ARCADIS
Infrastructure · Water · Environment · Buildings

Imagine the result

Hercules Incorporated

Voluntary Investigation and Remediation Plan – Semiannual Progress Report #5

Hercules Incorporated
3000 Louisville Road
Savannah, Georgia

October 6, 2015

ARCADIS

Christopher R. Miller, PG
Project Geologist

David Wilderman, PG
Project Manager

Voluntary Investigation and Remediation Plan – Semiannual Progress Report #5

Hercules Incorporated
3000 Louisville Road
Savannah, Georgia

Prepared for:
Hercules Incorporated

Prepared by:
ARCADIS U.S., Inc.
1000 Cobb Place Blvd.
Bldg. 500-A
Kennesaw
Georgia 30144
Tel 770 428 9009
Fax 770 428 4004

Our Ref.:
OH008000.GA60

Date:
October 6, 2015

ARCADIS

Professional Engineer/Geologist Certification

I certify that I am a qualified groundwater scientist who has received a baccalaureate or postgraduate degree in the natural sciences or engineering, and have sufficient training and experience in groundwater hydrology and related fields, as demonstrated by state registration and completion of accredited university courses, that enable me to make sound professional judgments regarding groundwater monitoring and contaminant fate and transport. I further certify that this report was prepared by me or by a subordinate working under my direction.

David M. Wilderman, PG
Georgia Registration No. 978

10.6.2015
Date

Ashland Inc. Environmental Remediation – Hercules Inc. (Savannah) Georgia
Facility Name

Voluntary Investigation and Remediation Plan Semiannual Progress Report #5
Document Title

Georgia EPD HSI Site #10696

ARCADIS

CD Certification Page

The electronic copy of the Voluntary Investigation and Remediation Plan – Semiannual Progress Report #5 to Georgia EPD for the Hercules Inc. site in Savannah, Georgia, HSI No. 10696, is complete and identical to the paper copy. The data on the CD was scanned for viruses using ARCADIS' standard security software and, to the best of ARCADIS' knowledge, is virus free.

David M. Wilderman, PG
Project Manager

Tables

Figures

Appendices

1. Introduction

This Voluntary Investigation and Remediation Plan (VIRP) Semiannual Progress Report (Progress Report) has been prepared to meet requirements outlined in the Georgia Voluntary Remediation Program Act (VRPA). Information and data contained in this Progress Report are provided in a streamlined format and additional information, if required, can be provided to the Georgia Environmental Protection Division (EPD) upon request.

Hercules Incorporated (Hercules), a wholly owned subsidiary of Ashland Inc., sold its distribution business and its associated assets to Solenis International, L.P. (Solenis) on July 31, 2014. Accordingly, Solenis is now the owner and operator of the facility located at 3000 Louisville Road, Savannah, Georgia. Hercules, however, retains responsibility for the remediation activities at the site relating to matters that occurred prior to the sale date. The facility is comprised of 14 separately deeded parcels of land (approximately 32.5 acres) bordered by railroad tracks, wetlands, and industrial and residential properties. Two of the 14 property parcels (Parcel ID 2-0734-01-001 and Parcel ID 2-0734-03-001), comprising of 29.09 acres, are the two approved properties in the Voluntary Remediation Program (VRP) and are currently included on the Hazardous Site Inventory (HSI) as ID No. 10696. Hercules has evaluated the ownership of land within the boundaries of the facility where right-of-ways, easements, and/or reconfiguration of properties has occurred since the original deed was filed. Data obtained during this review confirms that Hercules retains ownership of the remediation efforts for the two parcels as shown in **Figure 1** which provides the location of the Hercules land tracts superimposed on a topographic map of the area. The term “site” is used throughout this report to refer to the two tracts that comprise HSI Site ID 10696 that are owned by Solenis but whose environmental impacts are being managed by Hercules. **Figure 2** provides an aerial view of the VRP properties, and **Figure 3** illustrates the layout of the VRP properties and monitoring well locations. A tax map updated to show specific information on land tracks and ownership is provided in **Appendix A**.

2. Site History

The site was first developed in 1922 by Paper Makers Chemical Corporation for pulp and paper chemical manufacturing and was purchased by Hercules in 1931. Historical site operations have included distillation of crude tall oil (CTO) and production of sizing, release agents, emulsifiers, coating agents, defoamers, fatty acid esters, disproportionated rosin, and polyamides. The tall oil distillation and rosin production

operations have ceased and the plant currently only produces chemicals used in the paper processing industry. The following list outlines release, response, and remedial action history.

- Georgia EPD determined on March 9, 2001 that a release exceeding a reportable quantity had occurred at the facility based upon information provided in release notifications dated June 15, 2000 (caustic release in the Size Tank Farm Area), July 13, 2000 (asbestos and benzene in the 50s Tank Area), and August 11, 2000 (acrolein release in the Hard Resins Area), and the plant was placed on the Georgia HSI.

- Hercules submitted an amended release notification on March 9, 2001, documenting removal actions completed in the Hard Resins Area for acrolein-contaminated soil and providing additional analytical data gathered during the 2001 Phase II investigation.

- Multiple Compliance Status Report (CSR) documents have been submitted between 2002 and 2009.

- A Corrective Action Plan (CAP) was submitted in 2008

- A response to EPD's comments on the March 2009 CSR was submitted in February 2011

- A VIRP was submitted in lieu of a Revised CAP on April 9, 2012

- The VIRP was approved by EPD on March 15, 2013

- The First Progress Report was submitted via email on December 10, 2013.

- The Second Progress Report was submitted on March 15, 2014.

- The Third Progress Report was submitted on September 15, 2014.

- The Fourth Progress Report was submitted on March 30, 2015.

During the various subsurface investigations, regulated substances have been detected in site groundwater and soil. In addition, trace concentrations of regulated substances have been detected in surface water and sediment samples collected from

Dundee Canal downstream of the site. A list of regulated substances detected at the site along with the applicable delineation standards was provided in the VIRP. The EPD provided revised Risk Reduction Standards (RRSs) to Hercules following the submittal of the VIRP in a letter dated January 10, 2014. Hercules intends to use these RRSs for the VRP properties for delineation and clean-up standards. The approved RRSs are provided as **Table 1**.

3. Summary of Work Completed this Period

The work performed at the site during this period involved the following actions:

1. Collected water level measurements from 36 wells

2. Collected groundwater samples from six wells for laboratory analysis of volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method 8260B and semivolatile organic compounds (SVOCs) by USEPA Method 8270D

3. Collected groundwater samples from one well for polychlorinated biphenyls (PCBs) by USEPA Method 8082A (including 1262 and 1268) and USEPA Method 1668B.

4. Collected groundwater samples from one well for asbestos containing material (ACM) by USEPA Method 100.2.

5. Additional soil samples were collected the week of August 10, 2015 to delineate regulated substances (i.e., Aniline, 1,1-Biphenyl, PCBs) and soil pH associated with historical impacts as outlined in the VIRP and, in the former Dowtherm® area, to better define the extent of soil impact in this potential source area.

Details of data collected and interpretations of the groundwater sampling and water level data (task 1 through 4) are provided in the following sections. Data from the soil investigation activities (task 5) will be provided in the next regulatory submittal because those data have not yet been validated and approved for use in reporting.

3.1 Hydraulic Gradient

The static depth to water was measured in all accessible site wells on May 4, 2015. These measurements were used to develop a potentiometric surface contour map for the shallow water unit and to calculate a hydraulic gradient. The general groundwater flow direction based on these measurements was convergent toward Dundee Canal, which is consistent with historical data. The hydraulic gradient was calculated from potentiometric surface elevations of wells located perpendicular to groundwater flow from both sides of Dundee Canal. The average hydraulic gradient is 0.007 ft/ft, which is typical of shallow aquifers in the Coastal Plain depositional environment. The hydraulic gradient was calculated to be 0.008 ft/ft on the west side of Dundee Canal based on water level measurements from MW-F13 and MW-F17. On the east side of Dundee Canal, the hydraulic gradient is 0.007 ft/ft as calculated from monitoring wells MW-F9 and MW-F5. A summary of well construction details is included as **Table 2**. Water level elevations are included as **Table 3** and a potentiometric surface contour map is provided as **Figure 4**.

3.2 Groundwater Sample Data Summary

Semiannual groundwater sampling was conducted in May 2015 and will continue until compliance with final cleanup standards is demonstrated for a period of two years or as to be determined by the director of the VRPA and to be agreed upon by Hercules. Semiannual monitoring consists of the collection of water-level measurements from 37 onsite wells and the collection of groundwater samples from the following monitoring wells: MW-F3R, MW-F5, MW-F7, MW-F15, MW-F21, MW-27, MW-29, and MWD-30.

Well purging and sampling methods utilized a peristaltic pump and low-flow, low-purge volume sampling methodologies following the USEPA Region 4 Science and Ecosystem Support Division (SESD) operating procedures for groundwater sampling to ensure a representative sample is collected and to minimize the quantity of well purge water generated during sampling. During purging and sampling, the tubing intake was placed within the screened interval at the zone of sampling. Flow rates did not exceed the recharge rate of the aquifers monitored by measuring the top of the water column with a water level indicator while purging. With respect to the groundwater chemistry, an adequate purge was achieved when the pH, specific conductance, and temperature of the groundwater had stabilized and the turbidity had either stabilized or was below 10 Nephelometric Turbidity Units (NTUs) (twice the Primary Drinking Water Standard of 5 NTUs). Stabilization occurred when pH measurements remained constant within 0.1 Standard Unit, specific conductance varies no more than 10 percent, and the

temperature was constant to within one degree C for at least three consecutive readings. Each well purged for sampling met these criteria during this event and groundwater samples were collected following USEPA-accepted sampling methods once water quality parameters were reached. Well purging and sampling logs from the May 2015 monitoring event are provided as **Appendix B**.

The groundwater samples collected in May 2015 are analyzed for VOCs by USEPA Method 8260B and SVOCs by USEPA Method 8270D in monitoring wells MW-F5, MW-F7, MW-F21, MW-27, MW-29, and MWD-30. Monitoring well MW-F3R was sampled for PCBs analysis by USEPA Methods 8082A and PCB congeners analysis using USEPA Method 1668B. Monitoring well MW-F15 was sampled for asbestos fiber analysis using USEPA Method 100.2 and benzene by USEPA Method 8260B as described in Progress Report #4 in response to EPD comments received on December 29, 2014. MW-F15 is more suitably placed to monitor groundwater quality downgradient from the proposed engineering control for the Former Fatty Acid 50s Tank Area. A planned sampling table (PST) is provided as **Table 4** that gives additional information on samples collected for laboratory analyses.

Analytical results from the May 2015 groundwater sampling event indicate that the distribution of regulated constituents at the site is very limited. A summary of groundwater results from the May 2015 semiannual monitoring event for the shallow and deep aquifers is illustrated on **Figures 5a** and **5b**, respectively. Analytical results are summarized in T**able 5** and laboratory analytical reports are provided in **Appendix C**.

The only regulated constituent that exceeded Type 1 and Type 4 RRSs was naphthalene at a concentrations of 130 µg/L at MW-F21. The RRS for naphthalene is 20 µg/L. Laboratory results confirmed positive detections of acenaphthene, naphthalene, acetone, benzene, and tetrachloroethene in groundwater samples but all were below the Type 1 RRS. Results indicate that constituent concentrations for samples collected from the remaining wells were either below laboratory detection limits or have trace-level detections below the Type 1 RRSs. Laboratory results for deep aquifer monitoring well MWD-30 were below detection limits for all analyzed constituents.

A groundwater sample was also collected from MW-F3R to analyze for the presence of regulated PCBs (Aroclor 1254 and 1260) and both dioxin-like and non-dioxin-like PCBs congeners. Total PCBs are calculated as the sum of the 197 non-dioxin-like PCB congeners. This well is located in the Former CTO tank area, previously used for

storage of potentially PCB-containing oils. The analytical results from this sample indicate that the Aroclor mixtures are below laboratory reporting limits and that the total PCB result (330.1 picogram/Liter [pg/L]) is well below the Type 1 RRS of 500 pg/L.

MW-F15 was added to the semiannual monitoring network as a point of demonstration (POD) well to monitor groundwater downgradient the Former Fatty Acid 50s Tank Area. The groundwater sample from this well was analyzed for asbestos fibers and benzene. The analytical results indicate that fibers (asbestos structures) were not detected above the laboratory detection limit of 1.0 million of fibers per liter and that benzene was not detected above the laboratory reporting limit of 1 µg/L.

3.3 Delineation Status

3.3.1 Groundwater

Groundwater data from historical and the May 2015 monitoring event were compared to the Type 1 RRS and only one well, MW-F21, has concentrations greater than the Type 1 RRS (see Figure 5a). This well is located in the proximity of the ASTs 30's area and is delineated by downgradient monitoring well MW-F5, upgradient wells MW-F7, MW-27, and MW-29, and from historical groundwater analytical results from upgradient wells MW-8 and MW-9. Groundwater is vertically delineated by MWD-30. Additionally, PCBs and ACM were either below the Type 1 RRS or below laboratory detection limits in MW-F3R and MW-F15, respectively. Therefore, groundwater delineation is complete for all site COCs.

3.3.2 Soil

On August 10, 2015 ARCADIS personnel mobilized to the site to delineate the extent of known 1,1-biphenyl, PCB, and aniline impacts above Type 1 and Type 4 RRSs as discussed in Progress Report #4. Soil samples were also collected for aniline from two locations where the laboratory detection limit was elevated above the RRS. Additional soil samples were also collected at select locations in the former Dowtherm® area to assess current conditions and from a location where historically elevated soil pH was observed in the past. Samples were collected from surface and subsurface soils using a hand auger at a total of 51 boring locations across the site. **Figure 6** provides an illustration of sampling locations completed during the event. ARCADIS demobilized from the site on August 15, 2015 following the completion of field activities. Data from this investigation was still under validation review by the submittal date for Progress Report #5 so the results of this investigation will be presented in the next deliverable.

4. Updated Conceptual Site Model

Site investigations of soil and groundwater have occurred since 2000 to identify potential source areas of hazardous constituents, and to provide horizontal and vertical delineation of impacts. As indicated in Section 3.3, groundwater impacts are delineated horizontally and vertically and impacts are confined to the site. Delineation of impacts in soil is not yet complete but available data indicate that impacts are confined to isolated areas of the site. The general lack of source-areas combined with the low hydraulic conductivity typical of the shallow saturated zone has resulted in minimal vertical and lateral areas of hazardous constituent impact. Geologic cross sections have been prepared to illustrate the current subsurface conditions at the site and transect locations are provided on **Figure 7**. The cross-sectional geologic interpretations of subsurface conditions provided on **Figure 8** (along the groundwater flow direction) and **Figure 9** (perpendicular to site-wide groundwater flow), and **Figure 10** (along the groundwater flow direction on the eastern side of the site) include the updated May 2015 groundwater analytical results, August 2014 soil analytical results, and historical soil analytical results. These cross sections will be updated and presented with the August 2015 soil investigation data in the next data deliverable.

5. Status of Proposed Future Work

The comprehensive human health risk assessment presented in Progress Report #4 indicated that calculated cancer risks and non-cancer hazards to both industrial workers and a construction workers were below acceptable levels. No constituents of potential concern were identified for further evaluation in groundwater, sediment, or surface water for the exposure scenarios considered. Similarly, none of the constituents detected in sediment or surface water were identified as refined constituents of potential ecological concern and no further evaluation of sediment or surface water was proposed in Progress Report #4 based on the results of the ecological risk assessment. Adverse impacts are considered unlikely for any aquatic wildlife and sediment dwelling organisms that might occur in the reaches of Dundee Canal within the boundaries of the site based on the overall analysis of surface water and sediment exposures.

Data from the August 2015 soil sampling effort will be evaluated to determine if the delineation of impacts in soil above Type 2 and Type 4 RRSs is complete. The results will also provide information on current soil conditions and concentrations of 1,1-biphenyl in the former Dowtherm® area to support ongoing evaluations of future actions in that area of the site.

The semiannual groundwater sampling program that began in November 2013 will continue until compliance with final cleanup standards is demonstrated for a period of two years or as to be determined by the director of the VRPA and to be agreed upon by Hercules. As indicated above, semiannual monitoring consists of the collection of water-level measurements from up to 37 onsite wells and the collection of groundwater samples from the following 8 monitoring wells: MW-F21, MW-F3R, MW-F5, MW-F7, MW-F15, MW-27, MW-29, and MWD-30.

6. Schedule

An updated project schedule for work elements outlined in the VIRP is provided on **Figure 11**.

7. Reporting

Semiannual Progress Reports will be submitted to provide updates of the progress and implementation of the VIRP throughout the program and will include an updated CSM as necessary to accurately reflect site conditions. Additionally, the projected milestone schedule will be updated to show progress on VIRP objectives (**Figure 11**).

A CSR will be prepared for submittal to EPD following the conclusion of data collection and interpretation activities outlined in the Progress Reports. The CSR will confirm the completion of the corrective action specified in the VIRP and certify compliance of the site with the applicable cleanup standards.

8. References

ARCADIS, 2011. Response to Georgia EPD Comments, EPD Comment Letter Dated October 25, 2010. February 2011.

ARCADIS, 2012. Voluntary Investigation and Remediation Plan, April 9, 2013.

United States Environmental Protection Agency (USEPA). 2013e. Region 4 Science and Ecosystem Support Division Field Sampling Quality Control, SESDPROC-011-R4. February.

ARCADIS

Tables

Table 1a
Soil and Groundwater Delineation Standards
VIRP Semiannual Progress Report
Hercules Inc. - Savannah, GA

Constituent	CAS #	Units	Soil Delineation Criteria Applicable to entire vadose zone [Higher Value of Type 1 and 2 RRS]	Units	GW Delineation Criteria (Type 1 RRS)
Volatile Organic Compounds					
Acetone	67-64-1	mg/kg	400	mg/L	4
Acetonitrile	75-05-8	mg/kg	20	mg/L	0.2
Acetophenone	98-86-2	mg/kg	400	mg/L	4
Acrolein	107-02-8	mg/kg	0.1	mg/L	0.7
Benzene	71-43-2	mg/kg	0.5	mg/L	0.005
1,1'-Biphenyl	92-52-4	mg/kg	1	mg/L	0.01
Carbon Disulfide	75-15-0	mg/kg	400	mg/L	4
Chlorobenzene	108-90-7	mg/kg	10	mg/L	0.1
1,4-Dichloro-2-butene	764-41-0	mg/kg	0.11	mg/L	0.001
trans-1,4-Dichloro-2-butene	110-57-6	mg/kg	0.11	mg/L	0.002
1,2-Dichloropropane	78-87-5	mg/kg	0.5	mg/L	0.005
Ethylbenzene	100-41-4	mg/kg	70	mg/L	0.7
Ethyl Methacrylate	97-63-2	mg/kg	300	mg/L	3
Isobutyl Alcohol	78-83-1	mg/kg	1000	mg/L	10
Methyl Ethyl Ketone	78-93-3	mg/kg	200	mg/L	2
Methyl Isobutyl Ketone	108-10-1	mg/kg	200	mg/L	2
Styrene	100-42-5	mg/kg	14	mg/L	0.1
Tetrachloroethene	127-18-4	mg/kg	0.5	mg/L	0.005
Toluene	108-88-3	mg/kg	100	mg/L	1
Total Xylenes[1]	1330-20-7	mg/kg	1000	mg/L	10
m-Xylene [1]	108-38-3	mg/kg	20	mg/L	0.001 (0.002)
o-Xylene[1]	95-47-6	mg/kg	20	mg/L	0.001
p-Xylene [1]	106-42-3	mg/kg	20	mg/L	0.001 (0.002)
Semi-Volatile Organic Compounds (excluding Polynuclear Aromatic Hydrocarbons)					
Aniline	62-53-3	mg/kg	2	mg/L	0.02
Bis(2-ethylhexyl)phathalate	117-81-7	mg/kg	50	mg/L	0.01
Bis(2-chloroethyl) ether	111-44-4	mg/kg	0.60	mg/L	Detection Limit
Butyl Benzyl Phthlate	85-68-7	mg/kg	50	mg/L	0.1
Total Cresols	1319-77-3	mg/kg	3.8	mg/L	0.01
m-Cresol	108-39-4	mg/kg	3.8	mg/L	0.01
o-Cresol	95-48-7	mg/kg	3.8	mg/L	0.01
p-Creso	106-44-5	mg/kg	3.8	mg/L	0.01
Dibenzofuran	132-64-9	mg/kg	1	mg/L	0.01
2,4-Dimethylphenol	105-67-9	mg/kg	70	mg/L	0.7
m-Dinitrobenzene	99-65-0	mg/kg	1.05	mg/L	0.01
Di-n-octyl Phthalate	117-84-0	mg/kg	70	mg/L	0.7
1,4-Dioxane	123-91-1	mg/kg	7	mg/L	0.07
Formaldehyde	50-00-0	mg/kg	100	mg/L	1
Ni-Nitroso-di-N-butylamine	924-16-3	mg/kg	1	mg/L	0.01
N-Nitrosomethylethylamine	10595-95-6	mg/kg	0.68	mg/L	0.01
Semi-Volatile Organic Compounds (Polynuclear/Polycyclic Aromatic Hydrocarbons)					
Acenaphthene	83-32-9	mg/kg	300	mg/L	2
Acenaphthylene	208-96-8	mg/kg	130	mg/L	0.01
Anthracene	120-12-7	mg/kg	500	mg/L	0.01
Benz[a]anthacene	56-55-3	mg/kg	5	mg/L	0.01
Benzo[a]pyrene	50-32-8	mg/kg	1.64	mg/L	0.01
Benzo[b]fluoranthene	205-99-2	mg/kg	5	mg/L	0.01
Benzo[g,h,i]perylene	191-24-2	mg/kg	500	mg/L	0.01
Benzo(k)fluoranthene	207-08-9	mg/kg	13.7	mg/L	0.01
Chrysene	218-01-9	mg/kg	43	mg/L	0.01
Dibenz[a,h]anthracene	53-70-3	mg/kg	2	mg/L	0.01
Fluoranthene	206-44-0	mg/kg	500	mg/L	1
Fluorene	86-73-7	mg/kg	360	mg/L	1
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	5	mg/L	0.01
Naphthalene	91-20-3	mg/kg	100	mg/L	0.02
Phenanthrene	85-01-8	mg/kg	110	mg/L	0.01
Phenol	108-95-2	mg/kg	50	mg/L	4
Pyrene	129-00-0	mg/kg	500	mg/L	1

Table 1a
Soil and Groundwater Delineation Standards
VIRP Semiannual Progress Report
Hercules Inc. - Savannah, GA

Constituent	CAS #	Units	Soil Delineation Criteria Applicable to entire vadose zone [Higher Value of Type 1 and 2 RRS]	Units	GW Delineation Criteria (Type 1 RRS)
Dioxins, Chlorinated Dibenzofurans, and Dioxin-Like PCBs					
2,3,7,8-TCDD [2]		mg/kg	1.15E-04	mg/L	0.00001
Pesticides					
Endrin	72-20-8	mg/kg	10	mg/L	0.002
Endrin aldehyde	7421-93-4	mg/kg	10	mg/L	0.0001
DDT	50-29-3	mg/kg	0.84	mg/L	0.0001
Methoxychlor	72-43-5	mg/kg	10	mg/L	0.04
Parathion	56-38-2	mg/kg	20	mg/L	0.2
Polychlorinated Biphenyls (PCBs)					
Total PCBs[3,4]	1336-36-3	mg/kg	1.55	mg/L	0.0005
Aroclor 1254	11097-69-1	mg/kg	1.55	mg/L	0.0005
Aroclor 1260	11096-82-5	mg/kg	1.55	mg/L	0.0005
Inorganics and Hazardous Waste Characteristics					
Ammonia	7664-41-7	mg/kg	3000	mg/L	30
Asbestos	1332-21-4	% or ppm	1 or10,000	(MFL)	7 million
Fluoride	16984-48-8	mg/kg	NA	mg/L	4
pH	NA	s.u.	>2 and <12.5	s.u.	>2 and <12.5

NOTES:

NA - Not applicable

mg/kg - milligrams per kilogram

mg/L - millograms per liter

MFL - million fibers per liter

ppm - parts per million

RRS - Risk Reduction Standard

s.u. - Standard unit

1 The applicable groundwater delineation standard for this individual isomer is 0.001 if analytical results are reported as the individual isomers. If m- and p- isomer concentrations are only reported as combined isomer concentrations, the delineation standard defaults to the detection limit/PQL of 0.002 as proposed on revised Table 8 (second revision of the VIRP).

2 Summed TEF-adjusted concentrations for detected polychlorinated dioxin, furans, and dioxin-like PCBs in a single sample to be compared to these media standards.

3 PCBs are regulated as Aroclors (mixtures of various PCB homologues/congeners), total PCBs (summation of the concentrations the 197 individual non-dioxin-like PCB congeners), and the individual regulated 12 dioxin-like PCB congeners. Detected concentrations of the dioxin-like PCB congeners should be addressed using the TEF method along with the detected dioxins and chlorinated dibenzofurans.

4 Values shown are consistent with Georgia Hazardous Site Response Rules. However, detections of PCBs in soil or groundwater may be subject to the Federal Toxic Substance Control Act (TSCA) and cleanup standards set forth within it. Participant should contact EPA regarding the applicability of TSCA at this site.

Table 1b
Groundwater Cleanup Standards
VIRP Semiannual Progress Report
Hercules Inc. - Savannah, GA

Constituent	CAS #	Units	Residential RRS Type 1 and 2 [Higher Value of Type 1 and 2 RRS]	Non-Residential RRS Type 3 and Type 4 [Higher Value of Type 3 and 4 RRS]
Volatile Organic Compounds				
Acetone	67-64-1	mg/L	8	46
Acetonitrile	75-05-8	mg/L	0.2	0.2
Acetophenone	98-86-2	mg/L	4	10
Acrolein	107-02-8	mg/L	0.7	0.7
Benzene	71-43-2	mg/L	0.0054	0.0087
1,1'-Biphenyl	92-52-4	mg/L	0.01	0.01
Carbon Disulfide	75-15-0	mg/L	4	4
Chlorobenzene	108-90-7	mg/L	0.1	0.14
1,4-Dichloro-2-butene	764-41-0	mg/L	0.001	0.001
trans-1,4-Dichloro-2-butene	110-57-6	mg/L	0.002	0.002
1,2-Dichloropropane	78-87-5	mg/L	0.005	0.0074
Ethylbenzene	100-41-4	mg/L	0.7	0.7
Ethyl Methacrylate	97-63-2	mg/L	3	3
Isobutyl Alcohol	78-83-1	mg/L	10	31
Methyl Ethyl Ketone	78-93-3	mg/L	2.3	12
Methyl Isobutyl Ketone	108-10-1	mg/L	2	4.2
Styrene	100-42-5	mg/L	0.5	2.6
Tetrachloroethene	127-18-4	mg/L	0.019	0.098
Toluene	108-88-3	mg/L	1	5.2
Total Xylenes[1]	1330-20-7	mg/L	10	10
m-Xylene[1]	108-38-3	mg/L	0.058	0.29
o-Xylene[1]	95-47-6	mg/L	0.058	0.29
p-Xylene[1]	106-42-3	mg/L	0.058	0.29
Semi-Volatile Organic Compounds (excluding Polynuclear Aromatic Hydrocarbons)				
Aniline	62-53-3	mg/L	0.11	0.5
Bis(2-ethylhexyl)phathalate	117-81-7	mg/L	0.061	0.2
Butyl Benzyl Phthlate	85-68-7	mg/L	3.129	15.061
Total Cresols	1319-77-3	mg/L	1.6	10
m-Cresol	108-39-4	mg/L	0.78	5.1
o-Cresol	95-48-7	mg/L	0.78	5.1
p-Creso	106-44-5	mg/L	1.560	10
Dibenzofuran	132-64-9	mg/L	0.016	0.01
2,4-Dimethylphenol	105-67-9	mg/L	0.7	2
m-Dinitrobenzene	99-65-0	mg/L	0.01	0.01
Di-n-octyl Phthalate	117-84-0	mg/L	0.7	0.7
1,4-Dioxane	123-91-1	mg/L	0.07	0.07
Formaldehyde	50-00-0	mg/L	1	20
Ni-Nitroso-di-N-butylamine	924-16-3	mg/L	0.01	0.01
N-Nitrosomethylethylamine	10595-95-6	mg/L	0.01	0.01
Semi-Volatile Organic Compounds (Polynuclear/Polycyclic Aromatic Hydrocarbons)				
Acenaphthene	83-32-9	mg/L	2	6.1
Acenaphthylene	208-96-8	mg/L	0.01	0.01
Anthracene	120-12-7	mg/L	4.7	31
Benz[a]anthacene	56-55-3	mg/L	0.01	0.01
Benzo[a]pyrene	50-32-8	mg/L	0.01	0.01
Benzo[b]fluoranthene	205-99-2	mg/L	0.01	0.01
Benzo[g,h,i]perylene	191-24-2	mg/L	0.01	0.01
Benzo(k)fluoranthene	207-08-9	mg/L	0.012	0.039
Chrysene	218-01-9	mg/L	0.12	0.04
Dibenz[a,h]anthracene	53-70-3	mg/L	0.01	0.01
Fluoranthene	206-44-0	mg/L	1	4.1
Fluorene	86-73-7	mg/L	1	4.1
Indeno(1,2,3-cd)pyrene	193-39-5	mg/L	0.01	0.01
Naphthalene	91-20-3	mg/L	0.02	0.02
Phenanthrene	85-01-8	mg/L	0.01	0.01
Pyrene	129-00-0	mg/L	1	3.1

Table 1b
Groundwater Cleanup Standards
VIRP Semiannual Progress Report
Hercules Inc. - Savannah, GA

Constituent	CAS #	Units	Residential RRS Type 1 and 2 [Higher Value of Type 1 and 2 RRS]	Non-Residential RRS Type 3 and Type 4 [Higher Value of Type 3 and 4 RRS]
Dioxins, Chlorinated Dibenzofurans, and Dioxin-Like PCBs				
2,3,7,8-TCDD [2]		mg/L	0.00001	0.00001
Pesticides				
Endrin	72-20-8	mg/L	0.0047	0.031
Endrin aldehyde	7421-93-4	mg/L	0.0001	0.0001
DDT	50-29-3	mg/L	0.0025	0.0084
Methoxychlor	72-43-5	mg/L	0.078	0.51
Parathion	56-38-2	mg/L	0.2	0.61
Polychlorinated Biphenyls				
Total PCBs [3,4]	1336-36-3	mg/L	0.0005	0.0014
Aroclor 1254	11097-69-1	mg/L	0.0005	0.0014
Aroclor 1260	11096-82-5	mg/L	0.0005	0.0014
Inorganics				
Ammonia	7664-41-7	mg/L	30	30
Asbestos	1332-21-4	(MFL)	7	7
Fluoride	16984-48-8	mg/L	4	4.1
pH	NA	s.u.	>2 and <12.5	>2 and <12.5

NOTES:

NA - Not applicable

mg/kg - milligrams per kilogram

mg/L - millograms per liter

MFL - million fibers per liter

ppm - parts per million

RRS - Risk Reduction Standard

s.u. - Standard unit

1 The applicable groundwater delineation standard for this individual isomer is 0.001 if analytical results are reported as the individual isomers. If m- and p- isomer concentrations are only reported as combined isomer concentrations, the delineation standard defaults to the detection limit/PQL of 0.002 as proposed on revised Table 8 (second revision of the VIRP).

2 Summed TEF-adjusted concentrations for detected polychlorinated dioxin, furans, and dioxin-like PCBs in a single sample to be compared to these media standards.

3 PCBs are regulated as Aroclors (mixtures of various PCB homologues/congeners), total PCBs (summation of the concentrations the 197 individual non-dioxin-like PCB congeners), and the individual regulated 12 dioxin-like PCB congeners. Detected concentrations of the dioxin-like PCB congeners should be addressed using the TEF method along with the detected dioxins and chlorinated dibenzofurans.

4 Values shown are consistent with Georgia Hazardous Site Response Rules. However, detections of PCBs in soil or groundwater may be subject to the Federal Toxic Substance Control Act (TSCA) and cleanup standards set forth within it. Participant should contact EPA regarding the applicability of TSCA at this site.

Table 1c
Soil Cleanup Standards
VIRP Semiannual Progress Report
Hercules Inc. - Savannah, GA

Constituent	CAS #	Units	Residential RRS Type 1 and 2 [Higher Value of Type 1 and 2 RRS]	Non-Residential RRS Type 3 and Type 4 [Higher Value of Type 3 and 4 RRS]
Volatile Organic Compounds				
Acetone	67-64-1	mg/kg	400	400
Acetonitrile	75-05-8	mg/kg	20	20
Acetophenone	98-86-2	mg/kg	400	400
Acrolein	107-02-8	mg/kg	0.1	0.1
Benzene	71-43-2	mg/kg	0.5	0.5
1,1'-Biphenyl	92-52-4	mg/kg	1	1
Carbon Disulfide	75-15-0	mg/kg	400	400
Chlorobenzene	108-90-7	mg/kg	10	10
1,4-Dichloro-2-butene	764-41-0	mg/kg	0.110	0.100
trans-1,4-Dichloro-2-butene	110-57-6	mg/kg	0.113	0.140
1,2-Dichloropropane	78-87-5	mg/kg	0.5	0.5
Ethylbenzene	100-41-4	mg/kg	70	70
Ethyl Methacrylate	97-63-2	mg/kg	300	300
Isobutyl Alcohol	78-83-1	mg/kg	1000	1000
Methyl Ethyl Ketone	78-93-3	mg/kg	200	200
Methyl Isobutyl Ketone	108-10-1	mg/kg	200	200
Styrene	100-42-5	mg/kg	14	14
Tetrachloroethene	127-18-4	mg/kg	0.5	0.5
Toluene	108-88-3	mg/kg	100	100
Total Xylenes[1]	1330-20-7	mg/kg	1000	1000
m-Xylene[1]	108-38-3	mg/kg	20	20
o-Xylene[1]	95-47-6	mg/kg	20	20
p-Xylene[1]	106-42-3	mg/kg	20	20
Semi-Volatile Organic Compounds (excluding Polynuclear Aromatic Hydrocarbons)				
Aniline	62-53-3	mg/kg	2	2
Bis(2-ethylhexyl)phathalate	117-81-7	mg/kg	50	50
Butyl Benzyl Phthlate	85-68-7	mg/kg	50	218.540
Total Cresols	1319-77-3	mg/kg	3.8	8
m-Cresol	108-39-4	mg/kg	3.80	4.1
o-Cresol	95-48-7	mg/kg	3.80	4.1
p-Creso	106-44-5	mg/kg	3.800	8
Dibenzofuran	132-64-9	mg/kg	1	1.90
2,4-Dimethylphenol	105-67-9	mg/kg	70.0	70
m-Dinitrobenzene	99-65-0	mg/kg	1.05	1.05
Di-n-octyl Phthalate	117-84-0	mg/kg	70	70
1,4-Dioxane	123-91-1	mg/kg	7	7
Formaldehyde	50-00-0	mg/kg	100	100
Ni-Nitroso-di-N-butylamine	924-16-3	mg/kg	1	1
N-Nitrosomethylethylamine	10595-95-6	mg/kg	0.68	1
Semi-Volatile Organic Compounds (Polynuclear/Polycyclic Aromatic Hydrocarbons)				
Acenaphthene	83-32-9	mg/kg	300	300
Acenaphthylene	208-96-8	mg/kg	130	130
Anthracene	120-12-7	mg/kg	500	1009
Benz[a]anthacene	56-55-3	mg/kg	5	5
Benzo[a]pyrene	50-32-8	mg/kg	1.64	1.64
Benzo[b]fluoranthene	205-99-2	mg/kg	5	5
Benzo[g,h,i]perylene	191-24-2	mg/kg	500	500
Benzo(k)fluoranthene	207-08-9	mg/kg	5	46
Chrysene	218-01-9	mg/kg	5	141
Dibenz[a,h]anthracene	53-70-3	mg/kg	2	5
Fluoranthene	206-44-0	mg/kg	500	500
Fluorene	86-73-7	mg/kg	360	360
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	5	15
Naphthalene	91-20-3	mg/kg	100	100
Phenanthrene	85-01-8	mg/kg	110	110
Pyrene	129-00-0	mg/kg	500	500
Dioxins, Chlorinated Dibenzofurans, and Dioxin-Like PCBs				

Table 1c
Soil Cleanup Standards
VIRP Semiannual Progress Report
Hercules Inc. - Savannah, GA

Constituent	CAS #	Units	Residential RRS Type 1 and 2 [Higher Value of Type 1 and 2 RRS]	Non-Residential RRS Type 3 and Type 4 [Higher Value of Type 3 and 4 RRS]
2,3,7,8-TCDD [2]		mg/kg	0.00012	4.40E-04
Pesticides				
Endrin	72-20-8	mg/kg	10	10
Endrin aldehyde	7421-93-4	mg/kg	10	10
DDT	50-29-3	mg/kg	0.66	2.80
Methoxychlor	72-43-5	mg/kg	10	28
Parathion	56-38-2	mg/kg	20	20
Polychlorinated Biphenyls				
Total PCBs [3,4]	1336-36-3	mg/kg	1.55	1.55
Aroclor 1254	11097-69-1	mg/kg	1.55	1.55
Aroclor 1260	11096-82-5	mg/kg	1.55	1.55
Inorganics				
Ammonia	7664-41-7	mg/kg	3000	3000
Asbestos	1332-21-4	% or ppm	1 or 10,000 ppm	1 or 10,000 ppm
Fluoride	16984-48-8	mg/kg	NA	NA
pH	NA	s.u.	>2 and <12.5	>2 and <12.5

NOTES:

NA - Not applicable

mg/kg - milligrams per kilogram

mg/L - millograms per liter

MFL - million fibers per liter

ppm - parts per million

RRS - Risk Reduction Standard

s.u. - Standard unit

1 The applicable groundwater delineation standard for this individual isomer is 0.001 if analytical results are reported as the individual isomers. If m- and p- isomer concentrations are only reported as combined isomer concentrations, the delineation standard defaults to the detection limit/PQL of 0.002 as proposed on revised Table 8 (second revision of the VIRP).

2 Summed TEF-adjusted concentrations for detected polychlorinated dioxin, furans, and dioxin-like PCBs in a single sample to be compared to these media standards.

3 PCBs are regulated as Aroclors (mixtures of various PCB homologues/congeners), total PCBs (summation of the concentrations the 197 individual non-dioxin-like PCB congeners), and the individual regulated 12 dioxin-like PCB congeners. Detected concentrations of the dioxin-like PCB congeners should be addressed using the TEF method along with the detected dioxins and chlorinated dibenzofurans.

4 Values shown are consistent with Georgia Hazardous Site Response Rules. However, detections of PCBs in soil or groundwater may be subject to the Federal Toxic Substance Control Act (TSCA) and cleanup standards set forth within it. Participant should contact EPA regarding the applicability of TSCA at this site.

Table 2
Well Construction
VIRP Semiannual Progress Report
Hercules Inc. - Savannah, GA

Well Id	Install Date	Total Depth (btoc)[1]	Approximate Total Depth (bgs)[2]	Casing Length (bgs)	Screen Interval (bgs)		Well Completion	Site Area	Installer	Ground Elevation (Historical)	Top of Casing Elevation (Historical)	Ground Elevation (2011)	Top of Casing Elevation (2011)	Well Diameter	Construction Material
Shallow Monitoring Wells															
MWA*	--	--	10.4	--	--	10.4	--	Resin Areas	--	--	--	--	--	--	--
MWB*	--	--	10.2	--	--	10.2	--	Resin Areas	--	--	--	--	--	--	--
MWC*	--	--	10.2	--	--	10.2	--	Resin Areas	--	--	--	--	--	--	--
MWD*	--	--	8.8	--	--	8.8	--	Resin Areas	--	--	--	--	--	--	--
MW-F1	10/19/2000	22.58	20	10	10	20	Stick-up	Resin Areas	AGM	8.1	10.62	7.13	9.55	2	PVC
MW-F2	10/24/2000	11.82	10	5	5	10	--	Resin Areas	AGM	8.89	8.58	7.70	7.51	2	PVC
MW-F3*	10/19/2000	--	20	10	10	20	--	Resin Areas	AGM	10	9.94	--	--	2	PVC
MW-F3R	11/6/2008	22.90	20	10	10	20	Stick-up	Resin Areas	WPC	9.36	13.63	8.32	12.53	2	PVC
MW-F4*	10/18/2000	--	20	10	10	20	--	Resin Areas	AGM	9.6	12.09	--	--	2	PVC
MW-F5	10/18/2000	22.26	20	10	10	20	Stick-up	Resin Areas	AGM	10.01	12.62	9.07	11.49	2	PVC
MW-F6	10/19/2000	19.73	20	10	10	20	Flush mount	Resin Areas	AGM	10.01	10.03	8.97	8.59	2	PVC
MW-F7	10/18/2000	23.14	20	10	10	20	Stick-up	Resin Areas	AGM	11.59	14.03	10.70	13.23	2	PVC
MW-F8	10/20/2000	20.60	20	10	10	20	Stick-up	Resin Areas	AGM	12.25	12.5	11.22	12.59	2	PVC
MW-F9	10/17/2000	NM	20	10	10	20	--	Resin Areas	AGM	13	12.84	12.00	11.78	2	PVC
MW-F10*	10/17/2000	NM	20	10	10	20	--	Resin Areas	AGM	10.56	10.5	--	--	2	PVC
MW-F11	10/18/2000	19.66	20	10	10	20	Flush mount	Resin Areas	AGM	9.83	9.3	8.80	8.58	2	PVC
MW-F12	10/18/2000	20.47	20	10	10	20	Flush mount	Resin Areas	AGM	10.54	10.1	9.47	9.34	2	PVC
MW-F13	10/17/2000	23.32	20	10	10	20	Stick-up	Resin Areas	AGM	16.34	19.46	15.66	18.47	2	PVC
MW-F14	10/16/2000	22.52	20	10	10	20	Stick-up	Resin Areas	AGM	6.93	9.33	6.05	8.38	2	PVC
MW-F15	10/19/2000	19.98	20	10	10	20	Flush mount	Resin Areas	AGM	10.61	10.7	9.87	9.79	2	PVC
MW-F16	10/16/2000	22.42	20	10	10	20	Stick-up	Resin Areas	AGM	6.83	9.46	6.03	8.51	2	PVC
MW-F17	10/17/2000	22.83	20	10	10	20	Stick-up	Resin Areas	AGM	9.59	12.34	8.93	11.36	2	PVC
MW-F19	10/16/2000	22.84	20	10	10	20	Stick-up	Resin Areas	AGM	8.6	11.46	7.68	10.47	2	PVC
MW-F20*	10/23/2000	--	13	3	3	13	--	Resin Areas	AGM	10.07	9.89	--	--	2	PVC
MW-F21	10/23/2000	23.33	20	10	10	20	Stick-up	Resin Areas	AGM	11.11	13.54	9.96	12.46	2	PVC
MW-22	10/29/2002	21.39	20	10	10	20	Stick-up	Shallow Background Well	MACTEC	8.69	7.8	7.36	10.06	2	PVC
MW-23	10/28/2002	23.41	20	10	10	20	Stick-up	Resin Areas	MACTEC	7.31	9.64	7.08	9.4	2	PVC
MW-24	10/28/2002	22.95	20	10	10	20	Stick-up	Resin Areas	MACTEC	8.02	10.52	7.71	10.23	2	PVC
MW-25	10/29/2002	21.34	20	10	10	20	Stick-up	Shallow Background Well	MACTEC	10.99	13.17	10.32	12.72	2	PVC
MW-26	10/30/2002	24.01	20	10	10	20	Stick-up	Size Tank Farm	MACTEC	13.4	15.98	13.69	15.69	2	PVC
MW-27	12/17/2002	19.99	20	10	10	20	Flush mount	Resin Areas	MACTEC	11.39	10.52	10.36	10.23	2	PVC
MW-28	12/17/2002	24.54	20	10	10	20	Stick-up	Shallow Background Well	MACTEC	7.909	10.801	7.60	10.5	2	PVC
MW-29	11/6/2008	22.50	20	10	10	20	Stick-up	Resin Areas	WPC	10.65	13.85	9.58	12.8	2	PVC
MW-32	11/18/2008	21.98	20	10	10	20	Stick-up	Shallow Background Well	WPC	5.72	7.9	5.30	7.05	2	PVC

Table 2
Well Construction
VIRP Semiannual Progress Report
Hercules Inc. - Savannah, GA

Well Id	Install Date	Total Depth (btoc)[1]	Approximate Total Depth (bgs)[2]	Casing Length (bgs)	Screen Interval (bgs)		Well Completion	Site Area	Installer	Ground Elevation (Historical)	Top of Casing Elevation (Historical)	Ground Elevation (2011)	Top of Casing Elevation (2011)	Well Diameter	Construction Material
Deep Monitoring Wells															
MWD-22	10/29/2002	42.61	50	40	40	50	Stick-up	Resin Areas	MACTEC	7.8	10.15	7.71	10.05	2	PVC
MWD-23	11/1/2002	48.98	50	40	40	50	Stick-up	Resin Areas	MACTEC	7.13	9.46	6.83	9.27	2	PVC
MWD-24	10/29/2002	47.43	50	40	40	50	Stick-up	Deep Background Well	MACTEC	8.05	10.6	7.67	10.34	2	PVC
MWD-25	10/30/2002	48.07	50	40	40	50	Stick-up	Deep Background Well	MACTEC	10.89	8.11	10.26	12.58	2	PVC
MWD-27	12/17/2002	45.02	50	40	40	50	Flush mount	Resin Areas	MACTEC		10.404	10.25	10.09	2	PVC
MWD-28	12/17/2002	49.05	50	40	40	50	Stick-up	Deep Background Well	MACTEC	8.217	11.089	7.27	10.66	2	PVC
MWD-29	11/10/2008	51.10	50	40	40	50	Stick-up	Resin Areas	WPC	10.65	14.59	9.51	13.56	2	PVC
MWD-30	11/11/2008	52.78	50	40	40	50	Stick-up	Resin Areas	WPC	11.11	14.48	10.06	13.41	2	PVC
MWD-F1	10/17/2000	103.30	100	80	80	100	Stick-up	Resin Areas	AGM	7.99	10.39	6.92	9.25	2	PVC
MWD-F2	10/17/2000	103.25	100	80	80	100	Stick-up	Resin Areas	AGM	8.7	11.5	7.80	10.52	2	PVC
MWD-F3	10/18/2000	90.22	87	67	67	87	Stick-up	Resin Areas	AGM	9.58	12.21	8.77	11.23	2	PVC
Temporary Wells															
Well-1	1/7/1998	--	19	--	--	19	--	Size Tank Farm	Ferguson-Harbour	--	--			--	--
Well-2	1/7/1998	--	17	--	--	17	--	Size Tank Farm	Ferguson-Harbour	--	--			--	--
Well-3	1/7/1998	--	17	--	--	17	--	Size Tank Farm	Ferguson-Harbour	--	--			--	--
TMW-5	7/6/2000	--	~12-16	--	--	~12-16	--	50s Tank and Hard Resin Area	S&ME	--	--			--	--
TMW-6	7/6/2000	--	~12-16	--	--	~12-16	--	50s Tank and Hard Resin Area	S&ME	--	--			--	--
TMW-7	7/6/2000	--	~12-16	--	--	~12-16	--	50s Tank and Hard Resin Area	S&ME	--	--			--	--
TMW-10	7/6/2000	--	~12-16	--	--	~12-16	--	50s Tank and Hard Resin Area	S&ME	--	--			--	--
TMW-11	7/6/2000	--	~12-16	--	--	~12-16	--	50s Tank and Hard Resin Area	S&ME	--	--			--	--
TMW-12	7/6/2000	--	~12-16	--	--	~12-16	--	50s Tank and Hard Resin Area	S&ME	--	--			--	--
TMW-13	7/6/2000	--	~12-16	--	--	~12-16	--	50s Tank and Hard Resin Area	S&ME	--	--			--	--
TMW-14	7/6/2000	--	~12-16	--	--	~12-16	--	50s Tank and Hard Resin Area	S&ME	--	--			--	--
TMW-15	7/6/2000	--	~12-16	--	--	~12-16	--	50s Tank and Hard Resin Area	S&ME	--	--			--	--
TMW-16	7/6/2000	--	~12-16	--	--	~12-16	--	50s Tank and Hard Resin Area	S&ME	--	--			--	--
TMW-17	6/6/2000	--	~12-16	--	--	~12-16	--	50s Tank and Hard Resin Area	S&ME	--	--			--	--
Onsite Production Wells															
Well 1 (12")	~1955	--	1000	270	open borehole		--	--	--	--	--			12	--
Well 2 (10")	~1950	--	750	250	open borehole		--	--	--	--	--			10	--
Well 3 (8")	Before January 1956	--	--	--	--	--	--	--	--	--	--			8	--

-- Unknown or not applicable
MWA*–= Abandoned Well; MW-F10 was destroyed
[1] - Total depth below top of casing (btoc) measured on January 26, 2011. Wells MW-F2, MW-F9, and MW-F10 could not be located. Water level tape not long enough to measure total depth btoc of MWD-F2 and MWD-F3.
[2] - Total depth below ground surface for wells with riser aboveground is approximated based on limited well construction/boring log information. The length of aboveground risers will be measured during next field event for confirmation of total depth bgs.
[3] - The riser length is approximated based on historical survey data. The length of aboveground risers will be measured during the next field event.

Table 3
Groundwater Elevation Data
VIRP Semiannual Progress Report
Ashland - Hercules
Savannah, Georgia

		November 4, 2014		May 4, 2015	
Well Number	**Top of Casing Elevation (feet msl)**	**Depth to Water (feet)**	**Groundwater Elevation (feet msl)**	**Depth to Water (feet)**	**Groundwater Elevation (feet msl)**
MW-F1	9.55	4.16	5.39	3.85	5.70
MW-F2	7.51	NM	NM	5.14	2.37
MW-F3R	12.53	7.61	4.92	6.63	5.90
MW-F5	11.49	6.76	4.73	5.86	5.63
MW-F6	8.59	5.11	3.48	3.06	5.53
MW-F7	13.23	3.56	9.67	4.70	8.53
MW-F8	12.59	6.50	6.09	4.11	8.48
MW-F9	11.78	4.67	7.11	2.71	9.07
MW-F11	8.58	2.91	5.67	1.47	7.11
MW-F12	9.34	3.73	5.61	2.05	7.29
MW-F13	18.47	7.67	10.80	9.09	9.38
MW-F14	8.38	3.24	5.14	2.14	6.24
MW-F15	9.79	5.04	4.75	4.35	5.44
MW-F16	8.51	5.35	3.16	2.20	6.31
MW-F17	11.36	6.40	4.96	5.31	6.05
MW-F19	10.47	5.28	5.19	3.75	6.72
MW-F21	12.46	6.82	5.64	5.51	6.95
MW-22	10.06	3.97	6.09	2.23	7.83
MW-23	9.4	8.03	1.37	6.61	2.79
MW-24	10.23	5.26	4.97	3.70	6.53
MW-25	12.72	5.13	7.59	4.80	7.92
MW-26	15.69	NM	NM	7.05	8.64
MW-27	10.23	3.05	7.18	1.25	8.98
MW-28	10.5	Destroyed			
MW-29	12.8	5.73	7.07	4.20	8.60
MW-32	7.05	4.59	2.46	3.00	4.05
Deep Monitoring Wells					
MWD-22	10.05	4.22	5.83	2.52	7.53
MWD-23	9.27	8.05	1.22	5.65	3.62
MWD-24	10.34	5.4	4.94	4.02	6.32
MWD-25	12.58	6.25	6.33	5.16	7.42
MWD-27	10.09	4.6	5.49	2.4	7.69
MWD-28	10.66	7.59	3.07	6.12	4.54
MWD-29	13.56	4.77	8.79	6.13	7.43
MWD-30	13.41	9.56	3.85	7.60	5.81
MWD-F1	9.25	31.14	-21.89	30.36	-21.11
MWD-F2	10.52	22.06	-11.54	8.45	2.07
MWD-F3	11.23	17.63	-6.40	16.95	-5.72

Table 4
Planned Sampling Table
VIRP Semiannual Progress Report #5
Hercules Inc. - Savannah, GA

Sample Info	Analyses			
Well ID	**VOCs**	**SVOCs**	**Aroclors and congeners**	**ACM (asbestos)**
Glassware	40mL VOA glass	1L Amber glass	2 - 1L Amber	2 - 1L Plastic
Method	8260B	8270D	8082A (include 1262 and 1268), 1668B	600-R-93-116
MW-F3R			X	
MW-F5	X	X		
MW-F7	X	X		
MW-F15	X*			X
MW-F21	X	X		
MW-27	X	X		
MW-29	X	X		
MWD-30	X	X		

* - Benzene only

Table 5a
Groundwater Analytical Data, VOCs, SVOCs, and pH, May 2015
VIRP Semiannual Progress Report
Hercules Inc. - Savannah, GA

					Well	MW-27	MW-29	MWD-30	MWD-30	MW-F15	MW-F21	MW-F5	MW-F7
					Sample Matrix	GW	GW	GW	GW	GW	GW	GW	GW
					Date	5/4/2015	5/5/2015	5/4/2015	5/4/2015	5/5/2015	5/4/2015	5/5/2015	5/4/2015
					Sample Depth (ft bgs)	10-20	10-20	10-20	10-20	10-20	10-20	10-20	10-20
					Sample Type	N	N	FD	N	N	N	N	N
Constituent	**CAS**	**Unit**	**Type 1 RRS**	**Type 3/4 RRS**									
VOCs													
1,2-Dichloropropane	78-87-5	ug/l	5	7.4		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U		< 1.0 U	< 1.0 U	< 1.0 U
1,4-Dioxane	123-91-1	ug/l	70	70		< 100 U	< 100 U	< 100 U	< 100 U		< 100 U	< 100 U	< 100 U
2-Butanone (MEK)	78-93-3	ug/l	2000	12000		< 10 U	< 10 U	< 10 U	< 10 U		< 10 U	< 10 U	< 10 U
2-Methyl-1-propanol	78-83-1	ug/l	10000	31000		< 50 U	< 50 U	< 50 U	< 50 U		< 50 U	< 50 U	< 50 U
4-Methyl-2-Pentanone	108-10-1	ug/l	2000	4200		< 10 U	< 10 U	< 10 U	< 10 U		< 10 U	< 10 U	< 10 U
Acetone	67-64-1	ug/l	4000	46000		< 10 U	< 10 U	< 10 U	< 10 U		16	< 10 U	< 10 U
Acetonitrile	75-05-8	ug/l	200	200		< 40 U	< 40 U	< 40 U	< 40 U		< 40 U	< 40 U	< 40 U
Acrolein	107-02-8	ug/l	700	700		< 20 U	< 20 U	< 20 U	< 20 U		< 20 U	< 20 U	< 20 U
Benzene	71-43-2	ug/l	5	8.7		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	1.3	< 1.0 U	< 1.0 U
Carbon Disulfide	75-15-0	ug/l	4000	4000		< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U		< 2.0 U	< 2.0 U	< 2.0 U
Chlorobenzene	108-90-7	ug/l	100	140		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U		< 1.0 U	< 1.0 U	< 1.0 U
Ethyl Methacrylate	97-63-2	ug/l	3000	3000		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U		< 1.0 U	< 1.0 U	< 1.0 U
Ethylbenzene	100-41-4	ug/l	700	700		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U		< 1.0 U	< 1.0 U	< 1.0 U
Naphthalene	91-20-3	ug/l	20	**20**		< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U		**110**	< 5.0 U	4.5 J
Styrene (Monomer)	100-42-5	ug/l	100	2600		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U		< 1.0 U	< 1.0 U	< 1.0 U
Tetrachloroethene	127-18-4	ug/l	5	98		1.7	< 1.0 U	< 1.0 U	< 1.0 U		< 1.0 U	< 1.0 U	2.8
Toluene	108-88-3	ug/l	1000	5200		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U		< 1.0 U	< 1.0 U	< 1.0 U
Total Xylenes	1330-20-7	ug/l	2	10000		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U		< 1.0 U	< 1.0 U	< 1.0 U
trans-1,4-Dichlorobutene	110-57-6	ug/l	2	2		< 2.0 U	< 2.0 U*	< 2.0 U	< 2.0 U		< 2.0 U	< 2.0 U*	< 2.0 U
SVOCs													
1,1-Biphenyl	92-52-4	ug/l	10	10		< 0.98 UF1	< 1.1 U		< 0.97 U		< 0.97 U	< 0.99 U	< 0.96 U
1,3-Dinitrobenzene	99-65-0	ug/l	10	10		< 0.98 U	< 1.1 U		< 0.97 U		< 0.97 U	< 0.99 U	< 0.96 U
1,4-Dioxane	123-91-1	ug/l	70	70		< 2.0 U	< 2.3 U		< 1.9 U		16	< 2.0 U	< 1.9 U
2,4-Dimethylphenol	105-67-9	ug/l	700	2000		< 2.0 U	< 2.3 U		< 1.9 U		< 1.9 U	< 2.0 U	< 1.9 U
2-Methylphenol	95-48-7	ug/l	10	5100		< 2.0 U	< 2.3 U		< 1.9 U		< 1.9 U	< 2.0 U	< 1.9 U
4-Methylphenol	106-44-5	ug/l	10	10000		< 2.0 UF1	< 2.3 U		< 1.9 U		< 1.9 U	< 2.0 U	< 1.9 U
Acenaphthene	83-32-9	ug/l	2000	6100		< 0.20 U	< 0.23 U		< 0.19 U		2.4	4.9	< 0.19 U
Acenaphthylene	208-96-8	ug/l	10	10		< 0.20 U	< 0.23 U		< 0.19 U		< 0.19 U	< 0.20 U	< 0.19 U
Acetophenone	98-86-2	ug/l	4000	10000		< 0.98 U	< 1.1 U		< 0.97 U		< 0.97 U	< 0.99 U	< 0.96 U
Aniline	62-53-3	ug/l	20	500		< 2.0 U	< 2.3 U		< 1.9 U		< 1.9 U	< 2.0 U	< 1.9 U
Anthracene	120-12-7	ug/l	10	31000		< 0.20 UF1	< 0.23 U		< 0.19 U		< 0.19 U	< 0.20 U	< 0.19 U
Benzo(a)anthracene	56-55-3	ug/l	10	10		< 0.20 U	< 0.23 U		< 0.19 U		< 0.19 U	< 0.20 U	< 0.19 U
Benzo(a)pyrene	50-32-8	ug/l	10	10		< 0.20 UF1	< 0.23 U		< 0.19 U		< 0.19 U	< 0.20 U	< 0.19 U
Benzo(b)fluoranthene	205-99-2	ug/l	10	10		< 0.20 U	< 0.23 U		< 0.19 U		< 0.19 U	< 0.20 U	< 0.19 U
Benzo(g,h,i)perylene	191-24-2	ug/l	10	10		< 0.20 U	< 0.23 U		< 0.19 U		< 0.19 U	< 0.20 U	< 0.19 U
Benzo(k)fluoranthene	207-08-9	ug/l	10	39		< 0.20 U	< 0.23 U		< 0.19 U		< 0.19 U	< 0.20 U	< 0.19 U
bis(2-Ethylhexyl)phthalate	117-81-7	ug/l	10	200		< 4.9 U	< 5.7 U		< 4.8 U		< 4.8 U	< 5.0 U	< 4.8 U
Butyl benzyl phthalate	85-68-7	ug/l	100	15061		< 0.98 UF1	< 1.1 U		< 0.97 U		< 0.97 U	< 0.99 U	< 0.96 U
Chrysene	218-01-9	ug/l	10	40		< 0.20 U	< 0.23 U		< 0.19 U		< 0.19 U	< 0.20 U	< 0.19 U
Dibenzo(a,h)anthracene	53-70-3	ug/l	10	10		< 0.20 UF1	< 0.23 U		< 0.19 U		< 0.19 U	< 0.20 U	< 0.19 U
Dibenzofuran	132-64-9	ug/l	10	10		< 0.98 UF1	< 1.1 U		< 0.97 U		< 0.97 U	< 0.99 U	< 0.96 U

Table 5a
Groundwater Analytical Data, VOCs, SVOCs, and pH, May 2015
VIRP Semiannual Progress Report
Hercules Inc. - Savannah, GA

				Well	MW-27	MW-29	MWD-30	MWD-30	MW-F15	MW-F21	MW-F5	MW-F7
				Sample Matrix	GW	GW	GW	GW	GW	GW	GW	GW
				Date	5/4/2015	5/5/2015	5/4/2015	5/4/2015	5/5/2015	5/4/2015	5/5/2015	5/4/2015
				Sample Depth (ft bgs)	10-20	10-20	10-20	10-20	10-20	10-20	10-20	10-20
				Sample Type	N	N	FD	N	N	N	N	N
Constituent	**CAS**	**Unit**	**Type 1 RRS**	**Type 3/4 RRS**								
Di-n-octyl phthalate	117-84-0	ug/l	700	700	< 0.98 U	< 1.1 U		< 0.97 U		< 0.97 U	< 0.99 U	< 0.96 U
Fluoranthene	206-44-0	ug/l	1000	4100	< 0.20 U	< 0.23 U		< 0.19 U		< 0.19 U	< 0.20 U	< 0.19 U
Fluorene	86-73-7	ug/l	1000	4100	< 0.20 UF1	< 0.23 U		< 0.19 U		< 0.19 U	< 0.20 U	< 0.19 U
Indeno(1,2,3-cd)pyrene	193-39-5	ug/l	10	10	< 0.20 U	< 0.23 U		< 0.19 U		< 0.19 U	< 0.20 U	< 0.19 U
Naphthalene	91-20-3	ug/l	20	**20**	< 0.20 U	< 0.23 U		< 0.19 U		**130**	< 0.20 U	< 0.19 U
n-Nitrosodi-n-butylamine	924-16-3	ug/l	10	10	< 0.98 U	< 1.1 U		< 0.97 U		< 0.97 U	< 0.99 U	< 0.96 U
N-Nitroso-N-methylethylamine	10595-95-6	ug/l	10	10	< 2.0 U	< 2.3 U		< 1.9 U		< 1.9 U	< 2.0 U	< 1.9 U
Parathion	56-38-2	ug/l	200	610	< 2.0 U	< 2.3 U		< 1.9 U		< 1.9 U	< 2.0 U	< 1.9 U
Phenanthrene	85-01-8	ug/l	10	10	< 0.20 UF1	< 0.23 U		< 0.19 U		< 0.19 U	< 0.20 U	< 0.19 U
Phenol	108-95-2	ug/l	4		< 0.98 U	< 1.1 U		< 0.97 U		< 0.97 U	< 0.99 U	< 0.96 U
Pyrene	129-00-0	ug/l	1000	3100	< 0.20 UF1	< 0.23 U		< 0.19 U		< 0.19 U	< 0.20 U	< 0.19 U
pH		s.u	≥2 and ≤12.5	≥2 and ≤12.5	3.37	5.07		8.02	6.76	6	7.13	4.69

Notes

1. Highlighted values indicated concentrations above Type 1 RRS
2. Bolded values indicated concentrations above Type 3/4 RRS
3. pH values were recorded in the field.
4. Type 1 RRS is used for delineation and the higher of the Type 3 and Type 4 RRS is used for the cleanup standard.

U = Not detected above reporting limit
* = LCS or LCSD is outside acceptance limits.
^ = ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
F1 = MS and/or MSD Recovery is outside acceptance limits.
F2 = MS/MSD RPD exceeds control limits
< = Concentration is less than the reporting limit
* LCS or LCSD exceeds the control limits
-- Not Analyzed
FD = Field Duplicate
ft bgs = feet below ground surface
GW = Groundwater
N = Normal Sample
RRS = Risk Reduction Standard
s.u. = Standard Unit
SVOC = Semivolatile organic compound
µg/L = micrograms per liter
VOC = Volatile organic compounds
s.u. = Standard Unit

Table 5b
Groundwater Analytical Data, PCBs and pH, May 2015
VIRP Semiannual Progress Report
Hercules Inc. - Savannah, GA

				Well	MW-F3R
				Sample Matrix	GW
				Date	5/5/2015
				Sample Depth (ft bgs)	10-20
				Sample Type	N
Constituent	**CAS**	**Units**	**Type 1 RRS**	**Type 3/4 RRS**	
PCBs					
Aroclor Mixtures					
Aroclor 1254	11097-69-1	ug/l	0.5	1.4	< 0.99 U
Aroclor 1260	11096-82-5	ug/l	0.5	1.4	< 0.99 U
Dioxin-like PCB Congeners					
PCB-105	32598-14-4	pg/l			3.2 J
PCB-114	74472-37-0	pg/l			< 19 U
PCB-118	31508-00-6	pg/l			6.9 JB
PCB-123	65510-44-3	pg/l			< 19 U
PCB-126	57465-28-8	pg/l			< 19 U
PCB-156	38380-08-4	pg/l			< 39 U
PCB-157	69782-90-7	pg/l			< 39 U
PCB-167	52663-72-6	pg/l			< 19 U
PCB-169	32774-16-6	pg/l			< 19 U
PCB-189	39635-31-9	pg/l			< 19 U
PCB-77	32598-13-3	pg/l			< 19 U
PCB-81	70362-50-4	pg/l			< 19 U
Non-Dioxin-like PCB Congeners					
Total PCBs		pg/l	500	1400	330.1
Decachlorobiphenyl	2051-24-3	pg/l			< 190 U
2,3,3',4,5'-Pentachloro-1,1'-biphenyl	70362-41-3	pg/l			5.6 JB
2,3,4,4',5,6-Hexachloro-1,1'-biphenyl	41411-63-6	pg/l			< 190 U
PCB-1	2051-60-7	pg/l			5.2 J
PCB-10	33146-45-1	pg/l			< 190 U
PCB-100	39485-83-1	pg/l			< 390 U
PCB-101	37680-73-2	pg/l			6.2 JB
PCB-102	68194-06-9	pg/l			< 390 U
PCB-103	60145-21-3	pg/l			< 190 U
PCB-104	56558-16-8	pg/l			< 190 U
PCB-106	70424-69-0	pg/l			< 190 U
PCB-107	70424-68-9	pg/l			< 390 U
PCB-109	74472-35-8	pg/l			< 190 U
PCB-11	2050-67-1	pg/l			< 190 U
PCB-110	38380-03-9	pg/l			8.1 JB
PCB-111	39635-32-0	pg/l			< 190 U
PCB-112	74472-36-9	pg/l			< 190 U
PCB-113	68194-10-5	pg/l			6.2 JB
PCB-115	74472-38-1	pg/l			8.1 JB
PCB-116	18259-05-7	pg/l			< 580 U
PCB-117	68194-11-6	pg/l			< 580 U
PCB-119	56558-17-9	pg/l			5.6 JB
PCB-12	2974-92-7	pg/l			< 390 U
PCB-120	68194-12-7	pg/l			< 190 U

Table 5b
Groundwater Analytical Data, PCBs and pH, May 2015
VIRP Semiannual Progress Report
Hercules Inc. - Savannah, GA

				Well	MW-F3R
				Sample Matrix	GW
				Date	5/5/2015
				Sample Depth (ft bgs)	10-20
				Sample Type	N
Constituent	**CAS**	**Units**	**Type 1 RRS**	**Type 3/4 RRS**	
PCB-121	56558-18-0	pg/l			< 190 U
PCB-122	76842-07-4	pg/l			< 190 U
PCB-124	70424-70-3	pg/l			< 390 U
PCB-125	74472-39-2	pg/l			5.6 JB
PCB-127	39635-33-1	pg/l			< 190 U
PCB-128	38380-07-3	pg/l			< 390 U
PCB-129	55215-18-4	pg/l			4.6 JqB
PCB-13	2974-90-5	pg/l			< 390 U
PCB-130	52663-66-8	pg/l			< 190 U
PCB-131	61798-70-7	pg/l			< 190 U
PCB-132	38380-05-1	pg/l			2.0 J
PCB-133	35694-04-3	pg/l			< 190 U
PCB-134	52704-70-8	pg/l			< 390 U
PCB-135	52744-13-5	pg/l			< 390 U
PCB-136	38411-22-2	pg/l			< 190 U
PCB-137	35694-06-5	pg/l			< 190 U
PCB-138	35065-28-2	pg/l			4.6 JqB
PCB-139	56030-56-9	pg/l			< 390 U
PCB-14	34883-41-5	pg/l			< 190 U
PCB-140	59291-64-4	pg/l			< 390 U
PCB-141	52712-04-6	pg/l			< 190 U
PCB-142	41411-61-4	pg/l			< 190 U
PCB-143	68194-15-0	pg/l			< 390 U
PCB-144	68194-14-9	pg/l			< 190 U
PCB-145	74472-40-5	pg/l			< 190 U
PCB-146	51908-16-8	pg/l			< 190 U
PCB-147	68194-13-8	pg/l			3.8 JB
PCB-148	74472-41-6	pg/l			< 190 U
PCB-149	38380-04-0	pg/l			3.8 JB
PCB-15	2050-68-2	pg/l			< 190 U
PCB-150	68194-08-1	pg/l			< 190 U
PCB-151	52663-63-5	pg/l			< 390 U
PCB-152	68194-09-2	pg/l			< 190 U
PCB-153	35065-27-1	pg/l			2.7 JB
PCB-154	60145-22-4	pg/l			< 190 U
PCB-155	33979-03-2	pg/l			< 190 U
PCB-158	74472-42-7	pg/l			< 190 U
PCB-159	39635-35-3	pg/l			< 190 U
PCB-16	38444-78-9	pg/l			< 190 U
PCB-160	41411-62-5	pg/l			< 190 U
PCB-161	74472-43-8	pg/l			< 190 U
PCB-162	39635-34-2	pg/l			< 190 U
PCB-163	74472-44-9	pg/l			4.6 JqB

Table 5b
Groundwater Analytical Data, PCBs and pH, May 2015
VIRP Semiannual Progress Report
Hercules Inc. - Savannah, GA

				Well	MW-F3R
				Sample Matrix	GW
				Date	5/5/2015
				Sample Depth (ft bgs)	10-20
				Sample Type	N
Constituent	CAS	Units	Type 1 RRS	Type 3/4 RRS	
PCB-164	74472-45-0	pg/l			< 190 U
PCB-165	74472-46-1	pg/l			< 190 U
PCB-168	59291-65-5	pg/l			2.7 JB
PCB-17	37680-66-3	pg/l			< 190 U
PCB-170	35065-30-6	pg/l			< 190 U
PCB-171	52663-71-5	pg/l			< 390 U
PCB-172	52663-74-8	pg/l			< 190 U
PCB-173	68194-16-1	pg/l			< 390 U
PCB-174	38411-25-5	pg/l			< 190 U
PCB-175	40186-70-7	pg/l			< 190 U
PCB-176	52663-65-7	pg/l			< 190 U
PCB-177	52663-70-4	pg/l			< 190 U
PCB-178	52663-67-9	pg/l			< 190 U
PCB-179	52663-64-6	pg/l			< 190 U
PCB-18	37680-65-2	pg/l			3.1 JB
PCB-180	35065-29-3	pg/l			< 390 U
PCB-181	74472-47-2	pg/l			< 190 U
PCB-182	60145-23-5	pg/l			< 190 U
PCB-183	52663-69-1	pg/l			< 190 U
PCB-184	74472-48-3	pg/l			< 190 U
PCB-185	52712-05-7	pg/l			< 190 U
PCB-186	74472-49-4	pg/l			5.9 JB
PCB-187	52663-68-0	pg/l			1.6 Jq
PCB-188	74487-85-7	pg/l			< 190 U
PCB-19	38444-73-4	pg/l			< 190 U
PCB-190	41411-64-7	pg/l			< 190 U
PCB-191	74472-50-7	pg/l			< 190 U
PCB-192	74472-51-8	pg/l			< 190 U
PCB-193	69782-91-8	pg/l			< 390 U
PCB-194	35694-08-7	pg/l			< 190 U
PCB-195	52663-78-2	pg/l			< 190 U
PCB-196	42740-50-1	pg/l			< 190 U
PCB-197	33091-17-7	pg/l			< 190 U
PCB-198	68194-17-2	pg/l			< 390 U
PCB-199	52663-75-9	pg/l			< 390 U
PCB-2	2051-61-8	pg/l			< 190 U
PCB-20	38444-84-7	pg/l			< 390 U
PCB-200	52663-73-7	pg/l			< 190 U
PCB-201	40186-71-8	pg/l			< 190 U
PCB-202	2136-99-4	pg/l			< 190 U
PCB-203	52663-76-0	pg/l			< 190 U
PCB-204	74472-52-9	pg/l			< 190 U
PCB-205	74472-53-0	pg/l			< 190 U

Table 5b
Groundwater Analytical Data, PCBs and pH, May 2015
VIRP Semiannual Progress Report
Hercules Inc. - Savannah, GA

				Well	MW-F3R
				Sample Matrix	GW
				Date	5/5/2015
				Sample Depth (ft bgs)	10-20
				Sample Type	N
Constituent	CAS	Units	Type 1 RRS	Type 3/4 RRS	
PCB-206	40186-72-9	pg/l			< 190 U
PCB-207	52663-79-3	pg/l			< 190 U
PCB-208	52663-77-1	pg/l			< 190 U
PCB-21	55702-46-0	pg/l			< 390 U
PCB-22	38444-85-8	pg/l			< 190 U
PCB-23	55720-44-0	pg/l			< 190 U
PCB-24	55702-45-9	pg/l			< 190 U
PCB-25	55712-37-3	pg/l			< 190 U
PCB-26	38444-81-4	pg/l			< 390 U
PCB-27	38444-76-7	pg/l			< 190 U
PCB-28	7012-37-5	pg/l			< 390 U
PCB-29	15862-07-4	pg/l			< 390 U
PCB-3	2051-62-9	pg/l			1.4 J
PCB-30	35693-92-6	pg/l			3.1 JB
PCB-31	16606-02-3	pg/l			< 190 U
PCB-32	38444-77-8	pg/l			1.3 J
PCB-33	38444-86-9	pg/l			< 390 U
PCB-34	37680-68-5	pg/l			< 190 U
PCB-35	37680-69-6	pg/l			< 190 U
PCB-36	38444-87-0	pg/l			< 190 U
PCB-37	38444-90-5	pg/l			< 190 U
PCB-38	53555-66-1	pg/l			< 190 U
PCB-39	38444-88-1	pg/l			< 190 U
PCB-4	13029-08-8	pg/l			< 190 U
PCB-40	38444-93-8	pg/l			2.0 J
PCB-41	52663-59-9	pg/l			< 190 U
PCB-42	36559-22-5	pg/l			< 190 U
PCB-43	70362-46-8	pg/l			< 190 U
PCB-44	41464-39-5	pg/l			33 JB
PCB-45	70362-45-7	pg/l			28 J
PCB-46	41464-47-5	pg/l			< 190 U
PCB-47	2437-79-8	pg/l			33 JB
PCB-48	70362-47-9	pg/l			1.3 J
PCB-49	41464-40-8	pg/l			3.3 J
PCB-5	16605-91-7	pg/l			< 190 U
PCB-50	62796-65-0	pg/l			< 390 U
PCB-51	68194-04-7	pg/l			< 190 U
PCB-52	35693-99-3	pg/l			5.7 J
PCB-53	41464-41-9	pg/l			< 390 U
PCB-54	15968-05-5	pg/l			< 190 U
PCB-55	74338-24-2	pg/l			< 190 U
PCB-56	41464-43-1	pg/l			3.4 J
PCB-57	70424-67-8	pg/l			< 190 U

Table 5b
Groundwater Analytical Data, PCBs and pH, May 2015
VIRP Semiannual Progress Report
Hercules Inc. - Savannah, GA

				Well	MW-F3R
				Sample Matrix	GW
				Date	5/5/2015
				Sample Depth (ft bgs)	10-20
				Sample Type	N
Constituent	**CAS**	**Units**	**Type 1 RRS**	**Type 3/4 RRS**	
PCB-58	41464-49-7	pg/l			< 190 U
PCB-59	74472-33-6	pg/l			< 580 U
PCB-6	25569-80-6	pg/l			< 190 U
PCB-60	33025-41-1	pg/l			< 190 U
PCB-61	33284-53-6	pg/l			10 J
PCB-62	54230-22-7	pg/l			< 580 U
PCB-63	74472-34-7	pg/l			< 190 U
PCB-64	52663-58-8	pg/l			2.2 Jq
PCB-65	33284-54-7	pg/l			33 JB
PCB-66	32598-10-0	pg/l			5.7 J
PCB-67	73575-53-8	pg/l			< 190 U
PCB-68	73575-52-7	pg/l			7.0 J
PCB-69	60233-24-1	pg/l			3.3 J
PCB-7	33284-50-3	pg/l			< 190 U
PCB-70	32598-11-1	pg/l			10 J
PCB-71	41464-46-4	pg/l			2.0 J
PCB-72	41464-42-0	pg/l			< 190 U
PCB-73	74338-23-1	pg/l			< 190 U
PCB-74	32690-93-0	pg/l			10 J
PCB-75	32598-12-2	pg/l			< 580 U
PCB-76/66	70362-48-0	pg/l			10 J
PCB-78	70362-49-1	pg/l			< 190 U
PCB-79	41464-48-6	pg/l			< 190 U
PCB-8	34883-43-7	pg/l			< 190 U
PCB-80	33284-52-5	pg/l			< 190 U
PCB-82	52663-62-4	pg/l			< 190 U
PCB-83	60145-20-2	pg/l			< 190 U
PCB-84	52663-60-2	pg/l			1.8 J
PCB-85	65510-45-4	pg/l			< 580 U
PCB-86	55312-69-1	pg/l			5.6 JB
PCB-87	38380-02-8	pg/l			5.6 JB
PCB-88	55215-17-3	pg/l			< 390 U
PCB-89	73575-57-2	pg/l			< 190 U
PCB-9	34883-39-1	pg/l			< 190 U
PCB-90	68194-07-0	pg/l			6.2 JB
PCB-91	68194-05-8	pg/l			< 390 U
PCB-92	52663-61-3	pg/l			< 190 U
PCB-93	73575-56-1	pg/l			< 390 U
PCB-94	73575-55-0	pg/l			< 190 U
PCB-95	38379-99-6	pg/l			3.9 JqB
PCB-96	73575-54-9	pg/l			< 190 U
PCB-97	41464-51-1	pg/l			5.6 JB
PCB-98	60233-25-2	pg/l			< 390 U

Table 5b
Groundwater Analytical Data, PCBs and pH, May 2015
VIRP Semiannual Progress Report
Hercules Inc. - Savannah, GA

				Well	**MW-F3R**
				Sample Matrix	**GW**
				Date	**5/5/2015**
				Sample Depth (ft bgs)	**10-20**
				Sample Type	**N**
Constituent	**CAS**	**Units**	**Type 1 RRS**	**Type 3/4 RRS**	
PCB-99	38380-01-7	pg/l			2.7 JqB
pH		s.u.	≥2 and ≤12.5	≥2 and ≤12.5	7.2

Notes

Type 1 RRS is used for delineation and the higher of the Type 3 and Type 4 RRS is used for the cleanup standard.

pH values were recorded in the field.

-- Not Analyzed/No standard

< = Concentration is less than the reporting limit

U = Not detected above reporting limit

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value

B = Compound was found in the blank and sample.

q = The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

ft bgs = feet below ground surface

GW = Groundwater

N = Normal Sample

pg/L = picograms per liter

RRS = Risk Reduction Standard

s.u. = Standard Unit

Table 5c
Groundwater Analytical Data, Asbestos and pH, May 2015
VIRP Semiannual Progress Report
Hercules Inc. - Savannah, GA

				Well	**MW-F15**
				Sample Matrix	**GW**
				Date	**5/5/2015**
				Sample Depth (ft bgs)	**10-20**
				Sample Type	**N**
Constituent	**CAS**	**Units**	**Type 1 RRS**	**Type 3/4 RRS**	
Asbestos	1332-21-4	MFL	7	7	< 1.0 U
pH		s.u.	≥2 and ≤12.5	≥2 and ≤12.5	6.76

Notes

Type 1 RRS is used for delineation and the higher of the Type 3 and Type 4 RRS is used for the cleanup standard.

pH values were recorded in the field.

U = Not detected above reporting limit

< = Concentration is less than the reporting limit

ft bgs = feet below ground surface

GW = Groundwater

MFL = million fibers per liter

N = Normal Sample

RRS = Risk Reduction Standard

s.u. = Standard Unit

ARCADIS

Figures

LEGEND

HSI 10696 Site Boundary

PROJECTION: NAD83 State Plane Georgia East Feet

SOURCES:
1) ESRI Online Services (USA Topo Maps).
2) Parcels: SAGIS (2008).

REFERENCE:
U.S.G.S. 7.5 Minute Series Topographic Quadrangles:
Garden City, Georgia 1981,
Savannah, Georgia 1979.
CONTOUR INTERVAL: 20 foot.

0 1,500 3,000

SCALE IN FEET

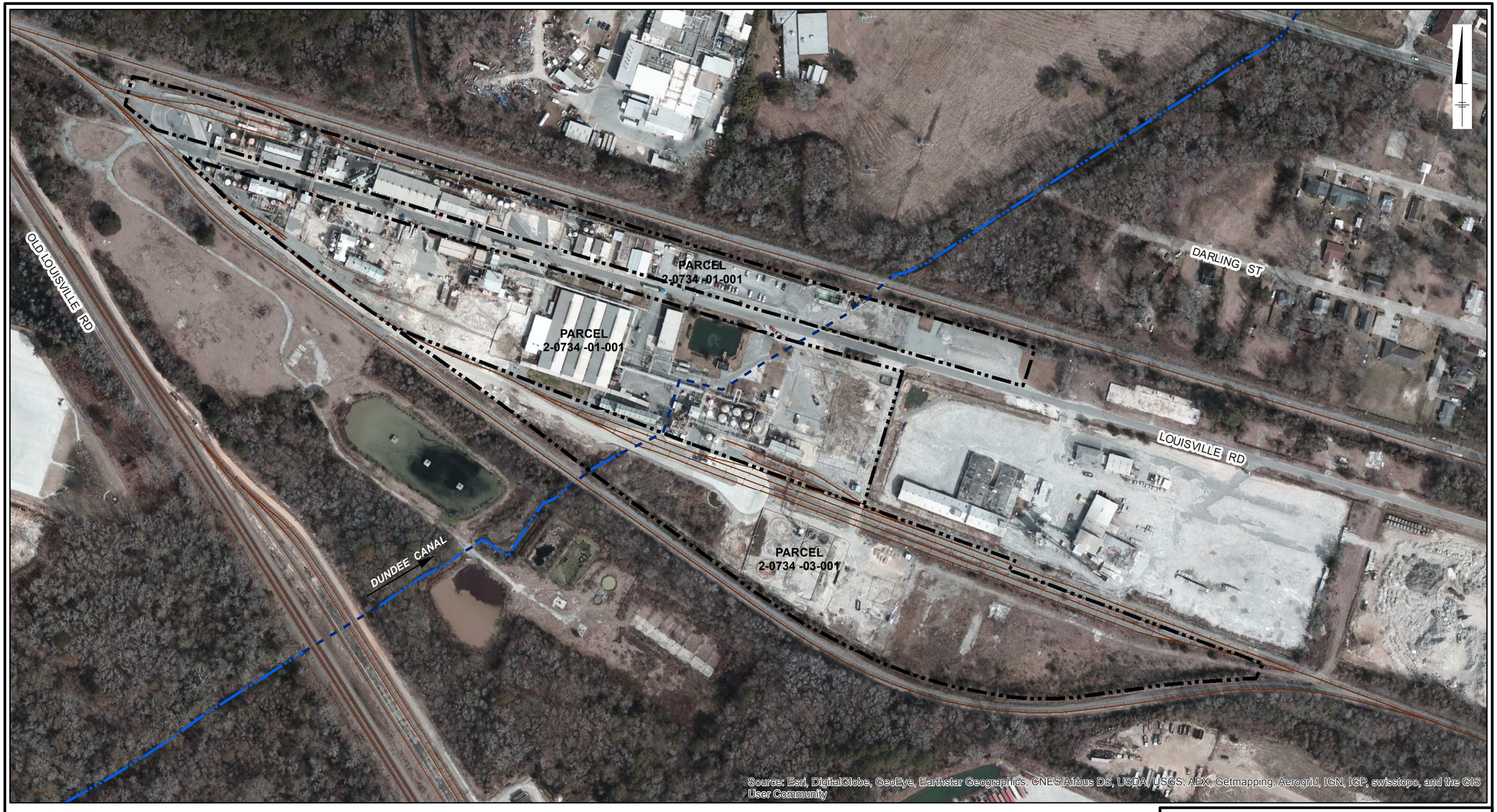
HERCULES INC. - SAVANNAH PLANT
SAVANNAH, GEORGIA (HSI #10696)
VOLUNTARY INVESTIGATION AND REMEDIATION PLAN
SEMIANNUAL PROGRESS REPORT #5

Site Location Map

ARCADIS

FIGURE
1

CITY: KNOXVILLE DIV/GROUP: ENV/GIS LD: B.ALTOM PIC: J.REID PM: D.WILDERMAN TM: J.HANNA DBASE: T.WALL BY: BALTOM
PROJECT: OH008000.GA60 PATH: G:\GIS\ASHLAND_HERCULES\GA_SAVANNAH\MAPDOCS\2015\SA PROGRESS NO5\F1 GA60_VRPSA5 REG.MXD SAVED: 9/24/2015



BASE REFERENCE:
1) Ashland (baseplot.dwg and toplot.dwg).
2) SAGIS parcels (2008).
3) Ashland Savannahbase.dwg (March 2014).
PROJECTION: NAD83 State Plane Georgia East Feet
AERIAL SOURCE: ESRI Online Imagery (NAIP, August 2013)

LEGEND

- HSI 10696 Site Boundary
- Dundee Canal (culverted section)
- Dundee Canal (open section)
- Canal Flow Direction

0 240 480

SCALE IN FEET

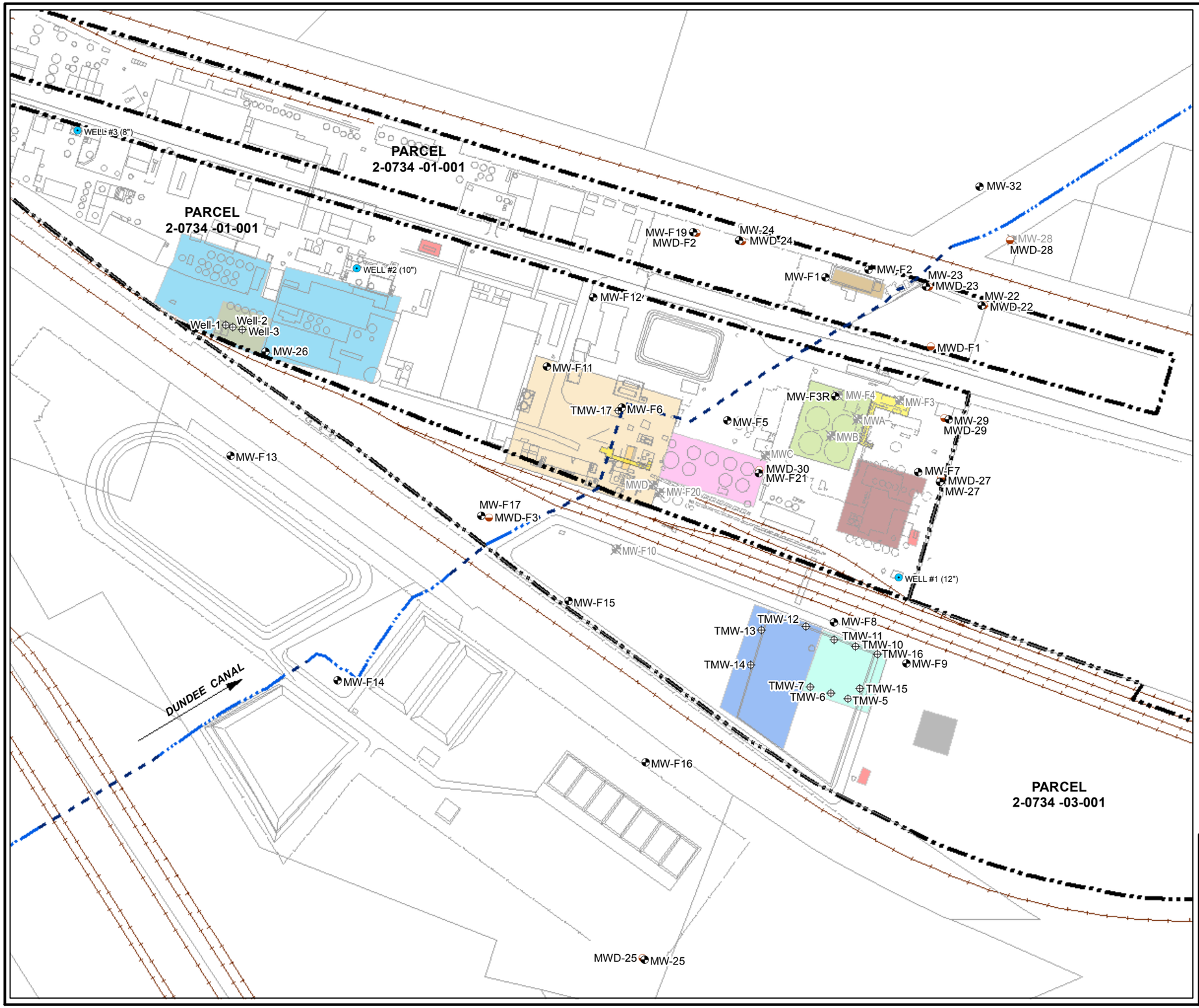
HERCULES INC. - SAVANNAH PLANT
SAVANNAH, GEORGIA (HSI #10696)
VOLUNTARY INVESTIGATION AND REMEDIATION PLAN
SEMIANNUAL PROGRESS REPORT #5

Site Layout – Aerial View

ARCADIS

FIGURE
2

CITY: KNOXVILLE DIV/GROUP: ENV/GIS LD: B.ALTOM PIC: J.REID PM: D.WILDERMAN TM: J.HANNA DBASE: T.WALL BY: BALTOM
PROJECT: OH008000.GA60 PATH: G:\GIS\ASHLAND_HERCULES\GA_SAVANNAH\MAPDOCS\2015\SA PROGRESS NO5\F2 GA60_VRPSA5 AERIAL.MXD SAVED: 9/24/2015



LEGEND

- HSI 10696 Site Boundary
- Monitoring Well (shallow)
- Monitoring Well (deep)
- Temporary Monitoring Well (shallow)
- Production Well
- Monitoring Well (abandoned/destroyed)
- Contractor Yard
- Former CTO ASTs 60's
- ASTs 30's
- Former Fatty Acid ASTs 50's
- Hard Resins Area
- Primary Oil/Water Separator
- Former Tall Oil Plant
- Former CTO Tank Area (Tall Oil Release)
- Dowtherm Release
- Former Dowtherm Unit
- Electrical Substation
- Former Dry Size Area
- Former Size Tank Area
- Dundee Canal (culverted section)
- Dundee Canal (open section)
- Canal Flow Direction

0 160 320

SCALE IN FEET

BASE REFERENCE:
1) Ashland (baseplot.dwg and toplot.dwg).
2) SAGIS parcels (2008).
3) Ashland Savannabase.dwg (March 2014).
PROJECTION: NAD83 State Plane Georgia East Feet

HERCULES INC. - SAVANNAH PLANT
SAVANNAH, GEORGIA (HSI #10696)

VOLUNTARY INVESTIGATION AND REMEDIATION PLAN
SEMIANNUAL PROGRESS REPORT #5

Site Map

ARCADIS

FIGURE
3

CITY: KNOXVILLE DIV/GROUP: ENV/GIS LD: B.ALTOM PIC: J.REID PM: D.WILDERMAN TM: J.HANNA DBASE: T.WALL BY: BALTOM
PROJECT: OH008000.GA60 PATH: G:\GIS\ASHLAND_HERCULES\GA_SAVANNAH\MAPDOCS\2015\SA PROGRESS NO5\F3 GA60_VRPSA5 SITE.MXD SAVED: 9/24/2015

WELL #3 (8")

PARCEL
2-0734 -01-001

PARCEL
2-0734 -01-001

WELL #2 (10")

MW-26
(8.64)

MW-F13
(9.38)

MW-F12
(7.29)

MW-F11
(7.11)

MW-F6
(5.53)

MW-F5
(5.63)

MW-F3R
(5.90)

MW-F21
(6.95)

MW-F7
(8.53)

MW-29
(8.60)

MW-27
(8.98)

MW-F17
(6.05)

MW-F19
(6.72)

MW-24
(6.53)

MW-F1
(5.70)

MW-F2
(2.37)

MW-23
(2.79)

MW-32
(4.05)

MW-22
(7.83)

WELL #1 (12")

MW-F15
(5.44)

MW-F8
(8.48)

MW-F9
(9.07)

MW-F14
(6.24)

DUNDEE CANAL

MW-F16
(6.31)

MW-25
(7.92)

PARCEL
2-0734 -03-001

6.0 5.0 4.0 3.0 3.0 4.0 5.0 6.0 7.0 8.0

8.0 7.0 9.0 8.0 7.0 6.0 7.0 8.0 9.0

LEGEND

- HSI 10696 Site Boundary
- Monitoring Well (shallow)
- Monitoring Well (deep)
- Production Well
- Dundee Canal (culverted section)
- Dundee Canal (open section)
- Groundwater Contour Line (ft amsl)
- (inferred where dashed)
- Groundwater Flow Direction
- (8.98) Groundwater Elevation (ft amsl) Measured May 4, 2015

0 160 320

SCALE IN FEET

BASE REFERENCE:
1) Ashland (baseplot.dwg and toplot.dwg).
2) SAGIS parcels (2008).
3) Ashland Savannabase.dwg (March 2014).
PROJECTION: NAD83 State Plane Georgia East Feet

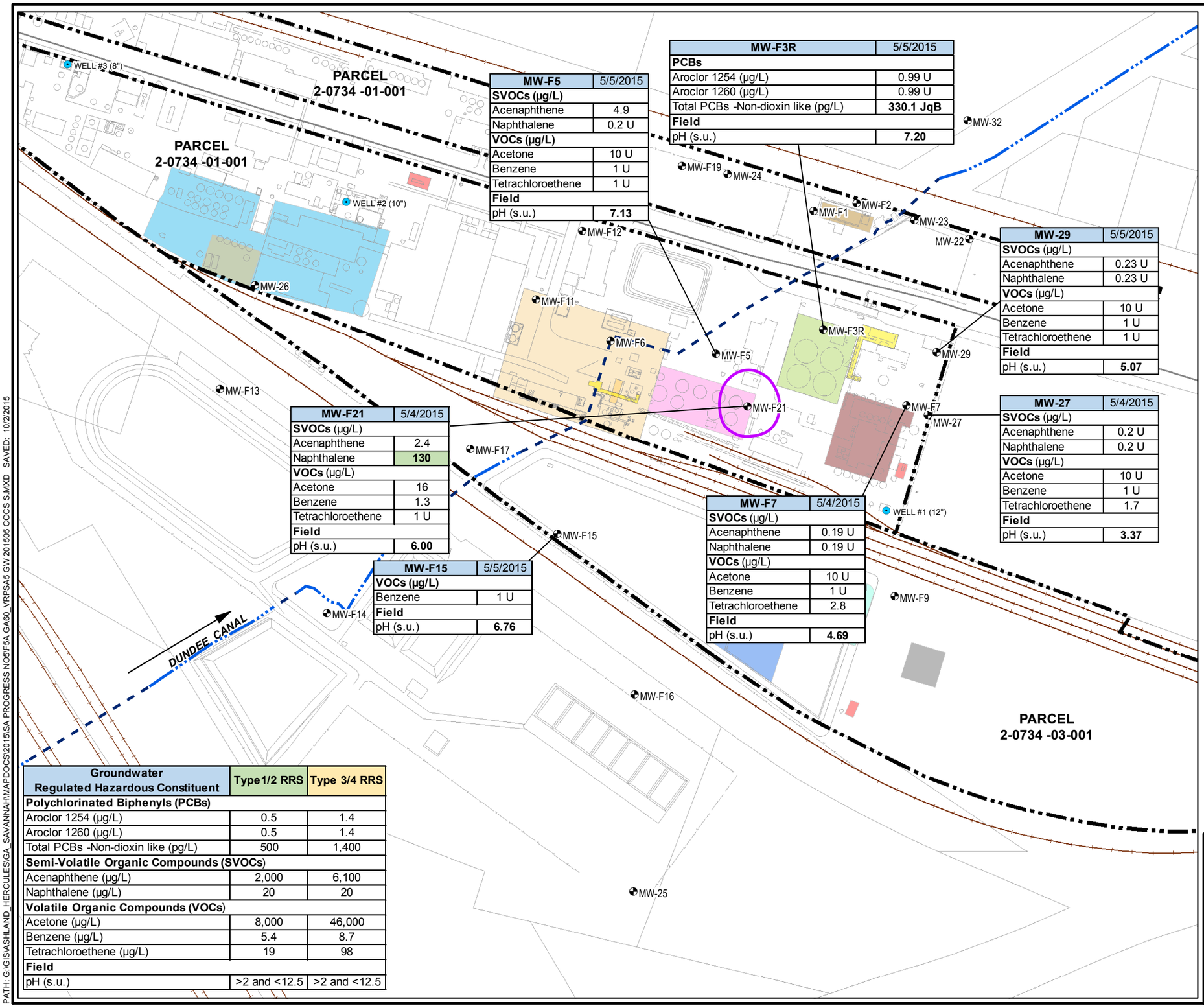
HERCULES INC. - SAVANNAH PLANT
SAVANNAH, GEORGIA (HSI #10696)
VOLUNTARY INVESTIGATION AND REMEDIATION PLAN
SEMIANNUAL PROGRESS REPORT #5

Shallow Potentiometric Surface Map
May 4, 2015

ARCADIS

FIGURE
4

CITY: KNOXVILLE DIV/GROUP: ENV/GIS LD: B.ALTOM PIC: J.REID PM: D.WILDERMAN TM: K.MALONEY BY: BALTOM PROJECT: OH008000.GA60
PATH: G:\GIS\ASHLAND_HERCULES\GA_SAVANNAH\MAPDOCS\2015\SA PROGRESS NO5\F4 GA60_VRPSA5 201505 POT.MXD SAVED: 10/2/2015



MW-F5	5/5/2015
SVOCs (µg/L)	
Acenaphthene	4.9
Naphthalene	0.2 U
VOCs (µg/L)	
Acetone	10 U
Benzene	1 U
Tetrachloroethene	1 U
Field	
pH (s.u.)	**7.13**

MW-F3R	5/5/2015
PCBs	
Aroclor 1254 (µg/L)	0.99 U
Aroclor 1260 (µg/L)	0.99 U
Total PCBs -Non-dioxin like (pg/L)	**330.1 JqB**
Field	
pH (s.u.)	**7.20**

MW-29	5/5/2015
SVOCs (µg/L)	
Acenaphthene	0.23 U
Naphthalene	0.23 U
VOCs (µg/L)	
Acetone	10 U
Benzene	1 U
Tetrachloroethene	1 U
Field	
pH (s.u.)	**5.07**

MW-27	5/4/2015
SVOCs (µg/L)	
Acenaphthene	0.2 U
Naphthalene	0.2 U
VOCs (µg/L)	
Acetone	10 U
Benzene	1 U
Tetrachloroethene	1.7
Field	
pH (s.u.)	**3.37**

MW-F21	5/4/2015
SVOCs (µg/L)	
Acenaphthene	2.4
Naphthalene	**130**
VOCs (µg/L)	
Acetone	16
Benzene	1.3
Tetrachloroethene	1 U
Field	
pH (s.u.)	**6.00**

MW-F7	5/4/2015
SVOCs (µg/L)	
Acenaphthene	0.19 U
Naphthalene	0.19 U
VOCs (µg/L)	
Acetone	10 U
Benzene	1 U
Tetrachloroethene	2.8
Field	
pH (s.u.)	**4.69**

MW-F15	5/5/2015
VOCs (µg/L)	
Benzene	1 U
Field	
pH (s.u.)	**6.76**

Groundwater Regulated Hazardous Constituent	Type1/2 RRS	Type 3/4 RRS
Polychlorinated Biphenyls (PCBs)		
Aroclor 1254 (µg/L)	0.5	1.4
Aroclor 1260 (µg/L)	0.5	1.4
Total PCBs -Non-dioxin like (pg/L)	500	1,400
Semi-Volatile Organic Compounds (SVOCs)		
Acenaphthene (µg/L)	2,000	6,100
Naphthalene (µg/L)	20	20
Volatile Organic Compounds (VOCs)		
Acetone (µg/L)	8,000	46,000
Benzene (µg/L)	5.4	8.7
Tetrachloroethene (µg/L)	19	98
Field		
pH (s.u.)	>2 and <12.5	>2 and <12.5

LEGEND

- HSI 10696 Site Boundary
- Monitoring Well (shallow)
- Production Well
- Contractor Yard
- Former CTO ASTs 60's
- ASTs 30's
- Former Fatty Acid ASTs 50's
- Hard Resins Area
- Primary Oil/Water Separator
- Former Tall Oil Plant
- Former CTO Tank Area (Tall Oil Release)
- Dowtherm Release
- Former Dowtherm Unit
- Electrical Substation
- Former Dry Size Area
- Former Size Tank Area
- Dundee Canal (culverted section)
- Dundee Canal (open section)
- Canal Flow Direction
- Type 1 RRS Isocontour

NOTES:
1) Analytical results represent data from May 4-5, 2015, sampling event.
2) All concentrations reported in micrograms per liter (µg/L) unless otherwise shown.
3) Only constituents with historical detections above Type 1 Risk Reduction Standards (RRS) are shown.
4) **BOLD** - Concentration exceeds Type I RRS.

B - Compound was found in the blank and sample.
J - Result is less than the RL but greater than or equal to the minimum detection limit (MDL) and the concentration is an approximate value.
q - The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.
U - Indicates the analyte was analyzed for but not detected.
pg/L - picograms per liter
s.u. - Standard unit

0 160 320
SCALE IN FEET

BASE REFERENCE:
1) Ashland (baseplot.dwg and toplot.dwg).
2) SAGIS parcels (2008).
3) Ashland Savannabase.dwg (March 2014).
PROJECTION: NAD83 State Plane Georgia East Feet

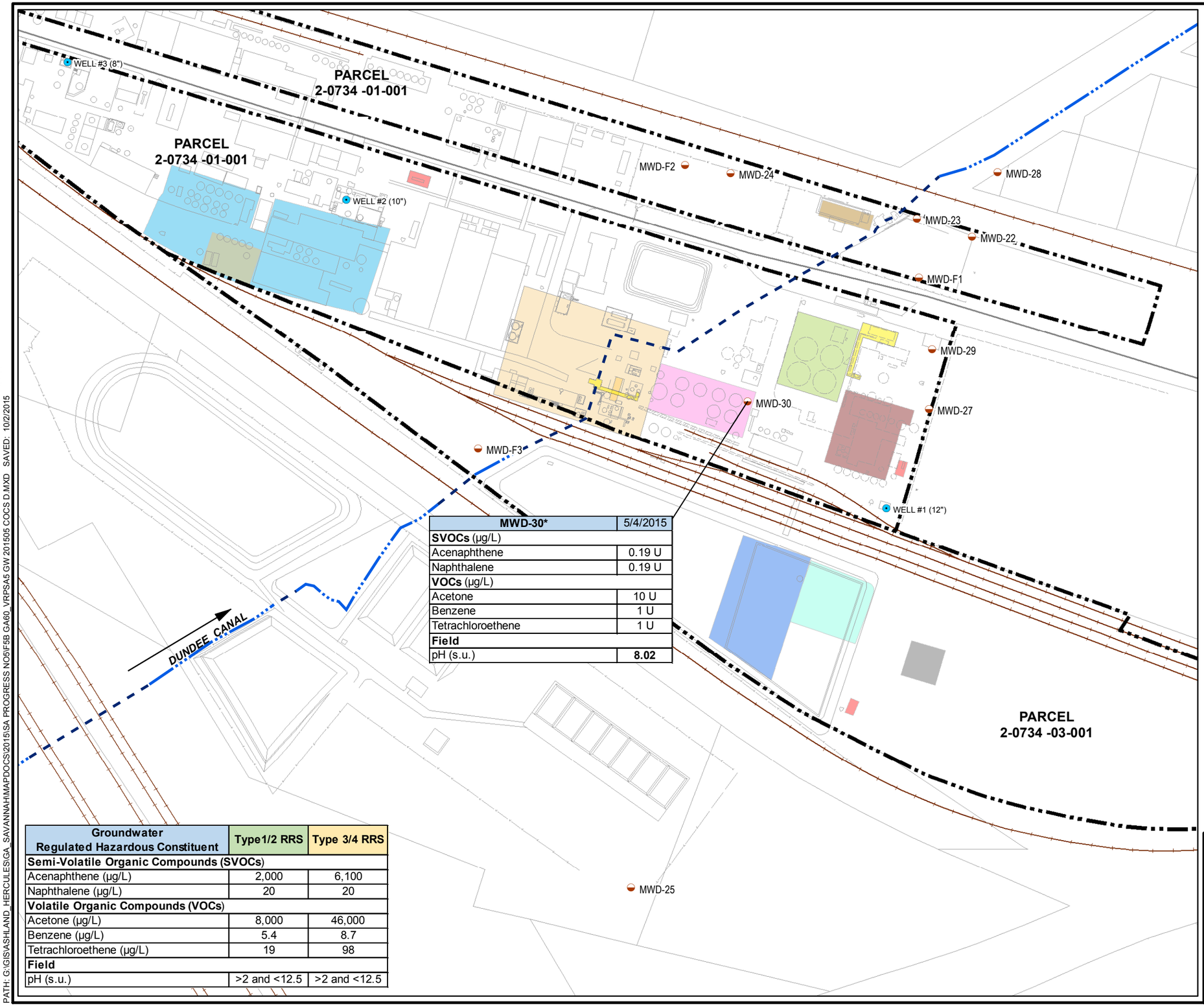
HERCULES INC. - SAVANNAH PLANT
SAVANNAH, GEORGIA (HSI #10696)
VOLUNTARY INVESTIGATION AND REMEDIATION PLAN
SEMIANNUAL PROGRESS REPORT #5

Detected Regulated Constituents in Shallow Groundwater, May 2015

ARCADIS

FIGURE
5a

CITY: KNOXVILLE DIV/GROUP: ENV/GIS LD: B.ALTOM PIC: J.REID PM: D.WILDERMAN TM: K.MALONEY/C.MILLER BY: B.ALTOM PROJECT: OH008000.GA60
PATH: G:\GIS\ASHLAND_HERCULES\GA_SAVANNAH\MAPDOCS\2015\SA PROGRESS NO5\F5A GA60_VRPSA5 GW 201505 COCS S.MXD SAVED: 10/2/2015



MWD-30*	5/4/2015
SVOCs (µg/L)	
Acenaphthene	0.19 U
Naphthalene	0.19 U
VOCs (µg/L)	
Acetone	10 U
Benzene	1 U
Tetrachloroethene	1 U
Field	
pH (s.u.)	**8.02**

Groundwater Regulated Hazardous Constituent	Type1/2 RRS	Type 3/4 RRS
Semi-Volatile Organic Compounds (SVOCs)		
Acenaphthene (µg/L)	2,000	6,100
Naphthalene (µg/L)	20	20
Volatile Organic Compounds (VOCs)		
Acetone (µg/L)	8,000	46,000
Benzene (µg/L)	5.4	8.7
Tetrachloroethene (µg/L)	19	98
Field		
pH (s.u.)	>2 and <12.5	>2 and <12.5

LEGEND

- HSI 10696 Site Boundary
- Monitoring Well (deep)
- Production Well
- Contractor Yard
- Former CTO ASTs 60's
- ASTs 30's
- Former Fatty Acid ASTs 50's
- Hard Resins Area
- Primary Oil/Water Separator
- Former Tall Oil Plant
- Former CTO Tank Area (Tall Oil Release)
- Dowtherm Release
- Former Dowtherm Unit
- Electrical Substation
- Former Dry Size Area
- Former Size Tank Area
- Dundee Canal (culverted section)
- Dundee Canal (open section)
- Canal Flow Direction

NOTES:
1) Analytical results represent data from May 4-5, 2015, sampling event.
2) All concentrations reported in micrograms per liter (µg/L) unless otherwise shown.
3) Only constituents with historical detections above Type 1 Risk Reduction Standards (RRS) are shown.
4) * Duplicate performed on this well.

U - Indicates the analyte was analyzed for but not detected.
s.u. - Standard unit

0 160 320
SCALE IN FEET

BASE REFERENCE:
1) Ashland (baseplot.dwg and toplot.dwg).
2) SAGIS parcels (2008).
3) Ashland Savannabase.dwg (March 2014).
PROJECTION: NAD83 State Plane Georgia East Feet

HERCULES INC. - SAVANNAH PLANT
SAVANNAH, GEORGIA (HSI #10696)
VOLUNTARY INVESTIGATION AND REMEDIATION PLAN
SEMIANNUAL PROGRESS REPORT #5

Detected Regulated Constituents in Deep Groundwater, May 2015

ARCADIS

FIGURE
5b

CITY: KNOXVILLE DIV/GROUP: ENV/GIS LD: B.ALTOM PIC: J.REID PM: D.WILDERMAN TM: K.MALONEY/C.MILLER BY: BALTOM PROJECT: OH008000.GA60
PATH: G:\GIS\ASHLAND_HERCULES\GA_SAVANNAH\MAPDOCS\2015\SA PROGRESS NO5\F5B GA60_VRPSA5 GW 201505 COCS D.MXD SAVED: 10/2/2015

LEGEND

- HSI 10696 Site Boundary
- Contractor Yard
- Former CTO ASTs 60's
- ASTs 30's
- Former Fatty Acid ASTs 50's
- Hard Resins Area
- Primary Oil/Water Separator
- Former Tall Oil Plant
- Former CTO Tank Area (Tall Oil Release)
- Dowtherm Release
- Former Dowtherm Unit
- Electrical Substation
- Former Dry Size Area
- Former Size Tank Area
- Dundee Canal (culverted section)
- Dundee Canal (open section)
- Canal Flow Direction
- Monitoring Well (shallow)
- Monitoring Well (deep)
- Temporary Monitoring Well (shallow)
- Production Well
- Recharge Well
- Soil Boring (August 2015 – 1,1,-Biphenyl and PCBs)
- Soil Boring (August 2015 – 1,1-Biphenyl Only)
- Soil Boring (August 2015 – PCBs Only)
- Soil Boring (August 2015 – pH Only)
- Soil Boring (August 2015 – Aniline Only)
- Soil Boring (2000-2008)
- Soil Boring (August 2014)
- Laboratory Reporting Limit above Type 1/2 RRS
- Result above Type 1/2 RRS

0 100 200 300 400

SCALE IN FEET

BASE REFERENCE: Ashland (baseplot.dwg and toplot.dwg).
PARCELS: SAGIS (2008).
AERIAL SOURCE: ESRI Online Imagery (NAIP, August 2013).
PROJECTION: NAD83 State Plane Georgia East Feet

HERCULES INC. - SAVANNAH PLANT
SAVANNAH, GEORGIA (HSI #10696)

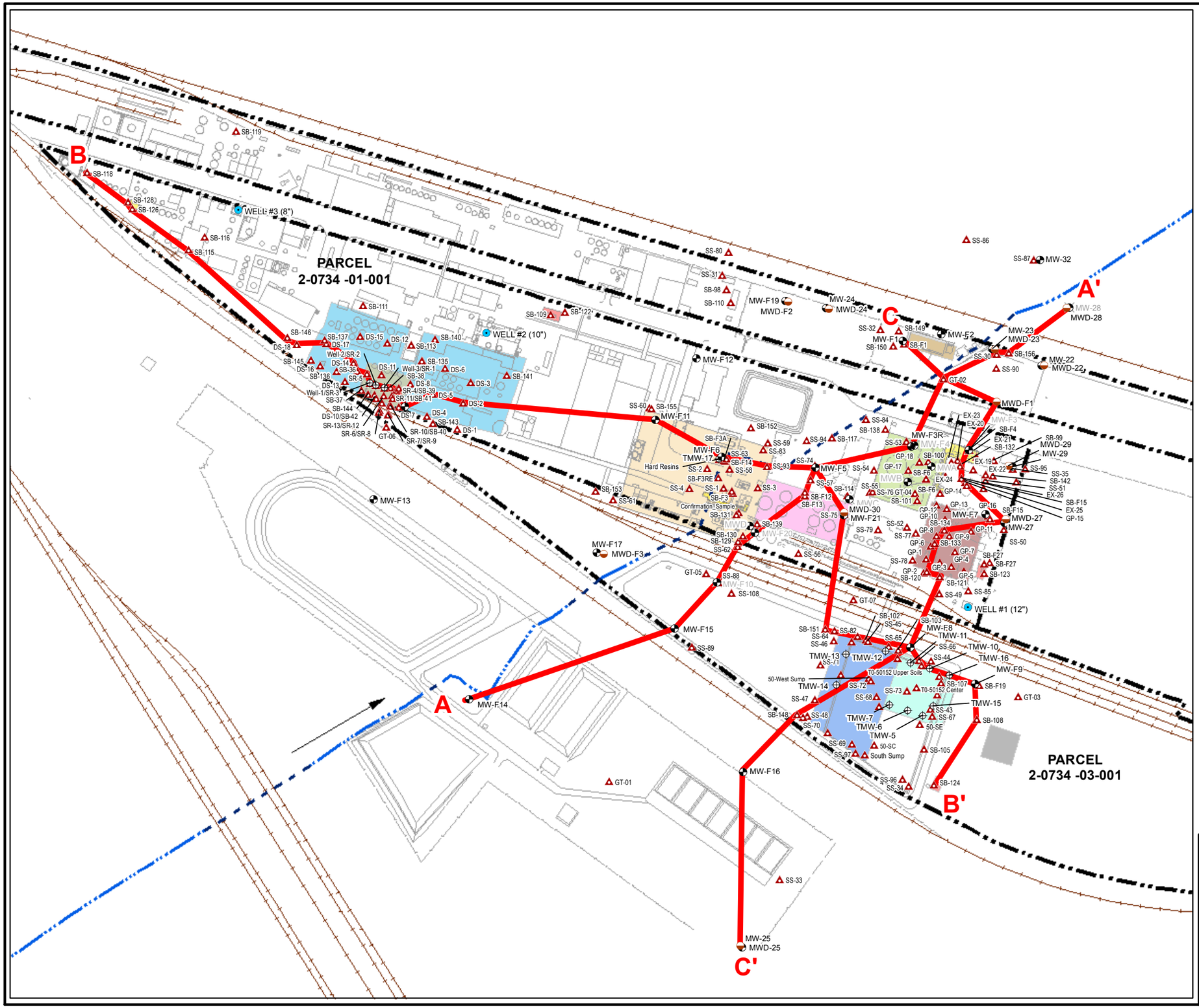
VOLUNTARY INVESTIGATION AND REMEDIATION PLAN
SEMIANNUAL PROGRESS REPORT #5

August 2015 Delineation and Dowtherm Area Soil Boring Locations

ARCADIS

FIGURE
6

CITY: KNOXVILLE DIV/GROUP: ENV/GIS LD: B.ALTOM PIC: J.REID PM: D.WILDERMAN TM: C.MILLER BY: BALTOM PROJECT: OH007000.GA60
PATH: G:\GIS\ASHLAND_HERCULES\GA_SAVANNAH\MAPDOCS\2015\SA PROGRESS NO5\F6 GA60_VRPSA5 2015 SBS DSIZE.MXD SAVED: 10/2/2015



LEGEND

- Monitoring Well (shallow)
- Temporary Monitoring Well (shallow)
- Monitoring Well (deep)
- Monitoring Well (abandoned/destroyed)
- Production Well
- Former Dry Size Area
- Former Size Tank Area
- Former Dowtherm Unit
- Electrical Substation
- Contractor Yard
- Former CTO ASTs 60's
- ASTs 30's
- Former Fatty Acid ASTs 50's
- Hard Resins Area
- Primary Oil/Water Separator
- Former Tall Oil Plant
- Former CTO Tank Area (Tall Oil Release)
- Dowtherm Release
- Dundee Canal (culverted section)
- Dundee Canal (open section)
- Canal Flow Direction

NOTE:
Locations for soil samples collected in August 2015 are not provided on this map nor the cross sections that follow because analytical data are not yet available and validated. The results of those samples will be provided in the next data deliverable.

0 180 360

SCALE IN FEET

BASE REFERENCE: Ashland (baseplot.dwg and toplot.dwg).
PARCELS AND AERIAL SOURCE: SAGIS (2008).
PROJECTION: NAD_1983_StatePlane_Georgia_East_FIPS_1001_Feet

HERCULES INC. - SAVANNAH PLANT
SAVANNAH, GEORGIA (HSI #10696)
VOLUNTARY INVESTIGATION AND REMEDIATION PLAN
SEMIANNUAL PROGRESS REPORT #5

Geologic Cross-Section Locations

ARCADIS

FIGURE
7

CITY: KNOXVILLE DIV/GROUP: ENV/GIS LD: B.ALTOM PIC: J.REID PM: D.WILDERMAN TM: K.MALONEY BY: BALTOM PROJECT: OH008000.GA60
PATH: C:\USERS\BALTOM\DESKTOP\ACT\ASHLAND HERC\MAPDOCS\2015\SA PROGRESS NO5\F7 GA60_VRPSA5 XSEC LOCS.MXD SAVED: 9/25/2015

A
SOUTHWEST

A'
NORTHEAST

SB-129 8/21/2014	(0-1 ft)	(1-3 ft)
PCBs		
Aroclor 1254	0.037 U	0.036 U
Aroclor 1260	0.037 U	0.036 U
Total PCBs (pg/g)	**0.00192**	**399**
TEQ (pg/g)	**0.37**	**0.0013**
SVOCs		
1,1-Biphenyl	8.2 U	8 U
Aniline	7.3 U	7.1 U
VOCs		
Acrolein	0.1 U	0.1 U

SB-130 8/21/2014	(0-1 ft)
PCBs	
Aroclor 1254	**0.21**
Aroclor 1260	0.036 U
Total PCBs (pg/g)	**226,578**
TEQ (pg/g)	**35**
SVOCs	
1,1-Biphenyl	8.1 U
Aniline	7.2 U
VOCs	
Acrolein	0.1 U

SB-F12	8/21/2014 (0-1 ft)	10/20/2000 (1-3 ft)
PCBs		
Aroclor 1254	0.036 U	NA
Aroclor 1260	0.036 U	NA
Total PCBs (pg/g)	**5,512**	NA
TEQ (pg/g)	**0.022**	NA
SVOCs		
1,1-Biphenyl	NA	0.72 U
Aniline	NA	0.36 U
VOCs		
Acrolein	NA	0.11 U

SS-57 12/19/2002	(1-2 ft)
PCBs	NA
SVOCs	
1,1-Biphenyl	0.78 U
Aniline	0.39 U
VOCs	NA

SS-62 12/19/2002	(1-2 ft)
PCBs	NA
SVOCs	
1,1-Biphenyl	0.78 U
Aniline	0.39 U
VOCs	NA

SS-88 11-6-2008	(0-2 ft)
PCBs	
Aroclor 1254	**0.78**
Aroclor 1260	**0.25**
SVOCs	NA
VOCs	NA

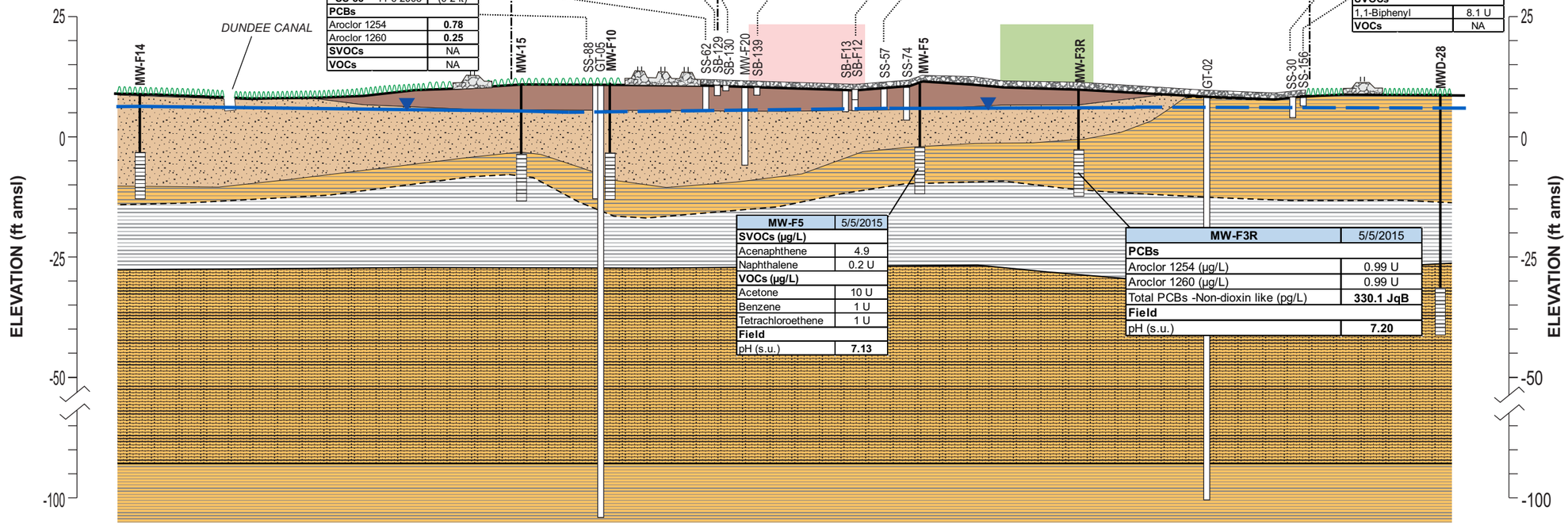
SB-139 8/21/2014	(0-1 ft)
PCBs	NA
SVOCs	NA
VOCs	
Acrolein	0.094 U

SS-30 11/8/2002	(0-2 ft)
PCBs	NA
SVOCs	
1,1-Biphenyl	0.86 U
Aniline	0.43 U
VOCs	NA

SB-156 8/22/2014	(0-1 ft)
PCBs	NA
SVOCs	
1,1-Biphenyl	8.1 U
VOCs	NA

MW-F5	5/5/2015
SVOCs (µg/L)	
Acenaphthene	4.9
Naphthalene	0.2 U
VOCs (µg/L)	
Acetone	10 U
Benzene	1 U
Tetrachloroethene	1 U
Field	
pH (s.u.)	**7.13**

MW-F3R	5/5/2015
PCBs	
Aroclor 1254 (µg/L)	0.99 U
Aroclor 1260 (µg/L)	0.99 U
Total PCBs -Non-dioxin like (pg/L)	**330.1 JqB**
Field	
pH (s.u.)	**7.20**



LEGEND

- Water-Table (May 4, 2015) (inferred where dashed)
- Soil Boring
- Monitoring Well Screened Interval
- Railroad Easement
- Concrete/Asphalt
- Grass
- ASTs 30's
- Former CTO Tank Area (Tall Oil Release)
- FILL MATERIAL, gravel, silty, sandy
- SAND, fine-grained, silty, clayey
- CLAY, high-plasticity (inferred where dashed)
- SAND, clayey, silty; with shell fragments (inferred where dashed)
- SILT, sandy (inferred where dashed)
- AQUITARD

Soil Regulated Hazardous Constituent	Type1/2 RRS	Type 3/4 RRS
Polychlorinated Biphenyls (PCBs)		
Aroclor 1254 (mg/kg)	1.55	1.55
Aroclor 1260 (mg/kg)	1.55	1.55
Total PCBs (pg/g)	1,550,000	1,550,000
TEQ (pg/g)	115	440
Semi-Volatile Organic Compounds (SVOCs)		
1,1-Biphenyl (mg/kg)	1	1
Aniline (mg/kg)	2	2
Volatile Organic Compounds (VOCs)		
Acrolein (mg/kg)	0.1	0.1

Groundwater Regulated Hazardous Constituent	Type1/2 RRS	Type 3/4 RRS
Polychlorinated Biphenyls (PCBs)		
Aroclor 1254 (µg/L)	0.5	1.4
Aroclor 1260 (µg/L)	0.5	1.4
Total PCBs -Non-dioxin like (pg/L)	500	1,400
Semi-Volatile Organic Compounds (SVOCs)		
Acenaphthene (µg/L)	2,000	6,100
Naphthalene (µg/L)	20	20
Volatile Organic Compounds (VOCs)		
Acetone (µg/L)	8,000	46,000
Benzene (µg/L)	5.4	8.7
Tetrachloroethene (µg/L)	19	98
Field		
pH (s.u.)	>2 and <12.5	>2 and <12.5

NOTES:
1) Groundwater analytical results represent data from May 4-5, 2015, sampling event.
2) All soil concentrations reported in milligrams per kilogram (mg/kg) except Toxic Equivalency (TEQ) and theTotal PCBs that are the sum of all Total Non-Dioxin-like PCBs which have been calculated in picograms per gram (pg/g).
3) All groundwater concentrations reported in micrograms per liter (µg/L) unless otherwise shown.
4) Only constituents with historical detections above Type 1 Risk Reduction Standards (RRS) are shown.
5) Locations for soil samples collected in August 2015 are not provided on this map because analytical data are not yet available and validated. The results of those samples will be provided in the next data deliverable.

NA - Not analyzed
ND - Not detected
B - Compound was found in the blank and sample.
J - Result is less than the RL but greater than or equal to the minimum detection limit (MDL) and the concentration is an approximate value.
q - The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.
U - Indicates the analyte was analyzed for but not detected.
pg/L - picograms per liter
s.u. - Standard unit

0 125' 250'
HORIZONTAL SCALE

VERTICAL EXAGGERATION: 5X

HERCULES INC. - SAVANNAH PLANT
SAVANNAH, GEORGIA (HSI #10696)
VOLUNTARY INVESTIGATION AND REMEDIATION PLAN
SEMIANNUAL PROGRESS REPORT #5

Distribution of Select Constituents along Geologic Cross-Section A-A'

ARCADIS

FIGURE
8

CITY: KNOXVILLE DIV/GROUP: ENV/GIS LD: B.ALTOM PIC: J.REID PM: D.WILDERMAN TM: D.WILDERMAN/J.HANNA BY: B.ALTOM
PROJECT: OH008000.GA60 PATH: G:\GIS\SAVHLAND_HERCULES\GA_SAVANNAH\MAPDOCS\2015\SA PROGRESS NO5\F8 GA60_VRPSA5 XSEC AA.cdr SAVED: 5OCT2015

SB-128 8/21/2014	(0-1 ft)
PCBs	
Aroclor 1254	**0.15**
Aroclor 1260	0.038 U
Total PCBs (pg/g)	**199,393**
TEQ (pg/g)	**52**
SVOCs	
1,1-Biphenyl	**4,400**
Aniline	760 U
VOCs	
Acrolein	0.1 U

SB-126 8/21/2014	(0-1 ft)
PCBs	
Aroclor 1254	**0.26**
Aroclor 1260	0.038 U
Total PCBs (pg/g)	**1,238,710**
TEQ (pg/g)	**224**
SVOCs	
1,1-Biphenyl	**140**
Aniline	76 U
VOCs	
Acrolein	39 U

SB-116 8/21/2014	(0-1 ft)
PCBs	
Aroclor 1254	0.04 U
Aroclor 1260	0.04 U
Total PCBs (pg/g)	**69,558**
TEQ (pg/g)	**13**
SVOCs	
1,1-Biphenyl	0.89 U
Aniline	0.79 U
VOCs	
Acrolein	0.082 U

SB-146 8/22/2014	(0-1 ft)
PCBs	NA
SVOCs	
1,1-Biphenyl	8.4 U
Aniline	7.5 U
VOCs	NA

DS-18 11/10/2008	(0-2 ft)	(2-4 ft)
PCBs	NA	NA
SVOCs		
1,1-Biphenyl	2 UD	2 UD
Aniline	3.9 UD	3.9 UD
VOCs		
Acrolein	0.09 U	0.099 U

DS-17 11/10/2008	(0-2 ft)	(2-4 ft)
PCBs	NA	NA
SVOCs		
1,1-Biphenyl	2 UD	3.9 UD
Aniline	4 UD	7.7 UD
VOCs		
Acrolein	0.09 U	0.1 U

DS-14 11/10/2008	(0-2 ft)	(2-4 ft)
PCBs	NA	NA
SVOCs		
1,1-Biphenyl	3.9 UD	4.1 UD
Aniline	7.8 UD	8.1 UD
VOCs		
Acrolein	0.0096 U	0.11 U

DS-5 11/7/2008	(0-2 ft)	(2-4 ft)
PCBs	NA	NA
SVOCs		
1,1-Biphenyl	**0.021 J**	1.9 UD
Aniline	0.74 U	3.7 UD
VOCs		
Acrolein	0.11 U	0.11 U

DS-2 11/7/2008	(0-2 ft)	(2-4 ft)
PCBs	NA	NA
SVOCs		
1,1-Biphenyl	0.36 U	0.38 U
Aniline	0.73 U	0.76 U
VOCs		
Acrolein	0.1 U	0.12 U

SS-93 11/6/2008	(0-4 ft)
PCBs	NA
SVOCs	NA
VOCs	
Acrolein	0.092 U

SB-108 8/19/2014	(0-1 ft)	(1-3 ft)
PCBs	NA	NA
SVOCs		
1,1-Biphenyl	0.86 U	0.87 U
Aniline	0.77 U	0.78 U
VOCs		
Acrolein	0.11 U	0.11 U

SB-124 8/19/2014	(0-1 ft)
PCBs	
Aroclor 1254	**0.20**
Aroclor 1260	0.17 U
Total PCBs (pg/g)	**84,300**
TEQ (pg/g)	**0.33**
SVOCs	
1,1-Biphenyl	19 U
VOCs	NA

B
NORTHWEST

B'
SOUTHEAST

PARCEL
2-0734 -01-001

PARCEL
2-0734 -03-001

DUNDEE CANAL
(UNDERGROUND)

RRS

SB-118, SB-128, SB-126, SB-116, SB-146, DS-18, DS-17, DS-14, SB-36, SR-5, SR-3/Well-1, SR-2/Well-2, SR-1/Well-3, SB-39, SB-38, MW-26, DS-5, DS-2, MW-F11, MW-F6, SS-93, SS-74, MW-F5, MWD-30/SS-75, MW-F21, SB-151, MW-F8, SS-86, TMW-10, TMW-16, MW-F9, SB-108, SB-124

ELEVATION (ft amsl): 25, 0, -25, -50, -100

MW-F5	5/5/2015
SVOCs (µg/L)	
Acenaphthene	4.9
Naphthalene	0.2 U
VOCs (µg/L)	
Acetone	10 U
Benzene	1 U
Tetrachloroethene	1 U
Field	
pH (s.u.)	**7.13**

MWD-30*	5/4/2015
SVOCs (µg/L)	
Acenaphthene	0.19 U
Naphthalene	0.19 U
VOCs (µg/L)	
Acetone	10 U
Benzene	1 U
Tetrachloroethene	1 U
Field	
pH (s.u.)	**8.02**

MW-F21	5/4/2015
SVOCs (µg/L)	
Acenaphthene	2.4
Naphthalene	**130**
VOCs (µg/L)	
Acetone	16
Benzene	1.3
Tetrachloroethene	1 U
Field	
pH (s.u.)	**6.00**

LEGEND

- Water-Table (May 4, 2015) (inferred where dashed)
- Soil Boring
- Monitoring Well Screened Interval
- Railroad Easement
- Concrete/Asphalt
- Grass
- Concentrations Exceed Type 1 (RRS)

- FILL MATERIAL, gravel, silty, sandy
- SAND, fine-grained, silty, clayey
- CLAY, high-plasticity (inferred where dashed)
- SAND, clayey, silty; with shell fragments (inferred where dashed)
- SILT, sandy (inferred where dashed)
- AQUITARD

- Former Dry Size Area
- Tank Area
- Hard Resins Area
- Former Fatty Acid ASTs 50's
- Former CTO ASTs 60's
- ASTs 30's
- Former Dowtherm Unit
- Contractor Yard
- Electrical Substation

Soil Regulated Hazardous Constituent	Type1/2 RRS	Type 3/4 RRS
Polychlorinated Biphenyls (PCBs)		
Aroclor 1254 (mg/kg)	1.55	1.55
Aroclor 1260 (mg/kg)	1.55	1.55
Total PCBs (pg/g)	1,550,000	1,550,000
TEQ (pg/g)	115	440
Semi-Volatile Organic Compounds (SVOCs)		
1,1-Biphenyl (mg/kg)	1	1
Aniline (mg/kg)	2	2
Volatile Organic Compounds (VOCs)		
Acrolein (mg/kg)	0.1	0.1

Groundwater Regulated Hazardous Constituent	Type1/2 RRS	Type 3/4 RRS
Semi-Volatile Organic Compounds (SVOCs)		
Acenaphthene (µg/L)	2,000	6,100
Naphthalene (µg/L)	20	20
Volatile Organic Compounds (VOCs)		
Acetone (µg/L)	8,000	46,000
Benzene (µg/L)	5.4	8.7
Tetrachloroethene (µg/L)	19	98
Field		
pH (s.u.)	>2 and <12.5	>2 and <12.5

0 125' 250'
HORIZONTAL SCALE

VERTICAL EXAGGERATION: 5X

NOTES:
1) Groundwater analytical results represent data from May 4-5, 2015, sampling event.
2) All soil concentrations reported in milligrams per kilogram (mg/kg) except Toxic Equivalency (TEQ) and theTotal PCBs that are the sum of all Total Non-Dioxin-like PCBs which have been calculated in picograms per gram (pg/g).
3) All groundwater concentrations reported in micrograms per liter (µg/L) unless otherwise shown.
4) Only constituents with historical detections above Type 1 Risk Reduction Standards (RRS) are shown.
5) **BOLD** - Concentration exceeds Type I RRS.
6) Locations for soil samples collected in August 2015 are not provided on this map because analytical data are not yet available and validated. The results of those samples will be provided in the next data deliverable.

NA - Not analyzed
ND - Not detected
D - Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution.
J - Result is less than the RL but greater than or equal to the minimum detection limit (MDL) and the concentration is an approximate value.
U - Indicates the analyte was analyzed for but not detected.
pg/L - picograms per liter
s.u. - Standard unit

HERCULES INC. - SAVANNAH PLANT
SAVANNAH, GEORGIA (HSI #10696)
VOLUNTARY INVESTIGATION AND REMEDIATION PLAN
SEMIANNUAL PROGRESS REPORT #5

Distribution of Select Constituents along Geologic Cross-Section B-B'

ARCADIS

FIGURE
9

C
SOUTHWEST

C'
NORTHEAST

SB-132 8/21/2014	(0-1 ft)
PCBs	
Aroclor 1254	**0.34**
Aroclor 1260	0.038 U
Total PCBs (pg/g)	**162,340**
TEQ (pg/g)	**18**
SVOCs	ND
VOCs	ND

SB-134 8/19/2014	(0-1 ft)
PCBs	
Aroclor 1254	**0.094**
Aroclor 1260	0.038 U
Total PCBs (pg/g)	**128,015**
TEQ (pg/g)	**0.44**
SVOCs	ND
VOCs	ND

SB-133 8/19/2014	(0-1 ft)
PCBs	
Aroclor 1254	**0.21**
Aroclor 1260	0.041 U
Total PCBs (pg/g)	**71,521**
TEQ (pg/g)	**11**
SVOCs	ND
VOCs	ND

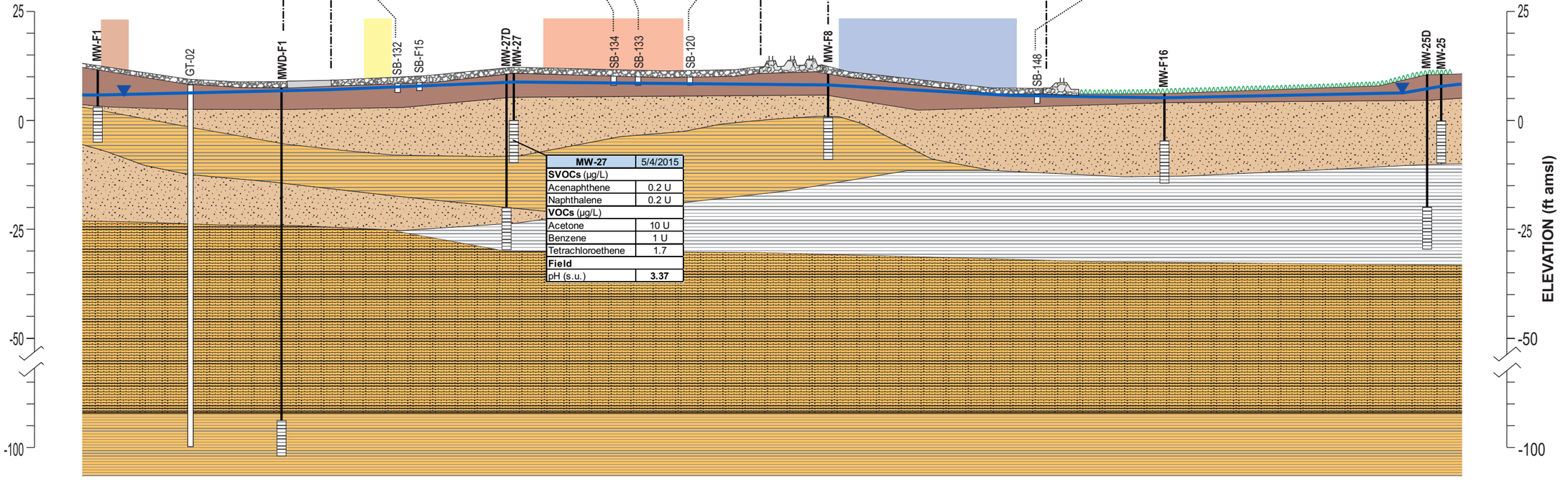
SB-120 8/20/2014	(0-1 ft)	(0-1 ft)*
PCBs	NA	NA
SVOCs	ND	ND
VOCs	NA	NA

SB-148 8/22/2014	(0-1 ft)
PCBs	NA
SVOCs	ND
VOCs	NA

PARCEL 2-0734-01-001

PARCEL 2-0734-01-001

PARCEL 2-0734-03-001



LEGEND

- Water-Table (May 4, 2015) (inferred where dashed)
- Soil Boring
- Monitoring Well Screened Interval
- Railroad Easement
- Concrete/Asphalt
- Grass
- Former CTO ASTs 60's
- Former Tall Oil Plant
- FILL MATERIAL, gravel, silty, sandy
- SAND, fine-grained, silty, clayey
- CLAY, high-plasticity (inferred where dashed)
- SAND, clayey, silty; with shell fragments (inferred where dashed)
- SILT, sandy (inferred where dashed)
- AQUITARD
- Former Dowtherm Unit
- Primary Oil/Water Separator

Soil Regulated Hazardous Constituent	Type 1/2 RRS	Type 3/4 RRS
Polychlorinated Biphenyls (PCBs)		
Aroclor 1254 (mg/kg)	1.55	1.55
Aroclor 1260 (mg/kg)	1.55	1.55
Total PCBs (pg/g)	1,550,000	1,550,000
TEQ (pg/g)	115	440
Semi-Volatile Organic Compounds (SVOCs)		
1,1-Biphenyl (mg/kg)	1	1
Aniline (mg/kg)	2	2
Volatile Organic Compounds (VOCs)		
Acrolein (mg/kg)	0.1	0.1

Groundwater Regulated Hazardous Constituent	Type 1/2 RRS	Type 3/4 RRS
Semi-Volatile Organic Compounds (SVOCs)		
Acenaphthene (µg/L)	2,000	6,100
Naphthalene (µg/L)	20	20
Volatile Organic Compounds (VOCs)		
Acetone (µg/L)	8,000	46,000
Benzene (µg/L)	5.4	8.7
Tetrachloroethene (µg/L)	19	98
Field		
pH (s.u.)	>2 and <12.5	>2 and <12.5

NOTES:
1) Groundwater analytical results represent data from May 4-5, 2015, sampling event.
2) All soil concentrations reported in milligrams per kilogram (mg/kg) except Toxic Equivalency (TEQ) and theTotal PCBs that are the sum of all Total Non-Dioxin-like PCBs which have been calculated in picograms per gram (pg/g).
3) * Duplicate performed on this sample.
4) All groundwater concentrations reported in micrograms per liter (µg/L) unless otherwise shown.
5) Only constituents with historical detections above Type 1 Risk Reduction Standards (RRS) are shown.
6) Locations for soil samples collected in August 2015 are not provided on this map because analytical data are not yet available and validated. The results of those samples will be provided in the next data deliverable.

NA - Not analyzed
ND - Not detected
U - Indicates the analyte was analyzed for but not detected.
s.u. - Standard unit.

0 125' 250'

HORIZONTAL SCALE

VERTICAL EXAGGERATION: 5X

HERCULES INC. - SAVANNAH PLANT
SAVANNAH, GEORGIA (HSI #10696)

VOLUNTARY INVESTIGATION AND REMEDIATION PLAN SEMIANNUAL PROGRESS REPORT #5

Distribution of Select Constituents along Geologic Cross-Section C-C'

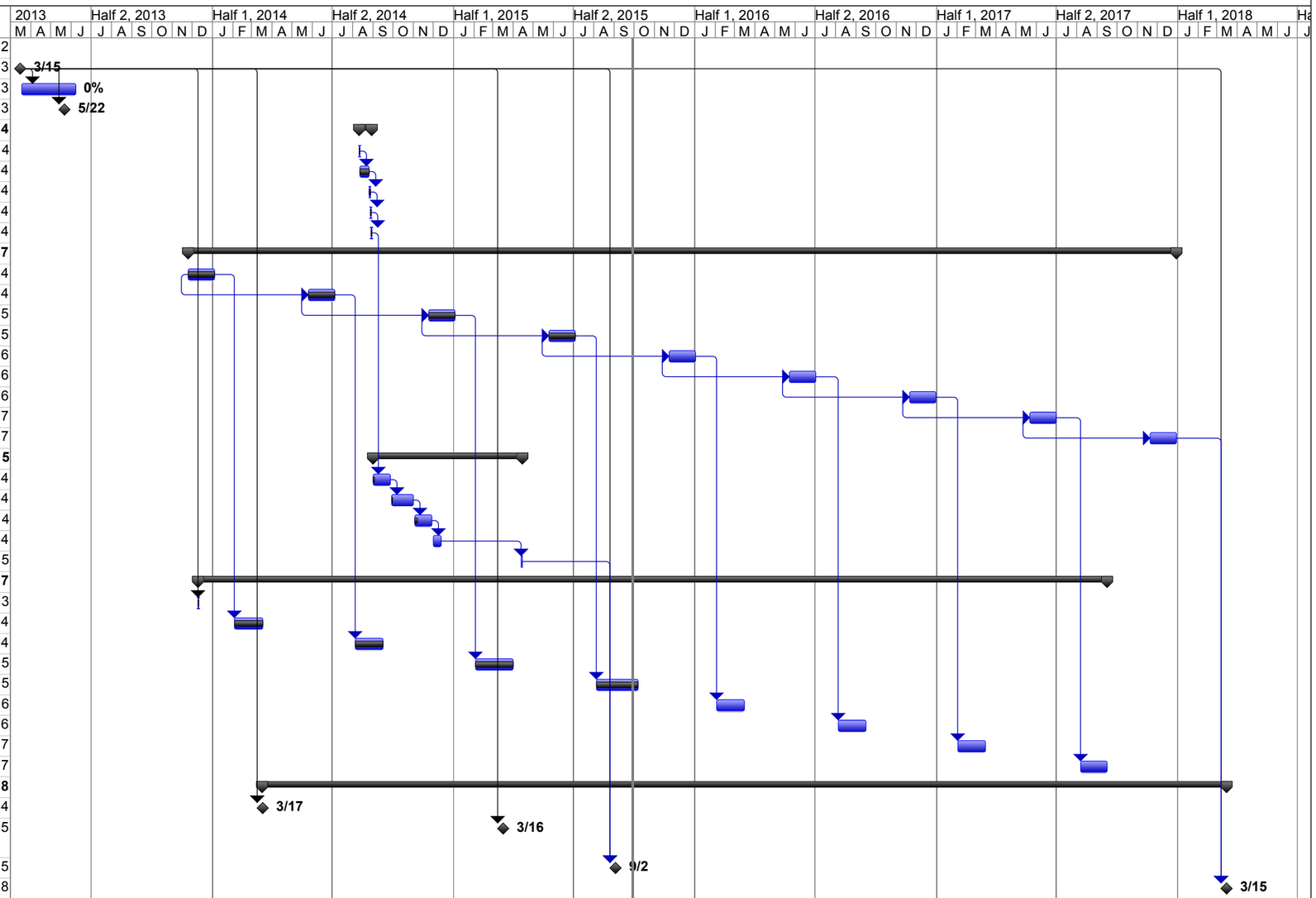
ARCADIS

FIGURE **10**

CITY: KNOXVILLE DIV/GROUP: ENV/GIS LD: B.ALTOM PIC: J.REID PM: D.WILDERMAN TM: D.WILDERMAN/J.HANNA BY: B.ALTOM
PROJECT: OH008000.GA60 PATH: G:\GIS\ASHLAND_HERCULES\GA_SAVANNAH\MAPDOCS\2015\SA PROGRESS NOS\F10 GA60_VRPSA5 XSEC CC.cdr SAVED: 5OCT2015

Figure 11
Hercules Incorporated
3000 Louisville Road, Savannah, Georgia
Updated Voluntary Remediation Program Milestone Schedule

ID	Task Name	Duration	Start	Finish
1	Submit VRP Application	1 day	Mon 4/9/12	Mon 4/9/12
2	EPD Approval of VRP Application	1 day	Fri 3/15/13	Fri 3/15/13
3	Prepare Investigation Work Plan	60 days	Mon 3/18/13	Fri 6/7/13
4	Record deed notice	0 days	Wed 5/22/13	Wed 5/22/13
5	**Field Activities**	**15 days**	**Mon 8/11/14**	**Fri 8/29/14**
6	Mobilize for data collection	1 day	Mon 8/11/14	Mon 8/11/14
7	Confirmatory soil sampling	10 days	Tue 8/12/14	Mon 8/25/14
8	Slug testing	2 days	Tue 8/26/14	Wed 8/27/14
9	Well gauging	1 day	Thu 8/28/14	Thu 8/28/14
10	Surface water/ sediment sampling	1 day	Fri 8/29/14	Fri 8/29/14
11	**Semiannual groundwater sampling**	**1070 days**	**Mon 11/25/13**	**Fri 12/29/17**
12	Sampling and analysis event	30 days	Mon 11/25/13	Fri 1/3/14
13	Sampling and analysis event	30 days	Mon 5/26/14	Fri 7/4/14
14	Sampling and analysis event	30 days	Mon 11/24/14	Fri 1/2/15
15	Sampling and analysis event	30 days	Mon 5/25/15	Fri 7/3/15
16	Sampling and analysis event	30 days	Mon 11/23/15	Fri 1/1/16
17	Sampling and analysis event	30 days	Mon 5/23/16	Fri 7/1/16
18	Sampling and analysis event	30 days	Mon 11/21/16	Fri 12/30/16
19	Sampling and analysis event	30 days	Mon 5/22/17	Fri 6/30/17
20	Sampling and analysis event	30 days	Mon 11/20/17	Fri 12/29/17
21	**Data analysis**	**162 days**	**Mon 9/1/14**	**Tue 4/14/15**
22	Delineation assessment	20 days	Mon 9/1/14	Fri 9/26/14
23	Human health risk assessment	25 days	Mon 9/29/14	Fri 10/31/14
24	Ecological risk assessment	20 days	Mon 11/3/14	Fri 11/28/14
25	CSM update	10 days	Mon 12/1/14	Fri 12/12/14
26	Delineation assessment phase 2	2 days	Mon 4/13/15	Tue 4/14/15
27	**Reporting**	**984 days**	**Tue 12/10/13**	**Fri 9/15/17**
28	Semiannual Progress Update #1	1 day	Tue 12/10/13	Tue 12/10/13
29	Semiannual Progress Report #2	31 days	Mon 2/3/14	Mon 3/17/14
30	Semiannual Progress Report #3	30 days	Tue 8/5/14	Mon 9/15/14
31	Semiannual Progress Report #4	41 days	Tue 2/3/15	Tue 3/31/15
32	Semiannual Progress Report #5	45 days	Wed 8/5/15	Tue 10/6/15
33	Semiannual Progress Report #6	30 days	Wed 2/3/16	Tue 3/15/16
34	Semiannual Progress Report #7	30 days	Fri 8/5/16	Thu 9/15/16
35	Semiannual Progress Report #8	30 days	Thu 2/2/17	Wed 3/15/17
36	Semiannual Progress Report #9	30 days	Mon 8/7/17	Fri 9/15/17
37	**Required Performance Milestones**	**1044 days**	**Mon 3/17/14**	**Thu 3/15/18**
38	Horizontal delineation complete (onsite)	1 day	Mon 3/17/14	Mon 3/17/14
39	Horizontal delineation complete (off-site)	1 day	Mon 3/16/15	Mon 3/16/15
40	Submit updated CSM	1 day	Wed 9/2/15	Wed 9/2/15
41	CSR submittal	1 day	Thu 3/15/18	Thu 3/15/18



Project: 2015_09_29_Savannah Herc
Date: Tue 9/29/15

Task	Project Summary	Inactive Milestone	Manual Summary Rollup	Progress
Split	External Tasks	Inactive Summary	Manual Summary	Deadline
Milestone	External Milestone	Manual Task	Start-only	
Summary	Inactive Task	Duration-only	Finish-only	

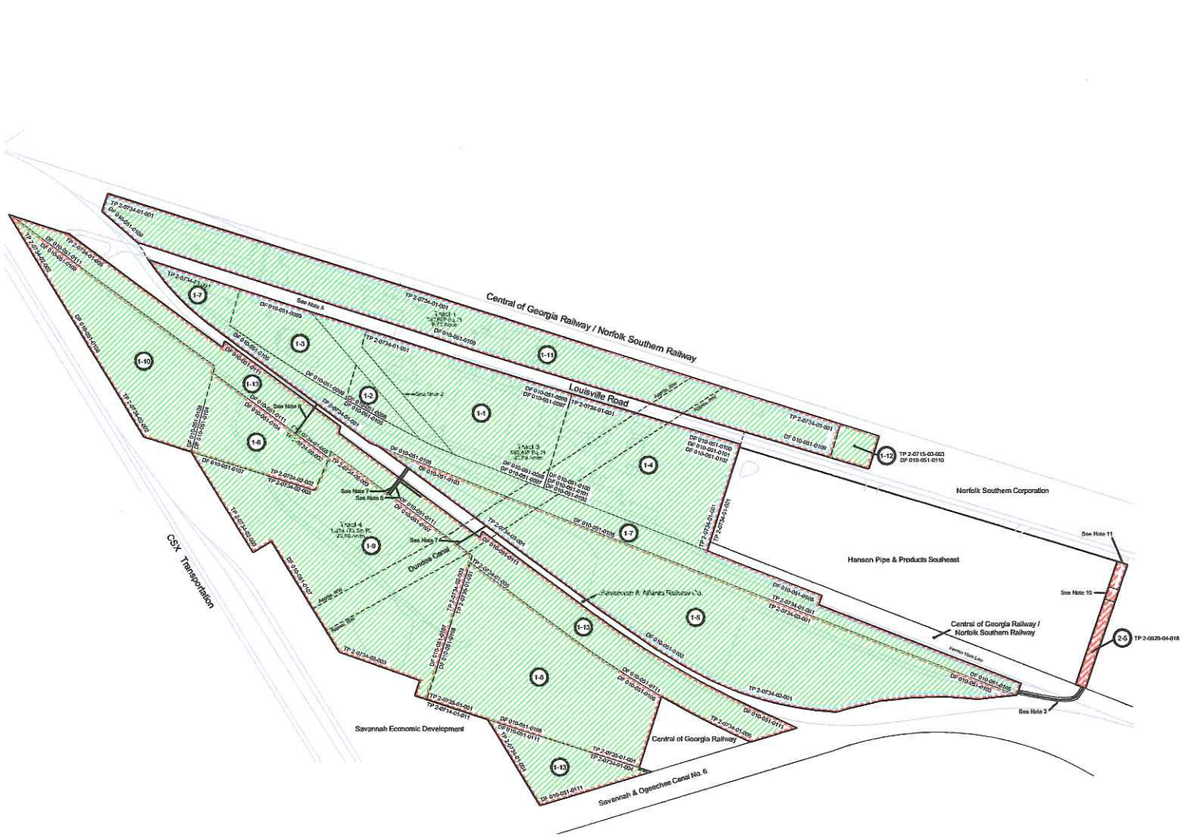
ARCADIS

Appendix A

Tax Parcel Map

HERCULES INCORPORATED

3000 LOUISVILLE ROAD, SAVANNAH, CHATHAM COUNTY, GEORGIA



Parcels Currently Owned by Hercules Incorporated
Approximately 53.27 Acres

Parcel	Deed File	Grantor	Deed Source	Area	Comments
1-1	010-051-0096	Western Paper Makers Chemical	Deed Book 31-Z, Folio 193	3.49 Acres	A part of Tract 3 on the Boundary Survey by Conner & Associates dated March 16, 2001.
	010-051-0097	Paper Makers Chemical Corp.	Deed Book 31-X, Folio 353		A part of Tract 3 on the Boundary Survey by Conner & Associates dated March 16, 2001.
1-2	010-051-0098	Paper Makers Chemical Corp.	Deed Book 31-Y, Folio 032	0.33 Acres	A part of Tract 3 on the Boundary Survey by Conner & Associates dated March 16, 2001.
1-3	010-051-0099	Paper Makers Chemical Corp.	Deed Book 31-X, Folio 354	1.42 Acres	A part of Tract 3 on the Boundary Survey by Conner & Associates dated March 16, 2001.
1-4	010-051-0100	James R. Sheldon, Executor	Deed Book 41-X, Folio 197	4.08 Acres	A part of Tract 3 on the Boundary Survey by Conner & Associates dated March 16, 2001.
	010-051-0101	Emma W. Morellas	Deed Book 41-Y, Folio 086		
	010-051-0102	James R. Sheldon	Deed Book 41-X, Folio 214		
1-5	*010-051-0103	Savannah & Atlanta Railway Co.	Deed Book 65-Q, Folio 441	8.47 Acres	A part of Tract 3 on the Boundary Survey by Conner & Associates dated March 16, 2001.
1-6	010-051-0104	R.F. Simmons	Deed Book 66-B, Folio 355	1.73 Acres	A part of Tract 4 on the Boundary Survey by Conner & Associates dated March 16, 2001.
1-7	010-051-0105	Savannah & Atlanta Railway Co.	Deed Book 97-D, Folio 645	4.22 Acres	A part of Tract 3 on the Boundary Survey by Conner & Associates dated March 16, 2001.
1-8	010-051-0106	Sidney L. Raskin, et.al	Deed Book 99-A, Folio 253	5.33 Acres	A part of Tract 4 on the Boundary Survey by Conner & Associates dated March 16, 2001.
1-9	010-051-0107	Jack W. Shearouse	Deed Book 99-O, Folio 017	7.02 Acres	A part of Parcel 1 as shown on the Boundary and Site Survey for the Bank of America of
1-10	010-051-0108	Jewel Tuten Hoggan	Deed Book 118-Y, Folio 842	3.31 Acres	A part of Tract 4 on the Boundary Survey by Conner & Associates dated March 16, 2001.
1-11	010-051-0109	Central of Georgia Railroad Co.	Deed Book 121-C, Folio 218	6.41 Acres	A part of Tract 1 on the Boundary Survey by Conner & Associates dated March 16, 2001.
1-12	010-051-0110	Central of Georgia Railroad Co.	Deed Book 126-T, Folio 474	0.31 Acres	A part of Tract 1 on the Boundary Survey by Conner & Associates dated March 16, 2001.
1-13	010-051-0111	CSX Transportation Inc.	Deed Book 135-B, Folio 113	5.21 Acres	A part of Tract 4 on the Boundary Survey by Conner & Associates dated March 16, 2001.
	010-051-0111			1.26 Acres	A part of Tract 4 on the Boundary Survey by Conner & Associates dated March 16, 2001.
N/A				0.68 Acres	A part of Tract 3 on the Boundary Survey by Conner & Associates dated March 16, 2001.
Total				53.27 Acres	

Parcels Formerly Owned by Hercules Incorporated

Parcel	Deed File	Grantor	Deed Source	Area	Comments
2-5	*010-051-0103	Savannah & Atlanta Railway Co.	Deed Book 65-Q, Folio 441	0.31 Acres	Acreage shown is calculated from the deed plot.

Tax Parcel Summary

Parcel	Tax Parcel	Deed Reference	Assessor Area	Survey/Calc. Area	Comments
1-1	2-0734-01-001	All of Deed Book 31-Z, Folio 193	14.43 Acres	3.49 Acres	
		All of Deed Book 31-X, Folio 353			
1-2		All of Deed Book 31-Y, Folio 032		0.33 Acres	
1-3		All of Deed Book 31-X, Folio 354		1.42 Acres	
1-4		All of Deed Book 41-X, Folio 197		4.08 Acres	
		All of Deed Book 41-Y, Folio 086			
		All of Deed Book 41-X, Folio 214			
1-7		All of Deed Book 97-D, Folio 645		4.22 Acres	
1-11		All of Deed Book 121-C, Folio 218		6.41 Acres	
N/A		N/A		0.68 Acres	
1-5	2-0734-03-001	Part of Deed Book 65-Q, Folio 441	7.86 Acres	8.47 Acres	
1-6	2-0734-02-002	All of Deed Book 66-B, Folio 355	6.24 Acres	1.73 Acres	
1-10		All of Deed Book 118-Y, Folio 842		3.31 Acres	
1-8	2-0735-01-001	All of Deed Book 99-A, Folio 253	7.85 Acres	5.33 Acres	
1-9	2-0734-02-003	All of Deed Book 99-O, Folio 017	7.19 Acres	7.02 Acres	
1-12	2-0715-03-003	All of Deed Book 126-T, Folio 474	0.31 Acres	0.31 Acres	
1-13	2-0734-01-004	Part of Deed Book 135-B, Folio 113	1.08 Acres	1.26 Acres	
1-13	2-0734-01-005	Part of Deed Book 135-B, Folio 113	8.11 Acres	5.21 Acres	
Total			53.07 Acres	53.27 Acres	

Notes

1. Property lines shown are take from survey plats by Conner and Associates dated March 16, 2001.
2. A deed of correction by and between Charles Lamas to Western Paper Makers Chemical dated August 1, 1922 of record in Deed Book 17-K, Page 249 states "This error in description was due to the fact that the surveyor did not show the right-of way of the Midland Railroad which crosses Patterson's four acres in a curve near the northwestern boundary. This was due to the fact that the Midland Railroad has been abandoned and its tracks taken up. All of this right-of-way we understand is now under fence by the Paper Makers Chemical Corporation."
3. On October 7, 1976, the Central of Georgia Railroad Company granted unto Hercules, Incorporated, a license to construct, maintain and use as a private access road upon and along, and across at grade, the right-of-way or property of the Railroad. Please note Item 4 of this agreement states "This license is a personal privilege to Licensee hereunder, and shall not be transferred or assigned without the written consent of Railroad."
4. All of Tract 1 with the exception of Parcel 1-12, and all of Tract 3 are subject to an Affidavit Pursuant to the Voluntary Remediation Program Act - Officer's Affidavit, Hercules Incorporated dated May 1, 2013.
5. On March 11, 1966, the Board of County Commissioners granted to Hercules Powder Company a perpetual right-of-way and easement to construct and maintain a sanitary sewer, storm sewer and industrial sewer over and along this portion of Louisville Road. This record is found in Minute Book A-7.
6. Approximate location of a pipe bridge and gravel walkway crossing as shown on the Hercules Facilities map dated September 28, 1982 and referenced as an agreement acquired on June 8, 1959 from the Savannah and Atlanta Railway Company.
7. Approximate location of a pipe crossing as shown on the Hercules Facilities map dated September 28, 1982 and referenced as an agreement acquired on February 14, 1972 from the Seaboard Coast Line Railroad and Central of Georgia Railway Company.
8. Approximate location of a wire crossing as shown on the Hercules Facilities map dated September 28, 1982 and referenced as an agreement acquired on March 19, 1973 from the Central of Georgia Railway Company.
9. The Dundee Canal is shown in its approximate location based on surveys by Conner and Associates dated Match 16, 2001 for Hercules Incorporated and a survey by Kern-Coleman & Company dated May 29, 2008 for the Seaboard System Railroad.
10. 40 Ft. Access Easement per agreement dated November 24, 1998 by and between Hercules Incorporated and Sherman International Corp. as shown on attached plat by Barrett Land Surveying, Inc., dated November 18, 1997
11. See letter agreement dated May 23, 1967 by and between Hercules Incorporated and Ken-Block Company granting permission to maintain a fence over and across the property of Hercules Incorporated.

Legend

- Property currently owned by Hercules Incorporated
- Boundary line per deed record.
- Surveyed tract boundary line.
- Tax Parcel Boundary.
- Area subject to Voluntary Remediation Program Act.
- TP — Tax Parcel Number.
- DF — Ashland Inc. Deed File Reference.

Graphic Scale

0 200 400 800

Scale: 1 inch = 200 feet

Parcel Map

Revised	
Date	By
Mar. 5, 2014	BCP

Site: Hercules Incorporated
3000 Louisville Road
Savannah, GA 31410

ASHLAND
Ashland Inc.
Corporate Real Estate
Lexington, Kentucky

Drawn: Sep. 17, 2013	By: Barry Peters	Revised: As Shown
Master File No.: MF-GA-H	Scale: 1 Inch = 200 Feet	Drawing No.: SAVANNAHBASE

ARCADIS

Appendix B

Purging and Sampling Logs

GROUNDWATER SAMPLING LOG

SITE NAME: Ashland Hercules	SITE LOCATION: 3000 Louisville Road, Savannah, Georgia
WELL ID: MW-27	DATE: 5.4.15

PURGING DATA

WELL DIAMETER (inches): 2	WELL SCREEN INTERVAL DEPTH: 10 feet to 20 feet	STATIC DEPTH TO WATER (feet): 1.52	PURGE PUMP TYPE OR BAILER: (Peristaltic) / Stainless Submersible

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= ✓ liters + (0.0097 liters/foot X 20 feet) + 0.20 liters = 0.394 liters

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (L/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µmhos/cm or (mS/cm))	DISS. OXYGEN (mg/L)	TURBIDITY (NTUs)	OXYGEN REDUCTION POTENTIAL (mV)
1145	0.40	0.40	0.10	1.52	4.00	20.50	0.300	081	8.11	390.0
1148	0.30	0.70	0.10	1.52	3.34	20.45	0.219	0.57	7.70	388.7
1151	0.30	1.00	0.10	1.55	3.37	20.50	0.219	0.55	8.52	384.2
1154	0.30	1.30	0.10	1.57	3.37	20.48	0.219	0.56	7.30	378.4

TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.0024; 3/16" = 0.0054; 1/4" = 0.0097; 5/16" = 0.0151; 3/8" = 0.0217; 1/2" = 0.0386; 5/8" = 0.0603

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Alex H / Antea Group	SAMPLER(S) SIGNATURES:	SAMPLING TIME: 1200
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) Filtration Equipment Type: ____ FILTER SIZE: ____ µm	DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION		SAMPLE PRESERVATION	
# CONTAINERS	VOLUME	PRESERVATIVE USED	INTENDED ANALYSIS AND/OR METHOD
3	40 mL	HCL	8260B
2	1000 mL	none	8270C

REMARKS:

NOTES: 1. STABILIZATION CRITERIA FOR THREE CONSECUTIVE WATER QUALITY READINGS

Turbidity:	<10 NTU or 3 Consecutive readings within 10% of each other
Temp.:	<0.5 Degrees C
pH:	<0.1 SU
Specific Conductance:	10%
Drawdown:	<0.5 ft from Initial
Dissolved Oxygen:	<0.5 mg/L

GROUNDWATER SAMPLING LOG

SITE NAME: Ashland Hercules	SITE LOCATION: 3000 Louisville Road, Savannah, Georgia
WELL ID: MW-F7	DATE: 5.4.15

PURGING DATA

WELL DIAMETER (inches): 2	WELL SCREEN INTERVAL DEPTH: 10 feet to 20 feet	STATIC DEPTH TO WATER (feet): 4.70	PURGE PUMP TYPE OR BAILER: (Peristaltic) / Stainless Submersible

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)

= ✓ liters + (0.0097 liters/foot X 18 feet) + 0.20 liters = 0.375 liters

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (L/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µmhos/cm or (µS/cm))	DISS. OXYGEN (mg/L)	TURBIDITY (NTUs)	OXYGEN REDUCTION POTENTIAL (mV)
1250	0.40	0.40	0.10	4.70	4.64	22.36	0.258	1.09	12.11	303.0
1253	0.30	0.70	0.10	4.71	4.67	22.26	0.259	1.55	8.60	301.5
1256	0.30	1.00	0.10	4.71	4.68	22.27	0.261	1.56	9.10	300.3
1259	0.30	1.30	0.10	4.73	4.69	22.28	0.261	1.55	8.00	299.6

TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.0024; 3/16" = 0.0054; 1/4" = 0.0097; 5/16" = 0.0151; 3/8" = 0.0217; 1/2" = 0.0386; 5/8" = 0.0603

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Alex H / Anka Group	SAMPLER(S) SIGNATURES:	SAMPLING TIME: 1300
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) Filtration Equipment Type: FILTER SIZE: ____ µm	DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION		SAMPLE PRESERVATION	
# CONTAINERS	VOLUME	PRESERVATIVE USED	INTENDED ANALYSIS AND/OR METHOD
3	40 mL	@ HCL	8260B
2	1000 mL	none	8270C

REMARKS:

NOTES: 1. STABILIZATION CRITERIA FOR THREE CONSECUTIVE WATER QUALITY READINGS

Turbidity:	<10 NTU or 3 Consecutive readings within 10% of each other
Temp.:	<0.5 Degrees C
pH:	<0.1 SU
Specific Conductance:	10%
Drawdown:	<0.5 ft from Initial
Dissolved Oxygen:	<0.5 mg/L

GROUNDWATER SAMPLING LOG

SITE NAME:	Ashland Hercules	SITE LOCATION:	3000 Louisville Road, Savannah, Georgia
WELL ID:	MW-F21	DATE:	5.4.15

PURGING DATA

WELL DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
2	10 feet to 20 feet	5.51	(Peristaltic) / Stainless Submersible

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= ✓ liters + (0.0097 liters/foot X 18 feet) + 0.20 liters = 0.375 liters

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (L/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µmhos/cm or (µS/cm))	DISS. OXYGEN (mg/L)	TURBIDITY (NTUs)	OXYGEN REDUCTION POTENTIAL (mV)
1335	0.40	0.40	0.10	5.51	6.00	22.82	0.714	4.11	6.60	-62.9
1338	0.30	0.70	0.10	5.55	5.99	22.78	0.712	4.34	6.10	-62.5
1341	0.30	1.00	0.10	5.57	6.00	22.74	0.710	4.30	7.45	-62.1
1344	0.30	1.30	0.10	5.57	6.00	22.72	0.709	4.08	6.51	-61.7

TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.0024; **3/16"** = 0.0054; **1/4"** = 0.0097; **5/16"** = 0.0151; **3/8"** = 0.0217; **1/2"** = 0.0386; **5/8"** = 0.0603

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURES:	SAMPLING TIME:
Alex H / Antea Group		1345

FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm	DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION		SAMPLE PRESERVATION	INTENDED ANALYSIS AND/OR METHOD
# CONTAINERS	VOLUME	PRESERVATIVE USED	
3	40 mL	HCL	8260B
2	1,000 mL	none	8270C

REMARKS:

NOTES: 1. STABILIZATION CRITERIA FOR THREE CONSECUTIVE WATER QUALITY READINGS

Turbidity:	<10 NTU or 3 Consecutive readings within 10% of each other
Temp.:	<0.5 Degrees C
pH:	<0.1 SU
Specific Conductance:	10%
Drawdown:	<0.5 ft from Initial
Dissolved Oxygen:	<0.5 mg/L

GROUNDWATER SAMPLING LOG

SITE NAME:	Ashland Hercules	SITE LOCATION:	3000 Louisville Road, Savannah, Georgia
WELL ID:	MWD-30	DATE:	5·4·15

PURGING DATA

WELL DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
2	40 feet to 50 feet	5.01	(Peristaltic) / Stainless Submersible

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= ____ liters + (0.0097 liters/foot X 50 feet) + 0.20 liters = 0.685 liters

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (L/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µmhos/cm or (µS/cm))	DISS. OXYGEN (mg/L)	TURBIDITY (NTUs)	OXYGEN REDUCTION POTENTIAL (mV)
1406	0.70	0.70	0.10	5.01	7.97	25.66	0.350	7.50	4.16	-1.6
1409	0.30	1.00	0.10	5.05	7.98	25.11	0.344	7.44	6.33	-0.1
1412	0.30	1.30	0.10	5.07	8.01	25.18	0.344	7.52	5.60	1.0
1415	0.30	1.60	0.10	5.08	8.02	25.23	0.344	7.50	5.52	2.0

TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.0024; **3/16"** = 0.0054; **1/4"** = 0.0097; **5/16"** = 0.0151; **3/8"** = 0.0217; **1/2"** = 0.0386; **5/8"** = 0.0603

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURES:	SAMPLING TIME:
Alex H / Antea Group		1420

FIELD DECONTAMINATION: Y (N)

FIELD-FILTERED: Y (N) FILTER SIZE: ____ µm
Filtration Equipment Type: ____

DUPLICATE: (Y) (N) AH 5.4.15

SAMPLE CONTAINER SPECIFICATION		SAMPLE PRESERVATION	
# CONTAINERS	VOLUME	PRESERVATIVE USED	INTENDED ANALYSIS AND/OR METHOD
3	40 mL	HCl	8260 B
2	1000 mL	none	8270 C
3	40 mL	HCl	8260 B (DUP-01-050415)

REMARKS:

NOTES: 1. STABILIZATION CRITERIA FOR THREE CONSECUTIVE WATER QUALITY READINGS

Turbidity:	<10 NTU or 3 Consecutive readings within 10% of each other
Temp.:	<0.5 Degrees C
pH:	<0.1 SU
Specific Conductance:	10%
Drawdown:	<0.5 ft from Initial
Dissolved Oxygen:	<0.5 mg/L

GROUNDWATER SAMPLING LOG

SITE NAME:	Ashland Hercules	SITE LOCATION:	3000 Louisville Road, Savannah, Georgia
WELL ID:	MW-F15	DATE:	~~MW~~ 5.5.15

PURGING DATA

WELL DIAMETER (inches):	2	WELL SCREEN INTERVAL DEPTH:	10 feet to 20 feet	STATIC DEPTH TO WATER (feet):	4.60	PURGE PUMP TYPE OR BAILER:	(Peristaltic) / Stainless Submersible

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= ____ liters + (0.0097 liters/foot X 20 feet) + 0.20 liters = 0.380 liters

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (L/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µmhos/cm or (µS/cm))	DISS. OXYGEN (mg/L)	TURBIDITY (NTUs)	OXYGEN REDUCTION POTENTIAL (mV)
1153	0.40	0.40	0.10	4.60	6.99	19.31	1.002	11.01	0.26	-33.6
1156	0.30	0.70	0.10	4.66	6.75	18.46	0.997	10.42	0.30	-28.6
1159	0.30	1.00	0.10	4.64	6.75	18.48	0.997	10.40	1.03	-29.1
1202	0.30	1.30	0.10	4.64	6.76	18.50	0.996	10.38	0.76	-29.9

TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.0024; 3/16" = 0.0054; 1/4" = 0.0097; 5/16" = 0.0151; 3/8" = 0.0217; 1/2" = 0.0386; 5/8" = 0.0603

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURES:	SAMPLING TIME:
Alex H / Antea Group		1205

FIELD DECONTAMINATION: Y (N)

FIELD-FILTERED: Y (N) FILTER SIZE: ____ µm
Filtration Equipment Type: ____

DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION		SAMPLE PRESERVATION	INTENDED ANALYSIS AND/OR METHOD
# CONTAINERS	VOLUME	PRESERVATIVE USED	
2	1000 mL	NONE	600-R-93-116
3	40 mL	HCL	8260B Benzene

REMARKS:

NOTES: 1. STABILIZATION CRITERIA FOR THREE CONSECUTIVE WATER QUALITY READINGS

Turbidity:	<10 NTU or 3 Consecutive readings within 10% of each other
Temp.:	<0.5 Degrees C
pH:	<0.1 SU
Specific Conductance:	10%
Drawdown:	<0.5 ft from Initial
Dissolved Oxygen:	<0.5 mg/L

GROUNDWATER SAMPLING LOG

SITE NAME:	Ashland Hercules	SITE LOCATION:	3000 Louisville Road, Savannah, Georgia
WELL ID:	MW-29	DATE:	5.5.15

PURGING DATA

WELL DIAMETER (inches):	2	WELL SCREEN INTERVAL DEPTH:	10 feet to 20 feet	STATIC DEPTH TO WATER (feet):	4.41	PURGE PUMP TYPE OR BAILER:	(Peristaltic) / Stainless Submersible

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= ____ liters + (0.0097 liters/foot X 20 feet) + 0.20 liters = 0.380 liters

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (L/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µmhos/cm or µS/cm)	DISS. OXYGEN (mg/L)	TURBIDITY (NTUs)	OXYGEN REDUCTION POTENTIAL (mV)
1120	0.40	0.40	0.10	4.41	5.40	21.99	0.401	9.60	4.52	194.00
1123	0.30	0.70	0.10	4.40	5.03	21.69	0.341	9.11	1.47	241.0
1126	0.30	1.00	0.10	4.45	5.06	21.58	0.327	9.18	2.31	257.9
1129	0.30	1.30	0.10	4.46	5.07	21.59	0.320	9.13	2.75	268.2

TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.0024; 3/16" = 0.0054; 1/4" = 0.0097; 5/16" = 0.0151; 3/8" = 0.0217; 1/2" = 0.0386; 5/8" = 0.0603

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURES:	SAMPLING TIME:
Alex H / Antea Group		1130

FIELD DECONTAMINATION: Y (N)

FIELD-FILTERED: Y (N) FILTER SIZE: ____ µm
Filtration Equipment Type: ____

DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION		SAMPLE PRESERVATION	INTENDED ANALYSIS AND/OR METHOD
# CONTAINERS	VOLUME	PRESERVATIVE USED	
3	40 mL	HCL	8260B App 9
2	1000 mL	NONE	8270D_LL bns only

REMARKS:

NOTES: 1. STABILIZATION CRITERIA FOR THREE CONSECUTIVE WATER QUALITY READINGS

Turbidity:	<10 NTU or 3 Consecutive readings within 10% of each other
Temp.:	<0.5 Degrees C
pH:	<0.1 SU
Specific Conductance:	10%
Drawdown:	<0.5 ft from Initial
Dissolved Oxygen:	<0.5 mg/L

GROUNDWATER SAMPLING LOG

SITE NAME:	Ashland Hercules	SITE LOCATION:	3000 Louisville Road, Savannah, Georgia
WELL ID:	MW-F5	DATE:	5.5.15

PURGING DATA

WELL DIAMETER (inches):	2	WELL SCREEN INTERVAL DEPTH:	10 feet to 20 feet	STATIC DEPTH TO WATER (feet):	5.93	PURGE PUMP TYPE OR BAILER:	(Peristaltic) / Stainless Submersible

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)

= ____ liters + (0.0097 liters/foot X 18 feet) + 0.20 liters = 0.375 liters

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (L/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µmhos/cm or (µS/cm))	DISS. OXYGEN (mg/L)	TURBIDITY (NTUs)	OXYGEN REDUCTION POTENTIAL (mV)
1045	0.40	0.40	0.10	5.93	7.11	21.09	0.697	0.42	2.47	-154.3
1048	0.30	0.70	0.10	5.94	7.13	20.94	0.691	0.27	2.55	-160.6
1051	0.30	1.00	0.10	5.94	7.13	20.95	0.690	0.27	3.00	-160.8
1054	0.30	1.30	0.10	5.96	7.13	20.96	0.689	0.28	3.22	-160.9

TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.0024; 3/16" = 0.0054; 1/4" = 0.0097; 5/16" = 0.0151; 3/8" = 0.0217; 1/2" = 0.0386; 5/8" = 0.0603

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURES:	SAMPLING TIME:
Alex H / Antea Group		1055

FIELD DECONTAMINATION: Y (N)

FIELD-FILTERED: Y (N) Filtration Equipment Type: ____ FILTER SIZE: ____ µm

DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION		SAMPLE PRESERVATION	INTENDED ANALYSIS AND/OR METHOD
# CONTAINERS	VOLUME	PRESERVATIVE USED	
3	40 mL	HCL	8260B App 9
2	1000 mL	NONE	8270D-LL B,S only

REMARKS:

NOTES: 1. STABILIZATION CRITERIA FOR THREE CONSECUTIVE WATER QUALITY READINGS

Turbidity:	<10 NTU or 3 Consecutive readings within 10% of each other
Temp.:	<0.5 Degrees C
pH:	<0.1 SU
Specific Conductance:	10%
Drawdown:	<0.5 ft from Initial
Dissolved Oxygen:	<0.5 mg/L

GROUNDWATER SAMPLING LOG

SITE NAME: Ashland Hercules	SITE LOCATION: 3000 Louisville Road, Savannah, Georgia
WELL ID: MW-F3R	DATE: 5.5.15

PURGING DATA

WELL DIAMETER (inches): 2	WELL SCREEN INTERVAL DEPTH: 10 feet to 20 feet	STATIC DEPTH TO WATER (feet): 6.10	PURGE PUMP TYPE OR BAILER: (Peristaltic) / Stainless Submersible

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= ____ liters + (0.0097 liters/foot X 18 feet) + 0.20 liters = 0.375 liters

TIME	VOLUME PURGED (liters)	CUMUL. VOLUME PURGED (liters)	PURGE RATE (L/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µmhos/cm or (µS/cm))	DISS. OXYGEN (mg/L)	TURBIDITY (NTUs)	OXYGEN REDUCTION POTENTIAL (mV)
1010	0.40	0.40	0.10	6.10	7.20	22.06	0.699	0.39	1.14	-127.7
1013	0.30	0.70	0.10	6.11	7.20	22.08	0.699	0.37	1.00	-127.9
1016	0.30	1.00	0.10	6.11	7.21	22.09	0.699	0.37	2.33	-128.0
1019	0.30	1.30	0.10	6.13	7.20	22.06	0.698	0.38	1.72	-127.9

TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.0024; 3/16" = 0.0054; 1/4" = 0.0097; 5/16" = 0.0151; 3/8" = 0.0217; 1/2" = 0.0386; 5/8" = 0.0603

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Alex H / Antea Group	SAMPLER(S) SIGNATURES:	SAMPLING TIME: 1020
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) Filtration Equipment Type: ____ FILTER SIZE: ____ µm	DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION		SAMPLE PRESERVATION	
# CONTAINERS	VOLUME	PRESERVATIVE USED	INTENDED ANALYSIS AND/OR METHOD
~~3~~	~~40 mL~~	~~8260B HCL~~	~~8260B~~ AH 5.5.15
~~2~~	~~1000 mL~~	~~NONE~~	~~8270C~~ AH 5.5.15
2	1000 mL	NONE	8082A (include 1262/1268), 1668B

REMARKS:

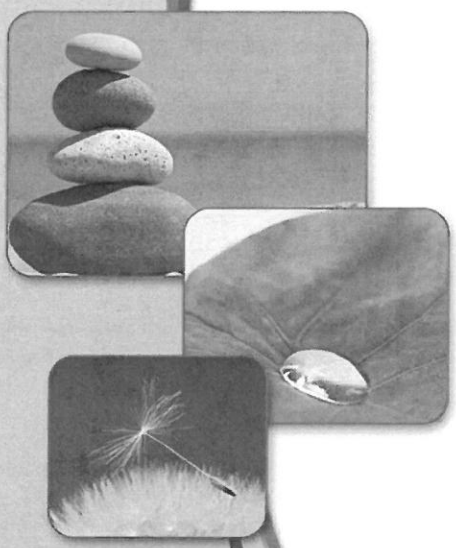
NOTES: 1. STABILIZATION CRITERIA FOR THREE CONSECUTIVE WATER QUALITY READINGS

Turbidity:	<10 NTU or 3 Consecutive readings within 10% of each other
Temp.:	<0.5 Degrees C
pH:	<0.1 SU
Specific Conductance:	10%
Drawdown:	<0.5 ft from Initial
Dissolved Oxygen:	<0.5 mg/L

ARCADIS

Appendix C

Laboratory Analytical Reports



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: 680-112169-1
Client Project/Site: Hercules Savannah
Revision: 1

For:
ARCADIS U.S., Inc.
2410 Paces Ferry Road
Suite 400
Atlanta, Georgia 30339

Attn: Chris Miller

Kathryn Smith

Authorized for release by:
10/5/2015 1:09:40 PM

Kathryn Smith, Project Manager II
(912)354-7858
kathy.smith@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
U	Indicates the analyte was analyzed for but not detected.

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
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Hercules Savannah

TestAmerica Job ID: 680-112169-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8270D LL	Semivolatile Organic Compounds by GC/MS - Low Level	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

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Hercules Savannah

TestAmerica Job ID: 680-112169-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-112169-1	MW-27	Water	05/04/15 12:00	05/04/15 17:05
680-112169-2	MW-F7	Water	05/04/15 13:00	05/04/15 17:05
680-112169-3	MW-F21	Water	05/04/15 13:45	05/04/15 17:05
680-112169-4	MWD-30 (050415)	Water	05/04/15 14:20	05/04/15 17:05
680-112169-5	DUP-01 (050415)	Water	05/04/15 00:00	05/04/15 17:05
680-112169-6	TRIP BLANK (050415)	Water	05/04/15 00:00	05/04/15 17:05

Job ID: 680-112169-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE
Client: ARCADIS U.S., Inc.
Project: Hercules Savannah

Report Number: 680-112169-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT
The samples were received on 05/04/2015; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.4 C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)
Samples MW-27 (680-112169-1), MW-F7 (680-112169-2), MW-F21 (680-112169-3), MWD-30 (050415) (680-112169-4), DUP-01 (050415) (680-112169-5) and TRIP BLANK (050415) (680-112169-6) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 05/12/2015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SEMIVOLATILE ORGANIC COMPOUNDS (GC/MS) - LOW LEVEL
Samples MW-27 (680-112169-1), MW-F7 (680-112169-2), MW-F21 (680-112169-3) and MWD-30 (050415) (680-112169-4) were analyzed for Semivolatile Organic Compounds (GC/MS) - Low level in accordance with EPA SW-846 Method 8270D. The samples were prepared on 05/06/2015 and analyzed on 05/15/2015, 05/18/2015 and 05/19/2015.

Several analytes recovered low for the MS of sample MW-27MS (680-112169-1) in batch 680-383051.

Samples MW-F21 (680-112169-3)[10X] and MW-F21 (680-112169-3)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Client Sample ID: MW-27

Date Collected: 05/04/15 12:00
Date Received: 05/04/15 17:05

Lab Sample ID: 680-112169-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	7.0	U	10	7.0	ug/L			05/12/15 17:43	1
Acetonitrile	20	U	40	20	ug/L			05/12/15 17:43	1
Acrolein	8.7	U	20	8.7	ug/L			05/12/15 17:43	1
Benzene	0.43	U	1.0	0.43	ug/L			05/12/15 17:43	1
Benzene chloride	0.26	U	1.0	0.26	ug/L			05/12/15 17:43	1
2-Butanone	3.4	U	10	3.4	ug/L			05/12/15 17:43	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			05/12/15 17:43	1
1,2-Dichloropropane	0.67	U	1.0	0.67	ug/L			05/12/15 17:43	1
Ethylbenzene	0.33	U	1.0	0.33	ug/L			05/12/15 17:43	1
Ethyl methacrylate	0.40	U	1.0	0.40	ug/L			05/12/15 17:43	1
Isobutanol	20	U	50	20	ug/L			05/12/15 17:43	1
4-Methyl-2-pentanone (MIBK)	2.1	U	10	2.1	ug/L			05/12/15 17:43	1
m-Xylene & p-Xylene	0.35	U	1.0	0.35	ug/L			05/12/15 17:43	1
o-Xylene	0.23	U	1.0	0.23	ug/L			05/12/15 17:43	1
Styrene	0.27	U	1.0	0.27	ug/L			05/12/15 17:43	1
Tetrachloroethene	**1.7**		1.0	0.74	ug/L			05/12/15 17:43	1
Toluene	0.48	U	1.0	0.48	ug/L			05/12/15 17:43	1
trans-1,4-Dichloro-2-butene	0.51	U	2.0	0.51	ug/L			05/12/15 17:43	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			05/12/15 17:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*05/12/15 17:43*	*1*
Dibromofluoromethane (Surr)	*100*		*70 - 130*		*05/12/15 17:43*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*70 - 130*		*05/12/15 17:43*	*1*
Toluene-d8 (Surr)	*102*		*70 - 130*		*05/12/15 17:43*	*1*

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.098	U	0.20	0.098	ug/L		05/06/15 17:19	05/15/15 19:23	1
Acenaphthylene	0.098	U	0.20	0.098	ug/L		05/06/15 17:19	05/15/15 19:23	1
Acetophenone	0.29	U	0.98	0.29	ug/L		05/06/15 17:19	05/15/15 19:23	1
Aniline	0.95	U	2.0	0.95	ug/L		05/06/15 17:19	05/15/15 19:23	1
Anthracene	0.098	U F1	0.20	0.098	ug/L		05/06/15 17:19	05/15/15 19:23	1
Benzo[a]anthracene	0.098	U	0.20	0.098	ug/L		05/06/15 17:19	05/15/15 19:23	1
Benzo[a]pyrene	0.098	U F1	0.20	0.098	ug/L		05/06/15 17:19	05/15/15 19:23	1
Benzo[b]fluoranthene	0.098	U	0.20	0.098	ug/L		05/06/15 17:19	05/15/15 19:23	1
Benzo[g,h,i]perylene	0.098	U	0.20	0.098	ug/L		05/06/15 17:19	05/15/15 19:23	1
Benzo[k]fluoranthene	0.098	U	0.20	0.098	ug/L		05/06/15 17:19	05/15/15 19:23	1
1,1'-Biphenyl	0.098	U F1	0.98	0.098	ug/L		05/06/15 17:19	05/15/15 19:23	1
Bis(2-chloroethyl)ether	0.098	U	0.98	0.098	ug/L		05/06/15 17:19	05/15/15 19:23	1
Bis(2-ethylhexyl)phthalate	2.0	U	4.9	2.0	ug/L		05/06/15 17:19	05/15/15 19:23	1
Butyl benzyl phthalate	0.12	U F1	0.98	0.12	ug/L		05/06/15 17:19	05/15/15 19:23	1
Chrysene	0.044	U	0.20	0.044	ug/L		05/06/15 17:19	05/15/15 19:23	1
Dibenz(a,h)anthracene	0.098	U F1	0.20	0.098	ug/L		05/06/15 17:19	05/15/15 19:23	1
Dibenzofuran	0.098	U F1	0.98	0.098	ug/L		05/06/15 17:19	05/15/15 19:23	1
2,4-Xylenol	0.68	U	2.0	0.68	ug/L		05/06/15 17:19	05/15/15 19:23	1
1,3-Dinitrobenzene	0.098	U	0.98	0.098	ug/L		05/06/15 17:19	05/15/15 19:23	1
Di-n-octyl phthalate	0.17	U	0.98	0.17	ug/L		05/06/15 17:19	05/15/15 19:23	1
1,4-Dioxane	0.30	U	2.0	0.30	ug/L		05/06/15 17:19	05/15/15 19:23	1
Ethyl Parathion	0.098	U	2.0	0.098	ug/L		05/06/15 17:19	05/15/15 19:23	1

Client: ARCADIS U.S., Inc.
Project/Site: Hercules Savannah

TestAmerica Job ID: 680-112169-1

Client Sample ID: MW-27
Date Collected: 05/04/15 12:00
Date Received: 05/04/15 17:05

Lab Sample ID: 680-112169-1
Matrix: Water

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	0.098	U	0.20	0.098	ug/L		05/06/15 17:19	05/15/15 19:23	1
Fluorene	0.098	U F1	0.20	0.098	ug/L		05/06/15 17:19	05/15/15 19:23	1
Indeno[1,2,3-cd]pyrene	0.098	U	0.20	0.098	ug/L		05/06/15 17:19	05/15/15 19:23	1
2-Methylphenol	0.73	U	2.0	0.73	ug/L		05/06/15 17:19	05/15/15 19:23	1
3 & 4 Methylphenol	0.65	U F1	2.0	0.65	ug/L		05/06/15 17:19	05/15/15 19:23	1
Naphthalene	0.098	U	0.20	0.098	ug/L		05/06/15 17:19	05/15/15 19:23	1
N-Nitrosodi-n-butylamine	0.098	U	0.98	0.098	ug/L		05/06/15 17:19	05/15/15 19:23	1
N-Nitrosomethylethylamine	0.098	U	2.0	0.098	ug/L		05/06/15 17:19	05/15/15 19:23	1
Phenanthrene	0.098	U F1	0.20	0.098	ug/L		05/06/15 17:19	05/15/15 19:23	1
Phenol	0.13	U	0.98	0.13	ug/L		05/06/15 17:19	05/15/15 19:23	1
Pyrene	0.098	U F1	0.20	0.098	ug/L		05/06/15 17:19	05/15/15 19:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*76*		*30 - 130*	*05/06/15 17:19*	*05/15/15 19:23*	*1*
2-Fluorobiphenyl	*53*		*34 - 130*	*05/06/15 17:19*	*05/15/15 19:23*	*1*
2-Fluorophenol (Surr)	*48*		*25 - 130*	*05/06/15 17:19*	*05/15/15 19:23*	*1*
Nitrobenzene-d5 (Surr)	*54*		*32 - 130*	*05/06/15 17:19*	*05/15/15 19:23*	*1*
Phenol-d5 (Surr)	*57*		*27 - 130*	*05/06/15 17:19*	*05/15/15 19:23*	*1*
Terphenyl-d14 (Surr)	*63*		*36 - 130*	*05/06/15 17:19*	*05/15/15 19:23*	*1*

Client Sample ID: MW-F7

Date Collected: 05/04/15 13:00
Date Received: 05/04/15 17:05

Lab Sample ID: 680-112169-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	7.0	U	10	7.0	ug/L			05/12/15 18:26	1
Acetonitrile	20	U	40	20	ug/L			05/12/15 18:26	1
Acrolein	8.7	U	20	8.7	ug/L			05/12/15 18:26	1
Benzene	0.43	U	1.0	0.43	ug/L			05/12/15 18:26	1
Benzene chloride	0.26	U	1.0	0.26	ug/L			05/12/15 18:26	1
2-Butanone	3.4	U	10	3.4	ug/L			05/12/15 18:26	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			05/12/15 18:26	1
1,2-Dichloropropane	0.67	U	1.0	0.67	ug/L			05/12/15 18:26	1
Ethylbenzene	0.33	U	1.0	0.33	ug/L			05/12/15 18:26	1
Ethyl methacrylate	0.40	U	1.0	0.40	ug/L			05/12/15 18:26	1
Isobutanol	20	U	50	20	ug/L			05/12/15 18:26	1
4-Methyl-2-pentanone (MIBK)	2.1	U	10	2.1	ug/L			05/12/15 18:26	1
m-Xylene & p-Xylene	0.35	U	1.0	0.35	ug/L			05/12/15 18:26	1
o-Xylene	0.23	U	1.0	0.23	ug/L			05/12/15 18:26	1
Styrene	0.27	U	1.0	0.27	ug/L			05/12/15 18:26	1
Tetrachloroethene	**2.8**		1.0	0.74	ug/L			05/12/15 18:26	1
Toluene	0.48	U	1.0	0.48	ug/L			05/12/15 18:26	1
trans-1,4-Dichloro-2-butene	0.51	U	2.0	0.51	ug/L			05/12/15 18:26	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			05/12/15 18:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*05/12/15 18:26*	*1*
Dibromofluoromethane (Surr)	*98*		*70 - 130*		*05/12/15 18:26*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*		*05/12/15 18:26*	*1*
Toluene-d8 (Surr)	*102*		*70 - 130*		*05/12/15 18:26*	*1*

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.096	U	0.19	0.096	ug/L		05/06/15 17:19	05/15/15 19:51	1
Acenaphthylene	0.096	U	0.19	0.096	ug/L		05/06/15 17:19	05/15/15 19:51	1
Acetophenone	0.29	U	0.96	0.29	ug/L		05/06/15 17:19	05/15/15 19:51	1
Aniline	0.93	U	1.9	0.93	ug/L		05/06/15 17:19	05/15/15 19:51	1
Anthracene	0.096	U	0.19	0.096	ug/L		05/06/15 17:19	05/15/15 19:51	1
Benzo[a]anthracene	0.096	U	0.19	0.096	ug/L		05/06/15 17:19	05/15/15 19:51	1
Benzo[a]pyrene	0.096	U	0.19	0.096	ug/L		05/06/15 17:19	05/15/15 19:51	1
Benzo[b]fluoranthene	0.096	U	0.19	0.096	ug/L		05/06/15 17:19	05/15/15 19:51	1
Benzo[g,h,i]perylene	0.096	U	0.19	0.096	ug/L		05/06/15 17:19	05/15/15 19:51	1
Benzo[k]fluoranthene	0.096	U	0.19	0.096	ug/L		05/06/15 17:19	05/15/15 19:51	1
1,1'-Biphenyl	0.096	U	0.96	0.096	ug/L		05/06/15 17:19	05/15/15 19:51	1
Bis(2-chloroethyl)ether	0.096	U	0.96	0.096	ug/L		05/06/15 17:19	05/15/15 19:51	1
Bis(2-ethylhexyl)phthalate	1.9	U	4.8	1.9	ug/L		05/06/15 17:19	05/15/15 19:51	1
Butyl benzyl phthalate	0.12	U	0.96	0.12	ug/L		05/06/15 17:19	05/15/15 19:51	1
Chrysene	0.043	U	0.19	0.043	ug/L		05/06/15 17:19	05/15/15 19:51	1
Dibenz(a,h)anthracene	0.096	U	0.19	0.096	ug/L		05/06/15 17:19	05/15/15 19:51	1
Dibenzofuran	0.096	U	0.96	0.096	ug/L		05/06/15 17:19	05/15/15 19:51	1
2,4-Xylenol	0.66	U	1.9	0.66	ug/L		05/06/15 17:19	05/15/15 19:51	1
1,3-Dinitrobenzene	0.096	U	0.96	0.096	ug/L		05/06/15 17:19	05/15/15 19:51	1
Di-n-octyl phthalate	0.16	U	0.96	0.16	ug/L		05/06/15 17:19	05/15/15 19:51	1
1,4-Dioxane	0.30	U	1.9	0.30	ug/L		05/06/15 17:19	05/15/15 19:51	1
Ethyl Parathion	0.096	U	1.9	0.096	ug/L		05/06/15 17:19	05/15/15 19:51	1

Client: ARCADIS U.S., Inc.
Project/Site: Hercules Savannah

TestAmerica Job ID: 680-112169-1

Client Sample ID: MW-F7
Date Collected: 05/04/15 13:00
Date Received: 05/04/15 17:05

Lab Sample ID: 680-112169-2
Matrix: Water

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	0.096	U	0.19	0.096	ug/L		05/06/15 17:19	05/15/15 19:51	1
Fluorene	0.096	U	0.19	0.096	ug/L		05/06/15 17:19	05/15/15 19:51	1
Indeno[1,2,3-cd]pyrene	0.096	U	0.19	0.096	ug/L		05/06/15 17:19	05/15/15 19:51	1
2-Methylphenol	0.71	U	1.9	0.71	ug/L		05/06/15 17:19	05/15/15 19:51	1
3 & 4 Methylphenol	0.64	U	1.9	0.64	ug/L		05/06/15 17:19	05/15/15 19:51	1
Naphthalene	0.096	U	0.19	0.096	ug/L		05/06/15 17:19	05/15/15 19:51	1
N-Nitrosodi-n-butylamine	0.096	U	0.96	0.096	ug/L		05/06/15 17:19	05/15/15 19:51	1
N-Nitrosomethylethylamine	0.096	U	1.9	0.096	ug/L		05/06/15 17:19	05/15/15 19:51	1
Phenanthrene	0.096	U	0.19	0.096	ug/L		05/06/15 17:19	05/15/15 19:51	1
Phenol	0.13	U	0.96	0.13	ug/L		05/06/15 17:19	05/15/15 19:51	1
Pyrene	0.096	U	0.19	0.096	ug/L		05/06/15 17:19	05/15/15 19:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*80*		*30 - 130*	*05/06/15 17:19*	*05/15/15 19:51*	*1*
2-Fluorobiphenyl	*76*		*34 - 130*	*05/06/15 17:19*	*05/15/15 19:51*	*1*
2-Fluorophenol (Surr)	*59*		*25 - 130*	*05/06/15 17:19*	*05/15/15 19:51*	*1*
Nitrobenzene-d5 (Surr)	*66*		*32 - 130*	*05/06/15 17:19*	*05/15/15 19:51*	*1*
Phenol-d5 (Surr)	*59*		*27 - 130*	*05/06/15 17:19*	*05/15/15 19:51*	*1*
Terphenyl-d14 (Surr)	*64*		*36 - 130*	*05/06/15 17:19*	*05/15/15 19:51*	*1*

Client Sample ID: MW-F21

Date Collected: 05/04/15 13:45
Date Received: 05/04/15 17:05

Lab Sample ID: 680-112169-3
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**16**		10	7.0	ug/L			05/12/15 18:05	1
Acetonitrile	20	U	40	20	ug/L			05/12/15 18:05	1
Acrolein	8.7	U	20	8.7	ug/L			05/12/15 18:05	1
Benzene	**1.3**		1.0	0.43	ug/L			05/12/15 18:05	1
Benzene chloride	0.26	U	1.0	0.26	ug/L			05/12/15 18:05	1
2-Butanone	3.4	U	10	3.4	ug/L			05/12/15 18:05	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			05/12/15 18:05	1
1,2-Dichloropropane	0.67	U	1.0	0.67	ug/L			05/12/15 18:05	1
Ethylbenzene	0.33	U	1.0	0.33	ug/L			05/12/15 18:05	1
Ethyl methacrylate	0.40	U	1.0	0.40	ug/L			05/12/15 18:05	1
Isobutanol	20	U	50	20	ug/L			05/12/15 18:05	1
4-Methyl-2-pentanone (MIBK)	2.1	U	10	2.1	ug/L			05/12/15 18:05	1
m-Xylene & p-Xylene	**0.47**	J	1.0	0.35	ug/L			05/12/15 18:05	1
o-Xylene	**0.34**	J	1.0	0.23	ug/L			05/12/15 18:05	1
Styrene	0.27	U	1.0	0.27	ug/L			05/12/15 18:05	1
Tetrachloroethene	0.74	U	1.0	0.74	ug/L			05/12/15 18:05	1
Toluene	0.48	U	1.0	0.48	ug/L			05/12/15 18:05	1
trans-1,4-Dichloro-2-butene	0.51	U	2.0	0.51	ug/L			05/12/15 18:05	1
Xylenes, Total	**0.81**	J	1.0	0.23	ug/L			05/12/15 18:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*		*05/12/15 18:05*	*1*
Dibromofluoromethane (Surr)	*98*		*70 - 130*		*05/12/15 18:05*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 130*		*05/12/15 18:05*	*1*
Toluene-d8 (Surr)	*101*		*70 - 130*		*05/12/15 18:05*	*1*

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**2.4**		0.19	0.097	ug/L		05/06/15 17:19	05/15/15 20:19	1
Acenaphthylene	0.097	U	0.19	0.097	ug/L		05/06/15 17:19	05/15/15 20:19	1
Acetophenone	0.29	U	0.97	0.29	ug/L		05/06/15 17:19	05/15/15 20:19	1
Aniline	0.94	U	1.9	0.94	ug/L		05/06/15 17:19	05/15/15 20:19	1
Anthracene	0.097	U	0.19	0.097	ug/L		05/06/15 17:19	05/15/15 20:19	1
Benzo[a]anthracene	0.097	U	0.19	0.097	ug/L		05/06/15 17:19	05/15/15 20:19	1
Benzo[a]pyrene	0.097	U	0.19	0.097	ug/L		05/06/15 17:19	05/15/15 20:19	1
Benzo[b]fluoranthene	0.097	U	0.19	0.097	ug/L		05/06/15 17:19	05/15/15 20:19	1
Benzo[g,h,i]perylene	0.097	U	0.19	0.097	ug/L		05/06/15 17:19	05/15/15 20:19	1
Benzo[k]fluoranthene	0.097	U	0.19	0.097	ug/L		05/06/15 17:19	05/15/15 20:19	1
1,1'-Biphenyl	0.097	U	0.97	0.097	ug/L		05/06/15 17:19	05/15/15 20:19	1
Bis(2-chloroethyl)ether	0.097	U	0.97	0.097	ug/L		05/06/15 17:19	05/15/15 20:19	1
Bis(2-ethylhexyl)phthalate	1.9	U	4.8	1.9	ug/L		05/06/15 17:19	05/15/15 20:19	1
Butyl benzyl phthalate	0.12	U	0.97	0.12	ug/L		05/06/15 17:19	05/15/15 20:19	1
Chrysene	0.043	U	0.19	0.043	ug/L		05/06/15 17:19	05/15/15 20:19	1
Dibenz(a,h)anthracene	0.097	U	0.19	0.097	ug/L		05/06/15 17:19	05/15/15 20:19	1
Dibenzofuran	0.097	U	0.97	0.097	ug/L		05/06/15 17:19	05/15/15 20:19	1
2,4-Xylenol	0.67	U	1.9	0.67	ug/L		05/06/15 17:19	05/15/15 20:19	1
1,3-Dinitrobenzene	0.097	U	0.97	0.097	ug/L		05/06/15 17:19	05/15/15 20:19	1
Di-n-octyl phthalate	0.16	U	0.97	0.16	ug/L		05/06/15 17:19	05/15/15 20:19	1
1,4-Dioxane	**16**		1.9	0.30	ug/L		05/06/15 17:19	05/15/15 20:19	1
Ethyl Parathion	0.097	U	1.9	0.097	ug/L		05/06/15 17:19	05/15/15 20:19	1

Client: ARCADIS U.S., Inc.
Project/Site: Hercules Savannah

TestAmerica Job ID: 680-112169-1

Client Sample ID: MW-F21
Date Collected: 05/04/15 13:45
Date Received: 05/04/15 17:05

Lab Sample ID: 680-112169-3
Matrix: Water

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	0.097	U	0.19	0.097	ug/L		05/06/15 17:19	05/15/15 20:19	1
Fluorene	0.097	U	0.19	0.097	ug/L		05/06/15 17:19	05/15/15 20:19	1
Indeno[1,2,3-cd]pyrene	0.097	U	0.19	0.097	ug/L		05/06/15 17:19	05/15/15 20:19	1
2-Methylphenol	0.71	U	1.9	0.71	ug/L		05/06/15 17:19	05/15/15 20:19	1
3 & 4 Methylphenol	0.64	U	1.9	0.64	ug/L		05/06/15 17:19	05/15/15 20:19	1
N-Nitrosodi-n-butylamine	0.097	U	0.97	0.097	ug/L		05/06/15 17:19	05/15/15 20:19	1
N-Nitrosomethylethylamine	0.097	U	1.9	0.097	ug/L		05/06/15 17:19	05/15/15 20:19	1
Phenanthrene	0.097	U	0.19	0.097	ug/L		05/06/15 17:19	05/15/15 20:19	1
Phenol	0.13	U	0.97	0.13	ug/L		05/06/15 17:19	05/15/15 20:19	1
Pyrene	0.097	U	0.19	0.097	ug/L		05/06/15 17:19	05/15/15 20:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*82*		*30 - 130*	*05/06/15 17:19*	*05/15/15 20:19*	*1*
2-Fluorobiphenyl	*71*		*34 - 130*	*05/06/15 17:19*	*05/15/15 20:19*	*1*
2-Fluorophenol (Surr)	*67*		*25 - 130*	*05/06/15 17:19*	*05/15/15 20:19*	*1*
Nitrobenzene-d5 (Surr)	*66*		*32 - 130*	*05/06/15 17:19*	*05/15/15 20:19*	*1*
Phenol-d5 (Surr)	*58*		*27 - 130*	*05/06/15 17:19*	*05/15/15 20:19*	*1*
Terphenyl-d14 (Surr)	*65*		*36 - 130*	*05/06/15 17:19*	*05/15/15 20:19*	*1*

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	130		1.9	0.97	ug/L		05/06/15 17:19	05/18/15 05:22	10

Client Sample ID: MWD-30 (050415)

Lab Sample ID: 680-112169-4

Date Collected: 05/04/15 14:20
Date Received: 05/04/15 17:05

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	7.0	U	10	7.0	ug/L			05/12/15 17:00	1
Acetonitrile	20	U	40	20	ug/L			05/12/15 17:00	1
Acrolein	8.7	U	20	8.7	ug/L			05/12/15 17:00	1
Benzene	0.43	U	1.0	0.43	ug/L			05/12/15 17:00	1
Benzene chloride	0.26	U	1.0	0.26	ug/L			05/12/15 17:00	1
2-Butanone	3.4	U	10	3.4	ug/L			05/12/15 17:00	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			05/12/15 17:00	1
1,2-Dichloropropane	0.67	U	1.0	0.67	ug/L			05/12/15 17:00	1
Ethylbenzene	0.33	U	1.0	0.33	ug/L			05/12/15 17:00	1
Ethyl methacrylate	0.40	U	1.0	0.40	ug/L			05/12/15 17:00	1
Isobutanol	20	U	50	20	ug/L			05/12/15 17:00	1
4-Methyl-2-pentanone (MIBK)	2.1	U	10	2.1	ug/L			05/12/15 17:00	1
m-Xylene & p-Xylene	0.35	U	1.0	0.35	ug/L			05/12/15 17:00	1
o-Xylene	0.23	U	1.0	0.23	ug/L			05/12/15 17:00	1
Styrene	0.27	U	1.0	0.27	ug/L			05/12/15 17:00	1
Tetrachloroethene	0.74	U	1.0	0.74	ug/L			05/12/15 17:00	1
Toluene	0.48	U	1.0	0.48	ug/L			05/12/15 17:00	1
trans-1,4-Dichloro-2-butene	0.51	U	2.0	0.51	ug/L			05/12/15 17:00	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			05/12/15 17:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*05/12/15 17:00*	*1*
Dibromofluoromethane (Surr)	*100*		*70 - 130*		*05/12/15 17:00*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*70 - 130*		*05/12/15 17:00*	*1*
Toluene-d8 (Surr)	*102*		*70 - 130*		*05/12/15 17:00*	*1*

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.097	U	0.19	0.097	ug/L		05/06/15 17:19	05/15/15 20:47	1
Acenaphthylene	0.097	U	0.19	0.097	ug/L		05/06/15 17:19	05/15/15 20:47	1
Acetophenone	0.29	U	0.97	0.29	ug/L		05/06/15 17:19	05/15/15 20:47	1
Aniline	0.94	U	1.9	0.94	ug/L		05/06/15 17:19	05/15/15 20:47	1
Anthracene	0.097	U	0.19	0.097	ug/L		05/06/15 17:19	05/15/15 20:47	1
Benzo[a]anthracene	0.097	U	0.19	0.097	ug/L		05/06/15 17:19	05/15/15 20:47	1
Benzo[a]pyrene	0.097	U	0.19	0.097	ug/L		05/06/15 17:19	05/15/15 20:47	1
Benzo[b]fluoranthene	0.097	U	0.19	0.097	ug/L		05/06/15 17:19	05/15/15 20:47	1
Benzo[g,h,i]perylene	0.097	U	0.19	0.097	ug/L		05/06/15 17:19	05/15/15 20:47	1
Benzo[k]fluoranthene	0.097	U	0.19	0.097	ug/L		05/06/15 17:19	05/15/15 20:47	1
1,1'-Biphenyl	0.097	U	0.97	0.097	ug/L		05/06/15 17:19	05/15/15 20:47	1
Bis(2-chloroethyl)ether	0.097	U	0.97	0.097	ug/L		05/06/15 17:19	05/15/15 20:47	1
Bis(2-ethylhexyl)phthalate	1.9	U	4.8	1.9	ug/L		05/06/15 17:19	05/15/15 20:47	1
Butyl benzyl phthalate	0.12	U	0.97	0.12	ug/L		05/06/15 17:19	05/15/15 20:47	1
Chrysene	0.044	U	0.19	0.044	ug/L		05/06/15 17:19	05/15/15 20:47	1
Dibenz(a,h)anthracene	0.097	U	0.19	0.097	ug/L		05/06/15 17:19	05/15/15 20:47	1
Dibenzofuran	0.097	U	0.97	0.097	ug/L		05/06/15 17:19	05/15/15 20:47	1
2,4-Xylenol	0.67	U	1.9	0.67	ug/L		05/06/15 17:19	05/15/15 20:47	1
1,3-Dinitrobenzene	0.097	U	0.97	0.097	ug/L		05/06/15 17:19	05/15/15 20:47	1
Di-n-octyl phthalate	0.16	U	0.97	0.16	ug/L		05/06/15 17:19	05/15/15 20:47	1
1,4-Dioxane	0.30	U	1.9	0.30	ug/L		05/06/15 17:19	05/15/15 20:47	1
Ethyl Parathion	0.097	U	1.9	0.097	ug/L		05/06/15 17:19	05/15/15 20:47	1

Client: ARCADIS U.S., Inc.
Project/Site: Hercules Savannah

TestAmerica Job ID: 680-112169-1

Client Sample ID: MWD-30 (050415)
Date Collected: 05/04/15 14:20
Date Received: 05/04/15 17:05

Lab Sample ID: 680-112169-4
Matrix: Water

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	0.097	U	0.19	0.097	ug/L		05/06/15 17:19	05/15/15 20:47	1
Fluorene	0.097	U	0.19	0.097	ug/L		05/06/15 17:19	05/15/15 20:47	1
Indeno[1,2,3-cd]pyrene	0.097	U	0.19	0.097	ug/L		05/06/15 17:19	05/15/15 20:47	1
2-Methylphenol	0.72	U	1.9	0.72	ug/L		05/06/15 17:19	05/15/15 20:47	1
3 & 4 Methylphenol	0.64	U	1.9	0.64	ug/L		05/06/15 17:19	05/15/15 20:47	1
Naphthalene	0.097	U	0.19	0.097	ug/L		05/06/15 17:19	05/15/15 20:47	1
N-Nitrosodi-n-butylamine	0.097	U	0.97	0.097	ug/L		05/06/15 17:19	05/15/15 20:47	1
N-Nitrosomethylethylamine	0.097	U	1.9	0.097	ug/L		05/06/15 17:19	05/15/15 20:47	1
Phenanthrene	0.097	U	0.19	0.097	ug/L		05/06/15 17:19	05/15/15 20:47	1
Phenol	0.13	U	0.97	0.13	ug/L		05/06/15 17:19	05/15/15 20:47	1
Pyrene	0.097	U	0.19	0.097	ug/L		05/06/15 17:19	05/15/15 20:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*93*		*30 - 130*	*05/06/15 17:19*	*05/15/15 20:47*	*1*
2-Fluorobiphenyl	*72*		*34 - 130*	*05/06/15 17:19*	*05/15/15 20:47*	*1*
2-Fluorophenol (Surr)	*67*		*25 - 130*	*05/06/15 17:19*	*05/15/15 20:47*	*1*
Nitrobenzene-d5 (Surr)	*65*		*32 - 130*	*05/06/15 17:19*	*05/15/15 20:47*	*1*
Phenol-d5 (Surr)	*59*		*27 - 130*	*05/06/15 17:19*	*05/15/15 20:47*	*1*
Terphenyl-d14 (Surr)	*71*		*36 - 130*	*05/06/15 17:19*	*05/15/15 20:47*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Hercules Savannah

TestAmerica Job ID: 680-112169-1

Client Sample ID: DUP-01 (050415)
Date Collected: 05/04/15 00:00
Date Received: 05/04/15 17:05

Lab Sample ID: 680-112169-5
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	7.0	U	10	7.0	ug/L			05/12/15 16:39	1
Acetonitrile	20	U	40	20	ug/L			05/12/15 16:39	1
Acrolein	8.7	U	20	8.7	ug/L			05/12/15 16:39	1
Benzene	0.43	U	1.0	0.43	ug/L			05/12/15 16:39	1
2-Butanone	3.4	U	10	3.4	ug/L			05/12/15 16:39	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			05/12/15 16:39	1
Chlorobenzene	0.26	U	1.0	0.26	ug/L			05/12/15 16:39	1
1,2-Dichloropropane	0.67	U	1.0	0.67	ug/L			05/12/15 16:39	1
Ethylbenzene	0.33	U	1.0	0.33	ug/L			05/12/15 16:39	1
Ethyl methacrylate	0.40	U	1.0	0.40	ug/L			05/12/15 16:39	1
Isobutanol	20	U	50	20	ug/L			05/12/15 16:39	1
4-Methyl-2-pentanone	2.1	U	10	2.1	ug/L			05/12/15 16:39	1
m-Xylene & p-Xylene	0.35	U	1.0	0.35	ug/L			05/12/15 16:39	1
o-Xylene	0.23	U	1.0	0.23	ug/L			05/12/15 16:39	1
Styrene	0.27	U	1.0	0.27	ug/L			05/12/15 16:39	1
Tetrachloroethene	0.74	U	1.0	0.74	ug/L			05/12/15 16:39	1
Toluene	0.48	U	1.0	0.48	ug/L			05/12/15 16:39	1
trans-1,4-Dichloro-2-butene	0.51	U	2.0	0.51	ug/L			05/12/15 16:39	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			05/12/15 16:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*70 - 130*		*05/12/15 16:39*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 130*		*05/12/15 16:39*	*1*
Dibromofluoromethane (Surr)	*98*		*70 - 130*		*05/12/15 16:39*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*05/12/15 16:39*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Hercules Savannah

TestAmerica Job ID: 680-112169-1

Client Sample ID: TRIP BLANK (050415)

Lab Sample ID: 680-112169-6

Date Collected: 05/04/15 00:00
Date Received: 05/04/15 17:05

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	7.0	U	10	7.0	ug/L			05/12/15 17:22	1
Acetonitrile	20	U	40	20	ug/L			05/12/15 17:22	1
Acrolein	8.7	U	20	8.7	ug/L			05/12/15 17:22	1
Benzene	0.43	U	1.0	0.43	ug/L			05/12/15 17:22	1
2-Butanone	3.4	U	10	3.4	ug/L			05/12/15 17:22	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			05/12/15 17:22	1
Chlorobenzene	0.26	U	1.0	0.26	ug/L			05/12/15 17:22	1
1,2-Dichloropropane	0.67	U	1.0	0.67	ug/L			05/12/15 17:22	1
Ethylbenzene	0.33	U	1.0	0.33	ug/L			05/12/15 17:22	1
Ethyl methacrylate	0.40	U	1.0	0.40	ug/L			05/12/15 17:22	1
Isobutanol	20	U	50	20	ug/L			05/12/15 17:22	1
4-Methyl-2-pentanone	2.1	U	10	2.1	ug/L			05/12/15 17:22	1
m-Xylene & p-Xylene	0.35	U	1.0	0.35	ug/L			05/12/15 17:22	1
o-Xylene	0.23	U	1.0	0.23	ug/L			05/12/15 17:22	1
Styrene	0.27	U	1.0	0.27	ug/L			05/12/15 17:22	1
Tetrachloroethene	0.74	U	1.0	0.74	ug/L			05/12/15 17:22	1
Toluene	0.48	U	1.0	0.48	ug/L			05/12/15 17:22	1
trans-1,4-Dichloro-2-butene	0.51	U	2.0	0.51	ug/L			05/12/15 17:22	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			05/12/15 17:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*70 - 130*		*05/12/15 17:22*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 130*		*05/12/15 17:22*	*1*
Dibromofluoromethane (Surr)	*99*		*70 - 130*		*05/12/15 17:22*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*05/12/15 17:22*	*1*

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

Lab Sample ID: MB 680-382596/10
Matrix: Water
Analysis Batch: 382596

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	7.0	U	10	7.0	ug/L			05/12/15 11:04	1
Acetonitrile	20	U	40	20	ug/L			05/12/15 11:04	1
Acrolein	8.7	U	20	8.7	ug/L			05/12/15 11:04	1
Benzene	0.43	U	1.0	0.43	ug/L			05/12/15 11:04	1
2-Butanone	3.4	U	10	3.4	ug/L			05/12/15 11:04	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			05/12/15 11:04	1
Benzene chloride	0.26	U	1.0	0.26	ug/L			05/12/15 11:04	1
Chlorobenzene	0.26	U	1.0	0.26	ug/L			05/12/15 11:04	1
1,2-Dichloropropane	0.67	U	1.0	0.67	ug/L			05/12/15 11:04	1
Ethylbenzene	0.33	U	1.0	0.33	ug/L			05/12/15 11:04	1
Ethyl methacrylate	0.40	U	1.0	0.40	ug/L			05/12/15 11:04	1
Isobutanol	20	U	50	20	ug/L			05/12/15 11:04	1
4-Methyl-2-pentanone	2.1	U	10	2.1	ug/L			05/12/15 11:04	1
4-Methyl-2-pentanone (MIBK)	2.1	U	10	2.1	ug/L			05/12/15 11:04	1
m-Xylene & p-Xylene	0.35	U	1.0	0.35	ug/L			05/12/15 11:04	1
o-Xylene	0.23	U	1.0	0.23	ug/L			05/12/15 11:04	1
Styrene	0.27	U	1.0	0.27	ug/L			05/12/15 11:04	1
Tetrachloroethene	0.74	U	1.0	0.74	ug/L			05/12/15 11:04	1
Toluene	0.48	U	1.0	0.48	ug/L			05/12/15 11:04	1
trans-1,4-Dichloro-2-butene	0.51	U	2.0	0.51	ug/L			05/12/15 11:04	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			05/12/15 11:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*05/12/15 11:04*	*1*
Dibromofluoromethane (Surr)	*100*		*70 - 130*		*05/12/15 11:04*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*		*05/12/15 11:04*	*1*
Toluene-d8 (Surr)	*102*		*70 - 130*		*05/12/15 11:04*	*1*

Lab Sample ID: LCS 680-382596/4
Matrix: Water
Analysis Batch: 382596

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	250	226		ug/L		91	60 - 154
Acrolein	1000	1330		ug/L		133	10 - 200
Benzene	50.0	49.0		ug/L		98	73 - 131
2-Butanone	250	248		ug/L		99	75 - 133
Carbon disulfide	50.0	48.1		ug/L		96	73 - 127
Benzene chloride	50.0	47.9		ug/L		96	80 - 120
Chlorobenzene	50.0	47.9		ug/L		96	80 - 120
1,2-Dichloropropane	50.0	49.3		ug/L		99	80 - 123
Ethylbenzene	50.0	49.5		ug/L		99	80 - 120
Ethyl methacrylate	50.0	50.0		ug/L		100	75 - 138
Isobutanol	1250	1260		ug/L		100	61 - 151
4-Methyl-2-pentanone	250	248		ug/L		99	75 - 135
4-Methyl-2-pentanone (MIBK)	250	248		ug/L		99	75 - 135
m-Xylene & p-Xylene	50.0	49.6		ug/L		99	80 - 120
o-Xylene	50.0	50.2		ug/L		100	80 - 120

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

Lab Sample ID: LCS 680-382596/4
Matrix: Water
Analysis Batch: 382596

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Styrene	50.0	49.5		ug/L		99	80 - 122
Tetrachloroethene	50.0	48.0		ug/L		96	77 - 123
Toluene	50.0	50.3		ug/L		101	80 - 122
trans-1,4-Dichloro-2-butene	50.0	53.2		ug/L		106	55 - 147
Xylenes, Total	100	99.8		ug/L		100	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*
Dibromofluoromethane (Surr)	*96*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*

Lab Sample ID: LCSD 680-382596/5
Matrix: Water
Analysis Batch: 382596

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
Acetone	250	243		ug/L		97	60 - 154	7	40
Acrolein	1000	1450		ug/L		145	10 - 200	9	50
Benzene	50.0	48.4		ug/L		97	73 - 131	1	30
2-Butanone	250	248		ug/L		99	75 - 133	0	30
Carbon disulfide	50.0	48.8		ug/L		98	73 - 127	2	20
Benzene chloride	50.0	47.3		ug/L		95	80 - 120	1	20
Chlorobenzene	50.0	47.3		ug/L		95	80 - 120	1	20
1,2-Dichloropropane	50.0	50.0		ug/L		100	80 - 123	1	20
Ethylbenzene	50.0	48.4		ug/L		97	80 - 120	2	20
Ethyl methacrylate	50.0	51.6		ug/L		103	75 - 138	3	30
Isobutanol	1250	1280		ug/L		102	61 - 151	2	40
4-Methyl-2-pentanone	250	251		ug/L		101	75 - 135	1	30
4-Methyl-2-pentanone (MIBK)	250	251		ug/L		101	75 - 135	1	30
m-Xylene & p-Xylene	50.0	48.3		ug/L		97	80 - 120	3	20
o-Xylene	50.0	49.0		ug/L		98	80 - 120	2	20
Styrene	50.0	48.9		ug/L		98	80 - 122	1	20
Tetrachloroethene	50.0	46.9		ug/L		94	77 - 123	2	20
Toluene	50.0	49.1		ug/L		98	80 - 122	2	20
trans-1,4-Dichloro-2-butene	50.0	53.6		ug/L		107	55 - 147	1	40
Xylenes, Total	100	97.3		ug/L		97	80 - 120	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*
Dibromofluoromethane (Surr)	*96*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 130*
Toluene-d8 (Surr)	*96*		*70 - 130*

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

Lab Sample ID: MB 680-381679/11-A
Matrix: Water
Analysis Batch: 383051

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 381679

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.10	U	0.20	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Acenaphthylene	0.10	U	0.20	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Acetophenone	0.30	U	1.0	0.30	ug/L		05/06/15 17:19	05/14/15 19:28	1
Aniline	0.97	U	2.0	0.97	ug/L		05/06/15 17:19	05/14/15 19:28	1
Anthracene	0.10	U	0.20	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Benzo[a]anthracene	0.10	U	0.20	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Benzo[a]pyrene	0.10	U	0.20	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Benzo[b]fluoranthene	0.10	U	0.20	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Benzo[g,h,i]perylene	0.10	U	0.20	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Benzo[k]fluoranthene	0.10	U	0.20	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
1,1'-Biphenyl	0.10	U	1.0	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Bis(2-chloroethyl)ether	0.10	U	1.0	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Bis(2-ethylhexyl)phthalate	2.0	U	5.0	2.0	ug/L		05/06/15 17:19	05/14/15 19:28	1
Butyl benzyl phthalate	0.12	U	1.0	0.12	ug/L		05/06/15 17:19	05/14/15 19:28	1
Chrysene	0.045	U	0.20	0.045	ug/L		05/06/15 17:19	05/14/15 19:28	1
Dibenz(a,h)anthracene	0.10	U	0.20	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Dibenzofuran	0.10	U	1.0	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
2,4-Xylenol	0.69	U	2.0	0.69	ug/L		05/06/15 17:19	05/14/15 19:28	1
1,3-Dinitrobenzene	0.10	U	1.0	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Di-n-octyl phthalate	0.17	U	1.0	0.17	ug/L		05/06/15 17:19	05/14/15 19:28	1
1,4-Dioxane	0.31	U	2.0	0.31	ug/L		05/06/15 17:19	05/14/15 19:28	1
Ethyl Parathion	0.10	U	2.0	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Fluoranthene	0.10	U	0.20	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Fluorene	0.10	U	0.20	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Indeno[1,2,3-cd]pyrene	0.10	U	0.20	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
2-Methylphenol	0.74	U	2.0	0.74	ug/L		05/06/15 17:19	05/14/15 19:28	1
3 & 4 Methylphenol	0.66	U	2.0	0.66	ug/L		05/06/15 17:19	05/14/15 19:28	1
Naphthalene	0.10	U	0.20	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
N-Nitrosodi-n-butylamine	0.10	U	1.0	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
N-Nitrosomethylethylamine	0.10	U	2.0	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Phenanthrene	0.10	U	0.20	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Phenol	0.13	U	1.0	0.13	ug/L		05/06/15 17:19	05/14/15 19:28	1
Pyrene	0.10	U	0.20	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*69*		*30 - 130*	*05/06/15 17:19*	*05/14/15 19:28*	*1*
2-Fluorobiphenyl	*69*		*34 - 130*	*05/06/15 17:19*	*05/14/15 19:28*	*1*
2-Fluorophenol (Surr)	*73*		*25 - 130*	*05/06/15 17:19*	*05/14/15 19:28*	*1*
Nitrobenzene-d5 (Surr)	*76*		*32 - 130*	*05/06/15 17:19*	*05/14/15 19:28*	*1*
Phenol-d5 (Surr)	*75*		*27 - 130*	*05/06/15 17:19*	*05/14/15 19:28*	*1*
Terphenyl-d14 (Surr)	*78*		*36 - 130*	*05/06/15 17:19*	*05/14/15 19:28*	*1*

Lab Sample ID: LCS 680-381679/12-A
Matrix: Water
Analysis Batch: 383051

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 381679

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	10.0	7.05		ug/L		70	42 - 130

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level (Continued)

Lab Sample ID: LCS 680-381679/12-A
Matrix: Water
Analysis Batch: 383051

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 381679

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthylene	10.0	5.39		ug/L		54	45 - 130
Acetophenone	10.0	7.58		ug/L		76	45 - 130
Aniline	10.0	4.75		ug/L		47	10 - 130
Anthracene	10.0	7.29		ug/L		73	58 - 130
Benzo[a]anthracene	10.0	7.77		ug/L		78	42 - 143
Benzo[a]pyrene	10.0	7.09		ug/L		71	45 - 151
Benzo[b]fluoranthene	10.0	8.65		ug/L		87	41 - 140
Benzo[g,h,i]perylene	10.0	5.71		ug/L		57	27 - 134
Benzo[k]fluoranthene	10.0	7.70		ug/L		77	45 - 140
1,1'-Biphenyl	10.0	6.72		ug/L		67	50 - 130
Bis(2-chloroethyl)ether	10.0	8.13		ug/L		81	36 - 130
Bis(2-ethylhexyl)phthalate	10.0	8.58		ug/L		86	10 - 158
Butyl benzyl phthalate	10.0	7.89		ug/L		79	60 - 130
Chrysene	10.0	7.55		ug/L		76	40 - 142
Dibenz(a,h)anthracene	10.0	6.83		ug/L		68	38 - 130
Dibenzofuran	10.0	7.12		ug/L		71	56 - 130
2,4-Xylenol	10.0	7.46		ug/L		75	41 - 130
1,3-Dinitrobenzene	10.0	7.76		ug/L		78	10 - 130
Di-n-octyl phthalate	10.0	8.22		ug/L		82	19 - 130
1,4-Dioxane	10.0	6.34		ug/L		63	10 - 130
Fluoranthene	10.0	7.95		ug/L		80	46 - 136
Fluorene	10.0	7.32		ug/L		73	48 - 130
Indeno[1,2,3-cd]pyrene	10.0	6.54		ug/L		65	12 - 130
2-Methylphenol	10.0	7.54		ug/L		75	49 - 130
3 & 4 Methylphenol	10.0	7.69		ug/L		77	55 - 130
Naphthalene	10.0	6.52		ug/L		65	35 - 130
Phenanthrene	10.0	7.41		ug/L		74	45 - 134
Phenol	10.0	7.70		ug/L		77	44 - 130
Pyrene	10.0	7.30		ug/L		73	47 - 143

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*62*		*30 - 130*
2-Fluorobiphenyl	*61*		*34 - 130*
2-Fluorophenol (Surr)	*63*		*25 - 130*
Nitrobenzene-d5 (Surr)	*64*		*32 - 130*
Phenol-d5 (Surr)	*63*		*27 - 130*
Terphenyl-d14 (Surr)	*64*		*36 - 130*

Lab Sample ID: LCS 680-381679/15-A
Matrix: Water
Analysis Batch: 383051

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 381679

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethyl Parathion	10.0	8.28		ug/L		83	10 - 130
N-Nitrosodi-n-butylamine	10.0	8.55		ug/L		86	10 - 130
N-Nitrosomethylethylamine	10.0	8.41		ug/L		84	10 - 130

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level (Continued)

Lab Sample ID: LCS 680-381679/15-A
Matrix: Water
Analysis Batch: 383051

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 381679

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	*59*		*30 - 130*
2-Fluorobiphenyl	*67*		*34 - 130*
2-Fluorophenol (Surr)	*57*		*25 - 130*
Nitrobenzene-d5 (Surr)	*71*		*32 - 130*
Phenol-d5 (Surr)	*64*		*27 - 130*
Terphenyl-d14 (Surr)	*70*		*36 - 130*

Lab Sample ID: 680-112169-1 MS
Matrix: Water
Analysis Batch: 383051

Client Sample ID: MW-27
Prep Type: Total/NA
Prep Batch: 381679

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	0.098	U	9.94	4.43		ug/L		45	42 - 130
Acenaphthylene	0.098	U	9.94	4.67		ug/L		47	45 - 130
Acetophenone	0.29	U	9.94	5.26		ug/L		53	45 - 130
Aniline	0.95	U	9.94	4.69		ug/L		47	10 - 130
Anthracene	0.098	U F1	9.94	4.20	F1	ug/L		42	58 - 130
Benzo[a]anthracene	0.098	U	9.94	4.40		ug/L		44	42 - 143
Benzo[a]pyrene	0.098	U F1	9.94	4.40	F1	ug/L		44	45 - 151
Benzo[b]fluoranthene	0.098	U	9.94	4.83		ug/L		49	41 - 140
Benzo[g,h,i]perylene	0.098	U	9.94	2.84		ug/L		29	27 - 134
Benzo[k]fluoranthene	0.098	U	9.94	4.54		ug/L		46	45 - 140
1,1'-Biphenyl	0.098	U F1	9.94	4.06	F1	ug/L		41	50 - 130
Bis(2-chloroethyl)ether	0.098	U	9.94	5.52		ug/L		56	36 - 130
Bis(2-ethylhexyl)phthalate	2.0	U	9.94	5.02		ug/L		51	10 - 158
Butyl benzyl phthalate	0.12	U F1	9.94	5.38	F1	ug/L		54	60 - 130
Chrysene	0.044	U	9.94	4.37		ug/L		44	40 - 142
Dibenz(a,h)anthracene	0.098	U F1	9.94	3.32	F1	ug/L		33	38 - 130
Dibenzofuran	0.098	U F1	9.94	4.37	F1	ug/L		44	56 - 130
2,4-Xylenol	0.68	U	9.94	4.85		ug/L		49	41 - 130
1,3-Dinitrobenzene	0.098	U	9.94	5.23		ug/L		53	10 - 130
Di-n-octyl phthalate	0.17	U	9.94	4.61		ug/L		46	19 - 130
1,4-Dioxane	0.30	U	9.94	4.23		ug/L		43	10 - 130
Fluoranthene	0.098	U	9.94	4.71		ug/L		47	46 - 136
Fluorene	0.098	U F1	9.94	4.44	F1	ug/L		45	48 - 130
Indeno[1,2,3-cd]pyrene	0.098	U	9.94	3.17		ug/L		32	12 - 130
2-Methylphenol	0.73	U	9.94	5.08		ug/L		51	49 - 130
3 & 4 Methylphenol	0.65	U F1	9.94	5.10	F1	ug/L		51	55 - 130
Naphthalene	0.098	U	9.94	4.04		ug/L		41	35 - 130
Phenanthrene	0.098	U F1	9.94	4.31	F1	ug/L		43	45 - 134
Phenol	0.13	U	9.94	5.00		ug/L		50	44 - 130
Pyrene	0.098	U F1	9.94	4.42	F1	ug/L		45	47 - 143

Surrogate	MS %Recovery	MS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	*43*		*30 - 130*
2-Fluorobiphenyl	*43*		*34 - 130*
2-Fluorophenol (Surr)	*44*		*25 - 130*

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level (Continued)

Lab Sample ID: 680-112169-1 MS
Matrix: Water
Analysis Batch: 383051

Client Sample ID: MW-27
Prep Type: Total/NA
Prep Batch: 381679

Surrogate	MS %Recovery	MS Qualifier	Limits
Nitrobenzene-d5 (Surr)	*47*		*32 - 130*
Phenol-d5 (Surr)	*44*		*27 - 130*
Terphenyl-d14 (Surr)	*42*		*36 - 130*

Lab Sample ID: 680-112169-1 MSD
Matrix: Water
Analysis Batch: 383051

Client Sample ID: MW-27
Prep Type: Total/NA
Prep Batch: 381679

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	0.098	U	9.29	6.30		ug/L		68	42 - 130	35	50
Acenaphthylene	0.098	U	9.29	6.50		ug/L		70	45 - 130	33	50
Acetophenone	0.29	U	9.29	6.45		ug/L		69	45 - 130	20	50
Aniline	0.95	U	9.29	6.04		ug/L		65	10 - 130	25	50
Anthracene	0.098	U F1	9.29	6.18		ug/L		67	58 - 130	38	50
Benzo[a]anthracene	0.098	U	9.29	6.27		ug/L		67	42 - 143	35	50
Benzo[a]pyrene	0.098	U F1	9.29	6.63		ug/L		71	45 - 151	40	50
Benzo[b]fluoranthene	0.098	U	9.29	7.19		ug/L		77	41 - 140	39	50
Benzo[g,h,i]perylene	0.098	U	9.29	3.49		ug/L		38	27 - 134	21	50
Benzo[k]fluoranthene	0.098	U	9.29	6.58		ug/L		71	45 - 140	37	50
1,1'-Biphenyl	0.098	U F1	9.29	5.97		ug/L		64	50 - 130	38	50
Bis(2-chloroethyl)ether	0.098	U	9.29	6.53		ug/L		70	36 - 130	17	50
Bis(2-ethylhexyl)phthalate	2.0	U	9.29	7.57		ug/L		82	10 - 158	41	50
Butyl benzyl phthalate	0.12	U F1	9.29	7.74		ug/L		83	60 - 130	36	50
Chrysene	0.044	U	9.29	6.25		ug/L		67	40 - 142	35	50
Dibenz(a,h)anthracene	0.098	U F1	9.29	4.22		ug/L		45	38 - 130	24	50
Dibenzofuran	0.098	U F1	9.29	6.24		ug/L		67	56 - 130	35	50
2,4-Xylenol	0.68	U	9.29	6.01		ug/L		65	41 - 130	21	50
1,3-Dinitrobenzene	0.098	U	9.29	6.88		ug/L		74	10 - 130	27	50
Di-n-octyl phthalate	0.17	U	9.29	7.27		ug/L		78	19 - 130	45	50
1,4-Dioxane	0.30	U	9.29	4.82		ug/L		52	10 - 130	13	50
Fluoranthene	0.098	U	9.29	6.74		ug/L		73	46 - 136	36	50
Fluorene	0.098	U F1	9.29	6.39		ug/L		69	48 - 130	36	50
Indeno[1,2,3-cd]pyrene	0.098	U	9.29	4.09		ug/L		44	12 - 130	26	50
2-Methylphenol	0.73	U	9.29	6.36		ug/L		68	49 - 130	22	50
3 & 4 Methylphenol	0.65	U F1	9.29	6.64		ug/L		71	55 - 130	26	50
Naphthalene	0.098	U	9.29	5.66		ug/L		61	35 - 130	34	50
Phenanthrene	0.098	U F1	9.29	6.49		ug/L		70	45 - 134	40	50
Phenol	0.13	U	9.29	6.73		ug/L		72	44 - 130	29	50
Pyrene	0.098	U F1	9.29	6.53		ug/L		70	47 - 143	38	50

Surrogate	MSD %Recovery	MSD Qualifier	Limits
2,4,6-Tribromophenol (Surr)	*60*		*30 - 130*
2-Fluorobiphenyl	*56*		*34 - 130*
2-Fluorophenol (Surr)	*56*		*25 - 130*
Nitrobenzene-d5 (Surr)	*58*		*32 - 130*
Phenol-d5 (Surr)	*62*		*27 - 130*
Terphenyl-d14 (Surr)	*59*		*36 - 130*

GC/MS VOA

Analysis Batch: 382596

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112169-1	MW-27	Total/NA	Water	8260B	
680-112169-2	MW-F7	Total/NA	Water	8260B	
680-112169-3	MW-F21	Total/NA	Water	8260B	
680-112169-4	MWD-30 (050415)	Total/NA	Water	8260B	
680-112169-5	DUP-01 (050415)	Total/NA	Water	8260B	
680-112169-6	TRIP BLANK (050415)	Total/NA	Water	8260B	
LCS 680-382596/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-382596/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-382596/10	Method Blank	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 381679

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112169-1	MW-27	Total/NA	Water	3520C	
680-112169-1 MS	MW-27	Total/NA	Water	3520C	
680-112169-1 MSD	MW-27	Total/NA	Water	3520C	
680-112169-2	MW-F7	Total/NA	Water	3520C	
680-112169-3	MW-F21	Total/NA	Water	3520C	
680-112169-3 - DL	MW-F21	Total/NA	Water	3520C	
680-112169-4	MWD-30 (050415)	Total/NA	Water	3520C	
LCS 680-381679/12-A	Lab Control Sample	Total/NA	Water	3520C	
LCS 680-381679/15-A	Lab Control Sample	Total/NA	Water	3520C	
MB 680-381679/11-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 382643

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112169-3 - DL	MW-F21	Total/NA	Water	8270D LL	381679

Analysis Batch: 383051

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112169-1 MS	MW-27	Total/NA	Water	8270D LL	381679
680-112169-1 MSD	MW-27	Total/NA	Water	8270D LL	381679
LCS 680-381679/12-A	Lab Control Sample	Total/NA	Water	8270D LL	381679
LCS 680-381679/15-A	Lab Control Sample	Total/NA	Water	8270D LL	381679
MB 680-381679/11-A	Method Blank	Total/NA	Water	8270D LL	381679

Analysis Batch: 383233

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112169-1	MW-27	Total/NA	Water	8270D LL	381679
680-112169-2	MW-F7	Total/NA	Water	8270D LL	381679
680-112169-3	MW-F21	Total/NA	Water	8270D LL	381679
680-112169-4	MWD-30 (050415)	Total/NA	Water	8270D LL	381679

Client Sample ID: MW-27

Lab Sample ID: 680-112169-1
Matrix: Water

Date Collected: 05/04/15 12:00
Date Received: 05/04/15 17:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	382596	05/12/15 17:43	JD1	TAL SAV
Total/NA	Prep	3520C			508.9 mL	0.5 mL	381679	05/06/15 17:19	RBS	TAL SAV
Total/NA	Analysis	8270D LL		1	508.9 mL	0.5 mL	383233	05/15/15 19:23	NED	TAL SAV

Client Sample ID: MW-F7

Lab Sample ID: 680-112169-2
Matrix: Water

Date Collected: 05/04/15 13:00
Date Received: 05/04/15 17:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	382596	05/12/15 18:26	JD1	TAL SAV
Total/NA	Prep	3520C			1039.1 mL	1.0 mL	381679	05/06/15 17:19	RBS	TAL SAV
Total/NA	Analysis	8270D LL		1	1039.1 mL	1.0 mL	383233	05/15/15 19:51	NED	TAL SAV

Client Sample ID: MW-F21

Lab Sample ID: 680-112169-3
Matrix: Water

Date Collected: 05/04/15 13:45
Date Received: 05/04/15 17:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	382596	05/12/15 18:05	JD1	TAL SAV
Total/NA	Prep	3520C			1035 mL	1.0 mL	381679	05/06/15 17:19	RBS	TAL SAV
Total/NA	Analysis	8270D LL		1	1035 mL	1.0 mL	383233	05/15/15 20:19	NED	TAL SAV
Total/NA	Prep	3520C	DL		1035 mL	1.0 mL	381679	05/06/15 17:19	RBS	TAL SAV
Total/NA	Analysis	8270D LL	DL	10	1035 mL	1.0 mL	382643	05/18/15 05:22	NED	TAL SAV

Client Sample ID: MWD-30 (050415)

Lab Sample ID: 680-112169-4
Matrix: Water

Date Collected: 05/04/15 14:20
Date Received: 05/04/15 17:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	382596	05/12/15 17:00	JD1	TAL SAV
Total/NA	Prep	3520C			1033.3 mL	1.0 mL	381679	05/06/15 17:19	RBS	TAL SAV
Total/NA	Analysis	8270D LL		1	1033.3 mL	1.0 mL	383233	05/15/15 20:47	NED	TAL SAV

Client Sample ID: DUP-01 (050415)

Lab Sample ID: 680-112169-5
Matrix: Water

Date Collected: 05/04/15 00:00
Date Received: 05/04/15 17:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	382596	05/12/15 16:39	JD1	TAL SAV

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Hercules Savannah

TestAmerica Job ID: 680-112169-1

Client Sample ID: TRIP BLANK (050415)

Lab Sample ID: 680-112169-6

Date Collected: 05/04/15 00:00
Date Received: 05/04/15 17:05

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		1	5 mL	5 mL	382596	05/12/15 17:22	JD1	TAL SAV

Laboratory References:

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

Serial Number 92834

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
Ashland-Hercules	68001205	
TAL (LAB) PROJECT MANAGER	P.O NUMBER	CONTRACT NO
Smith, Kathryn	4501696543	
CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
David Wilderman	770-428-9009	
CLIENT NAME	CLIENT E-MAIL	
Arcadis	dwilderman@arcadis-us.com	
CLIENT ADDRESS		
2410 Paces Ferry Rd Ste 400, GA 30339		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ☒

DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ○

DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 1

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX: COMPOSITE (C) OR GRAB (G) INDICATE	MATRIX: AQUEOUS (WATER)	MATRIX: SOLID OR SEMISOLID	MATRIX: AIR	MATRIX: NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	REQUIRED ANALYSIS: HCL 8260B	REQUIRED ANALYSIS: NONE 8270C	NUMBER OF CONTAINERS SUBMITTED	REMARKS
5-4-15	1200	MW-27		X				3	2		
5-4-15	1300	MW-F7		X				3	2		
5-4-15	1345	MW-F21		X				3	2		
5-4-15	1420	MWD-30(050415)		X				3	2		
5-4-15	—	DUP-01(050415)		X				3			
5-4-15	—	TRIP BLANK(050415)		X				2			

680-112169 Chain of Custody

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
	5-4-15	1645						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
	5/4/15	17:05	YES ○ NO ○			2.0°C 2.4°C CF

TAL8240-680 (1008)

Page 23 of 27

10/5/2015

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-112169-1

Login Number: 112169
List Number: 1
Creator: Banda, Christy S

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
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 containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Hercules Savannah

TestAmerica Job ID: 680-112169-1

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-17
A2LA	ISO/IEC 17025		399.01	02-28-17
Alabama	State Program	4	41450	06-30-16
Arkansas DEQ	State Program	6	88-0692	01-31-16
California	State Program	9	2939	07-31-16
Colorado	State Program	8	N/A	12-31-15
Connecticut	State Program	1	PH-0161	03-31-17
Florida	NELAP	4	E87052	06-30-16
GA Dept. of Agriculture	State Program	4	N/A	06-12-17
Georgia	State Program	4	803	06-30-16
Guam	State Program	9	14-004r	04-16-16
Hawaii	State Program	9	N/A	06-30-16
Illinois	NELAP	5	200022	11-30-15
Indiana	State Program	5	N/A	06-30-15 *
Iowa	State Program	7	353	06-30-17
Kentucky (DW)	State Program	4	90084	12-31-15
Kentucky (UST)	State Program	4	18	06-30-16
Kentucky (WW)	State Program	4	90084	12-31-15
Louisiana	NELAP	6	30690	06-30-16
Louisiana (DW)	NELAP	6	LA150014	12-31-15
Maine	State Program	1	GA00006	09-24-16
Maryland	State Program	3	250	12-31-15
Massachusetts	State Program	1	M-GA006	06-30-16
Michigan	State Program	5	9925	03-05-16
Mississippi	State Program	4	N/A	06-30-15 *
Montana	State Program	8	CERT0081	12-31-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-16
New Jersey	NELAP	2	GA769	10-30-16 *
New Mexico	State Program	6	N/A	06-30-16
New York	NELAP	2	10842	03-31-16
North Carolina (DW)	State Program	4	13701	07-31-16
North Carolina (WW/SW)	State Program	4	269	12-31-15
Oklahoma	State Program	6	9984	08-31-16
Pennsylvania	NELAP	3	68-00474	06-30-16
Puerto Rico	State Program	2	GA00006	12-31-15
South Carolina	State Program	4	98001	06-30-15 *
Tennessee	State Program	4	TN02961	06-30-16
Texas	NELAP	6	T104704185-14-7	11-30-15
USDA	Federal		SAV 3-04	06-11-17
Virginia	NELAP	3	460161	06-14-16
Washington	State Program	10	C805	06-10-16
West Virginia (DW)	State Program	3	9950C	12-31-15
West Virginia DEP	State Program	3	094	06-30-16
Wisconsin	State Program	5	999819810	08-31-16
Wyoming	State Program	8	8TMS-L	06-30-16

* Certification renewal pending - certification considered valid.

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: 680-112191-1
Client Project/Site: Hercules Savannah
Revision: 1

For:
ARCADIS U.S., Inc.
2410 Paces Ferry Road
Suite 400
Atlanta, Georgia 30339

Attn: Chris Miller

Kathryn Smith

Authorized for release by:
10/5/2015 1:23:40 PM

Kathryn Smith, Project Manager II
(912)354-7858
kathy.smith@testamericainc.com

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Hercules Savannah

TestAmerica Job ID: 680-112191-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
*	LCS or LCSD is outside acceptance limits.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Dioxin

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.
B	Compound was found in the blank and sample.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

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
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Hercules Savannah

TestAmerica Job ID: 680-112191-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8270D LL	Semivolatile Organic Compounds by GC/MS - Low Level	SW846	TAL SAV
8081B/8082A	Organochlorine Pesticides and Polychlorinated Biphenyls by Gas Chromatography	SW846	TAL SAV
1668C	Chlorinated Biphenyl Congeners (HRGC/HRMS)	EPA	TAL SAC
Asbestos	EPA 100.2 Asbestos in Drinking Water	NONE	EMSL

Protocol References:

EPA = US Environmental Protection Agency

NONE = NONE

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

Laboratory References:

EMSL = EMSL Analytical, Inc., 200 Rt 130 North, Cinnaminson, NJ 08077

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

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

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Hercules Savannah

TestAmerica Job ID: 680-112191-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-112191-1	MW-F3R (050515)	Water	05/05/15 10:20	05/05/15 13:00
680-112191-2	MW-F5 (050515)	Water	05/05/15 10:55	05/05/15 13:00
680-112191-3	MW-29 (050515)	Water	05/05/15 11:30	05/05/15 13:00
680-112191-4	MW-F15 (050515)	Water	05/05/15 12:05	05/05/15 13:00
680-112191-5	TRIP BLANK (050515)	Water	05/05/15 00:00	05/05/15 13:00

Job ID: 680-112191-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE
Client: ARCADIS U.S., Inc.
Project: Hercules Savannah

Report Number: 680-112191-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT
The samples were received on 05/05/2015; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.0 C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)
Samples MW-F5 (050515) (680-112191-2), MW-29 (050515) (680-112191-3), MW-F15 (050515) (680-112191-4) and TRIP BLANK (050515) (680-112191-5) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 05/12/2015.

1,1,1,2-Tetrachloroethane and trans-1,4-Dichloro-2-butene recovered high for LCS 680-382593/4 and LCSD 680-382593/5.

The continuing calibration verification (CCV) associated with batch 382593 recovered above the upper control limit for trans-1,4-dichloro-2-butene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: (CCVIS 680-382593/3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SEMIVOLATILE ORGANIC COMPOUNDS (GC/MS) - LOW LEVEL
Samples MW-F5 (050515) (680-112191-2) and MW-29 (050515) (680-112191-3) were analyzed for Semivolatile Organic Compounds (GC/MS) - Low level in accordance with EPA SW-846 Method 8270D. The samples were prepared on 05/06/2015 and analyzed on 05/15/2015.

Bis(2-chloroethoxy)methane and Hexachlorocyclopentadiene recovered low for LCS 680-381679/12-A. Dimethoate, Famphur and Methyl parathion recovered low for LCS 680-381679/15-A.

Several analytes recovered low for the MS/MSD of sample MW-F5 (050515) (680-112191-2) in batch 680-383051. Several analytes exceeded the RPD limit.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PESTICIDES AND PCBS
Sample MW-F3R (050515) (680-112191-1) was analyzed for Pesticides and PCBs in accordance with EPA SW-846 Method 8081B_8082A. The samples were prepared on 05/06/2015 and analyzed on 05/07/2015.

This method incorporates 2nd column confirmation. Corrective action is not taken for surrogate/spike compounds unless results from both columns are unacceptable. Results outside criteria are qualified.

PCB-1016 exceeded the RPD limit for the MSD of sample MW-F3R (050515)MSD (680-112191-1) in batch 680-381944.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Job ID: 680-112191-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

CHLORINATED BIPHENYL CONGENERS

Sample MW-F3R (050515) (680-112191-1) was analyzed for chlorinated biphenyl congeners in accordance with EPA method 1668C. The samples were prepared on 05/12/2015 and analyzed on 05/13/2015.

Several analytes were detected in method blank MB 320-73648/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Client Sample ID: MW-F3R (050515)

Lab Sample ID: 680-112191-1

Date Collected: 05/05/15 10:20
Date Received: 05/05/15 13:00

Matrix: Water

Method: 8081B/8082A - Organochlorine Pesticides and Polychlorinated Biphenyls by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1254	0.11	U	0.99	0.11	ug/L		05/06/15 17:19	05/07/15 16:48	1
PCB-1260	0.12	U	0.99	0.12	ug/L		05/06/15 17:19	05/07/15 16:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*22*		*14 - 130*	*05/06/15 17:19*	*05/07/15 16:48*	*1*
Tetrachloro-m-xylene	*46*		*40 - 130*	*05/06/15 17:19*	*05/07/15 16:48*	*1*

Method: 1668C - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	**5.2**	**J**	190	0.46	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-10	5.5	U	190	5.5	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-100	0.96	U	390	0.96	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-101	**6.2**	**J B**	580	0.83	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-102	0.87	U	390	0.87	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-103	0.90	U	190	0.90	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-104	0.60	U	190	0.60	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-105	**3.2**	**J**	19	0.85	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-106	0.79	U	190	0.79	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-107	0.75	U	390	0.75	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-108	**5.6**	**J B**	1200	0.83	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-109	0.76	U	190	0.76	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-11	5.9	U	190	5.9	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-110	**8.1**	**J B**	390	0.71	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-111	0.67	U	190	0.67	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-112	0.66	U	190	0.66	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-113	**6.2**	**J B**	190	0.83	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-114	0.81	U	19	0.81	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-115	**8.1**	**J B**	390	0.71	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-116	0.81	U	580	0.81	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-117	0.81	U	580	0.81	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-118	**6.9**	**J B**	19	0.78	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-119	**5.6**	**J B**	1200	0.83	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-12	5.7	U	390	5.7	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-120	0.72	U	190	0.72	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-121	0.70	U	190	0.70	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-122	0.85	U	190	0.85	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-123	0.77	U	19	0.77	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-124	0.75	U	390	0.75	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-125	**5.6**	**J B**	1200	0.83	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-126	1.1	U	19	1.1	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-127	0.87	U	190	0.87	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-128	0.74	U	390	0.74	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-129	**4.6**	**J q B**	580	0.74	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-13	5.7	U	390	5.7	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-130	0.93	U	190	0.93	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-131	0.87	U	190	0.87	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-132	**2.0**	**J**	190	0.81	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-133	0.79	U	190	0.79	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-134	0.82	U	390	0.82	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-135	0.77	U	390	0.77	pg/L		05/12/15 08:41	05/13/15 21:51	1

Client Sample ID: MW-F3R (050515)

Date Collected: 05/05/15 10:20
Date Received: 05/05/15 13:00

Lab Sample ID: 680-112191-1
Matrix: Water

Method: 1668C - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-136	0.58	U	190	0.58	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-137	0.80	U	190	0.80	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-138	**4.6**	**J q B**	580	0.74	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-139	0.73	U	390	0.73	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-14	5.0	U	190	5.0	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-140	0.73	U	390	0.73	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-141	0.76	U	190	0.76	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-142	0.78	U	190	0.78	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-143	0.82	U	390	0.82	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-144	0.73	U	190	0.73	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-145	0.54	U	190	0.54	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-146	0.78	U	190	0.78	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-147	**3.8**	**J B**	390	0.74	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-148	0.72	U	190	0.72	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-149	**3.8**	**J B**	390	0.74	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-15	6.6	U	190	6.6	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-150	0.51	U	190	0.51	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-151	0.77	U	390	0.77	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-152	0.55	U	190	0.55	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-153	**2.7**	**J B**	390	0.63	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-154	0.65	U	190	0.65	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-155	0.49	U	190	0.49	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-156	0.98	U	39	0.98	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-157	0.98	U	39	0.98	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-158	0.58	U	190	0.58	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-159	0.72	U	190	0.72	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-16	1.4	U	190	1.4	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-160	0.70	U	190	0.70	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-161	0.58	U	190	0.58	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-162	0.66	U	190	0.66	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-163	**4.6**	**J q B**	580	0.74	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-164	0.60	U	190	0.60	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-165	0.67	U	190	0.67	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-166	0.74	U	190	0.74	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-167	0.65	U	19	0.65	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-168	**2.7**	**J B**	390	0.63	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-169	0.95	U	19	0.95	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-17	1.2	U	190	1.2	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-170	0.61	U	190	0.61	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-171	0.53	U	390	0.53	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-172	0.54	U	190	0.54	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-173	0.53	U	390	0.53	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-174	0.50	U	190	0.50	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-175	0.77	U	190	0.77	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-176	0.52	U	190	0.52	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-177	0.53	U	190	0.53	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-178	0.78	U	190	0.78	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-179	0.57	U	190	0.57	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-18	**3.1**	**J B**	390	1.0	pg/L		05/12/15 08:41	05/13/15 21:51	1

Client: ARCADIS U.S., Inc.
Project/Site: Hercules Savannah

TestAmerica Job ID: 680-112191-1

Client Sample ID: MW-F3R (050515)
Date Collected: 05/05/15 10:20
Date Received: 05/05/15 13:00

Lab Sample ID: 680-112191-1
Matrix: Water

Method: 1668C - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-180	1.1	U	390	1.1	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-181	0.47	U	190	0.47	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-182	0.70	U	190	0.70	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-183	0.90	U	190	0.90	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-184	0.57	U	190	0.57	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-185	0.47	U	190	0.47	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-186	**5.9**	**J B**	190	0.55	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-187	**1.6**	**J q**	190	0.73	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-188	0.56	U	190	0.56	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-189	1.5	U	19	1.5	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-19	1.3	U	190	1.3	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-190	0.43	U	190	0.43	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-191	0.41	U	190	0.41	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-192	0.43	U	190	0.43	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-193	1.1	U	390	1.1	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-194	1.7	U	190	1.7	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-195	1.5	U	190	1.5	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-196	1.0	U	190	1.0	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-197	0.65	U	190	0.65	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-198	1.0	U	390	1.0	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-199	1.0	U	390	1.0	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-2	0.51	U	190	0.51	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-20	3.2	U	390	3.2	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-200	0.66	U	190	0.66	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-201	0.64	U	190	0.64	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-202	0.68	U	190	0.68	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-203	0.98	U	190	0.98	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-204	0.66	U	190	0.66	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-205	1.4	U	190	1.4	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-206	1.7	U	190	1.7	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-207	1.0	U	190	1.0	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-208	1.2	U	190	1.2	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-209	1.4	U	190	1.4	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-21	2.8	U	390	2.8	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-22	3.4	U	190	3.4	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-23	2.9	U	190	2.9	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-24	0.93	U	190	0.93	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-25	2.9	U	190	2.9	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-26	3.1	U	390	3.1	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-27	0.94	U	190	0.94	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-28	3.2	U	390	3.2	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-29	3.1	U	390	3.1	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-3	**1.4**	**J**	190	0.53	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-30	**3.1**	**J B**	390	1.0	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-31	2.9	U	190	2.9	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-32	**1.3**	**J**	190	0.84	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-33	2.8	U	390	2.8	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-34	3.3	U	190	3.3	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-35	3.4	U	190	3.4	pg/L		05/12/15 08:41	05/13/15 21:51	1

Client Sample ID: MW-F3R (050515)

Date Collected: 05/05/15 10:20
Date Received: 05/05/15 13:00

Lab Sample ID: 680-112191-1

Matrix: Water

Method: 1668C - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-36	3.1	U	190	3.1	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-37	4.0	U	190	4.0	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-38	3.3	U	190	3.3	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-39	3.0	U	190	3.0	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-4	7.7	U	190	7.7	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-40	**2.0**	**J**	390	0.65	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-41	0.79	U	190	0.79	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-42	1.0	U	190	1.0	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-43	0.73	U	190	0.73	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-44	**33**	**J B**	580	0.64	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-45	**28**	**J**	190	0.83	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-46	0.81	U	190	0.81	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-47	**33**	**J B**	580	0.64	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-48	**1.3**	**J**	190	0.66	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-49	**3.3**	**J**	390	0.57	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-5	5.8	U	190	5.8	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-50	0.69	U	390	0.69	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-51	0.65	U	190	0.65	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-52	**5.7**	**J**	190	0.74	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-53	0.69	U	390	0.69	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-54	0.62	U	190	0.62	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-55	0.68	U	190	0.68	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-56	**3.4**	**J**	190	0.84	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-57	0.79	U	190	0.79	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-58	0.78	U	190	0.78	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-59	0.50	U	580	0.50	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-6	5.6	U	190	5.6	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-60	0.75	U	190	0.75	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-61	**10**	**J**	770	0.76	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-62	0.50	U	580	0.50	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-63	0.73	U	190	0.73	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-64	**2.2**	**J q**	190	0.45	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-65	**33**	**J B**	580	0.64	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-66	**5.7**	**J**	190	0.88	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-67	0.72	U	190	0.72	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-68	**7.0**	**J**	190	0.70	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-69	**3.3**	**J**	390	0.57	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-7	5.3	U	190	5.3	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-70	**10**	**J**	770	0.76	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-71	**2.0**	**J**	390	0.65	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-72	0.75	U	190	0.75	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-73	0.55	U	190	0.55	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-74	**10**	**J**	770	0.76	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-75	0.50	U	580	0.50	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-76	**10**	**J**	770	0.76	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-77	1.1	U	19	1.1	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-78	0.85	U	190	0.85	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-79	0.80	U	190	0.80	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-8	5.0	U	190	5.0	pg/L		05/12/15 08:41	05/13/15 21:51	1

Client: ARCADIS U.S., Inc.
Project/Site: Hercules Savannah

TestAmerica Job ID: 680-112191-1

Client Sample ID: MW-F3R (050515)

Date Collected: 05/05/15 10:20
Date Received: 05/05/15 13:00

Lab Sample ID: 680-112191-1

Matrix: Water

Method: 1668C - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-80	0.71	U	190	0.71	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-81	1.0	U	19	1.0	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-82	1.1	U	190	1.1	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-83	1.3	U	190	1.3	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-84	**1.8**	**J**	190	1.1	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-85	0.81	U	580	0.81	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-86	**5.6**	**J B**	1200	0.83	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-87	**5.6**	**J B**	1200	0.83	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-88	0.94	U	390	0.94	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-89	1.0	U	190	1.0	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-9	6.3	U	190	6.3	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-90	**6.2**	**J B**	580	0.83	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-91	0.94	U	390	0.94	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-92	0.99	U	190	0.99	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-93	0.96	U	390	0.96	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-94	1.0	U	190	1.0	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-95	**3.9**	**J q B**	190	1.0	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-96	0.65	U	190	0.65	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-97	**5.6**	**J B**	1200	0.83	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-98	0.87	U	390	0.87	pg/L		05/12/15 08:41	05/13/15 21:51	1
PCB-99	**2.7**	**J q B**	190	0.90	pg/L		05/12/15 08:41	05/13/15 21:51	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-104L	*79*		*10 - 145*	*05/12/15 08:41*	*05/13/15 21:51*	*1*
PCB-105L	*98*		*10 - 145*	*05/12/15 08:41*	*05/13/15 21:51*	*1*
PCB-114L	*97*		*10 - 145*	*05/12/15 08:41*	*05/13/15 21:51*	*1*
PCB-118L	*97*		*10 - 145*	*05/12/15 08:41*	*05/13/15 21:51*	*1*
PCB-123L	*96*		*10 - 145*	*05/12/15 08:41*	*05/13/15 21:51*	*1*
PCB-126L	*99*		*10 - 145*	*05/12/15 08:41*	*05/13/15 21:51*	*1*
PCB-155L	*87*		*10 - 145*	*05/12/15 08:41*	*05/13/15 21:51*	*1*
PCB-156L	*100*		*10 - 145*	*05/12/15 08:41*	*05/13/15 21:51*	*1*
PCB-157L	*100*		*10 - 145*	*05/12/15 08:41*	*05/13/15 21:51*	*1*
PCB-15L	*91*		*5 - 145*	*05/12/15 08:41*	*05/13/15 21:51*	*1*
PCB-167L	*98*		*10 - 145*	*05/12/15 08:41*	*05/13/15 21:51*	*1*
PCB-169L	*102*		*10 - 145*	*05/12/15 08:41*	*05/13/15 21:51*	*1*
PCB-188L	*90*		*10 - 145*	*05/12/15 08:41*	*05/13/15 21:51*	*1*
PCB-189L	*100*		*10 - 145*	*05/12/15 08:41*	*05/13/15 21:51*	*1*
PCB-19L	*81*		*5 - 145*	*05/12/15 08:41*	*05/13/15 21:51*	*1*
PCB-1L	*75*		*5 - 145*	*05/12/15 08:41*	*05/13/15 21:51*	*1*
PCB-202L	*90*		*10 - 145*	*05/12/15 08:41*	*05/13/15 21:51*	*1*
PCB-205L	*92*		*10 - 145*	*05/12/15 08:41*	*05/13/15 21:51*	*1*
PCB-206L	*89*		*10 - 145*	*05/12/15 08:41*	*05/13/15 21:51*	*1*
PCB-208L	*93*		*10 - 145*	*05/12/15 08:41*	*05/13/15 21:51*	*1*
PCB-209L	*83*		*10 - 145*	*05/12/15 08:41*	*05/13/15 21:51*	*1*
PCB-37L	*106*		*5 - 145*	*05/12/15 08:41*	*05/13/15 21:51*	*1*
PCB-3L	*83*		*5 - 145*	*05/12/15 08:41*	*05/13/15 21:51*	*1*
PCB-4L	*79*		*5 - 145*	*05/12/15 08:41*	*05/13/15 21:51*	*1*
PCB-54L	*81*		*5 - 145*	*05/12/15 08:41*	*05/13/15 21:51*	*1*
PCB-77L	*100*		*10 - 145*	*05/12/15 08:41*	*05/13/15 21:51*	*1*
PCB-81L	*102*		*10 - 145*	*05/12/15 08:41*	*05/13/15 21:51*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Hercules Savannah

TestAmerica Job ID: 680-112191-1

Client Sample ID: MW-F3R (050515)
Date Collected: 05/05/15 10:20
Date Received: 05/05/15 13:00

Lab Sample ID: 680-112191-1
Matrix: Water

Method: 1668C - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-156L/157L	100		10 - 145	05/12/15 08:41	05/13/15 21:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-111L	102		10 - 145	05/12/15 08:41	05/13/15 21:51	1
PCB-178L	94		10 - 145	05/12/15 08:41	05/13/15 21:51	1
PCB-28L	105		5 - 145	05/12/15 08:41	05/13/15 21:51	1

Client Sample ID: MW-F5 (050515)

Date Collected: 05/05/15 10:55
Date Received: 05/05/15 13:00

Lab Sample ID: 680-112191-2
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	7.0	U	10	7.0	ug/L			05/12/15 17:20	1
Acetonitrile	20	U	40	20	ug/L			05/12/15 17:20	1
Acrolein	8.7	U	20	8.7	ug/L			05/12/15 17:20	1
Benzene	0.43	U	1.0	0.43	ug/L			05/12/15 17:20	1
2-Butanone	3.4	U	10	3.4	ug/L			05/12/15 17:20	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			05/12/15 17:20	1
Chlorobenzene	0.26	U	1.0	0.26	ug/L			05/12/15 17:20	1
1,2-Dichloropropane	0.67	U	1.0	0.67	ug/L			05/12/15 17:20	1
Ethylbenzene	0.33	U	1.0	0.33	ug/L			05/12/15 17:20	1
Ethyl methacrylate	0.40	U	1.0	0.40	ug/L			05/12/15 17:20	1
Isobutanol	20	U	50	20	ug/L			05/12/15 17:20	1
4-Methyl-2-pentanone	2.1	U	10	2.1	ug/L			05/12/15 17:20	1
m-Xylene & p-Xylene	0.35	U	1.0	0.35	ug/L			05/12/15 17:20	1
o-Xylene	0.23	U	1.0	0.23	ug/L			05/12/15 17:20	1
Styrene	0.27	U	1.0	0.27	ug/L			05/12/15 17:20	1
Tetrachloroethene	0.74	U	1.0	0.74	ug/L			05/12/15 17:20	1
Toluene	0.48	U	1.0	0.48	ug/L			05/12/15 17:20	1
trans-1,4-Dichloro-2-butene	0.51	U *	2.0	0.51	ug/L			05/12/15 17:20	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			05/12/15 17:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*70 - 130*		*05/12/15 17:20*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*70 - 130*		*05/12/15 17:20*	*1*
Dibromofluoromethane (Surr)	*105*		*70 - 130*		*05/12/15 17:20*	*1*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*		*05/12/15 17:20*	*1*

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**4.9**		0.20	0.099	ug/L		05/06/15 17:19	05/15/15 21:15	1
Acenaphthylene	0.099	U	0.20	0.099	ug/L		05/06/15 17:19	05/15/15 21:15	1
Acetophenone	0.30	U	0.99	0.30	ug/L		05/06/15 17:19	05/15/15 21:15	1
Aniline	0.96	U	2.0	0.96	ug/L		05/06/15 17:19	05/15/15 21:15	1
Anthracene	0.099	U	0.20	0.099	ug/L		05/06/15 17:19	05/15/15 21:15	1
Benzo[a]anthracene	0.099	U	0.20	0.099	ug/L		05/06/15 17:19	05/15/15 21:15	1
Benzo[a]pyrene	0.099	U	0.20	0.099	ug/L		05/06/15 17:19	05/15/15 21:15	1
Benzo[b]fluoranthene	0.099	U	0.20	0.099	ug/L		05/06/15 17:19	05/15/15 21:15	1
Benzo[g,h,i]perylene	0.099	U	0.20	0.099	ug/L		05/06/15 17:19	05/15/15 21:15	1
Benzo[k]fluoranthene	0.099	U	0.20	0.099	ug/L		05/06/15 17:19	05/15/15 21:15	1
1,1'-Biphenyl	0.099	U	0.99	0.099	ug/L		05/06/15 17:19	05/15/15 21:15	1
Bis(2-chloroethyl)ether	0.099	U	0.99	0.099	ug/L		05/06/15 17:19	05/15/15 21:15	1
Bis(2-ethylhexyl) phthalate	2.0	U	5.0	2.0	ug/L		05/06/15 17:19	05/15/15 21:15	1
Butyl benzyl phthalate	0.12	U	0.99	0.12	ug/L		05/06/15 17:19	05/15/15 21:15	1
Chrysene	0.045	U	0.20	0.045	ug/L		05/06/15 17:19	05/15/15 21:15	1
Dibenz(a,h)anthracene	0.099	U	0.20	0.099	ug/L		05/06/15 17:19	05/15/15 21:15	1
Dibenzofuran	0.099	U	0.99	0.099	ug/L		05/06/15 17:19	05/15/15 21:15	1
2,4-Dimethylphenol	0.68	U	2.0	0.68	ug/L		05/06/15 17:19	05/15/15 21:15	1
1,3-Dinitrobenzene	0.099	U	0.99	0.099	ug/L		05/06/15 17:19	05/15/15 21:15	1
Di-n-octyl phthalate	0.17	U	0.99	0.17	ug/L		05/06/15 17:19	05/15/15 21:15	1
1,4-Dioxane	0.31	U	2.0	0.31	ug/L		05/06/15 17:19	05/15/15 21:15	1
Ethyl Parathion	0.099	U	2.0	0.099	ug/L		05/06/15 17:19	05/15/15 21:15	1

Client: ARCADIS U.S., Inc.
Project/Site: Hercules Savannah

TestAmerica Job ID: 680-112191-1

Client Sample ID: MW-F5 (050515)
Date Collected: 05/05/15 10:55
Date Received: 05/05/15 13:00

Lab Sample ID: 680-112191-2
Matrix: Water

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	0.099	U	0.20	0.099	ug/L		05/06/15 17:19	05/15/15 21:15	1
Fluorene	0.099	U	0.20	0.099	ug/L		05/06/15 17:19	05/15/15 21:15	1
Indeno[1,2,3-cd]pyrene	0.099	U	0.20	0.099	ug/L		05/06/15 17:19	05/15/15 21:15	1
2-Methylphenol	0.73	U	2.0	0.73	ug/L		05/06/15 17:19	05/15/15 21:15	1
3 & 4 Methylphenol	0.65	U	2.0	0.65	ug/L		05/06/15 17:19	05/15/15 21:15	1
Naphthalene	0.099	U	0.20	0.099	ug/L		05/06/15 17:19	05/15/15 21:15	1
N-Nitrosodi-n-butylamine	0.099	U	0.99	0.099	ug/L		05/06/15 17:19	05/15/15 21:15	1
N-Nitrosomethylethylamine	0.099	U	2.0	0.099	ug/L		05/06/15 17:19	05/15/15 21:15	1
Phenanthrene	0.099	U	0.20	0.099	ug/L		05/06/15 17:19	05/15/15 21:15	1
Phenol	0.13	U	0.99	0.13	ug/L		05/06/15 17:19	05/15/15 21:15	1
Pyrene	0.099	U	0.20	0.099	ug/L		05/06/15 17:19	05/15/15 21:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*83*		*30 - 130*	*05/06/15 17:19*	*05/15/15 21:15*	*1*
2-Fluorobiphenyl	*65*		*34 - 130*	*05/06/15 17:19*	*05/15/15 21:15*	*1*
2-Fluorophenol (Surr)	*58*		*25 - 130*	*05/06/15 17:19*	*05/15/15 21:15*	*1*
Nitrobenzene-d5 (Surr)	*62*		*32 - 130*	*05/06/15 17:19*	*05/15/15 21:15*	*1*
Phenol-d5 (Surr)	*57*		*27 - 130*	*05/06/15 17:19*	*05/15/15 21:15*	*1*
Terphenyl-d14 (Surr)	*65*		*36 - 130*	*05/06/15 17:19*	*05/15/15 21:15*	*1*

Client Sample ID: MW-29 (050515)

Lab Sample ID: 680-112191-3

Date Collected: 05/05/15 11:30
Date Received: 05/05/15 13:00

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	7.0	U	10	7.0	ug/L			05/12/15 17:43	1
Acetonitrile	20	U	40	20	ug/L			05/12/15 17:43	1
Acrolein	8.7	U	20	8.7	ug/L			05/12/15 17:43	1
Benzene	0.43	U	1.0	0.43	ug/L			05/12/15 17:43	1
2-Butanone	3.4	U	10	3.4	ug/L			05/12/15 17:43	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			05/12/15 17:43	1
Chlorobenzene	0.26	U	1.0	0.26	ug/L			05/12/15 17:43	1
1,2-Dichloropropane	0.67	U	1.0	0.67	ug/L			05/12/15 17:43	1
Ethylbenzene	0.33	U	1.0	0.33	ug/L			05/12/15 17:43	1
Ethyl methacrylate	0.40	U	1.0	0.40	ug/L			05/12/15 17:43	1
Isobutanol	20	U	50	20	ug/L			05/12/15 17:43	1
4-Methyl-2-pentanone	2.1	U	10	2.1	ug/L			05/12/15 17:43	1
m-Xylene & p-Xylene	0.35	U	1.0	0.35	ug/L			05/12/15 17:43	1
o-Xylene	0.23	U	1.0	0.23	ug/L			05/12/15 17:43	1
Styrene	0.27	U	1.0	0.27	ug/L			05/12/15 17:43	1
Tetrachloroethene	0.74	U	1.0	0.74	ug/L			05/12/15 17:43	1
Toluene	0.48	U	1.0	0.48	ug/L			05/12/15 17:43	1
trans-1,4-Dichloro-2-butene	0.51	U *	2.0	0.51	ug/L			05/12/15 17:43	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			05/12/15 17:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*70 - 130*		*05/12/15 17:43*	*1*
1,2-Dichloroethane-d4 (Surr)	*114*		*70 - 130*		*05/12/15 17:43*	*1*
Dibromofluoromethane (Surr)	*103*		*70 - 130*		*05/12/15 17:43*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*05/12/15 17:43*	*1*

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.11	U	0.23	0.11	ug/L		05/06/15 17:19	05/15/15 21:43	1
Acenaphthylene	0.11	U	0.23	0.11	ug/L		05/06/15 17:19	05/15/15 21:43	1
Acetophenone	0.34	U	1.1	0.34	ug/L		05/06/15 17:19	05/15/15 21:43	1
Aniline	1.1	U	2.3	1.1	ug/L		05/06/15 17:19	05/15/15 21:43	1
Anthracene	0.11	U	0.23	0.11	ug/L		05/06/15 17:19	05/15/15 21:43	1
Benzo[a]anthracene	0.11	U	0.23	0.11	ug/L		05/06/15 17:19	05/15/15 21:43	1
Benzo[a]pyrene	0.11	U	0.23	0.11	ug/L		05/06/15 17:19	05/15/15 21:43	1
Benzo[b]fluoranthene	0.11	U	0.23	0.11	ug/L		05/06/15 17:19	05/15/15 21:43	1
Benzo[g,h,i]perylene	0.11	U	0.23	0.11	ug/L		05/06/15 17:19	05/15/15 21:43	1
Benzo[k]fluoranthene	0.11	U	0.23	0.11	ug/L		05/06/15 17:19	05/15/15 21:43	1
1,1'-Biphenyl	0.11	U	1.1	0.11	ug/L		05/06/15 17:19	05/15/15 21:43	1
Bis(2-chloroethyl)ether	0.11	U	1.1	0.11	ug/L		05/06/15 17:19	05/15/15 21:43	1
Bis(2-ethylhexyl) phthalate	2.3	U	5.7	2.3	ug/L		05/06/15 17:19	05/15/15 21:43	1
Butyl benzyl phthalate	0.14	U	1.1	0.14	ug/L		05/06/15 17:19	05/15/15 21:43	1
Chrysene	0.052	U	0.23	0.052	ug/L		05/06/15 17:19	05/15/15 21:43	1
Dibenz(a,h)anthracene	0.11	U	0.23	0.11	ug/L		05/06/15 17:19	05/15/15 21:43	1
Dibenzofuran	0.11	U	1.1	0.11	ug/L		05/06/15 17:19	05/15/15 21:43	1
2,4-Dimethylphenol	0.79	U	2.3	0.79	ug/L		05/06/15 17:19	05/15/15 21:43	1
1,3-Dinitrobenzene	0.11	U	1.1	0.11	ug/L		05/06/15 17:19	05/15/15 21:43	1
Di-n-octyl phthalate	0.20	U	1.1	0.20	ug/L		05/06/15 17:19	05/15/15 21:43	1
1,4-Dioxane	0.36	U	2.3	0.36	ug/L		05/06/15 17:19	05/15/15 21:43	1
Ethyl Parathion	0.11	U	2.3	0.11	ug/L		05/06/15 17:19	05/15/15 21:43	1

Client: ARCADIS U.S., Inc.
Project/Site: Hercules Savannah

TestAmerica Job ID: 680-112191-1

Client Sample ID: MW-29 (050515)
Date Collected: 05/05/15 11:30
Date Received: 05/05/15 13:00

Lab Sample ID: 680-112191-3
Matrix: Water

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	0.11	U	0.23	0.11	ug/L		05/06/15 17:19	05/15/15 21:43	1
Fluorene	0.11	U	0.23	0.11	ug/L		05/06/15 17:19	05/15/15 21:43	1
Indeno[1,2,3-cd]pyrene	0.11	U	0.23	0.11	ug/L		05/06/15 17:19	05/15/15 21:43	1
2-Methylphenol	0.85	U	2.3	0.85	ug/L		05/06/15 17:19	05/15/15 21:43	1
3 & 4 Methylphenol	0.76	U	2.3	0.76	ug/L		05/06/15 17:19	05/15/15 21:43	1
Naphthalene	0.11	U	0.23	0.11	ug/L		05/06/15 17:19	05/15/15 21:43	1
N-Nitrosodi-n-butylamine	0.11	U	1.1	0.11	ug/L		05/06/15 17:19	05/15/15 21:43	1
N-Nitrosomethylethylamine	0.11	U	2.3	0.11	ug/L		05/06/15 17:19	05/15/15 21:43	1
Phenanthrene	0.11	U	0.23	0.11	ug/L		05/06/15 17:19	05/15/15 21:43	1
Phenol	0.15	U	1.1	0.15	ug/L		05/06/15 17:19	05/15/15 21:43	1
Pyrene	0.11	U	0.23	0.11	ug/L		05/06/15 17:19	05/15/15 21:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*75*		*30 - 130*	*05/06/15 17:19*	*05/15/15 21:43*	*1*
2-Fluorobiphenyl	*67*		*34 - 130*	*05/06/15 17:19*	*05/15/15 21:43*	*1*
2-Fluorophenol (Surr)	*60*		*25 - 130*	*05/06/15 17:19*	*05/15/15 21:43*	*1*
Nitrobenzene-d5 (Surr)	*64*		*32 - 130*	*05/06/15 17:19*	*05/15/15 21:43*	*1*
Phenol-d5 (Surr)	*60*		*27 - 130*	*05/06/15 17:19*	*05/15/15 21:43*	*1*
Terphenyl-d14 (Surr)	*67*		*36 - 130*	*05/06/15 17:19*	*05/15/15 21:43*	*1*

Client Sample ID: MW-F15 (050515)

Lab Sample ID: 680-112191-4

Date Collected: 05/05/15 12:05
Date Received: 05/05/15 13:00

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	7.0	U	10	7.0	ug/L			05/12/15 18:06	1
Acetonitrile	20	U	40	20	ug/L			05/12/15 18:06	1
Acrolein	8.7	U	20	8.7	ug/L			05/12/15 18:06	1
Benzene	0.43	U	1.0	0.43	ug/L			05/12/15 18:06	1
2-Butanone	3.4	U	10	3.4	ug/L			05/12/15 18:06	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			05/12/15 18:06	1
Chlorobenzene	0.26	U	1.0	0.26	ug/L			05/12/15 18:06	1
1,2-Dichloropropane	0.67	U	1.0	0.67	ug/L			05/12/15 18:06	1
Ethylbenzene	0.33	U	1.0	0.33	ug/L			05/12/15 18:06	1
Ethyl methacrylate	0.40	U	1.0	0.40	ug/L			05/12/15 18:06	1
Isobutanol	20	U	50	20	ug/L			05/12/15 18:06	1
4-Methyl-2-pentanone	2.1	U	10	2.1	ug/L			05/12/15 18:06	1
m-Xylene & p-Xylene	0.35	U	1.0	0.35	ug/L			05/12/15 18:06	1
o-Xylene	0.23	U	1.0	0.23	ug/L			05/12/15 18:06	1
Styrene	0.27	U	1.0	0.27	ug/L			05/12/15 18:06	1
Tetrachloroethene	0.74	U	1.0	0.74	ug/L			05/12/15 18:06	1
Toluene	0.48	U	1.0	0.48	ug/L			05/12/15 18:06	1
trans-1,4-Dichloro-2-butene	0.51	U *	2.0	0.51	ug/L			05/12/15 18:06	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			05/12/15 18:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*70 - 130*		*05/12/15 18:06*	*1*
1,2-Dichloroethane-d4 (Surr)	*113*		*70 - 130*		*05/12/15 18:06*	*1*
Dibromofluoromethane (Surr)	*106*		*70 - 130*		*05/12/15 18:06*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*05/12/15 18:06*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Hercules Savannah

TestAmerica Job ID: 680-112191-1

Client Sample ID: TRIP BLANK (050515)

Lab Sample ID: 680-112191-5

Date Collected: 05/05/15 00:00
Date Received: 05/05/15 13:00

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	7.0	U	10	7.0	ug/L			05/12/15 18:28	1
Acetonitrile	20	U	40	20	ug/L			05/12/15 18:28	1
Acrolein	8.7	U	20	8.7	ug/L			05/12/15 18:28	1
Benzene	0.43	U	1.0	0.43	ug/L			05/12/15 18:28	1
2-Butanone	3.4	U	10	3.4	ug/L			05/12/15 18:28	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			05/12/15 18:28	1
Chlorobenzene	0.26	U	1.0	0.26	ug/L			05/12/15 18:28	1
1,2-Dichloropropane	0.67	U	1.0	0.67	ug/L			05/12/15 18:28	1
Ethylbenzene	0.33	U	1.0	0.33	ug/L			05/12/15 18:28	1
Ethyl methacrylate	0.40	U	1.0	0.40	ug/L			05/12/15 18:28	1
Isobutanol	20	U	50	20	ug/L			05/12/15 18:28	1
4-Methyl-2-pentanone	2.1	U	10	2.1	ug/L			05/12/15 18:28	1
m-Xylene & p-Xylene	0.35	U	1.0	0.35	ug/L			05/12/15 18:28	1
o-Xylene	0.23	U	1.0	0.23	ug/L			05/12/15 18:28	1
Styrene	0.27	U	1.0	0.27	ug/L			05/12/15 18:28	1
Tetrachloroethene	0.74	U	1.0	0.74	ug/L			05/12/15 18:28	1
Toluene	0.48	U	1.0	0.48	ug/L			05/12/15 18:28	1
trans-1,4-Dichloro-2-butene	0.51	U *	2.0	0.51	ug/L			05/12/15 18:28	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			05/12/15 18:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*05/12/15 18:28*	*1*
Dibromofluoromethane (Surr)	*104*		*70 - 130*		*05/12/15 18:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*113*		*70 - 130*		*05/12/15 18:28*	*1*
Toluene-d8 (Surr)	*96*		*70 - 130*		*05/12/15 18:28*	*1*

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.
Project/Site: Hercules Savannah

TestAmerica Job ID: 680-112191-1

Method: 1668C - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PCB-104L (10-145)	PCB-105L (10-145)	PCB-114L (10-145)	PCB-118L (10-145)	PCB-123L (10-145)	PCB-126L (10-145)	PCB-155L (10-145)	PCB-156L (10-145)
680-112191-1	MW-F3R (050515)	79	98	97	97	96	99	87	100
MB 320-73648/1-A	Method Blank	74	84	84	85	84	80	80	88

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PCB-157L (10-145)	PCB-15L (5-145)	PCB-167L (10-145)	PCB-169L (10-145)	PCB-188L (10-145)	PCB-189L (10-145)	PCB-19L (5-145)	PCB-1L (5-145)
680-112191-1	MW-F3R (050515)	100	91	98	102	90	100	81	75
MB 320-73648/1-A	Method Blank	88	75	88	87	86	94	75	67

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PCB-202L (10-145)	PCB-205L (10-145)	PCB-206L (10-145)	PCB-208L (10-145)	PCB-209L (10-145)	PCB-37L (5-145)	PCB-3L (5-145)	PCB-4L (5-145)
680-112191-1	MW-F3R (050515)	90	92	89	93	83	106	83	79
MB 320-73648/1-A	Method Blank	87	89	89	87	86	81	71	73

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PCB-54L (5-145)	PCB-77L (10-145)	PCB-81L (10-145)	B-156L/15 (10-145)				
680-112191-1	MW-F3R (050515)	81	100	102	100				
MB 320-73648/1-A	Method Blank	76	84	83	88				

Surrogate Legend

PCB-104L = PCB-104L
PCB-105L = PCB-105L
PCB-114L = PCB-114L
PCB-118L = PCB-118L
PCB-123L = PCB-123L
PCB-126L = PCB-126L
PCB-155L = PCB-155L
PCB-156L = PCB-156L
PCB-157L = PCB-157L
PCB-15L = PCB-15L
PCB-167L = PCB-167L
PCB-169L = PCB-169L
PCB-188L = PCB-188L
PCB-189L = PCB-189L
PCB-19L = PCB-19L
PCB-1L = PCB-1L
PCB-202L = PCB-202L
PCB-205L = PCB-205L
PCB-206L = PCB-206L
PCB-208L = PCB-208L
PCB-209L = PCB-209L
PCB-37L = PCB-37L
PCB-3L = PCB-3L
PCB-4L = PCB-4L
PCB-54L = PCB-54L
PCB-77L = PCB-77L
PCB-81L = PCB-81L
PCB-156L/157L = PCB-156L/157L

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.
Project/Site: Hercules Savannah

TestAmerica Job ID: 680-112191-1

Method: 1668C - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PCB-104L	PCB-105L	PCB-114L	PCB-118L	PCB-123L	PCB-126L	PCB-155L	PCB-156L
Lab Sample ID	Client Sample ID	(40-145)	(40-145)	(40-145)	(40-145)	(40-145)	(40-145)	(40-145)	(40-145)
LCS 320-73648/2-A	Lab Control Sample	81	96	96	95	95	97	85	99

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PCB-157L	PCB-15L	PCB-167L	PCB-169L	PCB-188L	PCB-189L	PCB-19L	PCB-1L
Lab Sample ID	Client Sample ID	(40-145)	(15-145)	(40-145)	(40-145)	(40-145)	(40-145)	(15-145)	(15-145)
LCS 320-73648/2-A	Lab Control Sample	99	84	99	102	87	97	74	66

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PCB-202L	PCB-205L	PCB-206L	PCB-208L	PCB-209L	PCB-37L	PCB-3L	PCB-4L
Lab Sample ID	Client Sample ID	(40-145)	(40-145)	(40-145)	(40-145)	(40-145)	(15-145)	(15-145)	(15-145)
LCS 320-73648/2-A	Lab Control Sample	87	94	92	91	87	95	74	72

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PCB-54L	PCB-77L	PCB-81L	B-156L/15				
Lab Sample ID	Client Sample ID	(15-145)	(40-145)	(40-145)	(40-145)				
LCS 320-73648/2-A	Lab Control Sample	80	99	96	99				

Surrogate Legend

PCB-104L = PCB-104L
PCB-105L = PCB-105L
PCB-114L = PCB-114L
PCB-118L = PCB-118L
PCB-123L = PCB-123L
PCB-126L = PCB-126L
PCB-155L = PCB-155L
PCB-156L = PCB-156L
PCB-157L = PCB-157L
PCB-15L = PCB-15L
PCB-167L = PCB-167L
PCB-169L = PCB-169L
PCB-188L = PCB-188L
PCB-189L = PCB-189L
PCB-19L = PCB-19L
PCB-1L = PCB-1L
PCB-202L = PCB-202L
PCB-205L = PCB-205L
PCB-206L = PCB-206L
PCB-208L = PCB-208L
PCB-209L = PCB-209L
PCB-37L = PCB-37L
PCB-3L = PCB-3L
PCB-4L = PCB-4L
PCB-54L = PCB-54L
PCB-77L = PCB-77L
PCB-81L = PCB-81L
PCB-156L/157L = PCB-156L/157L

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

Lab Sample ID: MB 680-382593/10
Matrix: Water
Analysis Batch: 382593

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	7.0	U	10	7.0	ug/L			05/12/15 11:11	1
Acetonitrile	20	U	40	20	ug/L			05/12/15 11:11	1
Acrolein	8.7	U	20	8.7	ug/L			05/12/15 11:11	1
Benzene	0.43	U	1.0	0.43	ug/L			05/12/15 11:11	1
2-Butanone	3.4	U	10	3.4	ug/L			05/12/15 11:11	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			05/12/15 11:11	1
Chlorobenzene	0.26	U	1.0	0.26	ug/L			05/12/15 11:11	1
1,2-Dichloropropane	0.67	U	1.0	0.67	ug/L			05/12/15 11:11	1
Ethylbenzene	0.33	U	1.0	0.33	ug/L			05/12/15 11:11	1
Ethyl methacrylate	0.40	U	1.0	0.40	ug/L			05/12/15 11:11	1
Isobutanol	20	U	50	20	ug/L			05/12/15 11:11	1
4-Methyl-2-pentanone	2.1	U	10	2.1	ug/L			05/12/15 11:11	1
m-Xylene & p-Xylene	0.35	U	1.0	0.35	ug/L			05/12/15 11:11	1
o-Xylene	0.23	U	1.0	0.23	ug/L			05/12/15 11:11	1
Styrene	0.27	U	1.0	0.27	ug/L			05/12/15 11:11	1
Tetrachloroethene	0.74	U	1.0	0.74	ug/L			05/12/15 11:11	1
Toluene	0.48	U	1.0	0.48	ug/L			05/12/15 11:11	1
trans-1,4-Dichloro-2-butene	0.51	U	2.0	0.51	ug/L			05/12/15 11:11	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			05/12/15 11:11	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*70 - 130*		*05/12/15 11:11*	*1*
Dibromofluoromethane (Surr)	*102*		*70 - 130*		*05/12/15 11:11*	*1*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*		*05/12/15 11:11*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*		*05/12/15 11:11*	*1*

Lab Sample ID: LCS 680-382593/4
Matrix: Water
Analysis Batch: 382593

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	250	230		ug/L		92	60 - 154
Acrolein	1000	1260		ug/L		126	10 - 200
Benzene	50.0	45.6		ug/L		91	73 - 131
2-Butanone	250	241		ug/L		97	75 - 133
Carbon disulfide	50.0	52.5		ug/L		105	73 - 127
Chlorobenzene	50.0	51.2		ug/L		102	80 - 120
1,2-Dichloropropane	50.0	46.2		ug/L		92	80 - 123
Ethylbenzene	50.0	52.4		ug/L		105	80 - 120
Ethyl methacrylate	50.0	45.9		ug/L		92	75 - 138
Isobutanol	1250	1220		ug/L		98	61 - 151
4-Methyl-2-pentanone	250	206		ug/L		82	75 - 135
m-Xylene & p-Xylene	50.0	52.2		ug/L		104	80 - 120
o-Xylene	50.0	53.6		ug/L		107	80 - 120
Styrene	50.0	52.8		ug/L		106	80 - 122
Tetrachloroethene	50.0	51.8		ug/L		104	77 - 123
Toluene	50.0	48.3		ug/L		97	80 - 122
trans-1,4-Dichloro-2-butene	50.0	90.4	*	ug/L		181	55 - 147

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

Lab Sample ID: LCS 680-382593/4
Matrix: Water
Analysis Batch: 382593

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Xylenes, Total	100	106		ug/L		106	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*109*		*70 - 130*
Dibromofluoromethane (Surr)	*100*		*70 - 130*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*
Toluene-d8 (Surr)	*97*		*70 - 130*

Lab Sample ID: LCSD 680-382593/5
Matrix: Water
Analysis Batch: 382593

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
Acetone	250	231		ug/L		92	60 - 154	0	40
Acrolein	1000	1260		ug/L		126	10 - 200	1	50
Benzene	50.0	45.0		ug/L		90	73 - 131	1	30
2-Butanone	250	242		ug/L		97	75 - 133	0	30
Carbon disulfide	50.0	51.0		ug/L		102	73 - 127	3	20
Chlorobenzene	50.0	51.4		ug/L		103	80 - 120	0	20
1,2-Dichloropropane	50.0	45.7		ug/L		91	80 - 123	1	20
Ethylbenzene	50.0	52.0		ug/L		104	80 - 120	1	20
Ethyl methacrylate	50.0	45.9		ug/L		92	75 - 138	0	30
Isobutanol	1250	1290		ug/L		103	61 - 151	5	40
4-Methyl-2-pentanone	250	207		ug/L		83	75 - 135	1	30
m-Xylene & p-Xylene	50.0	52.5		ug/L		105	80 - 120	1	20
o-Xylene	50.0	53.2		ug/L		106	80 - 120	1	20
Styrene	50.0	52.7		ug/L		105	80 - 122	0	20
Tetrachloroethene	50.0	51.4		ug/L		103	77 - 123	1	20
Toluene	50.0	47.9		ug/L		96	80 - 122	1	20
trans-1,4-Dichloro-2-butene	50.0	89.0	*	ug/L		178	55 - 147	2	40
Xylenes, Total	100	106		ug/L		106	80 - 120	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*70 - 130*
Dibromofluoromethane (Surr)	*102*		*70 - 130*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*
Toluene-d8 (Surr)	*96*		*70 - 130*

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

Lab Sample ID: MB 680-381679/11-A
Matrix: Water
Analysis Batch: 383051

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 381679

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.10	U	0.20	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Acenaphthylene	0.10	U	0.20	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level (Continued)

Lab Sample ID: MB 680-381679/11-A
Matrix: Water
Analysis Batch: 383051

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 381679

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetophenone	0.30	U	1.0	0.30	ug/L		05/06/15 17:19	05/14/15 19:28	1
Aniline	0.97	U	2.0	0.97	ug/L		05/06/15 17:19	05/14/15 19:28	1
Anthracene	0.10	U	0.20	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Benzo[a]anthracene	0.10	U	0.20	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Benzo[a]pyrene	0.10	U	0.20	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Benzo[b]fluoranthene	0.10	U	0.20	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Benzo[g,h,i]perylene	0.10	U	0.20	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Benzo[k]fluoranthene	0.10	U	0.20	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
1,1'-Biphenyl	0.10	U	1.0	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Bis(2-chloroethyl)ether	0.10	U	1.0	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Bis(2-ethylhexyl) phthalate	2.0	U	5.0	2.0	ug/L		05/06/15 17:19	05/14/15 19:28	1
Butyl benzyl phthalate	0.12	U	1.0	0.12	ug/L		05/06/15 17:19	05/14/15 19:28	1
Chrysene	0.045	U	0.20	0.045	ug/L		05/06/15 17:19	05/14/15 19:28	1
Dibenz(a,h)anthracene	0.10	U	0.20	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Dibenzofuran	0.10	U	1.0	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
2,4-Dimethylphenol	0.69	U	2.0	0.69	ug/L		05/06/15 17:19	05/14/15 19:28	1
1,3-Dinitrobenzene	0.10	U	1.0	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Di-n-octyl phthalate	0.17	U	1.0	0.17	ug/L		05/06/15 17:19	05/14/15 19:28	1
1,4-Dioxane	0.31	U	2.0	0.31	ug/L		05/06/15 17:19	05/14/15 19:28	1
Ethyl Parathion	0.10	U	2.0	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Fluoranthene	0.10	U	0.20	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Fluorene	0.10	U	0.20	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Indeno[1,2,3-cd]pyrene	0.10	U	0.20	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
2-Methylphenol	0.74	U	2.0	0.74	ug/L		05/06/15 17:19	05/14/15 19:28	1
3 & 4 Methylphenol	0.66	U	2.0	0.66	ug/L		05/06/15 17:19	05/14/15 19:28	1
Naphthalene	0.10	U	0.20	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
N-Nitrosodi-n-butylamine	0.10	U	1.0	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
N-Nitrosomethylethylamine	0.10	U	2.0	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Phenanthrene	0.10	U	0.20	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1
Phenol	0.13	U	1.0	0.13	ug/L		05/06/15 17:19	05/14/15 19:28	1
Pyrene	0.10	U	0.20	0.10	ug/L		05/06/15 17:19	05/14/15 19:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*69*		*30 - 130*	*05/06/15 17:19*	*05/14/15 19:28*	*1*
2-Fluorobiphenyl	*69*		*34 - 130*	*05/06/15 17:19*	*05/14/15 19:28*	*1*
2-Fluorophenol (Surr)	*73*		*25 - 130*	*05/06/15 17:19*	*05/14/15 19:28*	*1*
Nitrobenzene-d5 (Surr)	*76*		*32 - 130*	*05/06/15 17:19*	*05/14/15 19:28*	*1*
Phenol-d5 (Surr)	*75*		*27 - 130*	*05/06/15 17:19*	*05/14/15 19:28*	*1*
Terphenyl-d14 (Surr)	*78*		*36 - 130*	*05/06/15 17:19*	*05/14/15 19:28*	*1*

Lab Sample ID: LCS 680-381679/12-A
Matrix: Water
Analysis Batch: 383051

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 381679

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	10.0	7.05		ug/L		70	42 - 130
Acenaphthylene	10.0	5.39		ug/L		54	45 - 130
Acetophenone	10.0	7.58		ug/L		76	45 - 130

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level (Continued)

Lab Sample ID: LCS 680-381679/12-A
Matrix: Water
Analysis Batch: 383051

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 381679

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aniline	10.0	4.75		ug/L		47	10 - 130
Anthracene	10.0	7.29		ug/L		73	58 - 130
Benzo[a]anthracene	10.0	7.77		ug/L		78	42 - 143
Benzo[a]pyrene	10.0	7.09		ug/L		71	45 - 151
Benzo[b]fluoranthene	10.0	8.65		ug/L		87	41 - 140
Benzo[g,h,i]perylene	10.0	5.71		ug/L		57	27 - 134
Benzo[k]fluoranthene	10.0	7.70		ug/L		77	45 - 140
1,1'-Biphenyl	10.0	6.72		ug/L		67	50 - 130
Bis(2-chloroethyl)ether	10.0	8.13		ug/L		81	36 - 130
Bis(2-ethylhexyl) phthalate	10.0	8.58		ug/L		86	10 - 158
Butyl benzyl phthalate	10.0	7.89		ug/L		79	60 - 130
Chrysene	10.0	7.55		ug/L		76	40 - 142
Dibenz(a,h)anthracene	10.0	6.83		ug/L		68	38 - 130
Dibenzofuran	10.0	7.12		ug/L		71	56 - 130
2,4-Dimethylphenol	10.0	7.46		ug/L		75	41 - 130
1,3-Dinitrobenzene	10.0	7.76		ug/L		78	10 - 130
Di-n-octyl phthalate	10.0	8.22		ug/L		82	19 - 130
1,4-Dioxane	10.0	6.34		ug/L		63	10 - 130
Fluoranthene	10.0	7.95		ug/L		80	46 - 136
Fluorene	10.0	7.32		ug/L		73	48 - 130
Indeno[1,2,3-cd]pyrene	10.0	6.54		ug/L		65	12 - 130
2-Methylphenol	10.0	7.54		ug/L		75	49 - 130
3 & 4 Methylphenol	10.0	7.69		ug/L		77	55 - 130
Naphthalene	10.0	6.52		ug/L		65	35 - 130
Phenanthrene	10.0	7.41		ug/L		74	45 - 134
Phenol	10.0	7.70		ug/L		77	44 - 130
Pyrene	10.0	7.30		ug/L		73	47 - 143

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*62*		*30 - 130*
2-Fluorobiphenyl	*61*		*34 - 130*
2-Fluorophenol (Surr)	*63*		*25 - 130*
Nitrobenzene-d5 (Surr)	*64*		*32 - 130*
Phenol-d5 (Surr)	*63*		*27 - 130*
Terphenyl-d14 (Surr)	*64*		*36 - 130*

Lab Sample ID: LCS 680-381679/15-A
Matrix: Water
Analysis Batch: 383051

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 381679

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethyl Parathion	10.0	8.28		ug/L		83	10 - 130
N-Nitrosodi-n-butylamine	10.0	8.55		ug/L		86	10 - 130
N-Nitrosomethylethylamine	10.0	8.41		ug/L		84	10 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*59*		*30 - 130*

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level (Continued)

Lab Sample ID: LCS 680-381679/15-A
Matrix: Water
Analysis Batch: 383051

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 381679

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	67		34 - 130
2-Fluorophenol (Surr)	57		25 - 130
Nitrobenzene-d5 (Surr)	71		32 - 130
Phenol-d5 (Surr)	64		27 - 130
Terphenyl-d14 (Surr)	70		36 - 130

Lab Sample ID: 680-112191-2 MS
Matrix: Water
Analysis Batch: 383051

Client Sample ID: MW-F5 (050515)
Prep Type: Total/NA
Prep Batch: 381679

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethyl Parathion	0.099	U	9.81	7.49		ug/L		76	10 - 130
N-Nitrosodi-n-butylamine	0.099	U	9.81	6.95		ug/L		71	10 - 130
N-Nitrosomethylethylamine	0.099	U	9.81	7.53		ug/L		77	10 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	52		30 - 130
2-Fluorobiphenyl	45		34 - 130
2-Fluorophenol (Surr)	49		25 - 130
Nitrobenzene-d5 (Surr)	53		32 - 130
Phenol-d5 (Surr)	52		27 - 130
Terphenyl-d14 (Surr)	57		36 - 130

Lab Sample ID: 680-112191-2 MSD
Matrix: Water
Analysis Batch: 383051

Client Sample ID: MW-F5 (050515)
Prep Type: Total/NA
Prep Batch: 381679

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethyl Parathion	0.099	U	9.50	7.52		ug/L		79	10 - 130	0	50
N-Nitrosodi-n-butylamine	0.099	U	9.50	7.60		ug/L		80	10 - 130	9	50
N-Nitrosomethylethylamine	0.099	U	9.50	7.46		ug/L		79	10 - 130	1	50

Surrogate	MSD %Recovery	MSD Qualifier	Limits
2,4,6-Tribromophenol (Surr)	59		30 - 130
2-Fluorobiphenyl	62		34 - 130
2-Fluorophenol (Surr)	57		25 - 130
Nitrobenzene-d5 (Surr)	67		32 - 130
Phenol-d5 (Surr)	59		27 - 130
Terphenyl-d14 (Surr)	66		36 - 130

Method: 8081B/8082A - Organochlorine Pesticides and Polychlorinated Biphenyls by Gas Chromatography

Lab Sample ID: MB 680-381706/4-A
Matrix: Water
Analysis Batch: 381944

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 381706

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1254	0.11	U	1.0	0.11	ug/L		05/06/15 17:19	05/07/15 15:01	1
PCB-1260	0.12	U	1.0	0.12	ug/L		05/06/15 17:19	05/07/15 15:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*62*		*14 - 130*	*05/06/15 17:19*	*05/07/15 15:01*	*1*
Tetrachloro-m-xylene	*61*		*40 - 130*	*05/06/15 17:19*	*05/07/15 15:01*	*1*

Lab Sample ID: LCS 680-381706/8-A
Matrix: Water
Analysis Batch: 381944

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 381706

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1260	10.0	7.37		ug/L		74	35 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*64*		*14 - 130*
Tetrachloro-m-xylene	*59*		*40 - 130*

Lab Sample ID: 680-112191-1 MS
Matrix: Water
Analysis Batch: 381944

Client Sample ID: MW-F3R (050515)
Prep Type: Total/NA
Prep Batch: 381706

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1260	0.12	U	9.92	5.33		ug/L		54	35 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*27*		*14 - 130*
Tetrachloro-m-xylene	*47*		*40 - 130*

Lab Sample ID: 680-112191-1 MSD
Matrix: Water
Analysis Batch: 381944

Client Sample ID: MW-F3R (050515)
Prep Type: Total/NA
Prep Batch: 381706

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1260	0.12	U	9.32	5.32		ug/L		57	35 - 130	0	50

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*27*		*14 - 130*
Tetrachloro-m-xylene	*54*		*40 - 130*

Method: 1668C - Chlorinated Biphenyl Congeners (HRGC/HRMS)

Lab Sample ID: MB 320-73648/1-A
Matrix: Water
Analysis Batch: 73917

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 73648

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.66	U	200	0.66	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-10	5.4	U	200	5.4	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-100	1.2	U	400	1.2	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-101	5.10	J	600	1.0	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-102	1.1	U	400	1.1	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-103	1.1	U	200	1.1	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-104	0.66	U	200	0.66	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-105	1.1	U	20	1.1	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-106	0.99	U	200	0.99	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-107	0.94	U	400	0.94	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-108	4.61	J	1200	1.0	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-109	0.94	U	200	0.94	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-11	7.8	U	200	7.8	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-110	7.03	J	400	0.89	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-111	0.83	U	200	0.83	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-112	0.82	U	200	0.82	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-113	5.10	J	200	1.0	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-114	1.0	U	20	1.0	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-115	7.03	J	400	0.89	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-116	1.0	U	600	1.0	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-117	1.0	U	600	1.0	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-118	5.82	J	20	0.98	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-119	4.61	J	1200	1.0	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-12	7.5	U	400	7.5	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-120	0.90	U	200	0.90	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-121	0.88	U	200	0.88	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-122	1.1	U	200	1.1	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-123	0.99	U	20	0.99	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-124	0.94	U	400	0.94	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-125	4.61	J	1200	1.0	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-126	1.5	U	20	1.5	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-127	1.1	U	200	1.1	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-128	1.3	U	400	1.3	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-129	3.53	J q	600	1.3	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-13	7.5	U	400	7.5	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-130	1.6	U	200	1.6	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-131	1.5	U	200	1.5	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-132	1.4	U	200	1.4	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-133	1.4	U	200	1.4	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-134	1.5	U	400	1.5	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-135	1.4	U	400	1.4	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-136	1.0	U	200	1.0	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-137	1.4	U	200	1.4	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-138	3.53	J q	600	1.3	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-139	1.3	U	400	1.3	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-14	6.6	U	200	6.6	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-140	1.3	U	400	1.3	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-141	1.4	U	200	1.4	pg/L		05/12/15 08:41	05/13/15 18:06	1

Method: 1668C - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-73648/1-A
Matrix: Water
Analysis Batch: 73917

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 73648

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-142	1.4	U	200	1.4	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-143	1.5	U	400	1.5	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-144	1.3	U	200	1.3	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-145	0.96	U	200	0.96	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-146	1.4	U	200	1.4	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-147	2.57	J q	400	1.3	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-148	1.3	U	200	1.3	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-149	2.57	J q	400	1.3	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-15	9.5	U	200	9.5	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-150	0.90	U	200	0.90	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-151	1.4	U	400	1.4	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-152	0.97	U	200	0.97	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-153	2.91	J	400	1.1	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-154	1.2	U	200	1.2	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-155	0.85	U	200	0.85	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-156	1.7	U	40	1.7	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-157	1.7	U	40	1.7	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-158	1.0	U	200	1.0	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-159	1.3	U	200	1.3	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-16	1.3	U	200	1.3	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-160	1.2	U	200	1.2	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-161	1.0	U	200	1.0	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-162	1.2	U	200	1.2	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-163	3.53	J q	600	1.3	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-164	1.1	U	200	1.1	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-165	1.2	U	200	1.2	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-166	1.3	U	200	1.3	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-167	1.2	U	20	1.2	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-168	2.91	J	400	1.1	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-169	1.8	U	20	1.8	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-17	1.1	U	200	1.1	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-170	1.1	U	200	1.1	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-171	0.91	U	400	0.91	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-172	0.94	U	200	0.94	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-173	0.91	U	400	0.91	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-174	0.88	U	200	0.88	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-175	1.7	U	200	1.7	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-176	1.1	U	200	1.1	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-177	0.92	U	200	0.92	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-178	1.7	U	200	1.7	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-179	1.2	U	200	1.2	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-18	1.01	J q	400	0.98	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-180	0.79	U	400	0.79	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-181	0.82	U	200	0.82	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-182	1.5	U	200	1.5	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-183	0.96	U	200	0.96	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-184	1.2	U	200	1.2	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-185	0.82	U	200	0.82	pg/L		05/12/15 08:41	05/13/15 18:06	1

Method: 1668C - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-73648/1-A
Matrix: Water
Analysis Batch: 73917

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 73648

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-186	5.16	J q	200	1.2	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-187	1.6	U	200	1.6	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-188	1.2	U	200	1.2	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-189	2.4	U	20	2.4	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-19	1.0	U	200	1.0	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-190	0.75	U	200	0.75	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-191	0.71	U	200	0.71	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-192	0.74	U	200	0.74	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-193	0.79	U	400	0.79	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-194	2.8	U	200	2.8	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-195	2.6	U	200	2.6	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-196	1.4	U	200	1.4	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-197	0.88	U	200	0.88	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-198	1.4	U	400	1.4	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-199	1.4	U	400	1.4	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-2	0.76	U	200	0.76	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-20	0.95	U	400	0.95	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-200	0.89	U	200	0.89	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-201	0.86	U	200	0.86	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-202	0.91	U	200	0.91	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-203	1.3	U	200	1.3	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-204	0.89	U	200	0.89	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-205	2.4	U	200	2.4	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-206	2.4	U	200	2.4	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-207	1.6	U	200	1.6	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-208	1.9	U	200	1.9	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-209	1.7	U	200	1.7	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-21	0.83	U	400	0.83	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-22	1.0	U	200	1.0	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-23	0.86	U	200	0.86	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-24	0.89	U	200	0.89	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-25	0.85	U	200	0.85	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-26	0.91	U	400	0.91	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-27	0.89	U	200	0.89	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-28	0.95	U	400	0.95	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-29	0.91	U	400	0.91	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-3	0.80	U	200	0.80	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-30	1.01	J q	400	0.98	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-31	1.30	J	200	0.85	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-32	0.80	U	200	0.80	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-33	0.83	U	400	0.83	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-34	0.96	U	200	0.96	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-35	0.99	U	200	0.99	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-36	0.92	U	200	0.92	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-37	1.4	U	200	1.4	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-38	0.98	U	200	0.98	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-39	0.89	U	200	0.89	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-4	7.1	U	200	7.1	pg/L		05/12/15 08:41	05/13/15 18:06	1

Method: 1668C - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-73648/1-A
Matrix: Water
Analysis Batch: 73917

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 73648

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-40	0.79	U	400	0.79	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-41	0.97	U	200	0.97	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-42	0.79	U	200	0.79	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-43	0.89	U	200	0.89	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-44	3.35	J	600	0.79	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-45	1.0	U	200	1.0	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-46	0.99	U	200	0.99	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-47	3.35	J	600	0.79	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-48	0.81	U	200	0.81	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-49	0.70	U	400	0.70	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-5	7.7	U	200	7.7	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-50	0.85	U	400	0.85	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-51	0.80	U	200	0.80	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-52	0.90	U	200	0.90	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-53	0.85	U	400	0.85	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-54	0.67	U	200	0.67	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-55	0.85	U	200	0.85	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-56	1.0	U	200	1.0	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-57	0.98	U	200	0.98	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-58	0.96	U	200	0.96	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-59	0.62	U	600	0.62	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-6	7.4	U	200	7.4	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-60	0.92	U	200	0.92	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-61	0.94	U	800	0.94	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-62	0.62	U	600	0.62	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-63	0.91	U	200	0.91	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-64	0.55	U	200	0.55	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-65	3.35	J	600	0.79	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-66	1.1	U	200	1.1	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-67	0.89	U	200	0.89	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-68	0.86	U	200	0.86	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-69	0.70	U	400	0.70	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-7	7.0	U	200	7.0	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-70	0.94	U	800	0.94	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-71	0.79	U	400	0.79	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-72	0.93	U	200	0.93	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-73	0.67	U	200	0.67	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-74	0.94	U	800	0.94	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-75	0.62	U	600	0.62	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-76	0.94	U	800	0.94	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-77	1.5	U	20	1.5	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-78	1.1	U	200	1.1	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-79	1.0	U	200	1.0	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-8	6.6	U	200	6.6	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-80	0.88	U	200	0.88	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-81	1.4	U	20	1.4	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-82	1.4	U	200	1.4	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-83	1.6	U	200	1.6	pg/L		05/12/15 08:41	05/13/15 18:06	1

Method: 1668C - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-73648/1-A
Matrix: Water
Analysis Batch: 73917

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 73648

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-84	1.4	U	200	1.4	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-85	1.0	U	600	1.0	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-86	4.61	J	1200	1.0	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-87	4.61	J	1200	1.0	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-88	1.2	U	400	1.2	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-89	1.3	U	200	1.3	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-9	8.4	U	200	8.4	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-90	5.10	J	600	1.0	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-91	1.2	U	400	1.2	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-92	1.2	U	200	1.2	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-93	1.2	U	400	1.2	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-94	1.3	U	200	1.3	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-95	1.73	J q	200	1.2	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-96	0.80	U	200	0.80	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-97	4.61	J	1200	1.0	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-98	1.1	U	400	1.1	pg/L		05/12/15 08:41	05/13/15 18:06	1
PCB-99	1.46	J	200	1.1	pg/L		05/12/15 08:41	05/13/15 18:06	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-104L	*74*		*10 - 145*	*05/12/15 08:41*	*05/13/15 18:06*	*1*
PCB-105L	*84*		*10 - 145*	*05/12/15 08:41*	*05/13/15 18:06*	*1*
PCB-114L	*84*		*10 - 145*	*05/12/15 08:41*	*05/13/15 18:06*	*1*
PCB-118L	*85*		*10 - 145*	*05/12/15 08:41*	*05/13/15 18:06*	*1*
PCB-123L	*84*		*10 - 145*	*05/12/15 08:41*	*05/13/15 18:06*	*1*
PCB-126L	*80*		*10 - 145*	*05/12/15 08:41*	*05/13/15 18:06*	*1*
PCB-155L	*80*		*10 - 145*	*05/12/15 08:41*	*05/13/15 18:06*	*1*
PCB-156L	*88*		*10 - 145*	*05/12/15 08:41*	*05/13/15 18:06*	*1*
PCB-157L	*88*		*10 - 145*	*05/12/15 08:41*	*05/13/15 18:06*	*1*
PCB-15L	*75*		*5 - 145*	*05/12/15 08:41*	*05/13/15 18:06*	*1*
PCB-167L	*88*		*10 - 145*	*05/12/15 08:41*	*05/13/15 18:06*	*1*
PCB-169L	*87*		*10 - 145*	*05/12/15 08:41*	*05/13/15 18:06*	*1*
PCB-188L	*86*		*10 - 145*	*05/12/15 08:41*	*05/13/15 18:06*	*1*
PCB-189L	*94*		*10 - 145*	*05/12/15 08:41*	*05/13/15 18:06*	*1*
PCB-19L	*75*		*5 - 145*	*05/12/15 08:41*	*05/13/15 18:06*	*1*
PCB-1L	*67*		*5 - 145*	*05/12/15 08:41*	*05/13/15 18:06*	*1*
PCB-202L	*87*		*10 - 145*	*05/12/15 08:41*	*05/13/15 18:06*	*1*
PCB-205L	*89*		*10 - 145*	*05/12/15 08:41*	*05/13/15 18:06*	*1*
PCB-206L	*89*		*10 - 145*	*05/12/15 08:41*	*05/13/15 18:06*	*1*
PCB-208L	*87*		*10 - 145*	*05/12/15 08:41*	*05/13/15 18:06*	*1*
PCB-209L	*86*		*10 - 145*	*05/12/15 08:41*	*05/13/15 18:06*	*1*
PCB-37L	*81*		*5 - 145*	*05/12/15 08:41*	*05/13/15 18:06*	*1*
PCB-3L	*71*		*5 - 145*	*05/12/15 08:41*	*05/13/15 18:06*	*1*
PCB-4L	*73*		*5 - 145*	*05/12/15 08:41*	*05/13/15 18:06*	*1*
PCB-54L	*76*		*5 - 145*	*05/12/15 08:41*	*05/13/15 18:06*	*1*
PCB-77L	*84*		*10 - 145*	*05/12/15 08:41*	*05/13/15 18:06*	*1*
PCB-81L	*83*		*10 - 145*	*05/12/15 08:41*	*05/13/15 18:06*	*1*
PCB-156L/157L	*88*		*10 - 145*	*05/12/15 08:41*	*05/13/15 18:06*	*1*

Method: 1668C - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-73648/1-A
Matrix: Water
Analysis Batch: 73917

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 73648

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-111L	100		10 - 145	05/12/15 08:41	05/13/15 18:06	1
PCB-178L	96		10 - 145	05/12/15 08:41	05/13/15 18:06	1
PCB-28L	96		5 - 145	05/12/15 08:41	05/13/15 18:06	1

Lab Sample ID: LCS 320-73648/2-A
Matrix: Water
Analysis Batch: 73917

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 73648

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1	2000	1860		pg/L		93	60 - 135
PCB-104	2000	1960		pg/L		98	60 - 135
PCB-105	2000	1890		pg/L		94	60 - 135
PCB-114	2000	1880		pg/L		94	60 - 135
PCB-118	2000	1960		pg/L		98	60 - 135
PCB-123	2000	1830		pg/L		92	60 - 135
PCB-126	2000	1860		pg/L		93	60 - 135
PCB-15	2000	1800		pg/L		90	60 - 135
PCB-155	2000	1920		pg/L		96	60 - 135
PCB-156	4000	3790		pg/L		95	60 - 135
PCB-157	4000	3790		pg/L		95	60 - 135
PCB-167	2000	1840		pg/L		92	60 - 135
PCB-169	2000	1850		pg/L		93	60 - 135
PCB-188	2000	1870		pg/L		94	60 - 135
PCB-189	2000	1850		pg/L		92	60 - 135
PCB-19	2000	1940		pg/L		97	60 - 135
PCB-202	2000	1950		pg/L		97	60 - 135
PCB-205	2000	1930		pg/L		96	60 - 135
PCB-206	2000	1850		pg/L		92	60 - 135
PCB-208	2000	1890		pg/L		95	60 - 135
PCB-209	2000	1900		pg/L		95	60 - 135
PCB-3	2000	1860		pg/L		93	60 - 135
PCB-37	2000	1850		pg/L		92	60 - 135
PCB-4	2000	1870		pg/L		93	60 - 135
PCB-54	2000	1990		pg/L		99	60 - 135
PCB-77	2000	1830		pg/L		91	60 - 135
PCB-81	2000	1920		pg/L		96	60 - 135

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
PCB-104L	81		40 - 145
PCB-105L	96		40 - 145
PCB-114L	96		40 - 145
PCB-118L	95		40 - 145
PCB-123L	95		40 - 145
PCB-126L	97		40 - 145
PCB-155L	85		40 - 145
PCB-156L	99		40 - 145
PCB-157L	99		40 - 145
PCB-15L	84		15 - 145

Method: 1668C - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-73648/2-A
Matrix: Water
Analysis Batch: 73917

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 73648

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
PCB-167L	99		40 - 145
PCB-169L	102		40 - 145
PCB-188L	87		40 - 145
PCB-189L	97		40 - 145
PCB-19L	74		15 - 145
PCB-1L	66		15 - 145
PCB-202L	87		40 - 145
PCB-205L	94		40 - 145
PCB-206L	92		40 - 145
PCB-208L	91		40 - 145
PCB-209L	87		40 - 145
PCB-37L	95		15 - 145
PCB-3L	74		15 - 145
PCB-4L	72		15 - 145
PCB-54L	80		15 - 145
PCB-77L	99		40 - 145
PCB-81L	96		40 - 145
PCB-156L/157L	99		40 - 145

Surrogate	LCS %Recovery	LCS Qualifier	Limits
PCB-111L	107		10 - 145
PCB-178L	99		10 - 145
PCB-28L	99		5 - 145

GC/MS VOA

Analysis Batch: 382593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112191-2	MW-F5 (050515)	Total/NA	Water	8260B	
680-112191-3	MW-29 (050515)	Total/NA	Water	8260B	
680-112191-4	MW-F15 (050515)	Total/NA	Water	8260B	
680-112191-5	TRIP BLANK (050515)	Total/NA	Water	8260B	
LCS 680-382593/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-382593/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-382593/10	Method Blank	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 381679

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112191-2	MW-F5 (050515)	Total/NA	Water	3520C	
680-112191-2 MS	MW-F5 (050515)	Total/NA	Water	3520C	
680-112191-2 MSD	MW-F5 (050515)	Total/NA	Water	3520C	
680-112191-3	MW-29 (050515)	Total/NA	Water	3520C	
LCS 680-381679/12-A	Lab Control Sample	Total/NA	Water	3520C	
LCS 680-381679/15-A	Lab Control Sample	Total/NA	Water	3520C	
MB 680-381679/11-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 383051

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112191-2 MS	MW-F5 (050515)	Total/NA	Water	8270D LL	381679
680-112191-2 MSD	MW-F5 (050515)	Total/NA	Water	8270D LL	381679
LCS 680-381679/12-A	Lab Control Sample	Total/NA	Water	8270D LL	381679
LCS 680-381679/15-A	Lab Control Sample	Total/NA	Water	8270D LL	381679
MB 680-381679/11-A	Method Blank	Total/NA	Water	8270D LL	381679

Analysis Batch: 383233

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112191-2	MW-F5 (050515)	Total/NA	Water	8270D LL	381679
680-112191-3	MW-29 (050515)	Total/NA	Water	8270D LL	381679

GC Semi VOA

Prep Batch: 381706

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112191-1	MW-F3R (050515)	Total/NA	Water	3520C	
680-112191-1 MS	MW-F3R (050515)	Total/NA	Water	3520C	
680-112191-1 MSD	MW-F3R (050515)	Total/NA	Water	3520C	
LCS 680-381706/8-A	Lab Control Sample	Total/NA	Water	3520C	
MB 680-381706/4-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 381944

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112191-1	MW-F3R (050515)	Total/NA	Water	8081B/8082A	381706
680-112191-1 MS	MW-F3R (050515)	Total/NA	Water	8081B/8082A	381706
680-112191-1 MSD	MW-F3R (050515)	Total/NA	Water	8081B/8082A	381706
LCS 680-381706/8-A	Lab Control Sample	Total/NA	Water	8081B/8082A	381706
MB 680-381706/4-A	Method Blank	Total/NA	Water	8081B/8082A	381706

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Hercules Savannah

TestAmerica Job ID: 680-112191-1

Specialty Organics

Prep Batch: 73648

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112191-1	MW-F3R (050515)	Total/NA	Water	HRMS-Sep	
LCS 320-73648/2-A	Lab Control Sample	Total/NA	Water	HRMS-Sep	
MB 320-73648/1-A	Method Blank	Total/NA	Water	HRMS-Sep	

Analysis Batch: 73917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-112191-1	MW-F3R (050515)	Total/NA	Water	1668C	73648
LCS 320-73648/2-A	Lab Control Sample	Total/NA	Water	1668C	73648
MB 320-73648/1-A	Method Blank	Total/NA	Water	1668C	73648

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Hercules Savannah

TestAmerica Job ID: 680-112191-1

Client Sample ID: MW-F3R (050515)

Lab Sample ID: 680-112191-1
Matrix: Water

Date Collected: 05/05/15 10:20
Date Received: 05/05/15 13:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			505.7 mL	5.0 mL	381706	05/06/15 17:19	RBS	TAL SAV
Total/NA	Analysis	8081B/8082A		1	505.7 mL	5.0 mL	381944	05/07/15 16:48	JCK	TAL SAV
Total/NA	Prep	HRMS-Sep			1037.2 mL	20 uL	73648	05/12/15 08:41	DXD	TAL SAC
Total/NA	Analysis	1668C		1	1037.2 mL	20 uL	73917	05/13/15 21:51	KSS	TAL SAC

Client Sample ID: MW-F5 (050515)

Lab Sample ID: 680-112191-2
Matrix: Water

Date Collected: 05/05/15 10:55
Date Received: 05/05/15 13:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	382593	05/12/15 17:20	JD1	TAL SAV
Total/NA	Prep	3520C			504.2 mL	0.5 mL	381679	05/06/15 17:19	RBS	TAL SAV
Total/NA	Analysis	8270D LL		1	504.2 mL	0.5 mL	383233	05/15/15 21:15	NED	TAL SAV

Client Sample ID: MW-29 (050515)

Lab Sample ID: 680-112191-3
Matrix: Water

Date Collected: 05/05/15 11:30
Date Received: 05/05/15 13:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	382593	05/12/15 17:43	JD1	TAL SAV
Total/NA	Prep	3520C			870.3 mL	1.0 mL	381679	05/06/15 17:19	RBS	TAL SAV
Total/NA	Analysis	8270D LL		1	870.3 mL	1.0 mL	383233	05/15/15 21:43	NED	TAL SAV

Client Sample ID: MW-F15 (050515)

Lab Sample ID: 680-112191-4
Matrix: Water

Date Collected: 05/05/15 12:05
Date Received: 05/05/15 13:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	382593	05/12/15 18:06	JD1	TAL SAV

Client Sample ID: TRIP BLANK (050515)

Lab Sample ID: 680-112191-5
Matrix: Water

Date Collected: 05/05/15 00:00
Date Received: 05/05/15 13:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	382593	05/12/15 18:28	JD1	TAL SAV

Laboratory References:

EMSL = EMSL Analytical, Inc., 200 Rt 130 North, Cinnaminson, NJ 08077

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

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

Serial Number 95824

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
Hercules Savannah	60001205	GA
TAL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Smith, Kathryn E	4501696543	
CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
David Wilderman	770-428-9009	
CLIENT NAME	CLIENT E-MAIL	
Arcadis	dwilderman@arcadis-us.com	
CLIENT ADDRESS		
2410 Paces Ferry Rd Ste 400, GA 30339		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE 1 OF 1

STANDARD REPORT DELIVERY X
DATE DUE

EXPEDITED REPORT DELIVERY (SURCHARGE) ○
DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 1

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	MATRIX TYPE: AQUEOUS (WATER)	MATRIX TYPE: SOLID OR SEMISOLID	MATRIX TYPE: AIR	MATRIX TYPE: NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	REQUIRED ANALYSIS: 8260B-App 9 (HCL)	8081B/8082A Routine PCB's (NONE)	1668C-Full List 209 (NONE)	8270D_LL-PAHs only (None)	8260B-Benzene (HCL)	Subcontract-Asbestos (NONE)	NUMBER OF CONTAINERS SUBMITTED	REMARKS
5.5.15	1020	MW-F3R (050515)		X					2	2					
5.5.15	1055	MW-F5 (050515)		X				3			2				
5.5.15	1130	MW-29 (050515)		X				3			2				
5.5.15	1205	MW-F15 (050515)		X								3	2		Subcontract asbestos
5.5.15	—	TRIP BLANK (050515)		X				3							

680-112191 Chain of Custody

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
	5.5.15	1300						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES ○ NO ○	CUSTODY SEAL NO	SAVANNAH LOG NO.	LABORATORY REMARKS
	5/5/15	13:00				2.6°C 3.0°C CF

TAL8240-680 (1008)

Page 37 of 41

10/8/2015

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-112191-1

Login Number: 112191
List Number: 1
Creator: White, Menica R

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
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 containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
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	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 680-112191-1

Login Number: 112191
List Number: 2
Creator: Hytrek, Cheryl

List Source: TestAmerica Sacramento
List Creation: 05/07/15 02:03 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
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 containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Hercules Savannah

TestAmerica Job ID: 680-112191-1

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-17
A2LA	ISO/IEC 17025		399.01	02-28-17
Alabama	State Program	4	41450	06-30-16
Arkansas DEQ	State Program	6	88-0692	01-31-16
California	State Program	9	2939	07-31-16
Colorado	State Program	8	N/A	12-31-15
Connecticut	State Program	1	PH-0161	03-31-17
Florida	NELAP	4	E87052	06-30-16
GA Dept. of Agriculture	State Program	4	N/A	06-12-17
Georgia	State Program	4	803	06-30-16
Guam	State Program	9	14-004r	04-16-16
Hawaii	State Program	9	N/A	06-30-16
Illinois	NELAP	5	200022	11-30-15
Indiana	State Program	5	N/A	06-30-15 *
Iowa	State Program	7	353	06-30-17
Kentucky (DW)	State Program	4	90084	12-31-15
Kentucky (UST)	State Program	4	18	06-30-16
Kentucky (WW)	State Program	4	90084	12-31-15
Louisiana	NELAP	6	30690	06-30-16
Louisiana (DW)	NELAP	6	LA150014	12-31-15
Maine	State Program	1	GA00006	09-24-16
Maryland	State Program	3	250	12-31-15
Massachusetts	State Program	1	M-GA006	06-30-16
Michigan	State Program	5	9925	03-05-16
Mississippi	State Program	4	N/A	06-30-15 *
Montana	State Program	8	CERT0081	12-31-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-16
New Jersey	NELAP	2	GA769	10-30-16 *
New Mexico	State Program	6	N/A	06-30-16
New York	NELAP	2	10842	03-31-16
North Carolina (DW)	State Program	4	13701	07-31-16
North Carolina (WW/SW)	State Program	4	269	12-31-15
Oklahoma	State Program	6	9984	08-31-16
Pennsylvania	NELAP	3	68-00474	06-30-16
Puerto Rico	State Program	2	GA00006	12-31-15
South Carolina	State Program	4	98001	06-30-15 *
Tennessee	State Program	4	TN02961	06-30-16
Texas	NELAP	6	T104704185-14-7	11-30-15
USDA	Federal		SAV 3-04	06-11-17
Virginia	NELAP	3	460161	06-14-16
Washington	State Program	10	C805	06-10-16
West Virginia (DW)	State Program	3	9950C	12-31-15
West Virginia DEP	State Program	3	094	06-30-16
Wisconsin	State Program	5	999819810	08-31-16
Wyoming	State Program	8	8TMS-L	06-30-16

Laboratory: TestAmerica Sacramento

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

* Certification renewal pending - certification considered valid.

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Hercules Savannah

TestAmerica Job ID: 680-112191-1

Laboratory: TestAmerica Sacramento (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-16
Alaska (UST)	State Program	10	UST-055	12-18-15
Arizona	State Program	9	AZ0708	08-11-16
Arkansas DEQ	State Program	6	88-0691	06-17-16
California	State Program	9	2897	01-31-16
Colorado	State Program	8	N/A	08-31-16
Connecticut	State Program	1	PH-0691	06-30-17
Florida	NELAP	4	E87570	06-30-16
Hawaii	State Program	9	N/A	01-29-16
Illinois	NELAP	5	200060	03-17-16
Kansas	NELAP	7	E-10375	10-31-15
Louisiana	NELAP	6	30612	06-30-16
Michigan	State Program	5	9947	01-31-16
Nevada	State Program	9	CA44	07-31-16
New Jersey	NELAP	2	CA005	09-30-15 *
New York	NELAP	2	11666	04-01-16
Oregon	NELAP	10	CA200005	01-29-16
Oregon	NELAP Secondary AB	10	E87570	06-30-15
Pennsylvania	NELAP	3	9947	03-31-16
Texas	NELAP	6	T104704399-15-9	05-31-16
US Fish & Wildlife	Federal		LE148388-0	02-28-16
USDA	Federal		P330-11-00436	12-30-17
USEPA UCMR	Federal	1	CA00044	11-06-16
Utah	NELAP	8	QUAN1	02-28-16
Virginia	NELAP Secondary AB	3	460278	03-14-16
Washington	State Program	10	C581	05-04-16
West Virginia (DW)	State Program	3	9930C	12-31-15
Wyoming	State Program	8	8TMS-Q	01-29-16

* Certification renewal pending - certification considered valid.