Specification A 781/A 781M. The chemical analysis thus determined shall conform to the following requirements:

| | |
|---|---|
| Copper, max, % | 0.50 |
| Nickel, max, % | 0.50 |
| Molybdenum, max, % | 0.25 |
| Chromium, max, % | 0.50 |

S54.2 Total content of these residual elements, maximum percent 1.00 .

**TABLE 5 Allowable Deviation[A] from Average Casting Weight**

| Casting Weight, lb [kg] | Positive Deviation, % | Negative Deviation, % |
|---|---|---|
| Up to 100 [45], incl | 8.0 | 8.0 |
| Over 100 to 500 [45 to 230], incl | 6.5 | 5.0 |
| Over 500 to 10 000 [230 to 4540], incl | 5.0 | 3.0 |
| Over 10 000 [4540] | 3.0 | 2.5 |

[A] Deviations do not apply to mass as calculated from a design drawing.

TABLE 2 Tensile Requirements

| Grade | Tensile strength min, ksi [MPa] | Yield point min, ksi [MPa] | Elongation in 2 in. or 50 mm, min, %[A] | Reduction of Area, min, % |
|---|---|---|---|---|
| 80-40 [550-275] | 80 [550] | 40 [275] | 18 | 30 |
| 80-50 [550-345] | 80 [550] | 50 [345] | 22 | 35 |
| 90-60 [620-415] | 90 [620] | 60 [415] | 20 | 40 |
| 105-85 [725-585] | 105 [725] | 85 [585] | 17 | 35 |
| 115-95 [795-655] | 115 [795] | 95 [655] | 14 | 30 |
| 130-115 [895-795] | 130 [895] | 115 [795] | 11 | 25 |
| 135-125 [930-860] | 135 [930] | 125 [860] | 9 | 22 |
| 150-135 [1035-930] | 150 [1035] | 135 [930] | 7 | 18 |
| 160-145 [1105-1000] | 160 [1105] | 145 [1000] | 6 | 12 |
| 165-150 [1140-1035] | 165 [1140] | 150 [1035] | 5 | 20 |
| 165-150L [1140-1035L][B] | 165 [1140] | 150 [1035] | 5 | 20 |
| 210-180 [1450-1240] | 210 [1450] | 180 [1240] | 4 | 15 |
| 210-180L [1450-1240L][B] | 210 [1450] | 180 [1240] | 4 | 15 |
| 260-210 [1795-1450] | 260 [1795] | 210 [1450] | 3 | 6 |
| 260-210L [1795-1450L][B] | 260 [1795] | 210 [1450] | 3 | 6 |

[A] When ICI test bars are used in tensile testing as provided for in this specification, the gage length to reduced section diameter ratio shall be 4 to 1.
[B] These grades must be charpy impact tested as prescribed in Section 9, and with minimum values as shown in Table 3.

## 7. Chemical Composition

7.1 The steel shall conform to sulfur and phosphorus requirements as prescribed in Table 1.

7.2 The content of carbon, manganese, silicon, and alloying elements may, by agreement, be prescribed by the purchaser. If not specified, the content may be selected by the manufacturer to obtain the required mechanical properties.

7.3 When the analysis of carbon, manganese, silicon, or any intentionally added alloying element is specifically requested in the contract or order, it shall be made by the manufacturer and reported to the purchaser. The results of these analyses shall not be used as a basis for rejection except by prior agreement.

## 8. Tensile Requirements

8.1 One tension test shall be made from each heat and shall conform to the tensile requirements specified in Table 2.

8.2 The test coupons and specimens shall conform to requirements specified in Section 11.

8.3 Tension test coupons shall be machined to the form and dimension shown in Fig. 5 of Test Methods and Definitions A 370 and tested in accordance with those test methods.

8.4 To determine conformance with the tension test requirements, an observed value or calculated value shall be rounded off in accordance with Practice E 29 to the nearest 500 psi [5 MPa] for yield point and tensile strength and to the nearest 1 % for elongation and reduction of area.

## 9. Charpy Impact Requirements

9.1 This section is applicable only to grades 165-150L [1140-1035L], 210-180L [1450-1240L], and 260-210L [1795-1450L].

NOTE 1—Other grades may be ordered to charpy impact test requirements in accordance with Supplementary Requirement S9 of Specification A 781/A 781M.

9.2 The notched bar impact properties of each heat shall be determined by testing one set of three Charpy V-notch impact specimens at −40° ± 2°F [−40° ± 1°C]. The energy value of the three specimens shall not be less than shown in Table 3.

TABLE 3 Impact Requirements

| Grade | 165-150L [1140-1035L] | 210-180L [1450-1240L] | 260-210L [1795-1450L] |
|---|---|---|---|
| Impact Requirements Charpy V-notch | | | |
| Energy value, ft·lbf [J], min value for two specimens and minimum average of three specimens | 20 [27] | 15 [20] | 6 [8] |
| Energy value, ft·lbf [J], min for single specimen | 16 [22] | 12 [16] | 4 [5] |

9.3 Test coupons and specimens shall conform to the requirements specified in Section 11.

9.4 Impact test specimens shall be machined to the form and dimensions shown in Test Methods and Definitions A 370, Type A, Charpy V-notch specimen, Fig. 11, and tested in accordance with those test methods.

## 10. Retests

10.1 If the results of the tensile or charpy tests do not conform to the requirements specified, heat-treated castings may, at the manufacturer's option, be reheat treated. Testing after reheat treatment shall consist of the full number of specimens complying with the specification or order.

## 11. Test Coupons and Specimens

11.1 Test bars shall be poured from the same heat as the castings represented. Test coupons may be cast integrally with the castings or as separate blocks similar to those shown in Fig. 1 of Specification A 781/A 781M.

11.1.1 In the case of quenched and tempered castings where the ruling section of the casting exceeds three inches, supplementary requirement S 15 of Specification A 781/A 781M shall apply.

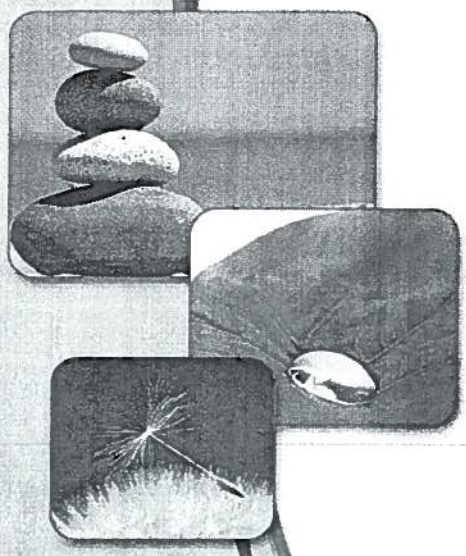
11.2 The bar from which the test piece is taken shall be heat treated in production furnaces with the castings or to the same procedure as the castings it represents.

11.2.1 When the bar from which the test piece is taken is not heat treated as part of the same heat treatment load as the

## SUMMARY OF CHANGES

Subcommittee A01.18 has identified the location of selected changes to this standard since the last issue (A 148/A 148M – 01) that may impact the use of this standard.

(*1*) Added UNS DXXXX equivalents to Table 1.



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-70758-2
Client Project/Site: Hercules Hattiesburg APIX 7/26/11

For:
Ashland Inc.
Ashland Hercules Research Center
500 Hercules Rd Bldg 8139
Wilmington, Delaware 19808

Attn: Timothy Hassett

Lidya Gulizia

*Authorized for release by:*
*08/10/2011 06:12:29 PM*

Lidya Gulizia
Project Manager II
lidya.gulizia@testamericainc.com

cc: Craig Derouen Chris Waters Charlie Jordan

## Job ID: 680-70758-2

**Laboratory: TestAmerica Savannah**

**Narrative**

**Job Narrative**
**680-70758-2**

**Receipt**
All samples were received in good condition within temperature requirements.

**GC/MS VOA**
No analytical or quality issues were noted.

**VOA Prep**
No analytical or quality issues were noted.

**Comments**
No additional comments.

# Method Summary

Client: Ashland Inc.
Project/Site: Hercules Hattiesburg APIX 7/26/11

TestAmerica Job ID: 680-70758-2

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 8260B | Volatile Organic Compounds (GC/MS) | SW846 | TAL SAV |

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Client: Ashland Inc.
Project/Site: Hercules Hattiesburg APIX 7/26/11

TestAmerica Job ID: 680-70758-2

**Client Sample ID: ASH-MW21-072611**
**Date Collected: 07/26/11 15:03**
**Date Received: 07/27/11 09:20**

**Lab Sample ID: 680-70758-8**
**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | <1300 | | 1300 | | ug/L | | | 07/30/11 07:05 | 50 |
| Acetonitrile | <2000 | | 2000 | | ug/L | | | 07/30/11 07:05 | 50 |
| Acrolein | <1000 | | 1000 | | ug/L | | | 07/30/11 07:05 | 50 |
| Acrylonitrile | <1000 | | 1000 | | ug/L | | | 07/30/11 07:05 | 50 |
| **Benzene** | **3200** | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| Dichlorobromomethane | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| Bromoform | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| Bromomethane | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| 2-Butanone (MEK) | <500 | | 500 | | ug/L | | | 07/30/11 07:05 | 50 |
| Carbon disulfide | <100 | | 100 | | ug/L | | | 07/30/11 07:05 | 50 |
| Carbon tetrachloride | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| **Chlorobenzene** | **150** | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| 2-Chloro-1,3-butadiene | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| Chloroethane | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| **Chloroform** | **4300** | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| Chloromethane | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| 3-Chloro-1-propene | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| Chlorodibromomethane | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| 1,2-Dibromo-3-Chloropropane | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| Ethylene Dibromide | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| Dibromomethane | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| trans-1,4-Dichloro-2-butene | <100 | | 100 | | ug/L | | | 07/30/11 07:05 | 50 |
| Dichlorodifluoromethane | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| 1,1-Dichloroethane | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| 1,2-Dichloroethane | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| cis-1,2-Dichloroethene | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| trans-1,2-Dichloroethene | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| 1,1-Dichloroethene | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| 1,2-Dichloropropane | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| cis-1,3-Dichloropropene | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| trans-1,3-Dichloropropene | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| Ethylbenzene | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| Ethyl methacrylate | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| 2-Hexanone | <500 | | 500 | | ug/L | | | 07/30/11 07:05 | 50 |
| Iodomethane | <250 | | 250 | | ug/L | | | 07/30/11 07:05 | 50 |
| Isobutyl alcohol | <2000 | | 2000 | | ug/L | | | 07/30/11 07:05 | 50 |
| Methacrylonitrile | <1000 | | 1000 | | ug/L | | | 07/30/11 07:05 | 50 |
| Methylene Chloride | <250 | | 250 | | ug/L | | | 07/30/11 07:05 | 50 |
| Methyl methacrylate | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| 4-Methyl-2-pentanone (MIBK) | <500 | | 500 | | ug/L | | | 07/30/11 07:05 | 50 |
| Pentachloroethane | <250 | | 250 | | ug/L | | | 07/30/11 07:05 | 50 |
| Propionitrile | <1000 | | 1000 | | ug/L | | | 07/30/11 07:05 | 50 |
| Styrene | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| 1,1,1,2-Tetrachloroethane | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| 1,1,2,2-Tetrachloroethane | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| Tetrachloroethene | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| **Toluene** | **2600** | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| 1,1,1-Trichloroethane | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| 1,1,2-Trichloroethane | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |
| Trichloroethene | <50 | | 50 | | ug/L | | | 07/30/11 07:05 | 50 |

# Surrogate Summary

Client: Ashland Inc.
Project/Site: Hercules Hattiesburg APIX 7/26/11

TestAmerica Job ID: 680-70758-2

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Matrix: Water**

**Prep Type: Total/NA**

| | | Percent Surrogate Recovery (Acceptance Limits) | | |
|---|---|---|---|---|
| | | BFB | DBFM | TOL |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) | (70-130) |
| 680-70758-8 | ASH-MW21-072611 | 92 | 107 | 100 |
| LCS 680-210543/4 | Lab Control Sample | 104 | 108 | 101 |
| LCSD 680-210543/5 | Lab Control Sample Dup | 102 | 103 | 101 |
| MB 680-210543/7 | Method Blank | 93 | 107 | 100 |

**Surrogate Legend**

BFB = 4-Bromofluorobenzene
DBFM = Dibromofluoromethane
TOL = Toluene-d8 (Surr)

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 680-210543/7**
**Matrix: Water**
**Analysis Batch: 210543**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Trichloroethene | <1.0 | | 1.0 | | ug/L | | | 07/30/11 00:43 | 1 |
| Trichlorofluoromethane | <1.0 | | 1.0 | | ug/L | | | 07/30/11 00:43 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | | ug/L | | | 07/30/11 00:43 | 1 |
| Vinyl acetate | <2.0 | | 2.0 | | ug/L | | | 07/30/11 00:43 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | | ug/L | | | 07/30/11 00:43 | 1 |
| Xylenes, Total | <2.0 | | 2.0 | | ug/L | | | 07/30/11 00:43 | 1 |

| *Surrogate* | *MB % Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *93* | | *70 - 130* | | *07/30/11 00:43* | *1* |
| *Dibromofluoromethane* | *107* | | *70 - 130* | | *07/30/11 00:43* | *1* |
| *Toluene-d8 (Surr)* | *100* | | *70 - 130* | | *07/30/11 00:43* | *1* |

**Lab Sample ID: LCS 680-210543/4**
**Matrix: Water**
**Analysis Batch: 210543**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | % Rec | % Rec. Limits |
|---|---|---|---|---|---|---|---|
| Acetone | 100 | 129 | | ug/L | | 129 | 26 - 180 |
| Benzene | 50.0 | 50.0 | | ug/L | | 100 | 70 - 130 |
| Dichlorobromomethane | 50.0 | 46.3 | | ug/L | | 93 | 70 - 130 |
| Bromoform | 50.0 | 38.1 | | ug/L | | 76 | 70 - 130 |
| Bromomethane | 50.0 | 25.4 | | ug/L | | 51 | 23 - 165 |
| 2-Butanone (MEK) | 100 | 111 | | ug/L | | 111 | 49 - 172 |
| Carbon disulfide | 50.0 | 48.0 | | ug/L | | 96 | 54 - 132 |
| Carbon tetrachloride | 50.0 | 41.3 | | ug/L | | 83 | 70 - 130 |
| Chlorobenzene | 50.0 | 52.5 | | ug/L | | 105 | 70 - 130 |
| Chloroethane | 50.0 | 50.0 | | ug/L | | 100 | 56 - 152 |
| Chloroform | 50.0 | 52.0 | | ug/L | | 104 | 70 - 130 |
| Chloromethane | 50.0 | 50.7 | | ug/L | | 101 | 70 - 130 |
| Chlorodibromomethane | 50.0 | 43.3 | | ug/L | | 87 | 70 - 130 |
| 1,2-Dibromo-3-Chloropropane | 50.0 | 41.0 | | ug/L | | 82 | 70 - 130 |
| Ethylene Dibromide | 50.0 | 49.6 | | ug/L | | 99 | 70 - 130 |
| Dibromomethane | 50.0 | 51.6 | | ug/L | | 103 | 70 - 130 |
| Dichlorodifluoromethane | 50.0 | 49.9 | | ug/L | | 100 | 44 - 146 |
| 1,1-Dichloroethane | 50.0 | 49.8 | | ug/L | | 100 | 70 - 130 |
| 1,2-Dichloroethane | 50.0 | 50.7 | | ug/L | | 101 | 70 - 130 |
| cis-1,2-Dichloroethene | 50.0 | 51.7 | | ug/L | | 103 | 70 - 130 |
| trans-1,2-Dichloroethene | 50.0 | 51.5 | | ug/L | | 103 | 70 - 130 |
| 1,1-Dichloroethene | 50.0 | 52.0 | | ug/L | | 104 | 66 - 131 |
| 1,2-Dichloropropane | 50.0 | 49.4 | | ug/L | | 99 | 70 - 130 |
| cis-1,3-Dichloropropene | 50.0 | 45.8 | | ug/L | | 92 | 70 - 130 |
| trans-1,3-Dichloropropene | 50.0 | 43.9 | | ug/L | | 88 | 70 - 130 |
| Ethylbenzene | 50.0 | 51.1 | | ug/L | | 102 | 70 - 130 |
| 2-Hexanone | 100 | 114 | | ug/L | | 114 | 42 - 185 |
| Methylene Chloride | 50.0 | 53.2 | | ug/L | | 106 | 67 - 130 |
| 4-Methyl-2-pentanone (MIBK) | 100 | 94.4 | | ug/L | | 94 | 70 - 130 |
| Styrene | 50.0 | 54.3 | | ug/L | | 109 | 70 - 130 |
| 1,1,1,2-Tetrachloroethane | 50.0 | 46.0 | | ug/L | | 92 | 70 - 130 |
| 1,1,2,2-Tetrachloroethane | 50.0 | 51.3 | | ug/L | | 103 | 70 - 130 |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 680-210543/5**
**Matrix: Water**
**Analysis Batch: 210543**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | % Rec | % Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| 4-Methyl-2-pentanone (MIBK) | 100 | 98.5 | | ug/L | | 98 | 70 - 130 | 4 | 30 |
| Styrene | 50.0 | 53.6 | | ug/L | | 107 | 70 - 130 | 1 | 30 |
| 1,1,1,2-Tetrachloroethane | 50.0 | 44.8 | | ug/L | | 90 | 70 - 130 | 3 | 30 |
| 1,1,2,2-Tetrachloroethane | 50.0 | 50.9 | | ug/L | | 102 | 70 - 130 | 1 | 30 |
| Tetrachloroethene | 50.0 | 51.6 | | ug/L | | 103 | 70 - 130 | 6 | 30 |
| Toluene | 50.0 | 49.1 | | ug/L | | 98 | 70 - 130 | 1 | 30 |
| 1,1,1-Trichloroethane | 50.0 | 46.7 | | ug/L | | 93 | 70 - 130 | 3 | 30 |
| 1,1,2-Trichloroethane | 50.0 | 51.6 | | ug/L | | 103 | 70 - 130 | 6 | 30 |
| Trichloroethene | 50.0 | 50.5 | | ug/L | | 101 | 70 - 130 | 5 | 30 |
| Trichlorofluoromethane | 50.0 | 48.3 | | ug/L | | 97 | 55 - 156 | 8 | 30 |
| 1,2,3-Trichloropropane | 50.0 | 53.3 | | ug/L | | 107 | 70 - 130 | 0 | 30 |
| Vinyl acetate | 100 | 94.3 | | ug/L | | 94 | 60 - 176 | 1 | 30 |
| Vinyl chloride | 50.0 | 47.8 | | ug/L | | 96 | 67 - 134 | 6 | 30 |
| Xylenes, Total | 150 | 153 | | ug/L | | 102 | 70 - 130 | 4 | 30 |

| *Surrogate* | *LCSD % Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *102* | | *70 - 130* |
| *Dibromofluoromethane* | *103* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *101* | | *70 - 130* |

# Lab Chronicle

Client: Ashland Inc.
Project/Site: Hercules Hattiesburg APIX 7/26/11

TestAmerica Job ID: 680-70758-2

**Client Sample ID: ASH-MW21-072611**
**Date Collected: 07/26/11 15:03**
**Date Received: 07/27/11 09:20**

**Lab Sample ID: 680-70758-8**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared Or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 50 | 5 mL | 5 mL | 210543 | 07/30/11 07:05 | AJMC | TAL SAV |

**Laboratory References:**
TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

# Login Sample Receipt Checklist

Client: Ashland Inc.

Job Number: 680-70758-2

**Login Number: 70758**

**List Source: TestAmerica Savannah**

**List Number: 1**

**Creator: Barnett, Eddie T**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity either was not measured or, if measured, is at or below background | N/A | |
| The cooler's custody seal, if present, is intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | 8 coolers rec'd on ice |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | Temp range 2.0 through 5.6 C |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | N/A | |
| There are no discrepancies between the sample IDs on the containers and the COC. | True | |
| Samples are received within Holding Time. | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | False | Samples -2, -5 and -6 had broken Liter Amber containers associated with them. |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | Insufficient volume received for MS/MSD. |
| VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter. | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-70818-1
Client Project/Site: Hercules Hattiesburg APIX 7/27/11

For:
Ashland Inc.
Ashland Hercules Research Center
500 Hercules Rd Bldg 8139
Wilmington, Delaware 19808

Attn: Timothy Hassett

*Authorized for release by:*
*08/25/2011 02:07:34 PM*

Lidya Gulizia
Project Manager II
lidya.gulizia@testamericainc.com

cc: Craig Derouen Chris Waters Charlie Jordan

## Job ID: 680-70818-1

**Laboratory: TestAmerica Savannah**

**Narrative**

**Job Narrative**
**680-70818-1**

**Receipt**
All samples were received in good condition within temperature requirements.

**GC/MS VOA**
Method(s) 8260B: A full list spike was utilized for this method. Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for 4 analytes to recover outside criteria for this method when a full list spike is utilized. The LCS associated with batch 210665 had 3 analytes outside control limits; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method(s) 8260B: A full list spike was utilized for this method. Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for 4 analytes to recover outside criteria for this method when a full list spike is utilized. The LCSD associated with batch 210908 had 2 analytes outside control limits; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method(s) 8260B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 210908 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) 8260B: The matrix spike / matrix spike duplicate (MS/MSD) precision for batch 210908 was outside control limits. The associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision met acceptance criteria.

Method(s) 8260B: The following compound was outside control limits in the continuing calibration verification (CCV) associated with batch 210624: iodomethane. This compound is not classified as a Calibration Check Compound (CCC) in the reference method, and the laboratory defaults to in-house and/or project-specific criteria for evaluation. There is insufficient holding time remaining for re-analysis; therefore, the data have been reported. The associated samples were non-detect for the affected analyte.

No other analytical or quality issues were noted.

**GC/MS Semi VOA**
Method(s) 8270C: The laboratory control sample (LCS) for batch 210688 exceeded control limits for the following analyte(s): Famphur. Famphur has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed.

Method(s) 8270C: A full list spike was utilized for this method. Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for 2 analytes to recover outside criteria for this method when a full list spike is utilized. The LCS associated with batch 210688 had 3 analytes outside control limits; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method(s) 8270C: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for batch 210688 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

No other analytical or quality issues were noted.

**GC Semi VOA**
Method(s) 8151A: This method incorporates the use of second column confirmation. Corrective action for unacceptable percent recovery is not taken for surrogate or spike compounds unless the results from both columns are outside criteria. Any results which fall outside criteria are qualified and reported.

No other analytical or quality Issues were noted.

**Metals**
No analytical or quality issues were noted.

# Sample Summary

Client: Ashland Inc.
Project/Site: Hercules Hattiesburg APIX 7/27/11

TestAmerica Job ID: 680-70818-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 680-70818-1 | ASH-MW24-072711 | Water | 07/27/11 08:20 | 07/28/11 14:09 |
| 680-70818-2 | ASH-MW22-072711 | Water | 07/27/11 08:55 | 07/28/11 14:09 |
| 680-70818-3 | ASH-MW18-072711 | Water | 07/27/11 09:23 | 07/28/11 14:09 |
| 680-70818-4 | ASH-MW20-072711 | Water | 07/27/11 10:00 | 07/28/11 14:09 |
| 680-70818-5 | ASH-MW12-072711 | Water | 07/27/11 10:14 | 07/28/11 14:09 |
| 680-70818-6 | ASH-MW02-072711 | Water | 07/27/11 12:10 | 07/28/11 14:09 |
| 680-70818-7 | ASH-MW04-072711 | Water | 07/27/11 12:55 | 07/28/11 14:09 |
| 680-70818-8 | ASH-MW11-072711 | Water | 07/27/11 14:55 | 07/28/11 14:09 |
| 680-70818-9 | ASH-MW10-072711 | Water | 07/27/11 14:40 | 07/28/11 14:09 |
| 680-70818-10 | ASH-MW03-072711 | Water | 07/27/11 13:40 | 07/28/11 14:09 |
| 680-70818-11 | ASH-DUP-072711 | Water | 07/27/11 00:00 | 07/28/11 14:09 |
| 680-70818-12 | Trip Blank 063011 | Water | 07/27/11 00:00 | 07/28/11 14:09 |

## Qualifiers

### GC/MS VOA

| Qualifier | Qualifier Description |
|---|---|
| * | LCS or LCSD exceeds the control limits |
| F | MS or MSD exceeds the control limits |
| F | RPD of the MS and MSD exceeds the control limits |

### GC/MS Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| * | LCS or LCSD exceeds the control limits |
| F | MS or MSD exceeds the control limits |
| F | RPD of the MS and MSD exceeds the control limits |
| E | Result exceeded calibration range. |

### GC Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| * | LCS or LCSD exceeds the control limits |
| p | The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported. |
| F | RPD of the MS and MSD exceeds the control limits |
| X | Surrogate is outside control limits |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ☼ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| DL, RA, RE, IN | Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| EDL | Estimated Detection Limit (Dioxin) |
| EPA | United States Environmental Protection Agency |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| ND | Not detected at the reporting limit (or method detection limit if shown) |
| PQL | Practical Quantitation Limit |
| RL | Reporting Limit |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |

# Detection Summary

Client: Ashland Inc.
Project/Site: Hercules Hattiesburg APIX 7/27/11

TestAmerica Job ID: 680-70818-1

**Client Sample ID: ASH-DUP-072711** — **Lab Sample ID: 680-70818-11**

No Detections

**Client Sample ID: Trip Blank 063011** — **Lab Sample ID: 680-70818-12**

No Detections

Client: Ashland Inc.
Project/Site: Hercules Hattiesburg APIX 7/27/11

TestAmerica Job ID: 680-70818-1

**Client Sample ID: ASH-MW24-072711**
**Date Collected: 07/27/11 08:20**
**Date Received: 07/28/11 14:09**

**Lab Sample ID: 680-70818-1**
**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Trichlorofluoromethane | <1.0 | | 1.0 | | ug/L | | | 07/30/11 15:23 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | | ug/L | | | 07/30/11 15:23 | 1 |
| Vinyl acetate | <2.0 | | 2.0 | | ug/L | | | 07/30/11 15:23 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | | ug/L | | | 07/30/11 15:23 | 1 |
| Xylenes, Total | <2.0 | | 2.0 | | ug/L | | | 07/30/11 15:23 | 1 |

| *Surrogate* | *% Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *92* | | *70 - 130* | | *07/30/11 15:23* | *1* |
| *Dibromofluoromethane* | *106* | | *70 - 130* | | *07/30/11 15:23* | *1* |
| *Toluene-d8 (Surr)* | *101* | | *70 - 130* | | *07/30/11 15:23* | *1* |

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Client: Ashland Inc.
Project/Site: Hercules Hattiesburg APIX 7/27/11

TestAmerica Job ID: 680-70818-1

**Client Sample ID: ASH-MW22-072711**
**Date Collected: 07/27/11 08:55**
**Date Received: 07/28/11 14:09**

**Lab Sample ID: 680-70818-2**
**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Trichlorofluoromethane | <1.0 | | 1.0 | | ug/L | | | 07/30/11 16:37 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | | ug/L | | | 07/30/11 16:37 | 1 |
| Vinyl acetate | <2.0 | | 2.0 | | ug/L | | | 07/30/11 16:37 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | | ug/L | | | 07/30/11 16:37 | 1 |
| Xylenes, Total | <2.0 | | 2.0 | | ug/L | | | 07/30/11 16:37 | 1 |

| *Surrogate* | *% Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *104* | | *70 - 130* | | *07/30/11 16:37* | *1* |
| *Dibromofluoromethane* | *105* | | *70 - 130* | | *07/30/11 16:37* | *1* |
| *Toluene-d8 (Surr)* | *102* | | *70 - 130* | | *07/30/11 16:37* | *1* |

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Client: Ashland Inc.
Project/Site: Hercules Hattiesburg APIX 7/27/11

TestAmerica Job ID: 680-70818-1

**Client Sample ID: ASH-MW18-072711**
**Date Collected: 07/27/11 09:23**
**Date Received: 07/28/11 14:09**

**Lab Sample ID: 680-70818-3**
**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Trichlorofluoromethane | <1.0 | | 1.0 | | ug/L | | | 07/30/11 15:53 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | | ug/L | | | 07/30/11 15:53 | 1 |
| Vinyl acetate | <2.0 | | 2.0 | | ug/L | | | 07/30/11 15:53 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | | ug/L | | | 07/30/11 15:53 | 1 |
| Xylenes, Total | <2.0 | | 2.0 | | ug/L | | | 07/30/11 15:53 | 1 |

| *Surrogate* | *% Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *96* | | *70 - 130* | | *07/30/11 15:53* | *1* |
| *Dibromofluoromethane* | *106* | | *70 - 130* | | *07/30/11 15:53* | *1* |
| *Toluene-d8 (Surr)* | *100* | | *70 - 130* | | *07/30/11 15:53* | *1* |

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Client: Ashland Inc.
Project/Site: Hercules Hattiesburg APIX 7/27/11

TestAmerica Job ID: 680-70818-1

**Client Sample ID: ASH-MW20-072711**
**Date Collected: 07/27/11 10:00**
**Date Received: 07/28/11 14:09**

**Lab Sample ID: 680-70818-4**
**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Trichlorofluoromethane | <1.0 | | 1.0 | | ug/L | | | 07/30/11 20:48 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | | ug/L | | | 07/30/11 20:48 | 1 |
| Vinyl acetate | <2.0 | | 2.0 | | ug/L | | | 07/30/11 20:48 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | | ug/L | | | 07/30/11 20:48 | 1 |
| Xylenes, Total | <2.0 | | 2.0 | | ug/L | | | 07/30/11 20:48 | 1 |

| *Surrogate* | *% Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *94* | | *70 - 130* | | *07/30/11 20:48* | *1* |
| *Dibromofluoromethane* | *105* | | *70 - 130* | | *07/30/11 20:48* | *1* |
| *Toluene-d8 (Surr)* | *102* | | *70 - 130* | | *07/30/11 20:48* | *1* |

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**Client Sample ID: ASH-MW12-072711**
**Date Collected: 07/27/11 10:14**
**Date Received: 07/28/11 14:09**

**Lab Sample ID: 680-70818-5**
**Matrix: Water**

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### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Trichlorofluoromethane | <1.0 | | 1.0 | | ug/L | | | 07/30/11 16:23 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | | ug/L | | | 07/30/11 16:23 | 1 |
| Vinyl acetate | <2.0 | | 2.0 | | ug/L | | | 07/30/11 16:23 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | | ug/L | | | 07/30/11 16:23 | 1 |
| Xylenes, Total | <2.0 | | 2.0 | | ug/L | | | 07/30/11 16:23 | 1 |

| *Surrogate* | *% Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *99* | | *70 - 130* | | *07/30/11 16:23* | *1* |
| *Dibromofluoromethane* | *107* | | *70 - 130* | | *07/30/11 16:23* | *1* |
| *Toluene-d8 (Surr)* | *99* | | *70 - 130* | | *07/30/11 16:23* | *1* |

### Method: 8270C - Semivolatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acenaphthene | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Acenaphthylene | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Acetophenone | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| 2-Acetylaminofluorene | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| alpha,alpha-Dimethyl phenethylamine | <2500 | | 2500 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| 4-Aminobiphenyl | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Aniline | <25 | | 25 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Anthracene | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Aramite, Total | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Benzo[a]anthracene | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Benzo[a]pyrene | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Benzo[b]fluoranthene | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Benzo[g,h,i]perylene | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Benzo[k]fluoranthene | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Benzyl alcohol | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| 1,1'-Biphenyl | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Bis(2-chloroethoxy)methane | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Bis(2-chloroethyl)ether | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| bis(chloroisopropyl) ether | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Bis(2-ethylhexyl) phthalate | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| 4-Bromophenyl phenyl ether | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Butyl benzyl phthalate | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| 4-Chloroaniline | <25 | | 25 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| 4-Chloro-3-methylphenol | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| 2-Chloronaphthalene | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| 2-Chlorophenol | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| 4-Chlorophenyl phenyl ether | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Chrysene | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Diallate | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Dibenz(a,h)anthracene | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Dibenzofuran | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| 1,2-Dichlorobenzene | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| 1,3-Dichlorobenzene | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| 1,4-Dichlorobenzene | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| 3,3'-Dichlorobenzidine | <75 | | 75 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| 2,4-Dichlorophenol | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| 2,6-Dichlorophenol | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |

**Client Sample ID: ASH-MW12-072711**
**Date Collected: 07/27/11 10:14**
**Date Received: 07/28/11 14:09**

**Lab Sample ID: 680-70818-5**
**Matrix: Water**

8

**Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| N-Nitrosodimethylamine | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| N-Nitrosodi-n-butylamine | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| N-Nitrosodi-n-propylamine | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| N-Nitrosodiphenylamine | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| N-Nitrosomethylethylamine | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| N-Nitrosomorpholine | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| N-Nitrosopiperidine | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| N-Nitrosopyrrolidine | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| o,o',o''-Triethylphosphorothioate | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| p-Dimethylamino azobenzene | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Pentachlorobenzene | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Pentachloronitrobenzene | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Pentachlorophenol | <62 | | 62 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Phenacetin | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Phenanthrene | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Phenol | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Phorate | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| 2-Picoline | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| p-Phenylene diamine | <2500 | | 2500 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Pronamide | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Pyrene | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Pyridine | <62 | | 62 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Safrole, Total | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Sulfotepp | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| 1,2,4,5-Tetrachlorobenzene | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| 2,3,4,6-Tetrachlorophenol | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| Thionazin | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| 2-Toluidine | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| 1,2,4-Trichlorobenzene | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| 2,4,5-Trichlorophenol | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| 2,4,6-Trichlorophenol | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |
| 1,3,5-Trinitrobenzene | <12 | | 12 | | ug/L | | 08/02/11 15:02 | 08/05/11 17:00 | 1 |

| *Surrogate* | *% Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2-Fluorobiphenyl* | *74* | | *38 - 130* | *08/02/11 15:02* | *08/05/11 17:00* | *1* |
| *2-Fluorophenol* | *57* | | *25 - 130* | *08/02/11 15:02* | *08/05/11 17:00* | *1* |
| *Nitrobenzene-d5* | *71* | | *39 - 130* | *08/02/11 15:02* | *08/05/11 17:00* | *1* |
| *Phenol-d5* | *46* | | *25 - 130* | *08/02/11 15:02* | *08/05/11 17:00* | *1* |
| *Terphenyl-d14* | *90* | | *10 - 143* | *08/02/11 15:02* | *08/05/11 17:00* | *1* |
| *2,4,6-Tribromophenol* | *91* | | *31 - 141* | *08/02/11 15:02* | *08/05/11 17:00* | *1* |

**Method: 8081A_8082 - Organochlorine Pesticides & PCBs (GC)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Aldrin | <0.050 | | 0.050 | | ug/L | | 07/29/11 14:35 | 08/08/11 06:07 | 1 |
| alpha-BHC | <0.050 | | 0.050 | | ug/L | | 07/29/11 14:35 | 08/08/11 06:07 | 1 |
| beta-BHC | <0.050 | | 0.050 | | ug/L | | 07/29/11 14:35 | 08/08/11 06:07 | 1 |
| Chlordane (technical) | <0.50 | | 0.50 | | ug/L | | 07/29/11 14:35 | 08/08/11 06:07 | 1 |
| Chlorobenzilate | <0.50 | | 0.50 | | ug/L | | 07/29/11 14:35 | 08/08/11 06:07 | 1 |
| 4,4'-DDD | <0.099 | | 0.099 | | ug/L | | 07/29/11 14:35 | 08/08/11 06:07 | 1 |
| 4,4'-DDE | <0.099 | | 0.099 | | ug/L | | 07/29/11 14:35 | 08/08/11 06:07 | 1 |

Client: Ashland Inc.
Project/Site: Hercules Hattiesburg APIX 7/27/11

TestAmerica Job ID: 680-70818-1

**Client Sample ID: ASH-MW12-072711**
**Date Collected: 07/27/11 10:14**
**Date Received: 07/28/11 14:09**

**Lab Sample ID: 680-70818-5**
**Matrix: Water**

| *Internal Standard* | *% Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *13C-2,3,7,8-TCDD* | *85* | | *40 - 135* | *07/29/11 09:00* | *07/30/11 01:44* | *0.98* |
| *13C-1,2,3,7,8-PeCDD* | *85* | | *40 - 135* | *07/29/11 09:00* | *07/30/11 01:44* | *0.98* |
| *13C-1,2,3,6,7,8-HxCDD* | *85* | | *40 - 135* | *07/29/11 09:00* | *07/30/11 01:44* | *0.98* |
| *13C-2,3,7,8-TCDF* | *89* | | *40 - 135* | *07/29/11 09:00* | *07/30/11 01:44* | *0.98* |
| *13C-1,2,3,7,8-PeCDF* | *84* | | *40 - 135* | *07/29/11 09:00* | *07/30/11 01:44* | *0.98* |
| *13C-1,2,3,4,7,8-HxCDF* | *78* | | *40 - 135* | *07/29/11 09:00* | *07/30/11 01:44* | *0.98* |

**Method: 6020 - Metals (ICP/MS)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | <5.0 | | 5.0 | | ug/L | | 08/01/11 08:48 | 08/07/11 00:12 | 1 |
| Arsenic | <2.5 | | 2.5 | | ug/L | | 08/01/11 08:48 | 08/07/11 00:12 | 1 |
| **Barium** | **120** | | 5.0 | | ug/L | | 08/01/11 08:48 | 08/07/11 00:12 | 1 |
| Beryllium | <0.50 | | 0.50 | | ug/L | | 08/01/11 08:48 | 08/07/11 00:12 | 1 |
| Cadmium | <0.50 | | 0.50 | | ug/L | | 08/01/11 08:48 | 08/07/11 00:12 | 1 |
| Chromium | <5.0 | | 5.0 | | ug/L | | 08/01/11 08:48 | 08/07/11 00:12 | 1 |
| **Cobalt** | **3.4** | | 0.50 | | ug/L | | 08/01/11 08:48 | 08/07/11 00:12 | 1 |
| Copper | <5.0 | | 5.0 | | ug/L | | 08/01/11 08:48 | 08/07/11 00:12 | 1 |
| Lead | <1.5 | | 1.5 | | ug/L | | 08/01/11 08:48 | 08/07/11 00:12 | 1 |
| **Nickel** | **9.7** | | 5.0 | | ug/L | | 08/01/11 08:48 | 08/07/11 00:12 | 1 |
| Selenium | <2.5 | | 2.5 | | ug/L | | 08/01/11 08:48 | 08/07/11 00:12 | 1 |
| Silver | <1.0 | | 1.0 | | ug/L | | 08/01/11 08:48 | 08/07/11 00:12 | 1 |
| Thallium | <1.0 | | 1.0 | | ug/L | | 08/01/11 08:48 | 08/07/11 00:12 | 1 |
| Tin | <5.0 | | 5.0 | | ug/L | | 08/01/11 08:48 | 08/07/11 00:12 | 1 |
| Vanadium | <10 | | 10 | | ug/L | | 08/01/11 08:48 | 08/07/11 00:12 | 1 |
| **Zinc** | **34** | | 20 | | ug/L | | 08/01/11 08:48 | 08/07/11 00:12 | 1 |

**Method: 7470A - Mercury (CVAA)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | <0.20 | | 0.20 | | ug/L | | 08/03/11 17:01 | 08/04/11 18:43 | 1 |

**General Chemistry**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Cyanide, Total | <0.010 | | 0.010 | | mg/L | | 08/01/11 07:51 | 08/02/11 06:56 | 1 |

| Analyte | Result | Qualifier | RL | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Sulfide | <1.0 | | 1.0 | | mg/L | | | 07/29/11 13:06 | 1 |

**Client Sample ID: ASH-MW02-072711**
Date Collected: 07/27/11 12:10
Date Received: 07/28/11 14:09

**Lab Sample ID: 680-70818-6**
Matrix: Water

8

### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Trichlorofluoromethane | <1.0 | | 1.0 | | ug/L | | | 07/30/11 16:52 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | | ug/L | | | 07/30/11 16:52 | 1 |
| Vinyl acetate | <2.0 | | 2.0 | | ug/L | | | 07/30/11 16:52 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | | ug/L | | | 07/30/11 16:52 | 1 |
| Xylenes, Total | <2.0 | | 2.0 | | ug/L | | | 07/30/11 16:52 | 1 |

| *Surrogate* | *% Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *95* | | *70 - 130* | | *07/30/11 16:52* | *1* |
| *Dibromofluoromethane* | *107* | | *70 - 130* | | *07/30/11 16:52* | *1* |
| *Toluene-d8 (Surr)* | *98* | | *70 - 130* | | *07/30/11 16:52* | *1* |

### Method: 8270C - Semivolatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acenaphthene | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Acenaphthylene | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Acetophenone | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| 2-Acetylaminofluorene | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| alpha,alpha-Dimethyl phenethylamine | <2000 | | 2000 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| 4-Aminobiphenyl | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Aniline | <20 | | 20 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Anthracene | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Aramite, Total | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Benzo[a]anthracene | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Benzo[a]pyrene | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Benzo[b]fluoranthene | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Benzo[g,h,i]perylene | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Benzo[k]fluoranthene | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Benzyl alcohol | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| 1,1'-Biphenyl | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Bis(2-chloroethoxy)methane | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Bis(2-chloroethyl)ether | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| bis(chloroisopropyl) ether | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Bis(2-ethylhexyl) phthalate | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| 4-Bromophenyl phenyl ether | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Butyl benzyl phthalate | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| 4-Chloroaniline | <20 | | 20 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| 4-Chloro-3-methylphenol | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| 2-Chloronaphthalene | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| 2-Chlorophenol | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| 4-Chlorophenyl phenyl ether | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Chrysene | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Diallate | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Dibenz(a,h)anthracene | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Dibenzofuran | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| 1,2-Dichlorobenzene | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| 1,3-Dichlorobenzene | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| 1,4-Dichlorobenzene | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| 3,3'-Dichlorobenzidine | <59 | | 59 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| 2,4-Dichlorophenol | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| 2,6-Dichlorophenol | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |

**Client Sample ID: ASH-MW02-072711**
**Date Collected: 07/27/11 12:10**
**Date Received: 07/28/11 14:09**

**Lab Sample ID: 680-70818-6**
**Matrix: Water**

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**Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| N-Nitrosodimethylamine | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| N-Nitrosodi-n-butylamine | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| N-Nitrosodi-n-propylamine | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| N-Nitrosodiphenylamine | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| N-Nitrosomethylethylamine | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| N-Nitrosomorpholine | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| N-Nitrosopiperidine | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| N-Nitrosopyrrolidine | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| o,o',o''-Triethylphosphorothioate | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| p-Dimethylamino azobenzene | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Pentachlorobenzene | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Pentachloronitrobenzene | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Pentachlorophenol | <49 | | 49 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Phenacetin | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Phenanthrene | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Phenol | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Phorate | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| 2-Picoline | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| p-Phenylene diamine | <2000 | | 2000 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Pronamide | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Pyrene | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Pyridine | <49 | | 49 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Safrole, Total | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Sulfotepp | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| 1,2,4,5-Tetrachlorobenzene | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| 2,3,4,6-Tetrachlorophenol | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| Thionazin | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| 2-Toluidine | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| 1,2,4-Trichlorobenzene | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| 2,4,5-Trichlorophenol | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| 2,4,6-Trichlorophenol | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |
| 1,3,5-Trinitrobenzene | <9.9 | | 9.9 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:01 | 1 |

| *Surrogate* | *% Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2-Fluorobiphenyl* | *63* | | *38 - 130* | *08/02/11 15:02* | *08/05/11 16:01* | *1* |
| *2-Fluorophenol* | *58* | | *25 - 130* | *08/02/11 15:02* | *08/05/11 16:01* | *1* |
| *Nitrobenzene-d5* | *65* | | *39 - 130* | *08/02/11 15:02* | *08/05/11 16:01* | *1* |
| *Phenol-d5* | *54* | | *25 - 130* | *08/02/11 15:02* | *08/05/11 16:01* | *1* |
| *Terphenyl-d14* | *80* | | *10 - 143* | *08/02/11 15:02* | *08/05/11 16:01* | *1* |
| *2,4,6-Tribromophenol* | *80* | | *31 - 141* | *08/02/11 15:02* | *08/05/11 16:01* | *1* |

**Method: 8081A_8082 - Organochlorine Pesticides & PCBs (GC)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Aldrin | <0.050 | | 0.050 | | ug/L | | 07/29/11 14:35 | 08/08/11 06:26 | 1 |
| alpha-BHC | <0.050 | | 0.050 | | ug/L | | 07/29/11 14:35 | 08/08/11 06:26 | 1 |
| beta-BHC | <0.050 | | 0.050 | | ug/L | | 07/29/11 14:35 | 08/08/11 06:26 | 1 |
| Chlordane (technical) | <0.50 | | 0.50 | | ug/L | | 07/29/11 14:35 | 08/08/11 06:26 | 1 |
| Chlorobenzilate | <0.50 | | 0.50 | | ug/L | | 07/29/11 14:35 | 08/08/11 06:26 | 1 |
| 4,4'-DDD | <0.099 | | 0.099 | | ug/L | | 07/29/11 14:35 | 08/08/11 06:26 | 1 |
| 4,4'-DDE | <0.099 | | 0.099 | | ug/L | | 07/29/11 14:35 | 08/08/11 06:26 | 1 |

Client: Ashland Inc.
Project/Site: Hercules Hattiesburg APIX 7/27/11

TestAmerica Job ID: 680-70818-1

**Client Sample ID: ASH-MW02-072711**
**Date Collected: 07/27/11 12:10**
**Date Received: 07/28/11 14:09**

**Lab Sample ID: 680-70818-6**
**Matrix: Water**

| *Internal Standard* | *% Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *13C-2,3,7,8-TCDD* | *87* | | *40 - 135* | *07/29/11 09:00* | *07/30/11 02:29* | *1.01* |
| *13C-1,2,3,7,8-PeCDD* | *89* | | *40 - 135* | *07/29/11 09:00* | *07/30/11 02:29* | *1.01* |
| *13C-1,2,3,6,7,8-HxCDD* | *85* | | *40 - 135* | *07/29/11 09:00* | *07/30/11 02:29* | *1.01* |
| *13C-2,3,7,8-TCDF* | *90* | | *40 - 135* | *07/29/11 09:00* | *07/30/11 02:29* | *1.01* |
| *13C-1,2,3,7,8-PeCDF* | *88* | | *40 - 135* | *07/29/11 09:00* | *07/30/11 02:29* | *1.01* |
| *13C-1,2,3,4,7,8-HxCDF* | *75* | | *40 - 135* | *07/29/11 09:00* | *07/30/11 02:29* | *1.01* |

**Method: 6020 - Metals (ICP/MS)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | <5.0 | | 5.0 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:38 | 1 |
| **Arsenic** | **2.9** | | 2.5 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:38 | 1 |
| **Barium** | **76** | | 5.0 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:38 | 1 |
| Beryllium | <0.50 | | 0.50 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:38 | 1 |
| Cadmium | <0.50 | | 0.50 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:38 | 1 |
| Chromium | <5.0 | | 5.0 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:38 | 1 |
| **Cobalt** | **4.2** | | 0.50 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:38 | 1 |
| Copper | <5.0 | | 5.0 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:38 | 1 |
| Lead | <1.5 | | 1.5 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:38 | 1 |
| Nickel | <5.0 | | 5.0 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:38 | 1 |
| Selenium | <2.5 | | 2.5 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:38 | 1 |
| Silver | <1.0 | | 1.0 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:38 | 1 |
| Thallium | <1.0 | | 1.0 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:38 | 1 |
| Tin | <5.0 | | 5.0 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:38 | 1 |
| Vanadium | <10 | | 10 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:38 | 1 |
| Zinc | <20 | | 20 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:38 | 1 |

**Method: 7470A - Mercury (CVAA)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | <0.20 | | 0.20 | | ug/L | | 08/03/11 17:01 | 08/04/11 18:53 | 1 |

**General Chemistry**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Cyanide, Total | <0.010 | | 0.010 | | mg/L | | 08/01/11 07:51 | 08/02/11 06:57 | 1 |

| Analyte | Result | Qualifier | RL | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Sulfide | <1.0 | | 1.0 | | mg/L | | | 07/29/11 13:06 | 1 |

**Client Sample ID: ASH-MW04-072711**
Date Collected: 07/27/11 12:55
Date Received: 07/28/11 14:09

**Lab Sample ID: 680-70818-7**
Matrix: Water

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Trichlorofluoromethane | <1.0 | | 1.0 | | ug/L | | | 07/30/11 21:48 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | | ug/L | | | 07/30/11 21:48 | 1 |
| Vinyl acetate | <2.0 | | 2.0 | | ug/L | | | 07/30/11 21:48 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | | ug/L | | | 07/30/11 21:48 | 1 |
| Xylenes, Total | <2.0 | | 2.0 | | ug/L | | | 07/30/11 21:48 | 1 |

| *Surrogate* | *% Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *102* | | *70 - 130* | | *07/30/11 21:48* | *1* |
| *Dibromofluoromethane* | *109* | | *70 - 130* | | *07/30/11 21:48* | *1* |
| *Toluene-d8 (Surr)* | *100* | | *70 - 130* | | *07/30/11 21:48* | *1* |

**Method: 8270C - Semivolatile Organic Compounds (GC/MS)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acenaphthene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Acenaphthylene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Acetophenone | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| 2-Acetylaminofluorene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| alpha,alpha-Dimethyl phenethylamine | <2100 | | 2100 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| 4-Aminobiphenyl | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Aniline | <21 | | 21 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Anthracene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Aramite, Total | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Benzo[a]anthracene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Benzo[a]pyrene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Benzo[b]fluoranthene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Benzo[g,h,i]perylene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Benzo[k]fluoranthene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Benzyl alcohol | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| 1,1'-Biphenyl | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Bis(2-chloroethoxy)methane | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Bis(2-chloroethyl)ether | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| bis(chloroisopropyl) ether | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Bis(2-ethylhexyl) phthalate | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| 4-Bromophenyl phenyl ether | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Butyl benzyl phthalate | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| 4-Chloroaniline | <21 | | 21 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| 4-Chloro-3-methylphenol | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| 2-Chloronaphthalene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| 2-Chlorophenol | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| 4-Chlorophenyl phenyl ether | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Chrysene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Diallate | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Dibenz(a,h)anthracene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Dibenzofuran | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| 1,2-Dichlorobenzene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| 1,3-Dichlorobenzene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| 1,4-Dichlorobenzene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| 3,3'-Dichlorobenzidine | <63 | | 63 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| 2,4-Dichlorophenol | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| 2,6-Dichlorophenol | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |

**Client Sample ID: ASH-MW04-072711**
Date Collected: 07/27/11 12:55
Date Received: 07/28/11 14:09

**Lab Sample ID: 680-70818-7**
Matrix: Water

**Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| N-Nitrosodimethylamine | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| N-Nitrosodi-n-butylamine | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| N-Nitrosodi-n-propylamine | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| N-Nitrosodiphenylamine | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| N-Nitrosomethylethylamine | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| N-Nitrosomorpholine | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| N-Nitrosopiperidine | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| N-Nitrosopyrrolidine | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| o,o',o''-Triethylphosphorothioate | 22 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| p-Dimethylamino azobenzene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Pentachlorobenzene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Pentachloronitrobenzene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Pentachlorophenol | <52 | | 52 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Phenacetin | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Phenanthrene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Phenol | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Phorate | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| 2-Picoline | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| p-Phenylene diamine | <2100 | | 2100 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Pronamide | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Pyrene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Pyridine | <52 | | 52 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Safrole, Total | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Sulfotepp | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| 1,2,4,5-Tetrachlorobenzene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| 2,3,4,6-Tetrachlorophenol | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| Thionazin | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| 2-Toluidine | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| 1,2,4-Trichlorobenzene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| 2,4,5-Trichlorophenol | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| 2,4,6-Trichlorophenol | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |
| 1,3,5-Trinitrobenzene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 16:30 | 1 |

| *Surrogate* | *% Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2-Fluorobiphenyl* | *71* | | *38 - 130* | *08/02/11 15:02* | *08/05/11 16:30* | *1* |
| *2-Fluorophenol* | *60* | | *25 - 130* | *08/02/11 15:02* | *08/05/11 16:30* | *1* |
| *Nitrobenzene-d5* | *67* | | *39 - 130* | *08/02/11 15:02* | *08/05/11 16:30* | *1* |
| *Phenol-d5* | *56* | | *25 - 130* | *08/02/11 15:02* | *08/05/11 16:30* | *1* |
| *Terphenyl-d14* | *37* | | *10 - 143* | *08/02/11 15:02* | *08/05/11 16:30* | *1* |
| *2,4,6-Tribromophenol* | *88* | | *31 - 141* | *08/02/11 15:02* | *08/05/11 16:30* | *1* |

**Method: 8081A_8082 - Organochlorine Pesticides & PCBs (GC)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Aldrin | <0.051 | | 0.051 | | ug/L | | 07/29/11 14:35 | 08/08/11 06:45 | 1 |
| alpha-BHC | <0.051 | | 0.051 | | ug/L | | 07/29/11 14:35 | 08/08/11 06:45 | 1 |
| beta-BHC | <0.051 | | 0.051 | | ug/L | | 07/29/11 14:35 | 08/08/11 06:45 | 1 |
| Chlordane (technical) | <0.51 | | 0.51 | | ug/L | | 07/29/11 14:35 | 08/08/11 06:45 | 1 |
| Chlorobenzilate | <0.51 | | 0.51 | | ug/L | | 07/29/11 14:35 | 08/08/11 06:45 | 1 |
| 4,4'-DDD | <0.10 | | 0.10 | | ug/L | | 07/29/11 14:35 | 08/08/11 06:45 | 1 |
| 4,4'-DDE | <0.10 | | 0.10 | | ug/L | | 07/29/11 14:35 | 08/08/11 06:45 | 1 |

Client: Ashland Inc.
Project/Site: Hercules Hattiesburg APIX 7/27/11

TestAmerica Job ID: 680-70818-1

**Client Sample ID: ASH-MW04-072711**
**Date Collected: 07/27/11 12:55**
**Date Received: 07/28/11 14:09**

**Lab Sample ID: 680-70818-7**
**Matrix: Water**

| *Internal Standard* | *% Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *13C-2,3,7,8-TCDD* | *86* | | *40 - 135* | *07/29/11 09:00* | *07/30/11 03:14* | *1* |
| *13C-1,2,3,7,8-PeCDD* | *85* | | *40 - 135* | *07/29/11 09:00* | *07/30/11 03:14* | *1* |
| *13C-1,2,3,6,7,8-HxCDD* | *84* | | *40 - 135* | *07/29/11 09:00* | *07/30/11 03:14* | *1* |
| *13C-2,3,7,8-TCDF* | *89* | | *40 - 135* | *07/29/11 09:00* | *07/30/11 03:14* | *1* |
| *13C-1,2,3,7,8-PeCDF* | *84* | | *40 - 135* | *07/29/11 09:00* | *07/30/11 03:14* | *1* |
| *13C-1,2,3,4,7,8-HxCDF* | *82* | | *40 - 135* | *07/29/11 09:00* | *07/30/11 03:14* | *1* |

**Method: 6020 - Metals (ICP/MS)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Antimony | <5.0 | | 5.0 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:44 | 1 |
| Arsenic | <2.5 | | 2.5 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:44 | 1 |
| Barium | 110 | | 5.0 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:44 | 1 |
| Beryllium | <0.50 | | 0.50 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:44 | 1 |
| Cadmium | <0.50 | | 0.50 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:44 | 1 |
| Chromium | <5.0 | | 5.0 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:44 | 1 |
| Cobalt | <0.50 | | 0.50 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:44 | 1 |
| Copper | <5.0 | | 5.0 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:44 | 1 |
| Lead | <1.5 | | 1.5 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:44 | 1 |
| Nickel | <5.0 | | 5.0 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:44 | 1 |
| Selenium | <2.5 | | 2.5 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:44 | 1 |
| Silver | <1.0 | | 1.0 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:44 | 1 |
| Thallium | <1.0 | | 1.0 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:44 | 1 |
| Tin | <5.0 | | 5.0 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:44 | 1 |
| Vanadium | <10 | | 10 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:44 | 1 |
| Zinc | <20 | | 20 | | ug/L | | 08/03/11 09:07 | 08/07/11 06:44 | 1 |

**Method: 7470A - Mercury (CVAA)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | <0.20 | | 0.20 | | ug/L | | 08/03/11 17:01 | 08/04/11 18:56 | 1 |

**General Chemistry**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Cyanide, Total | <0.010 | | 0.010 | | mg/L | | 08/01/11 07:51 | 08/02/11 06:58 | 1 |

| Analyte | Result | Qualifier | RL | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Sulfide | 1.1 | | 1.0 | | mg/L | | | 07/29/11 13:06 | 1 |

Client: Ashland Inc.
Project/Site: Hercules Hattiesburg APIX 7/27/11

TestAmerica Job ID: 680-70818-1

**Client Sample ID: ASH-MW11-072711**
**Date Collected: 07/27/11 14:55**
**Date Received: 07/28/11 14:09**

**Lab Sample ID: 680-70818-8**
**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Trichlorofluoromethane | <1.0 | | 1.0 | | ug/L | | | 08/01/11 19:52 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | | ug/L | | | 08/01/11 19:52 | 1 |
| Vinyl acetate | <2.0 | | 2.0 | | ug/L | | | 08/01/11 19:52 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | | ug/L | | | 08/01/11 19:52 | 1 |
| Xylenes, Total | <2.0 | | 2.0 | | ug/L | | | 08/01/11 19:52 | 1 |

| *Surrogate* | *% Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | 97 | | *70 - 130* | | *08/01/11 19:52* | *1* |
| *Dibromofluoromethane* | *110* | | *70 - 130* | | *08/01/11 19:52* | *1* |
| *Toluene-d8 (Surr)* | *104* | | *70 - 130* | | *08/01/11 19:52* | *1* |

8

Client: Ashland Inc.
Project/Site: Hercules Hattiesburg APIX 7/27/11

TestAmerica Job ID: 680-70818-1

**Client Sample ID: ASH-MW10-072711**
**Date Collected: 07/27/11 14:40**
**Date Received: 07/28/11 14:09**

**Lab Sample ID: 680-70818-9**
**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Trichlorofluoromethane | <1.0 | | 1.0 | | ug/L | | | 07/30/11 20:19 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | | ug/L | | | 07/30/11 20:19 | 1 |
| Vinyl acetate | <2.0 | | 2.0 | | ug/L | | | 07/30/11 20:19 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | | ug/L | | | 07/30/11 20:19 | 1 |
| Xylenes, Total | <2.0 | | 2.0 | | ug/L | | | 07/30/11 20:19 | 1 |

| *Surrogate* | *% Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *94* | | *70 - 130* | | *07/30/11 20:19* | *1* |
| *Dibromofluoromethane* | *107* | | *70 - 130* | | *07/30/11 20:19* | *1* |
| *Toluene-d8 (Surr)* | *99* | | *70 - 130* | | *07/30/11 20:19* | *1* |

Client: Ashland Inc
Project/Site: Hercules Hattiesburg APIX 7/27/11

TestAmerica Job ID: 680-70818-1

**Client Sample ID: ASH-MW03-072711**
**Date Collected: 07/27/11 13:40**
**Date Received: 07/28/11 14:09**

**Lab Sample ID: 680-70818-10**
**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Trichlorofluoromethane | <1.0 | | 1.0 | | ug/L | | | 07/30/11 19:49 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | | ug/L | | | 07/30/11 19:49 | 1 |
| Vinyl acetate | <2.0 | | 2.0 | | ug/L | | | 07/30/11 19:49 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | | ug/L | | | 07/30/11 19:49 | 1 |
| Xylenes, Total | <2.0 | | 2.0 | | ug/L | | | 07/30/11 19:49 | 1 |

| *Surrogate* | *% Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *93* | | *70 - 130* | | *07/30/11 19:49* | *1* |
| *Dibromofluoromethane* | *104* | | *70 - 130* | | *07/30/11 19:49* | *1* |
| *Toluene-d8 (Surr)* | *100* | | *70 - 130* | | *07/30/11 19:49* | *1* |

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Client: Ashland Inc.
Project/Site: Hercules Hattiesburg APIX 7/27/11

TestAmerica Job ID: 680-70818-1

**Client Sample ID: ASH-DUP-072711**
**Date Collected: 07/27/11 00:00**
**Date Received: 07/28/11 14:09**

**Lab Sample ID: 680-70818-11**
**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Trichlorofluoromethane | <1.0 | | 1.0 | | ug/L | | | 07/30/11 21:18 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | | ug/L | | | 07/30/11 21:18 | 1 |
| Vinyl acetate | <2.0 | | 2.0 | | ug/L | | | 07/30/11 21:18 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | | ug/L | | | 07/30/11 21:18 | 1 |
| Xylenes, Total | <2.0 | | 2.0 | | ug/L | | | 07/30/11 21:18 | 1 |

| *Surrogate* | *% Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *98* | | *70 - 130* | | *07/30/11 21:18* | *1* |
| *Dibromofluoromethane* | *106* | | *70 - 130* | | *07/30/11 21:18* | *1* |
| *Toluene-d8 (Surr)* | *99* | | *70 - 130* | | *07/30/11 21:18* | *1* |

8

Client: Ashland Inc.
Project/Site: Hercules Hattiesburg APIX 7/27/11

TestAmerica Job ID: 680-70818-1

**Client Sample ID: Trip Blank 063011**
Date Collected: 07/27/11 00:00
Date Received: 07/28/11 14:09

**Lab Sample ID: 680-70818-12**
Matrix: Water

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Trichlorofluoromethane | <1.0 | | 1.0 | | ug/L | | | 07/30/11 14:24 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | | ug/L | | | 07/30/11 14:24 | 1 |
| Vinyl acetate | <2.0 | | 2.0 | | ug/L | | | 07/30/11 14:24 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | | ug/L | | | 07/30/11 14:24 | 1 |
| Xylenes, Total | <2.0 | | 2.0 | | ug/L | | | 07/30/11 14:24 | 1 |

| *Surrogate* | *% Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *93* | | *70 - 130* | | *07/30/11 14:24* | *1* |
| *Dibromofluoromethane* | *109* | | *70 - 130* | | *07/30/11 14:24* | *1* |
| *Toluene-d8 (Surr)* | *98* | | *70 - 130* | | *07/30/11 14:24* | *1* |

## Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 680-210688/9-A**
**Matrix: Water**
**Analysis Batch: 211110**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 210688**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzyl alcohol | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| 1,1'-Biphenyl | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| Bis(2-chloroethoxy)methane | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| Bis(2-chloroethyl)ether | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| bis(chloroisopropyl) ether | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| Bis(2-ethylhexyl) phthalate | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| 4-Bromophenyl phenyl ether | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| Butyl benzyl phthalate | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| 4-Chloroaniline | <20 | | 20 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| 4-Chloro-3-methylphenol | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| 2-Chloronaphthalene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| 2-Chlorophenol | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| 4-Chlorophenyl phenyl ether | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| Chrysene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| Diallate | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| Dibenz(a,h)anthracene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| Dibenzofuran | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| 1,2-Dichlorobenzene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| 1,3-Dichlorobenzene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| 1,4-Dichlorobenzene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| 3,3'-Dichlorobenzidine | <60 | | 60 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| 2,4-Dichlorophenol | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| 2,6-Dichlorophenol | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| Diethyl phthalate | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| Dimethoate | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| 7,12-Dimethylbenz(a)anthracene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| 3,3'-Dimethylbenzidine | <20 | | 20 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| 2,4-Dimethylphenol | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| Dimethyl phthalate | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| Di-n-butyl phthalate | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| 1,3-Dinitrobenzene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| 4,6-Dinitro-2-methylphenol | <50 | | 50 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| 2,4-Dinitrophenol | <50 | | 50 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| 2,4-Dinitrotoluene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| 2,6-Dinitrotoluene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| Di-n-octyl phthalate | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| Dinoseb | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| 1,4-Dioxane | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| Disulfoton | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| Ethyl methanesulfonate | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| Ethyl Parathion | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| Famphur | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| Fluoranthene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| Fluorene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| Hexachlorobenzene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| Hexachlorobutadiene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| Hexachlorocyclopentadiene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| Hexachloroethane | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| Hexachlorophene | <5000 | | 5000 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |
| Hexachloropropene | <10 | | 10 | | ug/L | | 08/02/11 15:02 | 08/05/11 12:34 | 1 |