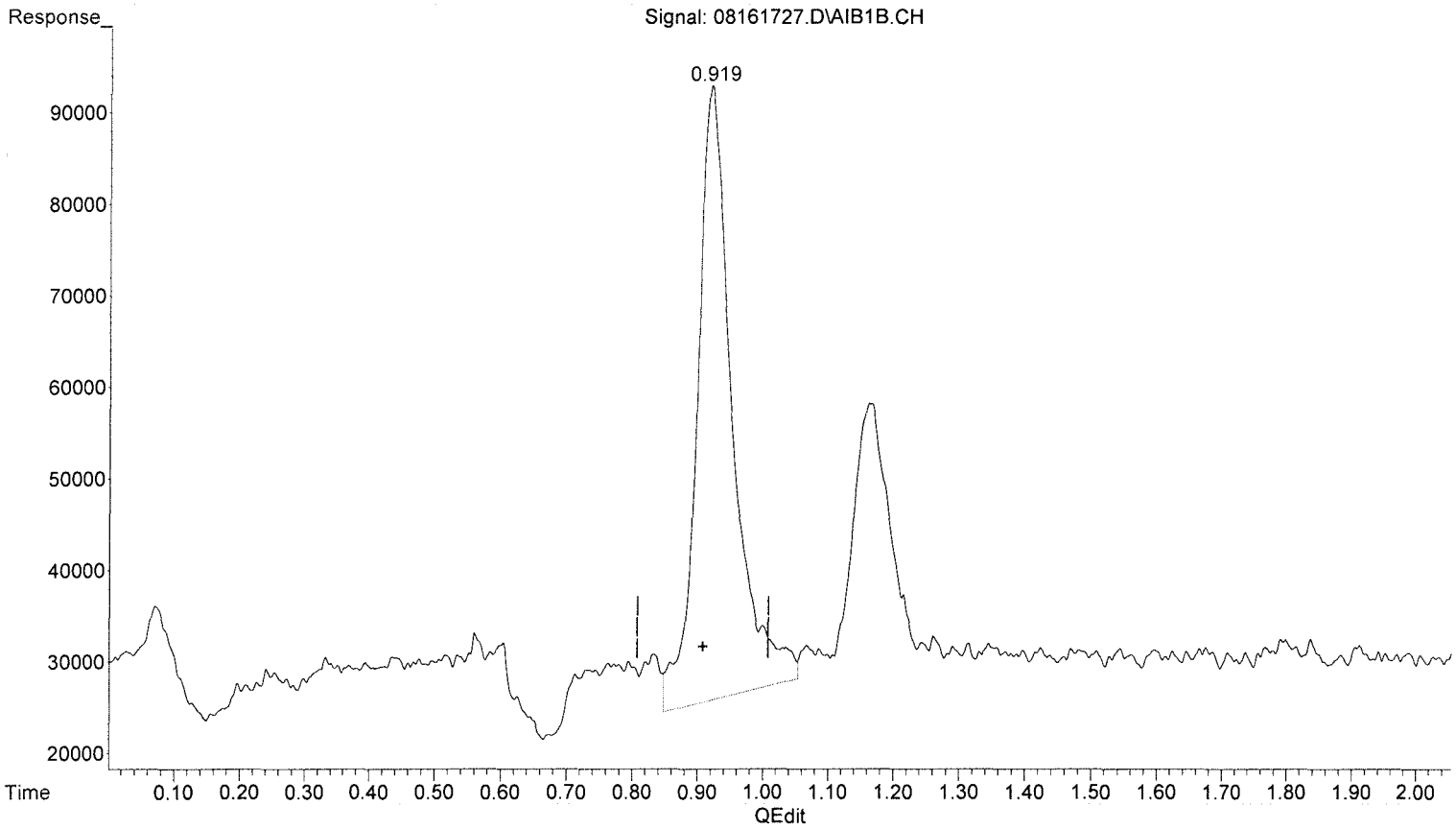


Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2017_08\16\
Data File : 08161727.D
Signal(s) : AIB1B.CH
Acq On : 16 Aug 2017 16:29
Operator : MC
Sample : P1703973-014 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 16:45:30 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(1) Hydrogen_Sulfide (Z)

0.919min 31.013 ppb

response 2532551

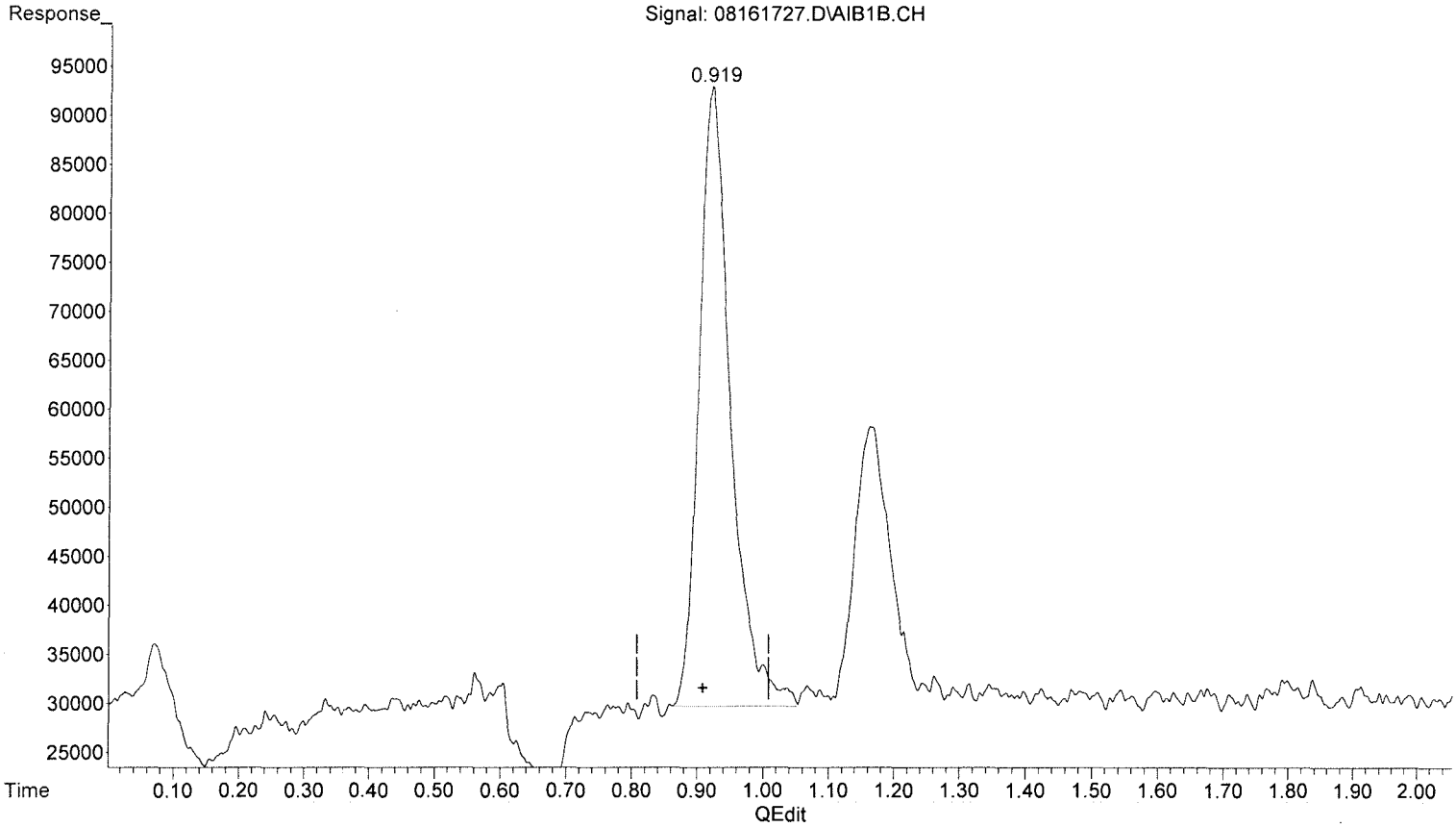
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2017_08\16\
Data File : 08161727.D
Signal(s) : AIB1B.CH
Acq On : 16 Aug 2017 16:29
Operator : MC
Sample : P1703973-014 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 16:45:30 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(1) Hydrogen_Sulfide (Z)
0.919min 25.922 ppb m
response 2116812

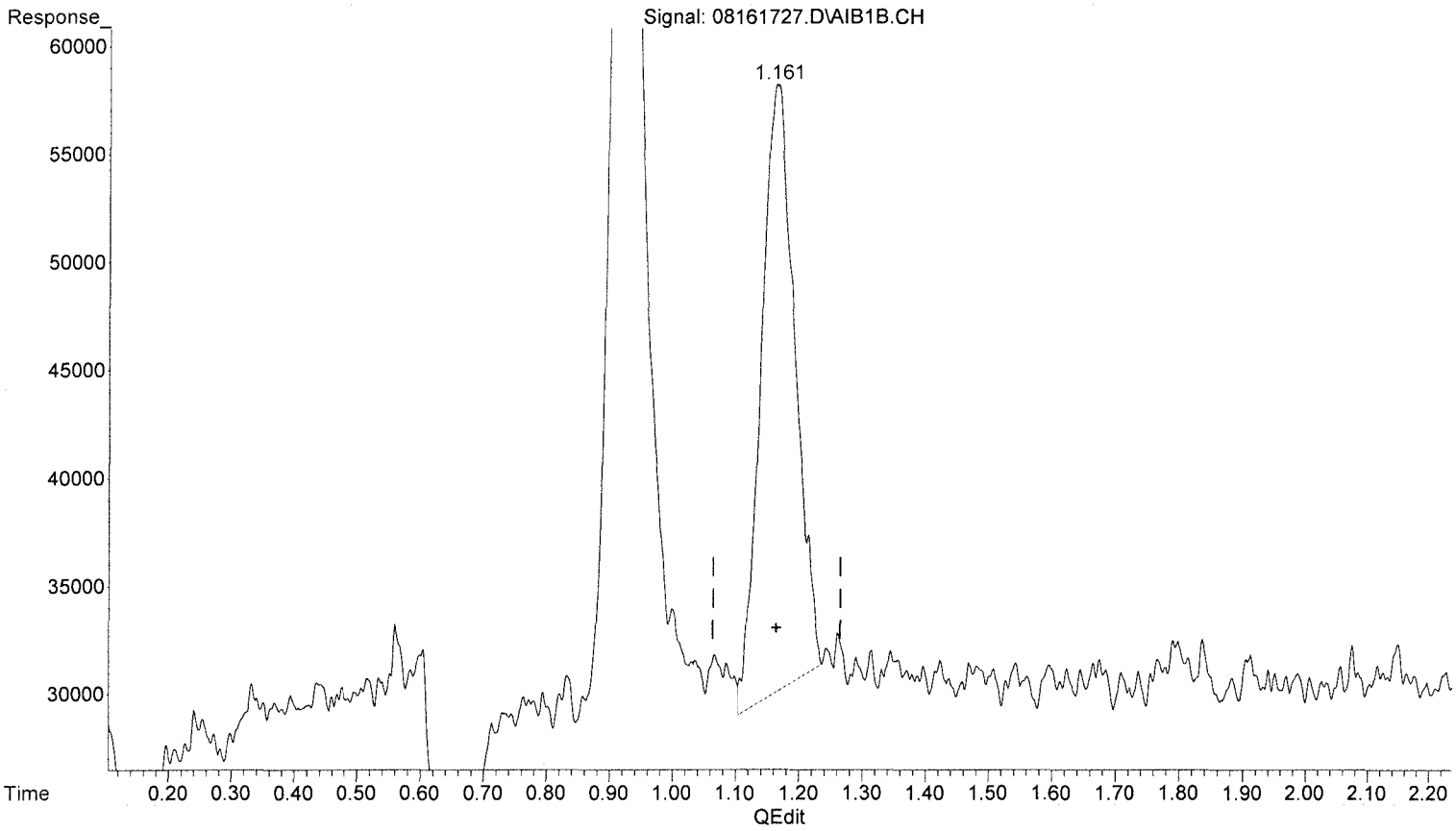
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2017_08\16\
Data File : 08161727.D
Signal(s) : AIB1B.CH
Acq On : 16 Aug 2017 16:29
Operator : MC
Sample : P1703973-014 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 16:45:30 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(2) Carbonyl_Sulfide (W)

1.164min 11.850 ppb

response 1043489

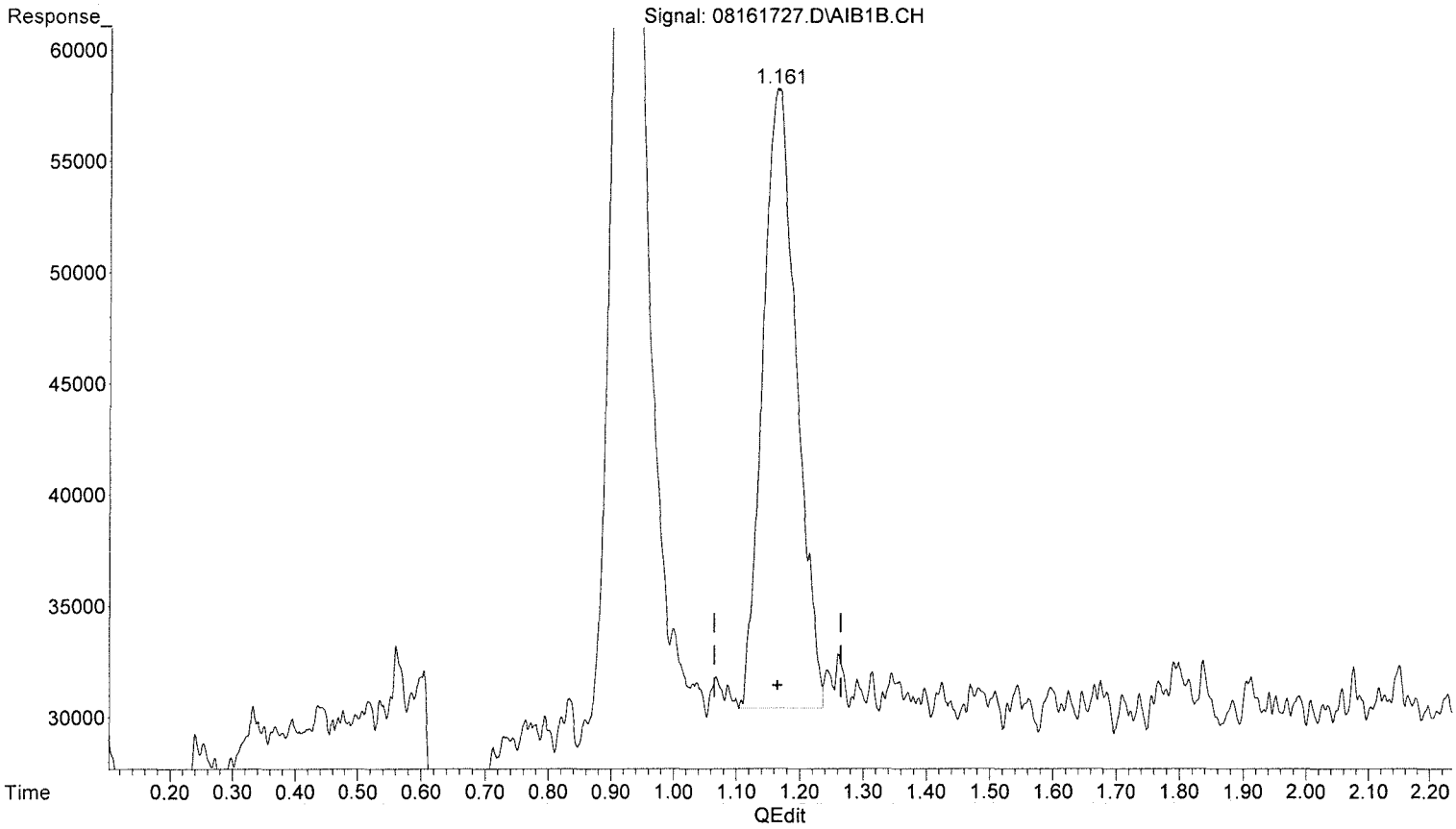
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2017_08\16\
Data File : 08161727.D
Signal(s) : AIB1B.CH
Acq On : 16 Aug 2017 16:29
Operator : MC
Sample : P1703973-014 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 16:45:30 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(2) Carbonyl_Sulfide (W)

1.161min 11.683 ppb m

response 1028848

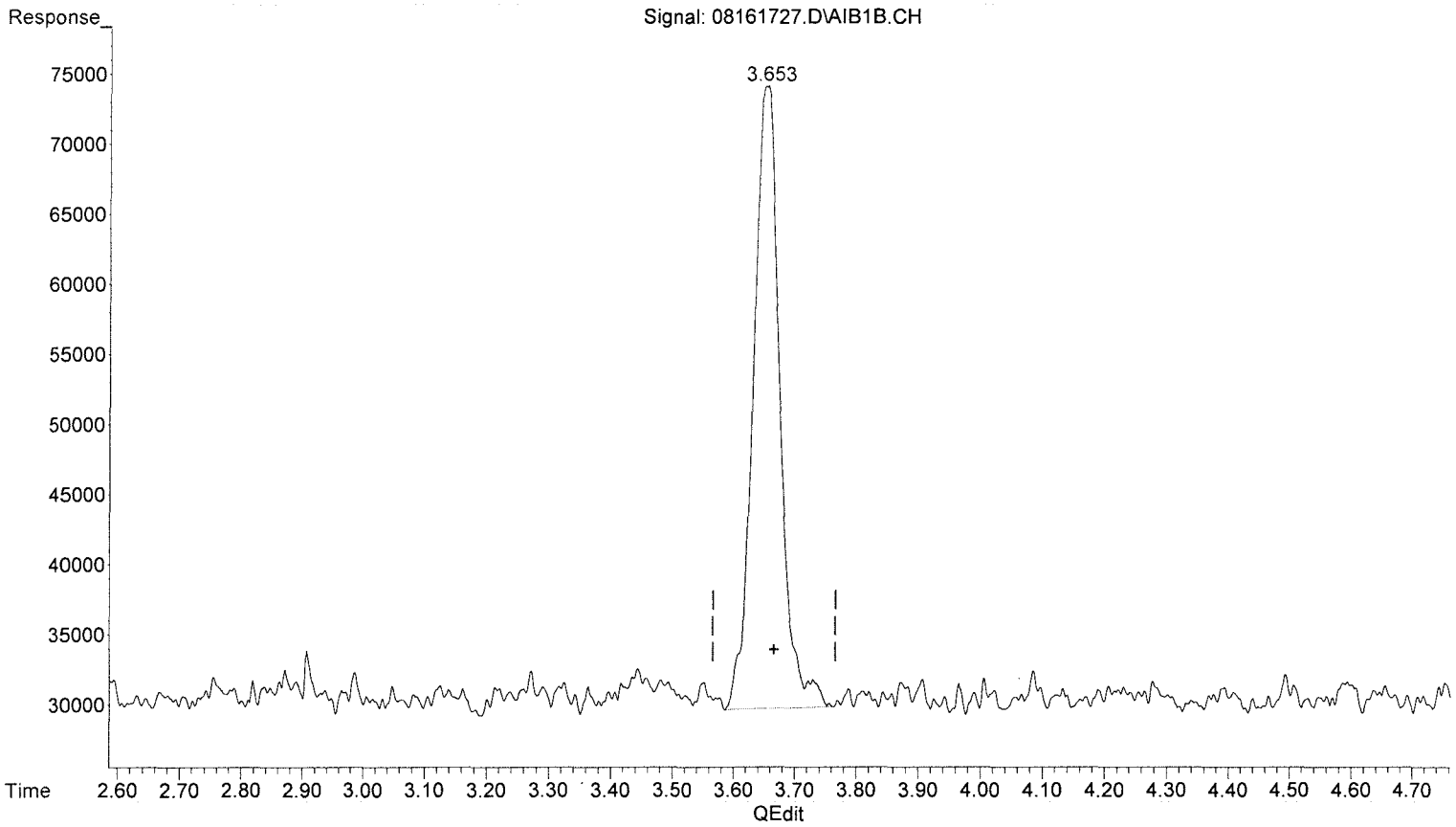
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2017_08\16\
Data File : 08161727.D
Signal(s) : AIB1B.CH
Acq On : 16 Aug 2017 16:29
Operator : MC
Sample : P1703973-014 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 16:45:30 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(6) Carbon_Disulfide (T)

3.652min 8.033 ppb

response 1350854

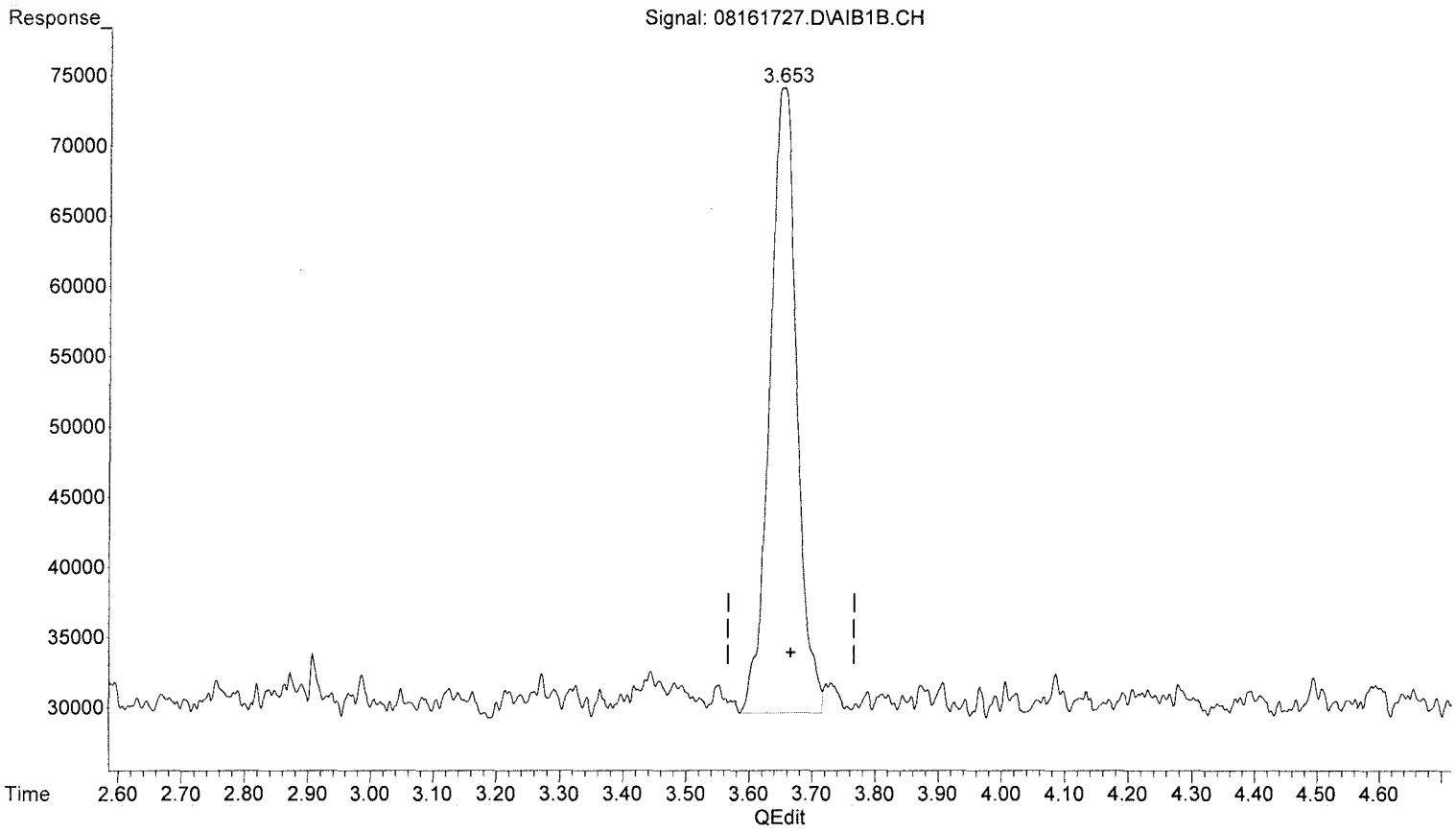
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2017_08\16\
Data File : 08161727.D
Signal(s) : AIB1B.CH
Acq On : 16 Aug 2017 16:29
Operator : MC
Sample : P1703973-014 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 16:45:30 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(6) Carbon_Disulfide (T)

3.653min 7.900 ppb m

response 1328602

(+) = Expected Retention Time

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\17\
Data File : 08171706.D
Signal(s) : AIB1B.CH
Acq On : 17 Aug 2017 8:39
Operator : MC
Sample : P1703973-015 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:32:23 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.000	0	N.D.	ppb
2)	W	Carbonyl_Sulfide	0.000	0	N.D.	ppb
3)	T	Methyl_Mercaptan	0.000	0	N.D.	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

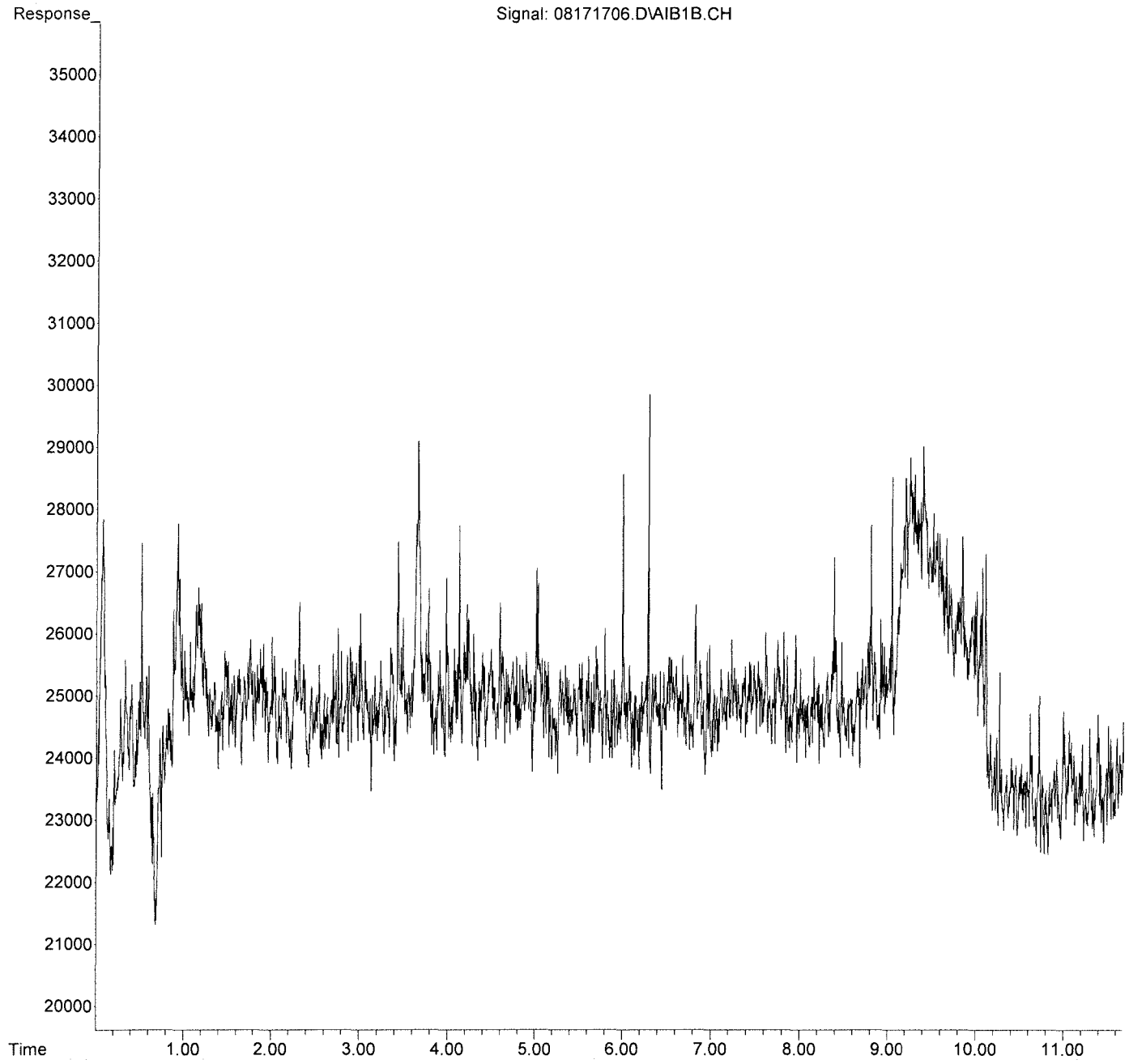
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\17\
Data File : 08171706.D
Signal(s) : AIB1B.CH
Acq On : 17 Aug 2017 8:39
Operator : MC
Sample : P1703973-015 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:32:23 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\17\
Data File : 08171708.D
Signal(s) : AIB1B.CH
Acq On : 17 Aug 2017 9:08
Operator : MC
Sample : P1703973-017 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:34:06 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.000	0	N.D.	ppb
2)	W	Carbonyl_Sulfide	0.000	0	N.D.	ppb
3)	T	Methyl_Mercaptan	0.000	0	N.D.	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	3.648	456142	2.712	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

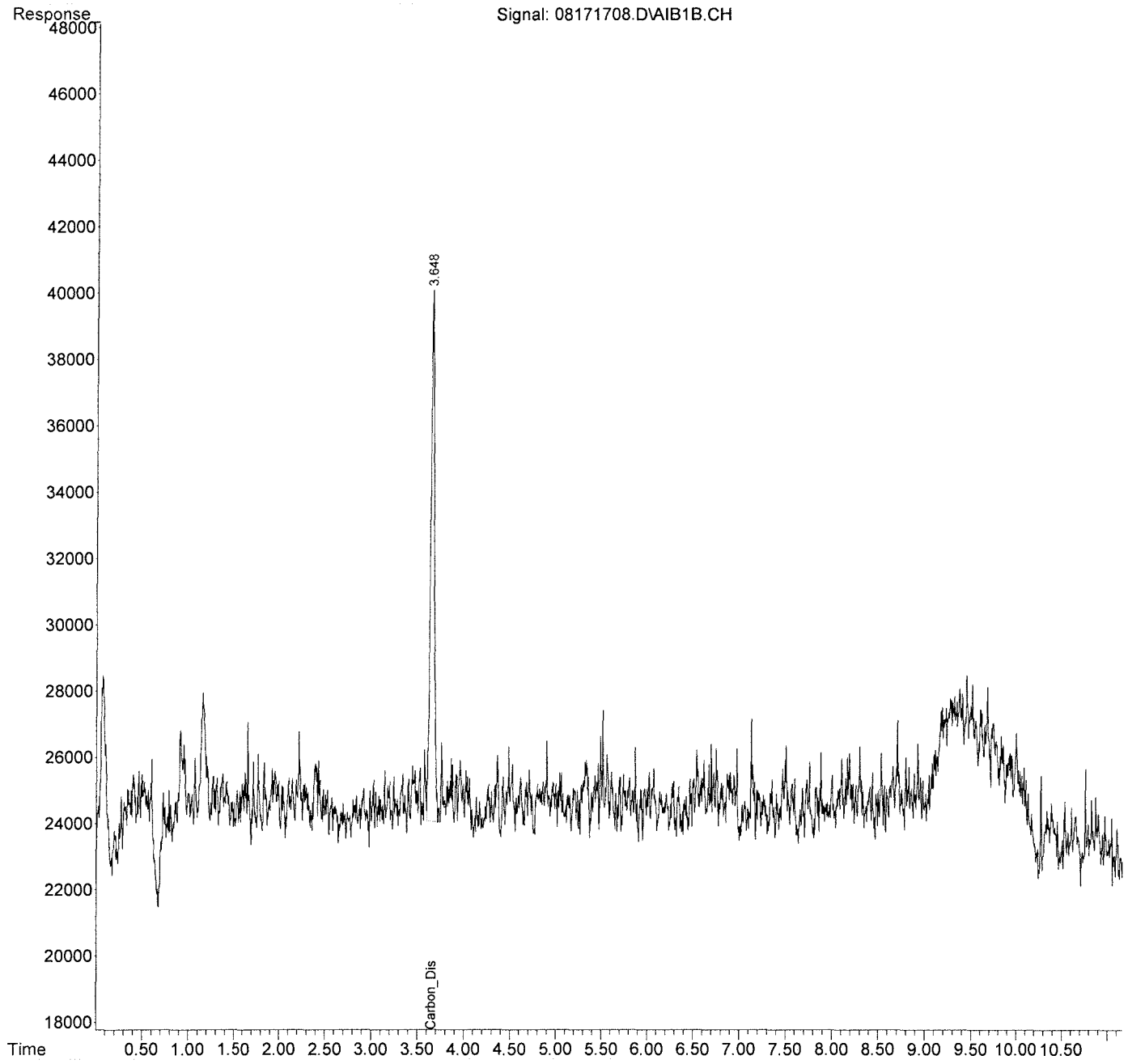
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\17\
Data File : 08171708.D
Signal(s) : AIB1B.CH
Acq On : 17 Aug 2017 9:08
Operator : MC
Sample : P1703973-017 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:34:06 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\17\
Data File : 08171709.D
Signal(s) : AIB1B.CH
Acq On : 17 Aug 2017 9:23
Operator : MC
Sample : P1703973-018 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:34:46 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.000	0	N.D.	ppb
2)	W	Carbonyl_Sulfide	0.000	0	N.D.	ppb
3)	T	Methyl_Mercaptan	0.000	0	N.D.	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

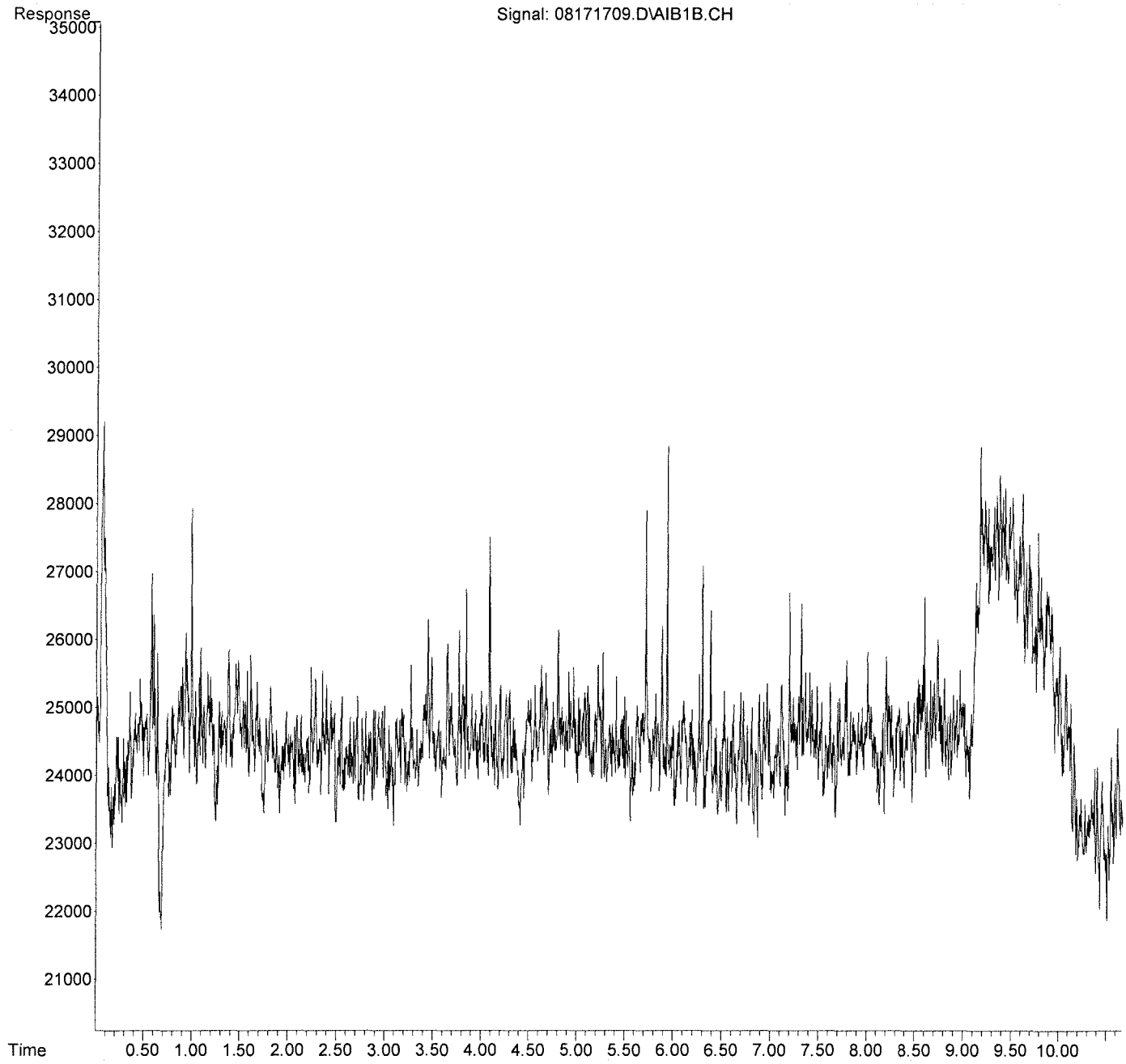
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\17\
Data File : 08171709.D
Signal(s) : AIB1B.CH
Acq On : 17 Aug 2017 9:23
Operator : MC
Sample : P1703973-018 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:34:46 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_08\17\
Data File : 08171711.d
Signal(s) : AIB1A.ch
Acq On : 17 Aug 2017 9:48
Operator : MC
Sample : P1703973-019 1ml
Misc :
ALS Vial : 11 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:09:04 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

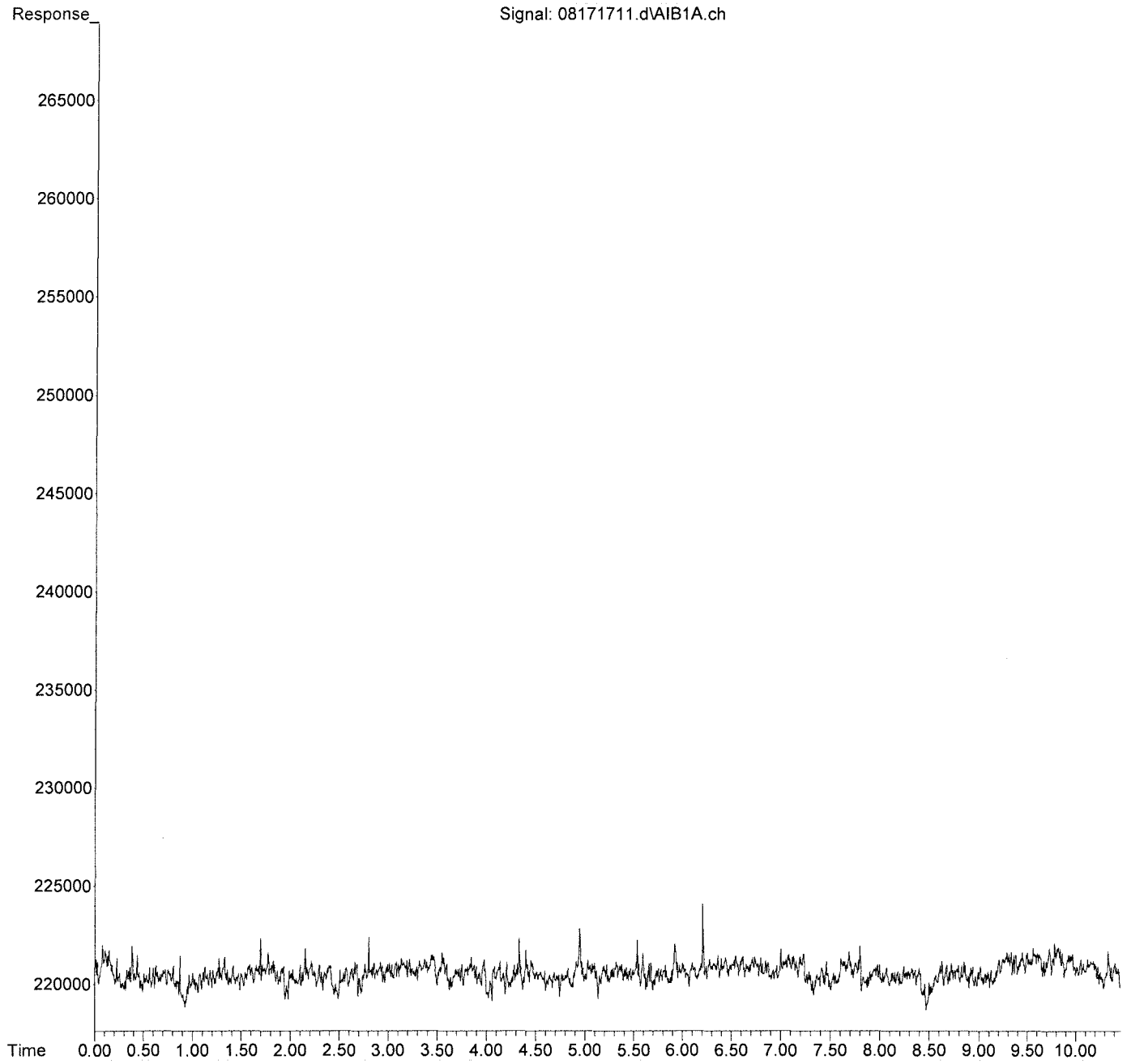
		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.000	0	N.D.	ppb
2)	W	Carbonyl_Sulfide	0.000	0	N.D.	ppb
3)	T	Methyl_Mercaptan	0.000	0	N.D.	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC22\DATA\SCD\2017_08\17\
Data File : 08171711.d
Signal(s) : AIB1A.ch
Acq On : 17 Aug 2017 9:48
Operator : MC
Sample : P1703973-019 1ml
Misc :
ALS Vial : 11 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:09:04 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_08\17\
Data File : 08171709.d
Signal(s) : AIB1A.ch
Acq On : 17 Aug 2017 9:18
Operator : MC
Sample : P1703973-021 1ml
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:08:17 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.000	0	N.D.	ppb
2)	W	Carbonyl_Sulfide	0.000	0	N.D.	ppb
3)	T	Methyl_Mercaptan	0.000	0	N.D.	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

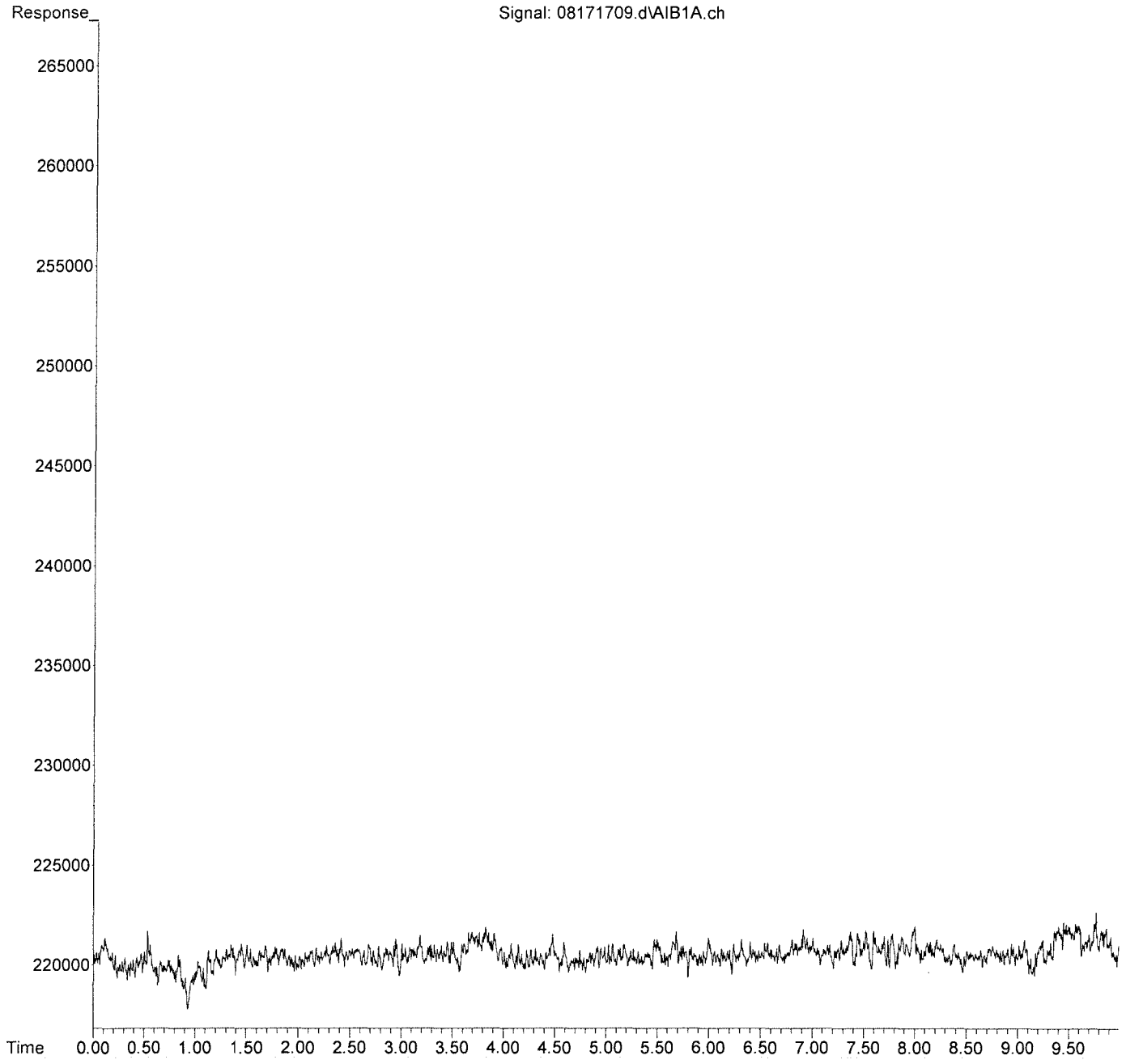
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_08\17\
Data File : 08171709.d
Signal(s) : AIB1A.ch
Acq On : 17 Aug 2017 9:18
Operator : MC
Sample : P1703973-021 1ml
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:08:17 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_08\17\
Data File : 08171708.d
Signal(s) : AIB1A.ch
Acq On : 17 Aug 2017 9:04
Operator : MC
Sample : P1703973-022 1ml
Misc :
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:07:36 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units	
Target Compounds							
1)	Z	Hydrogen_Sulfide	0.000	0	N.D.	ppb	
2)	W	Carbonyl_Sulfide	0.000	0	N.D.	ppb	
3)	T	Methyl_Mercaptan	0.000	0	N.D.	ppb	
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb	
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb	
6)	T	Carbon_Disulfide	3.384	329429	4.381	ppb	m
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb	
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb	
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb	
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb	
11)	T	Thiophene	0.000	0	N.D.	ppb	
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb	
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb	
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb	
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb	
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb	
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb	
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb	
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb	
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb	
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb	
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb	

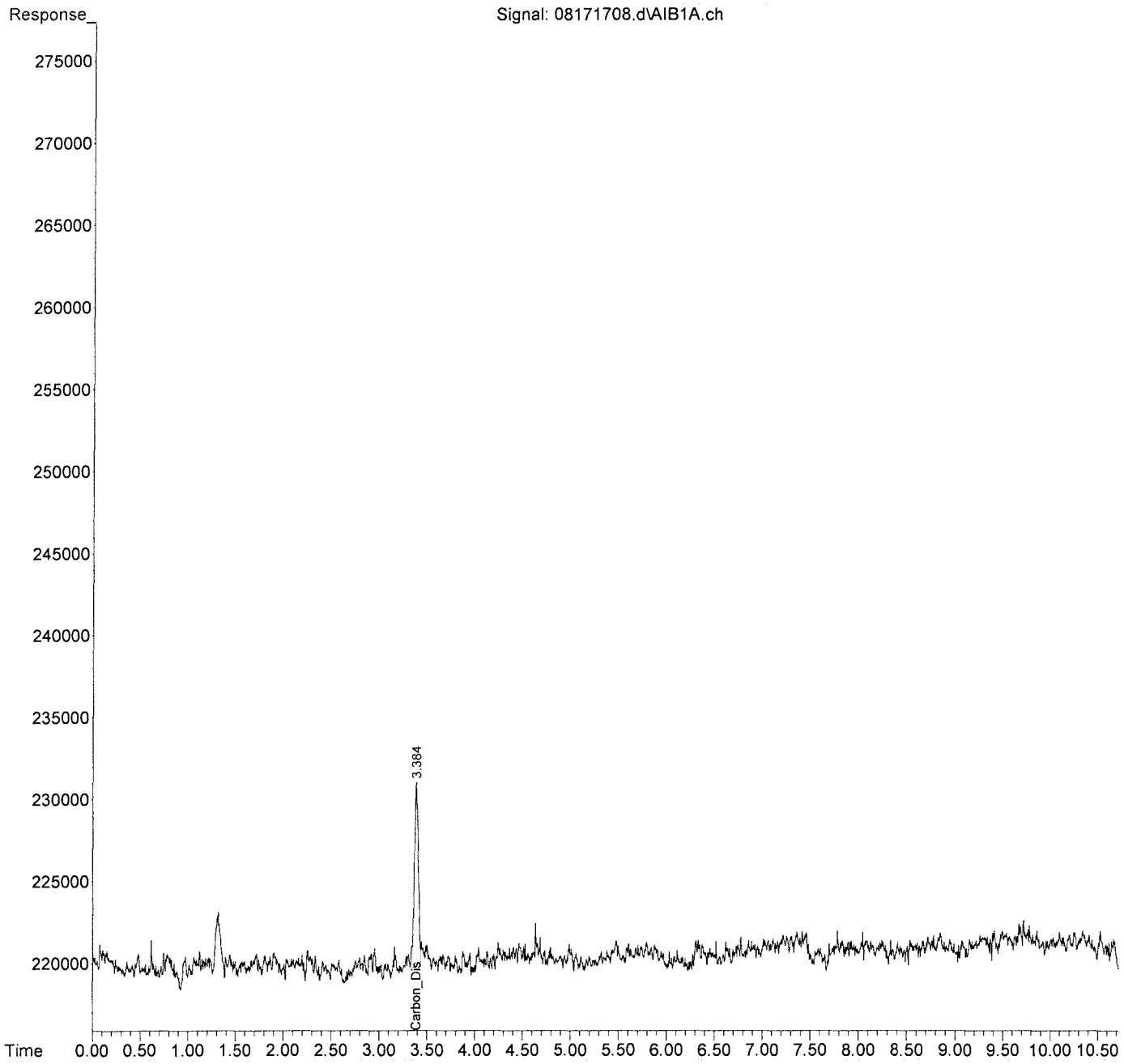
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_08\17\
Data File : 08171708.d
Signal(s) : AIB1A.ch
Acq On : 17 Aug 2017 9:04
Operator : MC
Sample : P1703973-022 1ml
Misc :
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:07:36 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

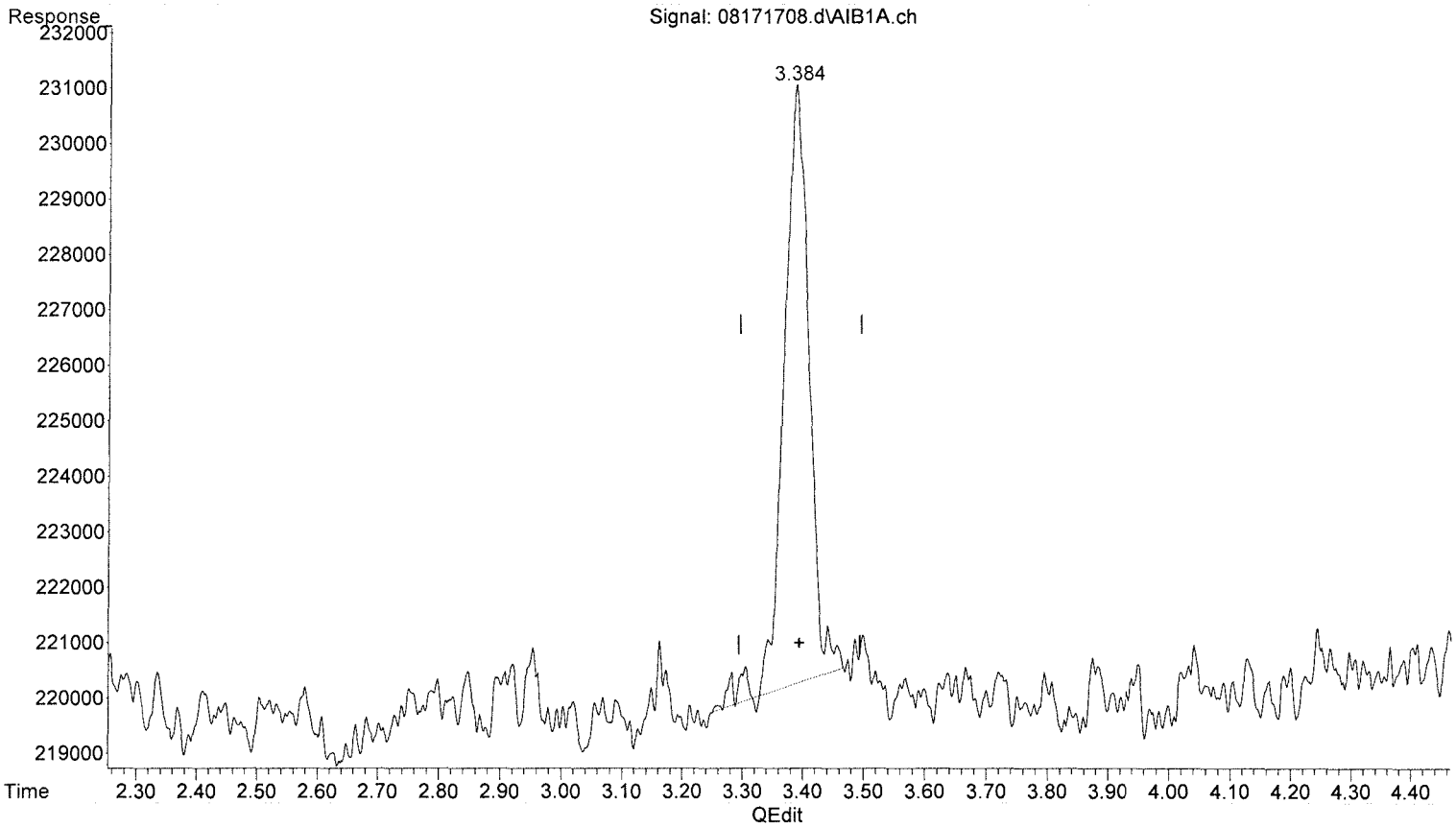


Quantitation Report (Qedit)

Data Path : J:\GC22\DATA\SCD\2017_08\17\
Data File : 08171708.d
Signal(s) : AIB1A.ch
Acq On : 17 Aug 2017 9:04
Operator : MC
Sample : P1703973-022 1ml
Misc :
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:07:36 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(6) Carbon_Disulfide (T)

3.385min 4.201 ppb

response 315908

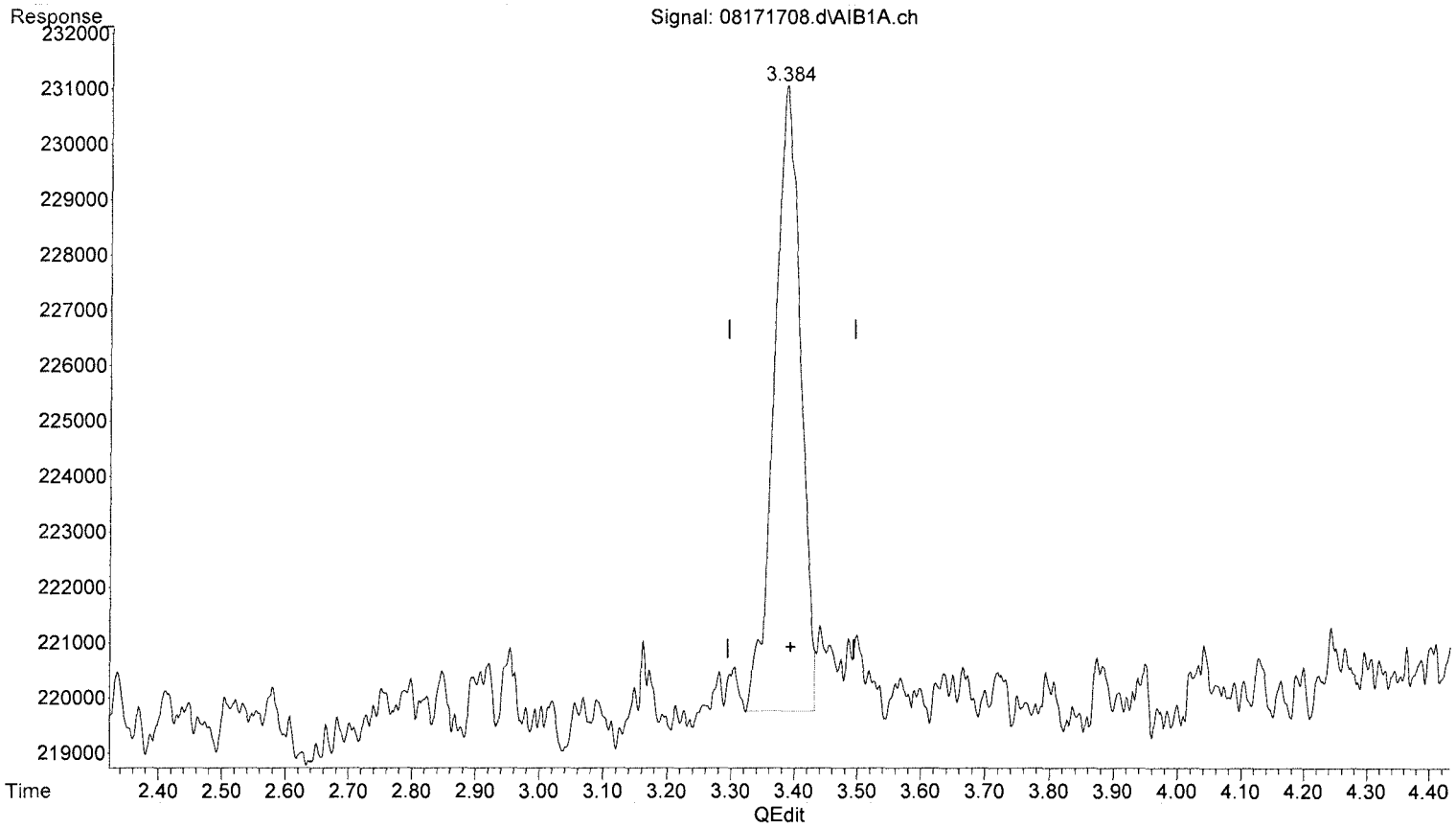
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC22\DATA\SCD\2017_08\17\
Data File : 08171708.d
Signal(s) : AIB1A.ch
Acq On : 17 Aug 2017 9:04
Operator : MC
Sample : P1703973-022 1ml
Misc :
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:07:36 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(6) Carbon_Disulfide (T)

3.384min 4.381 ppb m

response 329429

(+) = Expected Retention Time

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\16\
Data File : 08161705.D
Signal(s) : AIB1B.CH
Acq On : 16 Aug 2017 8:20
Operator : MC
Sample : mb 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 16:32:22 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.000	0	N.D.	ppb
2)	W	Carbonyl_Sulfide	0.000	0	N.D.	ppb
3)	T	Methyl_Mercaptan	0.000	0	N.D.	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

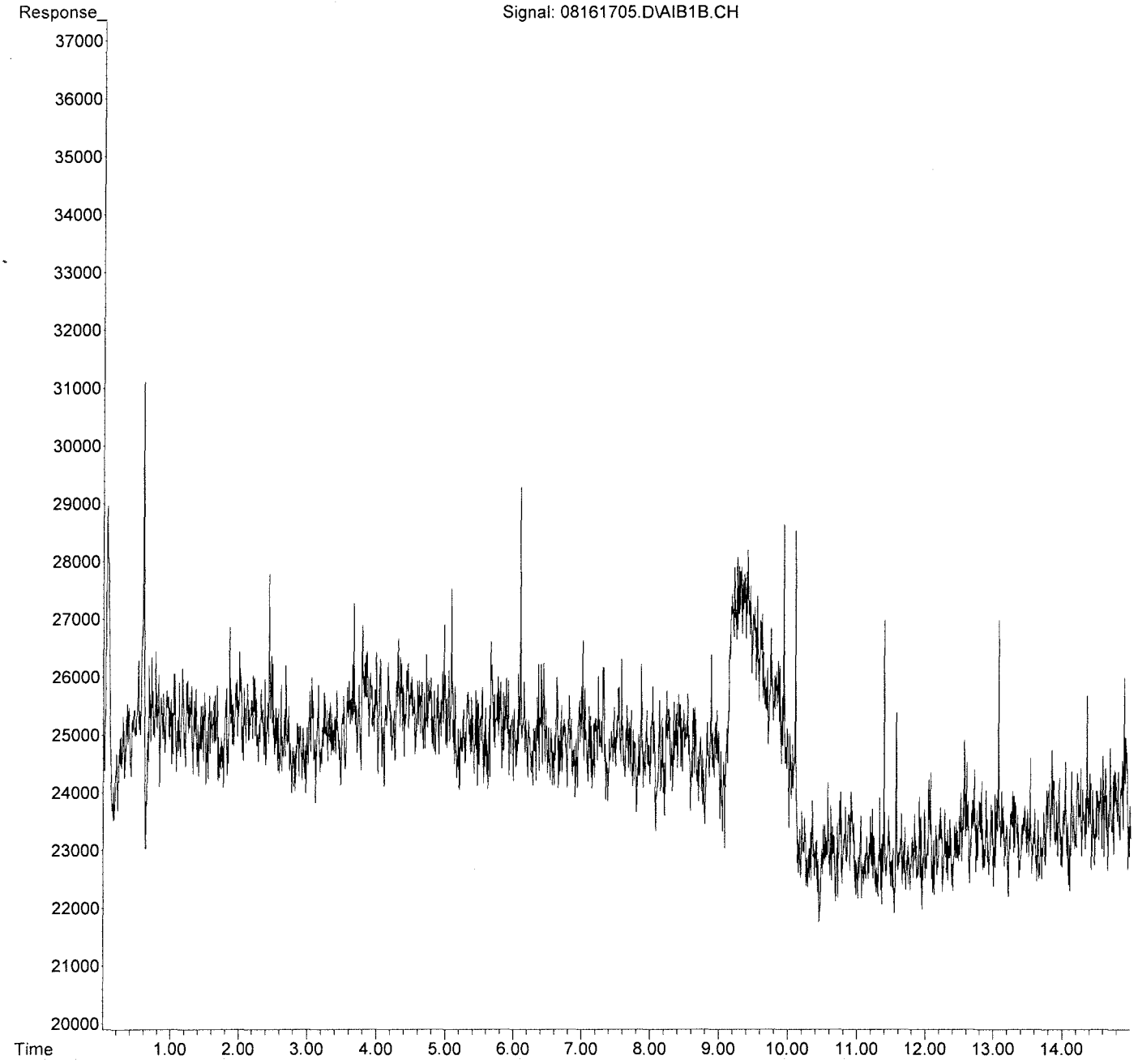
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\16\
Data File : 08161705.D
Signal(s) : AIB1B.CH
Acq On : 16 Aug 2017 8:20
Operator : MC
Sample : mb 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 16:32:22 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_08\16\
Data File : 08161705.d
Signal(s) : AIB1A.ch
Acq On : 16 Aug 2017 8:17
Operator : MC
Sample : mb 1ml
Misc :
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 10:46:27 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.000	0	N.D.	ppb
2)	W	Carbonyl_Sulfide	0.000	0	N.D.	ppb
3)	T	Methyl_Mercaptan	0.000	0	N.D.	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

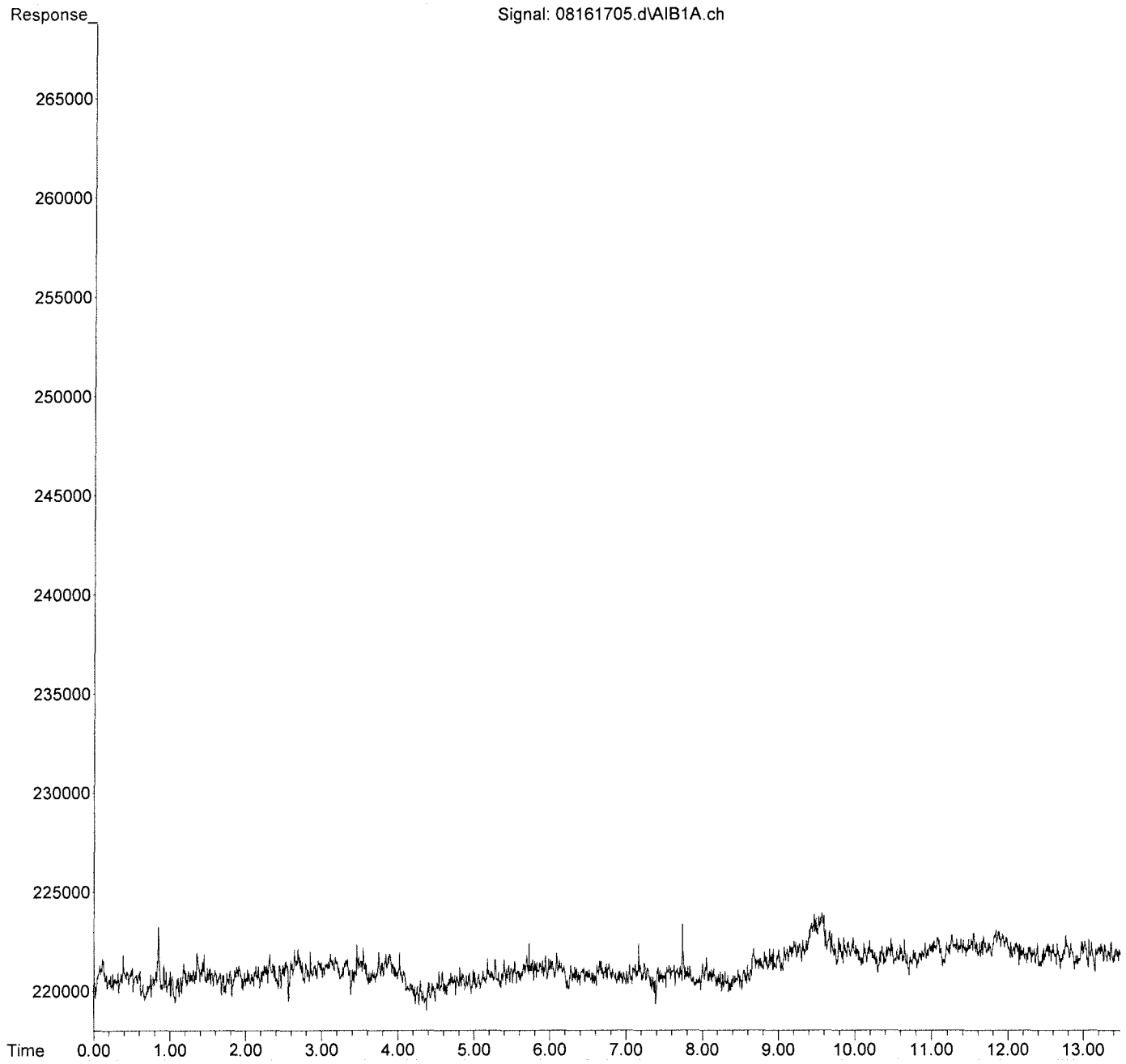
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_08\16\
Data File : 08161705.d
Signal(s) : AIB1A.ch
Acq On : 16 Aug 2017 8:17
Operator : MC
Sample : mb 1ml
Misc :
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 10:46:27 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\17\
Data File : 08171705.D
Signal(s) : AIB1B.CH
Acq On : 17 Aug 2017 8:20
Operator : MC
Sample : mb 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:31:56 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.000	0	N.D.	ppb
2)	W	Carbonyl_Sulfide	0.000	0	N.D.	ppb
3)	T	Methyl_Mercaptan	0.000	0	N.D.	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

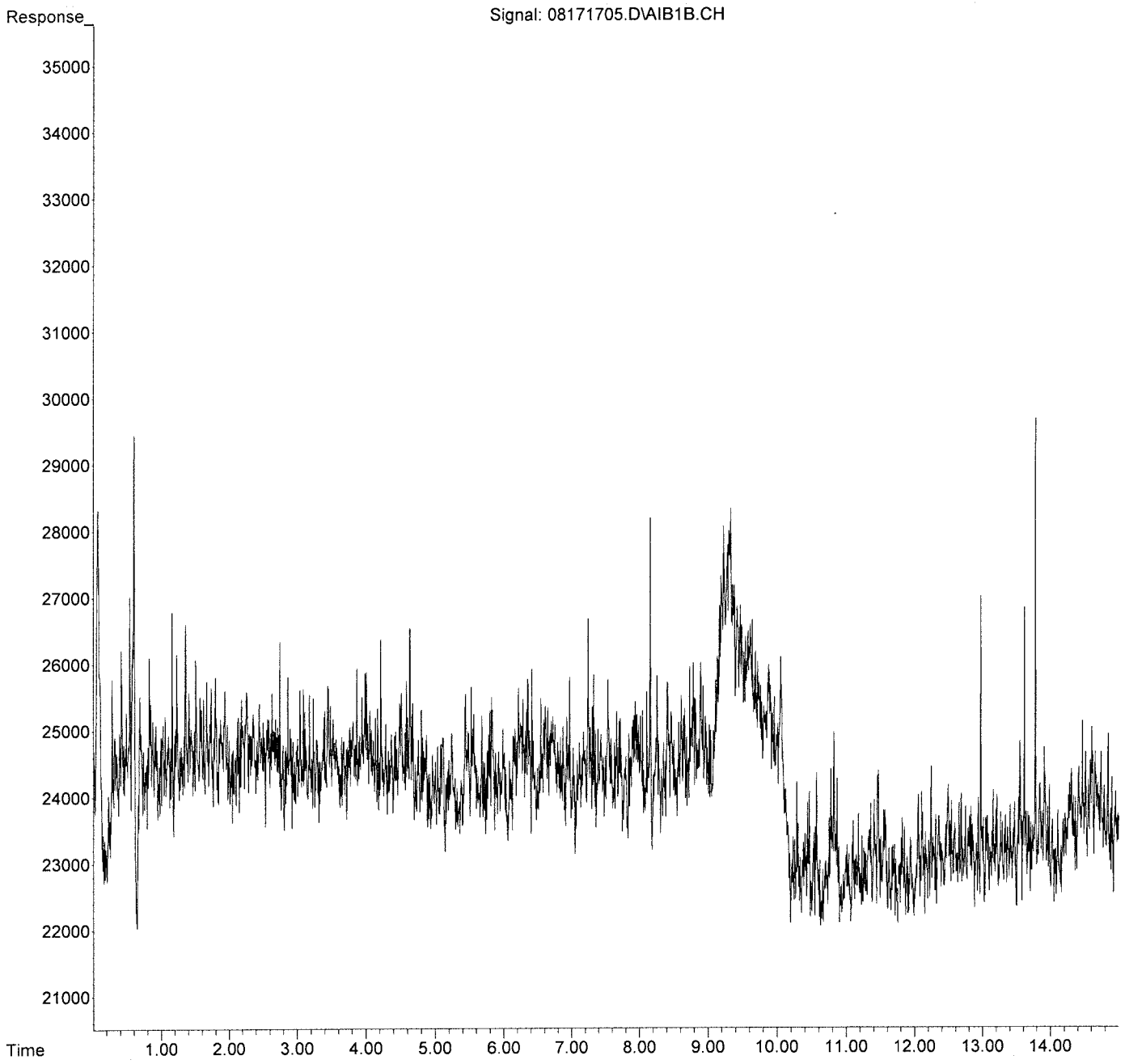
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\17\
Data File : 08171705.D
Signal(s) : AIB1B.CH
Acq On : 17 Aug 2017 8:20
Operator : MC
Sample : mb 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:31:56 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_08\17\
Data File : 08171705.d
Signal(s) : AIB1A.ch
Acq On : 17 Aug 2017 8:20
Operator : MC
Sample : mb 1ml
Misc :
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:02:26 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.000	0	N.D.	ppb
2)	W	Carbonyl_Sulfide	0.000	0	N.D.	ppb
3)	T	Methyl_Mercaptan	0.000	0	N.D.	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

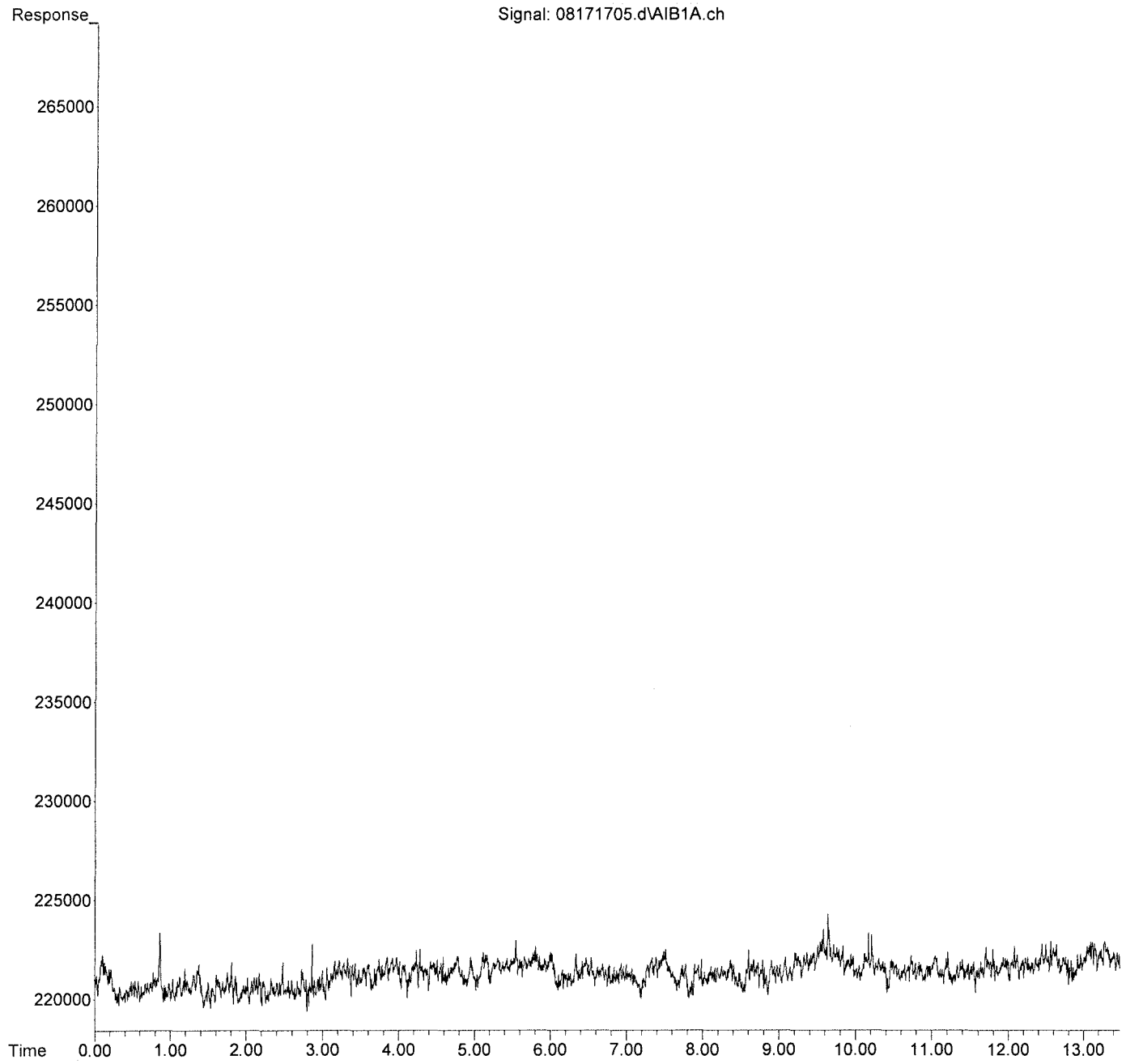
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_08\17\
Data File : 08171705.d
Signal(s) : AIB1A.ch
Acq On : 17 Aug 2017 8:20
Operator : MC
Sample : mb 1ml
Misc :
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:02:26 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\16\
Data File : 08161702.D
Signal(s) : AIB1B.CH
Acq On : 16 Aug 2017 7:54
Operator : MC
Sample : lcs s30-06191702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 16:02:17 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.910	77742813	952.032	ppb
2)	W	Carbonyl_Sulfide	1.149	86363891	980.734	ppb
3)	T	Methyl_Mercaptan	2.267	79592908	946.978	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

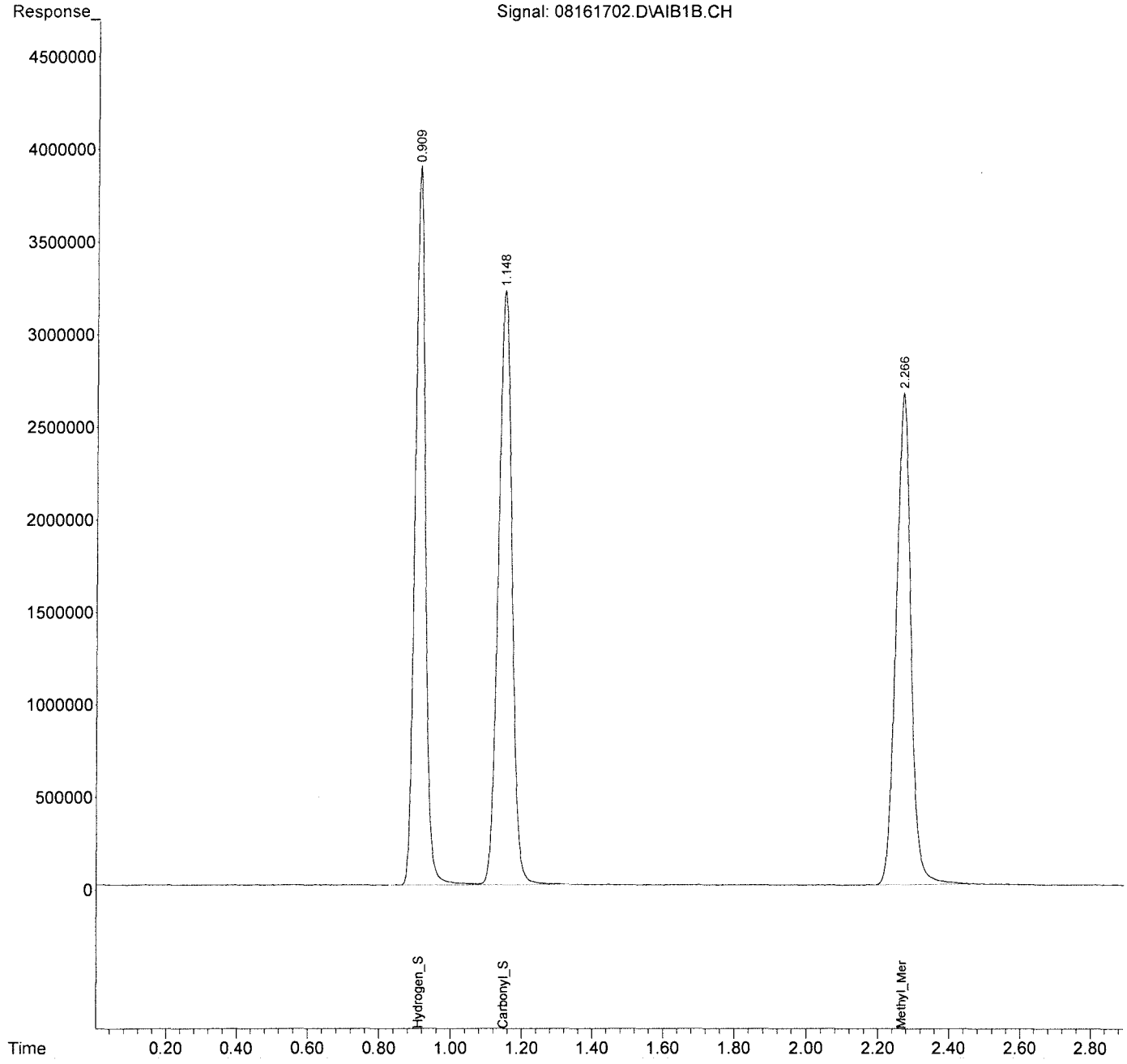
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\16\
Data File : 08161702.D
Signal(s) : AIB1B.CH
Acq On : 16 Aug 2017 7:54
Operator : MC
Sample : lcs s30-06191702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 16:02:17 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_08\16\
Data File : 08161702.d
Signal(s) : AIB1A.ch
Acq On : 16 Aug 2017 7:54
Operator : MC
Sample : lcs s30-06191702
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 10:43:49 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	1.171	35032425	914.480	ppb
2)	W	Carbonyl_Sulfide	1.346	40440942	960.857	ppb
3)	T	Methyl_Mercaptan	2.158	35886583	954.541	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

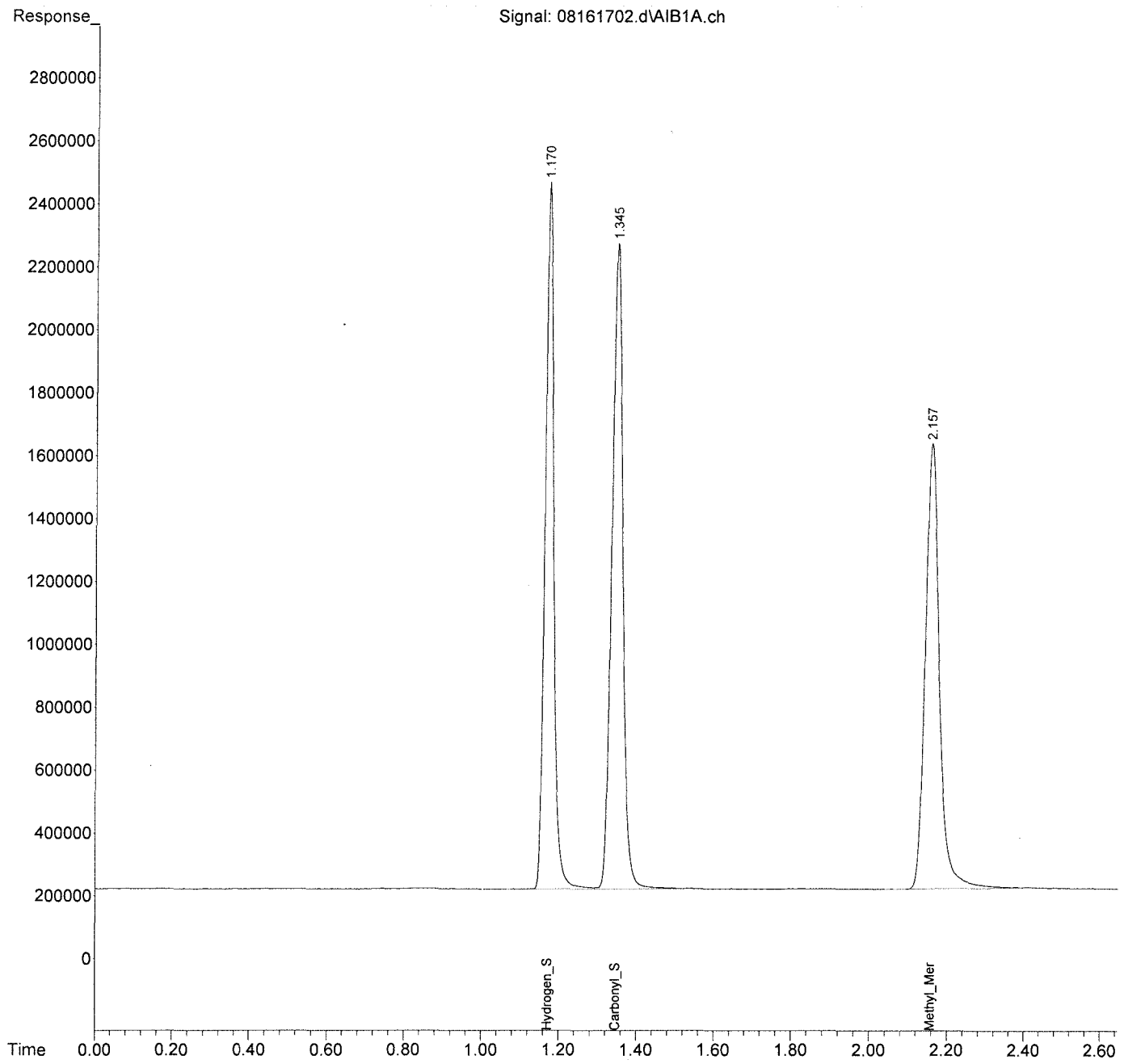
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_08\16\
Data File : 08161702.d
Signal(s) : AIB1A.ch
Acq On : 16 Aug 2017 7:54
Operator : MC
Sample : lcs s30-06191702
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 10:43:49 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\17\
Data File : 08171702.D
Signal(s) : AIB1B.CH
Acq On : 17 Aug 2017 7:54
Operator : MC
Sample : lcs s30-06191702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:30:38 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.912	78533215	961.711	ppb
2)	W	Carbonyl_Sulfide	1.151	86465647	981.890	ppb
3)	T	Methyl_Mercaptan	2.267	77815903	925.836	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

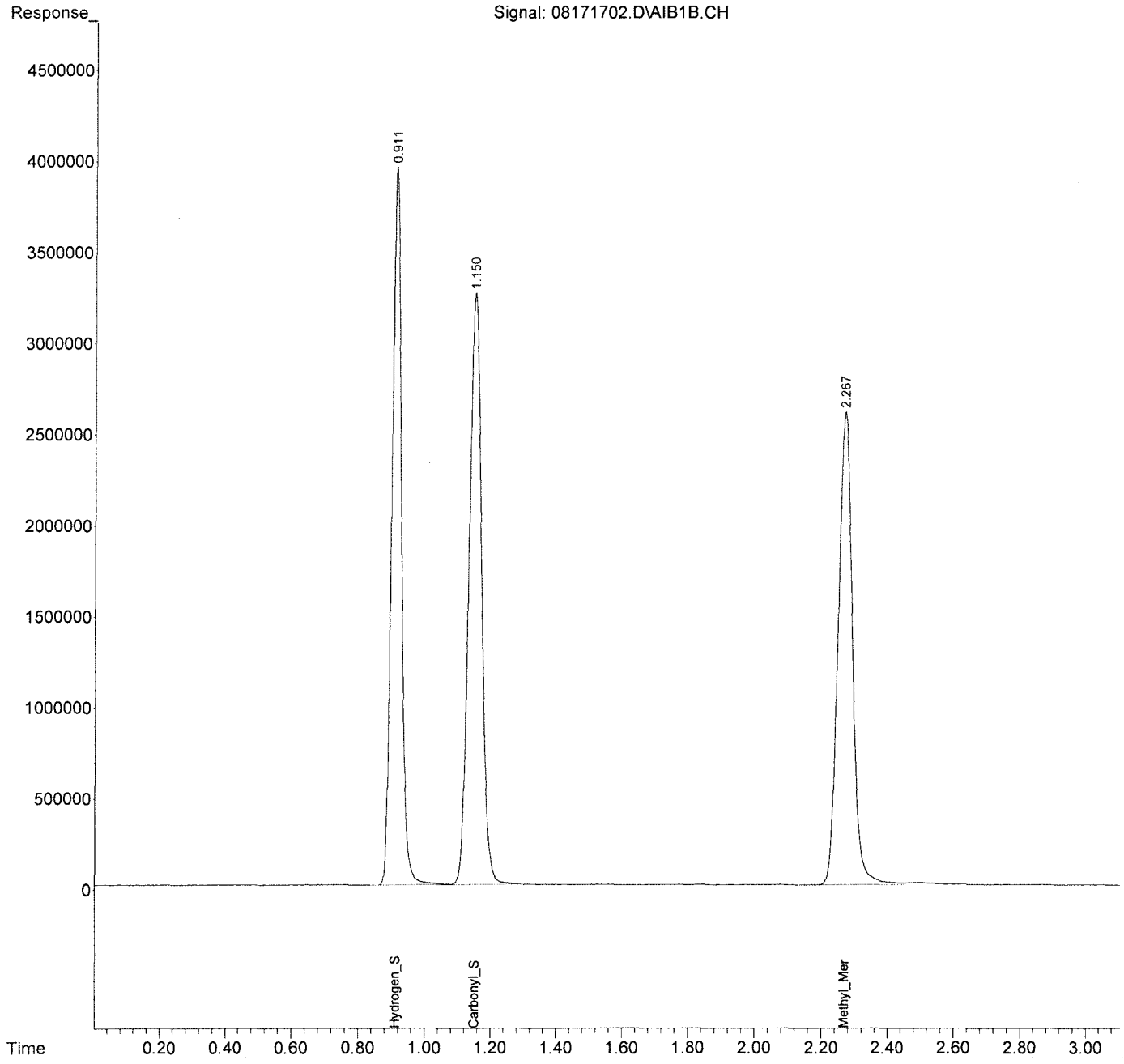
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\17\
Data File : 08171702.D
Signal(s) : AIB1B.CH
Acq On : 17 Aug 2017 7:54
Operator : MC
Sample : lcs s30-06191702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:30:38 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_08\17\
Data File : 08171702.d
Signal(s) : AIB1A.ch
Acq On : 17 Aug 2017 7:55
Operator : MC
Sample : lcs s30-06191702
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:00:54 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	1.094f	39537329	1032.076	ppb
2)	W	Carbonyl_Sulfide	1.263f	45210362	1074.176	ppb
3)	T	Methyl_Mercaptan	2.056f	39972878	1063.231	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

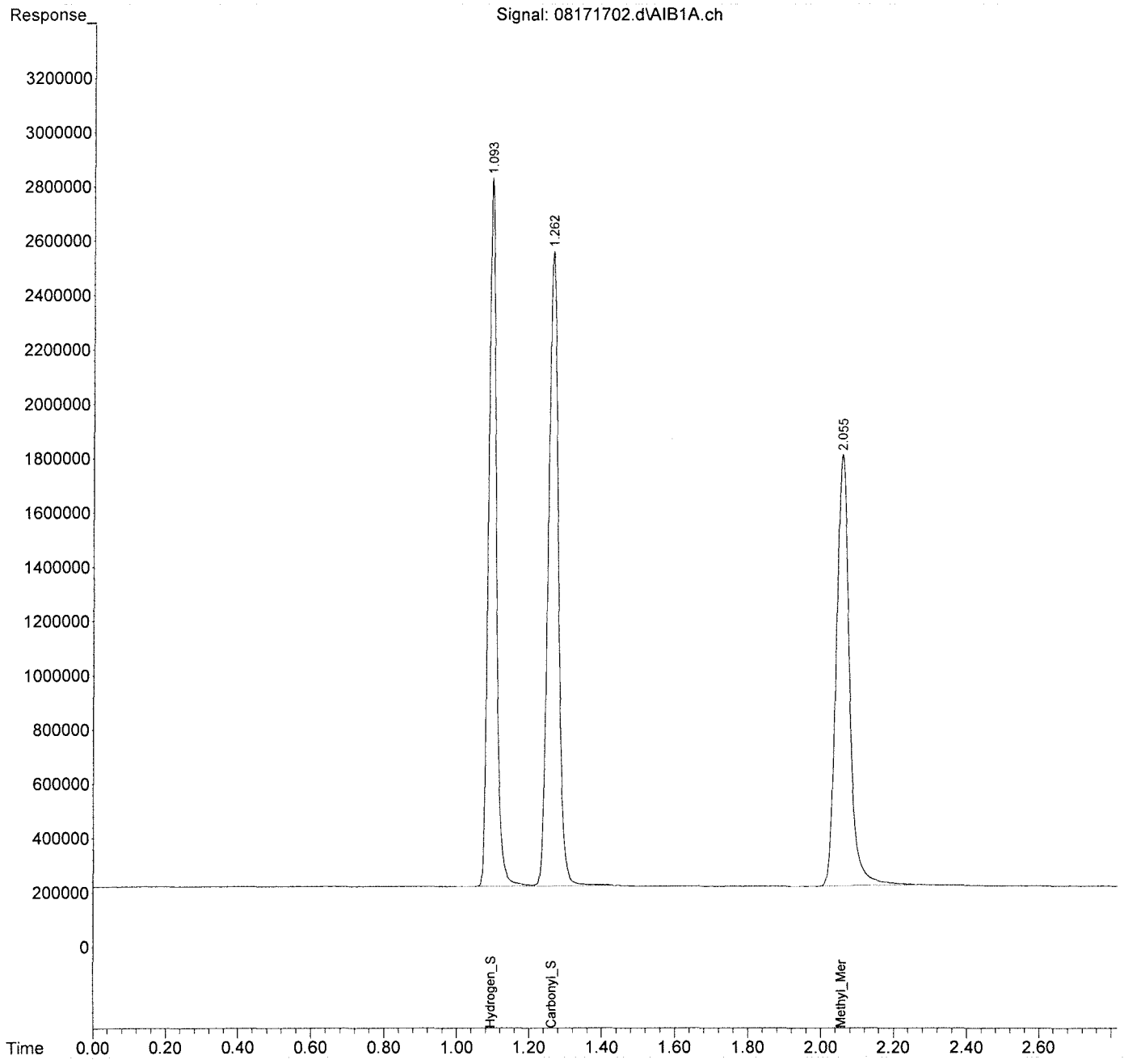
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_08\17\
Data File : 08171702.d
Signal(s) : AIB1A.ch
Acq On : 17 Aug 2017 7:55
Operator : MC
Sample : lcs s30-06191702
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:00:54 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Response Factor Report GC #22

Method Path : J:\GC22\METHODS\
Method File : GC22_Quan 02272017.M
Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
Last Update : Mon Feb 27 13:50:36 2017
Response Via : Initial Calibration

Calibration Files
2.5 =02271709.d 10 =02271710.d 50 =02271711.d
250 =02271712.d 1000 =02271713.d 2500 =02271714.d

		Compound	2.5	10	50	250	1000	2500	Avg		%RSD
1)	Z	Hydrogen_Sulfide	3.422	3.424	3.552	3.786	4.309	4.233	3.831	E4	9.81
2)	W	Carbonyl_Sulfide	3.959	3.902	4.224	4.282	4.724	4.483	4.209	E4	8.00
3)	T	Methyl_Mercaptan	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
4)	T	Ethyl_Mercaptan	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
5)	T	Dimethyl_Sulfide	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
6)	T	Carbon_Disulfide	7.252	6.311	6.994	7.331	8.507	8.288	7.519	E4	9.94
7)	T	2-Propyl_Merc...	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
8)	T	t-Butyl_Merca...	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
9)	T	Propyl_Mercaptan	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
10)	T	Ethyl_Methyl_...	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
11)	T	Thiophene	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
12)	T	i-Butyl_Merca...	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
13)	T	Diethyl_Sulfide	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
14)	T	n-Butyl_Merca...	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
15)	T	Dimethyl_Disu...	7.252	6.311	6.994	7.331	8.507	8.288	7.519	E4	9.94
16)	T	2-Methylthiop...	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
17)	T	3-Methylthiop...	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
18)	T	Tetrahydrothi...	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
19)	T	2,5-Dimethylt...	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
20)	T	2-Ethylthiophene	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
21)	T	Diethyl_Disul...	7.252	6.311	6.994	7.331	8.507	8.288	7.519	E4	9.94
22)	T	Methyltrisulfide	1.088	0.948	1.049	1.100	1.276	1.243	1.128	E5	9.92

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

GC22_Quan 02272017.M Mon Feb 27 13:51:11 2017

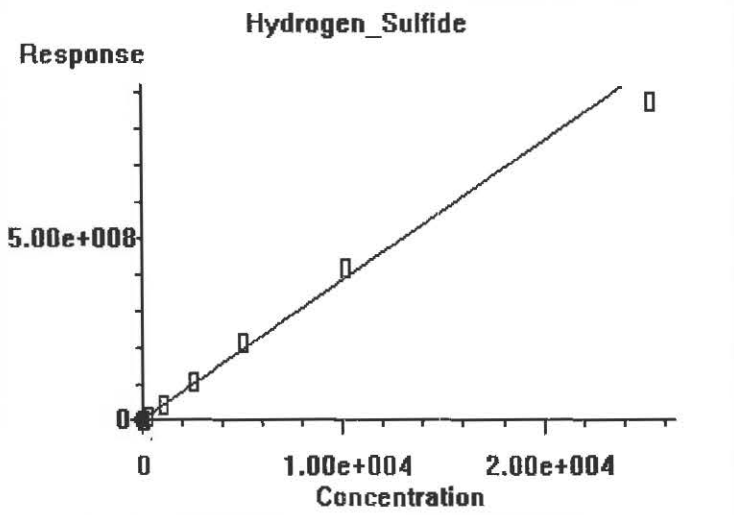
Edit Compounds

Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compour
  - Hydrogen_Sulfide
  - Carbonyl_Sulfide
  - Methyl_Mercaptan
  - Ethyl_Mercaptan
  - Dimethyl_Sulfide
  - Carbon_Disulfide
  - 2-Propyl_Mercaptan
  - t-Butyl_Mercaptan
  - Propyl_Mercaptan
  - Ethyl_Methyl_Sulfide
  - Thiophene
  - i-Butyl_Mercaptan
  - Diethyl_Sulfide
  - n-Butyl_Mercaptan
  - Dimethyl_Disulfide
  - 2-Methylthiophene
  - 3-Methylthiophene
  - Tetrahydrothiophene
  - 2,5-Dimethylthiophene
  - 2-Ethylthiophene
  - Diethyl_Disulfide
  - Methyltrisulfide

Identification | Calibration | User Defined | Advanced | Reporting

Lvl ID	Concentration	Response	Lvl ID	Concentration	Response
2.5	2.525000	86418.000000			
10	10.100000	345782.556000			
50	50.500000	1793731.675000			
250	252.500000	9559684.539297			
1000	1010.000000	43521251.425575			
2500	2525.000000	106891672.88050			
5000	5050.000000	208772565.32423			
10pm	10100.000000	419230047.18348			
25pm	25250.000000	875262732.65335			



0.000e+000	Quadratic term
3.831e+004	Linear term
0.000e+000	Constant term
9.8%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

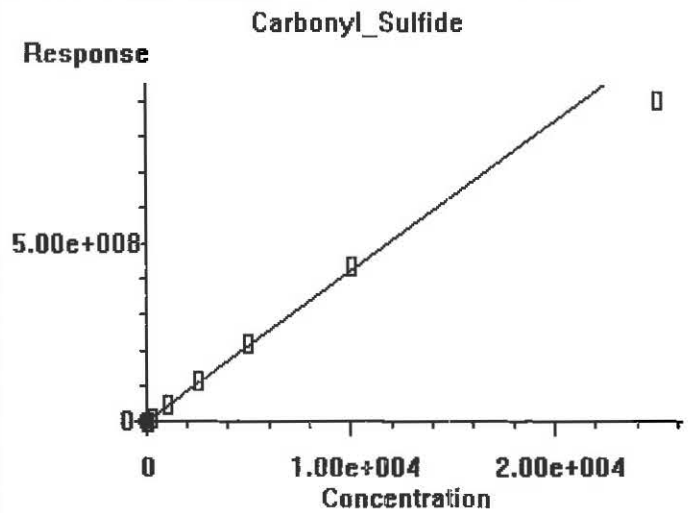
Edit Compounds

Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compour
  - Hydrogen_Sulfide
  - Carbonyl_Sulfide
  - Methyl_Mercaptan
  - Ethyl_Mercaptan
  - Dimethyl_Sulfide
  - Carbon_Disulfide
  - 2-Propyl_Mercaptan
  - t-Butyl_Mercaptan
  - Propyl_Mercaptan
  - Ethyl_Methyl_Sulfide
  - Thiophene
  - i-Butyl_Mercaptan
  - Diethyl_Sulfide
  - n-Butyl_Mercaptan
  - Dimethyl_Disulfide
  - 2-Methylthiophene
  - 3-Methylthiophene
  - Tetrahydrothiophene
  - 2,5-Dimethylthiophene
  - 2-Ethylthiophene
  - Diethyl_Disulfide
  - Methyltrisulfide

Identification | Calibration | User Defined | Advanced | Reporting

Lvl ID	Concentration	Response	Lvl ID	Concentration	Response
2.5	2.500000	9898-1.818650			
10	10.000000	390210.820000			
50	50.000000	2111859.023100			
250	250.000000	10705330.056675			
1000	1000.000000	47240640.069425			
2500	2500.000000	112070735.79186			
5000	5000.000000	217399700.85910			
10pm	10000.000000	435188381.41157			
25pm	25000.000000	901360045.71887			



0.000e+000	Quadratic term
4.209e+004	Linear term
0.000e+000	Constant term
8.0%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

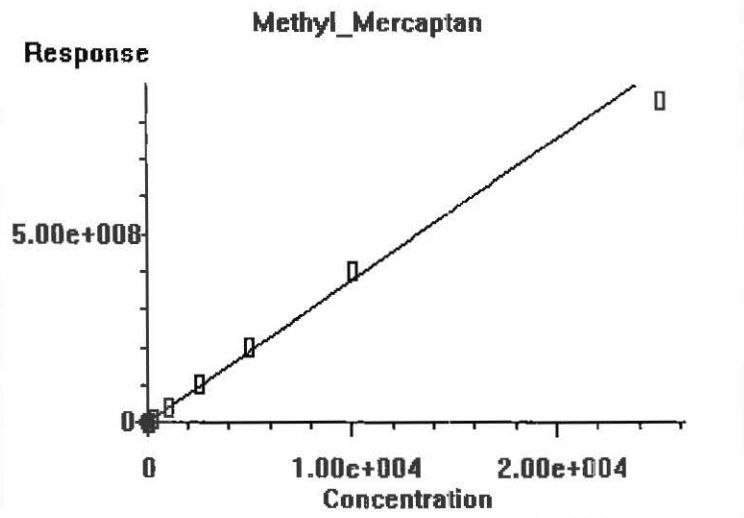
Edit Compounds

Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compour
  - Hydrogen_Sulfide
  - Carbonyl_Sulfide
  - Methyl_Mercaptan
  - Ethyl_Mercaptan
  - Dimethyl_Sulfide
  - Carbon_Disulfide
  - 2-Propyl_Mercaptan
  - t-Butyl_Mercaptan
  - Propyl_Mercaptan
  - Ethyl_Methyl_Sulfide
  - Thiophene
  - i-Butyl_Mercaptan
  - Diethyl_Sulfide
  - n-Butyl_Mercaptan
  - Dimethyl_Disulfide
  - 2-Methylthiophene
  - 3-Methylthiophene
  - Tetrahydrothiophene
  - 2,5-Dimethylthiophene
  - 2-Ethylthiophene
  - Diethyl_Disulfide
  - Methyltrisulfide

Identification | Calibration | User Defined | Advanced | Reporting

Lvl ID	Concentration	Response	Lvl ID	Concentration	Response
2.5	2.500000	90649.010000			
10	10.000000	315533.250000			
50	50.000000	1748501.770000			
250	250.000000	9163663.970000			
1000	1000.000000	42532650.540000			
2500	2500.000000	103599922.70000			
5000	5000.000000	201240135.19000			
10pm	10000.000000	404587228.18000			
25pm	25000.000000	856098119.10000			



0.000e+000	Quadratic term
3.760e+004	Linear term
0.000e+000	Constant term
9.9%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

Calibration Status Report GC #22

Method Path : J:\GC22\METHODS\
Method File : GC22_Quan 02272017.M
Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
Last Update : Mon Feb 27 11:34:37 2017
Response Via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	2.5	1	0	J:\GC22\DATA\SCD\2017_02\27\02271709.d
2	10	5	0	J:\GC22\DATA\SCD\2017_02\27\02271710.d
3	50	25	0	J:\GC22\DATA\SCD\2017_02\27\02271711.d
4	250	125	0	J:\GC22\DATA\SCD\2017_02\27\02271712.d
5	1000	500	0	J:\GC22\DATA\SCD\2017_02\27\02271713.d
6	2500	1250	0	J:\GC22\DATA\SCD\2017_02\27\02271714.d
7	5000	2500	0	J:\GC22\DATA\SCD\2017_02\27\02271715.d
8	10pm	5000	0	J:\GC22\DATA\SCD\2017_02\27\02271716.d
9	25pm	12500	0	J:\GC22\DATA\SCD\2017_02\27\02271717.d

#	ID	Update Time	Quant Time	Acquisition Time
1	2.5	Feb 27 08:38 2017	Feb 27 08:37 2017	27 Feb 2017 8:33
2	10	Feb 27 08:42 2017	Feb 27 08:42 2017	27 Feb 2017 8:38
3	50	Feb 27 08:52 2017	Feb 27 08:52 2017	27 Feb 2017 8:49
4	250	Feb 27 08:57 2017	Feb 27 08:56 2017	27 Feb 2017 8:53
5	1000	Feb 27 09:01 2017	Feb 27 09:00 2017	27 Feb 2017 8:58
6	2500	Feb 27 09:04 2017	Feb 27 09:04 2017	27 Feb 2017 9:01
7	5000	Feb 27 09:17 2017	Feb 27 09:17 2017	27 Feb 2017 9:11
8	10pm	Feb 27 09:21 2017	Feb 27 09:21 2017	27 Feb 2017 9:18
9	25pm	Feb 27 10:00 2017	Feb 27 09:30 2017	27 Feb 2017 9:27

GC22_Quan 02272017.M Mon Feb 27 11:35:23 2017

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271709.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:33
Operator : MC
Sample : 0.1ml s30-02271702 2.525ppm
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 08:37:45 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02262016.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Fri Feb 26 14:51:03 2016
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units	
Target Compounds							
1)	Z	Hydrogen_Sulfide	1.176	86418	2.095	ppb	m
2)	W	Carbonyl_Sulfide	1.352	98985	2.229	ppb	m
3)	T	Methyl_Mercaptan	2.166	90649	2.177	ppb	m
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb	
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb	
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb	
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb	
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb	
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb	
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb	
11)	T	Thiophene	0.000	0	N.D.	ppb	
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb	
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb	
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb	
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb	
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb	
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb	
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb	
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb	
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb	
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb	
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb	

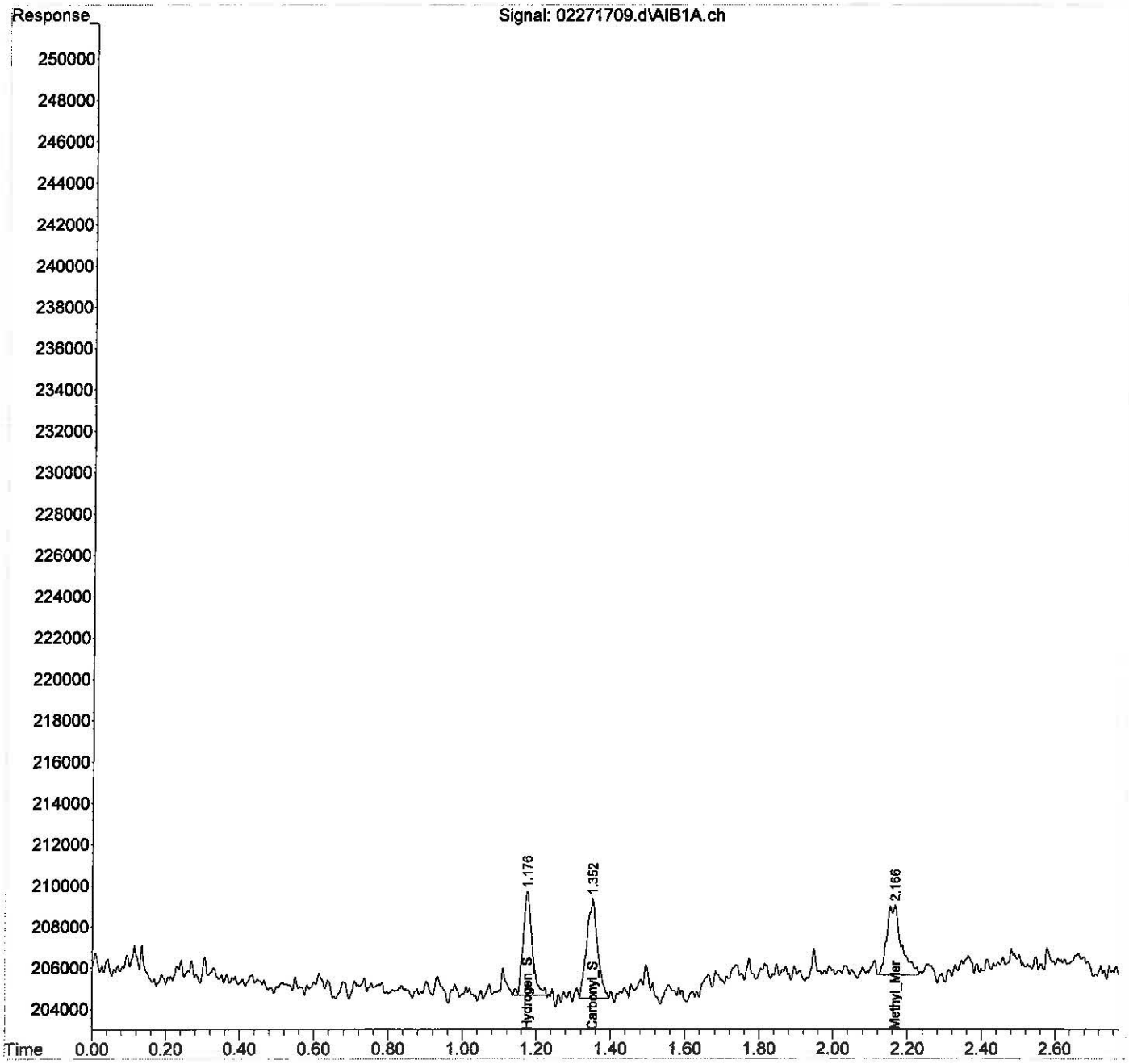
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271709.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:33
Operator : MC
Sample : 0.1ml s30-02271702 2.525ppm
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 08:37:45 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02262016.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Fri Feb 26 14:51:03 2016
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

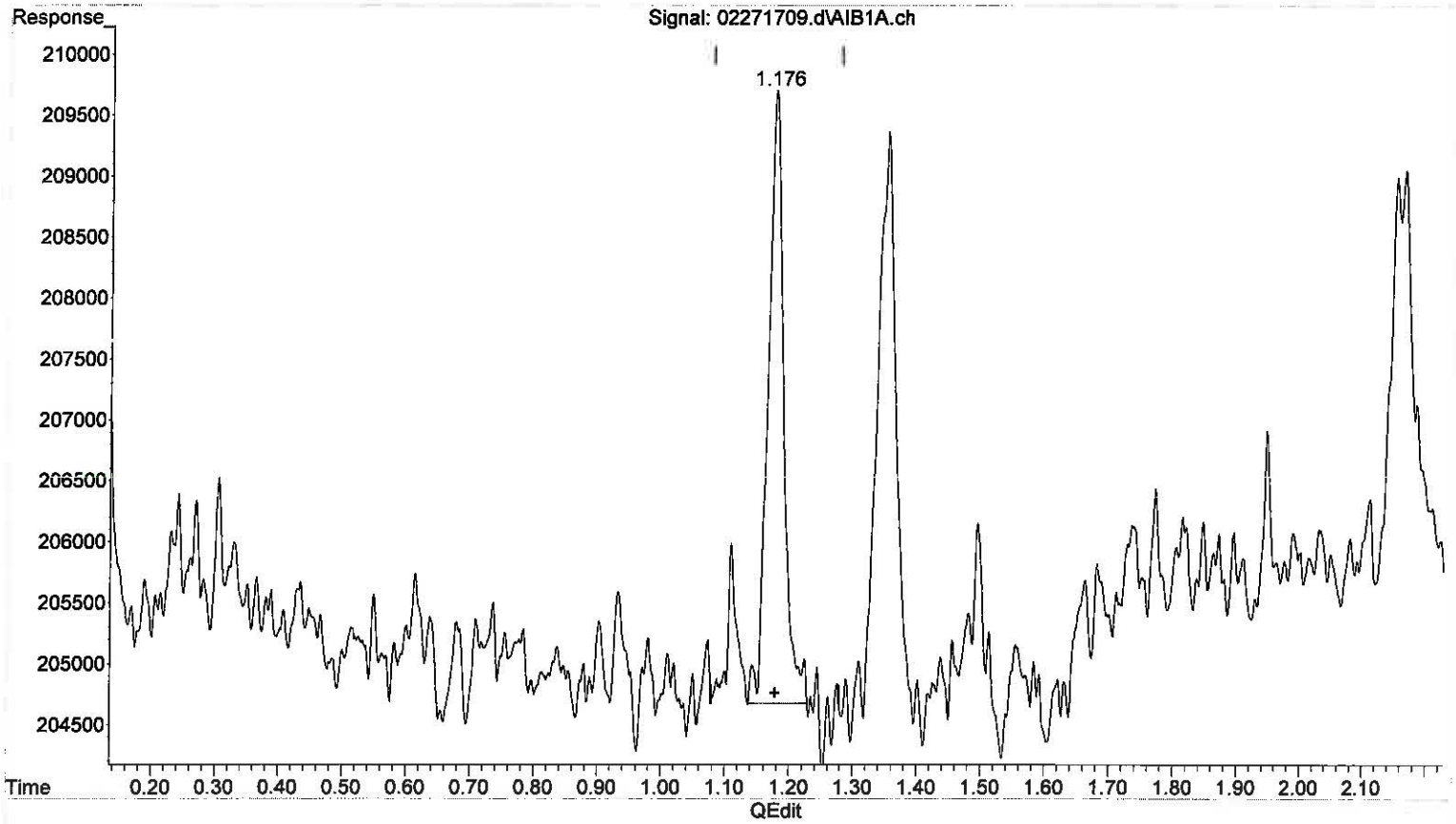


Quantitation Report (Qedit)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271709.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:33
Operator : MC
Sample : 0.1ml s30-02271702 2.525ppm
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 08:37:45 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02262016.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Fri Feb 26 14:51:03 2016
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(1) Hydrogen_Sulfide (Z)

1.176min 2.095 ppb m

response 86418

MC 2/27/17
BL
No previous

WL 2/27/17

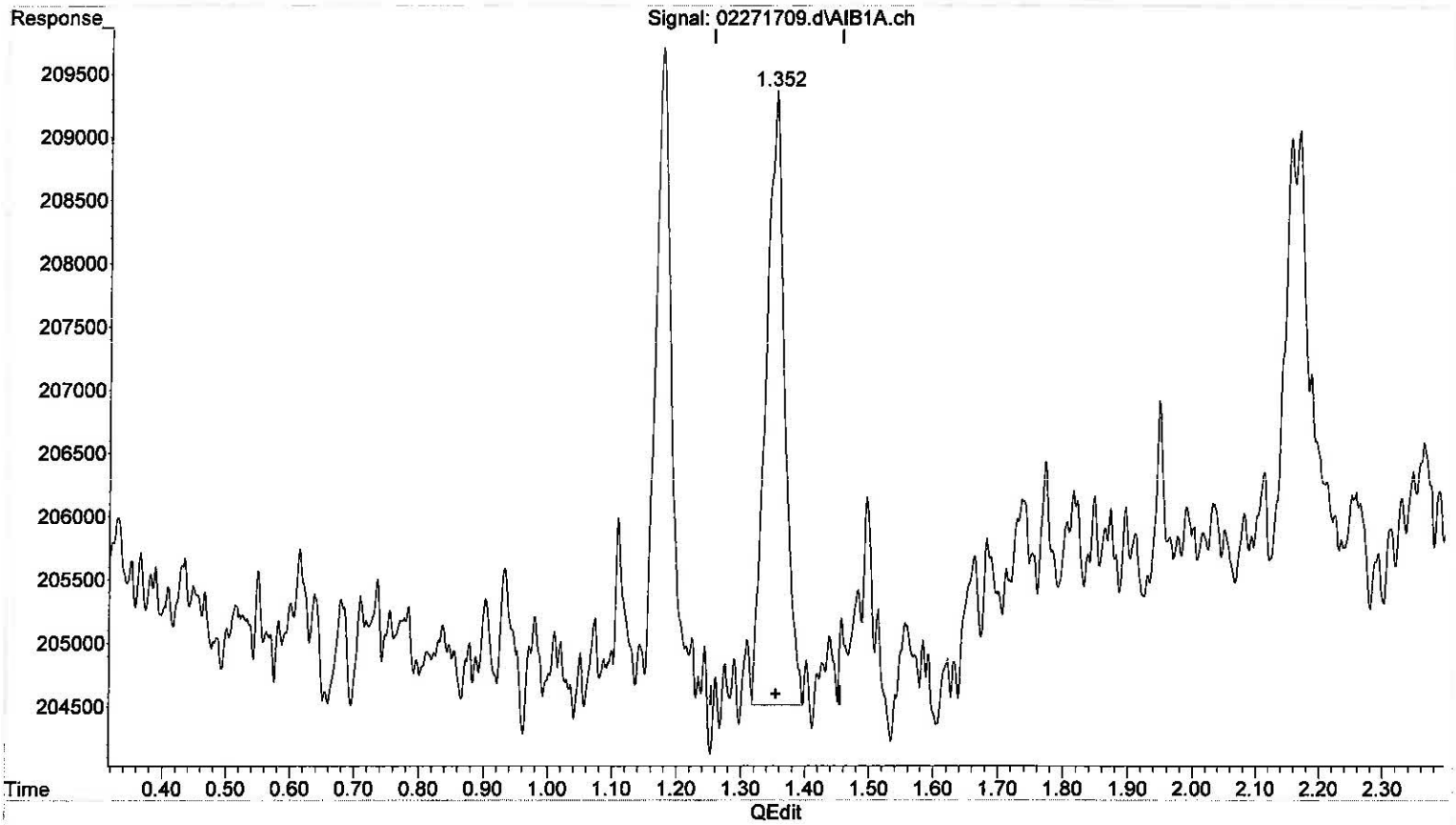
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271709.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:33
Operator : MC
Sample : 0.1ml s30-02271702 2.525ppm
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 08:37:45 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02262016.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Fri Feb 26 14:51:03 2016
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(2) Carbonyl_Sulfide (W)

1.352min 2.229 ppb m

response 98985

MC 2/27/17

BLL

No previous

LW 2/27/17

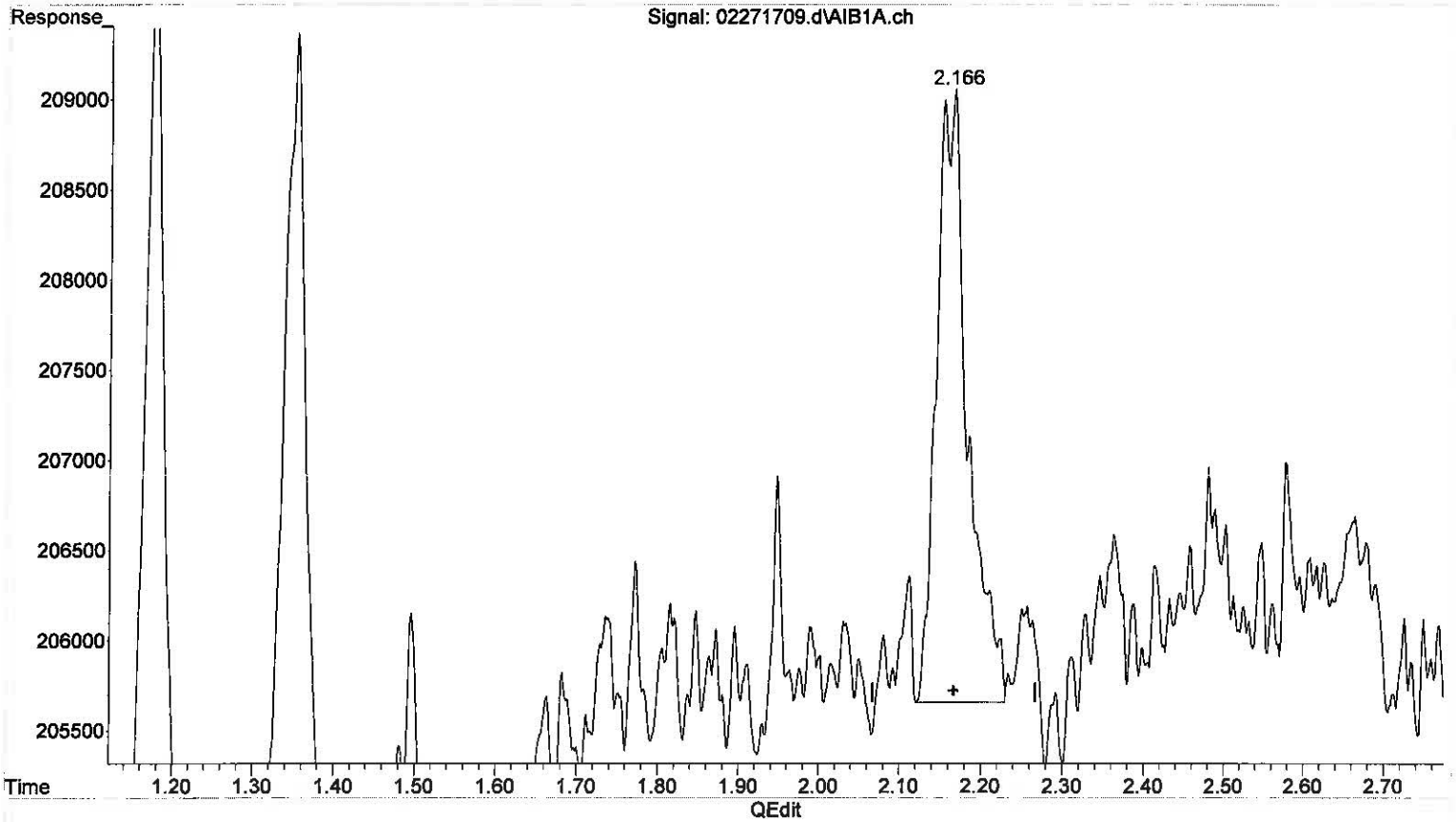
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271709.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:33
Operator : MC
Sample : 0.1ml s30-02271702 2.525ppm
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 08:37:45 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02262016.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Fri Feb 26 14:51:03 2016
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(3) Methyl_Mercaptan (T)
2.166min 2.177 ppb m
response 90649

ML 2/27/17
BLL
No peaks

LM 2/27/17

(+) = Expected Retention Time

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271710.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:38
Operator : MC
Sample : 0.4ml s30-02271702 10.1ppb
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 08:42:47 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 08:38:01 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units	
Target Compounds							
1)	Z	Hydrogen_Sulfide	1.160	345783	8.551	ppb	m
2)	W	Carbonyl_Sulfide	1.337	390211	8.893	ppb	m
3)	T	Methyl_Mercaptan	2.148	315533	7.646	ppb	m
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb	
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb	
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb	
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb	
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb	
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb	
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb	
11)	T	Thiophene	0.000	0	N.D.	ppb	
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb	
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb	
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb	
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb	
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb	
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb	
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb	
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb	
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb	
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb	
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb	

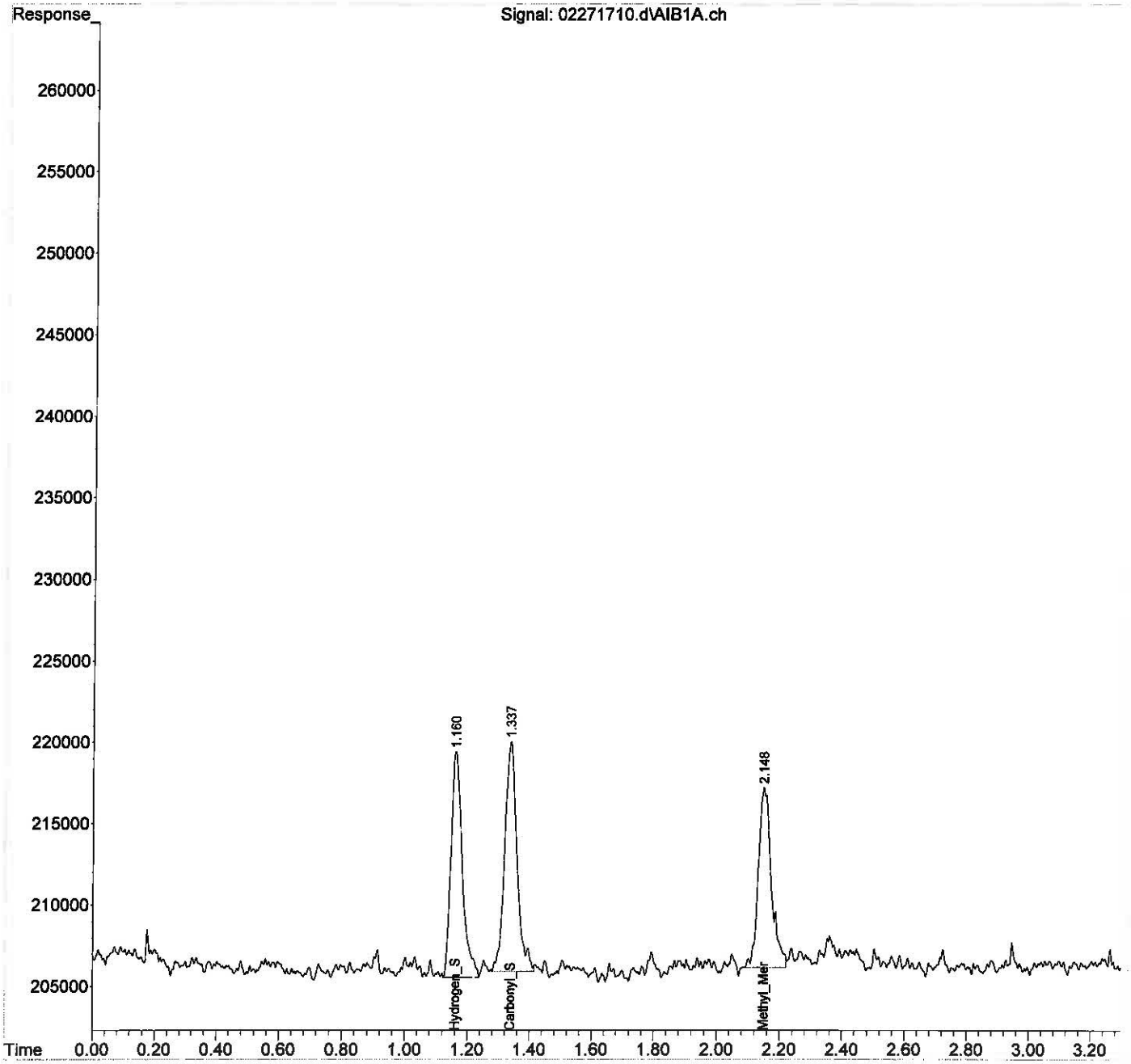
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271710.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:38
Operator : MC
Sample : 0.4ml s30-02271702 10.1ppb
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 08:42:47 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 08:38:01 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

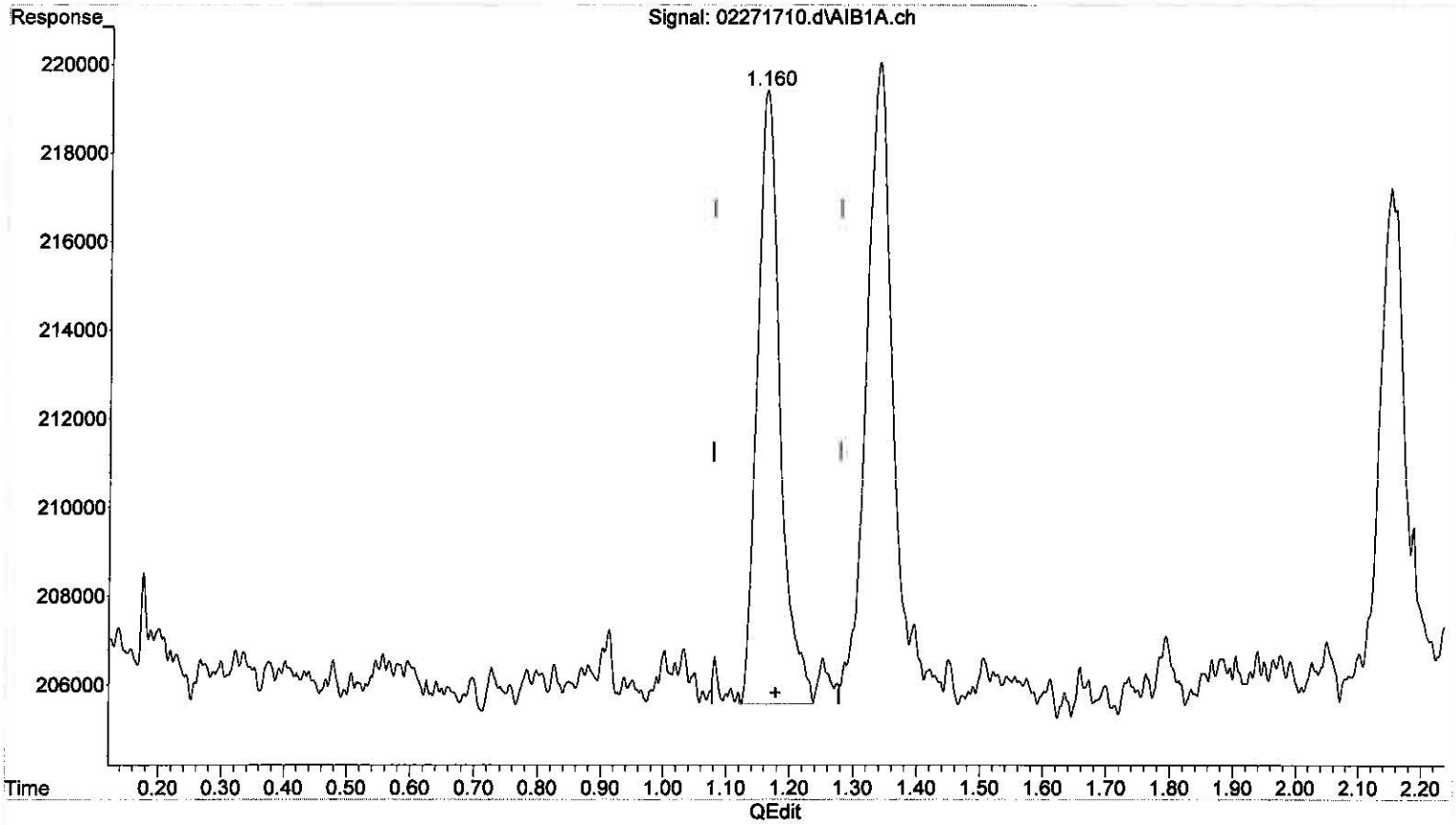


Quantitation Report (Qedit)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271710.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:38
Operator : MC
Sample : 0.4ml s30-02271702 10.1ppb
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 08:42:47 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 08:38:01 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(1) Hydrogen_Sulfide (Z)
1.160min 8.551 ppb m
response 345783

ML 2/27/17
BL
No peaks
LA 2/27/17

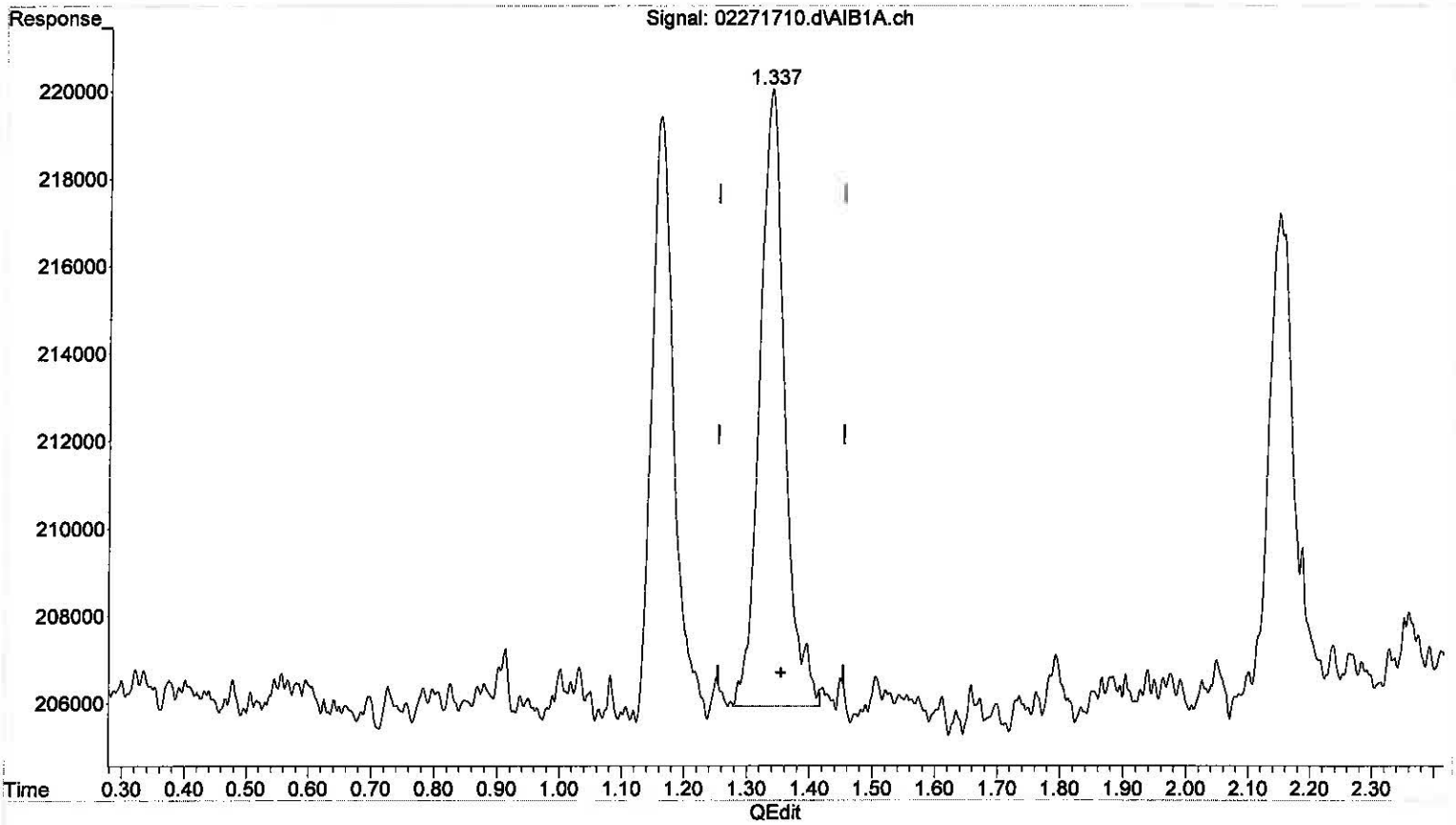
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271710.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:38
Operator : MC
Sample : 0.4ml s30-02271702 10.1ppb
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 08:42:47 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 08:38:01 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(2) Carbonyl_Sulfide (W)

1.337min 8.893 ppb m

response 390211

Mc 2/27/17
BL
No previous

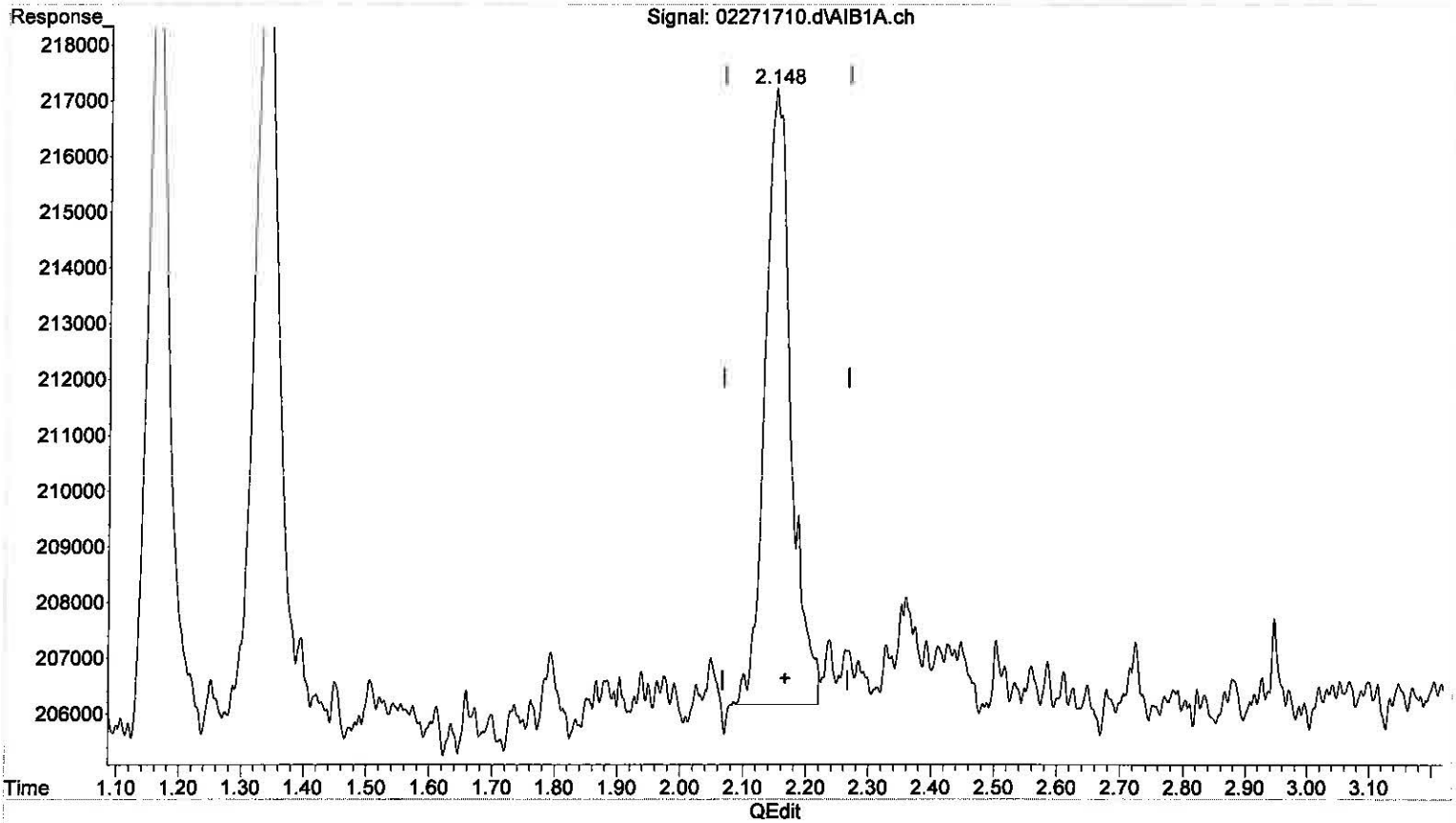
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271710.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:38
Operator : MC
Sample : 0.4ml s30-02271702 10.1ppb
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 08:42:47 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 08:38:01 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(3) Methyl_Mercaptan (T)

2.148min 7.646 ppb m

response 315533

(+) = Expected Retention Time

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271711.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:49
Operator : MC
Sample : 0.1ml s30-02271703 50.5ppb
Misc :
ALS Vial : 11 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 08:52:29 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 08:42:57 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	1.160	1793732	45.232	ppb
2)	W	Carbonyl_Sulfide	1.332	2111859	48.680	ppb
3)	T	Methyl_Mercaptan	2.134	1748502	43.328	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

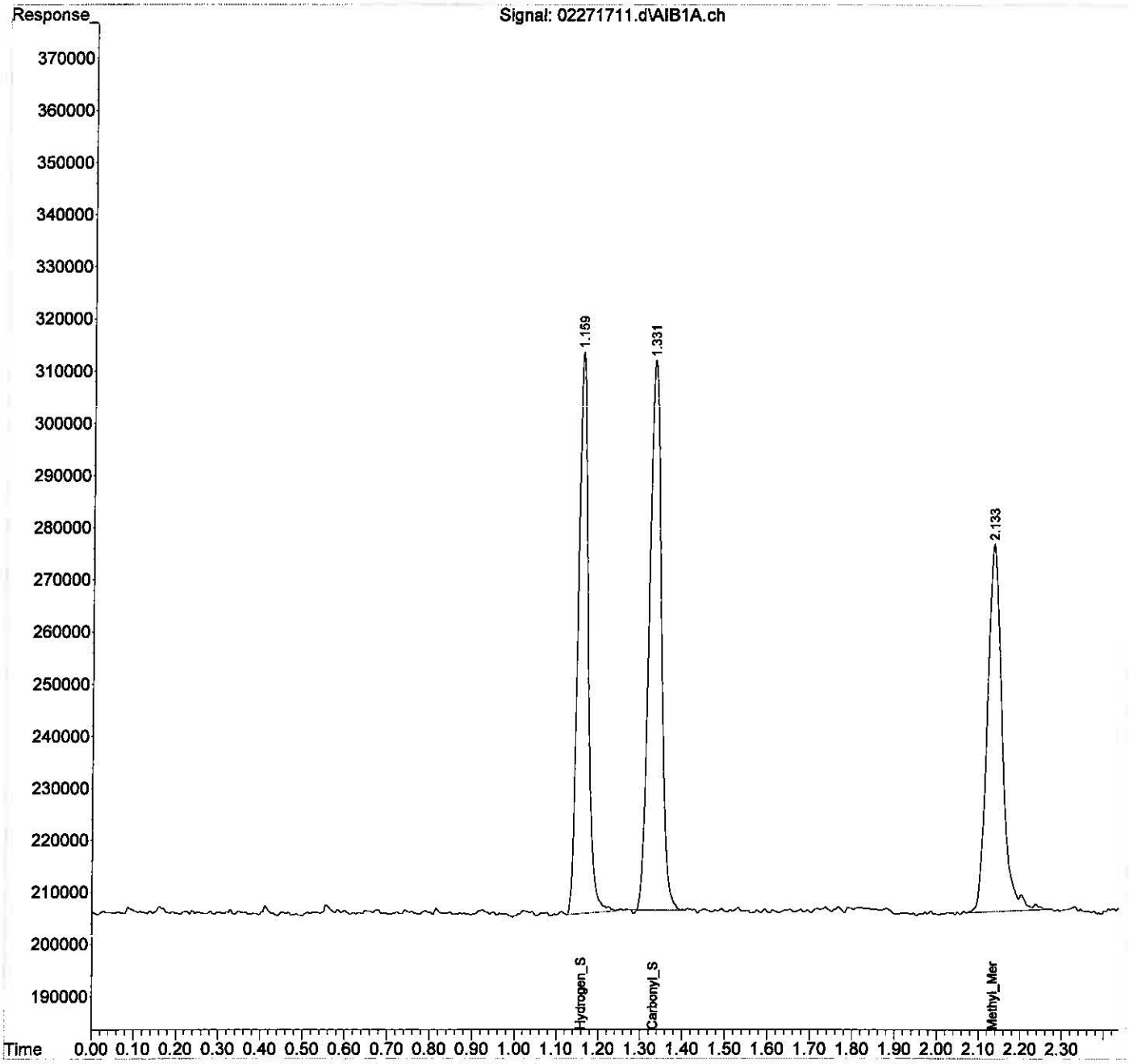
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271711.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:49
Operator : MC
Sample : 0.1ml s30-02271703 50.5ppb
Misc :
ALS Vial : 11 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 08:52:29 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 08:42:57 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271712.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:53
Operator : MC
Sample : 0.5ml s30-02271703 252.5ppb
Misc :
ALS Vial : 12 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 08:56:51 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 08:52:46 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	1.121f	9559685	245.143	ppb
2)	W	Carbonyl_Sulfide	1.295f	10705330	248.888	ppb
3)	T	Methyl_Mercaptan	2.101f	9163664	229.966	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

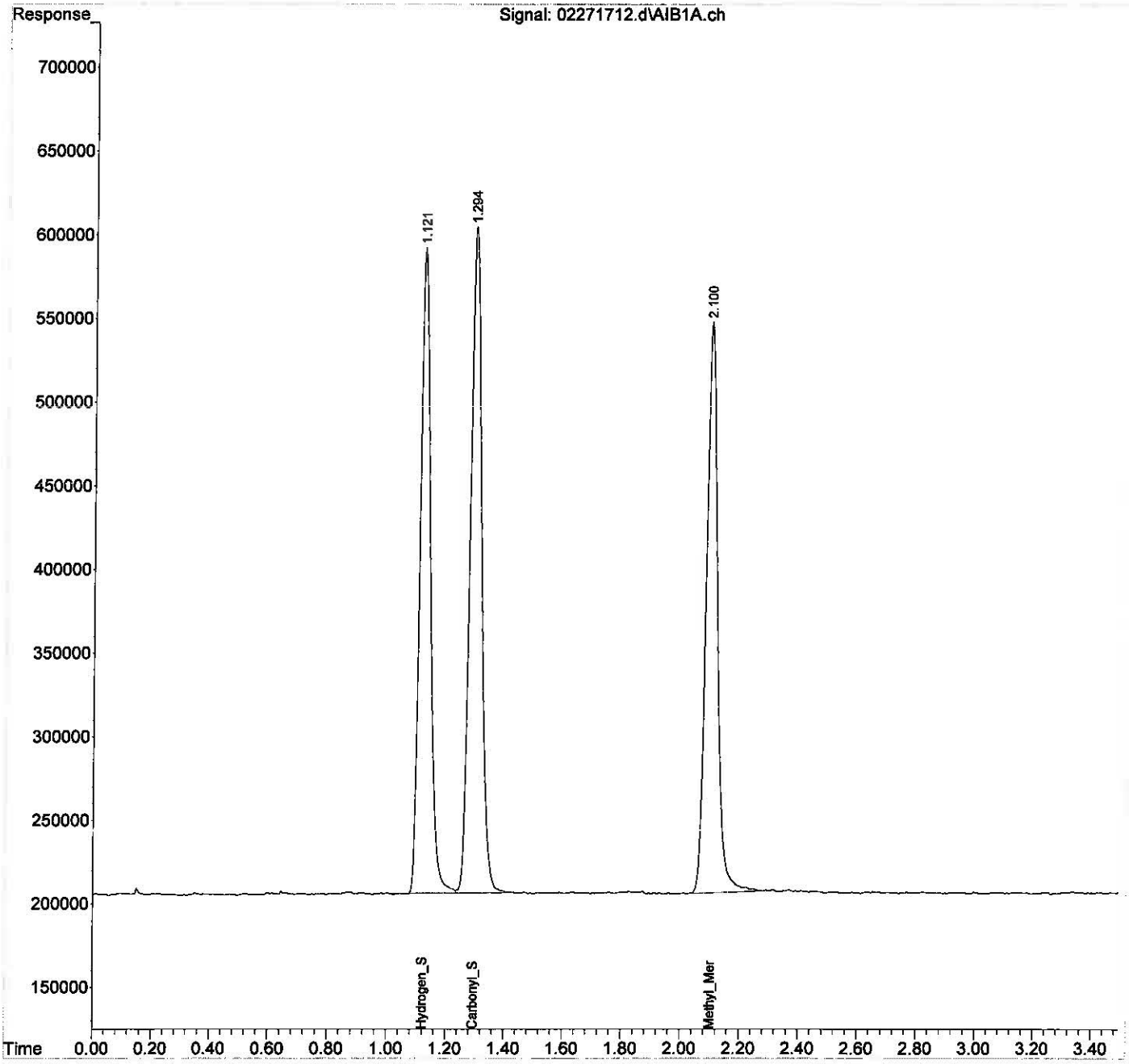
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271712.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:53
Operator : MC
Sample : 0.5ml s30-02271703 252.5ppb
Misc :
ALS Vial : 12 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 08:56:51 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 08:52:46 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271713.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:58
Operator : MC
Sample : 0.1ml s30-02271701 1010ppb
Misc :
ALS Vial : 13 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 09:00:50 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 08:57:02 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	1.186	43521251	1128.997	ppb
2)	W	Carbonyl_Sulfide	1.361	47240640	1106.141	ppb
3)	T	Methyl_Mercaptan	2.170	42532651	1085.079	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

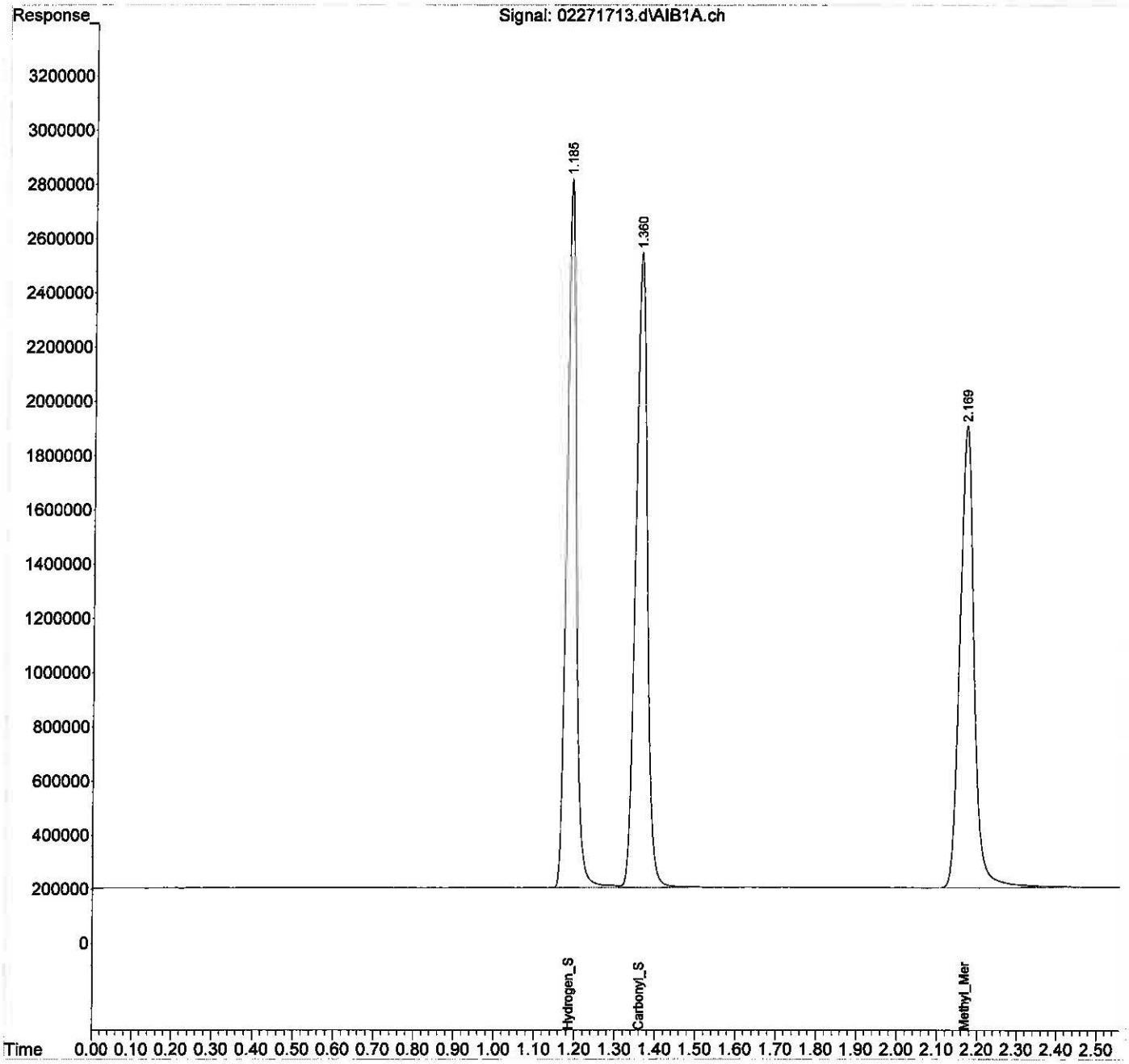
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271713.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:58
Operator : MC
Sample : 0.1ml s30-02271701 1010ppb
Misc :
ALS Vial : 13 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 09:00:50 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 08:57:02 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271714.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 9:01
Operator : MC
Sample : 0.25ml s30-02271701 2525ppb
Misc :
ALS Vial : 14 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 09:04:22 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 09:00:59 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	1.178	106891673	2779.645	ppb
2)	W	Carbonyl_Sulfide	1.354	112070736	2622.416	ppb
3)	T	Methyl_Mercaptan	2.166	103599923	2675.072	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

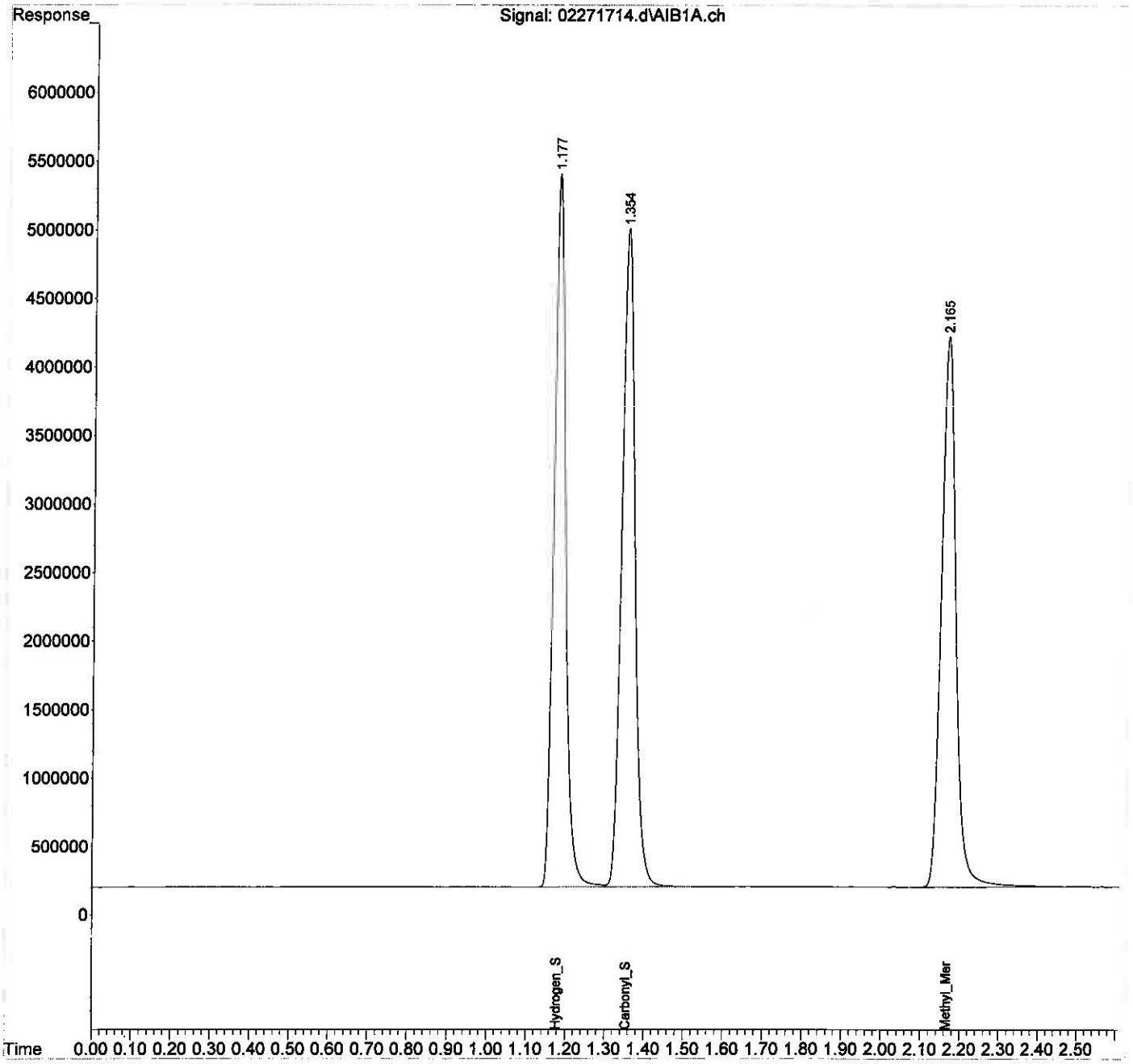
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271714.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 9:01
Operator : MC
Sample : 0.25ml s30-02271701 2525ppb
Misc :
ALS Vial : 14 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 09:04:22 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 09:00:59 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271715.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 9:11
Operator : MC
Sample : 0.5ml s30-02271701 5050ppb
Misc :
ALS Vial : 15 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 09:17:08 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 09:04:32 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units	
Target Compounds							
1)	Z	Hydrogen_Sulfide	1.163	208772565	5385.679	ppb	
2)	W	Carbonyl_Sulfide	1.341	217399701	5054.320	ppb	
3)	T	Methyl_Mercaptan	2.158	201240135	5181.659	ppb	
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb	
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb	
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb	d
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb	
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb	
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb	
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb	
11)	T	Thiophene	0.000	0	N.D.	ppb	
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb	
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb	
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb	
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb	
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb	
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb	
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb	
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb	
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb	
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb	
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb	

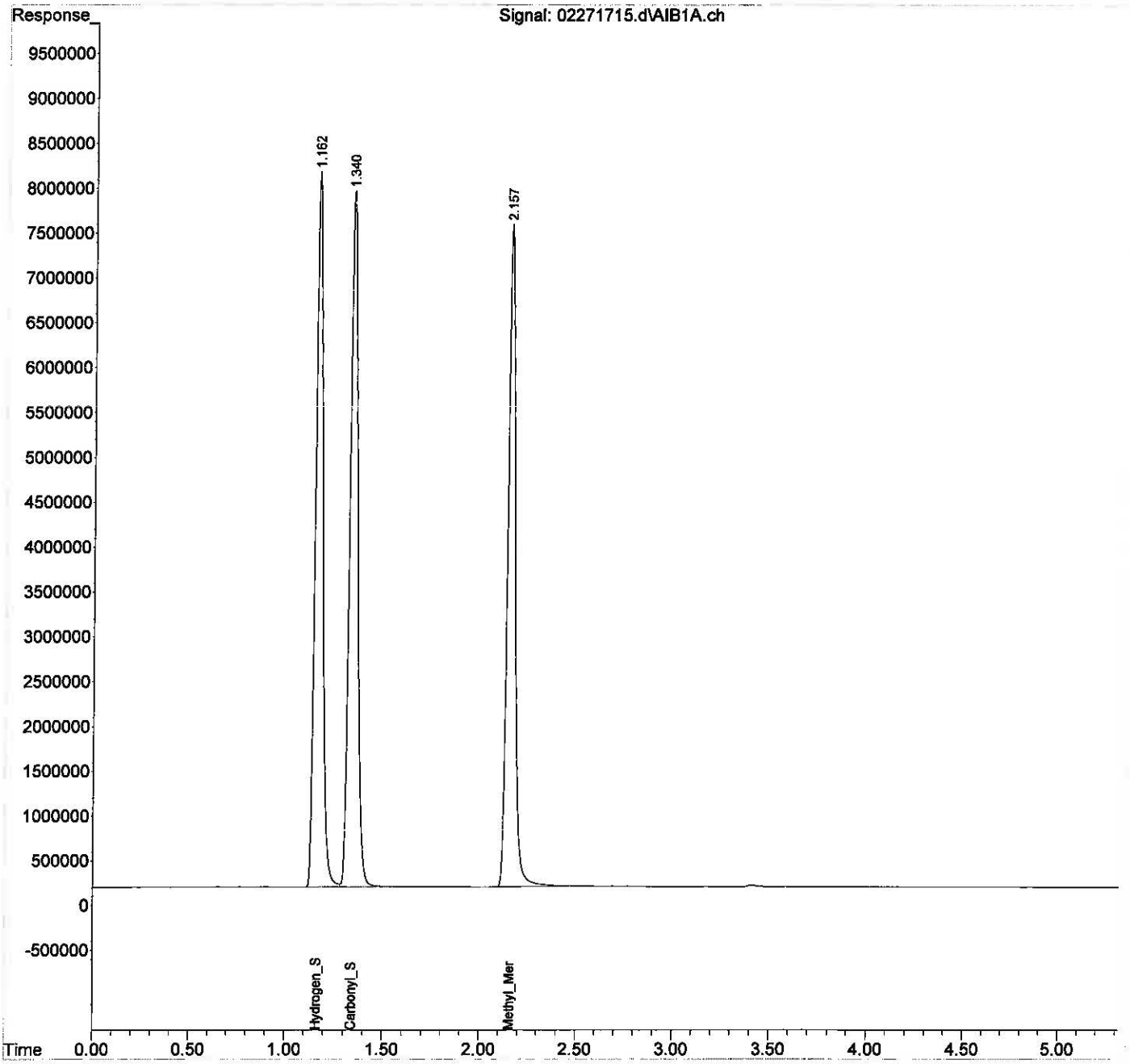
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271715.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 9:11
Operator : MC
Sample : 0.5ml s30-02271701 5050ppb
Misc :
ALS Vial : 15 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 09:17:08 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 09:04:32 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271716.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 9:18
Operator : MC
Sample : 1ml s30-02271701 10ppm
Misc :
ALS Vial : 16 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 09:21:30 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 09:17:15 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	1.140	419230047	10812.838	ppb
2)	W	Carbonyl_Sulfide	1.323	435188381	10144.588	ppb
3)	T	Methyl_Mercaptan	2.152	404587228	10464.955	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

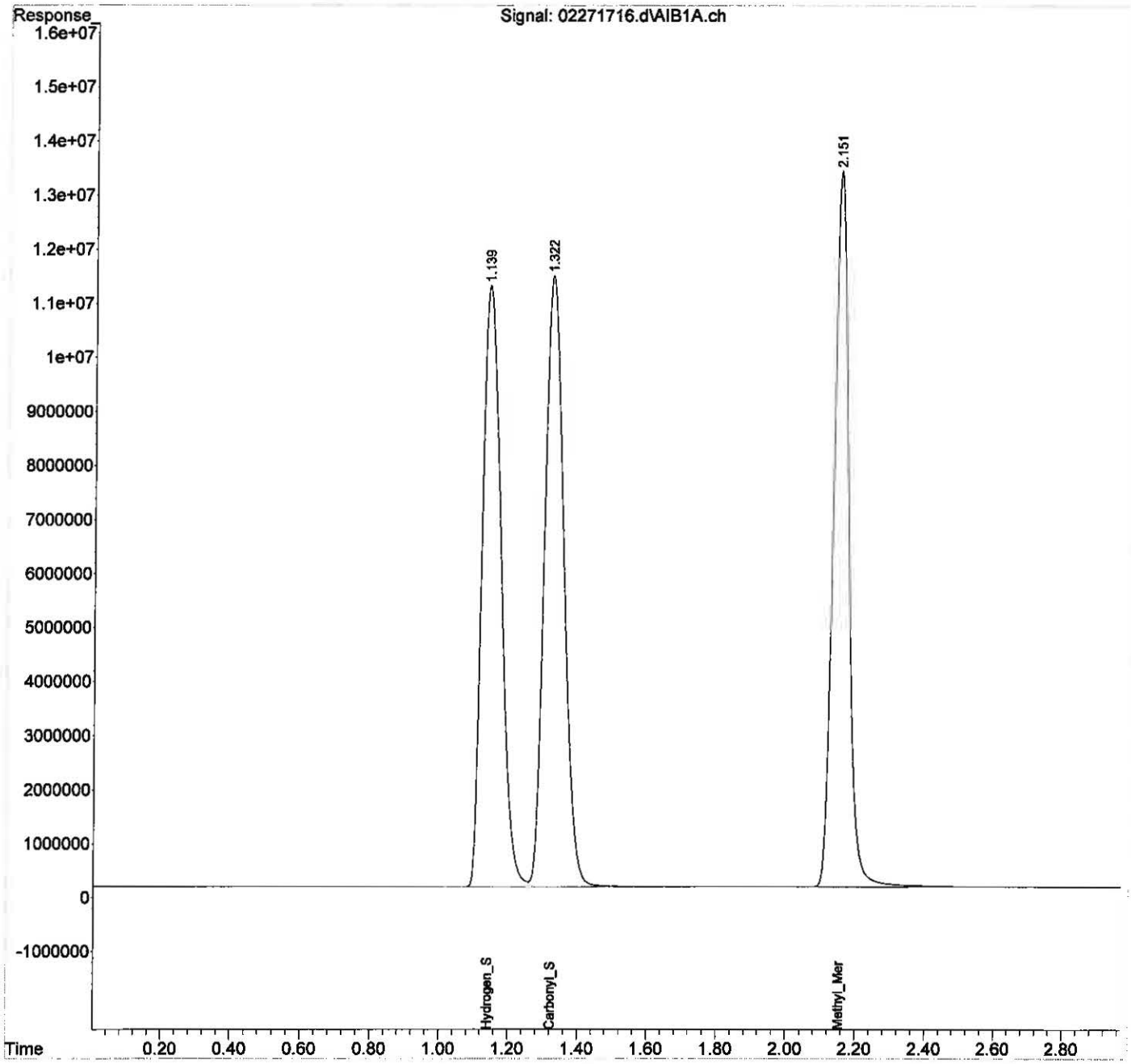
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271716.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 9:18
Operator : MC
Sample : 1ml s30-02271701 10ppm
Misc :
ALS Vial : 16 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 09:21:30 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 09:17:15 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271717.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 9:27
Operator : MC
Sample : 0.025ml s30-11031401 25ppm
Misc :
ALS Vial : 17 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 09:30:45 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 09:21:53 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	1.184	875262733	22860.989	ppb
2)	W	Carbonyl_Sulfide	1.360	901360046	21388.869	ppb
3)	T	Methyl_Mercaptan	2.167	856098119	22606.472	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

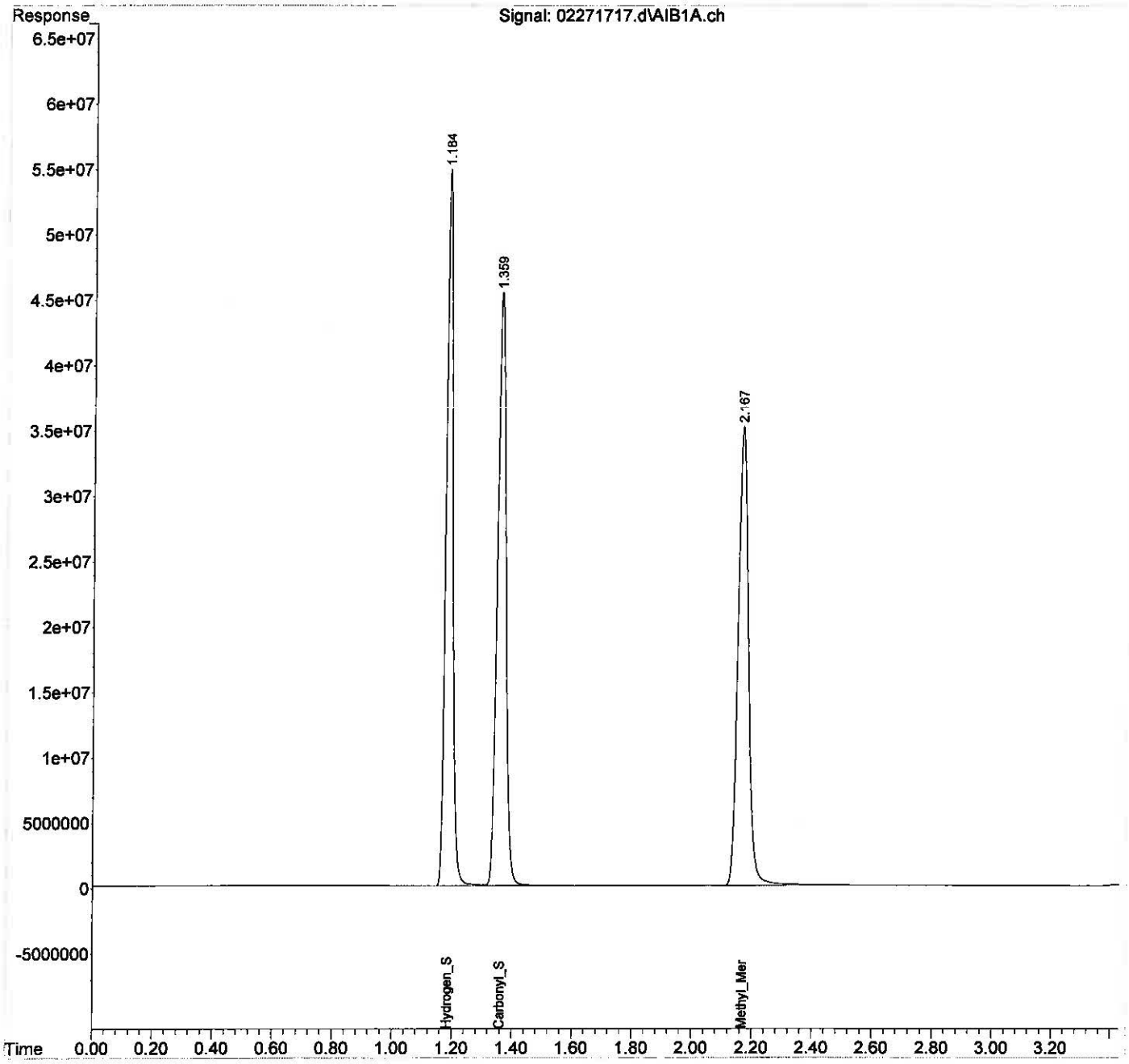
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271717.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 9:27
Operator : MC
Sample : 0.025ml s30-11031401 25ppm
Misc :
ALS Vial : 17 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 09:30:45 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 09:21:53 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271722.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 10:35
Operator : MC
Sample : ICV s30-02171702
Misc :
ALS Vial : 22 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 10:38:54 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 10:00:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	1.167	39399048	1028.466	ppb
2)	W	Carbonyl_Sulfide	1.340	43066352	1023.236	ppb
3)	T	Methyl_Mercaptan	2.146	39094492	1039.867	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

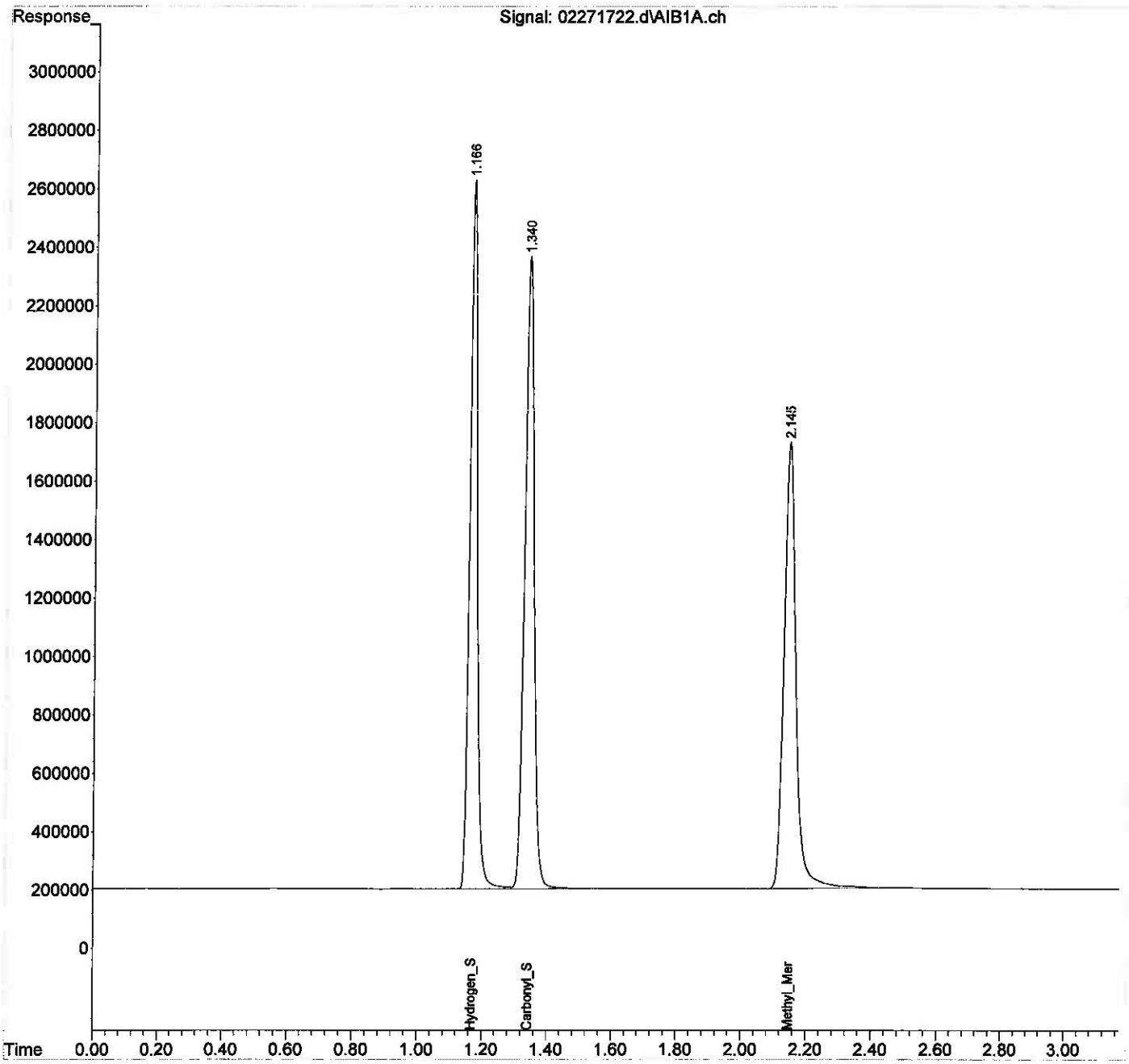
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271722.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 10:35
Operator : MC
Sample : ICV s30-02171702
Misc :
ALS Vial : 22 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 10:38:54 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 10:00:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Response Factor Report HP G1530A

Method Path : J:\GC13\METHODS\
Method File : GC13_030717.M
Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
Last Update : Tue Mar 07 11:32:15 2017
Response Via : Initial Calibration

Calibration Files
2.5 =03071713.D 10 =03071714.D 50 =03071715.D
250 =03071716.D 1000 =03071717.D 2500 =03071718.D

		Compound	2.5	10	50	250	1000	2500	Avg		%RSD
1)	Z	Hydrogen_Sulfide	8.045	7.505	8.723	8.477	8.387	8.709	8.166	E4	6.38
2)	W	Carbonyl_Sulfide	8.207	8.010	9.587	9.322	8.823	9.233	8.806	E4	6.33
3)	T	Methyl_Mercaptan	7.665	7.549	8.935	8.941	8.547	8.978	8.405	E4	7.10
4)	T	Ethyl_Mercaptan	7.665	7.549	8.935	8.941	8.583	8.978	8.409	E4	7.11
5)	T	Dimethyl_Sulfide	7.665	7.549	8.935	8.941	8.583	8.978	8.409	E4	7.11
6)	T	Carbon_Disulfide	1.533	1.510	1.787	1.788	1.717	1.796	1.682	E5	7.11
7)	T	2-Propyl_Merc...	7.665	7.549	8.935	8.941	8.583	8.978	8.409	E4	7.11
8)	T	t-Butyl_Merca...	7.665	7.549	8.935	8.941	8.583	8.978	8.409	E4	7.11
9)	T	Propyl_Mercaptan	7.665	7.549	8.935	8.941	8.583	8.978	8.409	E4	7.11
10)	T	Ethyl_Methyl_...	7.665	7.549	8.935	8.941	8.583	8.978	8.409	E4	7.11
11)	T	Thiophene	7.665	7.549	8.935	8.941	8.583	8.978	8.409	E4	7.11
12)	T	i-Butyl_Merca...	7.665	7.549	8.935	8.941	8.583	8.978	8.409	E4	7.11
13)	T	Diethyl_Sulfide	7.665	7.549	8.935	8.941	8.583	8.978	8.409	E4	7.11
14)	t	n-Butyl_Merca...	7.665	7.549	8.935	8.941	8.583	8.978	8.409	E4	7.11
15)	t	Dimethyl_Disu...	1.533	1.510	1.787	1.788	1.717	1.796	1.682	E5	7.11
16)	T	2-Methyl_Thio...	7.665	7.549	8.935	8.941	8.583	8.978	8.409	E4	7.11
17)	t	3-Methyl_Thio...	7.665	7.549	8.935	8.941	8.583	8.978	8.409	E4	7.11
18)	T	Tetrahydrothi...	7.665	7.549	8.935	8.941	8.583	8.978	8.409	E4	7.11
19)	t	2,5-Dimethyl_...	7.665	7.549	8.935	8.941	8.583	8.978	8.409	E4	7.11
20)	T	2-Ethyl_Thiop...	7.665	7.549	8.935	8.941	8.583	8.978	8.409	E4	7.11
21)	T	Diethyl_Disul...	1.533	1.510	1.787	1.788	1.717	1.796	1.682	E5	7.11
22)	T	Methyltrisulfide	2.299	2.265	2.680	2.682	2.575	2.693	2.523	E5	7.11

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

GC13_030717.M Tue Mar 07 11:33:00 2017

WB 3/10/17

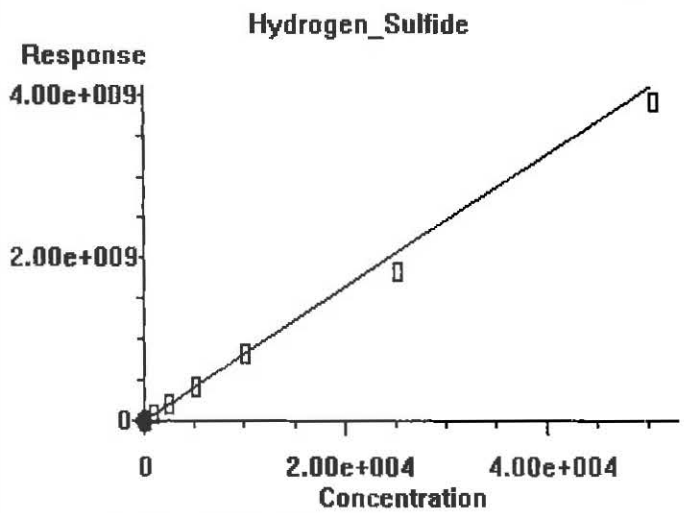
Edit Compounds

Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compour
  - Hydrogen_Sulfide
  - Carbonyl_Sulfide
  - Methyl_Mercaptan
  - Ethyl_Mercaptan
  - Dimethyl_Sulfide
  - Carbon_Disulfide
  - 2-Propyl_Mercaptan
  - t-Butyl_Mercaptan
  - Propyl_Mercaptan
  - Ethyl_Methyl_Sulfide
  - Thiophene
  - i-Butyl_Mercaptan
  - Diethyl_Sulfide
  - n-Butyl_Mercaptan
  - Dimethyl_Disulfide
  - 2-Methyl_Thiophene
  - 3-Methyl_Thiophene
  - Tetrahydrothiophene
  - 2,5-Dimethyl_Thiophene
  - 2-Ethyl_Thiophene
  - Diethyl_Disulfide
  - Methyltrisulfide

Identification | Calibration | User Defined | Advanced | Reporting

Lvl ID	Concentration	Response	Lvl ID	Concentration	Response
2.5	2.525000	203137.332500	100m		
10	10.100000	757999.142350			
50	50.500000	4405284.726849			
250	252.500000	21404140.503235			
1000	1010.000000	84705699.397721			
2500	2525.000000	219900016.25622			
5000	5050.000000	432986525.82435			
10pm	10100.000000	834474957.80641			
25pm	25250.000000	1822815366.5656			
50pm	50500.000000	3918226612.7364			



0.000e+000	Quadratic term
8.166e+004	Linear term
0.000e+000	Constant term
6.4%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

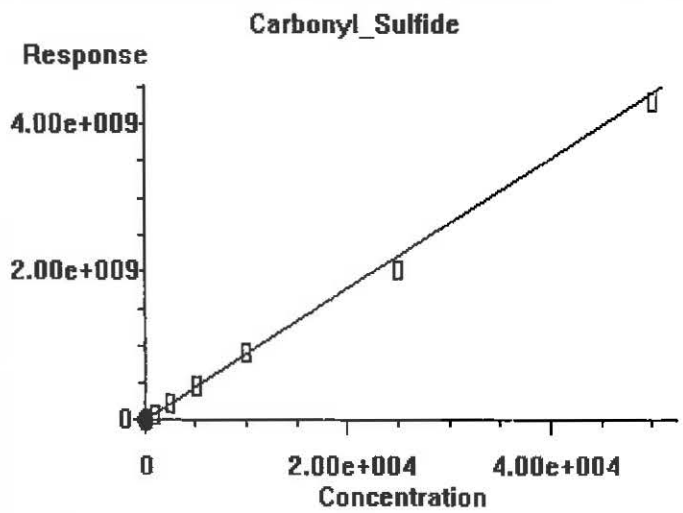
Edit Compounds

Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compour
  - Hydrogen_Sulfide
  - Carbonyl_Sulfide
  - Methyl_Mercaptan
  - Ethyl_Mercaptan
  - Dimethyl_Sulfide
  - Carbon_Disulfide
  - 2-Propyl_Mercaptan
  - t-Butyl_Mercaptan
  - Propyl_Mercaptan
  - Ethyl_Methyl_Sulfide
  - Thiophene
  - i-Butyl_Mercaptan
  - Diethyl_Sulfide
  - n-Butyl_Mercaptan
  - Dimethyl_Disulfide
  - 2-Methyl_Thiophene
  - 3-Methyl_Thiophene
  - Tetrahydrothiophene
  - 2,5-Dimethyl_Thiophene
  - 2-Ethyl_Thiophene
  - Diethyl_Disulfide
  - Methyltrisulfide

Identification | Calibration | User Defined | Advanced | Reporting

Lvl ID	Concentration	Response	Lvl ID	Concentration	Response
2.5	2.500000	205169.895900	100m		
10	10.000000	800979.504800			
50	50.000000	4793569.168151			
250	250.000000	23305728.945000			
1000	1000.000000	88225564.243658			
2500	2500.000000	230819279.26238			
5000	5000.000000	459256530.54314			
10pm	10000.000000	901347650.43272			
25pm	25000.000000	2023005311.4316			
50pm	50000.000000	4294226974.9600			



0.000e+000	Quadratic term
8.806e+004	Linear term
0.000e+000	Constant term
6.3%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

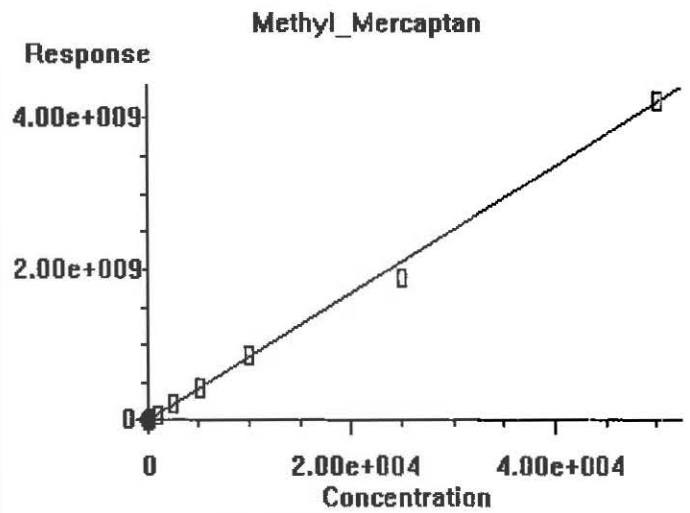
Edit Compounds

Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compour
  - Hydrogen_Sulfide
  - Carbonyl_Sulfide
  - Methyl_Mercaptan
  - Ethyl_Mercaptan
  - Dimethyl_Sulfide
  - Carbon_Disulfide
  - 2-Propyl_Mercaptan
  - t-Butyl_Mercaptan
  - Propyl_Mercaptan
  - Ethyl_Methyl_Sulfide
  - Thiophene
  - i-Butyl_Mercaptan
  - Diethyl_Sulfide
  - n-Butyl_Mercaptan
  - Dimethyl_Disulfide
  - 2-Methyl_Thiophene
  - 3-Methyl_Thiophene
  - Tetrahydrothiophene
  - 2,5-Dimethyl_Thiophene
  - 2-Ethyl_Thiophene
  - Diethyl_Disulfide
  - Methyltrisulfide

Identification | Calibration | User Defined | Advanced | Reporting

Lvl ID	Concentration	Response	Lvl ID	Concentration	Response
2.5	2.500000	191612.840000	100m		
10	10.000000	754894.000000			
50	50.000000	4467321.620000			
250	250.000000	22351885.890000			
1000	1000.000000	85471842.505000			
2500	2500.000000	224444244.96546			
5000	5000.000000	444134449.59000			
10pm	10000.000000	857065020.62000			
25pm	25000.000000	1885040416.7900			
50pm	50000.000000	4221029427.3814			



0.000e+000	Quadratic term
8.405e+004	Linear term
0.000e+000	Constant term
7.1%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

Calibration Status Report HP G1530A

Method Path : J:\GC13\METHODS\
Method File : GC13_030717.M
Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
Last Update : Tue Mar 07 11:32:15 2017
Response Via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	2.5	1	0	J:\GC13\DATA\SCD\2017_03\07\03071713.D
2	10	3	0	J:\GC13\DATA\SCD\2017_03\07\03071714.D
3	50	17	0	J:\GC13\DATA\SCD\2017_03\07\03071715.D
4	250	83	0	J:\GC13\DATA\SCD\2017_03\07\03071716.D
5	1000	333	0	J:\GC13\DATA\SCD\2017_03\07\03071717.D
6	2500	833	0	J:\GC13\DATA\SCD\2017_03\07\03071718.D
7	5000	1667	0	J:\GC13\DATA\SCD\2017_03\07\03071719.D
8	10pm	3333	0	J:\GC13\DATA\SCD\2017_03\07\03071720.D
9	25pm	8333	0	J:\GC13\DATA\SCD\2017_03\07\03071721.D
10	50pm	16667	0	J:\GC13\DATA\SCD\2017_03\07\03071723.D

#	ID	Update Time	Quant Time	Acquisition Time
1	2.5	Mar 07 09:44 2017	Mar 07 09:43 2017	07 Mar 2017 9:35
2	10	Mar 07 09:49 2017	Mar 07 09:49 2017	07 Mar 2017 9:44
3	50	Mar 07 10:01 2017	Mar 07 10:01 2017	07 Mar 2017 9:54
4	250	Mar 07 10:05 2017	Mar 07 10:05 2017	07 Mar 2017 10:02
5	1000	Mar 07 10:09 2017	Mar 07 10:09 2017	07 Mar 2017 10:06
6	2500	Mar 07 10:15 2017	Mar 07 10:15 2017	07 Mar 2017 10:10
7	5000	Mar 07 10:20 2017	Mar 07 10:20 2017	07 Mar 2017 10:16
8	10pm	Mar 07 10:25 2017	Mar 07 10:24 2017	07 Mar 2017 10:21
9	25pm	Mar 07 10:30 2017	Mar 07 10:30 2017	07 Mar 2017 10:26
10	50pm	Mar 07 10:39 2017	Mar 07 10:39 2017	07 Mar 2017 10:36

GC13_030717.M Tue Mar 07 11:33:18 2017

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071713.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 9:35
Operator : MC
Sample : 0.1ml 2.52ppb s30-03071702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 09:43:42 2017
Quant Method : J:\GC13\METHODS\GC13_030117.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Wed Mar 01 16:20:16 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units	
Target Compounds							
1)	Z	Hydrogen_Sulfide	0.973	203137	2.186	ppb	m
2)	W	Carbonyl_Sulfide	1.228	205170	2.145	ppb	m
3)	T	Methyl_Mercaptan	2.377	191613	2.119	ppb	m
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb	
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb	
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb	
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb	
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb	
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb	
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb	
11)	T	Thiophene	0.000	0	N.D.	ppb	
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb	
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb	
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb	
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb	
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb	
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb	
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb	
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb	
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb	
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb	
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb	

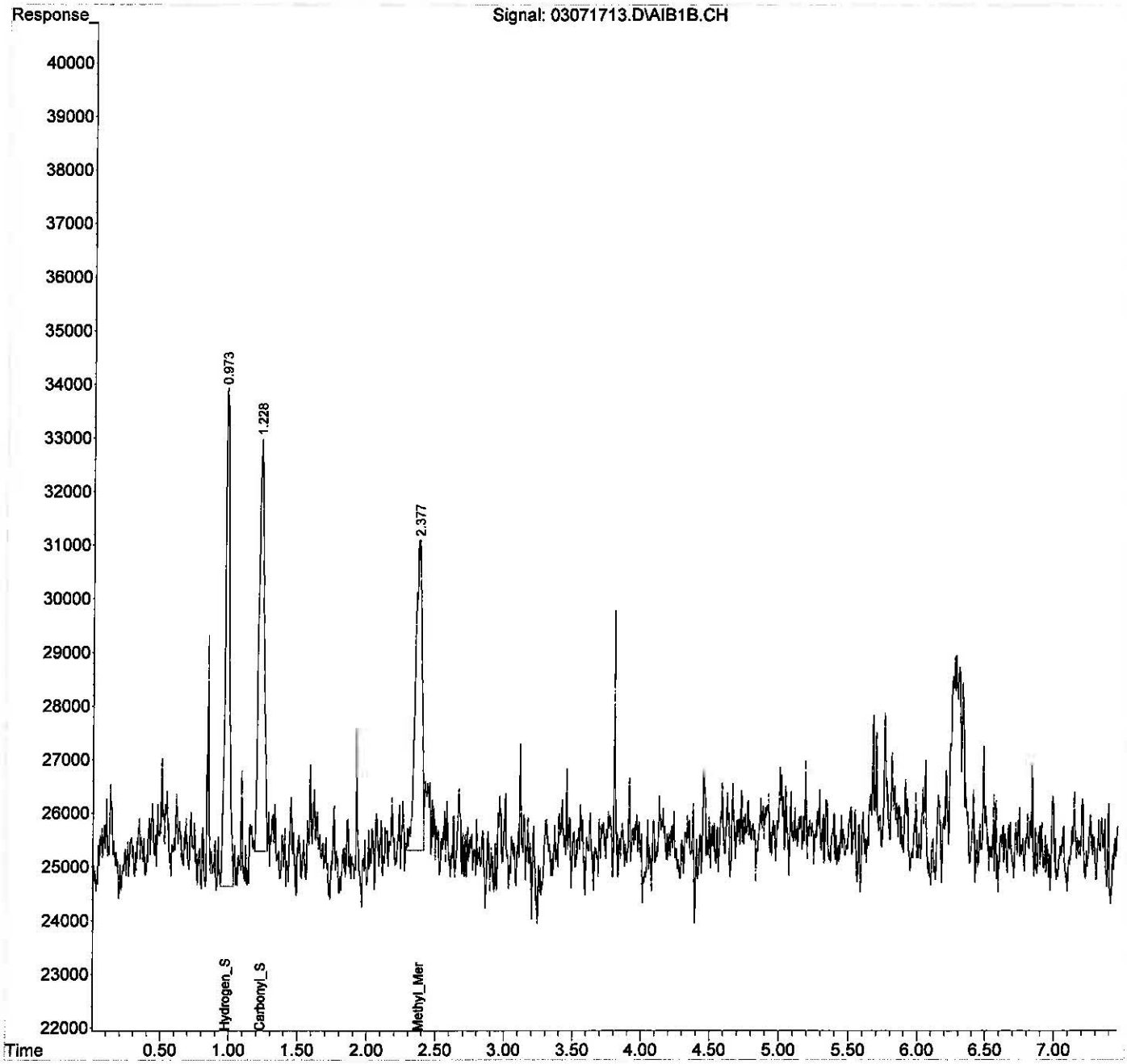
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071713.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 9:35
Operator : MC
Sample : 0.1ml 2.52ppb s30-03071702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 09:43:42 2017
Quant Method : J:\GC13\METHODS\GC13_030117.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Wed Mar 01 16:20:16 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

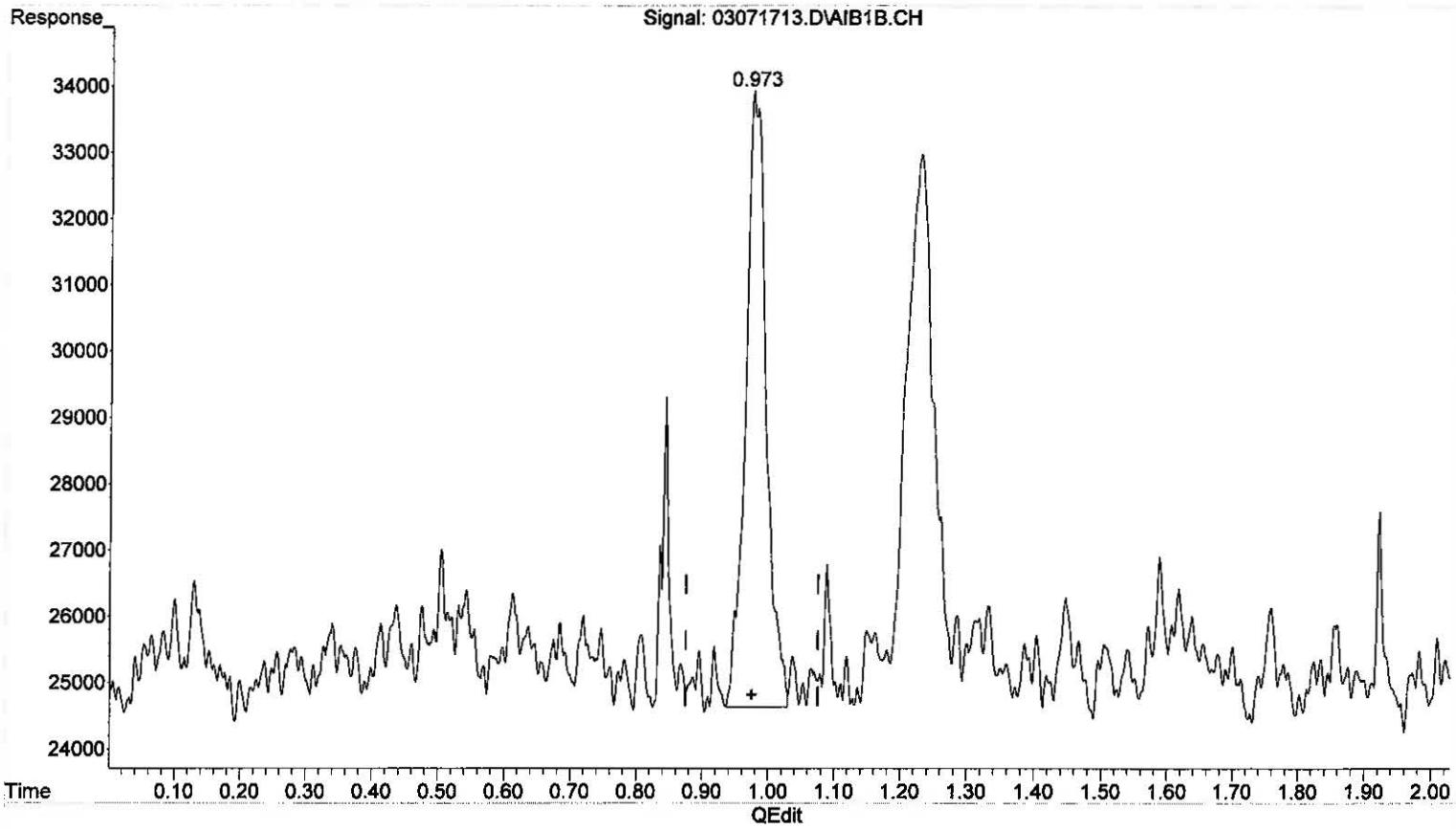


Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071713.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 9:35
Operator : MC
Sample : 0.1ml 2.52ppb s30-03071702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 09:43:42 2017
Quant Method : J:\GC13\METHODS\GC13_030117.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Wed Mar 01 16:20:16 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(1) Hydrogen_Sulfide (Z)
0.973min 2.186 ppb m
response 203137

No previous

3/10/17

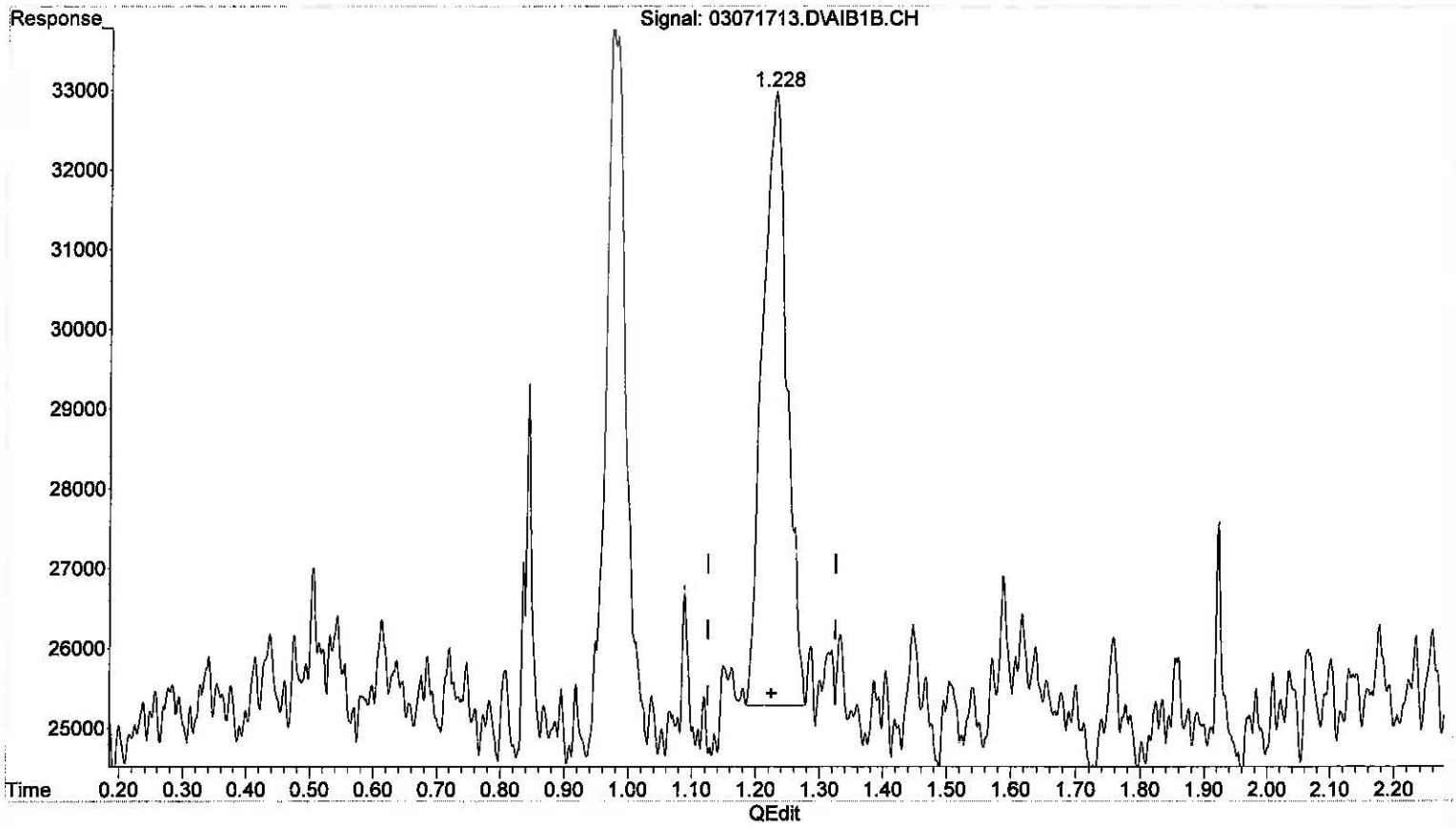
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071713.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 9:35
Operator : MC
Sample : 0.1ml 2.52ppb s30-03071702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 09:43:42 2017
Quant Method : J:\GC13\METHODS\GC13_030117.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Wed Mar 01 16:20:16 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(2) Carbonyl_Sulfide (W)

1.228min 2.145 ppb m

response 205170

MM 3/7/17
Bh
No previous

[illegible] 3/10/17

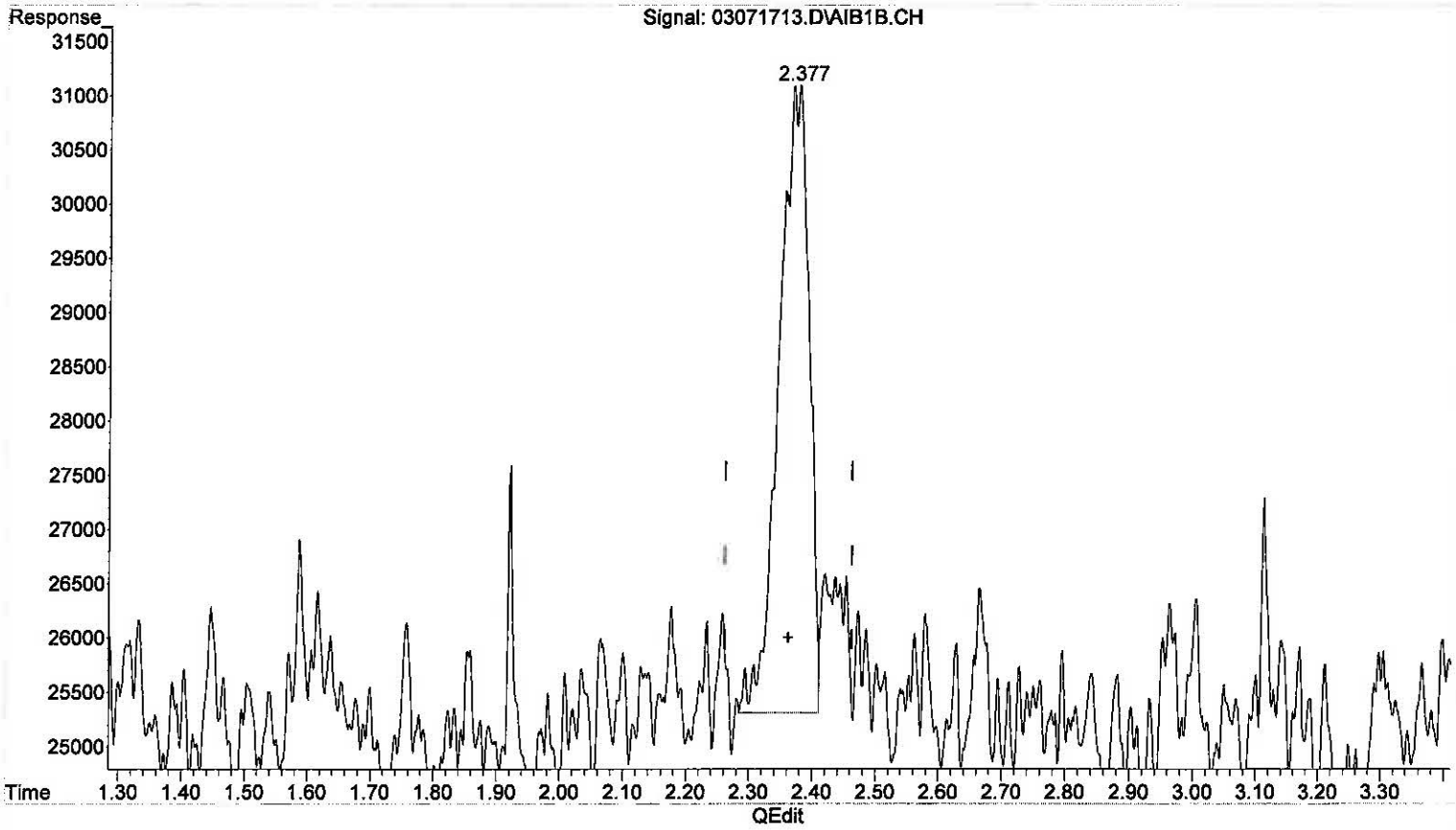
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071713.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 9:35
Operator : MC
Sample : 0.1ml 2.52ppb s30-03071702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 09:43:42 2017
Quant Method : J:\GC13\METHODS\GC13_030117.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Wed Mar 01 16:20:16 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(3) Methyl_Mercaptan (T)
2.377min 2.119 ppb m
response 191613

M 3/7/17
BL
No previous

3/10/17

(+) = Expected Retention Time

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071714.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 9:44
Operator : MC
Sample : 0.4ml 10.1ppb s30-03071702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 09:49:14 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 09:44:10 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units	
Target Compounds							
1)	Z	Hydrogen_Sulfide	0.976	757999	8.238	ppb	m
2)	W	Carbonyl_Sulfide	1.230	800980	8.390	ppb	m
3)	T	Methyl_Mercaptan	2.369	754894	8.427	ppb	m
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb	
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb	
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb	
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb	
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb	
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb	
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb	
11)	T	Thiophene	0.000	0	N.D.	ppb	
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb	
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb	
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb	
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb	
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb	
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb	
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb	
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb	
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb	
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb	
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb	

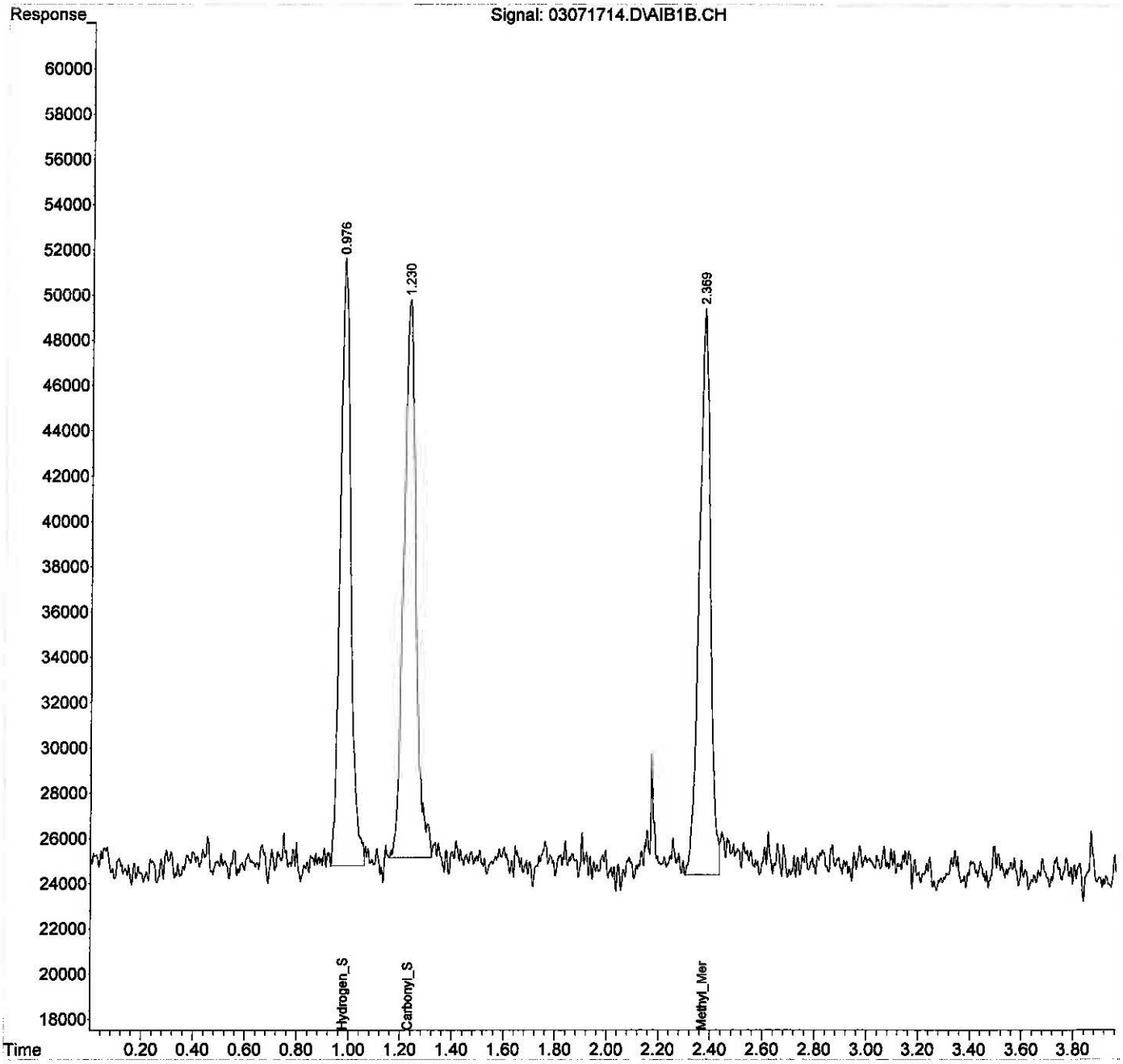
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071714.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 9:44
Operator : MC
Sample : 0.4ml 10.1ppb s30-03071702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 09:49:14 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 09:44:10 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

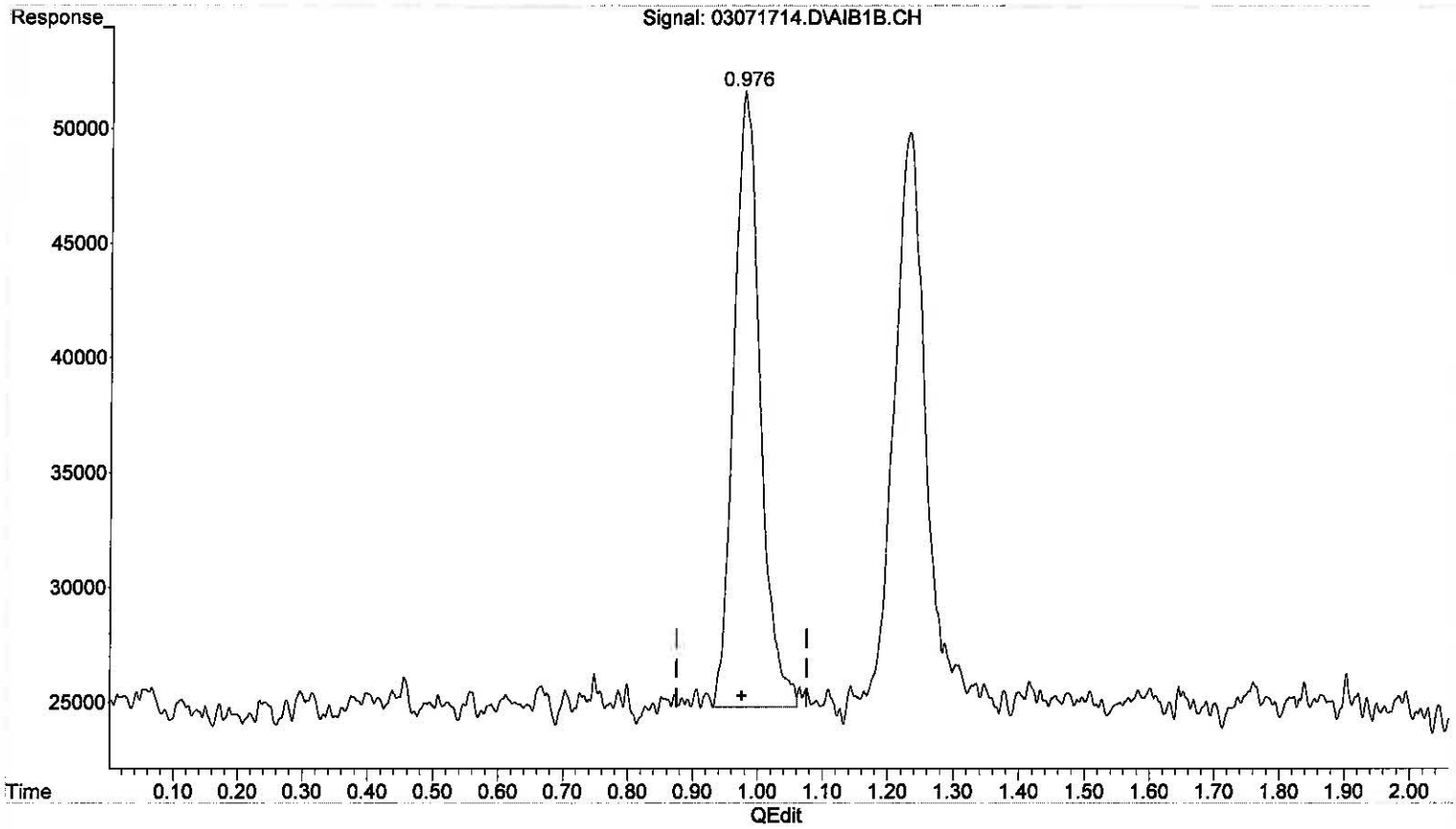


Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071714.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 9:44
Operator : MC
Sample : 0.4ml 10.1ppb s30-03071702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 09:49:14 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 09:44:10 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(1) Hydrogen_Sulfide (Z)
0.976min 8.238 ppb m
response 757999

M 3/7/17
BL
No peaks

3/10/17

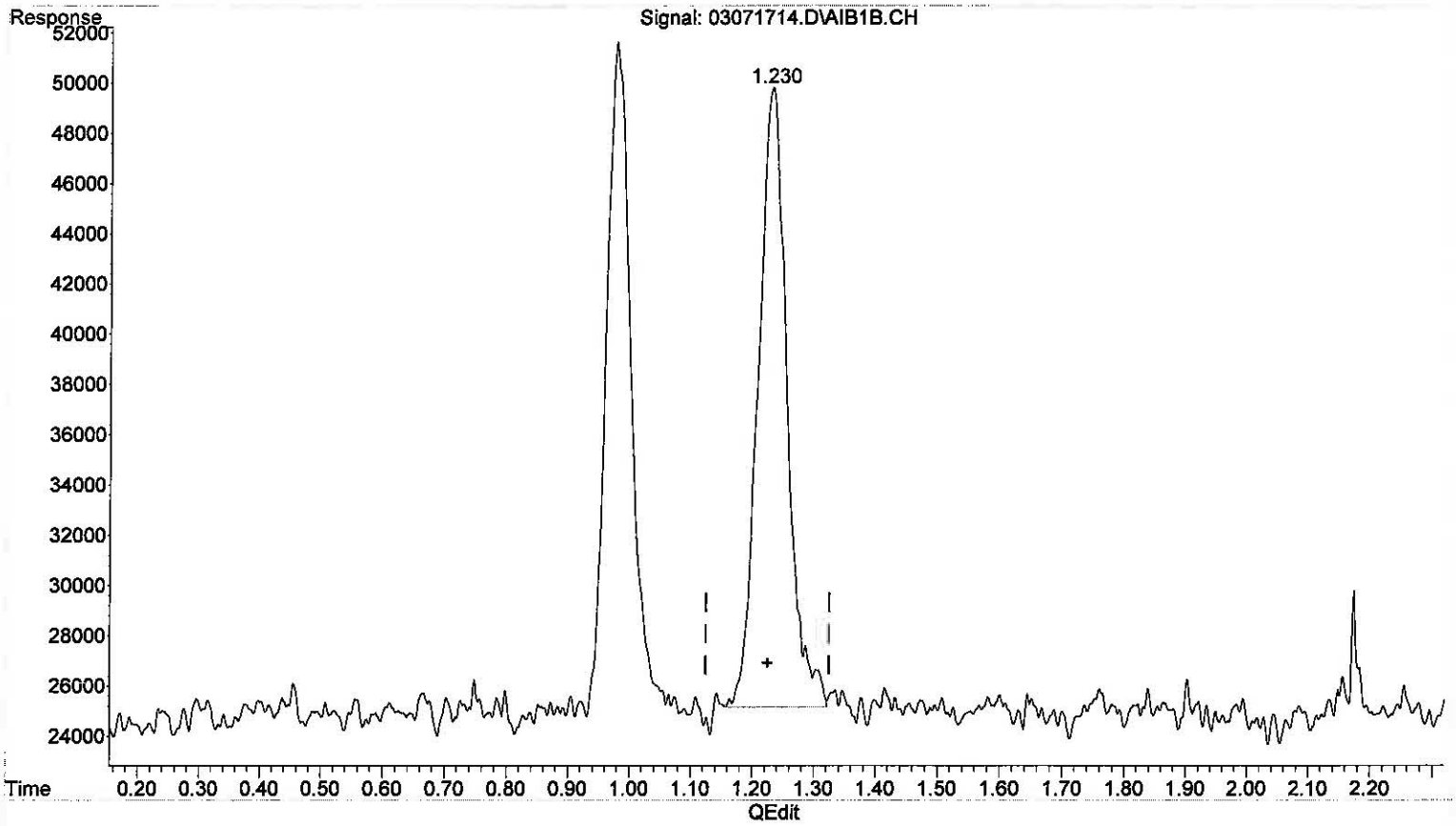
(+) = Expected Retention Time
GC13_030717.M Tue Mar 07 11:03:20 2017

Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071714.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 9:44
Operator : MC
Sample : 0.4ml 10.1ppb s30-03071702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 09:49:14 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 09:44:10 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(2) Carbonyl_Sulfide (W)

1.230min 8.390 ppb m

response 800980

MC 3/7/17
BK
No previous

[illegible] 3/10/17

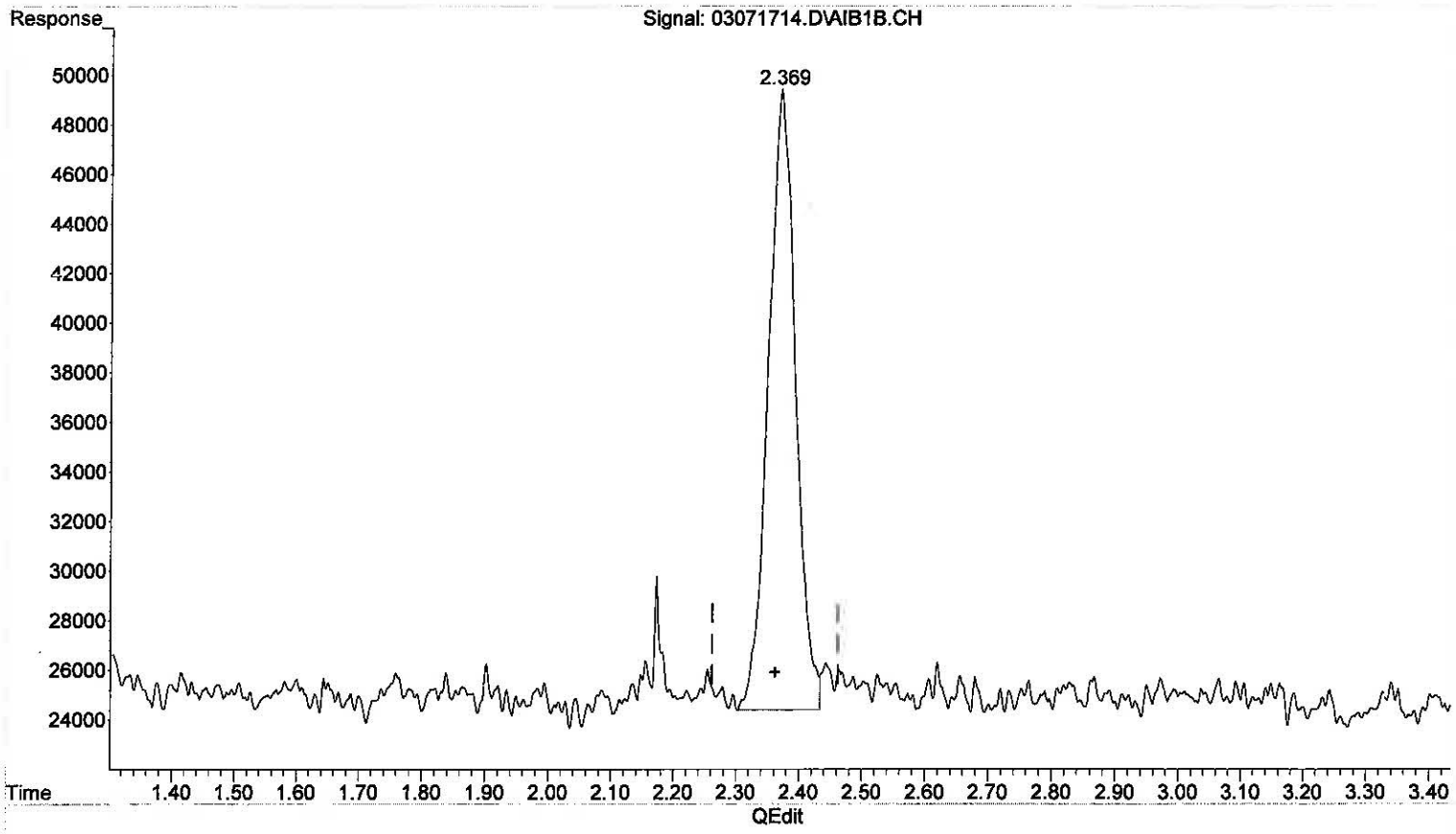
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071714.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 9:44
Operator : MC
Sample : 0.4ml 10.1ppb s30-03071702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 09:49:14 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 09:44:10 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(3) Methyl_Mercaptan (T)
2.369min 8.427 ppb m
response 754894

MM 3/7/17
BL
No processing

3/10/17

(+) = Expected Retention Time
GC13_030717.M Tue Mar 07 11:03:28 2017

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071715.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 9:54
Operator : MC
Sample : 0.1ml 50.5 s30-03071703
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:01:03 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 09:53:27 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.977	4405285	48.160	ppb
2)	W	Carbonyl_Sulfide	1.226	4793569	50.200	ppb
3)	T	Methyl_Mercaptan	2.366	4467322	49.942	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

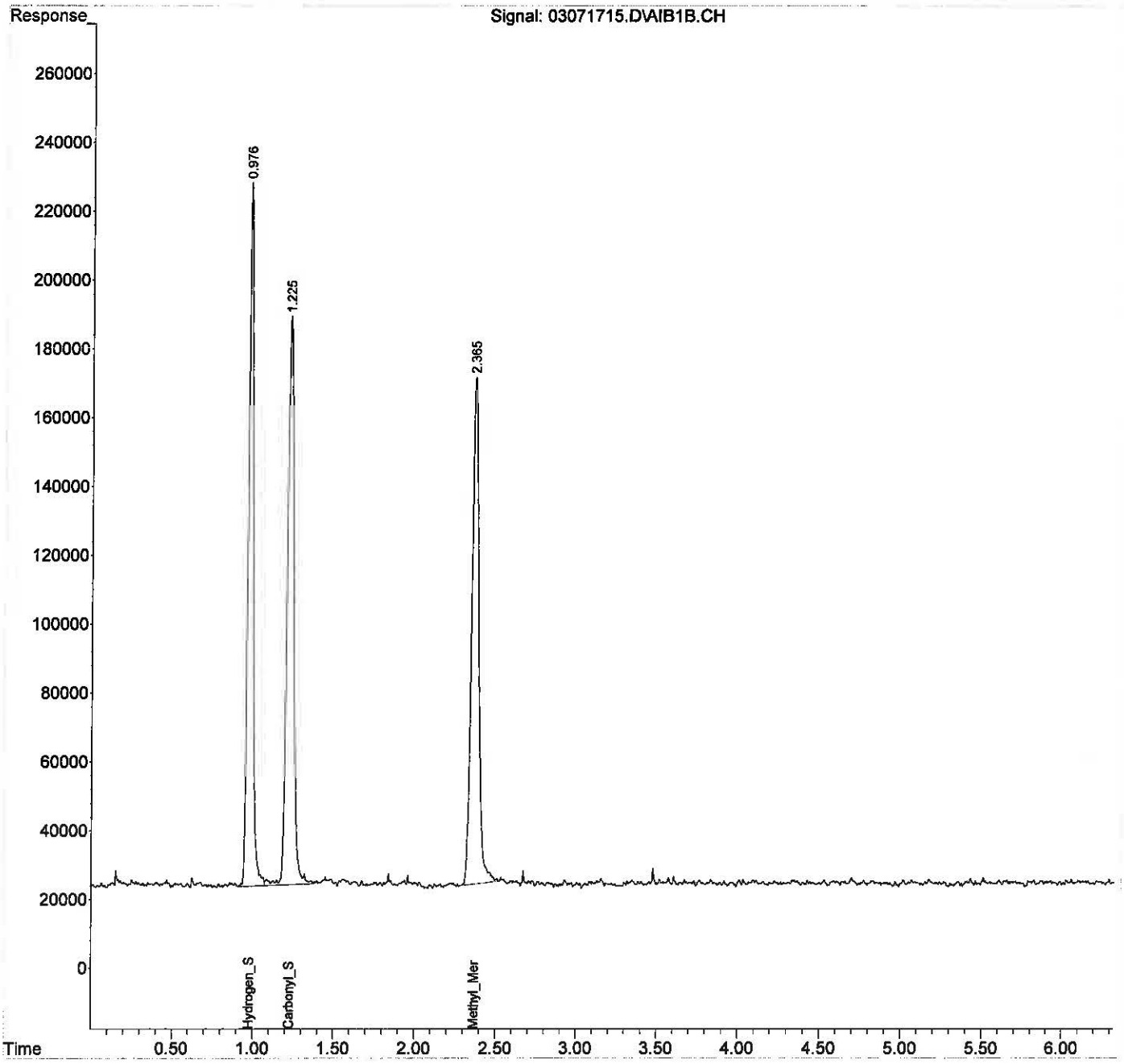
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071715.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 9:54
Operator : MC
Sample : 0.1ml 50.5 s30-03071703
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:01:03 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 09:53:27 2017
Response via : Initial Calibration.
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071716.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:02
Operator : MC
Sample : 0.5ml 252.5ppb s30-03071703
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:05:41 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:01:14 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.975	21404141	234.062	ppb
2)	W	Carbonyl_Sulfide	1.229	23305729	243.266	ppb
3)	T	Methyl_Mercaptan	2.370	22351886	248.262	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

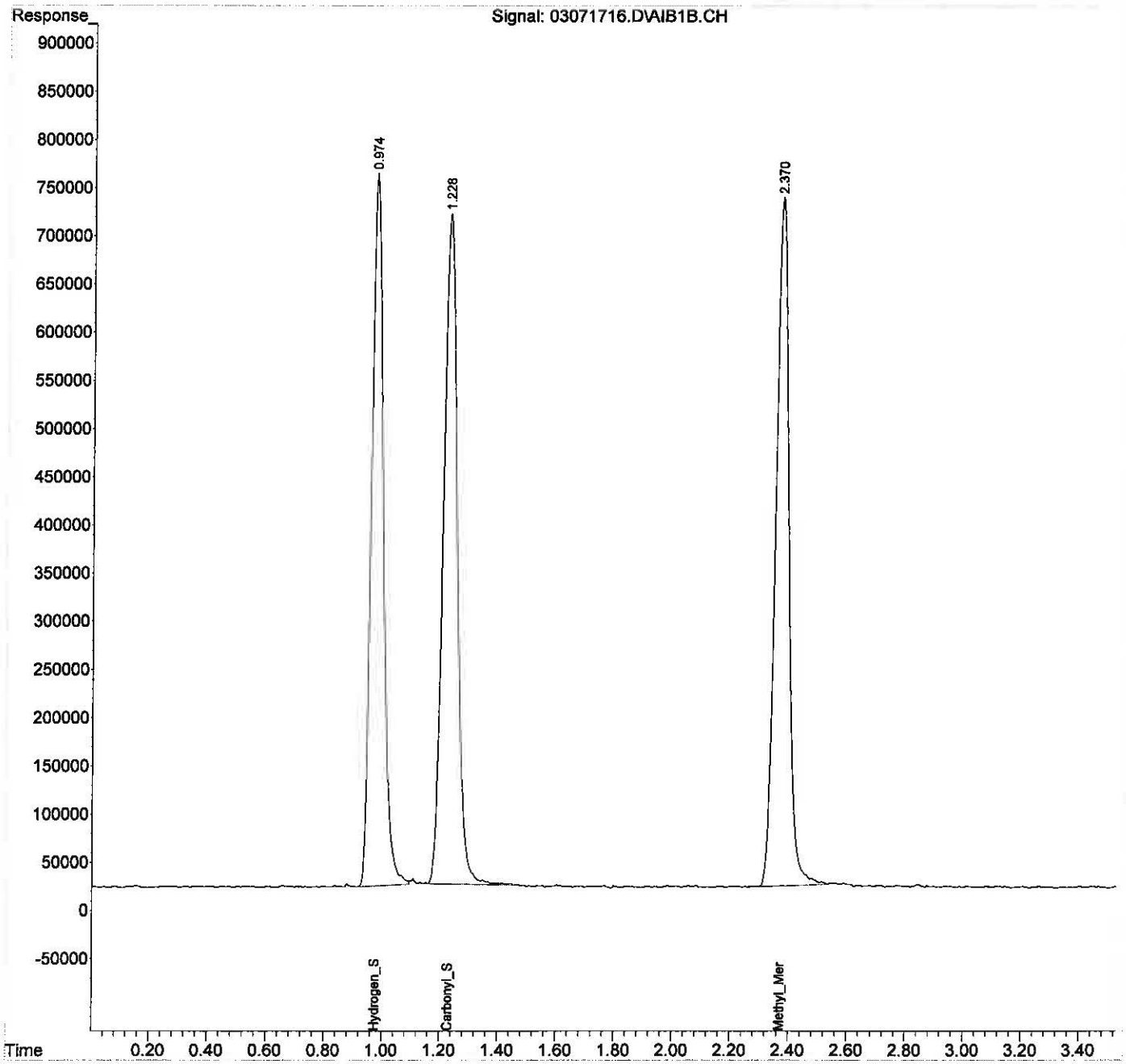
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071716.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:02
Operator : MC
Sample : 0.5ml 252.5ppb s30-03071703
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:05:41 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:01:14 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071717.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:06
Operator : MC
Sample : 0.1ml 1010ppb s30-03071701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:09:29 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:05:51 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.978	84705699	930.353	ppb
2)	W	Carbonyl_Sulfide	1.227	88225564	922.200	ppb
3)	T	Methyl_Mercaptan	2.366	85471843	950.814	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

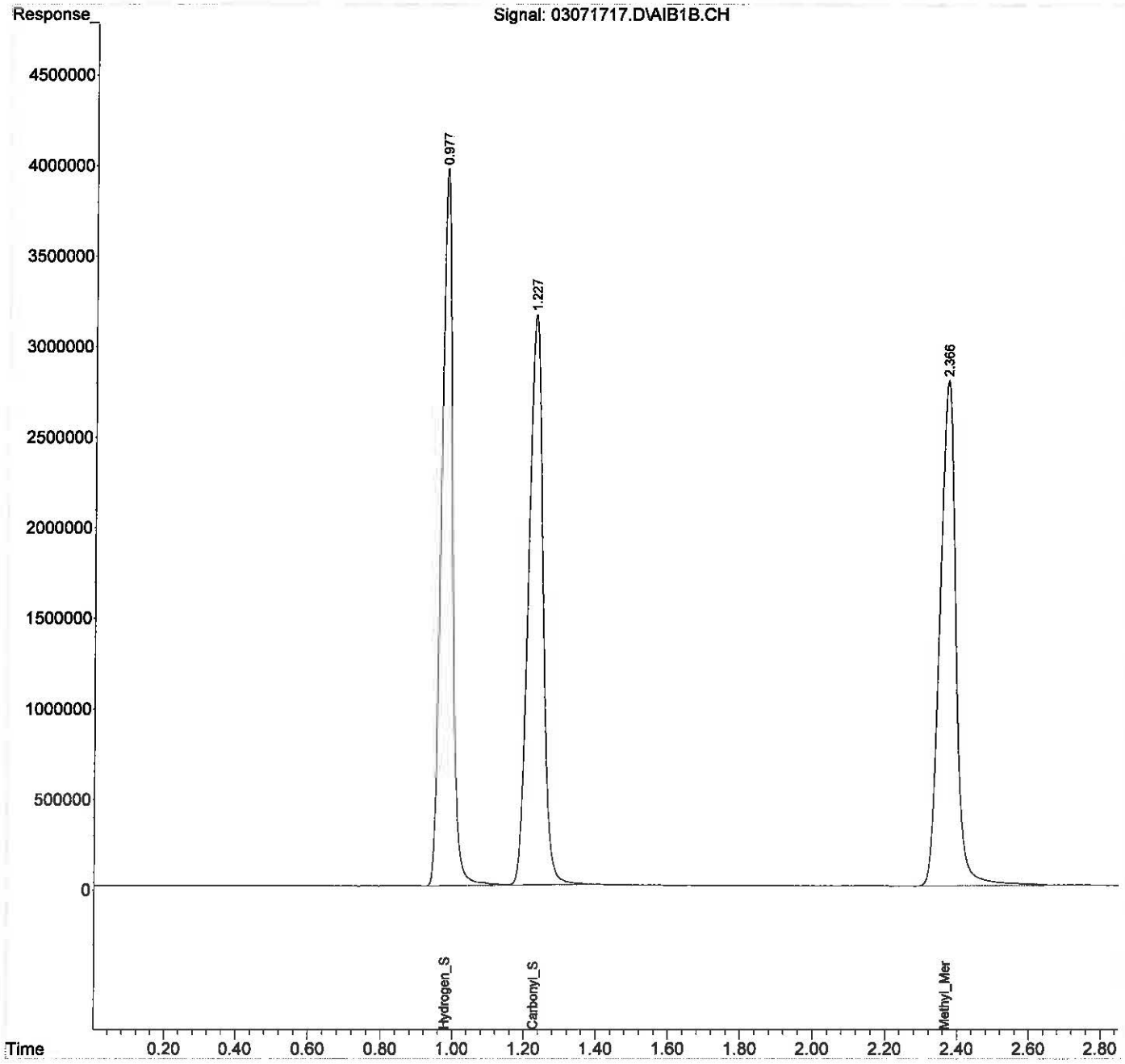
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071717.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:06
Operator : MC
Sample : 0.1ml 1010ppb s30-03071701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:09:29 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:05:51 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071718.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:10
Operator : MC
Sample : 0.25ml 2525ppb s30-03071701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:15:38 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:09:38 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.974	219900016	2426.234	ppb
2)	W	Carbonyl_Sulfide	1.224	230819279	2418.166	ppb
3)	T	Methyl_Mercaptan	2.364	224444245	2497.791	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	3.765	723755	2.668	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

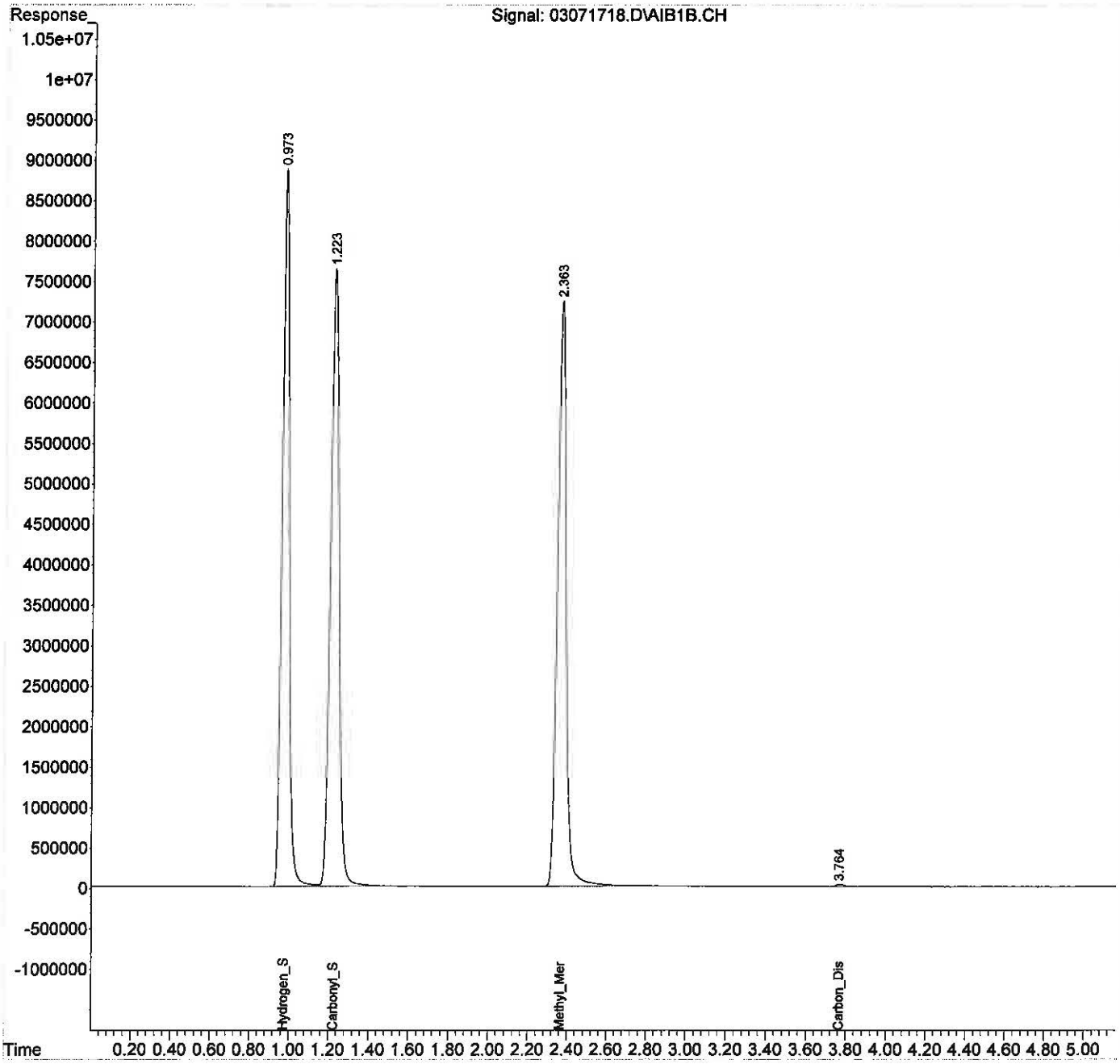
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071718.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:10
Operator : MC
Sample : 0.25ml 2525ppb s30-03071701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:15:38 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:09:38 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071719.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:16
Operator : MC
Sample : 0.5ml 5050ppb s30-03071701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:20:16 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:15:48 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.976	432986526	4854.115	ppb
2)	W	Carbonyl_Sulfide	1.229	459256531	4878.470	ppb
3)	T	Methyl_Mercaptan	2.370	444134450	4992.346	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	3.772	-622812	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

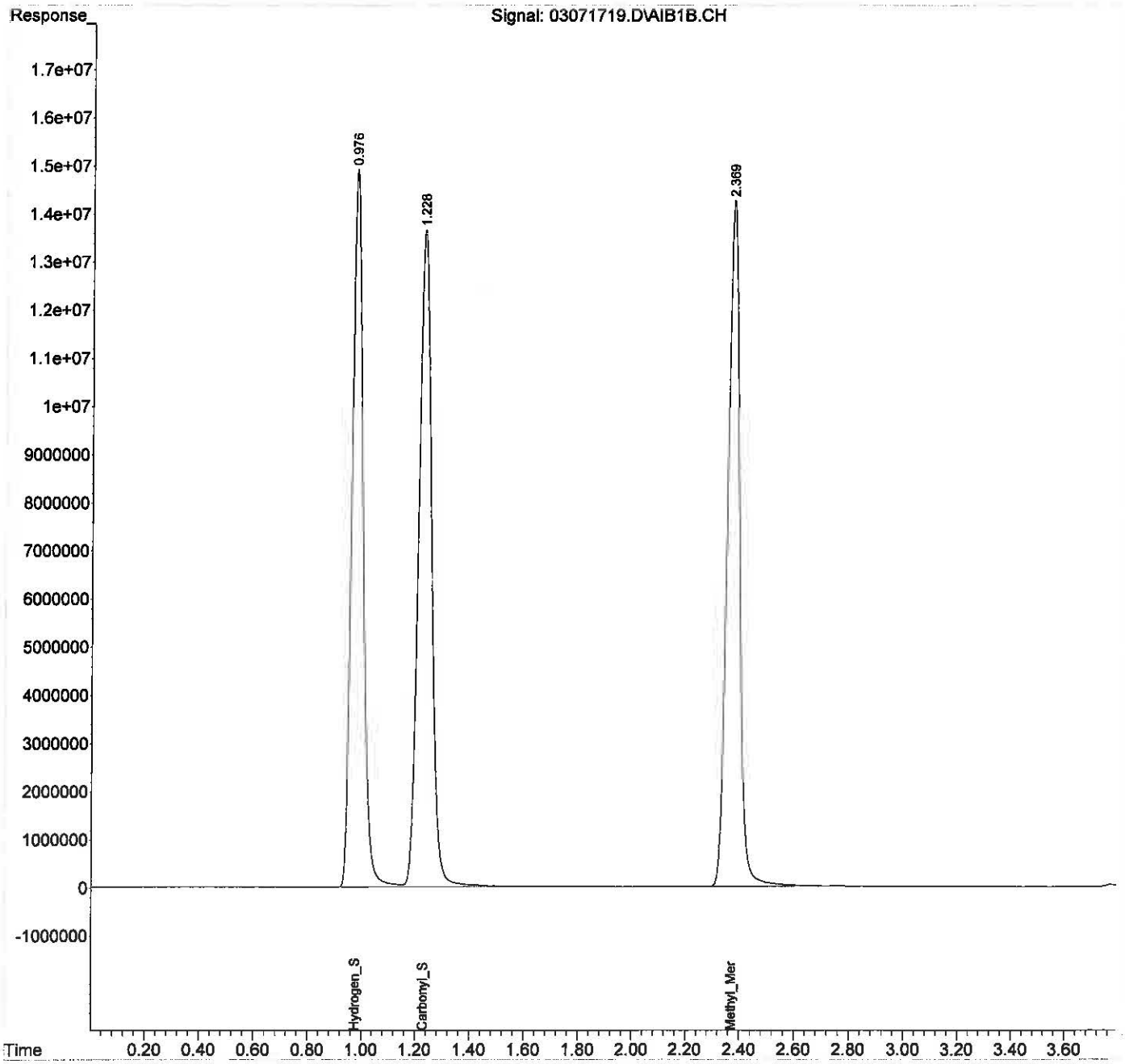
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071719.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:16
Operator : MC
Sample : 0.5ml 5050ppb s30-03071701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:20:16 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:15:48 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071720.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:21
Operator : MC
Sample : 1ml 10100ppb s30-03071701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:24:53 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:20:26 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.974	834474958	9555.983	ppb
2)	W	Carbonyl_Sulfide	1.227	901347650	9754.124	ppb
3)	T	Methyl_Mercaptan	2.366	857065021	9785.030	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

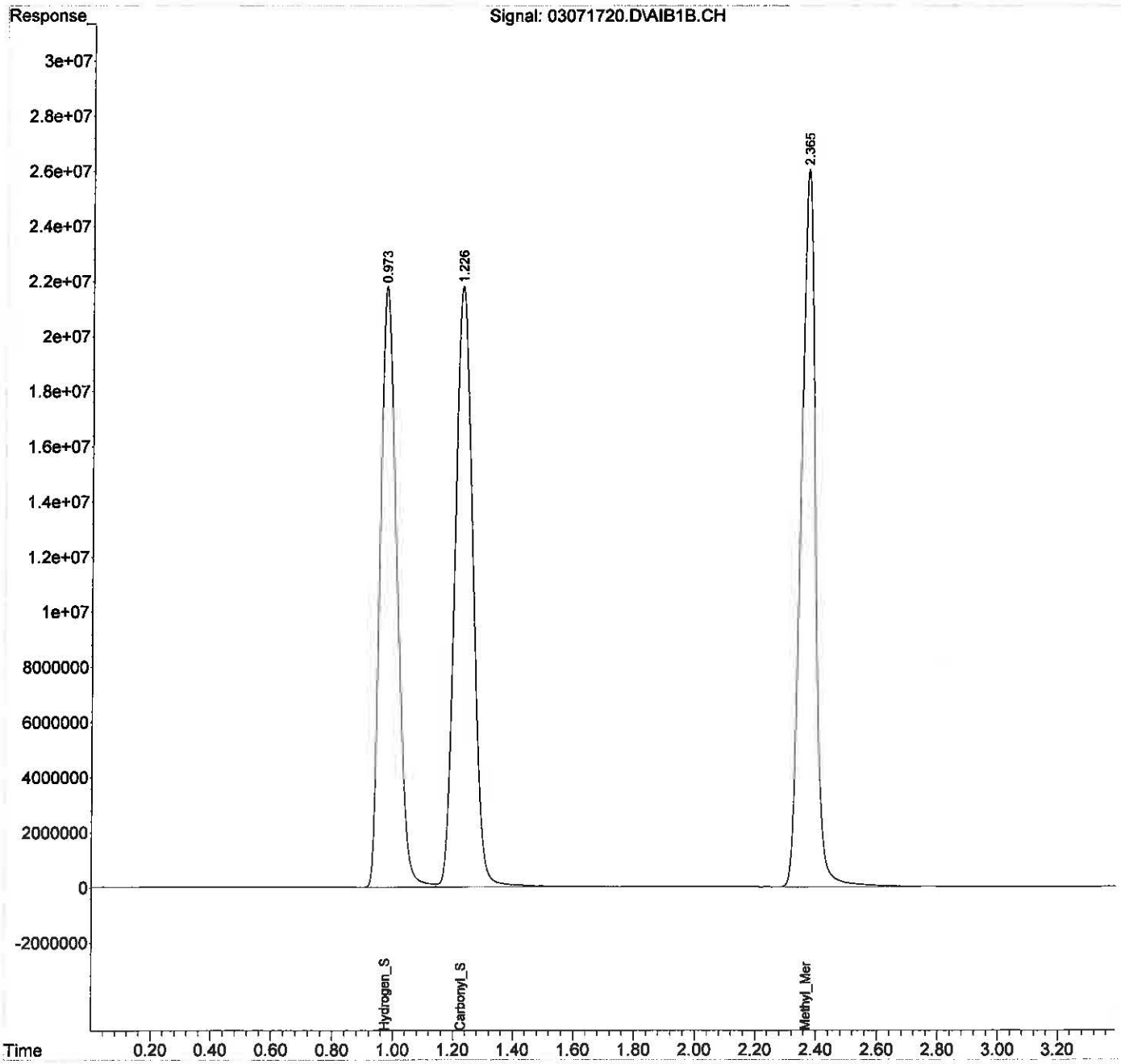
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071720.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:21
Operator : MC
Sample : 1ml 10100ppb s30-03071701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:24:53 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:20:26 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071721.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:26
Operator : MC
Sample : 0.025ml 25ppm s30-11031401
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:30:29 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:25:04 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.975	1822815367	21287.597	ppb
2)	W	Carbonyl_Sulfide	1.224	2023005311	22294.224	ppb
3)	T	Methyl_Mercaptan	2.362	1885040417	21915.390	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	3.564	531379	5.876	ppb
6)	T	Carbon_Disulfide	3.766	6654924	31.543	ppb
7)	T	2-Propyl_Mercaptan	4.039	73339	0.811	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

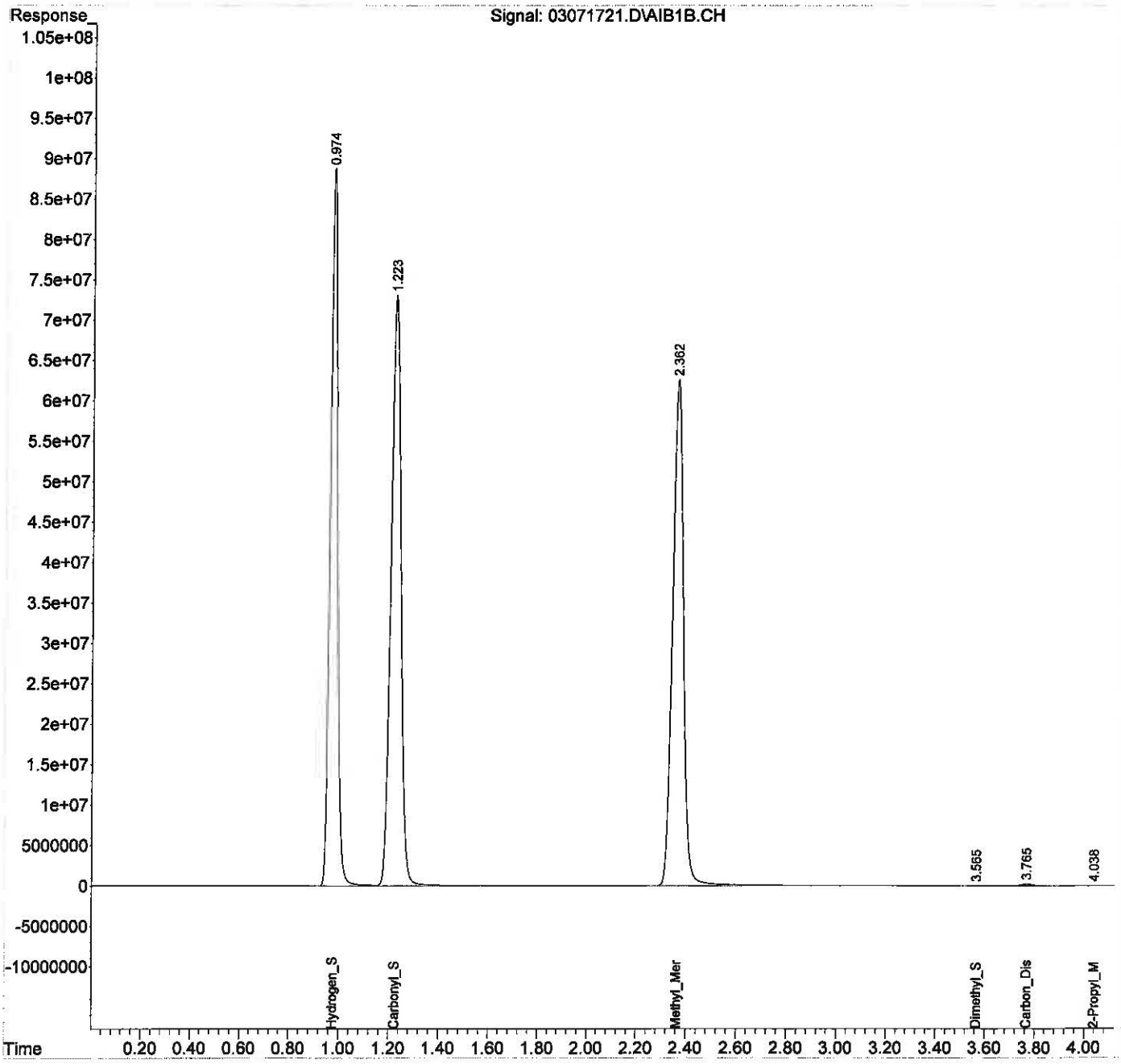
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071721.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:26
Operator : MC
Sample : 0.025ml 25ppm s30-11031401
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:30:29 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:25:04 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071723.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:36
Operator : MC
Sample : 0.05ml 50ppm s30-11031401
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:39:11 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:35:18 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.975	3918226613	48723.372	ppb
2)	W	Carbonyl_Sulfide	1.224	4294226975	49529.883	ppb
3)	T	Methyl_Mercaptan	2.363	4221029427	51071.711	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

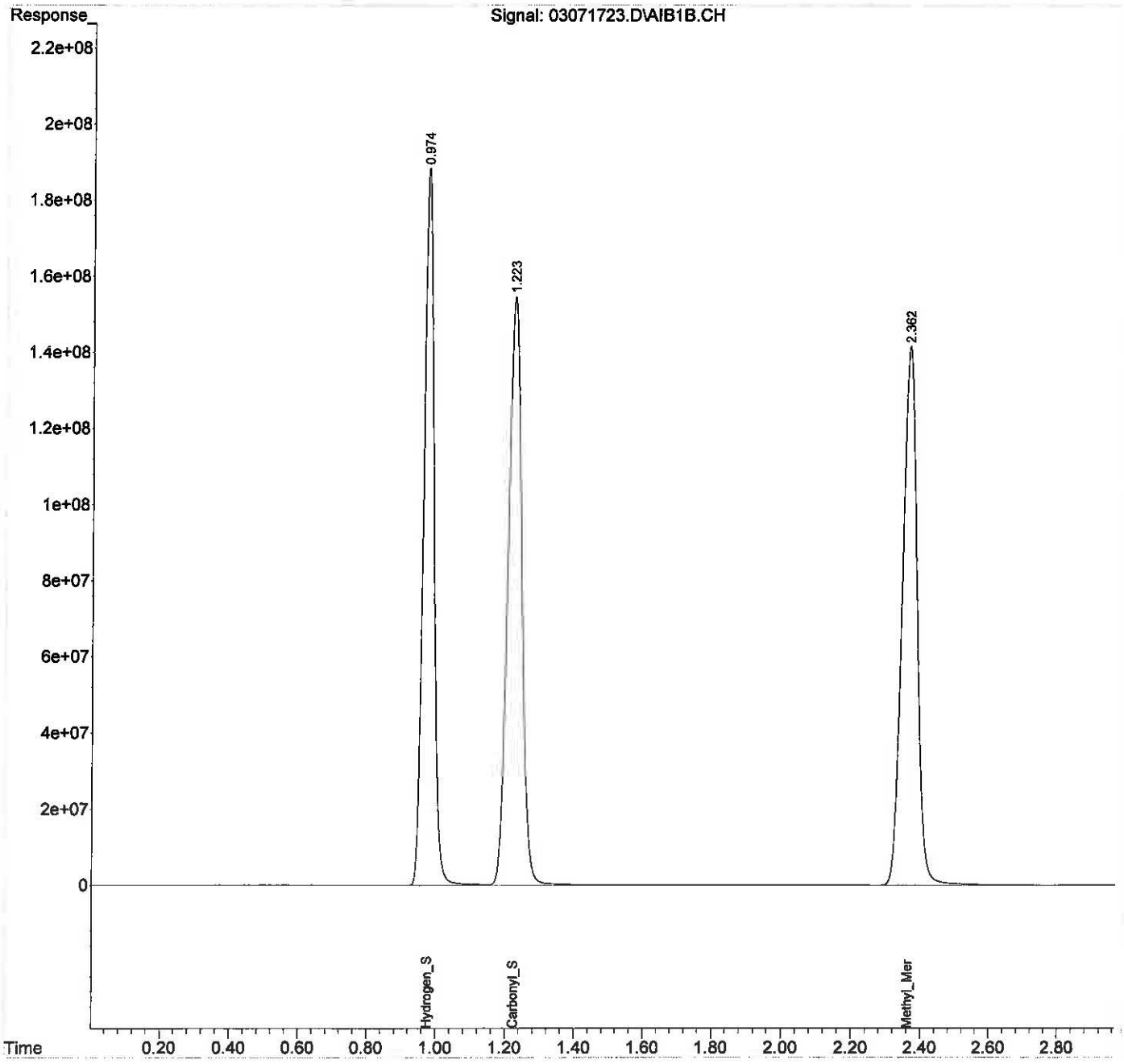
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071723.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:36
Operator : MC
Sample : 0.05ml 50ppm s30-11031401
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:39:11 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:35:18 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071724.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:55
Operator : MC
Sample : ICV s30-02171701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:59:54 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:39:20 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

MC 3/8/17

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units	actual	%
Target Compounds								
1)	Z	Hydrogen_Sulfide	0.978	75884269	929.272	ppb	1000	92.93
2)	W	Carbonyl_Sulfide	1.228	80361789	912.575	ppb	1000	91.26
3)	T	Methyl_Mercaptan	2.369	76067908	905.038	ppb	1000	90.50
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb		
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb		
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb		
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb		
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb		
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb		
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb		
11)	T	Thiophene	0.000	0	N.D.	ppb		
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb		
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb		
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb		
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb		
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb		
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb		
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb		
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb		
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb		
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb		
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb		

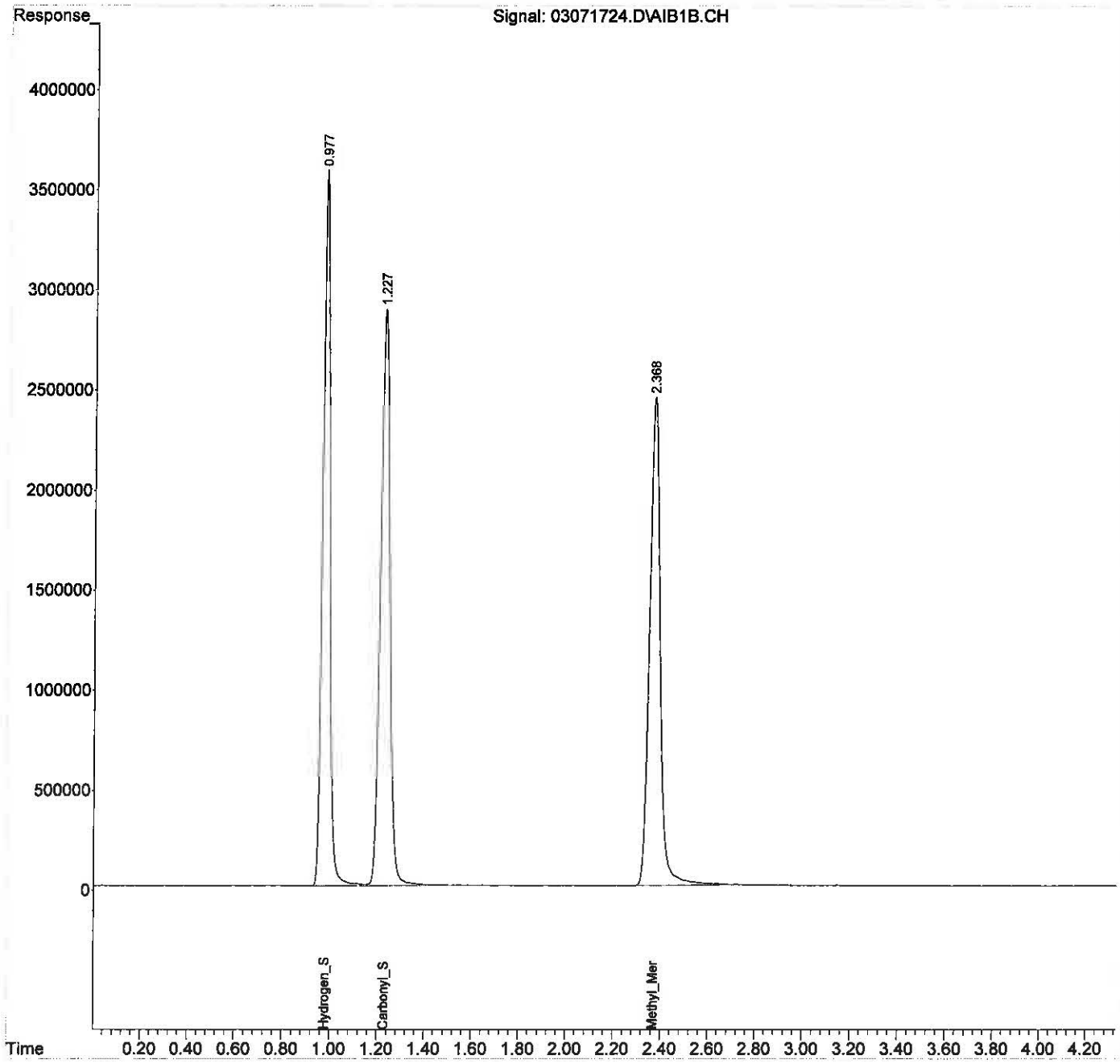
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071724.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:55
Operator : MC
Sample : ICV s30-02171701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:59:54 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:39:20 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



ALS Environmental

REPORT SUMMARY

Method : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
Client : GHD Services Inc.
Analyst : MC

Service Request : P1703973
Instrument : GC13
Date Acquired : 8/16/17

Compounds	MDL	RL	MB QC		Dry Wall QC		Lab Dup			Continuing Calibration Standards Summary (ppbv)													
			MB					dup	%RSD	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff
Sample Information :	ppb	ppb	mb 1ml							std s30-06191701		std s30-06191701		std s30-06191701		std s30-06191701		std s30-06191701					
Inj. Vol. (ml)	1.0	1.0	1.00		1.0	1.0				0.10		0.10		0.10		0.10		0.10		0.10		0.10	
Dilution	1.0	1.0	1.00		1.0	1.0																	
Pi:	1.0	1.0	1.0		1.0	1.0																	
Pi:	1.0	1.0	1.0		1.0	1.0																	
PiPf DF:	1.0	1.0	1.0		1.0	1.0																	
Hydrogen_Sulfide	1.900	5.000	ND	P						931.55	7.8%	754.591	25.3%	808.573	19.9%	1059.142	4.9%	1229.177	21.7%				
Carbonyl_Sulfide	1.700	5.000	ND	P						950.50	4.9%	778.351	22.2%	822.603	17.7%	1075.211	7.5%	1217.003	21.7%				
Methyl_Mercaptan	1.200	5.000	ND	P						928.15	7.2%	759.130	24.1%	801.881	19.8%	1057.054	5.7%	1197.846	19.8%				
Ethyl_Mercaptan	1.200	5.000	ND	P																			
Dimethyl_Sulfide	1.200	5.000	ND	P						7:50 AM		9:37 AM		11:53 AM		4:17 PM		4:42 PM					
Carbon_Disulfide	0.600	2.500	ND	P						08161701.D		08161709.D		08161715.D		08161726.D		08161728.D					
2-Propyl_Mercaptan	1.200	5.000	ND	P																			
t-Butyl_Mercaptan	1.200	5.000	ND	P																			
Propyl_Mercaptan	1.200	5.000	ND	P																			
Ethyl_Methyl_Sulfide	1.200	5.000	ND	P																			
Thiophene	1.200	5.000	ND	P																			
i-Butyl_Mercaptan	1.200	5.000	ND	P																			
Diethyl_Sulfide	1.200	5.000	ND	P																			
n-Butyl_Mercaptan	1.200	5.000	ND	P																			
Dimethyl_Disulfide	0.600	2.500	ND	P																			
2-Methylthiophene	1.200	5.000	ND	P																			
3-Methylthiophene	1.200	5.000	ND	P																			
Tetrahydrothiophene	1.200	5.000	ND	P																			
2,5-Dimethylthiophene	1.200	5.000	ND	P																			
2-Ethylthiophene	1.200	5.000	ND	P																			
Diethyl_Disulfide	0.600	2.500	ND	P																			
Methyltrisulfide	0.600	2.500	ND	P																			
Acqisition Time			8:20 AM																				
DataFile			08161705.D																				

LCS / LCS Dup Summary (ppbv)

	ppbv	%R		ppbv	% R	%RPD	Actual
Hydrogen_Sulfide	952.03	95.2%		912.34	91.2%	4.26%	1000.00
Carbonyl_Sulfide	980.73	98.1%		936.46	93.6%	4.62%	1000.00
Methyl_Mercaptan	946.98	94.7%		900.21	90.0%	5.06%	1000.00
Acqisition Time	7:54 AM			7:57 AM			
DataFile	08161702.D			08161703.D			

1440 7/7

EnviroQuan
J:\Excel\Report\SCD\2017\P1703973_GHD Services Inc._Avtex Fibers Superfund Site _ 11119510-001_ASTM5504_1708171516_MC

JM 8/21/2

Printed: 8/17/2017 3:18 PM

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\16\
Data File : 08161701.D
Signal(s) : AIB1B.CH
Acq On : 16 Aug 2017 7:50
Operator : MC
Sample : std s30-06191701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 16:01:58 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.896	76070327	931.551	ppb
2)	W	Carbonyl_Sulfide	1.137	83701562	950.501	ppb
3)	T	Methyl_Mercaptan	2.262	78010010	928.145	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

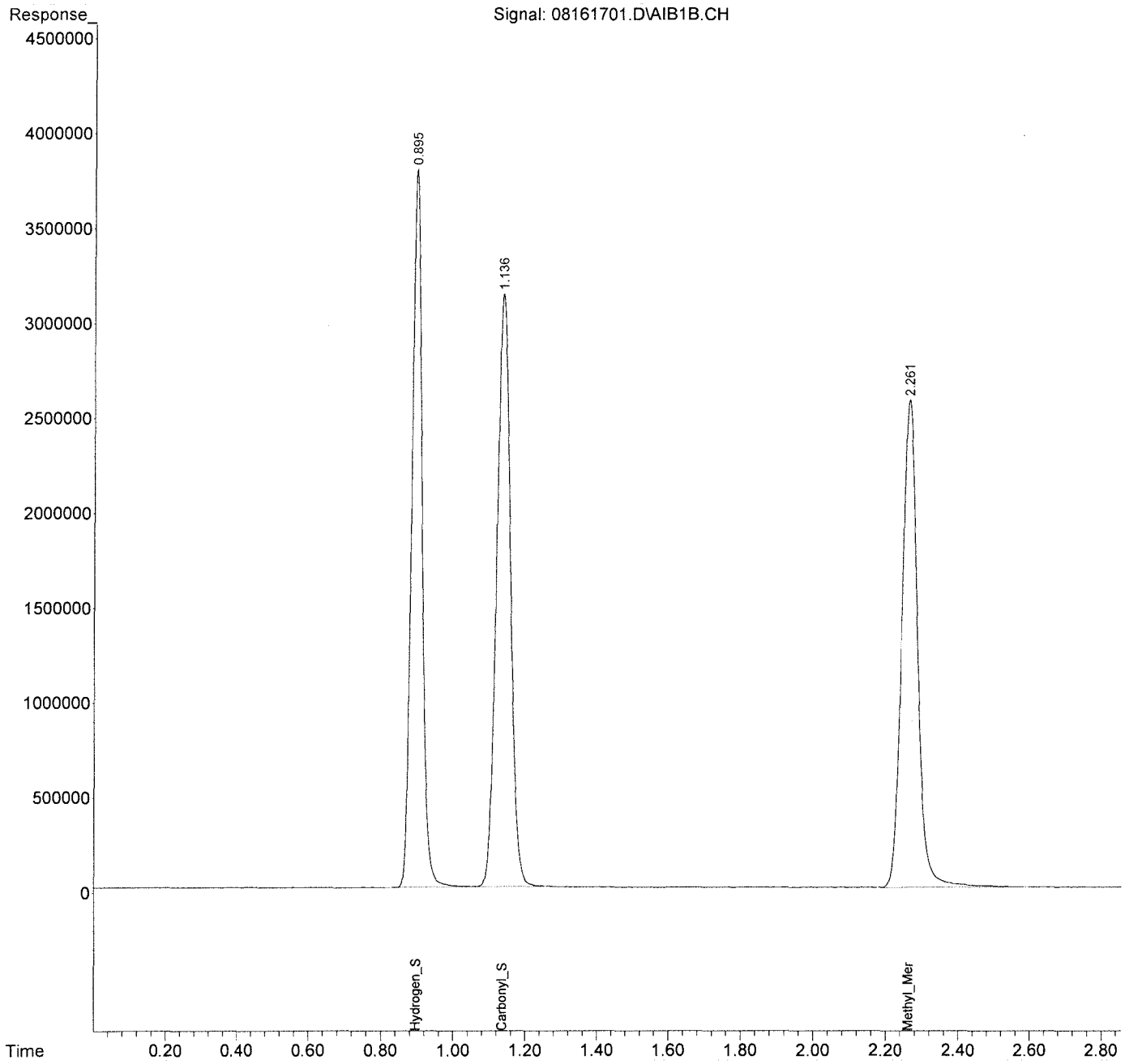
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\16\
Data File : 08161701.D
Signal(s) : AIB1B.CH
Acq On : 16 Aug 2017 7:50
Operator : MC
Sample : std s30-06191701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 16:01:58 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\16\
Data File : 08161709.D
Signal(s) : AIB1B.CH
Acq On : 16 Aug 2017 9:37
Operator : MC
Sample : std s30-06191701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 09:44:59 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.907	61619783	754.591	ppb
2)	W	Carbonyl_Sulfide	1.146	68541967	778.351	ppb
3)	T	Methyl_Mercaptan	2.264	63804390	759.130	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	3.643	217544	1.294	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	6.606	734850	4.370	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

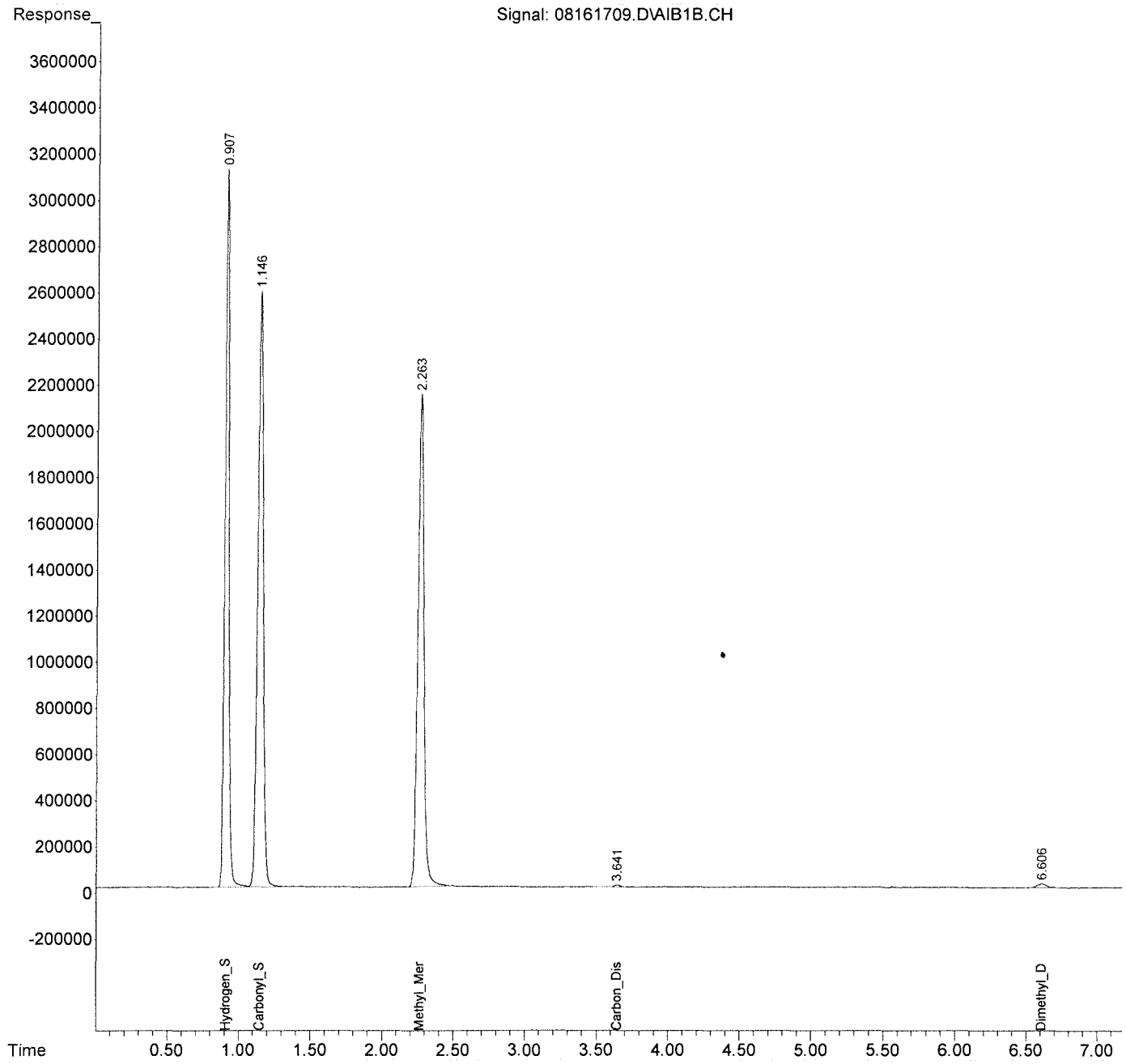
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\16\
Data File : 08161709.D
Signal(s) : AIB1B.CH
Acq On : 16 Aug 2017 9:37
Operator : MC
Sample : std s30-06191701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 09:44:59 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\16\
Data File : 08161715.D
Signal(s) : AIB1B.CH
Acq On : 16 Aug 2017 11:53
Operator : MC
Sample : std s30-06191701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 12:02:48 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.908	66027958	808.573	ppb
2)	W	Carbonyl_Sulfide	1.148	72438799	822.603	ppb
3)	T	Methyl_Mercaptan	2.264	67397621	801.881	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	3.646	276787	1.646	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	6.609	774881	4.608	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

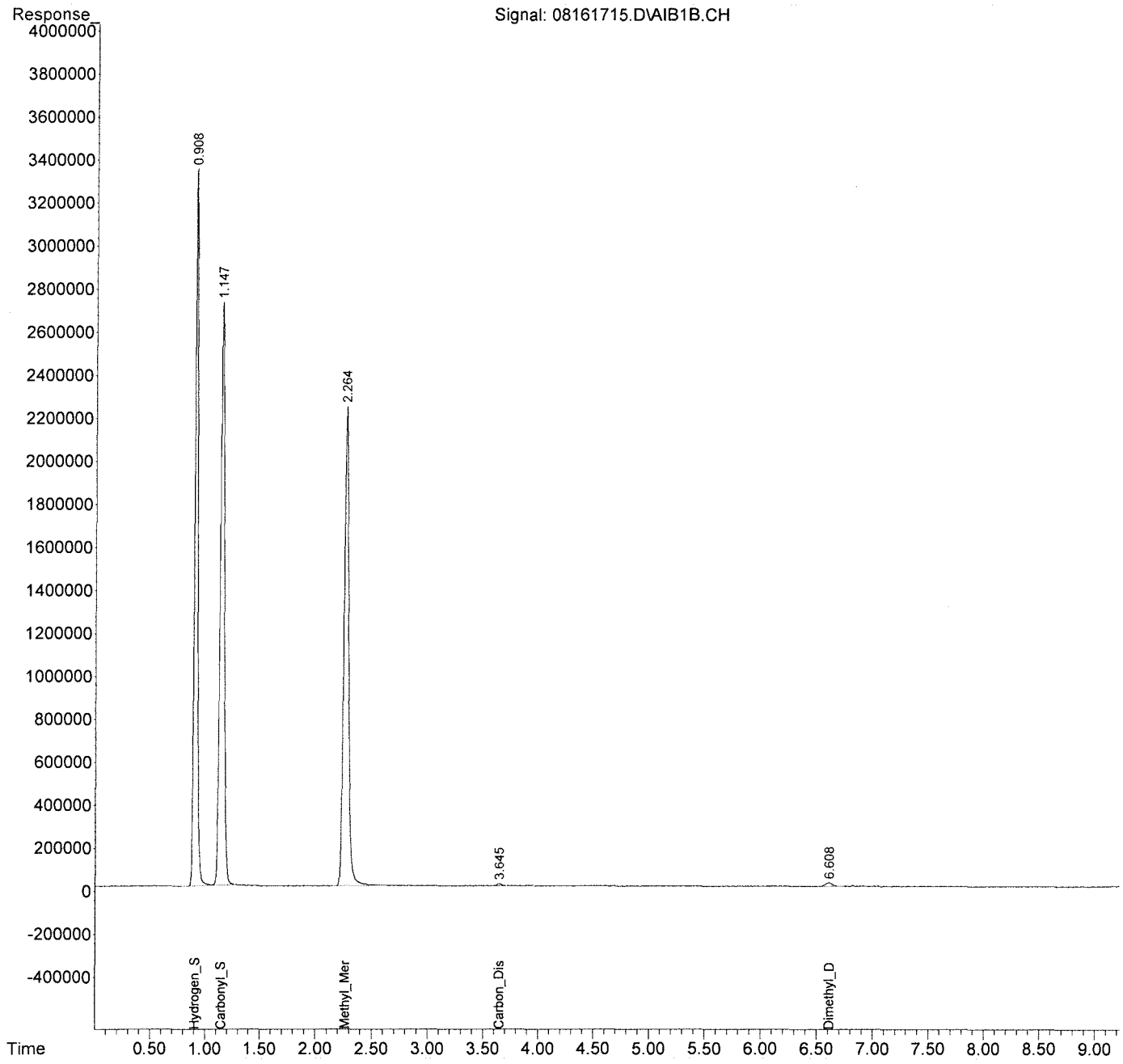
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\16\
Data File : 08161715.D
Signal(s) : AIB1B.CH
Acq On : 16 Aug 2017 11:53
Operator : MC
Sample : std s30-06191701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 12:02:48 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\16\
Data File : 08161726.D
Signal(s) : AIB1B.CH
Acq On : 16 Aug 2017 16:17
Operator : MC
Sample : std s30-06191701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 16:21:40 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.911	86489441	1059.142	ppb
2)	W	Carbonyl_Sulfide	1.151	94683559	1075.211	ppb
3)	T	Methyl_Mercaptan	2.270	88844685	1057.054	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	3.649	291663	1.734	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

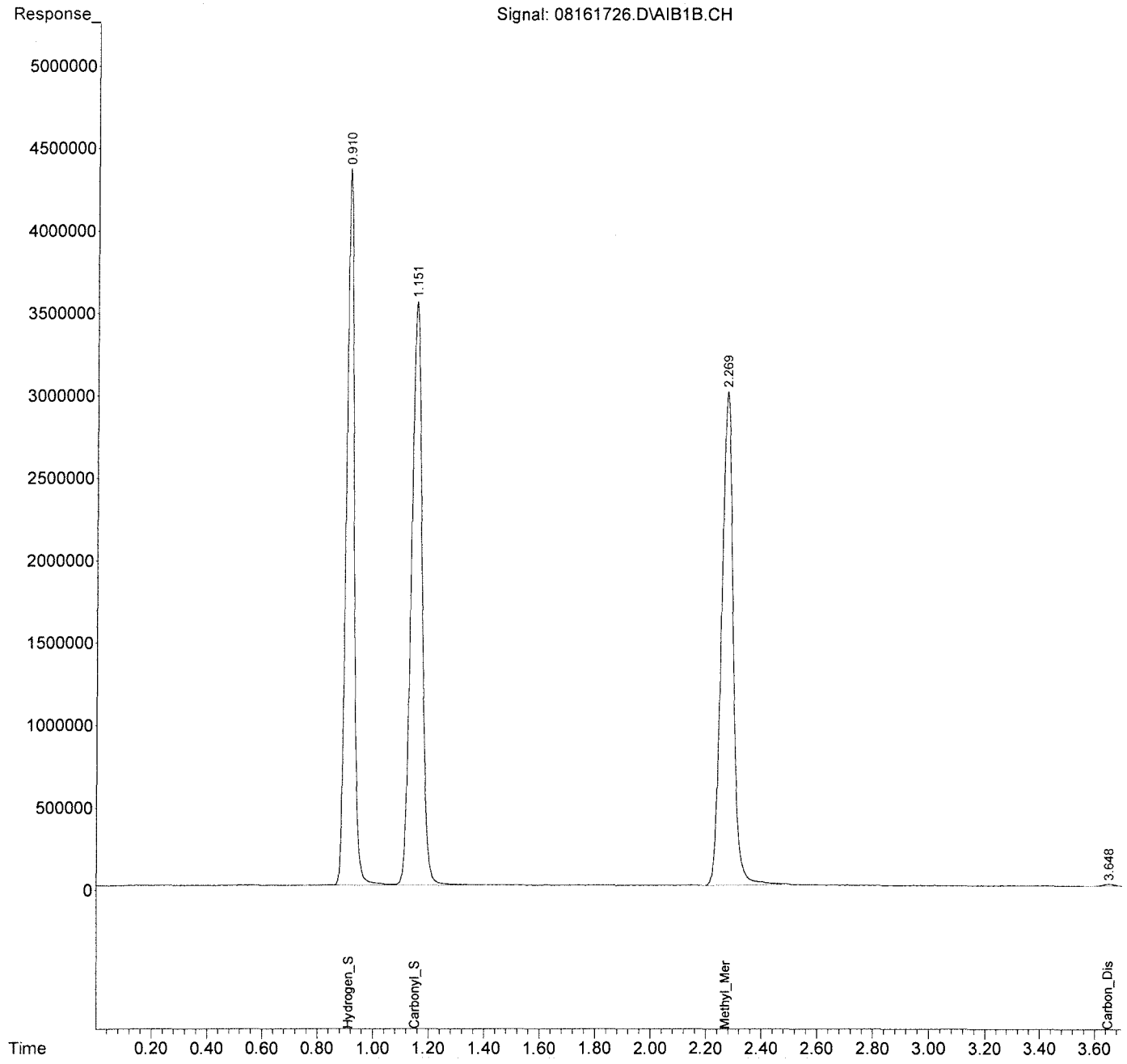
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\16\
Data File : 08161726.D
Signal(s) : AIB1B.CH
Acq On : 16 Aug 2017 16:17
Operator : MC
Sample : std s30-06191701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 16:21:40 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\16\
Data File : 08161728.D
Signal(s) : AIB1B.CH
Acq On : 16 Aug 2017 16:42
Operator : MC
Sample : std s30-06191701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 16:45:19 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.915	100374448	1229.177	ppb
2)	W	Carbonyl_Sulfide	1.157	107169791	1217.003	ppb
3)	T	Methyl_Mercaptan	2.274	100678235	1197.846	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

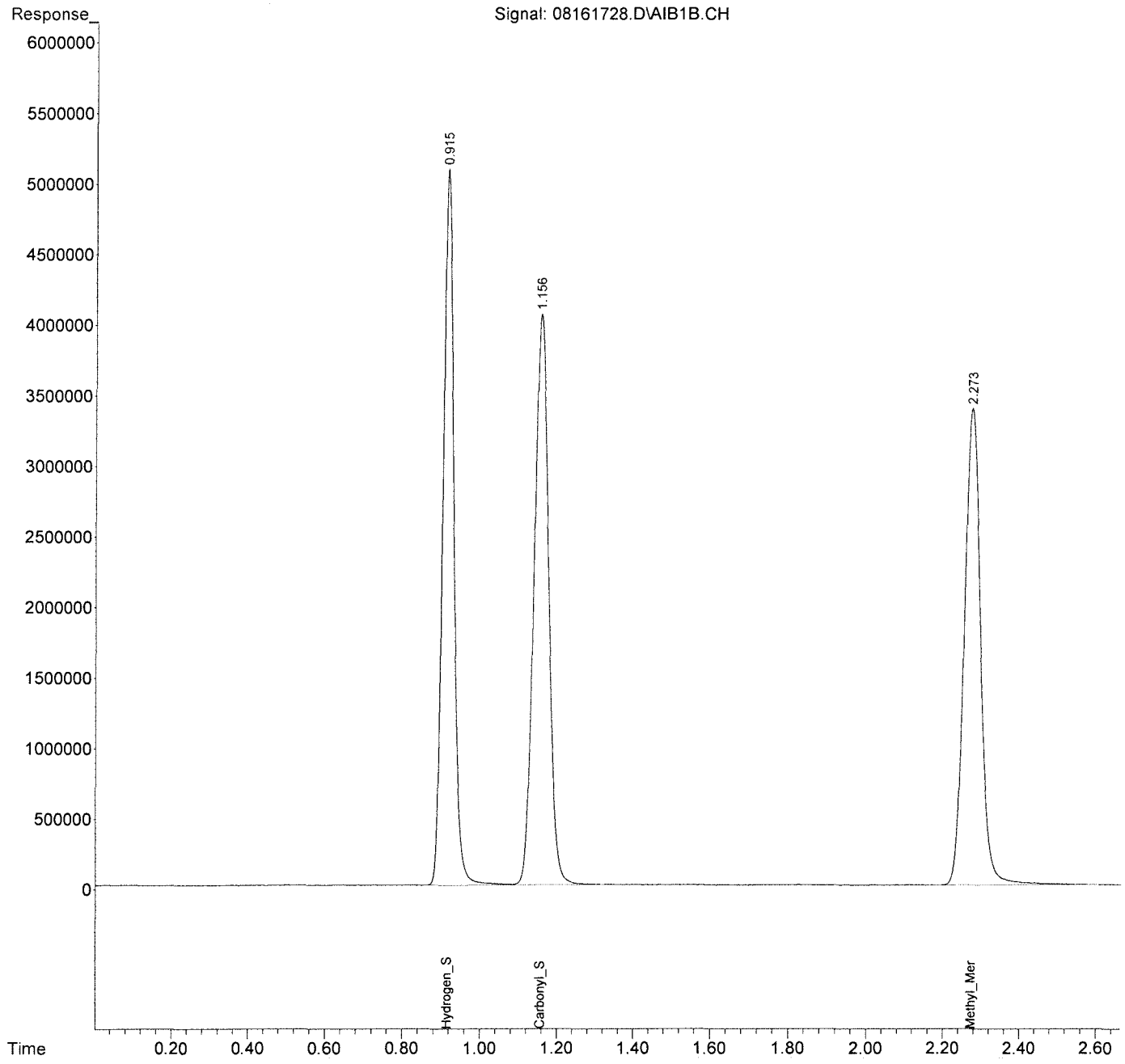
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\16\
Data File : 08161728.D
Signal(s) : AIB1B.CH
Acq On : 16 Aug 2017 16:42
Operator : MC
Sample : std s30-06191701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 16:45:19 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



ALS Environmental

REPORT SUMMARY

Method : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
Client : GHD Services Inc.
Analyst : MC

Service Request : P1703973
Instrument : GC #22
Date Acquired : 8/16/17

Compounds	MDL	RL	MB QC		Dry Wall QC		Lab Dup			Continuing Calibration Standards Summary (ppbv)													
			MB					dup	%RSD	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff
Sample Information :	ppb	ppb	mb 1ml							std s30-06191701		std s30-06191701		std s30-06191701		std s30-06191701							
Inj. Vol. (ml)	1.0	1.0	1.00		1.0	1.0				0.10		0.10		0.10		0.10		0.10		0.10		0.10	
Dilution	1.0	1.0	1.00		1.0	1.0																	
Pi:	1.0	1.0	1.0		1.0	1.0																	
Pi:	1.0	1.0	1.0		1.0	1.0																	
PiPf DF:	1.0	1.0	1.0		1.0	1.0																	
Hydrogen_Sulfide	1.900	5.000	ND	P						927.84	8.1%	871.031	13.8%	1078.960	6.8%	1196.601	18.5%						
Carbonyl_Sulfide	1.700	5.000	ND	P						984.38	1.6%	932.084	6.8%	1177.175	17.7%	1224.215	22.4%						
Methyl_Mercaptan	1.200	5.000	ND	P						989.05	1.1%	921.969	7.8%	1178.757	17.9%	1219.048	21.9%						
Ethyl_Mercaptan	1.200	5.000	ND	P																			
Dimethyl_Sulfide	1.200	5.000	ND	P						7:50 AM		10:49 AM		12:02 PM		4:40 PM							
Carbon_Disulfide	0.600	2.500	ND	P						08161701.d		08161717.d		08161721.d		08161725.d							
2-Propyl_Mercaptan	1.200	5.000	ND	P																			
t-Butyl_Mercaptan	1.200	5.000	ND	P																			
Propyl_Mercaptan	1.200	5.000	ND	P																			
Ethyl_Methyl_Sulfide	1.200	5.000	ND	P																			
Thiophene	1.200	5.000	ND	P																			
i-Butyl_Mercaptan	1.200	5.000	ND	P																			
Diethyl_Sulfide	1.200	5.000	ND	P																			
n-Butyl_Mercaptan	1.200	5.000	ND	P																			
Dimethyl_Disulfide	0.600	2.500	ND	P																			
2-Methylthiophene	1.200	5.000	ND	P																			
3-Methylthiophene	1.200	5.000	ND	P																			
Tetrahydrothiophene	1.200	5.000	ND	P																			
2,5-Dimethylthiophene	1.200	5.000	ND	P																			
2-Ethylthiophene	1.200	5.000	ND	P																			
Diethyl_Disulfide	0.600	2.500	ND	P																			
Methyltrisulfide	0.600	2.500	ND	P																			
Acqisition Time			8:17 AM																				
DataFile			08161705.d																				

LCS / LCS Dup Summary (ppbv)

	ppbv	%R		ppbv	% R	%RPD	Actual
Hydrogen_Sulfide	914.48	91.4%		873.93	87.4%	4.53%	1000.00
Carbonyl_Sulfide	960.86	96.1%		932.14	93.2%	3.03%	1000.00
Methyl_Mercaptan	954.54	95.5%		911.11	91.1%	4.66%	1000.00
Acqisition Time	7:54 AM			7:57 AM			
DataFile	08161702.d			08161703.d			

MC 8/17/17

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_08\16\
Data File : 08161701.d
Signal(s) : AIB1A.ch
Acq On : 16 Aug 2017 7:50
Operator : MC
Sample : std s30-06191701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 10:43:33 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

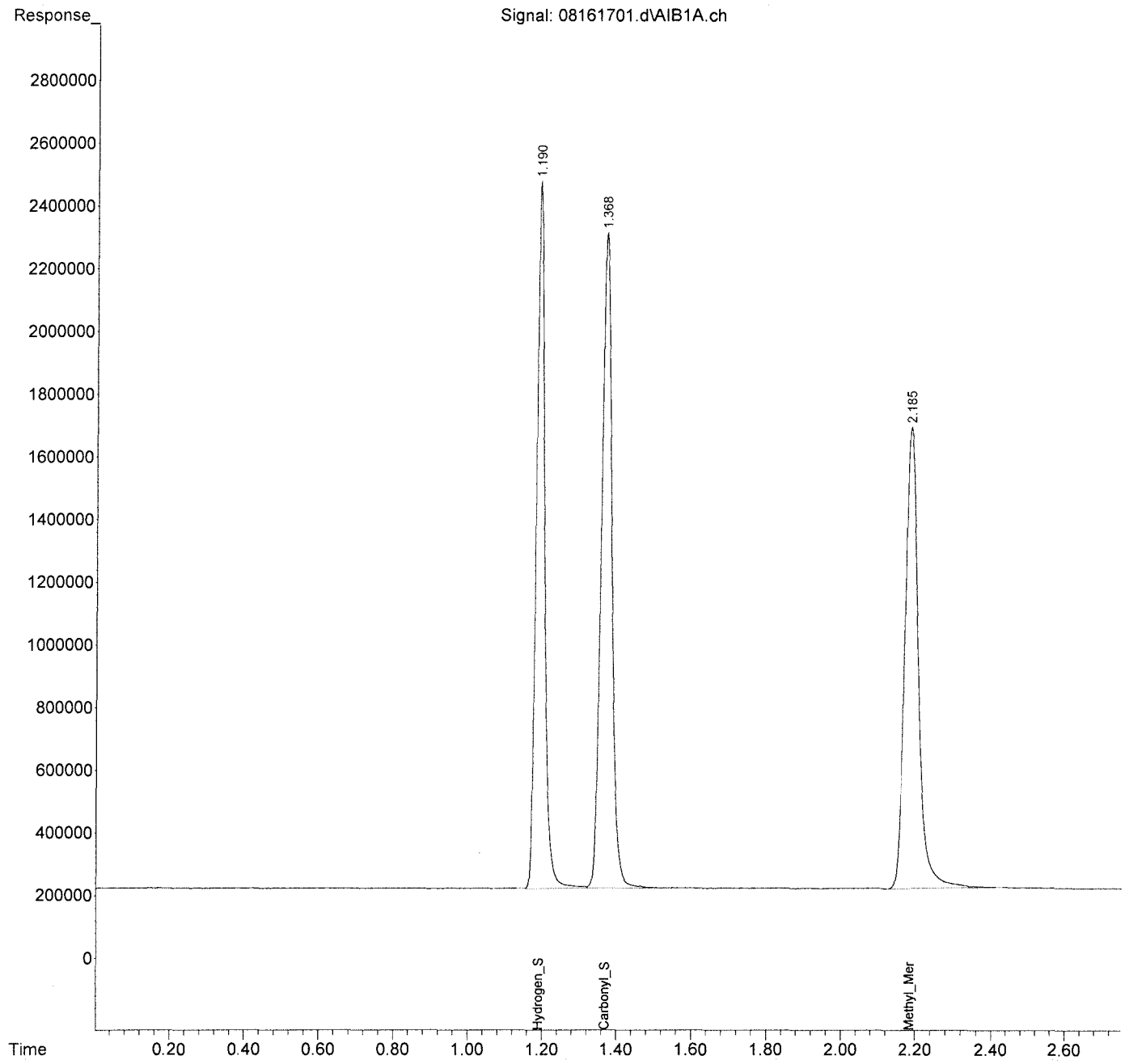
		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	1.190	35544056	927.836	ppb
2)	W	Carbonyl_Sulfide	1.369	41430977	984.380	ppb
3)	T	Methyl_Mercaptan	2.186	37183999	989.050	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC22\DATA\SCD\2017_08\16\
Data File : 08161701.d
Signal(s) : AIB1A.ch
Acq On : 16 Aug 2017 7:50
Operator : MC
Sample : std s30-06191701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 10:43:33 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_08\16\
Data File : 08161717.d
Signal(s) : AIB1A.ch
Acq On : 16 Aug 2017 10:49
Operator : MC
Sample : std s30-06191701
Misc :
ALS Vial : 17 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 10:54:10 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	1.171	33367957	871.031	ppb
2)	W	Carbonyl_Sulfide	1.349	39229913	932.084	ppb
3)	T	Methyl_Mercaptan	2.165	34662036	921.969	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

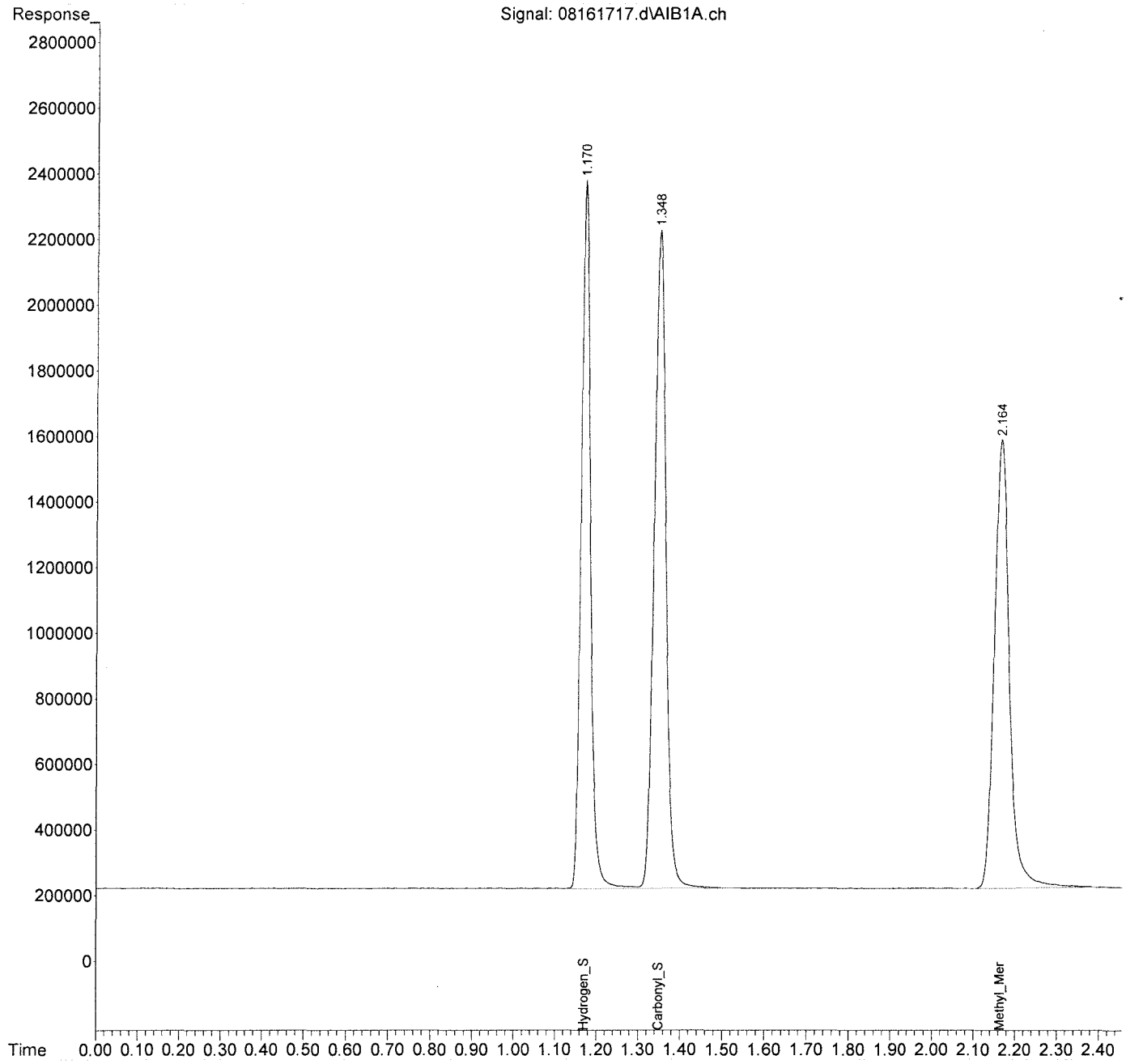
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_08\16\
Data File : 08161717.d
Signal(s) : AIB1A.ch
Acq On : 16 Aug 2017 10:49
Operator : MC
Sample : std s30-06191701
Misc :
ALS Vial : 17 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 10:54:10 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_08\16\
Data File : 08161721.d
Signal(s) : AIB1A.ch
Acq On : 16 Aug 2017 12:02
Operator : MC
Sample : std s30-06191701
Misc :
ALS Vial : 21 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 10:04:33 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	1.162	41333399	1078.960	ppb
2)	W	Carbonyl_Sulfide	1.337	49545417	1177.175	ppb
3)	T	Methyl_Mercaptan	2.148	44316154	1178.757	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	3.394	159564	2.122	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	6.350	372762	4.958	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

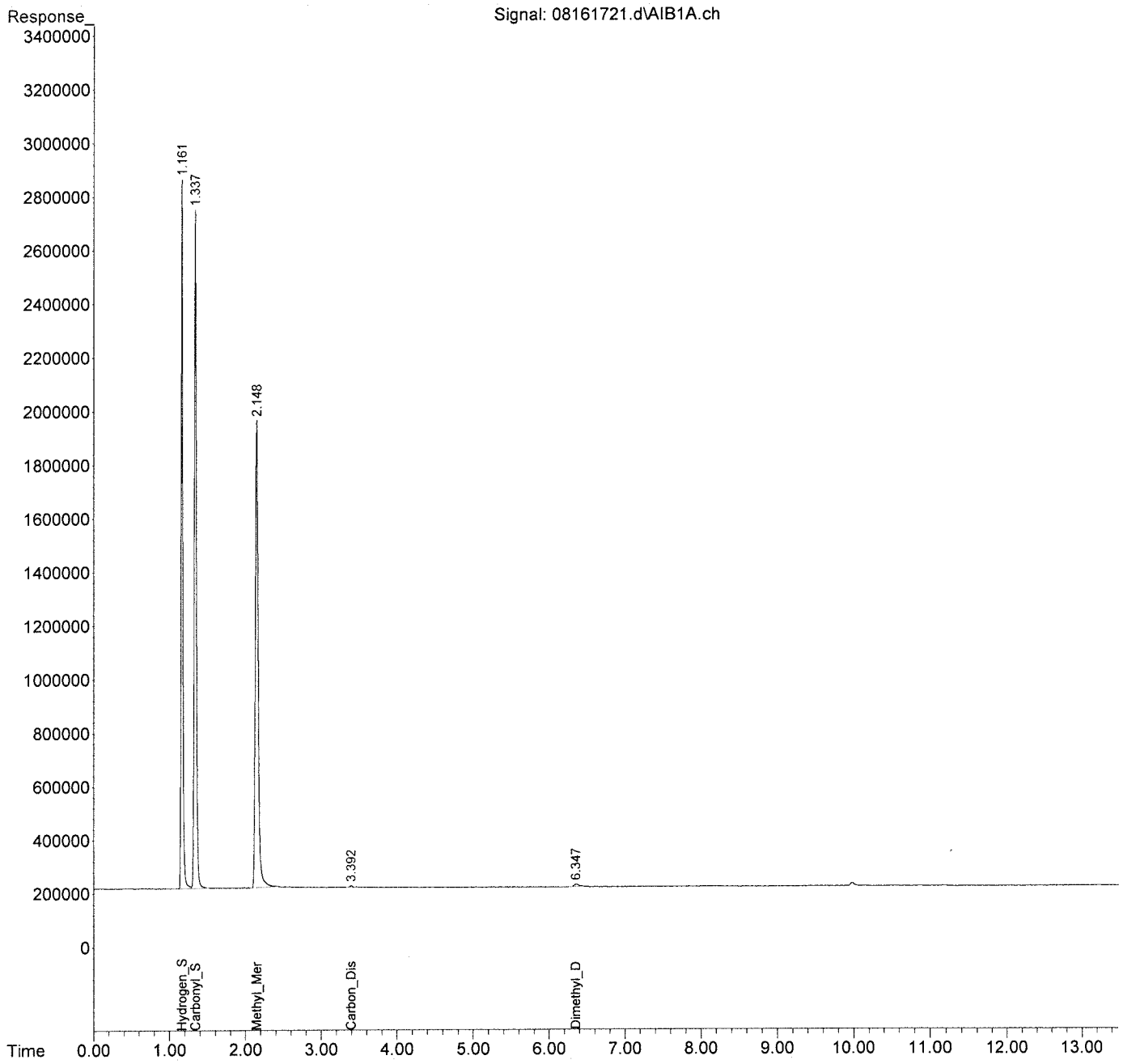
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_08\16\
Data File : 08161721.d
Signal(s) : AIB1A.ch
Acq On : 16 Aug 2017 12:02
Operator : MC
Sample : std s30-06191701
Misc :
ALS Vial : 21 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 10:04:33 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_08\16\
Data File : 08161725.d
Signal(s) : AIB1A.ch
Acq On : 16 Aug 2017 16:40
Operator : MC
Sample : std s30-06191701
Misc :
ALS Vial : 25 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 16:42:49 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

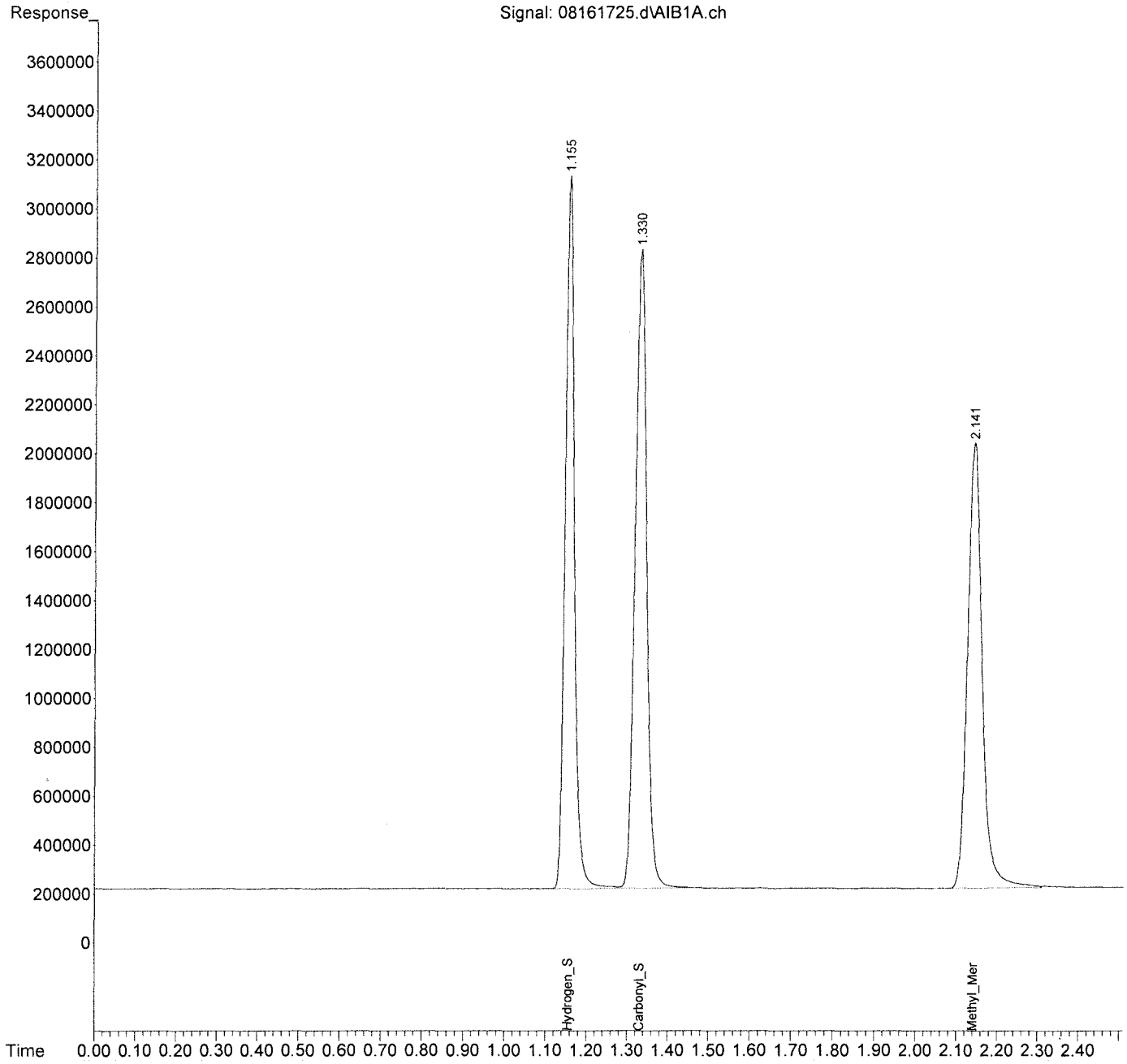
		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	1.155	45840057	1196.601	ppb
2)	W	Carbonyl_Sulfide	1.331	51525260	1224.215	ppb
3)	T	Methyl_Mercaptan	2.141	45830926	1219.048	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC22\DATA\SCD\2017_08\16\
Data File : 08161725.d
Signal(s) : AIB1A.ch
Acq On : 16 Aug 2017 16:40
Operator : MC
Sample : std s30-06191701
Misc :
ALS Vial : 25 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 16 16:42:49 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



ALS Environmental

REPORT SUMMARY

Method : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
Client : GHD Services Inc.
Analyst : MC

Service Request : P1703973
Instrument : GC13
Date Acquired : 8/17/17

Compounds	MDL	RL	MB QC		Dry Wall QC		Lab Dup			Continuing Calibration Standards Summary (ppbv)													
			MB					dup	%RSD	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff
Sample Information :	ppb	ppb	mb 1ml							std s30-06191701		std s30-06191701											
Inj. Vol. (ml)	1.0	1.0	1.00		1.0	1.0				0.10		0.10		0.10		0.10		0.10		0.10		0.10	
Dilution	1.0	1.0	1.00		1.0	1.0																	
Pi:	1.0	1.0	1.0		1.0	1.0																	
Pi:	1.0	1.0	1.0		1.0	1.0																	
PiPf DF:	1.0	1.0	1.0		1.0	1.0																	
Hydrogen_Sulfide	1.900	5.000	ND	P						906.08	10.3%	1031.637	2.1%										
Carbonyl_Sulfide	1.700	5.000	ND	P						912.86	8.7%	1044.061	4.4%										
Methyl_Mercaptan	1.200	5.000	ND	P						879.92	12.0%	1017.689	1.8%										
Ethyl_Mercaptan	1.200	5.000	ND	P																			
Dimethyl_Sulfide	1.200	5.000	ND	P						7:51 AM		10:56 AM											
Carbon_Disulfide	0.600	2.500	ND	P						08171701.D		08171715.D											
2-Propyl_Mercaptan	1.200	5.000	ND	P																			
t-Butyl_Mercaptan	1.200	5.000	ND	P																			
Propyl_Mercaptan	1.200	5.000	ND	P																			
Ethyl_Methyl_Sulfide	1.200	5.000	ND	P																			
Thiophene	1.200	5.000	ND	P																			
i-Butyl_Mercaptan	1.200	5.000	ND	P																			
Diethyl_Sulfide	1.200	5.000	ND	P																			
n-Butyl_Mercaptan	1.200	5.000	ND	P																			
Dimethyl_Disulfide	0.600	2.500	ND	P																			
2-Methylthiophene	1.200	5.000	ND	P																			
3-Methylthiophene	1.200	5.000	ND	P																			
Tetrahydrothiophene	1.200	5.000	ND	P																			
2,5-Dimethylthiophene	1.200	5.000	ND	P																			
2-Ethylthiophene	1.200	5.000	ND	P																			
Diethyl_Disulfide	0.600	2.500	ND	P																			
Methyltrisulfide	0.600	2.500	ND	P																			
Acqisition Time			8:20 AM																				
DataFile			08171705.D																				

LCS / LCS Dup Summary (ppbv)

	ppbv	%R		ppbv	% R	%RPD	Actual
Hydrogen_Sulfide	961.71	96.2%		944.75	94.5%	1.78%	1000.00
Carbonyl_Sulfide	981.89	98.2%		965.37	96.5%	1.70%	1000.00
Methyl_Mercaptan	925.84	92.6%		921.97	92.2%	0.42%	1000.00
Acqisition Time	7:54 AM			7:58 AM			
DataFile	08171702.D			08171703.D			

Me 8/18/17

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\17\
Data File : 08171701.D
Signal(s) : AIB1B.CH
Acq On : 17 Aug 2017 7:51
Operator : MC
Sample : std s30-06191701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:30:16 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.906	73990124	906.077	ppb
2)	W	Carbonyl_Sulfide	1.146	80386545	912.857	ppb
3)	T	Methyl_Mercaptan	2.266	73956455	879.917	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

(f)=RT Delta > 1/2 Window (m)=manual int.

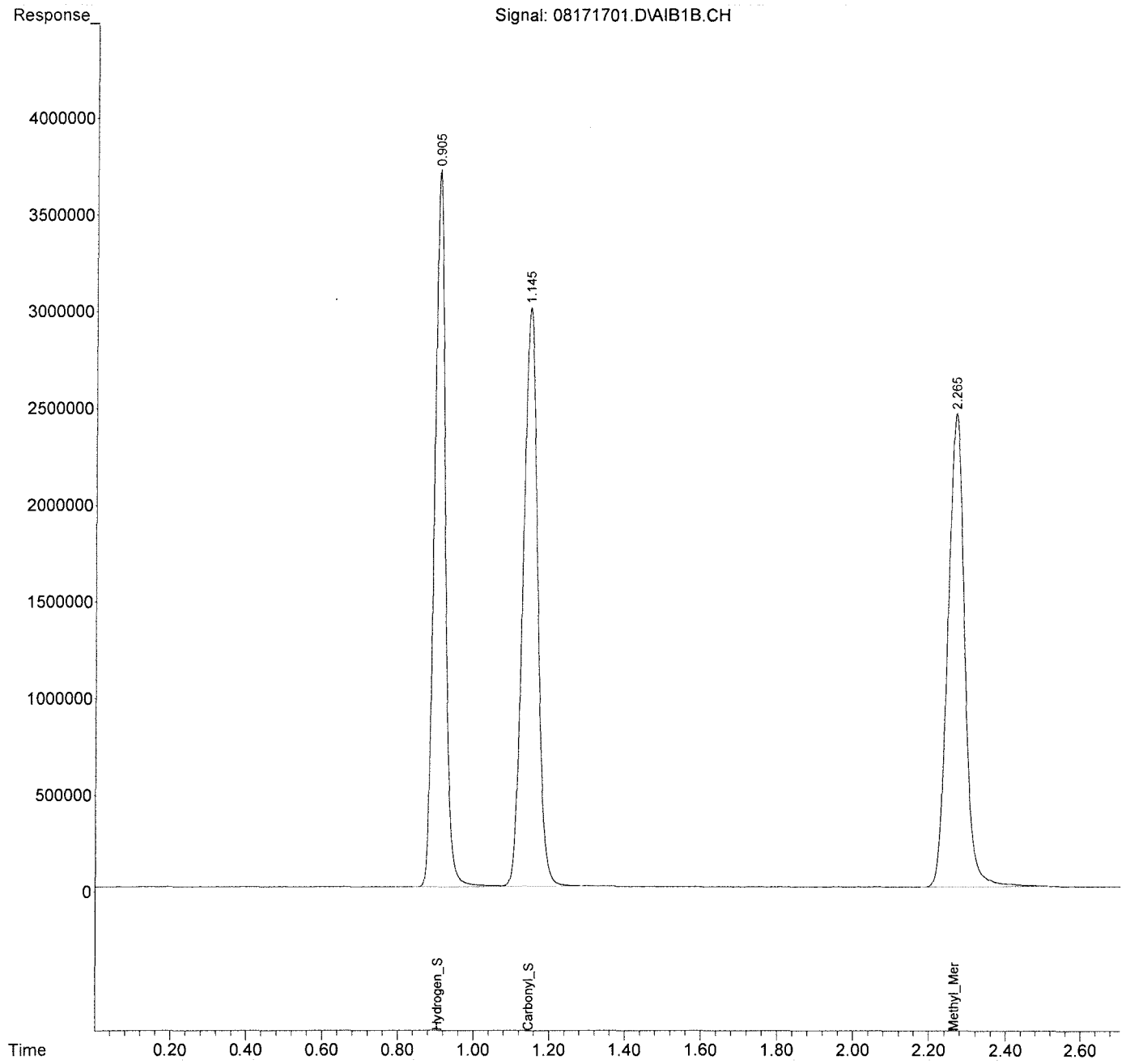
MC 8/17/17

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\17\
Data File : 08171701.D
Signal(s) : AIB1B.CH
Acq On : 17 Aug 2017 7:51
Operator : MC
Sample : std s30-06191701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:30:16 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\17\
Data File : 08171715.D
Signal(s) : AIB1B.CH
Acq On : 17 Aug 2017 10:56
Operator : MC
Sample : std s30-06191701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:35:14 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.907	84243317	1031.637	ppb
2)	W	Carbonyl_Sulfide	1.147	91940467	1044.061	ppb
3)	T	Methyl_Mercaptan	2.265	85536145	1017.689	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

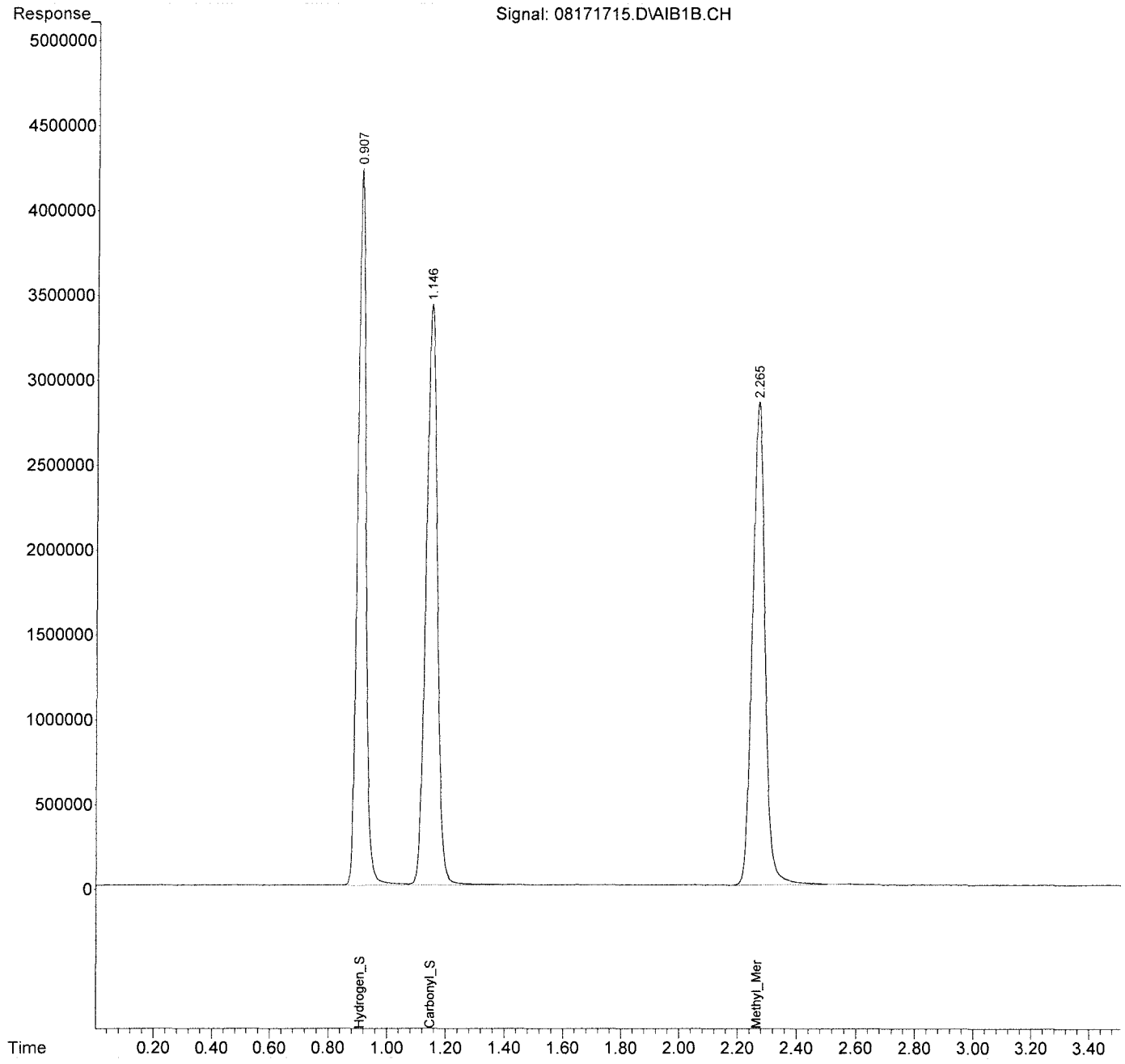
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_08\17\
Data File : 08171715.D
Signal(s) : AIB1B.CH
Acq On : 17 Aug 2017 10:56
Operator : MC
Sample : std s30-06191701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:35:14 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



ALS Environmental

REPORT SUMMARY

Method : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
Client : GHD Services Inc.
Analyst : MC

Service Request : P1703973
Instrument : GC #22
Date Acquired : 8/17/17

Compounds	MDL	RL	MB QC		Dry Wall QC		Lab Dup			Continuing Calibration Standards Summary (ppbv)													
			MB					dup	%RSD	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff
Sample Information :	ppb	ppb	mb 1ml							std s30-06191701		std s30-06191701											
Inj. Vol. (ml)	1.0	1.0	1.00		1.0	1.0				0.10		0.10		0.10		0.10		0.10		0.10		0.10	
Dilution	1.0	1.0	1.00		1.0	1.0																	
Pi:	1.0	1.0	1.0		1.0	1.0																	
Pi:	1.0	1.0	1.0		1.0	1.0																	
PiPf DF:	1.0	1.0	1.0		1.0	1.0																	
Hydrogen_Sulfide	1.900	5.000	ND	P						1118.43	10.7%	1050.232	4.0%										
Carbonyl_Sulfide	1.700	5.000	ND	P						1152.29	15.2%	1106.904	10.7%										
Methyl_Mercaptan	1.200	5.000	ND	P						1127.06	12.7%	1086.563	8.7%										
Ethyl_Mercaptan	1.200	5.000	ND	P																			
Dimethyl_Sulfide	1.200	5.000	ND	P						7:51 AM		10:55 AM											
Carbon_Disulfide	0.600	2.500	ND	P						08171701.d		08171715.d											
2-Propyl_Mercaptan	1.200	5.000	ND	P																			
t-Butyl_Mercaptan	1.200	5.000	ND	P																			
Propyl_Mercaptan	1.200	5.000	ND	P																			
Ethyl_Methyl_Sulfide	1.200	5.000	ND	P																			
Thiophene	1.200	5.000	ND	P																			
i-Butyl_Mercaptan	1.200	5.000	ND	P																			
Diethyl_Sulfide	1.200	5.000	ND	P																			
n-Butyl_Mercaptan	1.200	5.000	ND	P																			
Dimethyl_Disulfide	0.600	2.500	ND	P																			
2-Methylthiophene	1.200	5.000	ND	P																			
3-Methylthiophene	1.200	5.000	ND	P																			
Tetrahydrothiophene	1.200	5.000	ND	P																			
2,5-Dimethylthiophene	1.200	5.000	ND	P																			
2-Ethylthiophene	1.200	5.000	ND	P																			
Diethyl_Disulfide	0.600	2.500	ND	P																			
Methyltrisulfide	0.600	2.500	ND	P																			
Acqisition Time			8:20 AM																				
DataFile			08171705.d																				

LCS / LCS Dup Summary (ppbv)

	ppbv	%R		ppbv	% R	%RPD	Actual
Hydrogen_Sulfide	1032.08	103.2%		1063.97	106.4%	3.04%	1000.00
Carbonyl_Sulfide	1074.18	107.4%		1104.66	110.5%	2.80%	1000.00
Methyl_Mercaptan	1063.23	106.3%		1095.83	109.6%	3.02%	1000.00
Acqisition Time	7:55 AM			7:58 AM			
DataFile	08171702.d			08171703.d			

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Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_08\17\
Data File : 08171701.d
Signal(s) : AIB1A.ch
Acq On : 17 Aug 2017 7:51
Operator : MC
Sample : std s30-06191701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 07:53:58 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	1.141	42845262	1118.425	ppb
2)	W	Carbonyl_Sulfide	1.314	48497905	1152.287	ppb
3)	T	Methyl_Mercaptan	2.120	42372571	1127.060	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

(f)=RT Delta > 1/2 Window (m)=manual int.

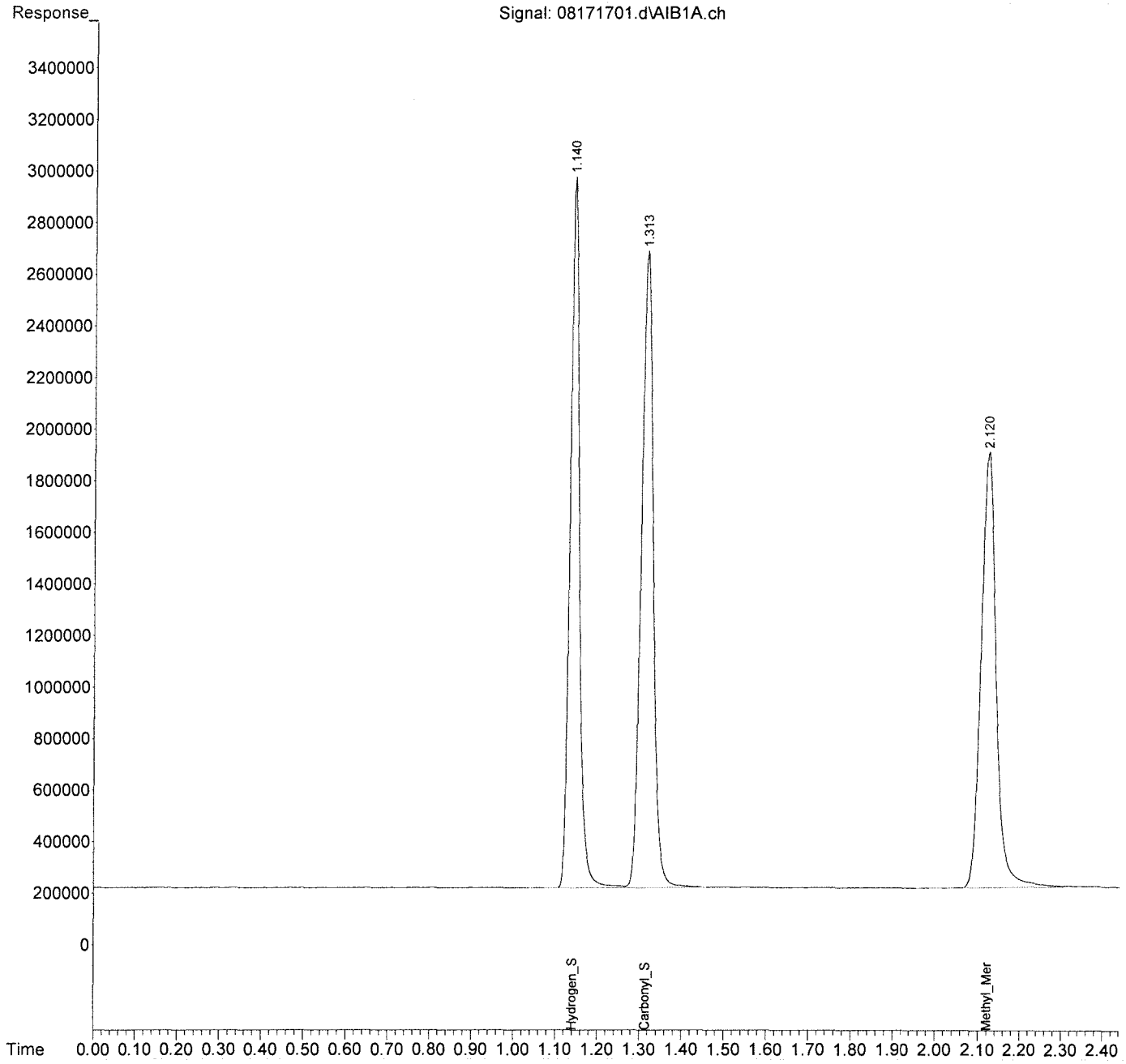
8/22/12

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_08\17\
Data File : 08171701.d
Signal(s) : AIB1A.ch
Acq On : 17 Aug 2017 7:51
Operator : MC
Sample : std s30-06191701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 07:53:58 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_08\17\
Data File : 08171715.d
Signal(s) : AIB1A.ch
Acq On : 17 Aug 2017 10:55
Operator : MC
Sample : std s30-06191701
Misc :
ALS Vial : 15 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:04:03 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	1.160	40232855	1050.232	ppb
2)	W	Carbonyl_Sulfide	1.335	46587840	1106.904	ppb
3)	T	Methyl_Mercaptan	2.147	40850046	1086.563	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	3.394	211328	2.811	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

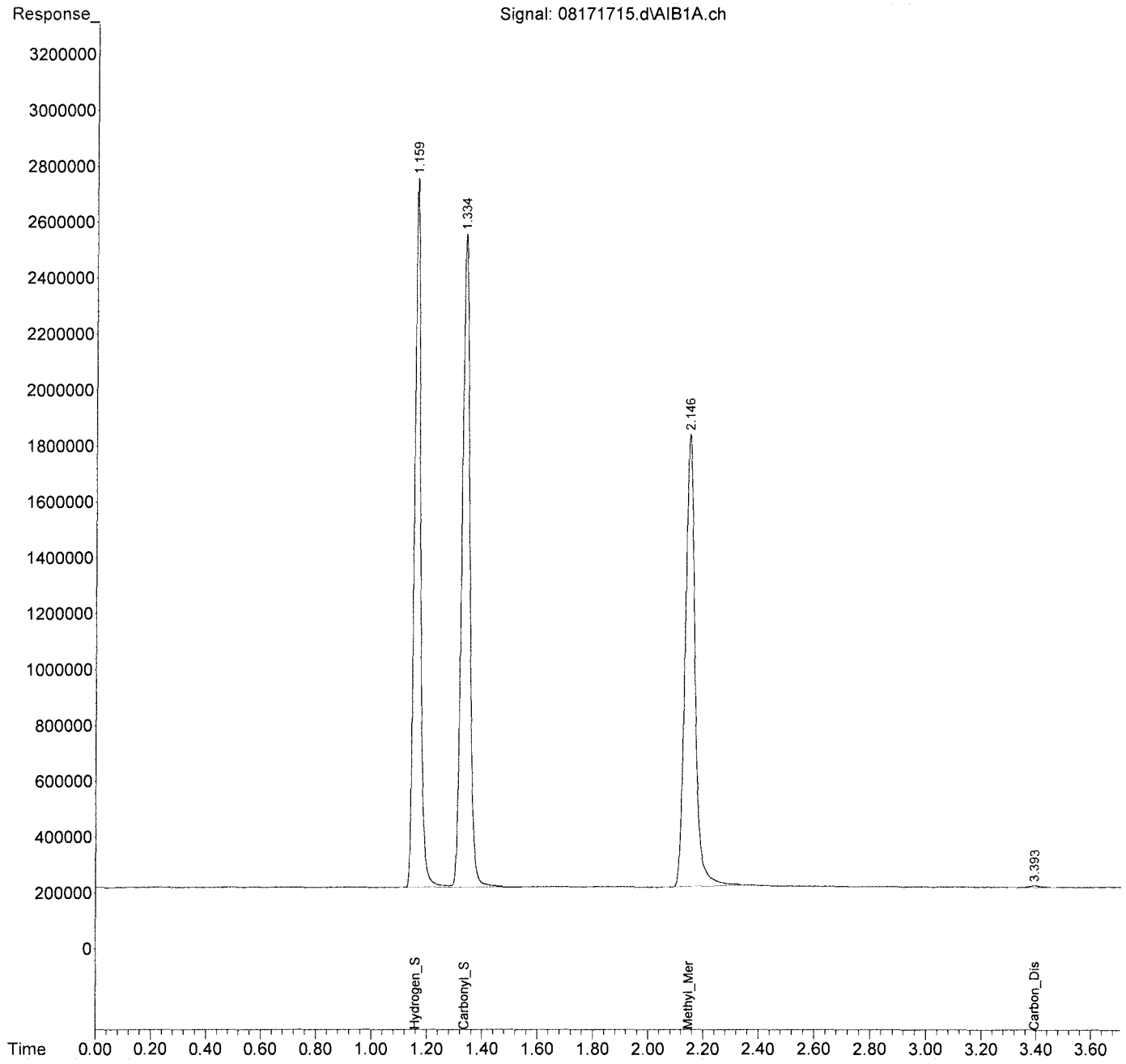
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_08\17\
Data File : 08171715.d
Signal(s) : AIB1A.ch
Acq On : 17 Aug 2017 10:55
Operator : MC
Sample : std s30-06191701
Misc :
ALS Vial : 15 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 17 14:04:03 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Injection Log

Directory: I:\GC22\DATA\SCD\2017_02\27\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Acquisition Method	Comments
1	2/27/17 7:47	02271701.D	test		MC	GC22ACQ.M	
2	2/27/17 7:50	02271702.D	test		MC	GC22ACQ.M	
3	2/27/17 7:53	02271703.D	test		MC	GC22ACQ.M	
4	2/27/17 7:59	02271704.D	test		MC	GC22ACQ.M	
5	2/27/17 8:03	02271705.D	test		MC	GC22ACQ.M	
6	2/27/17 8:07	02271706.D	test		MC	GC22ACQ.M	
7	2/27/17 8:11	02271707.D	test		MC	GC22ACQ.M	
8	2/27/17 8:22	02271708.D	test		MC	GC22ACQ.M	
9	2/27/17 8:33	02271709.D	0.1ml s30-02271702 2.525ppm		MC	GC22ACQ.M	Pass
10	2/27/17 8:38	02271710.D	0.4ml s30-02271702 10.1ppb		MC	GC22ACQ.M	Pass
11	2/27/17 8:49	02271711.D	0.1ml s30-02271703 50.5ppb		MC	GC22ACQ.M	Pass
12	2/27/17 8:53	02271712.D	0.5ml s30-02271703 252.5ppb		MC	GC22ACQ.M	Pass
13	2/27/17 8:58	02271713.D	0.1ml s30-02271701 1010ppb		MC	GC22ACQ.M	Pass
14	2/27/17 9:01	02271714.D	0.25ml s30-02271701 2525ppb		MC	GC22ACQ.M	Pass
15	2/27/17 9:11	02271715.D	0.5ml s30-02271701 5050ppb		MC	GC22ACQ.M	Pass
16	2/27/17 9:18	02271716.D	1ml s30-02271701 10ppm		MC	GC22ACQ.M	Pass
17	2/27/17 9:27	02271717.D	0.025ml s30-11031401 25ppm		MC	GC22ACQ.M	Pass
18	2/27/17 9:31	02271718.D	rt		MC	GC22ACQ.M	Pass
19	2/27/17 9:57	02271719.D	0.025ml s30-11 25ppm		MC	GC22ACQ.M	Not used
20	2/27/17 10:13	02271720.D	mb 1ml		MC	GC22ACQ.M	Pass
21	2/27/17 10:32	02271721.D	ICV s30-02171702		MC	GC22ACQ.M	Fail
22	2/27/17 10:35	02271722.D	ICV s30-02171702		MC	GC22ACQ.M	Pass

Injection Log

Directory: I:\GC13\DATA\SCD\2017_03\07\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Acquisition Method	Comments
1	3/7/17 7:32	03071701.D	std s30-02171701		MC	GC13SCD2.M	Test
2	3/7/17 7:35	03071702.D	std s30-02171701		MC	GC13SCD2.M	Test
3	3/7/17 8:22	03071703.D	.1ml		MC	GC13SCD2.M	Test
4	3/7/17 8:29	03071704.D	.1ml		MC	GC13SCD2.M	Test
5	3/7/17 8:33	03071705.D	.1ml		MC	GC13SCD2.M	Test
6	3/7/17 8:46	03071706.D	.1ml		MC	GC13SCD2.M	Test
7	3/7/17 8:49	03071707.D	.1ml		MC	GC13SCD2.M	Test
8	3/7/17 8:58	03071708.D	.1ml		MC	GC13SCD2.M	Test
9	3/7/17 9:06	03071709.D	.1ml		MC	GC13SCD2.M	Test
10	3/7/17 9:14	03071710.D	.1ml		MC	GC13SCD2.M	Test
11	3/7/17 9:27	03071711.D	.1ml		MC	GC13SCD2.M	Test
12	3/7/17 9:31	03071712.D	.1ml		MC	GC13SCD2.M	Test
13	3/7/17 9:35	03071713.D	0.1ml 2.52ppb s30-03071702		MC	GC13SCD2.M	Curve
14	3/7/17 9:44	03071714.D	0.4ml 10.1ppb s30-03071702		MC	GC13SCD2.M	Curve
15	3/7/17 9:54	03071715.D	0.1ml 50.5 s30-03071703		MC	GC13SCD2.M	Curve
16	3/7/17 10:02	03071716.D	0.5ml 252.5ppb s30-03071703		MC	GC13SCD2.M	Curve
17	3/7/17 10:06	03071717.D	0.1ml 1010ppb s30-03071701		MC	GC13SCD2.M	Curve
18	3/7/17 10:10	03071718.D	0.25ml 2525ppb s30-03071701		MC	GC13SCD2.M	Curve
19	3/7/17 10:16	03071719.D	0.5ml 5050ppb s30-03071701		MC	GC13SCD2.M	Curve
20	3/7/17 10:21	03071720.D	1ml 10100ppb s30-03071701		MC	GC13SCD2.M	Curve
21	3/7/17 10:26	03071721.D	0.025ml 25ppm s30-11031401		MC	GC13SCD2.M	Curve
22	3/7/17 10:31	03071722.D	x0.05ml		MC	GC13SCD2.M	
23	3/7/17 10:36	03071723.D	0.05ml 50ppm s30-11031401		MC	GC13SCD2.M	Curve
24	3/7/17 10:55	03071724.D	ICV s30-02171701		MC	GC13SCD2.M	Pass
25	3/7/17 11:00	03071725.D	rt		MC	GC13SCD2.M	Pass
26	3/7/17 11:20	03071726.D	mb 1ml		MC	GC13SCD2.M	Pass
27	3/7/17 11:43	03071727.D	mb 1ml		MC	GC13SCD2.M	Pass
28	3/7/17 12:03	03071728.D	2.5ppb s30-03071702 mdl-1		MC	GC13SCD2.M	MDL
29	3/7/17 12:45	03071729.D	2.5ppb s30-03071702 mdl-2		MC	GC13SCD2.M	MDL
30	3/7/17 12:50	03071730.D	2.5ppb s30-03071702 mdl-3		MC	GC13SCD2.M	MDL
31	3/7/17 12:54	03071731.D	2.5ppb s30-03071702 mdl-4		MC	GC13SCD2.M	MDL
32	3/7/17 12:58	03071732.D	2.5ppb s30-03071702 mdl-5		MC	GC13SCD2.M	MDL
33	3/7/17 13:02	03071733.D	2.5ppb s30-03071702 mdl-6		MC	GC13SCD2.M	MDL
34	3/7/17 13:05	03071734.D	2.5ppb s30-03071702 mdl-7		MC	GC13SCD2.M	MDL
35	3/7/17 13:09	03071735.D	2.5ppb s30-03071702 LOD		MC	GC13SCD2.M	LOD
36	3/7/17 13:53	03071736.D	std s30-02171701		MC	GC13SCD2.M	Pass
37	3/7/17 13:58	03071737.D	lcs s30-02171702		MC	GC13SCD2.M	Pass
38	3/7/17 14:01	03071738.D	lcsd s30-02171702		MC	GC13SCD2.M	Pass

Injection Log

Directory: I:\GC13\DATA\SCD\2017_03\07\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Acquisition Method	Comments
39	3/7/17 14:05	03071739.D	rt		MC	GC13SCD2.M	Pass
40	3/7/17 14:24	03071740.D	mb 1ml		MC	GC13SCD2.M	Pass
41	3/7/17 14:37	03071741.D	QC as00114 1ml		MC	GC13SCD2.M	
42	3/7/17 14:52	03071742.D	1106-003 1ml		MC	GC13SCD2.M	
43	3/7/17 15:13	03071743.D	1106-004 1ml		MC	GC13SCD2.M	
44	3/7/17 15:32	03071744.D	1106-006 1ml		MC	GC13SCD2.M	
45	3/7/17 15:52	03071745.D	1106-005 1ml		MC	GC13SCD2.M	
46	3/7/17 16:13	03071746.D	1106-001 1ml		MC	GC13SCD2.M	
47	3/7/17 16:30	03071747.D	1106-002 1ml		MC	GC13SCD2.M	
48	3/7/17 16:46	03071748.D	1105-001 0.5ml		MC	GC13SCD2.M	
49	3/7/17 17:01	03071749.D	1097-003 0.1ml		MC	GC13SCD2.M	
50	3/7/17 17:13	03071750.D	1097-002 1ml		MC	GC13SCD2.M	
51	3/7/17 17:26	03071751.D	std s30-02171701		MC	GC13SCD2.M	Pass

Injection Log

Directory: I:\GC13\DATA\SCD\2017_08\16\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Acquisition Method	Comments
1	8/16/17 7:50	08161701.D	std s30-06191701		MC	GC13SCD2.M	Pass
2	8/16/17 7:54	08161702.D	lcs s30-06191702		MC	GC13SCD2.M	Pass
3	8/16/17 7:57	08161703.D	lcsd s30-06191702		MC	GC13SCD2.M	Pass
4	8/16/17 8:00	08161704.D	rt		MC	GC13SCD2.M	Pass
5	8/16/17 8:20	08161705.D	mb 1ml		MC	GC13SCD2.M	Pass
6	8/16/17 8:42	08161706.D	P1703953-001 1ml		MC	GC13SCD2.M	
7	8/16/17 8:57	08161707.D	P1703953-002 1ml		MC	GC13SCD2.M	
8	8/16/17 9:18	08161708.D	3969-001 0.2ml(x100)		MC	GC13SCD2.M	
9	8/16/17 9:37	08161709.D	std s30-06191701		MC	GC13SCD2.M	Pass
10	8/16/17 10:26	08161710.D	P1703974-001 1ml		MC	GC13SCD2.M	
11	8/16/17 10:42	08161711.D	P1703974-002 1ml		MC	GC13SCD2.M	
12	8/16/17 10:56	08161712.D	P1703974-003 1ml		MC	GC13SCD2.M	
13	8/16/17 11:17	08161713.D	P1703974-004 1ml		MC	GC13SCD2.M	
14	8/16/17 11:33	08161714.D	P1703974-005 1ml		MC	GC13SCD2.M	
15	8/16/17 11:53	08161715.D	std s30-06191701		MC	GC13SCD2.M	Pass
16	8/16/17 12:29	08161716.D	P1703973-001 1ml		MC	GC13SCD2.M	
17	8/16/17 12:48	08161717.D	P1703973-002 1ml		MC	GC13SCD2.M	
18	8/16/17 13:49	08161718.D	P1703973-003 1ml		MC	GC13SCD2.M	
19	8/16/17 14:12	08161719.D	P1703973-004 1ml		MC	GC13SCD2.M	
20	8/16/17 14:30	08161720.D	P1703973-005 1ml		MC	GC13SCD2.M	
21	8/16/17 14:49	08161721.D	P1703973-006 1ml		MC	GC13SCD2.M	
22	8/16/17 15:11	08161722.D	P1703973-007 1ml		MC	GC13SCD2.M	
23	8/16/17 15:30	08161723.D	P1703973-008 1ml		MC	GC13SCD2.M	
24	8/16/17 15:49	08161724.D	P1703973-009 1ml		MC	GC13SCD2.M	
25	8/16/17 16:04	08161725.D	P1703973-010 1ml		MC	GC13SCD2.M	
26	8/16/17 16:17	08161726.D	std s30-06191701		MC	GC13SCD2.M	Pass
27	8/16/17 16:29	08161727.D	P1703973-014 1ml		MC	GC13SCD2.M	
28	8/16/17 16:42	08161728.D	std s30-06191701		MC	GC13SCD2.M	Pass

Injection Log

Directory: I:\GC22\DATA\SCD\2017_08\16\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Acquisition Method	Comments
1	8/16/17 7:50	08161701.D	std s30-06191701		MC	GC22ACQ.M	Pass
2	8/16/17 7:54	08161702.D	lcs s30-06191702		MC	GC22ACQ.M	Pass
3	8/16/17 7:57	08161703.D	lcsd s30-06191702		MC	GC22ACQ.M	Pass
4	8/16/17 8:00	08161704.D	rt		MC	GC22ACQ.M	Pass
5	8/16/17 8:17	08161705.D	mb 1ml		MC	GC22ACQ.M	Pass
6	8/16/17 8:36	08161706.D	bag blank 1ml		MC	GC22ACQ.M	Pass
7	8/16/17 8:53	08161707.D	P1703926-001 1ml		MC	GC22ACQ.M	
8	8/16/17 9:11	08161708.D	P1703926-001 1ml		MC	GC22ACQ.M	
9	8/16/17 9:28	08161709.D	P1703959-001 1ml(10->300)		MC	GC22ACQ.M	
10	8/16/17 9:45	08161710.D	P1708181-001 1ml(10->300)		MC	GC22ACQ.M	
11	8/16/17 9:59	08161711.D	P1708181-001 0.5ml(10->300)		MC	GC22ACQ.M	
12	8/16/17 10:13	08161712.D	P1708181-003 0.5ml(10->300)		MC	GC22ACQ.M	
13	8/16/17 10:20	08161713.D	P1708181-002 0.5ml(10->300)		MC	GC22ACQ.M	
14	8/16/17 10:28	08161714.D	P1708181-004 0.5ml(10->300)		MC	GC22ACQ.M	
15	8/16/17 10:42	08161715.D	lcs s30-08161701 purged		MC	GC22ACQ.M	Pass
16	8/16/17 10:46	08161716.D	lcsd s30-08161702 purged		MC	GC22ACQ.M	Pass
17	8/16/17 10:49	08161717.D	std s30-06191701		MC	GC22ACQ.M	Pass
18	8/16/17 11:10	08161718.D	QC 1bv09609 1ml		MC	GC22ACQ.M	
19	8/16/17 11:27	08161719.D	P1703979-001 1ml		MC	GC22ACQ.M	
20	8/16/17 11:44	08161720.D	P1703980-001 0.1ml		MC	GC22ACQ.M	
21	8/16/17 12:02	08161721.D	std s30-06191701		MC	GC22ACQ.M	Pass
22	8/16/17 15:54	08161722.D	P1703973-011 1ml		MC	GC22ACQ.M	
23	8/16/17 16:12	08161723.D	P1703973-012 1ml		MC	GC22ACQ.M	
24	8/16/17 16:24	08161724.D	P1703973-013 1ml		MC	GC22ACQ.M	
25	8/16/17 16:40	08161725.D	std s30-06191701		MC	GC22ACQ.M	Pass

Injection Log

Directory: I:\GC13\DATA\SCD\2017_08\17\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Acquisition Method	Comments
1	8/17/17 7:51	08171701.D	std s30-06191701		MC	GC13SCD2.M	Pass
2	8/17/17 7:54	08171702.D	lcs s30-06191702		MC	GC13SCD2.M	Pass
3	8/17/17 7:58	08171703.D	lcsd s30-06191702		MC	GC13SCD2.M	Pass
4	8/17/17 8:02	08171704.D	rt		MC	GC13SCD2.M	Pass
5	8/17/17 8:20	08171705.D	mb 1ml		MC	GC13SCD2.M	Pass
6	8/17/17 8:39	08171706.D	P1703973-015 1ml		MC	GC13SCD2.M	
7	8/17/17 8:54	08171707.D	P1703973-016 1ml		MC	GC13SCD2.M	
8	8/17/17 9:08	08171708.D	P1703973-017 1ml		MC	GC13SCD2.M	
9	8/17/17 9:23	08171709.D	P1703973-018 1ml		MC	GC13SCD2.M	
10	8/17/17 9:35	08171710.D	P1704004-001 1ml		MC	GC13SCD2.M	
11	8/17/17 9:49	08171711.D	4004-002 1ml		MC	GC13SCD2.M	
12	8/17/17 9:59	08171712.D	P1704004-002 0.1ml		MC	GC13SCD2.M	
13	8/17/17 10:19	08171713.D	4004-003 0.1ml		MC	GC13SCD2.M	
14	8/17/17 10:37	08171714.D	P1704004-003 0.5ml		MC	GC13SCD2.M	
15	8/17/17 10:56	08171715.D	std s30-06191701		MC	GC13SCD2.M	Pass
16	8/17/17 11:11	08171716.D	P1704001-001 1ml		MC	GC13SCD2.M	
17	8/17/17 11:25	08171717.D	P1704001-002 1ml		MC	GC13SCD2.M	
18	8/17/17 11:45	08171718.D	P1704001-003 1ml		MC	GC13SCD2.M	
19	8/17/17 12:02	08171719.D	P1704001-004 1ml		MC	GC13SCD2.M	
20	8/17/17 12:16	08171720.D	P1704001-005 1ml		MC	GC13SCD2.M	
21	8/17/17 12:29	08171721.D	P1704001-006 1ml		MC	GC13SCD2.M	
22	8/17/17 12:46	08171722.D	P1704001-007 1ml		MC	GC13SCD2.M	
23	8/17/17 13:03	08171723.D	std s30-06191701		MC	GC13SCD2.M	Pass

Injection Log

Directory: I:\GC22\DATA\SCD\2017_08\17\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Acquisition Method	Comments
1	8/17/17 7:51	08171701.D	std s30-06191701		MC	GC22ACQ.M	Pass
2	8/17/17 7:55	08171702.D	lcs s30-06191702		MC	GC22ACQ.M	Pass
3	8/17/17 7:58	08171703.D	lcsd s30-06191702		MC	GC22ACQ.M	Pass
4	8/17/17 8:02	08171704.D	rt		MC	GC22ACQ.M	Pass
5	8/17/17 8:20	08171705.D	mb 1ml		MC	GC22ACQ.M	Pass
6	8/17/17 8:37	08171706.D	P1703986-001 1ml		MC	GC22ACQ.M	
7	8/17/17 8:51	08171707.D	P1703986-002 1ml		MC	GC22ACQ.M	
8	8/17/17 9:04	08171708.D	P1703973-022 1ml		MC	GC22ACQ.M	
9	8/17/17 9:18	08171709.D	P1703973-021 1ml		MC	GC22ACQ.M	
10	8/17/17 9:31	08171710.D	P1703973-020 1ml		MC	GC22ACQ.M	
11	8/17/17 9:48	08171711.D	P1703973-019 1ml		MC	GC22ACQ.M	
12	8/17/17 10:02	08171712.D	P1704005-001 1ml		MC	GC22ACQ.M	
13	8/17/17 10:19	08171713.D	QC as01047 1ml		MC	GC22ACQ.M	
14	8/17/17 10:38	08171714.D	QC as00665 1ml		MC	GC22ACQ.M	
15	8/17/17 10:55	08171715.D	std s30-06191701		MC	GC22ACQ.M	Pass
16	8/17/17 14:56	08171716.D	P1703973-014 1ml		MC	GC22ACQ.M	Test

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www.alsglobal.com

LABORATORY REPORT

September 29, 2017

Deb Andrasko
GHD Services Inc.
2055 Niagara Falls Blvd., Suite 3
Niagara Falls, NY 14304

RE: Avtex

Dear Deb:

Enclosed are the results of the samples submitted to our laboratory on September 26, 2017. For your reference, these analyses have been assigned our service request number P1704726.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

By Sue Anderson at 6:14 pm, Sep 29, 2017

Sue Anderson
Project Manager

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
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F: +1 805 526 7270
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Client:	GHD Services Inc.	Service Request No:	P1704726
Project:	Avtex	New York Lab ID:	11221

CASE NARRATIVE

The samples were received intact under chain of custody on September 26, 2017 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Sulfur Analysis

The samples were analyzed for twenty sulfur compounds per ASTM D 5504-12 using a gas chromatograph equipped with a sulfur chemiluminescence detector (SCD). All compounds with the exception of hydrogen sulfide and carbonyl sulfide are quantitated against the initial calibration curve for methyl mercaptan. This method is included on the laboratory's NELAP scope of accreditation, however it is not part of the DoD-ELAP accreditation.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2016036
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1177034
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-004
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-17-8
Utah DOH (NELAP)	http://health.utah.gov/lab/environmental-lab-certification/	CA016272017-8
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: GHD Services Inc.
Project ID: Avtex

Service Request: P1704726

Date Received: 9/26/2017
Time Received: 09:30

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	ASTM D 5504-12 - Sulfur Can
OU-7-Perim-S	P1704726-001	Air	9/19/2017	15:30	SSC00237	-0.10	3.59	X
Perim NE	P1704726-003	Air	9/19/2017	15:45	SSC00188	-1.67	3.58	X
Perim-S	P1704726-005	Air	9/19/2017	15:50	SSC00281	-3.09	3.58	X
Perim-W	P1704726-007	Air	9/19/2017	16:00	SSC00159	-2.77	3.75	X
Perim-N	P1704726-008	Air	9/19/2017	16:20	SSC00197	-4.44	3.63	X
Downwind-NNE	P1704726-009	Air	9/19/2017	16:15	SSC00083	-3.89	3.87	X

Air - Chain of Custody Record & Analytical Service Request

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10-Day-Standard

ALS Project No. P704726

ALS Contact:

Company Name & Address (Reporting Information): Parsons, 4701 Hedgemore Dr, Charlotte, NC

Project Name: Autex

Project Number:

Project Manager: Mike Robinson

P.O. # / Billing Information:

Phone: 704-558-4255

Fax:

Email Address for Result Reporting: michael.robinson@parsons.com

Sampler (Print & Sign): Michael Robinson

Analysis Method: Reduced Sulfur Compounds ASTM D-5504 (valve closed 9/20/17)

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	Reduced Sulfur Compounds ASTM D-5504	Time	Comments e.g. Actual Preservative or specific instructions
OU-7-Perim-S	1	9/19/17	1530	SSC00237	SFC00038	<-30	-2	6L	X	1245	
OU-7-Perim-S (Backup)	2		1530	SSC00106	SFC00206	-30	-5	6L	X	1245	Hold
PERIM-NE	3		1545	SSC00188	SFC00127	<-30	-4	6L	X	1255	
PERIM-NE (Backup)	4		1545	SSC00058	SFC00114	-30	-12	6L	X	1255	Hold
PERIM-S	5		1550	SSC00281	SFC00101	<-30	-7	6L	X	1300	
PERIM-S (Backup)	6		1550	SSC00307	SFC00075	-30	-8	6L	X	1300	Hold
PERIM-W	7		1600	SSC00158	SFC00076	-29	-6	6L	X	1310	
PERIM-N	8		1620	SSC00197	SN 05027 SFC003	-30	-10	6L	X	1325	
Downwind NNE	9		1615	SSC00083	SFC00064	-29	-9	6L	X	1315	
Downwind (Backup)	10		1615	SSC00114	SFC00141	<-30	-10	6L	X	1315	Hold

Report Tier Levels - please select

Tier I - Results (Default in not specified) ____
Tier II (Results + QC Summaries ____
Tier III (Results + QC & Calibration Summaries) ____
Tier IV (Date Validation Package) 10% Surcharge X

EDD required YES No
Type: Equis Units: ____

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date: 9/20/17	Time: 1500	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature) FedEx	Date:	Time:	Received by: (Signature)	Date: 9-22-17	Time: 0930

Cooler / Blank Temperature ____ °C

ALS Environmental
Sample Acceptance Check Form

Client: GHD Services Inc. Work order: P1704726

Project: Avtex

Sample(s) received on: 9/26/17 Date opened: 9/26/17 by: ADAVID

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1704726-001.01	6.0 L Silonite Can					
P1704726-002.01	6.0 L Silonite Can					
P1704726-003.01	6.0 L Silonite Can					
P1704726-004.01	6.0 L Silonite Can					
P1704726-005.01	6.0 L Silonite Can					
P1704726-006.01	6.0 L Silonite Can					
P1704726-007.01	6.0 L Silonite Can					
P1704726-008.01	6.0 L Silonite Can					
P1704726-009.01	6.0 L Silonite Can					
P1704726-010.01	6.0 L Silonite Can					
P1704726-011.01	6.0 L Silonite Can					
P1704726-012.01	6.0 L Silonite Can					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **GHD Services Inc.**
Client Sample ID: **OU-7-Perim-S**
Client Project ID: **Avtex**

ALS Project ID: P1704726
ALS Sample ID: P1704726-001

Test Code: ASTM D 5504-12
Instrument ID: Agilent 6890A/GC13/SCD
Analyst: Mike Conejo
Sample Type: 6.0 L Silonite Canister
Test Notes:
Container ID: SSC00237

Date Collected: 9/19/17
Time Collected: 15:30
Date Received: 9/26/17
Date Analyzed: 9/26/17
Time Analyzed: 14:51
Volume(s) Analyzed: 1.0 ml(s)

Initial Pressure (psig): -0.10 Final Pressure (psig): 3.59

Container Dilution Factor: 1.25

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	8.7	1.9	ND	6.3	1.4	
463-58-1	Carbonyl Sulfide	ND	15	2.6	ND	6.3	1.1	
74-93-1	Methyl Mercaptan	ND	12	3.0	ND	6.3	1.5	
75-08-1	Ethyl Mercaptan	ND	16	3.8	ND	6.3	1.5	
75-18-3	Dimethyl Sulfide	ND	16	3.8	ND	6.3	1.5	
75-15-0	Carbon Disulfide	**16**	9.7	2.3	**5.2**	3.1	0.75	
75-33-2	Isopropyl Mercaptan	ND	19	4.7	ND	6.3	1.5	
75-66-1	tert-Butyl Mercaptan	ND	23	5.5	ND	6.3	1.5	
107-03-9	n-Propyl Mercaptan	ND	19	4.7	ND	6.3	1.5	
624-89-5	Ethyl Methyl Sulfide	ND	19	4.7	ND	6.3	1.5	
110-02-1	Thiophene	ND	21	5.2	ND	6.3	1.5	
513-44-0	Isobutyl Mercaptan	ND	23	5.5	ND	6.3	1.5	
352-93-2	Diethyl Sulfide	ND	23	5.5	ND	6.3	1.5	
109-79-5	n-Butyl Mercaptan	ND	23	5.5	ND	6.3	1.5	
624-92-0	Dimethyl Disulfide	ND	12	2.9	ND	3.1	0.75	
616-44-4	3-Methylthiophene	ND	25	6.0	ND	6.3	1.5	
110-01-0	Tetrahydrothiophene	ND	23	5.4	ND	6.3	1.5	
638-02-8	2,5-Dimethylthiophene	ND	29	6.9	ND	6.3	1.5	
872-55-9	2-Ethylthiophene	ND	29	6.9	ND	6.3	1.5	
110-81-6	Diethyl Disulfide	ND	16	3.7	ND	3.1	0.75	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **GHD Services Inc.**
Client Sample ID: **Perim NE** ALS Project ID: P1704726
Client Project ID: **Avtex** ALS Sample ID: P1704726-003

Test Code: ASTM D 5504-12 Date Collected: 9/19/17
Instrument ID: Agilent 6890A/GC13/SCD Time Collected: 15:45
Analyst: Mike Conejo Date Received: 9/26/17
Sample Type: 6.0 L Silonite Canister Date Analyzed: 9/26/17
Test Notes: Time Analyzed: 15:05
Container ID: SSC00188 Volume(s) Analyzed: 1.0 ml(s)

Initial Pressure (psig): -1.67 Final Pressure (psig): 3.58

Container Dilution Factor: 1.40

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	9.8	2.1	ND	7.0	1.5	
463-58-1	Carbonyl Sulfide	ND	17	2.9	ND	7.0	1.2	
74-93-1	Methyl Mercaptan	ND	14	3.3	ND	7.0	1.7	
75-08-1	Ethyl Mercaptan	ND	18	4.3	ND	7.0	1.7	
75-18-3	Dimethyl Sulfide	ND	18	4.3	ND	7.0	1.7	
75-15-0	Carbon Disulfide	ND	11	2.6	ND	3.5	0.84	
75-33-2	Isopropyl Mercaptan	ND	22	5.2	ND	7.0	1.7	
75-66-1	tert-Butyl Mercaptan	ND	26	6.2	ND	7.0	1.7	
107-03-9	n-Propyl Mercaptan	ND	22	5.2	ND	7.0	1.7	
624-89-5	Ethyl Methyl Sulfide	ND	22	5.2	ND	7.0	1.7	
110-02-1	Thiophene	ND	24	5.8	ND	7.0	1.7	
513-44-0	Isobutyl Mercaptan	ND	26	6.2	ND	7.0	1.7	
352-93-2	Diethyl Sulfide	ND	26	6.2	ND	7.0	1.7	
109-79-5	n-Butyl Mercaptan	ND	26	6.2	ND	7.0	1.7	
624-92-0	Dimethyl Disulfide	ND	13	3.2	ND	3.5	0.84	
616-44-4	3-Methylthiophene	ND	28	6.7	ND	7.0	1.7	
110-01-0	Tetrahydrothiophene	ND	25	6.1	ND	7.0	1.7	
638-02-8	2,5-Dimethylthiophene	ND	32	7.7	ND	7.0	1.7	
872-55-9	2-Ethylthiophene	ND	32	7.7	ND	7.0	1.7	
110-81-6	Diethyl Disulfide	ND	17	4.2	ND	3.5	0.84	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **GHD Services Inc.**
Client Sample ID: **Perim-S** ALS Project ID: P1704726
Client Project ID: **Avtex** ALS Sample ID: P1704726-005

Test Code:	ASTM D 5504-12	Date Collected:	9/19/17
Instrument ID:	Agilent 6890A/GC13/SCD	Time Collected:	15:50
Analyst:	Mike Conejo	Date Received:	9/26/17
Sample Type:	6.0 L Silonite Canister	Date Analyzed:	9/26/17
Test Notes:		Time Analyzed:	15:21
Container ID:	SSC00281	Volume(s) Analyzed:	1.0 ml(s)

Initial Pressure (psig): -3.09 Final Pressure (psig): 3.58

Container Dilution Factor: 1.57

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	11	2.4	ND	7.9	1.7	
463-58-1	Carbonyl Sulfide	**13**	19	3.2	**5.2**	7.9	1.3	**J**
74-93-1	Methyl Mercaptan	ND	15	3.7	ND	7.9	1.9	
75-08-1	Ethyl Mercaptan	ND	20	4.8	ND	7.9	1.9	
75-18-3	Dimethyl Sulfide	ND	20	4.8	ND	7.9	1.9	
75-15-0	Carbon Disulfide	**17**	12	2.9	**5.6**	3.9	0.94	
75-33-2	Isopropyl Mercaptan	ND	24	5.9	ND	7.9	1.9	
75-66-1	tert-Butyl Mercaptan	ND	29	6.9	ND	7.9	1.9	
107-03-9	n-Propyl Mercaptan	ND	24	5.9	ND	7.9	1.9	
624-89-5	Ethyl Methyl Sulfide	ND	24	5.9	ND	7.9	1.9	
110-02-1	Thiophene	ND	27	6.5	ND	7.9	1.9	
513-44-0	Isobutyl Mercaptan	ND	29	6.9	ND	7.9	1.9	
352-93-2	Diethyl Sulfide	ND	29	6.9	ND	7.9	1.9	
109-79-5	n-Butyl Mercaptan	ND	29	6.9	ND	7.9	1.9	
624-92-0	Dimethyl Disulfide	ND	15	3.6	ND	3.9	0.94	
616-44-4	3-Methylthiophene	ND	32	7.6	ND	7.9	1.9	
110-01-0	Tetrahydrothiophene	ND	28	6.8	ND	7.9	1.9	
638-02-8	2,5-Dimethylthiophene	ND	36	8.6	ND	7.9	1.9	
872-55-9	2-Ethylthiophene	ND	36	8.6	ND	7.9	1.9	
110-81-6	Diethyl Disulfide	ND	20	4.7	ND	3.9	0.94	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **GHD Services Inc.**
Client Sample ID: **Perim-W**
Client Project ID: **Avtex**

ALS Project ID: P1704726
ALS Sample ID: P1704726-007

Test Code: ASTM D 5504-12
Instrument ID: Agilent 7890A/GC22/SCD
Analyst: Mike Conejo
Sample Type: 6.0 L Silonite Canister
Test Notes:
Container ID: SSC00159

Date Collected: 9/19/17
Time Collected: 16:00
Date Received: 9/26/17
Date Analyzed: 9/26/17
Time Analyzed: 15:32
Volume(s) Analyzed: 1.0 ml(s)

Initial Pressure (psig): -2.77 Final Pressure (psig): 3.75

Container Dilution Factor: 1.55

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	11	2.4	ND	7.8	1.7	
463-58-1	Carbonyl Sulfide	ND	19	3.2	ND	7.8	1.3	
74-93-1	Methyl Mercaptan	ND	15	3.7	ND	7.8	1.9	
75-08-1	Ethyl Mercaptan	ND	20	4.7	ND	7.8	1.9	
75-18-3	Dimethyl Sulfide	ND	20	4.7	ND	7.8	1.9	
75-15-0	Carbon Disulfide	ND	12	2.9	ND	3.9	0.93	
75-33-2	Isopropyl Mercaptan	ND	24	5.8	ND	7.8	1.9	
75-66-1	tert-Butyl Mercaptan	ND	29	6.9	ND	7.8	1.9	
107-03-9	n-Propyl Mercaptan	ND	24	5.8	ND	7.8	1.9	
624-89-5	Ethyl Methyl Sulfide	ND	24	5.8	ND	7.8	1.9	
110-02-1	Thiophene	ND	27	6.4	ND	7.8	1.9	
513-44-0	Isobutyl Mercaptan	ND	29	6.9	ND	7.8	1.9	
352-93-2	Diethyl Sulfide	ND	29	6.9	ND	7.8	1.9	
109-79-5	n-Butyl Mercaptan	ND	29	6.9	ND	7.8	1.9	
624-92-0	Dimethyl Disulfide	ND	15	3.6	ND	3.9	0.93	
616-44-4	3-Methylthiophene	ND	31	7.5	ND	7.8	1.9	
110-01-0	Tetrahydrothiophene	ND	28	6.7	ND	7.8	1.9	
638-02-8	2,5-Dimethylthiophene	ND	36	8.5	ND	7.8	1.9	
872-55-9	2-Ethylthiophene	ND	36	8.5	ND	7.8	1.9	
110-81-6	Diethyl Disulfide	ND	19	4.6	ND	3.9	0.93	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **GHD Services Inc.**
Client Sample ID: **Perim-N** ALS Project ID: P1704726
Client Project ID: **Avtex** ALS Sample ID: P1704726-008

Test Code:	ASTM D 5504-12	Date Collected:	9/19/17
Instrument ID:	Agilent 6890A/GC13/SCD	Time Collected:	16:20
Analyst:	Mike Conejo	Date Received:	9/26/17
Sample Type:	6.0 L Silonite Canister	Date Analyzed:	9/26/17
Test Notes:		Time Analyzed:	15:35
Container ID:	SSC00197	Volume(s) Analyzed:	1.0 ml(s)

Initial Pressure (psig): -4.44 Final Pressure (psig): 3.63

Container Dilution Factor: 1.79

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	12	2.7	ND	9.0	2.0	
463-58-1	Carbonyl Sulfide	ND	22	3.7	ND	9.0	1.5	
74-93-1	Methyl Mercaptan	ND	18	4.2	ND	9.0	2.1	
75-08-1	Ethyl Mercaptan	ND	23	5.5	ND	9.0	2.1	
75-18-3	Dimethyl Sulfide	ND	23	5.5	ND	9.0	2.1	
75-15-0	Carbon Disulfide	ND	14	3.3	ND	4.5	1.1	
75-33-2	Isopropyl Mercaptan	ND	28	6.7	ND	9.0	2.1	
75-66-1	tert-Butyl Mercaptan	ND	33	7.9	ND	9.0	2.1	
107-03-9	n-Propyl Mercaptan	ND	28	6.7	ND	9.0	2.1	
624-89-5	Ethyl Methyl Sulfide	ND	28	6.7	ND	9.0	2.1	
110-02-1	Thiophene	ND	31	7.4	ND	9.0	2.1	
513-44-0	Isobutyl Mercaptan	ND	33	7.9	ND	9.0	2.1	
352-93-2	Diethyl Sulfide	ND	33	7.9	ND	9.0	2.1	
109-79-5	n-Butyl Mercaptan	ND	33	7.9	ND	9.0	2.1	
624-92-0	Dimethyl Disulfide	ND	17	4.1	ND	4.5	1.1	
616-44-4	3-Methylthiophene	ND	36	8.6	ND	9.0	2.1	
110-01-0	Tetrahydrothiophene	ND	32	7.7	ND	9.0	2.1	
638-02-8	2,5-Dimethylthiophene	ND	41	9.9	ND	9.0	2.1	
872-55-9	2-Ethylthiophene	ND	41	9.9	ND	9.0	2.1	
110-81-6	Diethyl Disulfide	ND	22	5.4	ND	4.5	1.1	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **GHD Services Inc.**
Client Sample ID: **Downwind-NNE**
Client Project ID: **Avtex**

ALS Project ID: P1704726
ALS Sample ID: P1704726-009

Test Code: ASTM D 5504-12
Instrument ID: Agilent 6890A/GC13/SCD
Analyst: Mike Conejo
Sample Type: 6.0 L Silonite Canister
Test Notes:
Container ID: SSC00083

Date Collected: 9/19/17
Time Collected: 16:15
Date Received: 9/26/17
Date Analyzed: 9/26/17
Time Analyzed: 15:48
Volume(s) Analyzed: 1.0 ml(s)

Initial Pressure (psig): -3.89 Final Pressure (psig): 3.87

Container Dilution Factor: 1.72

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	12	2.6	ND	8.6	1.9	
463-58-1	Carbonyl Sulfide	ND	21	3.5	ND	8.6	1.4	
74-93-1	Methyl Mercaptan	ND	17	4.1	ND	8.6	2.1	
75-08-1	Ethyl Mercaptan	ND	22	5.2	ND	8.6	2.1	
75-18-3	Dimethyl Sulfide	ND	22	5.2	ND	8.6	2.1	
75-15-0	Carbon Disulfide	ND	13	3.2	ND	4.3	1.0	
75-33-2	Isopropyl Mercaptan	ND	27	6.4	ND	8.6	2.1	
75-66-1	tert-Butyl Mercaptan	ND	32	7.6	ND	8.6	2.1	
107-03-9	n-Propyl Mercaptan	ND	27	6.4	ND	8.6	2.1	
624-89-5	Ethyl Methyl Sulfide	ND	27	6.4	ND	8.6	2.1	
110-02-1	Thiophene	ND	30	7.1	ND	8.6	2.1	
513-44-0	Isobutyl Mercaptan	ND	32	7.6	ND	8.6	2.1	
352-93-2	Diethyl Sulfide	ND	32	7.6	ND	8.6	2.1	
109-79-5	n-Butyl Mercaptan	ND	32	7.6	ND	8.6	2.1	
624-92-0	Dimethyl Disulfide	ND	17	4.0	ND	4.3	1.0	
616-44-4	3-Methylthiophene	ND	35	8.3	ND	8.6	2.1	
110-01-0	Tetrahydrothiophene	ND	31	7.4	ND	8.6	2.1	
638-02-8	2,5-Dimethylthiophene	ND	39	9.5	ND	8.6	2.1	
872-55-9	2-Ethylthiophene	ND	39	9.5	ND	8.6	2.1	
110-81-6	Diethyl Disulfide	ND	21	5.2	ND	4.3	1.0	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **GHD Services Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Avtex**

ALS Project ID: P1704726
ALS Sample ID: P170926-MB

Test Code: ASTM D 5504-12
Instrument ID: Agilent 6890A/GC13/SCD
Analyst: Mike Conejo
Sample Type: 6.0 L Silonite Canister
Test Notes:

Date Collected: NA
Time Collected: NA
Date Received: NA
Date Analyzed: 9/26/17
Time Analyzed: 07:33
Volume(s) Analyzed: 1.0 ml(s)

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	7.0	1.5	ND	5.0	1.1	
463-58-1	Carbonyl Sulfide	ND	12	2.1	ND	5.0	0.84	
74-93-1	Methyl Mercaptan	ND	9.8	2.4	ND	5.0	1.2	
75-08-1	Ethyl Mercaptan	ND	13	3.0	ND	5.0	1.2	
75-18-3	Dimethyl Sulfide	ND	13	3.0	ND	5.0	1.2	
75-15-0	Carbon Disulfide	ND	7.8	1.9	ND	2.5	0.60	
75-33-2	Isopropyl Mercaptan	ND	16	3.7	ND	5.0	1.2	
75-66-1	tert-Butyl Mercaptan	ND	18	4.4	ND	5.0	1.2	
107-03-9	n-Propyl Mercaptan	ND	16	3.7	ND	5.0	1.2	
624-89-5	Ethyl Methyl Sulfide	ND	16	3.7	ND	5.0	1.2	
110-02-1	Thiophene	ND	17	4.1	ND	5.0	1.2	
513-44-0	Isobutyl Mercaptan	ND	18	4.4	ND	5.0	1.2	
352-93-2	Diethyl Sulfide	ND	18	4.4	ND	5.0	1.2	
109-79-5	n-Butyl Mercaptan	ND	18	4.4	ND	5.0	1.2	
624-92-0	Dimethyl Disulfide	ND	9.6	2.3	ND	2.5	0.60	
616-44-4	3-Methylthiophene	ND	20	4.8	ND	5.0	1.2	
110-01-0	Tetrahydrothiophene	ND	18	4.3	ND	5.0	1.2	
638-02-8	2,5-Dimethylthiophene	ND	23	5.5	ND	5.0	1.2	
872-55-9	2-Ethylthiophene	ND	23	5.5	ND	5.0	1.2	
110-81-6	Diethyl Disulfide	ND	12	3.0	ND	2.5	0.60	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **GHD Services Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Avtex**

ALS Project ID: P1704726
ALS Sample ID: P170926-MB

Test Code: ASTM D 5504-12
Instrument ID: Agilent 7890A/GC22/SCD
Analyst: Mike Conejo
Sample Type: 6.0 L Silonite Canister
Test Notes:

Date Collected: NA
Time Collected: NA
Date Received: NA
Date Analyzed: 9/26/17
Time Analyzed: 07:32
Volume(s) Analyzed: 1.0 ml(s)

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	7.0	1.5	ND	5.0	1.1	
463-58-1	Carbonyl Sulfide	ND	12	2.1	ND	5.0	0.84	
74-93-1	Methyl Mercaptan	ND	9.8	2.4	ND	5.0	1.2	
75-08-1	Ethyl Mercaptan	ND	13	3.0	ND	5.0	1.2	
75-18-3	Dimethyl Sulfide	ND	13	3.0	ND	5.0	1.2	
75-15-0	Carbon Disulfide	ND	7.8	1.9	ND	2.5	0.60	
75-33-2	Isopropyl Mercaptan	ND	16	3.7	ND	5.0	1.2	
75-66-1	tert-Butyl Mercaptan	ND	18	4.4	ND	5.0	1.2	
107-03-9	n-Propyl Mercaptan	ND	16	3.7	ND	5.0	1.2	
624-89-5	Ethyl Methyl Sulfide	ND	16	3.7	ND	5.0	1.2	
110-02-1	Thiophene	ND	17	4.1	ND	5.0	1.2	
513-44-0	Isobutyl Mercaptan	ND	18	4.4	ND	5.0	1.2	
352-93-2	Diethyl Sulfide	ND	18	4.4	ND	5.0	1.2	
109-79-5	n-Butyl Mercaptan	ND	18	4.4	ND	5.0	1.2	
624-92-0	Dimethyl Disulfide	ND	9.6	2.3	ND	2.5	0.60	
616-44-4	3-Methylthiophene	ND	20	4.8	ND	5.0	1.2	
110-01-0	Tetrahydrothiophene	ND	18	4.3	ND	5.0	1.2	
638-02-8	2,5-Dimethylthiophene	ND	23	5.5	ND	5.0	1.2	
872-55-9	2-Ethylthiophene	ND	23	5.5	ND	5.0	1.2	
110-81-6	Diethyl Disulfide	ND	12	3.0	ND	2.5	0.60	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **GHD Services Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1704726
Client Project ID: **Avtex** ALS Sample ID: P170926-LCS

Test Code: ASTM D 5504-12 Date Collected: NA
Instrument ID: Agilent 6890A/GC13/SCD Date Received: NA
Analyst: Mike Conejo Date Analyzed: 9/26/17
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: NA ml(s)
Test Notes:

CAS #	**Compound**	Spike Amount ppbV	**Result ppbV**	**% Recovery**	ALS Acceptance Limits	Data Qualifier
7783-06-4	Hydrogen Sulfide	1,000	**1,060**	**106**	81-141	
463-58-1	Carbonyl Sulfide	1,000	**1,170**	**117**	81-147	
74-93-1	Methyl Mercaptan	1,000	**1,110**	**111**	80-144	

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **GHD Services Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1704726
Client Project ID: **Avtex** ALS Sample ID: P170926-LCS

Test Code: ASTM D 5504-12 Date Collected: NA
Instrument ID: Agilent 7890A/GC22/SCD Date Received: NA
Analyst: Mike Conejo Date Analyzed: 9/26/17
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: NA ml(s)
Test Notes:

CAS #	**Compound**	Spike Amount ppbV	**Result ppbV**	**% Recovery**	ALS Acceptance Limits	Data Qualifier
7783-06-4	Hydrogen Sulfide	1,000	**1,030**	**103**	81-141	
463-58-1	Carbonyl Sulfide	1,000	**1,130**	**113**	81-147	
74-93-1	Methyl Mercaptan	1,000	**1,110**	**111**	80-144	

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261720.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 14:51
Operator : MC
Sample : P1704726-001 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:57:41 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units	
Target Compounds							
1)	Z	Hydrogen_Sulfide	0.000	0	N.D.	ppb	
2)	W	Carbonyl_Sulfide	1.158	145958	1.657	ppb	m
3)	T	Methyl_Mercaptan	0.000	0	N.D.	ppb	
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb	
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb	
6)	T	Carbon_Disulfide	3.644	701621	4.172	ppb	m
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb	
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb	
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb	
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb	
11)	T	Thiophene	0.000	0	N.D.	ppb	
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb	
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb	
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb	
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb	
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb	
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb	
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb	
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb	
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb	
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb	
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb	

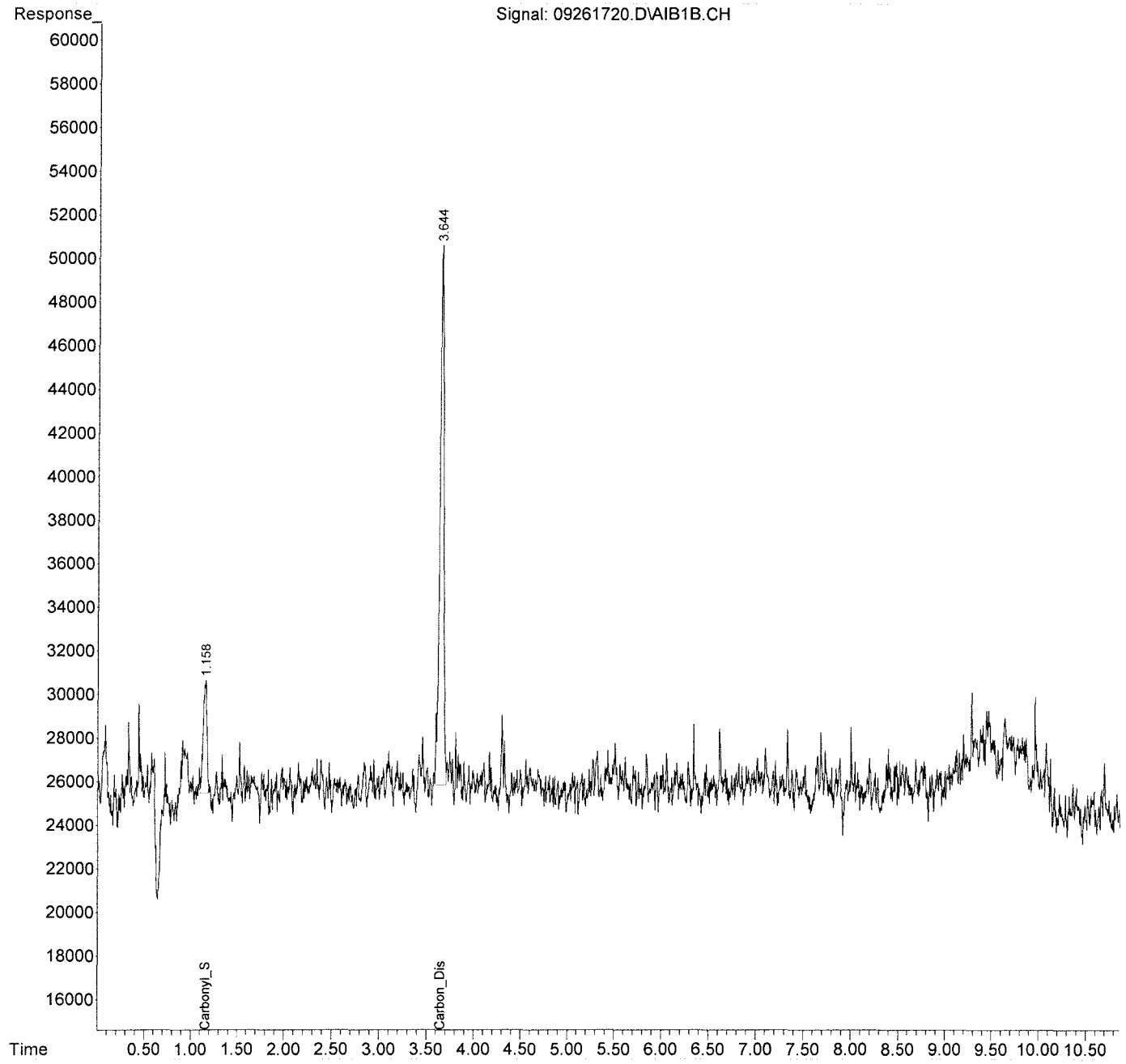
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261720.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 14:51
Operator : MC
Sample : P1704726-001 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:57:41 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

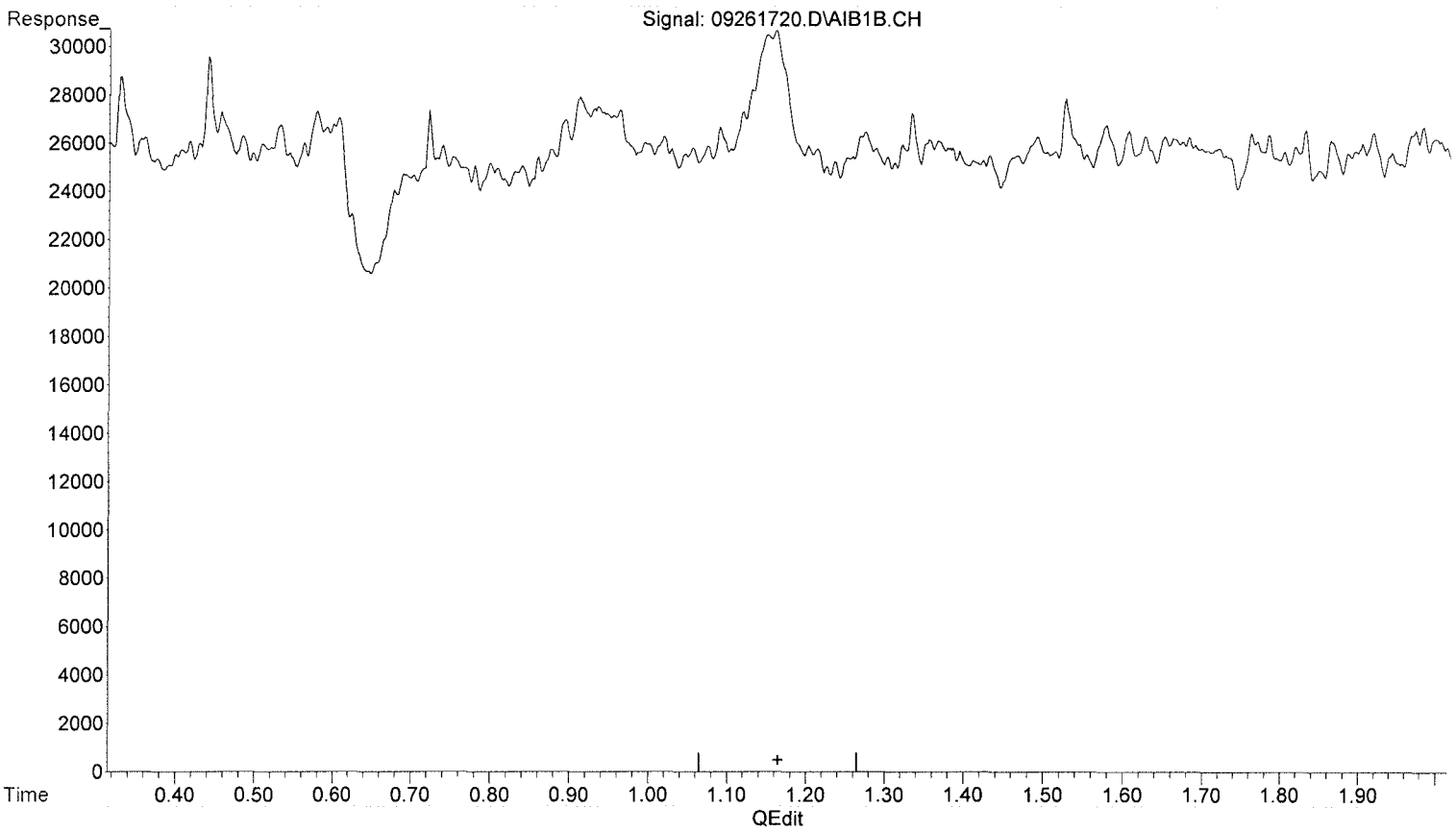


Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261720.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 14:51
Operator : MC
Sample 1(7:) 4726-001 1ml
Misc : Mc 9/27/17
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:57:41 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(2) Carbonyl_Sulfide (W)

1.165min 0.000 ppb

response 0

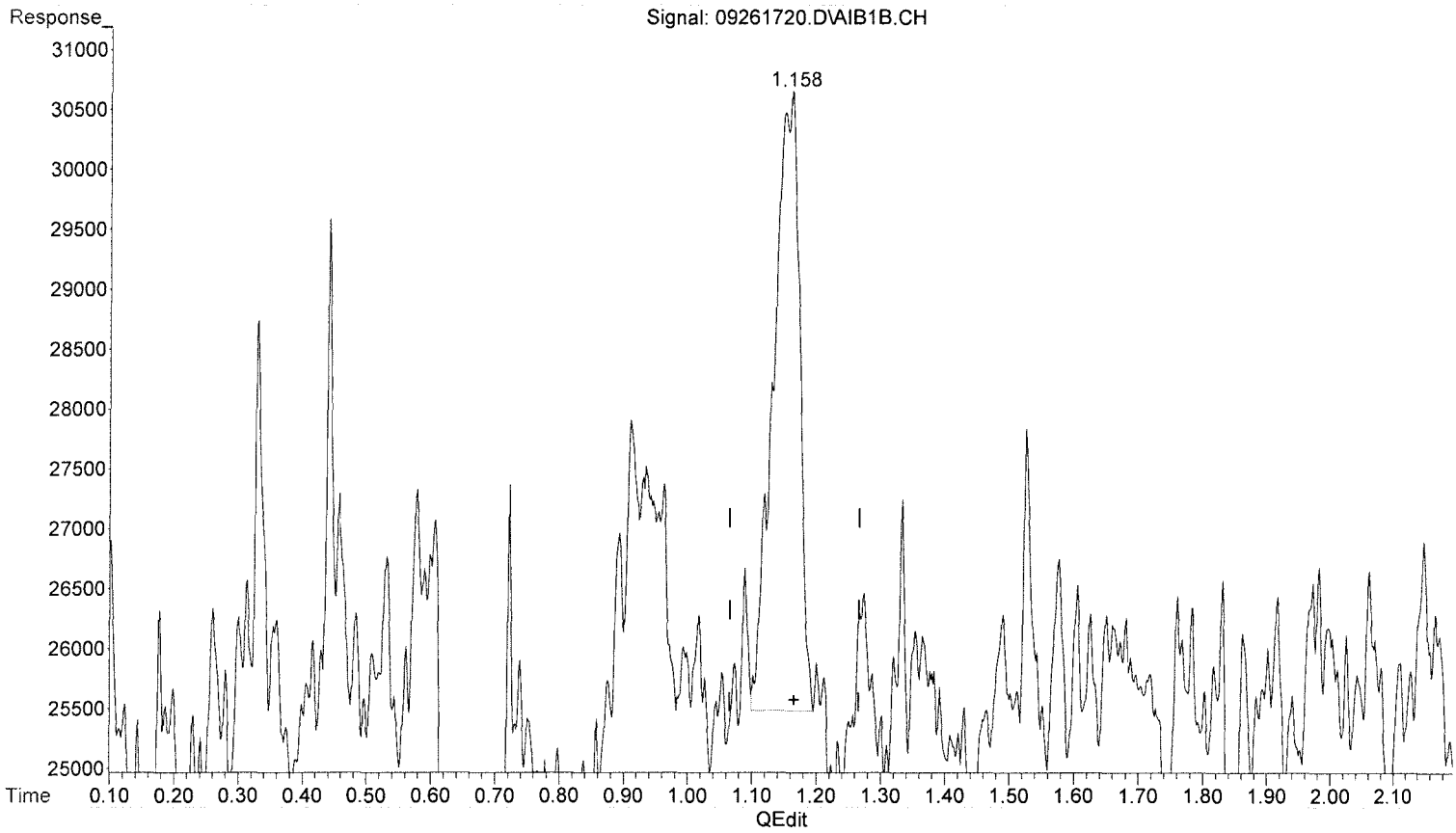
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261720.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 14:51
Operator : MC
Sample : 4726-001 1ml
Misc : ML 9/27/17
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:57:41 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(2) Carbonyl_Sulfide (W)

1.158min 1.657 ppb m

response 145958

ML 9/27/17
MP

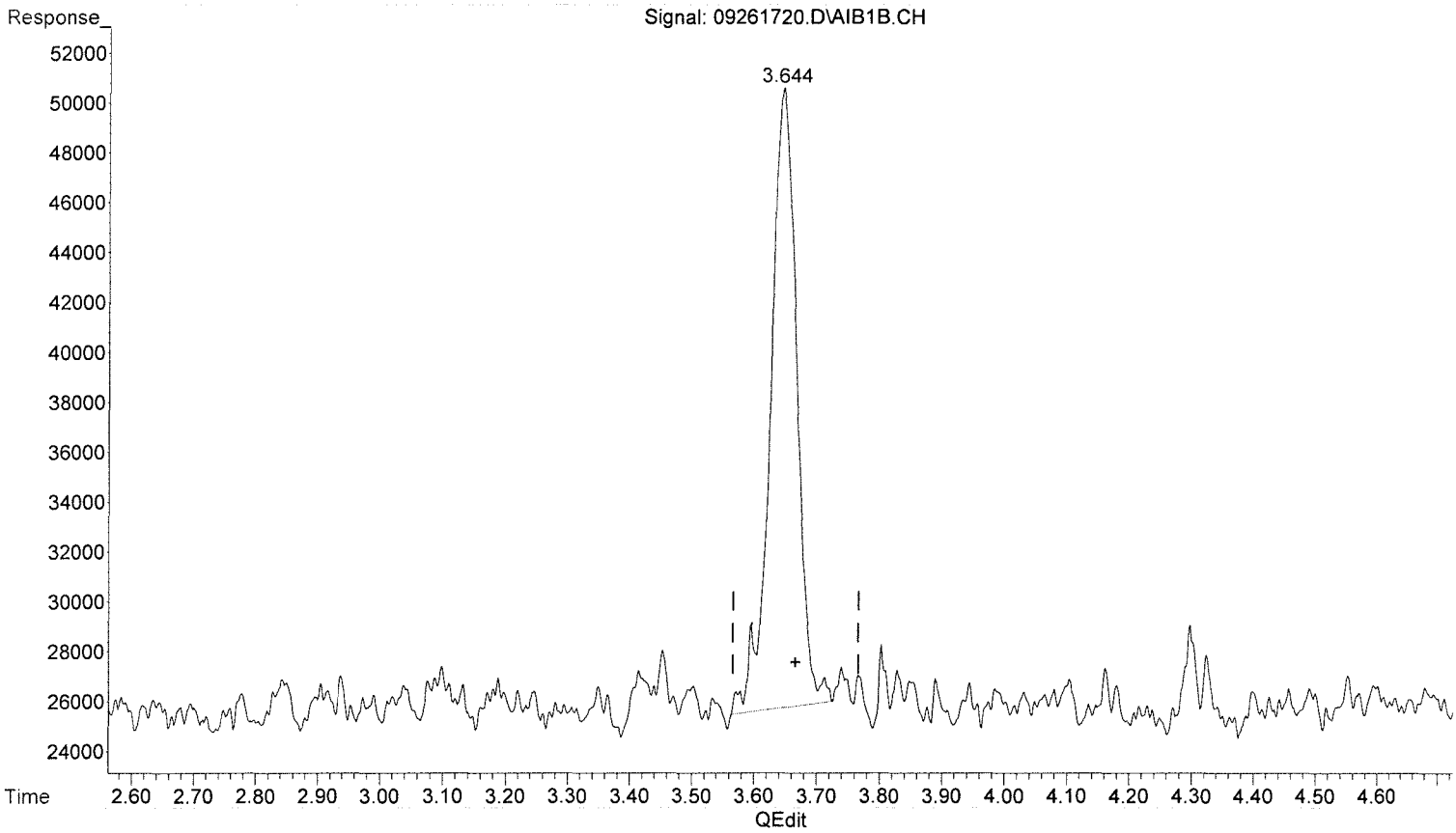
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261720.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 14:51
Operator : MC
Sample : 4726-001 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:57:41 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(6) Carbon_Disulfide (T)

3.645min 4.298 ppb

response 722738

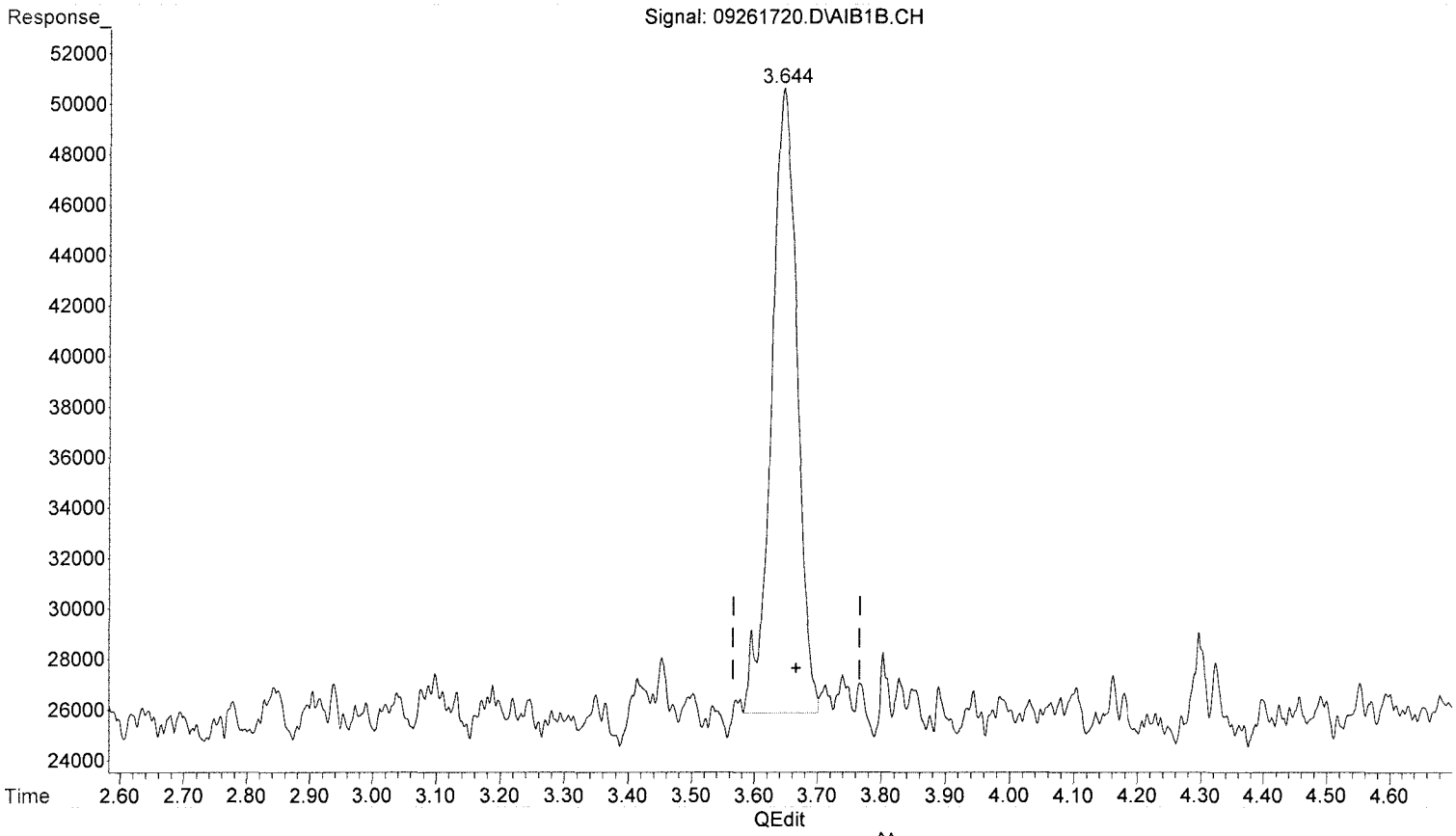
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261720.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 14:51
Operator : MC
Sample : 4726-001 1ml
Misc : [illegible]
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:57:41 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(6) Carbon_Disulfide (T)

3.644min 4.172 ppb m

response 701621

(+) = Expected Retention Time

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261721.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 15:05
Operator : MC
Sample : P1704726-003 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:58:59 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.000	0	N.D.	ppb
2)	W	Carbonyl_Sulfide	0.000	0	N.D.	ppb
3)	T	Methyl_Mercaptan	0.000	0	N.D.	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

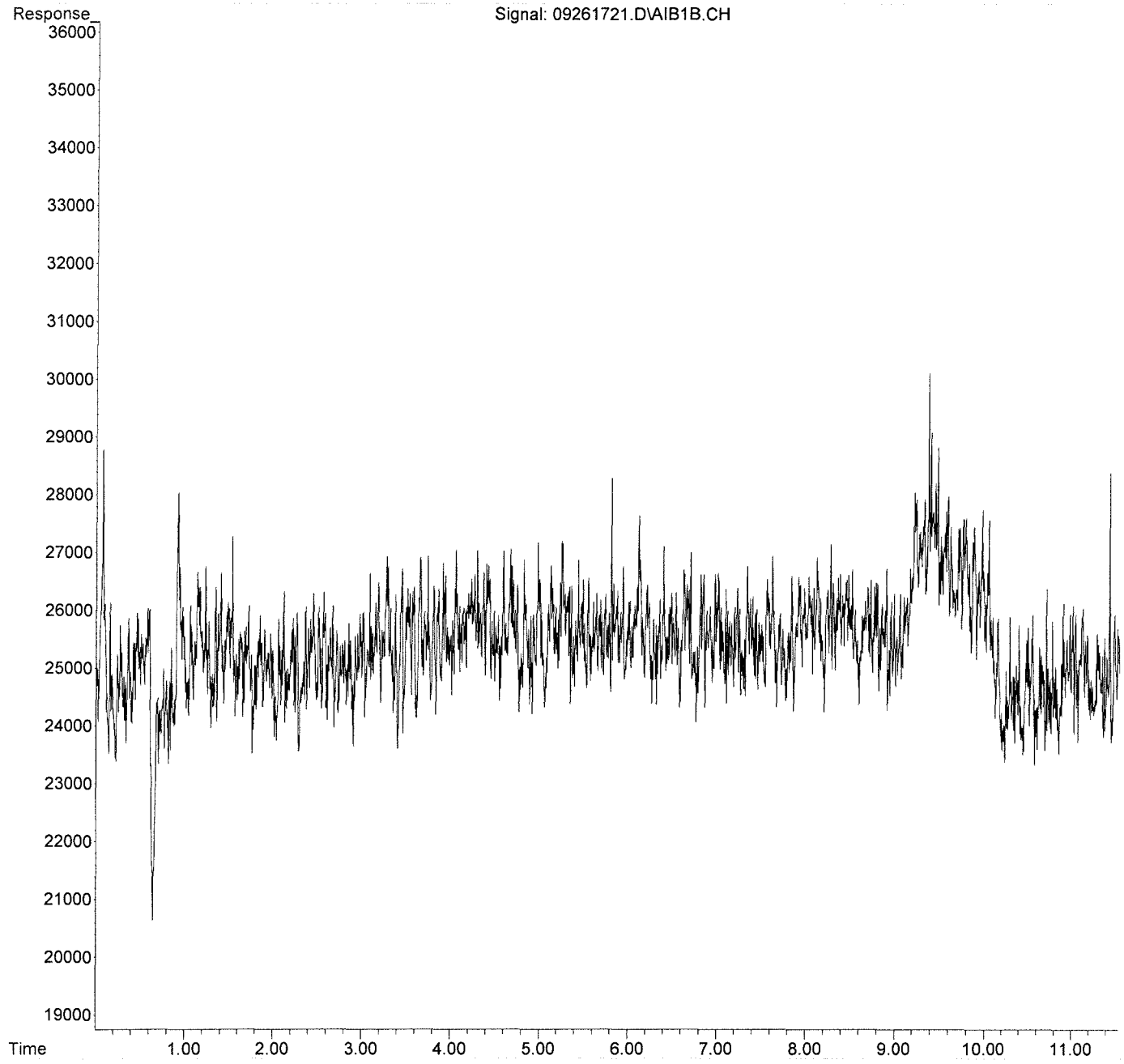
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261721.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 15:05
Operator : MC
Sample : P1704726-003 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:58:59 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261722.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 15:21
Operator : MC
Sample : P1704726-005 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:59:19 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units	
Target Compounds							
1)	Z	Hydrogen_Sulfide	0.917	106915	1.309	ppb	m
2)	W	Carbonyl_Sulfide	1.142	291680	3.312	ppb	m
3)	T	Methyl_Mercaptan	0.000	0	N.D.	ppb	
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb	
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb	
6)	T	Carbon_Disulfide	3.645	597470	3.553	ppb	m
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb	
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb	
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb	
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb	
11)	T	Thiophene	0.000	0	N.D.	ppb	
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb	
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb	
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb	
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb	
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb	
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb	
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb	
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb	
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb	
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb	
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb	

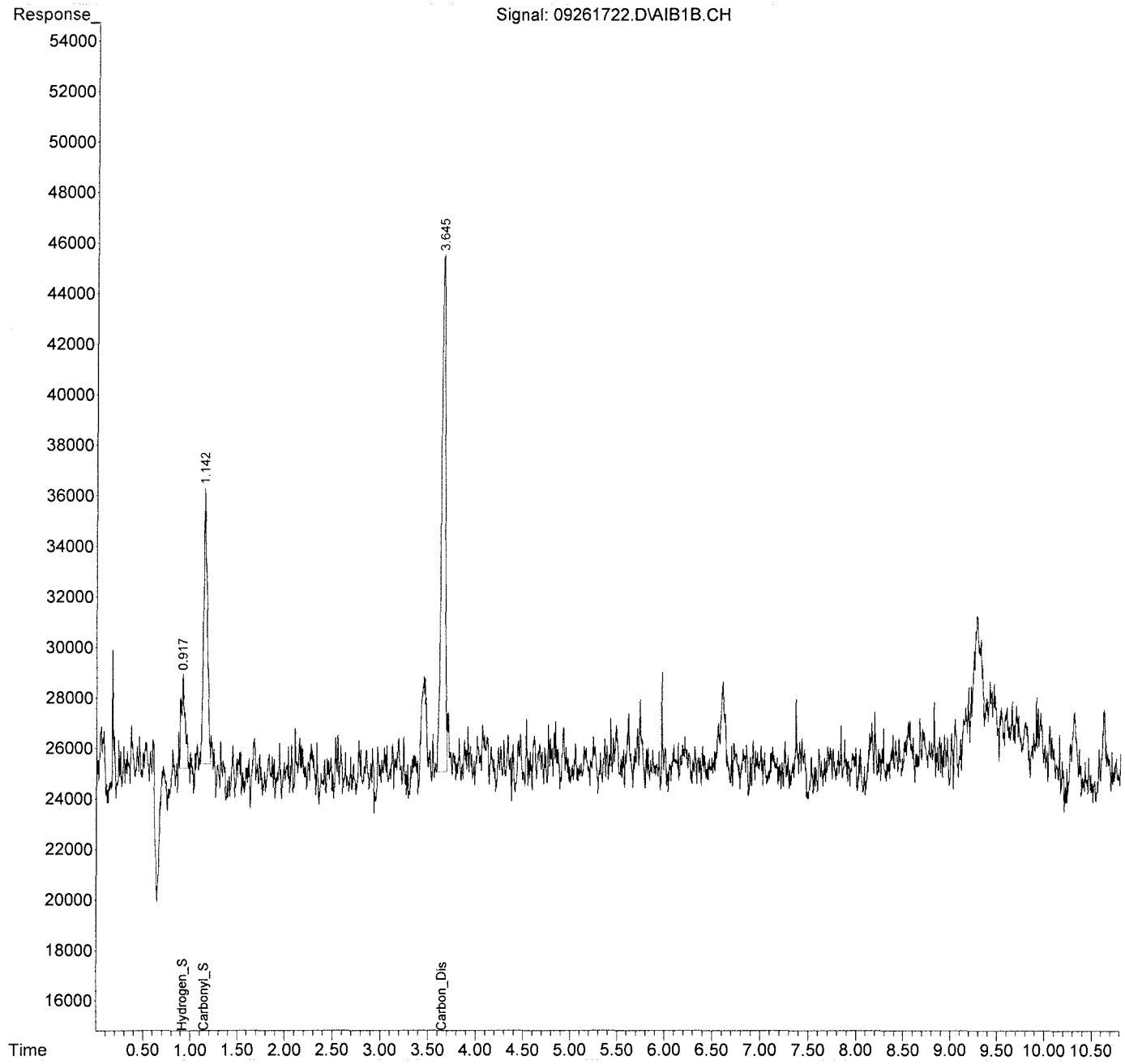
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261722.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 15:21
Operator : MC
Sample : P1704726-005 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:59:19 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

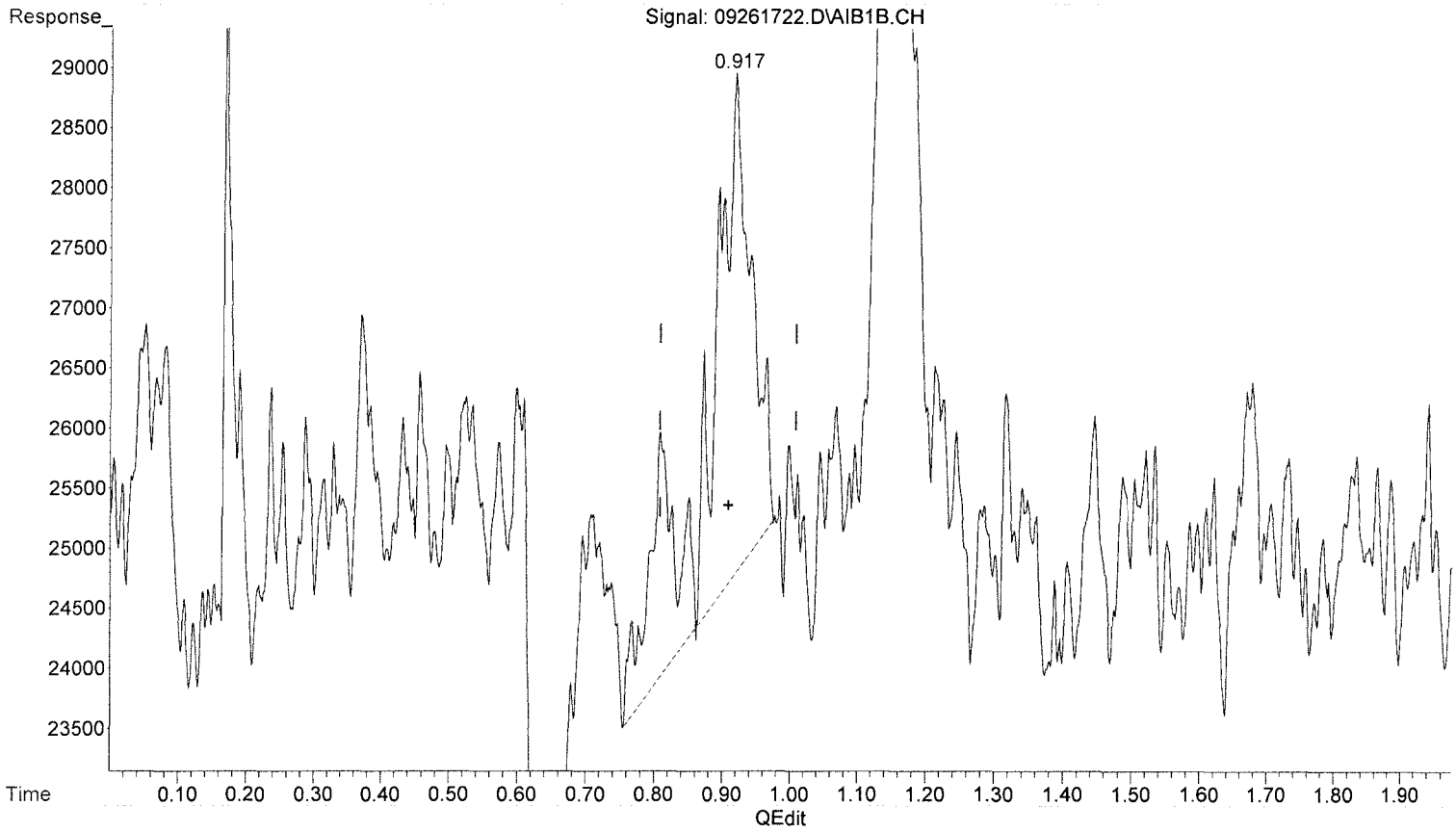


Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261722.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 15:21
Operator : MC
Sample : P1704726-005 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:59:19 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(1) Hydrogen_Sulfide (Z)

0.918min 2.404 ppb

response 196305

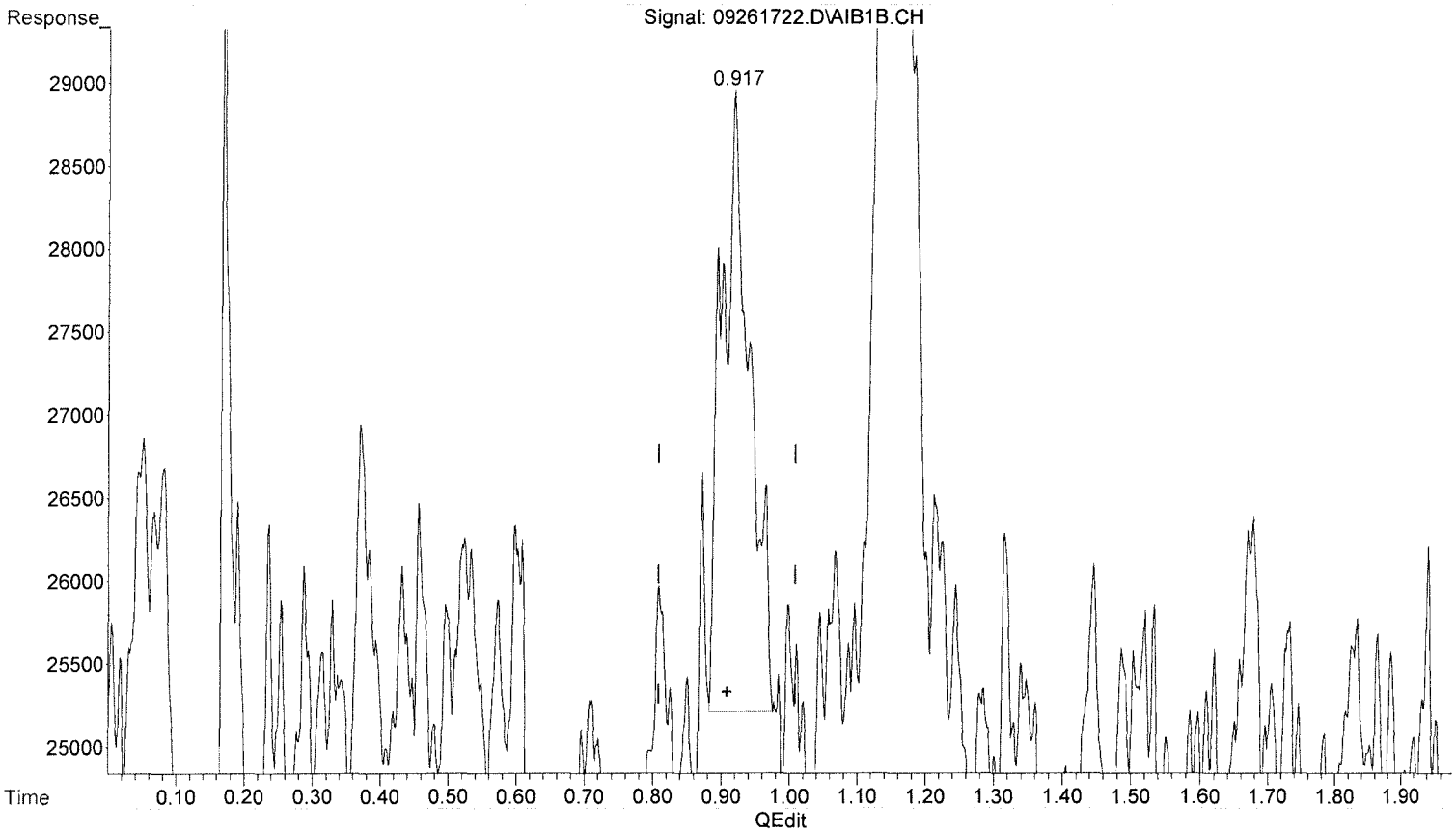
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261722.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 15:21
Operator : MC
Sample : P1704726-005 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:59:19 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(1) Hydrogen_Sulfide (Z)

0.917min 1.309 ppb m

response 106915

(+) = Expected Retention Time

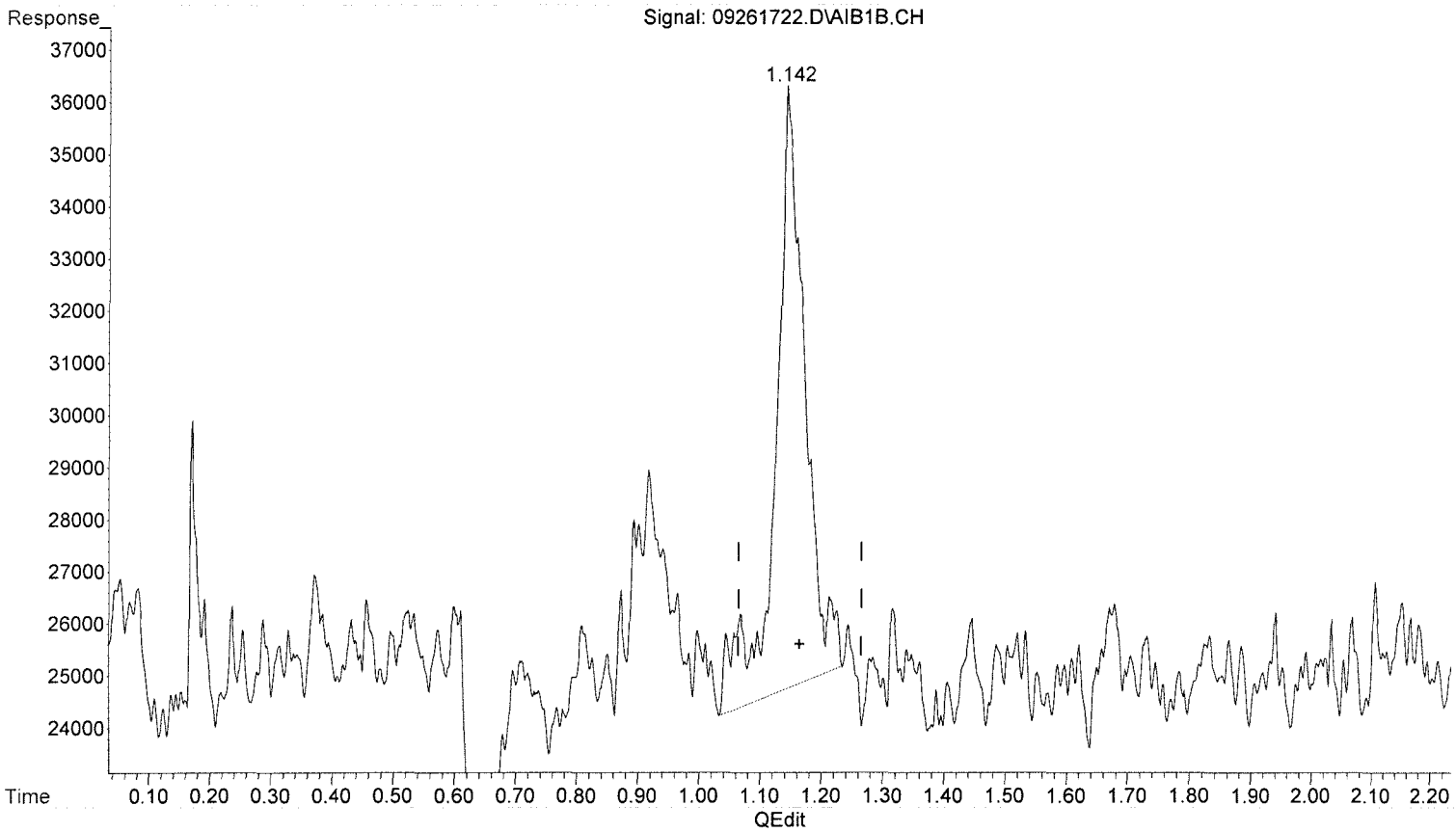
GC13_030717.M Wed Sep 27 08:05:18 2017

Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261722.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 15:21
Operator : MC
Sample : P1704726-005 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:59:19 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(2) Carbonyl_Sulfide (W)

1.144min 4.413 ppb

response 388625

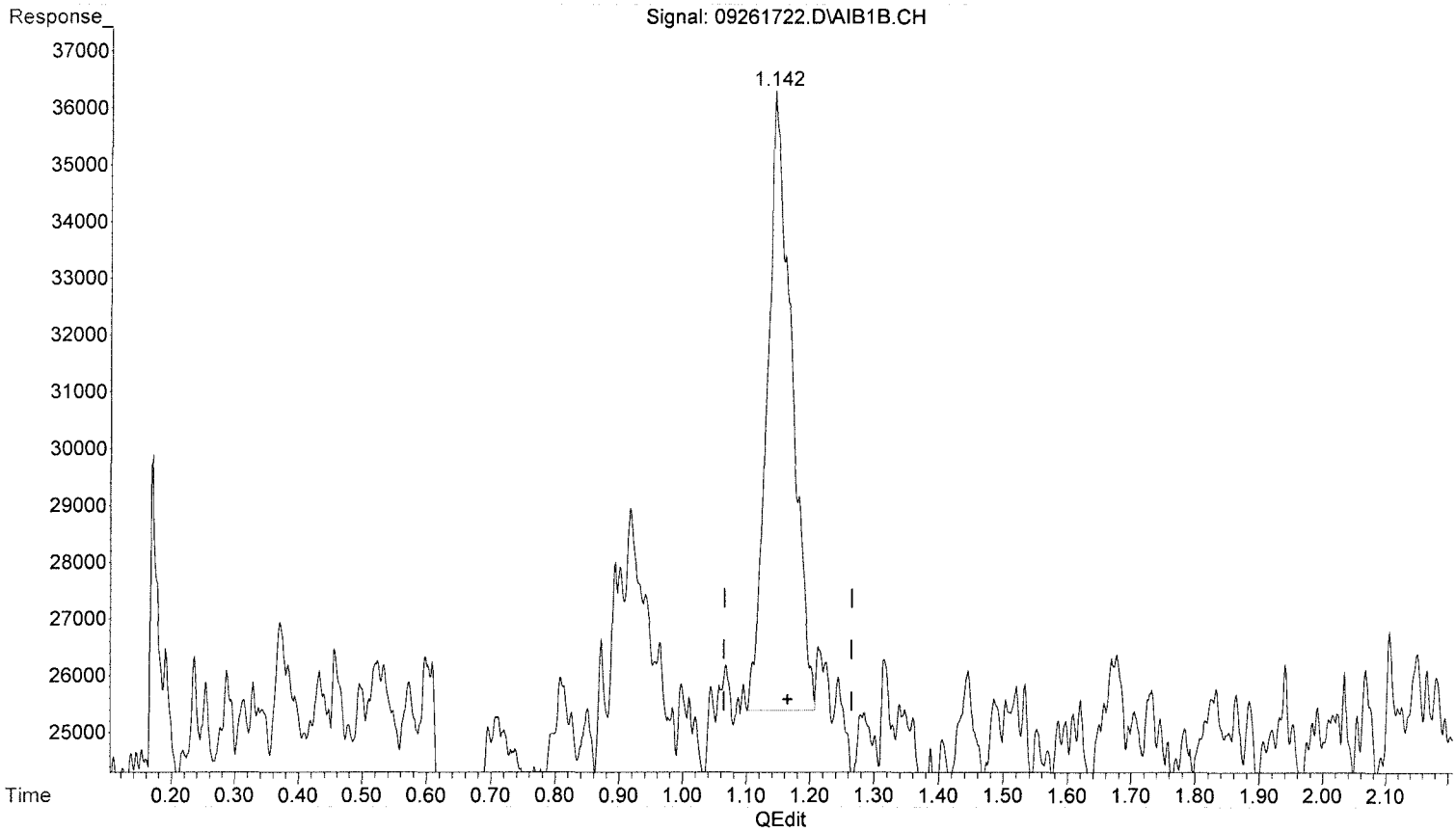
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261722.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 15:21
Operator : MC
Sample : P1704726-005 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:59:19 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(2) Carbonyl_Sulfide (W)

1.142min 3.312 ppb m

response 291680

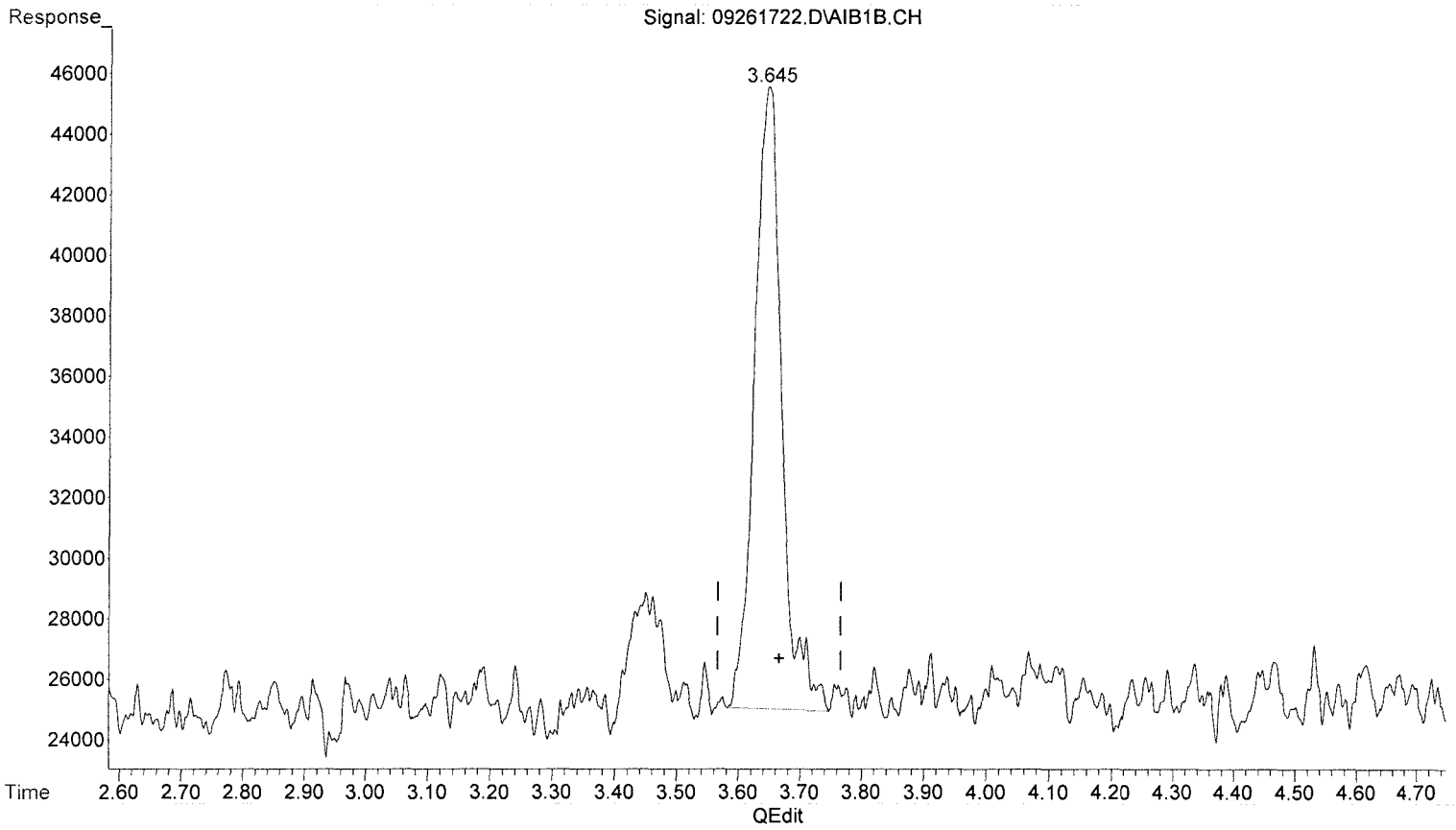
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261722.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 15:21
Operator : MC
Sample : P1704726-005 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:59:19 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(6) Carbon_Disulfide (T)

3.646min 3.814 ppb

response 641360

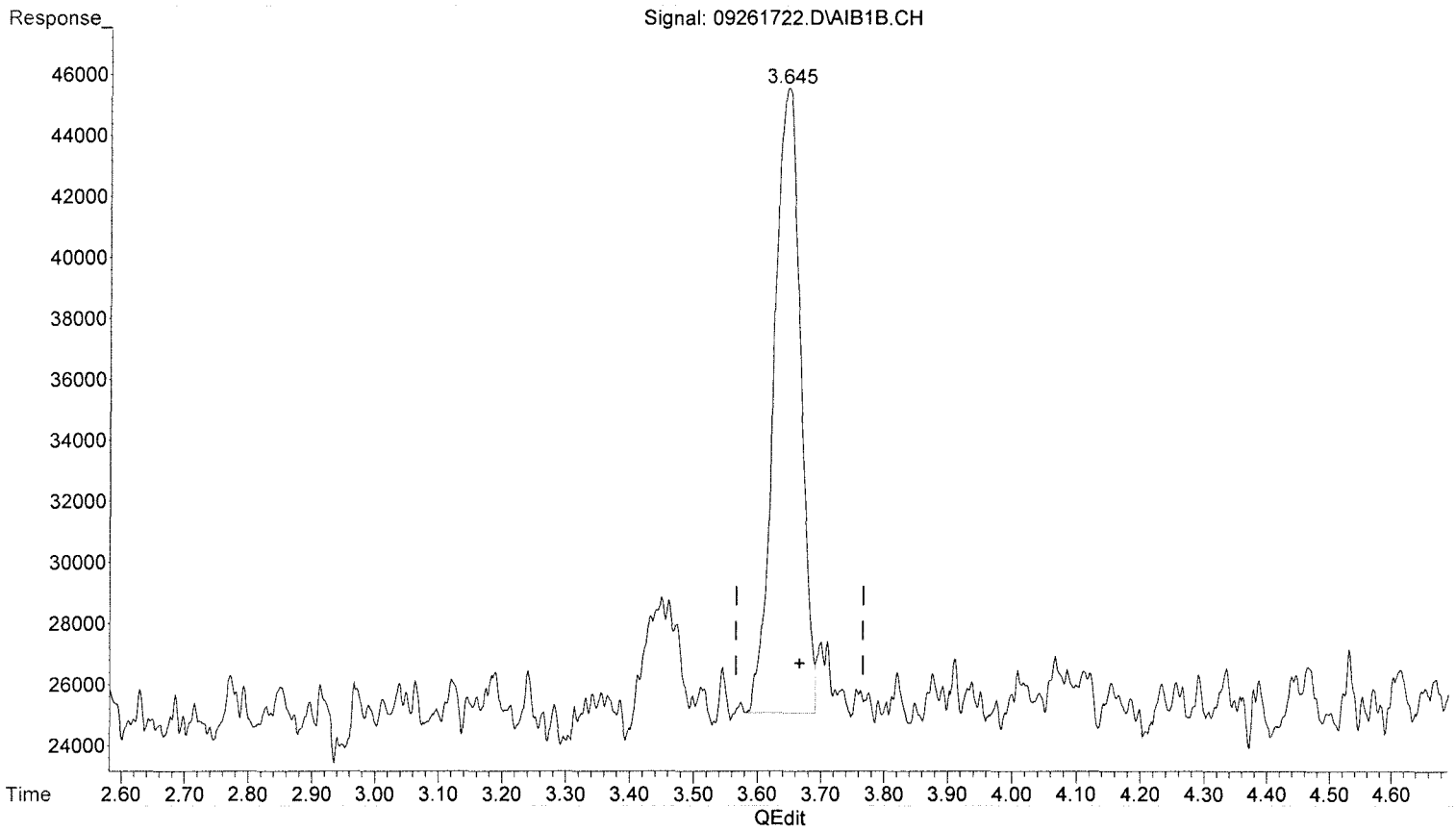
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261722.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 15:21
Operator : MC
Sample : P1704726-005 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:59:19 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(6) Carbon_Disulfide (T)

3.645min 3.553 ppb m

response 597470

MC 9/27/17

BU

LW 9/28/17

(+) = Expected Retention Time

GC13_030717.M Wed Sep 27 08:06:16 2017

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_09\26\
Data File : 09261737.d
Signal(s) : AIB1A.ch
Acq On : 26 Sep 2017 15:32
Operator : MC
Sample : P1704726-007 1ml
Misc :
ALS Vial : 37 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:43:40 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.000	0	N.D.	ppb
2)	W	Carbonyl_Sulfide	0.000	0	N.D.	ppb
3)	T	Methyl_Mercaptan	0.000	0	N.D.	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

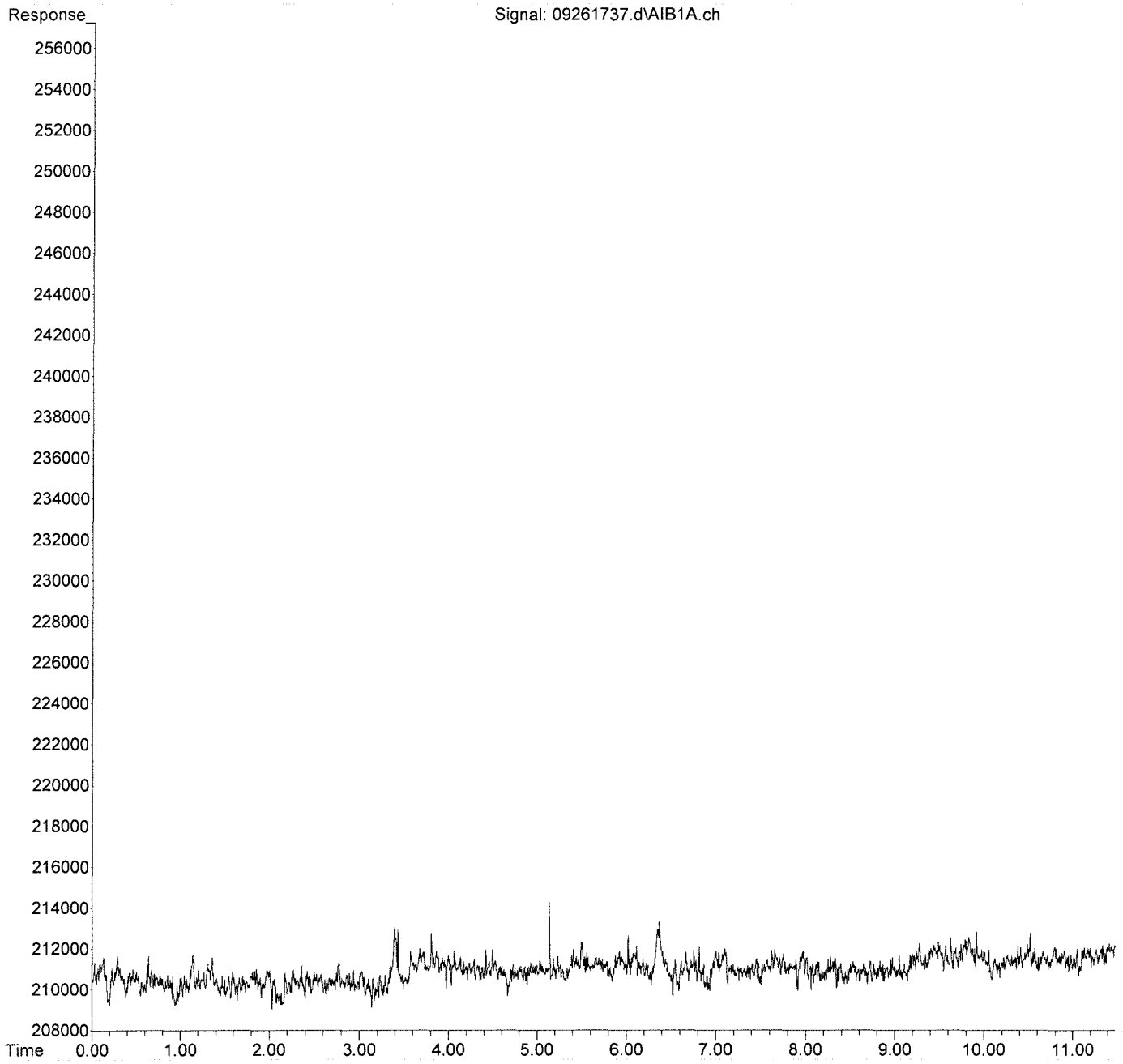
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_09\26\
Data File : 09261737.d
Signal(s) : AIB1A.ch
Acq On : 26 Sep 2017 15:32
Operator : MC
Sample : P1704726-007 1ml
Misc :
ALS Vial : 37 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:43:40 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261723.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 15:35
Operator : MC
Sample : P1704726-008 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 08:06:45 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.000	0	N.D.	ppb
2)	W	Carbonyl_Sulfide	0.000	0	N.D.	ppb
3)	T	Methyl_Mercaptan	0.000	0	N.D.	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

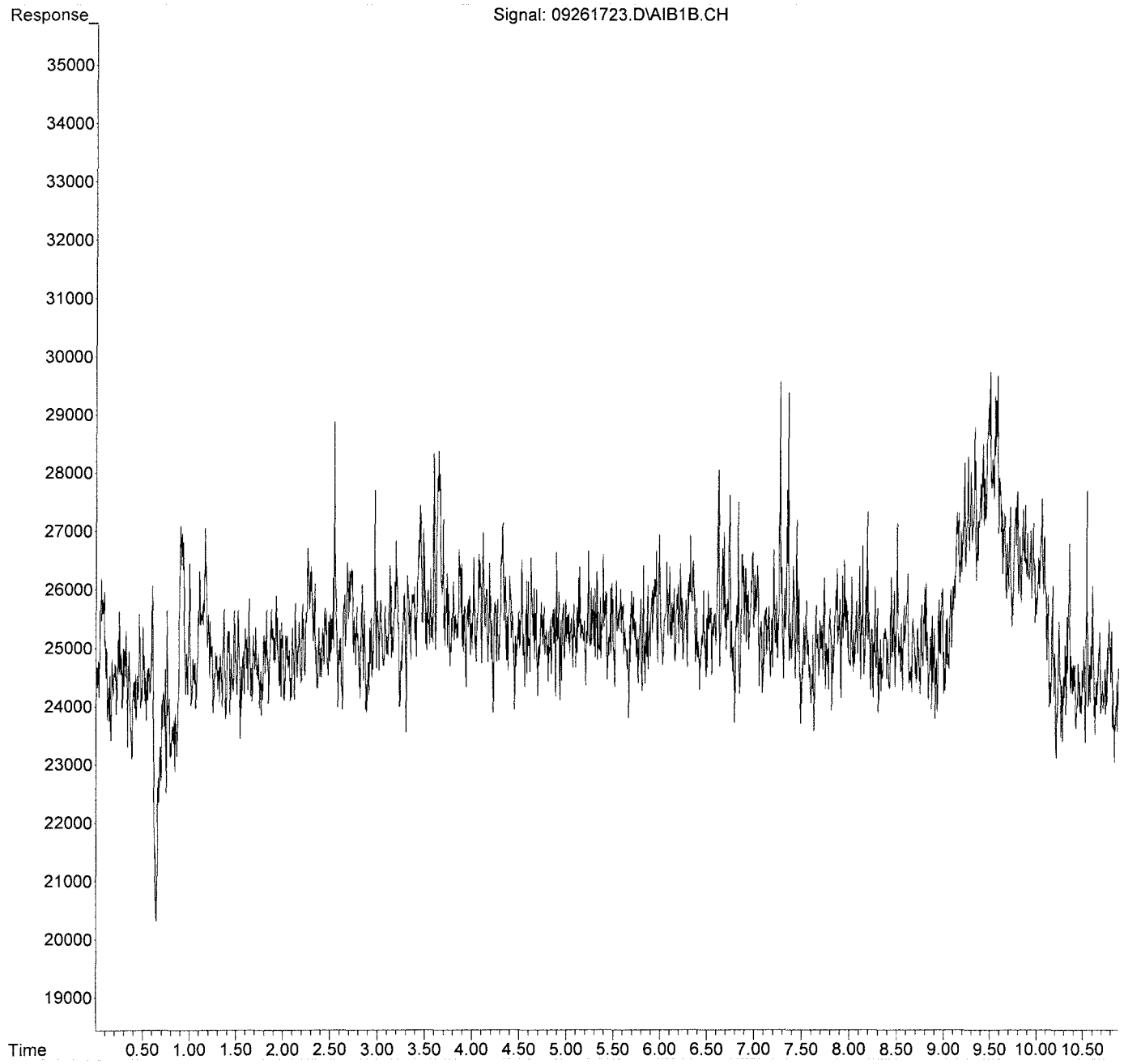
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261723.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 15:35
Operator : MC
Sample : P1704726-008 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 08:06:45 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261724.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 15:48
Operator : MC
Sample : P1704726-009 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 08:07:26 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units	
Target Compounds							
1)	Z	Hydrogen_Sulfide	0.904	117088	1.434	ppb	m
2)	W	Carbonyl_Sulfide	0.000	0	N.D.	ppb	
3)	T	Methyl_Mercaptan	0.000	0	N.D.	ppb	
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb	
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb	
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb	
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb	
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb	
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb	
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb	
11)	T	Thiophene	0.000	0	N.D.	ppb	
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb	
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb	
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb	
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb	
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb	
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb	
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb	
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb	
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb	
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb	
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb	

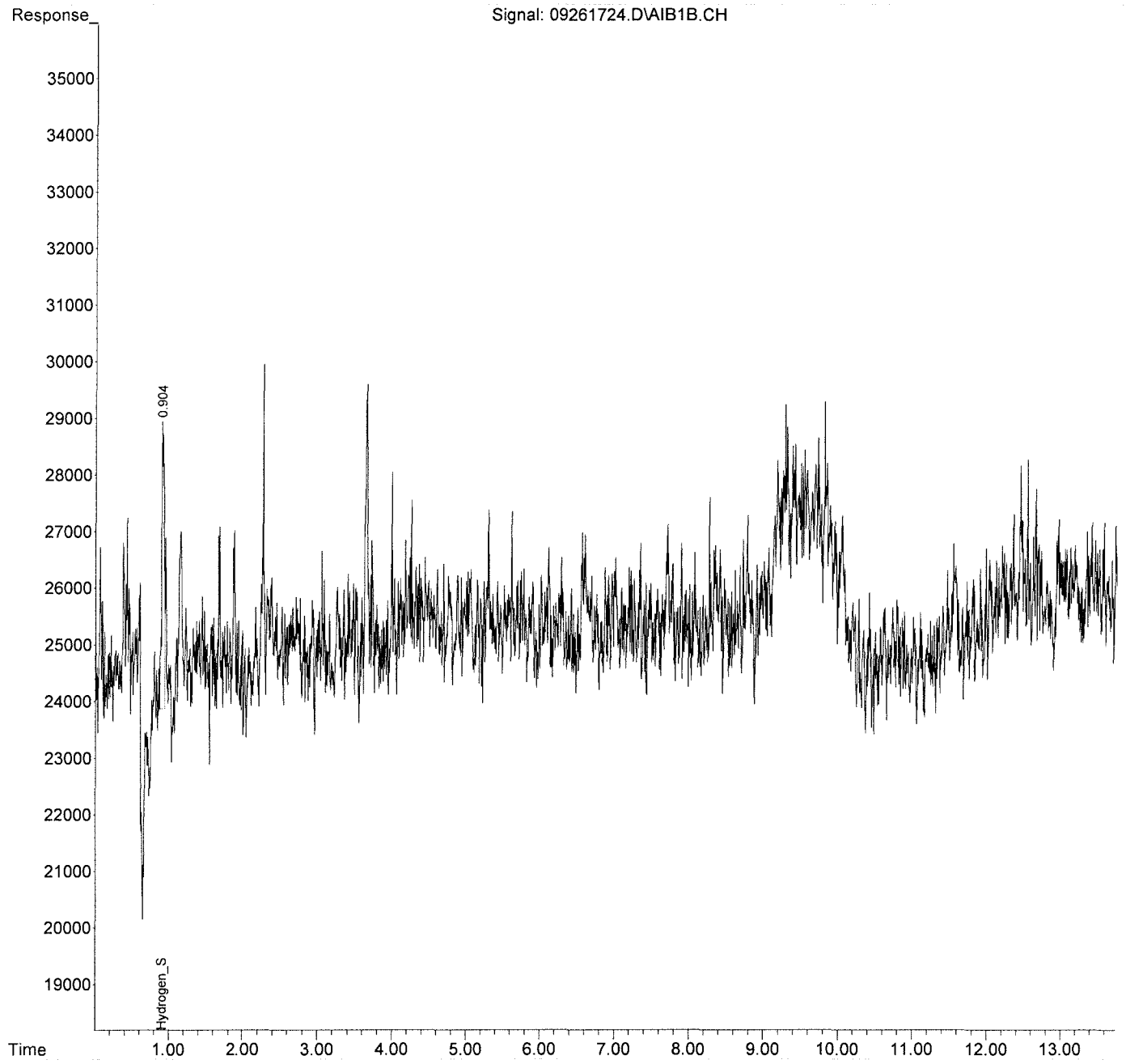
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261724.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 15:48
Operator : MC
Sample : P1704726-009 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 08:07:26 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

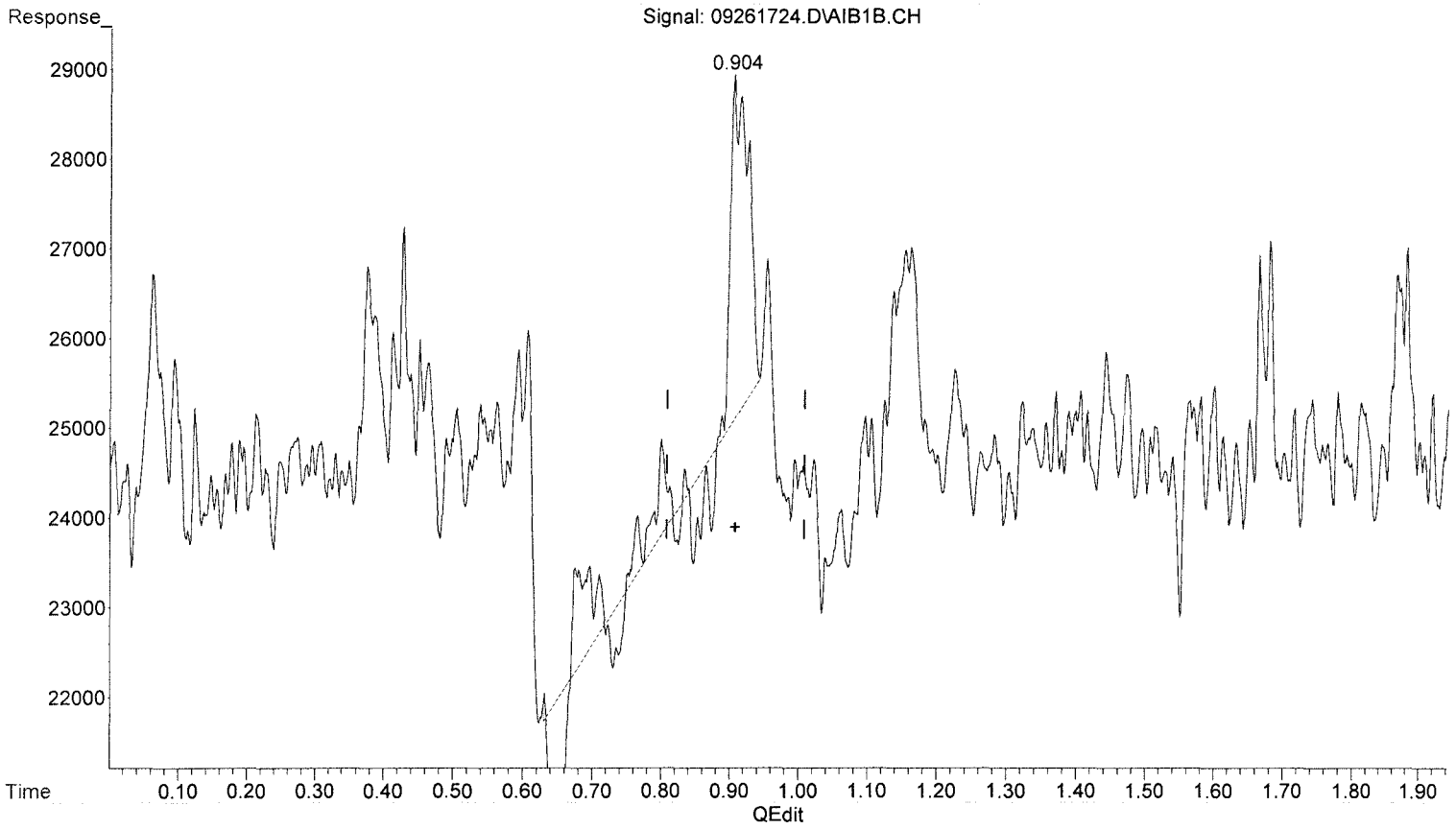


Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261724.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 15:48
Operator : MC
Sample : P1704726-009 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 08:07:26 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(1) Hydrogen_Sulfide (Z)

0.905min 0.768 ppb

response 62725

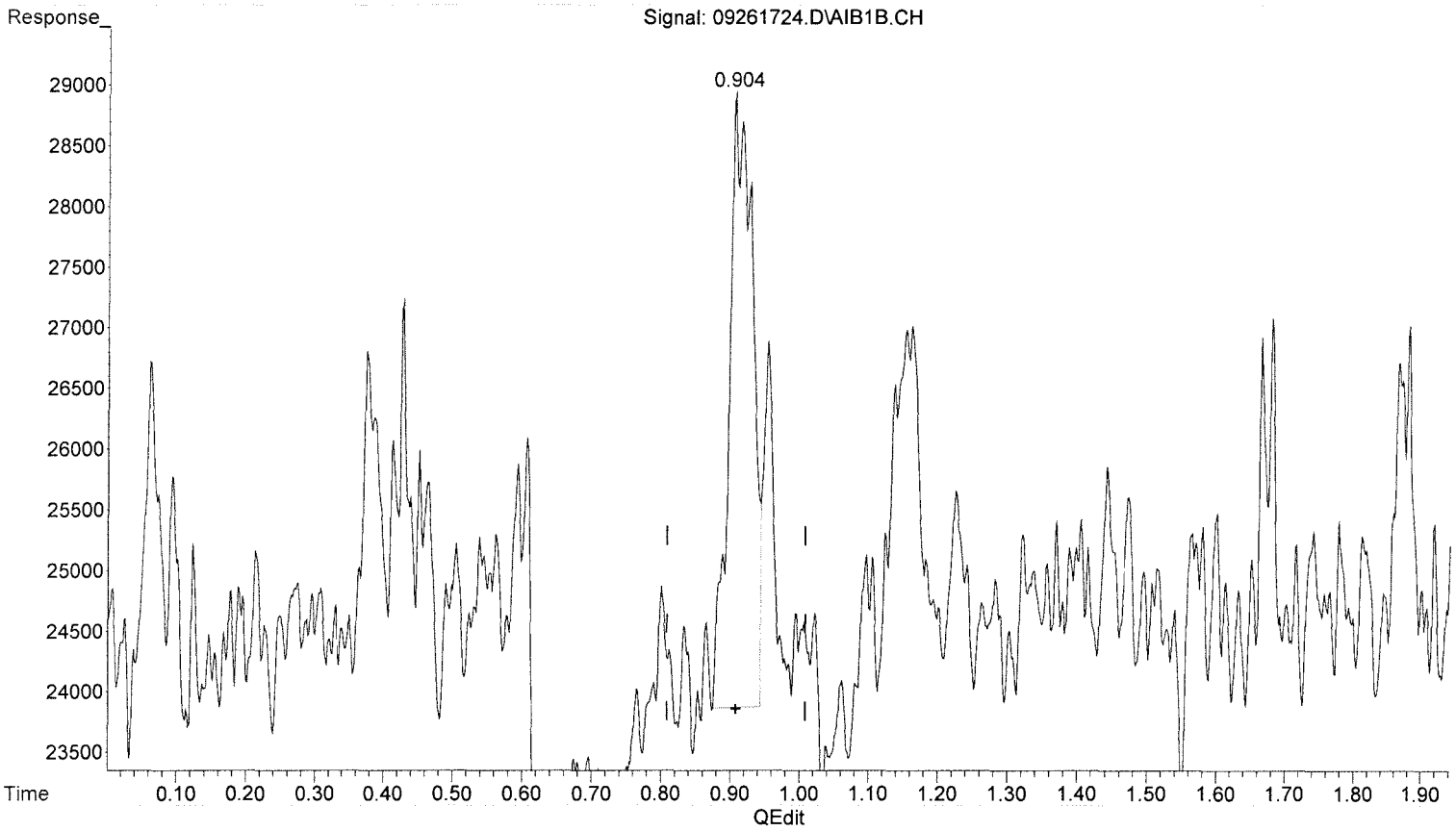
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261724.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 15:48
Operator : MC
Sample : P1704726-009 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 08:07:26 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(1) Hydrogen_Sulfide (Z)

0.904min 1.434 ppb m

response 117088

MC 9/27/17

BL

MW 9/28/17

(+) = Expected Retention Time

GC13_030717.M Wed Sep 27 08:07:45 2017

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261705.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 7:33
Operator : MC
Sample : mb 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:57:02 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.000	0	N.D.	ppb
2)	W	Carbonyl_Sulfide	0.000	0	N.D.	ppb
3)	T	Methyl_Mercaptan	0.000	0	N.D.	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

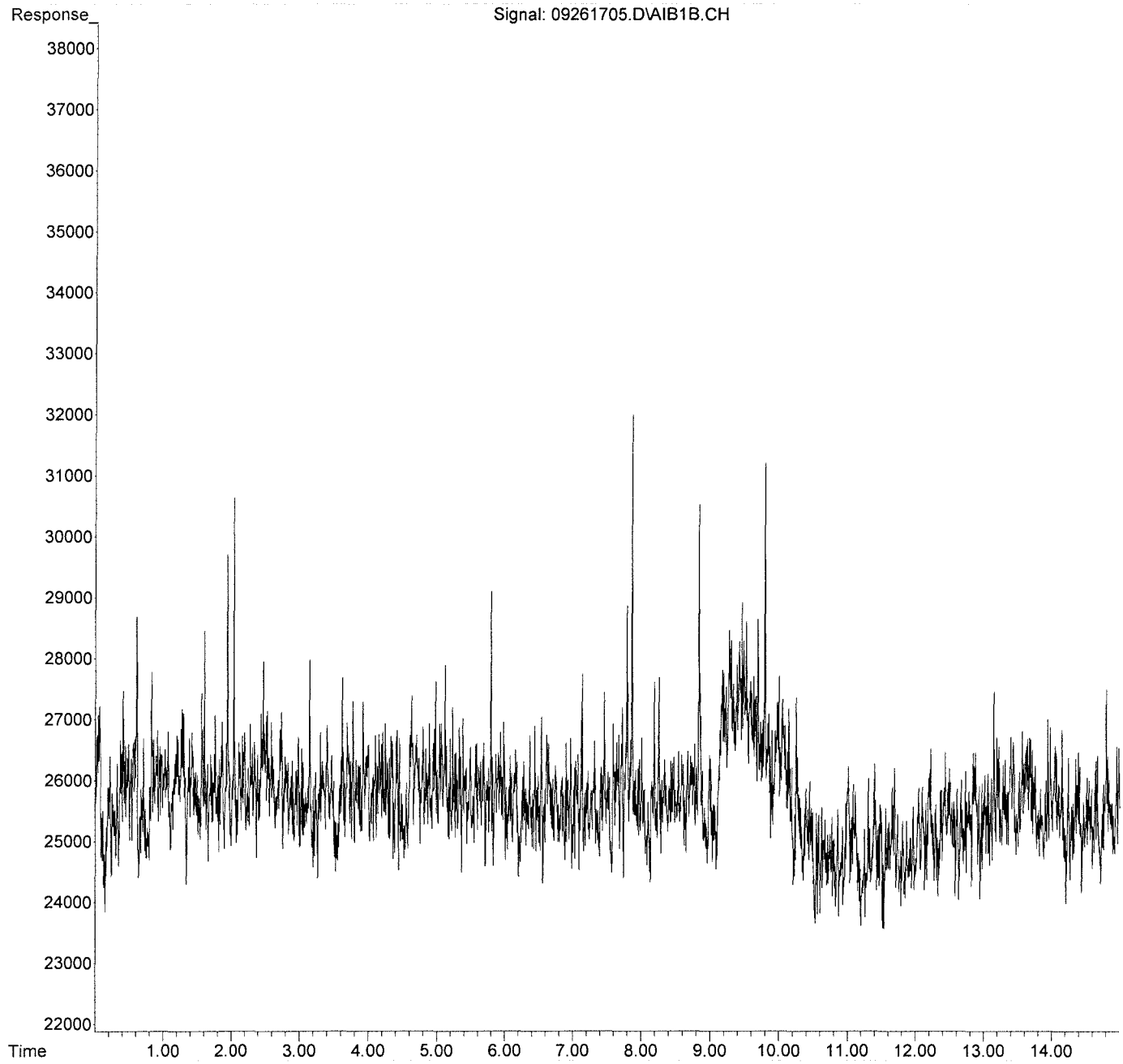
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261705.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 7:33
Operator : MC
Sample : mb 1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:57:02 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_09\26\
Data File : 09261705.d
Signal(s) : AIB1A.ch
Acq On : 26 Sep 2017 7:32
Operator : MC
Sample : mb 1ml
Misc :
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:09:29 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.000	0	N.D.	ppb
2)	W	Carbonyl_Sulfide	0.000	0	N.D.	ppb
3)	T	Methyl_Mercaptan	0.000	0	N.D.	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

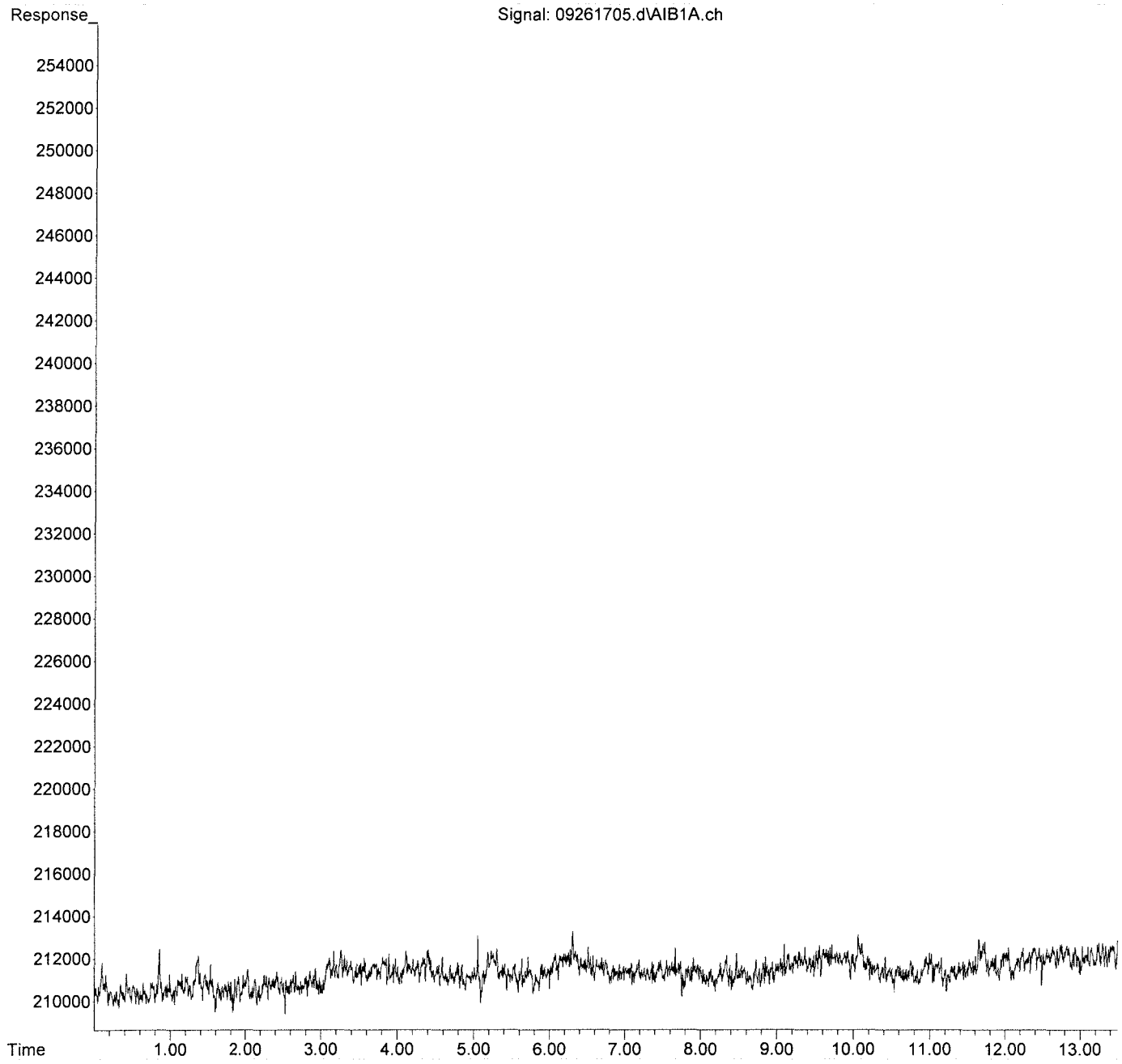
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_09\26\
Data File : 09261705.d
Signal(s) : AIB1A.ch
Acq On : 26 Sep 2017 7:32
Operator : MC
Sample : mb 1ml
Misc :
ALS Vial : 5 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:09:29 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261702.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 7:07
Operator : MC
Sample : lcs s32-08211702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:49:29 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.901	86763349	1062.497	ppb
2)	W	Carbonyl_Sulfide	1.140	102710046	1166.359	ppb
3)	T	Methyl_Mercaptan	2.260	93304743	1110.118	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

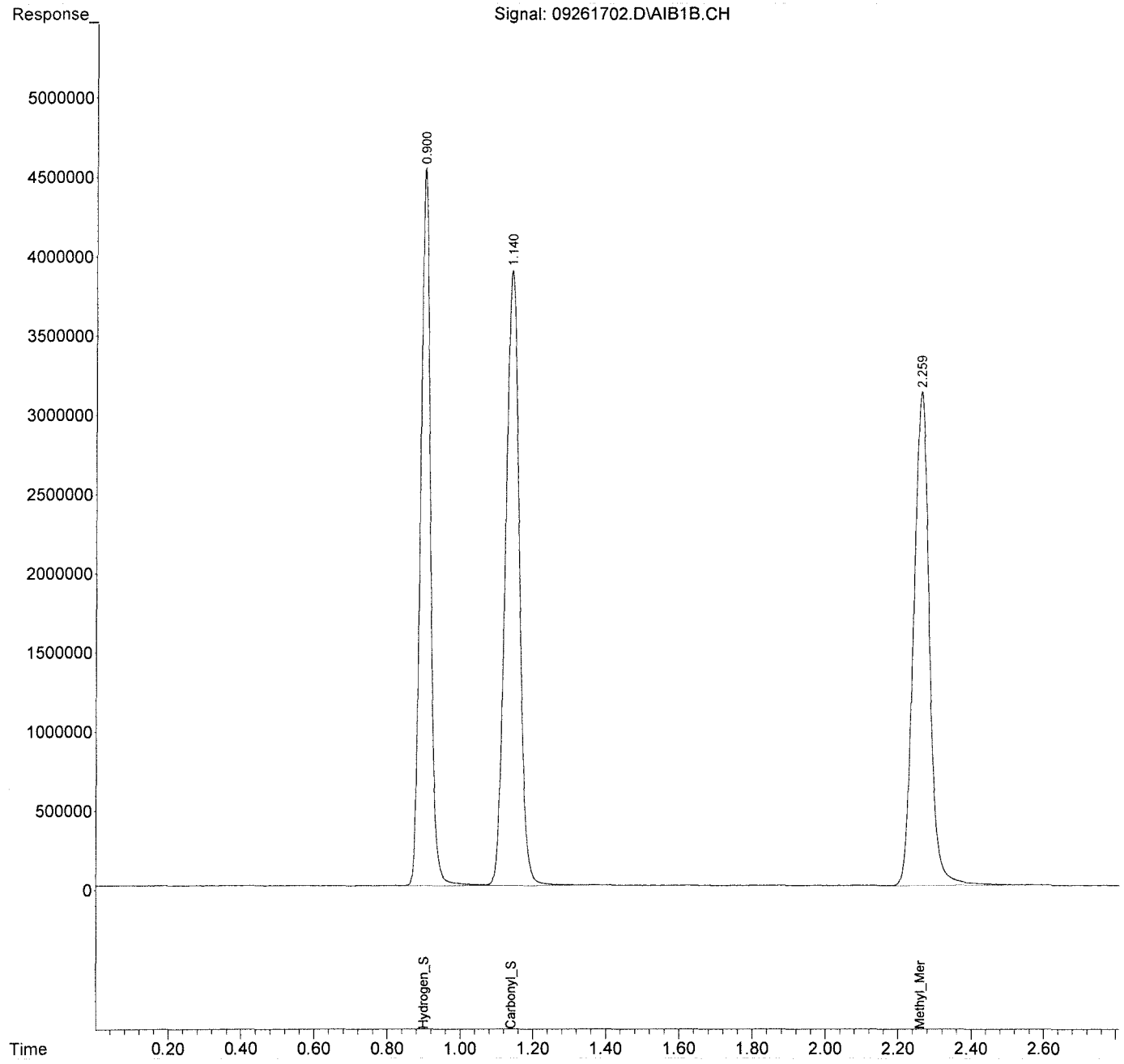
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261702.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 7:07
Operator : MC
Sample : lcs s32-08211702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:49:29 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_09\26\
Data File : 09261702.d
Signal(s) : AIB1A.ch
Acq On : 26 Sep 2017 7:06
Operator : MC
Sample : lcs s32-08211702
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:08:21 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	1.167	39415605	1028.898	ppb
2)	W	Carbonyl_Sulfide	1.342	47757197	1134.688	ppb
3)	T	Methyl_Mercaptan	2.153	41579211	1105.958	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

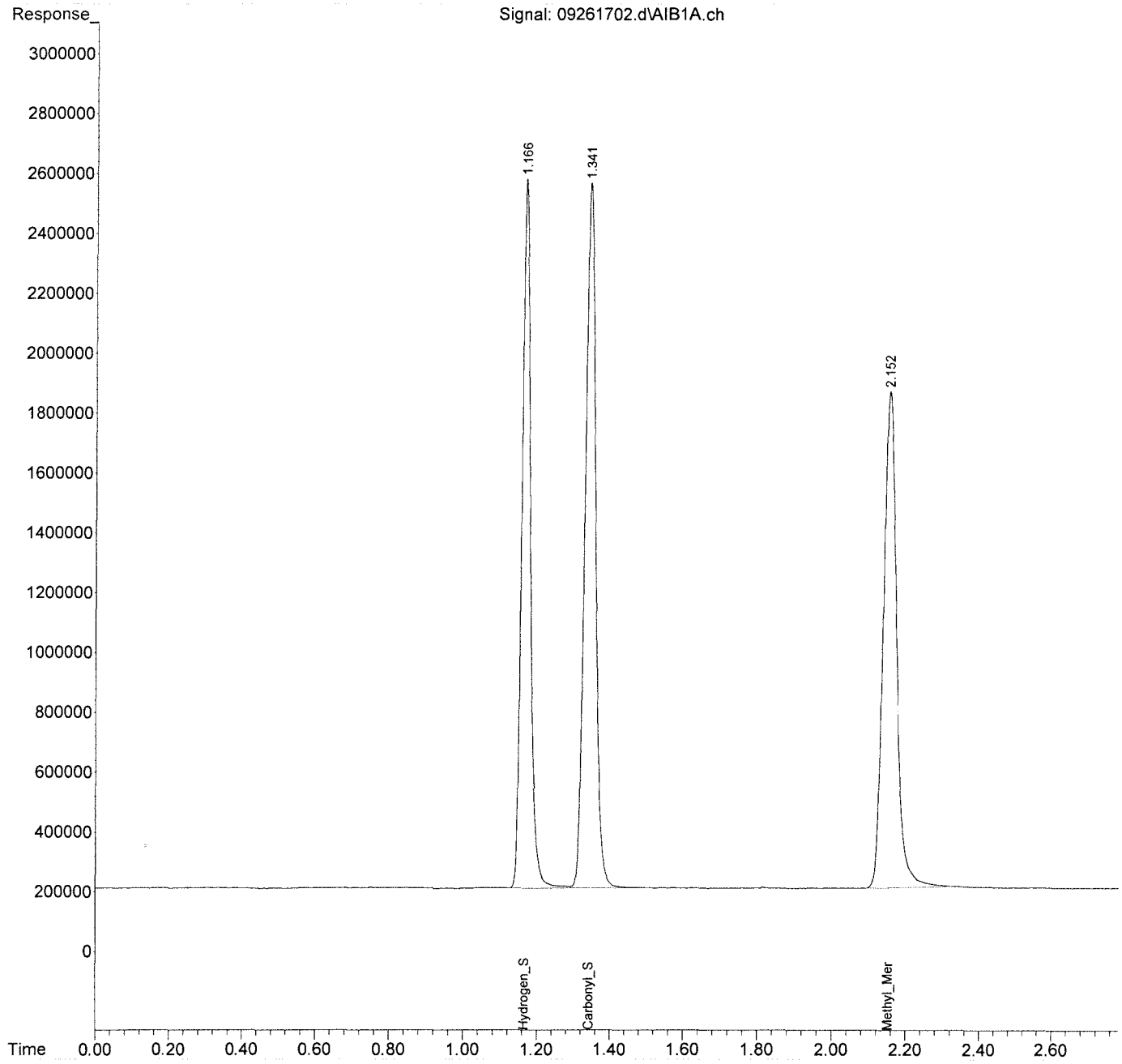
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_09\26\
Data File : 09261702.d
Signal(s) : AIB1A.ch
Acq On : 26 Sep 2017 7:06
Operator : MC
Sample : lcs s32-08211702
Misc :
ALS Vial : 2 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:08:21 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Response Factor Report GC #22

Method Path : J:\GC22\METHODS\
Method File : GC22_Quan 02272017.M
Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
Last Update : Mon Feb 27 13:50:36 2017
Response Via : Initial Calibration

Calibration Files
2.5 =02271709.d 10 =02271710.d 50 =02271711.d
250 =02271712.d 1000 =02271713.d 2500 =02271714.d

		Compound	2.5	10	50	250	1000	2500	Avg		%RSD
1)	Z	Hydrogen_Sulfide	3.422	3.424	3.552	3.786	4.309	4.233	3.831	E4	9.81
2)	W	Carbonyl_Sulfide	3.959	3.902	4.224	4.282	4.724	4.483	4.209	E4	8.00
3)	T	Methyl_Mercaptan	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
4)	T	Ethyl_Mercaptan	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
5)	T	Dimethyl_Sulfide	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
6)	T	Carbon_Disulfide	7.252	6.311	6.994	7.331	8.507	8.288	7.519	E4	9.94
7)	T	2-Propyl_Merc...	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
8)	T	t-Butyl_Merca...	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
9)	T	Propyl_Mercaptan	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
10)	T	Ethyl_Methyl_...	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
11)	T	Thiophene	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
12)	T	i-Butyl_Merca...	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
13)	T	Diethyl_Sulfide	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
14)	T	n-Butyl_Merca...	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
15)	T	Dimethyl_Disu...	7.252	6.311	6.994	7.331	8.507	8.288	7.519	E4	9.94
16)	T	2-Methylthiop...	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
17)	T	3-Methylthiop...	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
18)	T	Tetrahydrothi...	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
19)	T	2,5-Dimethylt...	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
20)	T	2-Ethylthiophene	3.626	3.155	3.497	3.665	4.253	4.144	3.760	E4	9.94
21)	T	Diethyl_Disul...	7.252	6.311	6.994	7.331	8.507	8.288	7.519	E4	9.94
22)	T	Methyltrisulfide	1.088	0.948	1.049	1.100	1.276	1.243	1.128	E5	9.92

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

GC22_Quan 02272017.M Mon Feb 27 13:51:11 2017

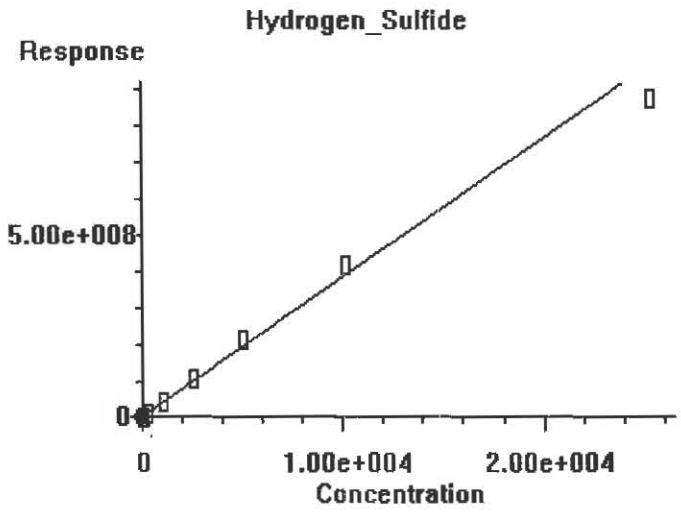
Edit Compounds

Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compour
  - Hydrogen_Sulfide
  - Carbonyl_Sulfide
  - Methyl_Mercaptan
  - Ethyl_Mercaptan
  - Dimethyl_Sulfide
  - Carbon_Disulfide
  - 2-Propyl_Mercaptan
  - t-Butyl_Mercaptan
  - Propyl_Mercaptan
  - Ethyl_Methyl_Sulfide
  - Thiophene
  - i-Butyl_Mercaptan
  - Diethyl_Sulfide
  - n-Butyl_Mercaptan
  - Dimethyl_Disulfide
  - 2-Methylthiophene
  - 3-Methylthiophene
  - Tetrahydrothiophene
  - 2,5-Dimethylthiophene
  - 2-Ethylthiophene
  - Diethyl_Disulfide
  - Methyltrisulfide

Identification | Calibration | User Defined | Advanced | Reporting

Lvl ID	Concentration	Response	Lvl ID	Concentration	Response
2.5	2.525000	86418.000000			
10	10.100000	345782.556000			
50	50.500000	1793731.675000			
250	252.500000	9559684.539297			
1000	1010.000000	43521251.425575			
2500	2525.000000	106891672.88050			
5000	5050.000000	208772565.32423			
10pm	10100.000000	419230047.18348			
25pm	25250.000000	875262732.65335			



0.000e+000	Quadratic term
3.831e+004	Linear term
0.000e+000	Constant term
9.8%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

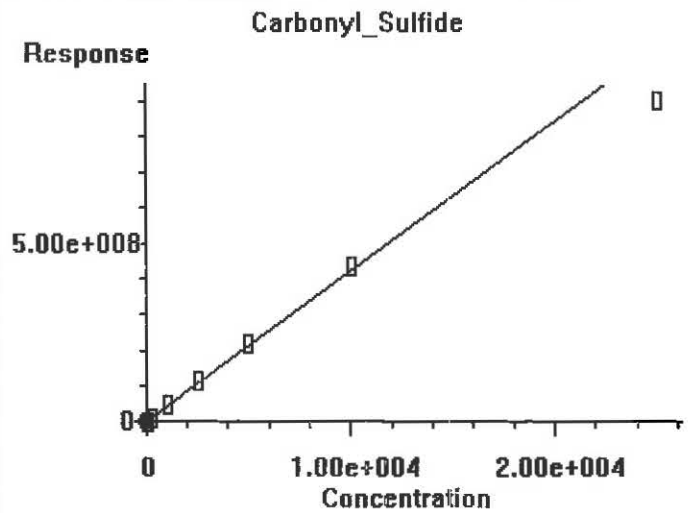
Edit Compounds

Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compour
  - Hydrogen_Sulfide
  - Carbonyl_Sulfide
  - Methyl_Mercaptan
  - Ethyl_Mercaptan
  - Dimethyl_Sulfide
  - Carbon_Disulfide
  - 2-Propyl_Mercaptan
  - t-Butyl_Mercaptan
  - Propyl_Mercaptan
  - Ethyl_Methyl_Sulfide
  - Thiophene
  - i-Butyl_Mercaptan
  - Diethyl_Sulfide
  - n-Butyl_Mercaptan
  - Dimethyl_Disulfide
  - 2-Methylthiophene
  - 3-Methylthiophene
  - Tetrahydrothiophene
  - 2,5-Dimethylthiophene
  - 2-Ethylthiophene
  - Diethyl_Disulfide
  - Methyltrisulfide

Identification | Calibration | User Defined | Advanced | Reporting

Lvl ID	Concentration	Response	Lvl ID	Concentration	Response
2.5	2.500000	9898-1.818650			
10	10.000000	390210.820000			
50	50.000000	2111859.023100			
250	250.000000	10705330.056675			
1000	1000.000000	47240640.069425			
2500	2500.000000	112070735.79186			
5000	5000.000000	217399700.85910			
10pm	10000.000000	435188381.41157			
25pm	25000.000000	901360045.71887			



0.000e+000	Quadratic term
4.209e+004	Linear term
0.000e+000	Constant term
8.0%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

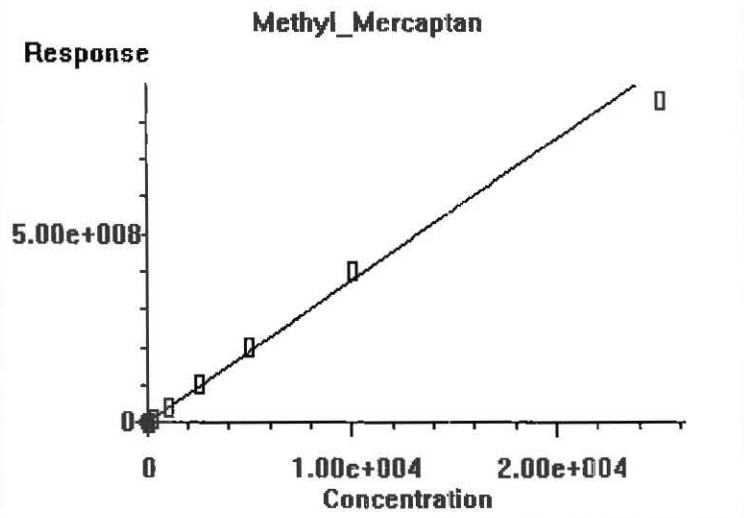
Edit Compounds

Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compour
  - Hydrogen_Sulfide
  - Carbonyl_Sulfide
  - Methyl_Mercaptan
  - Ethyl_Mercaptan
  - Dimethyl_Sulfide
  - Carbon_Disulfide
  - 2-Propyl_Mercaptan
  - t-Butyl_Mercaptan
  - Propyl_Mercaptan
  - Ethyl_Methyl_Sulfide
  - Thiophene
  - i-Butyl_Mercaptan
  - Diethyl_Sulfide
  - n-Butyl_Mercaptan
  - Dimethyl_Disulfide
  - 2-Methylthiophene
  - 3-Methylthiophene
  - Tetrahydrothiophene
  - 2,5-Dimethylthiophene
  - 2-Ethylthiophene
  - Diethyl_Disulfide
  - Methyltrisulfide

Identification | Calibration | User Defined | Advanced | Reporting

Lvl ID	Concentration	Response	Lvl ID	Concentration	Response
2.5	2.500000	90649.010000			
10	10.000000	315533.250000			
50	50.000000	1748501.770000			
250	250.000000	9163663.970000			
1000	1000.000000	42532650.540000			
2500	2500.000000	103599922.70000			
5000	5000.000000	201240135.19000			
10pm	10000.000000	404587228.18000			
25pm	25000.000000	856098119.10000			



0.000e+000	Quadratic term
3.760e+004	Linear term
0.000e+000	Constant term
9.9%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

Calibration Status Report GC #22

Method Path : J:\GC22\METHODS\
Method File : GC22_Quan 02272017.M
Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
Last Update : Mon Feb 27 11:34:37 2017
Response Via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	2.5	1	0	J:\GC22\DATA\SCD\2017_02\27\02271709.d
2	10	5	0	J:\GC22\DATA\SCD\2017_02\27\02271710.d
3	50	25	0	J:\GC22\DATA\SCD\2017_02\27\02271711.d
4	250	125	0	J:\GC22\DATA\SCD\2017_02\27\02271712.d
5	1000	500	0	J:\GC22\DATA\SCD\2017_02\27\02271713.d
6	2500	1250	0	J:\GC22\DATA\SCD\2017_02\27\02271714.d
7	5000	2500	0	J:\GC22\DATA\SCD\2017_02\27\02271715.d
8	10pm	5000	0	J:\GC22\DATA\SCD\2017_02\27\02271716.d
9	25pm	12500	0	J:\GC22\DATA\SCD\2017_02\27\02271717.d

#	ID	Update Time	Quant Time	Acquisition Time
1	2.5	Feb 27 08:38 2017	Feb 27 08:37 2017	27 Feb 2017 8:33
2	10	Feb 27 08:42 2017	Feb 27 08:42 2017	27 Feb 2017 8:38
3	50	Feb 27 08:52 2017	Feb 27 08:52 2017	27 Feb 2017 8:49
4	250	Feb 27 08:57 2017	Feb 27 08:56 2017	27 Feb 2017 8:53
5	1000	Feb 27 09:01 2017	Feb 27 09:00 2017	27 Feb 2017 8:58
6	2500	Feb 27 09:04 2017	Feb 27 09:04 2017	27 Feb 2017 9:01
7	5000	Feb 27 09:17 2017	Feb 27 09:17 2017	27 Feb 2017 9:11
8	10pm	Feb 27 09:21 2017	Feb 27 09:21 2017	27 Feb 2017 9:18
9	25pm	Feb 27 10:00 2017	Feb 27 09:30 2017	27 Feb 2017 9:27

GC22_Quan 02272017.M Mon Feb 27 11:35:23 2017

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271709.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:33
Operator : MC
Sample : 0.1ml s30-02271702 2.525ppm
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 08:37:45 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02262016.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Fri Feb 26 14:51:03 2016
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units	
Target Compounds							
1)	Z	Hydrogen_Sulfide	1.176	86418	2.095	ppb	m
2)	W	Carbonyl_Sulfide	1.352	98985	2.229	ppb	m
3)	T	Methyl_Mercaptan	2.166	90649	2.177	ppb	m
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb	
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb	
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb	
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb	
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb	
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb	
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb	
11)	T	Thiophene	0.000	0	N.D.	ppb	
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb	
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb	
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb	
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb	
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb	
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb	
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb	
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb	
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb	
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb	
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb	

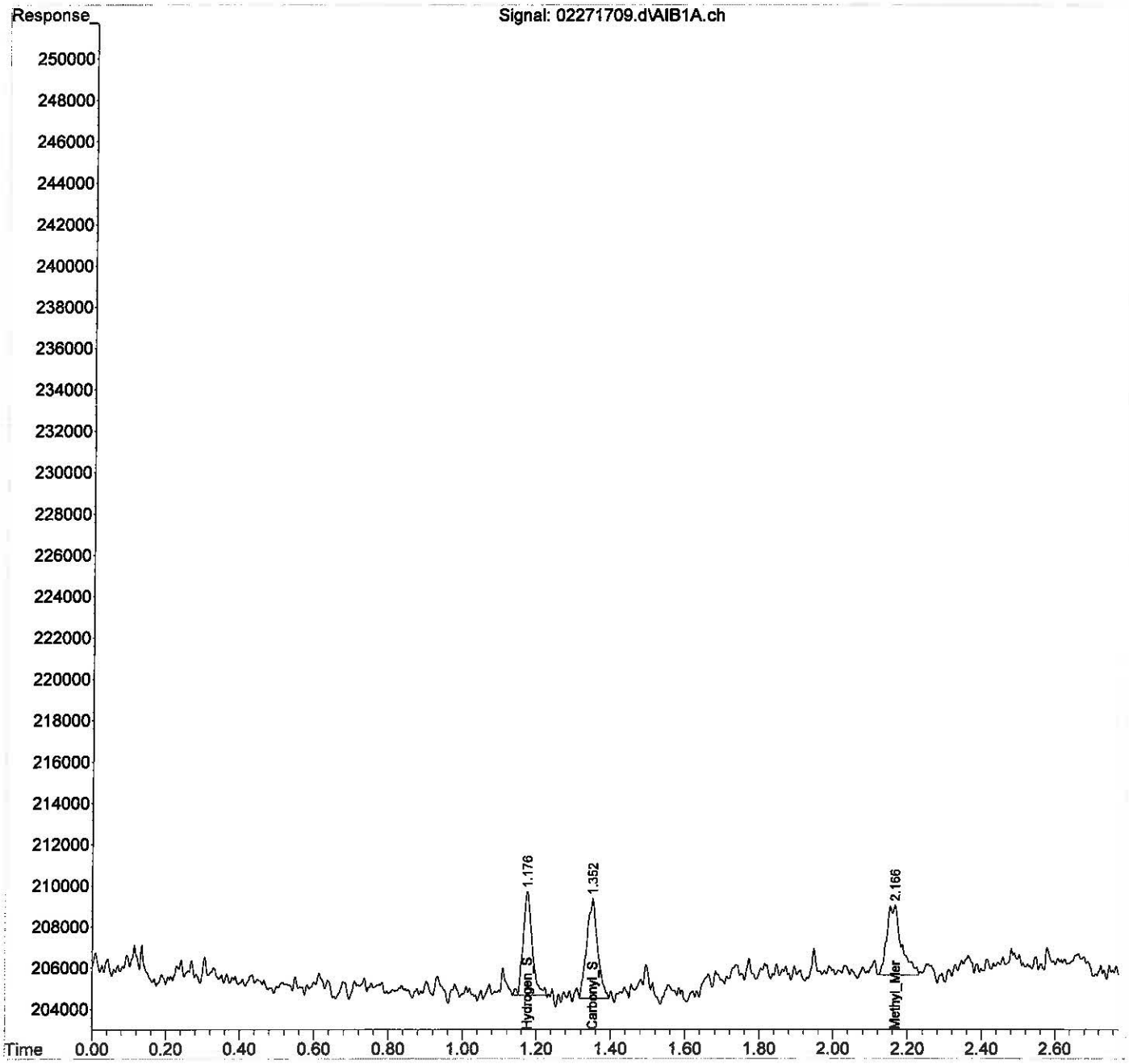
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271709.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:33
Operator : MC
Sample : 0.1ml s30-02271702 2.525ppm
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 08:37:45 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02262016.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Fri Feb 26 14:51:03 2016
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

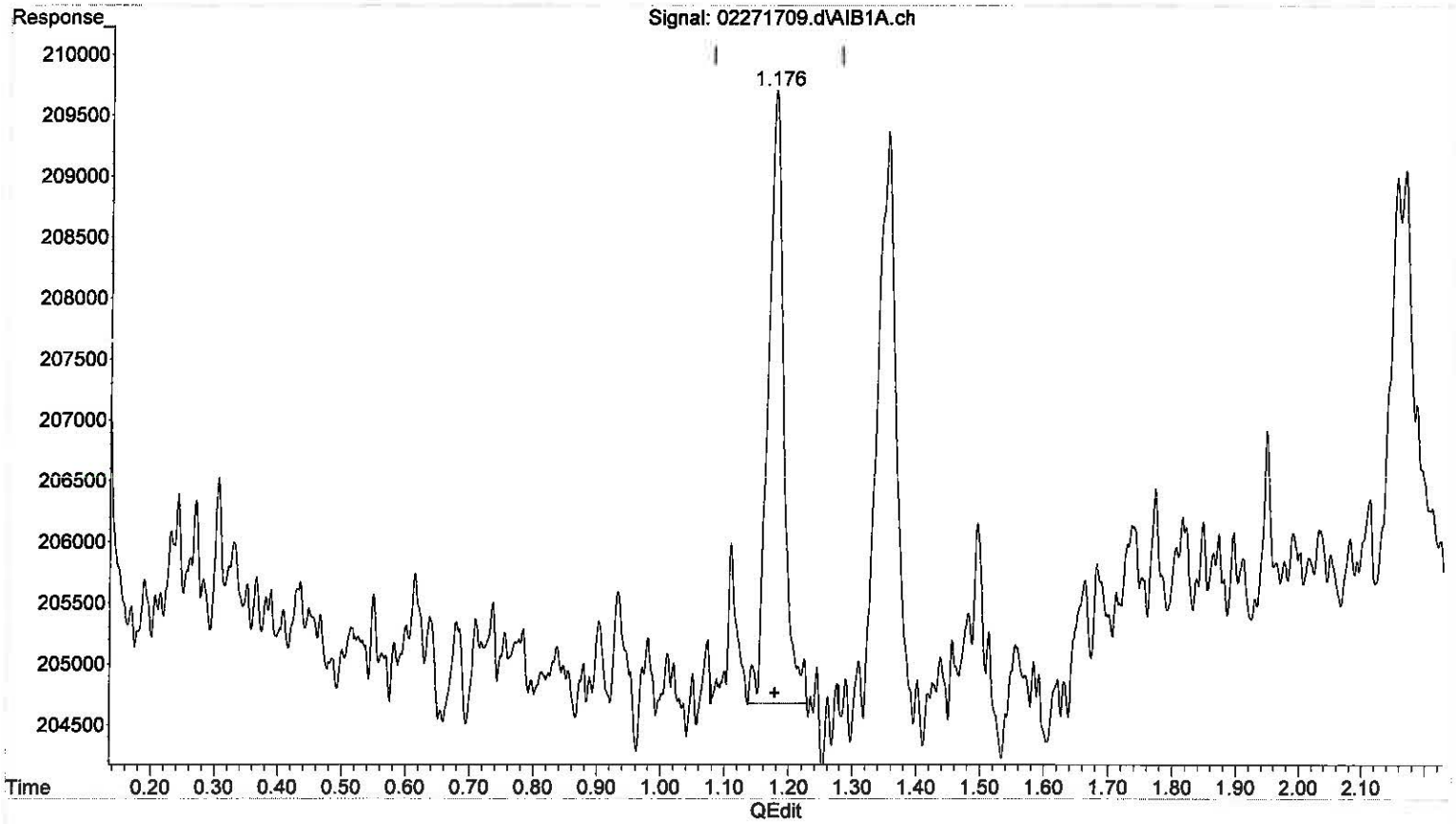


Quantitation Report (Qedit)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271709.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:33
Operator : MC
Sample : 0.1ml s30-02271702 2.525ppm
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 08:37:45 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02262016.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Fri Feb 26 14:51:03 2016
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(1) Hydrogen_Sulfide (Z)

1.176min 2.095 ppb m

response 86418

MC 2/27/17
BL
No previous

WL 2/27/17

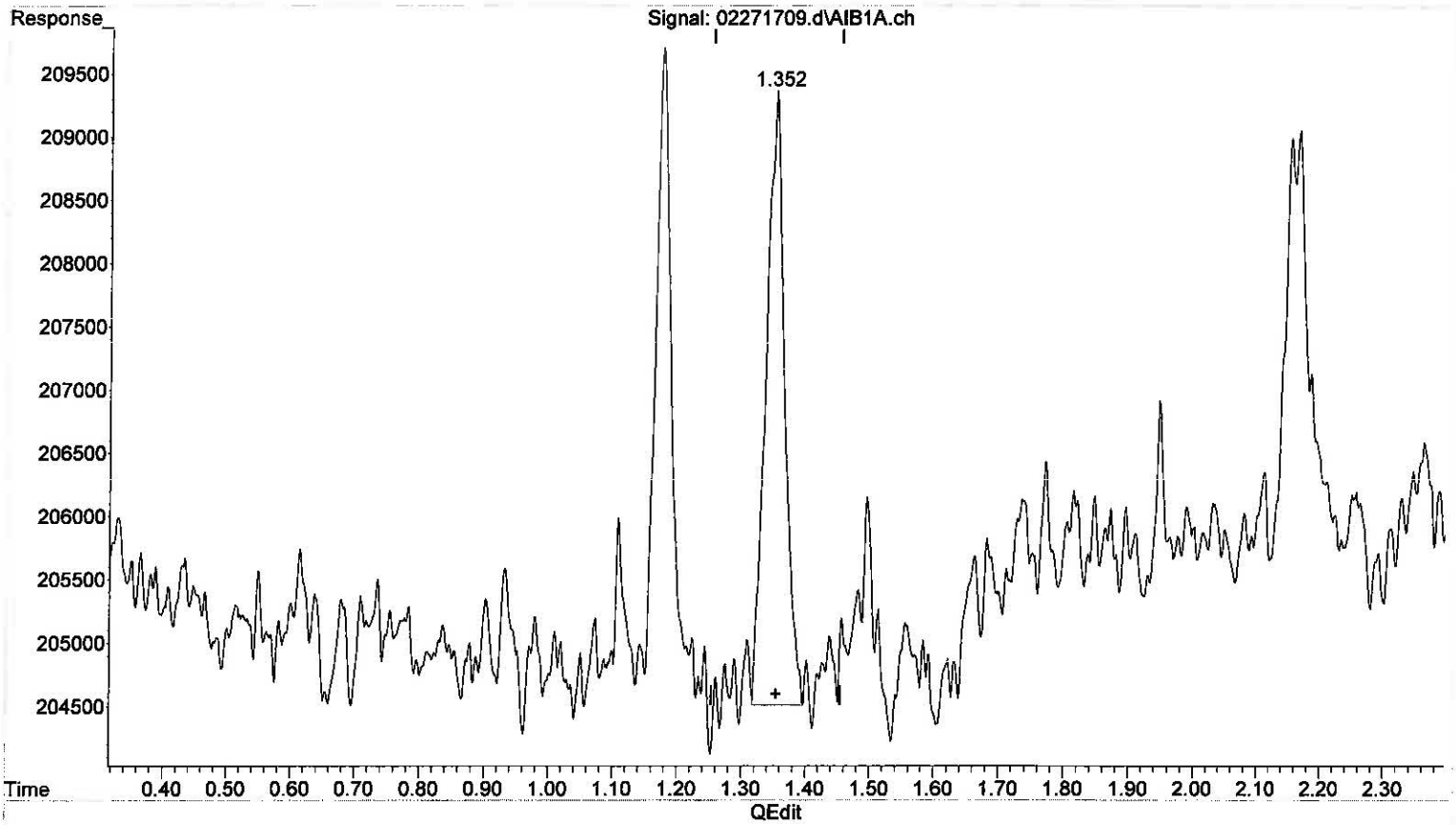
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271709.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:33
Operator : MC
Sample : 0.1ml s30-02271702 2.525ppm
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 08:37:45 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02262016.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Fri Feb 26 14:51:03 2016
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(2) Carbonyl_Sulfide (W)

1.352min 2.229 ppb m

response 98985

MC 2/27/17

BLL

No previous

2/27/17

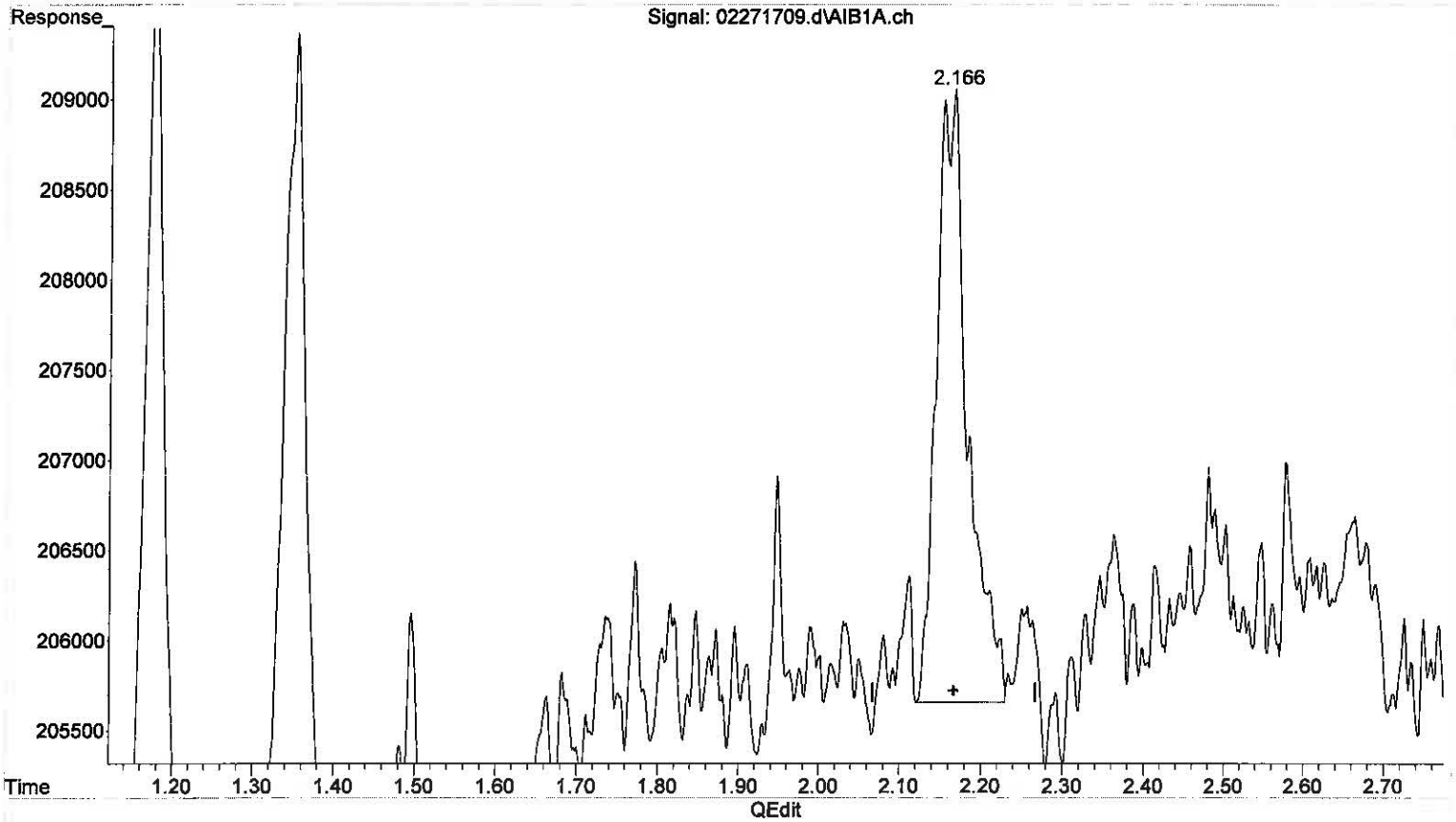
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271709.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:33
Operator : MC
Sample : 0.1ml s30-02271702 2.525ppm
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 08:37:45 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02262016.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Fri Feb 26 14:51:03 2016
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(3) Methyl_Mercaptan (T)
2.166min 2.177 ppb m
response 90649

ML 2/27/17
BLL
No peaks

LM 2/27/17

(+) = Expected Retention Time

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271710.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:38
Operator : MC
Sample : 0.4ml s30-02271702 10.1ppb
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 08:42:47 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 08:38:01 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units	
Target Compounds							
1)	Z	Hydrogen_Sulfide	1.160	345783	8.551	ppb	m
2)	W	Carbonyl_Sulfide	1.337	390211	8.893	ppb	m
3)	T	Methyl_Mercaptan	2.148	315533	7.646	ppb	m
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb	
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb	
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb	
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb	
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb	
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb	
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb	
11)	T	Thiophene	0.000	0	N.D.	ppb	
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb	
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb	
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb	
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb	
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb	
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb	
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb	
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb	
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb	
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb	
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb	

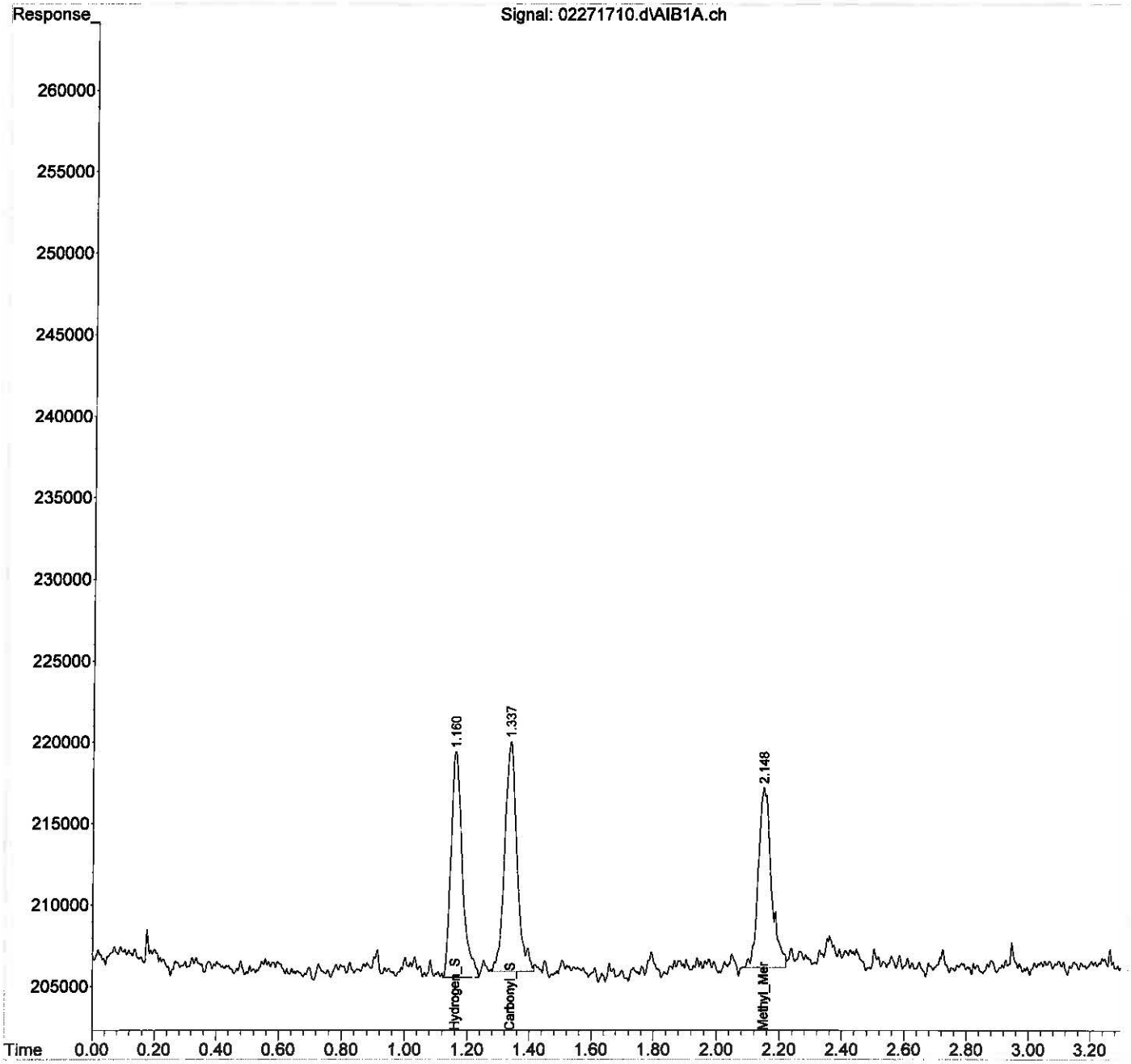
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271710.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:38
Operator : MC
Sample : 0.4ml s30-02271702 10.1ppb
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 08:42:47 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 08:38:01 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

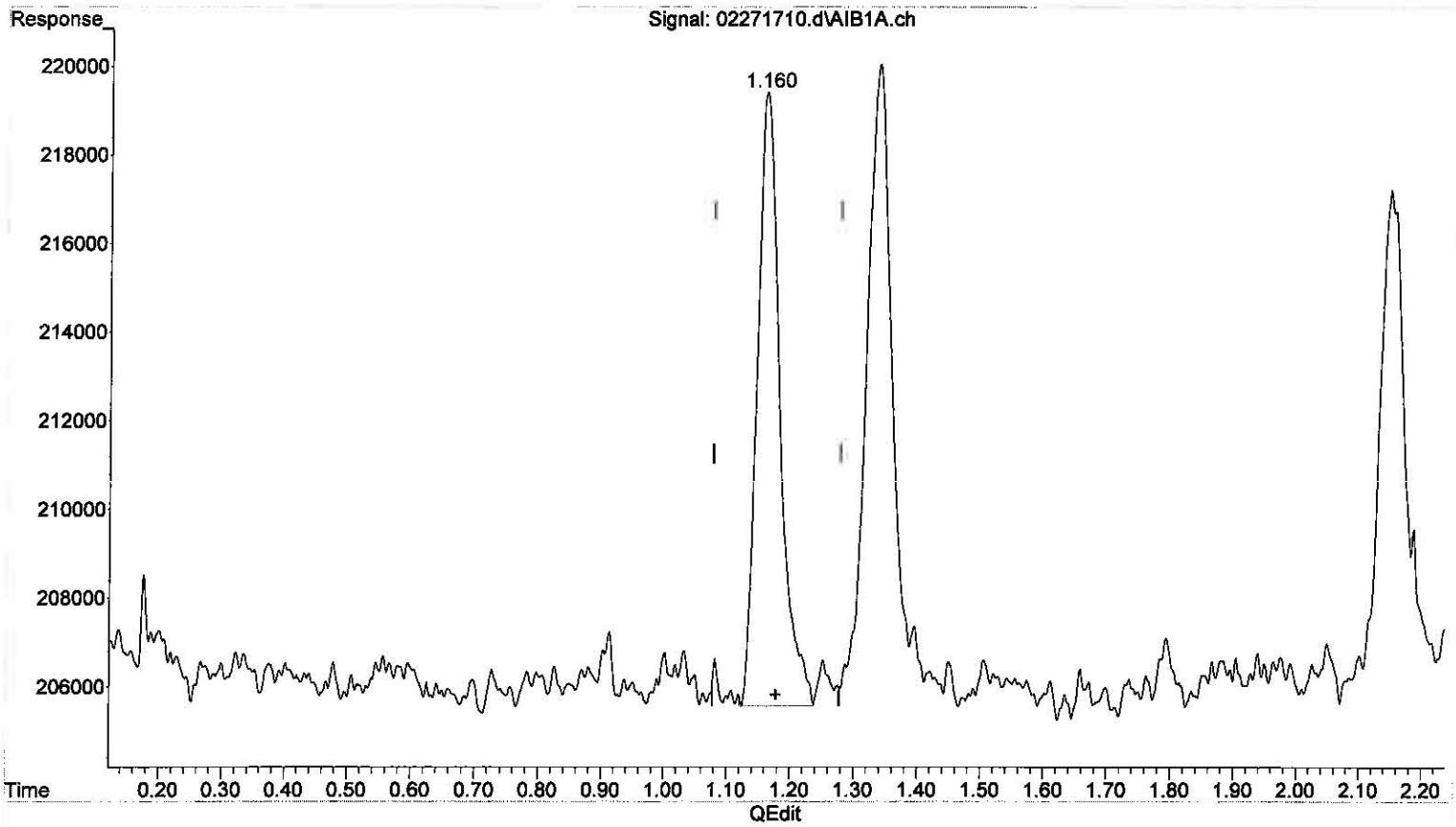


Quantitation Report (Qedit)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271710.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:38
Operator : MC
Sample : 0.4ml s30-02271702 10.1ppb
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 08:42:47 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 08:38:01 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(1) Hydrogen_Sulfide (Z)
1.160min 8.551 ppb m
response 345783

ML 2/27/17
BL
No peaks
LA 2/27/17

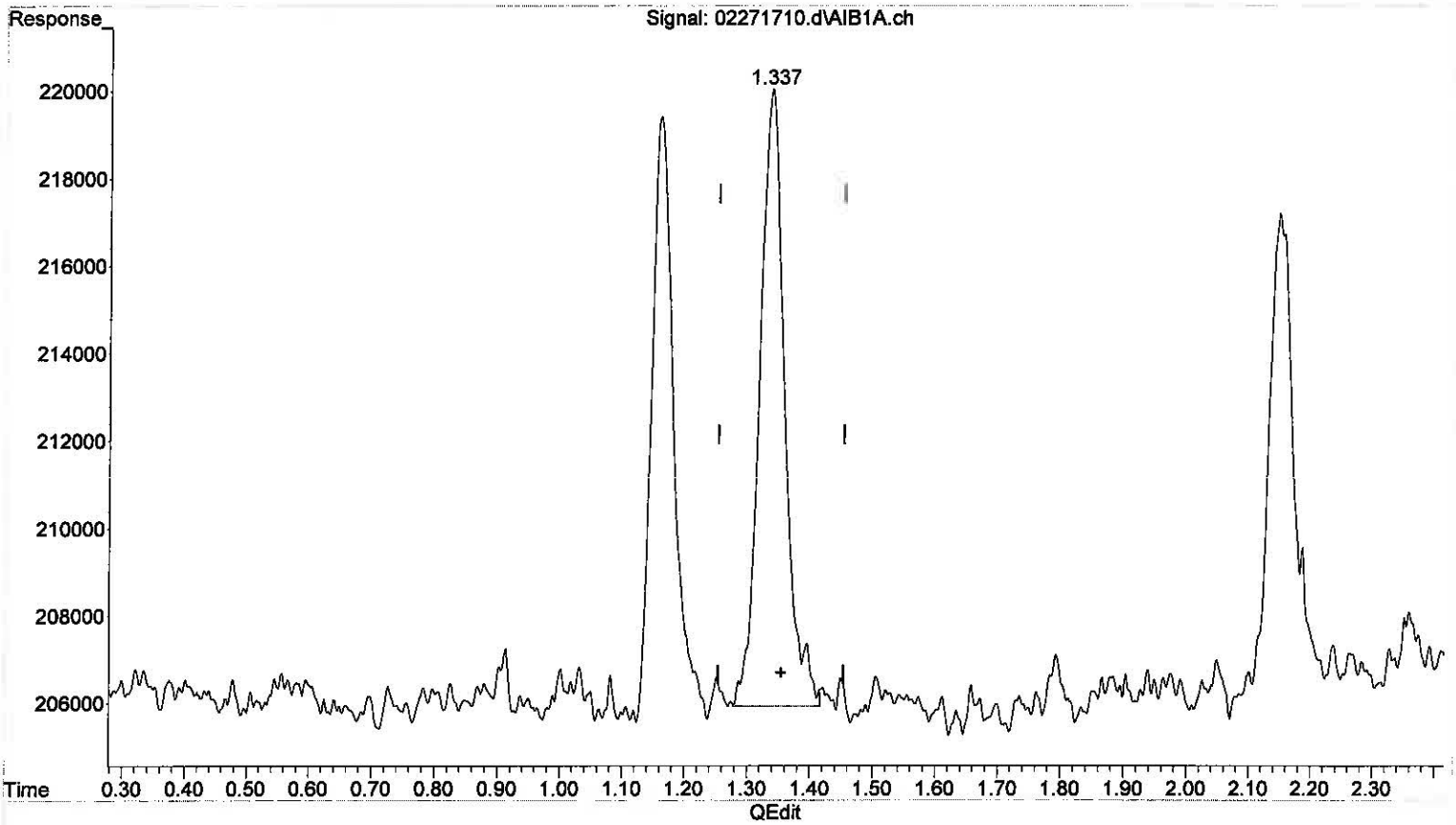
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271710.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:38
Operator : MC
Sample : 0.4ml s30-02271702 10.1ppb
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 08:42:47 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 08:38:01 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(2) Carbonyl_Sulfide (W)

1.337min 8.893 ppb m

response 390211

Mc 2/27/17
BL
No previous

(+) = Expected Retention Time

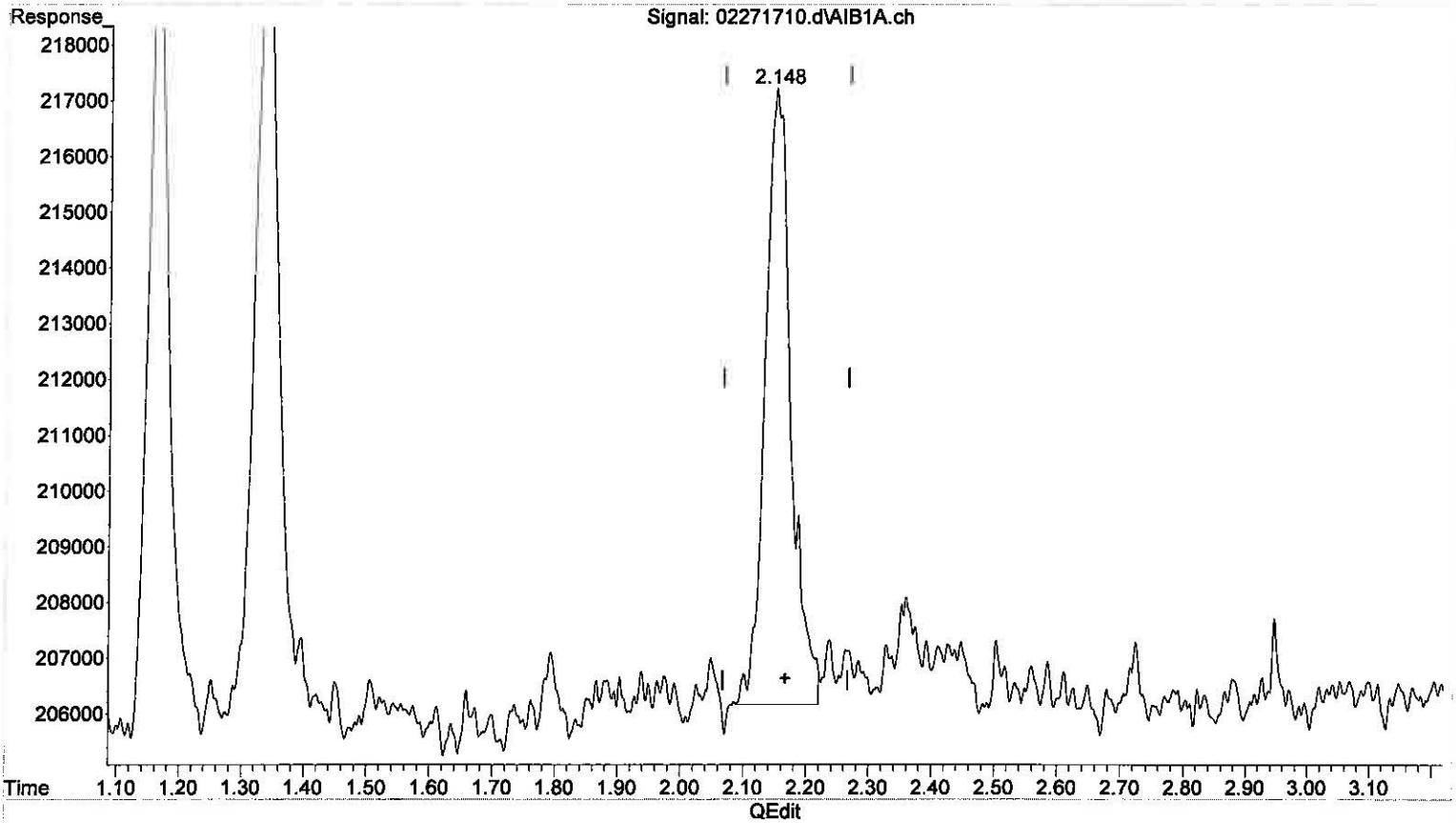
GC22_Quan 02272017.M Mon Feb 27 10:52:12 2017 Page: 1

Quantitation Report (Qedit)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271710.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:38
Operator : MC
Sample : 0.4ml s30-02271702 10.1ppb
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 08:42:47 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 08:38:01 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(3) Methyl_Mercaptan (T)

2.148min 7.646 ppb m

response 315533

(+) = Expected Retention Time

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271711.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:49
Operator : MC
Sample : 0.1ml s30-02271703 50.5ppb
Misc :
ALS Vial : 11 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 08:52:29 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 08:42:57 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	1.160	1793732	45.232	ppb
2)	W	Carbonyl_Sulfide	1.332	2111859	48.680	ppb
3)	T	Methyl_Mercaptan	2.134	1748502	43.328	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

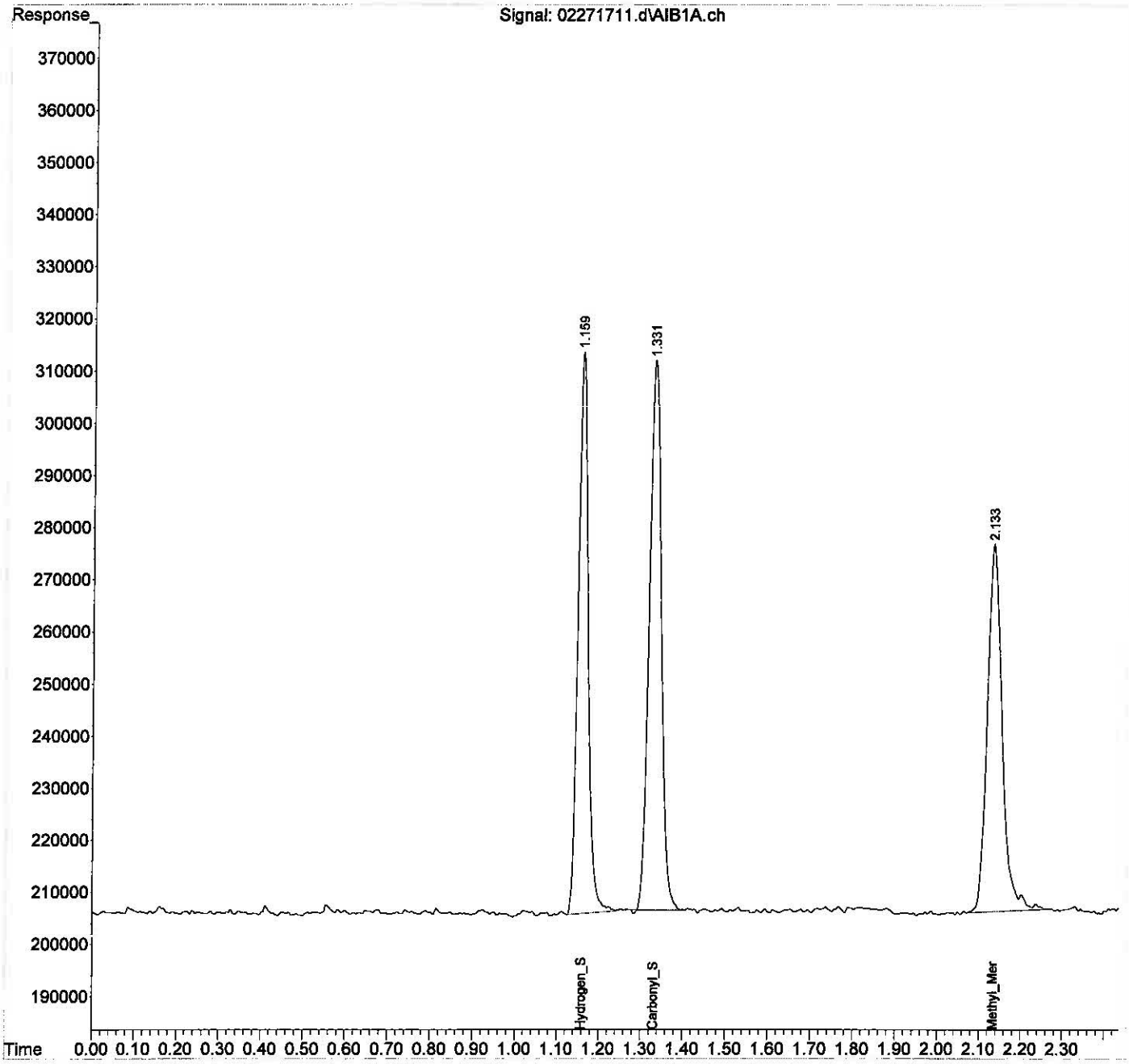
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271711.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:49
Operator : MC
Sample : 0.1ml s30-02271703 50.5ppb
Misc :
ALS Vial : 11 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 08:52:29 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 08:42:57 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271712.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:53
Operator : MC
Sample : 0.5ml s30-02271703 252.5ppb
Misc :
ALS Vial : 12 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 08:56:51 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 08:52:46 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	1.121f	9559685	245.143	ppb
2)	W	Carbonyl_Sulfide	1.295f	10705330	248.888	ppb
3)	T	Methyl_Mercaptan	2.101f	9163664	229.966	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

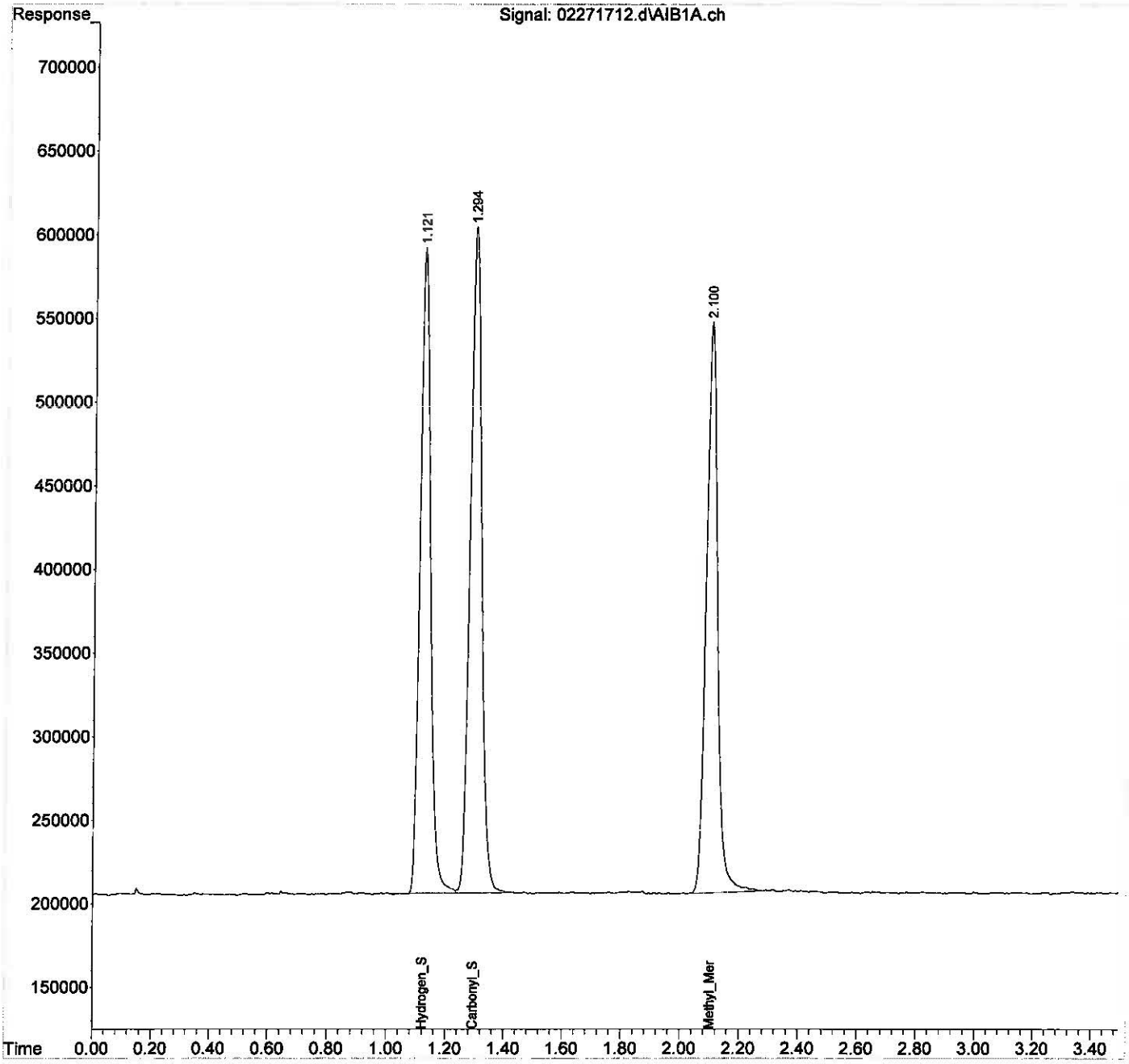
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271712.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:53
Operator : MC
Sample : 0.5ml s30-02271703 252.5ppb
Misc :
ALS Vial : 12 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 08:56:51 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 08:52:46 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271713.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:58
Operator : MC
Sample : 0.1ml s30-02271701 1010ppb
Misc :
ALS Vial : 13 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 09:00:50 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 08:57:02 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	1.186	43521251	1128.997	ppb
2)	W	Carbonyl_Sulfide	1.361	47240640	1106.141	ppb
3)	T	Methyl_Mercaptan	2.170	42532651	1085.079	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

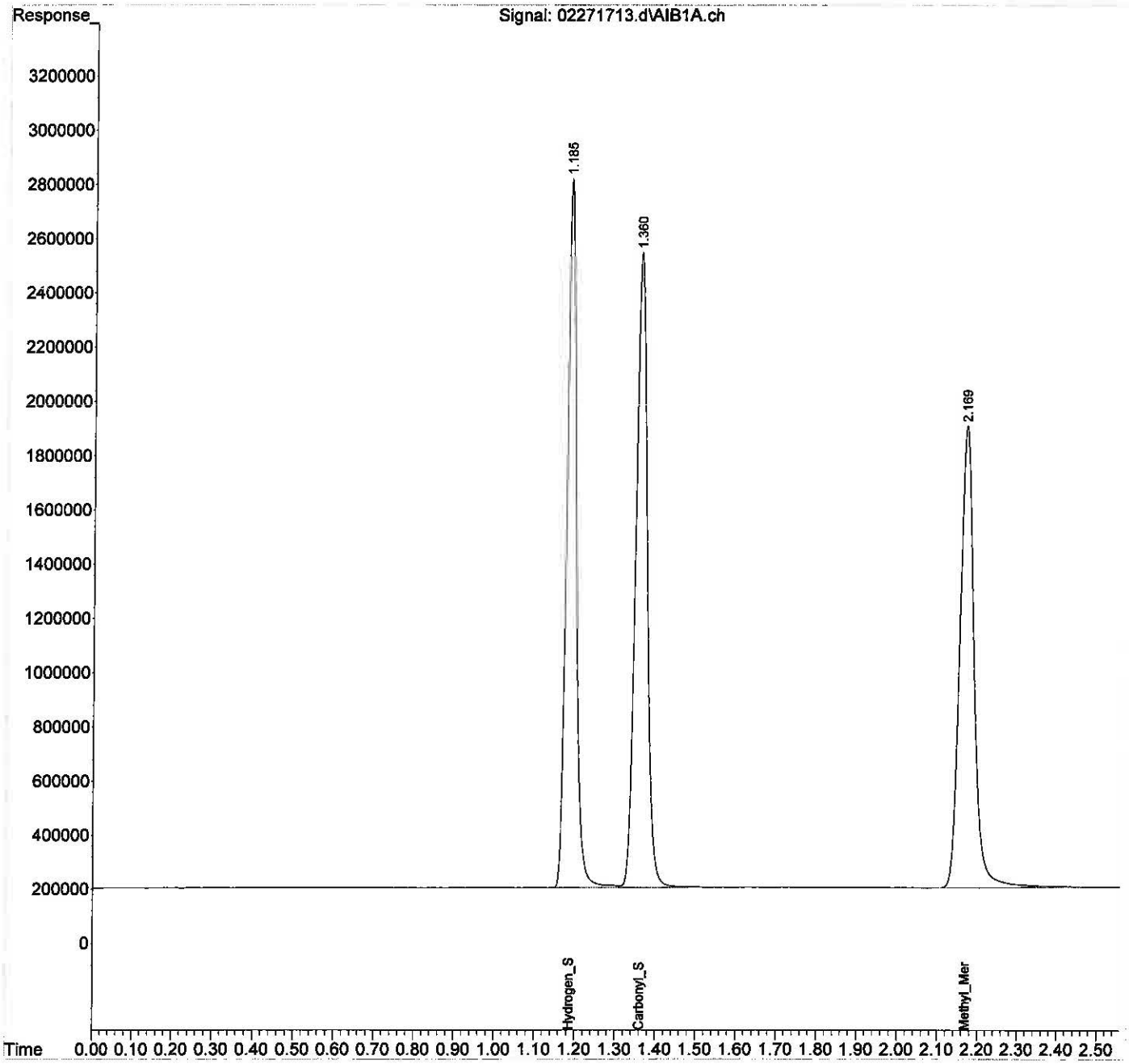
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271713.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 8:58
Operator : MC
Sample : 0.1ml s30-02271701 1010ppb
Misc :
ALS Vial : 13 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 09:00:50 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 08:57:02 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271714.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 9:01
Operator : MC
Sample : 0.25ml s30-02271701 2525ppb
Misc :
ALS Vial : 14 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 09:04:22 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 09:00:59 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	1.178	106891673	2779.645	ppb
2)	W	Carbonyl_Sulfide	1.354	112070736	2622.416	ppb
3)	T	Methyl_Mercaptan	2.166	103599923	2675.072	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

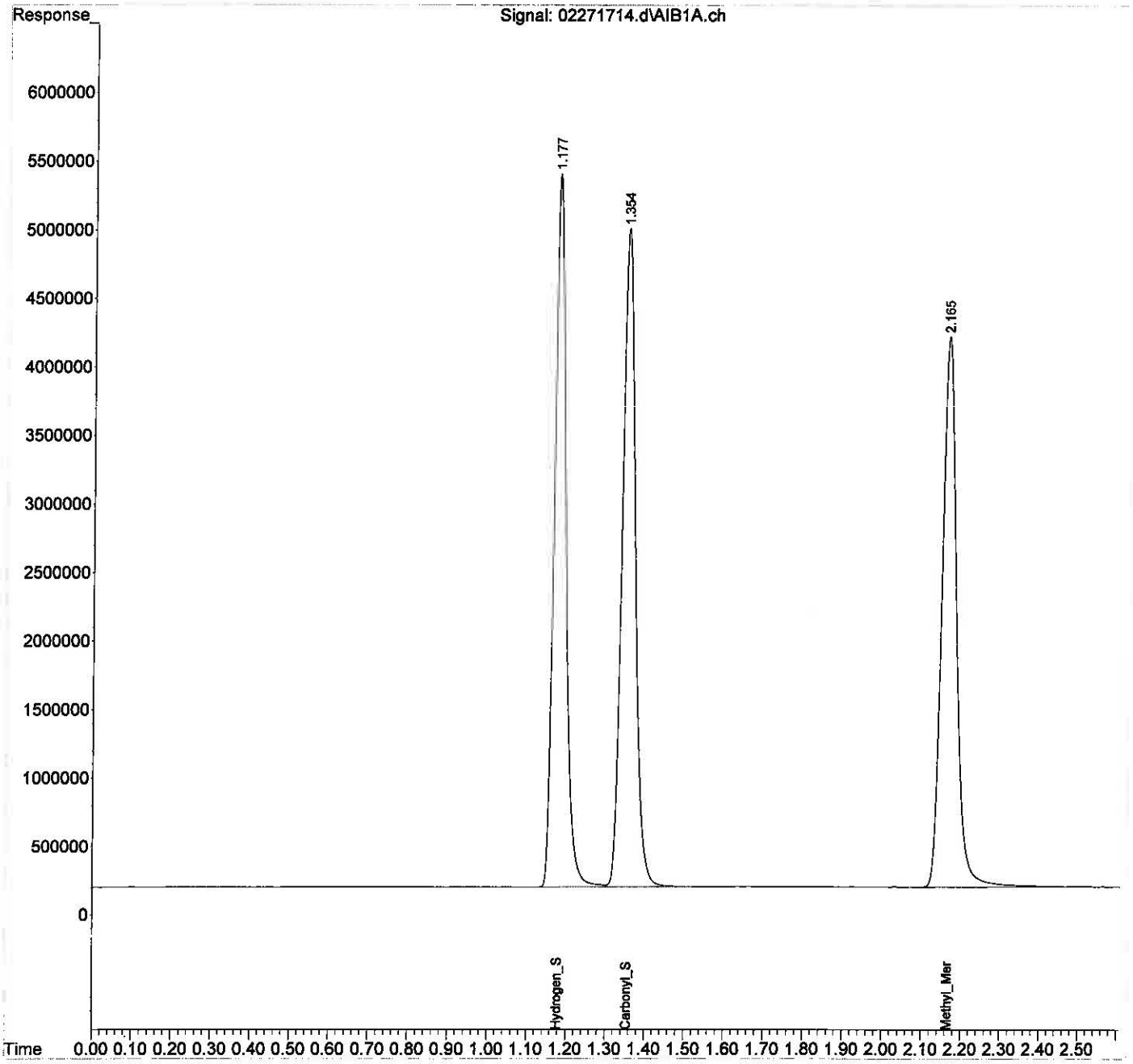
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271714.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 9:01
Operator : MC
Sample : 0.25ml s30-02271701 2525ppb
Misc :
ALS Vial : 14 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 09:04:22 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 09:00:59 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271715.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 9:11
Operator : MC
Sample : 0.5ml s30-02271701 5050ppb
Misc :
ALS Vial : 15 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 09:17:08 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 09:04:32 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units	
Target Compounds							
1)	Z	Hydrogen_Sulfide	1.163	208772565	5385.679	ppb	
2)	W	Carbonyl_Sulfide	1.341	217399701	5054.320	ppb	
3)	T	Methyl_Mercaptan	2.158	201240135	5181.659	ppb	
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb	
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb	
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb	d
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb	
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb	
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb	
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb	
11)	T	Thiophene	0.000	0	N.D.	ppb	
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb	
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb	
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb	
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb	
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb	
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb	
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb	
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb	
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb	
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb	
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb	

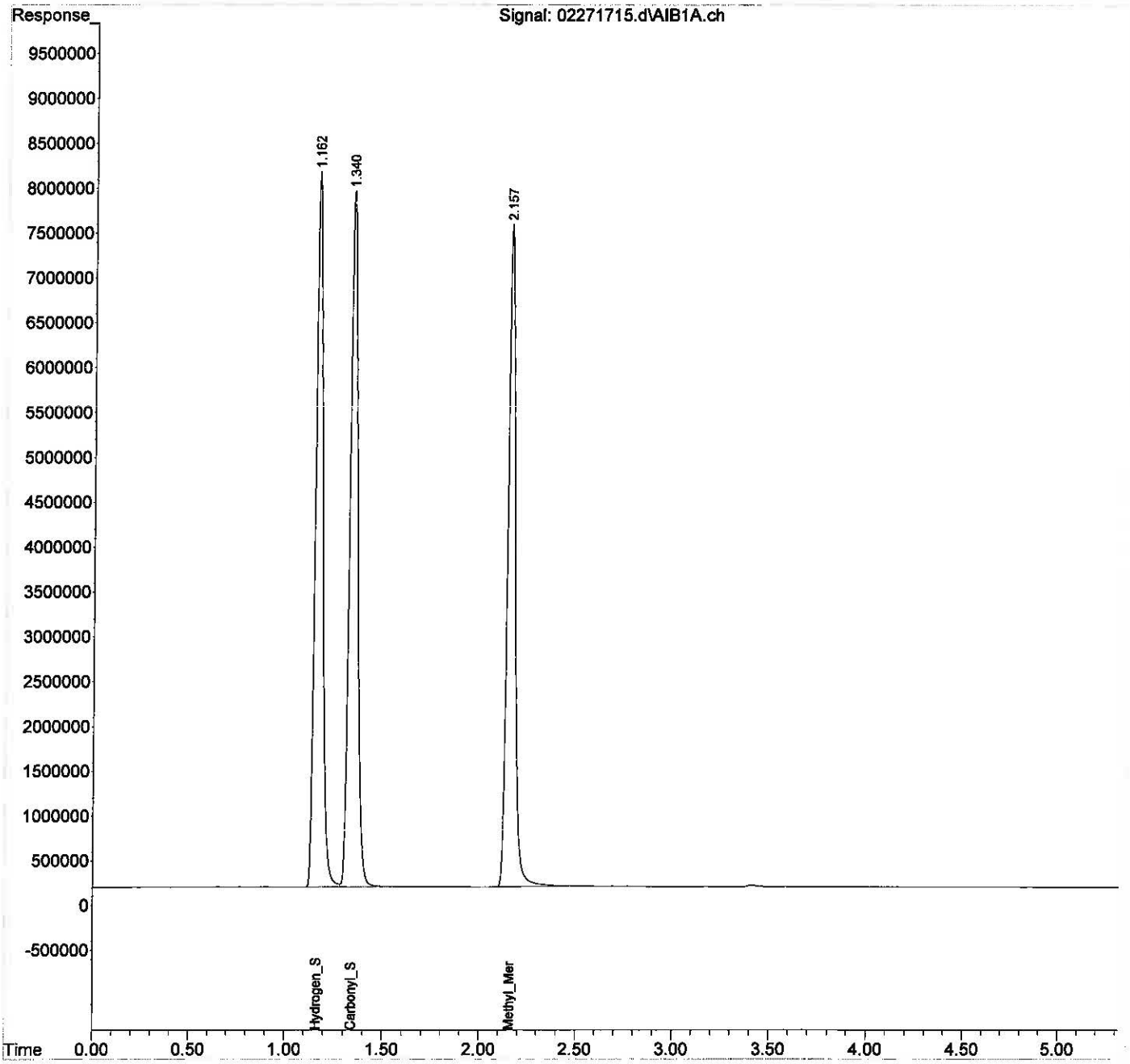
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271715.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 9:11
Operator : MC
Sample : 0.5ml s30-02271701 5050ppb
Misc :
ALS Vial : 15 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 09:17:08 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 09:04:32 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271716.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 9:18
Operator : MC
Sample : 1ml s30-02271701 10ppm
Misc :
ALS Vial : 16 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 09:21:30 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 09:17:15 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	1.140	419230047	10812.838	ppb
2)	W	Carbonyl_Sulfide	1.323	435188381	10144.588	ppb
3)	T	Methyl_Mercaptan	2.152	404587228	10464.955	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

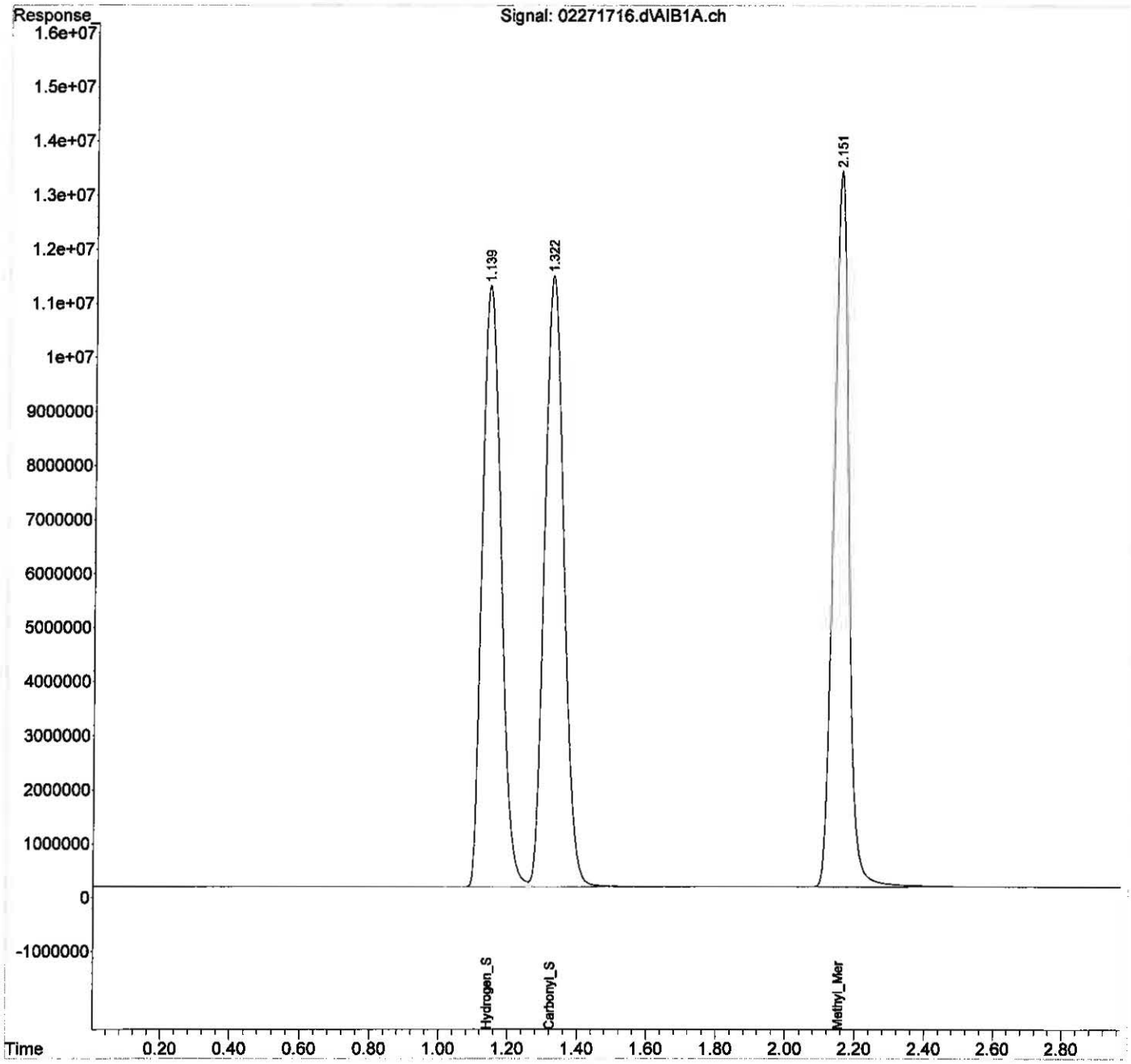
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271716.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 9:18
Operator : MC
Sample : 1ml s30-02271701 10ppm
Misc :
ALS Vial : 16 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 09:21:30 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 09:17:15 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271717.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 9:27
Operator : MC
Sample : 0.025ml s30-11031401 25ppm
Misc :
ALS Vial : 17 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 09:30:45 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 09:21:53 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	1.184	875262733	22860.989	ppb
2)	W	Carbonyl_Sulfide	1.360	901360046	21388.869	ppb
3)	T	Methyl_Mercaptan	2.167	856098119	22606.472	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

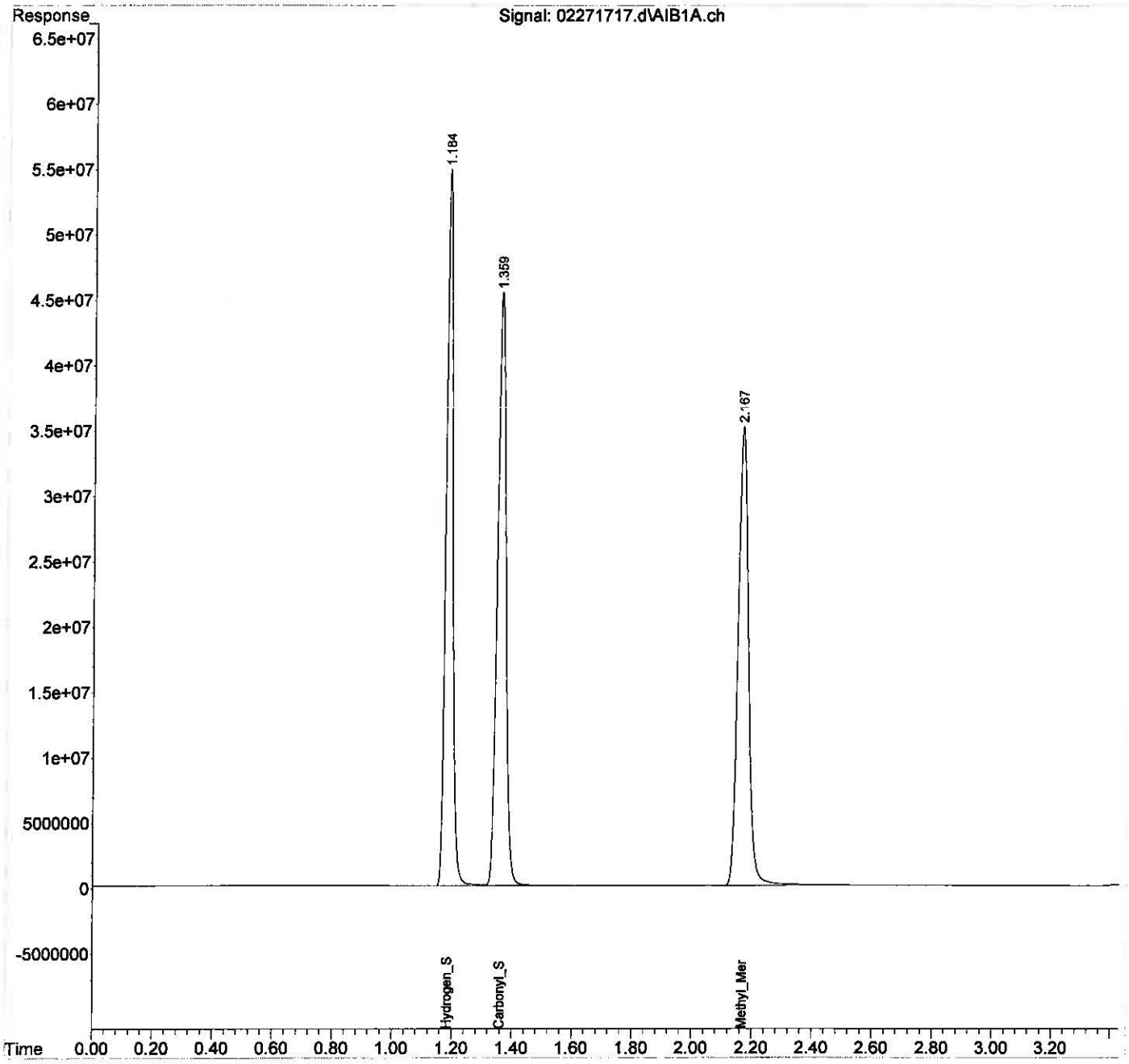
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271717.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 9:27
Operator : MC
Sample : 0.025ml s30-11031401 25ppm
Misc :
ALS Vial : 17 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 09:30:45 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 09:21:53 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271722.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 10:35
Operator : MC
Sample : ICV s30-02171702
Misc :
ALS Vial : 22 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 10:38:54 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 10:00:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	1.167	39399048	1028.466	ppb
2)	W	Carbonyl_Sulfide	1.340	43066352	1023.236	ppb
3)	T	Methyl_Mercaptan	2.146	39094492	1039.867	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

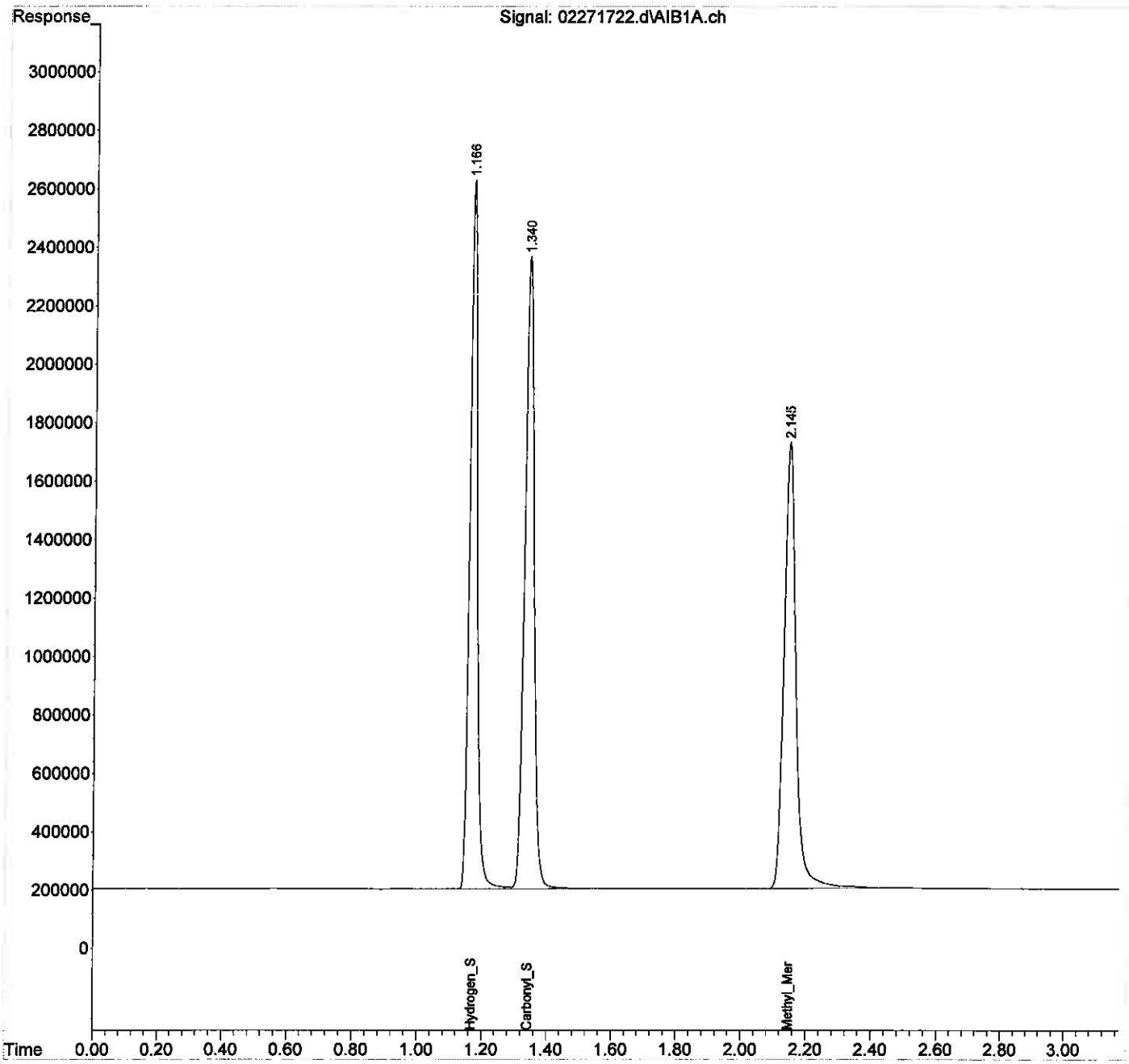
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_02\27\
Data File : 02271722.d
Signal(s) : AIB1A.ch
Acq On : 27 Feb 2017 10:35
Operator : MC
Sample : ICV s30-02171702
Misc :
ALS Vial : 22 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 27 10:38:54 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Mon Feb 27 10:00:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Response Factor Report HP G1530A

Method Path : J:\GC13\METHODS\
Method File : GC13_030717.M
Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
Last Update : Tue Mar 07 11:32:15 2017
Response Via : Initial Calibration

Calibration Files
2.5 =03071713.D 10 =03071714.D 50 =03071715.D
250 =03071716.D 1000 =03071717.D 2500 =03071718.D

		Compound	2.5	10	50	250	1000	2500	Avg		%RSD
1)	Z	Hydrogen_Sulfide	8.045	7.505	8.723	8.477	8.387	8.709	8.166	E4	6.38
2)	W	Carbonyl_Sulfide	8.207	8.010	9.587	9.322	8.823	9.233	8.806	E4	6.33
3)	T	Methyl_Mercaptan	7.665	7.549	8.935	8.941	8.547	8.978	8.405	E4	7.10
4)	T	Ethyl_Mercaptan	7.665	7.549	8.935	8.941	8.583	8.978	8.409	E4	7.11
5)	T	Dimethyl_Sulfide	7.665	7.549	8.935	8.941	8.583	8.978	8.409	E4	7.11
6)	T	Carbon_Disulfide	1.533	1.510	1.787	1.788	1.717	1.796	1.682	E5	7.11
7)	T	2-Propyl_Merc...	7.665	7.549	8.935	8.941	8.583	8.978	8.409	E4	7.11
8)	T	t-Butyl_Merca...	7.665	7.549	8.935	8.941	8.583	8.978	8.409	E4	7.11
9)	T	Propyl_Mercaptan	7.665	7.549	8.935	8.941	8.583	8.978	8.409	E4	7.11
10)	T	Ethyl_Methyl_...	7.665	7.549	8.935	8.941	8.583	8.978	8.409	E4	7.11
11)	T	Thiophene	7.665	7.549	8.935	8.941	8.583	8.978	8.409	E4	7.11
12)	T	i-Butyl_Merca...	7.665	7.549	8.935	8.941	8.583	8.978	8.409	E4	7.11
13)	T	Diethyl_Sulfide	7.665	7.549	8.935	8.941	8.583	8.978	8.409	E4	7.11
14)	t	n-Butyl_Merca...	7.665	7.549	8.935	8.941	8.583	8.978	8.409	E4	7.11
15)	t	Dimethyl_Disu...	1.533	1.510	1.787	1.788	1.717	1.796	1.682	E5	7.11
16)	T	2-Methyl_Thio...	7.665	7.549	8.935	8.941	8.583	8.978	8.409	E4	7.11
17)	t	3-Methyl_Thio...	7.665	7.549	8.935	8.941	8.583	8.978	8.409	E4	7.11
18)	T	Tetrahydrothi...	7.665	7.549	8.935	8.941	8.583	8.978	8.409	E4	7.11
19)	t	2,5-Dimethyl_...	7.665	7.549	8.935	8.941	8.583	8.978	8.409	E4	7.11
20)	T	2-Ethyl_Thiop...	7.665	7.549	8.935	8.941	8.583	8.978	8.409	E4	7.11
21)	T	Diethyl_Disul...	1.533	1.510	1.787	1.788	1.717	1.796	1.682	E5	7.11
22)	T	Methyltrisulfide	2.299	2.265	2.680	2.682	2.575	2.693	2.523	E5	7.11

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

GC13_030717.M Tue Mar 07 11:33:00 2017

WB 3/10/17

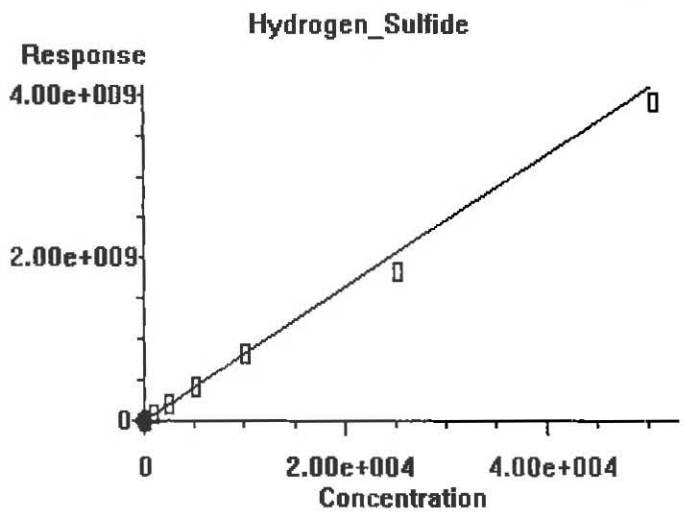
Edit Compounds

Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compour
  - Hydrogen_Sulfide
  - Carbonyl_Sulfide
  - Methyl_Mercaptan
  - Ethyl_Mercaptan
  - Dimethyl_Sulfide
  - Carbon_Disulfide
  - 2-Propyl_Mercaptan
  - t-Butyl_Mercaptan
  - Propyl_Mercaptan
  - Ethyl_Methyl_Sulfide
  - Thiophene
  - i-Butyl_Mercaptan
  - Diethyl_Sulfide
  - n-Butyl_Mercaptan
  - Dimethyl_Disulfide
  - 2-Methyl_Thiophene
  - 3-Methyl_Thiophene
  - Tetrahydrothiophene
  - 2,5-Dimethyl_Thiophene
  - 2-Ethyl_Thiophene
  - Diethyl_Disulfide
  - Methyltrisulfide

Identification | Calibration | User Defined | Advanced | Reporting

Lvl ID	Concentration	Response	Lvl ID	Concentration	Response
2.5	2.525000	203137.332500	100m		
10	10.100000	757999.142350			
50	50.500000	4405284.726849			
250	252.500000	21404140.503235			
1000	1010.000000	84705699.397721			
2500	2525.000000	219900016.25622			
5000	5050.000000	432986525.82435			
10pm	10100.000000	834474957.80641			
25pm	25250.000000	1822815366.5656			
50pm	50500.000000	3918226612.7364			



0.000e+000	Quadratic term
8.166e+004	Linear term
0.000e+000	Constant term
6.4%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

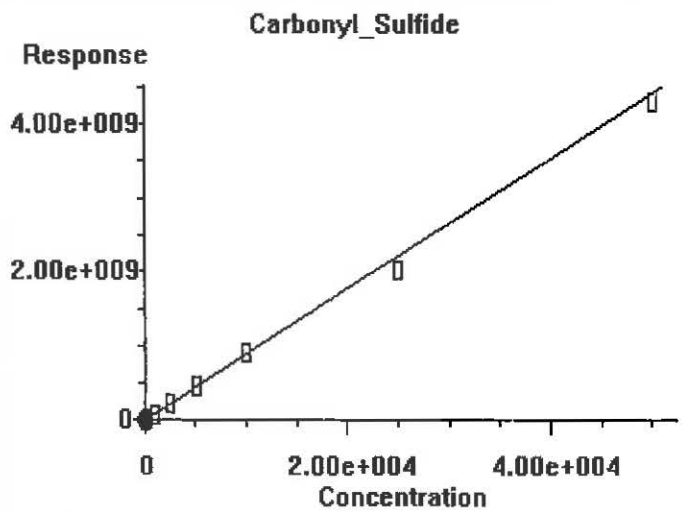
Edit Compounds

Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compour
  - Hydrogen_Sulfide
  - Carbonyl_Sulfide
  - Methyl_Mercaptan
  - Ethyl_Mercaptan
  - Dimethyl_Sulfide
  - Carbon_Disulfide
  - 2-Propyl_Mercaptan
  - t-Butyl_Mercaptan
  - Propyl_Mercaptan
  - Ethyl_Methyl_Sulfide
  - Thiophene
  - i-Butyl_Mercaptan
  - Diethyl_Sulfide
  - n-Butyl_Mercaptan
  - Dimethyl_Disulfide
  - 2-Methyl_Thiophene
  - 3-Methyl_Thiophene
  - Tetrahydrothiophene
  - 2,5-Dimethyl_Thiophene
  - 2-Ethyl_Thiophene
  - Diethyl_Disulfide
  - Methyltrisulfide

Identification | Calibration | User Defined | Advanced | Reporting

Lvl ID	Concentration	Response	Lvl ID	Concentration	Response
2.5	2.500000	205169.895900	100m		
10	10.000000	800979.504800			
50	50.000000	4793569.168151			
250	250.000000	23305728.945000			
1000	1000.000000	88225564.243658			
2500	2500.000000	230819279.26238			
5000	5000.000000	459256530.54314			
10pm	10000.000000	901347650.43272			
25pm	25000.000000	2023005311.4316			
50pm	50000.000000	4294226974.9600			



0.000e+000	Quadratic term
8.806e+004	Linear term
0.000e+000	Constant term
6.3%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

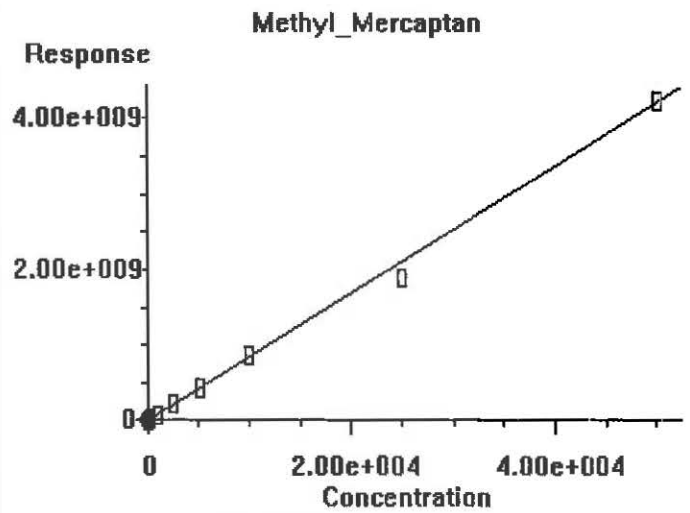
Edit Compounds

Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compour
  - Hydrogen_Sulfide
  - Carbonyl_Sulfide
  - Methyl_Mercaptan
  - Ethyl_Mercaptan
  - Dimethyl_Sulfide
  - Carbon_Disulfide
  - 2-Propyl_Mercaptan
  - t-Butyl_Mercaptan
  - Propyl_Mercaptan
  - Ethyl_Methyl_Sulfide
  - Thiophene
  - i-Butyl_Mercaptan
  - Diethyl_Sulfide
  - n-Butyl_Mercaptan
  - Dimethyl_Disulfide
  - 2-Methyl_Thiophene
  - 3-Methyl_Thiophene
  - Tetrahydrothiophene
  - 2,5-Dimethyl_Thiophene
  - 2-Ethyl_Thiophene
  - Diethyl_Disulfide
  - Methyltrisulfide

Identification | Calibration | User Defined | Advanced | Reporting

Lvl ID	Concentration	Response	Lvl ID	Concentration	Response
2.5	2.500000	191612.840000	100m		
10	10.000000	754894.000000			
50	50.000000	4467321.620000			
250	250.000000	22351885.890000			
1000	1000.000000	85471842.505000			
2500	2500.000000	224444244.96546			
5000	5000.000000	444134449.59000			
10pm	10000.000000	857065020.62000			
25pm	25000.000000	1885040416.7900			
50pm	50000.000000	4221029427.3814			



0.000e+000	Quadratic term
8.405e+004	Linear term
0.000e+000	Constant term
7.1%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

Calibration Status Report HP G1530A

Method Path : J:\GC13\METHODS\
Method File : GC13_030717.M
Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
Last Update : Tue Mar 07 11:32:15 2017
Response Via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	2.5	1	0	J:\GC13\DATA\SCD\2017_03\07\03071713.D
2	10	3	0	J:\GC13\DATA\SCD\2017_03\07\03071714.D
3	50	17	0	J:\GC13\DATA\SCD\2017_03\07\03071715.D
4	250	83	0	J:\GC13\DATA\SCD\2017_03\07\03071716.D
5	1000	333	0	J:\GC13\DATA\SCD\2017_03\07\03071717.D
6	2500	833	0	J:\GC13\DATA\SCD\2017_03\07\03071718.D
7	5000	1667	0	J:\GC13\DATA\SCD\2017_03\07\03071719.D
8	10pm	3333	0	J:\GC13\DATA\SCD\2017_03\07\03071720.D
9	25pm	8333	0	J:\GC13\DATA\SCD\2017_03\07\03071721.D
10	50pm	16667	0	J:\GC13\DATA\SCD\2017_03\07\03071723.D

#	ID	Update Time	Quant Time	Acquisition Time
1	2.5	Mar 07 09:44 2017	Mar 07 09:43 2017	07 Mar 2017 9:35
2	10	Mar 07 09:49 2017	Mar 07 09:49 2017	07 Mar 2017 9:44
3	50	Mar 07 10:01 2017	Mar 07 10:01 2017	07 Mar 2017 9:54
4	250	Mar 07 10:05 2017	Mar 07 10:05 2017	07 Mar 2017 10:02
5	1000	Mar 07 10:09 2017	Mar 07 10:09 2017	07 Mar 2017 10:06
6	2500	Mar 07 10:15 2017	Mar 07 10:15 2017	07 Mar 2017 10:10
7	5000	Mar 07 10:20 2017	Mar 07 10:20 2017	07 Mar 2017 10:16
8	10pm	Mar 07 10:25 2017	Mar 07 10:24 2017	07 Mar 2017 10:21
9	25pm	Mar 07 10:30 2017	Mar 07 10:30 2017	07 Mar 2017 10:26
10	50pm	Mar 07 10:39 2017	Mar 07 10:39 2017	07 Mar 2017 10:36

GC13_030717.M Tue Mar 07 11:33:18 2017

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071713.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 9:35
Operator : MC
Sample : 0.1ml 2.52ppb s30-03071702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 09:43:42 2017
Quant Method : J:\GC13\METHODS\GC13_030117.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Wed Mar 01 16:20:16 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units	
Target Compounds							
1)	Z	Hydrogen_Sulfide	0.973	203137	2.186	ppb	m
2)	W	Carbonyl_Sulfide	1.228	205170	2.145	ppb	m
3)	T	Methyl_Mercaptan	2.377	191613	2.119	ppb	m
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb	
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb	
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb	
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb	
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb	
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb	
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb	
11)	T	Thiophene	0.000	0	N.D.	ppb	
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb	
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb	
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb	
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb	
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb	
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb	
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb	
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb	
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb	
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb	
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb	

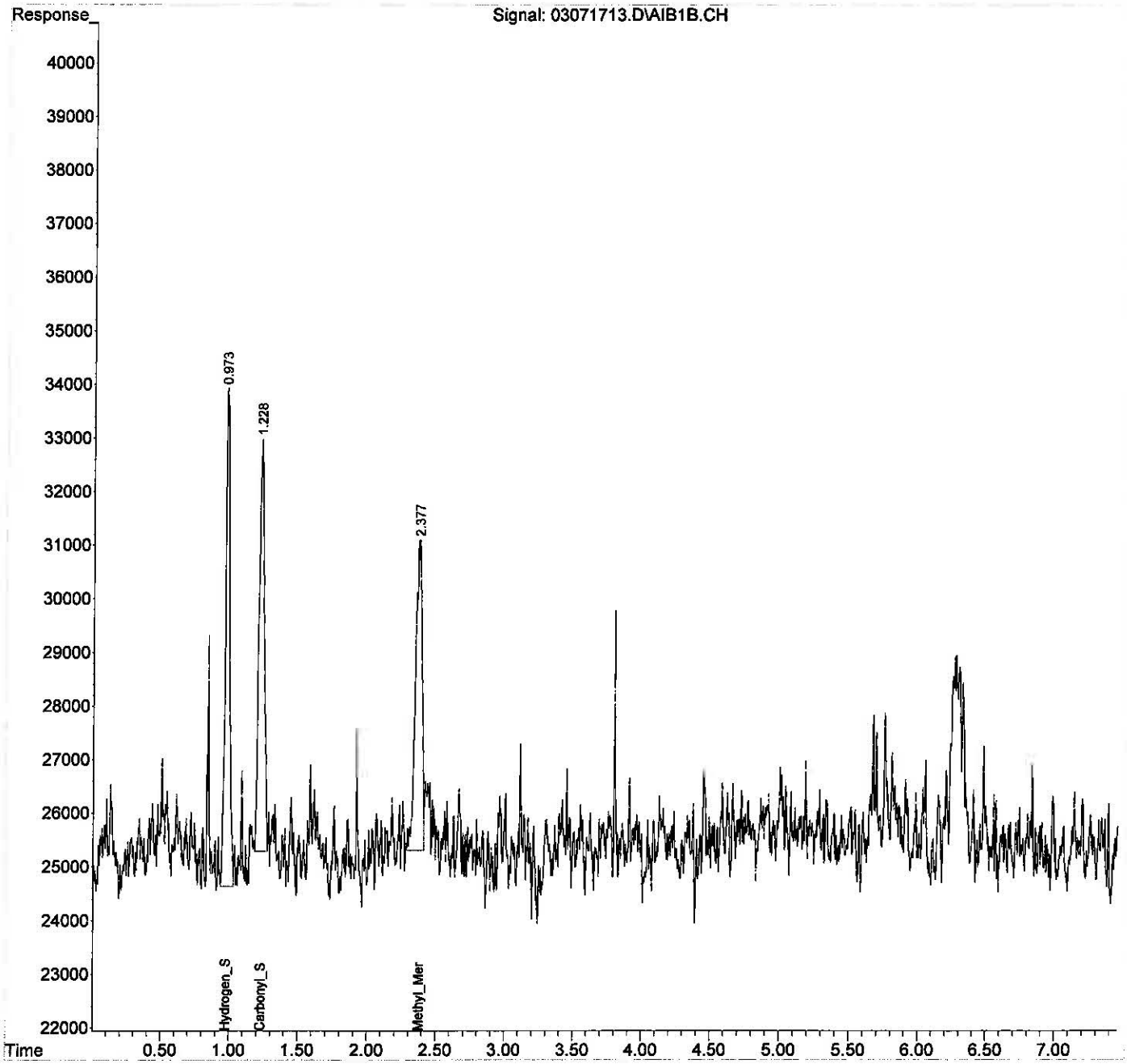
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071713.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 9:35
Operator : MC
Sample : 0.1ml 2.52ppb s30-03071702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 09:43:42 2017
Quant Method : J:\GC13\METHODS\GC13_030117.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Wed Mar 01 16:20:16 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

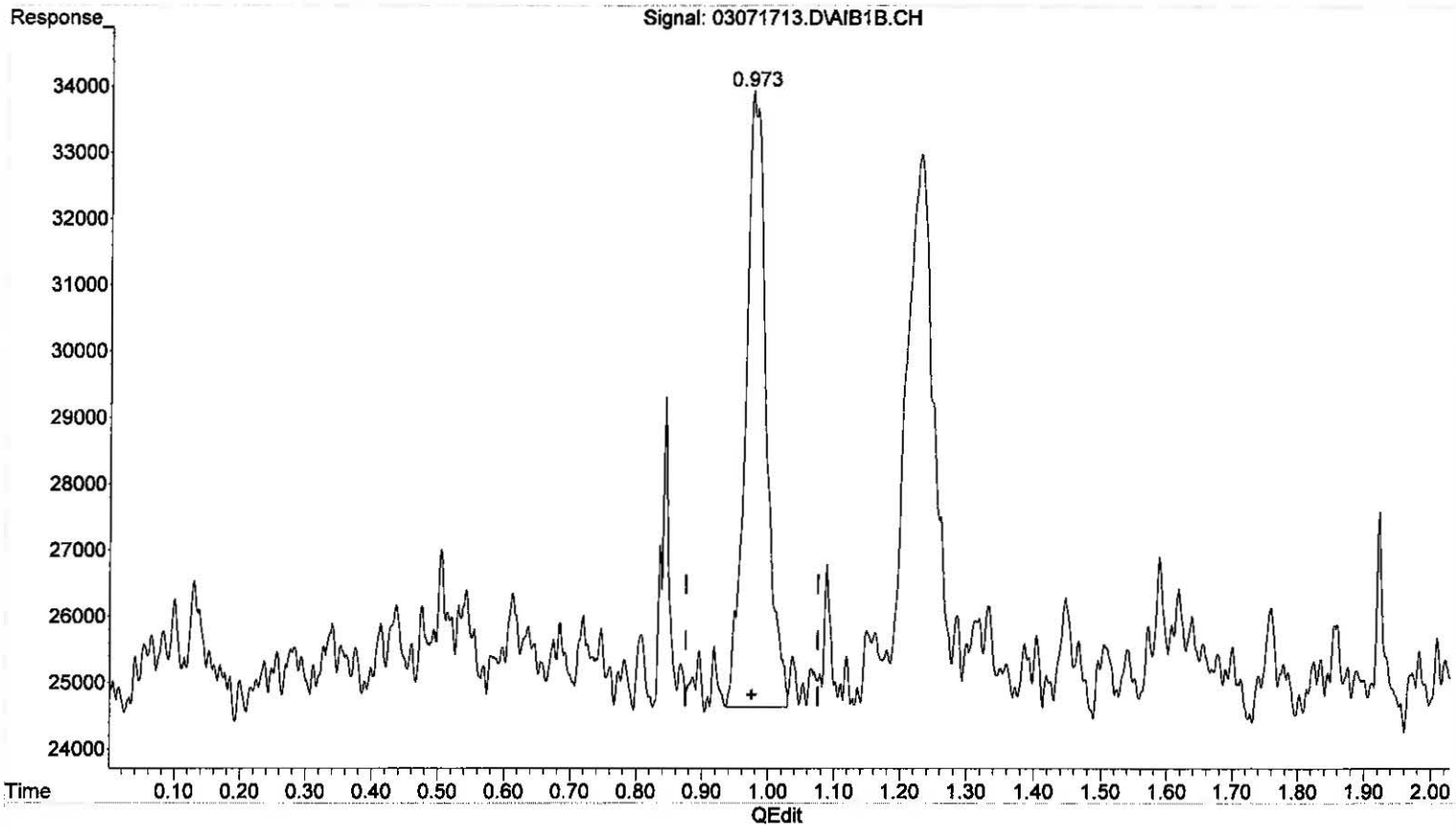


Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071713.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 9:35
Operator : MC
Sample : 0.1ml 2.52ppb s30-03071702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 09:43:42 2017
Quant Method : J:\GC13\METHODS\GC13_030117.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Wed Mar 01 16:20:16 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(1) Hydrogen_Sulfide (Z)
0.973min 2.186 ppb m
response 203137

MM 3/7/17
BL
No previous

3/10/17

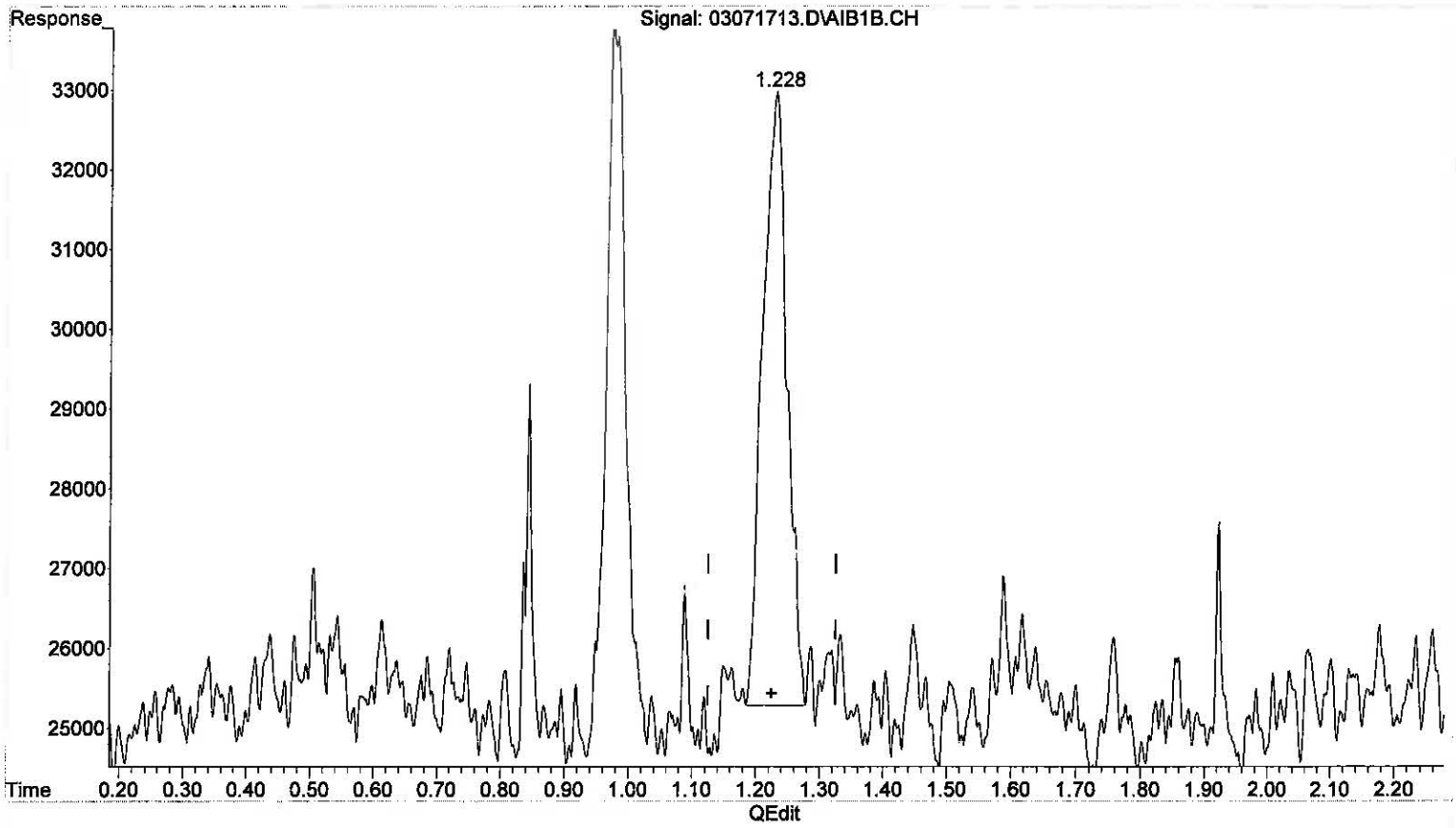
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071713.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 9:35
Operator : MC
Sample : 0.1ml 2.52ppb s30-03071702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 09:43:42 2017
Quant Method : J:\GC13\METHODS\GC13_030117.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Wed Mar 01 16:20:16 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(2) Carbonyl_Sulfide (W)

1.228min 2.145 ppb m

response 205170

MM 3/7/17
Bh
No previous

[illegible] 3/10/17

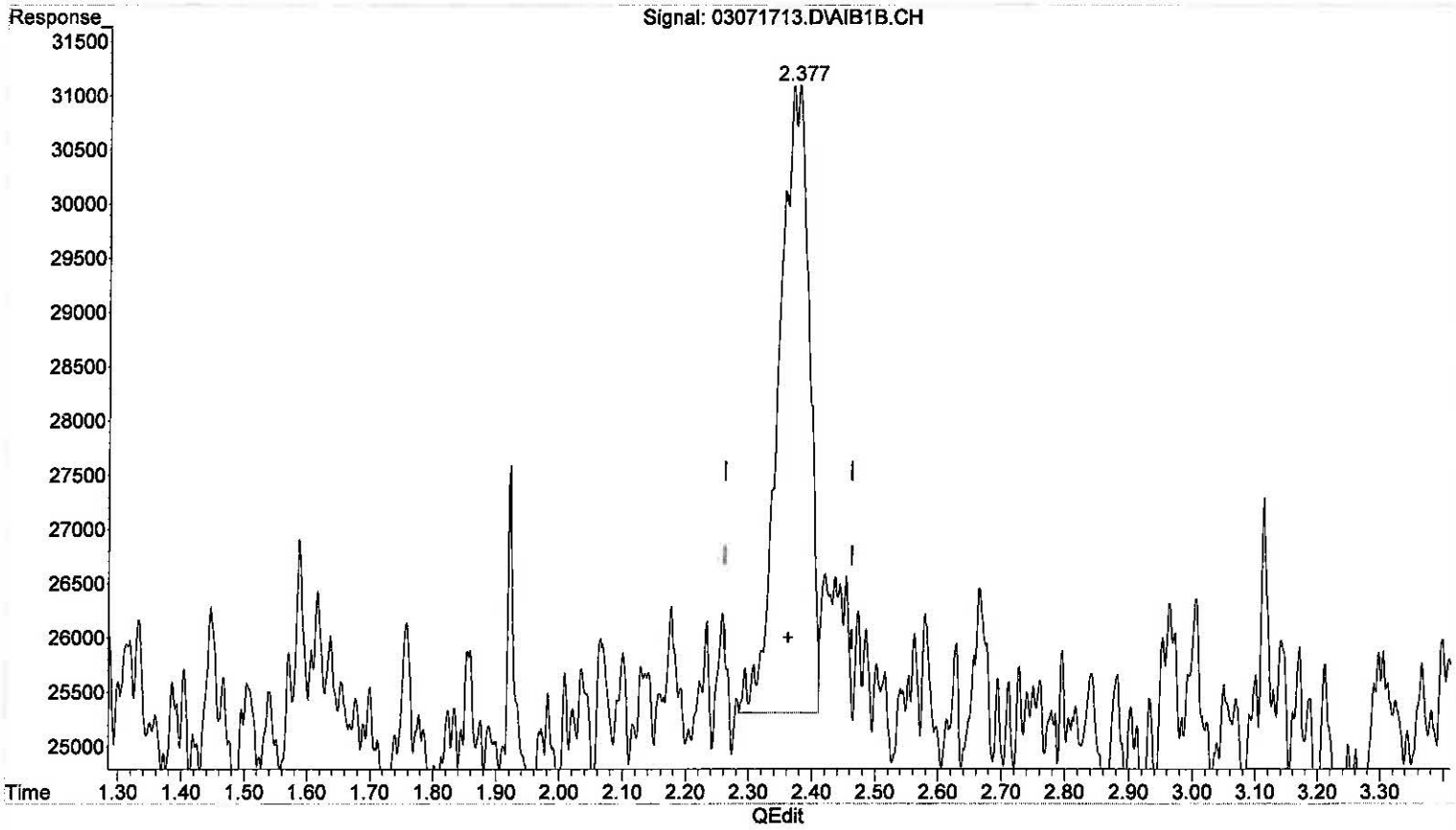
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071713.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 9:35
Operator : MC
Sample : 0.1ml 2.52ppb s30-03071702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 09:43:42 2017
Quant Method : J:\GC13\METHODS\GC13_030117.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Wed Mar 01 16:20:16 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(3) Methyl_Mercaptan (T)
2.377min 2.119 ppb m
response 191613

M 3/7/17
BL
No previous

3/10/17

(+) = Expected Retention Time

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071714.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 9:44
Operator : MC
Sample : 0.4ml 10.1ppb s30-03071702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 09:49:14 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 09:44:10 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units	
Target Compounds							
1)	Z	Hydrogen_Sulfide	0.976	757999	8.238	ppb	m
2)	W	Carbonyl_Sulfide	1.230	800980	8.390	ppb	m
3)	T	Methyl_Mercaptan	2.369	754894	8.427	ppb	m
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb	
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb	
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb	
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb	
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb	
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb	
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb	
11)	T	Thiophene	0.000	0	N.D.	ppb	
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb	
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb	
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb	
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb	
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb	
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb	
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb	
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb	
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb	
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb	
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb	

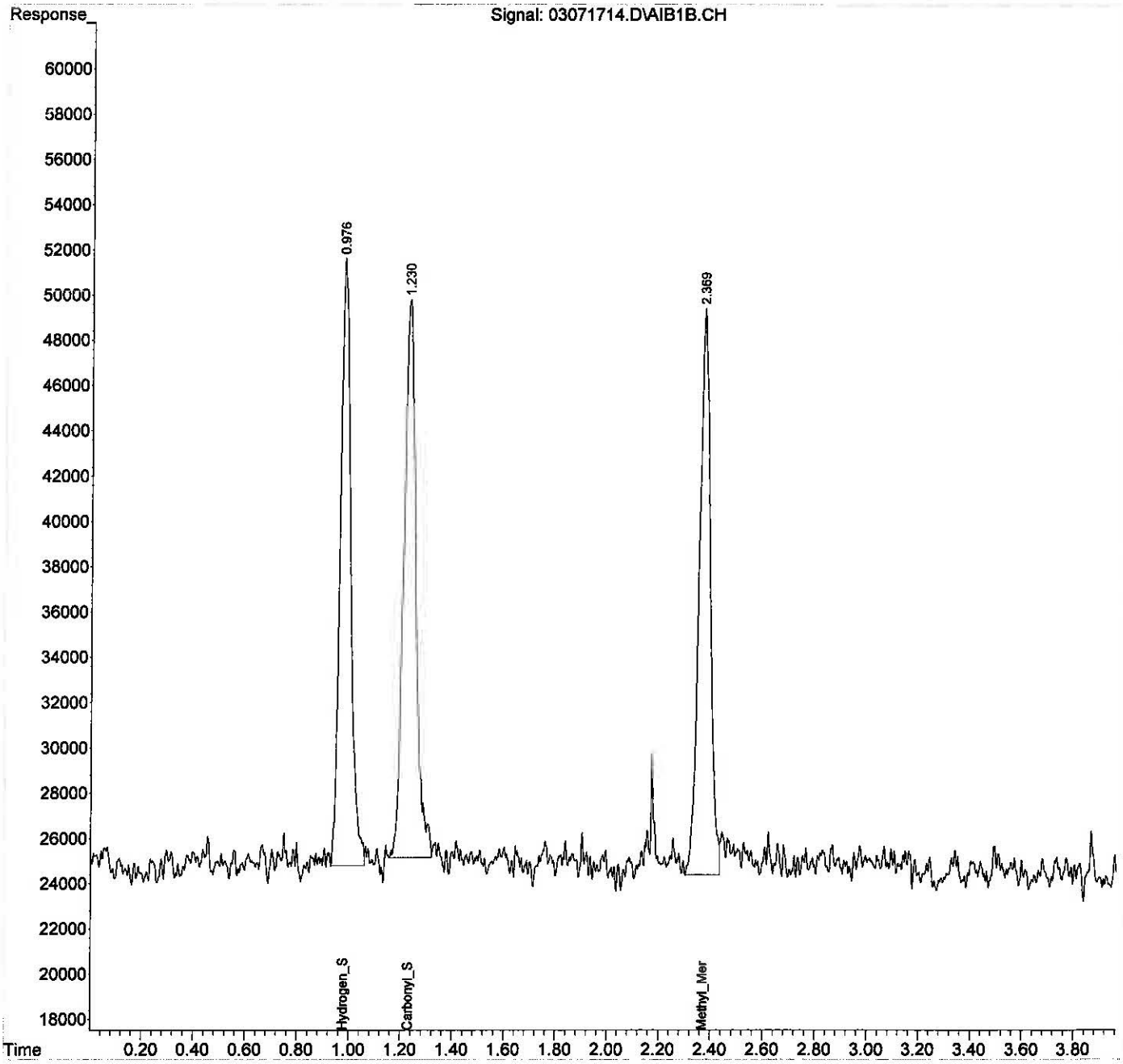
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071714.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 9:44
Operator : MC
Sample : 0.4ml 10.1ppb s30-03071702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 09:49:14 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 09:44:10 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

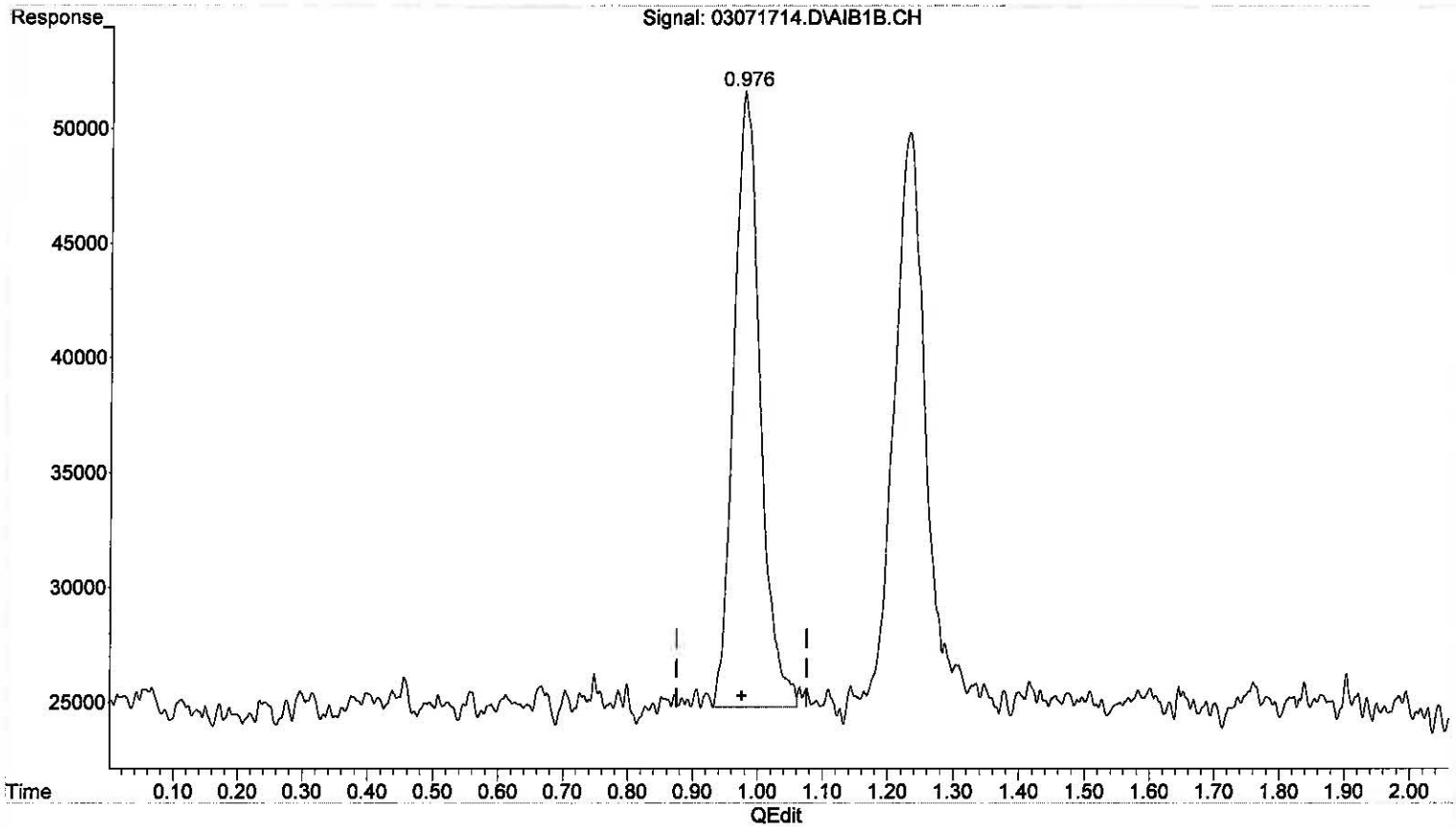


Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071714.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 9:44
Operator : MC
Sample : 0.4ml 10.1ppb s30-03071702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 09:49:14 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 09:44:10 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(1) Hydrogen_Sulfide (Z)
0.976min 8.238 ppb m
response 757999

M 3/7/17
BL
No peaks

3/10/17

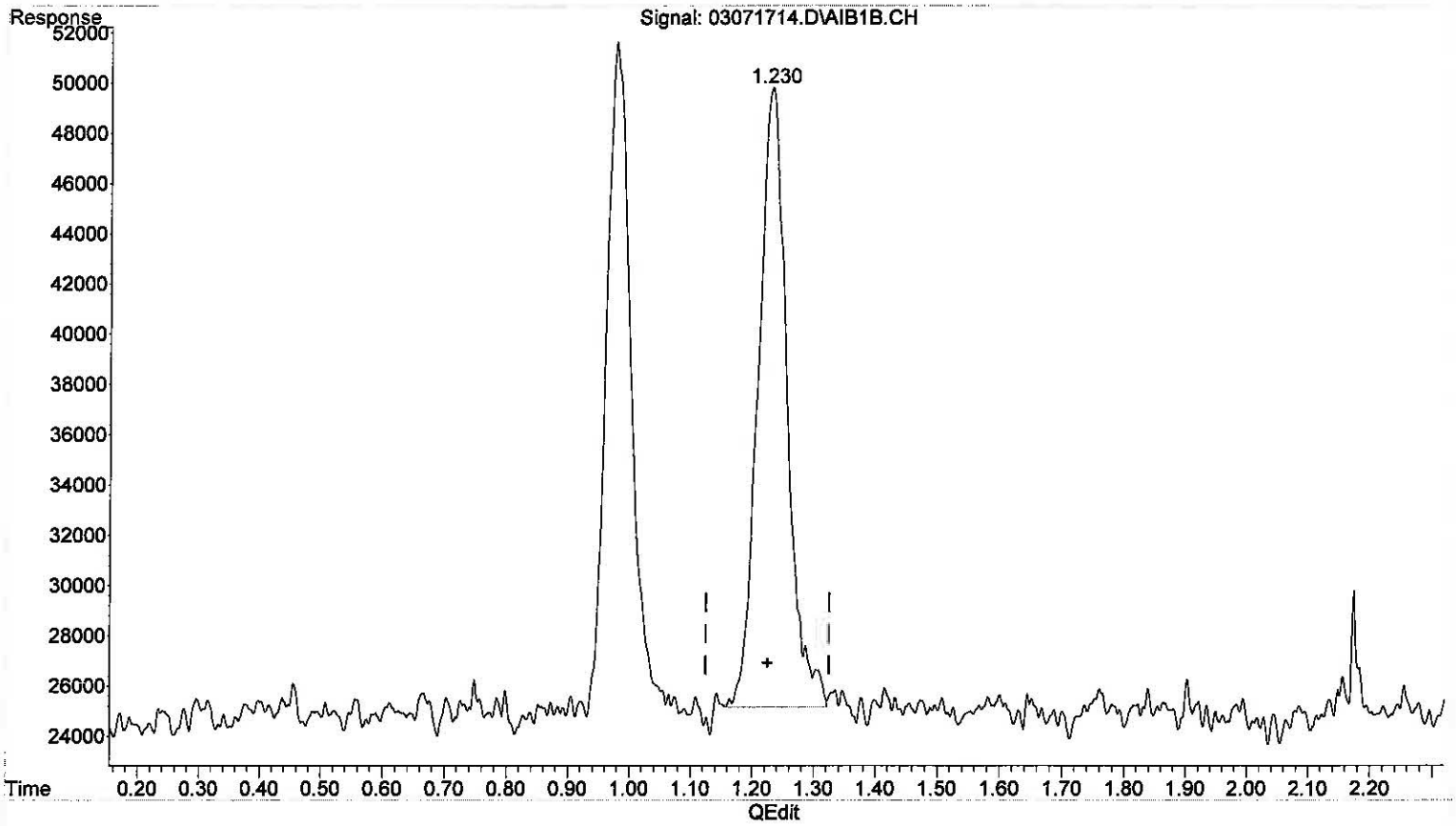
(+) = Expected Retention Time
GC13_030717.M Tue Mar 07 11:03:20 2017

Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071714.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 9:44
Operator : MC
Sample : 0.4ml 10.1ppb s30-03071702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 09:49:14 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 09:44:10 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(2) Carbonyl_Sulfide (W)

1.230min 8.390 ppb m

response 800980

MC 3/7/17
BK
No previous

[illegible] 3/10/17

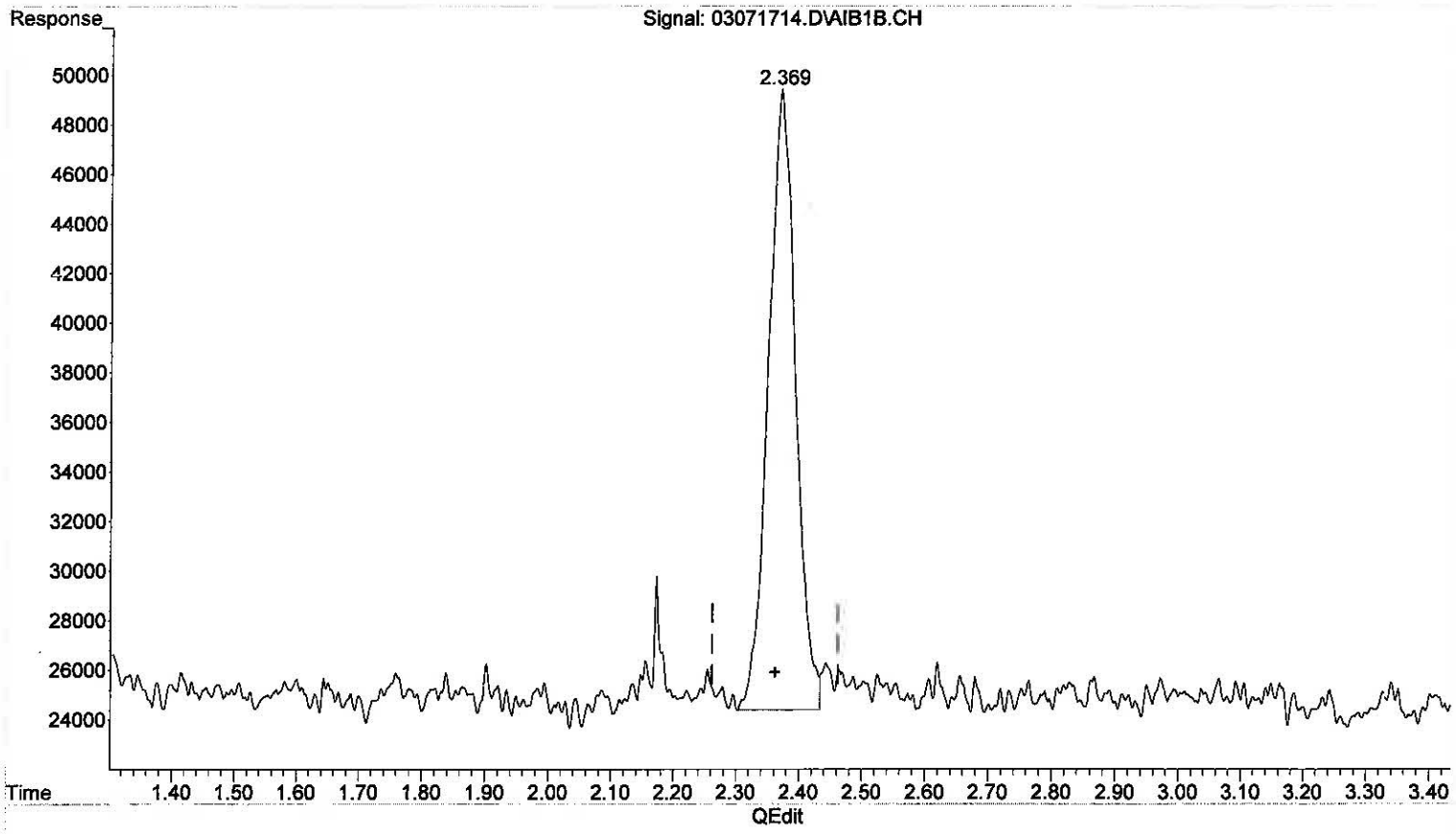
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071714.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 9:44
Operator : MC
Sample : 0.4ml 10.1ppb s30-03071702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 09:49:14 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 09:44:10 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(3) Methyl_Mercaptan (T)
2.369min 8.427 ppb m
response 754894

MM 3/7/17
BL
No previous

3/10/17

(+) = Expected Retention Time
GC13_030717.M Tue Mar 07 11:03:28 2017

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071715.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 9:54
Operator : MC
Sample : 0.1ml 50.5 s30-03071703
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:01:03 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 09:53:27 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.977	4405285	48.160	ppb
2)	W	Carbonyl_Sulfide	1.226	4793569	50.200	ppb
3)	T	Methyl_Mercaptan	2.366	4467322	49.942	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

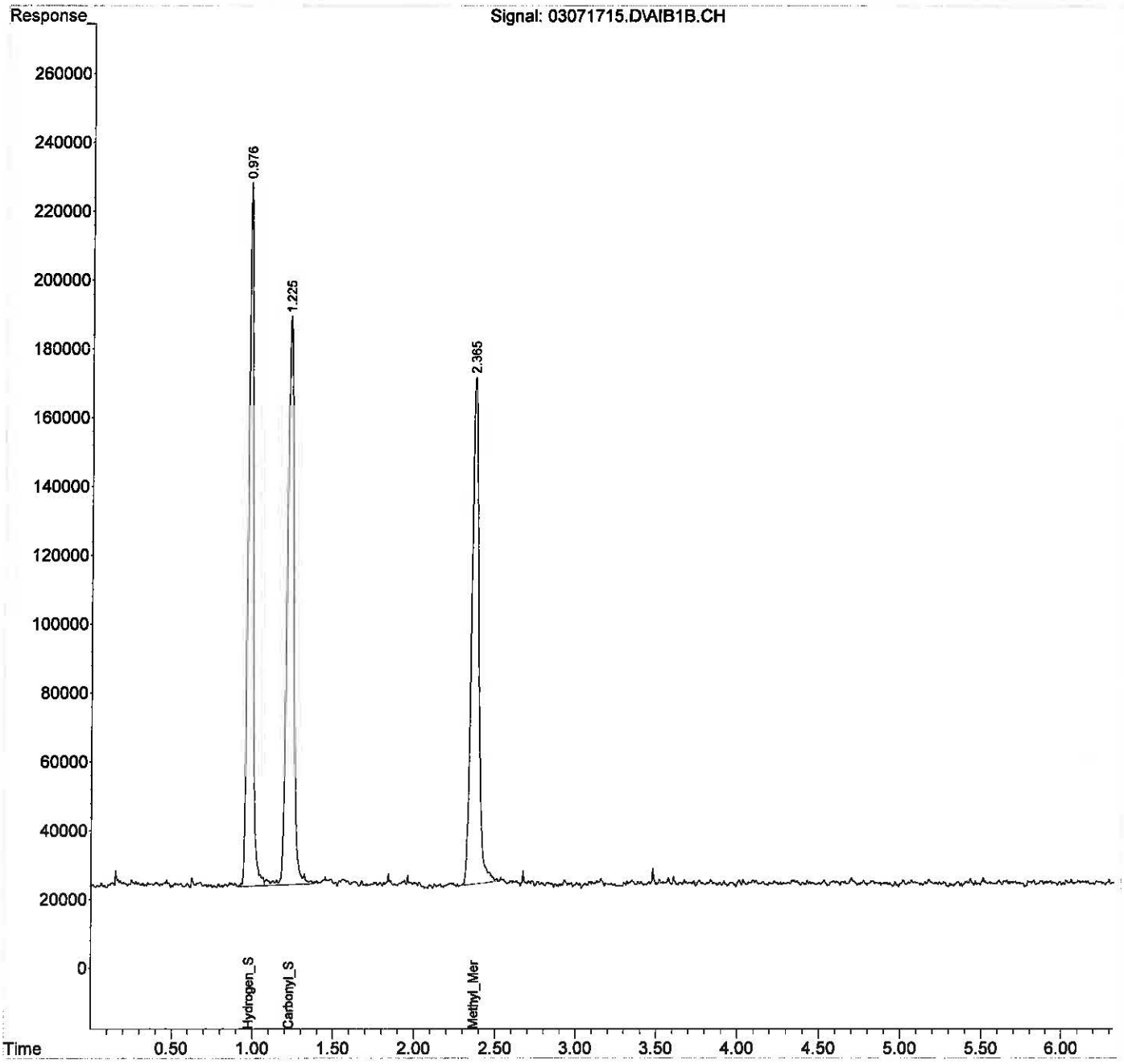
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071715.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 9:54
Operator : MC
Sample : 0.1ml 50.5 s30-03071703
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:01:03 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 09:53:27 2017
Response via : Initial Calibration.
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071716.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:02
Operator : MC
Sample : 0.5ml 252.5ppb s30-03071703
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:05:41 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:01:14 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.975	21404141	234.062	ppb
2)	W	Carbonyl_Sulfide	1.229	23305729	243.266	ppb
3)	T	Methyl_Mercaptan	2.370	22351886	248.262	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

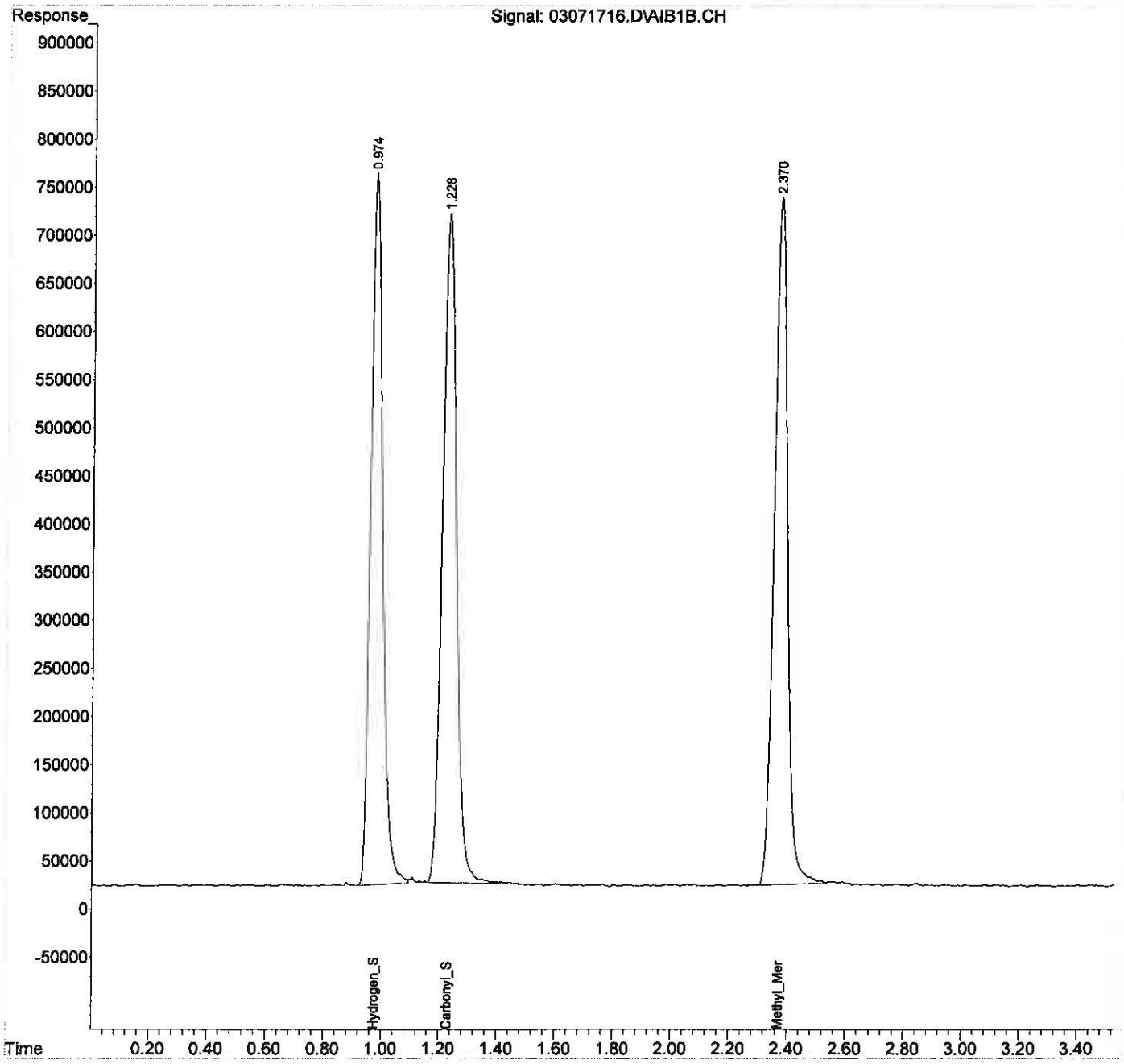
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071716.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:02
Operator : MC
Sample : 0.5ml 252.5ppb s30-03071703
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:05:41 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:01:14 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071717.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:06
Operator : MC
Sample : 0.1ml 1010ppb s30-03071701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:09:29 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:05:51 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.978	84705699	930.353	ppb
2)	W	Carbonyl_Sulfide	1.227	88225564	922.200	ppb
3)	T	Methyl_Mercaptan	2.366	85471843	950.814	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

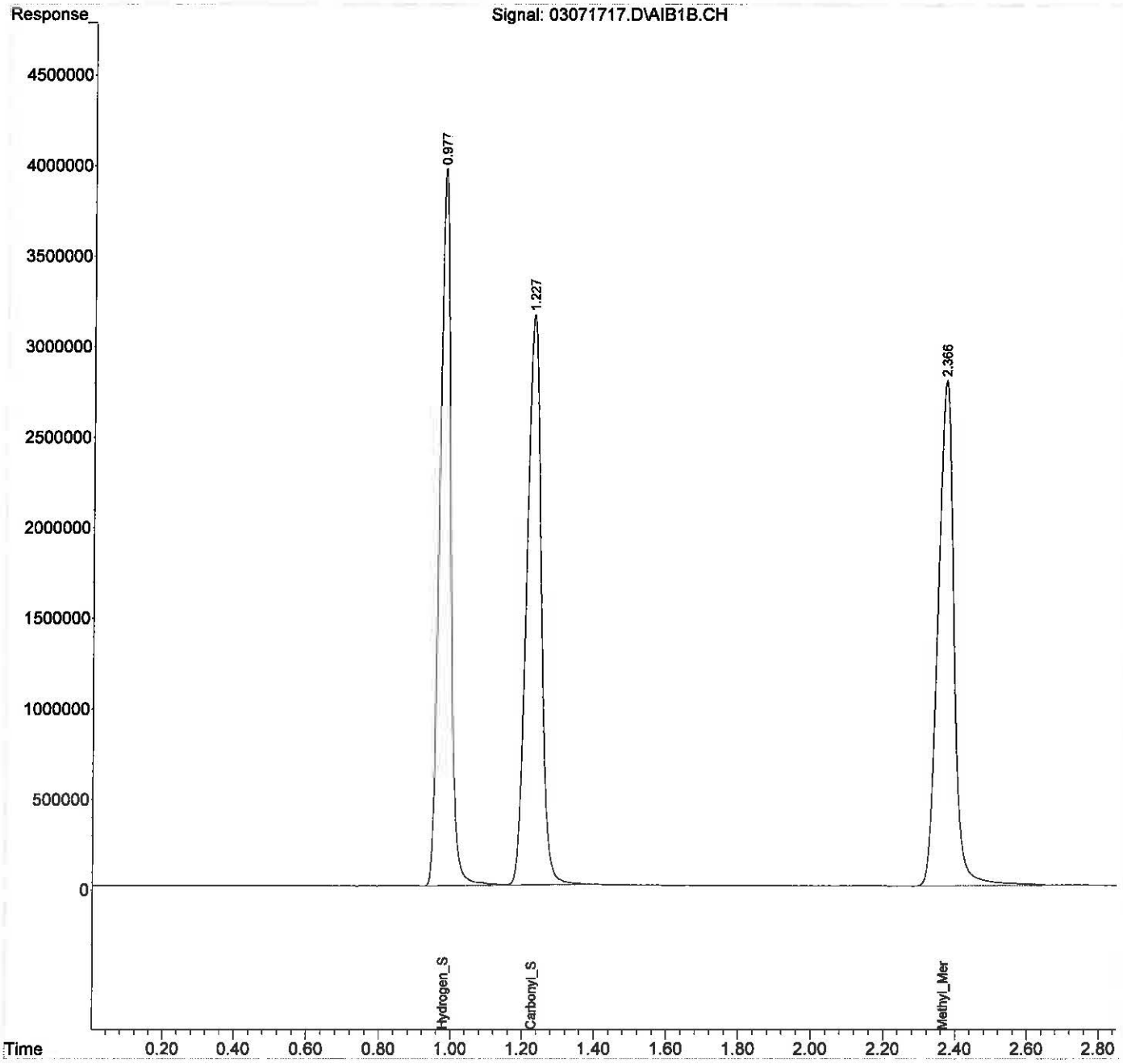
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071717.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:06
Operator : MC
Sample : 0.1ml 1010ppb s30-03071701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:09:29 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:05:51 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071718.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:10
Operator : MC
Sample : 0.25ml 2525ppb s30-03071701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:15:38 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:09:38 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.974	219900016	2426.234	ppb
2)	W	Carbonyl_Sulfide	1.224	230819279	2418.166	ppb
3)	T	Methyl_Mercaptan	2.364	224444245	2497.791	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	3.765	723755	2.668	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

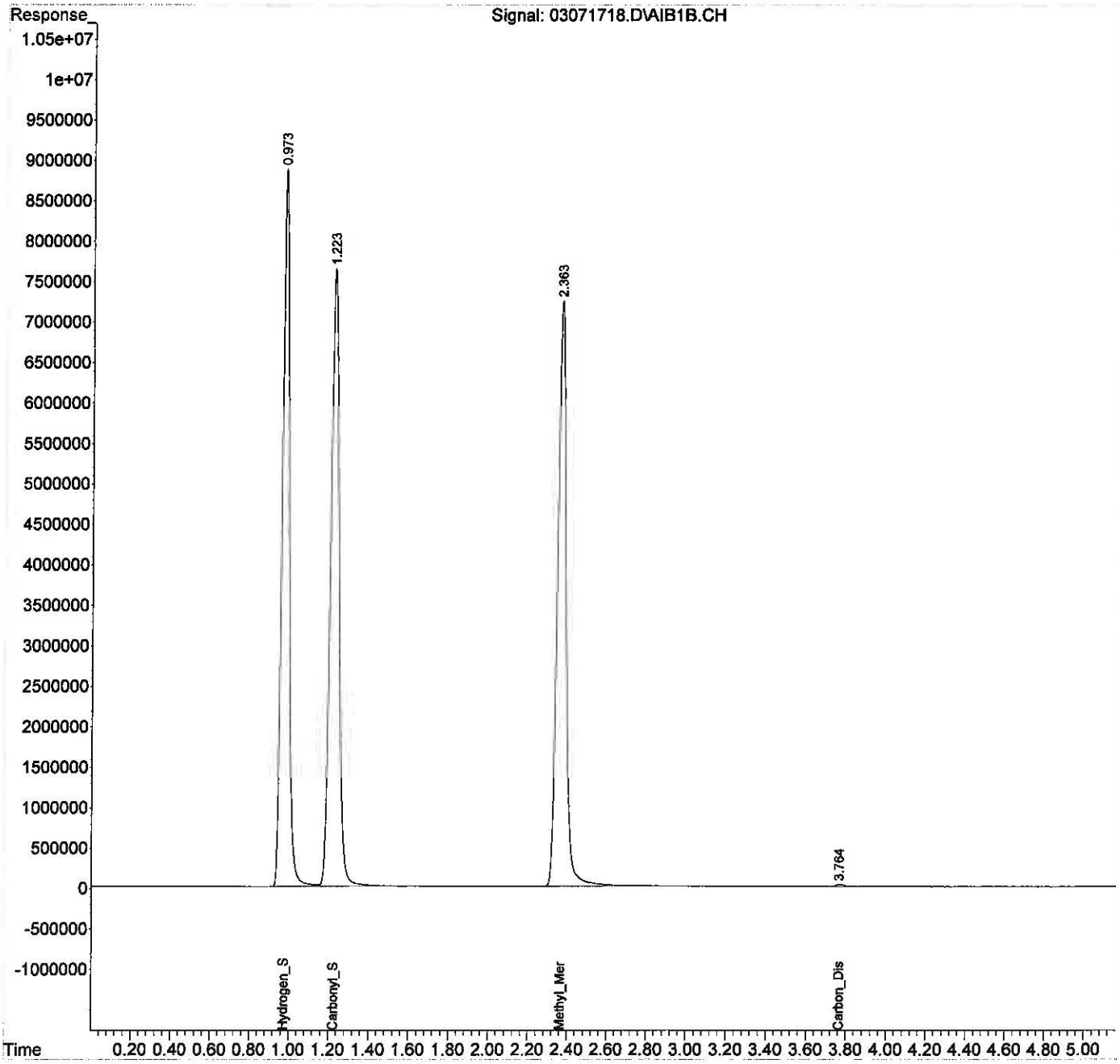
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071718.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:10
Operator : MC
Sample : 0.25ml 2525ppb s30-03071701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:15:38 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:09:38 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071719.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:16
Operator : MC
Sample : 0.5ml 5050ppb s30-03071701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:20:16 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:15:48 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.976	432986526	4854.115	ppb
2)	W	Carbonyl_Sulfide	1.229	459256531	4878.470	ppb
3)	T	Methyl_Mercaptan	2.370	444134450	4992.346	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	3.772	-622812	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

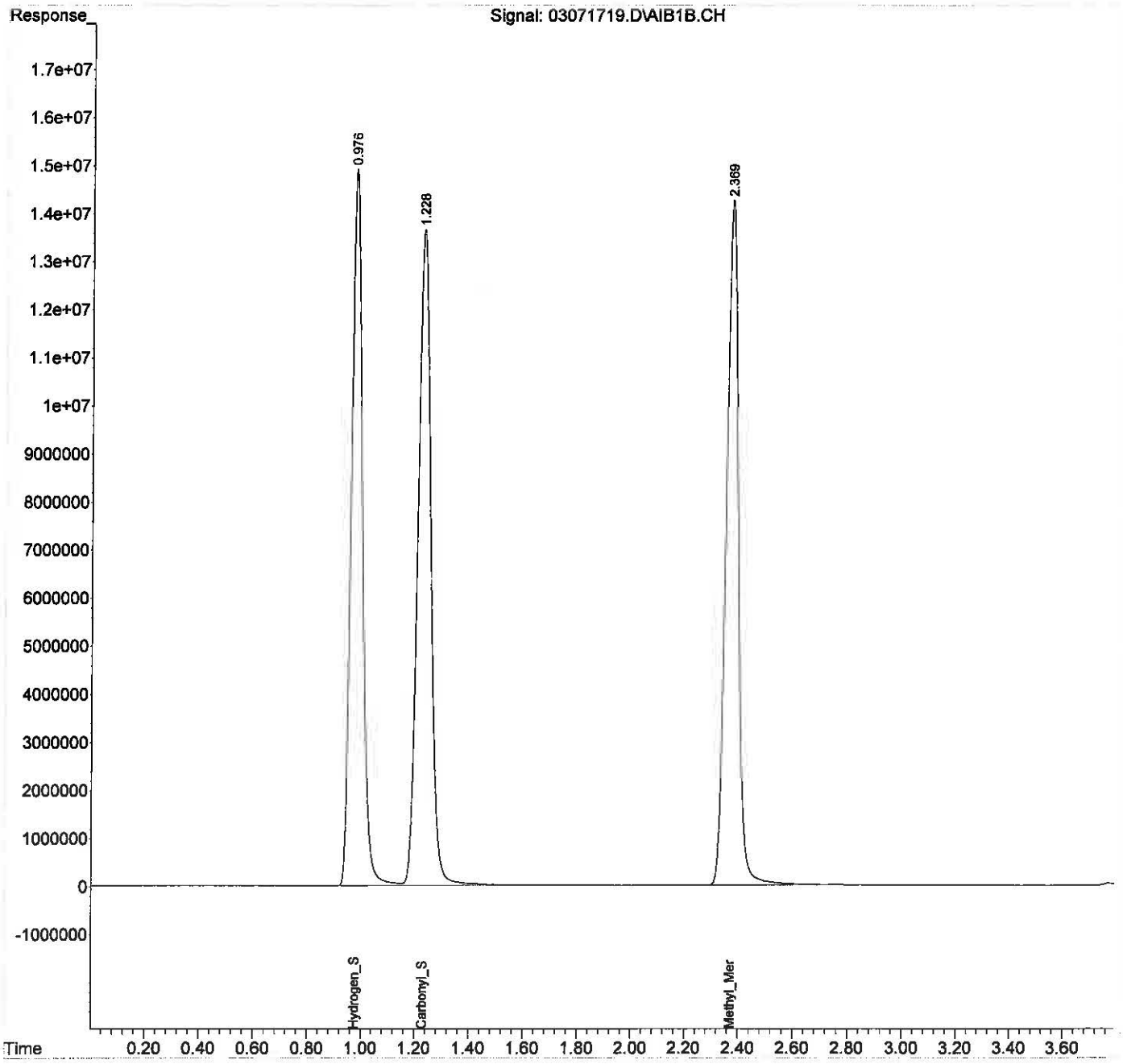
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071719.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:16
Operator : MC
Sample : 0.5ml 5050ppb s30-03071701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:20:16 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:15:48 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071720.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:21
Operator : MC
Sample : 1ml 10100ppb s30-03071701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:24:53 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:20:26 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.974	834474958	9555.983	ppb
2)	W	Carbonyl_Sulfide	1.227	901347650	9754.124	ppb
3)	T	Methyl_Mercaptan	2.366	857065021	9785.030	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

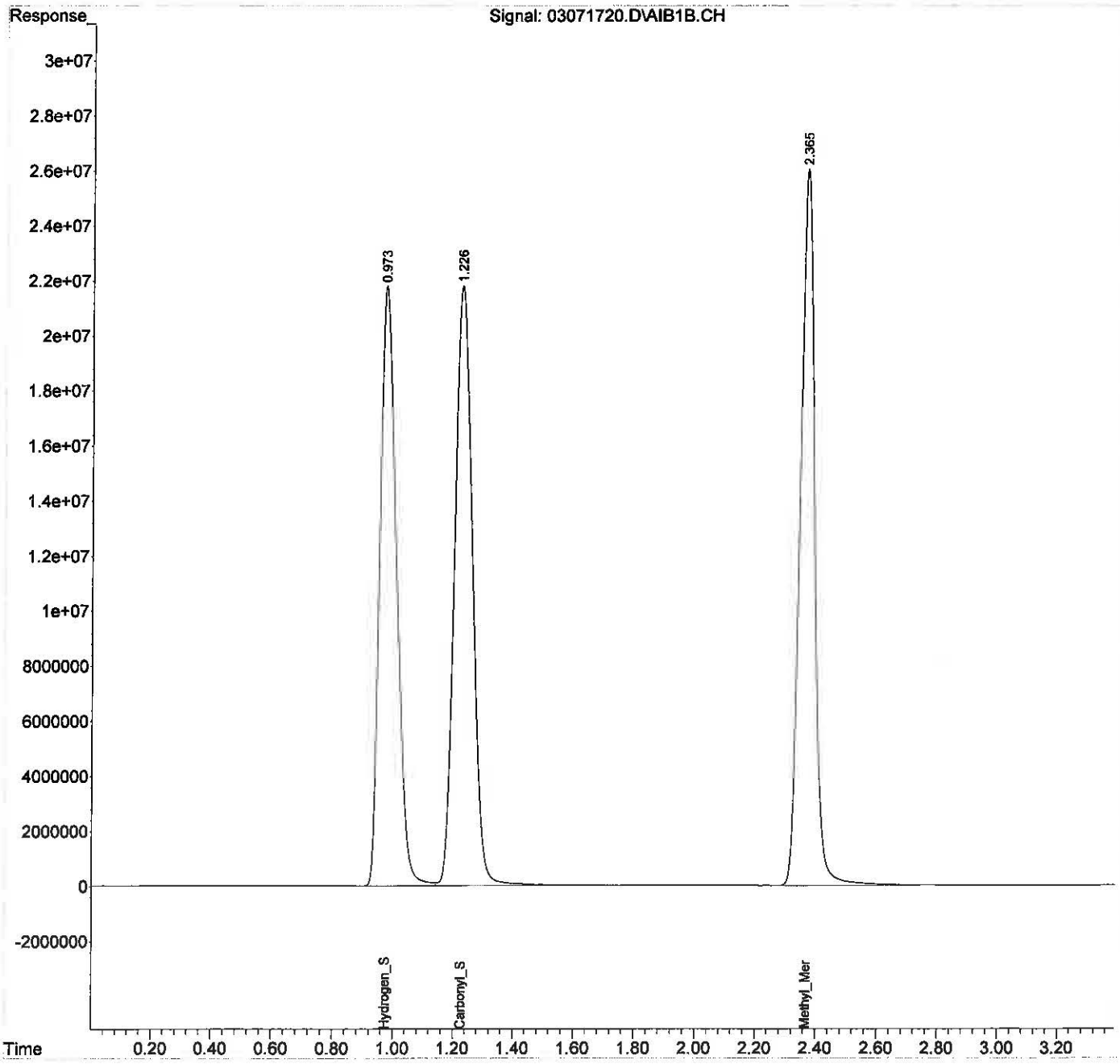
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071720.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:21
Operator : MC
Sample : 1ml 10100ppb s30-03071701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:24:53 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:20:26 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071721.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:26
Operator : MC
Sample : 0.025ml 25ppm s30-11031401
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:30:29 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:25:04 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.975	1822815367	21287.597	ppb
2)	W	Carbonyl_Sulfide	1.224	2023005311	22294.224	ppb
3)	T	Methyl_Mercaptan	2.362	1885040417	21915.390	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	3.564	531379	5.876	ppb
6)	T	Carbon_Disulfide	3.766	6654924	31.543	ppb
7)	T	2-Propyl_Mercaptan	4.039	73339	0.811	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

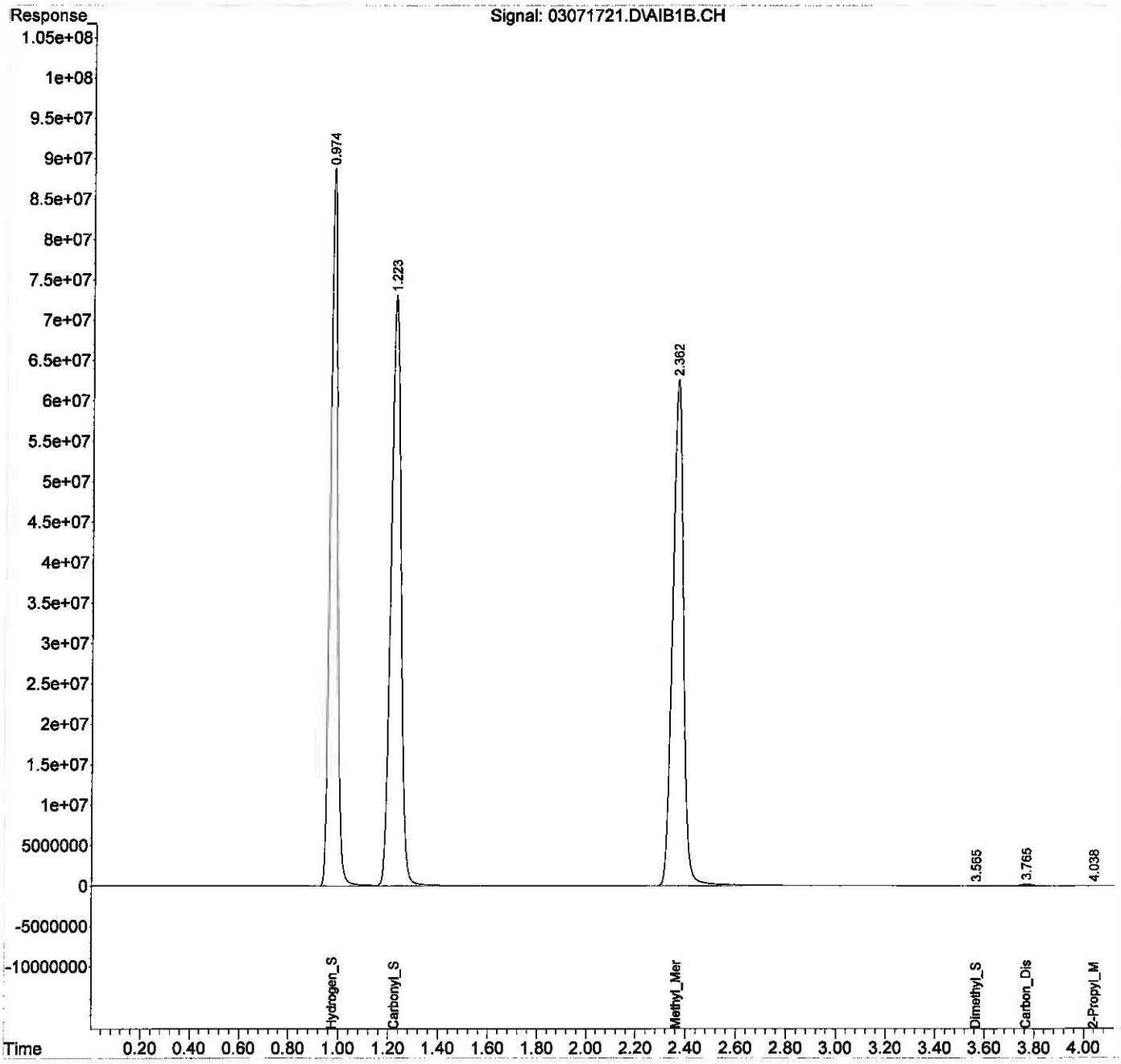
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071721.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:26
Operator : MC
Sample : 0.025ml 25ppm s30-11031401
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:30:29 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:25:04 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071723.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:36
Operator : MC
Sample : 0.05ml 50ppm s30-11031401
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:39:11 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:35:18 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.975	3918226613	48723.372	ppb
2)	W	Carbonyl_Sulfide	1.224	4294226975	49529.883	ppb
3)	T	Methyl_Mercaptan	2.363	4221029427	51071.711	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

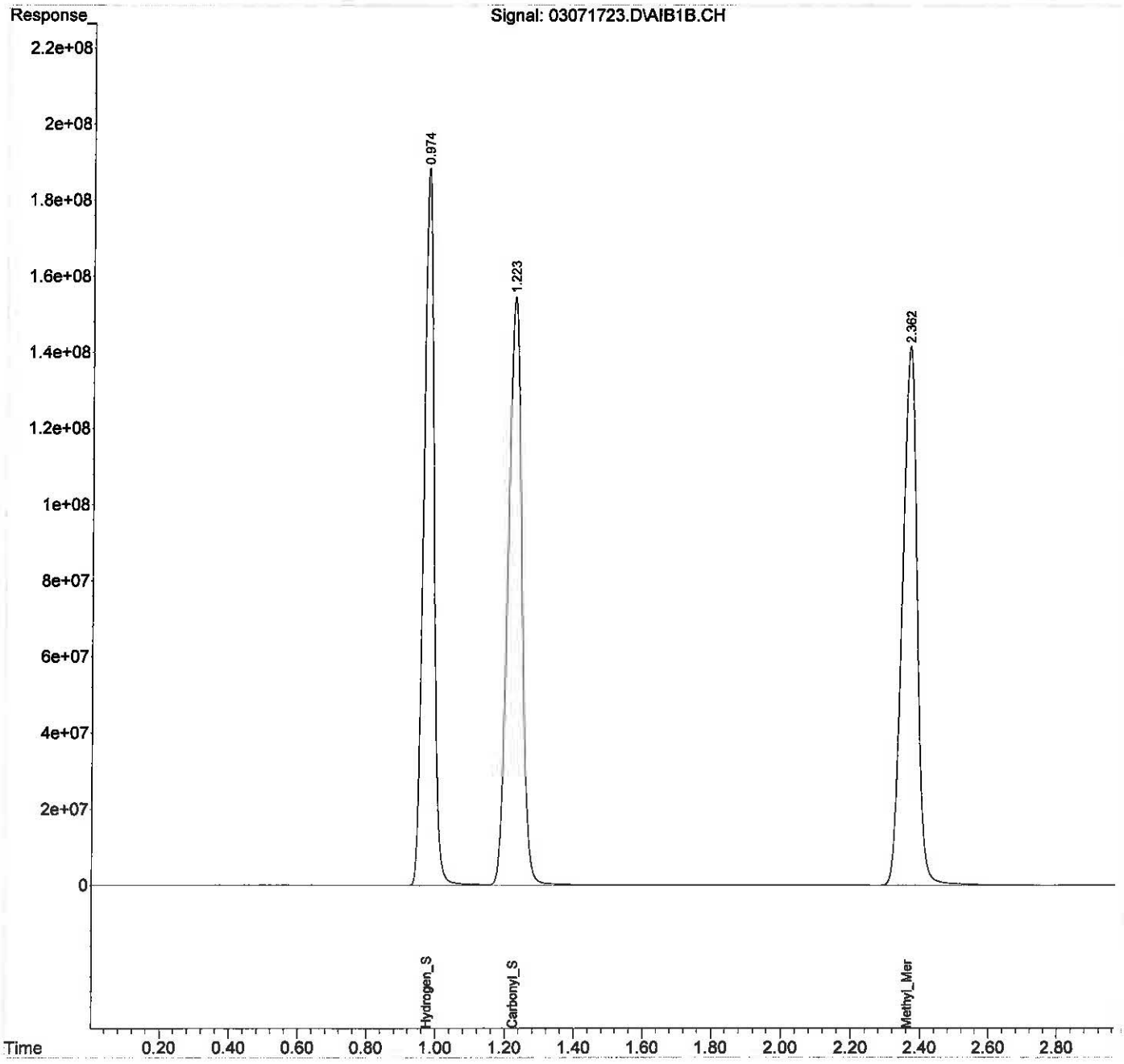
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071723.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:36
Operator : MC
Sample : 0.05ml 50ppm s30-11031401
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:39:11 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:35:18 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071724.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:55
Operator : MC
Sample : ICV s30-02171701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:59:54 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:39:20 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

MC 3/8/17

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units	actual	%
Target Compounds								
1)	Z	Hydrogen_Sulfide	0.978	75884269	929.272	ppb	1000	92.93
2)	W	Carbonyl_Sulfide	1.228	80361789	912.575	ppb	1000	91.26
3)	T	Methyl_Mercaptan	2.369	76067908	905.038	ppb	1000	90.50
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb		
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb		
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb		
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb		
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb		
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb		
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb		
11)	T	Thiophene	0.000	0	N.D.	ppb		
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb		
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb		
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb		
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb		
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb		
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb		
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb		
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb		
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb		
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb		
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb		

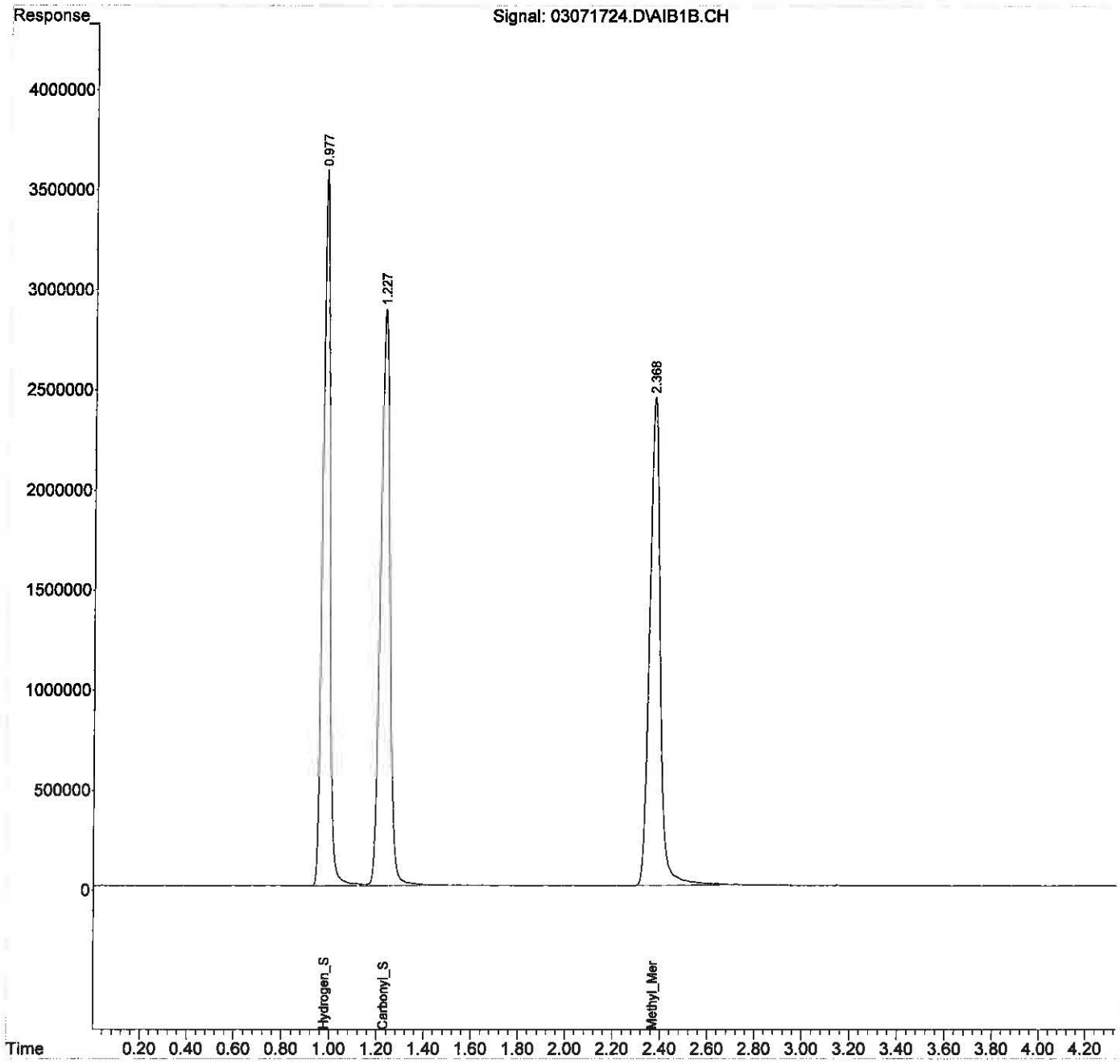
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_03\07\
Data File : 03071724.D
Signal(s) : AIB1B.CH
Acq On : 07 Mar 2017 10:55
Operator : MC
Sample : ICV s30-02171701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Mar 07 10:59:54 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 10:39:20 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



ALS Environmental

REPORT SUMMARY

Method : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
Client : GHD Services Inc.
Analyst : MC

Service Request : P1704726
Instrument : GC13
Date Acquired : 9/26/17

Compounds	MDL	RL	MB QC		Dry Wall QC		Lab Dup			Continuing Calibration Standards Summary (ppbv)													
			MB					dup	%RSD	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff
Sample Information :	ppb	ppb	mb 1ml							std s32-08211701		std s32-08211701		std s32-08211701									
Inj. Vol. (ml)	1.0	1.0	1.00		1.0	1.0				0.10		0.10		0.10		0.10		0.10		0.10		0.10	
Dilution	1.0	1.0	1.00		1.0	1.0																	
Pi:	1.0	1.0	1.0		1.0	1.0																	
Pi:	1.0	1.0	1.0		1.0	1.0																	
PiPf DF:	1.0	1.0	1.0		1.0	1.0																	
Hydrogen_Sulfide	1.900	5.000	ND	P						1102.43	9.2%	1045.341	3.5%	961.038	4.8%								
Carbonyl_Sulfide	1.700	5.000	ND	P						1187.57	18.8%	1116.814	11.7%	976.361	2.4%								
Methyl_Mercaptan	1.200	5.000	ND	P						1121.15	12.1%	1058.804	5.9%	934.506	6.5%								
Ethyl_Mercaptan	1.200	5.000	ND	P																			
Dimethyl_Sulfide	1.200	5.000	ND	P						7:03 AM		1:41 PM		4:05 PM									
Carbon_Disulfide	0.600	2.500	ND	P						09261701.D		09261716.D		09261725.D									
2-Propyl_Mercaptan	1.200	5.000	ND	P																			
t-Butyl_Mercaptan	1.200	5.000	ND	P																			
Propyl_Mercaptan	1.200	5.000	ND	P																			
Ethyl_Methyl_Sulfide	1.200	5.000	ND	P																			
Thiophene	1.200	5.000	ND	P																			
i-Butyl_Mercaptan	1.200	5.000	ND	P																			
Diethyl_Sulfide	1.200	5.000	ND	P																			
n-Butyl_Mercaptan	1.200	5.000	ND	P																			
Dimethyl_Disulfide	0.600	2.500	ND	P																			
2-Methylthiophene	1.200	5.000	ND	P																			
3-Methylthiophene	1.200	5.000	ND	P																			
Tetrahydrothiophene	1.200	5.000	ND	P																			
2,5-Dimethylthiophene	1.200	5.000	ND	P																			
2-Ethylthiophene	1.200	5.000	ND	P																			
Diethyl_Disulfide	0.600	2.500	ND	P																			
Methyltrisulfide	0.600	2.500	ND	P																			
Acqisition Time			7:33 AM																				
DataFile			09261705.D																				

LCS / LCS Dup Summary (ppbv)

	ppbv	%R		ppbv	% R	%RPD	Actual
Hydrogen_Sulfide	1062.50	106.2%		1043.78	104.4%	1.78%	1000.00
Carbonyl_Sulfide	1166.36	116.6%		1144.27	114.4%	1.91%	1000.00
Methyl_Mercaptan	1110.12	111.0%		1085.07	108.5%	2.28%	1000.00
Acqisition Time	7:07 AM			7:10 AM			
DataFile	09261702.D			09261703.D			

MC 10/2/17

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261701.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 7:03
Operator : MC
Sample : std s32-08211701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 26 07:05:48 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.902	90024271	1102.430	ppb
2)	W	Carbonyl_Sulfide	1.143	104577984	1187.571	ppb
3)	T	Methyl_Mercaptan	2.265	94231690	1121.147	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

(f)=RT Delta > 1/2 Window (m)=manual int.

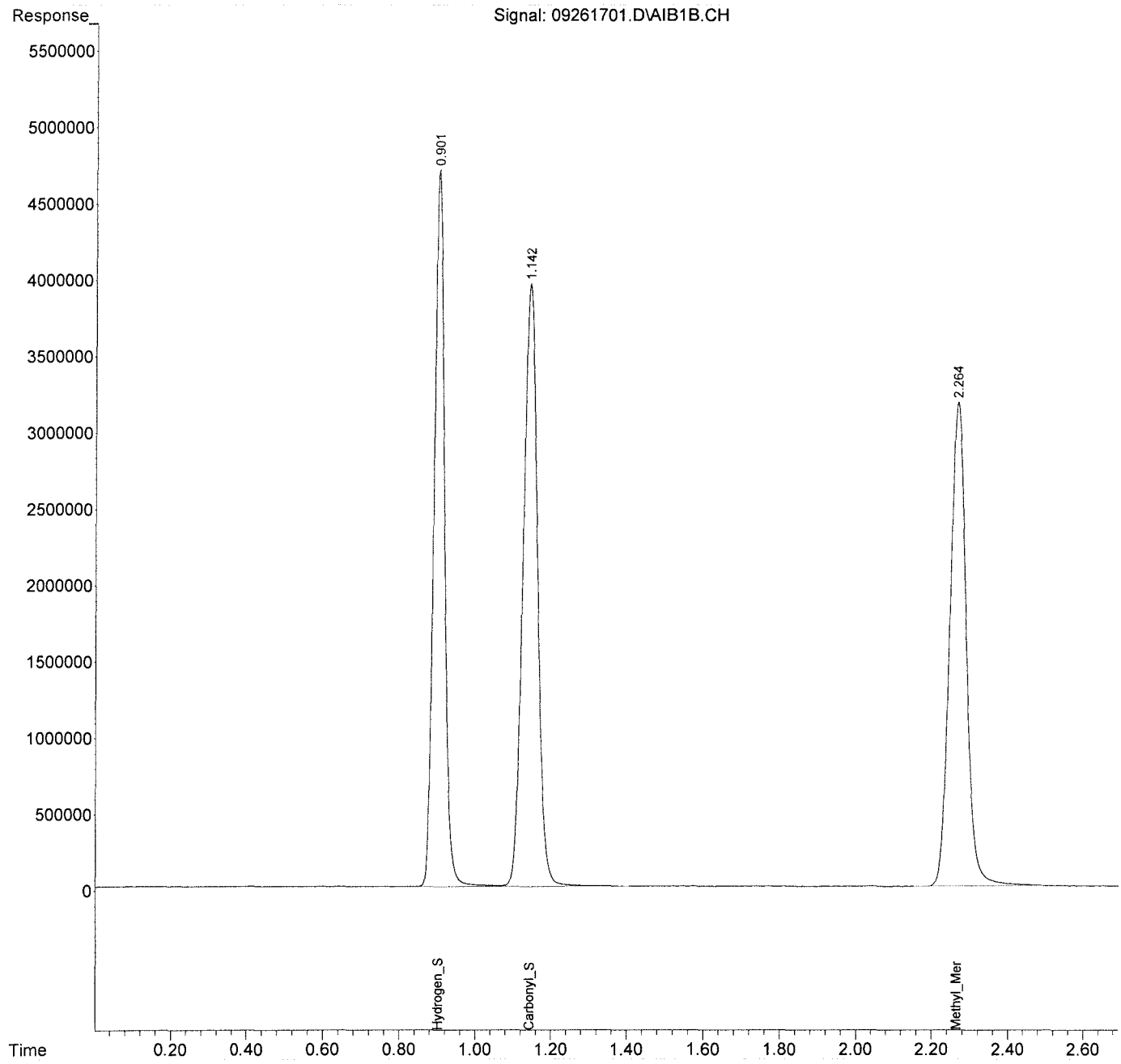
Me 9/27/7

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261701.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 7:03
Operator : MC
Sample : std s32-08211701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 26 07:05:48 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261716.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 13:41
Operator : MC
Sample : std s32-08211701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:57:21 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.901	85362444	1045.341	ppb
2)	W	Carbonyl_Sulfide	1.141	98347091	1116.814	ppb
3)	T	Methyl_Mercaptan	2.262	88991796	1058.804	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

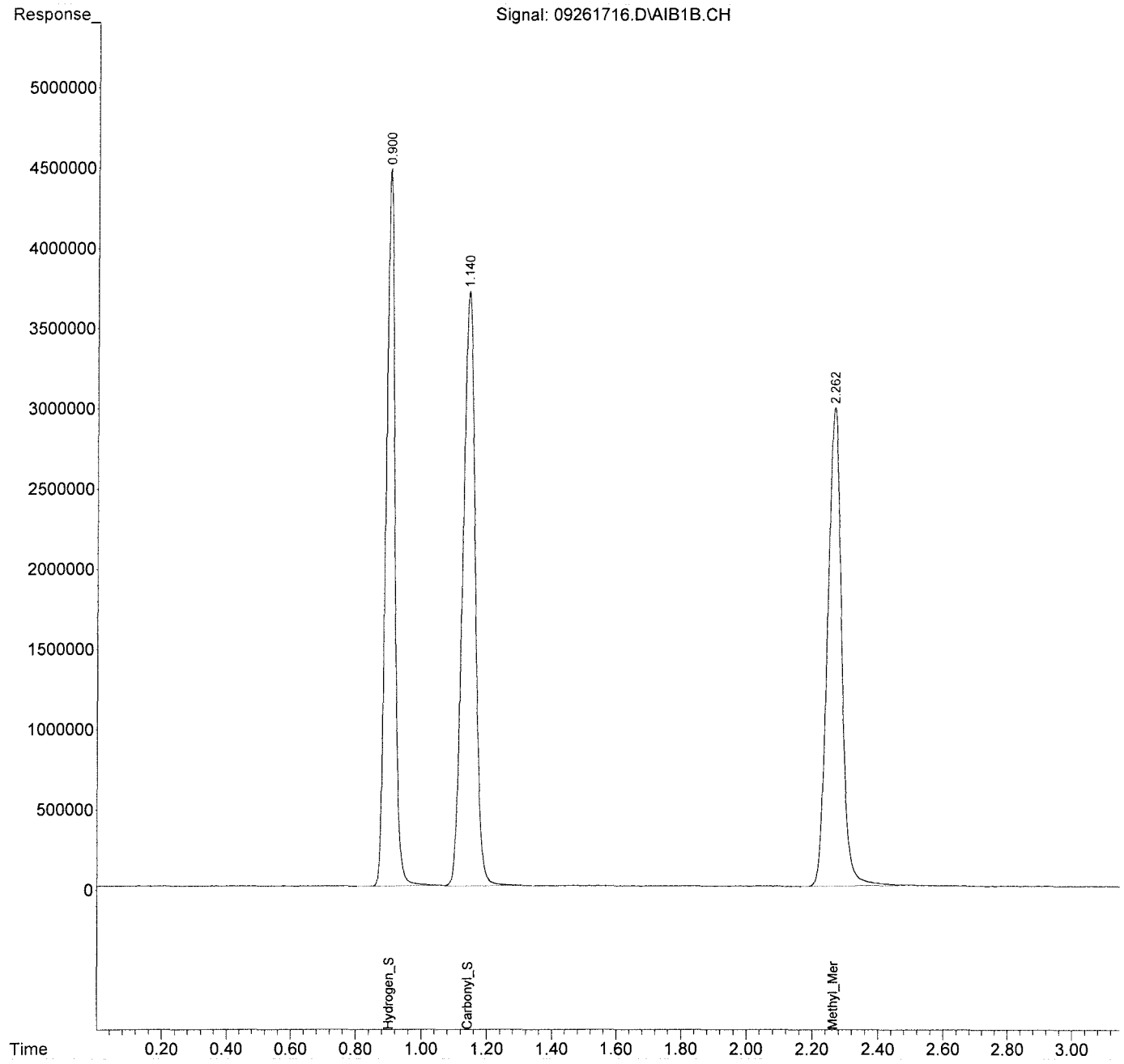
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261716.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 13:41
Operator : MC
Sample : std s32-08211701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:57:21 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261725.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 16:05
Operator : MC
Sample : std s32-08211701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 08:07:56 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	0.901	78478227	961.038	ppb
2)	W	Carbonyl_Sulfide	1.142	85978795	976.361	ppb
3)	T	Methyl_Mercaptan	2.264	78544624	934.506	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	t	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	t	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methyl_Thiophene	0.000	0	N.D.	ppb
17)	t	3-Methyl_Thiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	t	2,5-Dimethyl_Thiophene	0.000	0	N.D.	ppb
20)	T	2-Ethyl_Thiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

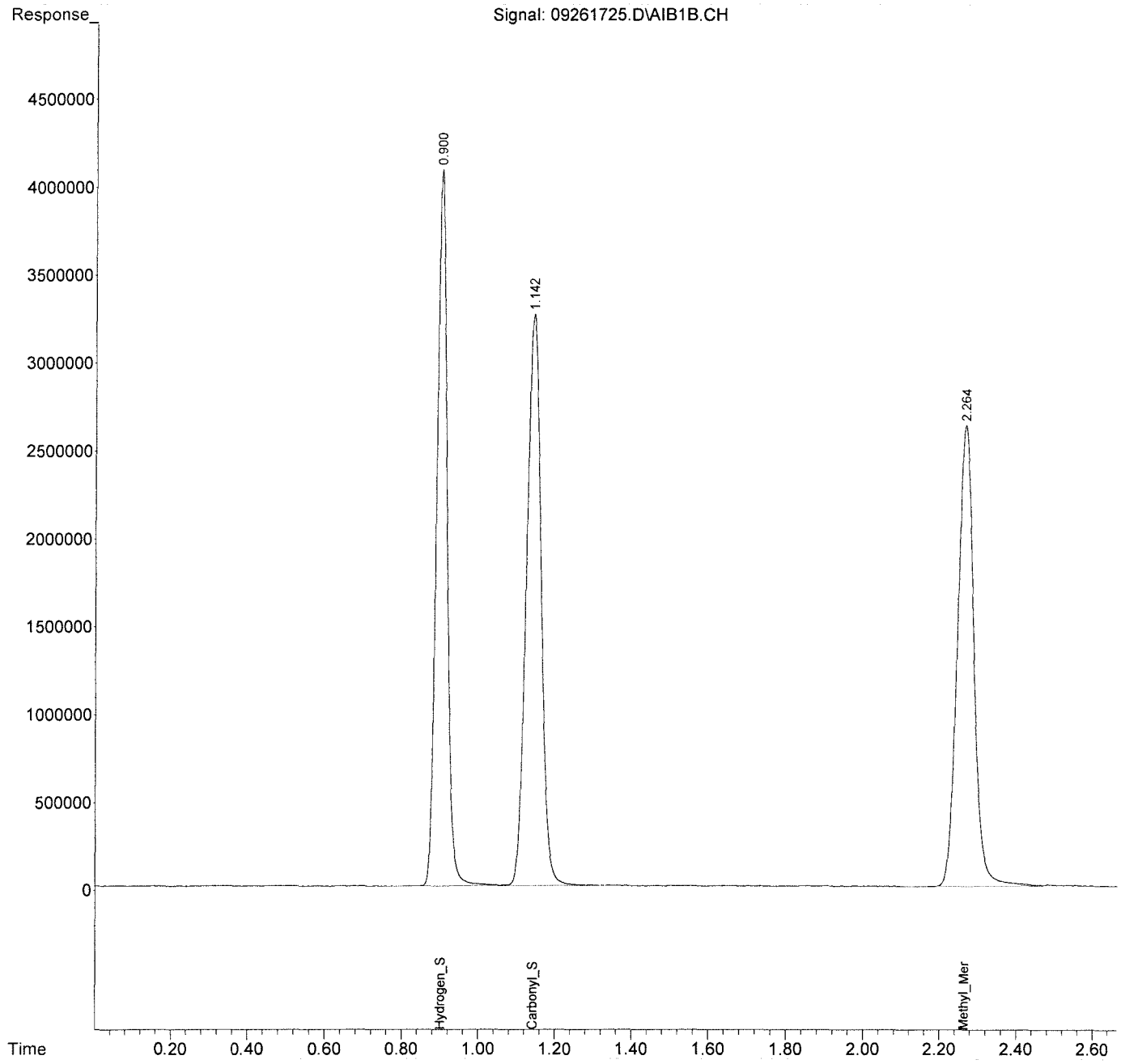
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC13\DATA\SCD\2017_09\26\
Data File : 09261725.D
Signal(s) : AIB1B.CH
Acq On : 26 Sep 2017 16:05
Operator : MC
Sample : std s32-08211701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 08:07:56 2017
Quant Method : J:\GC13\METHODS\GC13_030717.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Mar 07 11:32:15 2017
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



ALS Environmental

REPORT SUMMARY

Method : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
Client : GHD Services Inc.
Analyst : MC

Service Request : P1704726
Instrument : GC #22
Date Acquired : 9/26/17

Compounds	MDL	RL	MB QC		Dry Wall QC		Lab Dup			Continuing Calibration Standards Summary (ppbv)													
			MB					dup	%RSD	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff	ppbv	% Diff
Sample Information :	ppb	ppb	mb 1ml							std s32-08211701		std s32-08211701		std s32-08211701		std s32-08211701							
Inj. Vol. (ml)	1.0	1.0	1.00		1.0	1.0				0.10		0.10		0.10		0.10		0.10		0.10		0.10	
Dilution	1.0	1.0	1.00		1.0	1.0																	
Pi:	1.0	1.0	1.0		1.0	1.0																	
Pi:	1.0	1.0	1.0		1.0	1.0																	
PiPf DF:	1.0	1.0	1.0		1.0	1.0																	
Hydrogen_Sulfide	1.900	5.000	ND	P						1001.05	0.9%	1039.631	2.9%	741.020	26.6%	897.645	11.1%						
Carbonyl_Sulfide	1.700	5.000	ND	P						1103.32	10.3%	1130.445	13.0%	799.102	20.1%	924.876	7.5%						
Methyl_Mercaptan	1.200	5.000	ND	P						1068.56	6.9%	1107.909	10.8%	766.864	23.3%	941.523	5.8%						
Ethyl_Mercaptan	1.200	5.000	ND	P																			
Dimethyl_Sulfide	1.200	5.000	ND	P						7:03 AM		11:20 AM		2:20 PM		4:07 PM							
Carbon_Disulfide	0.600	2.500	ND	P						09261701.d		09261717.d		09261730.d		09261742.d							
2-Propyl_Mercaptan	1.200	5.000	ND	P																			
t-Butyl_Mercaptan	1.200	5.000	ND	P																			
Propyl_Mercaptan	1.200	5.000	ND	P																			
Ethyl_Methyl_Sulfide	1.200	5.000	ND	P																			
Thiophene	1.200	5.000	ND	P																			
i-Butyl_Mercaptan	1.200	5.000	ND	P																			
Diethyl_Sulfide	1.200	5.000	ND	P																			
n-Butyl_Mercaptan	1.200	5.000	ND	P																			
Dimethyl_Disulfide	0.600	2.500	ND	P																			
2-Methylthiophene	1.200	5.000	ND	P																			
3-Methylthiophene	1.200	5.000	ND	P																			
Tetrahydrothiophene	1.200	5.000	ND	P																			
2,5-Dimethylthiophene	1.200	5.000	ND	P																			
2-Ethylthiophene	1.200	5.000	ND	P																			
Diethyl_Disulfide	0.600	2.500	ND	P																			
Methyltrisulfide	0.600	2.500	ND	P																			
Acqisition Time			7:32 AM																				
DataFile			09261705.d																				

LCS / LCS Dup Summary (ppbv)

	ppbv	%R		ppbv	% R	%RPD	Actual
Hydrogen_Sulfide	1028.90	102.9%		1004.05	100.4%	2.44%	1000.00
Carbonyl_Sulfide	1134.69	113.5%		1109.34	110.9%	2.26%	1000.00
Methyl_Mercaptan	1105.96	110.6%		1087.93	108.8%	1.64%	1000.00
Acqisition Time	7:06 AM			7:10 AM			
DataFile	09261702.d			09261703.d			

120 of 134

MC 9/28/17

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_09\26\
Data File : 09261701.d
Signal(s) : AIB1A.ch
Acq On : 26 Sep 2017 7:03
Operator : MC
Sample : std s32-08211701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 26 07:06:09 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	1.172	38348755	1001.049	ppb
2)	W	Carbonyl_Sulfide	1.347	46437116	1103.323	ppb
3)	T	Methyl_Mercaptan	2.157	40173026	1068.555	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

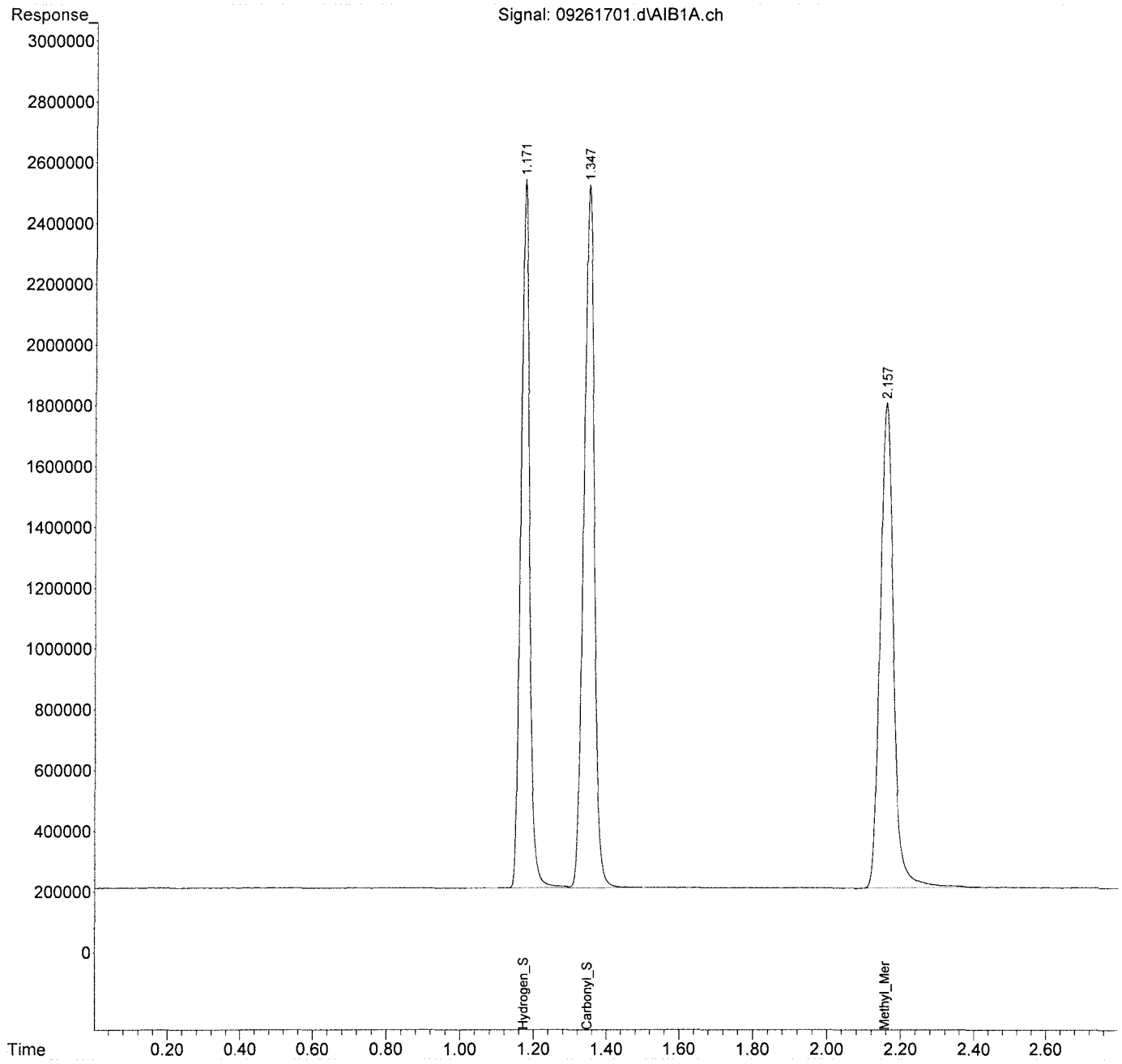
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_09\26\
Data File : 09261701.d
Signal(s) : AIB1A.ch
Acq On : 26 Sep 2017 7:03
Operator : MC
Sample : std s32-08211701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 26 07:06:09 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_09\26\
Data File : 09261717.d
Signal(s) : AIB1A.ch
Acq On : 26 Sep 2017 11:20
Operator : MC
Sample : std s32-08211701
Misc :
ALS Vial : 17 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:09:51 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	1.149	39826773	1039.631	ppb
2)	W	Carbonyl_Sulfide	1.321	47578610	1130.445	ppb
3)	T	Methyl_Mercaptan	2.124	41652562	1107.909	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

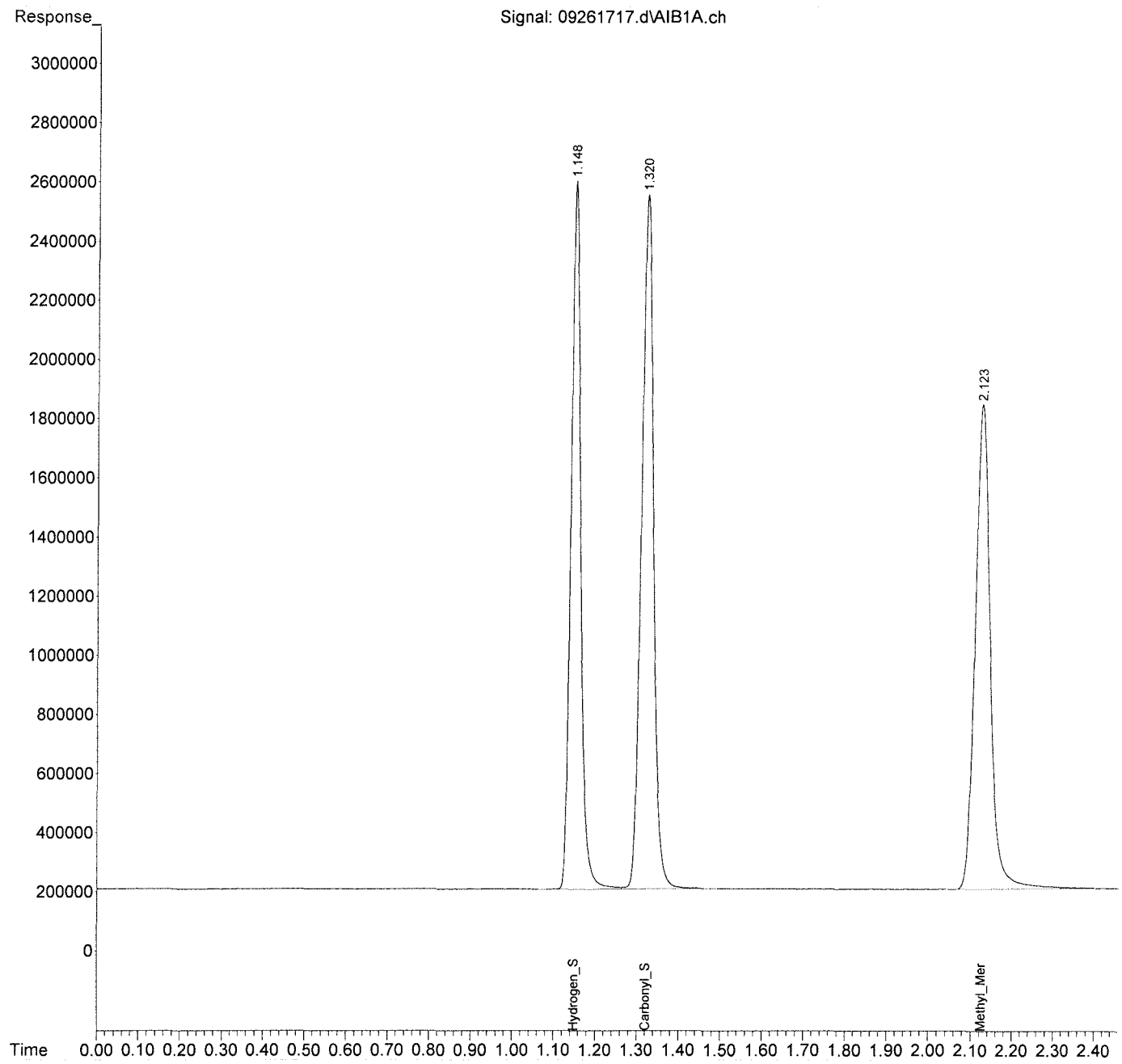
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_09\26\
Data File : 09261717.d
Signal(s) : AIB1A.ch
Acq On : 26 Sep 2017 11:20
Operator : MC
Sample : std s32-08211701
Misc :
ALS Vial : 17 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:09:51 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_09\26\
Data File : 09261730.d
Signal(s) : AIB1A.ch
Acq On : 26 Sep 2017 14:20
Operator : MC
Sample : std s32-08211701
Misc :
ALS Vial : 30 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 26 14:27:54 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	1.176	28387401	741.020	ppb
2)	W	Carbonyl_Sulfide	1.352	33632929	799.102	ppb
3)	T	Methyl_Mercaptan	2.163	28830743	766.864	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	6.362	596142	7.928	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

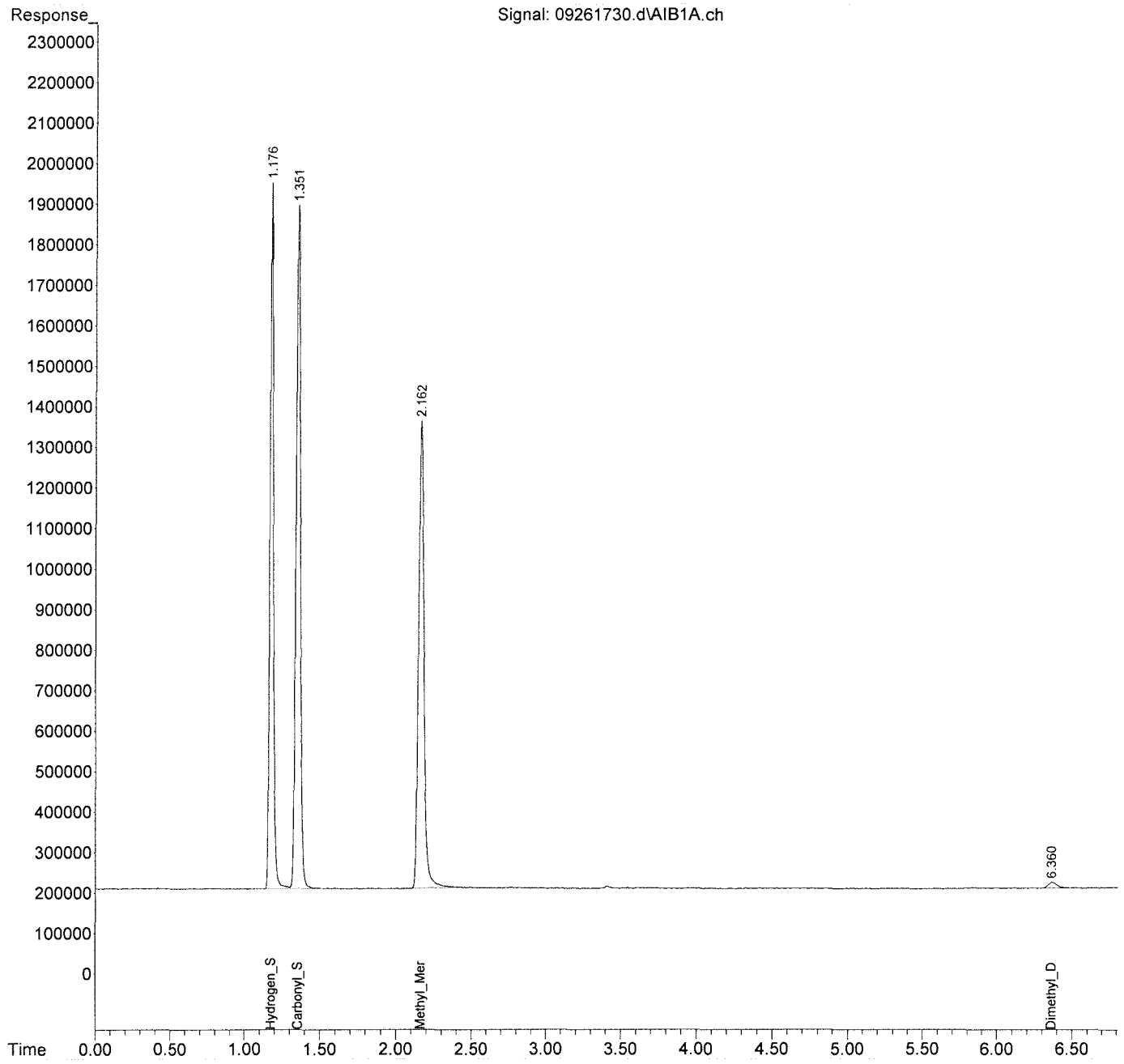
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_09\26\
Data File : 09261730.d
Signal(s) : AIB1A.ch
Acq On : 26 Sep 2017 14:20
Operator : MC
Sample : std s32-08211701
Misc :
ALS Vial : 30 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 26 14:27:54 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_09\26\
Data File : 09261742.d
Signal(s) : AIB1A.ch
Acq On : 26 Sep 2017 16:07
Operator : MC
Sample : std s32-08211701
Misc :
ALS Vial : 42 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:11:26 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Target Compounds						
1)	Z	Hydrogen_Sulfide	1.165	34387503	897.645	ppb
2)	W	Carbonyl_Sulfide	1.340	38926564	924.876	ppb
3)	T	Methyl_Mercaptan	2.149	35397190	941.523	ppb
4)	T	Ethyl_Mercaptan	0.000	0	N.D.	ppb
5)	T	Dimethyl_Sulfide	0.000	0	N.D.	ppb
6)	T	Carbon_Disulfide	0.000	0	N.D.	ppb
7)	T	2-Propyl_Mercaptan	0.000	0	N.D.	ppb
8)	T	t-Butyl_Mercaptan	0.000	0	N.D.	ppb
9)	T	Propyl_Mercaptan	0.000	0	N.D.	ppb
10)	T	Ethyl_Methyl_Sulfide	0.000	0	N.D.	ppb
11)	T	Thiophene	0.000	0	N.D.	ppb
12)	T	i-Butyl_Mercaptan	0.000	0	N.D.	ppb
13)	T	Diethyl_Sulfide	0.000	0	N.D.	ppb
14)	T	n-Butyl_Mercaptan	0.000	0	N.D.	ppb
15)	T	Dimethyl_Disulfide	0.000	0	N.D.	ppb
16)	T	2-Methylthiophene	0.000	0	N.D.	ppb
17)	T	3-Methylthiophene	0.000	0	N.D.	ppb
18)	T	Tetrahydrothiophene	0.000	0	N.D.	ppb
19)	T	2,5-Dimethylthiophene	0.000	0	N.D.	ppb
20)	T	2-Ethylthiophene	0.000	0	N.D.	ppb
21)	T	Diethyl_Disulfide	0.000	0	N.D.	ppb
22)	T	Methyltrisulfide	0.000	0	N.D.	ppb

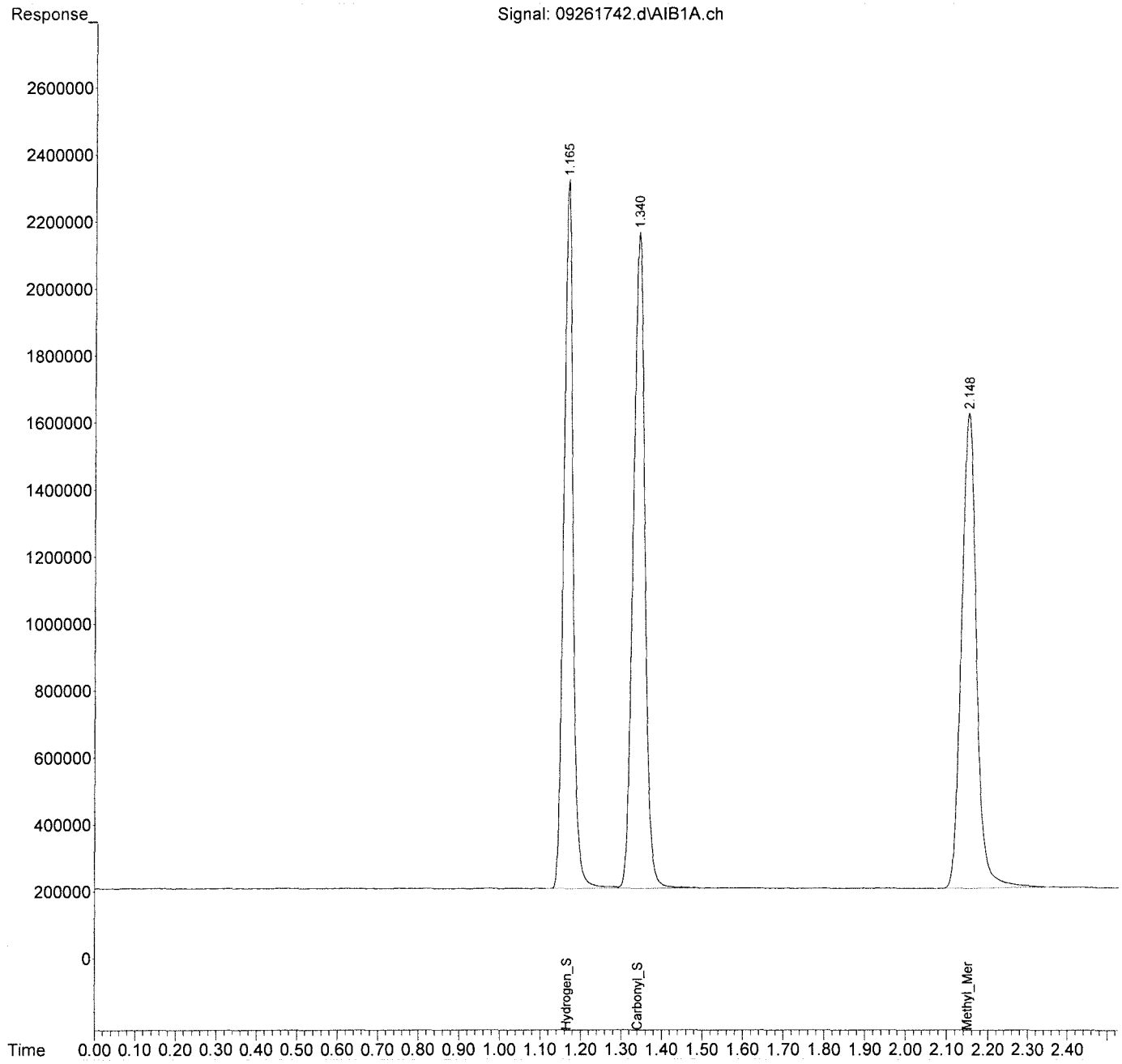
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC22\DATA\SCD\2017_09\26\
Data File : 09261742.d
Signal(s) : AIB1A.ch
Acq On : 26 Sep 2017 16:07
Operator : MC
Sample : std s32-08211701
Misc :
ALS Vial : 42 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 27 07:11:26 2017
Quant Method : J:\GC22\METHODS\GC22_Quan 02272017.M
Quant Title : ASTM D5504, VOA-S307M_SCD, VOA SH2O_SCD
QLast Update : Tue Feb 28 07:11:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Injection Log

Directory: I:\GC22\DATA\SCD\2017_02\27\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Acquisition Method	Comments
1	2/27/17 7:47	02271701.D	test		MC	GC22ACQ.M	
2	2/27/17 7:50	02271702.D	test		MC	GC22ACQ.M	
3	2/27/17 7:53	02271703.D	test		MC	GC22ACQ.M	
4	2/27/17 7:59	02271704.D	test		MC	GC22ACQ.M	
5	2/27/17 8:03	02271705.D	test		MC	GC22ACQ.M	
6	2/27/17 8:07	02271706.D	test		MC	GC22ACQ.M	
7	2/27/17 8:11	02271707.D	test		MC	GC22ACQ.M	
8	2/27/17 8:22	02271708.D	test		MC	GC22ACQ.M	
9	2/27/17 8:33	02271709.D	0.1ml s30-02271702 2.525ppm		MC	GC22ACQ.M	Pass
10	2/27/17 8:38	02271710.D	0.4ml s30-02271702 10.1ppb		MC	GC22ACQ.M	Pass
11	2/27/17 8:49	02271711.D	0.1ml s30-02271703 50.5ppb		MC	GC22ACQ.M	Pass
12	2/27/17 8:53	02271712.D	0.5ml s30-02271703 252.5ppb		MC	GC22ACQ.M	Pass
13	2/27/17 8:58	02271713.D	0.1ml s30-02271701 1010ppb		MC	GC22ACQ.M	Pass
14	2/27/17 9:01	02271714.D	0.25ml s30-02271701 2525ppb		MC	GC22ACQ.M	Pass
15	2/27/17 9:11	02271715.D	0.5ml s30-02271701 5050ppb		MC	GC22ACQ.M	Pass
16	2/27/17 9:18	02271716.D	1ml s30-02271701 10ppm		MC	GC22ACQ.M	Pass
17	2/27/17 9:27	02271717.D	0.025ml s30-11031401 25ppm		MC	GC22ACQ.M	Pass
18	2/27/17 9:31	02271718.D	rt		MC	GC22ACQ.M	Pass
19	2/27/17 9:57	02271719.D	0.025ml s30-11 25ppm		MC	GC22ACQ.M	Not used
20	2/27/17 10:13	02271720.D	mb 1ml		MC	GC22ACQ.M	Pass
21	2/27/17 10:32	02271721.D	ICV s30-02171702		MC	GC22ACQ.M	Fail
22	2/27/17 10:35	02271722.D	ICV s30-02171702		MC	GC22ACQ.M	Pass

Injection Log

Directory: I:\GC13\DATA\SCD\2017_03\07\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Acquisition Method	Comments
1	3/7/17 7:32	03071701.D	std s30-02171701		MC	GC13SCD2.M	Test
2	3/7/17 7:35	03071702.D	std s30-02171701		MC	GC13SCD2.M	Test
3	3/7/17 8:22	03071703.D	.1ml		MC	GC13SCD2.M	Test
4	3/7/17 8:29	03071704.D	.1ml		MC	GC13SCD2.M	Test
5	3/7/17 8:33	03071705.D	.1ml		MC	GC13SCD2.M	Test
6	3/7/17 8:46	03071706.D	.1ml		MC	GC13SCD2.M	Test
7	3/7/17 8:49	03071707.D	.1ml		MC	GC13SCD2.M	Test
8	3/7/17 8:58	03071708.D	.1ml		MC	GC13SCD2.M	Test
9	3/7/17 9:06	03071709.D	.1ml		MC	GC13SCD2.M	Test
10	3/7/17 9:14	03071710.D	.1ml		MC	GC13SCD2.M	Test
11	3/7/17 9:27	03071711.D	.1ml		MC	GC13SCD2.M	Test
12	3/7/17 9:31	03071712.D	.1ml		MC	GC13SCD2.M	Test
13	3/7/17 9:35	03071713.D	0.1ml 2.52ppb s30-03071702		MC	GC13SCD2.M	Curve
14	3/7/17 9:44	03071714.D	0.4ml 10.1ppb s30-03071702		MC	GC13SCD2.M	Curve
15	3/7/17 9:54	03071715.D	0.1ml 50.5 s30-03071703		MC	GC13SCD2.M	Curve
16	3/7/17 10:02	03071716.D	0.5ml 252.5ppb s30-03071703		MC	GC13SCD2.M	Curve
17	3/7/17 10:06	03071717.D	0.1ml 1010ppb s30-03071701		MC	GC13SCD2.M	Curve
18	3/7/17 10:10	03071718.D	0.25ml 2525ppb s30-03071701		MC	GC13SCD2.M	Curve
19	3/7/17 10:16	03071719.D	0.5ml 5050ppb s30-03071701		MC	GC13SCD2.M	Curve
20	3/7/17 10:21	03071720.D	1ml 10100ppb s30-03071701		MC	GC13SCD2.M	Curve
21	3/7/17 10:26	03071721.D	0.025ml 25ppm s30-11031401		MC	GC13SCD2.M	Curve
22	3/7/17 10:31	03071722.D	x0.05ml		MC	GC13SCD2.M	
23	3/7/17 10:36	03071723.D	0.05ml 50ppm s30-11031401		MC	GC13SCD2.M	Curve
24	3/7/17 10:55	03071724.D	ICV s30-02171701		MC	GC13SCD2.M	Pass
25	3/7/17 11:00	03071725.D	rt		MC	GC13SCD2.M	Pass
26	3/7/17 11:20	03071726.D	mb 1ml		MC	GC13SCD2.M	Pass
27	3/7/17 11:43	03071727.D	mb 1ml		MC	GC13SCD2.M	Pass
28	3/7/17 12:03	03071728.D	2.5ppb s30-03071702 mdl-1		MC	GC13SCD2.M	MDL
29	3/7/17 12:45	03071729.D	2.5ppb s30-03071702 mdl-2		MC	GC13SCD2.M	MDL
30	3/7/17 12:50	03071730.D	2.5ppb s30-03071702 mdl-3		MC	GC13SCD2.M	MDL
31	3/7/17 12:54	03071731.D	2.5ppb s30-03071702 mdl-4		MC	GC13SCD2.M	MDL
32	3/7/17 12:58	03071732.D	2.5ppb s30-03071702 mdl-5		MC	GC13SCD2.M	MDL
33	3/7/17 13:02	03071733.D	2.5ppb s30-03071702 mdl-6		MC	GC13SCD2.M	MDL
34	3/7/17 13:05	03071734.D	2.5ppb s30-03071702 mdl-7		MC	GC13SCD2.M	MDL
35	3/7/17 13:09	03071735.D	2.5ppb s30-03071702 LOD		MC	GC13SCD2.M	LOD
36	3/7/17 13:53	03071736.D	std s30-02171701		MC	GC13SCD2.M	Pass
37	3/7/17 13:58	03071737.D	lcs s30-02171702		MC	GC13SCD2.M	Pass
38	3/7/17 14:01	03071738.D	lcsd s30-02171702		MC	GC13SCD2.M	Pass

Injection Log

Directory: I:\GC13\DATA\SCD\2017_03\07\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Acquisition Method	Comments
39	3/7/17 14:05	03071739.D	rt		MC	GC13SCD2.M	Pass
40	3/7/17 14:24	03071740.D	mb 1ml		MC	GC13SCD2.M	Pass
41	3/7/17 14:37	03071741.D	QC as00114 1ml		MC	GC13SCD2.M	
42	3/7/17 14:52	03071742.D	1106-003 1ml		MC	GC13SCD2.M	
43	3/7/17 15:13	03071743.D	1106-004 1ml		MC	GC13SCD2.M	
44	3/7/17 15:32	03071744.D	1106-006 1ml		MC	GC13SCD2.M	
45	3/7/17 15:52	03071745.D	1106-005 1ml		MC	GC13SCD2.M	
46	3/7/17 16:13	03071746.D	1106-001 1ml		MC	GC13SCD2.M	
47	3/7/17 16:30	03071747.D	1106-002 1ml		MC	GC13SCD2.M	
48	3/7/17 16:46	03071748.D	1105-001 0.5ml		MC	GC13SCD2.M	
49	3/7/17 17:01	03071749.D	1097-003 0.1ml		MC	GC13SCD2.M	
50	3/7/17 17:13	03071750.D	1097-002 1ml		MC	GC13SCD2.M	
51	3/7/17 17:26	03071751.D	std s30-02171701		MC	GC13SCD2.M	Pass

Injection Log

Directory: I:\GC13\DATA\SCD\2017_09\26\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Acquisition Method	Comments
1	9/26/17 7:03	09261701.D	std s32-08211701		MC	GC13SCD2.M	Pass
2	9/26/17 7:07	09261702.D	lcs s32-08211702		MC	GC13SCD2.M	Pass
3	9/26/17 7:10	09261703.D	lcsd s32-08211702		MC	GC13SCD2.M	Pass
4	9/26/17 7:14	09261704.D	rt		MC	GC13SCD2.M	Pass
5	9/26/17 7:33	09261705.D	mb 1ml		MC	GC13SCD2.M	Pass
6	9/26/17 9:57	09261706.D	P1704713-001 1ml		MC	GC13SCD2.M	
7	9/26/17 10:15	09261707.D	P1704713-002 1ml		MC	GC13SCD2.M	
8	9/26/17 10:29	09261708.D	P1704713-003 1ml		MC	GC13SCD2.M	
9	9/26/17 10:48	09261709.D	P1704713-004 1ml		MC	GC13SCD2.M	
10	9/26/17 11:08	09261710.D	P1704713-005 1ml		MC	GC13SCD2.M	
11	9/26/17 11:28	09261711.D	P1704713-006 1ml		MC	GC13SCD2.M	
12	9/26/17 11:45	09261712.D	P1704713-007 1ml		MC	GC13SCD2.M	
13	9/26/17 12:43	09261713.D	P1704713-008 1ml		MC	GC13SCD2.M	
14	9/26/17 13:04	09261714.D	P1704713-009 1ml		MC	GC13SCD2.M	
15	9/26/17 13:22	09261715.D	P1704713-010 1ml		MC	GC13SCD2.M	
16	9/26/17 13:41	09261716.D	std s32-08211701		MC	GC13SCD2.M	Pass
17	9/26/17 13:54	09261717.D	P1704713-011 1ml		MC	GC13SCD2.M	
18	9/26/17 14:12	09261718.D	P1704713-012 1ml		MC	GC13SCD2.M	
19	9/26/17 14:32	09261719.D	P1704713-013 1ml		MC	GC13SCD2.M	
20	9/26/17 14:51	09261720.D	P1704726-001 1ml		MC	GC13SCD2.M	
21	9/26/17 15:05	09261721.D	P1704726-003 1ml		MC	GC13SCD2.M	
22	9/26/17 15:21	09261722.D	P1704726-005 1ml		MC	GC13SCD2.M	
23	9/26/17 15:35	09261723.D	P1704726-008 1ml		MC	GC13SCD2.M	
24	9/26/17 15:48	09261724.D	P1704726-009 1ml		MC	GC13SCD2.M	
25	9/26/17 16:05	09261725.D	std s32-08211701		MC	GC13SCD2.M	Pass

Injection Log

Directory: I:\GC22\DATA\SCD\2017_09\26\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Acquisition Method	Comments
1	9/26/17 7:03	09261701.D	std s32-0821170		MC	GC22ACQ.M	Pass
2	9/26/17 7:06	09261702.D	lcs s32-0821170		MC	GC22ACQ.M	Pass
3	9/26/17 7:10	09261703.D	lcsd s32-08211702		MC	GC22ACQ.M	Pass
4	9/26/17 7:14	09261704.D	rt		MC	GC22ACQ.M	Pass
5	9/26/17 7:32	09261705.D	mb 1ml		MC	GC22ACQ.M	Pass
6	9/26/17 7:50	09261706.D	bag blank 1ml		MC	GC22ACQ.M	Pass
7	9/26/17 8:07	09261707.D	P1704532-002 1ml(10->300)		MC	GC22ACQ.M	
8	9/26/17 8:25	09261708.D	P1704532-001 1ml(10->300)		MC	GC22ACQ.M	
9	9/26/17 8:42	09261709.D	P1704712-001 1ml		MC	GC22ACQ.M	
10	9/26/17 8:59	09261710.D	P1704712-001 1ml		MC	GC22ACQ.M	
11	9/26/17 9:58	09261712.D	P1704531-001 1ml(10->300)		MC	GC22ACQ.M	
12	9/26/17 10:15	09261713.D	P1704531-002 1ml(10->300)		MC	GC22ACQ.M	
13	9/26/17 10:36	09261714.D	P1704531-003 1ml(10->300)		MC	GC22ACQ.M	
14	9/26/17 10:53	09261715.D	P1704531-004 1ml(10->300)		MC	GC22ACQ.M	
15	9/26/17 11:11	09261716.D	P1704714-001 0.7ml(x100)		MC	GC22ACQ.M	
16	9/26/17 11:20	09261717.D	std s32-08211701		MC	GC22ACQ.M	Pass
17	9/26/17 11:32	09261718.D	P1704714-001 0.4ml(x100)		MC	GC22ACQ.M	
18	9/26/17 11:48	09261719.D	P1704714-001 0.1ml(x100)		MC	GC22ACQ.M	
19	9/26/17 12:42	09261720.D	P1704715-001 0.1ml		MC	GC22ACQ.M	
20	9/26/17 12:50	09261721.D	P1704715-002 0.1ml		MC	GC22ACQ.M	
21	9/26/17 13:07	09261722.D	QC as01191 1ml		MC	GC22ACQ.M	
22	9/26/17 13:20	09261723.D	QC as01048 1ml		MC	GC22ACQ.M	
23	9/26/17 13:37	09261724.D	QC as00977 1ml		MC	GC22ACQ.M	
24	9/26/17 13:50	09261725.D	QC as00928 1ml		MC	GC22ACQ.M	
25	9/26/17 14:04	09261726.D	P1704724-001 1ml		MC	GC22ACQ.M	
26	9/26/17 14:08	09261727.D	P1704724-002 1ml		MC	GC22ACQ.M	
27	9/26/17 14:13	09261728.D	P1704724-003 1ml		MC	GC22ACQ.M	
28	9/26/17 14:17	09261729.D	P1704724-004 1ml		MC	GC22ACQ.M	
29	9/26/17 14:20	09261730.D	std s32-08211701		MC	GC22ACQ.M	Pass
30	9/26/17 14:38	09261731.D	P1704727-001 1ml		MC	GC22ACQ.M	
31	9/26/17 14:46	09261732.D	P1704727-002 1ml		MC	GC22ACQ.M	
32	9/26/17 14:51	09261733.D	P1704727-003 1ml		MC	GC22ACQ.M	
33	9/26/17 14:53	09261734.D	P1704727-004 1ml		MC	GC22ACQ.M	
34	9/26/17 15:04	09261735.D	P1704686-001 1ml		MC	GC22ACQ.M	
35	9/26/17 15:17	09261736.D	P1704686-002 1ml		MC	GC22ACQ.M	
36	9/26/17 15:32	09261737.D	P1704726-007 1ml		MC	GC22ACQ.M	
37	9/26/17 15:47	09261738.D	lcs		MC	GC22ACQ.M	Pass
38	9/26/17 15:51	09261739.D	lcs		MC	GC22ACQ.M	Pass

Injection Log

Directory: I:\GC22\DATA\SCD\2017_09\26\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Acquisition Method	Comments
39	9/26/17 15:54	09261740.D	allyl sulfide rt		MC	GC22ACQ.M	
40	9/26/17 15:55	09261741.D	allyl sulfide rt		MC	GC22ACQ.M	
41	9/26/17 16:07	09261742.D	std s32-08211701		MC	GC22ACQ.M	Pass