

**Environmental  
Resources  
Management**

700 W. Virginia Street  
Suite 601  
Milwaukee, WI 53204  
414-289-9505  
414-289-9552 (fax)



October 28, 2016

Attn: R&R Program Associate  
Northeast Region  
Sent Via Email: DNRRRNER@wisconsin.gov

RE: Notification of Potential Release  
Former Hamilton Industries Site – No Action Required Request  
East River Street and 16<sup>th</sup> Street  
Two Rivers, WI 54241

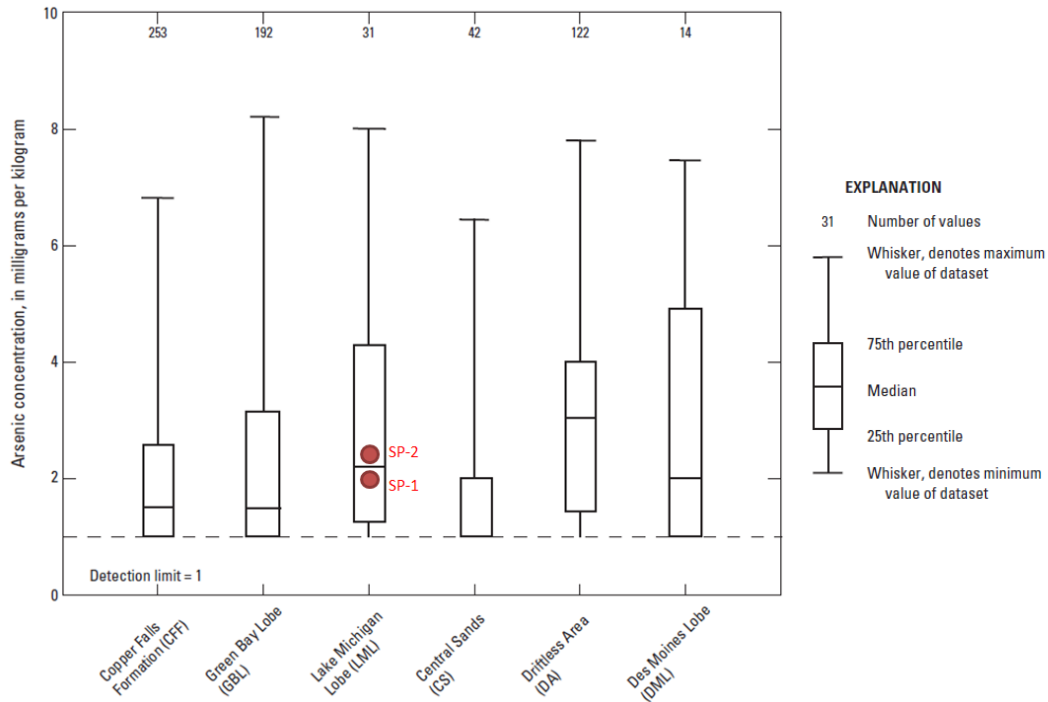
Environmental Resources Management, Inc. (ERM) was retained by Thermo Fisher Scientific to perform spilt sampling of soil samples collected for waste characterization purposes during excavation work performed by the City of Two Rivers. This work was part of a water main pipe abandonment and repair within the utility easement at the former Hamilton Industries facility in Two Rivers, Wisconsin.

The City of Two Rivers performed two excavations as part of a water main repair. The locations of the excavations are shown on Figure 1. The first excavation failed to locate the water main to be abandoned and required installation of a second excavation that successfully located the water main. Excavated soils were segregated from each excavation and isolated on plastic tarps. One split soil sample was collected from each pile (SP-1 and SP-2) and submitted to Pace Analytical of Green Bay, Wisconsin for analysis of Resource Conservation and Recovery Act (RCRA) metals and volatile organic compounds (VOCs). Excavated soils consisted of clayey/silty sand with some organic materials such as wood.

Sample results were compared to the Wisconsin Department of Natural Resources (WDNR) residual contaminant levels (RCLs) in accordance with NR 720, Wis. Adm. Code and background threshold values (BTVs) as presented in USGS Scientific Investigations Report 2011-5202. The results are presented on Table 1.

VOCs were not detected within the soil samples above the method detection limits. Arsenic was detected above the soil-to-groundwater RCL in samples SP-1 and SP-2, but at concentrations of 2.0 and 2.4 mg/kg, respectively. These concentrations are below the BTV for arsenic of 8.3 mg/kg and are consistent

with concentrations of arsenic observed in the Lake Michigan lobe soils as shown below.



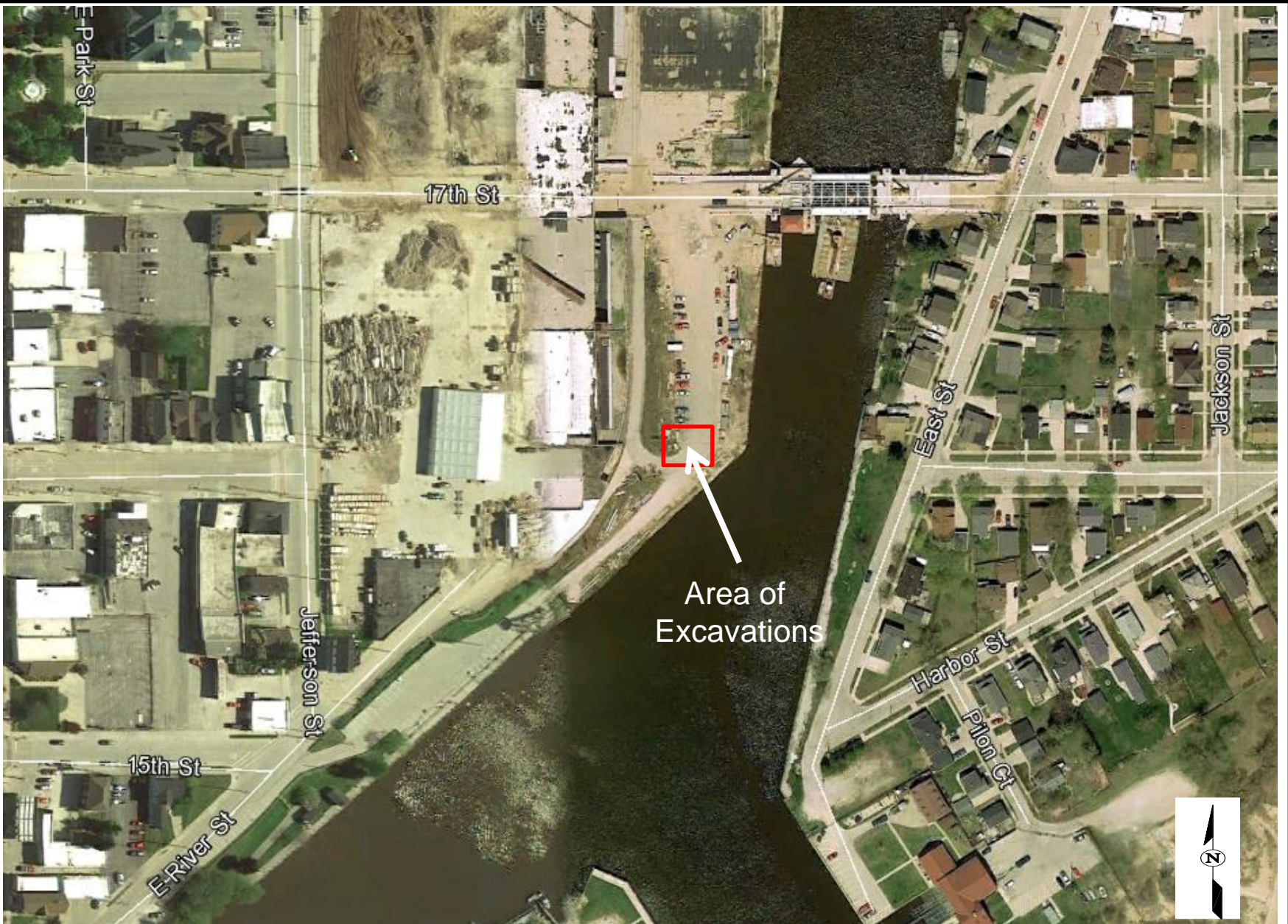
Concentrations of cadmium (0.79 mg/kg) and lead (42.7 mg/kg) were also detected in SP-2 at concentrations that exceeded the soil-to-groundwater RCL, but again are below the BTVs (1.07 mg/kg and 51.6 mg/kg, respectively) for both of these metals.

These sample results were obtained from split samples conducted during work by the City of Two Rivers in the utility easement. On behalf of Thermo Fisher Scientific, ERM is providing notification to the WDNR for concentrations of arsenic, cadmium and lead that exceed the soil-to-groundwater RCLs, but is requesting that no action be required because these concentrations are below the BTVs for these metals, and there is no visual or other indication of a release.

Should you have any questions or need additional assistance from ERM please feel free to contact me at (414) 289-9505.

Sincerely,

David de Courcy-Bower  
 Project Manager  
 enclosures



Area of Excavations



Soil Excavation Area  
Former Hamilton Industries Facility  
1316 18<sup>th</sup> Street  
Two Rivers, Wisconsin

Figure  
**1**

**TABLE 1**  
**SOIL PILE ANALYTICAL RESULTS**  
**FORMER HAMILTON INDUSTRIES SITE, TWO RIVERS, WI**

PARAMETER	Non-Carcinogenic RCL	Carcinogenic RCL	Not-to-Exceed DC RCL	DC Basis	Soil-GW Pathway*	BTV	SP-1		SP-2	
							RESULT		RESULT	
<b>Metals</b>										
Arsenic	34.3	0.613	0.613	ca	0.584	8.3	<b>2.0</b>	J	<b>2.4</b>	J
Barium	15300	NE	15300	nc	164.8	364	<b>20.8</b>		<b>85.6</b>	
Cadmium	70	2110	70	nc	0.752	1.07	<0.14		<b>0.79</b>	
Chromium	NE	NE	NE	NE	360,000	43.5	<b>8.9</b>		<b>19.4</b>	
Lead	NE	NE	400	nc	27	51.6	<b>17.7</b>		<b>42.7</b>	
Selenium	391	NE	391	nc	0.52	NE	<1.2		<1.3	
Silver	391	NE	391	nc	0.85	NE	<0.37		<0.39	
Mercury	16.9	NE	3.13	Csat	0.208	NE	<0.039		<b>0.11</b>	J
<b>Volatile Organic Compounds (VOCs)</b>										
VOCs	NA	NA	NA	NA	NA	NA	ND		ND	

**Note:**

Metals analyzed by EPA Method 6010. Mercury analyzed by EPA Method 7471.  
VOCs analyzed by EPA Method 8260.  
Units are milligrams per kilogram (mg/kg).

**Key:**

J = concentration between detection limit and limit of quantitation.  
NA = Not applicable.  
NE = Not established.  
Csat = Concentration at saturation.  
DC = Non-industrial direct contact  
DC Basis: ca = carcinogenic, nc = noncarcinogenic.  
RCL= Residual contaminant level  
BTV= Background Threshold Value as presented in USGS Scientific Investigations Report 2011–5202  
Bold= detected above detection limits  
Bold Box = Exceedance of Established RCL, Note, in some cases detection limits were above RCLs.  
\* Soil to Groundwater Pathway assuming a dilution factor of 2.



## Notification For Hazardous Substance Discharge (Non-Emergency Only)

**Emergency Discharges / Spills should be reported via the 24-Hour Hotline: 1-800-943-0003**

**Notice: Hazardous substance discharges must be reported immediately** according to s. 292.11 Wis. Stats. Non-emergency hazardous substance discharges may be reported by telefaxing or e-mailing a completed report to the Department, or calling or visiting a Department office in person. If you choose to notify the Department by telefax or by email, you should use this form to be sure that all necessary information is included. However, use of this form is not mandatory. Under s. 292.99, Wis. Stats., the penalty for violating the reporting requirements of ch. 292 Wis. Stats., shall be no less than \$10 nor more than \$5000 for each violation. Each day of continued violation is a separate offense. It is not the Department's intention to use any personally identifiable information from this form for any purpose other than program administration. However, information submitted on this form may also be made available to requesters under Wisconsin's Open Records Law (ss. 19.31 – 19.39, Wis. Stats.).

Confirmatory laboratory data should be included with this form, to assist the DNR in processing this Hazardous Substance Release Notification.

Complete this form. **TYPE or PRINT LEGIBLY.** NOTIFY appropriate DNR region (see next page) **IMMEDIATELY** upon discovery of a potential release from (check one):

- Underground Petroleum Storage Tank System (additional information may be required for Item 6 below)
- Aboveground Petroleum Storage Tank System
- Dry Cleaner Facility
- Other - Describe: Soil sample collected during excavation of water main

ATTN DNR: **R & R Program Associate**

Date DNR Notified: 10/25/2016

**1. Discharge Reported By**

Name Mr. Robert H. Fetter	Firm Thermo Fisher Scientific	Phone No. (include area code) (781) 622-1176
Mailing Address 81 Wyman Street, Waltham, MA 02451		Email Address robert.fetter@thermofisher.com

**2. Site Information**

Name of site at which discharge occurred. Include local name of site/business, not responsible party name, unless a residence/vacant property. Former Hamilton Industries Site

Location: Include street address, not PO Box. If no street address, describe as precisely as possible, i.e., 1/4 mile NW of CTHs 60 & 123 on E side of CTH 60. Vacated intersection of 16th Street and East River Street

Municipality: (City, Village, Township) Specify municipality in which the site is located, not mailing address/city.

Two Rivers

County: Manitowoc	Legal Description: SW 1/4 NE 1/4 Sec 1 Tn 19 Range 24 <input checked="" type="radio"/> E <input type="radio"/> W	WTM: X 714764 Y 411167
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**3. Responsible Party (RP) and/or RP Representative**

Responsible Party Name: Business or owner name that is responsible for cleanup. If more than one, list all. Attach additional pages as necessary.

Thermo Fisher Scientific

- Reported in compliance with s. 292.11(2), Wis. Stats., by a local government exempt from liability under s. 292.11(9)(e), Wis. Stats.
- For more information see <http://dnr.wi.gov/topic/Brownfields/Liability.html>.

Contact Person Name (if different) <u>Mr. Robert H. Fetter</u>	Phone Number (781) 622-1176	Email Address robert.fetter@thermofisher.com	
Mailing Address 81 Wyman Street	City Waltham	State MA	ZIP Code 02451

Property owner if Different From RP: Business or owner name that is responsible for cleanup. If more than one, list all. Attach additional pages as necessary. Same

Contact Person Name (if different) <u>Same</u>	Phone Number	Email Address	
Mailing Address	City	State	ZIP Code

**4. Hazardous Substance Information**

Identify hazardous substance discharged (check all that apply):

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> VOC's  | <input type="checkbox"/> Diesel                 | <input type="checkbox"/> PERC (Dry Cleaners)                |
| <input type="checkbox"/> PAH's  | <input type="checkbox"/> Fuel Oil               | <input type="checkbox"/> RCRA Hazardous Waste               |
| <input checked="" type="checkbox"/> Metals (specify): <u>As, Pb, Cd</u> | <input type="checkbox"/> Gasoline               | <input type="checkbox"/> Leachate                           |
| <input type="checkbox"/> Arsenic  | <input type="checkbox"/> Hydraulic Oil          | <input type="checkbox"/> Fertilizer                         |
| <input type="checkbox"/> Chromium                                       | <input type="checkbox"/> Jet Fuel               | <input type="checkbox"/> Pesticide/Herbicide/Insecticide(s) |
| <input type="checkbox"/> Cyanide  | <input type="checkbox"/> Mineral Oil            | <input type="checkbox"/> Other (specify): _____             |
| <input type="checkbox"/> Lead   | <input type="checkbox"/> Waste Oil              | <input type="checkbox"/> Unknown                            |
| <input type="checkbox"/> PCB's  | <input type="checkbox"/> Petroleum-Unknown Type |   |

**5. Impacts to the Environment Information**

Enter "K" for known/confirmed or "P" for potential for all that apply.

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> Air Contamination                            | <input type="checkbox"/> Sanitary Sewer Contamination  | <input checked="" type="checkbox"/> Soil Contamination |
| <input type="checkbox"/> Co-Contamination (Petroleum & Non-Petroleum) | <input type="checkbox"/> Contamination in Right of Way | <input type="checkbox"/> Storm Sewer                   |
| <input type="checkbox"/> Contamination Within 1 Meter of Bedrock      | <input type="checkbox"/> Fire Explosion Threat         | <input type="checkbox"/> Surface Water Contamination   |
| <input type="checkbox"/> Contaminated Private Well                    | <input type="checkbox"/> Free Product                  | <input type="checkbox"/> Within 100 ft of Private Well |
| <input type="checkbox"/> Contaminated Public Well                     | <input type="checkbox"/> Groundwater Contamination     | <input type="checkbox"/> Within 1000 ft of Public Well |
| <input type="checkbox"/> Contamination in Fractured Bedrock           | <input type="checkbox"/> Off-Site Contamination        |  |
|   | <input type="checkbox"/> Other (specify): _____        |  |

Contamination was discovered as a result of:

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Tank closure assessment | <input type="checkbox"/> Site assessment | <input checked="" type="checkbox"/> Other - Describe: <u>Utility Excavation Work</u> |
| Date: <input type="text"/>                       | Date: <input type="text"/>               | Date: <input type="text" value="10/11/2016"/>  |

Lab results:  Lab results will be faxed upon receipt  Lab results are attached

Additional Comments: Include a brief description of immediate actions taken to halt the release and contain or cleanup hazardous substances that have been discharged.  
Concentrations of As, Pb, Cd detected above soil-to-groundwater RCL, but below background threshold values in excavated soils. Soils were isolated on plastic tarps pending disposal. Request WDNR require no action required as no visual evidence of release was observed.

**6. Federal Energy Act Requirements (Section 9002(d) of the Solid Waste Disposal Act (SWDA))**

For all confirmed releases from UST's occurring after 9/30/2007 please provide the following information:

- | Source  | Cause  |
|---|--|
| <input type="checkbox"/> Tank                     | <input type="checkbox"/> Spill                             |
| <input type="checkbox"/> Piping                   | <input type="checkbox"/> Overfill                          |
| <input type="checkbox"/> Dispenser                | <input type="checkbox"/> Corrosion                         |
| <input type="checkbox"/> Submersible Turbine Pump | <input type="checkbox"/> Physical or Mechanical Damage     |
| <input type="checkbox"/> Delivery Problem         | <input type="checkbox"/> Installation Problem              |
| <input type="checkbox"/> Other (specify): _____   | <input type="checkbox"/> Other (does not fit any of above) |
|   | <input type="checkbox"/> Unknown                           |

Contact information to report non-emergency releases in DNR's five regions are as follows:

- Northeast Region (FAX: 920-662-5197); Attention -- R&R Program Associate: DNRRRNER@wisconsin.gov**  
Brown, Calumet, Door, Fond du Lac (except City of Waupun - see South Central Region), Green Lake, Kewaunee, Manitowoc, Marinette, Marquette, Menominee, Oconto, Outagamie, Shawano, Sheboygan, Waupaca, Waushara, Winnebago counties
- Northern Region (FAX: 715-623-6773); Attention -- R&R Program Associate: DNRRRNOR@wisconsin.gov**  
Ashland, Barron, Bayfield, Burnett, Douglas, Forest, Florence, Iron, Langlade, Lincoln, Oneida, Polk, Price, Rusk, Sawyer, Taylor, Vilas, Washburn counties
- South Central Region (FAX: 608-273-5610); Attention -- R&R Program Associate: DNRRRSCR@wisconsin.gov**  
Columbia, Dane, Dodge, Fond du Lac (City of Waupun only), Grant, Green, Iowa, Jefferson, Lafayette, Richland, Rock, Sauk, Walworth counties
- Southeast Region (FAX: 414-263-8550); Attention -- R&R Program Associate: DNRRRSER@wisconsin.gov**  
Kenosha, Milwaukee, Ozaukee, Racine, Washington, Waukesha counties
- West Central Region (FAX: 715-839-6076); Attention -- R&R Program Associate: DNRRRWCR@wisconsin.gov**  
Adams, Buffalo, Chippewa, Clark, Crawford, Dunn, Eau Claire, Jackson, Juneau, LaCrosse, Marathon, Monroe, Pepin, Pierce, Portage, St. Croix, Trempealeau, Vernon, Wood counties

October 18, 2016

Carl Stay  
ERM, Inc.  
700 W. Virginia Street  
Suite 601  
Milwaukee, WI 53204

RE: Project: 0363247 THERMO FISHER  
Pace Project No.: 40139898

Dear Carl Stay:

Enclosed are the analytical results for sample(s) received by the laboratory on October 11, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Dan Milewsky  
dan.milewsky@pacelabs.com  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 0363247 THERMO FISHER

Pace Project No.: 40139898

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### Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302

Florida/NELAP Certification #: E87948

Illinois Certification #: 200050

Kentucky Certification #: 82

Louisiana Certification #: 04168

Minnesota Certification #: 055-999-334

Virginia VELAP ID: 460263

North Dakota Certification #: R-150

South Carolina Certification #: 83006001

Texas Certification #: T104704529-14-1

US Dept of Agriculture #: S-76505

Virginia VELAP Certification ID: 460263

Virginia VELAP ID: 460263

Wisconsin Certification #: 405132750

Wisconsin DATCP Certification #: 105-444

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: 0363247 THERMO FISHER

Pace Project No.: 40139898

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40139898001	MANHOLE WATER	Water	10/11/16 09:30	10/11/16 14:45
40139898002	SP-1	Solid	10/11/16 11:40	10/11/16 14:45
40139898003	SP-2	Solid	10/11/16 11:45	10/11/16 14:45
40139898004	TRIP BLANK	Water	10/11/16 00:00	10/11/16 14:45

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 0363247 THERMO FISHER

Pace Project No.: 40139898

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40139898001	MANHOLE WATER	EPA 6010	DLB	7	PASI-G
		EPA 7470	AJT	1	PASI-G
		EPA 8260	LAP	64	PASI-G
40139898002	SP-1	EPA 6010	DLB	7	PASI-G
		EPA 7471	AJT	1	PASI-G
		EPA 8260	SMT	64	PASI-G
40139898003	SP-2	ASTM D2974-87	SKW	1	PASI-G
		EPA 6010	DLB	7	PASI-G
		EPA 7471	AJT	1	PASI-G
		EPA 8260	SMT	64	PASI-G
40139898004	TRIP BLANK	ASTM D2974-87	SKW	1	PASI-G
		EPA 8260	LAP	64	PASI-G

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 0363247 THERMO FISHER

Pace Project No.: 40139898

**Sample: MANHOLE WATER**      **Lab ID: 40139898001**      Collected: 10/11/16 09:30      Received: 10/11/16 14:45      Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>		Analytical Method: EPA 6010    Preparation Method: EPA 3010							
Arsenic	<8.3	ug/L	25.0	8.3	1	10/17/16 08:28	10/18/16 11:57	7440-38-2	
Barium	2.5J	ug/L	5.0	1.5	1	10/17/16 08:28	10/18/16 11:57	7440-39-3	
Cadmium	<1.3	ug/L	5.0	1.3	1	10/17/16 08:28	10/18/16 11:57	7440-43-9	
Chromium	<2.5	ug/L	10.0	2.5	1	10/17/16 08:28	10/18/16 11:57	7440-47-3	
Lead	<4.3	ug/L	13.0	4.3	1	10/17/16 08:28	10/18/16 11:57	7439-92-1	
Selenium	<16.6	ug/L	50.0	16.6	1	10/17/16 08:28	10/18/16 11:57	7782-49-2	
Silver	<3.3	ug/L	10.0	3.3	1	10/17/16 08:28	10/18/16 11:57	7440-22-4	P4
<b>7470 Mercury</b>		Analytical Method: EPA 7470    Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	10/12/16 13:15	10/13/16 11:58	7439-97-6	
<b>8260 MSV</b>		Analytical Method: EPA 8260							
Benzene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:46	71-43-2	
Bromobenzene	<0.23	ug/L	1.0	0.23	1		10/14/16 15:46	108-86-1	
Bromochloromethane	<0.34	ug/L	1.0	0.34	1		10/14/16 15:46	74-97-5	
Bromodichloromethane	<0.50	ug/L	1.0	0.50	1		10/14/16 15:46	75-27-4	
Bromoform	<0.50	ug/L	1.0	0.50	1		10/14/16 15:46	75-25-2	
Bromomethane	<2.4	ug/L	5.0	2.4	1		10/14/16 15:46	74-83-9	
n-Butylbenzene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:46	104-51-8	
sec-Butylbenzene	<2.2	ug/L	5.0	2.2	1		10/14/16 15:46	135-98-8	
tert-Butylbenzene	<0.18	ug/L	1.0	0.18	1		10/14/16 15:46	98-06-6	
Carbon tetrachloride	<0.50	ug/L	1.0	0.50	1		10/14/16 15:46	56-23-5	
Chlorobenzene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:46	108-90-7	
Chloroethane	<0.37	ug/L	1.0	0.37	1		10/14/16 15:46	75-00-3	
Chloroform	<2.5	ug/L	5.0	2.5	1		10/14/16 15:46	67-66-3	
Chloromethane	<0.50	ug/L	1.0	0.50	1		10/14/16 15:46	74-87-3	
2-Chlorotoluene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:46	95-49-8	
4-Chlorotoluene	<0.21	ug/L	1.0	0.21	1		10/14/16 15:46	106-43-4	
1,2-Dibromo-3-chloropropane	<2.2	ug/L	5.0	2.2	1		10/14/16 15:46	96-12-8	
Dibromochloromethane	<0.50	ug/L	1.0	0.50	1		10/14/16 15:46	124-48-1	
1,2-Dibromoethane (EDB)	<0.18	ug/L	1.0	0.18	1		10/14/16 15:46	106-93-4	
Dibromomethane	<0.43	ug/L	1.0	0.43	1		10/14/16 15:46	74-95-3	
1,2-Dichlorobenzene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:46	95-50-1	
1,3-Dichlorobenzene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:46	541-73-1	
1,4-Dichlorobenzene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:46	106-46-7	
Dichlorodifluoromethane	<0.22	ug/L	1.0	0.22	1		10/14/16 15:46	75-71-8	
1,1-Dichloroethane	<0.24	ug/L	1.0	0.24	1		10/14/16 15:46	75-34-3	
1,2-Dichloroethane	<0.17	ug/L	1.0	0.17	1		10/14/16 15:46	107-06-2	
1,1-Dichloroethene	<0.41	ug/L	1.0	0.41	1		10/14/16 15:46	75-35-4	
cis-1,2-Dichloroethene	<0.26	ug/L	1.0	0.26	1		10/14/16 15:46	156-59-2	
trans-1,2-Dichloroethene	<0.26	ug/L	1.0	0.26	1		10/14/16 15:46	156-60-5	
1,2-Dichloropropane	<0.23	ug/L	1.0	0.23	1		10/14/16 15:46	78-87-5	
1,3-Dichloropropane	<0.50	ug/L	1.0	0.50	1		10/14/16 15:46	142-28-9	
2,2-Dichloropropane	<0.48	ug/L	1.0	0.48	1		10/14/16 15:46	594-20-7	
1,1-Dichloropropene	<0.44	ug/L	1.0	0.44	1		10/14/16 15:46	563-58-6	
cis-1,3-Dichloropropene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:46	10061-01-5	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: 0363247 THERMO FISHER

Pace Project No.: 40139898

**Sample: MANHOLE WATER**      **Lab ID: 40139898001**      Collected: 10/11/16 09:30      Received: 10/11/16 14:45      Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b> Analytical Method: EPA 8260									
trans-1,3-Dichloropropene	<0.23	ug/L	1.0	0.23	1		10/14/16 15:46	10061-02-6	
Diisopropyl ether	<0.50	ug/L	1.0	0.50	1		10/14/16 15:46	108-20-3	
Ethylbenzene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:46	100-41-4	
Hexachloro-1,3-butadiene	<2.1	ug/L	5.0	2.1	1		10/14/16 15:46	87-68-3	
Isopropylbenzene (Cumene)	<0.14	ug/L	1.0	0.14	1		10/14/16 15:46	98-82-8	
p-Isopropyltoluene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:46	99-87-6	
Methylene Chloride	<0.23	ug/L	1.0	0.23	1		10/14/16 15:46	75-09-2	
Methyl-tert-butyl ether	<0.17	ug/L	1.0	0.17	1		10/14/16 15:46	1634-04-4	
Naphthalene	<2.5	ug/L	5.0	2.5	1		10/14/16 15:46	91-20-3	
n-Propylbenzene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:46	103-65-1	
Styrene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:46	100-42-5	
1,1,1,2-Tetrachloroethane	<0.18	ug/L	1.0	0.18	1		10/14/16 15:46	630-20-6	
1,1,2,2-Tetrachloroethane	<0.25	ug/L	1.0	0.25	1		10/14/16 15:46	79-34-5	
Tetrachloroethene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:46	127-18-4	
Toluene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:46	108-88-3	
1,2,3-Trichlorobenzene	<2.1	ug/L	5.0	2.1	1		10/14/16 15:46	87-61-6	
1,2,4-Trichlorobenzene	<2.2	ug/L	5.0	2.2	1		10/14/16 15:46	120-82-1	
1,1,1-Trichloroethane	<0.50	ug/L	1.0	0.50	1		10/14/16 15:46	71-55-6	
1,1,2-Trichloroethane	<0.20	ug/L	1.0	0.20	1		10/14/16 15:46	79-00-5	
Trichloroethene	<0.33	ug/L	1.0	0.33	1		10/14/16 15:46	79-01-6	
Trichlorofluoromethane	<0.18	ug/L	1.0	0.18	1		10/14/16 15:46	75-69-4	
1,2,3-Trichloropropane	<0.50	ug/L	1.0	0.50	1		10/14/16 15:46	96-18-4	
1,2,4-Trimethylbenzene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:46	95-63-6	
1,3,5-Trimethylbenzene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:46	108-67-8	
Vinyl chloride	<0.18	ug/L	1.0	0.18	1		10/14/16 15:46	75-01-4	
m&p-Xylene	<1.0	ug/L	2.0	1.0	1		10/14/16 15:46	179601-23-1	
o-Xylene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:46	95-47-6	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	86	%	70-130		1		10/14/16 15:46	460-00-4	
Dibromofluoromethane (S)	93	%	70-130		1		10/14/16 15:46	1868-53-7	
Toluene-d8 (S)	95	%	70-130		1		10/14/16 15:46	2037-26-5	

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## ANALYTICAL RESULTS

Project: 0363247 THERMO FISHER

Pace Project No.: 40139898

**Sample: SP-1**      **Lab ID: 40139898002**      Collected: 10/11/16 11:40      Received: 10/11/16 14:45      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	<b>2.0J</b>	mg/kg	5.4	1.1	1	10/17/16 10:48	10/18/16 13:26	7440-38-2	
Barium	<b>20.8</b>	mg/kg	0.54	0.16	1	10/17/16 10:48	10/18/16 13:26	7440-39-3	
Cadmium	<b>&lt;0.14</b>	mg/kg	0.54	0.14	1	10/17/16 10:48	10/18/16 13:26	7440-43-9	
Chromium	<b>8.9</b>	mg/kg	1.1	0.30	1	10/17/16 10:48	10/18/16 13:26	7440-47-3	
Lead	<b>17.7</b>	mg/kg	1.4	0.47	1	10/17/16 10:48	10/18/16 13:26	7439-92-1	
Selenium	<b>&lt;1.2</b>	mg/kg	5.4	1.2	1	10/17/16 10:48	10/18/16 13:26	7782-49-2	
Silver	<b>&lt;0.37</b>	mg/kg	1.1	0.37	1	10/17/16 10:48	10/18/16 13:26	7440-22-4	
<b>7471 Mercury</b>		Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	<b>&lt;0.039</b>	mg/kg	0.13	0.039	1	10/17/16 07:51	10/17/16 13:49	7439-97-6	
<b>8260 MSV Med Level Normal List</b>		Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B							
Benzene	<b>&lt;25.0</b>	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	71-43-2	W
Bromobenzene	<b>&lt;25.0</b>	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	108-86-1	W
Bromochloromethane	<b>&lt;25.0</b>	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	74-97-5	W
Bromodichloromethane	<b>&lt;25.0</b>	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	75-27-4	W
Bromoform	<b>&lt;25.0</b>	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	75-25-2	W
Bromomethane	<b>&lt;69.9</b>	ug/kg	250	69.9	1	10/12/16 07:15	10/12/16 10:56	74-83-9	W
n-Butylbenzene	<b>&lt;25.0</b>	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	104-51-8	W
sec-Butylbenzene	<b>&lt;25.0</b>	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	135-98-8	W
tert-Butylbenzene	<b>&lt;25.0</b>	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	98-06-6	W
Carbon tetrachloride	<b>&lt;25.0</b>	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	56-23-5	W
Chlorobenzene	<b>&lt;25.0</b>	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	108-90-7	W
Chloroethane	<b>&lt;67.0</b>	ug/kg	250	67.0	1	10/12/16 07:15	10/12/16 10:56	75-00-3	W
Chloroform	<b>&lt;46.4</b>	ug/kg	250	46.4	1	10/12/16 07:15	10/12/16 10:56	67-66-3	W
Chloromethane	<b>&lt;25.0</b>	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	74-87-3	W
2-Chlorotoluene	<b>&lt;25.0</b>	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	95-49-8	W
4-Chlorotoluene	<b>&lt;25.0</b>	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	106-43-4	W
1,2-Dibromo-3-chloropropane	<b>&lt;91.2</b>	ug/kg	250	91.2	1	10/12/16 07:15	10/12/16 10:56	96-12-8	W
Dibromochloromethane	<b>&lt;25.0</b>	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	124-48-1	W
1,2-Dibromoethane (EDB)	<b>&lt;25.0</b>	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	106-93-4	W
Dibromomethane	<b>&lt;25.0</b>	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	74-95-3	W
1,2-Dichlorobenzene	<b>&lt;25.0</b>	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	95-50-1	W
1,3-Dichlorobenzene	<b>&lt;25.0</b>	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	541-73-1	W
1,4-Dichlorobenzene	<b>&lt;25.0</b>	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	106-46-7	W
Dichlorodifluoromethane	<b>&lt;25.0</b>	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	75-71-8	W
1,1-Dichloroethane	<b>&lt;25.0</b>	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	75-34-3	W
1,2-Dichloroethane	<b>&lt;25.0</b>	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	107-06-2	W
1,1-Dichloroethene	<b>&lt;25.0</b>	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	75-35-4	W
cis-1,2-Dichloroethene	<b>&lt;25.0</b>	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	156-59-2	W
trans-1,2-Dichloroethene	<b>&lt;25.0</b>	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	156-60-5	W
1,2-Dichloropropane	<b>&lt;25.0</b>	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	78-87-5	W
1,3-Dichloropropane	<b>&lt;25.0</b>	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	142-28-9	W
2,2-Dichloropropane	<b>&lt;25.0</b>	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	594-20-7	W
1,1-Dichloropropene	<b>&lt;25.0</b>	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	563-58-6	W

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## ANALYTICAL RESULTS

Project: 0363247 THERMO FISHER

Pace Project No.: 40139898

**Sample: SP-1**      **Lab ID: 40139898002**      Collected: 10/11/16 11:40      Received: 10/11/16 14:45      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV Med Level Normal List</b> Analytical Method: EPA 8260      Preparation Method: EPA 5035/5030B									
cis-1,3-Dichloropropene	<25.0	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	10061-01-5	W
trans-1,3-Dichloropropene	<25.0	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	10061-02-6	W
Diisopropyl ether	<25.0	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	108-20-3	W
Ethylbenzene	<25.0	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	100-41-4	W
Hexachloro-1,3-butadiene	<25.0	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	87-68-3	W
Isopropylbenzene (Cumene)	<25.0	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	98-82-8	W
p-Isopropyltoluene	<25.0	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	99-87-6	W
Methylene Chloride	<25.0	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	75-09-2	W
Methyl-tert-butyl ether	<25.0	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	1634-04-4	W
Naphthalene	<40.0	ug/kg	250	40.0	1	10/12/16 07:15	10/12/16 10:56	91-20-3	W
n-Propylbenzene	<25.0	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	103-65-1	W
Styrene	<25.0	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	100-42-5	W
1,1,1,2-Tetrachloroethane	<25.0	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	630-20-6	W
1,1,2,2-Tetrachloroethane	<25.0	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	79-34-5	W
Tetrachloroethene	<25.0	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	127-18-4	W
Toluene	<25.0	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	108-88-3	W
1,2,3-Trichlorobenzene	<25.0	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	87-61-6	W
1,2,4-Trichlorobenzene	<47.6	ug/kg	250	47.6	1	10/12/16 07:15	10/12/16 10:56	120-82-1	W
1,1,1-Trichloroethane	<25.0	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	71-55-6	W
1,1,2-Trichloroethane	<25.0	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	79-00-5	W
Trichloroethene	<25.0	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	79-01-6	W
Trichlorofluoromethane	<25.0	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	75-69-4	W
1,2,3-Trichloropropane	<25.0	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	96-18-4	W
1,2,4-Trimethylbenzene	<25.0	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	95-63-6	W
1,3,5-Trimethylbenzene	<25.0	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	108-67-8	W
Vinyl chloride	<25.0	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	75-01-4	W
m&p-Xylene	<50.0	ug/kg	120	50.0	1	10/12/16 07:15	10/12/16 10:56	179601-23-1	W
o-Xylene	<25.0	ug/kg	60.0	25.0	1	10/12/16 07:15	10/12/16 10:56	95-47-6	W
<b>Surrogates</b>									
Dibromofluoromethane (S)	95	%	53-165		1	10/12/16 07:15	10/12/16 10:56	1868-53-7	
Toluene-d8 (S)	106	%	54-163		1	10/12/16 07:15	10/12/16 10:56	2037-26-5	
4-Bromofluorobenzene (S)	93	%	48-138		1	10/12/16 07:15	10/12/16 10:56	460-00-4	
<b>Percent Moisture</b> Analytical Method: ASTM D2974-87									
Percent Moisture	10.5	%	0.10	0.10	1		10/12/16 14:26		

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## ANALYTICAL RESULTS

Project: 0363247 THERMO FISHER

Pace Project No.: 40139898

**Sample: SP-2**      **Lab ID: 40139898003**      Collected: 10/11/16 11:45      Received: 10/11/16 14:45      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010    Preparation Method: EPA 3050									
Arsenic	<b>2.4J</b>	mg/kg	5.7	1.2	1	10/17/16 10:48	10/18/16 13:28	7440-38-2	
Barium	<b>85.6</b>	mg/kg	0.57	0.17	1	10/17/16 10:48	10/18/16 13:28	7440-39-3	
Cadmium	<b>0.79</b>	mg/kg	0.57	0.15	1	10/17/16 10:48	10/18/16 13:28	7440-43-9	
Chromium	<b>19.4</b>	mg/kg	1.1	0.32	1	10/17/16 10:48	10/18/16 13:28	7440-47-3	
Lead	<b>42.7</b>	mg/kg	1.5	0.49	1	10/17/16 10:48	10/18/16 13:28	7439-92-1	
Selenium	<b>&lt;1.3</b>	mg/kg	5.7	1.3	1	10/17/16 10:48	10/18/16 13:28	7782-49-2	
Silver	<b>&lt;0.39</b>	mg/kg	1.1	0.39	1	10/17/16 10:48	10/18/16 13:28	7440-22-4	
<b>7471 Mercury</b>									
Analytical Method: EPA 7471    Preparation Method: EPA 7471									
Mercury	<b>0.11J</b>	mg/kg	0.15	0.043	1	10/17/16 07:51	10/17/16 13:51	7439-97-6	
<b>8260 MSV Med Level Normal List</b>									
Analytical Method: EPA 8260    Preparation Method: EPA 5035/5030B									
Benzene	<b>&lt;29.1</b>	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	71-43-2	W
Bromobenzene	<b>&lt;29.1</b>	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	108-86-1	W
Bromochloromethane	<b>&lt;29.1</b>	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	74-97-5	W
Bromodichloromethane	<b>&lt;29.1</b>	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	75-27-4	W
Bromoform	<b>&lt;29.1</b>	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	75-25-2	W
Bromomethane	<b>&lt;81.3</b>	ug/kg	291	81.3	1	10/12/16 07:15	10/12/16 11:19	74-83-9	W
n-Butylbenzene	<b>&lt;29.1</b>	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	104-51-8	W
sec-Butylbenzene	<b>&lt;29.1</b>	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	135-98-8	W
tert-Butylbenzene	<b>&lt;29.1</b>	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	98-06-6	W
Carbon tetrachloride	<b>&lt;29.1</b>	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	56-23-5	W
Chlorobenzene	<b>&lt;29.1</b>	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	108-90-7	W
Chloroethane	<b>&lt;77.9</b>	ug/kg	291	77.9	1	10/12/16 07:15	10/12/16 11:19	75-00-3	W
Chloroform	<b>&lt;54.0</b>	ug/kg	291	54.0	1	10/12/16 07:15	10/12/16 11:19	67-66-3	W
Chloromethane	<b>&lt;29.1</b>	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	74-87-3	W
2-Chlorotoluene	<b>&lt;29.1</b>	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	95-49-8	W
4-Chlorotoluene	<b>&lt;29.1</b>	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	106-43-4	W
1,2-Dibromo-3-chloropropane	<b>&lt;106</b>	ug/kg	291	106	1	10/12/16 07:15	10/12/16 11:19	96-12-8	W
Dibromochloromethane	<b>&lt;29.1</b>	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	124-48-1	W
1,2-Dibromoethane (EDB)	<b>&lt;29.1</b>	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	106-93-4	W
Dibromomethane	<b>&lt;29.1</b>	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	74-95-3	W
1,2-Dichlorobenzene	<b>&lt;29.1</b>	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	95-50-1	W
1,3-Dichlorobenzene	<b>&lt;29.1</b>	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	541-73-1	W
1,4-Dichlorobenzene	<b>&lt;29.1</b>	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	106-46-7	W
Dichlorodifluoromethane	<b>&lt;29.1</b>	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	75-71-8	W
1,1-Dichloroethane	<b>&lt;29.1</b>	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	75-34-3	W
1,2-Dichloroethane	<b>&lt;29.1</b>	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	107-06-2	W
1,1-Dichloroethene	<b>&lt;29.1</b>	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	75-35-4	W
cis-1,2-Dichloroethene	<b>&lt;29.1</b>	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	156-59-2	W
trans-1,2-Dichloroethene	<b>&lt;29.1</b>	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	156-60-5	W
1,2-Dichloropropane	<b>&lt;29.1</b>	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	78-87-5	W
1,3-Dichloropropane	<b>&lt;29.1</b>	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	142-28-9	W
2,2-Dichloropropane	<b>&lt;29.1</b>	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	594-20-7	W
1,1-Dichloropropene	<b>&lt;29.1</b>	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	563-58-6	W

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 0363247 THERMO FISHER

Pace Project No.: 40139898

**Sample: SP-2**      **Lab ID: 40139898003**      Collected: 10/11/16 11:45      Received: 10/11/16 14:45      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV Med Level Normal List</b> Analytical Method: EPA 8260      Preparation Method: EPA 5035/5030B									
cis-1,3-Dichloropropene	<29.1	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	10061-01-5	W
trans-1,3-Dichloropropene	<29.1	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	10061-02-6	W
Diisopropyl ether	<29.1	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	108-20-3	W
Ethylbenzene	<29.1	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	100-41-4	W
Hexachloro-1,3-butadiene	<29.1	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	87-68-3	W
Isopropylbenzene (Cumene)	<29.1	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	98-82-8	W
p-Isopropyltoluene	<29.1	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	99-87-6	W
Methylene Chloride	<29.1	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	75-09-2	W
Methyl-tert-butyl ether	<29.1	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	1634-04-4	W
Naphthalene	<46.6	ug/kg	291	46.6	1	10/12/16 07:15	10/12/16 11:19	91-20-3	W
n-Propylbenzene	<29.1	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	103-65-1	W
Styrene	<29.1	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	100-42-5	W
1,1,1,2-Tetrachloroethane	<29.1	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	630-20-6	W
1,1,2,2-Tetrachloroethane	<29.1	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	79-34-5	W
Tetrachloroethene	<29.1	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	127-18-4	W
Toluene	<29.1	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	108-88-3	W
1,2,3-Trichlorobenzene	<29.1	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	87-61-6	W
1,2,4-Trichlorobenzene	<55.3	ug/kg	291	55.3	1	10/12/16 07:15	10/12/16 11:19	120-82-1	W
1,1,1-Trichloroethane	<29.1	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	71-55-6	W
1,1,2-Trichloroethane	<29.1	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	79-00-5	W
Trichloroethene	<29.1	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	79-01-6	W
Trichlorofluoromethane	<29.1	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	75-69-4	W
1,2,3-Trichloropropane	<29.1	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	96-18-4	W
1,2,4-Trimethylbenzene	<29.1	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	95-63-6	W
1,3,5-Trimethylbenzene	<29.1	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	108-67-8	W
Vinyl chloride	<29.1	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	75-01-4	W
m&p-Xylene	<58.1	ug/kg	140	58.1	1	10/12/16 07:15	10/12/16 11:19	179601-23-1	W
o-Xylene	<29.1	ug/kg	69.8	29.1	1	10/12/16 07:15	10/12/16 11:19	95-47-6	W
<b>Surrogates</b>									
Dibromofluoromethane (S)	84	%	53-165		1	10/12/16 07:15	10/12/16 11:19	1868-53-7	
Toluene-d8 (S)	96	%	54-163		1	10/12/16 07:15	10/12/16 11:19	2037-26-5	
4-Bromofluorobenzene (S)	83	%	48-138		1	10/12/16 07:15	10/12/16 11:19	460-00-4	
<b>Percent Moisture</b> Analytical Method: ASTM D2974-87									
Percent Moisture	17.1	%	0.10	0.10	1		10/12/16 14:26		

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 0363247 THERMO FISHER

Pace Project No.: 40139898

**Sample: TRIP BLANK**      **Lab ID: 40139898004**      Collected: 10/11/16 00:00      Received: 10/11/16 14:45      Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>		Analytical Method: EPA 8260							
Benzene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:02	71-43-2	
Bromobenzene	<0.23	ug/L	1.0	0.23	1		10/14/16 15:02	108-86-1	
Bromochloromethane	<0.34	ug/L	1.0	0.34	1		10/14/16 15:02	74-97-5	
Bromodichloromethane	<0.50	ug/L	1.0	0.50	1		10/14/16 15:02	75-27-4	
Bromoform	<0.50	ug/L	1.0	0.50	1		10/14/16 15:02	75-25-2	
Bromomethane	<2.4	ug/L	5.0	2.4	1		10/14/16 15:02	74-83-9	
n-Butylbenzene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:02	104-51-8	
sec-Butylbenzene	<2.2	ug/L	5.0	2.2	1		10/14/16 15:02	135-98-8	
tert-Butylbenzene	<0.18	ug/L	1.0	0.18	1		10/14/16 15:02	98-06-6	
Carbon tetrachloride	<0.50	ug/L	1.0	0.50	1		10/14/16 15:02	56-23-5	
Chlorobenzene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:02	108-90-7	
Chloroethane	<0.37	ug/L	1.0	0.37	1		10/14/16 15:02	75-00-3	
Chloroform	<2.5	ug/L	5.0	2.5	1		10/14/16 15:02	67-66-3	
Chloromethane	<0.50	ug/L	1.0	0.50	1		10/14/16 15:02	74-87-3	
2-Chlorotoluene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:02	95-49-8	
4-Chlorotoluene	<0.21	ug/L	1.0	0.21	1		10/14/16 15:02	106-43-4	
1,2-Dibromo-3-chloropropane	<2.2	ug/L	5.0	2.2	1		10/14/16 15:02	96-12-8	
Dibromochloromethane	<0.50	ug/L	1.0	0.50	1		10/14/16 15:02	124-48-1	
1,2-Dibromoethane (EDB)	<0.18	ug/L	1.0	0.18	1		10/14/16 15:02	106-93-4	
Dibromomethane	<0.43	ug/L	1.0	0.43	1		10/14/16 15:02	74-95-3	
1,2-Dichlorobenzene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:02	95-50-1	
1,3-Dichlorobenzene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:02	541-73-1	
1,4-Dichlorobenzene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:02	106-46-7	
Dichlorodifluoromethane	<0.22	ug/L	1.0	0.22	1		10/14/16 15:02	75-71-8	
1,1-Dichloroethane	<0.24	ug/L	1.0	0.24	1		10/14/16 15:02	75-34-3	
1,2-Dichloroethane	<0.17	ug/L	1.0	0.17	1		10/14/16 15:02	107-06-2	
1,1-Dichloroethene	<0.41	ug/L	1.0	0.41	1		10/14/16 15:02	75-35-4	
cis-1,2-Dichloroethene	<0.26	ug/L	1.0	0.26	1		10/14/16 15:02	156-59-2	
trans-1,2-Dichloroethene	<0.26	ug/L	1.0	0.26	1		10/14/16 15:02	156-60-5	
1,2-Dichloropropane	<0.23	ug/L	1.0	0.23	1		10/14/16 15:02	78-87-5	
1,3-Dichloropropane	<0.50	ug/L	1.0	0.50	1		10/14/16 15:02	142-28-9	
2,2-Dichloropropane	<0.48	ug/L	1.0	0.48	1		10/14/16 15:02	594-20-7	
1,1-Dichloropropene	<0.44	ug/L	1.0	0.44	1		10/14/16 15:02	563-58-6	
cis-1,3-Dichloropropene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:02	10061-01-5	
trans-1,3-Dichloropropene	<0.23	ug/L	1.0	0.23	1		10/14/16 15:02	10061-02-6	
Diisopropyl ether	<0.50	ug/L	1.0	0.50	1		10/14/16 15:02	108-20-3	
Ethylbenzene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:02	100-41-4	
Hexachloro-1,3-butadiene	<2.1	ug/L	5.0	2.1	1		10/14/16 15:02	87-68-3	
Isopropylbenzene (Cumene)	<0.14	ug/L	1.0	0.14	1		10/14/16 15:02	98-82-8	
p-Isopropyltoluene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:02	99-87-6	
Methylene Chloride	<0.23	ug/L	1.0	0.23	1		10/14/16 15:02	75-09-2	
Methyl-tert-butyl ether	<0.17	ug/L	1.0	0.17	1		10/14/16 15:02	1634-04-4	
Naphthalene	<2.5	ug/L	5.0	2.5	1		10/14/16 15:02	91-20-3	
n-Propylbenzene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:02	103-65-1	
Styrene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:02	100-42-5	
1,1,1,2-Tetrachloroethane	<0.18	ug/L	1.0	0.18	1		10/14/16 15:02	630-20-6	

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### ANALYTICAL RESULTS

Project: 0363247 THERMO FISHER

Pace Project No.: 40139898

**Sample: TRIP BLANK**      **Lab ID: 40139898004**      Collected: 10/11/16 00:00      Received: 10/11/16 14:45      Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>8260 MSV</b>		Analytical Method: EPA 8260							
1,1,2,2-Tetrachloroethane	<0.25	ug/L	1.0	0.25	1		10/14/16 15:02	79-34-5	
Tetrachloroethene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:02	127-18-4	
Toluene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:02	108-88-3	
1,2,3-Trichlorobenzene	<2.1	ug/L	5.0	2.1	1		10/14/16 15:02	87-61-6	
1,2,4-Trichlorobenzene	<2.2	ug/L	5.0	2.2	1		10/14/16 15:02	120-82-1	
1,1,1-Trichloroethane	<0.50	ug/L	1.0	0.50	1		10/14/16 15:02	71-55-6	
1,1,2-Trichloroethane	<0.20	ug/L	1.0	0.20	1		10/14/16 15:02	79-00-5	
Trichloroethene	<0.33	ug/L	1.0	0.33	1		10/14/16 15:02	79-01-6	
Trichlorofluoromethane	<0.18	ug/L	1.0	0.18	1		10/14/16 15:02	75-69-4	
1,2,3-Trichloropropane	<0.50	ug/L	1.0	0.50	1		10/14/16 15:02	96-18-4	
1,2,4-Trimethylbenzene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:02	95-63-6	
1,3,5-Trimethylbenzene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:02	108-67-8	
Vinyl chloride	<0.18	ug/L	1.0	0.18	1		10/14/16 15:02	75-01-4	
m&p-Xylene	<1.0	ug/L	2.0	1.0	1		10/14/16 15:02	179601-23-1	
o-Xylene	<0.50	ug/L	1.0	0.50	1		10/14/16 15:02	95-47-6	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	88	%	70-130		1		10/14/16 15:02	460-00-4	
Dibromofluoromethane (S)	95	%	70-130		1		10/14/16 15:02	1868-53-7	
Toluene-d8 (S)	96	%	70-130		1		10/14/16 15:02	2037-26-5	

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### QUALITY CONTROL DATA

Project: 0363247 THERMO FISHER

Pace Project No.: 40139898

QC Batch: 237869

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury

Associated Lab Samples: 40139898001

METHOD BLANK: 1409258

Matrix: Water

Associated Lab Samples: 40139898001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.13	0.42	10/13/16 11:30	

LABORATORY CONTROL SAMPLE: 1409259

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.9	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1409260 1409261

Parameter	Units	40139739001		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	% Rec	% Rec					
Mercury	ug/L	<0.13	5	5	4.7	4.6	94	93	85-115	1	20		

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### QUALITY CONTROL DATA

Project: 0363247 THERMO FISHER

Pace Project No.: 40139898

QC Batch: 238225

Analysis Method: EPA 7471

QC Batch Method: EPA 7471

Analysis Description: 7471 Mercury

Associated Lab Samples: 40139898002, 40139898003

METHOD BLANK: 1411719

Matrix: Solid

Associated Lab Samples: 40139898002, 40139898003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	<0.037	0.12	10/17/16 12:41	

LABORATORY CONTROL SAMPLE: 1411720

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.83	0.87	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1411721 1411722

Parameter	Units	40139525001		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	% Rec	% Rec					
Mercury	mg/kg	<0.054	1.2	1.2	1.3	1.2	104	100	85-115	4	20		

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### QUALITY CONTROL DATA

Project: 0363247 THERMO FISHER  
Pace Project No.: 40139898

QC Batch: 238278 Analysis Method: EPA 6010  
QC Batch Method: EPA 3050 Analysis Description: 6010 MET  
Associated Lab Samples: 40139898002, 40139898003

METHOD BLANK: 1411865 Matrix: Solid  
Associated Lab Samples: 40139898002, 40139898003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	<1.0	5.0	10/18/16 12:57	
Barium	mg/kg	<0.15	0.50	10/18/16 12:57	
Cadmium	mg/kg	<0.13	0.50	10/18/16 12:57	
Chromium	mg/kg	<0.28	1.0	10/18/16 12:57	
Lead	mg/kg	<0.43	1.3	10/18/16 12:57	
Selenium	mg/kg	<1.1	5.0	10/18/16 12:57	
Silver	mg/kg	<0.34	1.0	10/18/16 12:57	

LABORATORY CONTROL SAMPLE: 1411866

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	50	49.9	100	80-120	
Barium	mg/kg	50	50.6	101	80-120	
Cadmium	mg/kg	50	50.9	102	80-120	
Chromium	mg/kg	50	51.5	103	80-120	
Lead	mg/kg	50	50.9	102	80-120	
Selenium	mg/kg	50	51.8	104	80-120	
Silver	mg/kg	25	25.6	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1411867 1411868

Parameter	Units	40140140001		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Arsenic	mg/kg	<1.1	51.6	51.3	50.6	50.7	97	98	75-125	0	20		
Barium	mg/kg	3.0	51.6	51.3	54.9	55.0	101	101	75-125	0	20		
Cadmium	mg/kg	<0.14	51.6	51.3	50.8	51.5	99	100	75-125	1	20		
Chromium	mg/kg	2.0	51.6	51.3	54.6	54.9	102	103	75-125	1	20		
Lead	mg/kg	0.45J	51.6	51.3	51.3	51.7	99	100	75-125	1	20		
Selenium	mg/kg	<1.1	51.6	51.3	51.9	50.9	100	99	75-125	2	20		
Silver	mg/kg	<0.35	25.8	25.7	25.7	25.9	100	101	75-125	1	20		

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### QUALITY CONTROL DATA

Project: 0363247 THERMO FISHER  
Pace Project No.: 40139898

QC Batch: 238239 Analysis Method: EPA 6010  
QC Batch Method: EPA 3010 Analysis Description: 6010 MET  
Associated Lab Samples: 40139898001

METHOD BLANK: 1411757 Matrix: Water  
Associated Lab Samples: 40139898001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	ug/L	<8.3	25.0	10/18/16 11:53	
Barium	ug/L	<1.5	5.0	10/18/16 11:53	
Cadmium	ug/L	<1.3	5.0	10/18/16 11:53	
Chromium	ug/L	<2.5	10.0	10/18/16 11:53	
Lead	ug/L	<4.3	13.0	10/18/16 11:53	
Selenium	ug/L	<16.6	50.0	10/18/16 11:53	
Silver	ug/L	<3.3	10.0	10/18/16 11:53	

LABORATORY CONTROL SAMPLE: 1411758

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	500	476	95	80-120	
Barium	ug/L	500	490	98	80-120	
Cadmium	ug/L	500	494	99	80-120	
Chromium	ug/L	500	501	100	80-120	
Lead	ug/L	500	492	98	80-120	
Selenium	ug/L	500	494	99	80-120	
Silver	ug/L	250	246	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1411759 1411760

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		40139898001 Result	Spike Conc.	Spike Conc.	MS Result						
Arsenic	ug/L	<8.3	500	500	483	489	95	97	75-125	1	20
Barium	ug/L	2.5J	500	500	483	493	96	98	75-125	2	20
Cadmium	ug/L	<1.3	500	500	483	494	97	99	75-125	2	20
Chromium	ug/L	<2.5	500	500	484	500	97	100	75-125	3	20
Lead	ug/L	<4.3	500	500	480	486	96	97	75-125	1	20
Selenium	ug/L	<16.6	500	500	484	492	97	98	75-125	2	20
Silver	ug/L	<3.3	250	250	242	250	96	100	75-125	3	20

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: 0363247 THERMO FISHER

Pace Project No.: 40139898

QC Batch: 237849

Analysis Method: EPA 8260

QC Batch Method: EPA 5035/5030B

Analysis Description: 8260 MSV Med Level Normal List

Associated Lab Samples: 40139898002, 40139898003

METHOD BLANK: 1409185

Matrix: Solid

Associated Lab Samples: 40139898002, 40139898003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	<13.7	50.0	10/12/16 09:03	
1,1,1-Trichloroethane	ug/kg	<14.4	50.0	10/12/16 09:03	
1,1,2,2-Tetrachloroethane	ug/kg	<17.5	50.0	10/12/16 09:03	
1,1,2-Trichloroethane	ug/kg	<20.2	50.0	10/12/16 09:03	
1,1-Dichloroethane	ug/kg	<17.6	50.0	10/12/16 09:03	
1,1-Dichloroethene	ug/kg	<17.6	50.0	10/12/16 09:03	
1,1-Dichloropropene	ug/kg	<14.0	50.0	10/12/16 09:03	
1,2,3-Trichlorobenzene	ug/kg	<17.0	50.0	10/12/16 09:03	
1,2,3-Trichloropropane	ug/kg	<22.3	50.0	10/12/16 09:03	
1,2,4-Trichlorobenzene	ug/kg	<47.6	250	10/12/16 09:03	
1,2,4-Trimethylbenzene	ug/kg	<12.2	50.0	10/12/16 09:03	
1,2-Dibromo-3-chloropropane	ug/kg	<91.2	250	10/12/16 09:03	
1,2-Dibromoethane (EDB)	ug/kg	<14.7	50.0	10/12/16 09:03	
1,2-Dichlorobenzene	ug/kg	<16.2	50.0	10/12/16 09:03	
1,2-Dichloroethane	ug/kg	<15.0	50.0	10/12/16 09:03	
1,2-Dichloropropane	ug/kg	<16.8	50.0	10/12/16 09:03	
1,3,5-Trimethylbenzene	ug/kg	<14.5	50.0	10/12/16 09:03	
1,3-Dichlorobenzene	ug/kg	<13.2	50.0	10/12/16 09:03	
1,3-Dichloropropane	ug/kg	<12.0	50.0	10/12/16 09:03	
1,4-Dichlorobenzene	ug/kg	<15.9	50.0	10/12/16 09:03	
2,2-Dichloropropane	ug/kg	<12.6	50.0	10/12/16 09:03	
2-Chlorotoluene	ug/kg	<15.8	50.0	10/12/16 09:03	
4-Chlorotoluene	ug/kg	<13.0	50.0	10/12/16 09:03	
Benzene	ug/kg	<9.2	20.0	10/12/16 09:03	
Bromobenzene	ug/kg	<20.6	50.0	10/12/16 09:03	
Bromochloromethane	ug/kg	<21.4	50.0	10/12/16 09:03	
Bromodichloromethane	ug/kg	<9.8	50.0	10/12/16 09:03	
Bromoform	ug/kg	<19.8	50.0	10/12/16 09:03	
Bromomethane	ug/kg	<69.9	250	10/12/16 09:03	
Carbon tetrachloride	ug/kg	<12.1	50.0	10/12/16 09:03	
Chlorobenzene	ug/kg	<14.8	50.0	10/12/16 09:03	
Chloroethane	ug/kg	<67.0	250	10/12/16 09:03	
Chloroform	ug/kg	<46.4	250	10/12/16 09:03	
Chloromethane	ug/kg	<20.4	50.0	10/12/16 09:03	
cis-1,2-Dichloroethene	ug/kg	<16.6	50.0	10/12/16 09:03	
cis-1,3-Dichloropropene	ug/kg	<16.6	50.0	10/12/16 09:03	
Dibromochloromethane	ug/kg	<17.9	50.0	10/12/16 09:03	
Dibromomethane	ug/kg	<19.3	50.0	10/12/16 09:03	
Dichlorodifluoromethane	ug/kg	<12.3	50.0	10/12/16 09:03	
Diisopropyl ether	ug/kg	<17.7	50.0	10/12/16 09:03	
Ethylbenzene	ug/kg	<12.4	50.0	10/12/16 09:03	

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### QUALITY CONTROL DATA

Project: 0363247 THERMO FISHER

Pace Project No.: 40139898

METHOD BLANK: 1409185

Matrix: Solid

Associated Lab Samples: 40139898002, 40139898003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Hexachloro-1,3-butadiene	ug/kg	<24.5	50.0	10/12/16 09:03	
Isopropylbenzene (Cumene)	ug/kg	<12.6	50.0	10/12/16 09:03	
m&p-Xylene	ug/kg	<34.4	100	10/12/16 09:03	
Methyl-tert-butyl ether	ug/kg	<12.7	50.0	10/12/16 09:03	
Methylene Chloride	ug/kg	<16.2	50.0	10/12/16 09:03	
n-Butylbenzene	ug/kg	<10.5	50.0	10/12/16 09:03	
n-Propylbenzene	ug/kg	<11.6	50.0	10/12/16 09:03	
Naphthalene	ug/kg	<40.0	250	10/12/16 09:03	
o-Xylene	ug/kg	<14.0	50.0	10/12/16 09:03	
p-Isopropyltoluene	ug/kg	<12.0	50.0	10/12/16 09:03	
sec-Butylbenzene	ug/kg	<11.9	50.0	10/12/16 09:03	
Styrene	ug/kg	<9.0	50.0	10/12/16 09:03	
tert-Butylbenzene	ug/kg	<9.5	50.0	10/12/16 09:03	
Tetrachloroethene	ug/kg	<12.9	50.0	10/12/16 09:03	
Toluene	ug/kg	<11.2	50.0	10/12/16 09:03	
trans-1,2-Dichloroethene	ug/kg	<16.5	50.0	10/12/16 09:03	
trans-1,3-Dichloropropene	ug/kg	<14.4	50.0	10/12/16 09:03	
Trichloroethene	ug/kg	<23.6	50.0	10/12/16 09:03	
Trichlorofluoromethane	ug/kg	<24.7	50.0	10/12/16 09:03	
Vinyl chloride	ug/kg	<21.1	50.0	10/12/16 09:03	
4-Bromofluorobenzene (S)	%	87	48-138	10/12/16 09:03	
Dibromofluoromethane (S)	%	89	53-165	10/12/16 09:03	
Toluene-d8 (S)	%	97	54-163	10/12/16 09:03	

LABORATORY CONTROL SAMPLE: 1409186

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/kg	2500	2200	88	70-130	
1,1,2,2-Tetrachloroethane	ug/kg	2500	2540	102	70-130	
1,1,2-Trichloroethane	ug/kg	2500	2430	97	70-130	
1,1-Dichloroethane	ug/kg	2500	2230	89	70-133	
1,1-Dichloroethene	ug/kg	2500	2040	81	70-130	
1,2,4-Trichlorobenzene	ug/kg	2500	2430	97	70-130	
1,2-Dibromo-3-chloropropane	ug/kg	2500	2180	87	50-150	
1,2-Dibromoethane (EDB)	ug/kg	2500	2670	107	70-130	
1,2-Dichlorobenzene	ug/kg	2500	2520	101	70-130	
1,2-Dichloroethane	ug/kg	2500	2350	94	70-138	
1,2-Dichloropropane	ug/kg	2500	2430	97	70-130	
1,3-Dichlorobenzene	ug/kg	2500	2580	103	70-130	
1,4-Dichlorobenzene	ug/kg	2500	2520	101	70-130	
Benzene	ug/kg	2500	2470	99	70-130	
Bromodichloromethane	ug/kg	2500	2310	92	70-130	
Bromoform	ug/kg	2500	2090	84	68-130	
Bromomethane	ug/kg	2500	2000	80	25-163	

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### QUALITY CONTROL DATA

Project: 0363247 THERMO FISHER

Pace Project No.: 40139898

LABORATORY CONTROL SAMPLE: 1409186

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Carbon tetrachloride	ug/kg	2500	2130	85	70-130	
Chlorobenzene	ug/kg	2500	2560	103	70-130	
Chloroethane	ug/kg	2500	2070	83	34-151	
Chloroform	ug/kg	2500	2260	91	70-130	
Chloromethane	ug/kg	2500	1720	69	52-130	
cis-1,2-Dichloroethene	ug/kg	2500	2250	90	70-130	
cis-1,3-Dichloropropene	ug/kg	2500	2420	97	70-130	
Dibromochloromethane	ug/kg	2500	2400	96	70-130	
Dichlorodifluoromethane	ug/kg	2500	1370	55	27-150	
Ethylbenzene	ug/kg	2500	2540	101	70-130	
Isopropylbenzene (Cumene)	ug/kg	2500	2630	105	70-130	
m&p-Xylene	ug/kg	5000	5120	102	70-130	
Methyl-tert-butyl ether	ug/kg	2500	2460	98	70-130	
Methylene Chloride	ug/kg	2500	2090	84	70-131	
o-Xylene	ug/kg	2500	2630	105	70-130	
Styrene	ug/kg	2500	2550	102	70-130	
Tetrachloroethene	ug/kg	2500	2470	99	70-130	
Toluene	ug/kg	2500	2580	103	70-130	
trans-1,2-Dichloroethene	ug/kg	2500	2170	87	70-130	
trans-1,3-Dichloropropene	ug/kg	2500	2470	99	70-130	
Trichloroethene	ug/kg	2500	2300	92	70-130	
Trichlorofluoromethane	ug/kg	2500	2030	81	50-150	
Vinyl chloride	ug/kg	2500	2010	81	57-130	
4-Bromofluorobenzene (S)	%			91	48-138	
Dibromofluoromethane (S)	%			97	53-165	
Toluene-d8 (S)	%			103	54-163	

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### QUALITY CONTROL DATA

Project: 0363247 THERMO FISHER

Pace Project No.: 40139898

QC Batch: 237951

Analysis Method: EPA 8260

QC Batch Method: EPA 8260

Analysis Description: 8260 MSV

Associated Lab Samples: 40139898001, 40139898004

METHOD BLANK: 1409719

Matrix: Water

Associated Lab Samples: 40139898001, 40139898004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.18	1.0	10/14/16 06:55	
1,1,1-Trichloroethane	ug/L	<0.50	1.0	10/14/16 06:55	
1,1,2,2-Tetrachloroethane	ug/L	<0.25	1.0	10/14/16 06:55	
1,1,2-Trichloroethane	ug/L	<0.20	1.0	10/14/16 06:55	
1,1-Dichloroethane	ug/L	<0.24	1.0	10/14/16 06:55	
1,1-Dichloroethene	ug/L	<0.41	1.0	10/14/16 06:55	
1,1-Dichloropropene	ug/L	<0.44	1.0	10/14/16 06:55	
1,2,3-Trichlorobenzene	ug/L	<2.1	5.0	10/14/16 06:55	
1,2,3-Trichloropropane	ug/L	<0.50	1.0	10/14/16 06:55	
1,2,4-Trichlorobenzene	ug/L	<2.2	5.0	10/14/16 06:55	
1,2,4-Trimethylbenzene	ug/L	<0.50	1.0	10/14/16 06:55	
1,2-Dibromo-3-chloropropane	ug/L	<2.2	5.0	10/14/16 06:55	
1,2-Dibromoethane (EDB)	ug/L	<0.18	1.0	10/14/16 06:55	
1,2-Dichlorobenzene	ug/L	<0.50	1.0	10/14/16 06:55	
1,2-Dichloroethane	ug/L	<0.17	1.0	10/14/16 06:55	
1,2-Dichloropropane	ug/L	<0.23	1.0	10/14/16 06:55	
1,3,5-Trimethylbenzene	ug/L	<0.50	1.0	10/14/16 06:55	
1,3-Dichlorobenzene	ug/L	<0.50	1.0	10/14/16 06:55	
1,3-Dichloropropane	ug/L	<0.50	1.0	10/14/16 06:55	
1,4-Dichlorobenzene	ug/L	<0.50	1.0	10/14/16 06:55	
2,2-Dichloropropane	ug/L	<0.48	1.0	10/14/16 06:55	
2-Chlorotoluene	ug/L	<0.50	1.0	10/14/16 06:55	
4-Chlorotoluene	ug/L	<0.21	1.0	10/14/16 06:55	
Benzene	ug/L	<0.50	1.0	10/14/16 06:55	
Bromobenzene	ug/L	<0.23	1.0	10/14/16 06:55	
Bromochloromethane	ug/L	<0.34	1.0	10/14/16 06:55	
Bromodichloromethane	ug/L	<0.50	1.0	10/14/16 06:55	
Bromoform	ug/L	<0.50	1.0	10/14/16 06:55	
Bromomethane	ug/L	<2.4	5.0	10/14/16 06:55	
Carbon tetrachloride	ug/L	<0.50	1.0	10/14/16 06:55	
Chlorobenzene	ug/L	<0.50	1.0	10/14/16 06:55	
Chloroethane	ug/L	<0.37	1.0	10/14/16 06:55	
Chloroform	ug/L	<2.5	5.0	10/14/16 06:55	
Chloromethane	ug/L	<0.50	1.0	10/14/16 06:55	
cis-1,2-Dichloroethene	ug/L	<0.26	1.0	10/14/16 06:55	
cis-1,3-Dichloropropene	ug/L	<0.50	1.0	10/14/16 06:55	
Dibromochloromethane	ug/L	<0.50	1.0	10/14/16 06:55	
Dibromomethane	ug/L	<0.43	1.0	10/14/16 06:55	
Dichlorodifluoromethane	ug/L	<0.22	1.0	10/14/16 06:55	
Diisopropyl ether	ug/L	<0.50	1.0	10/14/16 06:55	
Ethylbenzene	ug/L	<0.50	1.0	10/14/16 06:55	

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### QUALITY CONTROL DATA

Project: 0363247 THERMO FISHER

Pace Project No.: 40139898

METHOD BLANK: 1409719

Matrix: Water

Associated Lab Samples: 40139898001, 40139898004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Hexachloro-1,3-butadiene	ug/L	<2.1	5.0	10/14/16 06:55	
Isopropylbenzene (Cumene)	ug/L	<0.14	1.0	10/14/16 06:55	
m&p-Xylene	ug/L	<1.0	2.0	10/14/16 06:55	
Methyl-tert-butyl ether	ug/L	<0.17	1.0	10/14/16 06:55	
Methylene Chloride	ug/L	<0.23	1.0	10/14/16 06:55	
n-Butylbenzene	ug/L	<0.50	1.0	10/14/16 06:55	
n-Propylbenzene	ug/L	<0.50	1.0	10/14/16 06:55	
Naphthalene	ug/L	<2.5	5.0	10/14/16 06:55	
o-Xylene	ug/L	<0.50	1.0	10/14/16 06:55	
p-Isopropyltoluene	ug/L	<0.50	1.0	10/14/16 06:55	
sec-Butylbenzene	ug/L	<2.2	5.0	10/14/16 06:55	
Styrene	ug/L	<0.50	1.0	10/14/16 06:55	
tert-Butylbenzene	ug/L	<0.18	1.0	10/14/16 06:55	
Tetrachloroethene	ug/L	<0.50	1.0	10/14/16 06:55	
Toluene	ug/L	<0.50	1.0	10/14/16 06:55	
trans-1,2-Dichloroethene	ug/L	<0.26	1.0	10/14/16 06:55	
trans-1,3-Dichloropropene	ug/L	<0.23	1.0	10/14/16 06:55	
Trichloroethene	ug/L	<0.33	1.0	10/14/16 06:55	
Trichlorofluoromethane	ug/L	<0.18	1.0	10/14/16 06:55	
Vinyl chloride	ug/L	<0.18	1.0	10/14/16 06:55	
4-Bromofluorobenzene (S)	%	86	70-130	10/14/16 06:55	
Dibromofluoromethane (S)	%	91	70-130	10/14/16 06:55	
Toluene-d8 (S)	%	95	70-130	10/14/16 06:55	

LABORATORY CONTROL SAMPLE: 1409720

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	49.4	99	70-131	
1,1,1,2-Tetrachloroethane	ug/L	50	49.9	100	67-130	
1,1,2-Trichloroethane	ug/L	50	49.9	100	70-130	
1,1-Dichloroethane	ug/L	50	42.0	84	70-133	
1,1-Dichloroethene	ug/L	50	40.9	82	70-130	
1,2,4-Trichlorobenzene	ug/L	50	49.5	99	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	47.8	96	50-150	
1,2-Dibromoethane (EDB)	ug/L	50	55.3	111	70-130	
1,2-Dichlorobenzene	ug/L	50	52.7	105	70-130	
1,2-Dichloroethane	ug/L	50	47.9	96	70-130	
1,2-Dichloropropane	ug/L	50	50.6	101	70-130	
1,3-Dichlorobenzene	ug/L	50	53.2	106	70-130	
1,4-Dichlorobenzene	ug/L	50	51.2	102	70-130	
Benzene	ug/L	50	50.8	102	60-135	
Bromodichloromethane	ug/L	50	51.3	103	70-130	
Bromoform	ug/L	50	48.6	97	70-130	
Bromomethane	ug/L	50	30.6	61	33-130	

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### QUALITY CONTROL DATA

Project: 0363247 THERMO FISHER

Pace Project No.: 40139898

LABORATORY CONTROL SAMPLE: 1409720

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Carbon tetrachloride	ug/L	50	51.8	104	70-138	
Chlorobenzene	ug/L	50	55.1	110	70-130	
Chloroethane	ug/L	50	40.9	82	51-130	
Chloroform	ug/L	50	47.8	96	70-130	
Chloromethane	ug/L	50	34.4	69	25-132	
cis-1,2-Dichloroethene	ug/L	50	39.9	80	69-130	
cis-1,3-Dichloropropene	ug/L	50	48.5	97	70-130	
Dibromochloromethane	ug/L	50	54.1	108	70-130	
Dichlorodifluoromethane	ug/L	50	31.0	62	23-130	
Ethylbenzene	ug/L	50	54.7	109	70-136	
Isopropylbenzene (Cumene)	ug/L	50	54.9	110	70-140	
m&p-Xylene	ug/L	100	111	111	70-138	
Methyl-tert-butyl ether	ug/L	50	40.4	81	66-138	
Methylene Chloride	ug/L	50	41.3	83	70-130	
o-Xylene	ug/L	50	55.0	110	70-134	
Styrene	ug/L	50	53.0	106	70-133	
Tetrachloroethene	ug/L	50	57.5	115	70-138	
Toluene	ug/L	50	53.6	107	70-130	
trans-1,2-Dichloroethene	ug/L	50	41.3	83	70-131	
trans-1,3-Dichloropropene	ug/L	50	48.6	97	69-130	
Trichloroethene	ug/L	50	53.3	107	70-130	
Trichlorofluoromethane	ug/L	50	46.0	92	50-150	
Vinyl chloride	ug/L	50	44.4	89	49-130	
4-Bromofluorobenzene (S)	%			97	70-130	
Dibromofluoromethane (S)	%			95	70-130	
Toluene-d8 (S)	%			97	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1410881 1410882

Parameter	Units	40139749001		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
1,1,1-Trichloroethane	ug/L	<0.50	50	50	49.1	50.4	98	101	70-134	3	20		
1,1,2,2-Tetrachloroethane	ug/L	<0.25	50	50	50.0	50.3	100	101	67-130	0	20		
1,1,2-Trichloroethane	ug/L	<0.20	50	50	51.3	50.8	103	102	70-130	1	20		
1,1-Dichloroethane	ug/L	<0.24	50	50	37.1	42.5	74	85	70-134	13	20		
1,1-Dichloroethene	ug/L	<0.41	50	50	35.5	41.2	71	82	68-136	15	20		
1,2,4-Trichlorobenzene	ug/L	<2.2	50	50	50.7	51.0	100	101	62-139	1	20		
1,2-Dibromo-3-chloropropane	ug/L	<2.2	50	50	48.9	48.7	98	97	50-150	0	20		
1,2-Dibromoethane (EDB)	ug/L	<0.18	50	50	53.9	53.9	108	108	70-130	0	20		
1,2-Dichlorobenzene	ug/L	<0.50	50	50	53.0	52.9	106	106	70-130	0	20		
1,2-Dichloroethane	ug/L	<0.17	50	50	41.0	48.5	82	97	70-130	17	20		
1,2-Dichloropropane	ug/L	<0.23	50	50	49.9	50.6	100	101	70-130	1	20		
1,3-Dichlorobenzene	ug/L	<0.50	50	50	53.7	54.2	107	108	70-131	1	20		
1,4-Dichlorobenzene	ug/L	<0.50	50	50	51.0	52.4	102	105	70-130	3	20		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: 0363247 THERMO FISHER

Pace Project No.: 40139898

Parameter	Units	40139749001		1410881		1410882		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
Benzene	ug/L	<0.50	50	50	44.2	52.2	88	104	57-138	17	20		
Bromodichloromethane	ug/L	<0.50	50	50	51.8	52.3	104	105	70-130	1	20		
Bromoform	ug/L	<0.50	50	50	49.8	48.8	100	98	70-130	2	20		
Bromomethane	ug/L	<2.4	50	50	26.7	32.4	53	65	33-130	19	27		
Carbon tetrachloride	ug/L	<0.50	50	50	51.4	53.6	103	107	70-138	4	20		
Chlorobenzene	ug/L	<0.50	50	50	55.0	54.9	110	110	70-130	0	20		
Chloroethane	ug/L	<0.37	50	50	35.9	41.9	72	84	51-130	15	20		
Chloroform	ug/L	<2.5	50	50	47.7	49.5	95	99	70-130	4	20		
Chloromethane	ug/L	<0.50	50	50	28.7	34.2	57	68	25-132	18	20		
cis-1,2-Dichloroethene	ug/L	<0.26	50	50	36.2	38.7	72	77	61-140	7	20		
cis-1,3-Dichloropropene	ug/L	<0.50	50	50	49.2	49.5	98	99	70-130	1	20		
Dibromochloromethane	ug/L	<0.50	50	50	54.7	54.5	109	109	70-130	0	20		
Dichlorodifluoromethane	ug/L	<0.22	50	50	24.6	29.5	49	59	23-130	18	20		
Ethylbenzene	ug/L	<0.50	50	50	55.6	54.7	111	109	70-138	2	20		
Isopropylbenzene (Cumene)	ug/L	<0.14	50	50	55.7	55.1	111	110	70-152	1	20		
m&p-Xylene	ug/L	<1.0	100	100	112	112	112	111	70-140	1	20		
Methyl-tert-butyl ether	ug/L	<0.17	50	50	35.1	41.5	70	83	66-139	17	20		
Methylene Chloride	ug/L	<0.23	50	50	35.4	42.5	71	85	70-130	18	20		
o-Xylene	ug/L	<0.50	50	50	54.7	53.2	109	106	70-134	3	20		
Styrene	ug/L	<0.50	50	50	52.0	51.4	104	103	70-138	1	20		
Tetrachloroethene	ug/L	0.58J	50	50	59.1	56.8	117	112	70-148	4	20		
Toluene	ug/L	<0.50	50	50	54.3	53.9	109	108	70-130	1	20		
trans-1,2-Dichloroethene	ug/L	<0.26	50	50	36.2	43.3	72	87	70-133	18	20		
trans-1,3-Dichloropropene	ug/L	<0.23	50	50	49.0	48.4	98	97	69-130	1	20		
Trichloroethene	ug/L	<0.33	50	50	54.0	53.9	108	108	70-131	0	20		
Trichlorofluoromethane	ug/L	<0.18	50	50	38.9	46.0	78	92	50-150	17	20		
Vinyl chloride	ug/L	<0.18	50	50	38.6	45.0	77	90	49-133	15	20		
4-Bromofluorobenzene (S)	%						97	97	70-130				
Dibromofluoromethane (S)	%						92	97	70-130				
Toluene-d8 (S)	%						97	96	70-130				

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: 0363247 THERMO FISHER

Pace Project No.: 40139898

QC Batch: 237924

Analysis Method: ASTM D2974-87

QC Batch Method: ASTM D2974-87

Analysis Description: Dry Weight/Percent Moisture

Associated Lab Samples: 40139898002, 40139898003

SAMPLE DUPLICATE: 1409603

Parameter	Units	40139860002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	27.3	27.5	1	10	

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## QUALIFIERS

Project: 0363247 THERMO FISHER

Pace Project No.: 40139898

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-G Pace Analytical Services - Green Bay

### ANALYTE QUALIFIERS

P4 Sample field preservation does not meet EPA or method recommendations for this analysis.

W Non-detect results are reported on a wet weight basis.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 0363247 THERMO FISHER

Pace Project No.: 40139898

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40139898002	SP-1	EPA 3050	238278	EPA 6010	238398
40139898003	SP-2	EPA 3050	238278	EPA 6010	238398
40139898001	MANHOLE WATER	EPA 3010	238239	EPA 6010	238395
40139898001	MANHOLE WATER	EPA 7470	237869	EPA 7470	237912
40139898002	SP-1	EPA 7471	238225	EPA 7471	238275
40139898003	SP-2	EPA 7471	238225	EPA 7471	238275
40139898002	SP-1	EPA 5035/5030B	237849	EPA 8260	237861
40139898003	SP-2	EPA 5035/5030B	237849	EPA 8260	237861
40139898001	MANHOLE WATER	EPA 8260	237951		
40139898004	TRIP BLANK	EPA 8260	237951		
40139898002	SP-1	ASTM D2974-87	237924		
40139898003	SP-2	ASTM D2974-87	237924		

### REPORT OF LABORATORY ANALYSIS

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(Please Print Clearly)

Company Name: **ERM**  
 Branch/Location: **Milwaukee**  
 Project Contact: **CARL STAY**  
 Phone: **414 688 0725**  
 Project Number: **0363247**  
 Project Name: **Thermo Fisher**  
 Project State: **WI**  
 Sampled By (Print): **CARL STAY**  
 Sampled By (Sign): *Carl Stay*  
 PO #: **0363247**

Regulatory Program:



**40139898**

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# CHAIN OF CUSTODY

**Preservation Codes**  
 A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH  
 H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

FILTERED? (YES/NO)  
 PRESERVATION (CODE)\*

Y/N	Y	N										
Analyses Requested	VOC	8260	RCRA Metals	Dry Weight								
Pick Letter												

**Data Package Options (billable)**  
 EPA Level III  
 EPA Level IV

**MS/MSD**  
 On your sample (billable)  
 NOT needed on your sample

**Matrix Codes**  
 A = Air B = Biota C = Charcoal O = Oil S = Soil SI = Sludge  
 W = Water DW = Drinking Water GW = Ground Water SW = Surface Water WW = Waste Water WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION		MATRIX	Y/N	BX	DX	FX	GX	HX
		DATE	TIME							
001	Mantle Water	10/11	930	W						
002	SP-1	10/11	1140	S			X	X		
003	SP-2	10/11	1145	S			X	X		
0034	(DTB)									

Quote #:  
 Mail To Contact:  
 Mail To Company:  
 Mail To Address:  
 Invoice To Contact:  
 Invoice To Company:  
 Invoice To Address:  
 Invoice To Phone:

**CLIENT COMMENTS**  
 Mantle Water 1-250ml<sup>p</sup> 3-40ml<sup>v</sup>  
 Soil Pile 1 2-40ml<sup>p</sup> 1-40ml<sup>v</sup>  
 Soil Pile 2 2-40ml<sup>v</sup><sup>13</sup>

**LAB COMMENTS (Lab Use Only)**

Profile #

Rush Turnaround Time Requested - Prelims  
 (Rush TAT subject to approval/surcharge)  
 Date Needed: **10-18-2016**

Transmit Prelim Rush Results by (complete what you want):  
 Email #1: **Carl.stay@erm.com**  
 Email #2:  
 Telephone: **414 688 0725**  
 Fax:

Samples on HOLD are subject to special pricing and release of liability

Relinquished By: **CARL STAY** Date/Time: **10/11/16 245**  
 Relinquished By: Date/Time:  
 Relinquished By: Date/Time:  
 Relinquished By: Date/Time:  
 Relinquished By: Date/Time:

Received By: **Kath Johnson** Date/Time: **10/11/16 1445**  
 Received By: Date/Time:  
 Received By: Date/Time:  
 Received By: Date/Time:  
 Received By: Date/Time:

PACE Project No. **40139898**  
 Receipt Temp = **RO1** °C  
 Sample Receipt pH (OK/ Adjusted)  
 Cooler Custody Seal Present / Not Present Intact / Not Intact

10/11/16 JL

① lab added to coc 10/11/16 R



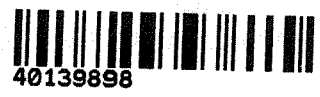
# Sample Condition Upon Receipt

Pace Analytical Services, Inc.  
1241 Bellevue Street, Suite 9  
Green Bay, WI 54302

Project # **WO# : 40139898**

Client Name: ERM

Courier:  Fed Ex  UPS  Client  Pace Other: \_\_\_\_\_



Tracking #: \_\_\_\_\_

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Custody Seal on Samples Present:  yes  no Seals intact:  yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used N/A Type of Ice:  Wet  Blue  Dry  None  Samples on ice, cooling process has begun

Cooler Temperature Uncorr: 101 /Corr: \_\_\_\_\_ Biological Tissue is Frozen:  yes  no

Temp Blank Present:  yes  no

Temp should be above freezing to 6°C for all sample except Biota.  
Frozen Biota Samples should be received ≤ 0°C.

Person examining contents:  
Date: 10/11/16  
Initials: RL

### Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
- VOA Samples frozen upon receipt	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time:
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
-Pace IR Containers Used:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12. <u>002 collect time on vial 1145</u>
-Includes date/time/ID/Analysis Matrix: <u>STW</u>		
All containers needing preservation have been checked. (Non-Compliance noted in 13.)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13. <u>NO3</u> <input type="checkbox"/> H2SO4 <input type="checkbox"/> NaOH <input type="checkbox"/> NaOH + ZnAct
All containers needing preservation are found to be in compliance with EPA recommendation. (HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: <input checked="" type="checkbox"/> VOA coliform, TOC, TOX, TOH, O&G, WIDROW, Phenolics, OTHER:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed: <u>RL</u> Lab Std #ID of preservative: _____ Date/Time: _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14.
Trip Blank Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	15. <u>lab added to coc</u>
Trip Blank Custody Seals Present	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased): <u>3169</u>		<u>10/11/16 RL</u>

Client Notification/ Resolution: \_\_\_\_\_  
Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Comments/ Resolution: \_\_\_\_\_  
If checked, see attached form for additional comments

Project Manager Review: [Signature] Date: 10-11-16