



**JOSH RANDALL**  
PROJECT MANAGER

June 10, 2016

Ms. Shelly Lam  
On-Scene Coordinator  
U.S. Environmental Protection Agency Region 5  
2525 North Shadeland Ave  
Indianapolis, IN 46219

Subject: **Final Report for Hoosier Wood Preservers ER and Site Assessment**  
**EPA Contract No. EP-S5-13-01**  
**Technical Direction Document No. S05-0001-1505-005 & S05-0001-1506-201**  
**Document Tracking No. 0843**

Dear Ms. Lam:

Tetra Tech, Inc. (Tetra Tech) is submitting this Final Emergency Response and Site Assessment Report summarizing emergency response activities conducted at the Hoosier Wood Preservers site between May 26 and September 10, 2015, and the site assessment activities conducted between June 10 and 19, 2015. This report summarizes the findings of the field activities conducted at the site located at 3605 Farnsworth Street in Indianapolis, Indiana. This Final Report addresses your comments on the draft submitted on May 27, 2016.

If you have any questions regarding this report, please contact me at (317) 441-8570 and/or via e-mail at [jrandall@qepi.com](mailto:jrandall@qepi.com).

Respectfully,

A handwritten signature in black ink, appearing to read 'Josh Randall'.

Lucas Stamps

Written on behalf of Josh Randall  
Project Manager

**FINAL ER AND SITE ASSESSMENT REPORT  
FOR THE  
HOOSIER WOOD PRESERVERS SITE  
3605 FARNSWORTH STREET,  
INDIANAPOLIS, MARION COUNTY, INDIANA**

**U.S. Environmental Protection Agency**  
Emergency Response Branch  
Region 5  
2525 North Shadeland Avenue  
Indianapolis, IN 46219

*Submitted by*

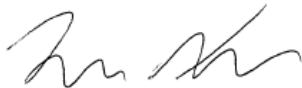
**Tetra Tech Inc.**  
1611 South Franklin Road  
Indianapolis, IN 46239

EPA Contract No. EP-S5-13-01

Technical Direction Document Nos. S05-0001-1505-005 and S05-0001-1506-201  
Document Tracking No. 0843

June 10, 2016

Prepared by



Lucas Stamps  
Environmental Scientist

Approved by



John Dirgo  
Environmental Scientist  
START QC Reviewer

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### **Attachments**

LABORATORY ANALYTICAL REPORT  
GEOPHYSICAL SURVEY REPORT

## 1.0 INTRODUCTION

Under the Superfund Technical Assessment and Response Team (START) Contract No. EP-S5-13-01, Technical Direction Document (TDD) Nos. S05-0001-1505-005 and S05-0001-1506-201, the U.S. Environmental Protection Agency (EPA) tasked Tetra Tech, Inc. (Tetra Tech), to assist the EPA On-Scene Coordinator (OSC) with emergency response activities and performing a site assessment at the Hoosier Wood Preservers site in Indianapolis, Marion County, Indiana. EPA requested that Tetra Tech START respond to emergency conditions following a fire, advance 22 soil borings across the site, and collect soil and groundwater samples for laboratory analysis. The purpose of the sampling was to determine the presence of hazardous substances and/or the presence of buried materials at the site. Tetra Tech also removed overgrown vegetation around the site prior to field activities and assisted with a geophysical survey of the property prior to the advancement of soil borings. Under the direction of OSC Lam, Tetra Tech START conducted emergency response activities between May 26 and September 10, 2015, and site assessment activities between June 10 and 19, 2015. The EPA OSC requested that a single report be produced documenting both of these projects due to their overlapping timeline and scope.

This report is organized into the following sections:

- Introduction – Provides a brief description of the objectives and scope of site assessment activities and describes the site and its history
- Emergency Response – Documents emergency response activities conducted by START
- Field Investigation – Discusses the methods and procedures used during the site assessment
- Analytical Results – Presents the analytical results for the samples collected during the site assessment
- Conclusions and Recommendation – Provides a summary of the site assessment findings and Tetra Tech's recommendations based on those findings

In addition, this site assessment report contains four appendices and one attachment. Appendix A provides figures for this report. Appendix B provides soil boring logs generated during the site assessment. Appendix C provides a summary table of analytical results and the data validation report. Appendix D provides a photo documentation log of emergency response and site assessment activities. The laboratory analytical report for samples collected during the site assessment and the geophysical survey report are included as attachments to this report.



## **1.1 Site Background**

The Hoosier Wood Preservers site is located at 3605 South Farnsworth Street in Indianapolis, Marion County, Indiana (Appendix A, Figure 1). The geographic coordinates of the site are 39.72241° north latitude and -86.22123° west longitude. The site is located approximately 3.5 miles southwest of downtown Indianapolis. The surrounding area is primarily industrial, although commercial properties are located to the south. Residential properties are within 200 feet to the east and northeast. The site is bordered by Farnsworth Street to the north, Kentucky Avenue to the south, an industrial property to the east, and railroad tracks to the west (Appendix A, Figures 1 and 2). No public water bodies are located within a 1-mile radius of the site.

Hoosier Wood Preservers, Inc. operated the site located at 3605 South Farnsworth Street in Indianapolis, Indiana from 1969 to 2013. The company performed wood treatment by using pressure to inject preservative compounds into wood products. The preservative compounds recently used by the company included chromated copper arsenate (CCA) and borate. Historically, creosote and pentachlorophenol were also used at the site. After the wood products were treated, they were placed on a drip pad to cure.

Hoosier Wood Preservers, Inc. was dissolved in 2012, and vacated the site in 2013. A limited liability company, 2008 TLA, LLC, purchased the site in February 2010 and is the current owner of the site. The site is currently abandoned, although many of the structures are still present. The building containing the drip pad described above caught fire on May 25, 2015.

On May 26, 2015, the Indiana Department of Environmental Management (IDEM) filed a report with the National Response Center (NRC # 1117591), and requested assistance from EPA. IDEM requested that EPA assess environmental hazards and secure hazardous materials abandoned on site. Fire investigators noted drums and containers inside buildings at the site.

## **2.0 EMERGENCY RESPONSE**

Following the fire on May 25, 2015, START conducted emergency response activities from May 26 to September 10, 2015. Emergency response activities included collecting samples for laboratory analysis from drums found on site; screening the site using a flame ionization detector, a photo ionization detector, and an x-ray fluorescence analyzer; maintaining site and photo logs throughout the duration of the response; and conducting field oversight during response activities.

The emergency response can be broken down into four phases: (1) securing the site; (2) finding, documenting, and categorizing contaminants at the site; (3) bulking waste into shippable containers; and (4) shipping waste off site for disposal.

1. The Marion County Public Health Department secured the main entry gate with a padlock and chain. Tetra Tech START conducted an initial site survey for harmful gases and radiation with a MultiRAE Pro multi-threat monitor and a Ludlum Model 19 Micro R Meter, respectively. The OSC did not request overnight security at the site. ERRS also made arrangements for three intermodal containers to be delivered to the site to secure waste pending disposal.
2. START, ERRS, and the OSC walked the site and entered all buildings, looking for containers or other concerning items. START photographed site conditions. START and ERRS assigned a number to all containers greater than 5 gallons in volume, and labeled them with spray paint. After labeling, START and ERRS opened and performed limited hazardous categorization on all drums and totes found on site. START documented numerous 275-gallon storage totes, cubic yard crates, 55-gallon drums, 30-gallon drums, cylinders, and small containers. Broken mercury switches were found in one of the buildings at the site, leaving elemental mercury on the floor. ERRS conducted mercury cleanup operations while Tetra Tech START monitored the breathing zone with a Lumex RA915 Mercury Vapor Analyzer.
3. ERRS overpacked dilapidated drums into overpack drums. ERRS bulked compatible waste into appropriate containers and transferred the contents of storage totes found on site into new totes. ERRS cut holes in vessels left on site to render them inoperable for future storage. Empty containers, as defined by the Resource Conservation and Recovery Act (RCRA), were placed in a roll-off box for disposal. START documented site activities and monitored air with a MultiRAE Pro multi-threat detector.
4. ERRS arranged shipping and disposal for all waste streams, which consisted of the following: 6 cubic yard boxes containing small containers and floor sweepings, 2 5-gallon buckets containing PCB ballasts and mercury switches, 5 cubic yard crates, 6 30-gallon drums, 58 55-gallon drums, 1 300-gallon tank, and 10 275-gallon totes.

As a result of emergency response operations, all containers found on site were removed or rendered inoperable for future storage.

### **3.0 FIELD INVESTIGATION**

Tetra Tech conducted site assessment activities between June 10 and 19, 2015. Activities included removing overgrown vegetation, assisting with a geophysical survey, advancing 22 soil borings, and collecting soil samples. The removal of overgrown vegetation preceded all other field activities to identify unknown surface features and to allow for the unhindered movement of personnel and equipment.

The following sections describe the geophysical survey, the soil borings, and the collection of soil samples.

#### **3.1 Geophysical Survey**

On June 15 and 16, 2015, EPA and Tetra Tech START mobilized to the site. After a brief safety meeting and equipment setup, EPA and Tetra Tech START personnel conducted a geophysical survey to identify potential buried materials in suspect areas at the site. Several passes were made across the site with the following instruments: a Geometrics G-858G cesium vapor gradient magnetometer, a Geophex GEM-2 broadband multi-frequency electromagnetic tool in quadrature and in-phase modes, a Geonics EM61-Mk2 for high sensitivity metal detection, and a Sensors and Software Noggins Plus ground penetrating radar with a 250 Megahertz antenna. GPS was used to record the operator's location during each pass made across the site and identified anomalies were marked on the ground surface with either spray paint or marking flags. Anomalies were identified at the northwestern corner of the site, near the former kiln, and in the center of the site, near the drip pad. The identified anomalies were used to aid in the placement of the proposed soil borings. An EPA report detailing the methods and results of the geophysical survey is included in the attachments for this report.

#### **3.2 Soil Boring Activities**

On June 18 and 19, 2015, the EPA OSC and Tetra Tech START mobilized to the site along with Earth Exploration of Indianapolis, Indiana to advance 22 soil borings. Soil borings were advanced with a direct push system and continuous soil samples were collected to depth using a macro-core sampler. The locations of the soil borings are shown on Figure 3. The soil borings (HWP B-1 through HWP B-22) were advanced to an approximate depth of at least 4 feet below ground surface (bgs). Soil borings HWP B-1 and HWP B-18 were advanced to a depth of 16 feet bgs and HWP B-4 was advanced to a depth of 8 feet bgs. Soils from the borings were logged in 2-foot intervals and field screened for impacts (staining and/or odor). Samples were collected from each 2-foot interval and placed in plastic bags for additional field testing and sampling as described in Section 3.3. Soil boring logs are included as Appendix B.

### 3.3 Sampling Activities

In accordance with the site-specific field sampling plan and health and safety plan, EPA directed Tetra Tech START to collect soil samples from soil borings that were identified to potentially have elevated levels of contaminants of concern (COC). During the investigation, the OSC also directed START personnel to collect two surface soil samples. HWP-SP1A consisted of soil mixed with a green powdery substance observed on the ground surface and HWP-SP2 consisted of soil mixed with charred debris and ash from the fire at the drip pad. Tetra Tech START personnel utilized a flame ionization detector (FID) and an x-ray fluorescence (XRF) analyzer to conduct field screening of all collected soil samples. Samples containing elevated levels of COCs were set aside and marked for laboratory analysis. Soil samples collected from soil borings HWP B-1, HWP B-2, HWP B-7, and HWP B-9 and surface soil samples HWP-SP1A and HWP-SP2 were analyzed for the eight RCRA metals using SW-846 Methods 6010B and 7471B and for hexavalent chromium using SW-846 Method 7196A. The soil sample from soil boring HWP B-18 was analyzed for volatile organic compounds (VOCs) using SW-846 Method 8260C and for semivolatile organic compounds (SVOCs) using SW-846 Method 8270D.

Additionally, an investigation derived waste sample (HWP-IDW) was also submitted for analysis of Toxicity Characteristic Leaching Procedure (TCLP) metals using SW-846 Method 6010C; TCLP VOCs using SW-846 Method 8260C; TCLP SVOCs using SW-846 Method 8270D; TCLP Pesticides using SW-846 Method 8081B; TCLP Herbicides using SW-846 Method 8151; TCLP polychlorinated biphenyls (PCBs) using SW-846 Method 8028A; Reactive Cyanide using American Society for Testing and Materials (ASTM) Method D5049; Reactive Sulfide using ASTM Method D4978; pH using SW-846 Method 9045D; and Flash Point using SW-846 Method 1010A. This sample was collected to allow for the disposal of all investigation derived waste.

## 4.0 ANALYTICAL RESULTS

The analytical results for soil samples collected during the site assessment are presented in Appendix C, Tables 1 and 2, along with the associated data validation report. The laboratory data report is included in the attachments to this report. The analytical results were compared to the EPA Removal Management Levels (RML) for industrial soil. Analytical results in exceedance of EPA RMLs are summarized below and are presented in Appendix A, Figure 3. All other results were either below RMLs or below laboratory reporting limits.

- Arsenic was detected above the RML of 300 mg/kg in the following samples: HWP B-1 (2,460 mg/kg), HWP-SP1A (272,000 mg/kg), and HWP-SP2 (4,510 mg/kg).

- No other COCs were detected above the RMLs.

The soil sample from soil boring HWP B-18 was analyzed for VOCs and SVOCs. Although several VOCs and SVOCs were detected in the sample, all results were below RMLs. The IDW sample was analyzed for several disposal parameters. All results were below regulatory levels and the IDW was disposed of as a non-hazardous waste.

ERRS collected numerous samples from around the site for disposal purposes. One of these samples (HWP-Disposal-3), composed of particulate matter from the floor in the former stacker building (adjacent to sample HWP-B22), was extracted using the TCLP. The TCLP extract contained arsenic at 26.9 milligrams per liter (mg/L), above the toxicity characteristic regulatory level of 5 mg/L.

## **5.0 CONCLUSIONS**

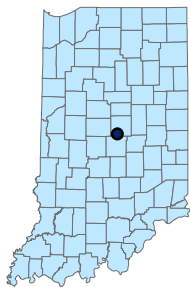
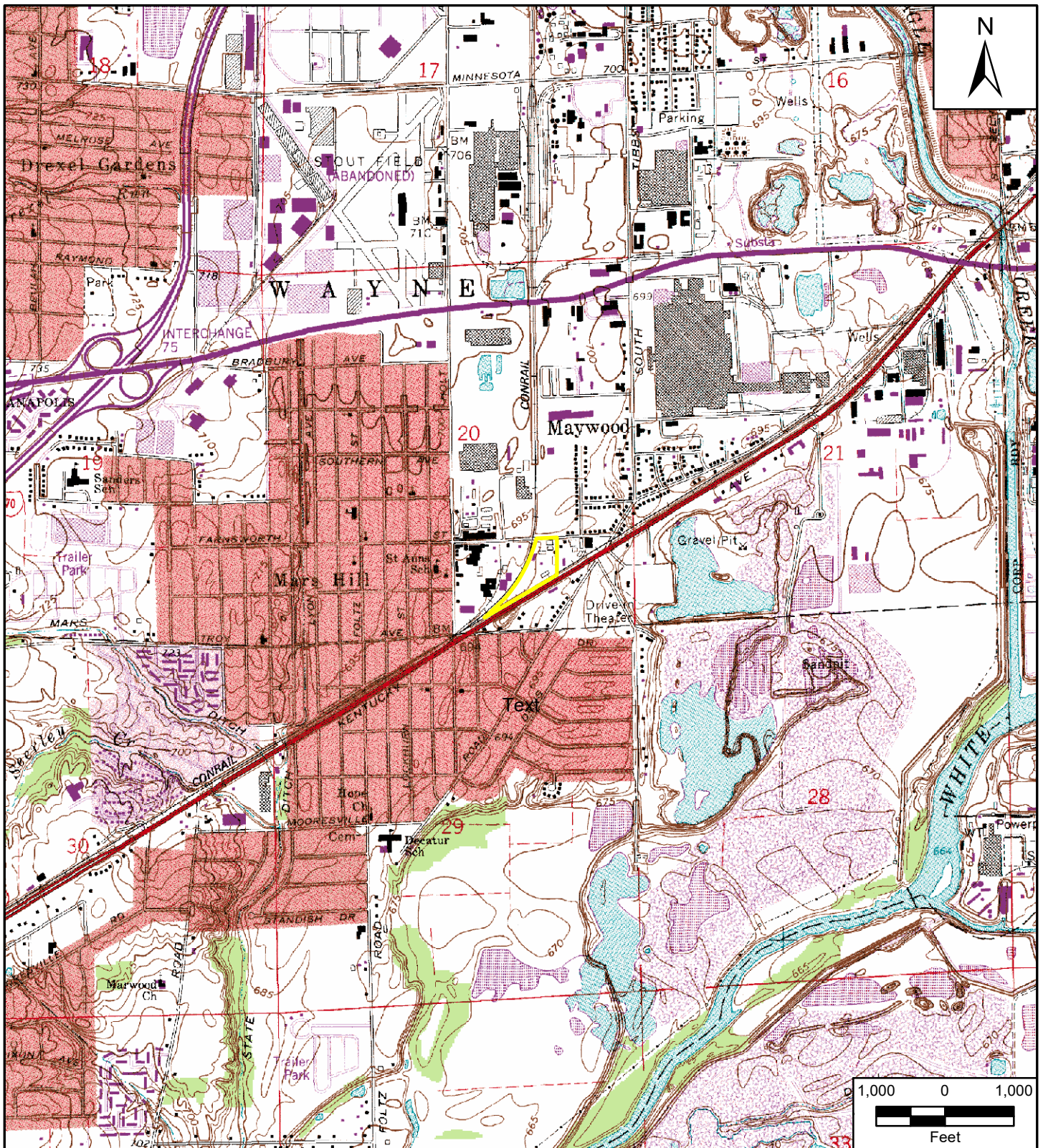
During the emergency response, Tetra Tech START assisted with identifying and categorizing threats encountered on site utilizing field screening methods and collecting samples for laboratory analysis. While the ERRS contractor secured, repackaged, and arranged disposal for waste, START performed air monitoring, documented site activities, and simultaneously performed a removal assessment for soil contamination.

Tetra Tech collected soil samples from locations requested by the OSC based on site observations and the results of a geophysical survey. Soil boring activities were completed to identify potential COCs at the site as well as locate potentially buried materials. Analytical results were compared to the EPA RMLs for industrial soils. Analytical results for three samples indicated the presence of arsenic above the RML at the site. As a result of this assessment, a time-critical removal action was conducted to remove soil and other material containing COCs above the RMLs from the site following proper health and safety techniques. The removal, which was completed prior to the submission of this report, focused on soil from the area around HWP B-1, the green powdery substance that made up HWP-SP1A, charred material and soil from the drip pad (HWP-SP2), and the dirt floor from the former stacker building.

**APPENDIX A**  
**FIGURES**

- 1 – SITE LOCATION MAP
- 2 – SITE MAP
- 3 – SOIL ANALYTICAL RESULTS





Maywood Quadrangle  
Section 20, Township 15N, Range 3E

Legend

 Site Boundary

Hoosier Wood Preservers  
Indianapolis, Indiana

Figure 1  
Site Location Map

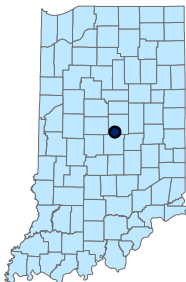


Source: USGS 7.5 Minute DRG Quadrangle

Prepared For: EPA

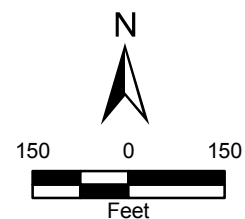
Prepared By: Tetra Tech, Inc.





#### Legend

Approximate Site Boundary



Hoosier Wood Preservers  
Indianapolis, Indiana

### Figure 2 Site Map

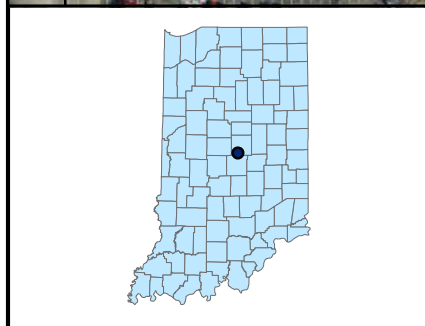
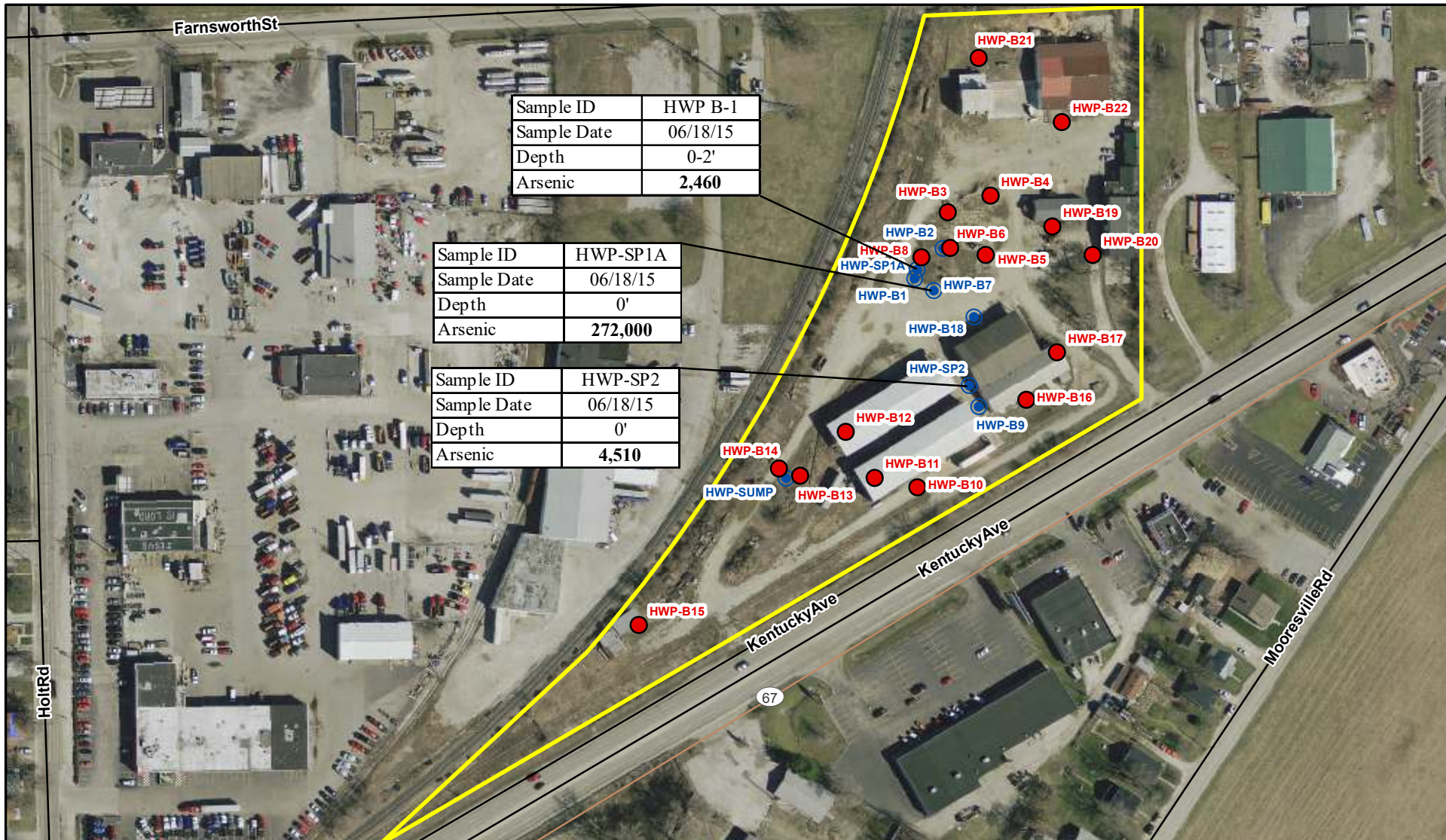


Prepared For: EPA

Prepared By: Tetra Tech, Inc.

Source: 2011-2013 Indiana Orthophotography

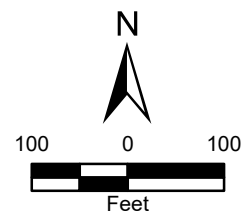




Notes:  
Parts per million  
Indicates concentration exceeds RMLs

#### Legend

- Soil Boring
- Soil Boring (Submitted for laboratory analysis)
- Approximate Site Boundary



Hoosier Wood Preservers  
Indianapolis, Indiana

### Figure 3 Soil Analytical Results



Prepared For: EPA

Prepared By: Tetra Tech, Inc.

Source: 2011-2013 Indiana Orthophotography

Coordinate System:

**APPENDIX B**  
**SOIL BORING LOGS**



QUALITY ENVIRONMENTAL  
PROFESSIONALS, INC.

1611 South Franklin Road  
Indianapolis, Indiana

LOG OF: **HWP-B-1**  
(1 of 1)

Project Number: **13-09-035**

Client: <b>EPA</b>	Drilling Method: <b>Direct Push</b>
Project: <b>Hoosier Wood Preservers</b>	Sampling Method:
Location: <b>Indianapolis, IN</b>	Weather: <b>P Cloudy</b>
Logged By: <b>JTB</b>	Time Terminated: <b>945</b>
Drilling Company: <b>Earth Exploration</b>	Drillers: <b>Sam</b>
Completion Date: <b>June 18, 2015</b>	

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)
	Gravel - gray damp w/ wood fragments				
	Sandy Clay - dark brown, dry, loose, slightly plastic	1			
2		2			2
4		3			4
6	Clayey Sand - light brown, dry, loose	4			6
8		5			8
10		6			10
12					12
14	grades compact/firm				14
16	Bottom of Boring at 16 ft				16
18					18
20					20

BORING LOG - BORING LOGS.GPJ BORING LOG.GDT 7/6/15



QUALITY ENVIRONMENTAL  
PROFESSIONALS, INC.

1611 South Franklin Road  
Indianapolis, Indiana

LOG OF: **HWP-B-2**  
(1 of 1)

Project Number: **13-09-035**

Client: <b>EPA</b>	Drilling Method: <b>Direct Push</b>
Project: <b>Hoosier Wood Preservers</b>	Sampling Method:
Location: <b>Indianapolis, IN</b>	Weather: <b>P Cloudy</b>
Logged By: <b>JTB</b>	Time Terminated: <b>1015</b>
Drilling Company: <b>Earth Exploration</b>	Drillers: <b>Sam</b>
Completion Date: <b>June 18, 2015</b>	

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)
	Sandy Clay - brown, damp, firm, slightly plastic	1			
2		2			2
4	grades w/ large gravel				4
	Refusal @ 4.2' Bottom of Boring at 4.2 ft	3			
6					6
8					8
10					10
12					12
14					14
16					16
18					18
20					20



QUALITY ENVIRONMENTAL  
PROFESSIONALS, INC.

1611 South Franklin Road  
Indianapolis, Indiana

LOG OF: **HWP-B-3**  
(1 of 1)

Project Number: **13-09-035**

Client: <b>EPA</b>	Drilling Method: <b>Direct Push</b>
Project: <b>Hoosier Wood Preservers</b>	Sampling Method:
Location: <b>Indianapolis, IN</b>	Weather: <b>P Cloudy</b>
Logged By: <b>JTB</b>	Time Terminated: <b>1035</b>
Drilling Company: <b>Earth Exploration</b>	Drillers: <b>Sam</b>
Completion Date: <b>June 18, 2015</b>	

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)
	Sandy Clay - brown, damp, firm, slightly plastic	1			
2					2
		2			
4	grades w/ large gravel				4
	Bottom of Boring at 4 ft				
6					6
8					8
10					10
12					12
14					14
16					16
18					18
20					20

BORING LOG BORING LOGS.GPJ BORING LOG.GDT 7/6/15



QUALITY ENVIRONMENTAL  
PROFESSIONALS, INC.

1611 South Franklin Road  
Indianapolis, Indiana

LOG OF: **HWP-B-4**  
(1 of 1)

Project Number: **13-09-035**

Client: <b>EPA</b>		Drilling Method: <b>Direct Push</b>	
Project: <b>Hoosier Wood Preservers</b>		Sampling Method:	
Location: <b>Indianapolis, IN</b>		Weather: <b>P Cloudy</b>	
Logged By: <b>JTB</b>		Time Terminated: <b>1050</b>	
Drilling Company: <b>Earth Exploration</b>	Drillers: <b>Sam</b>	Completion Date: <b>June 18, 2015</b>	

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)
2	Sandy Clay - dark brown, dry, hard, non-plastic, trace gravel	1			2
4	Sand and Gravel - light brown/gray, dry, loose	2			4
6		3			6
8		4			8
10	Bottom of Boring at 8 ft				10
12					12
14					14
16					16
18					18
20					20

BORING LOG BORING LOGS.GPJ BORING LOG.GDT 7/6/15



QUALITY ENVIRONMENTAL  
PROFESSIONALS, INC.

1611 South Franklin Road  
Indianapolis, Indiana

LOG OF: **HWP-B-5**  
(1 of 1)

Project Number: **13-09-035**

Client: <b>EPA</b>		Drilling Method: <b>Direct Push</b>			
Project: <b>Hoosier Wood Preservers</b>		Sampling Method:			
Location: <b>Indianapolis, IN</b>		Weather: <b>P Cloudy</b>			
Logged By: <b>JTB</b>		Time Terminated: <b>1110</b>			
Drilling Company: <b>Earth Exploration</b>	Drillers: <b>Sam</b>	Completion Date: <b>June 18, 2015</b>			
Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)
	Sandy Clay - brown, dry, hard, non-plastic, trace gravel	1			2
2		2			4
4	Bottom of Boring at 4 ft				4
6					6
8					8
10					10
12					12
14					14
16					16
18					18
20					20



QUALITY ENVIRONMENTAL  
PROFESSIONALS, INC.

1611 South Franklin Road  
Indianapolis, Indiana

LOG OF: **HWP-B-6**  
(1 of 1)

Project Number: **13-09-035**

Client: <b>EPA</b>	Drilling Method: <b>Direct Push</b>
Project: <b>Hoosier Wood Preservers</b>	Sampling Method:
Location: <b>Indianapolis, IN</b>	Weather: <b>P Cloudy</b>
Logged By: <b>JTB</b>	Time Terminated: <b>1140</b>
Drilling Company: <b>Earth Exploration</b>	Drillers: <b>Sam</b>
Completion Date: <b>June 18, 2015</b>	

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)
	Sandy Clay - brown, damp, firm, slightly plastic	1			
2					2
		2			
4	grades w/ large gravel				4
	Refusal @ 4.2'	3			
	Bottom of Boring at 4.2 ft				
6					6
8					8
10					10
12					12
14					14
16					16
18					18
20					20

BORING LOG BORING LOGS.GPJ BORING LOG.GDT 7/6/15





QUALITY ENVIRONMENTAL  
PROFESSIONALS, INC.

1611 South Franklin Road  
Indianapolis, Indiana

LOG OF: **HWP-B-7**  
(1 of 1)

Project Number: **13-09-035**

Client: <b>EPA</b>	Drilling Method: <b>Direct Push</b>
Project: <b>Hoosier Wood Preservers</b>	Sampling Method:
Location: <b>Indianapolis, IN</b>	Weather: <b>P Cloudy</b>
Logged By: <b>JTB</b>	Time Terminated: <b>1150</b>
Drilling Company: <b>Earth Exploration</b>	Drillers: <b>Sam</b>
Completion Date: <b>June 18, 2015</b>	

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)
	Sandy Clay - dark brown, dry, firm, non-plastic - wood gragments at 4"	1			
2	grades brown/orange	2			2
4	Bottom of Boring at 4 ft				4
6					6
8					8
10					10
12					12
14					14
16					16
18					18
20					20



QUALITY ENVIRONMENTAL  
PROFESSIONALS, INC.

1611 South Franklin Road  
Indianapolis, Indiana

LOG OF: **HWP-B-8**  
(1 of 1)

Project Number: **13-09-035**

Client: <b>EPA</b>		Drilling Method: <b>Direct Push</b>
Project: <b>Hoosier Wood Preservers</b>		Sampling Method:
Location: <b>Indianapolis, IN</b>		Weather: <b>P Cloudy</b>
Logged By: <b>JTB</b>		Time Terminated: <b>1200</b>
Drilling Company: <b>Earth Exploration</b>	Drillers: <b>Sam</b>	Completion Date: <b>June 18, 2015</b>

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)
	Sandy Clay - dark brown, dry, firm, non-plastic - wood gragments at 4"	1			
2	grades brown/orange	2			2
4	Bottom of Boring at 4 ft				4
6					6
8					8
10					10
12					12
14					14
16					16
18					18
20					20

BORING LOG BORING LOGS.GPJ BORING LOG.GDT 7/6/15



QUALITY ENVIRONMENTAL  
PROFESSIONALS, INC.

1611 South Franklin Road  
Indianapolis, Indiana

LOG OF: **HWP-B-9**  
(1 of 1)

Project Number: **13-09-035**

Client: <b>EPA</b>	Drilling Method: <b>Direct Push</b>
Project: <b>Hoosier Wood Preservers</b>	Sampling Method:
Location: <b>Indianapolis, IN</b>	Weather: <b>P Cloudy</b>
Logged By: <b>JTB</b>	Time Terminated: <b>1230</b>
Drilling Company: <b>Earth Exploration</b>	Drillers: <b>Sam</b>
Completion Date: <b>June 18, 2015</b>	

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)
2	Sandy Clay - dark brown, dry, hard, slightly plastic	1			2
4	grades moist, firm, plastic	2			4
4	Bottom of Boring at 4 ft				4
6					6
8					8
10					10
12					12
14					14
16					16
18					18
20					20

BORING LOG BORING LOGS.GPJ BORING LOG.GDT 7/6/15



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LOG OF: **HWP-B-10**  
(1 of 1)

Project Number: **13-09-035**

Client: <b>EPA</b>		Drilling Method: <b>Direct Push</b>
Project: <b>Hoosier Wood Preservers</b>		Sampling Method:
Location: <b>Indianapolis, IN</b>		Weather: <b>P Cloudy</b>
Logged By: <b>JTB</b>		Time Terminated: <b>1250</b>
Drilling Company: <b>Earth Exploration</b>	Drillers: <b>Sam</b>	Completion Date: <b>June 18, 2015</b>

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)
2	Sandy Clay - dark brown, dry, hard, slightly plastic, trace gravel	1			2
4	grades moist, firm, plastic	2			4
4	Bottom of Boring at 4 ft				4
6					6
8					8
10					10
12					12
14					14
16					16
18					18
20					20



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LOG OF: **HWP-B-11**  
(1 of 1)

Project Number: **13-09-035**

Client: <b>EPA</b>	Drilling Method: <b>Direct Push</b>
Project: <b>Hoosier Wood Preservers</b>	Sampling Method:
Location: <b>Indianapolis, IN</b>	Weather: <b>P Cloudy</b>
Logged By: <b>JTB</b>	Time Terminated: <b>1300</b>
Drilling Company: <b>Earth Exploration</b>	Drillers: <b>Sam</b>
Completion Date: <b>June 18, 2015</b>	

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)
	Sandy Clay - dark brown, dry, hard, slightly plastic, trace gravel	1			
2	grades orange/brown				2
	grades moist, firm, plastic	2			
4	Bottom of Boring at 4 ft				4
6					6
8					8
10					10
12					12
14					14
16					16
18					18
20					20



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LOG OF: **HWP-B-12**  
(1 of 1)

Project Number: **13-09-035**

Client: <b>EPA</b>		Drilling Method: <b>Direct Push</b>
Project: <b>Hoosier Wood Preservers</b>		Sampling Method:
Location: <b>Indianapolis, IN</b>		Weather: <b>P Cloudy</b>
Logged By: <b>JTB</b>		Time Terminated: <b>1315</b>
Drilling Company: <b>Earth Exploration</b>	Drillers: <b>Sam</b>	Completion Date: <b>June 18, 2015</b>

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)
2	Sandy Clay - dark brown, dry, hard, slightly plastic, trace gravel	1			2
	grades moist, firm, plastic	2			
4	Bottom of Boring at 4 ft				4
6					6
8					8
10					10
12					12
14					14
16					16
18					18
20					20



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LOG OF: **HWP-B-13**  
(1 of 1)

Project Number: **13-09-035**

Client: <b>EPA</b>		Drilling Method: <b>Direct Push</b>
Project: <b>Hoosier Wood Preservers</b>		Sampling Method:
Location: <b>Indianapolis, IN</b>		Weather: <b>P Cloudy</b>
Logged By: <b>JTB</b>		Time Terminated: <b>1330</b>
Drilling Company: <b>Earth Exploration</b>	Drillers: <b>Sam</b>	Completion Date: <b>June 18, 2015</b>

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)
	Sandy Clay - brown, damp, firm, slightly plastic, trace gravel	1			2
2		2			4
4	Bottom of Boring at 4 ft				6
6					8
8					10
10					12
12					14
14					16
16					18
18					20
20					

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LOG OF: **HWP-B-14**  
(1 of 1)

Project Number: **13-09-035**

Client: <b>EPA</b>	Drilling Method: <b>Direct Push</b>
Project: <b>Hoosier Wood Preservers</b>	Sampling Method:
Location: <b>Indianapolis, IN</b>	Weather: <b>P Cloudy</b>
Logged By: <b>JTB</b>	Time Terminated: <b>1340</b>
Drilling Company: <b>Earth Exploration</b>	Drillers: <b>Sam</b>
Completion Date: <b>June 18, 2015</b>	

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)
	Sandy Clay - dark brown, dry, firm, non-plastic, iron staining	1			
2	Sandy Clay - brown, damp, hard, slightly plastic, trace gravel				2
	Sand - light brown, dry, loose	2			
4	Bottom of Boring at 4 ft				4
6					6
8					8
10					10
12					12
14					14
16					16
18					18
20					20

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1611 South Franklin Road  
Indianapolis, Indiana

LOG OF: **HWP-B-15**  
(1 of 1)

Project Number: **13-09-035**

Client: <b>EPA</b>	Drilling Method: <b>Direct Push</b>
Project: <b>Hoosier Wood Preservers</b>	Sampling Method:
Location: <b>Indianapolis, IN</b>	Weather: <b>P Cloudy</b>
Logged By: <b>JTB</b>	Time Terminated: <b>1345</b>
Drilling Company: <b>Earth Exploration</b>	Drillers: <b>Sam</b>
Completion Date: <b>June 18, 2015</b>	

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)
	Sandy Clay - dark brown, dry, hard, non-plastic	1	Petro Odor from 0' to 0.5'		
2	grades brown, damp, w/ trace gravel	2			2
4	Bottom of Boring at 4 ft				4
6					6
8					8
10					10
12					12
14					14
16					16
18					18
20					20

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1611 South Franklin Road  
Indianapolis, Indiana

LOG OF: **HWP-B-16**  
(1 of 1)

Project Number: **13-09-035**

Client: <b>EPA</b>	Drilling Method: <b>Direct Push</b>
Project: <b>Hoosier Wood Preservers</b>	Sampling Method:
Location: <b>Indianapolis, IN</b>	Weather: <b>Rainy</b>
Logged By: <b>JTB</b>	Time Terminated: <b>830</b>
Drilling Company: <b>Earth Exploration</b>	Drillers: <b>Sam</b>
Completion Date: <b>June 19, 2015</b>	

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)
	Sandy Clay - moist, dark brown, soft, plastic	1			
2					2
	grades light brown, damp, firm	2			
4	Sand - brown, damp, loose, slightly plastic, trace clay				4
	Bottom of Boring at 4 ft				
6					6
8					8
10					10
12					12
14					14
16					16
18					18
20					20



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LOG OF: **HWP-B-17**  
(1 of 1)

Project Number: **13-09-035**

Client: <b>EPA</b>		Drilling Method: <b>Direct Push</b>	
Project: <b>Hoosier Wood Preservers</b>		Sampling Method:	
Location: <b>Indianapolis, IN</b>		Weather: <b>Rainy</b>	
Logged By: <b>JTB</b>		Time Terminated: <b>840</b>	
Drilling Company: <b>Earth Exploration</b>	Drillers: <b>Sam</b>	Completion Date: <b>June 19, 2015</b>	

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)
	Gravel Fill				
	Sandy Clay - damp, dark brown, firm, slightly plastic, trace gravel	1			
2					2
		2			
4					4
	Bottom of Boring at 4 ft				
6					6
8					8
10					10
12					12
14					14
16					16
18					18
20					20

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1611 South Franklin Road  
Indianapolis, Indiana

LOG OF: **HWP-B-18**  
(1 of 1)

Project Number: **13-09-035**

Client: <b>EPA</b>		Drilling Method: <b>Direct Push</b>
Project: <b>Hoosier Wood Preservers</b>		Sampling Method:
Location: <b>Indianapolis, IN</b>		Weather: <b>Rainy</b>
Logged By: <b>JTB</b>		Time Terminated: <b>930</b>
Drilling Company: <b>Earth Exploration</b>	Drillers: <b>Sam</b>	Completion Date: <b>June 19, 2015</b>

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)
	Gravel Fill				
	Sandy Clay - dry, dark brown/black, hard, non-plastic, trace gravel	1			
2		2			2
4	Sand and Gravel - dry, light brown, loose	3			4
6		4			6
8	Sand - light brown, dry, loose				8
	Sand and Gravel - dry, light brown, loose	5			
10		6			10
12					12
14					14
16	Bottom of Boring at 16 ft				16
18					18
20					20

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1611 South Franklin Road  
Indianapolis, Indiana

LOG OF: **HWP-B-19**  
(1 of 1)

Project Number: **13-09-035**

Client: <b>EPA</b>		Drilling Method: <b>Direct Push</b>	
Project: <b>Hoosier Wood Preservers</b>		Sampling Method:	
Location: <b>Indianapolis, IN</b>		Weather: <b>Rainy</b>	
Logged By: <b>JTB</b>		Time Terminated: <b>1005</b>	
Drilling Company: <b>Earth Exploration</b>	Drillers: <b>Sam</b>	Completion Date: <b>June 19, 2015</b>	

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)
	Gravel Fill				
	Sandy Clay - damp, dark brown, firm/hard,	1			
2					2
	grades brown w/ gray mottling	2			
4					4
	Bottom of Boring at 4 ft				
6					6
8					8
10					10
12					12
14					14
16					16
18					18
20					20



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LOG OF: **HWP-B-20**  
(1 of 1)

Project Number: **13-09-035**

Client: <b>EPA</b>	Drilling Method: <b>Direct Push</b>
Project: <b>Hoosier Wood Preservers</b>	Sampling Method:
Location: <b>Indianapolis, IN</b>	Weather: <b>Rainy</b>
Logged By: <b>JTB</b>	Time Terminated: <b>1020</b>
Drilling Company: <b>Earth Exploration</b>	Drillers: <b>Sam</b>
Completion Date: <b>June 19, 2015</b>	

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)
	Gravel Fill				
		1			
2	Sandy Clay - dry, dark brown, firm, slightly plastic, trace gravel				2
		2			
4	Bottom of Boring at 4 ft				4
6					6
8					8
10					10
12					12
14					14
16					16
18					18
20					20



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Indianapolis, Indiana

LOG OF: **HWP-B-21**  
(1 of 1)

Project Number: **13-09-035**

Client: <b>EPA</b>	Drilling Method: <b>Direct Push</b>
Project: <b>Hoosier Wood Preservers</b>	Sampling Method:
Location: <b>Indianapolis, IN</b>	Weather: <b>Rainy</b>
Logged By: <b>JTB</b>	Time Terminated: <b>1030</b>
Drilling Company: <b>Earth Exploration</b>	Drillers: <b>Sam</b>
Completion Date: <b>June 19, 2015</b>	

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)
	Gravel Fill				
	Sandy Clay - dry, dark brown, slightly plastic, trace gravel	1			
2					2
	grades brown, moist, firm/soft	2			
4					4
	Bottom of Boring at 4 ft				
6					6
8					8
10					10
12					12
14					14
16					16
18					18
20					20



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1611 South Franklin Road  
Indianapolis, Indiana

LOG OF: **HWP-B-22**  
(1 of 1)

Project Number: **13-09-035**

Client: <b>EPA</b>		Drilling Method: <b>Direct Push</b>
Project: <b>Hoosier Wood Preservers</b>		Sampling Method:
Location: <b>Indianapolis, IN</b>		Weather: <b>Rainy</b>
Logged By: <b>JTB</b>		Time Terminated: <b>1050</b>
Drilling Company: <b>Earth Exploration</b>	Drillers: <b>Sam</b>	Completion Date: <b>June 19, 2015</b>

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)
	Gravel Fill				
2	Sandy Clay - dry, dark brown, firm/hard, non-plastic, platy, brown mottling	1			2
4	Sandy Clay - brown, moist, firm, plastic, trace gravel	2			4
	Bottom of Boring at 4 ft				
6					6
8					8
10					10
12					12
14					14
16					16
18					18
20					20

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**APPENDIX C**  
**ANALYTICAL RESULTS TABLES AND DATA VALIDATION REPORT**

Table 1  
Soil Metals Analytical Results  
Hoosier Wood Preservers Site  
Indianapolis, IN  
6/18/2015 - 6/19/2015

Parameters	EPA RML (TCR = 10-4, HQ = 3) Industrial Soil	Sample ID	HWP B-1	HWP B-2	HWP B-7	HWP B-7 (DUP-1)	HWP B-9	HWP- SP1A	HWP- SP2	HWP- SUMP
		Depth (feet)	0-2	0-4	0-2	0-2	0-2	NA	NA	NA
		Units	Results							
Arsenic	300	mg/kg	<b>2,460</b>	227	46.3 <sup>J</sup>	155 <sup>J</sup>	28.1 <sup>J-</sup>	<b>272,000</b>	<b>4,510</b>	288
Barium	650,000	mg/kg	56.2	53.3	69.1	74.8	62.6	347	39.3	68
Cadmium	2,900	mg/kg	2.6	0.52	0.31 <sup>J</sup>	0.54 <sup>J</sup>	0.076 <sup>J+</sup>	599	8.8	2.2
Chromium	NL	mg/kg	1,420	148	72.5 <sup>J</sup>	178 <sup>J</sup>	36 <sup>J-</sup>	133,000	4,490	256
Hexavalent Chromium	630	mg/kg	ND	ND	ND	ND	ND	12.7 <sup>J</sup>	ND	ND
Lead	800	mg/kg	62.9	22.5	48.6 <sup>J</sup>	141 <sup>J</sup>	12.4 <sup>J+</sup>	599	17.1	74.9
Mercury	140	mg/kg	0.1	0.12	0.14 <sup>J</sup>	0.025 <sup>J</sup>	0.046 <sup>J-</sup>	14.7	ND	0.1
Selenium	18,000	mg/kg	ND	ND	ND	ND	ND	55.4	ND	ND
Silver	18,000	mg/kg	0.25	0.096 <sup>J</sup>	0.053 <sup>J</sup>	ND	0.066 <sup>J</sup>	16.9 <sup>J</sup>	ND	ND

**Notes:**

EPA = U.S. Environmental Protection Agency

HQ = Hazard Quotient

ID = Identification

J = Value is approximate

J- = Value is approximate and may be biased low

J+ = Value is approximate and may be biased high

mg/kg = milligrams per kilogram

ND = Not detected above laboratory reporting limit

NL = Not Listed

RML = Removal Management Level

TCR = Target Cancer Risk

Table 2  
Soil VOCs and SVOCs Analytical Results  
Hoosier Wood Preservers Site  
Indianapolis, IN  
6/19/2015

Parameters <sup>1</sup>	EPA RML (TCR = 10-4, HQ = 3) Industrial Soil	Sample ID	HWP B-18	HWP B-18 (DUP-2)
		Depth (feet)	0-2	0-2
		Units	Results	
2-Methylnaphthalene	9.00E+06	ug/kg	544 <sup>J-</sup>	1,010 <sup>J-</sup>
Acetone	2.00E+09	ug/kg	140 <sup>J</sup>	495
Acetophenone	3.50E+08	ug/kg	843	ND
Benzo(a)anthracene	2.90E+05	ug/kg	34.2 <sup>J</sup>	ND
Benzo(a)pyrene	2.90E+04	ug/kg	57.3 <sup>J</sup>	ND
Benzo(b)fluoranthene	2.90E+05	ug/kg	76.9 <sup>J</sup>	ND
Benzo(g,h,i)perylene	NL	ug/kg	43.1 <sup>J</sup>	ND
Benzo(k)fluoranthene	2.90E+06	ug/kg	32.3 <sup>J</sup>	ND
Carbon disulfide	1.00E+07	ug/kg	16.9 <sup>J</sup>	ND
Chrysene	2.90E+07	ug/kg	57 <sup>J</sup>	ND
Dibenzofuran	3.10E+06	ug/kg	220	ND
Ethylbenzene	2.50E+06	ug/kg	18.9 <sup>J</sup>	ND
Fluoranthene	9.00E+07	ug/kg	79.2 <sup>J</sup>	ND
Indeno(1,2,3-cd)pyrene	2.90E+05	ug/kg	38.6 <sup>J</sup>	ND
Isopropylbenzene	NL	ug/kg	40.5 <sup>J</sup>	ND
m,p-Xylenes	7.20E+06	ug/kg	47.4 <sup>J</sup>	ND
Methyl Acetate	3.50E+09	ug/kg	80.6	ND
Methylcyclohexane	NL	ug/kg	94.3 <sup>J-</sup>	ND
o-Xylene	8.40E+06	ug/kg	15.1 <sup>J</sup>	ND
Phenanthrene	NL	ug/kg	102 <sup>J</sup>	ND
Pyrene	6.80E+07	ug/kg	60.1 <sup>J</sup>	ND
Toluene	1.40E+08	ug/kg	11.7 <sup>J</sup>	ND

**Notes:**

1 = Only positively identified analytes are shown

EPA = U.S. Environmental Protection Agency

HQ = Hazard Quotient

ID = Identification

J = Value is approximate

J- = Value is approximate and may be biased low

ND = Not detected above the laboratory reporting limit

NL = Not Listed

RML = Removal Management Level

TCR = Target Cancer Risk

ug/kg = micrograms per kilogram



April 18, 2016

Ms. Shelly Lam  
On-Scene Coordinator  
U.S. Environmental Protection Agency Region 5  
2525 North Shadeland Avenue  
Indianapolis, Indiana 46219

**Subject: Data Validation Report  
Hoosier Wood Preservers Fire ER  
EPA Contract No. EP-S5-13-01  
Technical Direction Document No. S05-0001-1506-201  
Document Tracking No. 0703**

Dear Ms. Lam:

Tetra Tech Inc. (Tetra Tech) is submitting this Data Validation Report for 10 soil samples collected at the Hoosier Wood Preservers Fire ER site. The samples were collected on June 18 and 19, 2015, and were analyzed for Resource Conservation and Recovery Act metals, hexavalent chromium, volatile organic compounds, and semivolatile organic compounds by CT Laboratories LLC. Tetra Tech received the final data package on March 7, 2016.

Analytical data were evaluated in general accordance with the EPA *National Functional Guidelines (NFG) for Superfund Organic Methods Data Review* (August 2014) and EPA *National Functional Guidelines (NFG) for Superfund Inorganic Data Review* (August 2014).

The data are acceptable and usable as qualified, with the exception of the non-detect 2,4-dinitrophenol, 4-nitrophenol, caprolactam, and hexachlorocyclopentadiene results for HWP-18 (0-2) and DUP-2. These results were rejected due to extremely low laboratory control sample or matrix spike/matrix spike duplicate recoveries.

If you have any questions regarding this data validation report, please call me at (509) 688-5957.

Sincerely,

A handwritten signature in blue ink that reads 'Deb Kutsal'.

Deb Kutsal  
START Chemist

Enclosure

cc: Kevin Scott, Tetra Tech Program Manager  
Josh Randall, QEPI Project Manager  
Lucas Stamps, QEPI  
TDD File

## **ATTACHMENT 1**

### **DATA VALIDATION REPORT CT LABORATORIES SDG NO. 112037**

**DATA VALIDATION CHECKLIST – STAGE 2A**  
**EPA REGION 5 START CONTRACT**

<b>Site Name</b>	Hoosier Wood Preservers Fire ER	<b>TDD No.</b>	0001-1506-201
<b>Document Tracking No.</b>	0703	<b>Technical Reviewer (signature and date)</b>	<i>Jessica A. Vickers</i> April 15, 2016
<b>Data Reviewer (signature and date)</b>	<i>Debbie Kuhl</i> April 14, 2016	<b>Laboratory</b>	CT Laboratories LLC
<b>Laboratory Report No.</b>	112037		
<b>Analyses</b>	Resource Conservation and Recovery Act (RCRA) metals by EPA SW6010/SW7471, hexavalent chromium by EPA SW7196, volatile organic compounds (VOC) by EPA SW8260, and semivolatile organic compounds (SVOC) by EPA SW8270		
<b>Samples and Matrix</b>	Ten soil samples, including two field duplicates		
<b>Field Duplicate Pairs</b>	HWP B-7 (0-2)/DUP-1 and HWP B-18 (0-2)/DUP-2		
<b>Field Blanks</b>	None		

**INTRODUCTION**

This checklist summarizes the Stage 2A validation performed on the subject laboratory report, in accordance with the U.S. Environmental Protection Agency (EPA) *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use* (January 2009). Analytical data were evaluated in general accordance with the EPA *National Functional Guidelines (NFG) for Superfund Organic Methods Data Review* (August 2014) and the EPA *NFG for Inorganic Superfund Data Review* (August 2014).

**OVERALL EVALUATION**

The data are acceptable and usable as qualified, with the exception of the non-detect 2,4-dinitrophenol, 4-nitrophenol, caprolactam, and hexachlorocyclopentadiene results for HWP-18 (0-2) and DUP-2, which were rejected due to extremely low laboratory control sample or matrix spike/matrix spike duplicate recoveries.

**Data completeness:**

Within Criteria	Exceedance/Notes
Y	The data package also included an investigation derived waste sample (HWP-IDW). Per client direction, this sample was not validated.



## DATA VALIDATION CHECKLIST – STAGE 2A EPA REGION 5 START CONTRACT

### Sample preservation, receipt, and holding times:

Within Criteria	Exceedance/Notes
Y	

### Method blanks:

Within Criteria	Exceedance/Notes
N	<b>Metals batch 116184.</b> Method blank (MB) contained barium, chromium, and selenium below reporting limits (RLs). The selenium result for sample HWP-SP2 was raised to the RL and qualified as non-detect (U). The remaining associated results are greater than 10 times the amount in the MB, or were not detected; therefore, no further action was required.

### Field blanks:

Within Criteria	Exceedance/Notes
NA	

### System monitoring compounds (surrogates and labeled compounds):

Within Criteria	Exceedance/Notes
N	The %R for SVOC surrogate 2,4,6-tribromophenol from sample DUP-2 was below the lower control limit. Results for all acid compounds for DUP-2 were qualified as estimated and possibly biased low (UJ).



**DATA VALIDATION CHECKLIST – STAGE 2A**  
**EPA REGION 5 START CONTRACT**

**MS/MSD:**

Within Criteria	Exceedance/Notes
N	<p><b>Hexavalent Chromium.</b> %Rs for hexavalent chromium were below the lower control limit. No hexavalent chromium was detected in parent sample HWP B-9 (0-2). The non-detect hexavalent chromium result for HWP B-9 (0-2) was qualified as estimated (UJ).</p> <p><b>Mercury.</b> %Rs for mercury were below the lower control limit. The detected mercury result for parent sample HWP B-9 (0-2) was qualified as estimated and possibly biased low (J-).</p> <p><b>Metals.</b> MS and/or MSD %Rs for arsenic and chromium were below the lower control limit and %Rs for cadmium and lead were above the upper control limit. Also, the RPD for lead exceeded the control limit. For parent sample HWP B-9 (0-2), results for arsenic and chromium were qualified as estimated and possibly biased low (J-), and results for cadmium and lead were qualified as estimated and possibly biased high (J+).</p> <p><b>SVOCs.</b> %Rs for 2,4,5-trichlorophenol, 2,4-dinitrophenol, 2-methylnaphthalene, 2-nitroaniline, 4-nitrophenol, caprolactam, and pentachlorophenol were below lower control limits. Also, the RPD for n-nitroso-di-n-propylamine exceeded the control limit. Non-detect results for 2,4,5-trichlorophenol, 2-methylnaphthalene, 2-nitroaniline, and pentachlorophenol for parent sample HWP B-18 (0-2) and DUP-2 were qualified as estimated (J-/UJ). N-nitroso-di-n-propylamine results were not qualified because non-detected results are not qualified on the basis of MS/MSD precision. Non-detected results for 2,4-dinitrophenol, 4-nitrophenol, and caprolactam for parent sample HWP B-18 (0-2) and DUP-2 were rejected (R) because the %Rs were less than 10.</p> <p><b>VOCs.</b> %Rs for 1,1,2,2-tetrachloroethane and naphthalene exceeded the upper control limit. Neither 1,1,2,2-tetrachloroethane or naphthalene was found in parent sample HWP B-18 (0-2) or field duplicate DUP-2; therefore, no action was required. The %R for methylcyclohexane was below the lower control limit; therefore, the detected result for parent sample HWP B-18 (0-2) was qualified as estimated and possibly biased low (J-) and the non-detected result for field duplicate sample DUP-2 was qualified as estimated (UJ).</p>

**Laboratory duplicates:**

Within Criteria	Exceedance/Notes
N	<p><b>Metals.</b> Arsenic, cadmium, and chromium RPDs exceeded control limits; however, the results were previously qualified for MS/MSD exceedances. No further qualification was required.</p>

# **DATA VALIDATION CHECKLIST – STAGE 2A** **EPA REGION 5 START CONTRACT**

## **Field duplicates:**

Within Criteria	Exceedance/Notes
N	<p><b>HWP B-7 (0-2)/DUP-1.</b> RPDs exceeded the control limit for arsenic, cadmium, chromium, lead, and mercury. Results for these analytes for both samples were qualified as estimated (J).</p> <p><b>HWP B-18 (0-2)/DUP-2.</b> RPDs exceeded the control limit for 2-methylnaphthalene; however, both results were previously qualified for MS/MSD exceedances. No further qualification was required.</p>

## **LCS/LCSDs:**

Within Criteria	Exceedance/Notes
N	<p><b>SVOCs.</b> %R for hexachlorocyclopentadiene from the LCS (1) is below the lower control limit. The associated non-detect hexachlorocyclopentadiene results for samples HWP B-18 (0-2) and DUP-2 were rejected (R).</p>

## **Sample dilutions:**

Within Criteria	Exceedance/Notes		
Y	The following samples/dilutions were done due to matrix interference or to bring results into calibration range:		
	Sample	Analyte	Dilution
	HWP-SP1A	Arsenic	1000x
		Chromium	200x
		Silver	100x
		Mercury	50x
		Barium, cadmium, lead, and selenium	25x
	HWP-SP2	Arsenic and silver	10x
	DUP-2	All SVOCs except 1,1-biphenyl, atrazine, and caprolactam	10x

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**Re-extraction and reanalysis:**

Within Criteria	Exceedance/Notes
NA	

**MDLs/RLs:**

Within Criteria	Exceedance/Notes
Y	Detected results below RLs were not reported. Many results have elevated RLs because of dilutions.

**Tentatively identified compounds:**

Within Criteria	Exceedance/Notes
NA	

**Other (specify):**

Within Criteria	Exceedance/Notes
NA	

## DATA VALIDATION CHECKLIST – STAGE 2A EPA REGION 5 START CONTRACT

### Overall Qualifications:

See results summary pages attached for changes to the laboratory qualifiers based upon this validation. The following is a list of qualifiers and definitions that may be used for the validation of this data package:

J	The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample.
J+	The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased high.
J-	The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased low.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated value is the approximate concentration of the analyte in the sample.
R	The sample result is rejected as unusable due to serious deficiencies in one or more quality control criteria. The analyte may or may not be present in the sample.
U	The analyte was analyzed for, but was not detected at or above the associated value (reporting limit).
UJ	The analyte was analyzed for, but was not detected at or above the associated value (reporting limit), which is considered approximate due to deficiencies in one or more quality control criteria.



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Samp_No	Analyte	Lab Result	Lab Qual	Units	RL	Val. Result	Val. Qual
DUP-1	Total Solids	88.3		Percent	1	88.3	
DUP-1	Selenium	0.066	U	mg/kg	0.44	0.44	U
DUP-1	Cadmium	0.54		mg/kg	0.044	0.54	J
DUP-1	Lead	141		mg/kg	0.27	141	J
DUP-1	Arsenic	155		mg/kg	0.88	155	J
DUP-1	Chromium	178		mg/kg	0.15	178	J
DUP-1	Barium	74.8		mg/kg	0.055	74.8	
DUP-1	Silver	0.019	U	mg/kg	0.11	0.11	U
DUP-1	Mercury	0.025		mg/kg	0.01	0.025	J
DUP-1	Hexavalent Chromium	1.1	U	mg/kg	11	11	U
DUP-2	Total Solids	83.3		Percent	1	83.3	
DUP-2	1,1-Dichloroethane	10	U	ug/kg	47	47	U
DUP-2	Carbon tetrachloride	10	U	ug/kg	47	47	U
DUP-2	trans-1,2-Dichloroethene	10	U	ug/kg	47	47	U
DUP-2	1,2-Dibromo-3-chloropropane	11	U	ug/kg	47	47	U
DUP-2	1,2-Dichloroethane	11	U	ug/kg	47	47	U
DUP-2	Cyclohexane	11	U	ug/kg	47	47	U
DUP-2	Methyl Acetate	11	U	ug/kg	47	47	U
DUP-2	Trichlorofluoromethane	12	U	ug/kg	47	47	U
DUP-2	Dichlorodifluoromethane	12	U	ug/kg	47	47	U
DUP-2	Vinyl chloride	13	U	ug/kg	47	47	U
DUP-2	Carbon disulfide	14	U	ug/kg	94	94	U
DUP-2	1,1-Dichloroethene	15	U	ug/kg	47	47	U
DUP-2	m,p-Xylenes	17	U	ug/kg	94	94	U
DUP-2	Chloroethane	18	U	ug/kg	47	47	U
DUP-2	Freon 113	19	U	ug/kg	94	94	U
DUP-2	Chloromethane	24	U	ug/kg	94	94	U
DUP-2	Methyl tert-butyl ether	26	U	ug/kg	94	94	U
DUP-2	Bromomethane	28	U	ug/kg	94	94	U
DUP-2	Methylene chloride	38	U	ug/kg	94	94	U
DUP-2	1,4-DIOXANE	380	U	ug/kg	4700	4700	U
DUP-2	Benzene	4.7	U	ug/kg	47	47	U
DUP-2	Styrene	5.7	U	ug/kg	47	47	U
DUP-2	1,1,2,2-Tetrachloroethane	5.7	U	ug/kg	47	47	U
DUP-2	Bromoform	5.7	U	ug/kg	47	47	U
DUP-2	1,2-Dichloropropane	6.6	U	ug/kg	47	47	U
DUP-2	trans-1,3-Dichloropropene	6.6	U	ug/kg	47	47	U
DUP-2	Toluene	6.6	U	ug/kg	47	47	U
DUP-2	2-Hexanone	64	U	ug/kg	470	470	U
DUP-2	1,3-Dichlorobenzene	7.5	U	ug/kg	47	47	U
DUP-2	Chlorobenzene	7.5	U	ug/kg	47	47	U
DUP-2	Ethylbenzene	7.5	U	ug/kg	47	47	U
DUP-2	o-Xylene	7.5	U	ug/kg	47	47	U
DUP-2	1,1,2-Trichloroethane	7.5	U	ug/kg	47	47	U
DUP-2	1,4-Dichlorobenzene	7.5	U	ug/kg	47	47	U
DUP-2	Bromochloromethane	7.5	U	ug/kg	47	47	U
DUP-2	Dibromochloromethane	7.5	U	ug/kg	47	47	U
DUP-2	Isopropylbenzene	7.5	U	ug/kg	47	47	U
DUP-2	Tetrachloroethene	7.5	U	ug/kg	47	47	U

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DUP-2	1,2,3-Trichlorobenzene	7.5 U	ug/kg	47	47 U
DUP-2	4-Methyl-2-pentanone	77 U	ug/kg	470	470 U
DUP-2	1,2-Dichlorobenzene	8.5 U	ug/kg	47	47 U
DUP-2	1,2,4-Trichlorobenzene	8.5 U	ug/kg	47	47 U
DUP-2	Bromodichloromethane	8.5 U	ug/kg	47	47 U
DUP-2	Methylcyclohexane	8.5 U	ug/kg	47	47 UJ
DUP-2	Chloroform	8.5 U	ug/kg	47	47 U
DUP-2	1,1,1-Trichloroethane	9.4 U	ug/kg	47	47 U
DUP-2	cis-1,3-Dichloropropene	9.4 U	ug/kg	47	47 U
DUP-2	Trichloroethene	9.4 U	ug/kg	47	47 U
DUP-2	1,2-Dibromoethane	9.4 U	ug/kg	47	47 U
DUP-2	cis-1,2-Dichloroethene	9.4 U	ug/kg	47	47 U
DUP-2	2-Butanone	94 U	ug/kg	470	470 U
DUP-2	Acetone	495	ug/kg	470	495
DUP-2	BIPHENYL	17 U,V	ug/kg	140	140 U
DUP-2	Atrazine	17 U,V	ug/kg	140	140 U
DUP-2	Benzaldehyde	23 U,V	ug/kg	140	140 U
DUP-2	CAPROLACTAM	89 U,V	ug/kg	480	R
DUP-2	Bis(2-ethylhexyl) phthalate	1000 U,V	ug/kg	4800	4800 U
DUP-2	2,4-Dimethylphenol	1200 U,V	ug/kg	7100	7100 UJ
DUP-2	2,4-Dichlorophenol	1400 U,V	ug/kg	7100	7100 UJ
DUP-2	2,4,5-Trichlorophenol	1500 U,V	ug/kg	7100	7100 UJ
DUP-2	2,4,6-Trichlorophenol	1500 U,V	ug/kg	7100	7100 UJ
DUP-2	3,3'-Dichlorobenzidine	1800 U,V	ug/kg	5900	5900 U
DUP-2	Phenol	1900 U,V	ug/kg	7100	7100 UJ
DUP-2	Naphthalene	250 U,V	ug/kg	1400	1400 U
DUP-2	3-Nitroaniline	260 U,V	ug/kg	1400	1400 U
DUP-2	Benzo(g,h,i)perylene	260 U,V	ug/kg	1400	1400 U
DUP-2	1,2,4,5-Tetrachlorobenzene	260 U,V	ug/kg	1400	1400 U
DUP-2	Dibenzo(a,h)anthracene	260 U,V	ug/kg	1400	1400 U
DUP-2	Indeno(1,2,3-cd)pyrene	270 U,V	ug/kg	1400	1400 U
DUP-2	2-Chloronaphthalene	270 U,V	ug/kg	1400	1400 U
DUP-2	Bis(2-chloroethoxy)methane	270 U,V	ug/kg	1400	1400 U
DUP-2	2-Nitroaniline	270 U,V	ug/kg	1400	1400 UJ
DUP-2	Benzo(a)pyrene	270 U,V	ug/kg	1400	1400 U
DUP-2	2,4-Dinitrotoluene	290 U,V	ug/kg	1400	1400 U
DUP-2	Acenaphthene	290 U,V	ug/kg	1400	1400 U
DUP-2	2,6-Dinitrotoluene	290 U,V	ug/kg	1400	1400 U
DUP-2	Acenaphthylene	290 U,V	ug/kg	1400	1400 U
DUP-2	Anthracene	290 U,V	ug/kg	1400	1400 U
DUP-2	Dibenzofuran	290 U,V	ug/kg	1400	1400 U
DUP-2	Pentachlorophenol	2900 U,V	ug/kg	12000	12000 UJ
DUP-2	Benzo(a)anthracene	300 U,V	ug/kg	1400	1400 U
DUP-2	Bis(2-chloroethyl) ether	300 U,V	ug/kg	1400	1400 U
DUP-2	Chrysene	300 U,V	ug/kg	1400	1400 U
DUP-2	Benzo(b)fluoranthene	300 U,V	ug/kg	1400	1400 U
DUP-2	Benzo(k)fluoranthene	300 U,V	ug/kg	1400	1400 U
DUP-2	Fluorene	300 U,V	ug/kg	1400	1400 U
DUP-2	4-Bromophenyl phenyl ether	300 U,V	ug/kg	1400	1400 U
DUP-2	Fluoranthene	310 U,V	ug/kg	1400	1400 U

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DUP-2	Pyrene	310 U,V	ug/kg	1400	1400 U
DUP-2	4-Chlorophenyl phenyl ether	310 U,V	ug/kg	1400	1400 U
DUP-2	2-Methyl-4,6-dinitrophenol	3200 U,V	ug/kg	12000	12000 UJ
DUP-2	2,4-Dinitrophenol	3200 U,V	ug/kg	12000	R
DUP-2	Carbazole	330 U,V	ug/kg	1400	1400 U
DUP-2	Hexachlorobenzene	330 U,V	ug/kg	1400	1400 U
DUP-2	2-Nitrophenol	3300 U,V	ug/kg	12000	12000 UJ
DUP-2	4-Nitroaniline	360 U,V	ug/kg	1400	1400 U
DUP-2	Bis(2-chloroisopropyl) ether	360 U,V	ug/kg	1400	1400 U
DUP-2	Hexachloroethane	390 U,V	ug/kg	1400	1400 U
DUP-2	2-Chlorophenol	4000 U,V	ug/kg	24000	24000 UJ
DUP-2	4-Chloro-3-methylphenol	4500 U,V	ug/kg	24000	24000 UJ
DUP-2	4-Chloroaniline	460 U,V	ug/kg	2400	2400 U
DUP-2	4-Nitrophenol	4800 U,V	ug/kg	24000	R
DUP-2	2-Methylphenol	5000 U,V	ug/kg	24000	24000 UJ
DUP-2	N-Nitrosodiphenylamine	590 U,V	ug/kg	2900	2900 U
DUP-2	Isophorone	590 U,V	ug/kg	2400	2400 U
DUP-2	Hexachlorocyclopentadiene	620 U,Q,V	ug/kg	2400	R
DUP-2	Di-n-octyl phthalate	700 U,V	ug/kg	2400	2400 U
DUP-2	Nitrobenzene	700 U,V	ug/kg	2400	2400 U
DUP-2	Hexachlorobutadiene	740 U,V	ug/kg	4800	4800 U
DUP-2	Dimethyl phthalate	750 U,V	ug/kg	4800	4800 U
DUP-2	Diethyl phthalate	760 U,V	ug/kg	4800	4800 U
DUP-2	4-Methylphenol	7700 U,V	ug/kg	43000	43000 UJ
DUP-2	N-Nitroso-di-n-propylamine	830 U,V	ug/kg	4800	4800 U
DUP-2	Butylbenzyl phthalate	870 U,V	ug/kg	4800	4800 U
DUP-2	Acetophenone	890 U,V	ug/kg	4800	4800 U
DUP-2	Di-n-butyl phthalate	940 U,V	ug/kg	4800	4800 U
DUP-2	2-Methylnaphthalene	1010 J,V	ug/kg	1400	1010 J-
DUP-2	Phenanthrene	310 U,V	ug/kg	1400	1400 U
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HWP B-1 (0-2)	Total Solids	88.6	Percent	1	88.6
HWP B-1 (0-2)	Selenium	0.067 U	mg/kg	0.45	0.45 U
HWP B-1 (0-2)	Chromium	1420	mg/kg	0.16	1420
HWP B-1 (0-2)	Cadmium	2.6	mg/kg	0.045	2.6
HWP B-1 (0-2)	Arsenic	2460	mg/kg	0.89	2460
HWP B-1 (0-2)	Barium	56.2	mg/kg	0.056	56.2
HWP B-1 (0-2)	Lead	62.9	mg/kg	0.28	62.9
HWP B-1 (0-2)	Silver	0.25	mg/kg	0.11	0.25
HWP B-1 (0-2)	Mercury	0.1	mg/kg	0.0095	0.1
HWP B-1 (0-2)	Hexavalent Chromium	1.1 U	mg/kg	11	11 U
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HWP B-18 (0-2)	Total Solids	91.6	Percent	1	91.6
HWP B-18 (0-2)	1,2-Dibromo-3-chloropropane	11 U	ug/kg	45	45 U
HWP B-18 (0-2)	1,2-Dichloroethane	11 U	ug/kg	45	45 U
HWP B-18 (0-2)	Cyclohexane	11 U	ug/kg	45	45 U
HWP B-18 (0-2)	Trichlorofluoromethane	12 U	ug/kg	45	45 U
HWP B-18 (0-2)	Dichlorodifluoromethane	12 U	ug/kg	45	45 U
HWP B-18 (0-2)	Vinyl chloride	13 U	ug/kg	45	45 U
HWP B-18 (0-2)	1,1-Dichloroethene	14 U	ug/kg	45	45 U
HWP B-18 (0-2)	Chloroethane	17 U	ug/kg	45	45 U
HWP B-18 (0-2)	Freon 113	18 U	ug/kg	89	89 U

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HWP B-18 (0-2)	Chloromethane	22 U	ug/kg	89	89 U
HWP B-18 (0-2)	Methyl tert-butyl ether	25 U	ug/kg	89	89 U
HWP B-18 (0-2)	Bromomethane	27 U	ug/kg	89	89 U
HWP B-18 (0-2)	Methylene chloride	36 U	ug/kg	89	89 U
HWP B-18 (0-2)	1,4-DIOXANE	360 U,Y,M	ug/kg	4500	4500 U
HWP B-18 (0-2)	Benzene	4.5 U	ug/kg	45	45 U
HWP B-18 (0-2)	Styrene	5.4 U	ug/kg	45	45 U
HWP B-18 (0-2)	Bromoform	5.4 U	ug/kg	45	45 U
HWP B-18 (0-2)	1,1,2,2-Tetrachloroethane	5.4 U,M	ug/kg	45	45 U
HWP B-18 (0-2)	1,2-Dichloropropane	6.3 U	ug/kg	45	45 U
HWP B-18 (0-2)	trans-1,3-Dichloropropene	6.3 U	ug/kg	45	45 U
HWP B-18 (0-2)	2-Hexanone	61 U	ug/kg	450	450 U
HWP B-18 (0-2)	1,3-Dichlorobenzene	7.1 U	ug/kg	45	45 U
HWP B-18 (0-2)	Chlorobenzene	7.1 U	ug/kg	45	45 U
HWP B-18 (0-2)	1,1,2-Trichloroethane	7.1 U	ug/kg	45	45 U
HWP B-18 (0-2)	1,4-Dichlorobenzene	7.1 U	ug/kg	45	45 U
HWP B-18 (0-2)	Bromochloromethane	7.1 U	ug/kg	45	45 U
HWP B-18 (0-2)	Dibromochloromethane	7.1 U	ug/kg	45	45 U
HWP B-18 (0-2)	Tetrachloroethene	7.1 U	ug/kg	45	45 U
HWP B-18 (0-2)	1,2,3-Trichlorobenzene	7.1 U	ug/kg	45	45 U
HWP B-18 (0-2)	4-Methyl-2-pentanone	73 U	ug/kg	450	450 U
HWP B-18 (0-2)	1,2-Dichlorobenzene	8 U	ug/kg	45	45 U
HWP B-18 (0-2)	1,2,4-Trichlorobenzene	8 U	ug/kg	45	45 U
HWP B-18 (0-2)	Bromodichloromethane	8 U	ug/kg	45	45 U
HWP B-18 (0-2)	Chloroform	8 U	ug/kg	45	45 U
HWP B-18 (0-2)	1,1,1-Trichloroethane	8.9 U	ug/kg	45	45 U
HWP B-18 (0-2)	cis-1,3-Dichloropropene	8.9 U	ug/kg	45	45 U
HWP B-18 (0-2)	Trichloroethene	8.9 U	ug/kg	45	45 U
HWP B-18 (0-2)	1,2-Dibromoethane	8.9 U	ug/kg	45	45 U
HWP B-18 (0-2)	cis-1,2-Dichloroethene	8.9 U	ug/kg	45	45 U
HWP B-18 (0-2)	2-Butanone	89 U	ug/kg	450	450 U
HWP B-18 (0-2)	1,1-Dichloroethane	9.8 U	ug/kg	45	45 U
HWP B-18 (0-2)	Carbon tetrachloride	9.8 U	ug/kg	45	45 U
HWP B-18 (0-2)	trans-1,2-Dichloroethene	9.8 U	ug/kg	45	45 U
HWP B-18 (0-2)	Toluene	11.7 J	ug/kg	45	11.7 J
HWP B-18 (0-2)	Acetone	140 J	ug/kg	450	140 J
HWP B-18 (0-2)	o-Xylene	15.1 J	ug/kg	45	15.1 J
HWP B-18 (0-2)	Carbon disulfide	16.9 J	ug/kg	89	16.9 J
HWP B-18 (0-2)	Ethylbenzene	18.9 J	ug/kg	45	18.9 J
HWP B-18 (0-2)	Isopropylbenzene	40.5 J	ug/kg	45	40.5 J
HWP B-18 (0-2)	m,p-Xylenes	47.4 J	ug/kg	89	47.4 J
HWP B-18 (0-2)	Methyl Acetate	80.6	ug/kg	45	80.6
HWP B-18 (0-2)	Methylcyclohexane	94.3 M	ug/kg	45	94.3 J-
HWP B-18 (0-2)	2,4-Dimethylphenol	110 U	ug/kg	650	650 U
HWP B-18 (0-2)	2,4-Dichlorophenol	130 U	ug/kg	650	650 U
HWP B-18 (0-2)	2,4,6-Trichlorophenol	140 U	ug/kg	650	650 U
HWP B-18 (0-2)	2,4,5-Trichlorophenol	140 U,M	ug/kg	650	650 UJ
HWP B-18 (0-2)	BIPHENYL	15 U	ug/kg	130	130 U
HWP B-18 (0-2)	Atrazine	15 U	ug/kg	130	130 U
HWP B-18 (0-2)	3,3'-Dichlorobenzidine	160 U	ug/kg	550	550 U



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HWP B-18 (0-2)	Phenol	170 U	ug/kg	650	650 U
HWP B-18 (0-2)	Benzaldehyde	21 U	ug/kg	130	130 U
HWP B-18 (0-2)	Naphthalene	23 U	ug/kg	130	130 U
HWP B-18 (0-2)	3-Nitroaniline	24 U	ug/kg	130	130 U
HWP B-18 (0-2)	1,2,4,5-Tetrachlorobenzene	24 U	ug/kg	130	130 U
HWP B-18 (0-2)	Dibenzo(a,h)anthracene	24 U	ug/kg	130	130 U
HWP B-18 (0-2)	2-Chloronaphthalene	25 U	ug/kg	130	130 U
HWP B-18 (0-2)	Bis(2-chloroethoxy)methane	25 U	ug/kg	130	130 U
HWP B-18 (0-2)	2-Nitroaniline	25 U,M	ug/kg	130	130 UJ
HWP B-18 (0-2)	2,4-Dinitrotoluene	26 U	ug/kg	130	130 U
HWP B-18 (0-2)	Acenaphthene	26 U	ug/kg	130	130 U
HWP B-18 (0-2)	2,6-Dinitrotoluene	26 U	ug/kg	130	130 U
HWP B-18 (0-2)	Acenaphthylene	26 U	ug/kg	130	130 U
HWP B-18 (0-2)	Anthracene	26 U	ug/kg	130	130 U
HWP B-18 (0-2)	Pentachlorophenol	260 U,M	ug/kg	1100	1100 UJ
HWP B-18 (0-2)	4-Bromophenyl phenyl ether	27 U	ug/kg	130	130 U
HWP B-18 (0-2)	Bis(2-chloroethyl) ether	27 U	ug/kg	130	130 U
HWP B-18 (0-2)	Fluorene	27 U	ug/kg	130	130 U
HWP B-18 (0-2)	4-Chlorophenyl phenyl ether	28 U	ug/kg	130	130 U
HWP B-18 (0-2)	2-Methyl-4,6-dinitrophenol	290 U	ug/kg	1100	1100 U
HWP B-18 (0-2)	2,4-Dinitrophenol	290 U,M	ug/kg	1100	R
HWP B-18 (0-2)	Carbazole	31 U	ug/kg	130	130 U
HWP B-18 (0-2)	Hexachlorobenzene	31 U	ug/kg	130	130 U
HWP B-18 (0-2)	2-Nitrophenol	310 U	ug/kg	1100	1100 U
HWP B-18 (0-2)	4-Nitroaniline	33 U	ug/kg	130	130 U
HWP B-18 (0-2)	Bis(2-chloroisopropyl) ether	33 U	ug/kg	130	130 U
HWP B-18 (0-2)	Hexachloroethane	36 U	ug/kg	130	130 U
HWP B-18 (0-2)	2-Chlorophenol	370 U	ug/kg	2200	2200 U
HWP B-18 (0-2)	4-Chloro-3-methylphenol	410 U	ug/kg	2200	2200 U
HWP B-18 (0-2)	4-Chloroaniline	43 U	ug/kg	220	220 U
HWP B-18 (0-2)	4-Nitrophenol	440 U,M	ug/kg	2200	R
HWP B-18 (0-2)	2-Methylphenol	460 U	ug/kg	2200	2200 U
HWP B-18 (0-2)	N-Nitrosodiphenylamine	55 U	ug/kg	260	260 U
HWP B-18 (0-2)	Isophorone	55 U	ug/kg	220	220 U
HWP B-18 (0-2)	Hexachlorocyclopentadiene	57 U,Q,V	ug/kg	220	R
HWP B-18 (0-2)	Di-n-octyl phthalate	64 U	ug/kg	220	220 U
HWP B-18 (0-2)	Nitrobenzene	64 U	ug/kg	220	220 U
HWP B-18 (0-2)	Hexachlorobutadiene	68 U	ug/kg	440	440 U
HWP B-18 (0-2)	Dimethyl phthalate	69 U	ug/kg	440	440 U
HWP B-18 (0-2)	Diethyl phthalate	70 U	ug/kg	440	440 U
HWP B-18 (0-2)	4-Methylphenol	710 U	ug/kg	3900	3900 U
HWP B-18 (0-2)	N-Nitroso-di-n-propylamine	76 U,Y,M	ug/kg	440	440 U
HWP B-18 (0-2)	Butylbenzyl phthalate	80 U	ug/kg	440	440 U
HWP B-18 (0-2)	CAPROLACTAM	82 U,M	ug/kg	440	R
HWP B-18 (0-2)	Phenanthrene	102 J	ug/kg	130	102 J
HWP B-18 (0-2)	Dibenzofuran	220	ug/kg	130	220
HWP B-18 (0-2)	Di-n-butyl phthalate	86 U	ug/kg	440	440 U
HWP B-18 (0-2)	Benzo(k)fluoranthene	32.3 J	ug/kg	130	32.3 J
HWP B-18 (0-2)	Benzo(a)anthracene	34.2 J	ug/kg	130	34.2 J
HWP B-18 (0-2)	Indeno(1,2,3-cd)pyrene	38.6 J	ug/kg	130	38.6 J

**Hoosier Wood Preservers Fire ER**  
**Soil Sample Results, CT Laboratories LLC, 112037**

HWP B-18 (0-2)	Benzo(g,h,i)perylene	43.1 J	ug/kg	130	43.1 J
HWP B-18 (0-2)	2-Methylnaphthalene	544 M	ug/kg	130	544 J-
HWP B-18 (0-2)	Chrysene	57 J	ug/kg	130	57 J
HWP B-18 (0-2)	Benzo(a)pyrene	57.3 J	ug/kg	130	57.3 J
HWP B-18 (0-2)	Pyrene	60.1 J	ug/kg	130	60.1 J
HWP B-18 (0-2)	Bis(2-ethylhexyl) phthalate	95 U	ug/kg	440	440 U
HWP B-18 (0-2)	Benzo(b)fluoranthene	76.9 J	ug/kg	130	76.9 J
HWP B-18 (0-2)	Fluoranthene	79.2 J	ug/kg	130	79.2 J
HWP B-18 (0-2)	Acetophenone	843	ug/kg	440	843
HWP B-2 (0-4)	Total Solids	87	Percent	1	87
HWP B-2 (0-4)	Selenium	0.066 U	mg/kg	0.44	0.44 U
HWP B-2 (0-4)	Cadmium	0.52	mg/kg	0.044	0.52
HWP B-2 (0-4)	Chromium	148	mg/kg	0.15	148
HWP B-2 (0-4)	Lead	22.5	mg/kg	0.28	22.5
HWP B-2 (0-4)	Arsenic	227	mg/kg	0.88	227
HWP B-2 (0-4)	Barium	53.3	mg/kg	0.055	53.3
HWP B-2 (0-4)	Silver	0.096 J	mg/kg	0.11	0.096 J
HWP B-2 (0-4)	Mercury	0.12	mg/kg	0.0099	0.12
HWP B-2 (0-4)	Hexavalent Chromium	1.1 U	mg/kg	11	11 U
HWP B-7 (0-2)	Total Solids	88.4	Percent	1	88.4
HWP B-7 (0-2)	Selenium	0.068 U	mg/kg	0.45	0.45 U
HWP B-7 (0-2)	Cadmium	0.31	mg/kg	0.045	0.31 J
HWP B-7 (0-2)	Arsenic	46.3	mg/kg	0.91	46.3 J
HWP B-7 (0-2)	Lead	48.6	mg/kg	0.28	48.6 J
HWP B-7 (0-2)	Barium	69.1	mg/kg	0.057	69.1
HWP B-7 (0-2)	Chromium	72.5	mg/kg	0.16	72.5 J
HWP B-7 (0-2)	Silver	0.053 J	mg/kg	0.11	0.053 J
HWP B-7 (0-2)	Mercury	0.14	mg/kg	0.01	0.14 J
HWP B-7 (0-2)	Hexavalent Chromium	1.1 U	mg/kg	11	11 U
HWP B-9 (0-2)	Total Solids	89.1	Percent	1	89.1
HWP B-9 (0-2)	Selenium	0.068 U	mg/kg	0.45	0.45 U
HWP B-9 (0-2)	Cadmium	0.076	mg/kg	0.045	0.076 J+
HWP B-9 (0-2)	Lead	12.4	mg/kg	0.28	12.4 J+
HWP B-9 (0-2)	Arsenic	28.1 Y	mg/kg	0.91	28.1 J-
HWP B-9 (0-2)	Chromium	36 Y,M	mg/kg	0.16	36 J-
HWP B-9 (0-2)	Barium	62.6	mg/kg	0.057	62.6
HWP B-9 (0-2)	Silver	0.066 J,M	mg/kg	0.11	0.066 J
HWP B-9 (0-2)	Mercury	0.046 M	mg/kg	0.0096	0.046 J-
HWP B-9 (0-2)	Hexavalent Chromium	1.1 U,M	mg/kg	11	11 UJ
HWP-SP1A	Total Solids	49.4	Percent	1	49.4
HWP-SP1A	Barium	347	mg/kg	2.6	347
HWP-SP1A	Selenium	55.4	mg/kg	21	55.4
HWP-SP1A	Cadmium	599	mg/kg	2.1	599
HWP-SP1A	Lead	599	mg/kg	13	599
HWP-SP1A	Silver	16.9 J,V	mg/kg	21	16.9 J
HWP-SP1A	Chromium	133000	mg/kg	58	133000
HWP-SP1A	Arsenic	272000	mg/kg	1700	272000
HWP-SP1A	Mercury	14.7	mg/kg	0.92	14.7
HWP-SP1A	Hexavalent Chromium	12.7 J	mg/kg	20	12.7 J
HWP-SP2	Total Solids	36.9	Percent	1	36.9

**Hoosier Wood Preservers Fire ER**  
**Soil Sample Results, CT Laboratories LLC, 112037**

HWP-SP2	Selenium	0.8 J,B	mg/kg	1.1	1.1 U
HWP-SP2	Lead	17.1	mg/kg	0.7	17.1
HWP-SP2	Barium	39.3	mg/kg	0.14	39.3
HWP-SP2	Chromium	4490	mg/kg	0.39	4490
HWP-SP2	Cadmium	8.8	mg/kg	0.11	8.8
HWP-SP2	Silver	0.48 U,V	mg/kg	2.8	2.8 U
HWP-SP2	Arsenic	4510	mg/kg	22	4510
HWP-SP2	Mercury	0.0062 U	mg/kg	0.025	0.025 U
HWP-SP2	Hexavalent Chromium	2.7 U	mg/kg	27	27 U
HWP-SUMP	Total Solids	58.6	Percent	1	58.6
HWP-SUMP	Selenium	0.1 U	mg/kg	0.69	0.69 U
HWP-SUMP	Cadmium	2.2	mg/kg	0.069	2.2
HWP-SUMP	Chromium	256	mg/kg	0.24	256
HWP-SUMP	Arsenic	288	mg/kg	1.4	288
HWP-SUMP	Barium	68	mg/kg	0.087	68
HWP-SUMP	Lead	74.9	mg/kg	0.43	74.9
HWP-SUMP	Silver	0.029 U	mg/kg	0.17	0.17 U
HWP-SUMP	Mercury	0.1	mg/kg	0.015	0.1
HWP-SUMP	Hexavalent Chromium	1.7 U	mg/kg	17	17 U

**APPENDIX D**  
**PHOTO DOCUMENTATION LOG**



## Photographic Documentation Log

**Client:** U.S. Environmental Protection Agency Region 5  
**Site Name:** Hoosier Wood Preservers ER and Site Assessment  
**Location:** Indianapolis, Marion County, Indiana

**Prepared By:** Tetra Tech, Inc.  
**TDD:** S05-0001-1505-005  
& S05-0001-1506-201

**Photograph: 1**

**Direction:** N/A

**Date:** 5/27/15

**Photographer:**  
Josh Randall

**Description:**  
Leaking tote found in  
former stacker building



**Photograph: 2**

**Direction:** N/A

**Date:** 5/27/15

**Photographer:**  
Josh Randall

**Description:**  
Stacked drums found in  
former stacker building





## Photographic Documentation Log

**Client:** U.S. Environmental Protection Agency Region 5  
**Site Name:** Hoosier Wood Preservers ER and Site Assessment  
**Location:** Indianapolis, Marion County, Indiana

**Prepared By:** Tetra Tech, Inc.  
**TDD:** S05-0001-1505-005  
& S05-0001-1506-201

**Photograph:** 3

**Direction:** Southwest

**Date:** 5/27/15

**Photographer:**  
Josh Randall

**Description:**  
Photo of the former  
drip pad, where the fire  
occurred



**Photograph:** 4

**Direction:** N/A

**Date:** 5/27/15

**Photographer:**  
Josh Randall

**Description:**  
Stacked totes of  
chemicals found in drip  
pad building







## Photographic Documentation Log

**Client:** U.S. Environmental Protection Agency Region 5  
**Site Name:** Hoosier Wood Preservers ER and Site Assessment  
**Location:** Indianapolis, Marion County, Indiana

**Prepared By:** Tetra Tech, Inc.  
**TDD:** S05-0001-1505-005  
& S05-0001-1506-201

**Photograph:** 5

**Direction:** N/A

**Date:** 5/27/15

**Photographer:**  
Josh Randall

**Description:**  
Stacked drums found  
behind makeshift wall  
in former stacker  
building



**Photograph:** 6

**Direction:** N/A

**Date:** 5/27/15

**Photographer:**  
Josh Randall

**Description:**  
Photograph of leaking  
storage tote





## Photographic Documentation Log

**Client:** U.S. Environmental Protection Agency Region 5  
**Site Name:** Hoosier Wood Preservers ER and Site Assessment  
**Location:** Indianapolis, Marion County, Indiana

**Prepared By:** Tetra Tech, Inc.  
**TDD:** S05-0001-1505-005  
& S05-0001-1506-201

**Photograph:** 7

**Direction:** Northeast

**Date:** 5/27/15

**Photographer:**  
Josh Randall

**Description:**  
Empty pressure  
treatment tanks  
permanently disabled



**Photograph:** 8

**Direction:** N/A

**Date:** 5/27/15

**Photographer:**  
Josh Randall

**Description:**  
Poly drums found  
onsite







## Photographic Documentation Log

**Client:** U.S. Environmental Protection Agency Region 5  
**Site Name:** Hoosier Wood Preservers ER and Site Assessment  
**Location:** Indianapolis, Marion County, Indiana

**Prepared By:** Tetra Tech, Inc.  
**TDD:** S05-0001-1505-005  
& S05-0001-1506-201

**Photograph:** 9

**Direction:** N/A

**Date:** 5/27/15

**Photographer:**  
Josh Randall

**Description:**  
Stacked drums in poor condition in former stacker building



**Photograph:** 10

**Direction:** N/A

**Date:** 5/27/15

**Photographer:**  
Josh Randall

**Description:**  
Assorted containers of various chemicals found around the site







## Photographic Documentation Log

**Client:** U.S. Environmental Protection Agency Region 5  
**Site Name:** Hoosier Wood Preservers ER and Site Assessment  
**Location:** Indianapolis, Marion County, Indiana

**Prepared By:** Tetra Tech, Inc.  
**TDD:** S05-0001-1505-005  
& S05-0001-1506-201

**Photograph:** 11

**Direction:** N/A

**Date:** 5/28/15

**Photographer:**  
Josh Randall

**Description:**  
Drums were sequentially numbered with spray paint prior to categorization and/or sampling



**Photograph:** 12

**Direction:** East

**Date:** 5/28/15

**Photographer:**  
Josh Randall

**Description:**  
ERRS contractor in level B PPE preparing to open a drum for sampling





## Photographic Documentation Log

**Client:** U.S. Environmental Protection Agency Region 5  
**Site Name:** Hoosier Wood Preservers ER and Site Assessment  
**Location:** Indianapolis, Marion County, Indiana

**Prepared By:** Tetra Tech, Inc.  
**TDD:** S05-0001-1505-005  
& S05-0001-1506-201

**Photograph:** 13

**Direction:** N/A

**Date:** 5/28/15

**Photographer:**  
Josh Randall

**Description:**  
Small containers of various chemicals were loose packed into poly lined cubic yard boxes



**Photograph:** 14

**Direction:** N/A

**Date:** 5/28/15

**Photographer:**  
Josh Randall

**Description:**  
Cubic yard boxes were sealed and staged for off site disposal







## Photographic Documentation Log

**Client:** U.S. Environmental Protection Agency Region 5  
**Site Name:** Hoosier Wood Preservers ER and Site Assessment  
**Location:** Indianapolis, Marion County, Indiana

**Prepared By:** Tetra Tech, Inc.  
**TDD:** S05-0001-1505-005  
& S05-0001-1506-201

**Photograph:** 15

**Direction:** North

**Date:** 5/29/15

**Photographer:**  
Josh Randall

**Description:**

A light green powder was observed on the ground near the former treatment building, later determined to have high concentrations of arsenic



**Photograph:** 16

**Direction:** N/A

**Date:** 5/29/15

**Photographer:**  
Josh Randall

**Description:**

ERRS contractors dismantled storage totes and bulked contents into drums





## Photographic Documentation Log

**Client:** U.S. Environmental Protection Agency Region 5  
**Site Name:** Hoosier Wood Preservers ER and Site Assessment  
**Location:** Indianapolis, Marion County, Indiana

**Prepared By:** Tetra Tech, Inc.  
**TDD:** S05-0001-1505-005  
& S05-0001-1506-201

**Photograph:** 17

**Direction:** North

**Date:** 6/1/15

**Photographer:**  
Josh Randall

**Description:**  
Conex boxes were placed on site for secure storage and staging of drums and other containers awaiting approval and shipment off site



**Photograph:** 18

**Direction:** 6/1/15

**Date:** 6/1/15

**Photographer:**  
Josh Randall

**Description:**  
Drums and other containers staged in conex box.







## Photographic Documentation Log

**Client:** U.S. Environmental Protection Agency Region 5  
**Site Name:** Hoosier Wood Preservers ER and Site Assessment  
**Location:** Indianapolis, Marion County, Indiana

**Prepared By:** Tetra Tech, Inc.  
**TDD:** S05-0001-1505-005  
& S05-0001-1506-201

**Photograph:** 19

**Direction:** N/A

**Date:** 6/1/15

**Photographer:**  
Josh Randall

**Description:**  
Broken mercury switches left elemental mercury in a building on site, cleared area until appropriate equipment could be brought on site for cleanup



**Photograph:** 20

**Direction:** N/A

**Date:** 6/1/15

**Photographer:**  
Josh Randall

**Description:**  
START screens containers and spilled liquids for VOCs using MultiRAE Pro multi-threat detector





## Photographic Documentation Log

**Client:** U.S. Environmental Protection Agency Region 5  
**Site Name:** Hoosier Wood Preservers ER and Site Assessment  
**Location:** Indianapolis, Marion County, Indiana

**Prepared By:** Tetra Tech, Inc.  
**TDD:** S05-0001-1505-005  
& S05-0001-1506-201

**Photograph:** 21

**Direction:** N/A

**Date:** 6/1/15

**Photographer:**  
Josh Randall

**Description:**  
ERRS contractors  
vacuum visible  
elemental mercury  
beads



**Photograph:** 22

**Direction:** Northwest

**Date:** 6/2/15

**Photographer:**  
Josh Randall

**Description:**  
ERRS contractors  
transfer liquid from  
dilapidated storage tote  
into a new one







## Photographic Documentation Log

**Client:** U.S. Environmental Protection Agency Region 5  
**Site Name:** Hoosier Wood Preservers ER and Site Assessment  
**Location:** Indianapolis, Marion County, Indiana

**Prepared By:** Tetra Tech, Inc.  
**TDD:** S05-0001-1505-005  
& S05-0001-1506-201

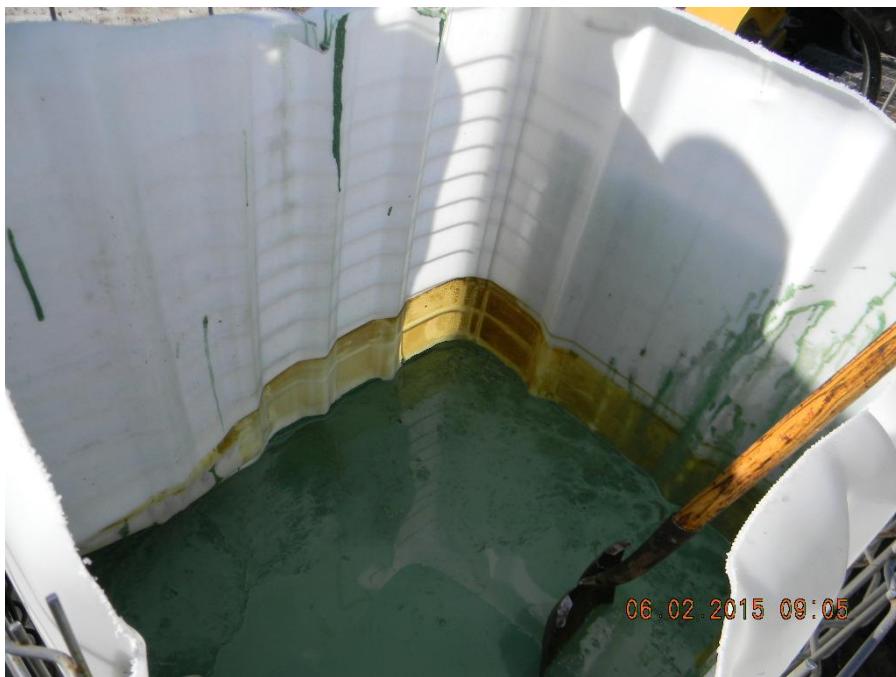
**Photograph:** 23

**Direction:** N/A

**Date:** 6/2/15

**Photographer:**  
Josh Randall

**Description:**  
Storage tote full of a  
viscous green liquid



**Photograph:** 24

**Direction:** North

**Date:** 6/3/15

**Photographer:**  
Josh Randall

**Description:**  
ERRS contractors clean  
out the inside of a  
dismantled storage tank







## Photographic Documentation Log

**Client:** U.S. Environmental Protection Agency Region 5  
**Site Name:** Hoosier Wood Preservers ER and Site Assessment  
**Location:** Indianapolis, Marion County, Indiana

**Prepared By:** Tetra Tech, Inc.  
**TDD:** S05-0001-1505-005  
& S05-0001-1506-201

**Photograph:** 25

**Direction:** Northeast

**Date:** 6/4/15

**Photographer:**  
Josh Randall

**Description:**  
ERRS contractors  
remove a tank from the  
drip pad building



**Photograph:** 26

**Direction:** Northeast

**Date:** 6/4/15

**Photographer:**  
Josh Randall

**Description:**  
ERRS contractor  
permanently disables  
storage tank by cutting  
a hole in it





## Photographic Documentation Log

**Client:** U.S. Environmental Protection Agency Region 5  
**Site Name:** Hoosier Wood Preservers ER and Site Assessment  
**Location:** Indianapolis, Marion County, Indiana

**Prepared By:** Tetra Tech, Inc.  
**TDD:** S05-0001-1505-005  
& S05-0001-1506-201

**Photograph:** 27

**Direction:** North

**Date:** 6/5/15

**Photographer:**  
Josh Randall

**Description:**  
Dismantled storage  
containers staged for  
off site disposal



**Photograph:** 28

**Direction:** N/A

**Date:** 5/28/15

**Photographer:**  
Shelly Lam

**Description:**  
START collects liquid  
sample from drum in  
level B PPE







## Photographic Documentation Log

**Client:** U.S. Environmental Protection Agency Region 5  
**Site Name:** Hoosier Wood Preservers ER and Site Assessment  
**Location:** Indianapolis, Marion County, Indiana

**Prepared By:** Tetra Tech, Inc.  
**TDD:** S05-0001-1505-005  
& S05-0001-1506-201

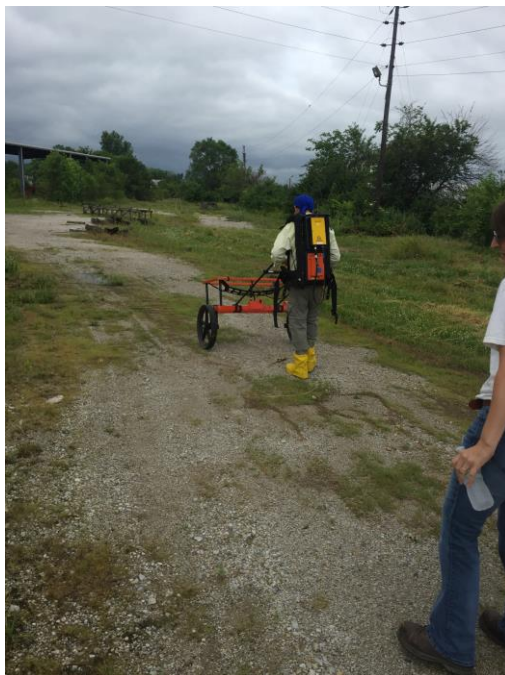
**Photograph:** 29

**Direction:** Southwest

**Date:** 6/16/15

**Photographer:**  
Josh Randall

**Description:**  
Geophysical survey  
was conducted to  
search for underground  
anomalies



**Photograph:** 30

**Direction:** South

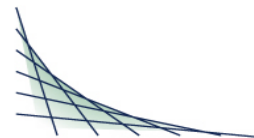
**Date:** 6/19/15

**Photographer:**  
Josh Randall

**Description:**  
Contractor on site to  
advance soil borings  
where underground  
anomalies were  
detected



**ATTACHMENTS**  
**LABORATORY ANALYTICAL REPORT AND GEOPHYSICAL SURVEY REPORT**



## ***ANALYTICAL REPORT***

This report at a minimum contains the following information:

- Analytical Report of Test Results
- Description of QC Qualifiers
- Chain of Custody (copy)
- Quality Control Summary
- Case Narrative (if applicable)
- Correspondence with Client (if applicable)

*This report has been specifically prepared to satisfy project or program requirements. These results are in compliance with NELAC requirements for parameters where accreditation is required or available, unless otherwise noted in the case narrative.*



## ANALYTICAL REPORT

QEPI  
 JOSH RANDALL  
 1611 SOUTH FRANKLIN ROAD  
 INDIANAPOLIS, IN 46239

Project Name: HOOSIER WOOD PRESERVER  
 Project Phase:  
 Contract #: 2810  
 Project #: 13-09-035  
 Folder #: 112037  
 Purchase Order #: 1111200

Page 1 of 20  
 Arrival Temperature: See COC  
 Report Date: 07/10/2015  
 Date Received: 06/20/2015  
 Reprint Date: 07/10/2015

CT LAB#: 598780	Sample Description: HWP B-1 (0-2)	Client Sample #:	Sampled: 06/18/2015 1526
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
<b>Inorganic Results</b>												
Solids, Percent	88.6	%	0.1	0.1	0.1	0.1	1.00			6/23/15 10:21	ABS	EPA 8000C
Hexavalent Chromium	<1.1	mg/kg	1.1	5.7	11	11	1.00	U	06/30/2015 10:00	6/30/15 10:00	LJS	EPA 3060A/7196A ^
<b>Metals Results</b>												
Arsenic	2460	mg/kg	0.15	0.45	0.89	0.89	1.00		06/29/2015 07:00	6/30/15 14:45	NAH	EPA 6010C ^
Barium	56.2	mg/kg	0.010	0.028	0.056	0.056	1.00		06/29/2015 07:00	6/30/15 14:45	NAH	EPA 6010C ^
Cadmium	2.6	mg/kg	0.0067	0.022	0.045	0.045	1.00		06/29/2015 07:00	6/30/15 14:45	NAH	EPA 6010C ^
Chromium	1420	mg/kg	0.026	0.078	0.16	0.16	1.00		06/29/2015 07:00	6/30/15 14:45	NAH	EPA 6010C ^
Lead	62.9	mg/kg	0.045	0.14	0.28	0.28	1.00		06/29/2015 07:00	6/30/15 14:45	NAH	EPA 6010C ^
Selenium	<0.067	mg/kg	0.067	0.22	0.45	0.45	1.00	U	06/29/2015 07:00	6/30/15 14:45	NAH	EPA 6010C ^
Silver	0.25	mg/kg	0.019	0.056	0.11	0.11	1.00		06/29/2015 07:00	7/3/15 17:53	NAH	EPA 6010C ^
Mercury	0.10	mg/kg	0.0024	0.0048	0.0095	0.0095	1.00		06/23/2015 10:00	6/24/15 11:54	LJF	EPA 7471B ^

CT LAB#: 598781	Sample Description: HWP B-2 (0-4)	Client Sample #:	Sampled: 06/18/2015 1528
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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CT LAB#: 598781	Sample Description: HWP B-2 (0-4)	Client Sample #:	Sampled: 06/18/2015 1528
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
<b>Inorganic Results</b>												
Solids, Percent	87.0	%	0.1	0.1	0.1	0.1	1.00			6/23/15 10:21	ABS	EPA 8000C
Hexavalent Chromium	<1.1	mg/kg	1.1	5.7	11	11	1.00	U	06/30/2015 10:00	6/30/15 10:00	LJS	EPA 3060A/7196A ^
<b>Metals Results</b>												
Arsenic	227	mg/kg	0.14	0.44	0.88	0.88	1.00		06/29/2015 07:00	6/30/15 14:49	NAH	EPA 6010C ^
Barium	53.3	mg/kg	0.0099	0.028	0.055	0.055	1.00		06/29/2015 07:00	6/30/15 14:49	NAH	EPA 6010C ^
Cadmium	0.52	mg/kg	0.0066	0.022	0.044	0.044	1.00		06/29/2015 07:00	6/30/15 14:49	NAH	EPA 6010C ^
Chromium	148	mg/kg	0.025	0.077	0.15	0.15	1.00		06/29/2015 07:00	6/30/15 14:49	NAH	EPA 6010C ^
Lead	22.5	mg/kg	0.044	0.14	0.28	0.28	1.00		06/29/2015 07:00	6/30/15 14:49	NAH	EPA 6010C ^
Selenium	<0.066	mg/kg	0.066	0.22	0.44	0.44	1.00	U	06/29/2015 07:00	6/30/15 14:49	NAH	EPA 6010C ^
Silver	0.096	mg/kg	0.019	0.055	0.11	0.11	1.00	J	06/29/2015 07:00	7/3/15 17:57	NAH	EPA 6010C ^
Mercury	0.12	mg/kg	0.0025	0.0050	0.0099	0.0099	1.00		06/23/2015 10:00	6/24/15 11:55	LJF	EPA 7471B ^

CT LAB#: 598782	Sample Description: HWP B-7 (0-2)	Client Sample #:	Sampled: 06/18/2015 1530
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
<b>Inorganic Results</b>												
Solids, Percent	88.4	%	0.1	0.1	0.1	0.1	1.00			6/23/15 10:21	ABS	EPA 8000C
Hexavalent Chromium	<1.1	mg/kg	1.1	5.6	11	11	1.00	U	06/30/2015 10:00	6/30/15 10:00	LJS	EPA 3060A/7196A ^
<b>Metals Results</b>												
Arsenic	46.3	mg/kg	0.15	0.45	0.91	0.91	1.00		06/29/2015 07:00	6/30/15 15:07	NAH	EPA 6010C ^
Barium	69.1	mg/kg	0.010	0.028	0.057	0.057	1.00		06/29/2015 07:00	6/30/15 15:07	NAH	EPA 6010C ^
Cadmium	0.31	mg/kg	0.0068	0.023	0.045	0.045	1.00		06/29/2015 07:00	6/30/15 15:07	NAH	EPA 6010C ^

CT LAB#: 598782	Sample Description: HWP B-7 (0-2)	Client Sample #:	Sampled: 06/18/2015 1530
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
Chromium	72.5	mg/kg	0.026	0.080	0.16	0.16	1.00		06/29/2015 07:00	6/30/15 15:07	NAH	EPA 6010C	^
Lead	48.6	mg/kg	0.045	0.14	0.28	0.28	1.00		06/29/2015 07:00	6/30/15 15:07	NAH	EPA 6010C	^
Selenium	<0.068	mg/kg	0.068	0.23	0.45	0.45	1.00	U	06/29/2015 07:00	6/30/15 15:07	NAH	EPA 6010C	^
Silver	0.053	mg/kg	0.019	0.057	0.11	0.11	1.00	J	06/29/2015 07:00	7/3/15 18:01	NAH	EPA 6010C	^
Mercury	0.14	mg/kg	0.0025	0.0051	0.010	0.010	1.00		06/23/2015 10:00	6/24/15 12:01	LJF	EPA 7471B	^

CT LAB#: 598783	Sample Description: HWP B-9 (0-2)	Client Sample #:	Sampled: 06/18/2015 1534
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
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#### Inorganic Results

Solids, Percent	89.1	%	0.1	0.1	0.1	0.1	1.00			6/23/15 10:21	ABS	EPA 8000C	
Hexavalent Chromium	<1.1	mg/kg	1.1	5.6	11	11	1.00	U M	06/30/2015 10:00	6/30/15 10:00	LJS	EPA 3060A/7196A	^

#### Metals Results

Arsenic	28.1	mg/kg	0.15	0.45	0.91	0.91	1.00	Y	06/29/2015 07:00	6/30/15 15:11	NAH	EPA 6010C	^
Barium	62.6	mg/kg	0.010	0.028	0.057	0.057	1.00		06/29/2015 07:00	6/30/15 15:11	NAH	EPA 6010C	^
Cadmium	0.076	mg/kg	0.0068	0.023	0.045	0.045	1.00		06/29/2015 07:00	6/30/15 15:11	NAH	EPA 6010C	^
Chromium	36.0	mg/kg	0.026	0.079	0.16	0.16	1.00	Y,M	06/29/2015 07:00	6/30/15 15:11	NAH	EPA 6010C	^
Lead	12.4	mg/kg	0.045	0.14	0.28	0.28	1.00		06/29/2015 07:00	6/30/15 15:11	NAH	EPA 6010C	^
Selenium	<0.068	mg/kg	0.068	0.23	0.45	0.45	1.00	U	06/29/2015 07:00	6/30/15 15:11	NAH	EPA 6010C	^
Silver	0.066	mg/kg	0.019	0.057	0.11	0.11	1.00	J M	06/29/2015 07:00	7/3/15 18:05	NAH	EPA 6010C	^
Mercury	0.046	mg/kg	0.0024	0.0049	0.0096	0.0096	1.00	M	06/23/2015 10:00	6/24/15 12:03	LJF	EPA 7471B	^



CT LAB#: 598784	Sample Description: HWP-SP1A	Client Sample #:	Sampled: 06/18/2015 1150
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
<b>Inorganic Results</b>												
Solids, Percent	49.4	%	0.1	0.1	0.1	0.1	1.00			6/23/15 10:21	ABS	EPA 8000C
Hexavalent Chromium	12.7	mg/kg	2.0	10	20	20	1.00	J	06/30/2015 10:00	6/30/15 10:00	LJS	EPA 3060A/7196A ^
<b>Metals Results</b>												
Arsenic	272000	mg/kg	270	830	1700	1700	1,000.00		06/29/2015 07:00	7/8/15 14:40	NAH	EPA 6010C ^
Barium	347	mg/kg	0.47	1.3	2.6	2.6	25.00		06/29/2015 07:00	6/30/15 15:38	NAH	EPA 6010C ^
Cadmium	599	mg/kg	0.31	1.0	2.1	2.1	25.00		06/29/2015 07:00	6/30/15 15:38	NAH	EPA 6010C ^
Chromium	133000	mg/kg	9.6	29	58	58	200.00		06/29/2015 07:00	7/7/15 15:52	NAH	EPA 6010C ^
Lead	599	mg/kg	2.1	6.5	13	13	25.00		06/29/2015 07:00	6/30/15 15:38	NAH	EPA 6010C ^
Selenium	55.4	mg/kg	3.1	10	21	21	25.00		06/29/2015 07:00	6/30/15 15:38	NAH	EPA 6010C ^
Silver	16.9	mg/kg	3.5	10	21	21	100.00	J V	06/29/2015 07:00	7/3/15 18:21	NAH	EPA 6010C ^
Mercury	14.7	mg/kg	0.23	0.46	0.92	0.92	50.00		06/23/2015 10:00	6/30/15 07:59	LJF	EPA 7471B ^

CT LAB#: 598785	Sample Description: HWP-SP2	Client Sample #:	Sampled: 06/18/2015 1618
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
<b>Inorganic Results</b>												
Solids, Percent	36.9	%	0.1	0.1	0.1	0.1	1.00			6/23/15 10:21	ABS	EPA 8000C
Hexavalent Chromium	<2.7	mg/kg	2.7	13	27	27	1.00	U	06/30/2015 10:00	6/30/15 10:00	LJS	EPA 3060A/7196A ^
<b>Metals Results</b>												
Arsenic	4510	mg/kg	3.7	11	22	22	10.00		06/29/2015 07:00	7/3/15 18:25	NAH	EPA 6010C ^
Barium	39.3	mg/kg	0.025	0.070	0.14	0.14	1.00		06/29/2015 07:00	6/30/15 15:42	NAH	EPA 6010C ^
Cadmium	8.8	mg/kg	0.017	0.056	0.11	0.11	1.00		06/29/2015 07:00	6/30/15 15:42	NAH	EPA 6010C ^

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 598785	Sample Description: HWP-SP2	Client Sample #:	Sampled: 06/18/2015 1618
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
Chromium	4490	mg/kg	0.065	0.20	0.39	0.39	1.00		06/29/2015 07:00	6/30/15 15:42	NAH	EPA 6010C	^
Lead	17.1	mg/kg	0.11	0.35	0.70	0.70	1.00		06/29/2015 07:00	6/30/15 15:42	NAH	EPA 6010C	^
Selenium	0.80	mg/kg	0.17	0.56	1.1	1.1	1.00	J B	06/29/2015 07:00	6/30/15 15:42	NAH	EPA 6010C	^
Silver	<0.48	mg/kg	0.48	1.4	2.8	2.8	10.00	U V	06/29/2015 07:00	7/3/15 18:25	NAH	EPA 6010C	^
Mercury	<0.0062	mg/kg	0.0062	0.012	0.025	0.025	1.00	U	06/23/2015 10:00	6/24/15 12:18	LJF	EPA 7471B	^

CT LAB#: 598786	Sample Description: DUP-1	Client Sample #:	Sampled: 06/18/2015
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
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#### Inorganic Results

Solids, Percent	88.3	%	0.1	0.1	0.1	0.1	1.00			6/23/15 10:21	ABS	EPA 8000C	
Hexavalent Chromium	<1.1	mg/kg	1.1	5.6	11	11	1.00	U	06/30/2015 10:00	6/30/15 10:00	LJS	EPA 3060A/7196A	^

#### Metals Results

Arsenic	155	mg/kg	0.14	0.44	0.88	0.88	1.00		06/29/2015 07:00	6/30/15 15:46	NAH	EPA 6010C	^
Barium	74.8	mg/kg	0.0099	0.027	0.055	0.055	1.00		06/29/2015 07:00	6/30/15 15:46	NAH	EPA 6010C	^
Cadmium	0.54	mg/kg	0.0066	0.022	0.044	0.044	1.00		06/29/2015 07:00	6/30/15 15:46	NAH	EPA 6010C	^
Chromium	178	mg/kg	0.025	0.077	0.15	0.15	1.00		06/29/2015 07:00	6/30/15 15:46	NAH	EPA 6010C	^
Lead	141	mg/kg	0.044	0.14	0.27	0.27	1.00		06/29/2015 07:00	6/30/15 15:46	NAH	EPA 6010C	^
Selenium	<0.066	mg/kg	0.066	0.22	0.44	0.44	1.00	U	06/29/2015 07:00	6/30/15 15:46	NAH	EPA 6010C	^
Silver	<0.019	mg/kg	0.019	0.055	0.11	0.11	1.00	U	06/29/2015 07:00	7/3/15 18:29	NAH	EPA 6010C	^
Mercury	0.025	mg/kg	0.0025	0.0051	0.010	0.010	1.00		06/23/2015 10:00	6/24/15 12:20	LJF	EPA 7471B	^

CT LAB#: 598787

Sample Description: HWP B-18 (0-2)

Client Sample #:

Sampled: 06/19/2015 0855

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
<b>Inorganic Results</b>												
Solids, Percent	91.6	%	0.1	0.1	0.1	0.1	1.00			6/23/15 10:21	ABS	EPA 8000C
<b>Organic Results</b>												
1,1,1-Trichloroethane	<8.9	ug/kg	8.9	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
1,1,2,2-Tetrachloroethane	<5.4	ug/kg	5.4	18	45	45	1.00	U M	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
1,1,2-Trichloroethane	<7.1	ug/kg	7.1	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
1,1-Dichloroethane	<9.8	ug/kg	9.8	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
1,1-Dichloroethene	<14	ug/kg	14	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
1,2,3-Trichlorobenzene	<7.1	ug/kg	7.1	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
1,2,4-Trichlorobenzene	<8.0	ug/kg	8.0	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
1,2-Dibromo-3-chloropropane	<11	ug/kg	11	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
1,2-Dibromoethane	<8.9	ug/kg	8.9	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
1,2-Dichlorobenzene	<8.0	ug/kg	8.0	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
1,2-Dichloroethane	<11	ug/kg	11	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
1,2-Dichloropropane	<6.3	ug/kg	6.3	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
1,3-Dichlorobenzene	<7.1	ug/kg	7.1	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
1,4-Dichlorobenzene	<7.1	ug/kg	7.1	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
1,4-Dioxane	<360	ug/kg	360	890	4500	4500	1.00	U Y,M	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
112Trichloro122trifluoroethane	<18	ug/kg	18	36	89	89	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
2-Butanone	<89	ug/kg	89	180	450	450	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
2-Hexanone	<61	ug/kg	61	180	450	450	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
4-Methyl-2-pentanone	<73	ug/kg	73	180	450	450	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
Acetone	140	ug/kg	56	180	450	450	1.00	J	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
Benzene	<4.5	ug/kg	4.5	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
Bromochloromethane	<7.1	ug/kg	7.1	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
Bromodichloromethane	<8.0	ug/kg	8.0	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
Bromoform	<5.4	ug/kg	5.4	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 598787

Sample Description: HWP B-18 (0-2)

Client Sample #:

Sampled: 06/19/2015 0855

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Bromomethane	<27	ug/kg	27	45	89	89	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
Carbon disulfide	16.9	ug/kg	13	36	89	89	1.00	J	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
Carbon tetrachloride	<9.8	ug/kg	9.8	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
Chlorobenzene	<7.1	ug/kg	7.1	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
Chloroethane	<17	ug/kg	17	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
Chloroform	<8.0	ug/kg	8.0	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
Chloromethane	<22	ug/kg	22	45	89	89	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
cis-1,2-Dichloroethene	<8.9	ug/kg	8.9	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
cis-1,3-Dichloropropene	<8.9	ug/kg	8.9	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
Cyclohexane	<11	ug/kg	11	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
Dibromochloromethane	<7.1	ug/kg	7.1	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
Dichlorodifluoromethane	<12	ug/kg	12	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
Ethylbenzene	18.9	ug/kg	7.1	18	45	45	1.00	J	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
Isopropylbenzene	40.5	ug/kg	7.1	18	45	45	1.00	J	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
m & p-Xylene	47.4	ug/kg	16	36	89	89	1.00	J	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
Methyl acetate	80.6	ug/kg	11	18	45	45	1.00		06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
Methyl tert-butyl ether	<25	ug/kg	25	45	89	89	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
Methylcyclohexane	94.3	ug/kg	8.0	18	45	45	1.00	M	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
Methylene chloride	<36	ug/kg	36	45	89	89	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
o-Xylene	15.1	ug/kg	7.1	18	45	45	1.00	J	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
Styrene	<5.4	ug/kg	5.4	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
Tetrachloroethene	<7.1	ug/kg	7.1	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
Toluene	11.7	ug/kg	6.3	18	45	45	1.00	J	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
trans-1,2-Dichloroethene	<9.8	ug/kg	9.8	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
trans-1,3-Dichloropropene	<6.3	ug/kg	6.3	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
Trichloroethene	<8.9	ug/kg	8.9	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
Trichlorofluoromethane	<12	ug/kg	12	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^
Vinyl chloride	<13	ug/kg	13	18	45	45	1.00	U	06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C ^

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 598787

Sample Description: HWP B-18 (0-2)

Client Sample #:

Sampled: 06/19/2015 0855

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
1,2 Dichloroethane-d4	103	% Recovery	80			117	1.00		06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C
Bromofluorobenzene	104	% Recovery	85			120	1.00		06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C
d8-Toluene	109	% Recovery	85			115	1.00		06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C
Dibromofluoromethane	98	% Recovery	79			118	1.00		06/23/2015 11:40	6/24/15 12:27	RLD	EPA 8260C
1,1'-Biphenyl	<15	ug/kg	15	65	130	130	1.00	U	06/23/2015 15:00	7/1/15 22:26	RPN	EPA 8270D
1,2,4,5-Tetrachlorobenzene	<24	ug/kg	24	65	130	130	1.00	U	06/23/2015 15:00	7/1/15 22:26	RPN	EPA 8270D
2,4,5-Trichlorophenol	<140	ug/kg	140	330	650	650	1.00	U M	06/23/2015 15:00	7/1/15 22:26	RPN	EPA 8270D ^
2,4,6-Trichlorophenol	<140	ug/kg	140	330	650	650	1.00	U	06/23/2015 15:00	7/1/15 22:26	RPN	EPA 8270D ^
2,4-Dichlorophenol	<130	ug/kg	130	330	650	650	1.00	U	06/23/2015 15:00	7/1/15 22:26	RPN	EPA 8270D ^
2,4-Dimethylphenol	<110	ug/kg	110	330	650	650	1.00	U	06/23/2015 15:00	7/1/15 22:26	RPN	EPA 8270D ^
2,4-Dinitrophenol	<290	ug/kg	290	650	1100	1100	1.00	U M	06/23/2015 15:00	7/1/15 22:26	RPN	EPA 8270D ^
2,4-Dinitrotoluene	<26	ug/kg	26	65	130	130	1.00	U	06/23/2015 15:00	7/1/15 22:26	RPN	EPA 8270D ^
2,6-Dinitrotoluene	<26	ug/kg	26	65	130	130	1.00	U	06/23/2015 15:00	7/1/15 22:26	RPN	EPA 8270D ^
2-Chloronaphthalene	<25	ug/kg	25	65	130	130	1.00	U	06/23/2015 15:00	7/1/15 22:26	RPN	EPA 8270D ^
2-Chlorophenol	<370	ug/kg	370	650	2200	2200	1.00	U	06/23/2015 15:00	7/1/15 22:26	RPN	EPA 8270D ^
2-Methylnaphthalene	544	ug/kg	27	65	130	130	1.00	M	06/23/2015 15:00	7/1/15 22:26	RPN	EPA 8270D ^
2-Methylphenol	<460	ug/kg	460	650	2200	2200	1.00	U	06/23/2015 15:00	7/1/15 22:26	RPN	EPA 8270D ^
2-Nitroaniline	<25	ug/kg	25	65	130	130	1.00	U M	06/23/2015 15:00	7/1/15 22:26	RPN	EPA 8270D ^
2-Nitrophenol	<310	ug/kg	310	330	1100	1100	1.00	U	06/23/2015 15:00	7/1/15 22:26	RPN	EPA 8270D ^
3 & 4-Methylphenol	<710	ug/kg	710	1200	3900	3900	1.00	U	06/23/2015 15:00	7/1/15 22:26	RPN	EPA 8270D ^
3,3'-Dichlorobenzidine	<160	ug/kg	160	160	550	550	1.00	U	06/23/2015 15:00	7/1/15 22:26	RPN	EPA 8270D ^
3-Nitroaniline	<24	ug/kg	24	65	130	130	1.00	U	06/23/2015 15:00	7/1/15 22:26	RPN	EPA 8270D ^
4,6-Dinitro-2-methylphenol	<290	ug/kg	290	330	1100	1100	1.00	U	06/23/2015 15:00	7/1/15 22:26	RPN	EPA 8270D ^
4-Bromophenyl-phenyl ether	<27	ug/kg	27	65	130	130	1.00	U	06/23/2015 15:00	7/1/15 22:26	RPN	EPA 8270D ^
4-Chloro-3-methylphenol	<410	ug/kg	410	650	2200	2200	1.00	U	06/23/2015 15:00	7/1/15 22:26	RPN	EPA 8270D ^
4-Chloroaniline	<43	ug/kg	43	65	220	220	1.00	U	06/23/2015 15:00	7/1/15 22:26	RPN	EPA 8270D ^
4-Chlorophenyl-phenyl ether	<28	ug/kg	28	65	130	130	1.00	U	06/23/2015 15:00	7/1/15 22:26	RPN	EPA 8270D ^
4-Nitroaniline	<33	ug/kg	33	65	130	130	1.00	U	06/23/2015 15:00	7/1/15 22:26	RPN	EPA 8270D ^

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 598787

Sample Description: HWP B-18 (0-2)

Client Sample #:

Sampled: 06/19/2015 0855

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
4-Nitrophenol	<440	ug/kg	440	650	2200	2200	1.00	U M	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D		^
Acenaphthene	<26	ug/kg	26	65	130	130	1.00	U	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D		^
Acenaphthylene	<26	ug/kg	26	65	130	130	1.00	U	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D		^
Acetophenone	843	ug/kg	82	130	440	440	1.00		06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D		^
Anthracene	<26	ug/kg	26	65	130	130	1.00	U	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D		^
Atrazine	<15	ug/kg	15	65	130	130	1.00	U	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D		
Benzo(a)anthracene	34.2	ug/kg	27	65	130	130	1.00	J	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D		^
Benzo(a)pyrene	57.3	ug/kg	25	65	130	130	1.00	J	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D		^
Benzo(b)fluoranthene	76.9	ug/kg	27	65	130	130	1.00	J	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D		^
Benzo(g,h,i)perylene	43.1	ug/kg	24	65	130	130	1.00	J	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D		^
Benzo(k)fluoranthene	32.3	ug/kg	27	65	130	130	1.00	J	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D		^
Bis(2-chloroethoxy)methane	<25	ug/kg	25	65	130	130	1.00	U	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D		^
Bis(2-chloroethyl)ether	<27	ug/kg	27	65	130	130	1.00	U	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D		^
Bis(2-chloroisopropyl)ether	<33	ug/kg	33	65	130	130	1.00	U	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D		^
Bis(2-ethylhexyl)phthalate	<95	ug/kg	95	130	440	440	1.00	U	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D		^
Butylbenzylphthalate	<80	ug/kg	80	130	440	440	1.00	U	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D		^
Caprolactam	<82	ug/kg	82	130	440	440	1.00	U M	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D		
Carbazole	<31	ug/kg	31	65	130	130	1.00	U	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D		^
Chrysene	57.0	ug/kg	27	65	130	130	1.00	J	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D		^
Di-n-butylphthalate	<86	ug/kg	86	130	440	440	1.00	U	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D		^
Di-n-octylphthalate	<64	ug/kg	64	65	220	220	1.00	U	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D		^
Dibenzo(a,h)anthracene	<24	ug/kg	24	65	130	130	1.00	U	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D		^
Dibenzofuran	220	ug/kg	26	65	130	130	1.00		06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D		^
Diethylphthalate	<70	ug/kg	70	130	440	440	1.00	U	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D		^
Dimethylphthalate	<69	ug/kg	69	130	440	440	1.00	U	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D		^
Fluoranthene	79.2	ug/kg	28	65	130	130	1.00	J	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D		^
Fluorene	<27	ug/kg	27	65	130	130	1.00	U	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D		^
Hexachlorobenzene	<31	ug/kg	31	65	130	130	1.00	U	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D		^

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 598787

Sample Description: HWP B-18 (0-2)

Client Sample #:

Sampled: 06/19/2015 0855

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Hexachlorobutadiene	<68	ug/kg	68	130	440	440	1.00	U	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D	^
Hexachlorocyclopentadiene	<57	ug/kg	57	130	220	220	1.00	U Q	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D	^
Hexachloroethane	<36	ug/kg	36	65	130	130	1.00	U	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D	^
Indeno(1,2,3-cd)pyrene	38.6	ug/kg	25	65	130	130	1.00	J	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D	^
Isophorone	<55	ug/kg	55	65	220	220	1.00	U	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D	^
N-Nitroso-di-n-propylamine	<76	ug/kg	76	130	440	440	1.00	U Y	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D	^
N-Nitrosodiphenylamine & Diphn	<55	ug/kg	55	130	260	260	1.00	U	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D	^
Naphthalene	<23	ug/kg	23	65	130	130	1.00	U	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D	^
Nitrobenzene	<64	ug/kg	64	65	220	220	1.00	U	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D	^
Pentachlorophenol	<260	ug/kg	260	330	1100	1100	1.00	U M	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D	^
Phenanthrene	102	ug/kg	28	65	130	130	1.00	J	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D	^
Phenol	<170	ug/kg	170	330	650	650	1.00	U	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D	^
Pyrene	60.1	ug/kg	28	65	130	130	1.00	J	06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D	^
Surr: 2,4,6-Tribromophenol	53	% Recovery	35			125	1.00		06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D	^
Surr: 2-Fluorobiphenyl	72	% Recovery	45			105	1.00		06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D	^
Surr: 2-Fluorophenol	74	% Recovery	35			105	1.00		06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D	^
Surr: Nitrobenzene-d5	77	% Recovery	35			100	1.00		06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D	^
Surr: Phenol-d5	76	% Recovery	40			100	1.00		06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D	^
Surr: Terphenyl-d14	71	% Recovery	30			125	1.00		06/23/2015 15:00	7/1/15 22:26 RPN	EPA 8270D	^

CT LAB#: 598788

Sample Description: HWP-SUMP

Client Sample #:

Sampled: 06/19/2015 1140

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Solids, Percent	58.6	%	0.1	0.1	0.1	0.1	1.00			6/23/15 10:21	ABS	EPA 8000C
Hexavalent Chromium	<1.7	mg/kg	1.7	8.4	17	17	1.00	U	06/30/2015 10:00	6/30/15 10:00	LJS	EPA 3060A/7196A

#### Inorganic Results

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis



CT LAB#: 598788	Sample Description: HWP-SUMP	Client Sample #:	Sampled: 06/19/2015 1140
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
<b>Metals Results</b>												
Arsenic	288	mg/kg	0.23	0.69	1.4	1.4	1.00		06/29/2015 07:00	6/30/15 16:05	NAH	EPA 6010C ^
Barium	68.0	mg/kg	0.016	0.043	0.087	0.087	1.00		06/29/2015 07:00	6/30/15 16:05	NAH	EPA 6010C ^
Cadmium	2.2	mg/kg	0.010	0.035	0.069	0.069	1.00		06/29/2015 07:00	6/30/15 16:05	NAH	EPA 6010C ^
Chromium	256	mg/kg	0.040	0.12	0.24	0.24	1.00		06/29/2015 07:00	6/30/15 16:05	NAH	EPA 6010C ^
Lead	74.9	mg/kg	0.069	0.22	0.43	0.43	1.00		06/29/2015 07:00	6/30/15 16:05	NAH	EPA 6010C ^
Selenium	<0.10	mg/kg	0.10	0.35	0.69	0.69	1.00	U	06/29/2015 07:00	6/30/15 16:05	NAH	EPA 6010C ^
Silver	<0.029	mg/kg	0.029	0.087	0.17	0.17	1.00	U	06/29/2015 07:00	7/3/15 18:33	NAH	EPA 6010C ^
Mercury	0.10	mg/kg	0.0037	0.0074	0.015	0.015	1.00		06/23/2015 10:00	6/24/15 12:25	LJF	EPA 7471B ^

CT LAB#: 598789	Sample Description: DUP-2	Client Sample #:	Sampled: 06/19/2015
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
<b>Inorganic Results</b>												
Solids, Percent	83.3	%	0.1	0.1	0.1	0.1	1.00			6/23/15 10:21	ABS	EPA 8000C
<b>Organic Results</b>												
1,1,1-Trichloroethane	<9.4	ug/kg	9.4	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C ^
1,1,2,2-Tetrachloroethane	<5.7	ug/kg	5.7	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C ^
1,1,2-Trichloroethane	<7.5	ug/kg	7.5	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C ^
1,1-Dichloroethane	<10	ug/kg	10	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C ^
1,1-Dichloroethene	<15	ug/kg	15	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C ^
1,2,3-Trichlorobenzene	<7.5	ug/kg	7.5	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C ^
1,2,4-Trichlorobenzene	<8.5	ug/kg	8.5	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C ^
1,2-Dibromo-3-chloropropane	<11	ug/kg	11	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C ^
1,2-Dibromoethane	<9.4	ug/kg	9.4	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C ^

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis



CT LAB#: 598789

Sample Description: DUP-2

Client Sample #:

Sampled: 06/19/2015

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
1,2-Dichlorobenzene	<8.5	ug/kg	8.5	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C	^
1,2-Dichloroethane	<11	ug/kg	11	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C	^
1,2-Dichloropropane	<6.6	ug/kg	6.6	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C	^
1,3-Dichlorobenzene	<7.5	ug/kg	7.5	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C	^
1,4-Dichlorobenzene	<7.5	ug/kg	7.5	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C	^
1,4-Dioxane	<380	ug/kg	380	940	4700	4700	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C	^
112Trichloro122trifluoroethane	<19	ug/kg	19	38	94	94	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C	^
2-Butanone	<94	ug/kg	94	190	470	470	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C	^
2-Hexanone	<64	ug/kg	64	190	470	470	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C	^
4-Methyl-2-pentanone	<77	ug/kg	77	190	470	470	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C	^
Acetone	495	ug/kg	59	190	470	470	1.00		06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C	^
Benzene	<4.7	ug/kg	4.7	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C	^
Bromochloromethane	<7.5	ug/kg	7.5	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C	^
Bromodichloromethane	<8.5	ug/kg	8.5	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C	^
Bromoform	<5.7	ug/kg	5.7	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C	^
Bromomethane	<28	ug/kg	28	47	94	94	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C	^
Carbon disulfide	<14	ug/kg	14	38	94	94	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C	^
Carbon tetrachloride	<10	ug/kg	10	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C	^
Chlorobenzene	<7.5	ug/kg	7.5	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C	^
Chloroethane	<18	ug/kg	18	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C	^
Chloroform	<8.5	ug/kg	8.5	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C	^
Chloromethane	<24	ug/kg	24	47	94	94	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C	^
cis-1,2-Dichloroethene	<9.4	ug/kg	9.4	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C	^
cis-1,3-Dichloropropene	<9.4	ug/kg	9.4	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C	^
Cyclohexane	<11	ug/kg	11	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C	^
Dibromochloromethane	<7.5	ug/kg	7.5	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C	^
Dichlorodifluoromethane	<12	ug/kg	12	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C	^
Ethylbenzene	<7.5	ug/kg	7.5	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C	^

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 598789

Sample Description: DUP-2

Client Sample #:

Sampled: 06/19/2015

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Isopropylbenzene	<7.5	ug/kg	7.5	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C ^
m & p-Xylene	<17	ug/kg	17	38	94	94	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C ^
Methyl acetate	<11	ug/kg	11	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C ^
Methyl tert-butyl ether	<26	ug/kg	26	47	94	94	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C ^
Methylcyclohexane	<8.5	ug/kg	8.5	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C ^
Methylene chloride	<38	ug/kg	38	47	94	94	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C ^
o-Xylene	<7.5	ug/kg	7.5	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C ^
Styrene	<5.7	ug/kg	5.7	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C ^
Tetrachloroethene	<7.5	ug/kg	7.5	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C ^
Toluene	<6.6	ug/kg	6.6	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C ^
trans-1,2-Dichloroethene	<10	ug/kg	10	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C ^
trans-1,3-Dichloropropene	<6.6	ug/kg	6.6	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C ^
Trichloroethene	<9.4	ug/kg	9.4	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C ^
Trichlorofluoromethane	<12	ug/kg	12	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C ^
Vinyl chloride	<13	ug/kg	13	19	47	47	1.00	U	06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C ^
1,2 Dichloroethane-d4	104	% Recovery	80			117	1.00		06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C
Bromofluorobenzene	106	% Recovery	85			120	1.00		06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C
d8-Toluene	98	% Recovery	85			115	1.00		06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C
Dibromofluoromethane	98	% Recovery	79			118	1.00		06/23/2015 11:40	6/24/15 17:11	RLD	EPA 8260C

Qualifiers applying to all Analytes of Method EPA 8270D: V

1,1'-Biphenyl	<17	ug/kg	17	71	140	140	1.00	U	06/23/2015 15:00	7/2/15 16:28	RPN	EPA 8270D
1,2,4,5-Tetrachlorobenzene	<260	ug/kg	260	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28	RPN	EPA 8270D
2,4,5-Trichlorophenol	<1500	ug/kg	1500	3600	7100	7100	10.00	U	06/23/2015 15:00	7/2/15 16:28	RPN	EPA 8270D ^
2,4,6-Trichlorophenol	<1500	ug/kg	1500	3600	7100	7100	10.00	U	06/23/2015 15:00	7/2/15 16:28	RPN	EPA 8270D ^
2,4-Dichlorophenol	<1400	ug/kg	1400	3600	7100	7100	10.00	U	06/23/2015 15:00	7/2/15 16:28	RPN	EPA 8270D ^
2,4-Dimethylphenol	<1200	ug/kg	1200	3600	7100	7100	10.00	U	06/23/2015 15:00	7/2/15 16:28	RPN	EPA 8270D ^
2,4-Dinitrophenol	<3200	ug/kg	3200	7100	12000	12000	10.00	U	06/23/2015 15:00	7/2/15 16:28	RPN	EPA 8270D ^

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 598789

Sample Description: DUP-2

Client Sample #:

Sampled: 06/19/2015

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Qualifiers applying to all Analytes of Method EPA 8270D: V												
2,4-Dinitrotoluene	<290	ug/kg	290	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
2,6-Dinitrotoluene	<290	ug/kg	290	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
2-Chloronaphthalene	<270	ug/kg	270	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
2-Chlorophenol	<4000	ug/kg	4000	7100	24000	24000	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
2-Methylnaphthalene	1010	ug/kg	300	710	1400	1400	10.00	J	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
2-Methylphenol	<5000	ug/kg	5000	7100	24000	24000	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
2-Nitroaniline	<270	ug/kg	270	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
2-Nitrophenol	<3300	ug/kg	3300	3600	12000	12000	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
3 & 4-Methylphenol	<7700	ug/kg	7700	13000	43000	43000	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
3,3'-Dichlorobenzidine	<1800	ug/kg	1800	1800	5900	5900	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
3-Nitroaniline	<260	ug/kg	260	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
4,6-Dinitro-2-methylphenol	<3200	ug/kg	3200	3600	12000	12000	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
4-Bromophenyl-phenyl ether	<300	ug/kg	300	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
4-Chloro-3-methylphenol	<4500	ug/kg	4500	7100	24000	24000	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
4-Chloroaniline	<460	ug/kg	460	710	2400	2400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
4-Chlorophenyl-phenyl ether	<310	ug/kg	310	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
4-Nitroaniline	<360	ug/kg	360	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
4-Nitrophenol	<4800	ug/kg	4800	7100	24000	24000	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Acenaphthene	<290	ug/kg	290	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Acenaphthylene	<290	ug/kg	290	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Acetophenone	<890	ug/kg	890	1400	4800	4800	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Anthracene	<290	ug/kg	290	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Atrazine	<17	ug/kg	17	71	140	140	1.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	
Benzo(a)anthracene	<300	ug/kg	300	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Benzo(a)pyrene	<270	ug/kg	270	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Benzo(b)fluoranthene	<300	ug/kg	300	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 598789

Sample Description: DUP-2

Client Sample #:

Sampled: 06/19/2015

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Qualifiers applying to all Analytes of Method EPA 8270D: V												
Benzo(g,h,i)perylene	<260	ug/kg	260	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Benzo(k)fluoranthene	<300	ug/kg	300	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Bis(2-chloroethoxy)methane	<270	ug/kg	270	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Bis(2-chloroethyl)ether	<300	ug/kg	300	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Bis(2-chloroisopropyl)ether	<360	ug/kg	360	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Bis(2-ethylhexyl)phthalate	<1000	ug/kg	1000	1400	4800	4800	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Butylbenzylphthalate	<870	ug/kg	870	1400	4800	4800	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Caprolactam	<89	ug/kg	89	140	480	480	1.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	
Carbazole	<330	ug/kg	330	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Chrysene	<300	ug/kg	300	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Di-n-butylphthalate	<940	ug/kg	940	1400	4800	4800	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Di-n-octylphthalate	<700	ug/kg	700	710	2400	2400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Dibenzo(a,h)anthracene	<260	ug/kg	260	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Dibenzofuran	<290	ug/kg	290	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Diethylphthalate	<760	ug/kg	760	1400	4800	4800	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Dimethylphthalate	<750	ug/kg	750	1400	4800	4800	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Fluoranthene	<310	ug/kg	310	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Fluorene	<300	ug/kg	300	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Hexachlorobenzene	<330	ug/kg	330	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Hexachlorobutadiene	<740	ug/kg	740	1400	4800	4800	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Hexachlorocyclopentadiene	<620	ug/kg	620	1400	2400	2400	10.00	U Q	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Hexachloroethane	<390	ug/kg	390	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Indeno(1,2,3-cd)pyrene	<270	ug/kg	270	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Isophorone	<590	ug/kg	590	710	2400	2400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
N-Nitroso-di-n-propylamine	<830	ug/kg	830	1400	4800	4800	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
N-Nitrosodiphenylamine & Diphn	<590	ug/kg	590	1400	2900	2900	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 598789	Sample Description: DUP-2	Client Sample #:	Sampled: 06/19/2015
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Qualifiers applying to all Analytes of Method EPA 8270D: V												
Naphthalene	<250	ug/kg	250	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Nitrobenzene	<700	ug/kg	700	710	2400	2400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Pentachlorophenol	<2900	ug/kg	2900	3600	12000	12000	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Phenanthrene	<310	ug/kg	310	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Phenol	<1900	ug/kg	1900	3600	7100	7100	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Pyrene	<310	ug/kg	310	710	1400	1400	10.00	U	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Surr: 2,4,6-Tribromophenol	29	% Recovery	35			125	10.00	S	06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Surr: 2-Fluorobiphenyl	70	% Recovery	45			105	10.00		06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Surr: 2-Fluorophenol	51	% Recovery	35			105	10.00		06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Surr: Nitrobenzene-d5	92	% Recovery	35			100	10.00		06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Surr: Phenol-d5	59	% Recovery	40			100	10.00		06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^
Surr: Terphenyl-d14	65	% Recovery	30			125	10.00		06/23/2015 15:00	7/2/15 16:28 RPN	EPA 8270D	^

CT LAB#: 598790	Sample Description: HWP-IDW	Client Sample #:	Sampled: 06/19/2015 1302
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
<b>Metals Results</b>												
TCLP Arsenic	0.020	mg/L	0.0040	0.012	0.024	0.024	1.00	J M	06/25/2015 07:45	6/29/15 15:23 NAH	EPA 6010C	^
TCLP Barium	0.70	mg/L	0.00029	0.00090	0.0018	0.0018	1.00		06/25/2015 07:45	6/29/15 15:23 NAH	EPA 6010C	^
TCLP Cadmium	0.0025	mg/L	0.00030	0.0010	0.0020	0.0020	1.00		06/25/2015 07:45	6/29/15 15:23 NAH	EPA 6010C	^
TCLP Chromium	0.0085	mg/L	0.00060	0.0020	0.0040	0.0040	1.00		06/25/2015 07:45	6/29/15 15:23 NAH	EPA 6010C	^
TCLP Lead	<0.0014	mg/L	0.0014	0.0020	0.0040	0.0040	1.00	U M	06/25/2015 07:45	6/29/15 15:23 NAH	EPA 6010C	^
TCLP Selenium	0.014	mg/L	0.0022	0.0065	0.013	0.013	1.00	B	06/25/2015 07:45	6/29/15 15:23 NAH	EPA 6010C	^
TCLP Silver	0.00099	mg/L	0.00070	0.0020	0.0040	0.0040	1.00	J	06/25/2015 07:45	6/29/15 15:23 NAH	EPA 6010C	^

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 598790

Sample Description: HWP-IDW

Client Sample #:

Sampled: 06/19/2015 1302

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
TCLP Mercury	<0.000030	mg/L	0.000030	0.000060	0.00012	0.00012	1.00	U	06/25/2015 07:45	6/26/15 12:08	LJF	EPA 7470A
<b>Organic Results</b>												
TCLP Aroclor-1016	<0.0021	mg/L	0.0021			0.0021	1.00	U	06/25/2015 07:45	6/30/15 11:50	JJY	EPA 8082A ^
TCLP Aroclor-1221	<0.0019	mg/L	0.0019			0.0019	1.00	U	06/25/2015 07:45	6/30/15 11:50	JJY	EPA 8082A ^
TCLP Aroclor-1232	<0.0016	mg/L	0.0016			0.0016	1.00	U	06/25/2015 07:45	6/30/15 11:50	JJY	EPA 8082A ^
TCLP Aroclor-1242	<0.0020	mg/L	0.0020			0.0020	1.00	U	06/25/2015 07:45	6/30/15 11:50	JJY	EPA 8082A ^
TCLP Aroclor-1248	<0.0028	mg/L	0.0028			0.0028	1.00	U	06/25/2015 07:45	6/30/15 11:50	JJY	EPA 8082A ^
TCLP Aroclor-1254	<0.0020	mg/L	0.0020			0.0020	1.00	U	06/25/2015 07:45	6/30/15 11:50	JJY	EPA 8082A ^
TCLP Aroclor-1260	<0.0010	mg/L	0.0010			0.0010	1.00	U	06/25/2015 07:45	6/30/15 11:50	JJY	EPA 8082A ^
TCLP Surr: 2,4,5,6-TCMX	78	% Recovery	45			125	1.00		06/25/2015 07:45	6/30/15 11:50	JJY	EPA 8082A
TCLP Surr: DCBP	102	% Recovery	34			154	1.00		06/25/2015 07:45	6/30/15 11:50	JJY	EPA 8082A
TCLP 1,1-Dichloroethene	<0.024	mg/L	0.024	0.025	0.050	0.050	100.00	U	07/01/2015 16:00	7/2/15 15:36	AGK	EPA 8260C ^
TCLP 1,2-Dichloroethane	<0.030	mg/L	0.030	0.050	0.10	0.10	100.00	U	07/01/2015 16:00	7/2/15 15:36	AGK	EPA 8260C ^
TCLP 2-Butanone	<0.24	mg/L	0.24	0.25	0.50	0.50	100.00	U	07/01/2015 16:00	7/2/15 15:36	AGK	EPA 8260C ^
TCLP Benzene	<0.019	mg/L	0.019	0.025	0.050	0.050	100.00	U	07/01/2015 16:00	7/2/15 15:36	AGK	EPA 8260C ^
TCLP Carbon tetrachloride	<0.023	mg/L	0.023	0.025	0.050	0.050	100.00	U	07/01/2015 16:00	7/2/15 15:36	AGK	EPA 8260C ^
TCLP Chlorobenzene	<0.024	mg/L	0.024	0.025	0.050	0.050	100.00	U	07/01/2015 16:00	7/2/15 15:36	AGK	EPA 8260C ^
TCLP Chloroform	<0.015	mg/L	0.015	0.025	0.050	0.050	100.00	U	07/01/2015 16:00	7/2/15 15:36	AGK	EPA 8260C ^
TCLP Tetrachloroethene	<0.030	mg/L	0.030	0.050	0.10	0.10	100.00	U	07/01/2015 16:00	7/2/15 15:36	AGK	EPA 8260C ^
TCLP Trichloroethene	<0.021	mg/L	0.021	0.025	0.050	0.050	100.00	U	07/01/2015 16:00	7/2/15 15:36	AGK	EPA 8260C ^
TCLP Vinyl chloride	<0.018	mg/L	0.018	0.025	0.050	0.050	100.00	U	07/01/2015 16:00	7/2/15 15:36	AGK	EPA 8260C ^
TCLP 1,2 Dichloroethane-d4	102	% Recovery	70			120	1.00		07/01/2015 16:00	7/2/15 15:36	AGK	EPA 8260C
TCLP Bromofluorobenzene	95	% Recovery	75			120	1.00		07/01/2015 16:00	7/2/15 15:36	AGK	EPA 8260C
TCLP d8-Toluene	97	% Recovery	85			120	1.00		07/01/2015 16:00	7/2/15 15:36	AGK	EPA 8260C
TCLP Dibromofluoromethane	94	% Recovery	85			115	1.00		07/01/2015 16:00	7/2/15 15:36	AGK	EPA 8260C
TCLP 1,4-Dichlorobenzene	<0.0019	mg/L	0.0019	0.0040	0.010	0.010	1.00	U	06/25/2015 07:45	6/30/15 20:51	RPN	EPA 8270D ^
TCLP 2,4,5-Trichlorophenol	<0.011	mg/L	0.011	0.020	0.050	0.050	1.00	U	06/25/2015 07:45	6/30/15 20:51	RPN	EPA 8270D ^

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis



CT LAB#: 598790

Sample Description: HWP-IDW

Client Sample #:

Sampled: 06/19/2015 1302

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
TCLP 2,4,6-Trichlorophenol	<0.010	mg/L	0.010	0.020	0.050	0.050	1.00	U	06/25/2015 07:45	6/30/15 20:51	RPN	EPA 8270D	^
TCLP 2,4-Dinitrotoluene	<0.0021	mg/L	0.0021	0.010	0.20	0.020	1.00	U	06/25/2015 07:45	6/30/15 20:51	RPN	EPA 8270D	^
TCLP 2-Methylphenol	<0.0086	mg/L	0.0086	0.020	0.050	0.050	1.00	U	06/25/2015 07:45	6/30/15 20:51	RPN	EPA 8270D	^
TCLP 3 & 4-Methylphenol	<0.014	mg/L	0.014	0.036	0.090	0.090	1.00	U	06/25/2015 07:45	6/30/15 20:51	RPN	EPA 8270D	^
TCLP Hexachlorobenzene	<0.0027	mg/L	0.0027	0.0040	0.010	0.010	1.00	U	06/25/2015 07:45	6/30/15 20:51	RPN	EPA 8270D	^
TCLP Hexachlorobutadiene	<0.0018	mg/L	0.0018	0.0040	0.010	0.010	1.00	U	06/25/2015 07:45	6/30/15 20:51	RPN	EPA 8270D	^
TCLP Hexachloroethane	<0.0022	mg/L	0.0022	0.0040	0.010	0.010	1.00	U	06/25/2015 07:45	6/30/15 20:51	RPN	EPA 8270D	^
TCLP Nitrobenzene	<0.0016	mg/L	0.0016	0.0040	0.010	0.010	1.00	U	06/25/2015 07:45	6/30/15 20:51	RPN	EPA 8270D	^
TCLP Pentachlorophenol	<0.011	mg/L	0.011	0.020	0.050	0.050	1.00	U	06/25/2015 07:45	6/30/15 20:51	RPN	EPA 8270D	^
TCLP Pyridine	<0.0062	mg/L	0.0062	0.010	0.040	0.040	1.00	U	06/25/2015 07:45	6/30/15 20:51	RPN	EPA 8270D	^
TCLP Surr: 2,4,6-Tribromophenol	74	% Recovery	40			125	1.00		06/25/2015 07:45	6/30/15 20:51	RPN	EPA 8270D	
TCLP Surr: 2-Fluorobiphenyl	62	% Recovery	50			110	1.00		06/25/2015 07:45	6/30/15 20:51	RPN	EPA 8270D	
TCLP Surr: 2-Fluorophenol	37	% Recovery	20			110	1.00		06/25/2015 07:45	6/30/15 20:51	RPN	EPA 8270D	
TCLP Surr: Nitrobenzene-d5	58	% Recovery	40			110	1.00		06/25/2015 07:45	6/30/15 20:51	RPN	EPA 8270D	
TCLP Surr: Phenol-d5	24	% Recovery	10			115	1.00		06/25/2015 07:45	6/30/15 20:51	RPN	EPA 8270D	
TCLP Surr: Terphenyl-d14	76	% Recovery	50			135	1.00		06/25/2015 07:45	6/30/15 20:51	RPN	EPA 8270D	
TCLP alpha-Chlordane	<0.000090	mg/L	0.000090	0.00010	0.00040	0.00040	1.00	U	06/25/2015 07:45	6/30/15 20:18	JJY	EPA 8081B	^
TCLP Chlordane (Technical)	<0.0010	mg/L	0.0010	0.0030	0.0060	0.0060	1.00	U	06/25/2015 07:45	6/30/15 20:18	JJY	EPA 8081B	^
TCLP Endrin	<0.000060	mg/L	0.000060	0.00010	0.00024	0.00024	1.00	U	06/25/2015 07:45	6/30/15 20:18	JJY	EPA 8081B	^
TCLP gamma-Chlordane	<0.000070	mg/L	0.000070	0.00010	0.00024	0.00024	1.00	U	06/25/2015 07:45	6/30/15 20:18	JJY	EPA 8081B	^
TCLP Heptachlor	<0.000060	mg/L	0.000060	0.00010	0.00024	0.00024	1.00	U	06/25/2015 07:45	6/30/15 20:18	JJY	EPA 8081B	^
TCLP Heptachlor epoxide	<0.000070	mg/L	0.000070	0.00010	0.00024	0.00024	1.00	U	06/25/2015 07:45	6/30/15 20:18	JJY	EPA 8081B	^
TCLP Lindane	<0.000070	mg/L	0.000070	0.00010	0.00024	0.00024	1.00	U	06/25/2015 07:45	6/30/15 20:18	JJY	EPA 8081B	^
TCLP Methoxychlor	<0.000060	mg/L	0.000060	0.00010	0.00040	0.00040	1.00	U	06/25/2015 07:45	6/30/15 20:18	JJY	EPA 8081B	^
TCLP Toxaphene	<0.0018	mg/L	0.0018	0.0030	0.0060	0.0056	1.00	U	06/25/2015 07:45	6/30/15 20:18	JJY	EPA 8081B	^
TCLP SURR:2,4,5,6-CL4-m-xylene	74	% Recovery	25			140	1.00		06/25/2015 07:45	6/30/15 20:18	JJY	EPA 8081B	
TCLP SURR:Decachlorobiphenyl	93	% Recovery	30			135	1.00		06/25/2015 07:45	6/30/15 20:18	JJY	EPA 8081B	

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 598790	Sample Description: HWP-IDW	Client Sample #:	Sampled: 06/19/2015 1302
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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#### Sub Lab Results

TCLP Herbicides ATTACHED 1.00 06/25/2015 07:45 6/30/15 09:25 PML SW8151

CT LAB#: 598801	Sample Description: HWP-IDW	Client Sample #:	Sampled: 06/19/2015 1302
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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#### Inorganic Results

Solids, Percent	87.4	%	0.1	0.1	0.1	0.1	1.00			6/23/15 10:21	ABS	EPA 8000C
pH	8.29	S.U.					1.00			6/26/15 11:30	MER	EPA 9045D ^
Flashpoint	>140	Deg. F					1.00			6/23/15 16:00	MER	EPA 1010A ^
Cyanide, Reactive	<20	mg/kg	20			20	1.00	U		6/23/15 13:55	MER	ASTM D5049 ^
Sulfide Reactive	<100	mg/kg	100			100	1.00	U		6/23/15 13:35	MER	ASTM D4978 ^



Notes:

^ Indicates the laboratory is NELAP accredited for this analyte by the indicated matrix and method. DL (detection limit), LOD (limit of detection), loq (limit of quantitation) as defined by most recent DOD QSM version.

All samples were received intact and properly preserved unless otherwise noted. The results reported relate only to the samples tested. This report shall not be reproduced, except in full, without written approval of this laboratory. The Chain of Custody is attached.

Submitted by: Pat M. Letterer  
Project Manager  
608-356-2760

**This report has been specifically prepared to satisfy project or program requirements.** These results are in compliance with NELAC requirements for the parameters where accreditation is required or available, unless noted in the case narrative.

QC Qualifiers		Current CT Laboratories Certifications
Code	Description	
B	Analyte detected in the associated Method Blank.	Florida NELAP ID# E871111 Kansas NELAP ID# E-10368 Kentucky ID# 0023 ISO/IEC 17025-2005 A2LA Cert # 3806.01 New Jersey NELAP ID# WI001 North Carolina ID# 674 Wisconsin (WDNR) Chemistry ID# 157066030 Wisconsin (DATCP) Bacteriology ID# 105-289 DoD-ELAP L-A-B Cert # L2392 GA EPD Stipulation ID E871111, Expires Annually Louisiana ID # 115843 Virginia ID# 7608 Illinois NELAP ID # 002413 Wisconsin (WOSB) ID# WI-5499-WBE Maryland ID# 344
C	Toxicity present in BOD sample.	
D	Diluted Out.	
E	Safe, No Total Coliform detected.	
F	Unsafe, Total Coliform detected, no E. Coli detected.	
G	Unsafe, Total Coliform detected and E. Coli detected.	
H	Holding time exceeded.	
I	BOD incubator temperature was outside acceptance limits during test period.	
J	Estimated value.	
L	Significant peaks were detected outside the chromatographic window.	
M	Matrix spike and/or Matrix Spike Duplicate recovery outside acceptance limits.	
N	Insufficient BOD oxygen depletion.	
O	Complete BOD oxygen depletion.	
P	Concentration of analyte differs more than 40% between primary and confirmation analysis.	
Q	Laboratory Control Sample outside acceptance limits.	
R	See Narrative at end of report.	
S	Surrogate standard recovery outside acceptance limits due to apparent matrix effects.	
T	Sample received with improper preservation or temperature.	
U	Analyte concentration was below detection limit.	
V	Raised Quantitation or Reporting Limit due to limited sample amount or dilution for matrix background interference.	
W	Sample amount received was below program minimum.	
X	Analyte exceeded calibration range.	
Y	Replicate/Duplicate precision outside acceptance limits.	
Z	Specified calibration criteria was not met.	



Where a purchaser (Client) places an order for laboratory, consulting or sampling services from CT Laboratories (CTL), CTL shall provide the ordered services pursuant to these Terms and Conditions, and the related Question, or as agreed in a negotiated contract, in the absence of a written agreement to the contrary, the Order constitutes an acceptance by the Client of CTL's offer to do business under these Terms and Conditions, and an agreement to be bound by these Terms and Conditions. No contrary or additional terms and conditions expressed in a Client's document shall be deemed to become a part of the contract created upon acceptance of these Terms and Conditions, unless accepted by CTL in advance of the start of the project and in writing.

1. ORDERS AND RECEIPT OF SAMPLES (Sample Acceptance Policy)

1.1 The Client may place the Order (i.e., specify Scope of Work) either by submitting a purchase order to CTL in writing, by telephone (confirmed in writing) or by negotiated contract. Whichever option the Client selects for placing the Order, the Order shall not be valid unless it contains sufficient specification to enable CTL to carry out the Client's requirements. It is the policy of CT Laboratories that samples not meeting the acceptance criteria, outlined in the NELAP standards and Section 5.3.2 of the DOD QSM, will not be accepted by the laboratory or will be qualified on the final report. All samples submitted to the laboratory must (1) be accompanied by proper, full and complete documentation, including sample identification, location, date and time of collection, the collector's name, type of preservation (if any), type of sample, any special comments concerning the sample and any additional pertinent fields on the chain-of-custody. In the absence of any of the required information, the laboratory will attempt to contact the client to obtain the necessary information. The final report will be qualified. (2) be labeled appropriately with a unique sample identification written with indelible ink on water resistant labels. If the laboratory cannot determine the identity of a sample, it will be rejected and the client will be contacted for further instructions or resampling. (3) be in an appropriate sample container. If the container is inappropriate, the client will be contacted for further instructions or resampling. If samples show signs of damage, contamination or inadequate methods requested, (4) adhere to specified holding times. If samples are received with less than 1/2 the holding time remaining for the requested test, CT Laboratories will make its best effort to analyze the samples and notify the client. If holding times are exceeded, the final report will be qualified. (5) contain adequate sample volume to perform the necessary testing. If sufficient volume is not present, the sample will be rejected and the client will be contacted for further instructions or resampling. If samples show signs of damage, contamination or inadequate preservation, the client will be notified. If analysis can be performed, the final report will be qualified. If not, the samples will be rejected and the client notified for further instructions or resampling. 1.2 CT Laboratories must be supplied with completed copies of the known or suspected presence of any hazardous substances, as defined by applicable federal or state law. Where any samples which were not accompanied by the required disclosure, cause interruptions in the lab's ability to process work due to contamination of instruments or work areas, the Client will be responsible for the costs of clean up and recovery. 1.3 Prior to Sample Acceptance, the entire risk of loss or damage to samples remains with the Client. In no event will CTL have any responsibility or liability for the loss or damage to samples or for the costs of collection, transportation and delivery of samples to or from CTL's premises. Client is responsible to assume that any sample containing any hazardous substances which is to be delivered to CTL's premises will be packaged, labeled, transported and delivered properly and in accordance with applicable laws.

2. PAYMENT TERMS

2.1 Services performed by CTL will be in accordance with prices quoted and later confirmed in writing. Invoices may be submitted to Client upon completion of any sample delivery group. Payment in advance is required for all Clients except those whose credit has been established with CTL. For Clients with approved credit, payment terms are net 30 days from the date of invoice by CTL. All overdue payments are subject to an additional interest and service charge of one and one-half percent (1.5%) (or the maximum rate permissible by law, whichever is lesser) per month or portion thereof from the due date until the date of payment. All fees are charged or billed directly to the Client. The billing of a third party will not be accepted without a statement signed by the third party that acknowledges and accepts payment responsibility. CTL work at any time based upon an undervalued Client credit report. 3. CHANGE ORDERS, TERMINATION 3.1 Changes to the Scope of Work, price, or result delivery date may be initiated by CTL after Sample Acceptance due to any condition which conflicts with analytical, QA or other protocols warranted in these Terms and Conditions. CTL will not proceed with such changes until an agreement with the Client is reached on the amount of any cost, schedule change or technical change to the Scope of Work, and such agreement is documented in writing. 3.2 Changes to the Scope of Work, including but not limited to increasing or decreasing the work, changing test and analysis specification or acceptance or acceleration in the performance of the work may be initiated by the Client after sample acceptance. Such a change will be documented in writing and may result in a change in cost and turnaround time commitment. CTL's acceptance of such changes is contingent upon technical feasibility and operational capacity. 3.3 Suspension or termination of all or any part of the work may be initiated by the Client. CTL will be compensated consistent with Section 2 of these Terms and Conditions. CTL will complete all work in progress and be paid in full for all work completed.

4. WARRANTIES AND LIABILITY

4.1 Where applicable, CTL will use analytical methodologies which are in substantial conformity with published test methods. CTL has implemented these methods in its Laboratory Quality Manuals and referenced Standard Operating Procedures and where the nature or composition of the sample requires it, CTL reserves the right to deviate from these methodologies as necessary or appropriate, based on the reasonable judgment of CTL, which deviations, if any, will be made on a basis consistent with recognized standards of the industry and/or CTL's Laboratory Quality Manuals. Client may request that CTL perform according to a mutually agreed Quality Assurance Project Plan (QAPP). In the event that samples arrive prior to agreement on a QAPP, CTL will proceed with analyses under its standard Quality Manuals then in effect, and CTL will not be responsible for any resampling or other charges if work must be repeated to comply with a subsequently finalized QAPP. 4.2 CTL shall retain possession and control of samples until holding times provided that Sample Acceptance occurs within 48 hours of sampling or 1/2 of the holding time for the test, whichever is less. Where resampling or inconsistency leading to Sample Acceptance does not occur within this period, CTL will use its best efforts to meet holding times and will proceed with the work provided that, in CTL's judgment, the chain-of-custody or deviation of the Scope of Work provide sufficient guidance. Resamples of samples to comply with CTL's Quality Manuals will be deemed to have met holding times provided the initial analysis was performed within the applicable holding time. Where resamples demonstrate that sample matrix interference is the cause of failure to meet any Quality Manual requirements, the warranty will be deemed to have been met. 4.3 CTL warrants that it possesses and maintains all licenses and certifications which are required to perform services under these Terms and Conditions provided that such requirements are specified in writing to CTL prior to Sample Acceptance. CTL will notify the Client in writing of any decertification or revocation of any license or notice of either, which affects work in progress. 4.4 The warranty obligations set forth in Sections 4.1, 4.2 and 4.3 are the sole and exclusive warranties given by CTL in connection with any services performed by CTL or any Results generated from such services, and CTL gives and makes NO OTHER REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. No representation of CTL is authorized to give or make any other representation or warranty or modify the warranty in any way. 4.5 Client's sole and exclusive remedy for the breach of warranty with any services performed by CTL, will be limited to repeating any services performed, containing on the Client's providing, at the request of CTL and at the Client's expense, additional sample(s) if necessary. Any resamples requested by the Client generating Results consistent with the breach of warranty will be at the Client's expense. If resampling is necessary, CTL's liability for resampling costs will be limited to actual cost or one hundred and fifty dollars (\$150) per sample, whichever is less. 4.6 CTL's liability for any and all causes of action arising hereunder, whether based in contract, tort, warranty, negligence or otherwise, shall be limited to the lesser amount of compensation for the services performed or \$100,000. All claims, including those for negligence, shall be deemed waived unless suit thereon is filed within one year after CTL's completion of the services. Under no circumstances, whether arising in contract, tort (including negligence) or otherwise, shall CTL be responsible for loss of use, loss of profits, or for any special, indirect, incidental or consequential damages occasioned by the services performed or by application or use of the reports prepared. 4.7 In no event shall CTL have any responsibility or liability to the Client for any failure or delay in performance by CTL, which results, directly or indirectly, in whole or in part, from any cause or circumstance beyond the reasonable control of CTL. Such causes and circumstances shall include, but not be limited to, acts of God, acts of Client, acts or omissions of any governmental authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, equipment breakdown, matrix interference or unknown highly contaminated samples that impact instrument operation, unavailability of supplies from usual suppliers, difficulties or delays in transportation, mail or delivery services, or any other cause beyond CTL's reasonable control.

5. RESULTS, WORK PRODUCT

5.1 Data or information provided to CTL or generated by services performed under this agreement shall only become the property of the Client upon receipt in full by CTL of payment for the whole Order. Ownership of any analytical method, QA/QC protocols, software programs or equipment developed by CTL for performance of work will be retained by CTL, and Client shall not disclose such information to any third party. 5.2 Data and sample materials provided by Client or at Client's request, and the result obtained by CTL shall be held in confidence (unless such information is generally available to the public or is in the public domain or Client has failed to pay CTL for all services rendered or is otherwise in breach of these Terms and Conditions), subject to any disclosure required by law or legal process. 5.3 Should the Results delivered by CTL be used by the Client or Client's client, even though subsequently determined not to meet the warranties described in these Terms and Conditions, then the compensation will be adjusted based upon mutual agreement. In no case shall the Client unreasonably withhold CTL's right to independently defend its data. 5.4 CTL reserves the right to subcontract services ordered by the Client to another laboratory or laboratories. It is CTL's sole judgment, it is reasonably necessary, appropriate or advisable to do so, and with the Client's permission, CTL will in no way be liable for any subcontracted services and all applicable warranties, guarantees and insurance are those of the subcontracted laboratory. 5.5 CTL shall dispose of the Client's samples 30 days after the analytical report is issued, unless instructed to store them for an alternate period of time or to return such samples to the Client, in a manner consistent with U.S. Environmental Protection Agency regulations or other applicable Federal, state or local requirements. Any samples for projects that are canceled or not accepted, or for which return was requested, will be returned to the Client at their own expense. CTL reserves the right to return to the Client any sample or unused portion of a sample that is not within CTL's permitted capability or the capabilities of CTL's designated waste disposal vendor(s). 5.6 Unless a different time period is agreed to in any order under these Terms and Conditions, CTL agrees to retain all records for five (5) years. 5.7 In the event that CTL is required to respond to legal process related to services for Client, Client agrees to reimburse CTL for hourly charges for personnel involved in the response and attorney fees reasonably incurred in obtaining advice concerning the response, preparation to testify, and appearances related to the legal process, travel and all reasonable expenses associated with the litigation.

6. INSURANCE

6.1 CTL shall maintain in force during the performance of services under these Terms and Conditions, Workers' Compensation and Employer's Liability Insurance in accordance with the laws of the states having jurisdiction over CTL's employees who are engaged in the performance of the work. CTL shall also maintain during such period, Comprehensive General and Contractual Liability (limit of \$2,000,000 per occurrence/aggregate), Comprehensive Automobile Liability, (limit of \$1,000,000 combined single limit), and Professional Pollution Liability Insurance (limit of \$5,000,000 per occurrence/aggregate). Any Client required changes to these limits or conditions may result in a charge in cost to the Client. 7. AUDIT 7.1 Upon prior notice to CTL, the Client may audit and inspect CTL's records and accounts covering reimbursable costs related to work done for the Client for a period of one (1) year after completion of the work. The purpose of any such audit shall be only for verification of such costs, and CTL shall not be required to provide access to cost records whose prices are expressed as fixed fees or published unit prices.

Ice Present YES NO  
Temperature 19°  
IR Gun # 11  
Initials TLR  
Date 6/20/15 Time 1725  
Cooler #: 5330

## Cooler Receipt Form

<b>CUSTODY SEAL</b> DATE: <u>6/19/15</u> SIGNATURE: <u>[Signature]</u>	<b>QEC</b> Quality Environmental Containers 800-255-3950 • 304-255-3900
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**FedEx** US Airbill  
Express

FedEx  
Tracking  
Number

8748 3361 6378

From This portion can be removed for Recipient's records.

Date 6-19-15

FedEx  
Tracking  
Number

874833616378

Sender's  
Name

JOY KIRK

Phone

317 351-4255

Company

QUALITY ENVIRONMENTAL PROF

Address

1611 S FRANKLIN RD

City INDIANAPOLIS

Dept./Room/Suite/Room

State

IN

ZIP

46239-1198

Our Internal Billing Reference

Recipient's  
Name

Sample Receiving

Phone

317 351-4255

Company

CT Laboratories

Address

1230 LANG COURT

Address

Baraboo WI

Use this for the HOLD location address or for continuation of your shipping address.

State

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53913

**HOLD Weekday**  
FedEx location address  
REQUIRED. NOT available for  
FedEx First Overnight.

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**HOLD Saturday**  
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FedEx Priority Overnight and  
FedEx 2Day to select locations.

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92 CG  
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93 CH  
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95 CJ  
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96 CK  
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97 CL  
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98 CM  
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## QC SUMMARY REPORT

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

### Duplicate

Analytical Run #:	116022	Analysis Date:	6/23/2015	Prep Batch #:	Matrix:	SOIL
CTLab #:	599737	Analysis Time:	10:21	Prep Date/Time:	Method:	SW8000C
Parent Sample #:	598783	Analyst:	ABS	Prep Analyst:		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Solids, Percent	89.5	%	89.1					0	8

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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***Duplicate***

Analytical Run #:	116051	Analysis Date:	6/23/2015	Prep Batch #:	Matrix:	SOIL
CTLab #:	599338	Analysis Time:	13:55	Prep Date/Time:	Method:	SW7.3
Parent Sample #:	598801	Analyst:	MER	Prep Analyst:		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Cyanide, Reactive	20.0	mg/kg	<20.0	U				0	20



QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Lab Control Spike Soil**

Analytical Run #:	116051	Analysis Date:	6/23/2015	Prep Batch #:	Matrix:	SOLID
CTLab #:	599336	Analysis Time:	13:55	Prep Date/Time:	Method:	SW7.3
Parent Sample #:		Analyst:	MER	Prep Analyst:		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Cyanide, Reactive	20.0	mg/kg			20.0	100	70 --- 130		

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Method Blank Soil**

Analytical Run #:	116051	Analysis Date:	6/23/2015	Prep Batch #:	Matrix:	SOLID
CTLab #:	599337	Analysis Time:	13:55	Prep Date/Time:	Method:	SW7.3
Parent Sample #:		Analyst:	MER	Prep Analyst:		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Cyanide, Reactive	20	mg/kg		U	0.00			8	

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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***Matrix Spike Soil***

Analytical Run #:	116051	Analysis Date:	6/23/2015	Prep Batch #:	Matrix:	SOIL
CTLab #:	599339	Analysis Time:	13:55	Prep Date/Time:	Method:	SW7.3
Parent Sample #:	598801	Analyst:	MER	Prep Analyst:		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Cyanide, Reactive	20.0	mg/kg	BDL		20.0	100	70 --- 130		

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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***Duplicate***

Analytical Run #:	116052	Analysis Date:	6/23/2015	Prep Batch #:	Matrix:	SOIL
CTLab #:	599342	Analysis Time:	13:35	Prep Date/Time:	Method:	SW7.3
Parent Sample #:	598801	Analyst:	MER	Prep Analyst:		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Sulfide Reactive	100	mg/kg	<100	U				0	20

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Lab Control Spike Soil**

Analytical Run #:	116052	Analysis Date:	6/23/2015	Prep Batch #:	Matrix:	SOLID
CTLab #:	599340	Analysis Time:	13:35	Prep Date/Time:	Method:	SW7.3
Parent Sample #:		Analyst:	MER	Prep Analyst:		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Sulfide Reactive	100	mg/kg			100	100	70 --- 130		

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Matrix Spike Soil**

Analytical Run #:	116052	Analysis Date:	6/23/2015	Prep Batch #:	Matrix:	SOIL
CTLab #:	599343	Analysis Time:	13:35	Prep Date/Time:	Method:	SW7.3
Parent Sample #:	598801	Analyst:	MER	Prep Analyst:		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Sulfide Reactive	100	mg/kg	BDL		100	100	70 --- 130		



QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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***Duplicate***

Analytical Run #:	116238	Analysis Date:	6/30/2015	Prep Batch #:	53083	Matrix:	SOIL
CTLab #:	601728	Analysis Time:	10:00	Prep Date/Time:	06/30/2015 10:00	Method:	SW7196
Parent Sample #:	598783	Analyst:	LJS	Prep Analyst:	LJS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Hexavalent Chromium	1.11	mg/kg	<1.11	U				0	30

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Lab Control Spike Soil**

Analytical Run #:	116238	Analysis Date:	6/30/2015	Prep Batch #:	53083	Matrix:	SOLID
CTLab #:	601732	Analysis Time:	10:00	Prep Date/Time:	06/30/2015 10:00	Method:	SW7196
Parent Sample #:		Analyst:	LJS	Prep Analyst:	LJS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Hexavalent Chromium	19.4	mg/kg			20.0	97	84 --- 110		

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Method Blank Soil**

Analytical Run #:	116238	Analysis Date:	6/30/2015	Prep Batch #:	53083	Matrix:	SOLID
CTLab #:	601731	Analysis Time:	10:00	Prep Date/Time:	06/30/2015 10:00	Method:	SW7196
Parent Sample #:		Analyst:	LJS	Prep Analyst:	LJS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Hexavalent Chromium	1.0	mg/kg		U	0		5.0		

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Matrix Spike Soil**

Analytical Run #:	116238	Analysis Date:	6/30/2015	Prep Batch #:	53083	Matrix:	SOIL
CTLab #:	601729	Analysis Time:	10:00	Prep Date/Time:	06/30/2015 10:00	Method:	SW7196
Parent Sample #:	598783	Analyst:	LJS	Prep Analyst:	LJS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Hexavalent Chromium	18.2	mg/kg	BDL		44.5	41	75 --- 125		

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Matrix Spike Soil**

Analytical Run #:	116238	Analysis Date:	6/30/2015	Prep Batch #:	53083	Matrix:	SOIL
CTLab #:	601730	Analysis Time:	10:00	Prep Date/Time:	06/30/2015 10:00	Method:	SW7196
Parent Sample #:	598783	Analyst:	LJS	Prep Analyst:	LJS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Hexavalent Chromium	203	mg/kg	BDL		449	45	75 --- 125		

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Duplicate**

Analytical Run #:	116036	Analysis Date:	6/24/2015	Prep Batch #:	52983	Matrix:	SOIL
CTLab #:	599042	Analysis Time:	12:07	Prep Date/Time:	06/23/2015 10:00	Method:	SW7471B
Parent Sample #:	598783	Analyst:	LJF	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Mercury	0.038	mg/kg	0.046				0.20	19	20



QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Lab Control Spike Soil**

Analytical Run #:	116036	Analysis Date:	6/24/2015	Prep Batch #:	52983	Matrix:	SOLID
CTLab #:	599041	Analysis Time:	11:50	Prep Date/Time:	06/23/2015 10:00	Method:	SW7471B
Parent Sample #:		Analyst:	LJF	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Mercury	0.078	mg/kg			0.083	94	80 --- 120		

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Method Blank Soil**

Analytical Run #:	116036	Analysis Date:	6/24/2015	Prep Batch #:	52983	Matrix:	SOLID
CTLab #:	599040	Analysis Time:	11:52	Prep Date/Time:	06/23/2015 10:00	Method:	SW7471B
Parent Sample #:		Analyst:	LJF	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Mercury	0.0021	mg/kg		U	0		00415		

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Matrix Spike Duplicate Soil**

Analytical Run #:	116036	Analysis Date:	6/24/2015	Prep Batch #:	52983	Matrix:	SOIL
CTLab #:	599044	Analysis Time:	12:11	Prep Date/Time:	06/23/2015 10:00	Method:	SW7471B
Parent Sample #:	599043	Analyst:	LJF	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Mercury	0.12	mg/kg	0.046		0.095	78	80 --- 120	5	20

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Matrix Spike Soil**

Analytical Run #:	116036	Analysis Date:	6/24/2015	Prep Batch #:	52983	Matrix:	SOIL
CTLab #:	599043	Analysis Time:	12:09	Prep Date/Time:	06/23/2015 10:00	Method:	SW7471B
Parent Sample #:	598783	Analyst:	LJF	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Mercury	0.12	mg/kg	0.046		0.094	79	80 --- 120		

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Duplicate**

Analytical Run #:	116124	Analysis Date:	6/26/2015	Prep Batch #:	53017	Matrix:	TCLP
CTLab #:	600307	Analysis Time:	12:12	Prep Date/Time:	06/25/2015 10:00	Method:	SW7470A
Parent Sample #:	598790	Analyst:	LJF	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Mercury	0.0000300	mg/L	<0.0000300				0.12	0	20

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Lab Control Spike Water**

Analytical Run #:	116124	Analysis Date:	6/26/2015	Prep Batch #:	53017	Matrix:	LIQUID
CTLab #:	600306	Analysis Time:	12:00	Prep Date/Time:	06/25/2015 10:00	Method:	SW7470A
Parent Sample #:		Analyst:	LJF	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Mercury	0.00294	mg/L			0.00300	98	80 --- 120		

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Method Blank Water**

Analytical Run #:	116124	Analysis Date:	6/26/2015	Prep Batch #:	53017	Matrix:	LIQUID
CTLab #:	600305	Analysis Time:	12:02	Prep Date/Time:	06/25/2015 10:00	Method:	SW7470A
Parent Sample #:		Analyst:	LJF	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Mercury	0.00003	mg/L		U	0		00006		



QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Matrix Spike Duplicate Water**

Analytical Run #:	116124	Analysis Date:	6/26/2015	Prep Batch #:	53017	Matrix:	TCLP
CTLab #:	600309	Analysis Time:	12:16	Prep Date/Time:	06/25/2015 10:00	Method:	SW7470A
Parent Sample #:	600308	Analyst:	LJF	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Mercury	0.00211	mg/L	BDL		0.00200	106	80 --- 120	6	20

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Matrix Spike Water**

Analytical Run #:	116124	Analysis Date:	6/26/2015	Prep Batch #:	53017	Matrix:	TCLP
CTLab #:	600308	Analysis Time:	12:14	Prep Date/Time:	06/25/2015 10:00	Method:	SW7470A
Parent Sample #:	598790	Analyst:	LJF	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Mercury	0.00199	mg/L	BDL		0.00200	100	80 --- 120		

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Duplicate**

Analytical Run #:	116176	Analysis Date:	6/29/2015	Prep Batch #:	53041	Matrix:	TCLP
CTLab #:	601149	Analysis Time:	15:33	Prep Date/Time:	06/26/2015 13:30	Method:	SW6010
Parent Sample #:	598790	Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Arsenic	0.0134	mg/L	0.020				24	40	20
Barium	0.674	mg/L	0.70				1.80	4	20
Cadmium	0.00253	mg/L	0.0025				2.0	1	20
Chromium	0.00432	mg/L	0.0085				4.0	65	20
Lead	0.00286	mg/L	<0.00140				4.0	200	20
Selenium	0.0105	mg/L	0.014				13.0	29	20
Silver	0.000700	mg/L	0.00099 U				4.0	200	20

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Lab Control Spike Water**

Analytical Run #:	116176	Analysis Date:	6/29/2015	Prep Batch #:	53041	Matrix:	LIQUID
CTLab #:	601148	Analysis Time:	15:00	Prep Date/Time:	06/26/2015 13:30	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Arsenic	0.824	mg/L			0.800	103	80 --- 120		
Barium	0.823	mg/L			0.800	103	80 --- 120		
Cadmium	0.0193	mg/L			0.0200	96	80 --- 120		
Chromium	0.0746	mg/L			0.0800	93	80 --- 120		
Lead	0.182	mg/L			0.200	91	80 --- 120		
Selenium	0.848	mg/L			0.800	106	80 --- 120		
Silver	0.0215	mg/L			0.0200	108	80 --- 120		

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Method Blank Water**

Analytical Run #:	116176	Analysis Date:	6/29/2015	Prep Batch #:	53041	Matrix:	LIQUID
CTLab #:	601147	Analysis Time:	15:05	Prep Date/Time:	06/26/2015 13:30	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Arsenic	0.004	mg/L		U	0		0.012		
Barium	0.00029	mg/L		U	0		00090		
Cadmium	0.0003	mg/L		U	0		.0010		
Chromium	0.0006	mg/L		U	0		.0020		
Lead	0.0014	mg/L		U	0		.0020		
Selenium	0.00456	mg/L			0		.0065		
Silver	0.0007	mg/L		U	0		.0020		

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Matrix Spike Duplicate Water**

Analytical Run #:	116176	Analysis Date:	6/29/2015	Prep Batch #:	53041	Matrix:	TCLP
CTLab #:	601151	Analysis Time:	15:43	Prep Date/Time:	06/26/2015 13:30	Method:	SW6010
Parent Sample #:	601150	Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Arsenic	0.991	mg/L	0.020		0.800	121	80 --- 120	0	20
Barium	1.52	mg/L	0.70		0.800	102	80 --- 120	1	20
Cadmium	0.0205	mg/L	0.0025		0.0200	90	80 --- 120	4	20
Chromium	0.0771	mg/L	0.0085		0.0800	86	80 --- 120	5	20
Lead	0.124	mg/L	BDL		0.200	62	80 --- 120	2	20
Selenium	1.04	mg/L	0.014		0.800	128	80 --- 120	4	20
Silver	0.0250	mg/L	0.00099		0.0200	120	80 --- 120	4	20

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Matrix Spike Water**

Analytical Run #:	116176	Analysis Date:	6/29/2015	Prep Batch #:	53041	Matrix:	TCLP
CTLab #:	601150	Analysis Time:	15:38	Prep Date/Time:	06/26/2015 13:30	Method:	SW6010
Parent Sample #:	598790	Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Arsenic	0.994	mg/L	0.020		0.800	122	80 --- 120		
Barium	1.54	mg/L	0.70		0.800	105	80 --- 120		
Cadmium	0.0213	mg/L	0.0025		0.0200	94	80 --- 120		
Chromium	0.0808	mg/L	0.0085		0.0800	90	80 --- 120		
Lead	0.122	mg/L	BDL		0.200	61	80 --- 120		
Selenium	1.08	mg/L	0.014		0.800	133	80 --- 120		
Silver	0.0240	mg/L	0.00099		0.0200	115	80 --- 120		

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Duplicate**

Analytical Run #:	116184	Analysis Date:	6/30/2015	Prep Batch #:	53054	Matrix:	SOIL
CTLab #:	601266	Analysis Time:	15:20	Prep Date/Time:	06/29/2015 07:00	Method:	SW6010
Parent Sample #:	598783	Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Arsenic	14.4	mg/kg	28.1				32	64	20
Barium	62.2	mg/kg	62.6				2.0	1	20
Cadmium	0.13	mg/kg	0.076				1.60	52	20
Chromium	26.0	mg/kg	36.0				5.6	32	20
Lead	13.9	mg/kg	12.4				10.0	11	20
Selenium	0.0694	mg/kg	<0.0694 U				16	0	20
Silver	0.070	mg/kg	0.066				4.0	6	20



QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Lab Control Spike Soil**

Analytical Run #:	116184	Analysis Date:	6/30/2015	Prep Batch #:	53054	Matrix:	SOLID
CTLab #:	601265	Analysis Time:	14:36	Prep Date/Time:	06/29/2015 07:00	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Arsenic	85.0	mg/kg			100	85	80 --- 120		
Barium	91.3	mg/kg			100	91	80 --- 120		
Cadmium	2.7	mg/kg			2.5	108	80 --- 120		
Chromium	9.3	mg/kg			10.0	93	80 --- 120		
Lead	21.5	mg/kg			25.0	86	80 --- 120		
Selenium	84.5	mg/kg			100	84	80 --- 120		
Silver	2.3	mg/kg			2.5	92	75 --- 120		

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Method Blank Soil**

Analytical Run #:	116184	Analysis Date:	6/30/2015	Prep Batch #:	53054	Matrix:	SOLID
CTLab #:	601264	Analysis Time:	14:40	Prep Date/Time:	06/29/2015 07:00	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Arsenic	0.13	mg/kg		U	0		0.40		
Barium	0.019	mg/kg			0		0.025		
Cadmium	0.006	mg/kg		U	0		0.020		
Chromium	0.085	mg/kg			0		0.125		
Lead	0.04	mg/kg		U	0		0.125		
Selenium	0.066	mg/kg			0		0.20		
Silver	0.017	mg/kg		U	0		0.050		

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Matrix Spike Duplicate Soil**

Analytical Run #:	116184	Analysis Date:	6/30/2015	Prep Batch #:	53054	Matrix:	SOIL
CTLab #:	601268	Analysis Time:	15:29	Prep Date/Time:	06/29/2015 07:00	Method:	SW6010
Parent Sample #:	601267	Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Arsenic	122	mg/kg	28.1		116	81	80 --- 120	4	20
Barium	163	mg/kg	62.6		116	87	80 --- 120	1	20
Cadmium	3.8	mg/kg	0.076		2.9	128	80 --- 120	8	20
Chromium	41.7	mg/kg	36.0		11.6	49	80 --- 120	6	20
Lead	52.1	mg/kg	12.4		28.9	137	80 --- 120	24	20
Selenium	100	mg/kg	BDL		116	86	80 --- 120	3	20
Silver	2.8	mg/kg	0.066		2.9	94	75 --- 125	5	20

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Matrix Spike Soil**

Analytical Run #:	116184	Analysis Date:	6/30/2015	Prep Batch #:	53054	Matrix:	SOIL
CTLab #:	601267	Analysis Time:	15:24	Prep Date/Time:	06/29/2015 07:00	Method:	SW6010
Parent Sample #:	598783	Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Arsenic	118	mg/kg	28.1		116	78	80 --- 120		
Barium	167	mg/kg	62.6		116	90	80 --- 120		
Cadmium	3.6	mg/kg	0.076		2.9	122	80 --- 120		
Chromium	39.3	mg/kg	36.0		11.6	28	80 --- 120		
Lead	41.0	mg/kg	12.4		29.1	98	80 --- 120		
Selenium	97.7	mg/kg	BDL		116	84	80 --- 120		
Silver	2.6	mg/kg	0.066		2.9	87	75 --- 125		

**Lab Control Spike Soil**

Analytical Run #:	116026	Analysis Date:	6/24/2015	Prep Batch #:	52991	Matrix:	SOLID
CTLab #:	599252	Analysis Time:	08:08	Prep Date/Time:	06/23/2015 12:00	Method:	SW8260C
Parent Sample #:		Analyst:	RLD	Prep Analyst:	AGK		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
1,1,1-Trichloroethane	492	ug/kg			500	98	70 --- 135		
1,1,2,2-Tetrachloroethane	474	ug/kg			500	95	55 --- 130		
1,1,2-Trichloroethane	478	ug/kg			500	96	60 --- 125		
1,1-Dichloroethane	489	ug/kg			500	98	75 --- 125		
1,1-Dichloroethene	500	ug/kg			500	100	65 --- 135		
1,2,3-Trichlorobenzene	502	ug/kg			500	100	60 --- 135		
1,2,4-Trichlorobenzene	483	ug/kg			500	97	65 --- 130		
1,2-Dibromo-3-chloropropane	494	ug/kg			500	99	40 --- 135		
1,2-Dibromoethane	464	ug/kg			500	93	70 --- 125		
1,2-Dichlorobenzene	470	ug/kg			500	94	75 --- 120		
1,2-Dichloroethane	503	ug/kg			500	101	70 --- 135		
1,2-Dichloropropane	492	ug/kg			500	98	70 --- 120		
1,3-Dichlorobenzene	483	ug/kg			500	97	70 --- 125		
1,4-Dichlorobenzene	463	ug/kg			500	93	70 --- 125		
1,4-Dioxane	27500	ug/kg			25000	110	58 --- 138		
1,1,2-Trichloro-2,2,2-trifluoroethane	997	ug/kg			1000	100	75 --- 129		
2-Butanone	4520	ug/kg			5000	90	30 --- 160		
2-Hexanone	5020	ug/kg			5000	100	45 --- 145		
4-Methyl-2-pentanone	5370	ug/kg			5000	107	45 --- 145		
Acetone	3870	ug/kg			5000	77	20 --- 160		
Benzene	491	ug/kg			500	98	75 --- 125		
Bromochloromethane	508	ug/kg			500	102	70 --- 125		
Bromodichloromethane	467	ug/kg			500	93	70 --- 130		
Bromoform	472	ug/kg			500	94	55 --- 135		
Bromomethane	545	ug/kg			500	109	30 --- 160		
Carbon disulfide	1010	ug/kg			1000	101	45 --- 160		
Carbon tetrachloride	509	ug/kg			500	102	65 --- 135		
Chlorobenzene	489	ug/kg			500	98	75 --- 125		
Chloroethane	500	ug/kg			500	100	40 --- 155		
Chloroform	493	ug/kg			500	99	70 --- 125		
Chloromethane	472	ug/kg			500	94	50 --- 130		
cis-1,2-Dichloroethene	495	ug/kg			500	99	65 --- 125		
cis-1,3-Dichloropropene	492	ug/kg			500	98	70 --- 125		
Cyclohexane	502	ug/kg			500	100	73 --- 128		
Dibromochloromethane	473	ug/kg			500	95	65 --- 130		
Dichlorodifluoromethane	496	ug/kg			500	99	35 --- 135		
Ethylbenzene	504	ug/kg			500	101	75 --- 125		
Isopropylbenzene	530	ug/kg			500	106	75 --- 130		
m & p-Xylene	988	ug/kg			1000	99	80 --- 125		
Methyl acetate	527	ug/kg			500	105	37 --- 176		
Methyl tert-butyl ether	494	ug/kg			500	99	74 --- 125		
Methylcyclohexane	505	ug/kg			500	101	73 --- 126		
Methylene chloride	481	ug/kg			500	96	55 --- 140		

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

**Lab Control Spike Soil**

Analytical Run #:	116026	Analysis Date:	6/24/2015	Prep Batch #:	52991	Matrix:	SOLID
CTLab #:	599252	Analysis Time:	08:08	Prep Date/Time:	06/23/2015 12:00	Method:	SW8260C
Parent Sample #:		Analyst:	RLD	Prep Analyst:	AGK		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Naphthalene	490	ug/kg			500	98	40 --- 125		
o-Xylene	499	ug/kg			500	100	75 --- 125		
Styrene	494	ug/kg			500	99	75 --- 125		
Tetrachloroethene	502	ug/kg			500	100	65 --- 140		
Toluene	477	ug/kg			500	95	70 --- 125		
trans-1,2-Dichloroethene	482	ug/kg			500	96	65 --- 135		
trans-1,3-Dichloropropene	492	ug/kg			500	98	65 --- 125		
Trichloroethene	497	ug/kg			500	99	75 --- 125		
Trichlorofluoromethane	505	ug/kg			500	101	25 --- 185		
Vinyl chloride	523	ug/kg			500	105	60 --- 125		

**Method Blank Soil**

Analytical Run #:	116026	Analysis Date:	6/24/2015	Prep Batch #:	52991	Matrix:	SOLID
CTLab #:	599251	Analysis Time:	09:06	Prep Date/Time:	06/23/2015 12:00	Method:	SW8260C
Parent Sample #:		Analyst:	RLD	Prep Analyst:	AGK		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
1,1,1-Trichloroethane	10	ug/kg		U	0		25		
1,1,2,2-Tetrachloroethane	6	ug/kg		U	0		25		
1,1,2-Trichloroethane	8	ug/kg		U	0		25		
1,1-Dichloroethane	11	ug/kg		U	0		25		
1,1-Dichloroethene	16	ug/kg		U	0		25		
1,2,3-Trichlorobenzene	8	ug/kg		U	0		25		
1,2,4-Trichlorobenzene	9	ug/kg		U	0		25		
1,2-Dibromo-3-chloropropane	12	ug/kg		U	0		25		
1,2-Dibromoethane	10	ug/kg		U	0		25		
1,2-Dichlorobenzene	9	ug/kg		U	0		25		
1,2-Dichloroethane	12	ug/kg		U	0		25		
1,2-Dichloropropane	7	ug/kg		U	0		25		
1,3-Dichlorobenzene	8	ug/kg		U	0		25		
1,4-Dichlorobenzene	8	ug/kg		U	0		25		
1,4-Dioxane	400	ug/kg		U	0		2500		
1,1,2-Trichloro-1,2,2-trifluoroethane	20	ug/kg		U	0		50		
2-Butanone	100	ug/kg		U	0		250		
2-Hexanone	68	ug/kg		U	0		250		
4-Methyl-2-pentanone	82	ug/kg		U	0		250		
Acetone	63	ug/kg		U	0		250		
Benzene	5	ug/kg		U	0		25		
Bromochloromethane	8	ug/kg		U	0		25		
Bromodichloromethane	9	ug/kg		U	0		25		
Bromoform	6	ug/kg		U	0		25		
Bromomethane	30	ug/kg		U	0		50		
Carbon disulfide	15	ug/kg		U	0		50		
Carbon tetrachloride	11	ug/kg		U	0		25		
Chlorobenzene	8	ug/kg		U	0		25		
Chloroethane	19	ug/kg		U	0		25		
Chloroform	9	ug/kg		U	0		25		
Chloromethane	25	ug/kg		U	0		50		
cis-1,2-Dichloroethene	10	ug/kg		U	0		25		
cis-1,3-Dichloropropene	10	ug/kg		U	0		25		
Cyclohexane	12	ug/kg		U	0		25		
Dibromochloromethane	8	ug/kg		U	0		25		
Dichlorodifluoromethane	13	ug/kg		U	0		25		
Ethylbenzene	8	ug/kg		U	0		25		
Isopropylbenzene	8	ug/kg		U	0		25		
m & p-Xylene	18	ug/kg		U	0		50		
Methyl acetate	12	ug/kg		U	0		25		
Methyl tert-butyl ether	28	ug/kg		U	0		50		
Methylcyclohexane	9	ug/kg		U	0		25		
Methylene chloride	40	ug/kg		U	0		50		

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Method Blank Soil**

Analytical Run #:	116026	Analysis Date:	6/24/2015	Prep Batch #:	52991	Matrix:	SOLID
CTLab #:	599251	Analysis Time:	09:06	Prep Date/Time:	06/23/2015 12:00	Method:	SW8260C
Parent Sample #:		Analyst:	RLD	Prep Analyst:	AGK		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Naphthalene	10	ug/kg		U	0		25		
o-Xylene	8	ug/kg		U	0		25		
Styrene	6	ug/kg		U	0		25		
Tetrachloroethene	8	ug/kg		U	0		25		
Toluene	7	ug/kg		U	0		25		
trans-1,2-Dichloroethene	11	ug/kg		U	0		25		
trans-1,3-Dichloropropene	7	ug/kg		U	0		25		
Trichloroethene	10	ug/kg		U	0		25		
Trichlorofluoromethane	13	ug/kg		U	0		25		
Vinyl chloride	14	ug/kg		U	0		25		



**Matrix Spike Duplicate Soil**

Analytical Run #:	116026	Analysis Date:	6/24/2015	Prep Batch #:	52991	Matrix:	SOIL
CTLab #:	599254	Analysis Time:	13:52	Prep Date/Time:	06/23/2015 12:00	Method:	SW8260C
Parent Sample #:	599253	Analyst:	RLD	Prep Analyst:	AGK		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
1,1,1-Trichloroethane	387	ug/kg	BDL		406	95	70 --- 135	0	30
1,1,2,2-Tetrachloroethane	2400	ug/kg	BDL		406	591	55 --- 130	0	30
1,1,2-Trichloroethane	486	ug/kg	BDL		406	120	60 --- 125	3	30
1,1-Dichloroethane	381	ug/kg	BDL		406	94	75 --- 125	1	30
1,1-Dichloroethene	374	ug/kg	BDL		406	92	65 --- 135	3	30
1,2 Dichloroethane-d4	98.0	% Recovery			100	98.0	80 --- 117		30
1,2,3-Trichlorobenzene	525	ug/kg	BDL		406	129	60 --- 135	7	30
1,2,4-Trichlorobenzene	368	ug/kg	BDL		406	91	65 --- 130	4	30
1,2-Dibromo-3-chloropropane	394	ug/kg	BDL		406	97	40 --- 135	0	30
1,2-Dibromoethane	396	ug/kg	BDL		406	98	70 --- 125	4	30
1,2-Dichlorobenzene	356	ug/kg	BDL		406	88	75 --- 120	1	30
1,2-Dichloroethane	386	ug/kg	BDL		406	95	70 --- 135	5	30
1,2-Dichloropropane	393	ug/kg	BDL		406	97	70 --- 120	2	30
1,3-Dichlorobenzene	360	ug/kg	BDL		406	89	70 --- 125	2	30
1,4-Dichlorobenzene	354	ug/kg	BDL		406	87	70 --- 125	6	30
1,4-Dioxane	37700	ug/kg	BDL		20300	186	58 --- 138	69	30
112Trichloro122trifluoroethane	656	ug/kg	BDL		812	81	75 --- 129	3	30
2-Butanone	4510	ug/kg	BDL		4060	111	30 --- 160	5	30
2-Hexanone	4450	ug/kg	BDL		4060	110	45 --- 145	3	30
4-Methyl-2-pentanone	4520	ug/kg	BDL		4060	111	20 --- 145	1	30
Acetone	4640	ug/kg	140		4060	111	20 --- 160	6	30
Benzene	392	ug/kg	BDL		406	97	75 --- 125	3	30
Bromochloromethane	405	ug/kg	BDL		406	100	70 --- 125	11	30
Bromodichloromethane	374	ug/kg	BDL		406	92	70 --- 130	1	30
Bromofluorobenzene	116	% Recovery			100	116	85 --- 120		30
Bromoform	377	ug/kg	BDL		406	93	55 --- 135	3	30
Bromomethane	389	ug/kg	BDL		406	96	30 --- 160	11	30
Carbon disulfide	742	ug/kg	16.9		812	89	45 --- 160	1	30
Carbon tetrachloride	339	ug/kg	BDL		406	83	65 --- 135	2	30
Chlorobenzene	384	ug/kg	BDL		406	95	75 --- 125	1	30
Chloroethane	398	ug/kg	BDL		406	98	40 --- 155	2	30
Chloroform	387	ug/kg	BDL		406	95	70 --- 125	6	30
Chloromethane	354	ug/kg	BDL		406	87	50 --- 130	2	30
cis-1,2-Dichloroethene	405	ug/kg	BDL		406	100	65 --- 125	5	30
cis-1,3-Dichloropropene	416	ug/kg	BDL		406	102	70 --- 125	6	30
Cyclohexane	337	ug/kg	BDL		406	83	73 --- 128	3	30
d8-Toluene	102	% Recovery			100	102	85 --- 115		30
Dibromochloromethane	379	ug/kg	BDL		406	93	65 --- 130	2	30
Dibromofluoromethane	93.0	% Recovery			100	93.0	82 --- 118		30
Dichlorodifluoromethane	321	ug/kg	BDL		406	79	35 --- 135	1	30
Ethylbenzene	402	ug/kg	18.9		406	94	75 --- 125	1	30
Isopropylbenzene	410	ug/kg	40.5		406	91	75 --- 130	0	30
m & p-Xylene	790	ug/kg	47.4		812	91	80 --- 125	2	30

**Matrix Spike Duplicate Soil**

Analytical Run #:	116026	Analysis Date:	6/24/2015	Prep Batch #:	52991	Matrix:	SOIL
CTLab #:	599254	Analysis Time:	13:52	Prep Date/Time:	06/23/2015 12:00	Method:	SW8260C
Parent Sample #:	599253	Analyst:	RLD	Prep Analyst:	AGK		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Methyl acetate	567	ug/kg	80.6		406	120	37 --- 176	14	30
Methyl tert-butyl ether	415	ug/kg	BDL		406	102	55 --- 140	0	30
Methylcyclohexane	342	ug/kg	94.3		406	61	73 --- 126	0	30
Methylene chloride	402	ug/kg	BDL		406	99	55 --- 140	0	30
Naphthalene	1600	ug/kg	813		406	194	40 --- 125	0	30
o-Xylene	402	ug/kg	15.1		406	95	75 --- 125	2	30
Styrene	417	ug/kg	BDL		406	103	75 --- 125	2	30
Tetrachloroethene	372	ug/kg	BDL		406	92	65 --- 140	0	30
Toluene	405	ug/kg	11.7		406	97	70 --- 125	3	30
trans-1,2-Dichloroethene	369	ug/kg	BDL		406	91	65 --- 135	4	30
trans-1,3-Dichloropropene	401	ug/kg	BDL		406	99	65 --- 125	1	30
Trichloroethene	401	ug/kg	BDL		406	99	75 --- 125	1	30
Trichlorofluoromethane	342	ug/kg	BDL		406	84	25 --- 185	2	30
Vinyl chloride	367	ug/kg	BDL		406	90	60 --- 125	2	30

**Matrix Spike Soil**

Analytical Run #:	116026	Analysis Date:	6/24/2015	Prep Batch #:	52991	Matrix:	SOIL
CTLab #:	599253	Analysis Time:	13:23	Prep Date/Time:	06/23/2015 12:00	Method:	SW8260C
Parent Sample #:	598787	Analyst:	RLD	Prep Analyst:	AGK		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
1,1,1-Trichloroethane	387	ug/kg	BDL		406	95	70 --- 135		
1,1,2,2-Tetrachloroethane	2400	ug/kg	BDL		406	591	55 --- 130		
1,1,2-Trichloroethane	501	ug/kg	BDL		406	123	60 --- 125		
1,1-Dichloroethane	376	ug/kg	BDL		406	93	75 --- 125		
1,1-Dichloroethene	386	ug/kg	BDL		406	95	65 --- 135		
1,2 Dichloroethane-d4	99.0	% Recovery			100	99.0	80 --- 117		
1,2,3-Trichlorobenzene	490	ug/kg	BDL		406	121	60 --- 135		
1,2,4-Trichlorobenzene	354	ug/kg	BDL		406	87	65 --- 130		
1,2-Dibromo-3-chloropropane	394	ug/kg	BDL		406	97	40 --- 135		
1,2-Dibromoethane	381	ug/kg	BDL		406	94	70 --- 125		
1,2-Dichlorobenzene	351	ug/kg	BDL		406	86	75 --- 120		
1,2-Dichloroethane	403	ug/kg	BDL		406	99	70 --- 135		
1,2-Dichloropropane	402	ug/kg	BDL		406	99	70 --- 120		
1,3-Dichlorobenzene	355	ug/kg	BDL		406	87	70 --- 125		
1,4-Dichlorobenzene	335	ug/kg	BDL		406	83	70 --- 125		
1,4-Dioxane	18400	ug/kg	BDL		20300	91	58 --- 138		
112Trichloro122trifluoroethane	679	ug/kg	BDL		812	84	75 --- 129		
2-Butanone	4300	ug/kg	BDL		4060	106	30 --- 160		
2-Hexanone	4310	ug/kg	BDL		4060	106	45 --- 145		
4-Methyl-2-pentanone	4460	ug/kg	BDL		4060	110	20 --- 145		
Acetone	4360	ug/kg	140		4060	104	20 --- 160		
Benzene	405	ug/kg	BDL		406	100	75 --- 125		
Bromochloromethane	453	ug/kg	BDL		406	112	70 --- 125		
Bromodichloromethane	378	ug/kg	BDL		406	93	70 --- 130		
Bromofluorobenzene	115	% Recovery			100	115	85 --- 120		
Bromoform	366	ug/kg	BDL		406	90	55 --- 135		
Bromomethane	436	ug/kg	BDL		406	107	30 --- 160		
Carbon disulfide	736	ug/kg	16.9		812	89	45 --- 160		
Carbon tetrachloride	345	ug/kg	BDL		406	85	65 --- 135		
Chlorobenzene	388	ug/kg	BDL		406	96	75 --- 125		
Chloroethane	405	ug/kg	BDL		406	100	40 --- 155		
Chloroform	413	ug/kg	BDL		406	102	70 --- 125		
Chloromethane	363	ug/kg	BDL		406	89	50 --- 130		
cis-1,2-Dichloroethene	426	ug/kg	BDL		406	105	65 --- 125		
cis-1,3-Dichloropropene	391	ug/kg	BDL		406	96	70 --- 125		
Cyclohexane	347	ug/kg	BDL		406	85	73 --- 128		
d8-Toluene	100	% Recovery			100	100	85 --- 115		
Dibromochloromethane	374	ug/kg	BDL		406	92	65 --- 130		
Dibromofluoromethane	97.0	% Recovery			100	97.0	82 --- 118		
Dichlorodifluoromethane	316	ug/kg	BDL		406	78	35 --- 135		
Ethylbenzene	399	ug/kg	18.9		406	94	75 --- 125		
Isopropylbenzene	411	ug/kg	40.5		406	91	75 --- 130		
m & p-Xylene	802	ug/kg	47.4		812	93	80 --- 125		

**Matrix Spike Soil**

Analytical Run #:	116026	Analysis Date:	6/24/2015	Prep Batch #:	52991	Matrix:	SOIL
CTLab #:	599253	Analysis Time:	13:23	Prep Date/Time:	06/23/2015 12:00	Method:	SW8260C
Parent Sample #:	598787	Analyst:	RLD	Prep Analyst:	AGK		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Methyl acetate	494	ug/kg	80.6		406	102	37 --- 176		
Methyl tert-butyl ether	416	ug/kg	BDL		406	102	55 --- 140		
Methylcyclohexane	341	ug/kg	94.3		406	61	73 --- 126		
Methylene chloride	400	ug/kg	BDL		406	99	55 --- 140		
Naphthalene	1600	ug/kg	813		406	194	40 --- 125		
o-Xylene	411	ug/kg	15.1		406	98	75 --- 125		
Styrene	426	ug/kg	BDL		406	105	75 --- 125		
Tetrachloroethene	373	ug/kg	BDL		406	92	65 --- 140		
Toluene	392	ug/kg	11.7		406	94	70 --- 125		
trans-1,2-Dichloroethene	382	ug/kg	BDL		406	94	65 --- 135		
trans-1,3-Dichloropropene	398	ug/kg	BDL		406	98	65 --- 125		
Trichloroethene	397	ug/kg	BDL		406	98	75 --- 125		
Trichlorofluoromethane	350	ug/kg	BDL		406	86	25 --- 185		
Vinyl chloride	359	ug/kg	BDL		406	88	60 --- 125		

**Lab Control Spike Soil**

Analytical Run #:	116114	Analysis Date:	7/1/2015	Prep Batch #:	52985	Matrix:	SOLID
CTLab #:	599066	Analysis Time:	17:55	Prep Date/Time:	06/23/2015 5:00	Method:	SW8270
Parent Sample #:		Analyst:	RPN	Prep Analyst:	AJZ		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
1,1'-Biphenyl	1400	ug/kg			2000	70	50 --- 106		30
1,2,4,5-Tetrachlorobenzene	1400	ug/kg			2000	70	47 --- 106		30
1,4-Dichlorobenzene	1280	ug/kg			2000	64	35 --- 105		30
2,4,5-Trichlorophenol	1610	ug/kg			2000	80	50 --- 110		30
2,4,6-Trichlorophenol	1600	ug/kg			2000	80	45 --- 110		30
2,4-Dichlorophenol	1380	ug/kg			2000	69	45 --- 110		30
2,4-Dimethylphenol	1300	ug/kg			2000	65	30 --- 105		30
2,4-Dinitrophenol	1330	ug/kg			2000	66	15 --- 130		30
2,4-Dinitrotoluene	1750	ug/kg			2000	88	50 --- 115		30
2,6-Dinitrotoluene	1630	ug/kg			2000	82	49 --- 108		30
2-Chloronaphthalene	1330	ug/kg			2000	66	45 --- 105		30
2-Chlorophenol	1330	ug/kg			2000	66	45 --- 105		30
2-Methylnaphthalene	1430	ug/kg			2000	72	45 --- 105		30
2-Methylphenol	1330	ug/kg			2000	66	40 --- 105		30
2-Nitroaniline	1660	ug/kg			2000	83	45 --- 120		30
2-Nitrophenol	1340	ug/kg			2000	67	40 --- 110		30
3 & 4-Methylphenol	1340	ug/kg			2000	67	40 --- 105		30
3,3'-Dichlorobenzidine	847	ug/kg			2000	42	10 --- 130		30
3-Nitroaniline	1320	ug/kg			2000	66	25 --- 110		30
4,6-Dinitro-2-methylphenol	1580	ug/kg			2000	79	30 --- 135		30
4-Bromophenyl-phenyl ether	1690	ug/kg			2000	84	45 --- 115		30
4-Chloro-3-methylphenol	1600	ug/kg			2000	80	45 --- 115		30
4-Chloroaniline	1110	ug/kg			2000	56	10 --- 95		30
4-Chlorophenyl-phenyl ether	1580	ug/kg			2000	79	45 --- 110		30
4-Nitroaniline	1640	ug/kg			2000	82	35 --- 115		30
4-Nitrophenol	1580	ug/kg			2000	79	15 --- 140		30
Acenaphthene	1470	ug/kg			2000	74	45 --- 110		30
Acenaphthylene	1420	ug/kg			2000	71	45 --- 105		30
Acetophenone	1350	ug/kg			2000	68	47 --- 105		30
Anthracene	1750	ug/kg			2000	88	55 --- 105		30
Atrazine	1830	ug/kg			2000	92	50 --- 150		30
Benzo(a)anthracene	1730	ug/kg			2000	86	55 --- 110		30
Benzo(a)pyrene	1750	ug/kg			2000	88	55 --- 110		30
Benzo(b)fluoranthene	1820	ug/kg			2000	91	45 --- 115		30
Benzo(g,h,i)perylene	1760	ug/kg			2000	88	40 --- 125		30
Benzo(k)fluoranthene	1700	ug/kg			2000	85	45 --- 105		30
Benzylaldehyde	1300	ug/kg			2000	65	50 --- 150		30
Bis(2-chloroethoxy)methane	1340	ug/kg			2000	67	45 --- 110		30
Bis(2-chloroethyl)ether	1310	ug/kg			2000	66	40 --- 105		30
Bis(2-chloroisopropyl)ether	1300	ug/kg			2000	65	20 --- 115		30
Bis(2-ethylhexyl)phthalate	1720	ug/kg			2000	86	45 --- 125		30
Butylbenzylphthalate	1710	ug/kg			2000	86	50 --- 125		30
Caprolactam	1760	ug/kg			2000	88	50 --- 150		30

**Lab Control Spike Soil**

Analytical Run #:	116114	Analysis Date:	7/1/2015	Prep Batch #:	52985	Matrix:	SOLID
CTLab #:	599066	Analysis Time:	17:55	Prep Date/Time:	06/23/2015 5:00	Method:	SW8270
Parent Sample #:		Analyst:	RPN	Prep Analyst:	AJZ		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Carbazole	1790	ug/kg			2000	90	45 --- 115		30
Chrysene	1680	ug/kg			2000	84	55 --- 110		30
Di-n-butylphthalate	1740	ug/kg			2000	87	55 --- 110		30
Di-n-octylphthalate	1780	ug/kg			2000	89	40 --- 130		30
Dibenzo(a,h)anthracene	1790	ug/kg			2000	90	40 --- 125		30
Dibenzofuran	1500	ug/kg			2000	75	50 --- 105		30
Diethylphthalate	1750	ug/kg			2000	88	50 --- 115		30
Dimethylphthalate	1680	ug/kg			2000	84	50 --- 110		30
Fluoranthene	1800	ug/kg			2000	90	55 --- 115		30
Fluorene	1570	ug/kg			2000	78	50 --- 110		30
Hexachlorobenzene	1710	ug/kg			2000	86	45 --- 120		30
Hexachlorobutadiene	1290	ug/kg			2000	64	40 --- 115		30
Hexachlorocyclopentadiene	28.7	ug/kg			2000	1	35 --- 106		30
Hexachloroethane	1250	ug/kg			2000	62	35 --- 110		30
Indeno(1,2,3-cd)pyrene	1750	ug/kg			2000	88	40 --- 120		30
Isophorone	1300	ug/kg			2000	65	45 --- 110		30
N-Nitroso-di-n-propylamine	1320	ug/kg			2000	66	40 --- 115		30
N-Nitrosodiphenylamine & Diphn	3660	ug/kg			4000	92	50 --- 115		30
Naphthalene	1310	ug/kg			2000	66	40 --- 105		30
Nitrobenzene	1330	ug/kg			2000	66	40 --- 115		30
Pentachlorophenol	1680	ug/kg			2000	84	25 --- 120		30
Phenanthrene	1720	ug/kg			2000	86	50 --- 110		30
Phenol	1360	ug/kg			2000	68	40 --- 100		30
Pyrene	1690	ug/kg			2000	84	45 --- 125		30
Pyridine	1050	ug/kg			2000	52	10 --- 89		30

**Method Blank Soil**

Analytical Run #:	116114	Analysis Date:	7/1/2015	Prep Batch #:	52985	Matrix:	SOLID
CTLab #:	599065	Analysis Time:	17:34	Prep Date/Time:	06/23/2015 5:00	Method:	SW8270
Parent Sample #:		Analyst:	RPN	Prep Analyst:	AJZ		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
1,1'-Biphenyl	21	ug/kg		U			60		
1,2,4,5-Tetrachlorobenzene	22	ug/kg		U	0		60		
1,4-Dichlorobenzene	19	ug/kg		U	0		60		
2,4,5-Trichlorophenol	130	ug/kg		U	0		300		
2,4,6-Trichlorophenol	130	ug/kg		U	0		300		
2,4-Dichlorophenol	120	ug/kg		U	0		300		
2,4-Dimethylphenol	99	ug/kg		U	0		300		
2,4-Dinitrophenol	270	ug/kg		U	0		500		
2,4-Dinitrotoluene	24	ug/kg		U	0		60		
2,6-Dinitrotoluene	24	ug/kg		U	0		60		
2-Chloronaphthalene	23	ug/kg		U	0		60		
2-Chlorophenol	340	ug/kg		U	0		1000		
2-Methylnaphthalene	25	ug/kg		U	0		60		
2-Methylphenol	420	ug/kg		U	0		1000		
2-Nitroaniline	23	ug/kg		U	0		60		
2-Nitrophenol	280	ug/kg		U	0		500		
3 & 4-Methylphenol	650	ug/kg		U	0		1800		
3,3'-Dichlorobenzidine	150	ug/kg		U	0		250		
3-Nitroaniline	22	ug/kg		U	0		60		
4,6-Dinitro-2-methylphenol	270	ug/kg		U	0		500		
4-Bromophenyl-phenyl ether	25	ug/kg		U	0		60		
4-Chloro-3-methylphenol	380	ug/kg		U	0		1000		
4-Chloroaniline	39	ug/kg		U	0		100		
4-Chlorophenyl-phenyl ether	26	ug/kg		U	0		60		
4-Nitroaniline	30	ug/kg		U	0		60		
4-Nitrophenol	400	ug/kg		U	0		1000		
Acenaphthene	24	ug/kg		U	0		60		
Acenaphthylene	24	ug/kg		U	0		60		
Acetophenone	75	ug/kg		U	0		200		
Anthracene	24	ug/kg		U	0		60		
Atrazine	21	ug/kg		U			60		
Benzo(a)anthracene	25	ug/kg		U	0		60		
Benzo(a)pyrene	23	ug/kg		U	0		60		
Benzo(b)fluoranthene	25	ug/kg		U	0		60		
Benzo(g,h,i)perylene	22	ug/kg		U	0		60		
Benzo(k)fluoranthene	25	ug/kg		U	0		60		
Benzylaldehyde	21	ug/kg		U			60		
Bis(2-chloroethoxy)methane	23	ug/kg		U	0		60		
Bis(2-chloroethyl)ether	25	ug/kg		U	0		60		
Bis(2-chloroisopropyl)ether	30	ug/kg		U	0		60		
Bis(2-ethylhexyl)phthalate	87	ug/kg		U	0		200		
Butylbenzylphthalate	73	ug/kg		U	0		200		
Caprolactam	75	ug/kg		U			200		

**Method Blank Soil**

Analytical Run #:	116114	Analysis Date:	7/1/2015	Prep Batch #:	52985	Matrix:	SOLID
CTLab #:	599065	Analysis Time:	17:34	Prep Date/Time:	06/23/2015 5:00	Method:	SW8270
Parent Sample #:		Analyst:	RPN	Prep Analyst:	AJZ		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Carbazole	28	ug/kg		U	0		60		
Chrysene	25	ug/kg		U	0		60		
Di-n-butylphthalate	79	ug/kg		U	0		200		
Di-n-octylphthalate	59	ug/kg		U	0		100		
Dibenzo(a,h)anthracene	22	ug/kg		U	0		60		
Dibenzofuran	24	ug/kg		U	0		60		
Diethylphthalate	64	ug/kg		U	0		200		
Dimethylphthalate	63	ug/kg		U	0		200		
Fluoranthene	26	ug/kg		U	0		60		
Fluorene	25	ug/kg		U	0		60		
Hexachlorobenzene	28	ug/kg		U	0		60		
Hexachlorobutadiene	62	ug/kg		U	0		200		
Hexachlorocyclopentadiene	52	ug/kg		U	0		100		
Hexachloroethane	33	ug/kg		U	0		60		
Indeno(1,2,3-cd)pyrene	23	ug/kg		U	0		60		
Isophorone	50	ug/kg		U	0		100		
N-Nitroso-di-n-propylamine	70	ug/kg		U	0		200		
N-Nitrosodiphenylamine & Diphn	50	ug/kg		U	0		120		
Naphthalene	21	ug/kg		U	0		60		
Nitrobenzene	59	ug/kg		U	0		100		
Pentachlorophenol	240	ug/kg		U	0		500		
Phenanthrene	26	ug/kg		U	0		60		
Phenol	160	ug/kg		U	0		300		
Pyrene	26	ug/kg		U	0		60		
Pyridine	39	ug/kg		U	0		100		



**Matrix Spike Duplicate Soil**

Analytical Run #:	116114	Analysis Date:	7/1/2015	Prep Batch #:	52985	Matrix:	SOIL
CTLab #:	599069	Analysis Time:	23:08	Prep Date/Time:	06/23/2015 5:00	Method:	SW8270
Parent Sample #:	599068	Analyst:	RPN	Prep Analyst:	AJZ		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
1,1'-Biphenyl	1330	ug/kg	BDL		2190	61	50 --- 150	23	30
1,2,4,5-Tetrachlorobenzene	1830	ug/kg	BDL		2190	84	40 --- 129	2	30
1,4-Dichlorobenzene	1560	ug/kg	BDL		2190	71	35 --- 105	3	30
2,4,5-Trichlorophenol	1070	ug/kg	BDL		2190	49	50 --- 110	19	30
2,4,6-Trichlorophenol	1350	ug/kg	BDL		2190	62	45 --- 110	15	30
2,4-Dichlorophenol	1940	ug/kg	BDL		2190	89	45 --- 110	5	30
2,4-Dimethylphenol	1260	ug/kg	BDL		2190	58	30 --- 105	9	30
2,4-Dinitrophenol	295	ug/kg	BDL	U	2190	0	15 --- 130	0	30
2,4-Dinitrotoluene	1820	ug/kg	BDL		2190	83	50 --- 115	20	30
2,6-Dinitrotoluene	2170	ug/kg	BDL		2190	99	50 --- 110	2	30
2-Chloronaphthalene	1110	ug/kg	BDL		2190	51	45 --- 105	11	30
2-Chlorophenol	1640	ug/kg	BDL		2190	75	45 --- 105	2	30
2-Methylnaphthalene	1510	ug/kg	544		2190	44	45 --- 105	15	30
2-Methylphenol	1430	ug/kg	BDL		2190	65	40 --- 105	8	30
2-Nitroaniline	859	ug/kg	BDL		2190	39	45 --- 120	24	30
2-Nitrophenol	1570	ug/kg	BDL		2190	72	40 --- 110	1	30
3 & 4-Methylphenol	1490	ug/kg	BDL		2190	68	40 --- 105	5	30
3,3'-Dichlorobenzidine	505	ug/kg	BDL		2190	23	10 --- 130	7	30
3-Nitroaniline	2300	ug/kg	BDL		2190	105	25 --- 110	29	30
4,6-Dinitro-2-methylphenol	927	ug/kg	BDL		2190	42	30 --- 135	10	30
4-Bromophenyl-phenyl ether	1070	ug/kg	BDL		2190	49	45 --- 115	17	30
4-Chloro-3-methylphenol	1650	ug/kg	BDL		2190	75	45 --- 115	6	30
4-Chloroaniline	687	ug/kg	BDL		2190	31	10 --- 95	23	30
4-Chlorophenyl-phenyl ether	1630	ug/kg	BDL		2190	74	45 --- 110	5	30
4-Nitroaniline	1840	ug/kg	BDL		2190	84	35 --- 115	4	30
4-Nitrophenol	437	ug/kg	BDL	U	2190	0	15 --- 140	0	30
Acenaphthene	2020	ug/kg	BDL		2190	92	45 --- 110	8	30
Acenaphthylene	1450	ug/kg	BDL		2190	66	45 --- 105	9	30
Acetophenone	1980	ug/kg	843		2190	52	25 --- 96	3	30
Anthracene	1850	ug/kg	BDL		2190	84	55 --- 105	1	30
Atrazine	1860	ug/kg	BDL		2190	85	50 --- 150	5	30
Benzo(a)anthracene	1750	ug/kg	34.2		2190	78	50 --- 110	3	30
Benzo(a)pyrene	1710	ug/kg	57.3		2190	75	50 --- 110	4	30
Benzo(b)fluoranthene	1830	ug/kg	76.9		2190	80	45 --- 115	2	30
Benzo(g,h,i)perylene	1550	ug/kg	43.1		2190	69	40 --- 125	6	30
Benzo(k)fluoranthene	1730	ug/kg	32.3		2190	78	45 --- 125	9	30
Benzylaldehyde	1830	ug/kg	BDL		2190	84	50 --- 150	3	30
Bis(2-chloroethoxy)methane	1750	ug/kg	BDL		2190	80	45 --- 110	2	30
Bis(2-chloroethyl)ether	1590	ug/kg	BDL		2190	73	40 --- 105	3	30
Bis(2-chloroisopropyl)ether	1490	ug/kg	BDL		2190	68	20 --- 115	6	30
Bis(2-ethylhexyl)phthalate	1760	ug/kg	BDL		2190	80	45 --- 125	11	30
Butylbenzylphthalate	1670	ug/kg	BDL		2190	76	50 --- 125	4	30
Caprolactam	82.0	ug/kg	BDL	U	2190	0	50 --- 150	0	30

**Matrix Spike Duplicate Soil**

Analytical Run #:	116114	Analysis Date:	7/1/2015	Prep Batch #:	52985	Matrix:	SOIL
CTLab #:	599069	Analysis Time:	23:08	Prep Date/Time:	06/23/2015 5:00	Method:	SW8270
Parent Sample #:	599068	Analyst:	RPN	Prep Analyst:	AJZ		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Carbazole	1850	ug/kg	BDL		2190	84	45 --- 115	0	30
Chrysene	1630	ug/kg	57.0		2190	72	55 --- 110	4	30
Di-n-butylphthalate	1810	ug/kg	BDL		2190	83	55 --- 110	3	30
Di-n-octylphthalate	1710	ug/kg	BDL		2190	78	40 --- 130	3	30
Dibenzo(a,h)anthracene	1640	ug/kg	BDL		2190	75	40 --- 125	7	30
Dibenzofuran	1970	ug/kg	220		2190	80	50 --- 105	4	30
Diethylphthalate	1990	ug/kg	BDL		2190	91	50 --- 115	1	30
Dimethylphthalate	1580	ug/kg	BDL		2190	72	50 --- 110	3	30
Fluoranthene	2050	ug/kg	79.2		2190	90	55 --- 115	1	30
Fluorene	2240	ug/kg	BDL		2190	102	50 --- 110	9	30
Hexachlorobenzene	1580	ug/kg	BDL		2190	72	45 --- 120	6	30
Hexachlorobutadiene	1460	ug/kg	BDL		2190	67	40 --- 115	13	30
Hexachlorocyclopentadiene	732	ug/kg	BDL		2190	33	30 --- 137	21	30
Hexachloroethane	1510	ug/kg	BDL		2190	69	35 --- 110	8	30
Indeno(1,2,3-cd)pyrene	1610	ug/kg	38.6		2190	72	40 --- 120	7	30
Isophorone	1960	ug/kg	BDL		2190	89	45 --- 110	1	30
N-Nitroso-di-n-propylamine	2350	ug/kg	BDL		2190	107	40 --- 115	32	30
N-Nitrosodiphenylamine & Diphn	3210	ug/kg	BDL		4370	73	50 --- 115	8	30
Naphthalene	1790	ug/kg	BDL		2190	82	40 --- 105	2	30
Nitrobenzene	1980	ug/kg	BDL		2190	90	40 --- 115	2	30
Pentachlorophenol	262	ug/kg	BDL	U	2190	10	25 --- 120	20	30
Phenanthrene	1750	ug/kg	102		2190	75	50 --- 110	4	30
Phenol	1730	ug/kg	BDL		2190	79	40 --- 100	0	30
Pyrene	1690	ug/kg	60.1		2190	74	45 --- 125	5	30
Pyridine	42.6	ug/kg	BDL	U	2190	0	16 --- 121	0	30
Surr: 2,4,6-Tribromophenol	77.4	% Recovery			100	77.4	35 --- 125		
Surr: 2-Fluorobiphenyl	70.4	% Recovery			100	70.4	45 --- 105		
Surr: 2-Fluorophenol	80.2	% Recovery			100	80.2	35 --- 105		
Surr: Nitrobenzene-d5	76.4	% Recovery			100	76.4	35 --- 100		
Surr: Phenol-d5	75.8	% Recovery			100	75.8	40 --- 100		
Surr: Terphenyl-d14	73.6	% Recovery			100	73.6	30 --- 125		

**Matrix Spike Soil**

Analytical Run #:	116114	Analysis Date:	7/1/2015	Prep Batch #:	52985	Matrix:	SOIL
CTLab #:	599068	Analysis Time:	22:47	Prep Date/Time:	06/23/2015 5:00	Method:	SW8270
Parent Sample #:	598787	Analyst:	RPN	Prep Analyst:	AJZ		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
1,1'-Biphenyl	1670	ug/kg	BDL		2180	77	50 --- 150		
1,2,4,5-Tetrachlorobenzene	1780	ug/kg	BDL		2180	82	40 --- 129		
1,4-Dichlorobenzene	1600	ug/kg	BDL		2180	73	35 --- 105		
2,4,5-Trichlorophenol	890	ug/kg	BDL		2180	41	50 --- 110		
2,4,6-Trichlorophenol	1570	ug/kg	BDL		2180	72	45 --- 110		
2,4-Dichlorophenol	2040	ug/kg	BDL		2180	94	45 --- 110		
2,4-Dimethylphenol	1380	ug/kg	BDL		2180	63	30 --- 105		
2,4-Dinitrophenol	294	ug/kg	BDL	U	2180	0	15 --- 130		
2,4-Dinitrotoluene	2220	ug/kg	BDL		2180	102	50 --- 115		
2,6-Dinitrotoluene	2130	ug/kg	BDL		2180	98	50 --- 110		
2-Chloronaphthalene	1240	ug/kg	BDL		2180	57	45 --- 105		
2-Chlorophenol	1670	ug/kg	BDL		2180	77	45 --- 105		
2-Methylnaphthalene	1750	ug/kg	544		2180	55	45 --- 105		
2-Methylphenol	1550	ug/kg	BDL		2180	71	40 --- 105		
2-Nitroaniline	1090	ug/kg	BDL		2180	50	45 --- 120		
2-Nitrophenol	1560	ug/kg	BDL		2180	72	40 --- 110		
3 & 4-Methylphenol	1560	ug/kg	BDL		2180	72	40 --- 105		
3,3'-Dichlorobenzidine	539	ug/kg	BDL		2180	25	10 --- 130		
3-Nitroaniline	1710	ug/kg	BDL		2180	78	25 --- 110		
4,6-Dinitro-2-methylphenol	1020	ug/kg	BDL		2180	47	30 --- 135		
4-Bromophenyl-phenyl ether	1270	ug/kg	BDL		2180	58	45 --- 115		
4-Chloro-3-methylphenol	1540	ug/kg	BDL		2180	71	45 --- 115		
4-Chloroaniline	547	ug/kg	BDL		2180	25	10 --- 95		
4-Chlorophenyl-phenyl ether	1720	ug/kg	BDL		2180	79	45 --- 110		
4-Nitroaniline	1770	ug/kg	BDL		2180	81	35 --- 115		
4-Nitrophenol	436	ug/kg	BDL	U	2180	0	15 --- 140		
Acenaphthene	1850	ug/kg	BDL		2180	85	45 --- 110		
Acenaphthylene	1590	ug/kg	BDL		2180	73	45 --- 105		
Acetophenone	1920	ug/kg	843		2180	49	25 --- 96		
Anthracene	1870	ug/kg	BDL		2180	86	55 --- 105		
Atrazine	1950	ug/kg	BDL		2180	89	50 --- 150		
Benzo(a)anthracene	1800	ug/kg	34.2		2180	81	50 --- 110		
Benzo(a)pyrene	1790	ug/kg	57.3		2180	79	50 --- 110		
Benzo(b)fluoranthene	1800	ug/kg	76.9		2180	79	45 --- 115		
Benzo(g,h,i)perylene	1650	ug/kg	43.1		2180	74	40 --- 125		
Benzo(k)fluoranthene	1890	ug/kg	32.3		2180	85	45 --- 125		
Benzylaldehyde	1760	ug/kg	BDL		2180	81	50 --- 150		
Bis(2-chloroethoxy)methane	1770	ug/kg	BDL		2180	81	45 --- 110		
Bis(2-chloroethyl)ether	1640	ug/kg	BDL		2180	75	40 --- 105		
Bis(2-chloroisopropyl)ether	1580	ug/kg	BDL		2180	72	20 --- 115		
Bis(2-ethylhexyl)phthalate	1960	ug/kg	BDL		2180	90	45 --- 125		
Butylbenzylphthalate	1730	ug/kg	BDL		2180	79	50 --- 125		
Caprolactam	81.8	ug/kg	BDL	U	2180	0	50 --- 150		

**Matrix Spike Soil**

Analytical Run #:	116114	Analysis Date:	7/1/2015	Prep Batch #:	52985	Matrix:	SOIL
CTLab #:	599068	Analysis Time:	22:47	Prep Date/Time:	06/23/2015 5:00	Method:	SW8270
Parent Sample #:	598787	Analyst:	RPN	Prep Analyst:	AJZ		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Carbazole	1850	ug/kg	BDL		2180	85	45 --- 115		
Chrysene	1690	ug/kg	57.0		2180	75	55 --- 110		
Di-n-butylphthalate	1880	ug/kg	BDL		2180	86	55 --- 110		
Di-n-octylphthalate	1760	ug/kg	BDL		2180	81	40 --- 130		
Dibenzo(a,h)anthracene	1760	ug/kg	BDL		2180	81	40 --- 125		
Dibenzofuran	1880	ug/kg	220		2180	76	50 --- 105		
Diethylphthalate	2010	ug/kg	BDL		2180	92	50 --- 115		
Dimethylphthalate	1630	ug/kg	BDL		2180	75	50 --- 110		
Fluoranthene	2020	ug/kg	79.2		2180	89	55 --- 115		
Fluorene	2040	ug/kg	BDL		2180	94	50 --- 110		
Hexachlorobenzene	1680	ug/kg	BDL		2180	77	45 --- 120		
Hexachlorobutadiene	1660	ug/kg	BDL		2180	76	40 --- 115		
Hexachlorocyclopentadiene	905	ug/kg	BDL		2180	42	30 --- 137		
Hexachloroethane	1630	ug/kg	BDL		2180	75	35 --- 110		
Indeno(1,2,3-cd)pyrene	1730	ug/kg	38.6		2180	78	40 --- 120		
Isophorone	1980	ug/kg	BDL		2180	91	45 --- 110		
N-Nitroso-di-n-propylamine	1700	ug/kg	BDL		2180	78	40 --- 115		
N-Nitrosodiphenylamine & Diphn	3480	ug/kg	BDL		4360	80	50 --- 115		
Naphthalene	1810	ug/kg	BDL		2180	83	40 --- 105		
Nitrobenzene	2010	ug/kg	BDL		2180	92	40 --- 115		
Pentachlorophenol	269	ug/kg	BDL		2180	12	25 --- 120		
Phenanthrene	1810	ug/kg	102		2180	78	50 --- 110		
Phenol	1730	ug/kg	BDL		2180	79	40 --- 100		
Pyrene	1770	ug/kg	60.1		2180	78	45 --- 125		
Pyridine	42.5	ug/kg	BDL	U	2180	0	16 --- 121		
Surr: 2,4,6-Tribromophenol	75.3	% Recovery			100	75.3	35 --- 125		
Surr: 2-Fluorobiphenyl	74.6	% Recovery			100	74.6	45 --- 105		
Surr: 2-Fluorophenol	80.2	% Recovery			100	80.2	35 --- 105		
Surr: Nitrobenzene-d5	100	% Recovery			100	100	35 --- 100		
Surr: Phenol-d5	75.9	% Recovery			100	75.9	40 --- 100		
Surr: Terphenyl-d14	77.3	% Recovery			100	77.3	30 --- 125		

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Lab Control Spike Water**

Analytical Run #:	116221	Analysis Date:	6/30/2015	Prep Batch #:	53046	Matrix:	LIQUID
CTLab #:	601171	Analysis Time:	11:28	Prep Date/Time:	06/29/2015 08:30	Method:	SW8082
Parent Sample #:		Analyst:	JJY	Prep Analyst:	AJZ		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Aroclor-1016	4.03	ug/L			5.00	81	60 --- 136		9
Aroclor-1260	4.18	ug/L			5.00	84	59 --- 137		11

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Method Blank Water**

Analytical Run #:	116221	Analysis Date:	6/30/2015	Prep Batch #:	53046	Matrix:	LIQUID
CTLab #:	601170	Analysis Time:	11:07	Prep Date/Time:	06/29/2015 08:30	Method:	SW8082
Parent Sample #:		Analyst:	JJY	Prep Analyst:	AJZ		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Aroclor-1016	0.21	ug/L		U	0		0.21		
Aroclor-1221	0.19	ug/L		U	0		0.19		
Aroclor-1232	0.16	ug/L		U	0		0.16		
Aroclor-1242	0.20	ug/L		U	0		0.20		
Aroclor-1248	0.28	ug/L		U	0		0.28		
Aroclor-1254	0.20	ug/L		U	0		0.20		
Aroclor-1260	0.10	ug/L		U	0		0.10		

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Matrix Spike Water**

Analytical Run #:	116221	Analysis Date:	6/30/2015	Prep Batch #:	53046	Matrix:	TCLP
CTLab #:	601173	Analysis Time:	12:12	Prep Date/Time:	06/29/2015 08:30	Method:	SW8082
Parent Sample #:	598790	Analyst:	JJY	Prep Analyst:	AJZ		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Aroclor-1016	0.0434	mg/L	BDL		0.0500	87	68 --- 124		
Aroclor-1260	0.0446	mg/L	BDL		0.0500	89	63 --- 130		
Surr: 2,4,5,6-TCMX	76.9	% Recovery			100	76.9	45 --- 125		
Surr: DCBP	94.2	% Recovery			100	94.2	34 --- 154		

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

**Lab Control Spike Water**

Analytical Run #:	116222	Analysis Date:	6/30/2015	Prep Batch #:	53047	Matrix:	LIQUID
CTLab #:	601175	Analysis Time:	19:45	Prep Date/Time:	06/29/2015 08:30	Method:	SW8081
Parent Sample #:		Analyst:	JJY	Prep Analyst:	AJZ		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
alpha-Chlordane	0.000378	mg/L			0.000400	94	65 --- 125		30
Chlordane (Technical)	0.00219	mg/L			0.00250	88	50 --- 150		30
Endrin	0.000434	mg/L			0.000400	108	55 --- 135		30
gamma-Chlordane	0.000384	mg/L			0.000400	96	60 --- 125		30
Heptachlor	0.000403	mg/L			0.000400	101	40 --- 130		30
Heptachlor epoxide	0.000388	mg/L			0.000400	97	60 --- 130		30
Lindane	0.000353	mg/L			0.000400	88	25 --- 135		30
Methoxychlor	0.000465	mg/L			0.000400	116	55 --- 150		30
Toxaphene	0.00216	mg/L			0.00250	86	50 --- 150		30



QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Method Blank Water**

Analytical Run #:	116222	Analysis Date:	6/30/2015	Prep Batch #:	53047	Matrix:	LIQUID
CTLab #:	601174	Analysis Time:	19:29	Prep Date/Time:	06/29/2015 08:30	Method:	SW8081
Parent Sample #:		Analyst:	JJY	Prep Analyst:	AJZ		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
alpha-Chlordane	0.000009	mg/L		U	0		00020		
Chlordane (Technical)	0.000102	mg/L		U	0		00025		
Endrin	0.000006	mg/L		U	0		00012		
gamma-Chlordane	0.000007	mg/L		U	0		00020		
Heptachlor	0.000006	mg/L		U	0		00012		
Heptachlor epoxide	0.000007	mg/L		U	0		00012		
Lindane	0.000007	mg/L		U	0		00012		
Methoxychlor	0.000006	mg/L		U	0		00020		
Toxaphene	0.000176	mg/L		U	0		00025		

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

**Matrix Spike Water**

Analytical Run #:	116222	Analysis Date:	6/30/2015	Prep Batch #:	53047	Matrix:	TCLP
CTLab #:	601177	Analysis Time:	20:35	Prep Date/Time:	06/29/2015 08:30	Method:	SW8081
Parent Sample #:	598790	Analyst:	JJY	Prep Analyst:	AJZ		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
alpha-Chlordane	0.00362	mg/L	BDL		0.00400	90	65 --- 125		
Chlordane (Technical)	0.00102	mg/L	BDL	U	0.0500	0	50 --- 150		
Endrin	0.00417	mg/L	BDL		0.00400	104	55 --- 135		
gamma-Chlordane	0.00363	mg/L	BDL		0.00400	91	60 --- 125		
Heptachlor	0.00368	mg/L	BDL		0.00400	92	40 --- 130		
Heptachlor epoxide	0.00377	mg/L	BDL		0.00400	94	60 --- 130		
Lindane	0.00353	mg/L	BDL		0.00400	88	25 --- 135		
Methoxychlor	0.00439	mg/L	BDL		0.00400	110	55 --- 150		
SURR:2,4,5,6-CL4-m-xylene	74.3	% Recovery			100	74.3	25 --- 140		
SURR:Decachlorobiphenyl	98.0	% Recovery			100	98.0	30 --- 135		
Toxaphene	0.00176	mg/L	BDL	U	0.0500	0	50 --- 150		

**Lab Control Spike Water**

Analytical Run #:	116244	Analysis Date:	6/30/2015	Prep Batch #:	53045	Matrix:	LIQUID
CTLab #:	601167	Analysis Time:	18:32	Prep Date/Time:	06/29/2015 12:30	Method:	SW8270
Parent Sample #:		Analyst:	RPN	Prep Analyst:	AJZ		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
1,4-Dichlorobenzene	0.0123	mg/L			0.0200	62	30 --- 100		20
2,4,5-Trichlorophenol	0.0148	mg/L			0.0200	74	50 --- 110		20
2,4,6-Trichlorophenol	0.0148	mg/L			0.0200	74	50 --- 115		20
2,4-Dichlorophenol	0.0132	mg/L			0.0200	66	50 --- 105		20
2,4-Dimethylphenol	0.0133	mg/L			0.0200	66	30 --- 110		20
2,4-Dinitrophenol	0.0148	mg/L			0.0200	74	15 --- 140		20
2,4-Dinitrotoluene	0.0171	mg/L			0.0200	86	50 --- 120		20
2,6-Dinitrotoluene	0.0156	mg/L			0.0200	78	50 --- 115		20
2-Chloronaphthalene	0.0128	mg/L			0.0200	64	50 --- 105		20
2-Chlorophenol	0.0132	mg/L			0.0200	66	35 --- 105		20
2-Methylnaphthalene	0.0125	mg/L			0.0200	62	45 --- 105		20
2-Methylphenol	0.0115	mg/L			0.0200	58	40 --- 110		20
2-Nitroaniline	0.0153	mg/L			0.0200	76	50 --- 115		20
2-Nitrophenol	0.0127	mg/L			0.0200	64	40 --- 115		20
3 & 4-Methylphenol	0.0117	mg/L			0.0200	58	30 --- 110		20
3,3'-Dichlorobenzidine	0.0183	mg/L			0.0200	92	20 --- 110		20
3-Nitroaniline	0.0150	mg/L			0.0200	75	20 --- 125		20
4,6-Dinitro-2-methylphenol	0.0166	mg/L			0.0200	83	40 --- 130		20
4-Bromophenyl-phenyl ether	0.0154	mg/L			0.0200	77	50 --- 115		20
4-Chloro-3-methylphenol	0.0137	mg/L			0.0200	68	45 --- 110		20
4-Chloroaniline	0.0114	mg/L			0.0200	57	15 --- 110		20
4-Chlorophenyl-phenyl ether	0.0151	mg/L			0.0200	76	50 --- 110		20
4-Nitroaniline	0.0175	mg/L			0.0200	88	35 --- 120		20
4-Nitrophenol	0.00837	mg/L			0.0200	42	0 --- 125		20
Acenaphthene	0.0142	mg/L			0.0200	71	45 --- 110		20
Acenaphthylene	0.0141	mg/L			0.0200	70	50 --- 105		20
Acetophenone	0.0133	mg/L			0.0200	66	50 --- 136		20
Anthracene	0.0167	mg/L			0.0200	84	55 --- 110		20
Benzo(a)anthracene	0.0164	mg/L			0.0200	82	55 --- 110		20
Benzo(a)pyrene	0.0136	mg/L			0.0200	68	55 --- 110		20
Benzo(b)fluoranthene	0.0140	mg/L			0.0200	70	45 --- 120		20
Benzo(g,h,i)perylene	0.0111	mg/L			0.0200	56	40 --- 125		20
Benzo(k)fluoranthene	0.0144	mg/L			0.0200	72	45 --- 125		20
Bis(2-chloroethoxy)methane	0.0125	mg/L			0.0200	62	45 --- 105		20
Bis(2-chloroethyl)ether	0.0124	mg/L			0.0200	62	35 --- 110		20
Bis(2-chloroisopropyl)ether	0.0131	mg/L			0.0200	66	25 --- 130		20
Bis(2-ethylhexyl)phthalate	0.0167	mg/L			0.0200	84	40 --- 125		20
Butylbenzylphthalate	0.0157	mg/L			0.0200	78	45 --- 115		20
Carbazole	0.0182	mg/L			0.0200	91	50 --- 115		20
Chrysene	0.0155	mg/L			0.0200	78	55 --- 110		20
Di-n-butylphthalate	0.0169	mg/L			0.0200	84	55 --- 115		20
Di-n-octylphthalate	0.0158	mg/L			0.0200	79	35 --- 135		20
Dibenzo(a,h)anthracene	0.0116	mg/L			0.0200	58	40 --- 125		20

**Lab Control Spike Water**

Analytical Run #:	116244	Analysis Date:	6/30/2015	Prep Batch #:	53045	Matrix:	LIQUID
CTLab #:	601167	Analysis Time:	18:32	Prep Date/Time:	06/29/2015 12:30	Method:	SW8270
Parent Sample #:		Analyst:	RPN	Prep Analyst:	AJZ		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dibenzofuran	0.0149	mg/L			0.0200	74	55 --- 105		20
Diethylphthalate	0.0162	mg/L			0.0200	81	40 --- 120		20
Dimethylphthalate	0.0156	mg/L			0.0200	78	25 --- 125		20
Fluoranthene	0.0172	mg/L			0.0200	86	55 --- 115		20
Fluorene	0.0156	mg/L			0.0200	78	50 --- 110		20
Hexachlorobenzene	0.0157	mg/L			0.0200	78	50 --- 110		20
Hexachlorobutadiene	0.0109	mg/L			0.0200	54	25 --- 105		20
Hexachlorocyclopentadiene	0.0106	mg/L			0.0200	53	36 --- 106		20
Hexachloroethane	0.0116	mg/L			0.0200	58	30 --- 95		20
Indeno(1,2,3-cd)pyrene	0.0115	mg/L			0.0200	58	45 --- 125		20
Isophorone	0.0123	mg/L			0.0200	62	50 --- 110		20
N-Nitroso-di-n-propylamine	0.0133	mg/L			0.0200	66	35 --- 130		20
N-Nitrosodiphenylamine & Diphn	0.0337	mg/L			0.0400	84	50 --- 110		20
Naphthalene	0.0125	mg/L			0.0200	62	40 --- 100		20
Nitrobenzene	0.0130	mg/L			0.0200	65	45 --- 110		20
Pentachlorophenol	0.0148	mg/L			0.0200	74	40 --- 115		20
Phenanthrene	0.0172	mg/L			0.0200	86	50 --- 115		20
Phenol	0.00658	mg/L			0.0200	33	0 --- 115		20
Pyrene	0.0162	mg/L			0.0200	81	50 --- 130		20
Pyridine	0.00756	mg/L			0.0200	38	1 --- 78		20

**Method Blank Water**

Analytical Run #:	116244	Analysis Date:	6/30/2015	Prep Batch #:	53045	Matrix:	LIQUID
CTLab #:	601166	Analysis Time:	19:32	Prep Date/Time:	06/29/2015 12:30	Method:	SW8270
Parent Sample #:		Analyst:	RPN	Prep Analyst:	AJZ		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
1,4-Dichlorobenzene	0.00019	mg/L		U	0		.0005		
2,4,5-Trichlorophenol	0.0011	mg/L		U	0		.0025		
2,4,6-Trichlorophenol	0.0010	mg/L		U	0		.0025		
2,4-Dichlorophenol	0.0010	mg/L		U	0		.0025		
2,4-Dimethylphenol	0.00082	mg/L		U	0		.0025		
2,4-Dinitrophenol	0.0015	mg/L		U	0		0.005		
2,4-Dinitrotoluene	0.00021	mg/L		U	0		.0005		
2,6-Dinitrotoluene	0.00028	mg/L		U	0		.0005		
2-Chloronaphthalene	0.00018	mg/L		U	0		.0005		
2-Chlorophenol	0.00087	mg/L		U	0		.0025		
2-Methylnaphthalene	0.00017	mg/L		U	0		.0005		
2-Methylphenol	0.00086	mg/L		U	0		.0025		
2-Nitroaniline	0.00022	mg/L		U	0		0.001		
2-Nitrophenol	0.00090	mg/L		U	0		.0025		
3 & 4-Methylphenol	0.0014	mg/L		U	0		.0045		
3,3'-Dichlorobenzidine	0.00066	mg/L		U	0		0.0125		
3-Nitroaniline	0.00026	mg/L		U	0		0.001		
4,6-Dinitro-2-methylphenol	0.0016	mg/L		U	0		0.005		
4-Bromophenyl-phenyl ether	0.00020	mg/L		U	0		.0010		
4-Chloro-3-methylphenol	0.00076	mg/L		U	0		.0025		
4-Chloroaniline	0.00012	mg/L		U	0		.0005		
4-Chlorophenyl-phenyl ether	0.00018	mg/L		U	0		.0005		
4-Nitroaniline	0.00015	mg/L		U	0		.0005		
4-Nitrophenol	0.0011	mg/L		U	0		0.005		
Acenaphthene	0.00018	mg/L		U	0		.0005		
Acenaphthylene	0.00017	mg/L		U	0		.0005		
Acetophenone	0.00027	mg/L		U	0		.0005		
Anthracene	0.00011	mg/L		U	0		.0005		
Benzo(a)anthracene	0.00012	mg/L		U	0		.0005		
Benzo(a)pyrene	0.00014	mg/L		U	0		.0005		
Benzo(b)fluoranthene	0.00017	mg/L		U	0		.0005		
Benzo(g,h,i)perylene	0.00021	mg/L		U	0		.0005		
Benzo(k)fluoranthene	0.00020	mg/L		U	0		.0005		
Bis(2-chloroethoxy)methane	0.00019	mg/L		U	0		.0005		
Bis(2-chloroethyl)ether	0.00021	mg/L		U	0		.0005		
Bis(2-chloroisopropyl)ether	0.00022	mg/L		U	0		.0005		
Bis(2-ethylhexyl)phthalate	0.00044	mg/L		U	0		0.001		
Butylbenzylphthalate	0.00047	mg/L		U	0		0.001		
Carbazole	0.00012	mg/L		U	0		.0005		
Chrysene	0.00016	mg/L		U	0		.0005		
Di-n-butylphthalate	0.00067	mg/L		U	0		0.002		
Di-n-octylphthalate	0.00049	mg/L		U	0		0.001		
Dibenzo(a,h)anthracene	0.00017	mg/L		U	0		.0005		

**Method Blank Water**

Analytical Run #:	116244	Analysis Date:	6/30/2015	Prep Batch #:	53045	Matrix:	LIQUID
CTLab #:	601166	Analysis Time:	19:32	Prep Date/Time:	06/29/2015 12:30	Method:	SW8270
Parent Sample #:		Analyst:	RPN	Prep Analyst:	AJZ		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dibenzofuran	0.00019	mg/L		U	0		.0005		
Diethylphthalate	0.00045	mg/L		U	0		0.001		
Dimethylphthalate	0.00054	mg/L		U	0		0.001		
Fluoranthene	0.00013	mg/L		U	0		.0005		
Fluorene	0.00019	mg/L		U	0		.0005		
Hexachlorobenzene	0.00027	mg/L		U	0		.0005		
Hexachlorobutadiene	0.00018	mg/L		U	0		.0005		
Hexachlorocyclopentadiene	0.00026	mg/L		U	0		0.001		
Hexachloroethane	0.00022	mg/L		U	0		.0005		
Indeno(1,2,3-cd)pyrene	0.00018	mg/L		U	0		.0005		
Isophorone	0.00018	mg/L		U	0		.0005		
N-Nitroso-di-n-propylamine	0.00018	mg/L		U	0		.0005		
N-Nitrosodiphenylamine & Diphn	0.00036	mg/L		U	0		0.001		
Naphthalene	0.00018	mg/L		U	0		.0005		
Nitrobenzene	0.00016	mg/L		U	0		.0005		
Pentachlorophenol	0.0011	mg/L		U	0		.0025		
Phenanthrene	0.00030	mg/L		U	0		.0005		
Phenol	0.00048	mg/L		U	0		.0025		
Pyrene	0.00013	mg/L		U	0		.0005		
Pyridine	0.00062	mg/L		U	0		0.002		

**Matrix Spike Water**

Analytical Run #:	116244	Analysis Date:	6/30/2015	Prep Batch #:	53045	Matrix:	TCLP
CTLab #:	601169	Analysis Time:	21:11	Prep Date/Time:	06/29/2015 12:30	Method:	SW8270
Parent Sample #:	598790	Analyst:	RPN	Prep Analyst:	AJZ		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
1,4-Dichlorobenzene	0.114	mg/L	BDL		0.200	57	30 --- 100		
2,4,5-Trichlorophenol	0.152	mg/L	BDL		0.200	76	50 --- 110		
2,4,6-Trichlorophenol	0.151	mg/L	BDL		0.200	76	50 --- 115		
2,4-Dichlorophenol	0.133	mg/L	BDL		0.200	66	50 --- 105		
2,4-Dimethylphenol	0.134	mg/L	BDL		0.200	67	30 --- 110		
2,4-Dinitrophenol	0.158	mg/L	BDL		0.200	79	15 --- 140		
2,4-Dinitrotoluene	0.175	mg/L	BDL		0.200	88	50 --- 120		
2,6-Dinitrotoluene	0.161	mg/L	BDL		0.200	80	50 --- 115		
2-Chloronaphthalene	0.123	mg/L	BDL		0.200	62	50 --- 105		
2-Chlorophenol	0.124	mg/L	BDL		0.200	62	35 --- 105		
2-Methylnaphthalene	0.122	mg/L	BDL		0.200	61	45 --- 105		
2-Methylphenol	0.118	mg/L	BDL		0.200	59	40 --- 110		
2-Nitroaniline	0.157	mg/L	BDL		0.200	78	50 --- 115		
2-Nitrophenol	0.128	mg/L	BDL		0.200	64	40 --- 115		
3 & 4-Methylphenol	0.118	mg/L	BDL		0.200	59	30 --- 110		
3,3'-Dichlorobenzidine	0.184	mg/L	BDL		0.200	92	20 --- 110		
3-Nitroaniline	0.140	mg/L	BDL		0.200	70	20 --- 125		
4,6-Dinitro-2-methylphenol	0.185	mg/L	BDL		0.200	92	40 --- 130		
4-Bromophenyl-phenyl ether	0.169	mg/L	BDL		0.200	84	50 --- 115		
4-Chloro-3-methylphenol	0.146	mg/L	BDL		0.200	73	45 --- 110		
4-Chloroaniline	0.0813	mg/L	BDL		0.200	41	15 --- 110		
4-Chlorophenyl-phenyl ether	0.155	mg/L	BDL		0.200	78	50 --- 110		
4-Nitroaniline	0.181	mg/L	BDL		0.200	90	35 --- 120		
4-Nitrophenol	0.0902	mg/L	BDL		0.200	45	0 --- 125		
Acenaphthene	0.145	mg/L	BDL		0.200	72	45 --- 110		
Acenaphthylene	0.139	mg/L	BDL		0.200	70	50 --- 105		
Acetophenone	0.133	mg/L	BDL		0.200	66	50 --- 136		
Anthracene	0.183	mg/L	BDL		0.200	92	55 --- 110		
Benzo(a)anthracene	0.173	mg/L	BDL		0.200	86	55 --- 110		
Benzo(a)pyrene	0.145	mg/L	BDL		0.200	72	55 --- 110		
Benzo(b)fluoranthene	0.148	mg/L	BDL		0.200	74	45 --- 120		
Benzo(g,h,i)perylene	0.133	mg/L	BDL		0.200	66	40 --- 125		
Benzo(k)fluoranthene	0.155	mg/L	BDL		0.200	78	45 --- 125		
Bis(2-chloroethoxy)methane	0.126	mg/L	BDL		0.200	63	45 --- 105		
Bis(2-chloroethyl)ether	0.125	mg/L	BDL		0.200	62	35 --- 110		
Bis(2-chloroisopropyl)ether	0.128	mg/L	BDL		0.200	64	25 --- 130		
Bis(2-ethylhexyl)phthalate	0.176	mg/L	BDL		0.200	88	40 --- 125		
Butylbenzylphthalate	0.170	mg/L	BDL		0.200	85	45 --- 115		
Carbazole	0.199	mg/L	BDL		0.200	100	50 --- 115		
Chrysene	0.162	mg/L	BDL		0.200	81	55 --- 110		
Di-n-butylphthalate	0.175	mg/L	BDL		0.200	88	55 --- 115		
Di-n-octylphthalate	0.172	mg/L	BDL		0.200	86	35 --- 135		
Dibenzo(a,h)anthracene	0.138	mg/L	BDL		0.200	69	40 --- 125		

**Matrix Spike Water**

Analytical Run #:	116244	Analysis Date:	6/30/2015	Prep Batch #:	53045	Matrix:	TCLP
CTLab #:	601169	Analysis Time:	21:11	Prep Date/Time:	06/29/2015 12:30	Method:	SW8270
Parent Sample #:	598790	Analyst:	RPN	Prep Analyst:	AJZ		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dibenzofuran	0.149	mg/L	BDL		0.200	74	55 --- 105		
Diethylphthalate	0.173	mg/L	BDL		0.200	86	40 --- 120		
Dimethylphthalate	0.161	mg/L	BDL		0.200	80	25 --- 125		
Fluoranthene	0.182	mg/L	BDL		0.200	91	55 --- 115		
Fluorene	0.161	mg/L	BDL		0.200	80	50 --- 110		
Hexachlorobenzene	0.171	mg/L	BDL		0.200	86	50 --- 110		
Hexachlorobutadiene	0.101	mg/L	BDL		0.200	50	25 --- 105		
Hexachlorocyclopentadiene	0.104	mg/L	BDL		0.200	52	36 --- 106		
Hexachloroethane	0.108	mg/L	BDL		0.200	54	30 --- 95		
Indeno(1,2,3-cd)pyrene	0.136	mg/L	BDL		0.200	68	45 --- 125		
Isophorone	0.124	mg/L	BDL		0.200	62	50 --- 110		
N-Nitroso-di-n-propylamine	0.135	mg/L	BDL		0.200	68	35 --- 130		
N-Nitrosodiphenylamine & Diphn	0.374	mg/L	BDL		0.400	94	50 --- 110		
Naphthalene	0.122	mg/L	BDL		0.200	61	40 --- 100		
Nitrobenzene	0.125	mg/L	BDL		0.200	62	45 --- 110		
Pentachlorophenol	0.179	mg/L	BDL		0.200	90	40 --- 115		
Phenanthrene	0.186	mg/L	BDL		0.200	93	50 --- 115		
Phenol	0.0623	mg/L	BDL		0.200	31	0 --- 115		
Pyrene	0.171	mg/L	BDL		0.200	86	50 --- 130		
Pyridine	0.0474	mg/L	BDL		0.200	24	1 --- 78		
Surr: 2,4,6-Tribromophenol	83.2	% Recovery			100	83.2	40 --- 125		
Surr: 2-Fluorobiphenyl	65.2	% Recovery			100	65.2	50 --- 110		
Surr: 2-Fluorophenol	39.8	% Recovery			100	39.8	20 --- 110		
Surr: Nitrobenzene-d5	60.4	% Recovery			100	60.4	40 --- 110		
Surr: Phenol-d5	27.7	% Recovery			100	27.7	10 --- 115		
Surr: Terphenyl-d14	82.8	% Recovery			100	82.8	50 --- 135		



QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

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**Lab Control Spike Water**

Analytical Run #:	116309	Analysis Date:	7/2/2015	Prep Batch #:	Matrix:	LIQUID
CTLab #:	604002	Analysis Time:	14:06	Prep Date/Time:	Method:	SW8260C
Parent Sample #:		Analyst:	AGK	Prep Analyst:		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
1,1-Dichloroethene	1.06	mg/L			1.00	106	70 --- 130		
1,2-Dichloroethane	1.06	mg/L			1.00	106	70 --- 130		
2-Butanone	10.9	mg/L			10.0	109	30 --- 150		
Benzene	1.06	mg/L			1.00	106	80 --- 120		
Carbon tetrachloride	1.01	mg/L			1.00	101	65 --- 140		
Chlorobenzene	1.06	mg/L			1.00	106	80 --- 120		
Chloroform	1.01	mg/L			1.00	101	65 --- 135		
Tetrachloroethene	1.05	mg/L			1.00	105	45 --- 150		
Trichloroethene	0.999	mg/L			1.00	100	70 --- 125		
Vinyl chloride	1.16	mg/L			1.00	116	50 --- 145		

QEPI

Project Name: HOOSIER WOOD PRESERVER

SDG #: 0

Folder #: 112037

Project Number: 13-09-035

**Method Blank Water**

Analytical Run #:	116309	Analysis Date:	7/2/2015	Prep Batch #:	Matrix:	LIQUID
CTLab #:	604000	Analysis Time:	13:37	Prep Date/Time:	Method:	SW8260C
Parent Sample #:		Analyst:	AGK	Prep Analyst:		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
1,1-Dichloroethene	0.00024	mg/L		U	0		00025		
1,2-Dichloroethane	0.0003	mg/L		U	0		.0005		
2-Butanone	0.0024	mg/L		U	0		.0025		
Benzene	0.00019	mg/L		U	0		00025		
Carbon tetrachloride	0.00023	mg/L		U	0		00025		
Chlorobenzene	0.00024	mg/L		U	0		00025		
Chloroform	0.00015	mg/L		U	0		00025		
Tetrachloroethene	0.0003	mg/L		U	0		.0005		
Trichloroethene	0.00021	mg/L		U	0		00025		
Vinyl chloride	0.00018	mg/L		U	0		00025		

**Matrix Spike Duplicate Water**

Analytical Run #:	116309	Analysis Date:	7/2/2015	Prep Batch #:	Matrix:	TCLP
CTLab #:	603204	Analysis Time:	18:02	Prep Date/Time:	Method:	SW8260C
Parent Sample #:	603202	Analyst:	AGK	Prep Analyst:		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
1,1-Dichloroethene	1.05	mg/L	BDL		1.00	105	70 --- 130	5	30
1,2 Dichloroethane-d4	102	% Recovery			100	102	70 --- 120		
1,2-Dichloroethane	1.02	mg/L	BDL		1.00	102	70 --- 130	2	30
2-Butanone	11.1	mg/L	BDL		10.0	111	30 --- 150	1	30
Benzene	1.02	mg/L	BDL		1.00	102	80 --- 120	4	30
Bromofluorobenzene	97.0	% Recovery			100	97.0	75 --- 120		
Carbon tetrachloride	0.969	mg/L	BDL		1.00	97	65 --- 140	3	30
Chlorobenzene	1.03	mg/L	BDL		1.00	103	80 --- 120	4	30
Chloroform	0.999	mg/L	BDL		1.00	100	65 --- 135	5	30
d8-Toluene	99.0	% Recovery			100	99.0	85 --- 120		
Dibromofluoromethane	98.0	% Recovery			100	98.0	85 --- 115		
Tetrachloroethene	1.02	mg/L	BDL		1.00	102	45 --- 150	3	30
Trichloroethene	0.963	mg/L	BDL		1.00	96	70 --- 125	7	30
Vinyl chloride	1.11	mg/L	BDL		1.00	111	50 --- 145	3	30

**Matrix Spike Water**

Analytical Run #:	116309	Analysis Date:	7/2/2015	Prep Batch #:	Matrix:	TCLP
CTLab #:	603202	Analysis Time:	17:33	Prep Date/Time:	Method:	SW8260C
Parent Sample #:	598790	Analyst:	AGK	Prep Analyst:		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
1,1-Dichloroethene	1.10	mg/L	BDL		1.00	110	70 --- 130		30
1,2 Dichloroethane-d4	101	% Recovery			100	101	70 --- 120		
1,2-Dichloroethane	1.04	mg/L	BDL		1.00	104	70 --- 130		30
2-Butanone	11.2	mg/L	BDL		10.0	112	30 --- 150		30
Benzene	1.06	mg/L	BDL		1.00	106	80 --- 120		30
Bromofluorobenzene	96.0	% Recovery			100	96.0	75 --- 120		
Carbon tetrachloride	0.994	mg/L	BDL		1.00	99	65 --- 140		30
Chlorobenzene	1.07	mg/L	BDL		1.00	107	80 --- 120		30
Chloroform	1.05	mg/L	BDL		1.00	105	65 --- 135		30
d8-Toluene	99.0	% Recovery			100	99.0	85 --- 120		
Dibromofluoromethane	99.0	% Recovery			100	99.0	85 --- 115		
Tetrachloroethene	1.05	mg/L	BDL		1.00	105	45 --- 150		30
Trichloroethene	1.03	mg/L	BDL		1.00	103	70 --- 125		30
Vinyl chloride	1.15	mg/L	BDL		1.00	115	50 --- 145		30

## Sample Condition Report

Folder #: 112037	Print Date / Time: 06/22/2015 13:04
Client: QEPI	Received Date / Time / By: 06/20/2015 1725 TKR
Project Name: HOOSIER WOOD PRESERVER	Log-In Date / Time / By: 06/22/2015 1302 TKR
Project Phase:	Project #: 13-09-035 PM: PML
Coolers: 5330	Temperature: 1.9C On Ice: Y
Custody Seals Present : Y	COC Present?: Y Complete? Y
Seal Intact? Y	Numbers: DATED AND SIGNED
Ship Method: FEDEX EXPRESS	Tracking Number: 8748 3361 6378
Adequate Packaging: Y	Temp Blank Enclosed? Y

Notes: SAMPLES RECEIVED IN GOOD CONDITION ON ICE.

2 CUSTODY SEALS PRESENT AND INTACT ON COOLER, DATED AND SIGNED.

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
598780 HWP B-1 (0-2)	SOLIDS	1	/	%SOL,CR6,HG,ICP
Total # of Containers of Type ( SOLIDS ) = 1				

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
598781 HWP B-2 (0-4)	SOLIDS	1	/	%SOL,CR6,HG,ICP
Total # of Containers of Type ( SOLIDS ) = 1				

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
598782 HWP B-7 (0-2)	SOLIDS	1	/	%SOL,CR6,HG,ICP
Total # of Containers of Type ( SOLIDS ) = 1				

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
598783 HWP B-9 (0-2)	SOLIDS	1	/	%SOL,CR6,HG,ICP
	SOLIDS	1	/	%SOL,CR6,HG,ICP
Total # of Containers of Type ( SOLIDS ) = 2				

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
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SOLIDS 1 /  
**Total # of Containers of Type ( SOLIDS ) = 1**

%SOL,CR6,HG,ICP

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
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598785 HWP-SP2

SOLIDS 1 /  
**Total # of Containers of Type ( SOLIDS ) = 1**

%SOL,CR6,HG,ICP

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
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598786 DUP-1

SOLIDS 1 /  
**Total # of Containers of Type ( SOLIDS ) = 1**

%SOL,CR6,HG,ICP

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
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598787 HWP B-18 (0-2)

UNPRES GL 1 /  
**Total # of Containers of Type ( UNPRES GL ) = 1**

8270,%SOL

598787 HWP B-18 (0-2)

MEOH TARED 1 /  
MEOH TARED 1 /  
MEOH TARED 1 /  
MEOH TARED 1 /  
**Total # of Containers of Type ( MEOH TARED ) = 4**

VOC  
VOC  
VOC  
VOC

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
-------------------------	----------------	------------	---------------------	-------

598788 HWP-SUMP

SOLIDS 1 /  
**Total # of Containers of Type ( SOLIDS ) = 1**

%SOL,CR6,HG,ICP

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
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598789 DUP-2

UNPRES GL 1 /  
**Total # of Containers of Type ( UNPRES GL ) = 1**

8270,%SOL

598789 DUP-2

MEOH TARED 1 /  
MEOH TARED 1 /  
MEOH TARED 1 /  
MEOH TARED 1 /  
**Total # of Containers of Type ( MEOH TARED ) = 4**

VOC  
VOC  
VOC  
VOC

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
598790 HWP-IDW	AMBER GL	1	/	8270,PCB,PEST
	<b>Total # of Containers of Type</b>		<b>( AMBER GL ) = 1</b>	
598790 HWP-IDW	UNPRES GL	1	/	HERB
	<b>Total # of Containers of Type</b>		<b>( UNPRES GL ) = 1</b>	
598790 HWP-IDW	SOLIDS	1	/	HG,ICP
	<b>Total # of Containers of Type</b>		<b>( SOLIDS ) = 1</b>	
598790 HWP-IDW	JAR GL	1	/	VOC
	<b>Total # of Containers of Type</b>		<b>( JAR GL ) = 1</b>	

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
598801 HWP-IDW	SOLIDS	1	/	%SOL,CN React,pH,S2 React
	SOLIDS	1	/	%SOL,CN React,pH,S2 React
	<b>Total # of Containers of Type</b>		<b>( SOLIDS ) = 2</b>	
598801 HWP-IDW	SOLIDS	1	/	FLASH
	SOLIDS	1	/	FLASH
	<b>Total # of Containers of Type</b>		<b>( SOLIDS ) = 2</b>	

<u>Condition Code</u>	<u>Condition Description</u>
1	Sample Received OK

**Laboratory Report Number:** L15061283

Patrick Letterer  
CT Laboratories  
1230 Lange Court  
Baraboo, WI 53913

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:  
Stephanie Mossburg – Team Chemist/Data Specialist  
(740) 373-4071  
Stephanie.Mossburg@microbac.com

*I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.*

This report was certified on June 29 2015



David Vandenberg – Managing Director

State of Origin: MI  
Accrediting Authority: N/A ID:N/A  
QAPP: DOD Ver 5.0



Microbac Laboratories \* Ohio Valley Division  
158 Starlite Drive, Marietta, OH 45750 \* T: (740) 373-4071 F: (740) 373-4835 \* www.microbac.com



## Record of Sample Receipt and Inspection

### Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution
-------------	------------

### Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00112815	I	5.0		1001910553310004575000634116666452	X

### Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

**Lab Report #:** L15061283

**Lab Project #:** 2694.005

**Project Name:** CT Labs DOD

**Lab Contact:** Stephanie Mossburg

**Samples Received**

Client ID	Laboratory ID	Date Collected	Date Received
598790	L15061283-01	06/19/2015 13:02	06/23/2015 10:50

**Microbac REPORT L15061283**  
**PREPARED FOR CT Laboratories**  
**WORK ID:**

1.0 Summary Data .....	5
1.1 Narratives .....	6
1.2 Certificate of Analysis .....	9
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# 1.0 Summary Data

# **1.1 Narratives**



**Login Number:** L15061283  
**Department:** General Chromatography  
**Analyst:** Allen Davis

## METHOD

**Analysis** SW-846 8151A

## HOLDING TIMES

**Sample Preparation:** All holding times were met.

**Sample Analysis:** All holding times were met.

## PREPARATION

Sample preparation proceeded normally.

## CALIBRATION

**Initial Calibration:** For all compounds that yielded a %RSD greater than 20%, linear or higher order equations were applied. All acceptance criteria were met.

**Alternate Source Standards:** All acceptance criteria were met.

**Continuing Calibration and Tune:** All acceptance criteria were met.

## BATCH QA/QC

**Method Blank:** All acceptance criteria were met.

**Laboratory Control Sample:** All acceptance criteria were met.

**Matrix Spikes:** There were no MS/MSD results associated with this sample delivery group, due to insufficient volume of sample. The laboratory included an LCS and LCS duplicate in the preparation batch in lieu of the NELAC prescribed MS/MSD. Microbac recommends site specific MS/MSD samples to avoid possible data qualification.

## SAMPLES

**Samples:** All acceptance criteria were met.

**Surrogates:** All acceptance criteria were met.

### Manual Integration Reason Codes

**Reason #1: Data System Fails to Select Correct Peak** In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peak completely.

**Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak** This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low areacounts for the target compound.

**Reason #3: Improperly Integrated Isomers and/or coeluting compounds.** This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

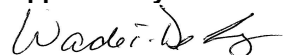
**Reason #4: System Establishes Incorrect Baseline** There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

**Reason #5: Miscellaneous** Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

**Narrative ID:** 101007

**Approved By:** Wade DeLong



# **1.2 Certificate of Analysis**



## Certificate of Analysis

<b>Sample #:</b> L15061283-01	<b>PrePrep Method:</b>	<b>Instrument:</b> HP17
<b>Client ID:</b> 598790	<b>Prep Method:</b> METHOD	<b>Prep Date:</b> 06/26/2015 08:30
<b>Matrix:</b> TCLP Leach	<b>Analytical Method:</b> 8151A	<b>Cal Date:</b> 06/11/2015 14:15
<b>Workgroup #:</b> WG529150	<b>Analyst:</b> AED	<b>Run Date:</b> 06/26/2015 17:00
<b>Collect Date:</b> 06/19/2015 13:02	<b>Dilution:</b> 1	<b>File ID:</b> 17G19590.F
<b>Sample Tag:</b> 01	<b>Units:</b> ug/L	

Analyte		Result	Qual	LOQ	LOD	DL	EPA HW#	Reg. Limit
2,4-D		10.0	U	20.0	10.0	5.00	D016	10000
2,4,5-TP (Silvex)		1.00	U	2.00	1.00	0.500	D017	1000
Surrogate		Recovery	Lower Limit		Upper Limit	Q		
2,4-Dichlorophenylacetic acid		68.6	32		138			
U	Analyte was not detected. The concentration is below the reported LOD.							

Certificate of Analysis

## **2.0 Full Sample Data Package**

## **2.1 Semivolatiles Data**

## **2.1.1 Herbicide GC Data (8151)**

## **2.1.1.1 Summary Data**



**Login Number:** L15061283  
**Department:** General Chromatography  
**Analyst:** Allen Davis

## METHOD

**Analysis** SW-846 8151A

## HOLDING TIMES

**Sample Preparation:** All holding times were met.

**Sample Analysis:** All holding times were met.

## PREPARATION

Sample preparation proceeded normally.

## CALIBRATION

**Initial Calibration:** For all compounds that yielded a %RSD greater than 20%, linear or higher order equations were applied. All acceptance criteria were met.

**Alternate Source Standards:** All acceptance criteria were met.

**Continuing Calibration and Tune:** All acceptance criteria were met.

## BATCH QA/QC

**Method Blank:** All acceptance criteria were met.

**Laboratory Control Sample:** All acceptance criteria were met.

**Matrix Spikes:** There were no MS/MSD results associated with this sample delivery group, due to insufficient volume of sample. The laboratory included an LCS and LCS duplicate in the preparation batch in lieu of the NELAC prescribed MS/MSD. Microbac recommends site specific MS/MSD samples to avoid possible data qualification.

## SAMPLES

**Samples:** All acceptance criteria were met.

**Surrogates:** All acceptance criteria were met.

### Manual Integration Reason Codes

**Reason #1: Data System Fails to Select Correct Peak** In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peak completely.

**Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak** This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low areacounts for the target compound.

**Reason #3: Improperly Integrated Isomers and/or coeluting compounds.** This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

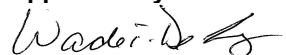
**Reason #4: System Establishes Incorrect Baseline** There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

**Reason #5: Miscellaneous** Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

**Narrative ID:** 101007

**Approved By:** Wade DeLong





## Certificate of Analysis

<b>Sample #:</b> L15061283-01	<b>PrePrep Method:</b>	<b>Instrument:</b> HP17
<b>Client ID:</b> 598790	<b>Prep Method:</b> METHOD	<b>Prep Date:</b> 06/26/2015 08:30
<b>Matrix:</b> TCLP Leach	<b>Analytical Method:</b> 8151A	<b>Cal Date:</b> 06/11/2015 14:15
<b>Workgroup #:</b> WG529150	<b>Analyst:</b> AED	<b>Run Date:</b> 06/26/2015 17:00
<b>Collect Date:</b> 06/19/2015 13:02	<b>Dilution:</b> 1	<b>File ID:</b> 17G19590.F
<b>Sample Tag:</b> 01	<b>Units:</b> ug/L	

Analyte		Result	Qual	LOQ	LOD	DL	EPA HW#	Reg. Limit
2,4-D			U	20.0	10.0	5.00	D016	10000
2,4,5-TP (Silvex)			U	2.00	1.00	0.500	D017	1000
Surrogate		Recovery	Lower Limit		Upper Limit	Q		
2,4-Dichlorophenylacetic acid		68.6	32		138			
U	Analyte was not detected. The concentration is below the reported LOD.							

## **2.1.1.2 QC Summary Data**

## Example 8151 Calculations

### 1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

$$RF = \frac{A_s}{C_s}$$

where:

$A_s$  = Area of the compound being measured in the standard

$C_s$  = Concentration of the compound being measured (ng/mL)

Example:

10000

100

RF = 100

### 2.0 Calculating the concentration (C) of a compound in water using data from prep log and quantitation report:\*

$$C = \frac{(A_x)(Vf)(D)}{(RF)(Vi)}$$

where:

$A_x$  = Area of the compound begin measured

$Vf$  = Final volume of sample extract (mL). (prep log)

$D$  = Dilution factor for sample as a multiplier (10X=10)

$RF$  = Response factor from ICAL calculated above.

$Vi$  = Initial volume of sample (mL). (prep log)

Example:

10000

1

1

100

1000

C(ug/L) = 0.1

### 3.0 Calculating the concentration (C) of a compound in soil using data from prep log and quantitation report:\*

$$C = \frac{(A_x)(Vf)(D)}{(RF)(Wi)}$$

where:

$A_x$  = Area of the compound begin measured

$Vf$  = Final volume of sample extract (mL). (prep log)

$D$  = Dilution factor for sample as a multiplier (10X=10)

$RF$  = Response factor from ICAL calculated above.

$Wi$  = Initial weight of sample (g).

Example:

10000

1

1

100

30

C(ug/kg) = 3.333333

\* Concentrations appearing on instrument quantitation reports are on-column results and do not take into account initial volume, final volume and dilution factor.

### TCLP Non-Volatile

Analyst(s): RAH  
Date: 6/24/15  
Filter Lot #: 9469815  
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
RAH 6/24/15		RAH 6/25/15	
Time On	Temp On °C	Time Off	Temp Off °C
1315	23.0	0800	21.4

Agitator Speed  $30 \pm 2$  rpm ☒

[illegible]

\*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)

D = Disposable plastic jug

TCLP Pretest weight will be 5.0 g ( $\pm 0.1$ ) unless otherwise noted.

Temperature shall be maintained at  $23^{\circ} \pm 2$  for  $18 \pm 2$  hours unless otherwise noted.

Comments:

Peer Review By:

Chabui McDermis

Microbac Laboratories Inc.  
Sample Extract Log

Workgroup: WG528983  
Analyst: CAF  
Spike Analyst: CAF  
Method: METHOD  
Run Date: 06/26/2015 08:30  
SOP: EXH01 Revision 21  
Spike Witness: CPD  
Surr Solution: STD70619

Methylene Chloride Lot #: COA18237  
Hexane Lot #: COA18250  
Ether Lot #: COA18321  
Methanol Lot #: COA18213  
NACL Lot #: COA18307  
2,2,4-Trimethylpentane Lot #: COA18049  
Silicic Acid, n-Hydrate, Powder Lot #: COA16200  
Acidified Na2SO4 Lot #: RGT33779  
12N H2SO4 Lot #: RGT33771  
NaOH 6N Lot #: RGT33189  
Diazomethane Lot #: RGT34017

	SAMPLE #	Type	Reference	pH	Prod	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L15061283-01	SAMP		<2>12	8151-TC	100 mL	1 mL			10 mL	Transparent
2	L15061317-01	SAMP		<2>12	8151-TC	100 mL	1 mL			10 mL	Transparent
3	WG528691-01	FBLK		<2>12	8151-TC	100 mL	1 mL			10 mL	Transparent
4	WG528983-01	BLANK		<2>12	8151-TC	1000 mL	1 mL			10 mL	Transparent
5	WG528983-02	LCS		<2>12	8151-TC	1000 mL	1 mL	1 mL	STD67333	10 mL	Transparent
6	WG528983-03	LCS2		<2>12	8151-TC	1000 mL	1 mL	1 mL	STD67333	10 mL	Transparent

Due to insufficient sample volume, this preparation batch failed to include the method prescribed MS and MSD.

Analyst: Cheryl A. Flowers

Reviewer: Leanne Davis

**Microbac Laboratories Inc.**  
Instrument Run Log

Instrument: HP17	Dataset: 061115	
Analyst1: ECL	Analyst2: NA	
Method: 8151	SOP: GCS04	Rev: 13
Method: OVAP	SOP: GCS04	Rev: 0

Maintenance Log ID: \_\_\_\_\_ Syringe Filter Lot#: \_\_\_\_\_  
Eluent ID#: \_\_\_\_\_

Workgroups: \_\_\_\_\_ Column 1 ID: RTX-CLP \_\_\_\_\_ Column 2 ID: RTX-CLP2 \_\_\_\_\_

Internal STD: NA \_\_\_\_\_ Surrogate STD: STD70619 \_\_\_\_\_ Calibration STD: \_\_\_\_\_  
CCV STD: STD70764 \_\_\_\_\_ LCS STD: STD67333 \_\_\_\_\_ MS/MSD STD: \_\_\_\_\_

Comments: \_\_\_\_\_

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	17G19430.F	WG527079-01 HERB ICAL \#5	1	1	STD70764	06/11/15 12:05
2	17G19430.R	WG527079-01 HERB ICAL \#5	1	1	STD70764	06/11/15 12:31
3	17G19431.F	WG527079-02 HERB ICAL \#4	1	1	STD70764	06/11/15 12:31
4	17G19431.R	WG527079-02 HERB ICAL \#4	1	1	STD70764	06/11/15 12:57
5	17G19432.F	WG527079-03 HERB ICAL \#3	1	1	STD70764	06/11/15 12:57
6	17G19432.R	WG527079-03 HERB ICAL \#3	1	1	STD70764	06/11/15 13:23
7	17G19433.F	WG527079-04 HERB ICAL \#2	1	1	STD70764	06/11/15 13:23
8	17G19433.R	WG527079-04 HERB ICAL \#2	1	1	STD70764	06/11/15 13:49
9	17G19434.F	WG527079-05 HERB ICAL \#1	1	1	STD70764	06/11/15 13:49
10	17G19434.R	WG527079-05 HERB ICAL \#1	1	1	STD70764	06/11/15 14:15
11	17G19435.F	WG527079-06 HERB ALT	1	1	STD70765	06/11/15 14:15
12	17G19435.R	WG527079-06 HERB ALT	1	1	STD70765	06/11/15 14:41
13	17G19436.F	WG526837-01 BLANK	17	1		06/11/15 14:41
14	17G19436.R	WG526837-01 BLANK	17	1		06/11/15 15:07
15	17G19437.F	WG526837-02 LCS	17	1		06/11/15 15:07
16	17G19437.R	WG526837-02 LCS	17	1		06/11/15 15:35
17	17G19438.F	WG526837-03 LCS DUP	17	1		06/11/15 15:35
18	17G19438.R	WG526837-03 LCS DUP	17	1		06/11/15 16:01
19	17G19439.F	L15060232-01	17	1		06/11/15 16:01
20	17G19439.R	L15060232-01	17	1		06/11/15 16:27
21	17G19440.F	WG526367-01 FBLANK	17	1		06/11/15 16:27
22	17G19440.R	WG526367-01 FBLANK	17	1		06/11/15 16:53
23	17G19441.F	WG527249-01 HERB CCV	1	1	STD70764	06/11/15 16:53
24	17G19441.R	WG527249-01 HERB CCV	1	1	STD70764	06/11/15 17:19

Comments

Seq.	Rerun	Dil.	Reason	Analytes
14				
			WG526837-01 BLANK: DCAA surrogate failed low.	
16				
			WG526837-02 LCS: 2,4-D and silvex failed low.	
20				
			L15060232-01: DCAA surrogate failed low. Needs re-extracted.	

Page: 1

Approved: 12-JUN-15

*Leslie Bucina*



**Microbac Laboratories Inc.**  
Instrument Run Log

Instrument: HP17                      Dataset: 062615  
 Analyst1: AED                      Analyst2: ECL  
 Method: 8151                      SOP: GCS04                      Rev: 13

Maintenance Log ID:                      Syringe Filter Lot#:                      \_\_\_\_\_

Eluent ID#:                      \_\_\_\_\_

Column 1 ID: RTX-CLP                      Column 2 ID: RTX-CLP2

Workgroups: \_\_\_\_\_

Internal STD: NA                      Surrogate STD: STD70619                      Calibration STD: \_\_\_\_\_  
 CCV STD: STD70764                      LCS STD: STD67333                      MS/MSD STD: \_\_\_\_\_

Comments: \_\_\_\_\_

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	17G19586.F	WG529103-01 HERB CCV	1	1	STD70764	06/26/15 14:03
2	17G19586.R	WG529103-01 HERB CCV	1	1	STD70764	06/26/15 14:30
3	17G19587.F	WG528983-01 BLANK	17	1		06/26/15 15:42
4	17G19587.R	WG528983-01 BLANK	17	1		06/26/15 16:08
5	17G19588.F	WG528983-02 LCS	17	1		06/26/15 16:08
6	17G19588.R	WG528983-02 LCS	17	1		06/26/15 16:34
7	17G19589.F	WG528983-03 LCS2	17	1		06/26/15 16:34
8	17G19589.R	WG528983-03 LCS2	17	1		06/26/15 17:00
9	17G19590.F	L15061283-01	17	1		06/26/15 17:00
10	17G19590.R	L15061283-01	17	1		06/26/15 17:26
11	17G19591.F	L15061317-01	17	1		06/26/15 17:26
12	17G19591.R	L15061317-01	17	1		06/26/15 17:52
13	17G19592.F	WG528691-01	17	1		06/26/15 17:52
14	17G19592.R	WG528691-01	17	1		06/26/15 18:18
15	17G19593.F	WG529103-02 HERB CCV	1	1	STD70764	06/26/15 18:18
16	17G19593.R	WG529103-02 HERB CCV	1	1	STD70764	06/26/15 18:44

**Comments**

Seq.	Rerun	Dil.	Reason	Analytes
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Page: 1

Approved: 29-JUN-15

*Wade D. S.*



## Microbac Laboratories Inc.

## Data Checklist

Date: 11-JUN-2015

Analyst: ECL

Analyst: NA

Method: 8151

Instrument: HP17

Curve Workgroup: NA

Runlog ID: 68575

Analytical Workgroups: L15060232

ANALYTICAL	
System Performance Check	NA
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	ECL
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	LSB

Primary Reviewer:  
12-JUN-2015



Secondary Reviewer:  
12-JUN-2015



CHECKLIST1 - Modified 03/05/2008

Generated: JUN-12-2015 13:45:25





## Microbac Laboratories Inc.

## Data Checklist

Date: 26-JUN-2015

Analyst: AED

Analyst: ECL

Method: 8151

Instrument: HP17

Curve Workgroup: NA

Runlog ID: 68901

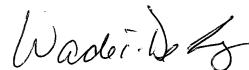
Analytical Workgroups: L15061283 L15061317

ANALYTICAL	
System Performance Check	NA
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	AED
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:  
29-JUN-2015



Secondary Reviewer:  
29-JUN-2015



CHECKLIST1 - Modified 03/05/2008

Generated: JUN-29-2015 15:35:29



Microbac Laboratories Inc.  
HOLDING TIMES  
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8151A  
Login Number: L15061283

AAB#: WG529150

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
598790	01	06/19/15	06/24/15	5			06/26/2015	6.8	7		06/26/15	.4	40	

\* = SEE PROJECT QAPP REQUIREMENTS

HOLD\_TIMES - Modified 03/06/2008  
PDF File ID: 4258222  
Report generated 06/29/2015 15:52



Microbac Laboratories Inc.  
SURROGATE STANDARDS

Login Number: L15061283  
Instrument Id: HP17  
Workgroup (AAB#): WG529150

Method: 8151  
CAL ID: HP17-11-JUN-15  
Matrix: TCLP Leach

Sample Number	Dilution	Tag	1
L15061283-01	1.00	01	68.6
WG528983-01	1.00	01	70.4
WG528983-02	1.00	01	77.8
WG528983-03	1.00	01	77.2

Surrogates	Surrogate Limits
1 - 2,4-Dichlorophenylacetic acid	32 - 138

Underline = Result out of surrogate limits

DL = surrogate diluted out

ND = surrogate not detected



## METHOD BLANK SUMMARY

Login Number: L15061283 Work Group: WG529150  
Blank File ID: 17G19587.F Blank Sample ID: WG528983-01  
Prep Date: 06/26/15 08:30 Instrument ID: HP17  
Analyzed Date: 06/26/15 15:42 Method: 8151A  
Analyst: AED

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG528983-02	17G19588.F	06/26/15 16:08	01
LCS2	WG528983-03	17G19589.F	06/26/15 16:34	01
598790	L15061283-01	17G19590.F	06/26/15 17:00	01

Report Name: BLANK\_SUMMARY  
PDF File ID: 4258223  
Report generated 06/29/2015 15:52



## METHOD BLANK REPORT

Login Number: L15061283      Prep Date: 06/26/15 08:30      Sample ID: WG528983-01  
Instrument ID: HP17      Run Date: 06/26/15 15:42      Prep Method: METHOD  
File ID: 17G19587.F      Analyst: AED      Method: 8151A  
Workgroup (AAB#): WG529150      Matrix: TCLP Leach      Units: ug/L  
Contract #:      Cal ID: HP17-11-JUN-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
2,4-D	0.500	2.00	0.500	1	U
2,4,5-TP (Silvex)	0.0500	0.200	0.0500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
2,4-Dichlorophenylacetic acid	70.4	32 - 138	PASS

DL      Method Detection Limit  
LOQ      Reporting/Practical Quantitation Limit  
ND      Analyte Not detected at or above reporting limit  
\*      |Analyte concentration| > 1/2 RL

Report Name: BLANK

PDF ID: 4258224

29-JUN-2015 15:52



Microbac Laboratories Inc.  
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15061283 Analyst: AED Prep Method: METHOD  
Instrument ID: HP17 Matrix: TCLP Leach Method: 8151A  
Workgroup (AAB#): WG529150 Units: ug/L  
QC Key: DOD5 Lot #: STD67333  
Sample ID: WG528983-02 LCS File ID: 17G19588.F Run Date: 06/26/2015 16:08  
Sample ID: WG528983-03 LCS2 File ID: 17G19589.F Run Date: 06/26/2015 16:34

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
2,4-D	5.00	4.25	85.0	5.00	4.33	86.6	1.86	45 - 152	30	
2,4,5-TP (Silvex)	0.500	0.406	81.1	0.500	0.409	81.8	0.835	51 - 134	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
2,4-Dichlorophenylacetic acid	77.8	77.2	32 - 138	PASS

\* EXCEEDS %REC LIMIT

# EXCEEDS RPD LIMIT

LCS\_LCS2 - Modified 03/06/2008  
PDF File ID: 4258225  
Report generated: 06/29/2015 15:52



Microbac Laboratories Inc.  
INITIAL CALIBRATION SUMMARY

Login Number: L15061283  
Analytical Method: 8151A  
ICAL Workgroup: WG527079

Instrument ID: HP17  
Initial Calibration Date: 11-JUN-15 14:15  
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R <sup>2</sup> )
2,4-D		1624000	6.48		
Silvex		7958000	3.51		

R = Correlation coefficient; 0.995 minimum  
R<sup>2</sup> = Coefficient of determination; 0.99 minimum

INT\_CAL - Modified 03/06/2008  
PDF File ID: 4258226  
Report generated 06/29/2015 15:52



Microbac Laboratories Inc.  
INITIAL CALIBRATION DATA

Login Number: L15061283  
Analytical Method: 8151A

Instrument ID: HP17  
Initial Calibration Date: 11-JUN-15 14:15  
Column ID: F

Analyte	WG527079-01			WG527079-02			WG527079-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
2,4-D	2000	3102445430	1551000	1000	1523912820	1524000	500	804891047	1610000
Silvex	200	1545057340	7725000	100	771393874	7714000	50.0	402222796	8044000

INT\_CAL - Modified 03/06/2008  
PDF File ID: 4258226  
Report generated 06/29/2015 15:52





Microbac Laboratories Inc.  
INITIAL CALIBRATION DATA

Login Number: L15061283  
Analytical Method: 8151A

Instrument ID: HP17  
Initial Calibration Date: 11-JUN-15 14:15  
Column ID: F

Analyte	WG527079-04			WG527079-05		
	CONC	RESP	RF	CONC	RESP	RF
2,4-D	250	411252774	1645000	100	179229200	1792000
Silvex	25.0	197861474	7914000	10.0	83923498.0	8392000

INT\_CAL - Modified 03/06/2008  
PDF File ID: 4258226  
Report generated 06/29/2015 15:52



Microbac Laboratories Inc.  
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15061283 Run Date: 06/11/2015 Sample ID: WG527079-06  
Instrument ID: HP17 Run Time: 14:15 Method: 8151A  
File ID: 17G19435.F Analyst: ECL QC Key: DOD5  
ICal Workgroup: WG527079 Cal ID: HP17 - 11-JUN-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2,4-D		500	462	ug/L	1500000	7.50	20	
2,4,5-TP (Silvex)		50.0	47.9	ug/L	7620000	4.20	20	

\* Exceeds %D Limit

ALT - Modified 09/06/2007  
Version 1.5 PDF File ID: 4258227  
Report generated 06/29/2015 15:53



Microbac Laboratories Inc.  
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15061283 Run Date: 06/26/2015 Sample ID: WG529103-01  
Instrument ID: HP17 Run Time: 14:03 Method: 8151A  
File ID: 17G19586.F Analyst: AED QC Key: DOD5  
Workgroup (AAB#): WG529150 Cal ID: HP17 - 11-JUN-15  
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
2,4-D		500	470	ug/L	1530000	6.03	20	
2,4,5-TP (Silvex)		50.0	48.2	ug/L	7670000	3.68	20	

\* Exceeds %D Criteria

CCV - Modified 03/05/2008  
PDF File ID: 4258228  
Report generated 06/29/2015 15:53



Microbac Laboratories Inc.  
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15061283 Run Date: 06/26/2015 Sample ID: WG529103-02  
Instrument ID: HP17 Run Time: 18:18 Method: 8151A  
File ID: 17G19593.F Analyst: AED QC Key: DOD5  
Workgroup (AAB#): WG529150 Cal ID: HP17 - 11-JUN-15  
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
2,4-D		500	458	ug/L	1490000	8.32	20	
2,4,5-TP (Silvex)		50.0	46.3	ug/L	7370000	7.44	20	

\* Exceeds %D Criteria

CCV - Modified 03/05/2008  
PDF File ID: 4258228  
Report generated 06/29/2015 15:53



**Primary/Confirmation Relative Percent Difference**  
*Microbac Laboratories Inc.*



Login #: L15061283  
Instrument: HP17  
Analyst: AED  
Worknum: WG529150  
File ID #2: 17G19590.R

Prep Method: METHOD  
Prep Date: 06/26/2015 08:30  
Anal Method: 8151A  
Analysis Date: 06/26/2015 17:00  
Analysis Date #2: 06/26/2015 17:26

Samplenum: L15061283-01  
File ID: 17G19590.F  
Matrix: WATER  
Units: ug/L

Analyte	Column #1	Column #2	%RPD	Q
2,4-D	ND	ND		
2,4,5-TP (Silvex)	ND	ND		

Report ID: 4258535

Generated at Jun 29, 2015 16:06

Page 1 of 1

## **2.1.1.3 Sample Data**

Data Path : D:\msdchem\1\DATA\062615\  
 Data File : 17G19590.D  
 Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
 Acq On : 26 Jun 2015 17:00 (#1); 26 Jun 2015 17:26 (#2)  
 Operator : AED  
 Sample : L15061283-01  
 Misc : 17,1  
 ALS Vial : 5 Sample Multiplier: 1

Integration File signal 1: events.e  
 Integration File signal 2: events2.e  
 Quant Time: Jun 29 13:58:24 2015  
 Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
 Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
 QLast Update : Mon Jun 29 13:56:37 2015  
 Response via : Initial Calibration  
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

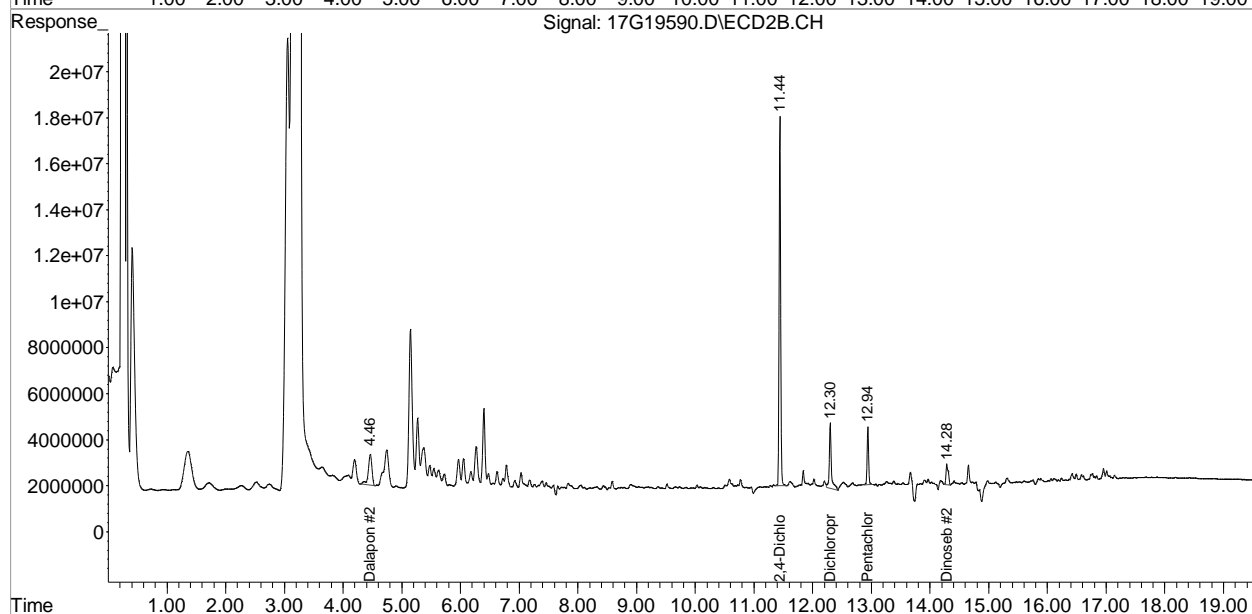
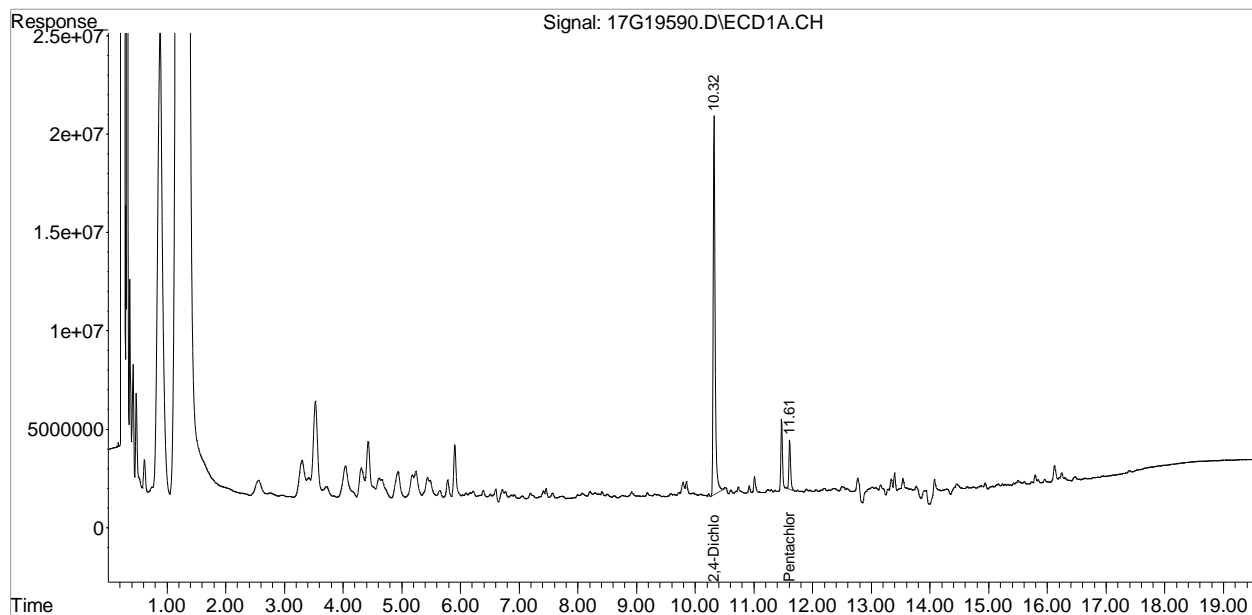
Compound	RT#1	RT#2	Resp#1	Resp#2	ug/L	ug/L
-----						
System Monitoring Compounds						
2) S 2,4-Dichlorophen	10.32	11.44	435.7E6	287.5E6	342.964	344.339
Spiked Amount	500.000		Recovery	=	68.59%	68.87%
Target Compounds						
1) Dalapon	0.00	4.46	0	58673280	N.D.	49.314 #
3) MCPA	0.00	0.00	0	0	N.D.	N.D.
4) Dicamba	0.00	0.00	0	0	N.D.	N.D.
5) MCPP	0.00	0.00	0	0	N.D.	N.D.
6) Dichloroprop	0.00	12.30	0	68341813	N.D.	80.097 #
7) 2,4-D	0.00	0.00	0	0	N.D.	N.D.
8) Pentachloropheno	11.61	12.94	49399920	44541792	2.197	3.142 #
9) Silvex	0.00	0.00	0	0	N.D.	N.D.
10) 2,4,5-T	0.00	0.00	0	0	N.D.	N.D.
11) Dinoseb	0.00	14.28	0	23929739	N.D.	9.111 #
12) 2,4-DB	0.00	0.00	0	0	N.D.	N.D.
-----						

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Data Path : D:\msdchem\1\DATA\062615\  
Data File : 17G19590.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 26 Jun 2015 17:00 (#1); 26 Jun 2015 17:26 (#2)  
Operator : AED  
Sample : L15061283-01  
Misc : 17,1  
ALS Vial : 5 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Jun 29 13:58:24 2015  
Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
QLast Update : Mon Jun 29 13:56:37 2015  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
Signal #1 Phase : Signal #2 Phase:  
Signal #1 Info : Signal #2 Info :



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## **2.1.1.4 Standards Data**

Data Path : D:\MSDCHEM\1\DATA\061115\  
 Data File : 17G19430.D  
 Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
 Acq On : 11 Jun 2015 12:05 (#1); 11 Jun 2015 12:31 (#2)  
 Operator : ECL  
 Sample : WG527079-01 HERB ICAL #5  
 Misc : 1,1 STD70764  
 ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: events.e  
 Integration File signal 2: events2.e  
 Quant Time: Jun 11 14:49:37 2015  
 Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
 Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
 QLast Update : Thu Jun 11 14:49:35 2015  
 Response via : Initial Calibration  
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

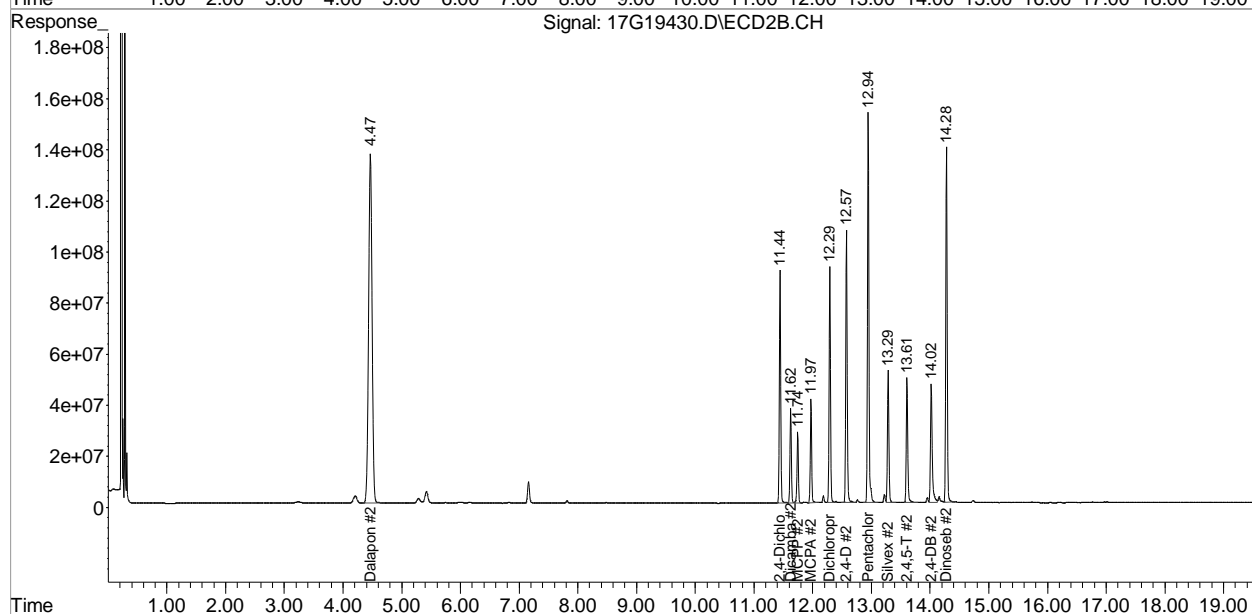
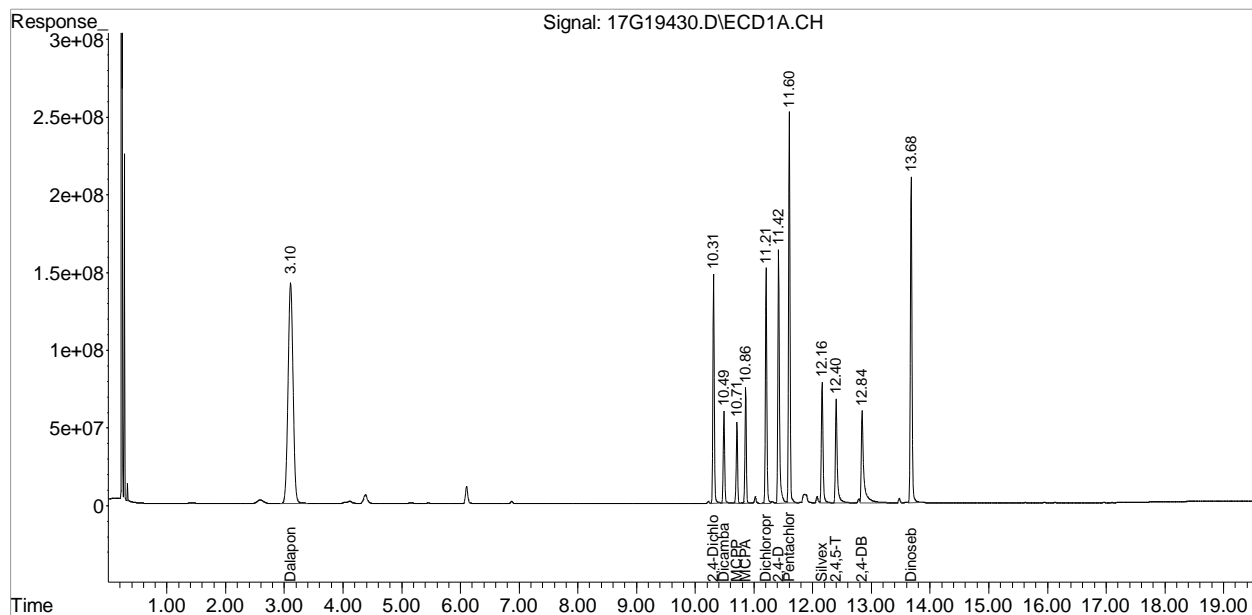
	Compound	RT#1	RT#2	Resp#1	Resp#2	ug/L	ug/L
-----							
System Monitoring Compounds							
2) S	2,4-Dichlorophen	10.31	11.44	2384.6E6	1448.1E6	1931.979	1745.648
	Spiked Amount	500.000		Recovery	=	386.40%	349.13%
Target Compounds							
1)	Dalapon	3.11	4.46	8411.7E6	5629.3E6	5142.664	4731.852
3)	MCPA	10.86	11.97	1145.2E6	630.3E6	204.719	180.841
4)	Dicamba	10.49	11.62	992.4E6	589.4E6	197.935	183.287
5)	MCPA	10.71	11.75	834.4E6	439.9E6	219.690	197.972
6)	Dichloroprop	11.21	12.29	2546.6E6	1484.2E6	1909.724	1752.753
7)	2,4-D	11.42	12.57	3102.4E6	1806.5E6	1938.377	1746.001
8)	Pentachloropheno	11.60	12.95	4353.5E6	2632.1E6	198.625	188.274
9)	Silvex	12.16	13.29	1545.1E6	886.7E6	201.489	188.232
10)	2,4,5-T	12.40	13.61	1473.9E6	859.0E6	216.190	188.511
11)	Dinoseb	13.68	14.28	3930.5E6	2309.3E6	920.643	878.868
12)	2,4-DB	12.84	14.02	1723.8E6	948.0E6	2353.654	1931.530
-----							

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Data Path : D:\MSDCHEM\1\DATA\061115\  
Data File : 17G19430.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 11 Jun 2015 12:05 (#1); 11 Jun 2015 12:31 (#2)  
Operator : ECL  
Sample : WG527079-01 HERB ICAL #5  
Misc : 1,1 STD70764  
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Jun 11 14:49:37 2015  
Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
QLast Update : Thu Jun 11 14:49:35 2015  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
Signal #1 Phase : Signal #2 Phase:  
Signal #1 Info : Signal #2 Info :



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Data Path : D:\MSDCHEM\1\DATA\061115\  
 Data File : 17G19431.D  
 Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
 Acq On : 11 Jun 2015 12:31 (#1); 11 Jun 2015 12:57 (#2)  
 Operator : ECL  
 Sample : WG527079-02 HERB ICAL #4  
 Misc : 1,1 STD70764  
 ALS Vial : 2 Sample Multiplier: 1

Integration File signal 1: events.e  
 Integration File signal 2: events2.e  
 Quant Time: Jun 11 14:49:55 2015  
 Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
 Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
 QLast Update : Thu Jun 11 14:49:53 2015  
 Response via : Initial Calibration  
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

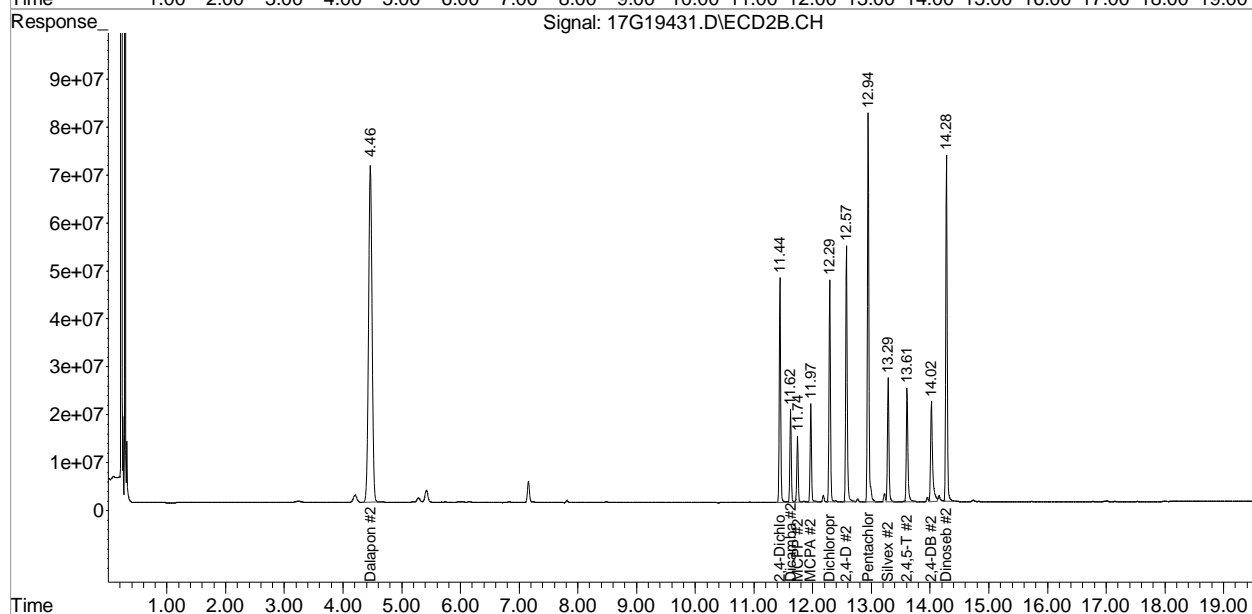
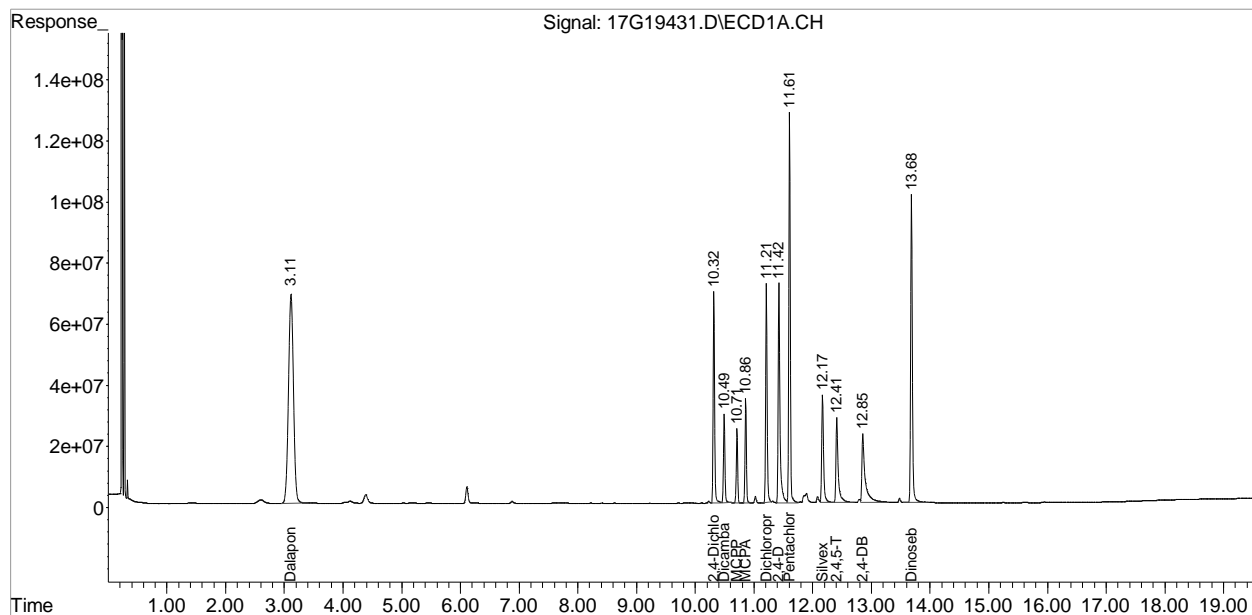
Compound	RT#1	RT#2	Resp#1	Resp#2	ug/L	ug/L
-----						
System Monitoring Compounds						
2) S 2,4-Dichlorophen	10.32	11.44	1168.5E6	763.1E6	943.212	919.915
Spiked Amount 500.000			Recovery	=	188.64%	183.98%
Target Compounds						
1) Dalapon	3.11	4.46	4045.6E6	2925.4E6	2471.036	2458.989
3) MCPA	10.86	11.97	541.5E6	325.3E6	96.639	93.326
4) Dicamba	10.49	11.62	495.5E6	310.1E6	98.312	96.432
5) MCPP	10.71	11.74	383.7E6	222.4E6	101.045	100.096
6) Dichloroprop	11.21	12.29	1232.5E6	774.7E6	924.313	914.829
7) 2,4-D	11.42	12.57	1523.9E6	953.4E6	951.049	921.508
8) Pentachloropheno	11.61	12.94	2202.1E6	1392.3E6	100.347	99.590
9) Silvex	12.17	13.29	771.4E6	463.4E6	100.169	98.361
10) 2,4,5-T	12.41	13.61	731.2E6	448.1E6	106.607	98.340
11) Dinoseb	13.68	14.28	2015.2E6	1232.1E6	470.676	468.924
12) 2,4-DB	12.85	14.02	853.1E6	492.0E6	1141.258	1002.576
-----						

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Data Path : D:\MSDCHEM\1\DATA\061115\  
Data File : 17G19431.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 11 Jun 2015 12:31 (#1); 11 Jun 2015 12:57 (#2)  
Operator : ECL  
Sample : WG527079-02 HERB ICAL #4  
Misc : 1,1 STD70764  
ALS Vial : 2 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Jun 11 14:49:55 2015  
Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
QLast Update : Thu Jun 11 14:49:53 2015  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
Signal #1 Phase : Signal #2 Phase:  
Signal #1 Info : Signal #2 Info :



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Data Path : D:\MSDCHEM\1\DATA\061115\  
 Data File : 17G19432.D  
 Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
 Acq On : 11 Jun 2015 12:57 (#1); 11 Jun 2015 13:23 (#2)  
 Operator : ECL  
 Sample : WG527079-03 HERB ICAL #3  
 Misc : 1,1 STD70764  
 ALS Vial : 3 Sample Multiplier: 1

Integration File signal 1: events.e  
 Integration File signal 2: events2.e  
 Quant Time: Jun 11 14:50:17 2015  
 Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
 Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
 QLast Update : Thu Jun 11 14:50:16 2015  
 Response via : Initial Calibration  
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

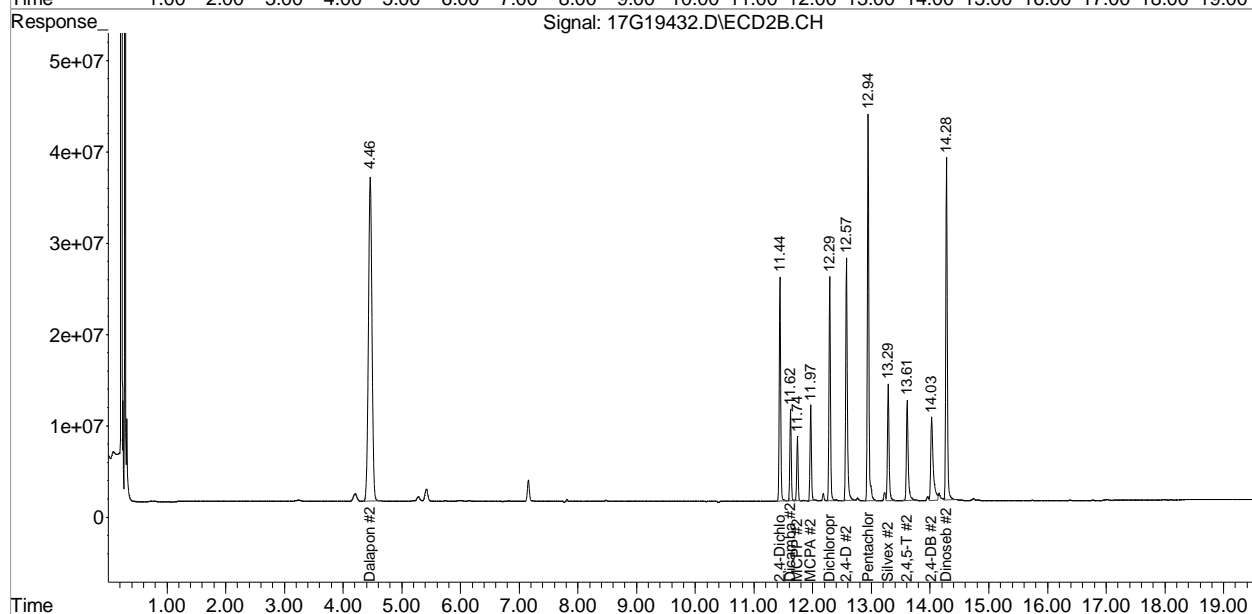
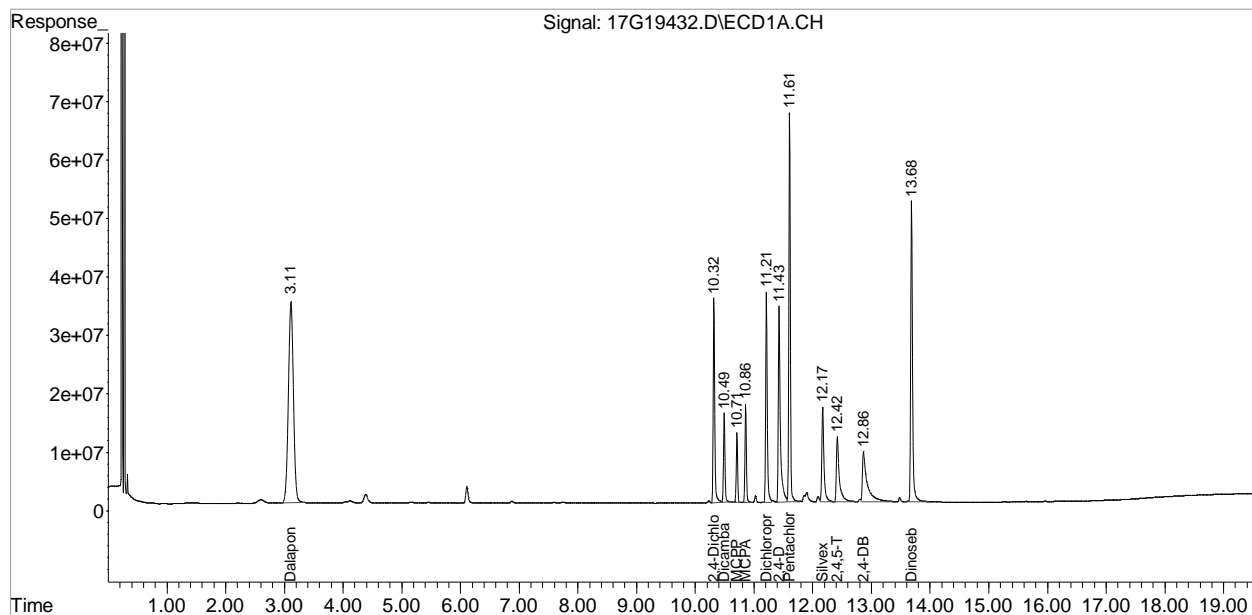
Compound	RT#1	RT#2	Resp#1	Resp#2	ug/L	ug/L
-----						
System Monitoring Compounds						
2) S 2,4-Dichlorophen	10.32	11.44	621.6E6	410.5E6	498.554	494.810
Spiked Amount	500.000		Recovery	=	99.71%	98.96%
Target Compounds						
1) Dalapon	3.11	4.46	2054.7E6	1489.2E6	1252.545	1251.778
3) MCPA	10.86	11.97	278.4E6	169.7E6	49.548	48.698
4) Dicamba	10.49	11.62	262.8E6	162.5E6	51.716	50.519
5) MCPP	10.71	11.74	190.6E6	113.8E6	50.140	51.213
6) Dichloroprop	11.21	12.29	663.6E6	418.8E6	496.038	494.583
7) 2,4-D	11.43	12.57	804.9E6	515.1E6	501.835	497.867
8) Pentachloropheno	11.61	12.94	1153.1E6	731.5E6	52.478	52.326
9) Silvex	12.17	13.29	402.2E6	242.4E6	51.870	51.464
10) 2,4,5-T	12.42	13.61	381.3E6	234.5E6	54.727	51.460
11) Dinoseb	13.68	14.28	1099.0E6	670.6E6	255.604	255.205
12) 2,4-DB	12.86	14.03	469.6E6	264.8E6	604.926	539.630
-----						

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Data Path : D:\MSDCHEM\1\DATA\061115\  
Data File : 17G19432.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 11 Jun 2015 12:57 (#1); 11 Jun 2015 13:23 (#2)  
Operator : ECL  
Sample : WG527079-03 HERB ICAL #3  
Misc : 1,1 STD70764  
ALS Vial : 3 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Jun 11 14:50:17 2015  
Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
QLast Update : Thu Jun 11 14:50:16 2015  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
Signal #1 Phase :  
Signal #1 Info :  
Signal #2 Phase :  
Signal #2 Info :



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Data Path : D:\MSDCHEM\1\DATA\061115\  
 Data File : 17G19433.D  
 Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
 Acq On : 11 Jun 2015 13:23 (#1); 11 Jun 2015 13:49 (#2)  
 Operator : ECL  
 Sample : WG527079-04 HERB ICAL #2  
 Misc : 1,1 STD70764  
 ALS Vial : 4 Sample Multiplier: 1

Integration File signal 1: events.e  
 Integration File signal 2: events2.e  
 Quant Time: Jun 11 14:50:35 2015  
 Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
 Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
 QLast Update : Thu Jun 11 14:50:34 2015  
 Response via : Initial Calibration  
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

Compound	RT#1	RT#2	Resp#1	Resp#2	ug/L	ug/L
-----						
System Monitoring Compounds						
2) S 2,4-Dichlorophen	10.32	11.44	323.8E6	216.8E6	257.307	261.348
Spiked Amount	500.000		Recovery	=	51.46%	52.27%
Target Compounds						
1) Dalapon	3.11	4.46	1014.4E6	737.6E6	616.341	619.998
3) MCPA	10.86	11.97	138.6E6	89141749	24.592	25.577
4) Dicamba	10.49	11.62	130.9E6	82223423	25.542	25.570
5) MCPP	10.71	11.74	91684251	55911877	24.080	25.162
6) Dichloroprop	11.21	12.29	342.6E6	221.5E6	255.499	261.550
7) 2,4-D	11.43	12.58	411.3E6	271.9E6	252.868	262.771
8) Pentachloropheno	11.61	12.94	563.0E6	358.5E6	25.385	25.645
9) Silvex	12.17	13.29	197.9E6	120.4E6	25.404	25.553
10) 2,4,5-T	12.43	13.61	181.6E6	115.9E6	25.346	25.441
11) Dinoseb	13.69	14.28	567.4E6	341.5E6	131.382	129.977
12) 2,4-DB	12.89	14.03	222.1E6	115.1E6	268.095	234.592
-----						

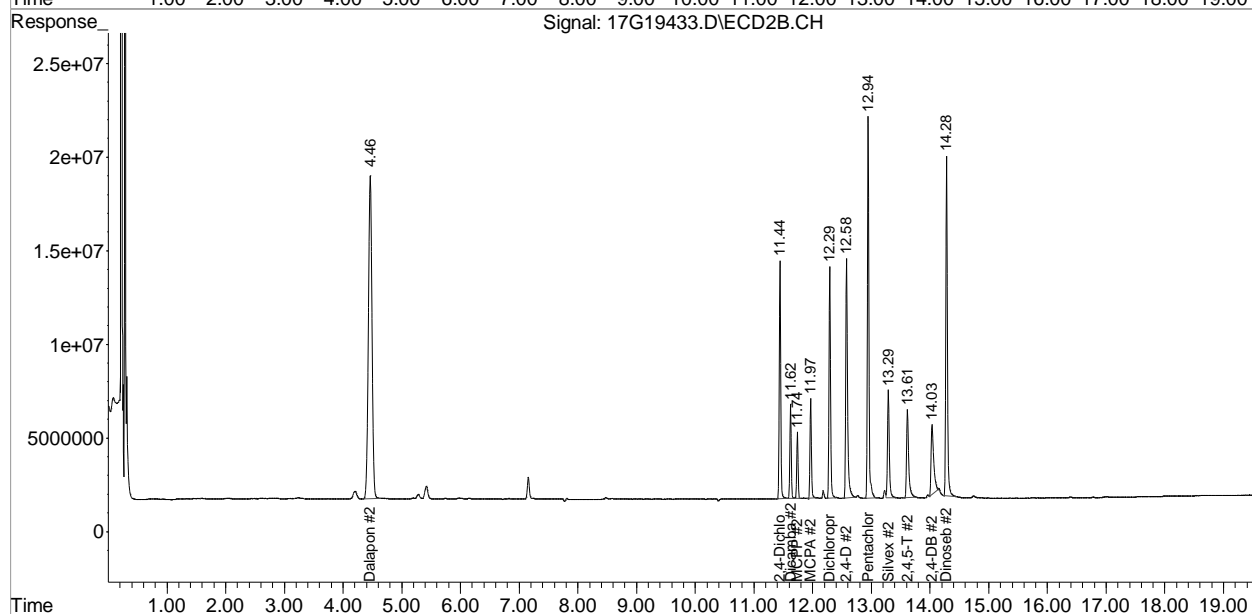
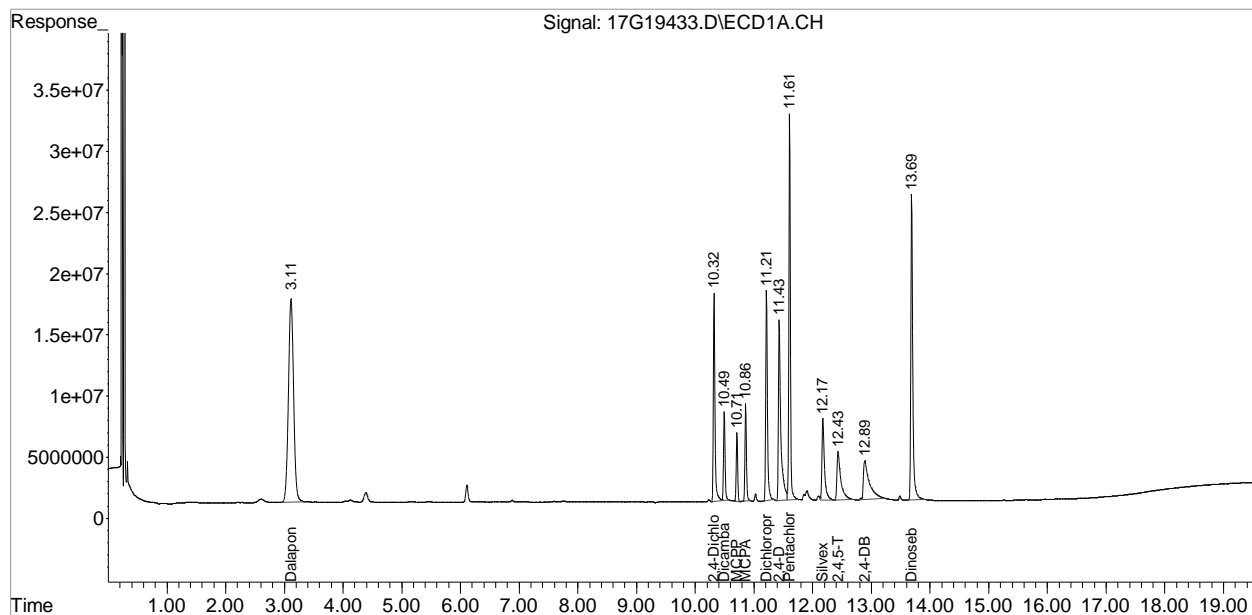
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.



Data Path : D:\MSDCHEM\1\DATA\061115\  
Data File : 17G19433.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 11 Jun 2015 13:23 (#1); 11 Jun 2015 13:49 (#2)  
Operator : ECL  
Sample : WG527079-04 HERB ICAL #2  
Misc : 1,1 STD70764  
ALS Vial : 4 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Jun 11 14:50:35 2015  
Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
QLast Update : Thu Jun 11 14:50:34 2015  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
Signal #1 Phase :  
Signal #1 Info :  
Signal #2 Phase :  
Signal #2 Info :



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Page: 2

Data Path : D:\MSDCHEM\1\DATA\061115\  
 Data File : 17G19434.D  
 Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
 Acq On : 11 Jun 2015 13:49 (#1); 11 Jun 2015 14:15 (#2)  
 Operator : ECL  
 Sample : WG527079-05 HERB ICAL #1  
 Misc : 1,1 STD70764  
 ALS Vial : 5 Sample Multiplier: 1

Integration File signal 1: events.e  
 Integration File signal 2: events2.e  
 Quant Time: Jun 11 14:51:10 2015  
 Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
 Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
 QLast Update : Thu Jun 11 14:50:34 2015  
 Response via : Initial Calibration  
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

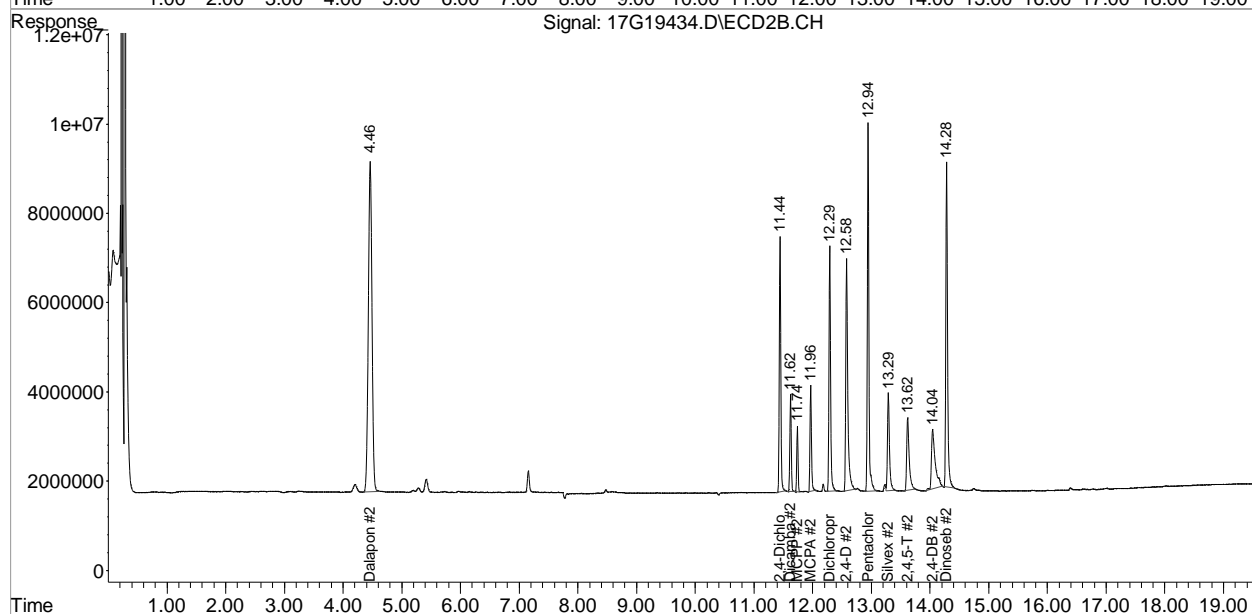
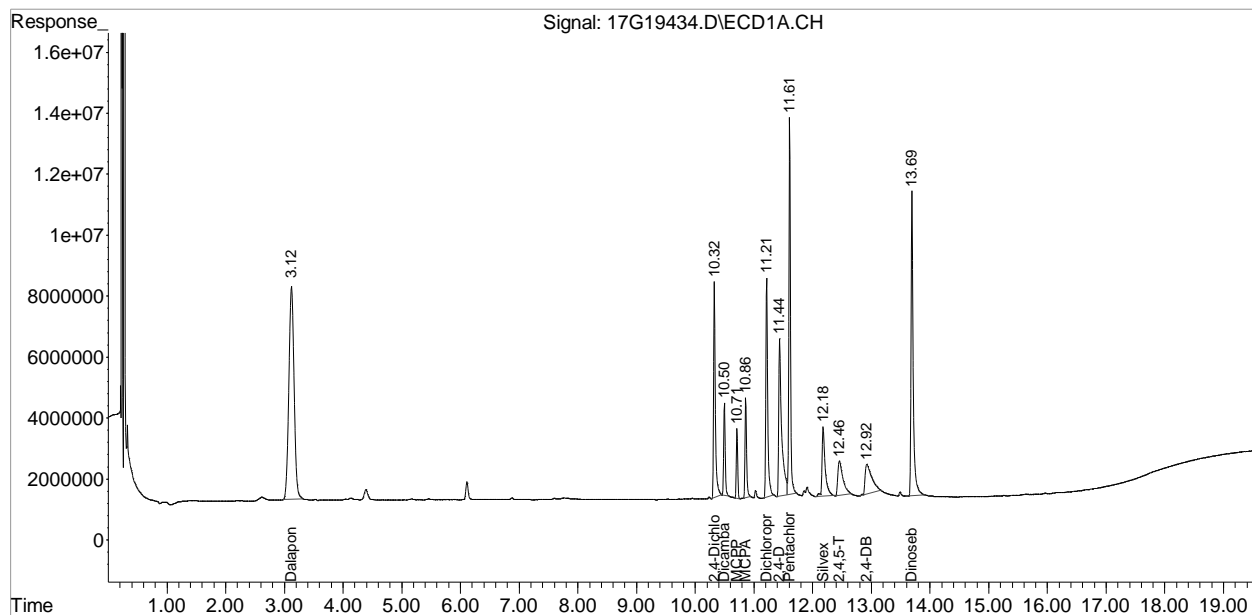
Compound	RT#1	RT#2	Resp#1	Resp#2	ug/L	ug/L
-----						
System Monitoring Compounds						
2) S 2,4-Dichlorophen	10.32	11.44	145.3E6	99893440	115.433	120.415
Spiked Amount	500.000		Recovery	=	23.09%	24.08%
Target Compounds						
1) Dalapon	3.12	4.46	431.8E6	320.3E6	262.324	269.269
3) MCPA	10.86	11.97	61194747	41174342	10.855	11.814
4) Dicamba	10.50	11.62	54131373	35710242	10.562	11.105
5) MCPP	10.71	11.74	36972108	22241303	9.710	10.009
6) Dichloroprop	11.21	12.29	156.8E6	102.6E6	116.974	121.154
7) 2,4-D	11.44	12.58	179.2E6	123.3E6	110.203	119.146
8) Pentachloropheno	11.61	12.94	230.6E6	148.2E6	10.398	10.599
9) Silvex	12.18	13.29	83923498	50758535	10.775	10.775
10) 2,4,5-T	12.46	13.62	67758466	47284182	9.459	10.377
11) Dinoseb	13.69	14.28	251.1E6	147.2E6	58.130	56.021
12) 2,4-DB	12.92	14.04	76283552	58793380	92.095	119.796
-----						

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Data Path : D:\MSDCHEM\1\DATA\061115\  
Data File : 17G19434.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 11 Jun 2015 13:49 (#1); 11 Jun 2015 14:15 (#2)  
Operator : ECL  
Sample : WG527079-05 HERB ICAL #1  
Misc : 1,1 STD70764  
ALS Vial : 5 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Jun 11 14:51:10 2015  
Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
QLast Update : Thu Jun 11 14:50:34 2015  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
Signal #1 Phase :  
Signal #1 Info :  
Signal #2 Phase :  
Signal #2 Info :



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Data Path : D:\MSDCHEM\1\DATA\061115\  
 Data File : 17G19435.D  
 Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
 Acq On : 11 Jun 2015 14:15 (#1); 11 Jun 2015 14:41 (#2)  
 Operator : ECL  
 Sample : WG527079-06 HERB ALT  
 Misc : 1,1 STD70765  
 ALS Vial : 6 Sample Multiplier: 1

Integration File signal 1: events.e  
 Integration File signal 2: events2.e  
 Quant Time: Jun 11 15:05:20 2015  
 Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
 Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
 QLast Update : Thu Jun 11 14:51:20 2015  
 Response via : Initial Calibration  
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

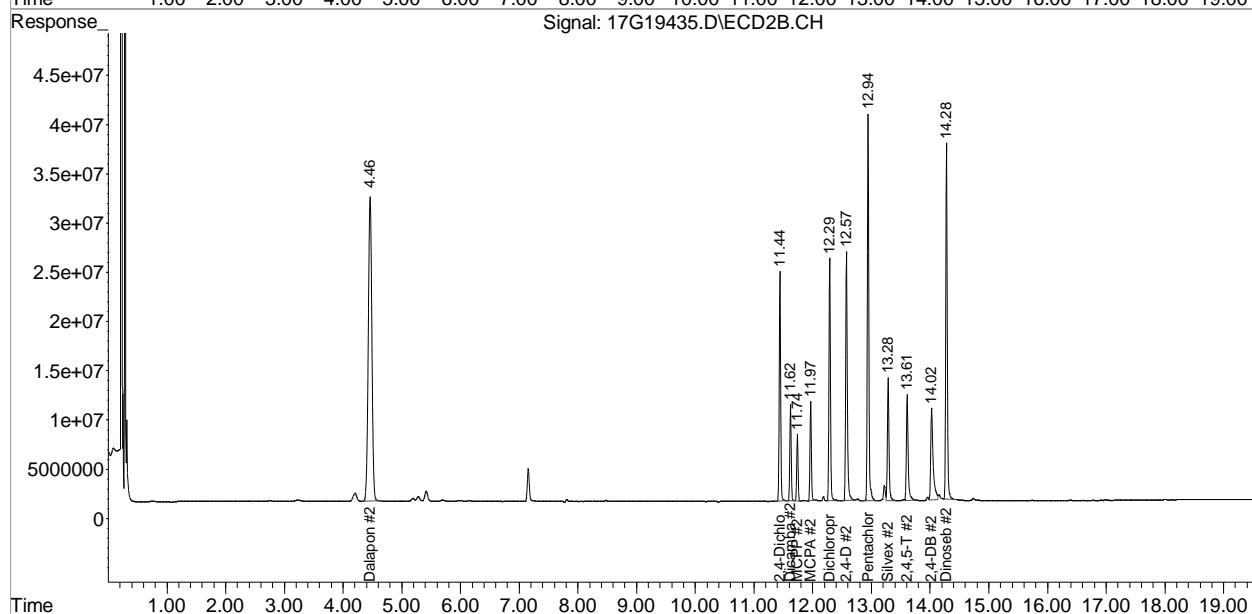
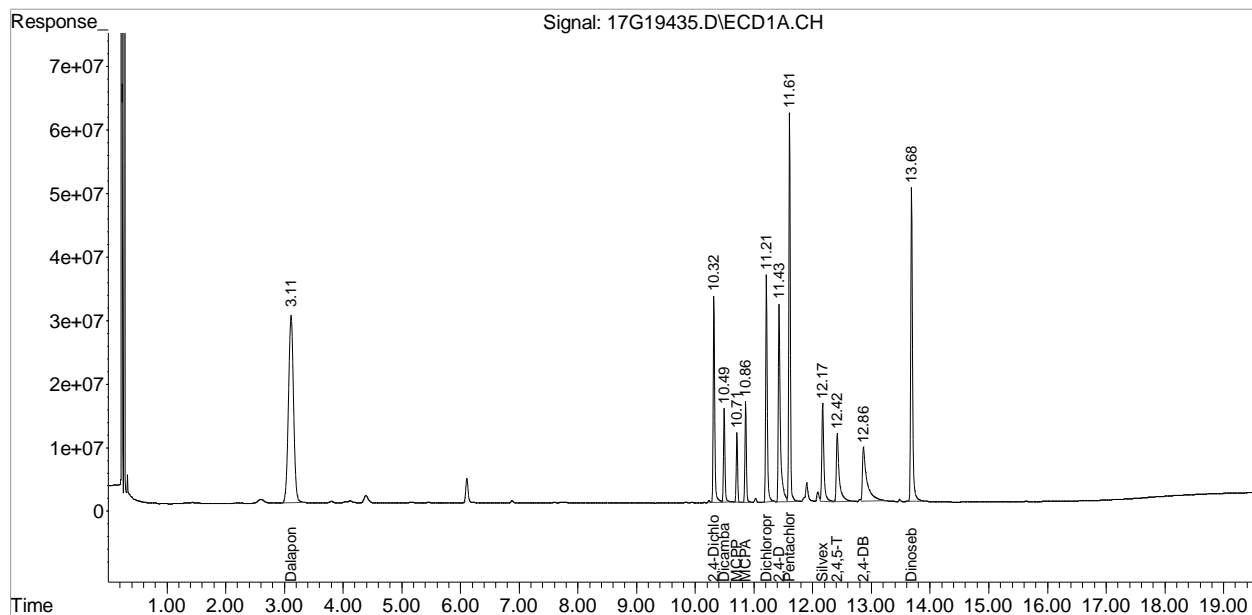
Compound	RT#1	RT#2	Resp#1	Resp#2	ug/L	ug/L
-----						
System Monitoring Compounds						
2) S 2,4-Dichlorophen	10.32	11.44	576.7E6	389.2E6	453.932	466.156
Spiked Amount	500.000		Recovery	=	90.79%	93.23%
Target Compounds						
1) Dalapon	3.11	4.46	1768.4E6	1313.2E6	1066.011	1103.746
3) MCPA	10.86	11.97	257.6E6	162.0E6	45.393	46.327
4) Dicamba	10.49	11.62	252.3E6	160.6E6	48.851	49.711
5) MCPP	10.71	11.74	175.3E6	106.3E6	45.673	47.622
6) Dichloroprop	11.21	12.29	658.8E6	423.8E6	486.403	496.661
7) 2,4-D	11.43	12.57	751.1E6	491.9E6	462.345	472.345
8) Pentachloropheno	11.61	12.94	1061.9E6	676.2E6	47.223	47.703
9) Silvex	12.17	13.29	381.1E6	234.6E6	47.894	49.264
10) 2,4,5-T	12.42	13.61	358.0E6	226.4E6	49.254	49.571
11) Dinoseb	13.68	14.28	1042.8E6	647.7E6	237.896	246.612
12) 2,4-DB	12.86	14.03f	442.4E6	263.7E6	513.740	518.261
-----						

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Data Path : D:\MSDCHEM\1\DATA\061115\  
Data File : 17G19435.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 11 Jun 2015 14:15 (#1); 11 Jun 2015 14:41 (#2)  
Operator : ECL  
Sample : WG527079-06 HERB ALT  
Misc : 1,1 STD70765  
ALS Vial : 6 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Jun 11 15:05:20 2015  
Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
QLast Update : Thu Jun 11 14:51:20 2015  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
Signal #1 Phase : Signal #2 Phase:  
Signal #1 Info : Signal #2 Info :



8151.M Thu Jun 11 15:05:35 2015

Page: 2

Data Path : D:\MSDCHEM\1\DATA\061115\  
 Data File : 17G19435.D  
 Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
 Acq On : 11 Jun 2015 14:15 (#1); 11 Jun 2015 14:41 (#2)  
 Operator : ECL  
 Sample : WG527079-06 HERB ALT  
 Misc : 1,1 STD70765  
 ALS Vial : 6 Sample Multiplier: 1

Integration File signal 1: events.e  
 Integration File signal 2: events2.e  
 Quant Time: Jun 11 15:05:20 2015  
 Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
 Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
 QLast Update : Thu Jun 11 14:51:20 2015  
 Response via : Initial Calibration  
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

Min. RRF : 0.000 Min. Rel. Area : 10% Max. R.T. Dev 0.15min  
 Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(Min)
1	Dalapon	1250.000	1066.011	14.7	86	0.00
2 S	2,4-Dichlorophenylacetic ac	500.000	453.932	9.2	93	0.00
3	MCPA	50.000	45.393	9.2	93	0.00
4	Dicamba	50.000	48.851	2.3	96	0.00
5	MCP	50.000	45.673	8.7	92	0.00
6	Dichloroprop	500.000	486.403	2.7	99	0.00
7	2,4-D	500.000	462.345	7.5	93	0.00
8	Pentachlorophenol	50.000	47.223	5.6	92	0.00
9	Silvex	50.000	47.894	4.2	95	0.00
10	2,4,5-T	50.000	49.254	1.5	94	0.00
11	Dinoseb	250.000	237.896	4.8	95	0.00
12	2,4-DB	500.000	513.740	-2.7	94	0.00

## Signal #2

1	Dalapon	1250.000	1103.746	11.7	88	0.00
2 S	2,4-Dichlorophenylacetic	500.000	466.156	6.8	95	0.00
3	MCPA	50.000	46.327	7.3	95	0.00
4	Dicamba	50.000	49.711	0.6	99	0.00
5	MCP	50.000	47.622	4.8	93	0.00
6	Dichloroprop	500.000	496.661	0.7	101	0.00
7	2,4-D	500.000	472.345	5.5	95	0.00
8	Pentachlorophenol	50.000	47.703	4.6	92	0.00
9	Silvex	50.000	49.264	1.5	97	0.00
10	2,4,5-T	50.000	49.571	0.9	97	0.00
11	Dinoseb	250.000	246.612	1.4	97	0.00
12	2,4-DB	500.000	518.261	-3.7	100	-0.02

Evaluate Continuing Calibration Report - Not Found

## Signal #2

-----  
(#) = Out of Range

SPCC's out = 0 CCC's out = 0

Data Path : D:\msdchem\1\DATA\062615\  
 Data File : 17G19586.D  
 Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
 Acq On : 26 Jun 2015 14:03 (#1); 26 Jun 2015 14:30 (#2)  
 Operator : AED  
 Sample : WG529103-01 HERB CCV  
 Misc : 1,1 STD70764  
 ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: events.e  
 Integration File signal 2: events2.e  
 Quant Time: Jun 26 14:50:14 2015  
 Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
 Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
 QLast Update : Mon Jun 22 12:05:07 2015  
 Response via : Initial Calibration  
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

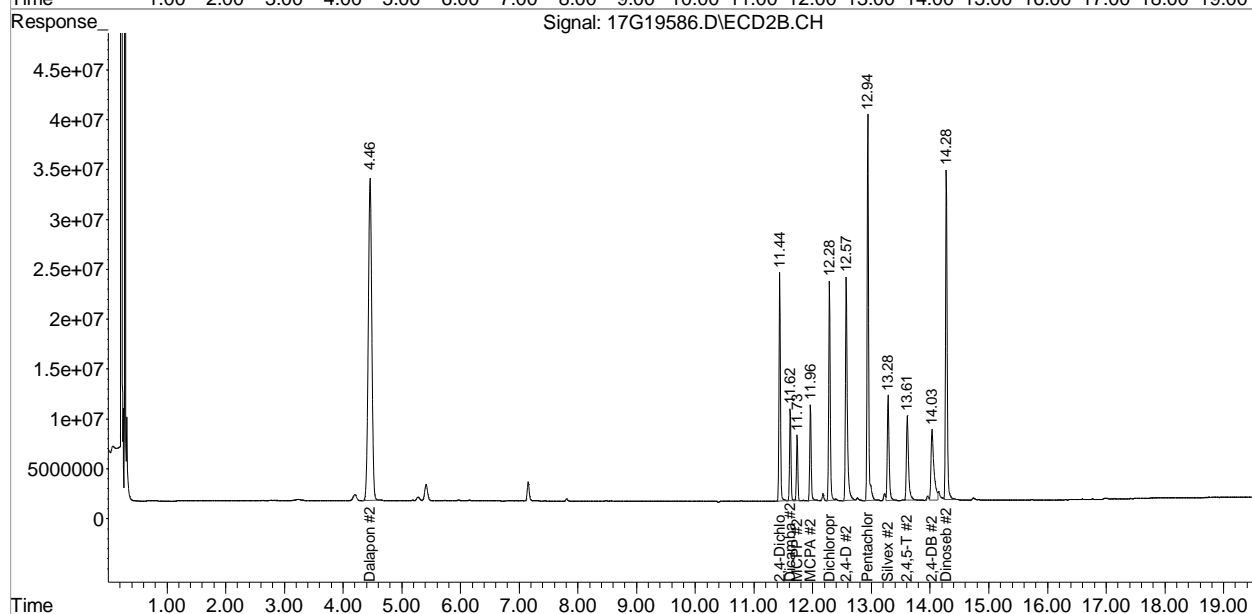
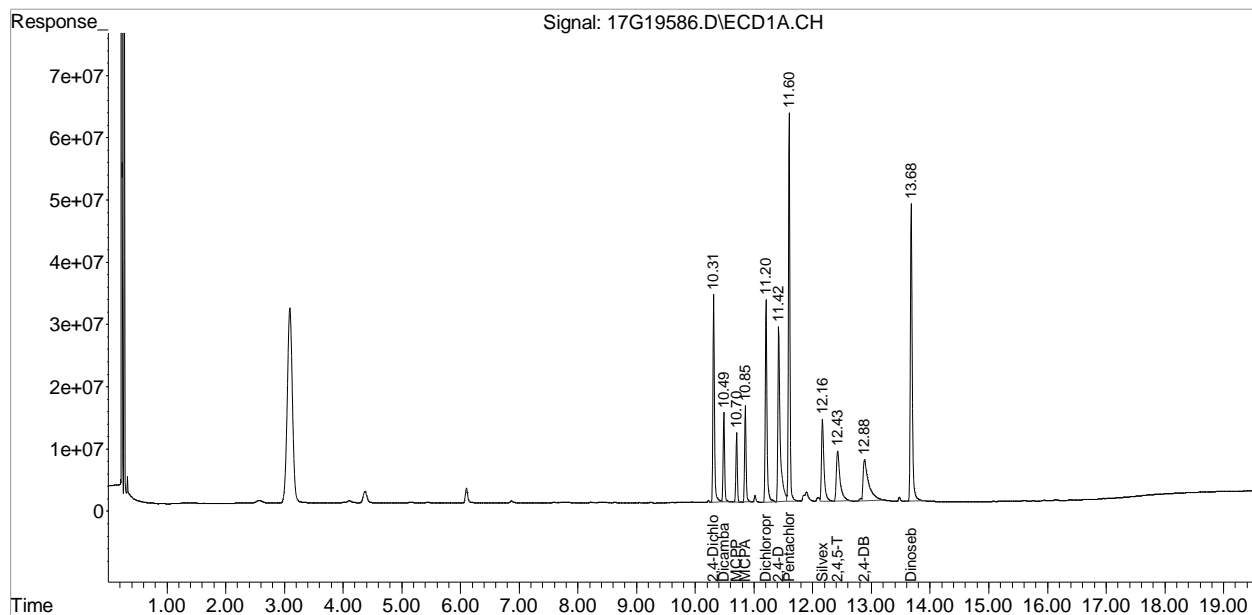
Compound	RT#1	RT#2	Resp#1	Resp#2	ug/L	ug/L
-----						
System Monitoring Compounds						
2) S 2,4-Dichlorophen	10.31	11.44	596.9E6	380.6E6	469.802	455.939
Spiked Amount	500.000		Recovery	=	93.96%	91.19%
Target Compounds						
1) Dalapon	0.00	4.46	0	1352.8E6	N.D.	1137.029 #
3) MCPA	10.85	11.96	264.5E6	160.0E6	46.603	45.763
4) Dicamba	10.49	11.62	248.7E6	147.6E6	48.167	45.670
5) MCPP	10.70	11.73	182.5E6	105.3E6	47.555	47.183
6) Dichloroprop	11.20	12.29	644.2E6	390.0E6	475.679	457.060
7) 2,4-D	11.42	12.57	763.3E6	478.7E6	469.864	459.652
8) Pentachloropheno	11.60	12.94	1094.6E6	674.5E6	48.680	47.584
9) Silvex	12.17	13.28	383.3E6	223.9E6	48.162	47.026
10) 2,4,5-T	12.43f	13.61	351.1E6	212.3E6	48.299	46.503
11) Dinoseb	13.68	14.28	1055.0E6	623.1E6	240.680	237.248
12) 2,4-DB	12.88f	14.03	428.9E6	244.1E6	498.159	479.672
-----						

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Data Path : D:\msdchem\1\DATA\062615\  
Data File : 17G19586.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 26 Jun 2015 14:03 (#1); 26 Jun 2015 14:30 (#2)  
Operator : AED  
Sample : WG529103-01 HERB CCV  
Misc : 1,1 STD70764  
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Jun 26 14:50:14 2015  
Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
QLast Update : Mon Jun 22 12:05:07 2015  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
Signal #1 Phase : Signal #2 Phase:  
Signal #1 Info : Signal #2 Info :



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Page: 2



Data Path : D:\msdchem\1\DATA\062615\  
 Data File : 17G19586.D  
 Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
 Acq On : 26 Jun 2015 14:03 (#1); 26 Jun 2015 14:30 (#2)  
 Operator : AED  
 Sample : WG529103-01 HERB CCV  
 Misc : 1,1 STD70764  
 ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: events.e  
 Integration File signal 2: events2.e  
 Quant Time: Jun 26 14:50:14 2015  
 Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
 Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
 QLast Update : Mon Jun 22 12:05:07 2015  
 Response via : Initial Calibration  
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

Min. RRF : 0.000 Min. Rel. Area : 10% Max. R.T. Dev 0.15min  
 Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(Min)
2 S	2,4-Dichlorophenylacetic ac	500.000	469.802	6.0	96	0.00
3	MCPA	50.000	46.603	6.8	95	0.00
4	Dicamba	50.000	48.167	3.7	95	0.00
5	MCPD	50.000	47.555	4.9	96	0.00
6	Dichloroprop	500.000	475.679	4.9	97	-0.01
7	2,4-D	500.000	469.864	6.0	95	0.00
8	Pentachlorophenol	50.000	48.680	2.6	95	0.00
9	Silvex	50.000	48.162	3.7	95	0.00
10	2,4,5-T	50.000	48.299	3.4	92	0.02
11	Dinoseb	250.000	240.680	3.7	96	0.00
12	2,4-DB	500.000	498.159	0.4	91	0.02

## Signal #2

1	Dalapon	1250.000	1137.029	9.0	91	0.00
2 S	2,4-Dichlorophenylacetic	500.000	455.939	8.8	93	0.00
3	MCPA	50.000	45.763	8.5	94	0.00
4	Dicamba	50.000	45.670	8.7	91	0.00
5	MCPD	50.000	47.183	5.6	93	0.00
6	Dichloroprop	500.000	457.060	8.6	93	0.00
7	2,4-D	500.000	459.652	8.1	93	0.00
8	Pentachlorophenol	50.000	47.584	4.8	92	0.00
9	Silvex	50.000	47.026	5.9	92	0.00
10	2,4,5-T	50.000	46.503	7.0	91	0.00
11	Dinoseb	250.000	237.248	5.1	93	0.00
12	2,4-DB	500.000	479.672	4.1	92	0.01

## Evaluate Continuing Calibration Report - Not Found

1	Dalapon	1250.000	0.000	100.0#	0	-3.20#
---	---------	----------	-------	--------	---	--------

## Signal #2

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

Data Path : D:\msdchem\1\DATA\062615\  
 Data File : 17G19593.D  
 Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
 Acq On : 26 Jun 2015 18:18 (#1); 26 Jun 2015 18:44 (#2)  
 Operator : AED  
 Sample : WG529103-02 HERB CCV  
 Misc : 1,1 STD70764  
 ALS Vial : 8 Sample Multiplier: 1

Integration File signal 1: events.e  
 Integration File signal 2: events2.e  
 Quant Time: Jun 29 07:24:19 2015  
 Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
 Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
 QLast Update : Mon Jun 22 12:05:07 2015  
 Response via : Initial Calibration  
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

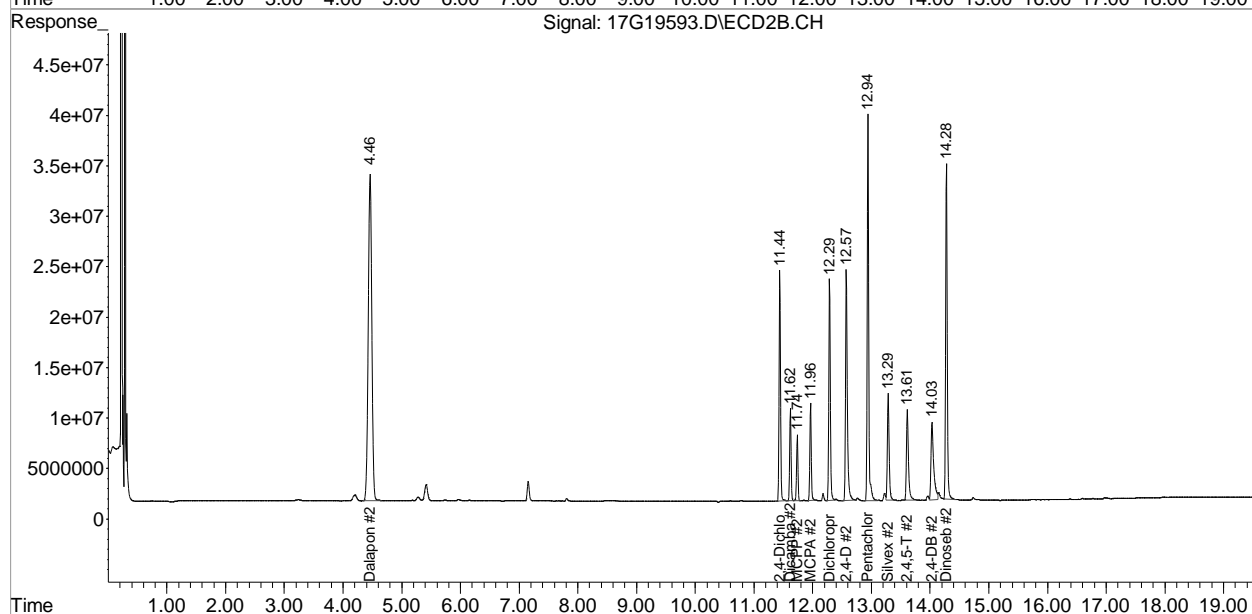
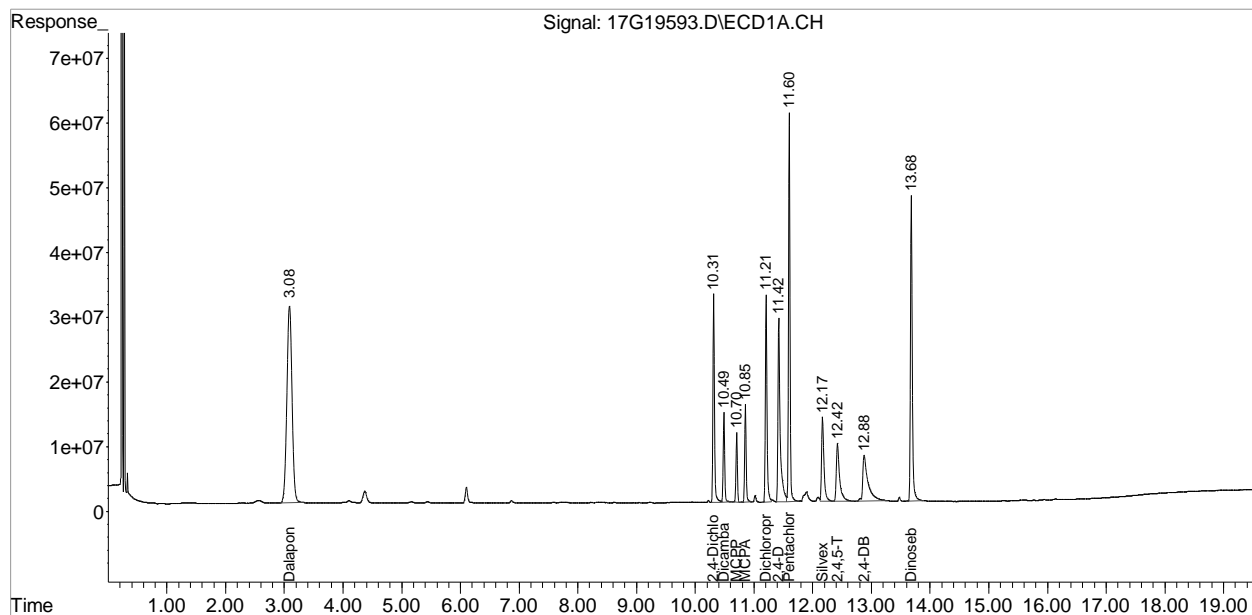
Compound	RT#1	RT#2	Resp#1	Resp#2	ug/L	ug/L
-----						
System Monitoring Compounds						
2) S 2,4-Dichlorophen	10.31	11.44	578.1E6	380.2E6	455.010	455.401
Spiked Amount	500.000		Recovery	=	91.00%	91.08%
Target Compounds						
1) Dalapon	3.09	4.46	1865.5E6	1367.8E6	1124.536	1149.665
3) MCPA	10.85	11.96	258.6E6	159.5E6	45.571	45.633
4) Dicamba	10.49	11.62	241.1E6	147.7E6	46.693	45.698
5) MCPP	10.71	11.74	176.6E6	104.9E6	46.031	46.988
6) Dichloroprop	11.21	12.29	616.9E6	389.6E6	455.505	456.628
7) 2,4-D	11.42	12.57	744.6E6	477.5E6	458.381	458.515
8) Pentachloropheno	11.60	12.94	1053.7E6	673.1E6	46.860	47.489
9) Silvex	12.17	13.29	368.3E6	221.7E6	46.278	46.565
10) 2,4,5-T	12.42	13.61	344.2E6	212.7E6	47.345	46.591
11) Dinoseb	13.68	14.28	1004.2E6	613.0E6	229.097	233.392
12) 2,4-DB	12.88f	14.03	438.2E6	244.0E6	508.949	479.559
-----						

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Data Path : D:\msdchem\1\DATA\062615\  
Data File : 17G19593.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 26 Jun 2015 18:18 (#1); 26 Jun 2015 18:44 (#2)  
Operator : AED  
Sample : WG529103-02 HERB CCV  
Misc : 1,1 STD70764  
ALS Vial : 8 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Jun 29 07:24:19 2015  
Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
QLast Update : Mon Jun 22 12:05:07 2015  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
Signal #1 Phase : Signal #2 Phase:  
Signal #1 Info : Signal #2 Info :



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Page: 2

Data Path : D:\msdchem\1\DATA\062615\  
 Data File : 17G19593.D  
 Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
 Acq On : 26 Jun 2015 18:18 (#1); 26 Jun 2015 18:44 (#2)  
 Operator : AED  
 Sample : WG529103-02 HERB CCV  
 Misc : 1,1 STD70764  
 ALS Vial : 8 Sample Multiplier: 1

Integration File signal 1: events.e  
 Integration File signal 2: events2.e  
 Quant Time: Jun 29 07:24:19 2015  
 Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
 Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
 QLast Update : Mon Jun 22 12:05:07 2015  
 Response via : Initial Calibration  
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

Min. RRF : 0.000 Min. Rel. Area : 10% Max. R.T. Dev 0.15min  
 Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(Min)
1	Dalapon	1250.000	1124.536	10.0	91	0.00
2 S	2,4-Dichlorophenylacetic ac	500.000	455.010	9.0	93	0.00
3	MCPA	50.000	45.571	8.9	93	0.00
4	Dicamba	50.000	46.693	6.6	92	0.00
5	MCP	50.000	46.031	7.9	93	0.00
6	Dichloroprop	500.000	455.505	8.9	93	0.00
7	2,4-D	500.000	458.381	8.3	93	0.00
8	Pentachlorophenol	50.000	46.860	6.3	91	0.00
9	Silvex	50.000	46.278	7.4	92	0.00
10	2,4,5-T	50.000	47.345	5.3	90	0.01
11	Dinoseb	250.000	229.097	8.4	91	0.00
12	2,4-DB	500.000	508.949	-1.8	93	0.02

## Signal #2

1	Dalapon	1250.000	1149.665	8.0	92	0.00
2 S	2,4-Dichlorophenylacetic	500.000	455.401	8.9	93	0.00
3	MCPA	50.000	45.633	8.7	94	0.00
4	Dicamba	50.000	45.698	8.6	91	0.00
5	MCP	50.000	46.988	6.0	92	0.00
6	Dichloroprop	500.000	456.628	8.7	93	0.00
7	2,4-D	500.000	458.515	8.3	93	0.00
8	Pentachlorophenol	50.000	47.489	5.0	92	0.00
9	Silvex	50.000	46.565	6.9	91	0.00
10	2,4,5-T	50.000	46.591	6.8	91	0.00
11	Dinoseb	250.000	233.392	6.6	91	0.00
12	2,4-DB	500.000	479.559	4.1	92	0.01

Evaluate Continuing Calibration Report - Not Found

## Signal #2

-----  
(#) = Out of Range

SPCC's out = 0 CCC's out = 0

# RETENTION TIME WINDOWS

Lab Name: Microbac Laboratories, Inc.

Instrument ID: HP 17

GC Column: RTx-CLP (Front)

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	2/24/14	2/26/14	2/27/14
File #	17G16525	17G16540	17G16555

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
Dalapon	3.27	3.26	3.27	0.017
Dicamba	10.59	10.59	10.59	0.000
MCP	10.81	10.81	10.80	0.017
MCPA	10.95	10.95	10.95	0.000
Dichloroprop	11.31	11.31	11.30	0.017
2,4-D	11.52	11.52	11.51	0.017
Pentachlorophenol	11.70	11.70	11.70	0.000
Silvex	12.26	12.25	12.25	0.017
2,4,5-T	12.49	12.49	12.49	0.000
2,4-DB	12.93	12.93	12.93	0.000
Dinoseb	13.79	13.79	13.79	0.000
2,4-Dichlorophenol	10.41	10.41	10.41	0.000

# RETENTION TIME WINDOWS

Lab Name: Microbac Laboratories, Inc.

Instrument ID: HP 17  
GC Column: RTx-CLP II (Rear)

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	2/24/14	2/26/14	2/27/14
File #	17G16525	17G16540	17G16555

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
Dalapon	4.47	4.47	4.47	0.000
Dicamba	11.60	11.60	11.61	0.017
MCP	11.72	11.72	11.72	0.000
MCPA	11.95	11.94	11.95	0.017
Dichloroprop	12.27	12.27	12.27	0.000
2,4-D	12.55	12.55	12.55	0.000
Pentachlorophenol	12.93	12.92	12.93	0.017
Silvex	13.25	13.25	13.26	0.017
2,4,5-T	13.57	13.57	13.57	0.000
2,4-DB	13.98	13.98	13.98	0.000
Dinoseb	14.24	14.23	14.24	0.017
2,4-Dichlorophenol	11.43	11.42	11.43	0.017

## **2.1.1.5 Raw QC Data**

Data Path : D:\msdchem\1\DATA\062615\  
 Data File : 17G19587.D  
 Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
 Acq On : 26 Jun 2015 15:42 (#1); 26 Jun 2015 16:08 (#2)  
 Operator : AED  
 Sample : WG528983-01 BLANK  
 Misc : 17,1  
 ALS Vial : 2 Sample Multiplier: 1

Integration File signal 1: events.e  
 Integration File signal 2: events2.e  
 Quant Time: Jun 29 13:55:56 2015  
 Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
 Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
 QLast Update : Mon Jun 22 12:05:07 2015  
 Response via : Initial Calibration  
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

	Compound	RT#1	RT#2	Resp#1	Resp#2	ug/L	ug/L
-----							
System Monitoring Compounds							
2) S	2,4-Dichlorophen	10.33f	11.44	447.1E6	276.0E6	351.901	330.625
	Spiked Amount	500.000		Recovery	=	70.38%	66.13%
Target Compounds							
1)	Dalapon	0.00	0.00	0	0	N.D.	N.D.
3)	MCPA	0.00	0.00	0	0	N.D.	N.D.
4)	Dicamba	0.00	0.00	0	0	N.D.	N.D.
5)	MCPA	0.00	0.00	0	0	N.D.	N.D.
6)	Dichloroprop	0.00	12.30	0	55669912	N.D.	65.245 #
7)	2,4-D	0.00	0.00	0	0	N.D.	N.D.
8)	Pentachloropheno	0.00	0.00	0	0	N.D.	N.D.
9)	Silvex	0.00	0.00	0	0	N.D.	N.D.
10)	2,4,5-T	0.00	0.00	0	0	N.D.	N.D.
11)	Dinoseb	0.00	0.00	0	0	N.D.	N.D.
12)	2,4-DB	0.00	0.00	0	0	N.D.	N.D.
-----							

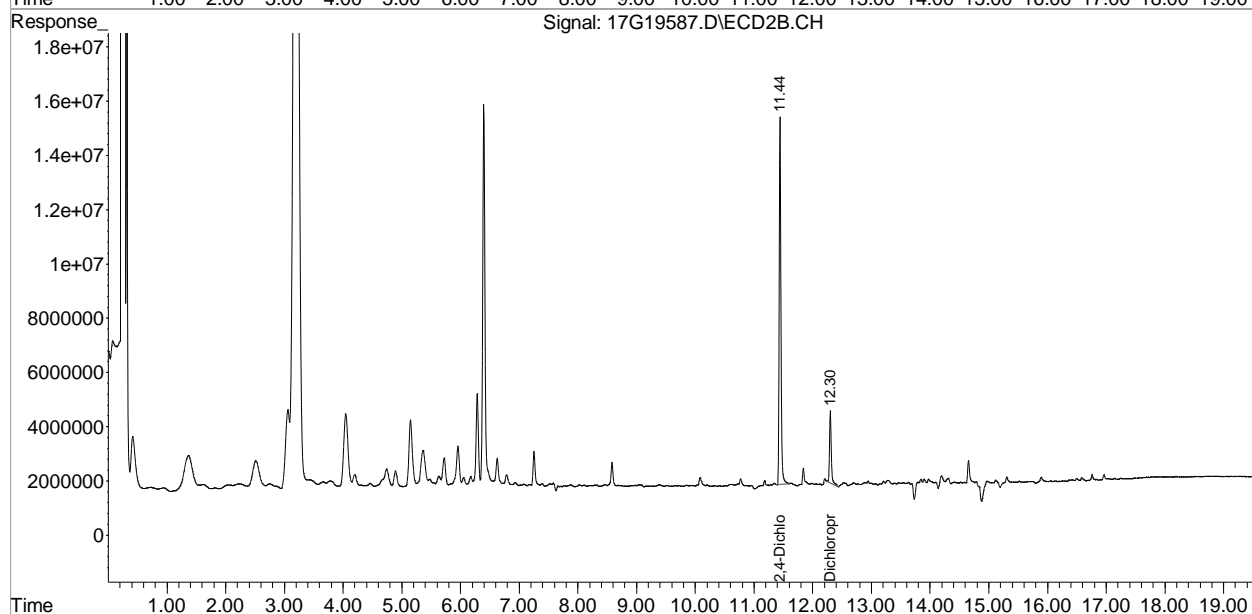
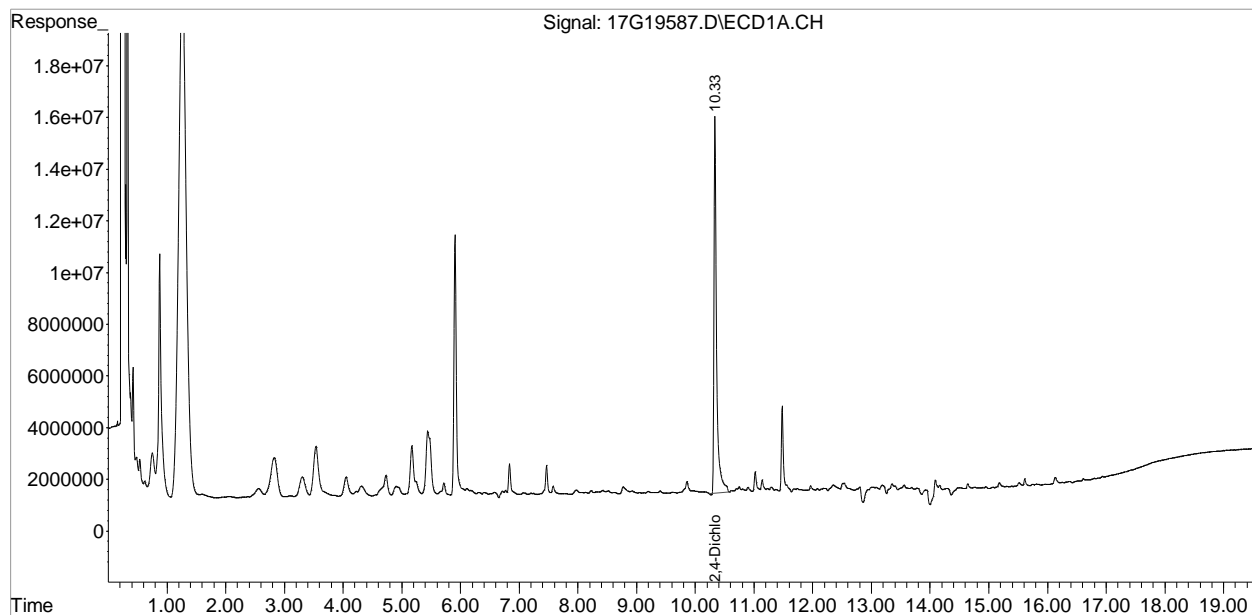
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.



Data Path : D:\msdchem\1\DATA\062615\  
Data File : 17G19587.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 26 Jun 2015 15:42 (#1); 26 Jun 2015 16:08 (#2)  
Operator : AED  
Sample : WG528983-01 BLANK  
Misc : 17,1  
ALS Vial : 2 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Jun 29 13:55:56 2015  
Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
QLast Update : Mon Jun 22 12:05:07 2015  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
Signal #1 Phase : Signal #2 Phase:  
Signal #1 Info : Signal #2 Info :



8151.M Mon Jun 29 13:56:08 2015

Page: 2

Data Path : D:\msdchem\1\DATA\062615\  
 Data File : 17G19588.D  
 Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
 Acq On : 26 Jun 2015 16:08 (#1); 26 Jun 2015 16:34 (#2)  
 Operator : AED  
 Sample : WG528983-02 LCS  
 Misc : 17,1  
 ALS Vial : 3 Sample Multiplier: 1

Integration File signal 1: events.e  
 Integration File signal 2: events2.e  
 Quant Time: Jun 29 13:57:42 2015  
 Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
 Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
 QLast Update : Mon Jun 29 13:56:37 2015  
 Response via : Initial Calibration  
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

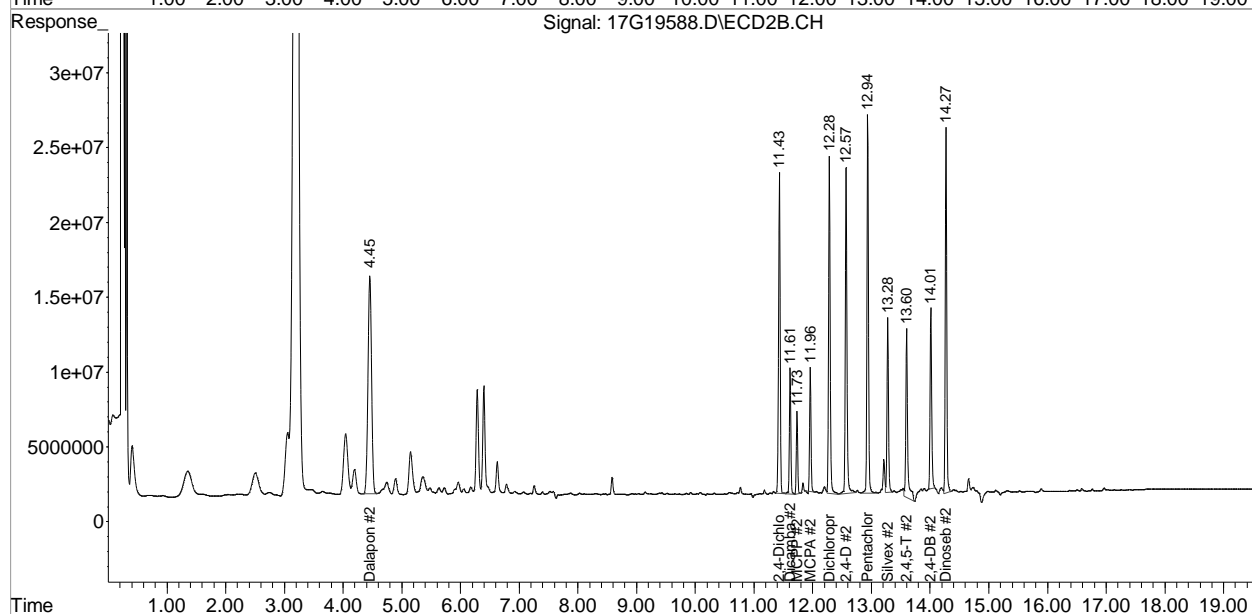
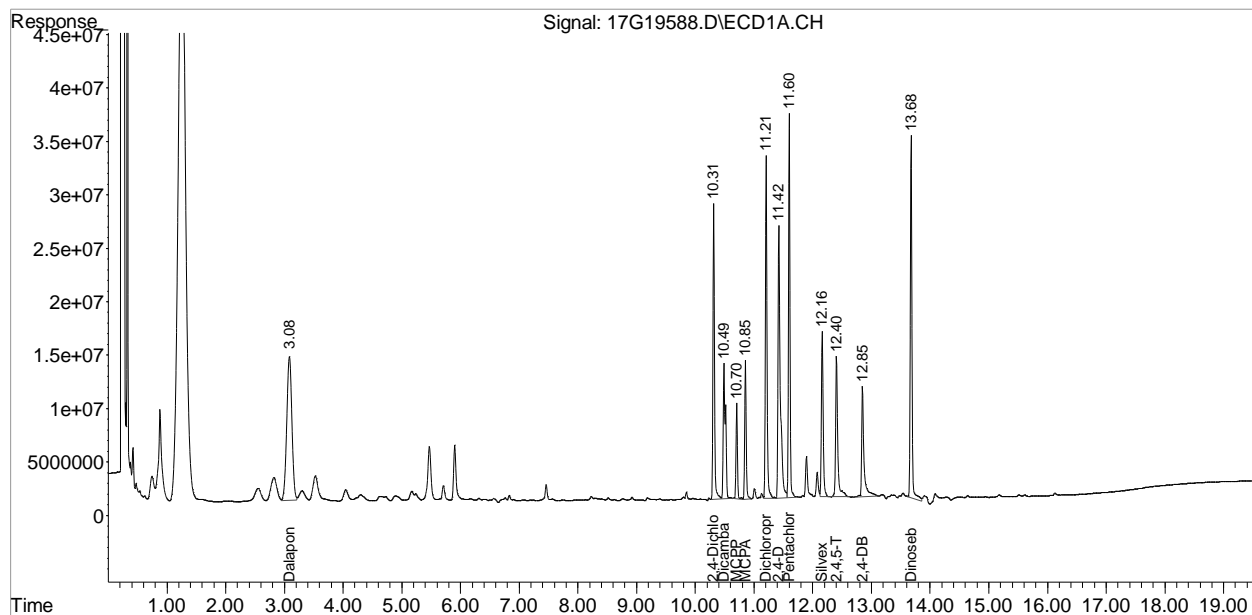
	Compound	RT#1	RT#2	Resp#1	Resp#2	ug/L	ug/L
-----							
System Monitoring Compounds							
2) S	2,4-Dichlorophen	10.31	11.43	494.2E6	405.6E6	388.972	485.845
Spiked Amount 500.000				Recovery	=	77.79%	97.17%
Target Compounds							
1)	Dalapon	3.09	4.46	820.9E6	618.0E6	494.829	519.407
3)	MCPA	10.85	11.96	222.7E6	131.9E6	39.236	37.731
4)	Dicamba	10.49	11.62	342.1E6	139.7E6	66.244	43.221
5)	MCPA	10.71	11.73	149.6E6	87525132	38.976	39.212
6)	Dichloroprop	11.21	12.28	603.7E6	420.1E6	445.740	492.301
7)	2,4-D	11.42	12.57	690.4E6	422.9E6	424.979	406.108
8)	Pentachloropheno	11.60	12.94	616.1E6	448.5E6	27.400	31.641
9)	Silvex	12.16	13.28	322.9E6	206.7E6	40.571	43.401
10)	2,4,5-T	12.41	13.60f	324.9E6	240.2E6	44.691	52.608
11)	Dinoseb	13.68	14.27	649.0E6	419.6E6	148.045	159.753
12)	2,4-DB	12.85	14.01	278.8E6	223.8E6	323.824	439.837m
-----							

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Data Path : D:\msdchem\1\DATA\062615\  
Data File : 17G19588.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 26 Jun 2015 16:08 (#1); 26 Jun 2015 16:34 (#2)  
Operator : AED  
Sample : WG528983-02 LCS  
Misc : 17,1  
ALS Vial : 3 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Jun 29 13:57:42 2015  
Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
QLast Update : Mon Jun 29 13:56:37 2015  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
Signal #1 Phase : Signal #2 Phase:  
Signal #1 Info : Signal #2 Info :



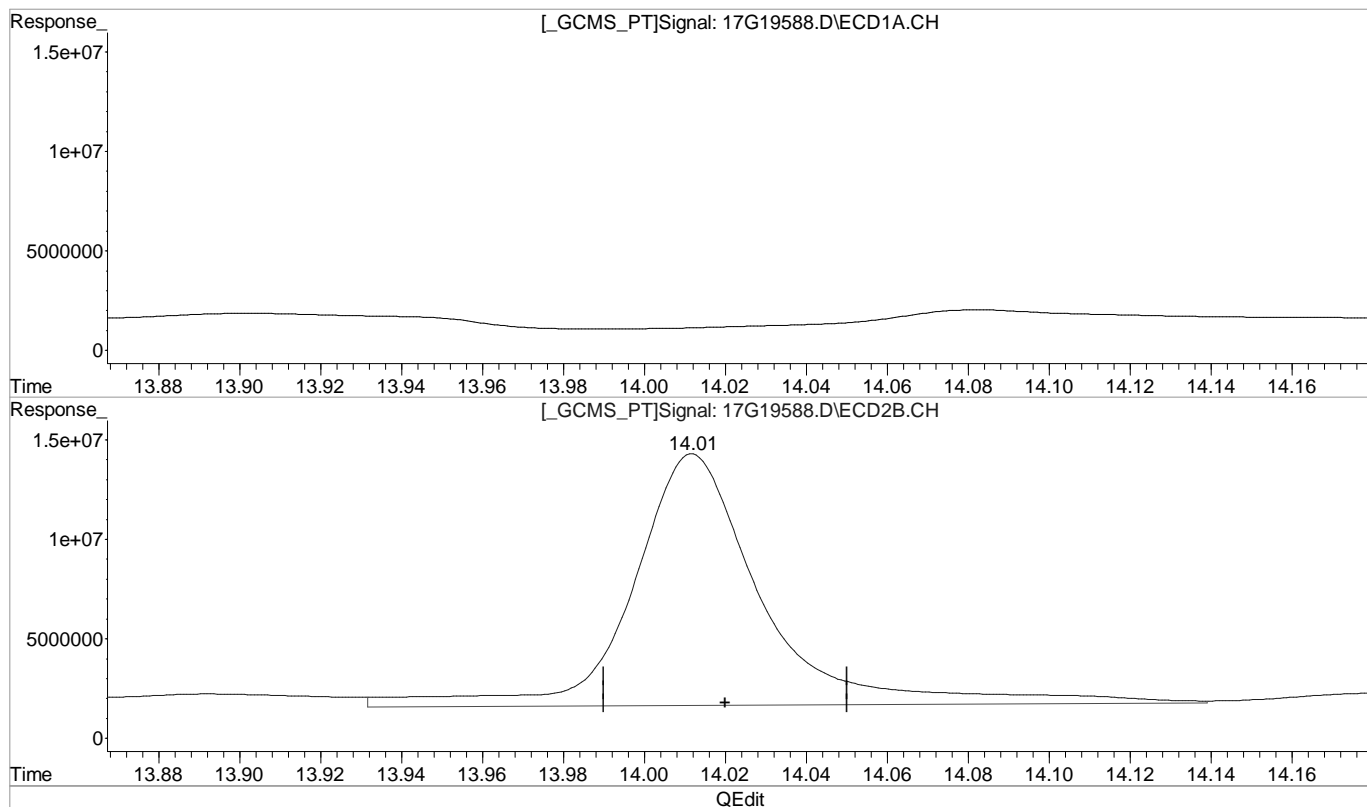
8151.M Mon Jun 29 13:57:52 2015

Page: 2

Data Path : D:\msdchem\1\DATA\062615\  
Data File : 17G19588.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 26 Jun 2015 16:08 (#1); 26 Jun 2015 16:34 (#2)  
Operator : AED  
Sample : WG528983-02 LCS  
Misc : 17,1  
ALS Vial : 3 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Jun 29 13:57:21 2015  
Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
QLast Update : Mon Jun 29 13:56:37 2015  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
Signal #1 Phase : Signal #2 Phase:  
Signal #1 Info : Signal #2 Info :



(12) 2,4-DB  
12.85min 323.824ug/L  
response 278827994

(12) 2,4-DB #2  
14.01min 560.823ug/L  
response 285365588

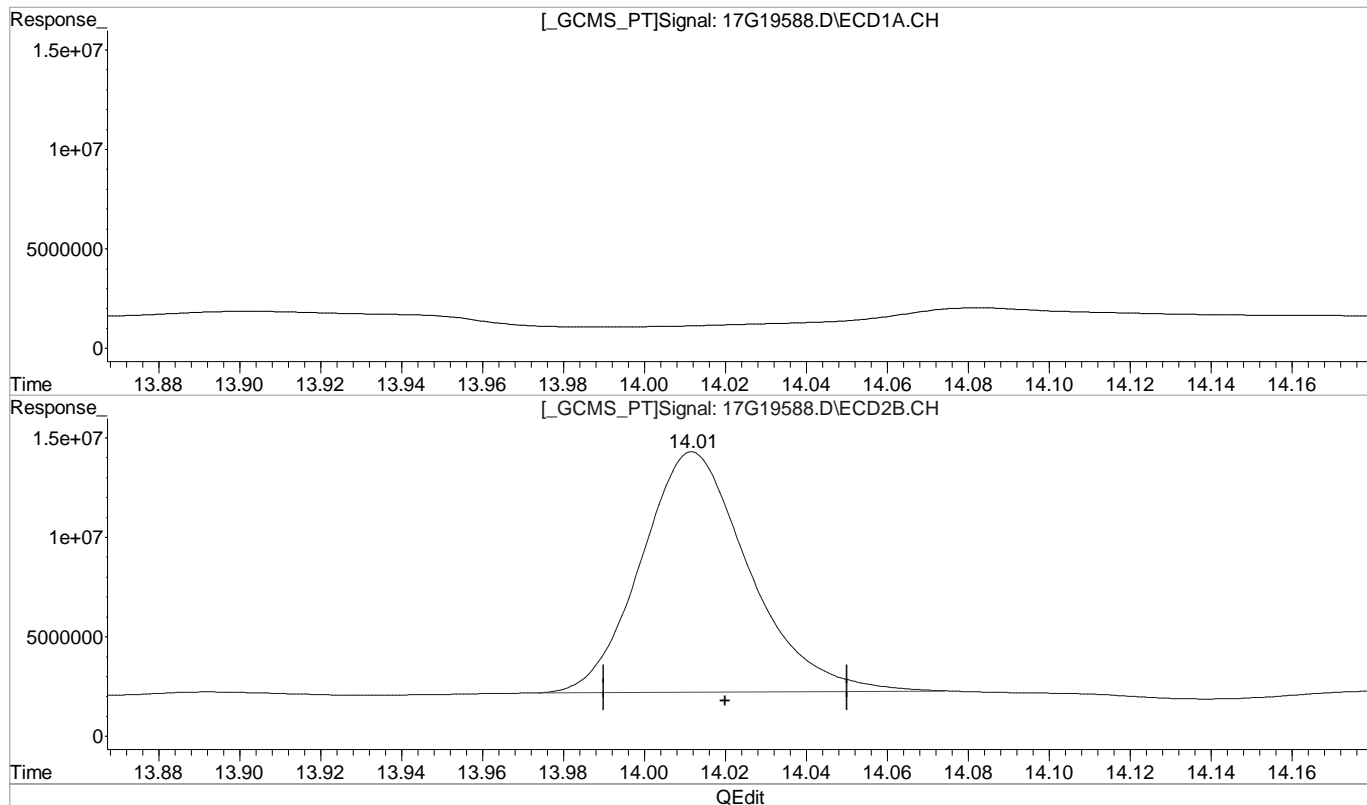
(+) = Expected Retention Time  
8151.M Mon Jun 29 13:57:37 2015

Page: 1

Data Path : D:\msdchem\1\DATA\062615\  
Data File : 17G19588.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 26 Jun 2015 16:08 (#1); 26 Jun 2015 16:34 (#2)  
Operator : AED  
Sample : WG528983-02 LCS  
Misc : 17,1  
ALS Vial : 3 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Jun 29 13:57:21 2015  
Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
QLast Update : Mon Jun 29 13:56:37 2015  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
Signal #1 Phase : Signal #2 Phase:  
Signal #1 Info : Signal #2 Info :



(12) 2,4-DB  
12.85min 323.824ug/L  
response 278827994

(12) 2,4-DB #2  
14.01min 439.837ug/L mint  
response 223803949

(+) = Expected Retention Time  
8151.M Mon Jun 29 13:57:45 2015

Analyst: 06/29/2015 14:45

Supervisor: 06/29/2015 15:33

#4 - System establishes incorrect baseline

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Data Path : D:\msdchem\1\DATA\062615\  
 Data File : 17G19589.D  
 Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
 Acq On : 26 Jun 2015 16:34 (#1); 26 Jun 2015 17:00 (#2)  
 Operator : AED  
 Sample : WG528983-03 LCS2  
 Misc : 17,1  
 ALS Vial : 4 Sample Multiplier: 1

Integration File signal 1: events.e  
 Integration File signal 2: events2.e  
 Quant Time: Jun 29 13:58:14 2015  
 Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
 Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
 QLast Update : Mon Jun 29 13:56:37 2015  
 Response via : Initial Calibration  
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

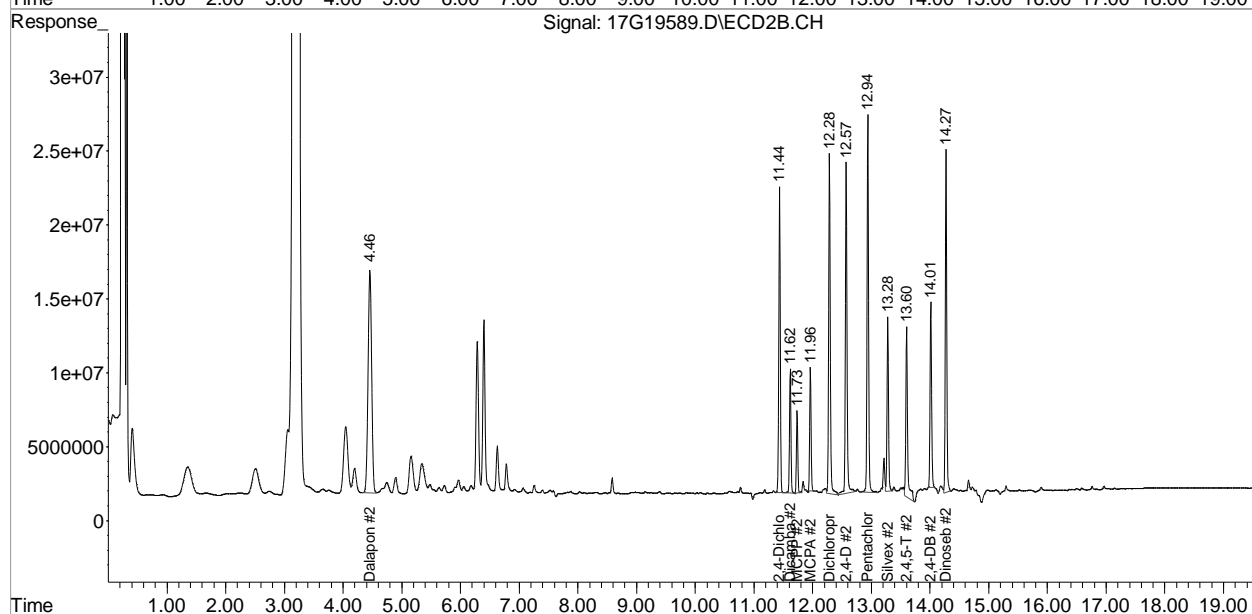
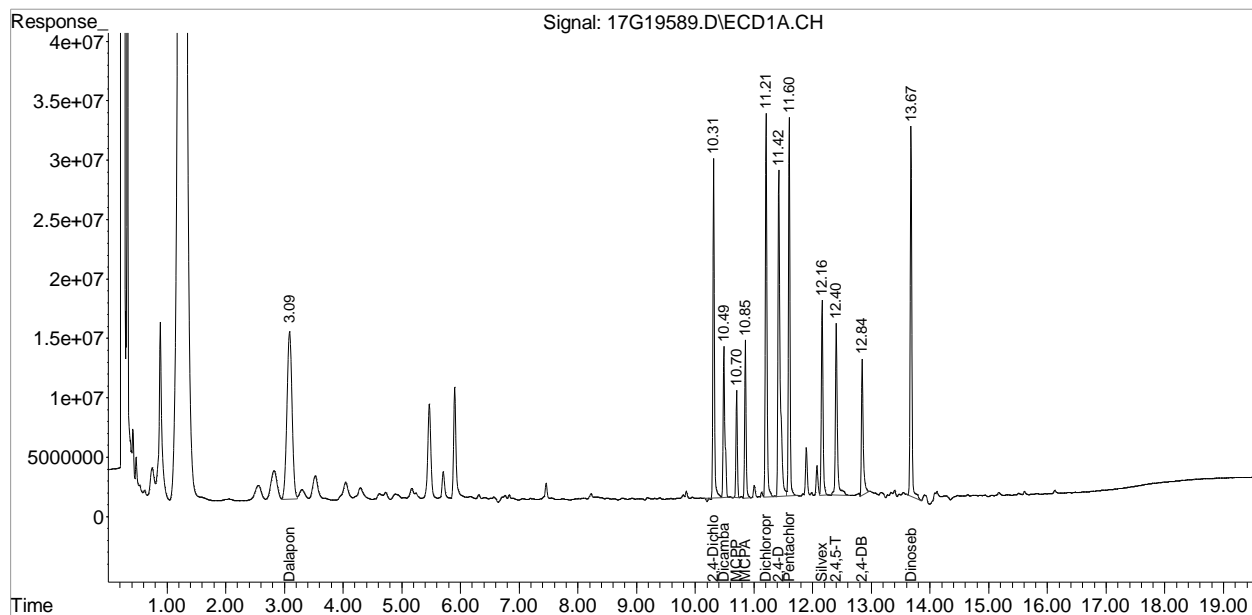
Compound	RT#1	RT#2	Resp#1	Resp#2	ug/L	ug/L
-----						
System Monitoring Compounds						
2) S 2,4-Dichlorophen	10.31	11.44	490.6E6	360.7E6	386.161	432.068
Spiked Amount	500.000		Recovery	=	77.23%	86.41%
Target Compounds						
1) Dalapon	3.09	4.46	853.5E6	638.2E6	514.471	536.433
3) MCPA	10.85	11.96	223.1E6	132.3E6	39.311	37.841
4) Dicamba	10.49	11.62	265.7E6	138.3E6	51.445	42.814
5) MCPP	10.70	11.73	146.5E6	87355408	38.167	39.136
6) Dichloroprop	11.21	12.29	608.9E6	427.5E6	449.556	501.040
7) 2,4-D	11.42	12.57	703.3E6	433.1E6	432.965	415.926
8) Pentachloropheno	11.60	12.94	564.2E6	449.5E6	25.090	31.713
9) Silvex	12.16	13.28	325.5E6	205.4E6	40.905	43.140
10) 2,4,5-T	12.40	13.60f	329.5E6	240.2E6	45.326	52.612
11) Dinoseb	13.67	14.27	593.2E6	393.2E6	135.325	149.721
12) 2,4-DB	12.84f	14.01	238.4E6	224.3E6	276.875	440.909m#
-----						

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 40% (m)=manual int.

Data Path : D:\msdchem\1\DATA\062615\  
Data File : 17G19589.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 26 Jun 2015 16:34 (#1); 26 Jun 2015 17:00 (#2)  
Operator : AED  
Sample : WG528983-03 LCS2  
Misc : 17,1  
ALS Vial : 4 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Jun 29 13:58:14 2015  
Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
QLast Update : Mon Jun 29 13:56:37 2015  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
Signal #1 Phase : Signal #2 Phase:  
Signal #1 Info : Signal #2 Info :



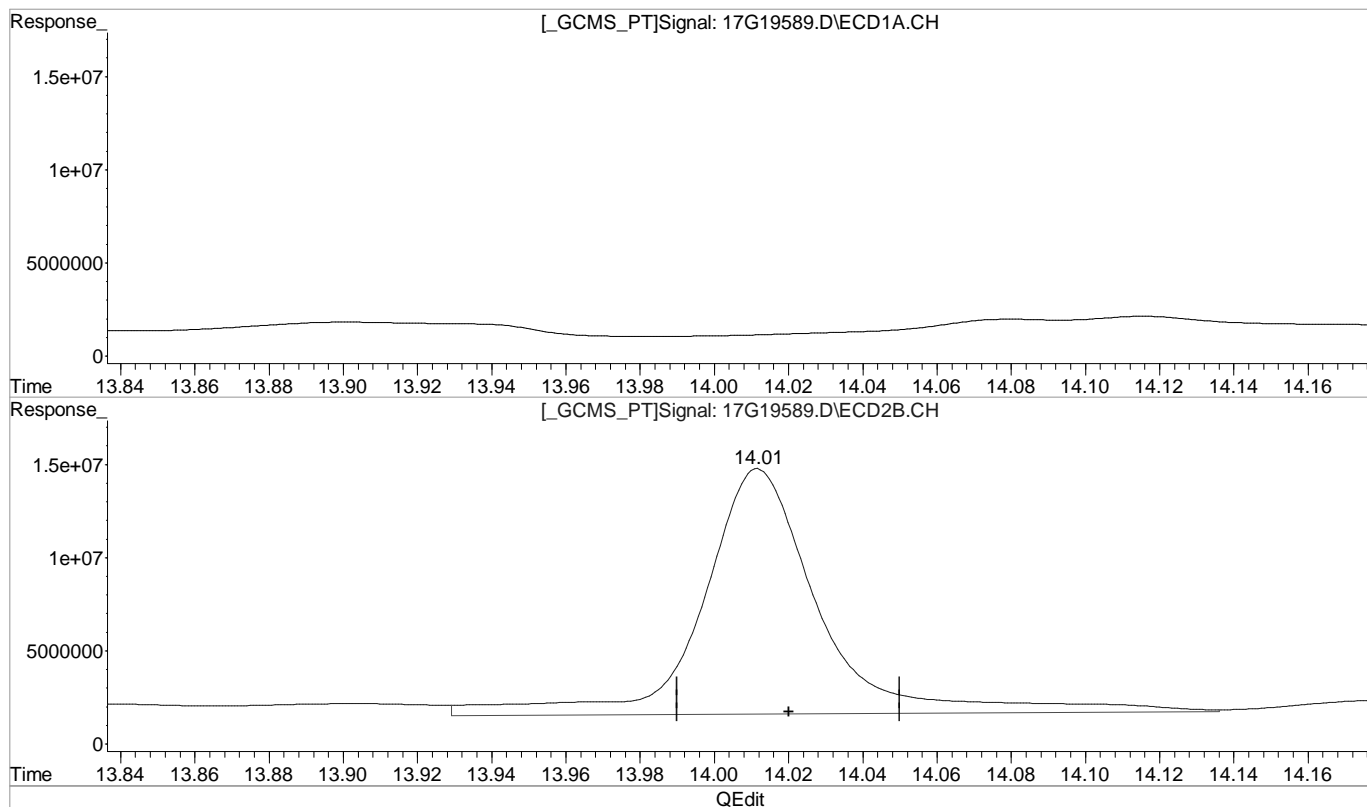
8151.M Mon Jun 29 13:58:22 2015

Page: 2

Data Path : D:\msdchem\1\DATA\062615\  
Data File : 17G19589.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 26 Jun 2015 16:34 (#1); 26 Jun 2015 17:00 (#2)  
Operator : AED  
Sample : WG528983-03 LCS2  
Misc : 17,1  
ALS Vial : 4 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Jun 29 13:57:55 2015  
Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
QLast Update : Mon Jun 29 13:56:37 2015  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
Signal #1 Phase : Signal #2 Phase:  
Signal #1 Info : Signal #2 Info :



(12) 2,4-DB  
12.84min 276.875ug/L  
response 238402872

(12) 2,4-DB #2  
14.01min 573.970ug/L  
response 292055199

(+) = Expected Retention Time  
8151.M Mon Jun 29 13:58:09 2015

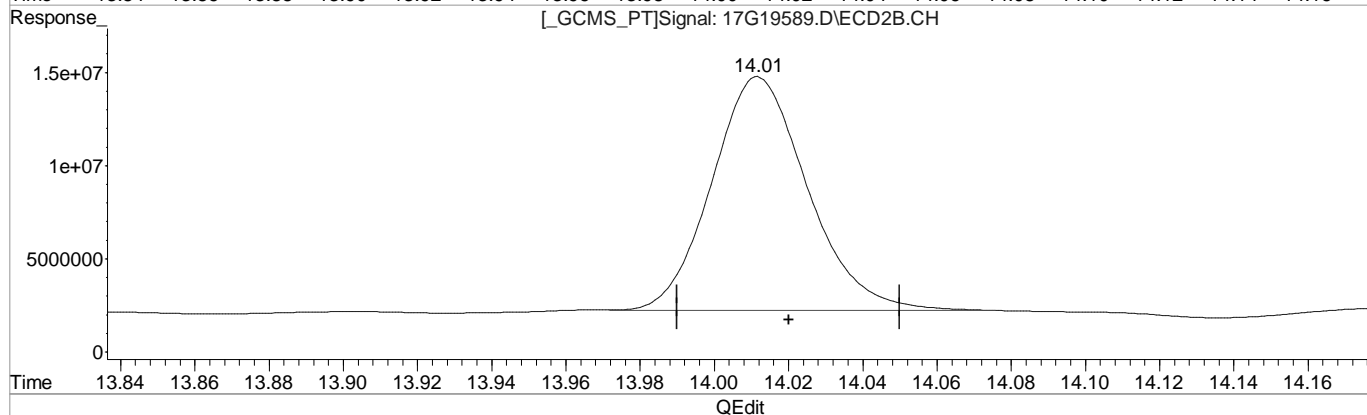
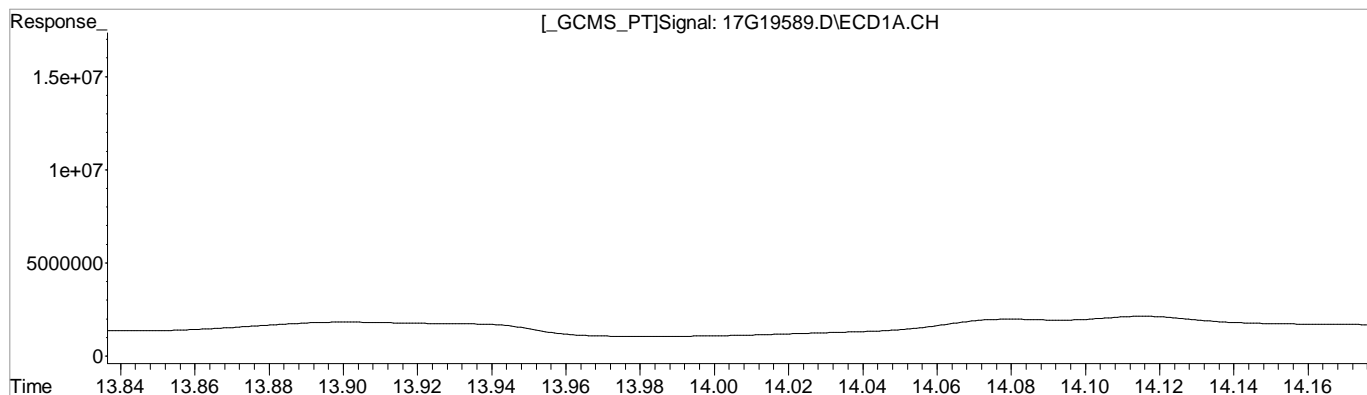
Page: 1



Data Path : D:\msdchem\1\DATA\062615\  
Data File : 17G19589.D  
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH  
Acq On : 26 Jun 2015 16:34 (#1); 26 Jun 2015 17:00 (#2)  
Operator : AED  
Sample : WG528983-03 LCS2  
Misc : 17,1  
ALS Vial : 4 Sample Multiplier: 1

Integration File signal 1: events.e  
Integration File signal 2: events2.e  
Quant Time: Jun 29 13:57:55 2015  
Quant Method : D:\MSDCHEM\1\METHODS\8151.M  
Quant Title : HP17: 8151 CALIBRATION June 11, 2015  
QLast Update : Mon Jun 29 13:56:37 2015  
Response via : Initial Calibration  
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :  
Signal #1 Phase : Signal #2 Phase:  
Signal #1 Info : Signal #2 Info :



(12) 2,4-DB

12.84min 276.875ug/L

response 238402872

(12) 2,4-DB #2

14.01min 440.909ug/L mint

response 224349370

(+) = Expected Retention Time  
8151.M Mon Jun 29 13:58:17 2015

Analyst: 06/29/2015 14:45

Supervisor: 06/29/2015 15:34

#4 - System establishes incorrect baseline

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# **3.0 Attachments**

Microbac Laboratories Inc.  
Ohio Valley Division Analyst List  
June 29, 2015

---

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS	ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG	AZH - AFTER HOURS
BJO - BRIAN J. OGDEN	BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT	BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN	CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES	CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD	CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL	DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE	DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK	EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER	FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY	JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH	JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS	JLL - JOHN L. LENT
JMW - JEANA M. WHITE	JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS	JWS - JACK W. SHEAVES
JYH - JI Y. HU	KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER	KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES	KHR - KIM H. RHODES
KKB - KERRI K. BUCK	KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER	KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER	LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS	LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON	MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN	MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS	PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB	PSW - PEGGY S. WEBB
QX - QIN XU	RAH - ROY A. HALSTEAD
REK - BOB E. KYER	RLB - BOB BUCHANAN
RM - RAYMOND MALEKE	RNP - RICK N. PETTY
RST - ROBIN S. TURNER	SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN	SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG	SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE	TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY	TMM - TAMMY M. MORRIS
VC - VICKI COLLIER	WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS	WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT	

## List of Valid Qualifiers

June 29, 2015

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample receipt exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample receipt exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentatively identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL/MDL).
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.



June 29, 2015

Qualkey: DOD

TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample receipt exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below



# CT LABORATORIES

1230 Lange Court • Baraboo, WI 53913 • 608-356-2760  
www.ctlaboratories.com

## Sub-Contract Laboratory Chain-of-Custody and Purchase Order

PURCHASE ORDER # 112037 MICROBAC

The PO# must appear on all invoice and reports!

Upon Receipt of Samples, please verify that samples were received in acceptable condition then sign this form and fax to (608)356-2766 or email to the project manager. Sample temperature, upon receipt, must be recorded on this document unless thermal preservation is not a method requirement.

Ship to: Microbac  
158 Starlight Drive  
Marietta, OH 45750

Return Invoice and Results to: pletterer@ctlaboratories.com

CTLaboratories  
Pat Letterer  
1230 Lange Court  
Baraboo WI 53913

Date Due: 2 Week TAT RUSH TURNAROUND NEEDED? Y or N (Circle One)

Project Name: HOOSIER WOOD PRESERVER Project State: IN

Analytical/QC Criteria: NONE INDICATED STATE STATE DOD QSM NELAP (Circle one) OTHER RCRA

Report results as EDD? N Y (Circle one and indicate type: SCRIBE) Data Deliverable Package LEVEL: IV

CTLabs ID#	Sample Date/Time	Matrix	Sample Description	Analyses / Method	Cost
598790	6/19/2015 1302	TCLP	HWP-IDW	HERBICIDES	SW8151

Relinquished by: [Signature] Date/Time: 6/22/15 1405

Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Receipt Temperature (C) \_\_\_\_\_

COMMENTS:

REPORT ALL SOLIDS ON A DRY WEIGHT BASIS UNLESS OTHERWISE INDICATED

Microbac OVD

Received: 06/23/2015 10:50  
By: BRIAN OGDEN

2210000071648

B-20

## Internal Chain of Custody Report

**Login:** L15061283**Account:** 2694**Project:** 2694.005**Samples:** 1**Due Date:** 29-JUN-2015

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L15061283-01	591751	TC-EX

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	TCL	23-JUN-2015 14:02	CLS		
2	STORE	TCL	A2	29-JUN-2015 08:15	BRG	RAH	

A1 - Sample Archive (COLD)  
A2 - Sample Archive (AMBIENT)  
F1 - Volatiles Freezer in Login  
V1 - Volatiles Refrigerator in Login  
W1 - Walkin Cooler in Login



**Geophysical Survey Report  
Hoosier Wood Preservers  
Indianapolis, Indiana**

**Dates of Survey  
June 15-16, 2015**



**James Ursic  
Superfund Division - Field Services Section United  
States Environmental Protection Agency Region 5  
Chicago, Illinois**



## **Introduction**

At the request of Shelly Lam, USEPA On-Scene Coordinator-Region 5, a geophysical survey was conducted on June 15-16, 2015 at 3605 South Farnsworth Street Indianapolis, IN. The survey area is approximately less than two acres in size, and is bounded by a railroad track to the west, Kentucky Avenue to the south, South Farnsworth Street to the north and other structures to the East (See Figure 1). The purpose of the survey was to locate a possible contaminate plume or other significant subsurface anomalies, if any, related to an abandoned former wood treatment facility which occupies this property.

Present during the survey, besides Jim Ursic, were S. Lam, OSC; two START U.S. EPA Contractors (J. Randall & J. Brodowski) and several visits by E. Hanotte from the Marion County Public Health Department.

Four geophysical instruments were used at this site that included a gradient magnetometer, broadband frequency domain electromagnetic (EM) tool, time domain EM high sensitivity metal detector and a ground penetrating radar (GPR) tool.

## **Site Conditions – Proposed Survey Planning**

Weather conditions during the survey ranged from lower 70s° to 80s° Fahrenheit, precipitation occurred in the early AM hours of both June 15 and 16 with light drizzle around 11:00 AM on June 16<sup>th</sup> (See Appendix A). This information is provided since electromagnetic conductivity values can differ between dry and wet conditions.

The areas surveyed varied depending on the type of instrument used generally regressing from a full evaluation of the entire site to one gradually narrowing in scope to specific anomalous areas. For example, the gradient magnetometer is a hand carried instrument and can collect data rapidly to complete a preliminary reconnaissance of the entire site, not hindered by buildings or debris, to detect anomalous areas (See Figure 2).

From the results of the magnetometer survey, a broadband EM survey was conducted near anomalous areas found with the gradient magnetometer, which is also a hand carried instrument for rapid data collection (See Figure 3).

Following the broadband EM tool was a two wheeled high sensitivity metal detector instrument, which is relegated to relatively flat open areas, which is advantageous for its ability to accurately define lateral extents of anomalies (See Figure 4).

Finally the GPR, which is a four wheeled instrument, is used to attempt to define the depth of anomalies and determine the below ground structure of an anomaly.

The magnetometer was limited generally to areas where buildings, debris and significant overgrowth of vegetation were not present. (See Figures 2 & 5). The site was relatively flat with three mounded areas of unknown composition, site boundaries were completely fenced.

Ground cover was either soil, vegetated cover or crushed gravel. Nearby structures that have potential for interference are a large communication tower approximately 110 feet west of the site and utility poles along South Farnsworth Street that have transformers adjacent to the site.

When visible surface interferences were seen, the operator would walk in a circle around these objects while the global positioning system (GPS) was operating to note their location in the data.

## **Field Procedures**

### Gradient Magnetometer

The gradient magnetometer instrument is limited to detecting ferrous metals (materials containing iron) and was the first instrument deployed at the site. Depth detection limits are dependent on the size and mass of the ferrous metal. Lateral sensor detection extents are also dependent on the amount of mass present and may extend slightly beyond the actual source limits.

The magnetic survey was conducted using a Geometrics G-858G cesium vapor gradient magnetometer in a vertical gradient mode, one meter spacing. Sensor orientation had a configuration of rotation at 45 degrees with a tilt angle set to 0 degrees, per manufacture's guidance document (See Appendix B).

Data were collected in areas accessible by foot and where vegetative canopies did not hinder satellite communication (See Figure 5). Traverses were made at ten foot intervals using the Trimble AgGPS parallel swathing method. This unit is capable of sub-meter accuracy to collect positional latitude/longitude data except where vegetative canopies restricted reception and satellite geometry configurations were not optimal.

### Broadband Electromagnetics

A Geophex GEM-2 broadband multi frequency electromagnetic tool was used to measure changes in the subsurface matrix conductivity (technical synonym: quadrature phase mode) and also metal detection measurements sensing ferrous and non-ferrous metals (technical synonym: in-phase mode).

Three frequencies were selected to investigate the sub-surface of the site. The highest frequency was limited to shallower depths and lowest frequency was limited to deeper depths. The exact depths of investigation for each frequency cannot be precisely determined since there was no secondary method to directly calculate the subsurface conductivities which would help to estimate signal propagation speeds, which was complicated by recent rain events.

A general depth of investigation estimate for frequencies used are:

- Highest frequency (35,010 Hz) depth of exploration would be near surface to 7 feet.
- Mid-frequency (13,590 Hz) to a depth of exploration would be near 8-15 feet.
- Lowest frequency (3,930 Hz) to depths near 22-25 feet.

The EM tool collects data from each frequency basically at the same time with positional data to provide X and Y locational data, therefore there will be matching traverse lines for all data collected. The Trimble AgGPS parallel swathing method could not be used with this instrument due to the amount of metal associated with the unit. GPS positioning was acquired using a smaller SX Blue GPS device without OmniStar service but has the capability of receiving GLONASS broadcasts increasing the availability of additional satellites for more accuracy.

Broadband EM was limited to areas where magnetic anomalies were found and also where paths could be made through mounded topography where the operator could traverse (See Figure 3, and Photo 5).

### Time Domain Electromagnetics

A Geonics EM61-Mk2 configured with 1 Meter by ½ Meter coils on a two wheeled cart system was used to collect high sensitivity metal detection data which includes all ferrous and non-ferrous metal. Use of the instrument was limited to the area with the most significant anomalies found in the central portion of the site (See Figure 4). Depth of investigation limits for this instrument is about 13 to 15 feet BGL.

Positional data was obtained with the assistance of a second person (START Contractor) who wore the Trimble AgGPS parallel swathing backpack since the EM61 operator had to wear the electronic and battery backpack for the EM tool. The Trimble unit has a feature to offset the space between the GPS antenna and the center of the EM61-Mk2 antenna (See Photo 1) which accounts for the actual position of the data sensor.

### Ground Penetrating Radar

A Sensors and Software Noggin Plus was used with a 250 Megahertz (MHz) antenna configured on a push cart system with a wheel odometer as a distance measuring device. Soil conductivity data from the GEM-2 instrument were used to obtain an average soil conductivity of 22 mS/m at this site which is very poor for signal transmissions through the soil. A velocity of 0.328 feet per Nano-second was chosen for this site.

Random traverses were made over known anomalous areas, mainly in the central portion of the facility, and were found to be inconclusive due to the high soil conductivities and wet soil conditions.

### **Data Processing**

Data for the gradient magnetometer, broadband and time domain EM were processed using Golden Software's Surfer 12 contouring program using the Kriging method of interpolation. Contour levels for each data set varied dependent on the best representation for the more significant anomalies and less importance on minor anomalies.

Distances shown in Figures 1 thru 12 are referenced by a horizontal bar scale which has been converted to feet by calculations from latitude and longitude decimal degree values using a

NAD 83 Datum.

### **Gradient Magnetometer Data**

*Figure 5. Plan View Contour Map, Gradient Magnetometer Data (Ferrous Metal Detection) Survey:*

Figure 5 presents the gradient magnetometer data for the site with 7 ferrous metal anomalies numbered from 1 to 7, and generally numbered from strongest (1) to weakest (7). Anomalies seen at the southwestern corner of the site are due to the sensors being too close to the railroad track. Note that anomaly location identifiers are centered in the middle of anomalies and any planned excavations should not be initiated this point.

It is critical to note that a comparison of the “Draft” magnetic data plotted and presented to OSC Lam immediately after the initial survey in June differs considerably from the present results in this report. Post processing and analysis of the data found external micro bursts of some electrical field or interference was spiking the magnetic data and had to be removed. These spikes would appear as having very high point source anomalies and were not valid. Any “Draft” magnetic data documentation should be replaced with the current data in this report to eliminate any confusion with the erroneous first “Draft” interpretation.

A large transmission tower exists within 110 feet of the site and the likelihood of interference to magnetic data is very high and probably the source of data spikes. Since the magnetometer uses a passive detection method and does not emit any energy to detect anomalies, only measuring local disturbances in the magnetic field, it is very susceptible to electrical transmission fields.

Since all other instruments used at this site do produce their own electromagnetic fields, as part of their detection processes, the chances are greater that external transmissions fields will have much less of an influence on their data.

### **Broadband Electromagnetic Data**

*The following should be considered about how broadband EM data is interpreted. In order to match various frequencies to specific depths, an estimate is made by the operator as to how efficient signal propagation is within the soil matrix. An incorrect estimate will change the estimated depths. Although specific depth intervals are mentioned for each frequency, bear in mind that this is the focused frequency interval, influences such as other anomalies, will also factor into the readings from depths just above and below the focused interval. Other complications occur when high concentrations of metal will interfere with all EM data.*

*Figures 6 thru 8. Plan View Contour Maps, Broadband In-Phase Mode (Metal Detection) EM Surveys:*

These three maps illustrate the metal detection mode of the EM survey and have frequencies of 35,010; 13,590 and 3,930 (all in Hz).

The 35,010 Hz frequency represents an approximate zone from the surface to about 7 feet below ground level (BGL). Six anomalies can be seen in the data with anomalies 1, 2 and 3

being the strongest. Anomaly 5 appears to have a slight linear trend which could be due to a subsurface pipe or subsurface preferential pathway. Anomaly 6 may also have a linear trend, although less subtle, but not enough data exists to confirm this interpretation.

The 13,590 Hz frequency approximately represents the 8' to 15' interval BGL. It is obvious that smaller anomalies numbered 5 and 6 from Figure 6 are now gone indicating that the anomalies do not extend to these depths. However, although anomalies 1, 2 and 3 are still visible at this interval it does not necessarily mean that they can be interpreted as being at these depths since a large metallic anomaly, as these could be, can reflect and essentially "block" the signal from penetrating further but still affect this interval.

The lowest level investigated at 3,930 Hz representing a depth near 22' to 25' still indicates anomalies at numbers 1, 2 and 3. Once again the likelihood is high that a near surface metal anomaly is blocking and influencing the data. Note that the In-Phase mode will respond to any metal (ferrous or non-ferrous).

*Figures 9 thru 11. Plan View Contour Maps, Broadband Quadrature Phase Mode (Soil Conductivity) EM Surveys:*

These three maps are illustrative of changes in ground conductivity from frequencies of 35,010; 13,590 and 3,930 (all in Hz).

The near surface interval from the 35,010 Hz frequency represents an interval approximately from 0 to 7 feet BGL and six anomalous areas can be seen in Figure 9. If anomalies 1, 2 and 3 are high concentrations of metal, it is not uncommon that the signature from the In-Phase mode will overwhelm the quadrature phase leaving a false positive, which is one interpretation for this situation. For anomalies 4 and 5 it is noted that the building just to the southeast of these anomalies had recently burned and subsequent fire suppression water could have a bearing on the water mixing with other substances creating a higher conductivities, or following preferential pathways in the area to affect anomalies.

Figure 10 representing a depth of investigation interval near 8' to 15' still illustrates significant anomalies at locations 1 and 2 when compared to Figure 9. A comparison of Figure 9, anomaly 5 to Figure 10, anomaly 3, which occupies the same location, can still be seen and the anomaly may extend beyond 7 feet BGL. Note that anomaly number 4 in Figure 9 does not exist at the same location in Figure 10 and is interpreted as being a shallow anomaly between 0 to 7 feet BGL.

The lowest investigative interval near 22 to 25 feet is illustrated in Figure 11. Note that anomalies numbers 1 and 2 as seen throughout Figures 9 and 10 still exist, which is suggestive of an In-Phase metallic anomaly interfering with the quadrature phase.

*Figure 12. Plan View Contour Map, High Sensitivity Metal Detection Mode (Ferrous & Non-Ferrous Metal Detection) Survey:*

This survey was limited to the central portion of the site surrounding the highest anomalous areas at the site. Six anomalies can be seen with anomaly number 1 occupying the same area where the larger EM anomalies are seen in figures 6 thru 11.

Anomaly numbers 2 and 3 are in close proximity to anomaly 1, but may not be directly adjoining since each seem to have lower anomalous values. The number 3 anomaly has less of a signature than others in the area, but has the same location as other anomalies seen at the same location in Figures 5, 6 and 9 suggesting it is a shallow near surface metallic anomaly. Anomalies 4 and 5 have extremely high values indicative of a point source metal anomaly at or just below the surface.

Anomaly number 6 appears to be an isolated metal anomaly that could continue further west but cannot be confirmed due to a lack of data.

## **Conclusions**

Anomalies seen in Figures 6 thru 12 just east and south of the hatched area at -86.2208411, 39.7235391 appear to be significant, but when compared to the magnetic data in Figure 5 do not appear to be that significant. This suggests that the amount of ferrous mass at this location is low, but enough metal exists in a cohesive mass in this area to reflect a strong anomaly to the EM tools and is probably shallow.

Anomalies that lie close to hatched areas where debris are located are most likely due to the sensors coming too close to these debris and should be ignored, except anomaly 3 in Figure 5, which is probably not associated with the debris.

The anomalies seen in Figures 6 (anomaly 5 & 6), 9 (anomaly 4 & 5) and 10 (anomaly 3) which lie northwest of the burned-out structure cannot be determined if it is singular or a combination of metallic and conductivities differing from background.

In general the more significant anomalous areas of concern are noted in Figures 5 through 12 with their center-most location indicated by their latitude and longitude in decimal degrees. Other smaller anomalies do exist, but are most likely due to metal scrap strewn within the site area.

Of the three mounded areas the largest one had a pathway cut through the significant vegetation at its center and traversed with the broadband EM tool. Data was only slightly higher than background.

## **DISCLAIMERS & WARNINGS:**

**Geophysical instruments used at this site were not configured to locate all utility lines, although they could be influenced by such lines under certain conditions. It is critical *not to use this data* for utility line location since methods applied were only directed towards larger sub-surface targets, other than utility lines.**

**It is strongly recommended that before any intrusive sampling, test pits, or other excavation methods are applied at the site, that *all* utility services be contacted to verify that none of the anomalies are the result of or near any buried utilities. Note that not all buried utilities and pipelines are members of local utility location services.**

**If any excavations are attempted near anomalies mentioned in this report, it is recommended that initial ground breaking be conducted outside the anomalous area and slowly moved towards the anomaly. This procedure will reduce the probability of damaging, puncturing, or disturbing the unknown source of the anomaly.**

**Note that data were collected on intervals that, in general, did not overlap so the possibility exists that not all areas could be evaluated between each line. Such a distinction has to be evaluated to consider the size of the suspected target and the amount of time available for the survey.**

**It is extremely difficult to discriminate specific sources of targets (metal scrap, etc.) based on geophysical responses since no one example can adequately describe each possible configuration. In addition, any distortions or deteriorations of buried objects will also affect anomaly signatures.**

**Disclosure of product names in this report is not an implied or direct recommendation of the equipment used for this survey. It is only provided for its scientific value related to a specific method or tool used.**

Attachments: Figures 1 thru 12

Appendix A: Weather Data

Appendix B: Magnetometer Sensor Orientation

Appendix C: Site Photographs



Hoosier Wood Preservers Site - 3605 S. Farnsworth Street  
Indianapolis, Indiana  
June 15-16, 2015



Base Map - Plan View



Figure 1





Hoosier Wood Preservers Site - 3605 S. Farnsworth Street  
Indianapolis, Indiana  
June 15-16, 2015

### Base Map - Gradient Magnetometer Survey Traverses Plan View

Red Lines Indicate Data Collection Traverses

Traverses Recorded by DGPS Using OmniStar Corrections;  $\pm 3$  Feet Accuracy



Figure 2





Hoosier Wood Preservers Site - 3605 S. Farnsworth Street  
Indianapolis, Indiana  
June 15-16, 2015

## GEM-2 Broadband Electromagnetic Survey Traverses Plan View

Quadrature and In-Phase Data

Red Lines Indicate Data Collection Traverses

Traverses Recorded by DGPS Using WAAS Corrections;  $\pm 3$  Feet Accuracy

Figure 3







Hoosier Wood Preservers Site - 3605 S. Farnsworth Street  
Indianapolis, Indiana  
June 15-16, 2015

## EM61-Mk2 Electromagnetic High Sensitivity Metal Detection Survey Traverses - Plan View

Ferrous and Non-Ferrous Metal Detection

Red Lines Indicate Data Collection Traverses

Traverses Recorded by DGPS Using OmniStar Corrections;  $\leq 3$  Feet Accuracy

Figure 4





**Hoosier Wood Preservers Site  
3605 S. Farnsworth Street  
Indianapolis, Indiana  
June 15-16, 2015**

**Gradient Magnetometer Data  
Plan View**

Ferrous Metal Detection Data

Contour Interval = 200 Gammas Per Meter

Blue Contour Lines = Positive Values  
Red Contour Lines = Negative Values  
Tan Lines = Traverse Paths

Hatched areas indicate ferrous surface metal. Anomalies very near hatched areas may be influenced by surface metal.

Traverses Recorded by  
Trimble AgGPS with OmniStar DGPS Correction  
± 3 Feet Accuracy

**Magnetic Anomaly Locations**

- 1) -86.22063, 39.72356
- 2) -86.22071, 39.72404
- 3) -86.22078, 39.72363
- 4) -86.22164, 39.72235
- 5) -86.22122, 39.72327
- 6) -86.22073, 39.72353
- 7) -86.22084, 39.72338

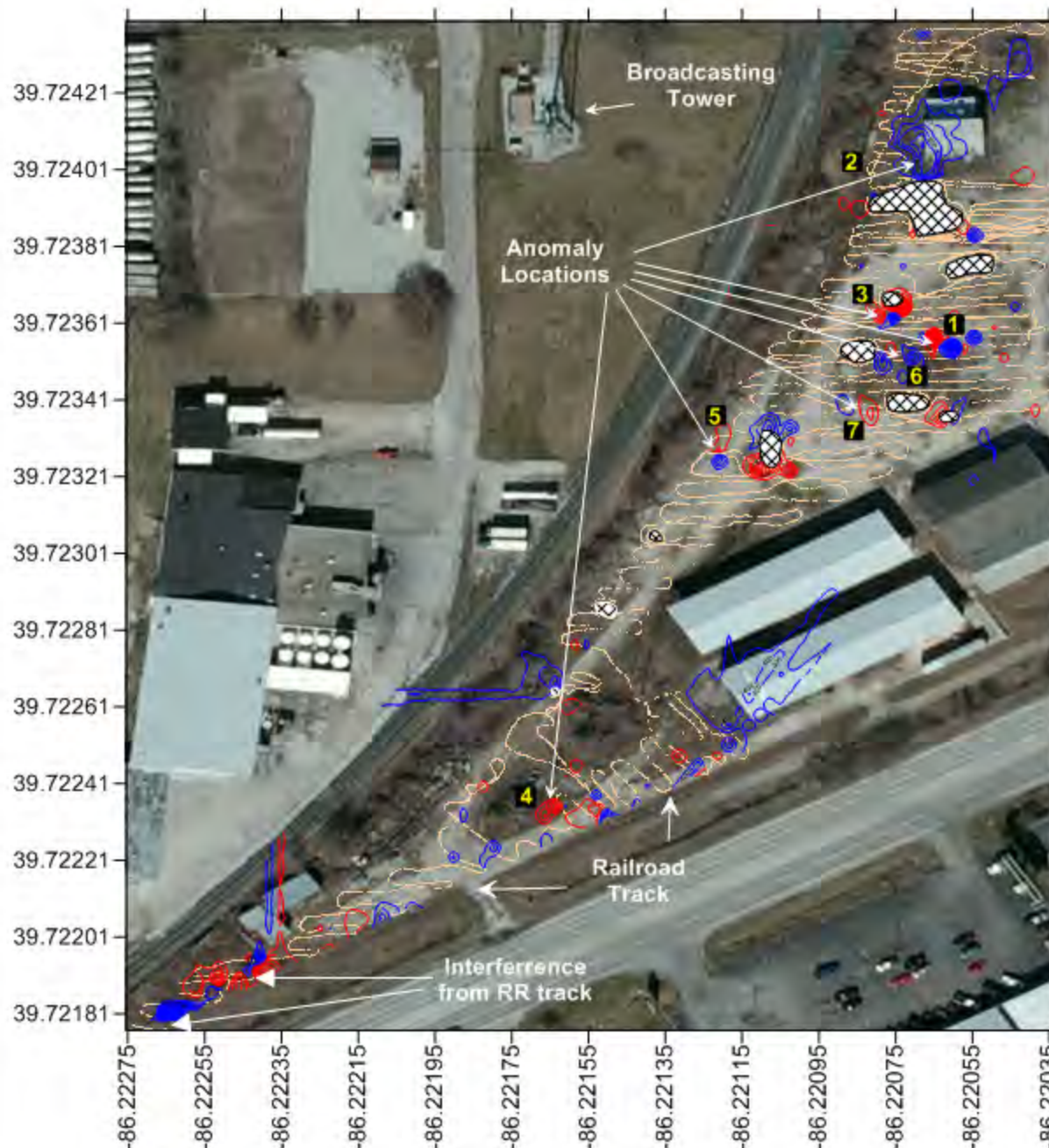
Approximate Scale in Feet  
0 70 140 210 280



Region 5  
Chicago, Illinois



Figure 5



Do Not Photocopy in Black and White - This is a Color Document

**Hoosier Wood Preservers Site  
3605 S. Farnsworth Street  
Indianapolis, Indiana  
June 15-16, 2015**

Electromagnetic Survey  
35,010 Hz In-Phase  
(Metal Detection Data  
Ferrous & Non Ferrous)  
Plan View

Black Lines = Anomalous Areas

Red Lines = Traverse Paths

Contour Interval = 450 ppm

 Known Surface Interferences

Traverses Recorded by GPS  
DGPS Capability Using WAAS Correction  
≤ 3 Feet Accuracy

Estimated Depth of Investigation  
for this Frequency = 0' to 7' BGL  
Shallower Anomalies May Block Transmissions  
to Lower Depths

**In-Phase Anomaly Locations**

- 1) -86.22072, 39.72353
- 2) -86.22080, 39.72344
- 3) -86.22065, 39.72357
- 4) -86.22072, 39.72408
- 5) -86.22055, 39.72342
- 6) -86.22074, 39.72327

Approximate Scale in Feet



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Figure 6




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**Hoosier Wood Preservers Site  
3605 S. Farnsworth Street  
Indianapolis, Indiana  
June 15-16, 2015**

Electromagnetic Survey  
13,590 Hz In-Phase  
(Metal Detection Data)  
Plan View

Red Lines = Traverse Paths  
Black Lines = Contour Intervals  
Contour Interval = 1000 ppm

 Known Surface Interferences

Estimated Depth of Investigation  
for this Frequency = 8' to 15' BGL  
Shallower Anomalies May Block Transmissions  
to Lower Depths

Traverses Recorded by GPS  
DGPS Capability Using WAAS Correction  
± 3 Feet Accuracy

In-Phase Anomaly Locations

- 1) -86.22073, 39.72353
- 2) -86.22080, 39.72345
- 3) -86.22072, 39.72407

Approximate Scale in Feet  
0 65 130 195 260



Region 5  
Chicago, Illinois



Figure 7



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# **Hoosier Wood Preservers Site** **3605 S. Farnsworth Street** **Indianapolis, Indiana** **June 15-16, 2015**

Electromagnetic Survey  
 3,930 Hz In-Phase  
 (Metal Detection Data  
 Ferrous & Non Ferrous)  
 Plan View

Red Lines = Traverse Paths  
 Black Lines = Contour Intervals  
 Contour Interval = 1000 ppm

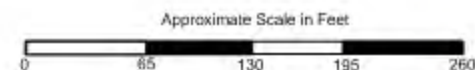
 Known Surface Interferences

Estimated Depth of Investigation  
 for this Frequency = 22' to 25' BGL  
 Shallower Anomalies May Block Transmissions  
 to Lower Depths

Traverses Recorded by GPS  
 DGPS Capability Using WAAS Correction  
 ≤ 3 Feet Accuracy

## **In-Phase Anomaly Locations**

- 1) -86.22072, 39.72353
- 2) -86.22080, 39.72345
- 3) -86.22073, 39.72407



Region 5  
 Chicago, Illinois



Figure 8




**Hoosier Wood Preservers Site  
3605 S. Farnsworth Street  
Indianapolis, Indiana  
June 15-16, 2015**

Electromagnetic Survey  
35,010 Hz Quadrature Phase  
(Conductivity Data)  
Plan View

Red Lines are Traverse Paths  
Black Lines = Contour Intervals  
Contour interval = 700 ppm

Note:  
Significant Inphase Anomalies May Influence  
Quad Phase Data

 Known Surface Interferences

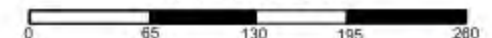
Traverses Recorded by GPS  
DGPS Capability Using WAAS Correction  
≤ 3 Feet Accuracy

Estimated Depth of Investigation  
for this Frequency = 0' to 7' BGL  
Shallower Anomalies May Block Transmissions  
to Lower Depths

Conductivity Anomaly Locations

- 1) -86.22073, 39.72353
- 2) -86.22066, 39.72357
- 3) -86.22081, 39.72344
- 4) -86.22055, 39.72342
- 5) -86.22077, 39.72333
- 6) -86.22091, 39.72369

Approximate Scale in Feet



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Chicago, Illinois



Figure 9



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# **Hoosier Wood Preservers Site** **3605 S. Farnsworth Street** **Indianapolis, Indiana** **June 15-16, 2015**

Electromagnetic Survey  
 13,590 Hz Quadrature Phase  
 (Conductivity Data)  
 Plan View

Red Lines = Traverse Paths  
 Black Lines = Contour Intervals  
 Contour Interval = 400 ppm

Note:  
 Significant Inphase Anomalies May Influence  
 Quad Phase Data

 Known Surface Interferences

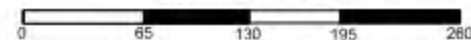
Estimated Depth of Investigation  
 for this Frequency = 8' to 15' BGL  
 Shallower Anomalies May Block Transmissions  
 to Lower Depths

Traverses Recorded by GPS  
 DGPS Capability Using WAAS Correction  
 ±3 Feet Accuracy

Conductivity Anomaly Locations

- 1) -86.22073, 39.72353
- 2) -86.22081, 39.72344
- 3) -86.22077, 39.72332
- 4) -86.22092, 39.72369

Approximate Scale in Feet



Region 5  
 Chicago, Illinois



Figure 10



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# **Hoosier Wood Preservers Site** **3605 S. Farnsworth Street** **Indianapolis, Indiana** **June 15-16, 2015**

Electromagnetic Survey  
 3,930 Hz Quadrature Phase  
 (Conductivity Data)  
 Plan View

Red Lines = Traverse Paths  
 Black Lines = Contour Intervals  
 Contour Interval = 400 ppm

Note:  
 Significant Inphase Anomalies May Influence  
 Quad Phase Data

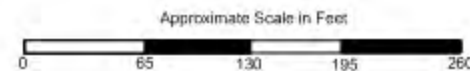
 Known Surface Interferences

Estimated Depth of Investigation  
 for this Frequency = 22' to 25' BGL  
 Shallower Anomalies May Block Transmissions  
 to Lower Depths

Traverses Recorded by GPS  
 DGPS Capability Using WAAS Correction  
 ≤3 Feet Accuracy

Conductivity Anomaly Locations

- 1) -86.22073, 39.72353
- 2) -86.22081, 39.72344

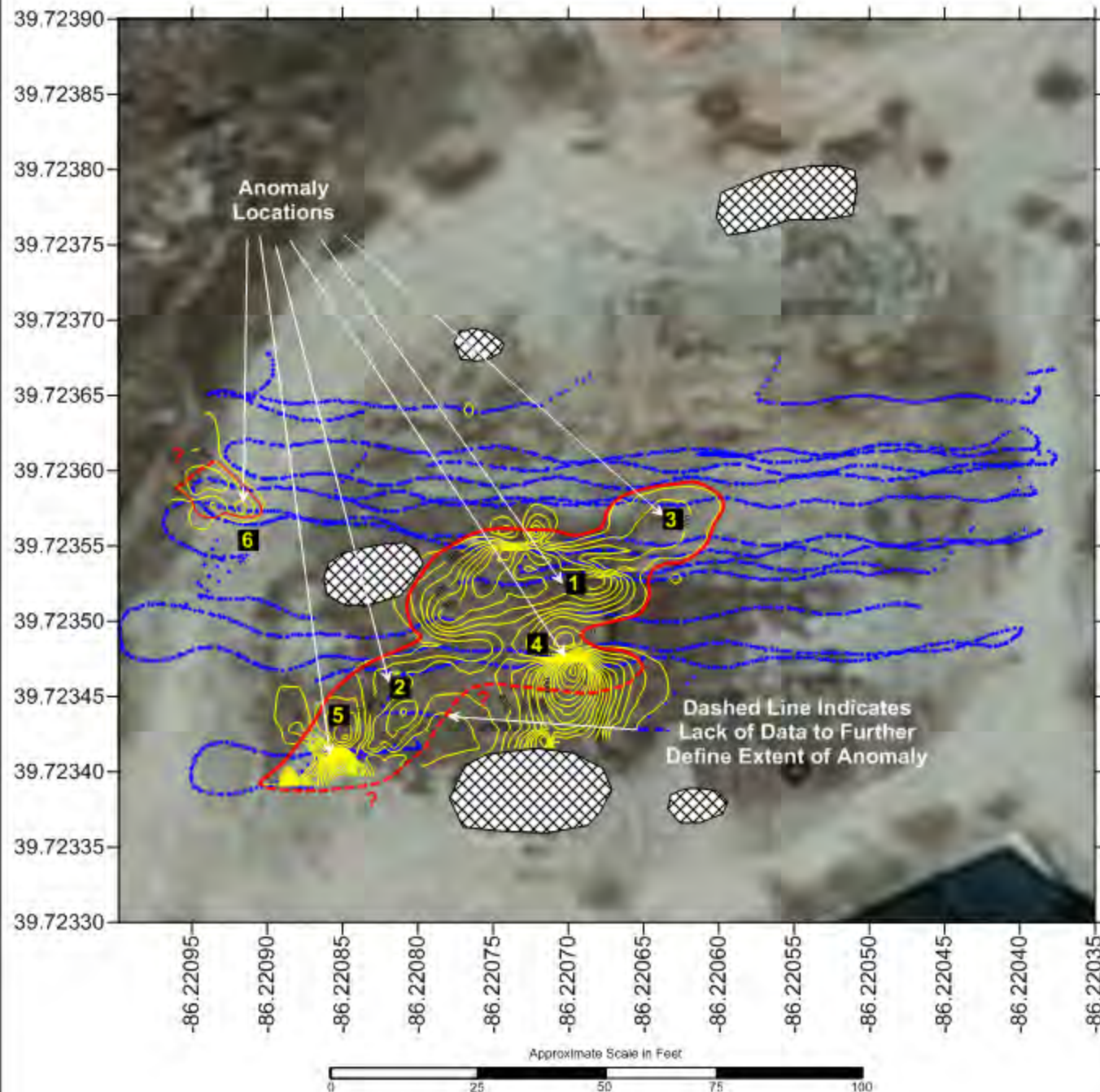


Region 5  
 Chicago, Illinois



Figure 11





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# **Hoosier Wood Preservers Site** **3605 S. Farnsworth Street** **Indianapolis, Indiana** **June 15-16, 2015**

Electromagnetic Survey  
 High Sensitivity Metal Detector  
 (Ferrous & Non-Ferrous Metal)  
 Plan View

Blue Lines = Traverse Paths  
 Yellow Lines = Contour Intervals  
 Red Lines = Anomalous Areas  
 Contour Interval = 50 ppt

 Known Surface Interferences

Traverses Recorded by GPS  
 DGPS Capability Using OmniStar Correction  
 ≤ 3 Feet Accuracy

Estimated Depth of Investigation  
 0' to 13' BGL  
 Shallower Anomalies May Block Transmissions  
 to Lower Depths

## **Metal Detector Anomaly Locations**

- 1) -86.22071, 39.72353
- 2) -86.22082, 39.72346
- 3) -86.22064, 39.72357
- 4) -86.22070, 39.72348
- 5) -86.22086, 39.72341
- 6) -86.22092, 39.72358



Region 5  
 Chicago, Illinois



Figure 12

## Appendix A - Weather History

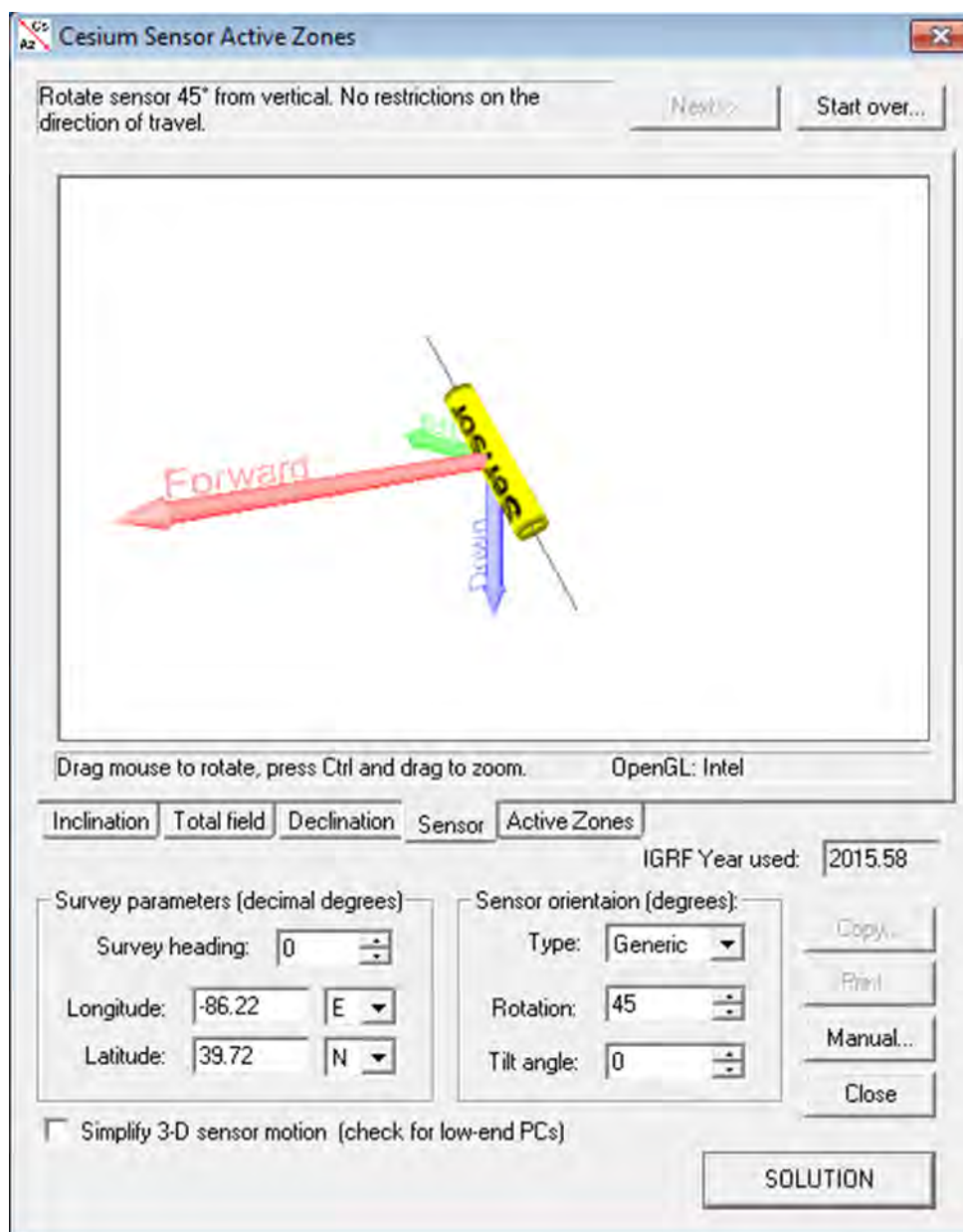
Hourly Weather History & Observations - June 15, 2015 - Indianapolis, Indiana										
Time (EDT)	Temp.	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
12:54 AM	72.0 °F	87%	30.01 in	10.0 mi	SW	8.1 mph	-	N/A		Overcast
1:54 AM	72.0 °F	91%	30.01 in	10.0 mi	SW	8.1 mph	-	N/A		Mostly Cloudy
2:54 AM	70.0 °F	93%	30.00 in	10.0 mi	SW	4.6 mph	-	N/A		Mostly Cloudy
3:54 AM	70.0 °F	93%	29.98 in	10.0 mi	SSW	3.5 mph	-	0.00 in	Rain	Light Rain
4:49 AM	71.6 °F	94%	30.01 in	2.5 mi	WSW	19.6 mph	27.6 mph	0.07 in	Rain	Light Rain
4:54 AM	71.6 °F	94%	30.00 in	2.5 mi	SW	16.1 mph	27.6 mph	N/A	Rain	Light Rain
5:02 AM	72.0 °F	91%	30.00 in	4.0 mi	SW	12.7 mph	-	0.10 in	Rain	Light Rain
5:10 AM	72.0 °F	91%	30.01 in	6.0 mi	SW	13.8 mph	-	0.12 in	Rain , Thunderstorm	Light Thunderstorms and Rain
5:19 AM	71.1 °F	90%	30.00 in	2.0 mi	SW	13.8 mph	-	0.16 in	Rain , Thunderstorm	Thunderstorms and Rain
5:32 AM	71.1 °F	90%	30.01 in	4.0 mi	SW	15.0 mph	-	0.25 in	Rain , Thunderstorm	Light Thunderstorms and Rain
5:46 AM	71.1 °F	90%	30.01 in	8.0 mi	SW	12.7 mph	-	0.29 in	Rain	Light Rain
5:54 AM	72.0 °F	91%	29.99 in	4.0 mi	SW	12.7 mph	-	0.30 in	Rain	Light Rain
6:35 AM	71.1 °F	93%	30.02 in	6.0 mi	SSW	3.5 mph	-	0.06 in	Rain	Light Rain
6:54 AM	72.0 °F	91%	30.01 in	9.0 mi	NNW	5.8 mph	-	0.08 in	Rain	Light Rain
7:54 AM	72.0 °F	91%	30.03 in	10.0 mi	South	9.2 mph	-	0.00 in		Mostly Cloudy
8:54 AM	73.9 °F	87%	30.03 in	10.0 mi	SSW	9.2 mph	-	0.00 in		Mostly Cloudy
9:54 AM	77.0 °F	82%	30.02 in	10.0 mi	WSW	10.4 mph	-	N/A		Mostly Cloudy
10:34 AM	78.1 °F	79%	30.05 in	10.0 mi	SW	15.0 mph	-	N/A		Mostly Cloudy
10:52 AM	80.6 °F	74%	30.04 in	10.0 mi	SW	12.7 mph	-	N/A		Mostly Cloudy
10:54 AM	80.1 °F	74%	30.02 in	10.0 mi	WSW	16.1 mph	-	N/A		Mostly Cloudy
11:54 AM	82.0 °F	69%	30.01 in	10.0 mi	SW	13.8 mph	-	N/A		Mostly Cloudy
12:54 PM	84.0 °F	63%	30.00 in	10.0 mi	SW	20.7 mph	-	N/A		Mostly Cloudy
1:54 PM	84.0 °F	63%	29.99 in	10.0 mi	SW	18.4 mph	-	N/A		Mostly Cloudy
2:54 PM	86.0 °F	59%	29.96 in	10.0 mi	SSW	15.0 mph	25.3 mph	N/A		Mostly Cloudy
3:54 PM	86.0 °F	59%	29.95 in	10.0 mi	SW	21.9 mph	29.9 mph	N/A		Mostly Cloudy
4:54 PM	87.8 °F	55%	29.95 in	10.0 mi	SSW	19.6 mph	28.8 mph	N/A		Mostly Cloudy
5:54 PM	84.9 °F	59%	29.92 in	10.0 mi	SW	16.1 mph	25.3 mph	N/A		Mostly Cloudy
6:54 PM	84.9 °F	59%	29.91 in	10.0 mi	SW	17.3 mph	-	N/A		Mostly Cloudy
7:54 PM	84.0 °F	61%	29.92 in	10.0 mi	SSW	16.1 mph	-	N/A		Mostly Cloudy
8:54 PM	81.0 °F	67%	29.92 in	10.0 mi	SW	11.5 mph	-	N/A		Mostly Cloudy
9:54 PM	80.1 °F	69%	29.93 in	10.0 mi	SSW	15.0 mph	-	N/A		Mostly Cloudy
10:54 PM	80.1 °F	69%	29.95 in	10.0 mi	SW	16.1 mph	-	N/A		Mostly Cloudy
11:54 PM	75.9 °F	79%	29.96 in	8.0 mi	WSW	24.2 mph	39.1 mph	0.00 in	Rain	Light Rain

## Appendix A (continued) - Weather History

Hourly Weather History & Observations - June 16, 2015 - Indianapolis, Indiana										
Time (EDT)	Temp.	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
12:02 AM	73.0 °F	84%	29.99 in	9.0 mi	WSW	20.7 mph	-	0.01 in	Rain , Thunder storm	Light Thunderstorms and Rain
12:54 AM	72.0 °F	91%	29.99 in	10.0 mi	WSW	9.2 mph	-	0.01 in		Overcast
1:54 AM	73.0 °F	84%	30.00 in	2.5 mi	WNW	16.1 mph	-	0.02 in	Rain	Light Rain
1:57 AM	72.0 °F	87%	30.01 in	1.8 mi	WNW	19.6 mph	-	0.04 in	Rain	Light Rain
2:03 AM	71.1 °F	90%	30.01 in	2.0 mi	WNW	15.0 mph	25.3 mph	0.24 in	Rain	Light Rain
2:08 AM	71.1 °F	90%	30.00 in	3.0 mi	WNW	6.9 mph	19.6 mph	0.32 in	Rain	Light Rain
2:10 AM	71.1 °F	90%	30.00 in	7.0 mi	WNW	9.2 mph	19.6 mph	0.34 in	Rain , Thunder storm	Light Thunderstorms and Rain
2:31 AM	71.1 °F	90%	30.00 in	10.0 mi	West	6.9 mph	-	0.35 in	Rain	Light Rain
2:54 AM	71.1 °F	90%	29.97 in	10.0 mi	West	12.7 mph	-	0.36 in	Rain	Light Rain
3:09 AM	71.1 °F	90%	29.99 in	10.0 mi	WSW	8.1 mph	-	0.00 in	Rain , Thunder storm	Light Thunderstorms and Rain
3:34 AM	71.1 °F	93%	30.00 in	8.0 mi	West	6.9 mph	-	0.09 in	Rain , Thunder storm	Light Thunderstorms and Rain
3:49 AM	71.6 °F	94%	29.99 in	10.0 mi	WSW	6.9 mph	-	0.10 in	Rain , Thunder storm	Light Thunderstorms and Rain
3:54 AM	71.1 °F	93%	29.97 in	10.0 mi	SW	6.9 mph	-	0.10 in	Rain , Thunder storm	Light Thunderstorms and Rain
4:00 AM	71.1 °F	93%	29.98 in	10.0 mi	SSW	6.9 mph	-	0.00 in	Rain	Light Rain
4:22 AM	71.1 °F	90%	29.98 in	10.0 mi	SSW	9.2 mph	-	0.00 in		Overcast
4:27 AM	71.1 °F	90%	29.98 in	10.0 mi	SSW	9.2 mph	-	0.00 in		Overcast
4:34 AM	71.1 °F	90%	29.99 in	10.0 mi	SSW	6.9 mph	-	0.00 in		Overcast
4:54 AM	71.6 °F	88%	30.00 in	10.0 mi	SW	5.8 mph	-	N/A		Overcast
5:41 AM	72.0 °F	91%	30.01 in	10.0 mi	SW	8.1 mph	-	N/A		Overcast
5:54 AM	72.0 °F	91%	29.99 in	9.0 mi	WSW	8.1 mph	-	N/A		Overcast
6:01 AM	72.0 °F	91%	30.01 in	9.0 mi	West	6.9 mph	-	0.00 in	Rain	Light Rain
6:28 AM	71.1 °F	93%	30.02 in	10.0 mi	West	6.9 mph	-	0.02 in		Overcast
6:54 AM	72.0 °F	91%	30.01 in	10.0 mi	WSW	6.9 mph	-	0.02 in		Overcast
7:52 AM	73.4 °F	88%	30.04 in	10.0 mi	West	6.9 mph	-	N/A		Mostly Cloudy
7:54 AM	73.9 °F	87%	30.02 in	10.0 mi	West	8.1 mph	-	N/A		Mostly Cloudy
8:10 AM	73.0 °F	90%	30.04 in	10.0 mi	WNW	8.1 mph	-	N/A		Overcast
8:54 AM	73.9 °F	85%	30.05 in	10.0 mi	WNW	9.2 mph	-	N/A		Mostly Cloudy
9:08 AM	75.0 °F	82%	30.07 in	10.0 mi	NW	8.1 mph	-	N/A		Mostly Cloudy
9:54 AM	75.9 °F	79%	30.06 in	10.0 mi	West	11.5 mph	-	N/A		Mostly Cloudy
10:54 AM	75.2 °F	78%	30.08 in	9.0 mi	NNW	10.4 mph	-	N/A		Light Drizzle
11:54 AM	75.9 °F	71%	30.08 in	10.0 mi	NW	6.9 mph	-	0.00 in		Overcast
12:51 PM	75.2 °F	73%	30.11 in	10.0 mi	NNW	8.1 mph	-	N/A		Overcast
12:54 PM	75.9 °F	74%	30.10 in	10.0 mi	NNW	9.2 mph	-	N/A		Overcast
1:25 PM	79.0 °F	69%	30.11 in	10.0 mi	WNW	9.2 mph	-	N/A		Mostly Cloudy
1:54 PM	79.0 °F	69%	30.08 in	10.0 mi	Variable	3.5 mph	-	N/A		Mostly Cloudy
2:54 PM	81.0 °F	60%	30.06 in	10.0 mi	Variable	6.9 mph	-	N/A		Mostly Cloudy
3:54 PM	82.0 °F	56%	30.04 in	10.0 mi	Variable	3.5 mph	-	N/A		Mostly Cloudy
4:54 PM	82.4 °F	58%	30.06 in	10.0 mi	NW	8.1 mph	-	N/A		Mostly Cloudy
5:54 PM	82.0 °F	56%	30.04 in	10.0 mi	NW	4.6 mph	-	N/A		Mostly Cloudy
6:54 PM	81.0 °F	58%	30.03 in	10.0 mi	NNW	5.8 mph	-	N/A		Mostly Cloudy
7:54 PM	80.1 °F	60%	30.03 in	10.0 mi	NNW	8.1 mph	-	N/A		Mostly Cloudy
8:54 PM	79.0 °F	62%	30.04 in	10.0 mi	NNW	6.9 mph	-	N/A		Mostly Cloudy
9:54 PM	78.1 °F	64%	30.05 in	10.0 mi	North	6.9 mph	-	N/A		Overcast
10:54 PM	77.0 °F	69%	30.06 in	10.0 mi	NNE	6.9 mph	-	N/A		Overcast
11:54 PM	77.0 °F	66%	30.06 in	10.0 mi	NE	6.9 mph	-	N/A		Overcast

## Appendix B

### Gradient Magnetometer Orientation Guidance





# Hoosier Wood Preservers Site – June 15-16, 2015



1) EM61 & GPS Survey



2) EM61 Marking Anomalies 1



3) EM61 Marking Anomalies 2



4) EM61 Marking Anomalies 3

# Hoosier Wood Preservers Site – June 15-16, 2015



5) GEM2 & GPS Survey