



received 02/29/2011  
Complaint 200339399

## GC/MS Volatiles

### Case Narrative

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## Colorado Oil & Gas Conservation Commission

Complaint 200339399

Work Order Number: 1202195

1. This report consists of 1 water sample. The sample was received cool and intact by ALS on 02/16/12.

The aqueous sample was free of headspace prior to analysis.

The sample had a pH < 2 at the time of analysis.

2. The sample was prepared according to SW-846, 3rd Edition procedures. Specifically, the water sample was prepared using purge and trap procedures based on Method 5030C.
3. The sample was analyzed using GC/MS with an RTX-624, RTX-VMS, or equivalent capillary column according to SOP 525 Revision 15 based on SW-846 Method 8260. All positive results were quantitated against the initial calibration standards using the internal standard technique. The identification of positive results was achieved by a comparison of the retention time and mass spectrum of the sample versus the daily calibration standard.
4. All initial calibration criteria were met.
5. All initial calibrations are verified by comparing a second source standard calibration verification (ICV) against the calibration curve. All criteria for initial calibration verification were met.
6. All criteria were met in daily (continuing) calibration verifications (CCV).
7. Methylene chloride, acetone and 2-butanone are common laboratory contaminants. In order to minimize the levels of these compounds detected in the gc/ms analysis, ALS has designated its volatile laboratory as a restricted access area. In addition, the laboratory has been equipped with a dedicated, air intake and exhaust system that operates under positive pressure in order to minimize cross contamination of these compounds. Due to fluctuations in ambient laboratory conditions, reported sample values for common laboratory contaminants may be due to lab contamination even if the compound in question is not detected in the associated method blank.



All method blank criteria were met.

8. All laboratory control sample and laboratory control sample duplicate recoveries and RPDs were within the acceptance criteria.
9. Since a sample from this order number was not the selected quality control (QC) sample, matrix specific QC results are not included in this report.
10. The sample was analyzed within the established holding time.
11. All surrogate recoveries were within acceptance criteria.
12. All internal standard recoveries were within acceptance criteria.
13. Manual integrations are performed when needed to provide consistent and defensible data following the guidelines in SOP 939 Revision 4.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Emily Hellickson

Emily Hellickson  
Organics Primary Data Reviewer

A handwritten signature of Emily Hellickson.

Organics Final Data Reviewer

21 Feb. 12

Date

2/23/12

Date



**ALS**  
**Data Qualifier Flags**  
**Chromatography and Mass Spectrometry**

- U or ND:** This flag indicates that the compound was analyzed for but not detected.
- J:** This flag indicates an estimated value. This flag is used as follows : (1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; (2) when the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the reporting limit (RL) but greater than the method detection limit (MDL); (3) when the retention time data indicate the presence of a compound that meets the GC identification criteria, and the result is less than the RL but greater than the MDL; and (4) the reported value is estimated.
- B:** This flag is used when the analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user. This flag shall be used for a tentatively identified compound (TIC) as well as for a positively identified target compound.
- E:** This flag identifies compounds whose concentration exceeds the upper level of the calibration range.
- A:** This flag indicates that a tentatively identified compound is a suspected aldol-condensation product.
- X:** This flag indicates that the analyte was diluted below an accurate quantitation level.
- \*:** This flag indicates that a spike recovery is equal to or outside the control criteria used.
- +**: This flag indicates that the relative percent difference (RPD) equals or exceeds the control criteria.

# ALS Environmental -- FC

## Sample Number(s) Cross-Reference Table

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**OrderNum:** 1202195

**Client Name:** Colorado Oil & Gas Conservation Commission

**Client Project Name:** Complaint 200339399

**Client Project Number:**

**Client PO Number:** PHA 12-10

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| Client Sample Number | Lab Sample Number | COC Number | Matrix | Date Collected | Time Collected |
|----------------------|-------------------|------------|--------|----------------|----------------|
| 705325 Nosaka WW     | 1202195-1         |            | WATER  | 14-Feb-12      | 14:17          |





## CONDITION OF SAMPLE UPON RECEIPT FORM

Client: COGCCWorkorder No: 1202195Project Manager: ARWInitials: LAS Date: 2/16/12

|  |                  |     |                 |    |
|--|------------------|-----|-----------------|----|
| 1. Does this project require any <b>special handling</b> in addition to standard Paragon procedures?   | YES              | NO  |                 |    |
| 2. Are custody <b>seals on shipping containers</b> intact?   | NONE             | YES | NO              |    |
| 3. Are Custody seals on <b>sample containers</b> intact?   | NONE             | YES | NO              |    |
| 4. Is there a <b>COC (Chain-of-Custody)</b> present or other representative documents?   | YES              | NO  |                 |    |
| 5. Are the <b>COC and bottle labels complete and legible?</b>  | YES              | NO  |                 |    |
| 6. Is the <b>COC in agreement</b> with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)  | YES              | NO  |                 |    |
| 7. Were <b>airbills / shipping documents</b> present and/or removable?   | DROP OFF         | YES | NO              |    |
| 8. Are all aqueous samples requiring preservation <b>preserved correctly? (excluding volatiles)</b>  | N/A              | YES | NO              |    |
| 9. Are all aqueous <b>non-preserved samples pH 4-9?</b>  | N/A              | YES | NO              |    |
| 10. Is there <b>sufficient sample</b> for the requested analyses?  | YES              | NO  |                 |    |
| 11. Were all samples placed in the <b>proper containers</b> for the requested analyses?  | YES              | NO  |                 |    |
| 12. Are all samples within <b>holding times</b> for the requested analyses?  | YES              | NO  |                 |    |
| 13. Were all sample containers received <b>intact?</b> (not broken or leaking, etc.)   | YES              | NO  |                 |    |
| 14. Are all samples requiring <b>no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon)</b> headspace free? Size of bubble: <u>X</u> < green pea      > green pea  | N/A              | YES | NO              |    |
| 15. Do perchlorate LCMS-MS samples have headspace? (at least 1/3 of container required)  | N/A              | YES | NO              |    |
| 16. Were samples checked for and free from the presence of <b>residual chlorine?</b><br>(Applicable when PM has indicated samples are from a chlorinated water source; note if field preservation with sodium thiosulfate was not observed.) | N/A              | YES | NO              |    |
| 17. Were the samples <b>shipped on ice?</b>  | YES              | NO  |                 |    |
| 18. Were cooler temperatures measured at 0.1-6.0°C?  | IR gun used*: #2 | #4  | RAD ONLY<br>YES | NO |
| Cooler #: <u>1</u>   |                  |     |                 |    |
| Temperature (°C): <u>1.6</u>   |                  |     |                 |    |
| No. of custody seals on cooler: <u>1</u>   |                  |     |                 |    |
| External µR/hr reading: <u>14</u>  |                  |     |                 |    |
| Background µR/hr reading: <u>11</u>  |                  |     |                 |    |
| Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? YES / NO / NA (If no, see Form 008.)   |                  |     |                 |    |

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

\*14 1202195-1-6(705325 Nos9ka) for DISS. Gases arrived with  
headspace ≤ pea-size.

If applicable, was the client contacted? YES / NO / NA Contact: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Project Manager Signature / Date: C. Wolf 2/16/12

From: (719) 846-3091  
Peter Gintautas  
Colo. Oil & Gas Cons. Comm.  
213 Conundrum RD

Timidad, CO 81082

Origin ID: PUJA  
**FedEx®**  
Business



J1210111219025

BILL SENDER

SHIP TO: (970) 490-1511  
**Amy Wolf**  
**ALS Laboratory Group**  
**225 COMMERCE DR**  
  
**FORT COLLINS, CO 80524**

Ship Date: 15FEB12  
ActWgt: 34.0 LB  
CAD: 4076443/NET3250

Delivery Address Bar Code

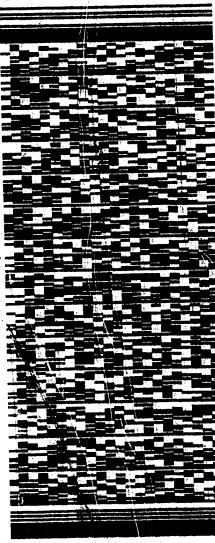


Ref #  
Invoice #  
PO #  
Dept #

Complaint 200339399

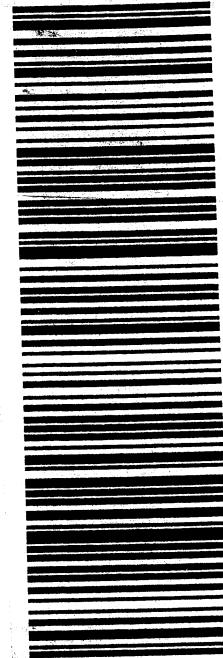
THU - 16 FEB A2  
PRIORITY OVERNIGHT

TRK# 7932 3213 0507  
0201



80524  
COUS  
DEN

72 FTCA



512G18F59A278

1.6

120219S

# GC/MS Volatiles

## Method SW8260\_25C

### Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1202195

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200339399

Lab ID: VL120217-3MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 17-Feb-12

Date Analyzed: 17-Feb-12

Prep Method: SW5030 Rev C

Prep Batch: VL120217-3

QCBatchID: VL120217-3-2

Run ID: VL120217-3A

Cleanup: NONE

Basis: N/A

File Name: C34498

Sample Aliquot: 10 ml

Final Volume: 10 ml

Result Units: UG/L

Clean DF: 1

| CASNO     | Target Analyte                    | DF | Result | Reporting Limit | Result Qualifier | EPA Qualifier |
|-----------|-----------------------------------|----|--------|-----------------|------------------|---------------|
| 75-71-8   | DICHLORODIFLUOROMETHANE           | 1  | 1      | 1               | U                |               |
| 74-87-3   | CHLOROMETHANE                     | 1  | 1      | 1               | U                |               |
| 75-01-4   | VINYL CHLORIDE                    | 1  | 1      | 1               | U                |               |
| 74-83-9   | BROMOMETHANE                      | 1  | 1      | 1               | U                |               |
| 75-00-3   | CHLOROETHANE                      | 1  | 1      | 1               | U                |               |
| 75-69-4   | TRICHLOROFUOROMETHANE             | 1  | 1      | 1               | U                |               |
| 75-35-4   | 1,1-DICHLOROETHENE                | 1  | 1      | 1               | U                |               |
| 76-13-1   | 1,1,2-TRICHLORO-1,2,2-TRIFLUOROET | 1  | 1      | 1               | U                |               |
| 67-64-1   | ACETONE                           | 1  | 10     | 10              | U                |               |
| 74-88-4   | IODOMETHANE                       | 1  | 1      | 1               | U                |               |
| 75-15-0   | CARBON DISULFIDE                  | 1  | 1      | 1               | U                |               |
| 75-09-2   | METHYLENE CHLORIDE                | 1  | 1      | 1               | U                |               |
| 156-60-5  | TRANS-1,2-DICHLOROETHENE          | 1  | 1      | 1               | U                |               |
| 1634-04-4 | METHYL TERTIARY BUTYL ETHER       | 1  | 1      | 1               | U                |               |
| 75-34-3   | 1,1-DICHLOROETHANE                | 1  | 1      | 1               | U                |               |
| 108-05-4  | VINYL ACETATE                     | 1  | 2      | 2               | U                |               |
| 156-59-2  | CIS-1,2-DICHLOROETHENE            | 1  | 1      | 1               | U                |               |
| 78-93-3   | 2-BUTANONE                        | 1  | 10     | 10              | U                |               |
| 74-97-5   | BROMOCHLOROMETHANE                | 1  | 1      | 1               | U                |               |
| 67-66-3   | CHLOROFORM                        | 1  | 1      | 1               | U                |               |
| 71-55-6   | 1,1,1-TRICHLOROETHANE             | 1  | 1      | 1               | U                |               |
| 594-20-7  | 2,2-DICHLOROPROPANE               | 1  | 1      | 1               | U                |               |
| 56-23-5   | CARBON TETRACHLORIDE              | 1  | 1      | 1               | U                |               |
| 563-58-6  | 1,1-DICHLOROPROPENE               | 1  | 1      | 1               | U                |               |
| 107-06-2  | 1,2-DICHLOROETHANE                | 1  | 1      | 1               | U                |               |
| 71-43-2   | BENZENE                           | 1  | 1      | 1               | U                |               |
| 79-01-6   | TRICHLOROETHENE                   | 1  | 1      | 1               | U                |               |

Data Package ID: VL1202195-1

Date Printed: Tuesday, February 21, 2012

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# GC/MS Volatiles

## Method SW8260\_25C

### Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1202195

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200339399

Lab ID: VL120217-3MB

Sample Matrix: WATER  
% Moisture: N/A  
Date Collected: N/A  
Date Extracted: 17-Feb-12  
Date Analyzed: 17-Feb-12  
Prep Method: SW5030 Rev C

Prep Batch: VL120217-3  
QCBatchID: VL120217-3-2  
Run ID: VL120217-3A  
Cleanup: NONE  
Basis: N/A  
File Name: C34498

Sample Aliquot: 10 ml  
Final Volume: 10 ml  
Result Units: UG/L  
Clean DF: 1

|            |                           |   |    |    |   |  |
|------------|---------------------------|---|----|----|---|--|
| 78-87-5    | 1,2-DICHLOROPROPANE       | 1 | 1  | 1  | U |  |
| 74-95-3    | DIBROMOMETHANE            | 1 | 1  | 1  | U |  |
| 75-27-4    | BROMODICHLOROMETHANE      | 1 | 1  | 1  | U |  |
| 10061-01-5 | CIS-1,3-DICHLOROPROPENE   | 1 | 1  | 1  | U |  |
| 108-10-1   | 4-METHYL-2-PENTANONE      | 1 | 10 | 10 | U |  |
| 108-88-3   | TOLUENE                   | 1 | 1  | 1  | U |  |
| 10061-02-6 | TRANS-1,3-DICHLOROPROPENE | 1 | 1  | 1  | U |  |
| 79-00-5    | 1,1,2-TRICHLOROETHANE     | 1 | 1  | 1  | U |  |
| 591-78-6   | 2-HEXANONE                | 1 | 10 | 10 | U |  |
| 127-18-4   | TETRACHLOROETHENE         | 1 | 1  | 1  | U |  |
| 142-28-9   | 1,3-DICHLOROPROPANE       | 1 | 1  | 1  | U |  |
| 124-48-1   | DIBROMOCHLOROMETHANE      | 1 | 1  | 1  | U |  |
| 106-93-4   | 1,2-DIBROMOETHANE         | 1 | 1  | 1  | U |  |
| 544-10-5   | 1-CHLOROHEXANE            | 1 | 1  | 1  | U |  |
| 108-90-7   | CHLOROBENZENE             | 1 | 1  | 1  | U |  |
| 630-20-6   | 1,1,1,2-TETRACHLOROETHANE | 1 | 1  | 1  | U |  |
| 100-41-4   | ETHYLBENZENE              | 1 | 1  | 1  | U |  |
| 136777-61- | M+P-XYLENE                | 1 | 1  | 1  | U |  |
| 95-47-6    | O-XYLENE                  | 1 | 1  | 1  | U |  |
| 100-42-5   | STYRENE                   | 1 | 1  | 1  | U |  |
| 75-25-2    | BROMOFORM                 | 1 | 1  | 1  | U |  |
| 98-82-8    | ISOPROPYLBENZENE          | 1 | 1  | 1  | U |  |
| 96-18-4    | 1,2,3-TRICHLOROPROPANE    | 1 | 1  | 1  | U |  |
| 79-34-5    | 1,1,2,2-TETRACHLOROETHANE | 1 | 1  | 1  | U |  |
| 108-86-1   | BROMOBENZENE              | 1 | 1  | 1  | U |  |
| 103-65-1   | N-PROPYLBENZENE           | 1 | 1  | 1  | U |  |
| 95-49-8    | 2-CHLOROTOLUENE           | 1 | 1  | 1  | U |  |
| 108-67-8   | 1,3,5-TRIMETHYLBENZENE    | 1 | 1  | 1  | U |  |
| 106-43-4   | 4-CHLOROTOLUENE           | 1 | 1  | 1  | U |  |

Data Package ID: VL1202195-1

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# GC/MS Volatiles

## Method SW8260\_25C

### Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1202195

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200339399

Lab ID: VL120217-3MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 17-Feb-12

Date Analyzed: 17-Feb-12

Prep Method: SW5030 Rev C

Prep Batch: VL120217-3

QCBatchID: VL120217-3-2

Run ID: VL120217-3A

Cleanup: NONE

Basis: N/A

File Name: C34498

Sample Aliquot: 10 ml

Final Volume: 10 ml

Result Units: UG/L

Clean DF: 1

|          |                             |   |   |   |   |  |
|----------|-----------------------------|---|---|---|---|--|
| 98-06-6  | TERT-BUTYLBENZENE           | 1 | 1 | 1 | U |  |
| 95-63-6  | 1,2,4-TRIMETHYLBENZENE      | 1 | 1 | 1 | U |  |
| 135-98-8 | SEC-BUTYLBENZENE            | 1 | 1 | 1 | U |  |
| 541-73-1 | 1,3-DICHLOROBENZENE         | 1 | 1 | 1 | U |  |
| 99-87-6  | P-ISOPROPYLtolUENE          | 1 | 1 | 1 | U |  |
| 106-46-7 | 1,4-DICHLOROBENZENE         | 1 | 1 | 1 | U |  |
| 104-51-8 | N-BUTYLBENZENE              | 1 | 1 | 1 | U |  |
| 95-50-1  | 1,2-DICHLOROBENZENE         | 1 | 1 | 1 | U |  |
| 96-12-8  | 1,2-DIBROMO-3-CHLOROPROPANE | 1 | 2 | 2 | U |  |
| 120-82-1 | 1,2,4-TRICHLOROBENZENE      | 1 | 1 | 1 | U |  |
| 87-68-3  | HEXACHLOROBUTADIENE         | 1 | 1 | 1 | U |  |
| 91-20-3  | NAPHTHALENE                 | 1 | 1 | 1 | U |  |
| 87-61-6  | 1,2,3-TRICHLOROBENZENE      | 1 | 1 | 1 | U |  |

### Surrogate Recovery

| CASNO     | Surrogate Analyte    | Result | Flag | Spike Amount | Percent Recovery | Control Limits |
|-----------|----------------------|--------|------|--------------|------------------|----------------|
| 460-00-4  | 4-BROMOFLUOROBENZENE | 26.8   |      | 25           | 107              | 85 - 115       |
| 1868-53-7 | DIBROMOFLUOROMETHANE | 26.1   |      | 25           | 104              | 84 - 118       |
| 2037-26-5 | TOLUENE-D8           | 26     |      | 25           | 104              | 85 - 115       |

Data Package ID: VL1202195-1

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# GC/MS Volatiles

## Method SW8260\_25

### Tentatively Identified Compounds

Lab Name: ALS Environmental -- FC

Work Order Number: 1202195

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200339399

Field ID:   
Lab ID: VL120217-3MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 17-Feb-12

Date Analyzed: 17-Feb-12

Prep Batch: VL120217-3

QCBatchID: VL120217-3-2

Run ID: VL120217-3A

Cleanup: NONE

Basis: As Received

Sample Aliquot: 10 ml

Final Volume: 10 ml

Clean DF: 1

File Name: C34498

| CASNO | Retention Time | Target Analyte | Dilution Factor | Result | Units | Qualifier |
|-------|----------------|----------------|-----------------|--------|-------|-----------|
|       |                | NONE DETECTED  | 1               |        |       | U         |

Data Package ID: VL1202195-1

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# GC/MS Volatiles

## Method SW8260\_25 Revision C Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1202195

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200339399

|           |                  |
|-----------|------------------|
| Field ID: | 705325 Nosaka WW |
| Lab ID:   | 1202195-1        |

Sample Matrix: WATER  
% Moisture: N/A  
Date Collected: 14-Feb-12  
Date Extracted: 17-Feb-12  
Date Analyzed: 17-Feb-12  
Prep Method: SW5030 Rev C

Prep Batch: VL120217-3  
QCBatchID: VL120217-3-2  
Run ID: VL120217-3A  
Cleanup: NONE  
Basis: As Received  
File Name: C34511

Analyst: Steven D. W  
Sample Aliquot: 10 ML  
Final Volume: 10 ML  
Result Units: UG/L  
Clean DF: 1

| CASNO     | Target Analyte                        | Dilution Factor | Result | Reporting Limit | Result Qualifier | EPA Qualifier |
|-----------|---------------------------------------|-----------------|--------|-----------------|------------------|---------------|
| 75-71-8   | DICHLORODIFLUOROMETHANE               | 1               | 1      | 1               | U                |               |
| 74-87-3   | CHLOROMETHANE                         | 1               | 1      | 1               | U                |               |
| 75-01-4   | VINYL CHLORIDE                        | 1               | 1      | 1               | U                |               |
| 74-83-9   | BROMOMETHANE                          | 1               | 1      | 1               | U                |               |
| 75-00-3   | CHLOROETHANE                          | 1               | 1      | 1               | U                |               |
| 75-69-4   | TRICHLOROFUOROMETHANE                 | 1               | 1      | 1               | U                |               |
| 75-35-4   | 1,1-DICHLOROETHENE                    | 1               | 1      | 1               | U                |               |
| 76-13-1   | 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | 1               | 1      | 1               | U                |               |
| 67-64-1   | ACETONE                               | 1               | 10     | 10              | U                |               |
| 74-88-4   | IODOMETHANE                           | 1               | 1      | 1               | U                |               |
| 75-15-0   | CARBON DISULFIDE                      | 1               | 1      | 1               | U                |               |
| 75-09-2   | METHYLENE CHLORIDE                    | 1               | 1      | 1               | U                |               |
| 156-60-5  | TRANS-1,2-DICHLOROETHENE              | 1               | 1      | 1               | U                |               |
| 1634-04-4 | METHYL TERTIARY BUTYL ETHER           | 1               | 1      | 1               | U                |               |
| 75-34-3   | 1,1-DICHLOROETHANE                    | 1               | 1      | 1               | U                |               |
| 108-05-4  | VINYL ACETATE                         | 1               | 2      | 2               | U                |               |
| 156-59-2  | CIS-1,2-DICHLOROETHENE                | 1               | 1      | 1               | U                |               |
| 78-93-3   | 2-BUTANONE                            | 1               | 10     | 10              | U                |               |
| 74-97-5   | BROMOCHLOROMETHANE                    | 1               | 1      | 1               | U                |               |
| 67-66-3   | CHLOROFORM                            | 1               | 1      | 1               | U                |               |
| 71-55-6   | 1,1,1-TRICHLOROETHANE                 | 1               | 1      | 1               | U                |               |
| 594-20-7  | 2,2-DICHLOROPROPANE                   | 1               | 1      | 1               | U                |               |
| 56-23-5   | CARBON TETRACHLORIDE                  | 1               | 1      | 1               | U                |               |
| 563-58-6  | 1,1-DICHLOROPROPENE                   | 1               | 1      | 1               | U                |               |
| 107-06-2  | 1,2-DICHLOROETHANE                    | 1               | 1      | 1               | U                |               |
| 71-43-2   | BENZENE                               | 1               | 1      | 1               | U                |               |
| 79-01-6   | TRICHLOROETHENE                       | 1               | 1      | 1               | U                |               |

Data Package ID: VL1202195-1

Date Printed: Tuesday, February 21, 2012

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# GC/MS Volatiles

## Method SW8260\_25 Revision C Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1202195

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200339399

|           |                  |
|-----------|------------------|
| Field ID: | 705325 Nosaka WW |
| Lab ID:   | 1202195-1        |

Sample Matrix: WATER  
% Moisture: N/A  
Date Collected: 14-Feb-12  
Date Extracted: 17-Feb-12  
Date Analyzed: 17-Feb-12  
Prep Method: SW5030 Rev C

Prep Batch: VL120217-3  
QCBatchID: VL120217-3-2  
Run ID: VL120217-3A  
Cleanup: NONE  
Basis: As Received  
File Name: C34511

Analyst: Steven D. W  
Sample Aliquot: 10 ML  
Final Volume: 10 ML  
Result Units: UG/L  
Clean DF: 1

|            |                           |   |    |    |   |  |
|------------|---------------------------|---|----|----|---|--|
| 78-87-5    | 1,2-DICHLOROPROPANE       | 1 | 1  | 1  | U |  |
| 74-95-3    | DIBROMOMETHANE            | 1 | 1  | 1  | U |  |
| 75-27-4    | BROMODICHLOROMETHANE      | 1 | 1  | 1  | U |  |
| 10061-01-5 | CIS-1,3-DICHLOROPROPENE   | 1 | 1  | 1  | U |  |
| 108-10-1   | 4-METHYL-2-PENTANONE      | 1 | 10 | 10 | U |  |
| 108-88-3   | TOLUENE                   | 1 | 1  | 1  | U |  |
| 10061-02-6 | TRANS-1,3-DICHLOROPROPENE | 1 | 1  | 1  | U |  |
| 79-00-5    | 1,1,2-TRICHLOROETHANE     | 1 | 1  | 1  | U |  |
| 591-78-6   | 2-HEXANONE                | 1 | 10 | 10 | U |  |
| 127-18-4   | TETRACHLOROETHENE         | 1 | 1  | 1  | U |  |
| 142-28-9   | 1,3-DICHLOROPROPANE       | 1 | 1  | 1  | U |  |
| 124-48-1   | DIBROMOCHLOROMETHANE      | 1 | 1  | 1  | U |  |
| 106-93-4   | 1,2-DIBROMOETHANE         | 1 | 1  | 1  | U |  |
| 544-10-5   | 1-CHLOROHEXANE            | 1 | 1  | 1  | U |  |
| 108-90-7   | CHLOROBENZENE             | 1 | 1  | 1  | U |  |
| 630-20-6   | 1,1,1,2-TETRACHLOROETHANE | 1 | 1  | 1  | U |  |
| 100-41-4   | ETHYLBENZENE              | 1 | 1  | 1  | U |  |
| 136777-61- | M+P-XYLENE                | 1 | 1  | 1  | U |  |
| 95-47-6    | O-XYLENE                  | 1 | 1  | 1  | U |  |
| 100-42-5   | STYRENE                   | 1 | 1  | 1  | U |  |
| 75-25-2    | BROMOFORM                 | 1 | 1  | 1  | U |  |
| 98-82-8    | ISOPROPYLBENZENE          | 1 | 1  | 1  | U |  |
| 96-18-4    | 1,2,3-TRICHLOROPROPANE    | 1 | 1  | 1  | U |  |
| 79-34-5    | 1,1,2,2-TETRACHLOROETHANE | 1 | 1  | 1  | U |  |
| 108-86-1   | BROMOBENZENE              | 1 | 1  | 1  | U |  |
| 103-65-1   | N-PROPYLBENZENE           | 1 | 1  | 1  | U |  |
| 95-49-8    | 2-CHLOROTOLUENE           | 1 | 1  | 1  | U |  |
| 108-67-8   | 1,3,5-TRIMETHYLBENZENE    | 1 | 1  | 1  | U |  |
| 106-43-4   | 4-CHLOROTOLUENE           | 1 | 1  | 1  | U |  |

Data Package ID: VL1202195-1

Date Printed: Tuesday, February 21, 2012

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# GC/MS Volatiles

## Method SW8260\_25 Revision C Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1202195

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200339399

|           |                  |
|-----------|------------------|
| Field ID: | 705325 Nosaka WW |
| Lab ID:   | 1202195-1        |

Sample Matrix: WATER  
% Moisture: N/A  
Date Collected: 14-Feb-12  
Date Extracted: 17-Feb-12  
Date Analyzed: 17-Feb-12  
Prep Method: SW5030 Rev C

Prep Batch: VL120217-3  
QCBatchID: VL120217-3-2  
Run ID: VL120217-3A  
Cleanup: NONE  
Basis: As Received  
File Name: C34511

Analyst: Steven D. W  
Sample Aliquot: 10 ML  
Final Volume: 10 ML  
Result Units: UG/L  
Clean DF: 1

|          |                             |   |   |   |   |  |
|----------|-----------------------------|---|---|---|---|--|
| 98-06-6  | TERT-BUTYLBENZENE           | 1 | 1 | 1 | U |  |
| 95-63-6  | 1,2,4-TRIMETHYLBENZENE      | 1 | 1 | 1 | U |  |
| 135-98-8 | SEC-BUTYLBENZENE            | 1 | 1 | 1 | U |  |
| 541-73-1 | 1,3-DICHLOROBENZENE         | 1 | 1 | 1 | U |  |
| 99-87-6  | P-ISOPROPYLtolUENE          | 1 | 1 | 1 | U |  |
| 106-46-7 | 1,4-DICHLOROBENZENE         | 1 | 1 | 1 | U |  |
| 104-51-8 | N-BUTYLBENZENE              | 1 | 1 | 1 | U |  |
| 95-50-1  | 1,2-DICHLOROBENZENE         | 1 | 1 | 1 | U |  |
| 96-12-8  | 1,2-DIBROMO-3-CHLOROPROPANE | 1 | 2 | 2 | U |  |
| 120-82-1 | 1,2,4-TRICHLOROBENZENE      | 1 | 1 | 1 | U |  |
| 87-68-3  | HEXACHLOROBUTADIENE         | 1 | 1 | 1 | U |  |
| 91-20-3  | NAPHTHALENE                 | 1 | 1 | 1 | U |  |
| 87-61-6  | 1,2,3-TRICHLOROBENZENE      | 1 | 1 | 1 | U |  |

## Surrogate Recovery

| CASNO     | Surrogate Analyte    | Result | Flag | Spike Amount | Percent Recovery | Control Limits |
|-----------|----------------------|--------|------|--------------|------------------|----------------|
| 460-00-4  | 4-BROMOFLUOROBENZENE | 27     |      | 25           | 108              | 85 - 115       |
| 1868-53-7 | DIBROMOFLUOROMETHANE | 25.3   |      | 25           | 101              | 84 - 118       |
| 2037-26-5 | TOLUENE-D8           | 26.2   |      | 25           | 105              | 85 - 115       |

Data Package ID: VL1202195-1

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# GC/MS Volatiles

## Method SW8260\_25

### Tentatively Identified Compounds

Lab Name: ALS Environmental -- FC

Work Order Number: 1202195

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200339399

|           |                  |
|-----------|------------------|
| Field ID: | 705325 Nosaka WW |
| Lab ID:   | 1202195-1        |

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 14-Feb-12

Date Extracted: 17-Feb-12

Date Analyzed: 17-Feb-12

Prep Batch: VL120217-3

QCBatchID: VL120217-3-2

Run ID: VL120217-3A

Cleanup: NONE

Basis: As Received

Sample Aliquot: 10 ml

Final Volume: 10 ml

Clean DF: 1

File Name: C34511

| CASNO     | Retention Time | Target Analyte | Dilution Factor | Result | Units | Qualifier |
|-----------|----------------|----------------|-----------------|--------|-------|-----------|
| 7446-09-5 | 3.36           | SULFUR DIOXIDE | 1               | 14     | UG/L  | J         |

Data Package ID: VL1202195-1

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# GC/MS Volatiles

## Method SW8260\_25C

### Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1202195

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200339399

|                       |   |  |   |
|-----------------------|---|--|---|
| Lab ID: VL120217-3LCS | Sample Matrix: WATER<br>% Moisture: N/A<br>Date Collected: N/A<br>Date Extracted: 02/17/2012<br>Date Analyzed: 02/17/2012<br>Prep Method: SW5030C | Prep Batch: VL120217-3<br>QCBatchID: VL120217-3-2<br>Run ID: VL120217-3A<br>Cleanup: NONE<br>Basis: N/A<br>File Name: C34495 | Sample Aliquot: 10 ml<br>Final Volume: 10 ml<br>Result Units: UG/L<br>Clean DF: 1 |
|-----------------------|---|--|---|

| CASNO     | Target Analyte                        | Spike Added | LCS Result | Reporting Limit | Result Qualifier | LCS % Rec. | Control Limits |
|-----------|---------------------------------------|-------------|------------|-----------------|------------------|------------|----------------|
| 75-71-8   | DICHLORODIFLUOROMETHANE               | 10          | 11.2       | 1               |                  | 112        | 63 - 125%      |
| 74-87-3   | CHLOROMETHANE                         | 10          | 10.5       | 1               |                  | 105        | 73 - 122%      |
| 75-01-4   | VINYL CHLORIDE                        | 10          | 10.6       | 1               |                  | 106        | 72 - 123%      |
| 74-83-9   | BROMOMETHANE                          | 10          | 10.3       | 1               |                  | 103        | 68 - 123%      |
| 75-00-3   | CHLOROETHANE                          | 10          | 10.1       | 1               |                  | 101        | 74 - 124%      |
| 75-69-4   | TRICHLORODIFLUOROMETHANE              | 10          | 9.91       | 1               |                  | 99         | 74 - 124%      |
| 75-35-4   | 1,1-DICHLOROETHENE                    | 10          | 10.4       | 1               |                  | 104        | 77 - 119%      |
| 76-13-1   | 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | 10          | 10.2       | 1               |                  | 102        | 79 - 122%      |
| 67-64-1   | ACETONE                               | 40          | 38.1       | 10              |                  | 95         | 62 - 142%      |
| 74-88-4   | IODOMETHANE                           | 10          | 8.89       | 1               |                  | 89         | 72 - 126%      |
| 75-15-0   | CARBON DISULFIDE                      | 10          | 10.5       | 1               |                  | 105        | 76 - 121%      |
| 75-09-2   | METHYLENE CHLORIDE                    | 10          | 9.91       | 1               |                  | 99         | 71 - 130%      |
| 156-60-5  | TRANS-1,2-DICHLOROETHENE              | 10          | 10.4       | 1               |                  | 104        | 82 - 117%      |
| 1634-04-4 | METHYL TERTIARY BUTYL ETHER           | 20          | 20.7       | 1               |                  | 103        | 77 - 119%      |
| 75-34-3   | 1,1-DICHLOROETHANE                    | 10          | 10.7       | 1               |                  | 107        | 83 - 119%      |
| 108-05-4  | VINYL ACETATE                         | 10          | 9.4        | 2               |                  | 94         | 76 - 121%      |
| 156-59-2  | CIS-1,2-DICHLOROETHENE                | 10          | 10.3       | 1               |                  | 103        | 83 - 117%      |
| 78-93-3   | 2-BUTANONE                            | 40          | 38.1       | 10              |                  | 95         | 70 - 135%      |
| 74-97-5   | BROMOCHLOROMETHANE                    | 10          | 10.5       | 1               |                  | 105        | 83 - 121%      |
| 67-66-3   | CHLOROFORM                            | 10          | 10.3       | 1               |                  | 103        | 82 - 119%      |
| 71-55-6   | 1,1,1-TRICHLOROETHANE                 | 10          | 10.3       | 1               |                  | 103        | 80 - 120%      |
| 594-20-7  | 2,2-DICHLOROPROPANE                   | 10          | 11.3       | 1               |                  | 113        | 83 - 125%      |
| 56-23-5   | CARBON TETRACHLORIDE                  | 10          | 10.7       | 1               |                  | 107        | 77 - 122%      |
| 563-58-6  | 1,1-DICHLOROPROPENE                   | 10          | 10.5       | 1               |                  | 105        | 84 - 118%      |
| 107-06-2  | 1,2-DICHLOROETHANE                    | 10          | 10.3       | 1               |                  | 103        | 74 - 128%      |
| 71-43-2   | BENZENE                               | 10          | 10.5       | 1               |                  | 105        | 83 - 117%      |

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# GC/MS Volatiles

## Method SW8260\_25C

### Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1202195

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200339399

|                       |   |  |   |
|-----------------------|---|--|---|
| Lab ID: VL120217-3LCS | Sample Matrix: WATER<br>% Moisture: N/A<br>Date Collected: N/A<br>Date Extracted: 02/17/2012<br>Date Analyzed: 02/17/2012<br>Prep Method: SW5030C | Prep Batch: VL120217-3<br>QCBatchID: VL120217-3-2<br>Run ID: VL120217-3A<br>Cleanup: NONE<br>Basis: N/A<br>File Name: C34495 | Sample Aliquot: 10 ml<br>Final Volume: 10 ml<br>Result Units: UG/L<br>Clean DF: 1 |
|-----------------------|---|--|---|

| CASNO    | Target Analyte              | Spike Added | LCS Result | Reporting Limit | Result Qualifier | LCS % Rec. | Control Limits |
|----------|-----------------------------|-------------|------------|-----------------|------------------|------------|----------------|
| 95-49-8  | 2-CHLOROTOLUENE             | 10          | 10.8       | 1               |                  | 108        | 79 - 116%      |
| 108-67-8 | 1,3,5-TRIMETHYLBENZENE      | 10          | 10.6       | 1               |                  | 106        | 78 - 116%      |
| 106-43-4 | 4-CHLOROTOLUENE             | 10          | 10.7       | 1               |                  | 107        | 78 - 115%      |
| 98-06-6  | TERT-BUTYLBENZENE           | 10          | 10.6       | 1               |                  | 106        | 76 - 120%      |
| 95-63-6  | 1,2,4-TRIMETHYLBENZENE      | 10          | 10.6       | 1               |                  | 106        | 80 - 117%      |
| 135-98-8 | SEC-BUTYLBENZENE            | 10          | 10.4       | 1               |                  | 104        | 78 - 115%      |
| 541-73-1 | 1,3-DICHLOROBENZENE         | 10          | 10.6       | 1               |                  | 106        | 79 - 115%      |
| 99-87-6  | P-ISOPROPYLtolUENE          | 10          | 10.5       | 1               |                  | 105        | 77 - 116%      |
| 106-46-7 | 1,4-DICHLOROBENZENE         | 10          | 10.5       | 1               |                  | 105        | 82 - 114%      |
| 104-51-8 | N-BUTYLBENZENE              | 10          | 10.6       | 1               |                  | 106        | 79 - 117%      |
| 95-50-1  | 1,2-DICHLOROBENZENE         | 10          | 10.6       | 1               |                  | 106        | 82 - 114%      |
| 96-12-8  | 1,2-DIBROMO-3-CHLOROPROPANE | 10          | 10.4       | 2               |                  | 104        | 73 - 125%      |
| 120-82-1 | 1,2,4-TRICHLOROBENZENE      | 10          | 10.8       | 1               |                  | 108        | 75 - 120%      |
| 87-68-3  | HEXACHLOROBUTADIENE         | 10          | 10.1       | 1               |                  | 101        | 71 - 124%      |
| 91-20-3  | NAPHTHALENE                 | 10          | 10.4       | 1               |                  | 104        | 71 - 131%      |
| 87-61-6  | 1,2,3-TRICHLOROBENZENE      | 10          | 10.6       | 1               |                  | 106        | 70 - 131%      |

Data Package ID: VL1202195-1

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# GC/MS Volatiles

## Method SW8260\_25C

### Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1202195

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200339399

|                        |   |  |   |
|------------------------|---|--|---|
| Lab ID: VL120217-3LCSD | Sample Matrix: WATER<br>% Moisture: N/A<br>Date Collected: N/A<br>Date Extracted: 02/17/2012<br>Date Analyzed: 02/17/2012<br>Prep Method: SW5030C | Prep Batch: VL120217-3<br>QCBatchID: VL120217-3-2<br>Run ID: VL120217-3A<br>Cleanup: NONE<br>Basis: N/A<br>File Name: C34496 | Sample Aliquot: 10 ml<br>Final Volume: 10 ml<br>Result Units: UG/L<br>Clean DF: 1 |
|------------------------|---|--|---|

| CASNO     | Target Analyte                        | Spike Added | LCSD Result | Reporting Limit | Result Qualifier | LCSD % Rec. | RPD Limit | RPD |
|-----------|---------------------------------------|-------------|-------------|-----------------|------------------|-------------|-----------|-----|
| 75-71-8   | DICHLORODIFLUOROMETHANE               | 10          | 11.3        | 1               |                  | 113         | 20        | 0   |
| 74-87-3   | CHLOROMETHANE                         | 10          | 10.4        | 1               |                  | 104         | 20        | 1   |
| 75-01-4   | VINYL CHLORIDE                        | 10          | 10.6        | 1               |                  | 106         | 20        | 0   |
| 74-83-9   | BROMOMETHANE                          | 10          | 10.1        | 1               |                  | 101         | 20        | 2   |
| 75-00-3   | CHLOROETHANE                          | 10          | 10.2        | 1               |                  | 102         | 20        | 1   |
| 75-69-4   | TRICHLOROFUOROMETHANE                 | 10          | 10.2        | 1               |                  | 102         | 20        | 3   |
| 75-35-4   | 1,1-DICHLOROETHENE                    | 10          | 10.3        | 1               |                  | 103         | 20        | 1   |
| 76-13-1   | 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | 10          | 10.2        | 1               |                  | 102         | 20        | 0   |
| 67-64-1   | ACETONE                               | 40          | 39.2        | 10              |                  | 98          | 30        | 3   |
| 74-88-4   | IODOMETHANE                           | 10          | 8.86        | 1               |                  | 89          | 20        | 0   |
| 75-15-0   | CARBON DISULFIDE                      | 10          | 10.4        | 1               |                  | 104         | 20        | 1   |
| 75-09-2   | METHYLENE CHLORIDE                    | 10          | 10.2        | 1               |                  | 102         | 20        | 2   |
| 156-60-5  | TRANS-1,2-DICHLOROETHENE              | 10          | 10.5        | 1               |                  | 105         | 20        | 1   |
| 1634-04-4 | METHYL TERTIARY BUTYL ETHER           | 20          | 21.4        | 1               |                  | 107         | 20        | 3   |
| 75-34-3   | 1,1-DICHLOROETHANE                    | 10          | 10.8        | 1               |                  | 108         | 20        | 1   |
| 108-05-4  | VINYL ACETATE                         | 10          | 10.2        | 2               |                  | 102         | 20        | 8   |
| 156-59-2  | CIS-1,2-DICHLOROETHENE                | 10          | 10.2        | 1               |                  | 102         | 20        | 1   |
| 78-93-3   | 2-BUTANONE                            | 40          | 40.3        | 10              |                  | 101         | 30        | 6   |
| 74-97-5   | BROMOCHLOROMETHANE                    | 10          | 10.8        | 1               |                  | 108         | 20        | 3   |
| 67-66-3   | CHLOROFORM                            | 10          | 10.5        | 1               |                  | 105         | 20        | 2   |
| 71-55-6   | 1,1,1-TRICHLOROETHANE                 | 10          | 10.6        | 1               |                  | 106         | 20        | 2   |
| 594-20-7  | 2,2-DICHLOROPROPANE                   | 10          | 11.2        | 1               |                  | 112         | 20        | 1   |
| 56-23-5   | CARBON TETRACHLORIDE                  | 10          | 10.7        | 1               |                  | 107         | 20        | 0   |
| 563-58-6  | 1,1-DICHLOROPROPENE                   | 10          | 10.6        | 1               |                  | 106         | 20        | 1   |
| 107-06-2  | 1,2-DICHLOROETHANE                    | 10          | 10.6        | 1               |                  | 106         | 20        | 3   |
| 71-43-2   | BENZENE                               | 10          | 10.6        | 1               |                  | 106         | 20        | 1   |
| 79-01-6   | TRICHLOROETHENE                       | 10          | 10.4        | 1               |                  | 104         | 20        | 1   |

Data Package ID: VL1202195-1



# GC/MS Volatiles

## Method SW8260\_25C

### Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1202195

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200339399

|                        |   |  |   |
|------------------------|---|--|---|
| Lab ID: VL120217-3LCSD | Sample Matrix: WATER<br>% Moisture: N/A<br>Date Collected: N/A<br>Date Extracted: 02/17/2012<br>Date Analyzed: 02/17/2012<br>Prep Method: SW5030C | Prep Batch: VL120217-3<br>QCBatchID: VL120217-3-2<br>Run ID: VL120217-3A<br>Cleanup: NONE<br>Basis: N/A<br>File Name: C34496 | Sample Aliquot: 10 ml<br>Final Volume: 10 ml<br>Result Units: UG/L<br>Clean DF: 1 |
|------------------------|---|--|---|

| CASNO    | Target Analyte              | Spike Added | LCSD Result | Reporting Limit | Result Qualifier | LCSD % Rec. | RPD Limit | RPD |
|----------|-----------------------------|-------------|-------------|-----------------|------------------|-------------|-----------|-----|
| 108-67-8 | 1,3,5-TRIMETHYLBENZENE      | 10          | 10.9        | 1               |                  | 109         | 20        | 3   |
| 106-43-4 | 4-CHLOROTOLUENE             | 10          | 10.9        | 1               |                  | 109         | 20        | 1   |
| 98-06-6  | TERT-BUTYLBENZENE           | 10          | 10.5        | 1               |                  | 105         | 20        | 0   |
| 95-63-6  | 1,2,4-TRIMETHYLBENZENE      | 10          | 10.5        | 1               |                  | 105         | 20        | 1   |
| 135-98-8 | SEC-BUTYLBENZENE            | 10          | 10.4        | 1               |                  | 104         | 20        | 0   |
| 541-73-1 | 1,3-DICHLOROBENZENE         | 10          | 10.7        | 1               |                  | 107         | 20        | 2   |
| 99-87-6  | P-ISOPROPYLTOLUENE          | 10          | 10.6        | 1               |                  | 106         | 20        | 0   |
| 106-46-7 | 1,4-DICHLOROBENZENE         | 10          | 10.6        | 1               |                  | 106         | 20        | 1   |
| 104-51-8 | N-BUTYLBENZENE              | 10          | 10.6        | 1               |                  | 106         | 20        | 0   |
| 95-50-1  | 1,2-DICHLOROBENZENE         | 10          | 10.7        | 1               |                  | 107         | 20        | 1   |
| 96-12-8  | 1,2-DIBROMO-3-CHLOROPROPANE | 10          | 10.7        | 2               |                  | 107         | 20        | 2   |
| 120-82-1 | 1,2,4-TRICHLOROBENZENE      | 10          | 10.8        | 1               |                  | 108         | 20        | 1   |
| 87-68-3  | HEXACHLOROBUTADIENE         | 10          | 10.3        | 1               |                  | 103         | 20        | 2   |
| 91-20-3  | NAPHTHALENE                 | 10          | 10.9        | 1               |                  | 109         | 20        | 4   |
| 87-61-6  | 1,2,3-TRICHLOROBENZENE      | 10          | 11.2        | 1               |                  | 112         | 20        | 5   |

### Surrogate Recovery LCS/LCSD

| CASNO     | Target Analyte       | Spike Added | LCS % Rec. | LCS Flag | LCSD % Rec. | LCSD Flag | Control Limits |
|-----------|----------------------|-------------|------------|----------|-------------|-----------|----------------|
| 460-00-4  | 4-BROMOFLUOROBENZENE | 25          | 107        |          | 107         |           | 85 - 115       |
| 1868-53-7 | DIBROMOFLUOROMETHANE | 25          | 106        |          | 106         |           | 84 - 118       |
| 2037-26-5 | TOLUENE-D8           | 25          | 106        |          | 107         |           | 85 - 115       |

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## Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\021712\C34495.D  
Acq On : 17 Feb 2012 11:18  
Sample : VL120217-3LCS  
Misc : UN-Heated Purge - 10ppb  
MS Integration Params: ettics.p  
Quant Time: Feb 17 11:56 2012

Vial: 6  
Operator: sdw-sop525r15  
Inst : CSS Instr  
Multipllr: 1.00

Quant Results File: 012412W.RES

Quant Method : C:\HPCHEM\1\METHODS\012412W.M (RTE Integrator)  
Title : GC/MS Volatiles (S.O.P. 525)  
Last Update : Fri Jan 27 08:42:40 2012  
Response via : Initial Calibration  
DataAcq Meth : 012412W

| Compound                    | R.T.  | QIon | Response | Conc  | Unit | Qvalue |
|-----------------------------|-------|------|----------|-------|------|--------|
| 102) 1,2,3-Trichlorobenzene | 16.42 | 180  | 166568   | 10.63 | ppb  | 99     |

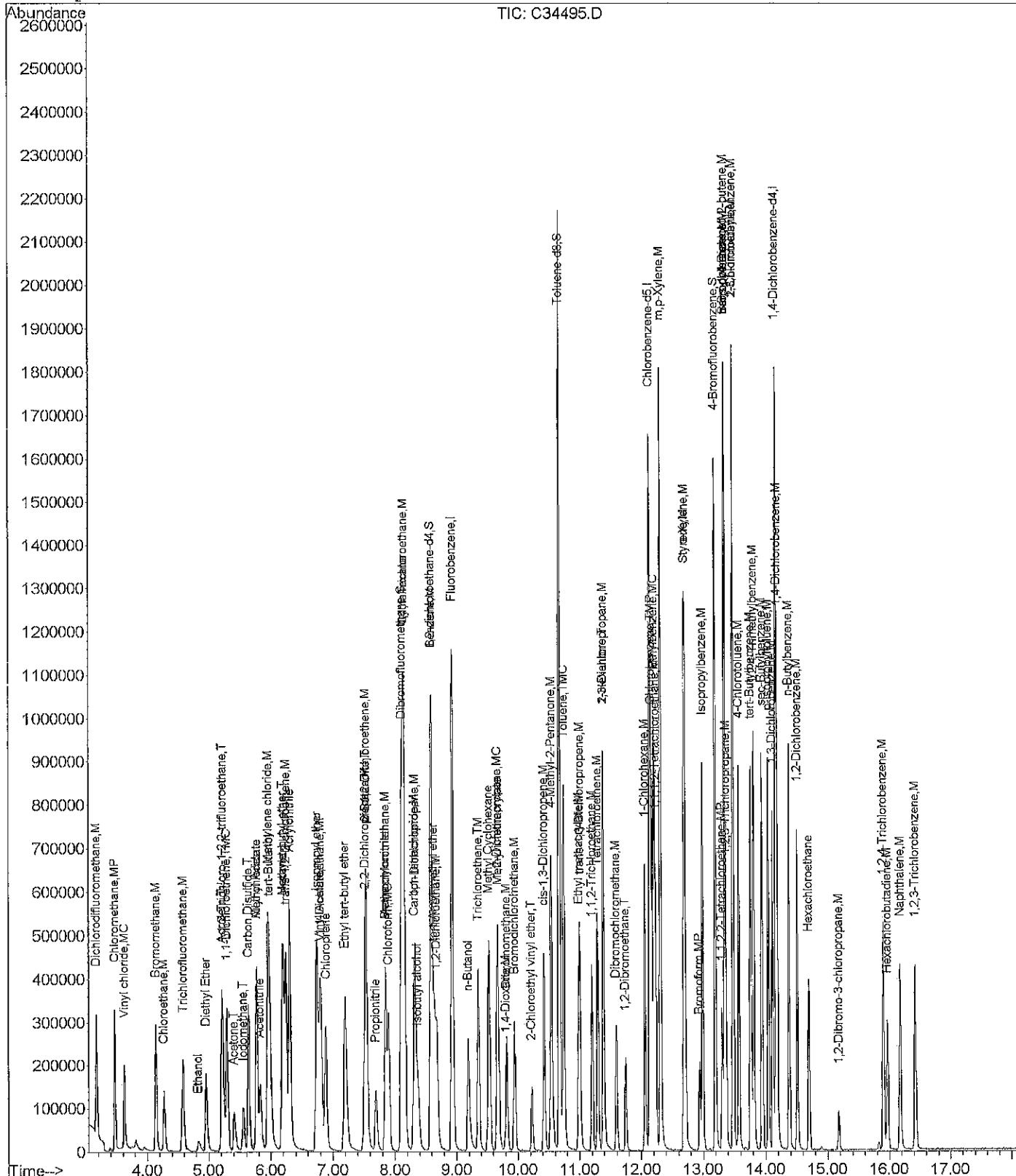
Quantitation Report

Data File : C:\HPCHEM\1\DATA\021712\C34495.D  
 Acq On : 17 Feb 2012 11:18  
 Sample : VL120217-3LCS  
 Misc : UN-Heated Purge - 10ppb  
 MS Integration Params: ettics.p  
 Quant Time: Feb 17 11:56 2012

Vial: 6  
 Operator: sdw-sop525r15  
 Inst : CSS Instr  
 Multipllr: 1.00

Quant Results File: 012412W.RES

Method : C:\HPCHEM\1\METHODS\012412W.M (RTE Integrator)  
 Title : GC/MS Volatiles (S.O.P. 525)  
 Last Update : Fri Jan 27 08:42:40 2012  
 Response via : Initial Calibration







## Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\021712\C34496.D Vial: 7  
Acq On : 17 Feb 2012 11:41 Operator: sdw-sop525r15  
Sample : VL120217-3LCSD Inst : CSS Instr  
Misc : UN-Heated Purge ~ 10ppb Multiplr: 1.00  
MS Integration Params: ettics.p  
Quant Time: Feb 17 12:12 2012 Quant Results File: 012412W.RES

Quant Method : C:\HPCHEM\1\METHODS\012412W.M (RTE Integrator)  
Title : GC/MS Volatiles (S.O.P. 525)  
Last Update : Fri Jan 27 08:42:40 2012  
Response via : Initial Calibration  
DataAcq Meth : 012412W

| Compound                    | R.T.  | QIon | Response | Conc  | Unit | Qvalue |
|-----------------------------|-------|------|----------|-------|------|--------|
| 102) 1,2,3-Trichlorobenzene | 16.42 | 180  | 171118   | 11.21 | ppb  | 97     |

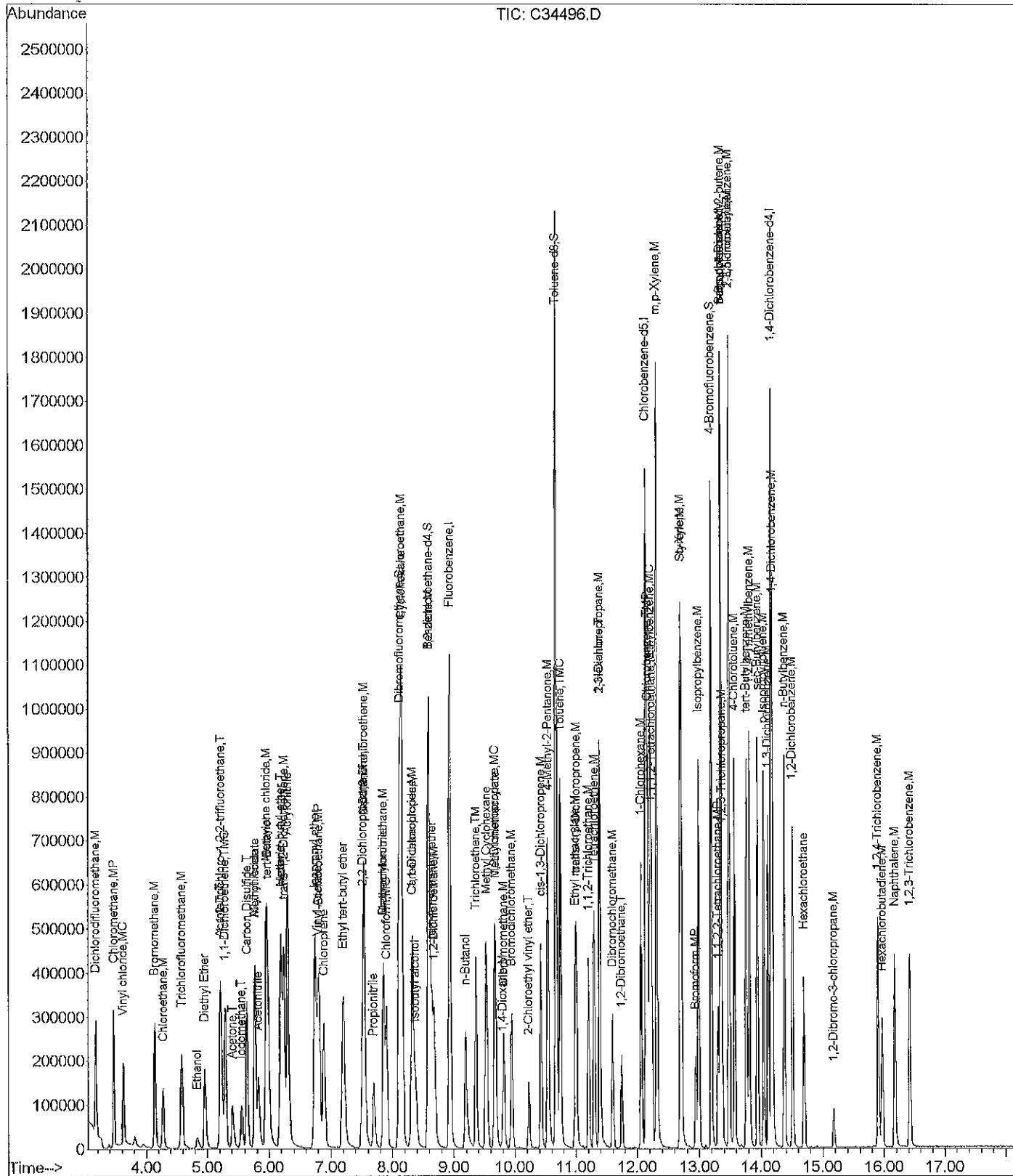
## Quantitation Report

Data File : C:\HPCHEM\1\DATA\021712\C34496.D  
 Acq On : 17 Feb 2012 11:41  
 Sample : VL120217-3LCSD  
 Misc : UN-Heated Purge - 10ppb  
 MS Integration Params: ettics.p  
 Quant Time: Feb 17 12:12 2012

Vial: 7  
 Operator: sdw-sop525r15  
 Inst : CSS Instr  
 Multiplr: 1.00

Quant Results File: 012412W.RES

Method : C:\HPCHEM\1\METHODS\012412W.M (RTE Integrator)  
 Title : GC/MS Volatiles (S.O.P. 525)  
 Last Update : Fri Jan 27 08:42:40 2012  
 Response via : Initial Calibration



Data File : C:\HPCHEM\1\DATA\021712\C34498.D  
 Acq On : 17 Feb 2012 12:27  
 Sample : VL120217-3MB  
 Misc : UN-Heated Purge  
 MS Integration Params: ettics.p  
 Quant Time: Feb 17 13:14 2012

Vial: 9  
 Operator: sdw-sop525r15  
 Inst : CSS Instr  
 Multiplr: 1.00

Quant Results File: 012412W.RES

Quant Method : C:\HPCHEM\1\METHODS\012412W.M (RTE Integrator)  
 Title : GC/MS Volatiles (S.O.P. 525)  
 Last Update : Fri Jan 27 08:42:40 2012  
 Response via : Initial Calibration  
 DataAcq Meth : 012412W

| Internal Standards         | R.T.  | QIon | Response | Conc  | Units | Dev(Min) |
|----------------------------|-------|------|----------|-------|-------|----------|
| 1) Fluorobenzene           | 8.94  | 96   | 1342844  | 25.00 | ppb   | 0.00     |
| 58) Chlorobenzene-d5       | 12.14 | 82   | 487973   | 25.00 | ppb   | 0.00     |
| 78) 1,4-Dichlorobenzene-d4 | 14.17 | 152  | 411091   | 25.00 | ppb   | 0.00     |

## System Monitoring Compounds

|                           |       |          |          |       |         |      |
|---------------------------|-------|----------|----------|-------|---------|------|
| 37) Dibromofluoromethane  | 8.11  | 113      | 534004   | 26.12 | ppb     | 0.00 |
| Spiked Amount 25.000      | Range | 85 - 115 | Recovery | =     | 104.48% |      |
| 42) 1,2-dichloroethane-d4 | 8.59  | 65       | 374305   | 26.64 | ppb     | 0.00 |
| Spiked Amount 25.000      | Range | 85 - 115 | Recovery | =     | 106.56% |      |
| 59) Toluene-d8            | 10.67 | 98       | 1561988  | 25.98 | ppb     | 0.00 |
| Spiked Amount 25.000      | Range | 85 - 115 | Recovery | =     | 103.92% |      |
| 79) 4-Bromofluorobenzene  | 13.20 | 95       | 561238   | 26.83 | ppb     | 0.00 |
| Spiked Amount 25.000      | Range | 85 - 115 | Recovery | =     | 107.32% |      |

## Target Compounds

Qvalue

SPW 2/20/12

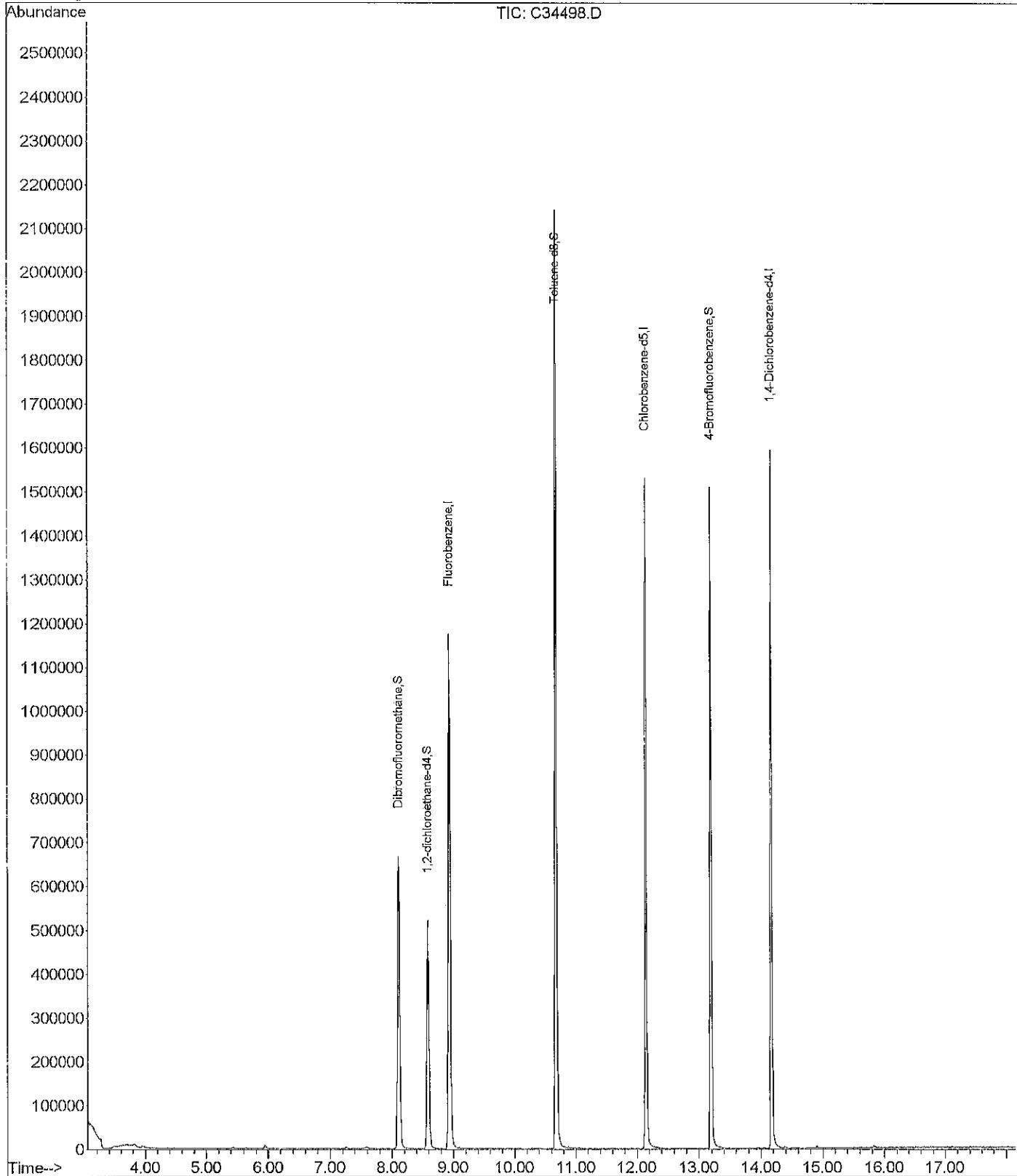
## Quantitation Report

Data File : C:\HPCHEM\1\DATA\021712\C34498.D  
 Acq On : 17 Feb 2012 12:27  
 Sample : VL120217-3MB  
 Misc : UN-Heated Purge  
 MS Integration Params: ettics.p  
 Quant Time: Feb 17 13:14 2012

Vial: 9  
 Operator: sdw-sop525r15  
 Inst : CSS Instr  
 Multiplr: 1.00

Quant Results File: 012412W.RES

Method : C:\HPCHEM\1\METHODS\012412W.M (RTE Integrator)  
 Title : GC/MS Volatiles (S.O.P. 525)  
 Last Update : Fri Jan 27 08:42:40 2012  
 Response via : Initial Calibration



Tentatively Identified Compound (LSC) summary

Operator ID: sdw-sop525r15 Date Acquired: 17 Feb 2012 12:27  
Data File: C:\HPCHEM\1\DATA\021712\C34498.D  
Name: VL120217-3MB  
Misc: UN-Heated Purge  
Method: C:\HPCHEM\1\METHODS\012412W.M (RTE Integrator)  
Title: GC/MS Volatiles (S.O.P. 525)  
Library Searched: C:\DATABASE\NIST129k.l

| TIC      | Top Hit name | RT         | EstConc  | Units | Area | IntStd | ISRT | ISArea | ISConc |
|----------|--------------|------------|----------|-------|------|--------|------|--------|--------|
| C34498.D | 012412W.M    | Sat Feb 18 | 12:24:41 | 2012  |      |        |      |        |        |

## Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\021712\C34511.D  
 Acq On : 17 Feb 2012 17:30  
 Sample : 1202195-1  
 Misc : UN-Heated Purge  
 MS Integration Params: ettics.p  
 Quant Time: Feb 18 11:59 2012

Vial: 22  
 Operator: sdw-sop525r15  
 Inst : CSS Instr  
 Multipllr: 1.00

Quant Results File: 012412W.RES

Quant Method : C:\HPCHEM\1\METHODS\012412W.M (RTE Integrator)  
 Title : GC/MS Volatiles (S.O.P. 525)  
 Last Update : Fri Jan 27 08:42:40 2012  
 Response via : Initial Calibration  
 DataAcq Meth : 012412W

| Internal Standards         | R.T.  | QIon | Response | Conc  | Units | Dev (Min) |
|----------------------------|-------|------|----------|-------|-------|-----------|
| 1) Fluorobenzene           | 8.93  | 96   | 1199497  | 25.00 | ppb   | 0.00      |
| 58) Chlorobenzene-d5       | 12.14 | 82   | 433757   | 25.00 | ppb   | 0.00      |
| 78) 1,4-Dichlorobenzene-d4 | 14.17 | 152  | 372264   | 25.00 | ppb   | 0.00      |

## System Monitoring Compounds

|                           |                |     |          |       |         |      |
|---------------------------|----------------|-----|----------|-------|---------|------|
| 37) Dibromofluoromethane  | 8.11           | 113 | 462265   | 25.31 | ppb     | 0.00 |
| Spiked Amount 25.000      | Range 85 - 115 |     | Recovery | =     | 101.24% |      |
| 42) 1,2-dichloroethane-d4 | 8.58           | 65  | 346788   | 27.63 | ppb     | 0.00 |
| Spiked Amount 25.000      | Range 85 - 115 |     | Recovery | =     | 110.52% |      |
| 59) Toluene-d8            | 10.67          | 98  | 1400190  | 26.20 | ppb     | 0.00 |
| Spiked Amount 25.000      | Range 85 - 115 |     | Recovery | =     | 104.80% |      |
| 79) 4-Bromofluorobenzene  | 13.19          | 95  | 511002   | 26.98 | ppb     | 0.00 |
| Spiked Amount 25.000      | Range 85 - 115 |     | Recovery | =     | 107.92% |      |

## Target Compounds

Qvalue

4m 2/28/12

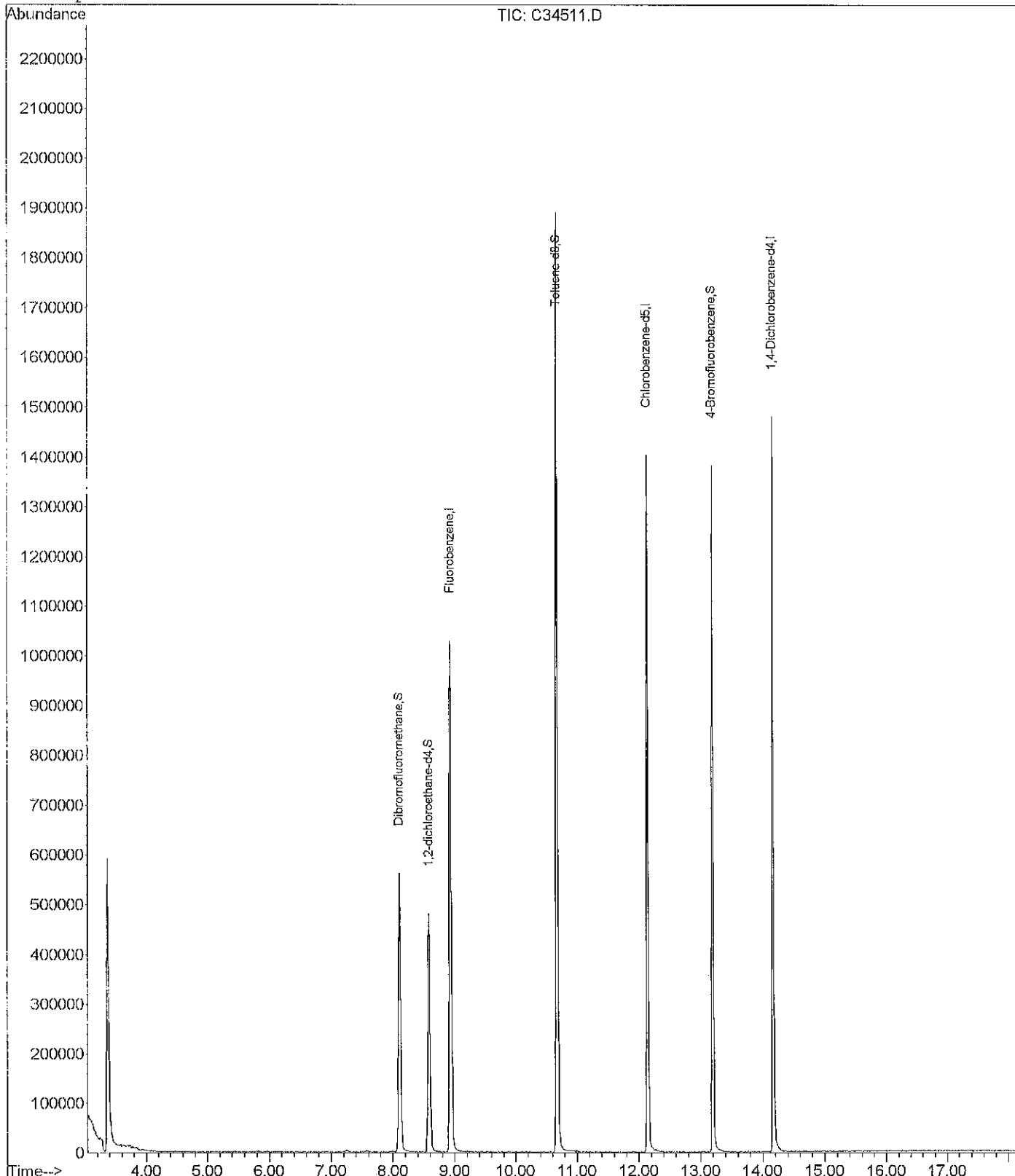
## Quantitation Report

Data File : C:\HPCHEM\1\DATA\021712\C34511.D  
 Acq On : 17 Feb 2012 17:30  
 Sample : 1202195-1  
 Misc : UN-Heated Purge  
 MS Integration Params: ettics.p  
 Quant Time: Feb 18 11:59 2012

Vial: 22  
 Operator: sdw-sop525r15  
 Inst : CSS Instr  
 Multiplr: 1.00

Quant Results File: 012412W.RES

Method : C:\HPCHEM\1\METHODS\012412W.M (RTE Integrator)  
 Title : GC/MS Volatiles (S.O.P. 525)  
 Last Update : Fri Jan 27 08:42:40 2012  
 Response via : Initial Calibration



## Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\021712\C34511.D  
 Acq On : 17 Feb 2012 17:30  
 Sample : 1202195-1  
 Misc : UN-Heated Purge  
 MS Integration Params: ETTICS.P

Vial: 22  
 Operator: sdw-sop525r15  
 Inst : CSS Instr  
 Multiplr: 1.00

Quant Method : C:\HPCHEM\1\METHODS\012412W.M (RTE Integrator)  
 Title : GC/MS Volatiles (S.O.P. 525)  
 Library : C:\DATABASE\NIST129k.1

\*\*\*\*\*  
 Peak Number 1 Sulfur dioxide \$\$ Fermenicide Concentration Rank 1

| R.T. | EstConc   | Area    | Relative to ISTD | R.T. |
|------|-----------|---------|------------------|------|
| 3.36 | 14.17 ppb | 1377250 | Fluorobenzene    | 8.93 |

| Hit# | of 5                      | Tentative ID | MW  | MolForm | CAS#        | Qual |
|------|---------------------------|--------------|-----|---------|-------------|------|
| 1    | Sulfur dioxide            | powde        | 64  | O2S     | 007446-09-5 | 83   |
| 2    | Aminomethanesulfonic acid | \$\$ Methan  | 111 | CH5NO3S | 013881-91-9 | 4    |
| 3    | Ethyl Chloride            |              | 64  | C2H5Cl  | 000075-00-3 | 3    |
| 4    | Ethene, 1,1-difluoro-     |              | 64  | C2H2F2  | 000075-38-7 | 3    |

