

## LABORATORY REPORT

July 24, 2009

Matt Fragala  
Environmental Health & Engineering, Inc.  
117 Fourth Avenue  
Needham, MA 02494

**RE: 16512**

Dear Matt:

Enclosed are the results of the samples submitted to our laboratory on July 22, 2009. For your reference, these analyses have been assigned our service request number P0902479.

All analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.caslab.com](http://www.caslab.com). Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein. Your report contains 14 pages.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; Department of the Navy (NFESC); Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-08-TX. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

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

Respectfully submitted,

**Columbia Analytical Services, Inc.**



Kate Aguilera  
Project Manager

Client: Environmental Health & Engineering, Inc.  
Project: 16512

CAS Project No: P0902479

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### CASE NARRATIVE

The samples were received intact under chain of custody on July 22, 2009 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.

#### Aldehyde Analysis

The samples were analyzed for aldehydes according to EPA Method TO-11A using high performance liquid chromatography (HPLC).

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*The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.*

**Client:** Environmental Health & Engineering, Inc.  
**Project:** 16512

**Service Request:** P0902479

**SAMPLE CROSS-REFERENCE**

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
P0902479-001	99377	7/21/09	00:00
P0902479-002	99378	7/21/09	00:00
P0902479-003	99379	7/21/09	00:00
P0902479-004	99380	7/21/09	00:00
P0902479-005	99385	7/21/09	00:00
P0902479-006	99381	7/21/09	00:00
P0902479-007	99382	7/21/09	00:00

PO 907479

DATE: 7/21/09

FROM: Environmental Health and Engineering, Inc.  
117 Fourth Avenue  
Needham, MA 02494-2725

TO: Columbia Analytical Services

Please send invoices to ATTN: Accounts Payable  
Please send reports to ATTN: Data Coordinator

In all correspondence regarding this matter, please refer to EH&E Project # 16512

The cost of this analysis will be covered by EH&E Purchase Order # 16512

For EH & E Data Coordinator - URGENT DATA

SAMPLE ID	SAMPLE TYPE	ANALYTICAL METHOD/NUMBER	OTHER:Time/Date/Vol.
1 99377	AIR	TO-11A Full List	6 L
2 99378	↓	↓	↓
3 99379	↓	↓	↓
4 99380	↓	↓	↓
5 99385	↓	↓	0
6 99381	↓	↓	6
7 99382	AIR	TO-11A Full List	↓ ↓

Special instructions:

- Standard turn around time
- Rush by 24h turnaround date/time
- Fax results 781-247-4305
- RETURN SAMPLES
- Electronic transfer - datacoordinator@ehinc.com
- Additional report recipient

Each signatory please return one copy of this form to the above address

Relinquished by: [Signature] of Environmental Health & Engineering, Inc. Date: \_\_\_\_\_

Received by: FED EX of (company name) \_\_\_\_\_ Date: \_\_\_\_\_

Relinquished by: FED EX of (company name) \_\_\_\_\_ Date: \_\_\_\_\_

Received by: [Signature] of (company name) CAS Date: 07/22/09 0945

Relinquished by: \_\_\_\_\_ of (company name) \_\_\_\_\_ Date: \_\_\_\_\_

Received by: \_\_\_\_\_ of (company name) \_\_\_\_\_ Date: \_\_\_\_\_

Lab Data

Received by: \_\_\_\_\_ of Environmental Health & Engineering, Inc. Date: \_\_\_\_\_

**Columbia Analytical Services, Inc.**  
**Sample Acceptance Check Form**

Client: Environmental Health & Engineering, Inc.

Work order: P0902479

Project: 16512

Sample(s) received on: 7/22/2009

Date opened: 7/22/2009

by: SSTAPLES

*Note:* This form is used for all samples received by CAS. 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.

- |    |                                                                                                               | <b>Yes</b>                          | <b>No</b>                           | <b>N/A</b>                          |
|----|---------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| 1  | Were <b>sample containers</b> properly marked with client sample ID?                                          | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 2  | Container(s) <b>supplied by CAS</b> ?                                                                         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 3  | Did <b>sample containers</b> arrive in good condition?                                                        | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 4  | Was a <b>chain-of-custody</b> provided?                                                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 5  | Was the <b>chain-of-custody</b> properly completed?                                                           | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 6  | Did <b>sample container labels</b> and/or tags agree with custody papers?                                     | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 7  | Was <b>sample volume</b> received adequate for analysis?                                                      | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 8  | Are samples within specified holding times?                                                                   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 9  | Was proper <b>temperature</b> (thermal preservation) of cooler at receipt adhered to?                         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
|    | Cooler Temperature <u>ambient</u> °C    Blank Temperature _____ °C                                            |                                     |                                     |                                     |
| 10 | Was a <b>trip blank</b> received?                                                                             | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
|    | Trip blank supplied by CAS: _____                                                                             |                                     |                                     |                                     |
| 11 | Were <b>custody seals</b> on outside of cooler/Box?                                                           | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
|    | Location of seal(s)? _____ Sealing Lid?                                                                       | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
|    | Were signature and date included?                                                                             | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
|    | Were seals intact?                                                                                            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
|    | Were custody seals on outside of sample container?                                                            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
|    | Location of seal(s)? _____ Sealing Lid?                                                                       | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
|    | Were signature and date included?                                                                             | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
|    | Were seals intact?                                                                                            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 12 | Do containers have appropriate <b>preservation</b> , according to method/SOP or Client specified information? | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
|    | Is there a client indication that the submitted samples are <b>pH</b> preserved?                              | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
|    | Were <b>VOA vials</b> checked for presence/absence of air bubbles?                                            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
|    | Does the client/method/SOP require that the analyst check the sample pH and <u>if necessary</u> alter it?     | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 13 | <b>Tubes:</b> Are the tubes capped and intact?                                                                | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
|    | Do they contain moisture?                                                                                     | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 14 | <b>Badges:</b> Are the badges properly capped and intact?                                                     | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
|    | Are dual bed badges separated and individually capped and intact?                                             | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P0902479-001.01	Silica Gel DNPH Tube					
P0902479-002.01	Silica Gel DNPH Tube					
P0902479-003.01	Silica Gel DNPH Tube					
P0902479-004.01	Silica Gel DNPH Tube					
P0902479-005.01	Silica Gel DNPH Tube					
P0902479-006.01	Silica Gel DNPH Tube					

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

Chain of Custody is missing date/time collected \_\_\_\_\_

\*Required pH: Phenols/COD/NH3/TOC/TOX/NO3+NO2/TKN/T.PHOS, H2SO4 (pH<2); Metals, HNO3 (pH<2); CN (NaOH or NaOH/Asc Acid) (pH>12);



**COLUMBIA ANALYTICAL SERVICES, INC.**

RESULTS OF ANALYSIS

Page 1 of 1

**Client:** Environmental Health & Engineering, Inc.

**Client Sample ID:** 99377

**Client Project ID:** 16512

CAS Project ID: P0902479

CAS Sample ID: P0902479-001

Test Code: EPA Method TO-11A  
 Instrument ID: Waters LC Module I Plus/UV\_Vis 360/LC1  
 Analyst: Hani Cherazaie  
 Sampling Media: Silica Gel DNPH Tube  
 Test Notes: BC

Date Collected: 7/21/09  
 Date Received: 7/22/09  
 Date Analyzed: 7/22/09  
 Desorption Volume: 1.0 ml  
 Volume Sampled: 6.0 Liter(s)

CAS #	Compound	Result ng/Sample	Result µg/m <sup>3</sup>	MRL µg/m <sup>3</sup>	Result ppbV	MRL ppbV	Data Qualifier
50-00-0	Formaldehyde	120	19	17	16	14	
75-07-0	Acetaldehyde	650	110	17	60	9.3	
123-38-6	Propionaldehyde	< 100	ND	17	ND	7.0	
4170-30-3	Crotonaldehyde, Total	< 100	ND	17	ND	5.8	
123-72-8	Butyraldehyde	< 100	ND	17	ND	5.7	
100-52-7	Benzaldehyde	100	17	17	4.0	3.8	
590-86-3	Isovaleraldehyde	< 100	ND	17	ND	4.7	
110-62-3	Valeraldehyde	140	23	17	6.7	4.7	
529-20-4	o-Tolualdehyde	< 100	ND	17	ND	3.4	
620-23-5							
104-87-0	m,p-Tolualdehyde	< 200	ND	33	ND	6.8	
66-25-1	n-Hexaldehyde	490	82	17	20	4.1	
5779-94-2	2,5-Dimethylbenzaldehyde	< 100	ND	17	ND	3.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

BC = Results reported are not blank corrected.

Verified By: Re Date: 7/22/09

**COLUMBIA ANALYTICAL SERVICES, INC.**

RESULTS OF ANALYSIS

Page 1 of 1

**Client:** Environmental Health & Engineering, Inc.

**Client Sample ID:** 99378

**Client Project ID:** 16512

CAS Project ID: P0902479

CAS Sample ID: P0902479-002

**Test Code:** EPA Method TO-11A  
**Instrument ID:** Waters LC Module I Plus/UV\_Vis 360/LC1  
**Analyst:** Hani Cherazaie  
**Sampling Media:** Silica Gel DNPH Tube  
**Test Notes:** BC

**Date Collected:** 7/21/09  
**Date Received:** 7/22/09  
**Date Analyzed:** 7/22/09  
**Desorption Volume:** 1.0 ml  
**Volume Sampled:** 6.0 Liter(s)

CAS #	Compound	Result ng/Sample	Result µg/m <sup>3</sup>	MRL µg/m <sup>3</sup>	Result ppbV	MRL ppbV	Data Qualifier
50-00-0	Formaldehyde	< 100	ND	17	ND	14	
75-07-0	Acetaldehyde	650	110	17	60	9.3	
123-38-6	Propionaldehyde	< 100	ND	17	ND	7.0	
4170-30-3	Crotonaldehyde, Total	< 100	ND	17	ND	5.8	
123-72-8	Butyraldehyde	< 100	ND	17	ND	5.7	
100-52-7	Benzaldehyde	< 100	ND	17	ND	3.8	
590-86-3	Isovaleraldehyde	< 100	ND	17	ND	4.7	
110-62-3	Valeraldehyde	140	24	17	6.7	4.7	
529-20-4	o-Tolualdehyde	< 100	ND	17	ND	3.4	
620-23-5							
104-87-0	m,p-Tolualdehyde	< 200	ND	33	ND	6.8	
66-25-1	n-Hexaldehyde	550	91	17	22	4.1	
5779-94-2	2,5-Dimethylbenzaldehyde	< 100	ND	17	ND	3.0	

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**COLUMBIA ANALYTICAL SERVICES, INC.**

RESULTS OF ANALYSIS

Page 1 of 1

**Client:** Environmental Health & Engineering, Inc.

**Client Sample ID:** 99379

**Client Project ID:** 16512

CAS Project ID: P0902479

CAS Sample ID: P0902479-003

**Test Code:** EPA Method TO-11A  
**Instrument ID:** Waters LC Module I Plus/UV\_Vis 360/LC1  
**Analyst:** Hani Cherazaie  
**Sampling Media:** Silica Gel DNPH Tube  
**Test Notes:** BC

**Date Collected:** 7/21/09  
**Date Received:** 7/22/09  
**Date Analyzed:** 7/22/09  
**Desorption Volume:** 1.0 ml  
**Volume Sampled:** 6.0 Liter(s)

CAS #	Compound	Result ng/Sample	Result µg/m <sup>3</sup>	MRL µg/m <sup>3</sup>	Result ppbV	MRL ppbV	Data Qualifier
50-00-0	Formaldehyde	< 100	ND	17	ND	14	
75-07-0	Acetaldehyde	290	48	17	27	9.3	
123-38-6	Propionaldehyde	< 100	ND	17	ND	7.0	
4170-30-3	Crotonaldehyde, Total	< 100	ND	17	ND	5.8	
123-72-8	Butyraldehyde	< 100	ND	17	ND	5.7	
100-52-7	Benzaldehyde	< 100	ND	17	ND	3.8	
590-86-3	Isovaleraldehyde	< 100	ND	17	ND	4.7	
110-62-3	Valeraldehyde	< 100	ND	17	ND	4.7	
529-20-4	o-Tolualdehyde	< 100	ND	17	ND	3.4	
620-23-5							
104-87-0	m,p-Tolualdehyde	< 200	ND	33	ND	6.8	
66-25-1	n-Hexaldehyde	240	41	17	9.9	4.1	
5779-94-2	2,5-Dimethylbenzaldehyde	< 100	ND	17	ND	3.0	

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BC = Results reported are not blank corrected.

Verified By: Re Date: 7/23/09

**COLUMBIA ANALYTICAL SERVICES, INC.**

RESULTS OF ANALYSIS

Page 1 of 1

**Client:** Environmental Health & Engineering, Inc.  
**Client Sample ID:** 99380  
**Client Project ID:** 16512

CAS Project ID: P0902479  
 CAS Sample ID: P0902479-004

**Test Code:** EPA Method TO-11A  
**Instrument ID:** Waters LC Module I Plus/UV\_Vis 360/LC1  
**Analyst:** Hani Cherazaie  
**Sampling Media:** Silica Gel DNPH Tube  
**Test Notes:** BC

**Date Collected:** 7/21/09  
**Date Received:** 7/22/09  
**Date Analyzed:** 7/22/09  
**Desorption Volume:** 1.0 ml  
**Volume Sampled:** 6.0 Liter(s)

CAS #	Compound	Result ng/Sample	Result µg/m <sup>3</sup>	MRL µg/m <sup>3</sup>	Result ppbV	MRL ppbV	Data Qualifier
50-00-0	Formaldehyde	190	32	17	26	14	
75-07-0	Acetaldehyde	340	56	17	31	9.3	
123-38-6	Propionaldehyde	< 100	ND	17	ND	7.0	
4170-30-3	Crotonaldehyde, Total	< 100	ND	17	ND	5.8	
123-72-8	Butyraldehyde	260	43	17	15	5.7	M
100-52-7	Benzaldehyde	< 100	ND	17	ND	3.8	
590-86-3	Isovaleraldehyde	< 100	ND	17	ND	4.7	
110-62-3	Valeraldehyde	< 100	ND	17	ND	4.7	
529-20-4	o-Tolualdehyde	< 100	ND	17	ND	3.4	
620-23-5							
104-87-0	m,p-Tolualdehyde	< 200	ND	33	ND	6.8	
66-25-1	n-Hexaldehyde	230	39	17	9.5	4.1	
5779-94-2	2,5-Dimethylbenzaldehyde	< 100	ND	17	ND	3.0	

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M = Matrix interference; results may be biased high.

**COLUMBIA ANALYTICAL SERVICES, INC.**

RESULTS OF ANALYSIS

Page 1 of 1

**Client:** Environmental Health & Engineering, Inc.

**Client Sample ID:** 99385

**Client Project ID:** 16512

CAS Project ID: P0902479

CAS Sample ID: P0902479-005

Test Code: EPA Method TO-11A  
 Instrument ID: Waters LC Module I Plus/UV\_Vis 360/LC1  
 Analyst: Hani Cherazaie  
 Sampling Media: Silica Gel DNPH Tube  
 Test Notes: BC

Date Collected: 7/21/09  
 Date Received: 7/22/09  
 Date Analyzed: 7/22/09  
 Desorption Volume: 1.0 ml  
 Volume Sampled: NA Liter(s)

CAS #	Compound	Result ng/Sample	Result µg/m <sup>3</sup>	MRL µg/m <sup>3</sup>	Result ppbV	MRL ppbV	Data Qualifier
50-00-0	Formaldehyde	< 100	NA	NA	NA	NA	
75-07-0	Acetaldehyde	< 100	NA	NA	NA	NA	
123-38-6	Propionaldehyde	< 100	NA	NA	NA	NA	
4170-30-3	Crotonaldehyde, Total	< 100	NA	NA	NA	NA	
123-72-8	Butyraldehyde	< 100	NA	NA	NA	NA	
100-52-7	Benzaldehyde	< 100	NA	NA	NA	NA	
590-86-3	Isovaleraldehyde	< 100	NA	NA	NA	NA	
110-62-3	Valeraldehyde	< 100	NA	NA	NA	NA	
529-20-4	o-Tolualdehyde	< 100	NA	NA	NA	NA	
620-23-5							
104-87-0	m,p-Tolualdehyde	< 200	NA	NA	NA	NA	
66-25-1	n-Hexaldehyde	< 100	NA	NA	NA	NA	
5779-94-2	2,5-Dimethylbenzaldehyde	< 100	NA	NA	NA	NA	

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**COLUMBIA ANALYTICAL SERVICES, INC.**

RESULTS OF ANALYSIS

Page 1 of 1

**Client:** Environmental Health & Engineering, Inc.

**Client Sample ID:** 99381

**Client Project ID:** 16512

CAS Project ID: P0902479

CAS Sample ID: P0902479-006

Test Code: EPA Method TO-11A  
 Instrument ID: Waters LC Module I Plus/UV\_Vis 360/LC1  
 Analyst: Hani Cherazaie  
 Sampling Media: Silica Gel DNPH Tube  
 Test Notes: **BC**

Date Collected: 7/21/09  
 Date Received: 7/22/09  
 Date Analyzed: 7/22/09  
 Desorption Volume: 1.0 ml  
 Volume Sampled: 6.0 Liter(s)

CAS #	Compound	Result ng/Sample	Result µg/m <sup>3</sup>	MRL µg/m <sup>3</sup>	Result ppbV	MRL ppbV	Data Qualifier
50-00-0	<b>Formaldehyde</b>	<b>100</b>	<b>17</b>	17	<b>14</b>	14	
75-07-0	<b>Acetaldehyde</b>	<b>290</b>	<b>48</b>	17	<b>27</b>	9.3	
123-38-6	Propionaldehyde	< 100	ND	17	ND	7.0	
4170-30-3	Crotonaldehyde, Total	< 100	ND	17	ND	5.8	
123-72-8	Butyraldehyde	< 100	ND	17	ND	5.7	
100-52-7	<b>Benzaldehyde</b>	<b>110</b>	<b>19</b>	17	<b>4.3</b>	3.8	
590-86-3	Isovaleraldehyde	< 100	ND	17	ND	4.7	
110-62-3	Valeraldehyde	< 100	ND	17	ND	4.7	
529-20-4	o-Tolualdehyde	< 100	ND	17	ND	3.4	
620-23-5							
104-87-0	m,p-Tolualdehyde	< 200	ND	33	ND	6.8	
66-25-1	<b>n-Hexaldehyde</b>	<b>210</b>	<b>36</b>	17	<b>8.7</b>	4.1	
5779-94-2	2,5-Dimethylbenzaldehyde	< 100	ND	17	ND	3.0	

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Verified By:                      Date: 7/22/09

**COLUMBIA ANALYTICAL SERVICES, INC.**

RESULTS OF ANALYSIS

Page 1 of 1

**Client:** Environmental Health & Engineering, Inc.

**Client Sample ID:** 99382

**Client Project ID:** 16512

CAS Project ID: P0902479

CAS Sample ID: P0902479-007

**Test Code:** EPA Method TO-11A  
**Instrument ID:** Waters LC Module I Plus/UV\_Vis 360/LC1  
**Analyst:** Hani Cherazaie  
**Sampling Media:** Silica Gel DNPH Tube  
**Test Notes:** BC

**Date Collected:** 7/21/09  
**Date Received:** 7/22/09  
**Date Analyzed:** 7/22/09  
**Desorption Volume:** 1.0 ml  
**Volume Sampled:** 6.0 Liter(s)

CAS #	Compound	Result ng/Sample	Result µg/m <sup>3</sup>	MRL µg/m <sup>3</sup>	Result ppbV	MRL ppbV	Data Qualifier
50-00-0	<b>Formaldehyde</b>	<b>160</b>	<b>27</b>	17	<b>22</b>	14	
75-07-0	<b>Acetaldehyde</b>	<b>300</b>	<b>50</b>	17	<b>28</b>	9.3	
123-38-6	Propionaldehyde	< 100	ND	17	ND	7.0	
4170-30-3	Crotonaldehyde, Total	< 100	ND	17	ND	5.8	
123-72-8	<b>Butyraldehyde</b>	<b>140</b>	<b>23</b>	17	<b>8.0</b>	5.7	
100-52-7	<b>Benzaldehyde</b>	<b>100</b>	<b>17</b>	17	<b>4.0</b>	3.8	
590-86-3	Isovaleraldehyde	< 100	ND	17	ND	4.7	
110-62-3	Valeraldehyde	< 100	ND	17	ND	4.7	
529-20-4	o-Tolualdehyde	< 100	ND	17	ND	3.4	
620-23-5							
104-87-0	m,p-Tolualdehyde	< 200	ND	33	ND	6.8	
66-25-1	<b>n-Hexaldehyde</b>	<b>270</b>	<b>44</b>	17	<b>11</b>	4.1	
5779-94-2	2,5-Dimethylbenzaldehyde	< 100	ND	17	ND	3.0	

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BC = Results reported are not blank corrected.

Verified By:     *Rus*     Date:     7/22/09

**COLUMBIA ANALYTICAL SERVICES, INC.**

RESULTS OF ANALYSIS

Page 1 of 1

**Client:** Environmental Health & Engineering, Inc.  
**Client Sample ID:** Method Blank  
**Client Project ID:** 16512

CAS Project ID: P0902479  
 CAS Sample ID: P090722-MB

**Test Code:** EPA Method TO-11A  
**Instrument ID:** Waters LC Module I Plus/UV\_Vis 360/LC1  
**Analyst:** Hani Cherazaie  
**Sampling Media:** Silica Gel DNPH Tube  
**Test Notes:** BC

**Date Collected:** NA  
**Date Received:** NA  
**Date Analyzed:** 07/22/09  
**Desorption Volume:** 1.0 ml  
**Volume Sampled:** NA Liter(s)

CAS #	Compound	Result ng/Sample	Result µg/m <sup>3</sup>	MRL µg/m <sup>3</sup>	Result ppbV	MRL ppbV	Data Qualifier
50-00-0	Formaldehyde	< 100	NA	NA	NA	NA	
75-07-0	Acetaldehyde	< 100	NA	NA	NA	NA	
123-38-6	Propionaldehyde	< 100	NA	NA	NA	NA	
4170-30-3	Crotonaldehyde, Total	< 100	NA	NA	NA	NA	
123-72-8	Butyraldehyde	< 100	NA	NA	NA	NA	
100-52-7	Benzaldehyde	< 100	NA	NA	NA	NA	
590-86-3	Isovaleraldehyde	< 100	NA	NA	NA	NA	
110-62-3	Valeraldehyde	< 100	NA	NA	NA	NA	
529-20-4	o-Tolualdehyde	< 100	NA	NA	NA	NA	
620-23-5							
104-87-0	m,p-Tolualdehyde	< 200	NA	NA	NA	NA	
66-25-1	n-Hexaldehyde	< 100	NA	NA	NA	NA	
5779-94-2	2,5-Dimethylbenzaldehyde	< 100	NA	NA	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

BC = Results reported are not blank corrected.

NA = Not applicable.