MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

TO: Mike Jury, Project Manager, Saginaw Bay District Office
Remediation and Redevelopment Division

FROM: Jeff Pincumbe, Geologist, Geological Services Unit
Program Support Section, Remediation and Redevelopment Division

DATE: January 18, 2017

SUBJECT: Wurtsmith – River Road PFC Contamination, Iosco County, Site ID #35000154
Site Investigation

This report is for Part 201 site investigation work requested by the Department of Environmental Quality (DEQ), Remediation and Redevelopment Division's (RRD's), Saginaw Bay District office for the subject site (Fig 1). The River Road site is one of three sites associated with Wurtsmith Air Force Base that have been or have the potential to be impacted with Perfluorinated Hydrocarbons (PFCs). The other two sites associated with Wurtsmith are the F-41/Colbath Road site and the Loud Drive site. Both of these sites are included on Figure 1. PFCs are used in firefighting foam which was used on several occasions at the air force base and suspected of being used on several structure fires in the surrounding area of the base.

The River Road site is located west of the city of Oscoda and south of the air force base on the south side of the Au Sable River. The northern half of this area is residential and the southern half includes Oscoda Public Schools and sports complex. The residential homes are on private wells and the school facilities have a series of on-site water supply wells.

Ongoing environmental work associated with the air force base has determined that PFCs are migrating south from the base towards the Au Sable River. There have also been reports that firefighting foam was used on a structure fire near the school bus garage. The school bus garage is located on the eastern side of the school property. The purpose for this investigation was to determine if PFCs detected in the River Road area were migrating under the Au Sable River or if the source was more local to this area.

The PFCs include a list of 21 compounds with only two being compounds of concern: Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA). The action level for the compounds of concern is 70 parts per trillion (ng/l) for each compound individually or for a total of the two compound added together.

This report includes the following:

- Site Location Map (Fig 1)
- Site Map (Fig 2)
- Groundwater Contour Map (Fig 3)
- Global Positioning System (GPS) Coordinates of Soil Borings and Monitor Wells (Table 1)
- Elevation Data (Table 2)
- Volatile Organic Compounds (VOCs) Laboratory Table with Comparison to Risk-Based Screening Levels (RBSLs) (Table 3)
- PFC Compounds of Concern Laboratory Table with Comparison to Action Levels (Table 4)
- DEQ Soil Boring and Monitor Well Logs (Appendix A)
- DEQ Laboratory Results (Appendix B)
- Test America Laboratory Results (Appendix C)

Beginning on October 25, 2016, RRD's Geological Services Unit (GSU) completed soil boring B-3 and installed monitor wells MW-3, MW-4, MW-5, MW-6, and MW-7 at the locations shown on Figure 2. The GPS coordinates for each location is included on Table 1. Soil boring logs and monitor well logs are included in Appendix A. GSU completed the soil boring and monitor wells using a Geoprobe. Staff collected soil samples at each location using a dual tube system with a 3.25-inch outer rod. The soil samples were collected from the surface until groundwater was encountered. The soil samples were for determining lithology so GSU did not submit them to the laboratory for analyses.

Once groundwater was encountered, the GSU crew removed the rods and attached a solid point to the lead rod. The 3.25-inch rods were then driven as deep as possible in an attempt to identify an underlying confining layer. When total depth for all soil borings and monitor wells was reached, staff used a gamma log to identify any changes in lithology with depth. The gamma logs are included on the soil boring and monitor well logs (Appendix A). At all locations, the upper portion of the gamma logs indicated that the lithology was consistently sand. At B-3, MW-4, MW-5, and MW-6 an increase in gamma counts occurred at a depth of approximately 50 feet indicating that a finer grained material was encountered. The gamma log did not indicate a finer grained material with depth at MW-3 (total depth 53 feet) and at MW-6 (total depth 57 feet).

The GSU completed vertical aquifer sampling (VAS) at all soil boring and monitor well locations. VAS was done by driving 1.25-inch Geoprobe rods with a mill slotted lead. Staff collected groundwater samples from the depth shown on the boring logs using a peristaltic pump. The samples were submitted to the DEQ Laboratory and analyzed for VOCs using USEPA Method 8260 (Table 3) (Appendix B). Duplicate groundwater samples were submitted to Test America and analyzed for PFCs (Table 4) (Appendix C).

The GSU conducted an elevation survey to determine the ground elevation of each soil boring and monitor well and the top of casing elevation for each monitor well (Table 2). Depth to groundwater levels were measured on November 14, 2016, and on December 7, 2016. These measurements were converted to a top of groundwater elevation (Table 2). The December 7, 2016, groundwater elevation data was used to generate a Groundwater Contour Map (Fig 3). Based on the Groundwater Contour Map, the groundwater flow direction for the River Road area is to the north towards the Au Sable River.

On November 14-15, 2016, the GSU collected groundwater samples from each monitor well. Staff conducted the sampling using a low-flow method. The samples were submitted to the DEQ Laboratory and analyzed for VOCs using USEPA Method 8260 (Table 3) (Appendix B). Duplicate groundwater samples were submitted to Test America and analyzed for PFCs (Table 4) (Appendix C).

A review of the VOC results indicated there were very low concentrations (<2.0 µg/l) of Toluene and Chloroform in three of the groundwater samples collected from the site. Toluene was detected in the groundwater samples from MW-3 (34-39 feet) and MW-6 (46-51 feet). Chloroform was detected in the groundwater sample from MW-5 (24-29 feet). These very low concentrations of Toluene and Chloroform are likely the result of sample handling and not indicative of the groundwater at these locations.

The PFC compounds were detected in the majority of the groundwater samples collected from the River Road area. Three groundwater samples collected from the site did exceed the action level of 70 ng/l for PFCs. These three samples were from MW-5 at depths of 14-19 feet, 24-29 feet, and 34-39 feet.

In summary, the groundwater flow direction for the site is to the north towards the Au Sable River. Site lithology consists of sand with finer grained material at a depth of approximately 50 feet. Toluene and Chloroform were the only VOCs detected in the groundwater at the site. The concentrations of Toluene and Chloroform are very low and are likely the result of sample handling and not indicative of the groundwater quality in this area. PFCs were detected across the River Road area at concentrations that are below the action level of 70 ng/l with the exception of the area around MW-5. Samples collected from depths of 14-19 feet, 24-29 feet, and 34-39 feet at MW-5 exceeded the action level of 70 ng/l of PFCs in the groundwater.

If you have any questions, contact me at 517-335-6418.

Attachments

cc: Burrell P. Shirey, DEQ

704617 E
441109 N

714736 E
441109 N

DEQ-CR-MW5
DEQ-CR-MW2
DEQ-CR-MW4
DEQ-CR-MW1
DEQ-CR-MW3

F41 / Colbath Road

DEQ-LD-B1
DEQ-LD-B2
DEQ-LD-MW1
DEQ-LD-B3
DEQ-LD-B4
DEQ-LD-MW5
DEQ-LD-B7
DEQ-LD-MW4
DEQ-LD-MW3
DEQ-LD-B6
DEQ-LD-B7
DEQ-LD-B8

Loud Drive

River Road

DEQ-RR-MW4
DEQ-RR-MW1
DEQ-RR-B1
DEQ-RR-MW2
DEQ-RR-MW5
DEQ-RR-MW3

704617 E
433003 N

714736 E
433003 N

LEGEND

Soil Boring / Monitor Well

- DATUM - NAD83
- PROJECTION: MICHIGAN GEOREF
- NORTHING AND EASTING COORDINATES (IN METERS) ARE IN CORNERS OF MAP

AERIAL PHOTO SOURCE: MI CENTER FOR SHARED SOLUTIONS
AERIAL PHOTO DATE: NA
AERIAL RESOLUTION: USGS Topographic

N
W E
S

0 185 370 740 Meters

0 650 1,300 2,600 Feet

1 inch = 2,667 feet

Wurtsmith Air Force Base

ERNIE ID 53000152, 53000153, 53000154

OSCODA & AU SABLE TOWNSHIPS, IOSCO COUNTY

SITE LOCATIONS MAP

GEOLOGIST	CREATION DATE
Jeff Pincumbe Geological Services Unit	January 2017
Remediation and Redevelopment Division	FIGURE 1

LEGEND

Soil Boring / Monitor well

- DATUM - NAD83
- PROJECTION: MICHIGAN GEOREF
- NORTHING AND EASTING COORDINATES (IN METERS) ARE IN CORNERS OF MAP

AERIAL PHOTO SOURCE: MI CENTER FOR SHARED SOLUTIONS
AERIAL PHOTO DATE: 2010
AERIAL RESOLUTION: 1 foot Natural Color

N
W E
S

0 30 60 120 Meters

0 130 260 520 Feet

1 inch = 500 feet

Wurtsmith - River Road

ERNIE ID 35000154

OSCODA & AU SABLE TOWNSHIPS, IOSCO COUNTY
T23N R9E SECTIONS 5 & 6, T24N R9E SECTION 32

SITE MAP

GEOLOGIST Jeff Pincumbe Geological Services Unit		CREATION DATE January2017
Remediation and Redevelopment Division		FIGURE 2

LEGEND

- Soil Boring / Monitor well
- Groundwater Contour 12-7-2016

- DATUM - NAD83
- PROJECTION: MICHIGAN GEOREF
- NORTHING AND EASTING COORDINATES (IN METERS) ARE IN CORNERS OF MAP

AERIAL PHOTO SOURCE: MI CENTER FOR SHARED SOLUTIONS
AERIAL PHOTO DATE: 2010
AERIAL RESOLUTION: 1 foot Natural Color

N
W E
S

0 30 60 120 Meters

0 130 260 520 Feet

1 inch = 500 feet

Wurtsmith - River Road

ERNIE ID 35000154

OSCODA & AU SABLE TOWNSHIPS, IOSCO COUNTY
T23N R9E SECTIONS 5 & 6, T24N R9E SECTION 32

GROUNDWATER CONTOUR MAP 12-7-2016

GEOLOGIST Jeff Pincumbe Geological Services Unit		CREATION DATE January 2017
Remediation and Redevelopment Division		FIGURE 3

River Road PFC Contamination, Iosco County

LOCATION	LATITUDE	LONGITUDE	NORTHING	EASTING
DEQ-RR-B3	44.424769	-83.372701	433719.636	708964.618
DEQ-RR-MW3	44.422113	-83.382515	433399.703	708192.979
DEQ-RR-MW4	44.426005	-83.377854	433843.77	708550.124
DEQ-RR-MW5	44.422982	-83.37551	433514.027	708747.414
DEQ-RR-MW6	44.425266	-83.380289	433755.508	708358.958
DEQ-RR-MW7	44.424778	-83.38361	433692.875	708096.385

Monitor Wells	Top of Casing (TOC) Elevation	Ground Elevation	Total Depth from TOC	Total Depth from Ground	Static Water Level (TOC) 11/14/16	Groundwater Elevation 11/14/16	Static Water Level (TOC) 12/7/16	Groundwater Elevation 12/7/16
RR-MW-3	618.93	619.69	19.10	19.86	13.00	605.93	13.09	605.84
RR-MW-4	616.82	917.08	22.00	322.26	15.86	600.96	15.81	601.01
RR-MW-5	619.37	619.63	18.30	18.56	13.74	605.63	13.81	605.56
RR-MW-6	618.88	916.64	21.00	318.77	16.53	602.35	16.57	602.31
RR-MW-7	619.22	619.48	21.35	21.61	15.68	603.54	15.75	603.47
RR-B-3	NA	612.26	NA					

NA = Not Available

Michigan Department of Environmental Quality Analytical Testing Report
Work Order: 1610241 1611011 1611131
Report Date: 12/2/16 12/6/2016 12/6/2016
Client: MDEQ-RRD-SAGINAW BAY
Attention: Mike Jury
Project Name: RIVER ROAD PFC CONTAMINATION, IOSCO CO.
Project Number: 35000154

Sample Number								1611011-06	1611011-07	1611011-08	1611011-09	1610241-10	1610241-11	1610241-12
Sample ID			Target Detection Limit (TDL)	Drinking Water Criteria (DWC)	Groundwater Surface Water Interface Criteria (GSIC)	Groundwater Volatilization to Indoor Air Inhalation Criteria (GVIIC)	Rule 57 Final Acute Value (FAV)	B-3	B-3	B-3	B-3	MW-3	MW-3	MW-3
Sample Depth								12-17 feet	22-27 feet	32-37 feet	42-47 feet	14-19 feet	24-29 feet	34-39 feet
Date Collected								11/1/2016	11/1/2016	11/1/2016	11/1/2016	10/27/2016	10/27/2016	10/27/2016
Date Received								11/2/2016	11/2/2016	11/2/2016	11/2/2016	10/28/2016	10/28/2016	10/28/2016
Analyte	Units	Method	Organics-Volatiles											
1,1,1,2-Tetrachloroethane	ug/L	8260	1	77	ID	15,000	ID	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	8260	1	200	89	660,000	1,600	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	8260	1	9	78	12,000	1,800	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	8260	1	5	330	17,000	6,400	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	8260	1	880	740	1,000,000	13,000	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethylene	ug/L	8260	1	7	130	200	2,300	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	8260	NA	NA	NA	NA	NA	<5	<5	<5	<5	<5	<5	<5
1,2,3-Trichloropropane	ug/L	8260	1	42	NA	8,300	NA	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trimethylbenzene	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	8260	5	70	99	300,000	850	<5	<5	<5	<5	<5	<5	<5
1,2,4-Trimethylbenzene	ug/L	8260	1	63	17	56,000	310	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	8260	NA	NA	NA	NA	NA	<5	<5	<5	<5	<5	<5	<5
1,2-Dibromoethane	ug/L	8260	0	0	6	2,400	280	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	8260	1	600	13	160,000	240	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	8260	1	5	360	9,600	16,000	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	8260	1	5	230	16,000	4,000	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	8260	1	72	45	61,000	810	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	8260	1	7	28	18,000	200	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	8260	1	75	17	16,000	210	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	ug/L	8260	25	13,000	2,200	240,000,000	40,000	<5	<5	<5	<5	<5	<5	<5
2-Hexanone	ug/L	8260	50	1,000	ID	4,200,000	ID	<5	<5	<5	<5	<5	<5	<5
2-Methylnaphthalene	ug/L	8260	5	260	19	25,000	340	<5	<5	<5	<5	<5	<5	<5
2-Propanone (acetone)	ug/L	8260	50	730	1,700	1,000,000,000	30,000	<20	<20	<20	<20	<20	<20	<20
4-Methyl-2-pentanone (MIBK)	ug/L	8260	50	1,800	ID	20,000,000	ID	<5	<5	<5	<5	<5	<5	<5
Acrylonitrile	ug/L	8260	2	3	2	34,000	1,200	<5	<5	<5	<5	<5	<5	<5
Benzene	ug/L	8260	1	5	200	5,600	1,900	<1	<1	<1	<1	<1	<1	<1
Bromobenzene	ug/L	8260	1	18	NA	180,000	NA	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	8260	1	80	ID	4,800	ID	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	8260	1	80	ID	470,000	ID	<1	<1	<1	<1	<1	<1	<1
Bromomethane	ug/L	8260	5	10	35	4,000	640	<5	<5	<5	<5	<5	<5	<5
Carbon disulfide	ug/L	8260	5	800	ID	250,000	ID	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	8260	1	5	45	370	1,400	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	8260	1	100	25	210,000	450	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	8260	5	430	1,100	5,700,000	20,000	<5	<5	<5	<5	<5	<5	<5
Chloroform	ug/L	8260	1	80	350	28,000	11,000	<1	<1	<1	<1	<1	<1	<1
Chloromethane	ug/L	8260	5	260	ID	8,600	ID	<5	<5	<5	<5	<5	<5	<5
cis-1,2-Dichloroethylene	ug/L	8260	1	70	620	93,000	11,000	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropylene	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	<1
Cyclohexane	ug/L	8260	NA	NA	NA	NA	NA	<5	<5	<5	<5	<5	<5	<5
Dibromochloromethane	ug/L	8260	5	80	ID	14,000	ID	<1	<1	<1	<1	<1	<1	<1
Dibromomethane	ug/L	8260	5	80	NA	ID	NA	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	8260	5	1,700	ID	220,000	ID	<5	<5	<5	<5	<5	<5	<5
Diethyl ether	ug/L	8260	10	10	ID	61,000,000	ID	<5	<5	<5	<5	<5	<5	<5
Diisopropyl Ether	ug/L	8260	5	30	ID	8,000	ID	<5	<5	<5	<5	<5	<5	<5
Ethylbenzene	ug/L	8260	1	74	18	110,000	320	<1	<1	<1	<1	<1	<1	<1
Ethyltertiarybutylether	ug/L	8260	5	49	ID	2,900,000	ID	<5	<5	<5	<5	<5	<5	<5
Hexachloroethane	ug/L	8260	5	7	7	27,000	210	<5	<5	<5	<5	<5	<5	<5
Isopropylbenzene	ug/L	8260	5	800	28	56,000	500	<1	<1	<1	<1	<1	<1	<1
m & p - Xylene	ug/L	8260	NA	NA	NA	NA	NA	<2	<2	<2	<2	<2	<2	<2
Methyl iodide	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	ug/L	8260	5	5	1,500	220,000	17,000	<5	<5	<5	<5	<5	<5	<5
Methyltertiarybutylether	ug/L	8260	5	40	7,100	47,000,000	420,000	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	8260	5	520	11	31,000	200	<5	<5	<5	<5	<5	<5	<5
n-Butylbenzene	ug/L	8260	1	80	ID	ID	ID	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	8260	1	80	ID	ID	ID	<1	<1	<1	<1	<1	<1	<1
o-Xylene	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	<1
p-Isopropyl toluene	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	8260	1	80	ID	ID	ID	<1	<1	<1	<1	<1	<1	<1
Styrene	ug/L	8260	1	100	80	170,000	2,900	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	8260	1	80	ID	ID	ID	<1	<1	<1	<1	<1	<1	<1
tertiary Butyl Alcohol	ug/L	8260	50	3,900	NA	1,000,000,000	NA	<50	<50	<50	<50	<50	<50	<50
tertiaryAmylmethylether	ug/L	8260	5	190	NA	260,000	NA	<5	<5	<5	<5	<5	<5	<5
Tetrachloroethylene	ug/L	8260	1	5	60	25,000	2,900	<1	<1	<1	<1	<1	<1	<1
Tetrahydrofuran	ug/L	8260	90	95	11,000	6,900,000	150,000	<5	<5	<5	<5	<5	<5	<5
Toluene	ug/L	8260	1	790	270	530,000	2,600	<1	<1	<1	<1	<1	<1	1.1
trans-1,2-Dichloroethylene	ug/L	8260	1	100	1,500	85,000	28,000	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropylene	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	8260	NA	NA	NA	NA	NA	<5	<5	<5	<5	<5	<5	<5
Trichloroethylene	ug/L	8260	1	5	200	2,200	3,500	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	8260	1	2,600	NA	1,100,000	NA	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	8260	1	2	13	1,100	17,000	<1	<1	<1	<1	<1	<1	<1

Grey indicates contaminant was detected.
Yellow indicates contaminant exceeds DWC.
Blue indicates contaminant exceeds GSIC.
Green indicates contaminant exceeds both DWC and GSIC.
Orange indicates contaminant exceeds one or more criteria; GVIIC and/or FAV.
"ID" means insufficient data to develop criterion.
"NA" means a criterion or value is not available or, in the case of background, not applicable.
"NLV" means hazardous substance is not likely to volatilize under most conditions.
Letters in criteria columns refer to Footnotes of the Criteria/RBSLs tables.

Michigan Department of Environmental Quality Analytical Testing Report
Work Order: 1610241 1611011 1611131
Report Date: 12/2/16 12/6/2016 12/6/2016
Client: MDEQ-RRD-SAGINAW BAY
Attention: Mike Jury
Project Name: RIVER ROAD PFC CONTAMINATION, IOSCO CO.
Project Number: 35000154

Sample Number								1610241-13	1610241-01	1610241-02	1610241-03	1610241-04	1611011-01	1611011-02
Sample ID			Target Detection Limit (TDL)	Drinking Water Criteria (DWC)	Groundwater Surface Water Interface Criteria (GSIC)	Groundwater Volatilization to Indoor Air Inhalation Criteria (GVIIC)	Rule 57 Final Acute Value (FAV)	MW-3	MW-4	MW-4	MW-4	MW-4	MW-5	MW-5
Sample Depth								44-49 feet	16-21 feet	26-31 feet	36-41 feet	46-51 feet	14-19 feet	24-29 feet
Date Collected								10/27/2016	10/26/2016	10/26/2016	10/26/2016	10/26/2016	10/31/2016	10/31/2016
Date Received								10/28/2016	10/28/2016	10/28/2016	10/28/2016	10/28/2016	11/2/2016	11/2/2016
Analyte	Units	Method	Organics-Volatiles											
1,1,1,2-Tetrachloroethane	ug/L	8260	1	77	ID	15,000	ID	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	8260	1	200	89	660,000	1,600	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	8260	1	9	78	12,000	1,800	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	8260	1	5	330	17,000	6,400	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	8260	1	880	740	1,000,000	13,000	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethylene	ug/L	8260	1	7	130	200	2,300	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	8260	NA	NA	NA	NA	NA	<5	<5	<5	<5	<5	<5	<5
1,2,3-Trichloropropane	ug/L	8260	1	42	NA	8,300	NA	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trimethylbenzene	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	8260	5	70	99	300,000	850	<5	<5	<5	<5	<5	<5	<5
1,2,4-Trimethylbenzene	ug/L	8260	1	63	17	56,000	310	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	8260	NA	NA	NA	NA	NA	<5	<5	<5	<5	<5	<5	<5
1,2-Dibromoethane	ug/L	8260	0	0	6	2,400	280	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	8260	1	600	13	160,000	240	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	8260	1	5	360	9,600	16,000	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	8260	1	5	230	16,000	4,000	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	8260	1	72	45	61,000	810	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	8260	1	7	28	18,000	200	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	8260	1	75	17	16,000	210	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	ug/L	8260	25	13,000	2,200	240,000,000	40,000	<5	<5	<5	<5	<5	<5	<5
2-Hexanone	ug/L	8260	50	1,000	ID	4,200,000	ID	<5	<5	<5	<5	<5	<5	<5
2-Methylnaphthalene	ug/L	8260	5	260	19	25,000	340	<5	<5	<5	<5	<5	<5	<5
2-Propanone (acetone)	ug/L	8260	50	730	1,700	1,000,000,000	30,000	<20	<20	<20	<20	<20	<20	<20
4-Methyl-2-pentanone (MIBK)	ug/L	8260	50	1,800	ID	20,000,000	ID	<5	<5	<5	<5	<5	<5	<5
Acrylonitrile	ug/L	8260	2	3	2	34,000	1,200	<5	<5	<5	<5	<5	<5	<5
Benzene	ug/L	8260	1	5	200	5,600	1,900	<1	<1	<1	<1	<1	<1	<1
Bromobenzene	ug/L	8260	1	18	NA	180,000	NA	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	8260	1	80	ID	4,800	ID	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	8260	1	80	ID	470,000	ID	<1	<1	<1	<1	<1	<1	<1
Bromomethane	ug/L	8260	5	10	35	4,000	640	<5	<5	<5	<5	<5	<5	<5
Carbon disulfide	ug/L	8260	5	800	ID	250,000	ID	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	8260	1	5	45	370	1,400	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	8260	1	100	25	210,000	450	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	8260	5	430	1,100	5,700,000	20,000	<5	<5	<5	<5	<5	<5	<5
Chloroform	ug/L	8260	1	80	350	28,000	11,000	<1	<1	<1	<1	<1	<1	1.2
Chloromethane	ug/L	8260	5	260	ID	8,600	ID	<5	<5	<5	<5	<5	<5	<5
cis-1,2-Dichloroethylene	ug/L	8260	1	70	620	93,000	11,000	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropylene	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	<1
Cyclohexane	ug/L	8260	NA	NA	NA	NA	NA	<5	<5	<5	<5	<5	<5	<5
Dibromochloromethane	ug/L	8260	5	80	ID	14,000	ID	<1	<1	<1	<1	<1	<1	<1
Dibromomethane	ug/L	8260	5	80	NA	ID	NA	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	8260	5	1,700	ID	220,000	ID	<5	<5	<5	<5	<5	<5	<5
Diethyl ether	ug/L	8260	10	10	ID	61,000,000	ID	<5	<5	<5	<5	<5	<5	<5
Diisopropyl Ether	ug/L	8260	5	30	ID	8,000	ID	<5	<5	<5	<5	<5	<5	<5
Ethylbenzene	ug/L	8260	1	74	18	110,000	320	<1	<1	<1	<1	<1	<1	<1
Ethyltertiarybutylether	ug/L	8260	5	49	ID	2,900,000	ID	<5	<5	<5	<5	<5	<5	<5
Hexachloroethane	ug/L	8260	5	7	7	27,000	210	<5	<5	<5	<5	<5	<5	<5
Isopropylbenzene	ug/L	8260	5	800	28	56,000	500	<1	<1	<1	<1	<1	<1	<1
m & p - Xylene	ug/L	8260	NA	NA	NA	NA	NA	<2	<2	<2	<2	<2	<2	<2
Methyl iodide	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	ug/L	8260	5	5	1,500	220,000	17,000	<5	<5	<5	<5	<5	<5	<5
Methyltertiarybutylether	ug/L	8260	5	40	7,100	47,000,000	420,000	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	8260	5	520	11	31,000	200	<5	<5	<5	<5	<5	<5	<5
n-Butylbenzene	ug/L	8260	1	80	ID	ID	ID	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	8260	1	80	ID	ID	ID	<1	<1	<1	<1	<1	<1	<1
o-Xylene	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	<1
p-Isopropyl toluene	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	8260	1	80	ID	ID	ID	<1	<1	<1	<1	<1	<1	<1
Styrene	ug/L	8260	1	100	80	170,000	2,900	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	8260	1	80	ID	ID	ID	<1	<1	<1	<1	<1	<1	<1
tertiary Butyl Alcohol	ug/L	8260	50	3,900	NA	1,000,000,000	NA	<50	<50	<50	<50	<50	<50	<50
tertiaryAmylmethylether	ug/L	8260	5	190	NA	260,000	NA	<5	<5	<5	<5	<5	<5	<5
Tetrachloroethylene	ug/L	8260	1	5	60	25,000	2,900	<1	<1	<1	<1	<1	<1	<1
Tetrahydrofuran	ug/L	8260	90	95	11,000	6,900,000	150,000	<5	<5	<5	<5	<5	<5	<5
Toluene	ug/L	8260	1	790	270	530,000	2,600	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethylene	ug/L	8260	1	100	1,500	85,000	28,000	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropylene	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	8260	NA	NA	NA	NA	NA	<5	<5	<5	<5	<5	<5	<5
Trichloroethylene	ug/L	8260	1	5	200	2,200	3,500	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	8260	1	2,600	NA	1,100,000	NA	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	8260	1	2	13	1,100	17,000	<1	<1	<1	<1	<1	<1	<1

Grey indicates contaminant was detected.
Yellow indicates contaminant exceeds DWC.
Blue indicates contaminant exceeds GSIC.
Green indicates contaminant exceeds both DWC and GSIC.
Orange indicates contaminant exceeds one or more criteria; GVIIC and/or FAV.
"ID" means insufficient data to develop criterion.
"NA" means a criterion or value is not available or, in the case of background, not applicable.
"NLV" means hazardous substance is not likely to volatilize under most conditions.
Letters in criteria columns refer to Footnotes of the Criteria/RBSLs tables.

Michigan Department of Environmental Quality Analytical Testing Report
Work Order: 1610241 1611011 1611131
Report Date: 12/2/16 12/6/2016 12/6/2016
Client: MDEQ-RRD-SAGINAW BAY
Attention: Mike Jury
Project Name: RIVER ROAD PFC CONTAMINATION, IOSCO CO.
Project Number: 35000154

Sample Number			Target Detection Limit (TDL)	Drinking Water Criteria (DWC)	Groundwater Surface Water Interface Criteria (GSIC)	Groundwater Volatilization to Indoor Air Inhalation Criteria (GVIIC)	Rule 57 Final Acute Value (FAV)	1611011-03	1611011-04	1611011-05	1610241-05	1610241-06	1610241-07	1610241-08
Sample ID								MW-5 Dup	MW-5	MW-5	MW-6	MW-6	MW-6 Dup	MW-6
Sample Depth								24-29 feet	34-39 feet	44-49 feet	16-21 feet	26-31 feet	26-31 feet	36-41 feet
Date Collected								10/31/2016	10/31/2016	10/31/2016	10/26/2016	10/26/2016	10/26/2016	10/26/2016
Date Received								11/2/2016	11/2/2016	11/2/2016	10/28/2016	10/28/2016	10/28/2016	10/28/2016
Analyte	Units	Method	Organics-Volatiles											
1,1,1,2-Tetrachloroethane	ug/L	8260	1	77	ID	15,000	ID	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	8260	1	200	89	660,000	1,600	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	8260	1	9	78	12,000	1,800	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	8260	1	5	330	17,000	6,400	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	8260	1	880	740	1,000,000	13,000	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethylene	ug/L	8260	1	7	130	200	2,300	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	8260	NA	NA	NA	NA	NA	<5	<5	<5	<5	<5	<5	<5
1,2,3-Trichloropropane	ug/L	8260	1	42	NA	8,300	NA	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trimethylbenzene	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	8260	5	70	99	300,000	850	<5	<5	<5	<5	<5	<5	<5
1,2,4-Trimethylbenzene	ug/L	8260	1	63	17	56,000	310	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	8260	NA	NA	NA	NA	NA	<5	<5	<5	<5	<5	<5	<5
1,2-Dibromoethane	ug/L	8260	0	0	6	2,400	280	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	8260	1	600	13	160,000	240	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	8260	1	5	360	9,600	16,000	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	8260	1	5	230	16,000	4,000	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	8260	1	72	45	61,000	810	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	8260	1	7	28	18,000	200	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	8260	1	75	17	16,000	210	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	ug/L	8260	25	13,000	2,200	240,000,000	40,000	<5	<5	<5	<5	<5	<5	<5
2-Hexanone	ug/L	8260	50	1,000	ID	4,200,000	ID	<5	<5	<5	<5	<5	<5	<5
2-Methylnaphthalene	ug/L	8260	5	260	19	25,000	340	<5	<5	<5	<5	<5	<5	<5
2-Propanone (acetone)	ug/L	8260	50	730	1,700	1,000,000,000	30,000	<20	<20	<20	<20	<20	<20	<20
4-Methyl-2-pentanone (MIBK)	ug/L	8260	50	1,800	ID	20,000,000	ID	<5	<5	<5	<5	<5	<5	<5
Acrylonitrile	ug/L	8260	2	3	2	34,000	1,200	<5	<5	<5	<5	<5	<5	<5
Benzene	ug/L	8260	1	5	200	5,600	1,900	<1	<1	<1	<1	<1	<1	<1
Bromobenzene	ug/L	8260	1	18	NA	180,000	NA	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	8260	1	80	ID	4,800	ID	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	8260	1	80	ID	470,000	ID	<1	<1	<1	<1	<1	<1	<1
Bromomethane	ug/L	8260	5	10	35	4,000	640	<5	<5	<5	<5	<5	<5	<5
Carbon disulfide	ug/L	8260	5	800	ID	250,000	ID	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	8260	1	5	45	370	1,400	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	8260	1	100	25	210,000	450	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	8260	5	430	1,100	5,700,000	20,000	<5	<5	<5	<5	<5	<5	<5
Chloroform	ug/L	8260	1	80	350	28,000	11,000	1.2	<1	<1	<1	<1	<1	<1
Chloromethane	ug/L	8260	5	260	ID	8,600	ID	<5	<5	<5	<5	<5	<5	<5
cis-1,2-Dichloroethylene	ug/L	8260	1	70	620	93,000	11,000	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropylene	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	<1
Cyclohexane	ug/L	8260	NA	NA	NA	NA	NA	<5	<5	<5	<5	<5	<5	<5
Dibromochloromethane	ug/L	8260	5	80	ID	14,000	ID	<1	<1	<1	<1	<1	<1	<1
Dibromomethane	ug/L	8260	5	80	NA	ID	NA	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	8260	5	1,700	ID	220,000	ID	<5	<5	<5	<5	<5	<5	<5
Diethyl ether	ug/L	8260	10	10	ID	61,000,000	ID	<5	<5	<5	<5	<5	<5	<5
Diisopropyl Ether	ug/L	8260	5	30	ID	8,000	ID	<5	<5	<5	<5	<5	<5	<5
Ethylbenzene	ug/L	8260	1	74	18	110,000	320	<1	<1	<1	<1	<1	<1	<1
Ethyltertiarybutylether	ug/L	8260	5	49	ID	2,900,000	ID	<5	<5	<5	<5	<5	<5	<5
Hexachloroethane	ug/L	8260	5	7	7	27,000	210	<5	<5	<5	<5	<5	<5	<5
Isopropylbenzene	ug/L	8260	5	800	28	56,000	500	<1	<1	<1	<1	<1	<1	<1
m & p - Xylene	ug/L	8260	NA	NA	NA	NA	NA	<2	<2	<2	<2	<2	<2	<2
Methyl iodide	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	ug/L	8260	5	5	1,500	220,000	17,000	<5	<5	<5	<5	<5	<5	<5
Methyltertiarybutylether	ug/L	8260	5	40	7,100	47,000,000	420,000	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	8260	5	520	11	31,000	200	<5	<5	<5	<5	<5	<5	<5
n-Butylbenzene	ug/L	8260	1	80	ID	ID	ID	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	8260	1	80	ID	ID	ID	<1	<1	<1	<1	<1	<1	<1
o-Xylene	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	<1
p-Isopropyl toluene	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	8260	1	80	ID	ID	ID	<1	<1	<1	<1	<1	<1	<1
Styrene	ug/L	8260	1	100	80	170,000	2,900	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	8260	1	80	ID	ID	ID	<1	<1	<1	<1	<1	<1	<1
tertiary Butyl Alcohol	ug/L	8260	50	3,900	NA	1,000,000,000	NA	<50	<50	<50	<50	<50	<50	<50
tertiaryAmylmethylether	ug/L	8260	5	190	NA	260,000	NA	<5	<5	<5	<5	<5	<5	<5
Tetrachloroethylene	ug/L	8260	1	5	60	25,000	2,900	<1	<1	<1	<1	<1	<1	<1
Tetrahydrofuran	ug/L	8260	90	95	11,000	6,900,000	150,000	<5	<5	<5	<5	<5	<5	<5
Toluene	ug/L	8260	1	790	270	530,000	2,600	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethylene	ug/L	8260	1	100	1,500	85,000	28,000	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropylene	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	8260	NA	NA	NA	NA	NA	<5	<5	<5	<5	<5	<5	<5
Trichloroethylene	ug/L	8260	1	5	200	2,200	3,500	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	8260	1	2,600	NA	1,100,000	NA	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	8260	1	2	13	1,100	17,000	<1	<1	<1	<1	<1	<1	<1

Grey indicates contaminant was detected.
Yellow indicates contaminant exceeds DWC.
Blue indicates contaminant exceeds GSIC.
Green indicates contaminant exceeds both DWC and GSIC.
Orange indicates contaminant exceeds one or more criteria; GVIIC and/or FAV.
"ID" means insufficient data to develop criterion.
"NA" means a criterion or value is not available or, in the case of background, not applicable.
"NLV" means hazardous substance is not likely to volatilize under most conditions.
Letters in criteria columns refer to Footnotes of the Criteria/RBSLs tables.

Michigan Department of Environmental Quality Analytical Testing Report
Work Order: 1610241 1611011 1611131
Report Date: 12/2/16 12/6/2016 12/6/2016
Client: MDEQ-RRD-SAGINAW BAY
Attention: Mike Jury
Project Name: RIVER ROAD PFC CONTAMINATION, IOSCO CO.
Project Number: 35000154

Sample Number								1610241-09	1610241-14	1610241-15	1610241-16	1610241-17	1611131-01	1611131-02
Sample ID			Target Detection Limit (TDL)	Drinking Water Criteria (DWC)	Groundwater Surface Water Interface Criteria (GSIC)	Groundwater Volatilization to Indoor Air Inhalation Criteria (GVIIC)	Rule 57 Final Acute Value (FAV)	MW-6	MW-7	MW-7	MW-7	MW-7	MW-3	MW-4
Sample Depth								46-51 feet	16-21 feet	26-31 feet	36-41 feet	46-51 feet		
Date Collected								10/26/2016	10/27/2016	10/27/2016	10/27/2016	10/27/2016	11/15/2016	11/14/2016
Date Received								10/28/2016	10/28/2016	10/28/2016	10/28/2016	10/28/2016	11/15/2016	11/15/2016
Analyte	Units	Method	Organics-Volatiles											
1,1,1,2-Tetrachloroethane	ug/L	8260	1	77	ID	15,000	ID	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	8260	1	200	89	660,000	1,600	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	8260	1	9	78	12,000	1,800	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	8260	1	5	330	17,000	6,400	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	8260	1	880	740	1,000,000	13,000	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethylene	ug/L	8260	1	7	130	200	2,300	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	8260	NA	NA	NA	NA	NA	<5	<5	<5	<5	<5	<5	<5
1,2,3-Trichloropropane	ug/L	8260	1	42	NA	8,300	NA	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trimethylbenzene	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	8260	5	70	99	300,000	850	<5	<5	<5	<5	<5	<5	<5
1,2,4-Trimethylbenzene	ug/L	8260	1	63	17	56,000	310	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	8260	NA	NA	NA	NA	NA	<5	<5	<5	<5	<5	<5	<5
1,2-Dibromoethane	ug/L	8260	0	0	6	2,400	280	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	8260	1	600	13	160,000	240	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	8260	1	5	360	9,600	16,000	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	8260	1	5	230	16,000	4,000	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	8260	1	72	45	61,000	810	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	8260	1	7	28	18,000	200	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	8260	1	75	17	16,000	210	<1	<1	<1	<1	<1	<1	<1
2-Butanone (MEK)	ug/L	8260	25	13,000	2,200	240,000,000	40,000	<5	<5	<5	<5	<5	<5	<5
2-Hexanone	ug/L	8260	50	1,000	ID	4,200,000	ID	<5	<5	<5	<5	<5	<5	<5
2-Methylnaphthalene	ug/L	8260	5	260	19	25,000	340	<5	<5	<5	<5	<5	<5	<5
2-Propanone (acetone)	ug/L	8260	50	730	1,700	1,000,000,000	30,000	<20	<20	<20	<20	<20	<20	<20
4-Methyl-2-pentanone (MIBK)	ug/L	8260	50	1,800	ID	20,000,000	ID	<5	<5	<5	<5	<5	<5	<5
Acrylonitrile	ug/L	8260	2	3	2	34,000	1,200	<5	<5	<5	<5	<5	<5	<5
Benzene	ug/L	8260	1	5	200	5,600	1,900	<1	<1	<1	<1	<1	<1	<1
Bromobenzene	ug/L	8260	1	18	NA	180,000	NA	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	8260	1	80	ID	4,800	ID	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	8260	1	80	ID	470,000	ID	<1	<1	<1	<1	<1	<1	<1
Bromomethane	ug/L	8260	5	10	35	4,000	640	<5	<5	<5	<5	<5	<5	<5
Carbon disulfide	ug/L	8260	5	800	ID	250,000	ID	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	8260	1	5	45	370	1,400	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	8260	1	100	25	210,000	450	<1	<1	<1	<1	<1	<1	<1
Chloroethane	ug/L	8260	5	430	1,100	5,700,000	20,000	<5	<5	<5	<5	<5	<5	<5
Chloroform	ug/L	8260	1	80	350	28,000	11,000	<1	<1	<1	<1	<1	<1	<1
Chloromethane	ug/L	8260	5	260	ID	8,600	ID	<5	<5	<5	<5	<5	<5	<5
cis-1,2-Dichloroethylene	ug/L	8260	1	70	620	93,000	11,000	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropylene	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	<1
Cyclohexane	ug/L	8260	NA	NA	NA	NA	NA	<5	<5	<5	<5	<5	<5	<5
Dibromochloromethane	ug/L	8260	5	80	ID	14,000	ID	<1	<1	<1	<1	<1	<1	<1
Dibromomethane	ug/L	8260	5	80	NA	ID	NA	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	8260	5	1,700	ID	220,000	ID	<5	<5	<5	<5	<5	<5	<5
Diethyl ether	ug/L	8260	10	10	ID	61,000,000	ID	<5	<5	<5	<5	<5	<5	<5
Diisopropyl Ether	ug/L	8260	5	30	ID	8,000	ID	<5	<5	<5	<5	<5	<5	<5
Ethylbenzene	ug/L	8260	1	74	18	110,000	320	<1	<1	<1	<1	<1	<1	<1
Ethyltertiarybutylether	ug/L	8260	5	49	ID	2,900,000	ID	<5	<5	<5	<5	<5	<5	<5
Hexachloroethane	ug/L	8260	5	7	7	27,000	210	<5	<5	<5	<5	<5	<5	<5
Isopropylbenzene	ug/L	8260	5	800	28	56,000	500	<1	<1	<1	<1	<1	<1	<1
m & p - Xylene	ug/L	8260	NA	NA	NA	NA	NA	<2	<2	<2	<2	<2	<2	<2
Methyl iodide	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	ug/L	8260	5	5	1,500	220,000	17,000	<5	<5	<5	<5	<5	<5	<5
Methyltertiarybutylether	ug/L	8260	5	40	7,100	47,000,000	420,000	<1	<1	<1	<1	<1	<1	<1
Naphthalene	ug/L	8260	5	520	11	31,000	200	<5	<5	<5	<5	<5	<5	<5
n-Butylbenzene	ug/L	8260	1	80	ID	ID	ID	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	ug/L	8260	1	80	ID	ID	ID	<1	<1	<1	<1	<1	<1	<1
o-Xylene	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	<1
p-Isopropyl toluene	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	ug/L	8260	1	80	ID	ID	ID	<1	<1	<1	<1	<1	<1	<1
Styrene	ug/L	8260	1	100	80	170,000	2,900	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	ug/L	8260	1	80	ID	ID	ID	<1	<1	<1	<1	<1	<1	<1
tertiary Butyl Alcohol	ug/L	8260	50	3,900	NA	1,000,000,000	NA	<50	<50	<50	<50	<50	<50	<50
tertiaryAmylmethylether	ug/L	8260	5	190	NA	260,000	NA	<5	<5	<5	<5	<5	<5	<5
Tetrachloroethylene	ug/L	8260	1	5	60	25,000	2,900	<1	<1	<1	<1	<1	<1	<1
Tetrahydrofuran	ug/L	8260	90	95	11,000	6,900,000	150,000	<5	<5	<5	<5	<5	<5	<5
Toluene	ug/L	8260	1	790	270	530,000	2,600	**0.96**	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethylene	ug/L	8260	1	100	1,500	85,000	28,000	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropylene	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	8260	NA	NA	NA	NA	NA	<5	<5	<5	<5	<5	<5	<5
Trichloroethylene	ug/L	8260	1	5	200	2,200	3,500	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	8260	1	2,600	NA	1,100,000	NA	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	ug/L	8260	1	2	13	1,100	17,000	<1	<1	<1	<1	<1	<1	<1

Grey indicates contaminant was detected.
Yellow indicates contaminant exceeds DWC.
Blue indicates contaminant exceeds GSIC.
Green indicates contaminant exceeds both DWC and GSIC.
Orange indicates contaminant exceeds one or more criteria; GVIIC and/or FAV.
"ID" means insufficient data to develop criterion.
"NA" means a criterion or value is not available or, in the case of background, not applicable.
"NLV" means hazardous substance is not likely to volatilize under most conditions.
Letters in criteria columns refer to Footnotes of the Criteria/RBSLs tables.

Michigan Department of Environmental Quality Analytical Testing Report
Work Order: 1610241 1611011 1611131
Report Date: 12/2/16 12/6/2016 12/6/2016
Client: MDEQ-RRD-SAGINAW BAY
Attention: Mike Jury
Project Name: RIVER ROAD PFC CONTAMINATION, IOSCO CO.
Project Number: 35000154

Sample Number								1611131-03	1611131-04	1611131-05	1611131-06
Sample ID			Target Detection Limit (TDL)	Drinking Water Criteria (DWC)	Groundwater Surface Water Interface Criteria (GSIC)	Groundwater Volatilization to Indoor Air Inhalation Criteria (GVIIC)	Rule 57 Final Acute Value (FAV)	MW-5	MW-6	MW-6 Dup	MW-7
Sample Depth											
Date Collected								11/15/2016	11/14/2016	11/14/2016	11/15/2016
Date Received								11/15/2016	11/15/2016	11/15/2016	11/15/2016
Analyte	Units	Method	Organics-Volatiles								
1,1,1,2-Tetrachloroethane	ug/L	8260	1	77	ID	15,000	ID	<1	<1	<1	<1
1,1,1-Trichloroethane	ug/L	8260	1	200	89	660,000	1,600	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	8260	1	9	78	12,000	1,800	<1	<1	<1	<1
1,1,2-Trichloroethane	ug/L	8260	1	5	330	17,000	6,400	<1	<1	<1	<1
1,1-Dichloroethane	ug/L	8260	1	880	740	1,000,000	13,000	<1	<1	<1	<1
1,1-Dichloroethylene	ug/L	8260	1	7	130	200	2,300	<1	<1	<1	<1
1,2,3-Trichlorobenzene	ug/L	8260	NA	NA	NA	NA	NA	<5	<5	<5	<5
1,2,3-Trichloropropane	ug/L	8260	1	42	NA	8,300	NA	<1	<1	<1	<1
1,2,3-Trimethylbenzene	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1
1,2,4-Trichlorobenzene	ug/L	8260	5	70	99	300,000	850	<5	<5	<5	<5
1,2,4-Trimethylbenzene	ug/L	8260	1	63	17	56,000	310	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	ug/L	8260	NA	NA	NA	NA	NA	<5	<5	<5	<5
1,2-Dibromoethane	ug/L	8260	0	0	6	2,400	280	<1	<1	<1	<1
1,2-Dichlorobenzene	ug/L	8260	1	600	13	160,000	240	<1	<1	<1	<1
1,2-Dichloroethane	ug/L	8260	1	5	360	9,600	16,000	<1	<1	<1	<1
1,2-Dichloropropane	ug/L	8260	1	5	230	16,000	4,000	<1	<1	<1	<1
1,3,5-Trimethylbenzene	ug/L	8260	1	72	45	61,000	810	<1	<1	<1	<1
1,3-Dichlorobenzene	ug/L	8260	1	7	28	18,000	200	<1	<1	<1	<1
1,4-Dichlorobenzene	ug/L	8260	1	75	17	16,000	210	<1	<1	<1	<1
2-Butanone (MEK)	ug/L	8260	25	13,000	2,200	240,000,000	40,000	<5	<5	<5	<5
2-Hexanone	ug/L	8260	50	1,000	ID	4,200,000	ID	<5	<5	<5	<5
2-Methylnaphthalene	ug/L	8260	5	260	19	25,000	340	<5	<5	<5	<5
2-Propanone (acetone)	ug/L	8260	50	730	1,700	1,000,000,000	30,000	<20	<20	<20	<20
4-Methyl-2-pentanone (MIBK)	ug/L	8260	50	1,800	ID	20,000,000	ID	<5	<5	<5	<5
Acrylonitrile	ug/L	8260	2	3	2	34,000	1,200	<5	<5	<5	<5
Benzene	ug/L	8260	1	5	200	5,600	1,900	<1	<1	<1	<1
Bromobenzene	ug/L	8260	1	18	NA	180,000	NA	<1	<1	<1	<1
Bromochloromethane	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1
Bromodichloromethane	ug/L	8260	1	80	ID	4,800	ID	<1	<1	<1	<1
Bromoform	ug/L	8260	1	80	ID	470,000	ID	<1	<1	<1	<1
Bromomethane	ug/L	8260	5	10	35	4,000	640	<5	<5	<5	<5
Carbon disulfide	ug/L	8260	5	800	ID	250,000	ID	<1	<1	<1	<1
Carbon tetrachloride	ug/L	8260	1	5	45	370	1,400	<1	<1	<1	<1
Chlorobenzene	ug/L	8260	1	100	25	210,000	450	<1	<1	<1	<1
Chloroethane	ug/L	8260	5	430	1,100	5,700,000	20,000	<5	<5	<5	<5
Chloroform	ug/L	8260	1	80	350	28,000	11,000	<1	<1	<1	<1
Chloromethane	ug/L	8260	5	260	ID	8,600	ID	<5	<5	<5	<5
cis-1,2-Dichloroethylene	ug/L	8260	1	70	620	93,000	11,000	<1	<1	<1	<1
cis-1,3-Dichloropropylene	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1
Cyclohexane	ug/L	8260	NA	NA	NA	NA	NA	<5	<5	<5	<5
Dibromochloromethane	ug/L	8260	5	80	ID	14,000	ID	<1	<1	<1	<1
Dibromomethane	ug/L	8260	5	80	NA	ID	NA	<1	<1	<1	<1
Dichlorodifluoromethane	ug/L	8260	5	1,700	ID	220,000	ID	<5	<5	<5	<5
Diethyl ether	ug/L	8260	10	10	ID	61,000,000	ID	<5	<5	<5	<5
Diisopropyl Ether	ug/L	8260	5	30	ID	8,000	ID	<5	<5	<5	<5
Ethylbenzene	ug/L	8260	1	74	18	110,000	320	<1	<1	<1	<1
Ethyltertiarybutylether	ug/L	8260	5	49	ID	2,900,000	ID	<5	<5	<5	<5
Hexachloroethane	ug/L	8260	5	7	7	27,000	210	<5	<5	<5	<5
Isopropylbenzene	ug/L	8260	5	800	28	56,000	500	<1	<1	<1	<1
m & p - Xylene	ug/L	8260	NA	NA	NA	NA	NA	<2	<2	<2	<2
Methyl iodide	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1
Methylene chloride	ug/L	8260	5	5	1,500	220,000	17,000	<5	<5	<5	<5
Methyltertiarybutylether	ug/L	8260	5	40	7,100	47,000,000	420,000	<1	<1	<1	<1
Naphthalene	ug/L	8260	5	520	11	31,000	200	<5	<5	<5	<5
n-Butylbenzene	ug/L	8260	1	80	ID	ID	ID	<1	<1	<1	<1
n-Propylbenzene	ug/L	8260	1	80	ID	ID	ID	<1	<1	<1	<1
o-Xylene	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1
p-Isopropyl toluene	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1
sec-Butylbenzene	ug/L	8260	1	80	ID	ID	ID	<1	<1	<1	<1
Styrene	ug/L	8260	1	100	80	170,000	2,900	<1	<1	<1	<1
tert-Butylbenzene	ug/L	8260	1	80	ID	ID	ID	<1	<1	<1	<1
tertiary Butyl Alcohol	ug/L	8260	50	3,900	NA	1,000,000,000	NA	<50	<50	<50	<50
tertiaryAmylmethylether	ug/L	8260	5	190	NA	260,000	NA	<5	<5	<5	<5
Tetrachloroethylene	ug/L	8260	1	5	60	25,000	2,900	<1	<1	<1	<1
Tetrahydrofuran	ug/L	8260	90	95	11,000	6,900,000	150,000	<5	<5	<5	<5
Toluene	ug/L	8260	1	790	270	530,000	2,600	<1	<1	<1	<1
trans-1,2-Dichloroethylene	ug/L	8260	1	100	1,500	85,000	28,000	<1	<1	<1	<1
trans-1,3-Dichloropropylene	ug/L	8260	NA	NA	NA	NA	NA	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	ug/L	8260	NA	NA	NA	NA	NA	<5	<5	<5	<5
Trichloroethylene	ug/L	8260	1	5	200	2,200	3,500	<1	<1	<1	<1
Trichlorofluoromethane	ug/L	8260	1	2,600	NA	1,100,000	NA	<1	<1	<1	<1
Vinyl chloride	ug/L	8260	1	2	13	1,100	17,000	<1	<1	<1	<1

Grey indicates contaminant was detected.
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Green indicates contaminant exceeds both DWC and GSIC.
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Testing America Analytical Testing Report

Table #4
(Page 1 of 1)

Test America Job IDs 320-23156-1 320-23292-1 320-23602-1
Report Date: 11/11/16 11/14/2016 12/15/2016
Client: MDEQ-RRD-SAGINAW BAY
Attention: Mike Jury
Project Name: RIVER ROAD PFC CONTAMINATION, IOSCO CO.
Project Number: 35000152

Location		B-3	B-3	B-3	B-3	MW-3	MW-3	MW-3	MW-3
Depth		12-17 feet	22-27 feet	32-37 feet	42-47 feet	14-19 feet	24-29 feet	34-39 feet	44-49 feet
Date		10/31/2016	10/31/2016	10/31/2016	10/31/2016	10/27/2016	10/27/2016	10/27/2016	10/27/2016
	Action Level								
Perfluorooctanoic Acid (PFOA)	70 ng/l	<0.75	0.87	4.8	<0.74	0.94	<0.74	<0.73	<0.73
Perfluorooctane Sulfonate (PFOS)	70ng/l	1.7	1.5	<1.3	<1.3	1.8	<1.3	<1.2	<1.3
Total PFOA and PFOS	70 ng/l	1.7	2.37	4.8	ND	2.74	ND	ND	ND

Location		MW-4	MW-4	MW-4	MW-4	MW-5	MW-5	MW-5 Dup	MW-5
Depth		16-21 feet	26-31 feet	36-41 feet	46-51 feet	14-19 feet	24-29 feet	24-29 feet	34-39 feet
Date		10/26/2016	10/26/2016	10/26/2016	10/26/2016	10/31/2016	10/31/2016	10/31/2016	10/31/2016
	Action Level								
Perfluorooctanoic Acid (PFOA)	70 ng/l	6.6	1.5	<0.72	<0.74	24	24	26	18
Perfluorooctane Sulfonate (PFOS)	70ng/l	8.6	1.8	<1.2	<1.3	100	57	57	81
Total PFOA and PFOS	70 ng/l	15.2	3.3	ND	ND	124	81	83	99

Location		MW-5	MW-6	MW-6	MW-6 Dup	MW-6	MW-6	MW-7	MW-7
Depth		44-49 feet	16-21 feet	26-31 feet	26-31 feet	36-41 feet	46-51 feet	16-21 feet	26-31 feet
Date		10/31/2016	10/26/2016	10/26/2016	10/26/2016	10/26/2016	10/26/2016	10/27/2016	10/27/2016
	Action Level								
Perfluorooctanoic Acid (PFOA)	70 ng/l	1.6	1.8	3.8	3.3	2.8	3.6	5	<0.72
Perfluorooctane Sulfonate (PFOS)	70ng/l	5.9	7.2	14	13	5.1	4.1	24	1.8
Total PFOA and PFOS	70 ng/l	7.5	9	17.8	16.3	7.9	7.7	29	1.8

Location		MW-7	MW-7	MW-3	MW-4	MW-5	MW-6	MW-6 Dup	MW-7
Depth		36-41 feet	46-51 feet						
Date		10/27/2016	10/27/2016	11/15/2016	11/14/2016	11/15/2016	11/14/2016	11/14/2016	11/15/2016
	Action Level								
Perfluorooctanoic Acid (PFOA)	70 ng/l	<0.73	0.77	0.97	3.2	8	1.1	<0.74	7.6
Perfluorooctane Sulfonate (PFOS)	70ng/l	<1.2	<1.2	1.3	17	45	8.7	8.1	26
Total PFOA and PFOS	70 ng/l	ND	0.77	2.27	20.2	53	9.8	8.1	33.6

70 = Exceeds Action Level of 70 ng/l
ND = Not Detected

APPENDIX A

River Road PFC Contamination, Iosco County
Site ID #35000154

DEQ Soil Boring and Monitor Well Logs

DEQ Remediation and Redevelopment Division

GEOPHYSICAL LOG

BORING/WELL: RR-B-3

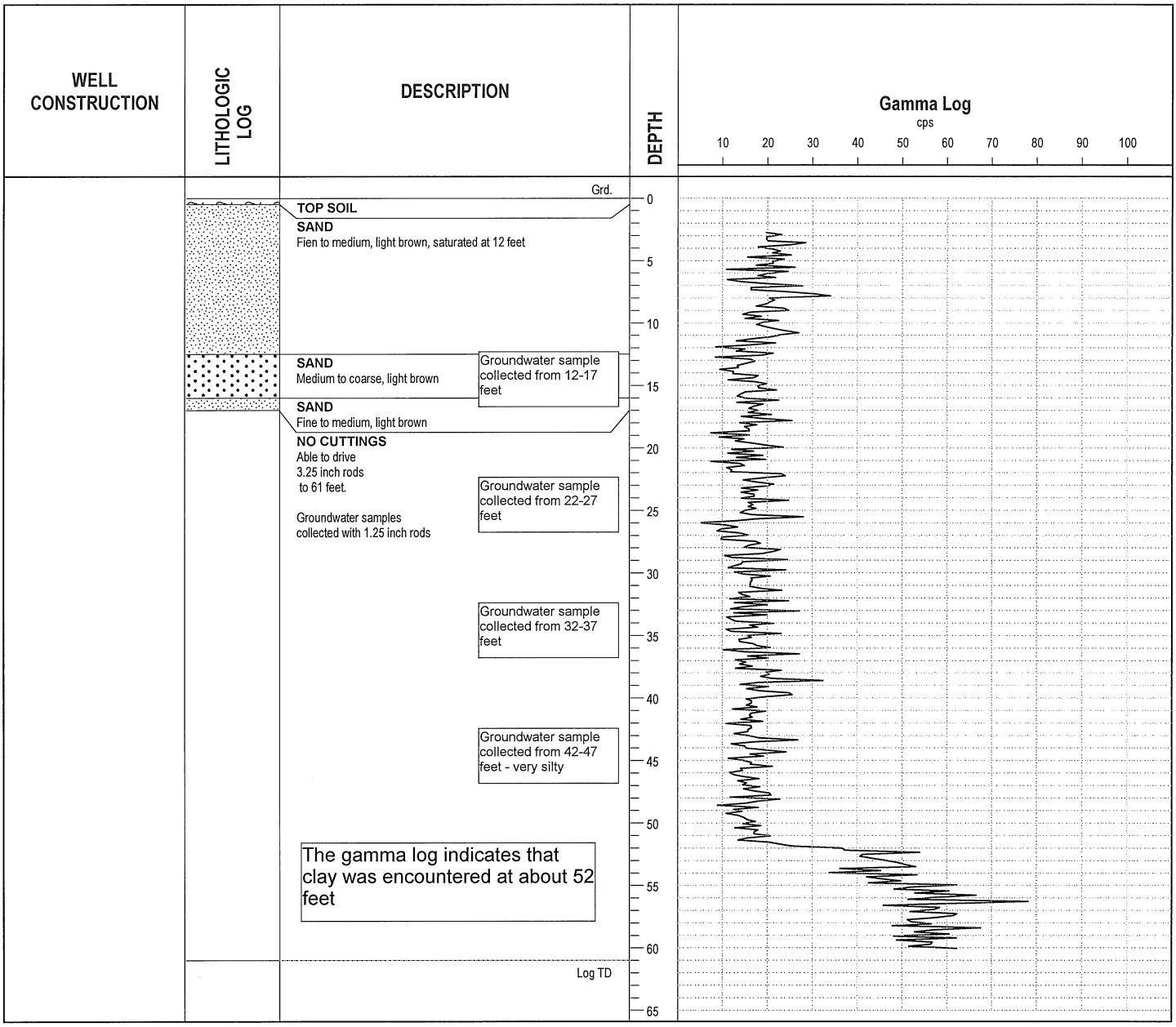
SITE: Wurtsmith - River Road

COUNTY: Iosco
TOWNSHIP: Au Sable
TOWN: T23N
RANGE: R9E
SECTION: 5

LOGGING DATE: 11-1-16
DRILLER: Zack Nichols
GAMMA LOGGED BY: Jeff Pincumbe
DRILL METHOD: Geoprobe
WELL DEPTH: NA

LOCATION DESCRIPTION: East end of School property along River Road

ERNIE#: 35000154



VERTICAL DATUM: USGS
GRD. ELEVATION: 612.263
T.O.C.: NA
S.W.L.: NA
CASING: NA
PROBE MODEL: Gamma
SERIAL NUMBER:
COMPLETION NOTES: Backfilled with bentonite

LATITUDE: 44.424769
LONGITUDE: -83.372701
DATUM: MichGeoRef
NORTHING: 433719.636
EASTING: 708964.618

DEQ Remediation and Redevelopment Division

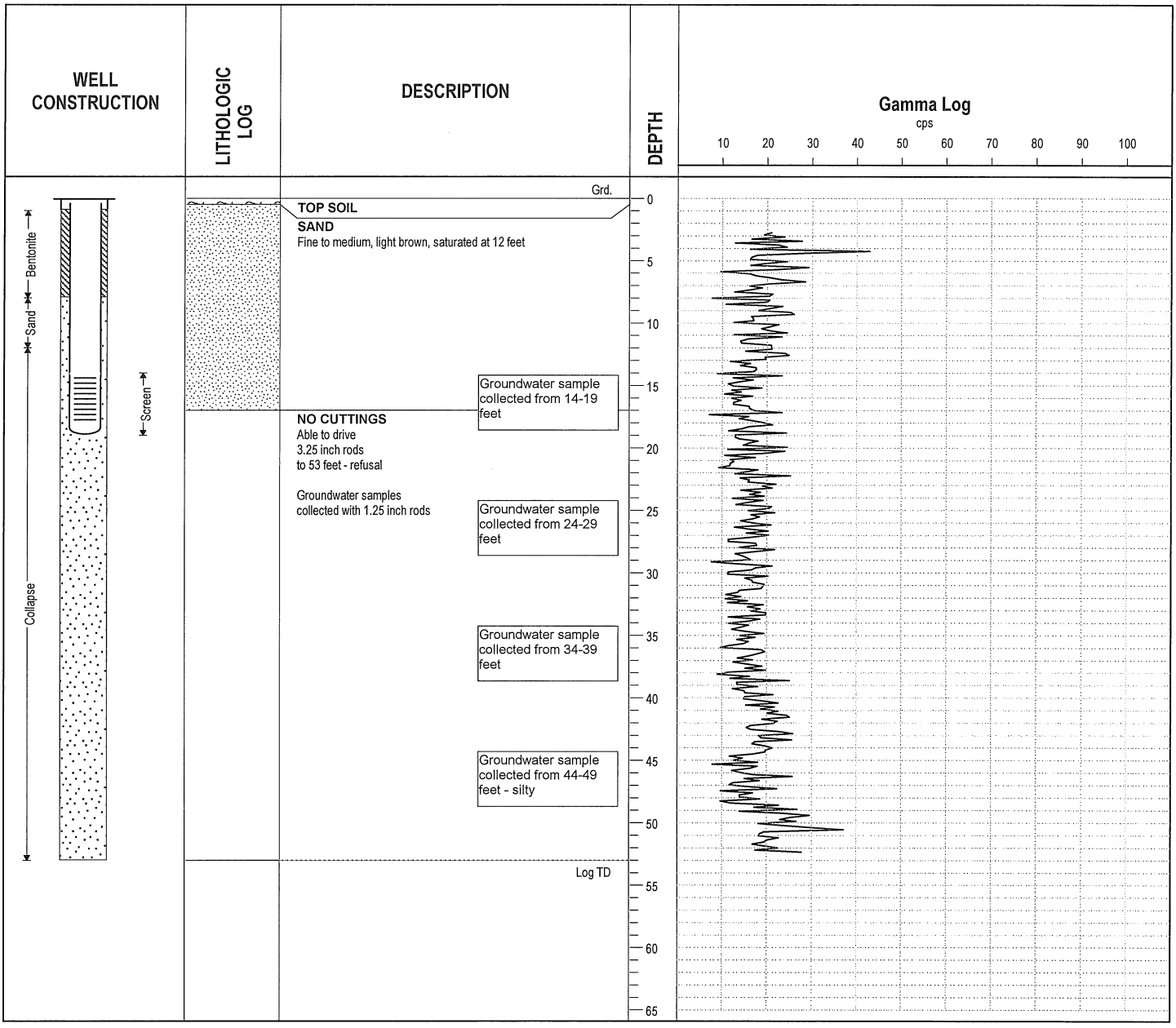
GEOPHYSICAL LOG

BORING/WELL: RR-MW-3

SITE: Wurtsmith - River Road

COUNTY: Iosco
TOWNSHIP: Au Sable
TOWN: T23N
RANGE: R9E
SECTION: 6
LOCATION DESCRIPTION: South of middle school

LOGGING DATE: 10-27-16
DRILLER: Zack Nichols
GAMMA LOGGED BY: Jeff Pincumbe
DRILL METHOD: Geoprobe
WELL DEPTH: 19 feet
ERNIE#: 35000154



VERTICAL DATUM: USGS
GRD. ELEVATION: 619.688
T.O.C.: 918.928
S.W.L.: 12 feet
CASING: 2-inch I.D. pvc
PROBE MODEL: Gamma
SERIAL NUMBER:
COMPLETION NOTES: Collapse to 12 feet, sand to 8 feet, bentonite to 1 foot

LATITUDE: 44.422113
LONGITUDE: -83.382515
DATUM: MichGeoRef
NORTHING: 433399.703
EASTING: 708192.979

DEQ Remediation and Redevelopment Division

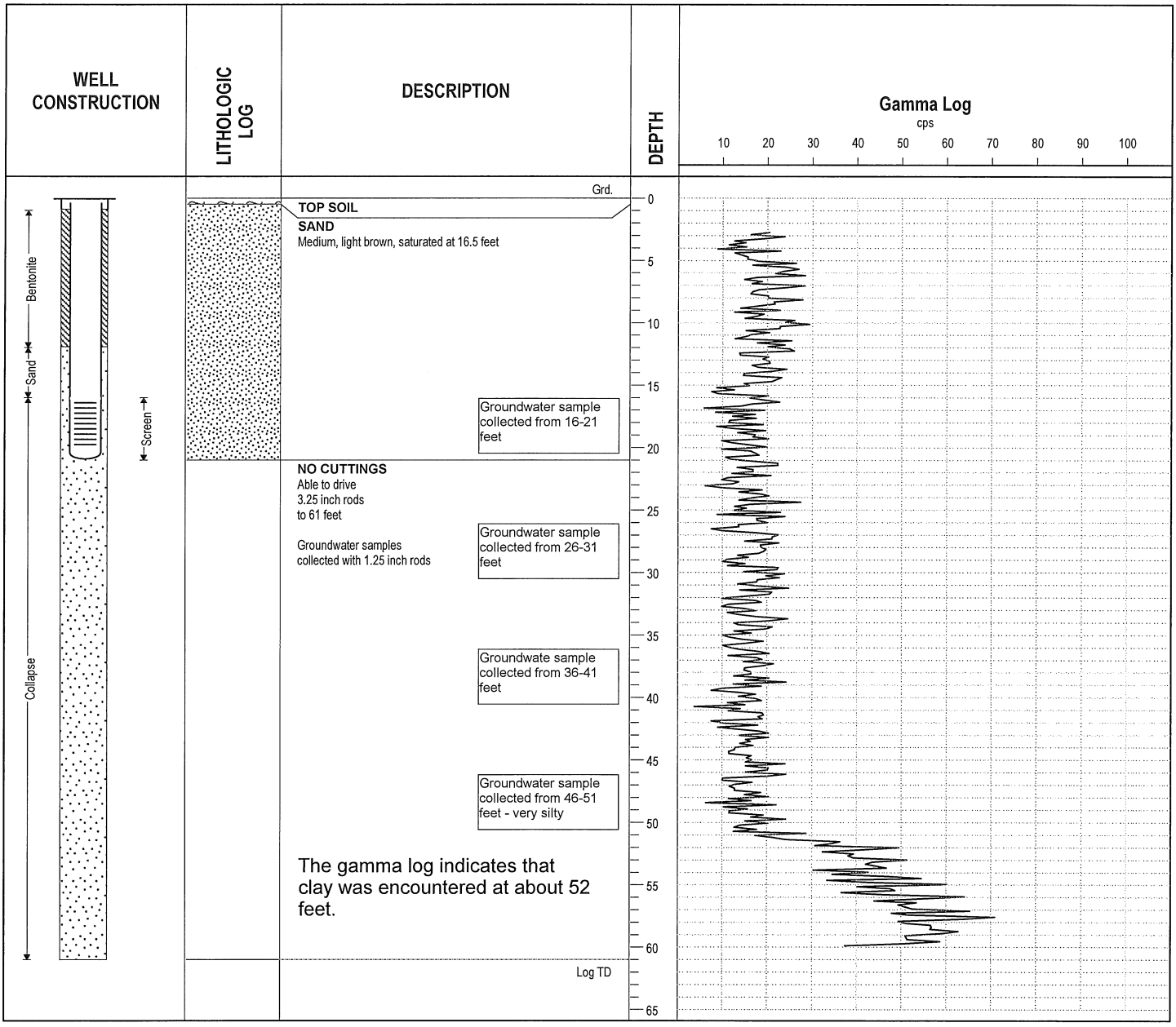
GEOPHYSICAL LOG

BORING/WELL: RR-MW-4

SITE: Wurtsmith - River Road

COUNTY: Iosco
TOWNSHIP: Oscoda
TOWN: T24N
RANGE: R9E
SECTION: 32
LOCATION DESCRIPTION: East end of Pinecrest Street on north side

LOGGING DATE: 10-25-16
DRILLER: Zack Nichols
GAMMA LOGGED BY: Jeff Pincumbe
DRILL METHOD: Geoprobe
WELL DEPTH: 21 feet
ERNIE#: 35000154



VERTICAL DATUM: USGS
GRD. ELEVATION: 617.078
T.O.C.: 616.822
S.W.L.: 15.8 feet
CASING: 2-inch I.D. pvc
PROBE MODEL: Gamma
SERIAL NUMBER:
COMPLETION NOTES: Collapse to 16 feet, sand to 12 feet, bentonite to 1 foot

LATITUDE: 44.426005
LONGITUDE: -83.377854
DATUM: MichGeoRef
NORTHING: 433843.770
EASTING: 708550.124

DEQ Remediation and Redevelopment Division

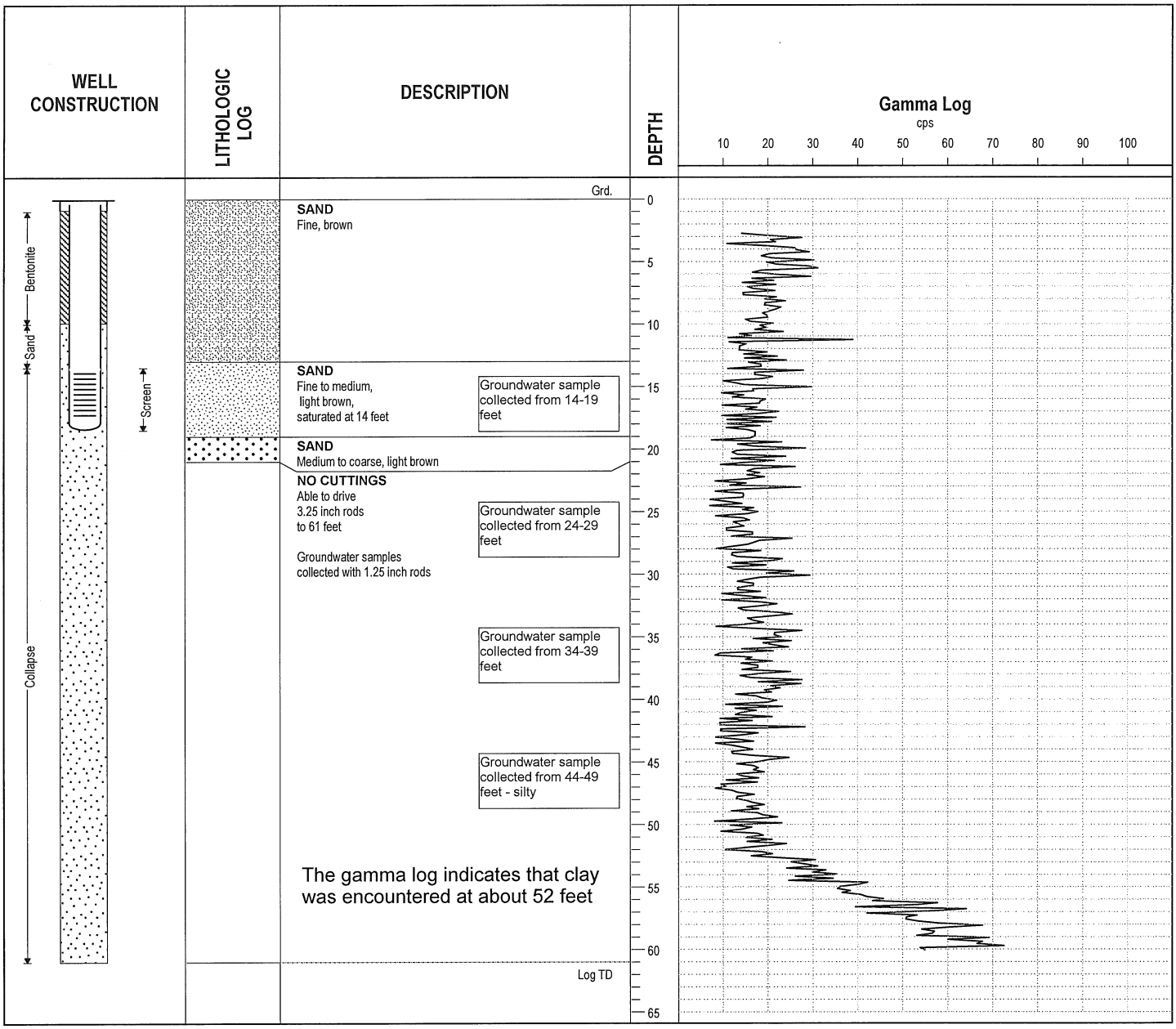
GEOPHYSICAL LOG

BORING/WELL: RR-MW-5

SITE: Wurtsmith - River Road

COUNTY: Iosco
TOWNSHIP: Au Sable
TOWN: T23N
RANGE: R9E
SECTION: 5
LOCATION DESCRIPTION: South side of school bus garage

LOGGING DATE: 10-31-16
DRILLER: Zack Nichols
GAMMA LOGGED BY: Jeff Pincumbe
DRILL METHOD: Geoprobe
WELL DEPTH: 18.5 feet
ERNIE#: 35000154



VERTICAL DATUM: USGS
GRD. ELEVATION: 586.91
T.O.C.: 586.84
S.W.L.: 13.7 feet
CASING: 2-inch I.D. pvc
PROBE MODEL: Gamma
SERIAL NUMBER:
COMPLETION NOTES: Collapse to 13.5 feet, sand to 10 feet, bentonite to 1 foot

LATITUDE: 44.422982
LONGITUDE: -83.37551
DATUM: MichGeoRef
NORTHING: 433514.027
EASTING: 708747.414

Remediation and Redevelopment Division

GEOPHYSICAL LOG

BORING/WELL: RR-MW-6

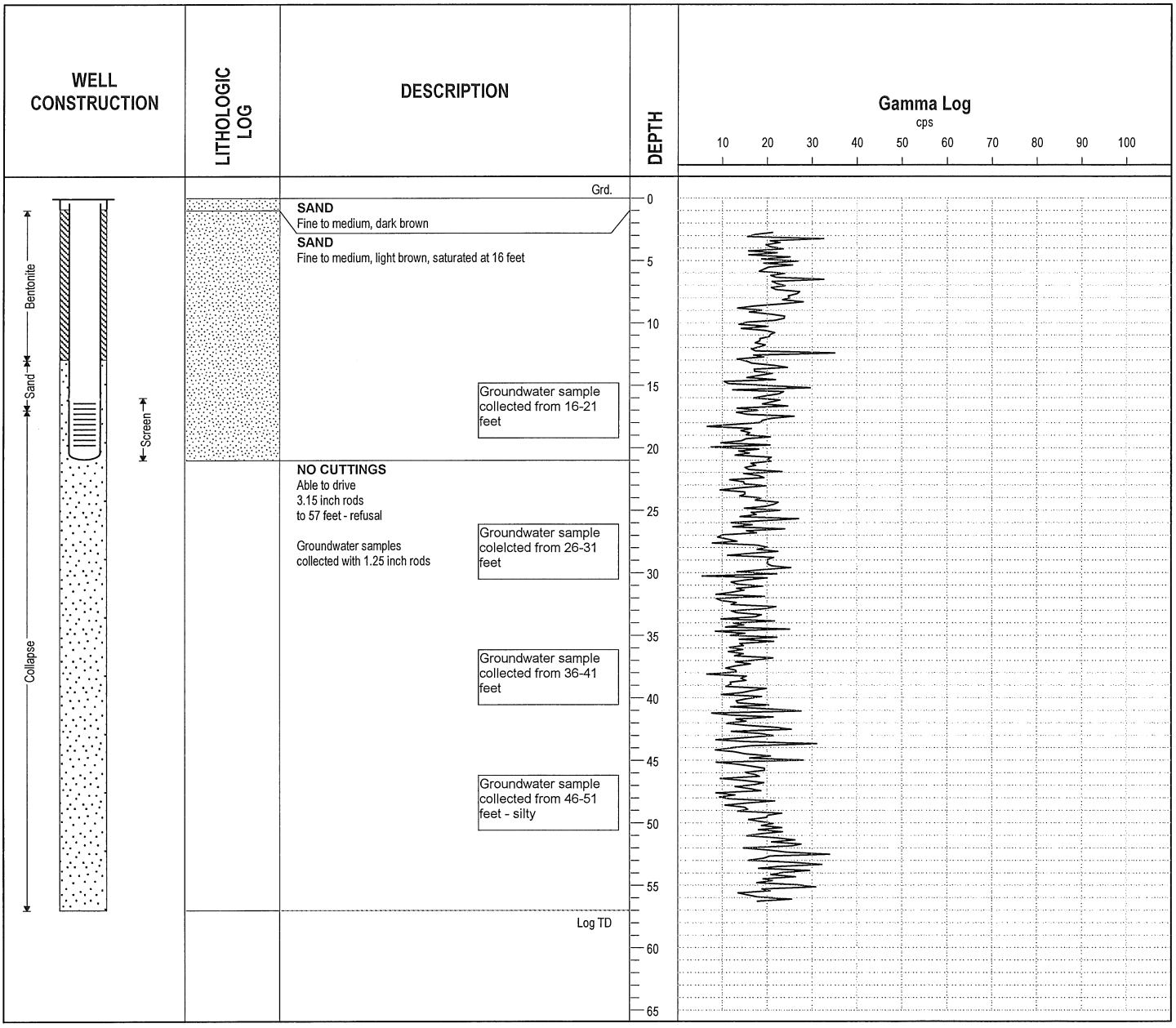
SITE: Wurtsmith - River Road

COUNTY: Iosco
TOWNSHIP: Oscoda
TOWN: T24N
RANGE: R9E
SECTION: 32

LOGGING DATE: 10-25-16
DRILLER: Zack Nichols
GAMMA LOGGED BY: Jeff Pincumbe
DRILL METHOD: Geoprobe
WELL DEPTH: 21 feet

LOCATION DESCRIPTION: East side of Pinecrest Street north of River Road

ERNIE#: 35000154



VERTICAL DATUM: USGS
GRD. ELEVATION: 619.641
T.O.C.: 618.876
S.W.L.: 16.5
CASING: 2-inch I.D. pvc
PROBE MODEL: Gamma
SERIAL NUMBER:
COMPLETION NOTES: Collapse to 16 feet, sand to 13 feet, bentonite to 1 foot

LATITUDE: 44.425266
LONGITUDE: -83.380289
DATUM: MichGeoRef
NORTHING: 433755.508
EASTING: 708358.958

DEQ Remediation and Redevelopment Division

GEOPHYSICAL LOG

BORING/WELL: RR-MW-7

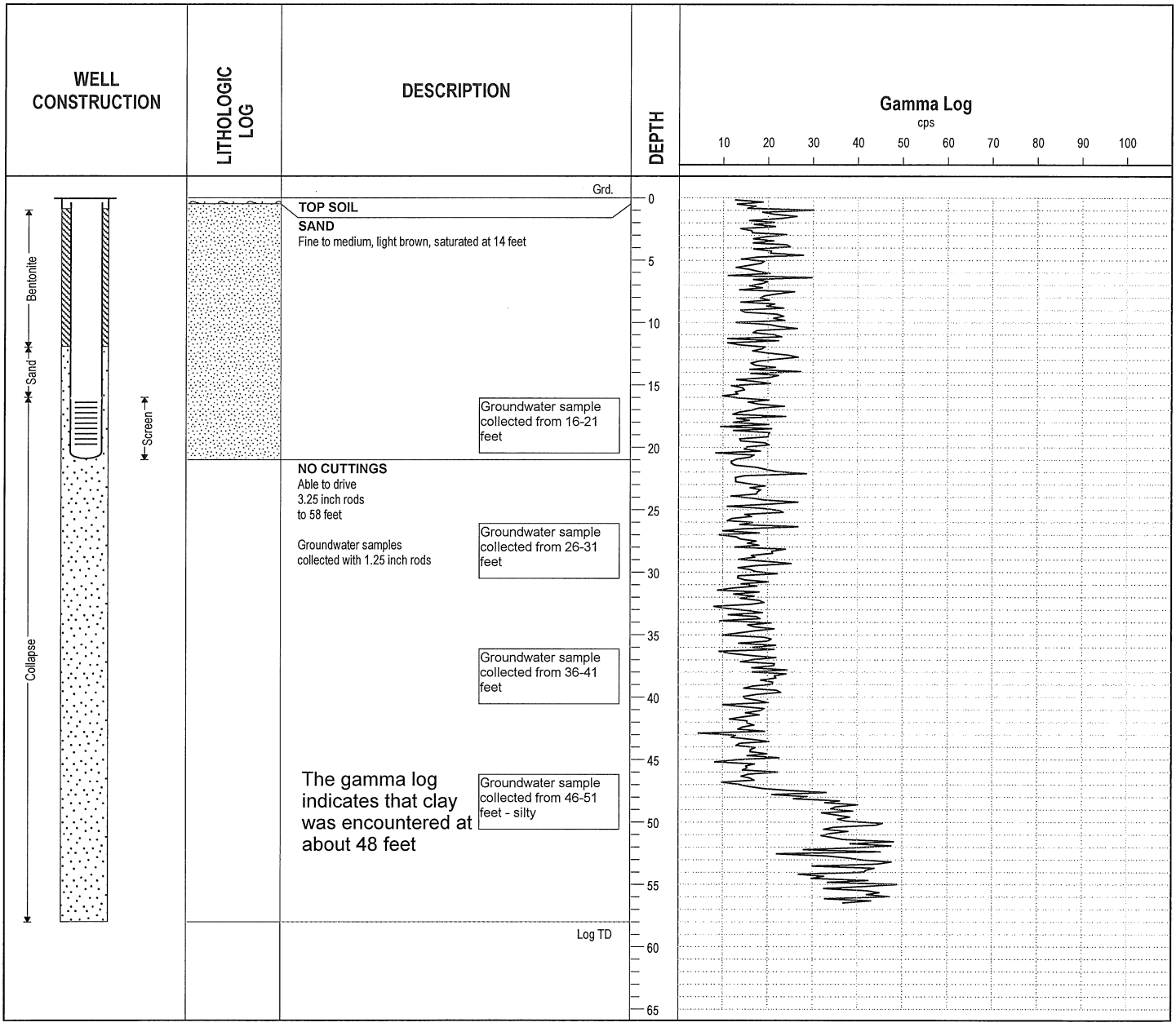
SITE: Wurtsmith - River Road

COUNTY: Iosco
TOWNSHIP: Au Sable
TOWN: T23N
RANGE: R9E
SECTION: 6

LOGGING DATE: 10-27-16
DRILLER: Zack Nichols
GAMMA LOGGED BY: Jeff Pincumbe
DRILL METHOD: Geoprobe
WELL DEPTH: 21 feet

LOCATION DESCRIPTION: NW of elementary school along fence line by gravel drive

ERNIE#: 35000154



VERTICAL DATUM: USGS
GRD. ELEVATION: 619.479
T.O.C.: 619.218
S.W.L.: 15.5
CASING: 2-inch I.D. pvc
PROBE MODEL: Gamma
SERIAL NUMBER:
COMPLETION NOTES: Collapse to 16 feet, sand to 12 feet, bentonite to 1 foot

LATITUDE: 44.424778
LONGITUDE: -83.38361
DATUM: MichGeoRef
NORTHING: 433692.875
EASTING: 708096.385

APPENDIX B

River Road PFC Contamination, Iosco County
Site ID #35000154

DEQ Laboratory Results

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

02 December 2016

Work Order: 1610241

Price: $1,955.00

Mike Jury
MDEQ-RRD-SAGINAW BAY
401 Ketchum St., Suite B
Bay City, MI 48708

RE: RIVER ROAD PFC CONTAMINATION

I certify that the analyses performed by the MDEQ Environmental Laboratory were conducted by methods approved by the U.S. Environmental Protection Agency and other appropriate regulatory agencies.

Sincerely,

Carol Smith
Laboratory Director (Acting)

STATE OF MICHIGAN
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MDEQ-RRD-SAGINAW BAY
401 Ketchum St., Suite B
Bay City MI, 48708

Project: RIVER ROAD PFC CONTAMINATION
Site Code: 35000154
Project Manager: Mike Jury

Reported:
12/02/2016

Analytical Report for Samples

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Qualifier
MW-4 16-21	1610241-01	Water	10/26/2016	10/28/2016	
MW-4 26-31	1610241-02	Water	10/26/2016	10/28/2016	
MW-4 36-41	1610241-03	Water	10/26/2016	10/28/2016	
MW-4 46-51	1610241-04	Water	10/26/2016	10/28/2016	
MW-6 16-21	1610241-05	Water	10/26/2016	10/28/2016	
MW-6 26-31	1610241-06	Water	10/26/2016	10/28/2016	
MW-6 26-31 DUP	1610241-07	Water	10/26/2016	10/28/2016	
MW-6 36-41	1610241-08	Water	10/26/2016	10/28/2016	
MW-6 46-51	1610241-09	Water	10/26/2016	10/28/2016	
MW-3 14-19	1610241-10	Water	10/27/2016	10/28/2016	
MW-3 24-29	1610241-11	Water	10/27/2016	10/28/2016	
MW-3 34-39	1610241-12	Water	10/27/2016	10/28/2016	
MW-3 44-49	1610241-13	Water	10/27/2016	10/28/2016	
MW-7 16-21	1610241-14	Water	10/27/2016	10/28/2016	
MW-7 26-31	1610241-15	Water	10/27/2016	10/28/2016	
MW-7 36-41	1610241-16	Water	10/27/2016	10/28/2016	
MW-7 46-51	1610241-17	Water	10/27/2016	10/28/2016	

Notes and Definitions

Y19	Sample received with headspace in vial. Data is estimated.
X	Methods 8260 & 624 are used to analyze volatile organics that have boiling points below 200 ºC. 2-Methylnaphthalene & naphthalene have boiling points above 200 ºC and are better suited to analysis by methods 8270 & 625 as semivolatile organics.
T	Reported value is less than the reporting limit (RL). Result is estimated.
A10	Result and reporting limit are estimated due to low initial verification standard criteria failure.
A08	Result(s) and reporting limits(s) are estimated due to low recovery of batch QC.
A07	Result(s) and reporting limit(s) are estimated due to poor precision.
A06	Result is estimated due to high continuing calibration standard criteria failure.
A05	Result and reporting limit are estimated due to low continuing calibration standard criteria failure.
A04	Result is estimated due to high matrix spike recovery.
A03	Result(s) and reporting limit(s) are estimated due to low matrix spike recovery.
ND	Indicates compound analyzed for but not detected
RL	Reporting Limit
NA	Not Applicable

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Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-4 16-21

Lab ID: 1610241-01

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	X
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/04/16	B6K0302	8260	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	

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TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-4 16-21

Lab ID: 1610241-01

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/04/16	B6K0302	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/04/16	B6K0302	8260	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	A05
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
Surrogate: Bromofluorobenzene			*107 %*	*85-115*		*11/04/16*	B6K0302	*8260*	
Surrogate: Dibromofluoromethane			*104 %*	*82.7-115*		*11/04/16*	B6K0302	*8260*	
Surrogate: Toluene-d8			*103 %*	*85-115*		*11/04/16*	B6K0302	*8260*	

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P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-4 26-31

Lab ID: 1610241-02

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	X
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/04/16	B6K0302	8260	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-4 26-31

Lab ID: 1610241-02

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/04/16	B6K0302	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/04/16	B6K0302	8260	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	A05
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
Surrogate: Bromofluorobenzene			*105 %*	*85-115*		*11/04/16*	B6K0302	*8260*	
Surrogate: Dibromofluoromethane			*105 %*	*82.7-115*		*11/04/16*	B6K0302	*8260*	
Surrogate: Toluene-d8			*103 %*	*85-115*		*11/04/16*	B6K0302	*8260*	

STATE OF MICHIGAN
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MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-4 36-41

Lab ID: 1610241-03

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	X
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/04/16	B6K0302	8260	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-4 36-41

Lab ID: 1610241-03

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/04/16	B6K0302	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/04/16	B6K0302	8260	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	A05
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/04/16	B6K0302	8260	
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/04/16	B6K0302	8260	
Surrogate: Bromofluorobenzene			*105 %*	*85-115*		*11/04/16*	B6K0302	*8260*	
Surrogate: Dibromofluoromethane			*105 %*	*82.7-115*		*11/04/16*	B6K0302	*8260*	
Surrogate: Toluene-d8			*102 %*	*85-115*		*11/04/16*	B6K0302	*8260*	

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-4 46-51

Lab ID: 1610241-04

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05, A08
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A07, X
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/03/16	B6K0309	8260	A05, A08, A10
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A07
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-4 46-51

Lab ID: 1610241-04

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/03/16	B6K0309	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/03/16	B6K0309	8260	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05, A08
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
Surrogate: Bromofluorobenzene			*107 %*	*85-115*		*11/03/16*	B6K0309	*8260*	
Surrogate: Dibromofluoromethane			*97.4 %*	*82.7-115*		*11/03/16*	B6K0309	*8260*	
Surrogate: Toluene-d8			*97.3 %*	*85-115*		*11/03/16*	B6K0309	*8260*	

STATE OF MICHIGAN
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MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-6 16-21

Lab ID: 1610241-05

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05, A08
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A07, X
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/03/16	B6K0309	8260	A05, A08, A10
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A07
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	

STATE OF MICHIGAN
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MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-6 16-21

Lab ID: 1610241-05

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/03/16	B6K0309	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/03/16	B6K0309	8260	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05, A08
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
Surrogate: Bromofluorobenzene			*104 %*	*85-115*		*11/03/16*	B6K0309	*8260*	
Surrogate: Dibromofluoromethane			*96.5 %*	*82.7-115*		*11/03/16*	B6K0309	*8260*	
Surrogate: Toluene-d8			*98.7 %*	*85-115*		*11/03/16*	B6K0309	*8260*	

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-6 26-31

Lab ID: 1610241-06

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05, A08
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A07, X
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/03/16	B6K0309	8260	A05, A08, A10
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A07
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	

STATE OF MICHIGAN
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MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-6 26-31

Lab ID: 1610241-06

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/03/16	B6K0309	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/03/16	B6K0309	8260	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05, A08
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
Surrogate: Bromofluorobenzene			*106 %*	*85-115*		*11/03/16*	B6K0309	*8260*	
Surrogate: Dibromofluoromethane			*96.1 %*	*82.7-115*		*11/03/16*	B6K0309	*8260*	
Surrogate: Toluene-d8			*98.3 %*	*85-115*		*11/03/16*	B6K0309	*8260*	

STATE OF MICHIGAN
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MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-6 26-31 DUP

Lab ID: 1610241-07

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05, A08
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A07, X
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/03/16	B6K0309	8260	A05, A08, A10
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A07
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	

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ENVIRONMENTAL LABORATORY

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Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-6 26-31 DUP

Lab ID: 1610241-07

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/03/16	B6K0309	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/03/16	B6K0309	8260	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05, A08
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
Surrogate: Bromofluorobenzene			*104 %*	*85-115*		*11/03/16*	B6K0309	*8260*	
Surrogate: Dibromofluoromethane			*101 %*	*82.7-115*		*11/03/16*	B6K0309	*8260*	
Surrogate: Toluene-d8			*97.6 %*	*85-115*		*11/03/16*	B6K0309	*8260*	

STATE OF MICHIGAN
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MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-6 36-41

Lab ID: 1610241-08

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05, A08
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	X, A07
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/03/16	B6K0309	8260	A05, A08, A10
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A07
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	

STATE OF MICHIGAN
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TEL: (517) 335-9800
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Client ID: MW-6 36-41

Lab ID: 1610241-08

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/03/16	B6K0309	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/03/16	B6K0309	8260	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05, A08
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
Surrogate: Bromofluorobenzene			*103 %*	*85-115*		*11/03/16*	B6K0309	*8260*	
Surrogate: Dibromofluoromethane			*98.7 %*	*82.7-115*		*11/03/16*	B6K0309	*8260*	
Surrogate: Toluene-d8			*100 %*	*85-115*		*11/03/16*	B6K0309	*8260*	

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-6 46-51

Lab ID: 1610241-09

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05, A08
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A07, X
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/03/16	B6K0309	8260	A05, A08, A10
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A07
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

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ENVIRONMENTAL LABORATORY

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Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-6 46-51

Lab ID: 1610241-09

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/03/16	B6K0309	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/03/16	B6K0309	8260	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
108-88-3	**Toluene**	**0.96**	1.0	ug/L	1	11/03/16	B6K0309	8260	T
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05, A08
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
Surrogate: Bromofluorobenzene			*106 %*	*85-115*		*11/03/16*	B6K0309	*8260*	
Surrogate: Dibromofluoromethane			*98.7 %*	*82.7-115*		*11/03/16*	B6K0309	*8260*	
Surrogate: Toluene-d8			*98.2 %*	*85-115*		*11/03/16*	B6K0309	*8260*	

STATE OF MICHIGAN
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MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-3 14-19

Lab ID: 1610241-10

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05, A08
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A07, X
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/03/16	B6K0309	8260	A05, A08, A10
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A07
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-3 14-19

Lab ID: 1610241-10

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/03/16	B6K0309	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/03/16	B6K0309	8260	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05, A08
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
Surrogate: Bromofluorobenzene			*106 %*	*85-115*		*11/03/16*	B6K0309	*8260*	
Surrogate: Dibromofluoromethane			*101 %*	*82.7-115*		*11/03/16*	B6K0309	*8260*	
Surrogate: Toluene-d8			*99.9 %*	*85-115*		*11/03/16*	B6K0309	*8260*	

STATE OF MICHIGAN
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MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-3 24-29

Lab ID: 1610241-11

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05, A08
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A07, X
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/03/16	B6K0309	8260	A05, A08, A10
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A07
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-3 24-29

Lab ID: 1610241-11

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/03/16	B6K0309	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/03/16	B6K0309	8260	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05, A08
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
Surrogate: Bromofluorobenzene			*104 %*	*85-115*		*11/03/16*	B6K0309	*8260*	
Surrogate: Dibromofluoromethane			*101 %*	*82.7-115*		*11/03/16*	B6K0309	*8260*	
Surrogate: Toluene-d8			*99.9 %*	*85-115*		*11/03/16*	B6K0309	*8260*	

STATE OF MICHIGAN
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MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-3 34-39

Lab ID: 1610241-12

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									**See note Y19**
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05, A08
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	X, A07
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/03/16	B6K0309	8260	A05, A08, A10
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A07
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	

STATE OF MICHIGAN
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MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-3 34-39

Lab ID: 1610241-12

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									**See note Y19**
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/03/16	B6K0309	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/03/16	B6K0309	8260	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
108-88-3	**Toluene**	**1.1**	1.0	ug/L	1	11/03/16	B6K0309	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05, A08
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
Surrogate: Bromofluorobenzene			*105 %*	*85-115*		*11/03/16*	B6K0309	*8260*	
Surrogate: Dibromofluoromethane			*102 %*	*82.7-115*		*11/03/16*	B6K0309	*8260*	
Surrogate: Toluene-d8			*98.0 %*	*85-115*		*11/03/16*	B6K0309	*8260*	

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-3 44-49

Lab ID: 1610241-13

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05, A08
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A07, X
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/03/16	B6K0309	8260	A05, A08, A10
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A07
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-3 44-49

Lab ID: 1610241-13

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/03/16	B6K0309	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/03/16	B6K0309	8260	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05, A08
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
Surrogate: Bromofluorobenzene			*106 %*	*85-115*		*11/03/16*	B6K0309	*8260*	
Surrogate: Dibromofluoromethane			*103 %*	*82.7-115*		*11/03/16*	B6K0309	*8260*	
Surrogate: Toluene-d8			*99.5 %*	*85-115*		*11/03/16*	B6K0309	*8260*	

STATE OF MICHIGAN
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MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-7 16-21

Lab ID: 1610241-14

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05, A08
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A07, X
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/03/16	B6K0309	8260	A05, A08, A10
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A07
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	

STATE OF MICHIGAN
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ENVIRONMENTAL LABORATORY

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Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-7 16-21

Lab ID: 1610241-14

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/03/16	B6K0309	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/03/16	B6K0309	8260	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05, A08
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
Surrogate: Bromofluorobenzene			*104 %*	*85-115*		*11/03/16*	B6K0309	*8260*	
Surrogate: Dibromofluoromethane			*101 %*	*82.7-115*		*11/03/16*	B6K0309	*8260*	
Surrogate: Toluene-d8			*99.8 %*	*85-115*		*11/03/16*	B6K0309	*8260*	

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-7 26-31

Lab ID: 1610241-15

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05, A08
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A07, X
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/03/16	B6K0309	8260	A05, A08, A10
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A07
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	

STATE OF MICHIGAN
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ENVIRONMENTAL LABORATORY

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Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-7 26-31

Lab ID: 1610241-15

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/03/16	B6K0309	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/03/16	B6K0309	8260	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05, A08
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
Surrogate: Bromofluorobenzene			*104 %*	*85-115*		*11/03/16*	B6K0309	*8260*	
Surrogate: Dibromofluoromethane			*102 %*	*82.7-115*		*11/03/16*	B6K0309	*8260*	
Surrogate: Toluene-d8			*101 %*	*85-115*		*11/03/16*	B6K0309	*8260*	

STATE OF MICHIGAN
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MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-7 36-41

Lab ID: 1610241-16

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05, A08
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A07, X
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/03/16	B6K0309	8260	A05, A08, A10
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A07
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	

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TEL: (517) 335-9800
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Client ID: MW-7 36-41

Lab ID: 1610241-16

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/03/16	B6K0309	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/03/16	B6K0309	8260	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05, A08
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
Surrogate: Bromofluorobenzene			*103 %*	*85-115*		*11/03/16*	B6K0309	*8260*	
Surrogate: Dibromofluoromethane			*101 %*	*82.7-115*		*11/03/16*	B6K0309	*8260*	
Surrogate: Toluene-d8			*99.7 %*	*85-115*		*11/03/16*	B6K0309	*8260*	

STATE OF MICHIGAN
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ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-7 46-51

Lab ID: 1610241-17

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05, A08
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A07, X
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/03/16	B6K0309	8260	A05, A08, A10
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A07
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	

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TEL: (517) 335-9800
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Client ID: MW-7 46-51

Lab ID: 1610241-17

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/03/16	B6K0309	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/03/16	B6K0309	8260	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/03/16	B6K0309	8260	A05, A08
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/03/16	B6K0309	8260	
Surrogate: Bromofluorobenzene			*103 %*	*85-115*		*11/03/16*	B6K0309	*8260*	
Surrogate: Dibromofluoromethane			*102 %*	*82.7-115*		*11/03/16*	B6K0309	*8260*	
Surrogate: Toluene-d8			*100 %*	*85-115*		*11/03/16*	B6K0309	*8260*	

Michigan Department of Environmental Quality
Laboratory Services Section

Analysis Request Sheet

Lab Work Order Number	Project Name	Matrix
1610241	River Road PFC Contamination	WATER

Site Code/Project Number	AY	CC Email 1	Project TAT Days	Sample Collector
35000154	17	pincumbej		Jeff Pincumbe
Dept-Division-District	**Index**	**CC Email 2**	**Project Due Date**	**Sample Collector Phone**
DEQ-RRD-Saginaw Bay	44031	shireyb		517-335-6418
State Project Manager	**PCA**	**CC Email 3**		**Contract Firm**
Mike Jury	30740			
State Project Manager Email	**Project**	**Overflow Lab Choice 1**	**Accept Analysis hold time codes**	**Contract Firm Primary Contact**
jurym1	457196			
State Project Manager Phone	**Phase**	**Overflow Lab Choice 2**		**Primary Contact Phone**
989-894-6255	00			

	Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1		MW-4 16-21	10-26-16			
2		MW-4 26-31	10-26-16			
3		MW-4 36-41	10-26-16			
4		MW-4 46-51	10-26-16			
5		MW-6 16-21	10-26-16			
6		MW-6 26-31	10-26-16			
7		MW-6 26-31 Dup	10-26-16			
8		MW-6 36-41	10-26-16			
9		MW-6 46-51	10-26-16			
10		MW-3 14-19	10-27-16			

ORGANIC CHEMISTRY

VOA - Volatile Organic Acidic	
Volatiles - Full List	1 2 3 4 5 6 7 8 9 10
BTEX/MTBE/TMB only	1 2 3 4 5 6 7 8 9 10
Chlorinated only	1 2 3 4 5 6 7 8 9 10
GRO	1 2 3 4 5 6 7 8 9 10
1,4 Dioxane	1 2 3 4 5 6 7 8 9 10
METH - Methane, Ethane, Ethene	
Methane, Ethane, Ethene	1 2 3 4 5 6 7 8 9 10
ON - Pesticides, PCBs	
Pesticides & PCBs	1 2 3 4 5 6 7 8 9 10
Pesticides only	1 2 3 4 5 6 7 8 9 10
PCBs only	1 2 3 4 5 6 7 8 9 10
Toxaphene	1 2 3 4 5 6 7 8 9 10
Chlordane	1 2 3 4 5 6 7 8 9 10
BNA - Base Neutral Acids	
BNAs	1 2 3 4 5 6 7 8 9 10
Benzidines	1 2 3 4 5 6 7 8 9 10
PNAs only	1 2 3 4 5 6 7 8 9 10
BNs only	1 2 3 4 5 6 7 8 9 10
Acids only	1 2 3 4 5 6 7 8 9 10
Organic Specialty Requests	
Library search - Volatiles	1 2 3 4 5 6 7 8 9 10
Library search - SemiVols	1 2 3 4 5 6 7 8 9 10
Finger Print	1 2 3 4 5 6 7 8 9 10
DRO / ORO	1 2 3 4 5 6 7 8 9 10

METALS CHEMISTRY PACKAGES

OpMemo2 - Total	1 2 3 4 5 6 7 8 9 10
OpMemo2 - Dissolved	1 2 3 4 5 6 7 8 9 10
(Sb,As,Ba,Be,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Tl,V,Zn)	
Michigan10 - Total	1 2 3 4 5 6 7 8 9 10
Michigan10 - Dissolved	1 2 3 4 5 6 7 8 9 10
(As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)	

MAD - DISSOLVED METALS

Diss - Silver - Ag	1 2 3 4 5 6 7 8 9 10
Diss - Aluminum - Al	1 2 3 4 5 6 7 8 9 10
Diss - Arsenic - As	1 2 3 4 5 6 7 8 9 10
Diss - Boron - B	1 2 3 4 5 6 7 8 9 10
Diss - Barium - Ba	1 2 3 4 5 6 7 8 9 10
Diss - Beryllium - Be	1 2 3 4 5 6 7 8 9 10
Diss - Cadmium - Cd	1 2 3 4 5 6 7 8 9 10
Diss - Cobalt - Co	1 2 3 4 5 6 7 8 9 10
Diss - Chromium - Cr	1 2 3 4 5 6 7 8 9 10
Diss - Copper - Cu	1 2 3 4 5 6 7 8 9 10
Diss - Iron - Fe	1 2 3 4 5 6 7 8 9 10
Diss - Mercury - Hg	1 2 3 4 5 6 7 8 9 10
Diss - Lithium - Li	1 2 3 4 5 6 7 8 9 10
Diss - Manganese - Mn	1 2 3 4 5 6 7 8 9 10
Diss - Molybdenum - Mo	1 2 3 4 5 6 7 8 9 10
Diss - Nickel - Ni	1 2 3 4 5 6 7 8 9 10
Diss - Lead - Pb	1 2 3 4 5 6 7 8 9 10
Diss - Antimony - Sb	1 2 3 4 5 6 7 8 9 10
Diss - Selenium - Se	1 2 3 4 5 6 7 8 9 10
Diss - Strontium - Sr	1 2 3 4 5 6 7 8 9 10
Diss - Titanium - Ti	1 2 3 4 5 6 7 8 9 10
Diss - Thallium - Tl	1 2 3 4 5 6 7 8 9 10
Diss - Uranium - U	1 2 3 4 5 6 7 8 9 10
Diss - Vanadium - V	1 2 3 4 5 6 7 8 9 10
Diss - Zinc - Zn	1 2 3 4 5 6 7 8 9 10
Diss - Calcium - Ca	1 2 3 4 5 6 7 8 9 10
Diss - Potassium - K	1 2 3 4 5 6 7 8 9 10
Diss - Magnesium - Mg	1 2 3 4 5 6 7 8 9 10
Diss - Sodium - Na	1 2 3 4 5 6 7 8 9 10
Diss - Hardness - Ca, Mg	1 2 3 4 5 6 7 8 9 10
MD - Metals Dissolved	
Lab Filtration	1 2 3 4 5 6 7 8 9 10

MA - TOTAL METALS

Silver - Ag	1 2 3 4 5 6 7 8 9 10
Aluminum - Al	1 2 3 4 5 6 7 8 9 10
Arsenic - As	1 2 3 4 5 6 7 8 9 10
Boron - B	1 2 3 4 5 6 7 8 9 10
Barium - Ba	1 2 3 4 5 6 7 8 9 10
Beryllium - Be	1 2 3 4 5 6 7 8 9 10
Cadmium - Cd	1 2 3 4 5 6 7 8 9 10
Cobalt - Co	1 2 3 4 5 6 7 8 9 10
Chromium - Cr	1 2 3 4 5 6 7 8 9 10
Copper - Cu	1 2 3 4 5 6 7 8 9 10
Iron - Fe	1 2 3 4 5 6 7 8 9 10
Mercury - Hg	1 2 3 4 5 6 7 8 9 10
Lithium - Li	1 2 3 4 5 6 7 8 9 10
Manganese - Mn	1 2 3 4 5 6 7 8 9 10
Molybdenum - Mo	1 2 3 4 5 6 7 8 9 10
Nickel - Ni	1 2 3 4 5 6 7 8 9 10
Lead - Pb	1 2 3 4 5 6 7 8 9 10
Antimony - Sb	1 2 3 4 5 6 7 8 9 10
Selenium - Se	1 2 3 4 5 6 7 8 9 10
Strontium - Sr	1 2 3 4 5 6 7 8 9 10
Titanium - Ti	1 2 3 4 5 6 7 8 9 10
Thallium - Tl	1 2 3 4 5 6 7 8 9 10
Uranium - U	1 2 3 4 5 6 7 8 9 10
Vanadium - V	1 2 3 4 5 6 7 8 9 10
Zinc - Zn	1 2 3 4 5 6 7 8 9 10
Calcium - Ca	1 2 3 4 5 6 7 8 9 10
Potassium - K	1 2 3 4 5 6 7 8 9 10
Magnesium - Mg	1 2 3 4 5 6 7 8 9 10
Sodium - Na	1 2 3 4 5 6 7 8 9 10
Hardness - Ca, Mg	1 2 3 4 5 6 7 8 9 10
LHG - Low Level Mercury	
Mercury Low Level - Hg	1 2 3 4 5 6 7 8 9 10

GENERAL CHEMISTRY

GB	Total Cyanide - CN	1 2 3 4 5 6 7 8 9 10
GB	Amenable Cyanide - CN	1 2 3 4 5 6 7 8 9 10
GCN	Available Cyanide - CN	1 2 3 4 5 6 7 8 9 10
CA	Chlorophyll	1 2 3 4 5 6 7 8 9 10
GN	Ortho Phosphate - OP	1 2 3 4 5 6 7 8 9 10
GN	Nitrite - NO_2	1 2 3 4 5 6 7 8 9 10
GN	Nitrate - NO_3 (Calc.)	1 2 3 4 5 6 7 8 9 10
GN	Suspended Solids - SS	1 2 3 4 5 6 7 8 9 10
GN	Dissolved Solids - TDS	1 2 3 4 5 6 7 8 9 10
MN	Diss Solids - TDS (Calc.)	1 2 3 4 5 6 7 8 9 10
GN	Turbidity	1 2 3 4 5 6 7 8 9 10
MN	Total Alkalinity	1 2 3 4 5 6 7 8 9 10
MN	Bicarb/Carb Alkalinity (includes Total Alkalinity)	1 2 3 4 5 6 7 8 9 10
MN	Chloride - Cl	1 2 3 4 5 6 7 8 9 10
MN	Fluoride - F	1 2 3 4 5 6 7 8 9 10
MN	Sulfate - SO4	1 2 3 4 5 6 7 8 9 10
MN	Chromium 6 - Cr+6	1 2 3 4 5 6 7 8 9 10
MN	Conductivity	1 2 3 4 5 6 7 8 9 10
MN	pH	1 2 3 4 5 6 7 8 9 10
GA	Chem Oxyg Dem - COD	1 2 3 4 5 6 7 8 9 10
GA	Diss Org Carbon - DOC (FF) (Field - Filtered & Preserved)	1 2 3 4 5 6 7 8 9 10
GN	Diss Org Carbon - DOC (LF) (Lab - Filtered & Preserved)	1 2 3 4 5 6 7 8 9 10
GA	Total Org Carbon - TOC	1 2 3 4 5 6 7 8 9 10
GA	Ammonia - NH3	1 2 3 4 5 6 7 8 9 10
GA	Nitrate+Nitrite - NO3+NO2	1 2 3 4 5 6 7 8 9 10
GA	Kjeldahl Nitrogen - KN	1 2 3 4 5 6 7 8 9 10
GA	Total Phosphorus - TP	1 2 3 4 5 6 7 8 9 10

Chain of Custody

	Relinquished by	Received By	Date / Time
Print Name & Org.	Jeff Pincumbe - MDEQ	Jordan Hadley MDEQ	10/28/16 1147
Signature:			
Print Name & Org.			
Signature:			
Print Name & Org.			
Signature:			

Michigan Department of Environmental Quality
Laboratory Services Section

Analysis Request Sheet

Lab Work Order Number	Project Name	Matrix
1610241	River Road PFC Contamination	WATER

Site Code/Project Number	AY	CC Email 1	Project TAT Days	Sample Collector
35000154	17	pincumbej		Jeff Pincumbe
Dept-Division-District	**Index**	**CC Email 2**	**Project Due Date**	**Sample Collector Phone**
DEQ-RRD-Saginaw Bay	44031	shireyb		517-335-6418
State Project Manager	**PCA**	**CC Email 3**		**Contract Firm**
Mike Jury	30740			
State Project Manager Email	**Project**	**Overflow Lab Choice 1**	**Accept Analysis hold time codes**	**Contract Firm Primary Contact**
jurym1	457196			
State Project Manager Phone	**Phase**	**Overflow Lab Choice 2**		**Primary Contact Phone**
989-894-6255	00			

	Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1		MW-3 24-29	10-27-16			
2		MW-3 34-39	10-27-16			
3		MW-3 44-49	10-27-16			
4		MW-7 ~~44-49~~ 16-21	10-27-16			
5		MW-7 26-31	10-27-16			
6		MW-7 36-41	10-27-16			
7		MW-7 46-51	10-27-16			
8						
9						
10						

ORGANIC CHEMISTRY

VOA - Volatile Organic Acidic	
Volatiles - Full List	1 2 3 4 5 6 7 8 9 10
BTEX/MTBE/TMB only	1 2 3 4 5 6 7 8 9 10
Chlorinated only	1 2 3 4 5 6 7 8 9 10
GRO	1 2 3 4 5 6 7 8 9 10
1,4 Dioxane	1 2 3 4 5 6 7 8 9 10
METH - Methane, Ethane, Ethene	
Methane, Ethane, Ethene	1 2 3 4 5 6 7 8 9 10
ON - Pesticides, PCBs	
Pesticides & PCBs	1 2 3 4 5 6 7 8 9 10
Pesticides only	1 2 3 4 5 6 7 8 9 10
PCBs only	1 2 3 4 5 6 7 8 9 10
Toxaphene	1 2 3 4 5 6 7 8 9 10
Chlordane	1 2 3 4 5 6 7 8 9 10
BNA - Base Neutral Acids	
BNAs	1 2 3 4 5 6 7 8 9 10
Benzidines	1 2 3 4 5 6 7 8 9 10
PNAs only	1 2 3 4 5 6 7 8 9 10
BNs only	1 2 3 4 5 6 7 8 9 10
Acids only	1 2 3 4 5 6 7 8 9 10
Organic Specialty Requests	
Library search - Volatiles	1 2 3 4 5 6 7 8 9 10
Library search - SemiVols	1 2 3 4 5 6 7 8 9 10
Finger Print	1 2 3 4 5 6 7 8 9 10
DRO / ORO	1 2 3 4 5 6 7 8 9 10

METALS CHEMISTRY PACKAGES

OpMemo2 - Total	1 2 3 4 5 6 7 8 9 10
OpMemo2 - Dissolved	1 2 3 4 5 6 7 8 9 10
(Sb,As,Ba,Be,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Tl,V,Zn)	
Michigan10 - Total	1 2 3 4 5 6 7 8 9 10
Michigan10 - Dissolved	1 2 3 4 5 6 7 8 9 10
(As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)	

MAD - DISSOLVED METALS

Diss - Silver - Ag	1 2 3 4 5 6 7 8 9 10
Diss - Aluminum - Al	1 2 3 4 5 6 7 8 9 10
Diss - Arsenic - As	1 2 3 4 5 6 7 8 9 10
Diss - Boron - B	1 2 3 4 5 6 7 8 9 10
Diss - Barium - Ba	1 2 3 4 5 6 7 8 9 10
Diss - Beryllium - Be	1 2 3 4 5 6 7 8 9 10
Diss - Cadmium - Cd	1 2 3 4 5 6 7 8 9 10
Diss - Cobalt - Co	1 2 3 4 5 6 7 8 9 10
Diss - Chromium - Cr	1 2 3 4 5 6 7 8 9 10
Diss - Copper - Cu	1 2 3 4 5 6 7 8 9 10
Diss - Iron - Fe	1 2 3 4 5 6 7 8 9 10
Diss - Mercury - Hg	1 2 3 4 5 6 7 8 9 10
Diss - Lithium - Li	1 2 3 4 5 6 7 8 9 10
Diss - Manganese - Mn	1 2 3 4 5 6 7 8 9 10
Diss - Molybdenum - Mo	1 2 3 4 5 6 7 8 9 10
Diss - Nickel - Ni	1 2 3 4 5 6 7 8 9 10
Diss - Lead - Pb	1 2 3 4 5 6 7 8 9 10
Diss - Antimony - Sb	1 2 3 4 5 6 7 8 9 10
Diss - Selenium - Se	1 2 3 4 5 6 7 8 9 10
Diss - Strontium - Sr	1 2 3 4 5 6 7 8 9 10
Diss - Titanium - Ti	1 2 3 4 5 6 7 8 9 10
Diss - Thallium - Tl	1 2 3 4 5 6 7 8 9 10
Diss - Uranium - U	1 2 3 4 5 6 7 8 9 10
Diss - Vanadium - V	1 2 3 4 5 6 7 8 9 10
Diss - Zinc - Zn	1 2 3 4 5 6 7 8 9 10
Diss - Calcium - Ca	1 2 3 4 5 6 7 8 9 10
Diss - Potassium - K	1 2 3 4 5 6 7 8 9 10
Diss - Magnesium - Mg	1 2 3 4 5 6 7 8 9 10
Diss - Sodium - Na	1 2 3 4 5 6 7 8 9 10
Diss - Hardness - Ca, Mg	1 2 3 4 5 6 7 8 9 10
MD - Metals Dissolved	
Lab Filtration	1 2 3 4 5 6 7 8 9 10

MA - TOTAL METALS

Silver - Ag	1 2 3 4 5 6 7 8 9 10
Aluminum - Al	1 2 3 4 5 6 7 8 9 10
Arsenic - As	1 2 3 4 5 6 7 8 9 10
Boron - B	1 2 3 4 5 6 7 8 9 10
Barium - Ba	1 2 3 4 5 6 7 8 9 10
Beryllium - Be	1 2 3 4 5 6 7 8 9 10
Cadmium - Cd	1 2 3 4 5 6 7 8 9 10
Cobalt - Co	1 2 3 4 5 6 7 8 9 10
Chromium - Cr	1 2 3 4 5 6 7 8 9 10
Copper - Cu	1 2 3 4 5 6 7 8 9 10
Iron - Fe	1 2 3 4 5 6 7 8 9 10
Mercury - Hg	1 2 3 4 5 6 7 8 9 10
Lithium - Li	1 2 3 4 5 6 7 8 9 10
Manganese - Mn	1 2 3 4 5 6 7 8 9 10
Molybdenum - Mo	1 2 3 4 5 6 7 8 9 10
Nickel - Ni	1 2 3 4 5 6 7 8 9 10
Lead - Pb	1 2 3 4 5 6 7 8 9 10
Antimony - Sb	1 2 3 4 5 6 7 8 9 10
Selenium - Se	1 2 3 4 5 6 7 8 9 10
Strontium - Sr	1 2 3 4 5 6 7 8 9 10
Titanium - Ti	1 2 3 4 5 6 7 8 9 10
Thallium - Tl	1 2 3 4 5 6 7 8 9 10
Uranium - U	1 2 3 4 5 6 7 8 9 10
Vanadium - V	1 2 3 4 5 6 7 8 9 10
Zinc - Zn	1 2 3 4 5 6 7 8 9 10
Calcium - Ca	1 2 3 4 5 6 7 8 9 10
Potassium - K	1 2 3 4 5 6 7 8 9 10
Magnesium - Mg	1 2 3 4 5 6 7 8 9 10
Sodium - Na	1 2 3 4 5 6 7 8 9 10
Hardness - Ca, Mg	1 2 3 4 5 6 7 8 9 10
LHG - Low Level Mercury	
Mercury Low Level - Hg	1 2 3 4 5 6 7 8 9 10

GENERAL CHEMISTRY

GB Total Cyanide - CN	1 2 3 4 5 6 7 8 9 10
GB Amenable Cyanide - CN	1 2 3 4 5 6 7 8 9 10
GCN Available Cyanide - CN	1 2 3 4 5 6 7 8 9 10
CA Chlorophyll	1 2 3 4 5 6 7 8 9 10
GN Ortho Phosphate - OP	1 2 3 4 5 6 7 8 9 10
GN Nitrite - NO_2	1 2 3 4 5 6 7 8 9 10
GN Nitrate - NO_3 (Calc.)	1 2 3 4 5 6 7 8 9 10
GN Suspended Solids - SS	1 2 3 4 5 6 7 8 9 10
GN Dissolved Solids - TDS	1 2 3 4 5 6 7 8 9 10
MN Diss Solids - TDS (Calc.)	1 2 3 4 5 6 7 8 9 10
GN Turbidity	1 2 3 4 5 6 7 8 9 10
MN Total Alkalinity	1 2 3 4 5 6 7 8 9 10
MN Bicarb/Carb Alkalinity (includes Total Alkalinity)	1 2 3 4 5 6 7 8 9 10
MN Chloride - Cl	1 2 3 4 5 6 7 8 9 10
MN Fluoride - F	1 2 3 4 5 6 7 8 9 10
MN Sulfate - SO4	1 2 3 4 5 6 7 8 9 10
MN Chromium 6 - Cr+6	1 2 3 4 5 6 7 8 9 10
MN Conductivity	1 2 3 4 5 6 7 8 9 10
MN pH	1 2 3 4 5 6 7 8 9 10
GA Chem Oxyg Dem - COD	1 2 3 4 5 6 7 8 9 10
GA Diss Org Carbon - DOC (FF) (Field - Filtered & Preserved)	1 2 3 4 5 6 7 8 9 10
GN Diss Org Carbon - DOC (LF) (Lab - Filtered & Preserved)	1 2 3 4 5 6 7 8 9 10
GA Total Org Carbon - TOC	1 2 3 4 5 6 7 8 9 10
GA Ammonia - NH3	1 2 3 4 5 6 7 8 9 10
GA Nitrate+Nitrite - NO3+NO2	1 2 3 4 5 6 7 8 9 10
GA Kjeldahl Nitrogen - KN	1 2 3 4 5 6 7 8 9 10
GA Total Phosphorus - TP	1 2 3 4 5 6 7 8 9 10

Chain of Custody

	Relinquished by	Received By	Date / Time
Print Name & Org.	Jeff Pincumbe - MDEQ	Jordan Hadley MDEQ	10/28/16 1147
Signature:			
Print Name & Org.			
Signature:			
Print Name & Org.			
Signature:			

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

06 December 2016

Work Order: 1611011

Price: $1,035.00

Mike Jury
MDEQ-RRD-SAGINAW BAY
401 Ketchum St., Suite B
Bay City, MI 48708

RE: RIVER ROAD PFC CONTAMINATION

I certify that the analyses performed by the MDEQ Environmental Laboratory were conducted by methods approved by the U.S. Environmental Protection Agency and other appropriate regulatory agencies.

Sincerely,

Carol Smith
Laboratory Director (Acting)

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

MDEQ-RRD-SAGINAW BAY
401 Ketchum St., Suite B
Bay City MI, 48708

Project: RIVER ROAD PFC CONTAMINATION
Site Code: 35000154
Project Manager: Mike Jury

Reported:
12/06/2016

Analytical Report for Samples

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Qualifier
MW-5 14-19	1611011-01	Water	10/31/2016	11/02/2016	
MW-5 24-29	1611011-02	Water	10/31/2016	11/02/2016	
MW-5 24-29 DUP	1611011-03	Water	10/31/2016	11/02/2016	
MW-5 34-39	1611011-04	Water	10/31/2016	11/02/2016	
MW-5 44-49	1611011-05	Water	10/31/2016	11/02/2016	
B-3 12-17	1611011-06	Water	11/01/2016	11/02/2016	
B-3 22-27	1611011-07	Water	11/01/2016	11/02/2016	
B-3 32-37	1611011-08	Water	11/01/2016	11/02/2016	
B-3 42-47	1611011-09	Water	11/01/2016	11/02/2016	

Notes and Definitions

X	Methods 8260 & 624 are used to analyze volatile organics that have boiling points below 200 ºC. 2-Methylnaphthalene & naphthalene have boiling points above 200 ºC and are better suited to analysis by methods 8270 & 625 as semivolatile organics.
A11	Result is estimated due to high initial verification standard criteria failure.
A10	Result and reporting limit are estimated due to low initial verification standard criteria failure.
A09	Result is estimated due to high recovery of batch quality control.
A08	Result(s) and reporting limits(s) are estimated due to low recovery of batch QC.
A06	Result is estimated due to high continuing calibration standard criteria failure.
A05	Result and reporting limit are estimated due to low continuing calibration standard criteria failure.
A04	Result is estimated due to high matrix spike recovery.
A03	Result(s) and reporting limit(s) are estimated due to low matrix spike recovery.
ND	Indicates compound analyzed for but not detected
RL	Reporting Limit
NA	Not Applicable

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-5 14-19

Lab ID: 1611011-01

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	X
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/08/16	B6K0704	8260	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-5 14-19

Lab ID: 1611011-01

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/08/16	B6K0704	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/08/16	B6K0704	8260	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
Surrogate: Bromofluorobenzene			*106 %*	*85-115*		*11/08/16*	B6K0704	*8260*	
Surrogate: Dibromofluoromethane			*105 %*	*82.7-115*		*11/08/16*	B6K0704	*8260*	
Surrogate: Toluene-d8			*102 %*	*85-115*		*11/08/16*	B6K0704	*8260*	

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-5 24-29

Lab ID: 1611011-02

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	X
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/08/16	B6K0704	8260	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
67-66-3	**Chloroform**	**1.2**	1.0	ug/L	1	11/08/16	B6K0704	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	

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ENVIRONMENTAL LABORATORY

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Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-5 24-29

Lab ID: 1611011-02

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/08/16	B6K0704	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/08/16	B6K0704	8260	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
Surrogate: Bromofluorobenzene			*105 %*	*85-115*		*11/08/16*	B6K0704	*8260*	
Surrogate: Dibromofluoromethane			*107 %*	*82.7-115*		*11/08/16*	B6K0704	*8260*	
Surrogate: Toluene-d8			*102 %*	*85-115*		*11/08/16*	B6K0704	*8260*	

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-5 24-29 DUP

Lab ID: 1611011-03

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	X
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/08/16	B6K0704	8260	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
67-66-3	**Chloroform**	**1.2**	1.0	ug/L	1	11/08/16	B6K0704	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	

STATE OF MICHIGAN
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ENVIRONMENTAL LABORATORY

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TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-5 24-29 DUP

Lab ID: 1611011-03

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/08/16	B6K0704	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/08/16	B6K0704	8260	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
Surrogate: Bromofluorobenzene			*107 %*	*85-115*		*11/08/16*	B6K0704	*8260*	
Surrogate: Dibromofluoromethane			*108 %*	*82.7-115*		*11/08/16*	B6K0704	*8260*	
Surrogate: Toluene-d8			*104 %*	*85-115*		*11/08/16*	B6K0704	*8260*	

STATE OF MICHIGAN
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MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-5 34-39

Lab ID: 1611011-04

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	X
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/08/16	B6K0704	8260	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	

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TEL: (517) 335-9800
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Client ID: MW-5 34-39

Lab ID: 1611011-04

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/08/16	B6K0704	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/08/16	B6K0704	8260	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
Surrogate: Bromofluorobenzene			*107 %*	*85-115*		*11/08/16*	B6K0704	*8260*	
Surrogate: Dibromofluoromethane			*107 %*	*82.7-115*		*11/08/16*	B6K0704	*8260*	
Surrogate: Toluene-d8			*103 %*	*85-115*		*11/08/16*	B6K0704	*8260*	

STATE OF MICHIGAN
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ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-5 44-49

Lab ID: 1611011-05

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	X
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/08/16	B6K0704	8260	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	

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TEL: (517) 335-9800
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Client ID: MW-5 44-49

Lab ID: 1611011-05

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/08/16	B6K0704	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/08/16	B6K0704	8260	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/08/16	B6K0704	8260	
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/08/16	B6K0704	8260	
Surrogate: Bromofluorobenzene			*106 %*	*85-115*		*11/08/16*	B6K0704	*8260*	
Surrogate: Dibromofluoromethane			*105 %*	*82.7-115*		*11/08/16*	B6K0704	*8260*	
Surrogate: Toluene-d8			*102 %*	*85-115*		*11/08/16*	B6K0704	*8260*	

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: B-3 12-17

Lab ID: 1611011-06

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	X
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/09/16	B6K0916	8260	A05
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	

STATE OF MICHIGAN
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ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: B-3 12-17

Lab ID: 1611011-06

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/09/16	B6K0916	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	A10
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/09/16	B6K0916	8260	A05
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	A05
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
Surrogate: Bromofluorobenzene			*105 %*	*85-115*		*11/09/16*	B6K0916	*8260*	
Surrogate: Dibromofluoromethane			*101 %*	*82.7-115*		*11/09/16*	B6K0916	*8260*	
Surrogate: Toluene-d8			*98.2 %*	*85-115*		*11/09/16*	B6K0916	*8260*	

Lab Work Order # 1611011

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: B-3 22-27

Lab ID: 1611011-07

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	X
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/09/16	B6K0916	8260	A05
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: B-3 22-27

Lab ID: 1611011-07

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/09/16	B6K0916	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	A10
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/09/16	B6K0916	8260	A05
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	A05
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
Surrogate: Bromofluorobenzene			*108 %*	*85-115*		*11/09/16*	B6K0916	*8260*	
Surrogate: Dibromofluoromethane			*101 %*	*82.7-115*		*11/09/16*	B6K0916	*8260*	
Surrogate: Toluene-d8			*97.5 %*	*85-115*		*11/09/16*	B6K0916	*8260*	

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: B-3 32-37

Lab ID: 1611011-08

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	X
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/09/16	B6K0916	8260	A05
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: B-3 32-37

Lab ID: 1611011-08

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/09/16	B6K0916	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	A10
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/09/16	B6K0916	8260	A05
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	A05
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
Surrogate: Bromofluorobenzene			*108 %*	*85-115*		*11/09/16*	B6K0916	*8260*	
Surrogate: Dibromofluoromethane			*101 %*	*82.7-115*		*11/09/16*	B6K0916	*8260*	
Surrogate: Toluene-d8			*97.8 %*	*85-115*		*11/09/16*	B6K0916	*8260*	

Lab Work Order # 1611011

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: B-3 42-47

Lab ID: 1611011-09

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	X
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/09/16	B6K0916	8260	A05
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	

STATE OF MICHIGAN
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ENVIRONMENTAL LABORATORY

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Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: B-3 42-47

Lab ID: 1611011-09

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/09/16	B6K0916	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	A10
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/09/16	B6K0916	8260	A05
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/09/16	B6K0916	8260	A05
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/09/16	B6K0916	8260	
Surrogate: Bromofluorobenzene			*107 %*	*85-115*		*11/09/16*	B6K0916	*8260*	
Surrogate: Dibromofluoromethane			*101 %*	*82.7-115*		*11/09/16*	B6K0916	*8260*	
Surrogate: Toluene-d8			*97.9 %*	*85-115*		*11/09/16*	B6K0916	*8260*	

Michigan Department of Environmental Quality
Laboratory Services Section

Analysis Request Sheet

Lab Work Order Number	Project Name	Matrix
1611011	River Road PFC Contamination	WATER

Site Code/Project Number	AY	CC Email 1	Project TAT Days	Sample Collector
35000154	17	pincumbej		Jeff Pincumbe
Dept-Division-District	**Index**	**CC Email 2**	**Project Due Date**	**Sample Collector Phone**
DEQ-RRD-Saginaw Bay	44031	shireyb		517-335-6418
State Project Manager	**PCA**	**CC Email 3**		**Contract Firm**
Mike Jury	30740			
State Project Manager Email	**Project**	**Overflow Lab Choice 1**	**Accept Analysis hold time codes**	**Contract Firm Primary Contact**
jurym1	457196			
State Project Manager Phone	**Phase**	**Overflow Lab Choice 2**		**Primary Contact Phone**
989-894-6255	00			

	Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1	01	MW-5 14-19	10-31-16			
2	02	MW-5 24-29	10-31-16			
3	03	MW-5 24-29 Dup	10-31-16			
4	04	MW-5 34-39	10-31-16			
5	05	MW-5 44-49	10-31-16			
6	06	B-3 12-17	11-1-16			
7	07	B-3 22-27	11-1-16			
8	08	B-3 32-37	11-1-16			
9	09	B-3 42-47	11-1-16			
10						

ORGANIC CHEMISTRY

VOA - Volatile Organic Acidic	
Volatiles - Full List	1 2 3 4 5 6 7 8 9 10
BTEX/MTBE/TMB only	1 2 3 4 5 6 7 8 9 10
Chlorinated only	1 2 3 4 5 6 7 8 9 10
GRO	1 2 3 4 5 6 7 8 9 10
1,4 Dioxane	1 2 3 4 5 6 7 8 9 10
METH - Methane, Ethane, Ethene	
Methane, Ethane, Ethene	1 2 3 4 5 6 7 8 9 10
ON - Pesticides, PCBs	
Pesticides & PCBs	1 2 3 4 5 6 7 8 9 10
Pesticides only	1 2 3 4 5 6 7 8 9 10
PCBs only	1 2 3 4 5 6 7 8 9 10
Toxaphene	1 2 3 4 5 6 7 8 9 10
Chlordane	1 2 3 4 5 6 7 8 9 10
BNA - Base Neutral Acids	
BNAs	1 2 3 4 5 6 7 8 9 10
Benzidines	1 2 3 4 5 6 7 8 9 10
PNAs only	1 2 3 4 5 6 7 8 9 10
BNs only	1 2 3 4 5 6 7 8 9 10
Acids only	1 2 3 4 5 6 7 8 9 10
Organic Specialty Requests	
Library search - Volatiles	1 2 3 4 5 6 7 8 9 10
Library search - SemiVols	1 2 3 4 5 6 7 8 9 10
Finger Print	1 2 3 4 5 6 7 8 9 10
DRO / ORO	1 2 3 4 5 6 7 8 9 10

METALS CHEMISTRY PACKAGES

OpMemo2 - Total	1 2 3 4 5 6 7 8 9 10
OpMemo2 - Dissolved (Sb,As,Ba,Be,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Tl,V,Zn)	1 2 3 4 5 6 7 8 9 10
Michigan10 - Total	1 2 3 4 5 6 7 8 9 10
Michigan10 - Dissolved (As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)	1 2 3 4 5 6 7 8 9 10

MAD - DISSOLVED METALS

Diss - Silver - Ag	1 2 3 4 5 6 7 8 9 10
Diss - Aluminum - Al	1 2 3 4 5 6 7 8 9 10
Diss - Arsenic - As	1 2 3 4 5 6 7 8 9 10
Diss - Boron - B	1 2 3 4 5 6 7 8 9 10
Diss - Barium - Ba	1 2 3 4 5 6 7 8 9 10
Diss - Beryllium - Be	1 2 3 4 5 6 7 8 9 10
Diss - Cadmium - Cd	1 2 3 4 5 6 7 8 9 10
Diss - Cobalt - Co	1 2 3 4 5 6 7 8 9 10
Diss - Chromium - Cr	1 2 3 4 5 6 7 8 9 10
Diss - Copper - Cu	1 2 3 4 5 6 7 8 9 10
Diss - Iron - Fe	1 2 3 4 5 6 7 8 9 10
Diss - Mercury - Hg	1 2 3 4 5 6 7 8 9 10
Diss - Lithium - Li	1 2 3 4 5 6 7 8 9 10
Diss - Manganese - Mn	1 2 3 4 5 6 7 8 9 10
Diss - Molybdenum - Mo	1 2 3 4 5 6 7 8 9 10
Diss - Nickel - Ni	1 2 3 4 5 6 7 8 9 10
Diss - Lead - Pb	1 2 3 4 5 6 7 8 9 10
Diss - Antimony - Sb	1 2 3 4 5 6 7 8 9 10
Diss - Selenium - Se	1 2 3 4 5 6 7 8 9 10
Diss - Strontium - Sr	1 2 3 4 5 6 7 8 9 10
Diss - Zinc - Zn	1 2 3 4 5 6 7 8 9 10
Diss - Titanium - Ti	1 2 3 4 5 6 7 8 9 10
Diss - Thallium - Tl	1 2 3 4 5 6 7 8 9 10
Diss - Uranium - U	1 2 3 4 5 6 7 8 9 10
Diss - Vanadium - V	1 2 3 4 5 6 7 8 9 10
Diss - Zinc - Zn	1 2 3 4 5 6 7 8 9 10
Diss - Calcium - Ca	1 2 3 4 5 6 7 8 9 10
Diss - Potassium - K	1 2 3 4 5 6 7 8 9 10
Diss - Magnesium - Mg	1 2 3 4 5 6 7 8 9 10
Diss - Sodium - Na	1 2 3 4 5 6 7 8 9 10
Diss - Hardness - Ca, Mg	1 2 3 4 5 6 7 8 9 10
MD - Metals Dissolved	
Lab Filtration	1 2 3 4 5 6 7 8 9 10

MA - TOTAL METALS

Silver - Ag	1 2 3 4 5 6 7 8 9 10
Aluminum - Al	1 2 3 4 5 6 7 8 9 10
Arsenic - As	1 2 3 4 5 6 7 8 9 10
Boron - B	1 2 3 4 5 6 7 8 9 10
Barium - Ba	1 2 3 4 5 6 7 8 9 10
Beryllium - Be	1 2 3 4 5 6 7 8 9 10
Cadmium - Cd	1 2 3 4 5 6 7 8 9 10
Cobalt - Co	1 2 3 4 5 6 7 8 9 10
Chromium - Cr	1 2 3 4 5 6 7 8 9 10
Copper - Cu	1 2 3 4 5 6 7 8 9 10
Iron - Fe	1 2 3 4 5 6 7 8 9 10
Mercury - Hg	1 2 3 4 5 6 7 8 9 10
Lithium - Li	1 2 3 4 5 6 7 8 9 10
Manganese - Mn	1 2 3 4 5 6 7 8 9 10
Molybdenum - Mo	1 2 3 4 5 6 7 8 9 10
Nickel - Ni	1 2 3 4 5 6 7 8 9 10
Lead - Pb	1 2 3 4 5 6 7 8 9 10
Antimony - Sb	1 2 3 4 5 6 7 8 9 10
Selenium - Se	1 2 3 4 5 6 7 8 9 10
Strontium - Sr	1 2 3 4 5 6 7 8 9 10
Titanium - Ti	1 2 3 4 5 6 7 8 9 10
Thallium - Tl	1 2 3 4 5 6 7 8 9 10
Uranium - U	1 2 3 4 5 6 7 8 9 10
Vanadium - V	1 2 3 4 5 6 7 8 9 10
Zinc - Zn	1 2 3 4 5 6 7 8 9 10
Calcium - Ca	1 2 3 4 5 6 7 8 9 10
Potassium - K	1 2 3 4 5 6 7 8 9 10
Magnesium - Mg	1 2 3 4 5 6 7 8 9 10
Sodium - Na	1 2 3 4 5 6 7 8 9 10
Hardness - Ca, Mg	1 2 3 4 5 6 7 8 9 10
LHG - Low Level Mercury	
Mercury Low Level - Hg	1 2 3 4 5 6 7 8 9 10

GENERAL CHEMISTRY

GB	Total Cyanide - CN	1 2 3 4 5 6 7 8 9 10
GB	Amenable Cyanide - CN	1 2 3 4 5 6 7 8 9 10
GCN	Available Cyanide - CN	1 2 3 4 5 6 7 8 9 10
CA	Chlorophyll	1 2 3 4 5 6 7 8 9 10
GN	Ortho Phosphate - OP	1 2 3 4 5 6 7 8 9 10
GN	Nitrite - NO_2	1 2 3 4 5 6 7 8 9 10
GN	Nitrate - NO_3 (Calc.)	1 2 3 4 5 6 7 8 9 10
GN	Suspended Solids - SS	1 2 3 4 5 6 7 8 9 10
GN	Dissolved Solids - TDS	1 2 3 4 5 6 7 8 9 10
MN	Diss Solids - TDS (Calc.)	1 2 3 4 5 6 7 8 9 10
GN	Turbidity	1 2 3 4 5 6 7 8 9 10
MN	Total Alkalinity	1 2 3 4 5 6 7 8 9 10
MN	Bicarb/Carb Alkalinity (Includes Total Alkalinity)	1 2 3 4 5 6 7 8 9 10
MN	Chloride - Cl	1 2 3 4 5 6 7 8 9 10
MN	Fluoride - F	1 2 3 4 5 6 7 8 9 10
MN	Sulfate - SO4	1 2 3 4 5 6 7 8 9 10
MN	Chromium 6 - Cr+6	1 2 3 4 5 6 7 8 9 10
MN	Conductivity	1 2 3 4 5 6 7 8 9 10
MN	pH	1 2 3 4 5 6 7 8 9 10
GA	Chem Oxyg Dem - COD	1 2 3 4 5 6 7 8 9 10
GA	Diss Org Carbon - DOC (FF) (Field - Filtered & Preserved)	1 2 3 4 5 6 7 8 9 10
GN	Diss Org Carbon - DOC (LF) (Lab - Filtered & Preserved)	1 2 3 4 5 6 7 8 9 10
GA	Total Org Carbon - TOC	1 2 3 4 5 6 7 8 9 10
GA	Ammonia - NH3	1 2 3 4 5 6 7 8 9 10
GA	Nitrate+Nitrite - NO3+NO2	1 2 3 4 5 6 7 8 9 10
GA	Kjeldahl Nitrogen - KN	1 2 3 4 5 6 7 8 9 10
GA	Total Phosphorus - TP	1 2 3 4 5 6 7 8 9 10

Chain of Custody

Relinquished by	Received By	Date / Time
Print Name & Org. Jeff Pincumbe - MDEQ	Melissa Smith	
Signature:		11/2/16 853
Print Name & Org.		
Signature:		
Print Name & Org.		
Signature:		

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

06 December 2016

Work Order: 1611131

Price: $690.00

Mike Jury
MDEQ-RRD-SAGINAW BAY
401 Ketchum St., Suite B
Bay City, MI 48708

RE: RIVER ROAD PFC CONTAMINATION

I certify that the analyses performed by the MDEQ Environmental Laboratory were conducted by methods approved by the U.S. Environmental Protection Agency and other appropriate regulatory agencies.

Sincerely,

Carol Smith
Laboratory Director (Acting)

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MDEQ-RRD-SAGINAW BAY
401 Ketchum St., Suite B
Bay City MI, 48708

Project: RIVER ROAD PFC CONTAMINATION
Site Code: 35000154
Project Manager: Mike Jury

Reported:
12/06/2016

Analytical Report for Samples

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Qualifier
MW-3	1611131-01	Water	11/15/2016	11/15/2016	
MW-4	1611131-02	Water	11/14/2016	11/15/2016	
MW-5	1611131-03	Water	11/15/2016	11/15/2016	
MW-6	1611131-04	Water	11/14/2016	11/15/2016	
MW-6 DUP	1611131-05	Water	11/14/2016	11/15/2016	
MW-7	1611131-06	Water	11/15/2016	11/15/2016	

Notes and Definitions

X	Methods 8260 & 624 are used to analyze volatile organics that have boiling points below 200 ºC. 2-Methylnaphthalene & naphthalene have boiling points above 200 ºC and are better suited to analysis by methods 8270 & 625 as semivolatile organics.
A11	Result is estimated due to high initial verification standard criteria failure.
A09	Result is estimated due to high recovery of batch quality control.
A06	Result is estimated due to high continuing calibration standard criteria failure.
A05	Result and reporting limit are estimated due to low continuing calibration standard criteria failure.
A04	Result is estimated due to high matrix spike recovery.
A03	Result(s) and reporting limit(s) are estimated due to low matrix spike recovery.
ND	Indicates compound analyzed for but not detected
RL	Reporting Limit
NA	Not Applicable

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Client ID: MW-3

Lab ID: 1611131-01

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	X
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/18/16	B6K1718	8260	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	

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Client ID: MW-3

Lab ID: 1611131-01

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/18/16	B6K1718	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/18/16	B6K1718	8260	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	A05
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
Surrogate: Bromofluorobenzene			*98.9 %*	*85-115*		*11/18/16*	B6K1718	*8260*	
Surrogate: Dibromofluoromethane			*101 %*	*82.7-115*		*11/18/16*	B6K1718	*8260*	
Surrogate: Toluene-d8			*99.2 %*	*85-115*		*11/18/16*	B6K1718	*8260*	

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ENVIRONMENTAL LABORATORY

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Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-4

Lab ID: 1611131-02

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	X
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/18/16	B6K1718	8260	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	

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CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/18/16	B6K1718	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/18/16	B6K1718	8260	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	A05
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
Surrogate: Bromofluorobenzene			*97.4 %*	*85-115*		*11/18/16*	B6K1718	*8260*	
Surrogate: Dibromofluoromethane			*104 %*	*82.7-115*		*11/18/16*	B6K1718	*8260*	
Surrogate: Toluene-d8			*101 %*	*85-115*		*11/18/16*	B6K1718	*8260*	

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-5

Lab ID: 1611131-03

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	X
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/18/16	B6K1718	8260	A03
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	

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ENVIRONMENTAL LABORATORY

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Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-5

Lab ID: 1611131-03

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/18/16	B6K1718	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	A03
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/18/16	B6K1718	8260	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	A05
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
Surrogate: Bromofluorobenzene			*97.2 %*	*85-115*		*11/18/16*	B6K1718	*8260*	
Surrogate: Dibromofluoromethane			*101 %*	*82.7-115*		*11/18/16*	B6K1718	*8260*	
Surrogate: Toluene-d8			*98.4 %*	*85-115*		*11/18/16*	B6K1718	*8260*	

STATE OF MICHIGAN
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MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-6

Lab ID: 1611131-04

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	X
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/18/16	B6K1718	8260	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

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ENVIRONMENTAL LABORATORY

P.O. Box 30270
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TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-6

Lab ID: 1611131-04

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/18/16	B6K1718	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/18/16	B6K1718	8260	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	A05
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
Surrogate: Bromofluorobenzene			*99.8 %*	*85-115*		*11/18/16*	B6K1718	*8260*	
Surrogate: Dibromofluoromethane			*104 %*	*82.7-115*		*11/18/16*	B6K1718	*8260*	
Surrogate: Toluene-d8			*99.6 %*	*85-115*		*11/18/16*	B6K1718	*8260*	

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-6 DUP

Lab ID: 1611131-05

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	X
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/18/16	B6K1718	8260	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	

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ENVIRONMENTAL LABORATORY

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TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-6 DUP

Lab ID: 1611131-05

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/18/16	B6K1718	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/18/16	B6K1718	8260	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	A05
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
Surrogate: Bromofluorobenzene			*100 %*	*85-115*		*11/18/16*	B6K1718	*8260*	
Surrogate: Dibromofluoromethane			*102 %*	*82.7-115*		*11/18/16*	B6K1718	*8260*	
Surrogate: Toluene-d8			*97.7 %*	*85-115*		*11/18/16*	B6K1718	*8260*	

STATE OF MICHIGAN
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ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: MW-7

Lab ID: 1611131-06

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
96-18-4	1,2,3-Trichloropropane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
526-73-8	1,2,3-Trimethylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
591-78-6	2-Hexanone	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
91-57-6	2-Methylnaphthalene	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	X
67-64-1	2-Propanone (acetone)	ND	20	ug/L	1	11/18/16	B6K1718	8260	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
107-13-1	Acrylonitrile	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
71-43-2	Benzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
108-86-1	Bromobenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
74-97-5	Bromochloromethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-27-4	Bromodichloromethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-25-2	Bromoform	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
74-83-9	Bromomethane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
75-15-0	Carbon disulfide	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
56-23-5	Carbon tetrachloride	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
108-90-7	Chlorobenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-00-3	Chloroethane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
67-66-3	Chloroform	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
74-87-3	Chloromethane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
10061-01-5	cis-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
110-82-7	Cyclohexane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
124-48-1	Dibromochloromethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	

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TEL: (517) 335-9800
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Client ID: MW-7

Lab ID: 1611131-06

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Volatiles									
74-95-3	Dibromomethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
60-29-7	Diethyl ether	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
108-20-3	Diisopropyl Ether	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
100-41-4	Ethylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
637-92-3	Ethyltertiarybutylether	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
67-72-1	Hexachloroethane	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
98-82-8	Isopropylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
1330-20-7	m & p - Xylene	ND	2.0	ug/L	1	11/18/16	B6K1718	8260	
74-88-4	Methyl iodide	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-09-2	Methylene chloride	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
1634-04-4	Methyltertiarybutylether	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
91-20-3	Naphthalene	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	X
104-51-8	n-Butylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
103-65-1	n-Propylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
95-47-6	o-Xylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
99-87-6	p-Isopropyl toluene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
135-98-8	sec-Butylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
100-42-5	Styrene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
98-06-6	tert-Butylbenzene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-65-0	tertiary Butyl Alcohol	ND	50	ug/L	1	11/18/16	B6K1718	8260	
994-05-8	tertiaryAmylmethylether	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
127-18-4	Tetrachloroethylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
109-99-9	Tetrahydrofuran	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	
108-88-3	Toluene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
10061-02-6	trans-1,3-Dichloropropylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	1	11/18/16	B6K1718	8260	A05
79-01-6	Trichloroethylene	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
75-01-4	Vinyl chloride	ND	1.0	ug/L	1	11/18/16	B6K1718	8260	
Surrogate: Bromofluorobenzene			*103 %*	*85-115*		*11/18/16*	B6K1718	*8260*	
Surrogate: Dibromofluoromethane			*104 %*	*82.7-115*		*11/18/16*	B6K1718	*8260*	
Surrogate: Toluene-d8			*98.4 %*	*85-115*		*11/18/16*	B6K1718	*8260*	

Lab Work Order # 1611131

Michigan Department of Environmental Quality
Laboratory Services Section

Analysis Request Sheet

Lab Work Order Number	Project Name	Matrix
16111131	River Road PFC Contamination	WATER

Site Code/Project Number	AY	CC Email 1	Project TAT Days	Sample Collector
35000154	17	pincumbej		Jeff Pincumbe
Dept-Division-District	**Index**	**CC Email 2**	**Project Due Date**	**Sample Collector Phone**
DEQ-RRD-Saginaw Bay	44031	shireyb		517-335-6418
State Project Manager	**PCA**	**CC Email 3**		**Contract Firm**
Mike Jury	30740			
State Project Manager Email	**Project**	**Overflow Lab Choice 1**	**Accept Analysis hold time codes**	**Contract Firm Primary Contact**
jurym1	457196			
State Project Manager Phone	**Phase**	**Overflow Lab Choice 2**		**Primary Contact Phone**
989-894-6255	00			

	Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1	01	MW-3	11-15-16			
2	02	MW-4	11-14-16			
3	03	MW-5	11-15-16			
4	04	MW-6	11-14-16			
5	05	MW-6 DUP	11-14-16			
6	06	MW-7	11-15-16			
7						
8						
9						
10						

ORGANIC CHEMISTRY

	1	2	3	4	5	6	7	8	9	10
VOA - Volatile Organic Acidic										
Volatiles - Full List	(1)	2	3	4	5	6	7	8	9	10
BTEX/MTBE/TMB only	1	2	3	4	5	6	7	8	9	10
Chlorinated only	1	2	3	4	5	6	7	8	9	10
GRO	1	2	3	4	5	6	7	8	9	10
1,4 Dioxane	1	2	3	4	5	6	7	8	9	10
METH - Methane, Ethane, Ethene										
Methane, Ethane, Ethene	1	2	3	4	5	6	7	8	9	10
ON - Pesticides, PCBs										
Pesticides & PCBs	1	2	3	4	5	6	7	8	9	10
Pesticides only	1	2	3	4	5	6	7	8	9	10
PCBs only	1	2	3	4	5	6	7	8	9	10
Toxaphene	1	2	3	4	5	6	7	8	9	10
Chlordane	1	2	3	4	5	6	7	8	9	10
BNA - Base Neutral Acids										
BNAs	1	2	3	4	5	6	7	8	9	10
Benzidines	1	2	3	4	5	6	7	8	9	10
PNAs only	1	2	3	4	5	6	7	8	9	10
BNs only	1	2	3	4	5	6	7	8	9	10
Acids only	1	2	3	4	5	6	7	8	9	10
Organic Specialty Requests										
Library search - Volatiles	1	2	3	4	5	6	7	8	9	10
Library search - SemiVols	1	2	3	4	5	6	7	8	9	10
Finger Print	1	2	3	4	5	6	7	8	9	10
DRO / ORO	1	2	3	4	5	6	7	8	9	10

METALS CHEMISTRY PACKAGES

OpMemo2 - Total	1	2	3	4	5	6	7	8	9	10
OpMemo2 - Dissolved (Sb,As,Ba,Be,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Tl,V,Zn)	1	2	3	4	5	6	7	8	9	10
Michigan10 - Total	1	2	3	4	5	6	7	8	9	10
Michigan10 - Dissolved (As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)	1	2	3	4	5	6	7	8	9	10

MAD - DISSOLVED METALS

Diss - Silver - Ag	1	2	3	4	5	6	7	8	9	10
Diss - Aluminum - Al	1	2	3	4	5	6	7	8	9	10
Diss - Arsenic - As	1	2	3	4	5	6	7	8	9	10
Diss - Boron - B	1	2	3	4	5	6	7	8	9	10
Diss - Barium - Ba	1	2	3	4	5	6	7	8	9	10
Diss - Beryllium - Be	1	2	3	4	5	6	7	8	9	10
Diss - Cadmium - Cd	1	2	3	4	5	6	7	8	9	10
Diss - Cobalt - Co	1	2	3	4	5	6	7	8	9	10
Diss - Chromium - Cr	1	2	3	4	5	6	7	8	9	10
Diss - Copper - Cu	1	2	3	4	5	6	7	8	9	10
Diss - Iron - Fe	1	2	3	4	5	6	7	8	9	10
Diss - Mercury - Hg	1	2	3	4	5	6	7	8	9	10
Diss - Lithium - Li	1	2	3	4	5	6	7	8	9	10
Diss - Manganese - Mn	1	2	3	4	5	6	7	8	9	10
Diss - Molybdenum - Mo	1	2	3	4	5	6	7	8	9	10
Diss - Nickel - Ni	1	2	3	4	5	6	7	8	9	10
Diss - Lead - Pb	1	2	3	4	5	6	7	8	9	10
Diss - Antimony - Sb	1	2	3	4	5	6	7	8	9	10
Diss - Selenium - Se	1	2	3	4	5	6	7	8	9	10
Diss - Strontium - Sr	1	2	3	4	5	6	7	8	9	10
Diss - Titanium - Ti	1	2	3	4	5	6	7	8	9	10
Diss - Thallium - Tl	1	2	3	4	5	6	7	8	9	10
Diss - Uranium - U	1	2	3	4	5	6	7	8	9	10
Diss - Vanadium - V	1	2	3	4	5	6	7	8	9	10
Diss - Zinc - Zn	1	2	3	4	5	6	7	8	9	10
Diss - Calcium - Ca	1	2	3	4	5	6	7	8	9	10
Diss - Potassium - K	1	2	3	4	5	6	7	8	9	10
Diss - Magnesium - Mg	1	2	3	4	5	6	7	8	9	10
Diss - Sodium - Na	1	2	3	4	5	6	7	8	9	10
Diss - Hardness - Ca, Mg	1	2	3	4	5	6	7	8	9	10
MD - Metals Dissolved										
Lab Filtration	1	2	3	4	5	6	7	8	9	10

MA - TOTAL METALS

Silver - Ag	1	2	3	4	5	6	7	8	9	10
Aluminum - Al	1	2	3	4	5	6	7	8	9	10
Arsenic - As	1	2	3	4	5	6	7	8	9	10
Boron - B	1	2	3	4	5	6	7	8	9	10
Barium - Ba	1	2	3	4	5	6	7	8	9	10
Beryllium - Be	1	2	3	4	5	6	7	8	9	10
Cadmium - Cd	1	2	3	4	5	6	7	8	9	10
Cobalt - Co	1	2	3	4	5	6	7	8	9	10
Chromium - Cr	1	2	3	4	5	6	7	8	9	10
Copper - Cu	1	2	3	4	5	6	7	8	9	10
Iron - Fe	1	2	3	4	5	6	7	8	9	10
Mercury - Hg	1	2	3	4	5	6	7	8	9	10
Lithium - Li	1	2	3	4	5	6	7	8	9	10
Manganese - Mn	1	2	3	4	5	6	7	8	9	10
Molybdenum - Mo	1	2	3	4	5	6	7	8	9	10
Nickel - Ni	1	2	3	4	5	6	7	8	9	10
Lead - Pb	1	2	3	4	5	6	7	8	9	10
Antimony - Sb	1	2	3	4	5	6	7	8	9	10
Selenium - Se	1	2	3	4	5	6	7	8	9	10
Strontium - Sr	1	2	3	4	5	6	7	8	9	10
Titanium - Ti	1	2	3	4	5	6	7	8	9	10
Thallium - Tl	1	2	3	4	5	6	7	8	9	10
Uranium - U	1	2	3	4	5	6	7	8	9	10
Vanadium - V	1	2	3	4	5	6	7	8	9	10
Zinc - Zn	1	2	3	4	5	6	7	8	9	10
Calcium - Ca	1	2	3	4	5	6	7	8	9	10
Potassium - K	1	2	3	4	5	6	7	8	9	10
Magnesium - Mg	1	2	3	4	5	6	7	8	9	10
Sodium - Na	1	2	3	4	5	6	7	8	9	10
Hardness - Ca, Mg	1	2	3	4	5	6	7	8	9	10
LHG - Low Level Mercury										
Mercury Low Level - Hg	1	2	3	4	5	6	7	8	9	10

GENERAL CHEMISTRY

GB Total Cyanide - CN	1	2	3	4	5	6	7	8	9	10
GB Amenable Cyanide - CN	1	2	3	4	5	6	7	8	9	10
GCN Available Cyanide - CN	1	2	3	4	5	6	7	8	9	10
CA Chlorophyll	1	2	3	4	5	6	7	8	9	10
GN Ortho Phosphate - OP	1	2	3	4	5	6	7	8	9	10
GN Nitrite - NO_2	1	2	3	4	5	6	7	8	9	10
GN Nitrate - NO_3 (Calc.)	1	2	3	4	5	6	7	8	9	10
GN Suspended Solids - SS	1	2	3	4	5	6	7	8	9	10
GN Dissolved Solids - TDS	1	2	3	4	5	6	7	8	9	10
MN Diss Solids - TDS (Calc.)	1	2	3	4	5	6	7	8	9	10
GN Turbidity	1	2	3	4	5	6	7	8	9	10
MN Total Alkalinity	1	2	3	4	5	6	7	8	9	10
MN Bicarb/Carb Alkalinity (includes Total Alkalinity)	1	2	3	4	5	6	7	8	9	10
MN Chloride - Cl	1	2	3	4	5	6	7	8	9	10
MN Fluoride - F	1	2	3	4	5	6	7	8	9	10
MN Sulfate - SO4	1	2	3	4	5	6	7	8	9	10
MN Chromium 6 - Cr+6	1	2	3	4	5	6	7	8	9	10
MN Conductivity	1	2	3	4	5	6	7	8	9	10
MN pH	1	2	3	4	5	6	7	8	9	10
GA Chem Oxyg Dem - COD	1	2	3	4	5	6	7	8	9	10
GA Diss Org Carbon - DOC (FF) (Field - Filtered & Preserved)	1	2	3	4	5	6	7	8	9	10
GN Diss Org Carbon - DOC (LF) (Lab - Filtered & Preserved)	1	2	3	4	5	6	7	8	9	10
GA Total Org Carbon - TOC	1	2	3	4	5	6	7	8	9	10
GA Ammonia - NH3	1	2	3	4	5	6	7	8	9	10
GA Nitrate+Nitrite - NO3+NO2	1	2	3	4	5	6	7	8	9	10
GA Kjeldahl Nitrogen - KN	1	2	3	4	5	6	7	8	9	10
GA Total Phosphorus - TP	1	2	3	4	5	6	7	8	9	10

Chain of Custody

	Relinquished by	Received By	Date / Time
Print Name & Org.	Jeff Pincumbe - MDEQ	[illegible]	
Signature:	[signature]	[signature]	11/15/16 1400
Print Name & Org.			
Signature:			
Print Name & Org.			
Signature:			

APPENDIX C

River Road PFC Contamination, Iosco County
Site ID #35000154

Test America Laboratory Results

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Tel: (916)373-5600

TestAmerica Job ID: 320-23156-1
Client Project/Site: Wurtsmith - 3500058 - River Road PFC

For:
Michigan Dept. of Environmental Quality
Constitution Hall 3rd floor SW
525 W. Allegan Street
Lansing, Michigan 48909

Attn: Bob Delaney

Kris Brooks

Authorized for release by:
11/11/2016 8:43:45 PM

Kris Brooks, Project Manager II
(330)966-9790
kris.brooks@testamericainc.com

Table of Contents

Definitions/Glossary

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23156-1

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 320-23156-1

Laboratory: TestAmerica Sacramento

Narrative

CASE NARRATIVE

Client: Michigan Dept. of Environmental Quality

Project: Wurtsmith - 3500058 - River Road PFC

Report Number: 320-23156-1

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

TestAmerica Sacramento attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

RECEIPT

The samples were received on 11/1/2016 9:55 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.7º C.

Receipt Exceptions

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. No times on COC or bottles.

PERFLUORINATED HYDROCARBONS

Samples MW-4 16-21 (320-23156-1), MW-4 26-31 (320-23156-2), MW-4 36-41 (320-23156-3), MW-4 46-51 (320-23156-4), MW-6 16-21 (320-23156-5), MW-6 26-31 (320-23156-6), MW-6 26-31 DUP (320-23156-7), MW-6 36-41 (320-23156-8), MW-6 46-51 (320-23156-9), MW-3 14-19 (320-23156-10), MW-3 24-29 (320-23156-11), MW-3 34-39 (320-23156-12), MW-3 44-49 (320-23156-13), MW-7 16-21 (320-23156-14), MW-7 26-31 (320-23156-15), MW-7 36-41 (320-23156-16) and MW-7 46-51 (320-23156-17) were analyzed for Perfluorinated Hydrocarbons in accordance with SOP WS-OC-0025. The samples were prepared on 11/02/2016 and analyzed on 11/04/2016 and 11/08/2016.

Perfluorobutanoic acid (PFBA) and Perfluorotetradecanoic acid (PFTeA) were detected in method blank MB 320-135789/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged.

Job ID: 320-23156-1 (Continued)

Laboratory: TestAmerica Sacramento (Continued)

If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

The Isotope Dilution Analyte (IDA) recovery for 13C8 FOSA in the following samples is below the method recommended limit: MW-4 16-21 (320-23156-1), MW-4 26-31 (320-23156-2), MW-4 36-41 (320-23156-3), MW-4 46-51 (320-23156-4), MW-6 16-21 (320-23156-5), MW-6 26-31 (320-23156-6), MW-6 26-31 DUP (320-23156-7), MW-6 36-41 (320-23156-8), MW-6 46-51 (320-23156-9), MW-3 14-19 (320-23156-10), MW-3 24-29 (320-23156-11), MW-3 34-39 (320-23156-12), MW-3 44-49 (320-23156-13), MW-7 16-21 (320-23156-14), MW-7 26-31 (320-23156-15), MW-7 36-41 (320-23156-16), MW-7 46-51 (320-23156-17) and (LCSD 320-135789/3-A). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the samples.

The Isotope Dilution Analyte (IDA) recoveries for several analytes are above the method recommended limit for the following samples: MW-6 46-51 (320-23156-9) and MW-3 34-39 (320-23156-12). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Due to the excessive amount of sediment in these samples, the aqueous portion was decanted to new 250 mL poly bottles prior to spiking and the extraction.

MW-4 16-21 (320-23156-1), MW-4 26-31 (320-23156-2), MW-4 36-41 (320-23156-3), MW-4 46-51 (320-23156-4), MW-6 26-31 (320-23156-6), MW-6 26-31 DUP (320-23156-7), MW-6 36-41 (320-23156-8), MW-6 46-51 (320-23156-9), MW-3 14-19 (320-23156-10), MW-3 24-29 (320-23156-11), MW-3 34-39 (320-23156-12), MW-3 44-49 (320-23156-13), MW-7 16-21 (320-23156-14), MW-7 26-31 (320-23156-15), MW-7 36-41 (320-23156-16) and MW-7 46-51 (320-23156-17)

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

Detection Summary

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23156-1

Client Sample ID: MW-4 16-21 — Lab Sample ID: 320-23156-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	4.2	B	2.0	0.45	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	6.6		2.0	0.73	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonate (PFOS)	8.6		2.0	1.3	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	1.6	J	2.0	0.97	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	2.0		2.0	0.77	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.6	J	2.0	0.79	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.87	J B	2.0	0.19	ng/L	1		537 (modified)	Total/NA
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.17	J	2.0	0.12	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	3.8		2.0	0.90	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.9		2.0	0.85	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	1.2	J	2.0	0.63	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-4 26-31 — Lab Sample ID: 320-23156-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	1.3	J B	1.9	0.44	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	1.5	J	1.9	0.72	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonate (PFOS)	1.8	J	1.9	1.2	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.88	J B	1.9	0.19	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-4 36-41 — Lab Sample ID: 320-23156-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.65	J B	1.9	0.44	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.72	J B	1.9	0.19	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-4 46-51 — Lab Sample ID: 320-23156-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	1.2	J B	2.0	0.45	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.93	J B	2.0	0.20	ng/L	1		537 (modified)	Total/NA
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.17	J	2.0	0.12	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-6 16-21 — Lab Sample ID: 320-23156-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.5	B	1.9	0.44	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	1.8	J	1.9	0.72	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonate (PFOS)	7.2		1.9	1.2	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	1.2	J	1.9	0.95	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	1.3	J	1.9	0.75	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.93	J	1.9	0.77	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.82	J B	1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.1	J	1.9	0.88	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	4.5		1.9	0.83	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-6 26-31 — Lab Sample ID: 320-23156-6

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-6 26-31 (Continued) — Lab Sample ID: 320-23156-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	7.1	B	2.0	0.45	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	3.8		2.0	0.74	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonate (PFOS)	14		2.0	1.3	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	3.1		2.0	0.98	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	2.4		2.0	0.78	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.2		2.0	0.80	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.97	J	2.0	0.65	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.88	J	2.0	0.44	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.73	J B	2.0	0.20	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.0	J	2.0	0.91	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	4.6		2.0	0.86	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-6 26-31 DUP — Lab Sample ID: 320-23156-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	6.4	B	2.0	0.45	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	3.3		2.0	0.74	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonate (PFOS)	13		2.0	1.3	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	2.8		2.0	0.98	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	2.2		2.0	0.78	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.0		2.0	0.79	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.89	J	2.0	0.65	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.91	J	2.0	0.44	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.66	J B	2.0	0.20	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	4.2		2.0	0.86	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	0.88	J	2.0	0.63	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-6 36-41 — Lab Sample ID: 320-23156-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.4	B	2.0	0.45	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	2.8		2.0	0.74	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonate (PFOS)	5.1		2.0	1.3	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	1.7	J	2.0	0.98	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	1.3	J	2.0	0.78	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.89	J	2.0	0.79	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.43	J	2.0	0.43	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.95	J B	2.0	0.20	ng/L	1		537 (modified)	Total/NA
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.26	J	2.0	0.12	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.99	J	2.0	0.91	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.8	J	2.0	0.86	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	1.1	J	2.0	0.63	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-6 46-51 — Lab Sample ID: 320-23156-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.4	B	2.0	0.45	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	3.6		2.0	0.74	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonate (PFOS)	4.1		2.0	1.3	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	3.2		2.0	0.97	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-6 46-51 (Continued) — Lab Sample ID: 320-23156-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	3.1		2.0	0.77	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.6	J	2.0	0.79	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.56	J	2.0	0.43	ng/L	1		537 (modified)	Total/NA
Perfluorotridecanoic Acid (PFTriA)	0.98	J	2.0	0.54	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	1.5	J B	2.0	0.20	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.5	J	2.0	0.85	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	1.7	J	2.0	0.63	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-3 14-19 — Lab Sample ID: 320-23156-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.3	B	2.0	0.46	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.94	J	2.0	0.74	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonate (PFOS)	1.8	J	2.0	1.3	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	1.2	J B	2.0	0.20	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	82		2.0	0.91	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	0.67	J	2.0	0.63	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-3 24-29 — Lab Sample ID: 320-23156-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorotetradecanoic acid (PFTeA)	0.74	J B	2.0	0.20	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	0.75	J	2.0	0.63	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-3 34-39 — Lab Sample ID: 320-23156-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.50	J B	1.9	0.45	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.64	J B	1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.97	J	1.9	0.89	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	1.7	J	1.9	0.62	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-3 44-49 — Lab Sample ID: 320-23156-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.49	J B	2.0	0.45	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.86	J B	2.0	0.20	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	0.90	J	2.0	0.63	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-7 16-21 — Lab Sample ID: 320-23156-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	3.1	B	1.9	0.44	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	5.0		1.9	0.72	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonate (PFOS)	24		1.9	1.2	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	1.0	J	1.9	0.95	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.87	J	1.9	0.76	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.4	J	1.9	0.77	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.89	J B	1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.9		1.9	0.84	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-7 16-21 (Continued) — Lab Sample ID: 320-23156-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctane Sulfonamide (FOSA)	1.4	J	1.9	0.61	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-7 26-31 — Lab Sample ID: 320-23156-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctane Sulfonate (PFOS)	1.8	J	1.9	1.2	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.69	J B	1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	0.81	J	1.9	0.62	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-7 36-41 — Lab Sample ID: 320-23156-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorotetradecanoic acid (PFTeA)	0.79	J B	1.9	0.19	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-7 46-51 — Lab Sample ID: 320-23156-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.55	J B	1.9	0.44	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.77	J	1.9	0.72	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.68	J B	1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	0.67	J	1.9	0.61	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23156-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Perfluorinated Hydrocarbons	EPA	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

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

Sample Summary

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23156-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-23156-1	MW-4 16-21	Water	10/26/16 00:00	11/01/16 09:55
320-23156-2	MW-4 26-31	Water	10/26/16 00:00	11/01/16 09:55
320-23156-3	MW-4 36-41	Water	10/26/16 00:00	11/01/16 09:55
320-23156-4	MW-4 46-51	Water	10/26/16 00:00	11/01/16 09:55
320-23156-5	MW-6 16-21	Water	10/26/16 00:00	11/01/16 09:55
320-23156-6	MW-6 26-31	Water	10/26/16 00:00	11/01/16 09:55
320-23156-7	MW-6 26-31 DUP	Water	10/26/16 00:00	11/01/16 09:55
320-23156-8	MW-6 36-41	Water	10/26/16 00:00	11/01/16 09:55
320-23156-9	MW-6 46-51	Water	10/26/16 00:00	11/01/16 09:55
320-23156-10	MW-3 14-19	Water	10/27/16 00:00	11/01/16 09:55
320-23156-11	MW-3 24-29	Water	10/27/16 00:00	11/01/16 09:55
320-23156-12	MW-3 34-39	Water	10/27/16 00:00	11/01/16 09:55
320-23156-13	MW-3 44-49	Water	10/27/16 00:00	11/01/16 09:55
320-23156-14	MW-7 16-21	Water	10/27/16 00:00	11/01/16 09:55
320-23156-15	MW-7 26-31	Water	10/27/16 00:00	11/01/16 09:55
320-23156-16	MW-7 36-41	Water	10/27/16 00:00	11/01/16 09:55
320-23156-17	MW-7 46-51	Water	10/27/16 00:00	11/01/16 09:55

Client Sample ID: MW-4 16-21
Date Collected: 10/26/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-1
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**4.2**	**B**	2.0	0.45	ng/L		11/02/16 17:27	11/04/16 14:19	1
Perfluorooctanoic acid (PFOA)	**6.6**		2.0	0.73	ng/L		11/02/16 17:27	11/04/16 14:19	1
Perfluorooctane Sulfonate (PFOS)	**8.6**		2.0	1.3	ng/L		11/02/16 17:27	11/04/16 14:19	1
Perfluoropentanoic acid (PFPeA)	**1.6**	**J**	2.0	0.97	ng/L		11/02/16 17:27	11/04/16 14:19	1
Perfluorohexanoic acid (PFHxA)	**2.0**		2.0	0.77	ng/L		11/02/16 17:27	11/04/16 14:19	1
Perfluoroheptanoic acid (PFHpA)	**1.6**	**J**	2.0	0.79	ng/L		11/02/16 17:27	11/04/16 14:19	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.64	ng/L		11/02/16 17:27	11/04/16 14:19	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.43	ng/L		11/02/16 17:27	11/04/16 14:19	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.73	ng/L		11/02/16 17:27	11/04/16 14:19	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.57	ng/L		11/02/16 17:27	11/04/16 14:19	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.54	ng/L		11/02/16 17:27	11/04/16 14:19	1
Perfluorotetradecanoic acid (PFTeA)	**0.87**	**J B**	2.0	0.19	ng/L		11/02/16 17:27	11/04/16 14:19	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	**0.17**	**J**	2.0	0.12	ng/L		11/02/16 17:27	11/04/16 14:19	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		2.0	0.66	ng/L		11/02/16 17:27	11/04/16 14:19	1
Perfluorobutanesulfonic acid (PFBS)	**3.8**		2.0	0.90	ng/L		11/02/16 17:27	11/04/16 14:19	1
Perfluorohexanesulfonic acid (PFHxS)	**2.9**		2.0	0.85	ng/L		11/02/16 17:27	11/04/16 14:19	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.70	ng/L		11/02/16 17:27	11/04/16 14:19	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	1.2	ng/L		11/02/16 17:27	11/04/16 14:19	1
Perfluorooctane Sulfonamide (FOSA)	**1.2**	**J**	2.0	0.63	ng/L		11/02/16 17:27	11/04/16 14:19	1
6:2FTS	ND		20	3.7	ng/L		11/02/16 17:27	11/04/16 14:19	1
8:2FTS	ND		20	4.0	ng/L		11/02/16 17:27	11/04/16 14:19	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*106*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:19*	*1*
13C4 PFOA	*99*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:19*	*1*
13C8 FOSA	*9*	*	*25 - 150*	*11/02/16 17:27*	*11/04/16 14:19*	*1*
13C4 PFBA	*71*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:19*	*1*
13C2 PFHxA	*106*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:19*	*1*
13C5 PFNA	*98*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:19*	*1*
13C2 PFDA	*102*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:19*	*1*
13C2 PFUnA	*107*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:19*	*1*
13C2 PFDoA	*104*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:19*	*1*
18O2 PFHxS	*109*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:19*	*1*
13C4-PFHpA	*97*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:19*	*1*
13C5-PFPeA	*103*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:19*	*1*
M2-6:2FTS	*89*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:19*	*1*
M2-8:2FTS	*101*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:19*	*1*

Client Sample ID: MW-4 26-31
Date Collected: 10/26/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-2
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**1.3**	**J B**	1.9	0.44	ng/L		11/02/16 17:27	11/04/16 14:26	1
Perfluorooctanoic acid (PFOA)	**1.5**	**J**	1.9	0.72	ng/L		11/02/16 17:27	11/04/16 14:26	1
Perfluorooctane Sulfonate (PFOS)	**1.8**	**J**	1.9	1.2	ng/L		11/02/16 17:27	11/04/16 14:26	1
Perfluoropentanoic acid (PFPeA)	ND		1.9	0.95	ng/L		11/02/16 17:27	11/04/16 14:26	1
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.75	ng/L		11/02/16 17:27	11/04/16 14:26	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.77	ng/L		11/02/16 17:27	11/04/16 14:26	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.63	ng/L		11/02/16 17:27	11/04/16 14:26	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.42	ng/L		11/02/16 17:27	11/04/16 14:26	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.72	ng/L		11/02/16 17:27	11/04/16 14:26	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.56	ng/L		11/02/16 17:27	11/04/16 14:26	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.53	ng/L		11/02/16 17:27	11/04/16 14:26	1
Perfluorotetradecanoic acid (PFTeA)	**0.88**	**J B**	1.9	0.19	ng/L		11/02/16 17:27	11/04/16 14:26	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.12	ng/L		11/02/16 17:27	11/04/16 14:26	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		1.9	0.64	ng/L		11/02/16 17:27	11/04/16 14:26	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.88	ng/L		11/02/16 17:27	11/04/16 14:26	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.83	ng/L		11/02/16 17:27	11/04/16 14:26	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.68	ng/L		11/02/16 17:27	11/04/16 14:26	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	1.2	ng/L		11/02/16 17:27	11/04/16 14:26	1
Perfluorooctane Sulfonamide (FOSA)	ND		1.9	0.61	ng/L		11/02/16 17:27	11/04/16 14:26	1
6:2FTS	ND		19	3.7	ng/L		11/02/16 17:27	11/04/16 14:26	1
8:2FTS	ND		19	3.9	ng/L		11/02/16 17:27	11/04/16 14:26	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*104*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:26*	*1*
13C4 PFOA	*100*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:26*	*1*
13C8 FOSA	*7*	*	*25 - 150*	*11/02/16 17:27*	*11/04/16 14:26*	*1*
13C4 PFBA	*42*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:26*	*1*
13C2 PFHxA	*101*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:26*	*1*
13C5 PFNA	*103*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:26*	*1*
13C2 PFDA	*109*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:26*	*1*
13C2 PFUnA	*108*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:26*	*1*
13C2 PFDoA	*105*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:26*	*1*
18O2 PFHxS	*104*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:26*	*1*
13C4-PFHpA	*100*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:26*	*1*
13C5-PFPeA	*84*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:26*	*1*
M2-6:2FTS	*87*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:26*	*1*
M2-8:2FTS	*104*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:26*	*1*

Client Sample ID: MW-4 36-41
Date Collected: 10/26/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-3
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.65**	**J B**	1.9	0.44	ng/L		11/02/16 17:27	11/04/16 14:34	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.72	ng/L		11/02/16 17:27	11/04/16 14:34	1
Perfluorooctane Sulfonate (PFOS)	ND		1.9	1.2	ng/L		11/02/16 17:27	11/04/16 14:34	1
Perfluoropentanoic acid (PFPeA)	ND		1.9	0.96	ng/L		11/02/16 17:27	11/04/16 14:34	1
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.76	ng/L		11/02/16 17:27	11/04/16 14:34	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.78	ng/L		11/02/16 17:27	11/04/16 14:34	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.63	ng/L		11/02/16 17:27	11/04/16 14:34	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.43	ng/L		11/02/16 17:27	11/04/16 14:34	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.72	ng/L		11/02/16 17:27	11/04/16 14:34	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.57	ng/L		11/02/16 17:27	11/04/16 14:34	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.53	ng/L		11/02/16 17:27	11/04/16 14:34	1
Perfluorotetradecanoic acid (PFTeA)	**0.72**	**J B**	1.9	0.19	ng/L		11/02/16 17:27	11/04/16 14:34	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.12	ng/L		11/02/16 17:27	11/04/16 14:34	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		1.9	0.65	ng/L		11/02/16 17:27	11/04/16 14:34	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.89	ng/L		11/02/16 17:27	11/04/16 14:34	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.84	ng/L		11/02/16 17:27	11/04/16 14:34	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.69	ng/L		11/02/16 17:27	11/04/16 14:34	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	1.2	ng/L		11/02/16 17:27	11/04/16 14:34	1
Perfluorooctane Sulfonamide (FOSA)	ND		1.9	0.62	ng/L		11/02/16 17:27	11/04/16 14:34	1
6:2FTS	ND		19	3.7	ng/L		11/02/16 17:27	11/04/16 14:34	1
8:2FTS	ND		19	3.9	ng/L		11/02/16 17:27	11/04/16 14:34	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*116*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:34*	*1*
13C4 PFOA	*94*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:34*	*1*
13C8 FOSA	*5*	*	*25 - 150*	*11/02/16 17:27*	*11/04/16 14:34*	*1*
13C4 PFBA	*46*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:34*	*1*
13C2 PFHxA	*103*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:34*	*1*
13C5 PFNA	*94*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:34*	*1*
13C2 PFDA	*96*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:34*	*1*
13C2 PFUnA	*99*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:34*	*1*
13C2 PFDoA	*100*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:34*	*1*
18O2 PFHxS	*111*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:34*	*1*
13C4-PFHpA	*101*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:34*	*1*
13C5-PFPeA	*89*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:34*	*1*
M2-6:2FTS	*84*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:34*	*1*
M2-8:2FTS	*106*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:34*	*1*

Client Sample ID: MW-4 46-51
Date Collected: 10/26/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-4
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**1.2**	**J B**	2.0	0.45	ng/L		11/02/16 17:27	11/04/16 14:41	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.74	ng/L		11/02/16 17:27	11/04/16 14:41	1
Perfluorooctane Sulfonate (PFOS)	ND		2.0	1.3	ng/L		11/02/16 17:27	11/04/16 14:41	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.98	ng/L		11/02/16 17:27	11/04/16 14:41	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.78	ng/L		11/02/16 17:27	11/04/16 14:41	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.79	ng/L		11/02/16 17:27	11/04/16 14:41	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.65	ng/L		11/02/16 17:27	11/04/16 14:41	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.43	ng/L		11/02/16 17:27	11/04/16 14:41	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.74	ng/L		11/02/16 17:27	11/04/16 14:41	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.58	ng/L		11/02/16 17:27	11/04/16 14:41	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.54	ng/L		11/02/16 17:27	11/04/16 14:41	1
Perfluorotetradecanoic acid (PFTeA)	**0.93**	**J B**	2.0	0.20	ng/L		11/02/16 17:27	11/04/16 14:41	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	**0.17**	**J**	2.0	0.12	ng/L		11/02/16 17:27	11/04/16 14:41	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		2.0	0.66	ng/L		11/02/16 17:27	11/04/16 14:41	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.91	ng/L		11/02/16 17:27	11/04/16 14:41	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.86	ng/L		11/02/16 17:27	11/04/16 14:41	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.70	ng/L		11/02/16 17:27	11/04/16 14:41	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	1.2	ng/L		11/02/16 17:27	11/04/16 14:41	1
Perfluorooctane Sulfonamide (FOSA)	ND		2.0	0.63	ng/L		11/02/16 17:27	11/04/16 14:41	1
6:2FTS	ND		20	3.8	ng/L		11/02/16 17:27	11/04/16 14:41	1
8:2FTS	ND		20	4.0	ng/L		11/02/16 17:27	11/04/16 14:41	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*103*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:41*	*1*
13C4 PFOA	*91*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:41*	*1*
13C8 FOSA	*6*	*	*25 - 150*	*11/02/16 17:27*	*11/04/16 14:41*	*1*
13C4 PFBA	*52*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:41*	*1*
13C2 PFHxA	*105*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:41*	*1*
13C5 PFNA	*92*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:41*	*1*
13C2 PFDA	*99*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:41*	*1*
13C2 PFUnA	*102*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:41*	*1*
13C2 PFDoA	*103*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:41*	*1*
18O2 PFHxS	*105*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:41*	*1*
13C4-PFHpA	*95*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:41*	*1*
13C5-PFPeA	*92*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:41*	*1*
M2-6:2FTS	*83*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:41*	*1*
M2-8:2FTS	*98*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:41*	*1*

Client Sample ID: MW-6 16-21
Date Collected: 10/26/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-5
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**2.5**	**B**	1.9	0.44	ng/L		11/02/16 17:27	11/04/16 14:49	1
Perfluorooctanoic acid (PFOA)	**1.8**	**J**	1.9	0.72	ng/L		11/02/16 17:27	11/04/16 14:49	1
Perfluorooctane Sulfonate (PFOS)	**7.2**		1.9	1.2	ng/L		11/02/16 17:27	11/04/16 14:49	1
Perfluoropentanoic acid (PFPeA)	**1.2**	**J**	1.9	0.95	ng/L		11/02/16 17:27	11/04/16 14:49	1
Perfluorohexanoic acid (PFHxA)	**1.3**	**J**	1.9	0.75	ng/L		11/02/16 17:27	11/04/16 14:49	1
Perfluoroheptanoic acid (PFHpA)	**0.93**	**J**	1.9	0.77	ng/L		11/02/16 17:27	11/04/16 14:49	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.63	ng/L		11/02/16 17:27	11/04/16 14:49	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.42	ng/L		11/02/16 17:27	11/04/16 14:49	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.72	ng/L		11/02/16 17:27	11/04/16 14:49	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.56	ng/L		11/02/16 17:27	11/04/16 14:49	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.53	ng/L		11/02/16 17:27	11/04/16 14:49	1
Perfluorotetradecanoic acid (PFTeA)	**0.82**	**J B**	1.9	0.19	ng/L		11/02/16 17:27	11/04/16 14:49	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.12	ng/L		11/02/16 17:27	11/04/16 14:49	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		1.9	0.64	ng/L		11/02/16 17:27	11/04/16 14:49	1
Perfluorobutanesulfonic acid (PFBS)	**1.1**	**J**	1.9	0.88	ng/L		11/02/16 17:27	11/04/16 14:49	1
Perfluorohexanesulfonic acid (PFHxS)	**4.5**		1.9	0.83	ng/L		11/02/16 17:27	11/04/16 14:49	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.68	ng/L		11/02/16 17:27	11/04/16 14:49	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	1.2	ng/L		11/02/16 17:27	11/04/16 14:49	1
Perfluorooctane Sulfonamide (FOSA)	ND		1.9	0.61	ng/L		11/02/16 17:27	11/04/16 14:49	1
6:2FTS	ND		19	3.7	ng/L		11/02/16 17:27	11/04/16 14:49	1
8:2FTS	ND		19	3.9	ng/L		11/02/16 17:27	11/04/16 14:49	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*114*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:49*	*1*
13C4 PFOA	*90*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:49*	*1*
13C8 FOSA	*1*	*	*25 - 150*	*11/02/16 17:27*	*11/04/16 14:49*	*1*
13C4 PFBA	*52*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:49*	*1*
13C2 PFHxA	*96*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:49*	*1*
13C5 PFNA	*83*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:49*	*1*
13C2 PFDA	*90*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:49*	*1*
13C2 PFUnA	*92*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:49*	*1*
13C2 PFDoA	*95*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:49*	*1*
18O2 PFHxS	*110*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:49*	*1*
13C4-PFHpA	*83*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:49*	*1*
13C5-PFPeA	*87*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:49*	*1*
M2-6:2FTS	*82*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:49*	*1*
M2-8:2FTS	*101*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:49*	*1*

Client Sample ID: MW-6 26-31
Date Collected: 10/26/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-6
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**7.1**	**B**	2.0	0.45	ng/L		11/02/16 17:27	11/04/16 14:56	1
Perfluorooctanoic acid (PFOA)	**3.8**		2.0	0.74	ng/L		11/02/16 17:27	11/04/16 14:56	1
Perfluorooctane Sulfonate (PFOS)	**14**		2.0	1.3	ng/L		11/02/16 17:27	11/04/16 14:56	1
Perfluoropentanoic acid (PFPeA)	**3.1**		2.0	0.98	ng/L		11/02/16 17:27	11/04/16 14:56	1
Perfluorohexanoic acid (PFHxA)	**2.4**		2.0	0.78	ng/L		11/02/16 17:27	11/04/16 14:56	1
Perfluoroheptanoic acid (PFHpA)	**2.2**		2.0	0.80	ng/L		11/02/16 17:27	11/04/16 14:56	1
Perfluorononanoic acid (PFNA)	**0.97**	**J**	2.0	0.65	ng/L		11/02/16 17:27	11/04/16 14:56	1
Perfluorodecanoic acid (PFDA)	**0.88**	**J**	2.0	0.44	ng/L		11/02/16 17:27	11/04/16 14:56	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.74	ng/L		11/02/16 17:27	11/04/16 14:56	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.58	ng/L		11/02/16 17:27	11/04/16 14:56	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.55	ng/L		11/02/16 17:27	11/04/16 14:56	1
Perfluorotetradecanoic acid (PFTeA)	**0.73**	**J B**	2.0	0.20	ng/L		11/02/16 17:27	11/04/16 14:56	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.12	ng/L		11/02/16 17:27	11/04/16 14:56	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		2.0	0.67	ng/L		11/02/16 17:27	11/04/16 14:56	1
Perfluorobutanesulfonic acid (PFBS)	**1.0**	**J**	2.0	0.91	ng/L		11/02/16 17:27	11/04/16 14:56	1
Perfluorohexanesulfonic acid (PFHxS)	**4.6**		2.0	0.86	ng/L		11/02/16 17:27	11/04/16 14:56	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.71	ng/L		11/02/16 17:27	11/04/16 14:56	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	1.2	ng/L		11/02/16 17:27	11/04/16 14:56	1
Perfluorooctane Sulfonamide (FOSA)	ND		2.0	0.63	ng/L		11/02/16 17:27	11/04/16 14:56	1
6:2FTS	ND		20	3.8	ng/L		11/02/16 17:27	11/04/16 14:56	1
8:2FTS	ND		20	4.0	ng/L		11/02/16 17:27	11/04/16 14:56	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*98*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:56*	*1*
13C4 PFOA	*84*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:56*	*1*
13C8 FOSA	*4*	*	*25 - 150*	*11/02/16 17:27*	*11/04/16 14:56*	*1*
13C4 PFBA	*61*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:56*	*1*
13C2 PFHxA	*87*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:56*	*1*
13C5 PFNA	*86*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:56*	*1*
13C2 PFDA	*90*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:56*	*1*
13C2 PFUnA	*93*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:56*	*1*
13C2 PFDoA	*92*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:56*	*1*
18O2 PFHxS	*99*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:56*	*1*
13C4-PFHpA	*80*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:56*	*1*
13C5-PFPeA	*85*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:56*	*1*
M2-6:2FTS	*83*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:56*	*1*
M2-8:2FTS	*98*		*25 - 150*	*11/02/16 17:27*	*11/04/16 14:56*	*1*

Client Sample ID: MW-6 26-31 DUP
Date Collected: 10/26/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-7
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**6.4**	**B**	2.0	0.45	ng/L		11/02/16 17:27	11/04/16 15:04	1
Perfluorooctanoic acid (PFOA)	**3.3**		2.0	0.74	ng/L		11/02/16 17:27	11/04/16 15:04	1
Perfluorooctane Sulfonate (PFOS)	**13**		2.0	1.3	ng/L		11/02/16 17:27	11/04/16 15:04	1
Perfluoropentanoic acid (PFPeA)	**2.8**		2.0	0.98	ng/L		11/02/16 17:27	11/04/16 15:04	1
Perfluorohexanoic acid (PFHxA)	**2.2**		2.0	0.78	ng/L		11/02/16 17:27	11/04/16 15:04	1
Perfluoroheptanoic acid (PFHpA)	**2.0**		2.0	0.79	ng/L		11/02/16 17:27	11/04/16 15:04	1
Perfluorononanoic acid (PFNA)	**0.89**	**J**	2.0	0.65	ng/L		11/02/16 17:27	11/04/16 15:04	1
Perfluorodecanoic acid (PFDA)	**0.91**	**J**	2.0	0.44	ng/L		11/02/16 17:27	11/04/16 15:04	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.74	ng/L		11/02/16 17:27	11/04/16 15:04	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.58	ng/L		11/02/16 17:27	11/04/16 15:04	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.54	ng/L		11/02/16 17:27	11/04/16 15:04	1
Perfluorotetradecanoic acid (PFTeA)	**0.66**	**J B**	2.0	0.20	ng/L		11/02/16 17:27	11/04/16 15:04	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.12	ng/L		11/02/16 17:27	11/04/16 15:04	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		2.0	0.66	ng/L		11/02/16 17:27	11/04/16 15:04	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.91	ng/L		11/02/16 17:27	11/04/16 15:04	1
Perfluorohexanesulfonic acid (PFHxS)	**4.2**		2.0	0.86	ng/L		11/02/16 17:27	11/04/16 15:04	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.71	ng/L		11/02/16 17:27	11/04/16 15:04	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	1.2	ng/L		11/02/16 17:27	11/04/16 15:04	1
Perfluorooctane Sulfonamide (FOSA)	**0.88**	**J**	2.0	0.63	ng/L		11/02/16 17:27	11/04/16 15:04	1
6:2FTS	ND		20	3.8	ng/L		11/02/16 17:27	11/04/16 15:04	1
8:2FTS	ND		20	4.0	ng/L		11/02/16 17:27	11/04/16 15:04	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*110*		*25 - 150*	*11/02/16 17:27*	*11/04/16 15:04*	*1*
13C4 PFOA	*89*		*25 - 150*	*11/02/16 17:27*	*11/04/16 15:04*	*1*
13C8 FOSA	*7*	*	*25 - 150*	*11/02/16 17:27*	*11/04/16 15:04*	*1*
13C4 PFBA	*68*		*25 - 150*	*11/02/16 17:27*	*11/04/16 15:04*	*1*
13C2 PFHxA	*96*		*25 - 150*	*11/02/16 17:27*	*11/04/16 15:04*	*1*
13C5 PFNA	*88*		*25 - 150*	*11/02/16 17:27*	*11/04/16 15:04*	*1*
13C2 PFDA	*93*		*25 - 150*	*11/02/16 17:27*	*11/04/16 15:04*	*1*
13C2 PFUnA	*101*		*25 - 150*	*11/02/16 17:27*	*11/04/16 15:04*	*1*
13C2 PFDoA	*100*		*25 - 150*	*11/02/16 17:27*	*11/04/16 15:04*	*1*
18O2 PFHxS	*109*		*25 - 150*	*11/02/16 17:27*	*11/04/16 15:04*	*1*
13C4-PFHpA	*87*		*25 - 150*	*11/02/16 17:27*	*11/04/16 15:04*	*1*
13C5-PFPeA	*96*		*25 - 150*	*11/02/16 17:27*	*11/04/16 15:04*	*1*
M2-6:2FTS	*84*		*25 - 150*	*11/02/16 17:27*	*11/04/16 15:04*	*1*
M2-8:2FTS	*102*		*25 - 150*	*11/02/16 17:27*	*11/04/16 15:04*	*1*

Client Sample ID: MW-6 36-41
Date Collected: 10/26/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-8
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**2.4**	**B**	2.0	0.45	ng/L		11/02/16 17:27	11/08/16 14:17	1
Perfluorooctanoic acid (PFOA)	**2.8**		2.0	0.74	ng/L		11/02/16 17:27	11/08/16 14:17	1
Perfluorooctane Sulfonate (PFOS)	**5.1**		2.0	1.3	ng/L		11/02/16 17:27	11/08/16 14:17	1
Perfluoropentanoic acid (PFPeA)	**1.7**	**J**	2.0	0.98	ng/L		11/02/16 17:27	11/08/16 14:17	1
Perfluorohexanoic acid (PFHxA)	**1.3**	**J**	2.0	0.78	ng/L		11/02/16 17:27	11/08/16 14:17	1
Perfluoroheptanoic acid (PFHpA)	**0.89**	**J**	2.0	0.79	ng/L		11/02/16 17:27	11/08/16 14:17	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.65	ng/L		11/02/16 17:27	11/08/16 14:17	1
Perfluorodecanoic acid (PFDA)	**0.43**	**J**	2.0	0.43	ng/L		11/02/16 17:27	11/08/16 14:17	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.74	ng/L		11/02/16 17:27	11/08/16 14:17	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.58	ng/L		11/02/16 17:27	11/08/16 14:17	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.54	ng/L		11/02/16 17:27	11/08/16 14:17	1
Perfluorotetradecanoic acid (PFTeA)	**0.95**	**J B**	2.0	0.20	ng/L		11/02/16 17:27	11/08/16 14:17	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	**0.26**	**J**	2.0	0.12	ng/L		11/02/16 17:27	11/08/16 14:17	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		2.0	0.66	ng/L		11/02/16 17:27	11/08/16 14:17	1
Perfluorobutanesulfonic acid (PFBS)	**0.99**	**J**	2.0	0.91	ng/L		11/02/16 17:27	11/08/16 14:17	1
Perfluorohexanesulfonic acid (PFHxS)	**1.8**	**J**	2.0	0.86	ng/L		11/02/16 17:27	11/08/16 14:17	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.70	ng/L		11/02/16 17:27	11/08/16 14:17	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	1.2	ng/L		11/02/16 17:27	11/08/16 14:17	1
Perfluorooctane Sulfonamide (FOSA)	**1.1**	**J**	2.0	0.63	ng/L		11/02/16 17:27	11/08/16 14:17	1
6:2FTS	ND		20	3.8	ng/L		11/02/16 17:27	11/08/16 14:17	1
8:2FTS	ND		20	4.0	ng/L		11/02/16 17:27	11/08/16 14:17	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*119*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:17*	*1*
13C4 PFOA	*79*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:17*	*1*
13C8 FOSA	*7*	*	*25 - 150*	*11/02/16 17:27*	*11/08/16 14:17*	*1*
13C4 PFBA	*70*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:17*	*1*
13C2 PFHxA	*95*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:17*	*1*
13C5 PFNA	*72*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:17*	*1*
13C2 PFDA	*66*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:17*	*1*
13C2 PFUnA	*75*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:17*	*1*
13C2 PFDoA	*87*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:17*	*1*
18O2 PFHxS	*120*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:17*	*1*
13C4-PFHpA	*85*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:17*	*1*
13C5-PFPeA	*97*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:17*	*1*
M2-6:2FTS	*108*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:17*	*1*
M2-8:2FTS	*121*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:17*	*1*

Client Sample ID: MW-6 46-51
Date Collected: 10/26/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-9
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**2.4**	**B**	2.0	0.45	ng/L		11/02/16 17:27	11/08/16 14:25	1
Perfluorooctanoic acid (PFOA)	**3.6**		2.0	0.74	ng/L		11/02/16 17:27	11/08/16 14:25	1
Perfluorooctane Sulfonate (PFOS)	**4.1**		2.0	1.3	ng/L		11/02/16 17:27	11/08/16 14:25	1
Perfluoropentanoic acid (PFPeA)	**3.2**		2.0	0.97	ng/L		11/02/16 17:27	11/08/16 14:25	1
Perfluorohexanoic acid (PFHxA)	**3.1**		2.0	0.77	ng/L		11/02/16 17:27	11/08/16 14:25	1
Perfluoroheptanoic acid (PFHpA)	**1.6**	**J**	2.0	0.79	ng/L		11/02/16 17:27	11/08/16 14:25	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.64	ng/L		11/02/16 17:27	11/08/16 14:25	1
Perfluorodecanoic acid (PFDA)	**0.56**	**J**	2.0	0.43	ng/L		11/02/16 17:27	11/08/16 14:25	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.74	ng/L		11/02/16 17:27	11/08/16 14:25	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.57	ng/L		11/02/16 17:27	11/08/16 14:25	1
Perfluorotridecanoic Acid (PFTriA)	**0.98**	**J**	2.0	0.54	ng/L		11/02/16 17:27	11/08/16 14:25	1
Perfluorotetradecanoic acid (PFTeA)	**1.5**	**J B**	2.0	0.20	ng/L		11/02/16 17:27	11/08/16 14:25	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.12	ng/L		11/02/16 17:27	11/08/16 14:25	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		2.0	0.66	ng/L		11/02/16 17:27	11/08/16 14:25	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.90	ng/L		11/02/16 17:27	11/08/16 14:25	1
Perfluorohexanesulfonic acid (PFHxS)	**1.5**	**J**	2.0	0.85	ng/L		11/02/16 17:27	11/08/16 14:25	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.70	ng/L		11/02/16 17:27	11/08/16 14:25	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	1.2	ng/L		11/02/16 17:27	11/08/16 14:25	1
Perfluorooctane Sulfonamide (FOSA)	**1.7**	**J**	2.0	0.63	ng/L		11/02/16 17:27	11/08/16 14:25	1
6:2FTS	ND		20	3.8	ng/L		11/02/16 17:27	11/08/16 14:25	1
8:2FTS	ND		20	4.0	ng/L		11/02/16 17:27	11/08/16 14:25	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*158*	*	*25 - 150*	*11/02/16 17:27*	*11/08/16 14:25*	*1*
13C4 PFOA	*136*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:25*	*1*
13C8 FOSA	*7*	*	*25 - 150*	*11/02/16 17:27*	*11/08/16 14:25*	*1*
13C4 PFBA	*84*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:25*	*1*
13C2 PFHxA	*133*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:25*	*1*
13C5 PFNA	*142*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:25*	*1*
13C2 PFDA	*142*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:25*	*1*
13C2 PFUnA	*147*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:25*	*1*
13C2 PFDoA	*147*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:25*	*1*
18O2 PFHxS	*152*	*	*25 - 150*	*11/02/16 17:27*	*11/08/16 14:25*	*1*
13C4-PFHpA	*128*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:25*	*1*
13C5-PFPeA	*121*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:25*	*1*
M2-6:2FTS	*145*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:25*	*1*
M2-8:2FTS	*160*	*	*25 - 150*	*11/02/16 17:27*	*11/08/16 14:25*	*1*

Client Sample ID: MW-3 14-19
Date Collected: 10/27/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-10
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**2.3**	**B**	2.0	0.46	ng/L		11/02/16 17:27	11/08/16 14:32	1
Perfluorooctanoic acid (PFOA)	**0.94**	**J**	2.0	0.74	ng/L		11/02/16 17:27	11/08/16 14:32	1
Perfluorooctane Sulfonate (PFOS)	**1.8**	**J**	2.0	1.3	ng/L		11/02/16 17:27	11/08/16 14:32	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.98	ng/L		11/02/16 17:27	11/08/16 14:32	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.78	ng/L		11/02/16 17:27	11/08/16 14:32	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.80	ng/L		11/02/16 17:27	11/08/16 14:32	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.65	ng/L		11/02/16 17:27	11/08/16 14:32	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.44	ng/L		11/02/16 17:27	11/08/16 14:32	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.74	ng/L		11/02/16 17:27	11/08/16 14:32	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.58	ng/L		11/02/16 17:27	11/08/16 14:32	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.55	ng/L		11/02/16 17:27	11/08/16 14:32	1
Perfluorotetradecanoic acid (PFTeA)	**1.2**	**J B**	2.0	0.20	ng/L		11/02/16 17:27	11/08/16 14:32	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.12	ng/L		11/02/16 17:27	11/08/16 14:32	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		2.0	0.67	ng/L		11/02/16 17:27	11/08/16 14:32	1
Perfluorobutanesulfonic acid (PFBS)	**82**		2.0	0.91	ng/L		11/02/16 17:27	11/08/16 14:32	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.86	ng/L		11/02/16 17:27	11/08/16 14:32	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.71	ng/L		11/02/16 17:27	11/08/16 14:32	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	1.2	ng/L		11/02/16 17:27	11/08/16 14:32	1
Perfluorooctane Sulfonamide (FOSA)	**0.67**	**J**	2.0	0.63	ng/L		11/02/16 17:27	11/08/16 14:32	1
6:2FTS	ND		20	3.8	ng/L		11/02/16 17:27	11/08/16 14:32	1
8:2FTS	ND		20	4.0	ng/L		11/02/16 17:27	11/08/16 14:32	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*107*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:32*	*1*
13C4 PFOA	*102*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:32*	*1*
13C8 FOSA	*9*	*	*25 - 150*	*11/02/16 17:27*	*11/08/16 14:32*	*1*
13C4 PFBA	*75*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:32*	*1*
13C2 PFHxA	*93*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:32*	*1*
13C5 PFNA	*107*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:32*	*1*
13C2 PFDA	*105*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:32*	*1*
13C2 PFUnA	*104*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:32*	*1*
13C2 PFDoA	*102*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:32*	*1*
18O2 PFHxS	*110*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:32*	*1*
13C4-PFHpA	*95*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:32*	*1*
13C5-PFPeA	*100*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:32*	*1*
M2-6:2FTS	*113*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:32*	*1*
M2-8:2FTS	*124*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:32*	*1*

Client Sample ID: MW-3 24-29
Date Collected: 10/27/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-11
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0	0.45	ng/L		11/02/16 17:27	11/08/16 14:40	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.74	ng/L		11/02/16 17:27	11/08/16 14:40	1
Perfluorooctane Sulfonate (PFOS)	ND		2.0	1.3	ng/L		11/02/16 17:27	11/08/16 14:40	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.98	ng/L		11/02/16 17:27	11/08/16 14:40	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.78	ng/L		11/02/16 17:27	11/08/16 14:40	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.79	ng/L		11/02/16 17:27	11/08/16 14:40	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.65	ng/L		11/02/16 17:27	11/08/16 14:40	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.43	ng/L		11/02/16 17:27	11/08/16 14:40	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.74	ng/L		11/02/16 17:27	11/08/16 14:40	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.58	ng/L		11/02/16 17:27	11/08/16 14:40	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.54	ng/L		11/02/16 17:27	11/08/16 14:40	1
Perfluorotetradecanoic acid (PFTeA)	**0.74**	**J B**	2.0	0.20	ng/L		11/02/16 17:27	11/08/16 14:40	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.12	ng/L		11/02/16 17:27	11/08/16 14:40	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		2.0	0.66	ng/L		11/02/16 17:27	11/08/16 14:40	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.91	ng/L		11/02/16 17:27	11/08/16 14:40	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.86	ng/L		11/02/16 17:27	11/08/16 14:40	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.70	ng/L		11/02/16 17:27	11/08/16 14:40	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	1.2	ng/L		11/02/16 17:27	11/08/16 14:40	1
Perfluorooctane Sulfonamide (FOSA)	**0.75**	**J**	2.0	0.63	ng/L		11/02/16 17:27	11/08/16 14:40	1
6:2FTS	ND		20	3.8	ng/L		11/02/16 17:27	11/08/16 14:40	1
8:2FTS	ND		20	4.0	ng/L		11/02/16 17:27	11/08/16 14:40	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*120*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:40*	*1*
13C4 PFOA	*110*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:40*	*1*
13C8 FOSA	*11*	*	*25 - 150*	*11/02/16 17:27*	*11/08/16 14:40*	*1*
13C4 PFBA	*84*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:40*	*1*
13C2 PFHxA	*108*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:40*	*1*
13C5 PFNA	*110*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:40*	*1*
13C2 PFDA	*113*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:40*	*1*
13C2 PFUnA	*118*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:40*	*1*
13C2 PFDoA	*107*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:40*	*1*
18O2 PFHxS	*121*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:40*	*1*
13C4-PFHpA	*105*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:40*	*1*
13C5-PFPeA	*114*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:40*	*1*
M2-6:2FTS	*121*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:40*	*1*
M2-8:2FTS	*130*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:40*	*1*

Client Sample ID: MW-3 34-39

Date Collected: 10/27/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-12

Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.50**	**J B**	1.9	0.45	ng/L		11/02/16 17:27	11/08/16 14:47	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.73	ng/L		11/02/16 17:27	11/08/16 14:47	1
Perfluorooctane Sulfonate (PFOS)	ND		1.9	1.2	ng/L		11/02/16 17:27	11/08/16 14:47	1
Perfluoropentanoic acid (PFPeA)	ND		1.9	0.96	ng/L		11/02/16 17:27	11/08/16 14:47	1
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.77	ng/L		11/02/16 17:27	11/08/16 14:47	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.78	ng/L		11/02/16 17:27	11/08/16 14:47	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.64	ng/L		11/02/16 17:27	11/08/16 14:47	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.43	ng/L		11/02/16 17:27	11/08/16 14:47	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.73	ng/L		11/02/16 17:27	11/08/16 14:47	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.57	ng/L		11/02/16 17:27	11/08/16 14:47	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.54	ng/L		11/02/16 17:27	11/08/16 14:47	1
Perfluorotetradecanoic acid (PFTeA)	**0.64**	**J B**	1.9	0.19	ng/L		11/02/16 17:27	11/08/16 14:47	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.12	ng/L		11/02/16 17:27	11/08/16 14:47	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		1.9	0.65	ng/L		11/02/16 17:27	11/08/16 14:47	1
Perfluorobutanesulfonic acid (PFBS)	**0.97**	**J**	1.9	0.89	ng/L		11/02/16 17:27	11/08/16 14:47	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.85	ng/L		11/02/16 17:27	11/08/16 14:47	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.69	ng/L		11/02/16 17:27	11/08/16 14:47	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	1.2	ng/L		11/02/16 17:27	11/08/16 14:47	1
Perfluorooctane Sulfonamide (FOSA)	**1.7**	**J**	1.9	0.62	ng/L		11/02/16 17:27	11/08/16 14:47	1
6:2FTS	ND		19	3.7	ng/L		11/02/16 17:27	11/08/16 14:47	1
8:2FTS	ND		19	3.9	ng/L		11/02/16 17:27	11/08/16 14:47	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*166*	*	*25 - 150*	*11/02/16 17:27*	*11/08/16 14:47*	*1*
13C4 PFOA	*151*	*	*25 - 150*	*11/02/16 17:27*	*11/08/16 14:47*	*1*
13C8 FOSA	*12*	*	*25 - 150*	*11/02/16 17:27*	*11/08/16 14:47*	*1*
13C4 PFBA	*101*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:47*	*1*
13C2 PFHxA	*153*	*	*25 - 150*	*11/02/16 17:27*	*11/08/16 14:47*	*1*
13C5 PFNA	*156*	*	*25 - 150*	*11/02/16 17:27*	*11/08/16 14:47*	*1*
13C2 PFDA	*162*	*	*25 - 150*	*11/02/16 17:27*	*11/08/16 14:47*	*1*
13C2 PFUnA	*154*	*	*25 - 150*	*11/02/16 17:27*	*11/08/16 14:47*	*1*
13C2 PFDoA	*149*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:47*	*1*
18O2 PFHxS	*161*	*	*25 - 150*	*11/02/16 17:27*	*11/08/16 14:47*	*1*
13C4-PFHpA	*145*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:47*	*1*
13C5-PFPeA	*143*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:47*	*1*
M2-6:2FTS	*153*	*	*25 - 150*	*11/02/16 17:27*	*11/08/16 14:47*	*1*
M2-8:2FTS	*171*	*	*25 - 150*	*11/02/16 17:27*	*11/08/16 14:47*	*1*

Client Sample ID: MW-3 44-49
Date Collected: 10/27/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-13
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.49**	**J B**	2.0	0.45	ng/L		11/02/16 17:27	11/08/16 14:55	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.73	ng/L		11/02/16 17:27	11/08/16 14:55	1
Perfluorooctane Sulfonate (PFOS)	ND		2.0	1.3	ng/L		11/02/16 17:27	11/08/16 14:55	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.97	ng/L		11/02/16 17:27	11/08/16 14:55	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.77	ng/L		11/02/16 17:27	11/08/16 14:55	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.79	ng/L		11/02/16 17:27	11/08/16 14:55	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.64	ng/L		11/02/16 17:27	11/08/16 14:55	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.43	ng/L		11/02/16 17:27	11/08/16 14:55	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.73	ng/L		11/02/16 17:27	11/08/16 14:55	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.57	ng/L		11/02/16 17:27	11/08/16 14:55	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.54	ng/L		11/02/16 17:27	11/08/16 14:55	1
Perfluorotetradecanoic acid (PFTeA)	**0.86**	**J B**	2.0	0.20	ng/L		11/02/16 17:27	11/08/16 14:55	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.12	ng/L		11/02/16 17:27	11/08/16 14:55	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		2.0	0.66	ng/L		11/02/16 17:27	11/08/16 14:55	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.90	ng/L		11/02/16 17:27	11/08/16 14:55	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.85	ng/L		11/02/16 17:27	11/08/16 14:55	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.70	ng/L		11/02/16 17:27	11/08/16 14:55	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	1.2	ng/L		11/02/16 17:27	11/08/16 14:55	1
Perfluorooctane Sulfonamide (FOSA)	**0.90**	**J**	2.0	0.63	ng/L		11/02/16 17:27	11/08/16 14:55	1
6:2FTS	ND		20	3.7	ng/L		11/02/16 17:27	11/08/16 14:55	1
8:2FTS	ND		20	4.0	ng/L		11/02/16 17:27	11/08/16 14:55	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*123*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:55*	*1*
13C4 PFOA	*107*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:55*	*1*
13C8 FOSA	*9*	*	*25 - 150*	*11/02/16 17:27*	*11/08/16 14:55*	*1*
13C4 PFBA	*72*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:55*	*1*
13C2 PFHxA	*114*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:55*	*1*
13C5 PFNA	*106*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:55*	*1*
13C2 PFDA	*110*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:55*	*1*
13C2 PFUnA	*106*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:55*	*1*
13C2 PFDoA	*104*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:55*	*1*
18O2 PFHxS	*118*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:55*	*1*
13C4-PFHpA	*107*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:55*	*1*
13C5-PFPeA	*105*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:55*	*1*
M2-6:2FTS	*112*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:55*	*1*
M2-8:2FTS	*118*		*25 - 150*	*11/02/16 17:27*	*11/08/16 14:55*	*1*

Client Sample ID: MW-7 16-21
Date Collected: 10/27/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-14
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**3.1**	**B**	1.9	0.44	ng/L		11/02/16 17:27	11/08/16 15:02	1
Perfluorooctanoic acid (PFOA)	**5.0**		1.9	0.72	ng/L		11/02/16 17:27	11/08/16 15:02	1
Perfluorooctane Sulfonate (PFOS)	**24**		1.9	1.2	ng/L		11/02/16 17:27	11/08/16 15:02	1
Perfluoropentanoic acid (PFPeA)	**1.0**	**J**	1.9	0.95	ng/L		11/02/16 17:27	11/08/16 15:02	1
Perfluorohexanoic acid (PFHxA)	**0.87**	**J**	1.9	0.76	ng/L		11/02/16 17:27	11/08/16 15:02	1
Perfluoroheptanoic acid (PFHpA)	**1.4**	**J**	1.9	0.77	ng/L		11/02/16 17:27	11/08/16 15:02	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.63	ng/L		11/02/16 17:27	11/08/16 15:02	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.42	ng/L		11/02/16 17:27	11/08/16 15:02	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.72	ng/L		11/02/16 17:27	11/08/16 15:02	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.56	ng/L		11/02/16 17:27	11/08/16 15:02	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.53	ng/L		11/02/16 17:27	11/08/16 15:02	1
Perfluorotetradecanoic acid (PFTeA)	**0.89**	**J B**	1.9	0.19	ng/L		11/02/16 17:27	11/08/16 15:02	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.12	ng/L		11/02/16 17:27	11/08/16 15:02	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		1.9	0.65	ng/L		11/02/16 17:27	11/08/16 15:02	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.88	ng/L		11/02/16 17:27	11/08/16 15:02	1
Perfluorohexanesulfonic acid (PFHxS)	**2.9**		1.9	0.84	ng/L		11/02/16 17:27	11/08/16 15:02	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.69	ng/L		11/02/16 17:27	11/08/16 15:02	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	1.2	ng/L		11/02/16 17:27	11/08/16 15:02	1
Perfluorooctane Sulfonamide (FOSA)	**1.4**	**J**	1.9	0.61	ng/L		11/02/16 17:27	11/08/16 15:02	1
6:2FTS	ND		19	3.7	ng/L		11/02/16 17:27	11/08/16 15:02	1
8:2FTS	ND		19	3.9	ng/L		11/02/16 17:27	11/08/16 15:02	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*116*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:02*	*1*
13C4 PFOA	*108*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:02*	*1*
13C8 FOSA	*8*	*	*25 - 150*	*11/02/16 17:27*	*11/08/16 15:02*	*1*
13C4 PFBA	*68*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:02*	*1*
13C2 PFHxA	*114*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:02*	*1*
13C5 PFNA	*106*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:02*	*1*
13C2 PFDA	*108*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:02*	*1*
13C2 PFUnA	*108*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:02*	*1*
13C2 PFDoA	*104*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:02*	*1*
18O2 PFHxS	*114*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:02*	*1*
13C4-PFHpA	*102*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:02*	*1*
13C5-PFPeA	*109*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:02*	*1*
M2-6:2FTS	*98*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:02*	*1*
M2-8:2FTS	*115*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:02*	*1*

Client Sample ID: MW-7 26-31
Date Collected: 10/27/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-15
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		1.9	0.44	ng/L		11/02/16 17:27	11/08/16 15:10	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.72	ng/L		11/02/16 17:27	11/08/16 15:10	1
Perfluorooctane Sulfonate (PFOS)	**1.8**	**J**	1.9	1.2	ng/L		11/02/16 17:27	11/08/16 15:10	1
Perfluoropentanoic acid (PFPeA)	ND		1.9	0.96	ng/L		11/02/16 17:27	11/08/16 15:10	1
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.76	ng/L		11/02/16 17:27	11/08/16 15:10	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.78	ng/L		11/02/16 17:27	11/08/16 15:10	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.63	ng/L		11/02/16 17:27	11/08/16 15:10	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.43	ng/L		11/02/16 17:27	11/08/16 15:10	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.72	ng/L		11/02/16 17:27	11/08/16 15:10	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.57	ng/L		11/02/16 17:27	11/08/16 15:10	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.53	ng/L		11/02/16 17:27	11/08/16 15:10	1
Perfluorotetradecanoic acid (PFTeA)	**0.69**	**J B**	1.9	0.19	ng/L		11/02/16 17:27	11/08/16 15:10	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.12	ng/L		11/02/16 17:27	11/08/16 15:10	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		1.9	0.65	ng/L		11/02/16 17:27	11/08/16 15:10	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.89	ng/L		11/02/16 17:27	11/08/16 15:10	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.84	ng/L		11/02/16 17:27	11/08/16 15:10	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.69	ng/L		11/02/16 17:27	11/08/16 15:10	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	1.2	ng/L		11/02/16 17:27	11/08/16 15:10	1
Perfluorooctane Sulfonamide (FOSA)	**0.81**	**J**	1.9	0.62	ng/L		11/02/16 17:27	11/08/16 15:10	1
6:2FTS	ND		19	3.7	ng/L		11/02/16 17:27	11/08/16 15:10	1
8:2FTS	ND		19	3.9	ng/L		11/02/16 17:27	11/08/16 15:10	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*118*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:10*	*1*
13C4 PFOA	*109*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:10*	*1*
13C8 FOSA	*8*	*	*25 - 150*	*11/02/16 17:27*	*11/08/16 15:10*	*1*
13C4 PFBA	*94*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:10*	*1*
13C2 PFHxA	*111*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:10*	*1*
13C5 PFNA	*112*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:10*	*1*
13C2 PFDA	*112*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:10*	*1*
13C2 PFUnA	*112*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:10*	*1*
13C2 PFDoA	*108*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:10*	*1*
18O2 PFHxS	*117*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:10*	*1*
13C4-PFHpA	*104*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:10*	*1*
13C5-PFPeA	*116*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:10*	*1*
M2-6:2FTS	*113*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:10*	*1*
M2-8:2FTS	*118*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:10*	*1*

Client Sample ID: MW-7 36-41
Date Collected: 10/27/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-16
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		1.9	0.44	ng/L		11/02/16 17:27	11/08/16 15:17	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.73	ng/L		11/02/16 17:27	11/08/16 15:17	1
Perfluorooctane Sulfonate (PFOS)	ND		1.9	1.2	ng/L		11/02/16 17:27	11/08/16 15:17	1
Perfluoropentanoic acid (PFPeA)	ND		1.9	0.96	ng/L		11/02/16 17:27	11/08/16 15:17	1
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.76	ng/L		11/02/16 17:27	11/08/16 15:17	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.78	ng/L		11/02/16 17:27	11/08/16 15:17	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.63	ng/L		11/02/16 17:27	11/08/16 15:17	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.43	ng/L		11/02/16 17:27	11/08/16 15:17	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.73	ng/L		11/02/16 17:27	11/08/16 15:17	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.57	ng/L		11/02/16 17:27	11/08/16 15:17	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.53	ng/L		11/02/16 17:27	11/08/16 15:17	1
Perfluorotetradecanoic acid (PFTeA)	**0.79**	**J B**	1.9	0.19	ng/L		11/02/16 17:27	11/08/16 15:17	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.12	ng/L		11/02/16 17:27	11/08/16 15:17	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		1.9	0.65	ng/L		11/02/16 17:27	11/08/16 15:17	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.89	ng/L		11/02/16 17:27	11/08/16 15:17	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.84	ng/L		11/02/16 17:27	11/08/16 15:17	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.69	ng/L		11/02/16 17:27	11/08/16 15:17	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	1.2	ng/L		11/02/16 17:27	11/08/16 15:17	1
Perfluorooctane Sulfonamide (FOSA)	ND		1.9	0.62	ng/L		11/02/16 17:27	11/08/16 15:17	1
6:2FTS	ND		19	3.7	ng/L		11/02/16 17:27	11/08/16 15:17	1
8:2FTS	ND		19	3.9	ng/L		11/02/16 17:27	11/08/16 15:17	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*115*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:17*	*1*
13C4 PFOA	*110*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:17*	*1*
13C8 FOSA	*7*	*	*25 - 150*	*11/02/16 17:27*	*11/08/16 15:17*	*1*
13C4 PFBA	*80*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:17*	*1*
13C2 PFHxA	*110*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:17*	*1*
13C5 PFNA	*110*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:17*	*1*
13C2 PFDA	*117*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:17*	*1*
13C2 PFUnA	*111*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:17*	*1*
13C2 PFDoA	*105*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:17*	*1*
18O2 PFHxS	*113*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:17*	*1*
13C4-PFHpA	*102*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:17*	*1*
13C5-PFPeA	*110*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:17*	*1*
M2-6:2FTS	*105*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:17*	*1*
M2-8:2FTS	*124*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:17*	*1*

Client Sample ID: MW-7 46-51

Date Collected: 10/27/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-17

Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.55**	**J B**	1.9	0.44	ng/L		11/02/16 17:27	11/08/16 15:25	1
Perfluorooctanoic acid (PFOA)	**0.77**	**J**	1.9	0.72	ng/L		11/02/16 17:27	11/08/16 15:25	1
Perfluorooctane Sulfonate (PFOS)	ND		1.9	1.2	ng/L		11/02/16 17:27	11/08/16 15:25	1
Perfluoropentanoic acid (PFPeA)	ND		1.9	0.95	ng/L		11/02/16 17:27	11/08/16 15:25	1
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.75	ng/L		11/02/16 17:27	11/08/16 15:25	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.77	ng/L		11/02/16 17:27	11/08/16 15:25	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.63	ng/L		11/02/16 17:27	11/08/16 15:25	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.42	ng/L		11/02/16 17:27	11/08/16 15:25	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.72	ng/L		11/02/16 17:27	11/08/16 15:25	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.56	ng/L		11/02/16 17:27	11/08/16 15:25	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.53	ng/L		11/02/16 17:27	11/08/16 15:25	1
Perfluorotetradecanoic acid (PFTeA)	**0.68**	**J B**	1.9	0.19	ng/L		11/02/16 17:27	11/08/16 15:25	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.12	ng/L		11/02/16 17:27	11/08/16 15:25	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		1.9	0.64	ng/L		11/02/16 17:27	11/08/16 15:25	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.88	ng/L		11/02/16 17:27	11/08/16 15:25	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.83	ng/L		11/02/16 17:27	11/08/16 15:25	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.68	ng/L		11/02/16 17:27	11/08/16 15:25	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	1.2	ng/L		11/02/16 17:27	11/08/16 15:25	1
Perfluorooctane Sulfonamide (FOSA)	**0.67**	**J**	1.9	0.61	ng/L		11/02/16 17:27	11/08/16 15:25	1
6:2FTS	ND		19	3.7	ng/L		11/02/16 17:27	11/08/16 15:25	1
8:2FTS	ND		19	3.9	ng/L		11/02/16 17:27	11/08/16 15:25	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*115*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:25*	*1*
13C4 PFOA	*108*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:25*	*1*
13C8 FOSA	*9*	*	*25 - 150*	*11/02/16 17:27*	*11/08/16 15:25*	*1*
13C4 PFBA	*71*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:25*	*1*
13C2 PFHxA	*115*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:25*	*1*
13C5 PFNA	*108*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:25*	*1*
13C2 PFDA	*110*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:25*	*1*
13C2 PFUnA	*107*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:25*	*1*
13C2 PFDoA	*104*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:25*	*1*
18O2 PFHxS	*112*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:25*	*1*
13C4-PFHpA	*103*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:25*	*1*
13C5-PFPeA	*106*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:25*	*1*
M2-6:2FTS	*111*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:25*	*1*
M2-8:2FTS	*127*		*25 - 150*	*11/02/16 17:27*	*11/08/16 15:25*	*1*

Isotope Dilution Summary

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23156-1

Method: 537 (modified) - Perfluorinated Hydrocarbons

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	3C4 PFOS (25-150)	3C4 PFOA (25-150)	3C8 FOSA (25-150)	3C4 PFBA (25-150)	3C2 PFHx (25-150)	3C5 PFNA (25-150)	3C2 PFDA (25-150)	3C2 PFUn (25-150)
320-23156-1	MW-4 16-21	106	99	9 *	71	106	98	102	107
320-23156-2	MW-4 26-31	104	100	7 *	42	101	103	109	108
320-23156-3	MW-4 36-41	116	94	5 *	46	103	94	96	99
320-23156-4	MW-4 46-51	103	91	6 *	52	105	92	99	102
320-23156-5	MW-6 16-21	114	90	1 *	52	96	83	90	92
320-23156-6	MW-6 26-31	98	84	4 *	61	87	86	90	93
320-23156-7	MW-6 26-31 DUP	110	89	7 *	68	96	88	93	101
320-23156-8	MW-6 36-41	119	79	7 *	70	95	72	66	75
320-23156-9	MW-6 46-51	158 *	136	7 *	84	133	142	142	147
320-23156-10	MW-3 14-19	107	102	9 *	75	93	107	105	104
320-23156-11	MW-3 24-29	120	110	11 *	84	108	110	113	118
320-23156-12	MW-3 34-39	166 *	151 *	12 *	101	153 *	156 *	162 *	154 *
320-23156-13	MW-3 44-49	123	107	9 *	72	114	106	110	106
320-23156-14	MW-7 16-21	116	108	8 *	68	114	106	108	108
320-23156-15	MW-7 26-31	118	109	8 *	94	111	112	112	112
320-23156-16	MW-7 36-41	115	110	7 *	80	110	110	117	111
320-23156-17	MW-7 46-51	115	108	9 *	71	115	108	110	107
LCS 320-135789/2-A	Lab Control Sample	103	101	36	108	97	103	112	106
LCSD 320-135789/3-A	Lab Control Sample Dup	109	108	24 *	114	104	109	116	116
MB 320-135789/1-A	Method Blank	115	112	48	115	102	114	117	119

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	3C2 PFDoA (25-150)	3O2 PFHxS (25-150)	3C4-PFHpA (25-150)	3C5-PFPeA (25-150)	M2-6:2FTS (25-150)	M2-8:2FTS (25-150)		
320-23156-1	MW-4 16-21	104	109	97	103	89	101		
320-23156-2	MW-4 26-31	105	104	100	84	87	104		
320-23156-3	MW-4 36-41	100	111	101	89	84	106		
320-23156-4	MW-4 46-51	103	105	95	92	83	98		
320-23156-5	MW-6 16-21	95	110	83	87	82	101		
320-23156-6	MW-6 26-31	92	99	80	85	83	98		
320-23156-7	MW-6 26-31 DUP	100	109	87	96	84	102		
320-23156-8	MW-6 36-41	87	120	85	97	108	121		
320-23156-9	MW-6 46-51	147	152 *	128	121	145	160 *		
320-23156-10	MW-3 14-19	102	110	95	100	113	124		
320-23156-11	MW-3 24-29	107	121	105	114	121	130		
320-23156-12	MW-3 34-39	149	161 *	145	143	153 *	171 *		
320-23156-13	MW-3 44-49	104	118	107	105	112	118		
320-23156-14	MW-7 16-21	104	114	102	109	98	115		
320-23156-15	MW-7 26-31	108	117	104	116	113	118		
320-23156-16	MW-7 36-41	105	113	102	110	105	124		
320-23156-17	MW-7 46-51	104	112	103	106	111	127		
LCS 320-135789/2-A	Lab Control Sample	101	108	96	105	79	98		
LCSD 320-135789/3-A	Lab Control Sample Dup	114	110	103	110	84	105		
MB 320-135789/1-A	Method Blank	116	116	107	115	82	103		

Surrogate Legend

13C4 PFOS = 13C4 PFOS
13C4 PFOA = 13C4 PFOA
13C8 FOSA = 13C8 FOSA
13C4 PFBA = 13C4 PFBA

Isotope Dilution Summary

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23156-1

13C2 PFHxA = 13C2 PFHxA
13C5 PFNA = 13C5 PFNA
13C2 PFDA = 13C2 PFDA
13C2 PFUnA = 13C2 PFUnA
13C2 PFDoA = 13C2 PFDoA
18O2 PFHxS = 18O2 PFHxS
13C4-PFHpA = 13C4-PFHpA
13C5-PFPeA = 13C5-PFPeA
M2-6:2FTS = M2-6:2FTS
M2-8:2FTS = M2-8:2FTS

Method: 537 (modified) - Perfluorinated Hydrocarbons

Lab Sample ID: MB 320-135789/1-A
Matrix: Water
Analysis Batch: 136370

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 135789

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.486	J	2.0	0.46	ng/L		11/02/16 17:27	11/04/16 13:56	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.75	ng/L		11/02/16 17:27	11/04/16 13:56	1
Perfluorooctane Sulfonate (PFOS)	ND		2.0	1.3	ng/L		11/02/16 17:27	11/04/16 13:56	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.99	ng/L		11/02/16 17:27	11/04/16 13:56	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.79	ng/L		11/02/16 17:27	11/04/16 13:56	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.80	ng/L		11/02/16 17:27	11/04/16 13:56	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.65	ng/L		11/02/16 17:27	11/04/16 13:56	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.44	ng/L		11/02/16 17:27	11/04/16 13:56	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.75	ng/L		11/02/16 17:27	11/04/16 13:56	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.58	ng/L		11/02/16 17:27	11/04/16 13:56	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.55	ng/L		11/02/16 17:27	11/04/16 13:56	1
Perfluorotetradecanoic acid (PFTeA)	0.891	J	2.0	0.20	ng/L		11/02/16 17:27	11/04/16 13:56	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.12	ng/L		11/02/16 17:27	11/04/16 13:56	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		2.0	0.67	ng/L		11/02/16 17:27	11/04/16 13:56	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.92	ng/L		11/02/16 17:27	11/04/16 13:56	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.87	ng/L		11/02/16 17:27	11/04/16 13:56	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.71	ng/L		11/02/16 17:27	11/04/16 13:56	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	1.2	ng/L		11/02/16 17:27	11/04/16 13:56	1
Perfluorooctane Sulfonamide (FOSA)	ND		2.0	0.64	ng/L		11/02/16 17:27	11/04/16 13:56	1
6:2FTS	ND		20	3.8	ng/L		11/02/16 17:27	11/04/16 13:56	1
8:2FTS	ND		20	4.0	ng/L		11/02/16 17:27	11/04/16 13:56	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*115*		*25 - 150*	*11/02/16 17:27*	*11/04/16 13:56*	*1*
13C4 PFOA	*112*		*25 - 150*	*11/02/16 17:27*	*11/04/16 13:56*	*1*
13C8 FOSA	*48*		*25 - 150*	*11/02/16 17:27*	*11/04/16 13:56*	*1*
13C4 PFBA	*115*		*25 - 150*	*11/02/16 17:27*	*11/04/16 13:56*	*1*
13C2 PFHxA	*102*		*25 - 150*	*11/02/16 17:27*	*11/04/16 13:56*	*1*
13C5 PFNA	*114*		*25 - 150*	*11/02/16 17:27*	*11/04/16 13:56*	*1*
13C2 PFDA	*117*		*25 - 150*	*11/02/16 17:27*	*11/04/16 13:56*	*1*
13C2 PFUnA	*119*		*25 - 150*	*11/02/16 17:27*	*11/04/16 13:56*	*1*
13C2 PFDoA	*116*		*25 - 150*	*11/02/16 17:27*	*11/04/16 13:56*	*1*
18O2 PFHxS	*116*		*25 - 150*	*11/02/16 17:27*	*11/04/16 13:56*	*1*
13C4-PFHpA	*107*		*25 - 150*	*11/02/16 17:27*	*11/04/16 13:56*	*1*
13C5-PFPeA	*115*		*25 - 150*	*11/02/16 17:27*	*11/04/16 13:56*	*1*
M2-6:2FTS	*82*		*25 - 150*	*11/02/16 17:27*	*11/04/16 13:56*	*1*
M2-8:2FTS	*103*		*25 - 150*	*11/02/16 17:27*	*11/04/16 13:56*	*1*

Lab Sample ID: LCS 320-135789/2-A
Matrix: Water
Analysis Batch: 136370

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 135789

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	42.7		ng/L		107	74 - 138
Perfluorooctanoic acid (PFOA)	40.0	37.2		ng/L		93	63 - 141

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Lab Sample ID: LCS 320-135789/2-A
Matrix: Water
Analysis Batch: 136370

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 135789

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctane Sulfonate (PFOS)	37.1	37.3		ng/L		101	47 - 162
Perfluoropentanoic acid (PFPeA)	40.0	37.5		ng/L		94	69 - 134
Perfluorohexanoic acid (PFHxA)	40.0	40.1		ng/L		100	70 - 136
Perfluoroheptanoic acid (PFHpA)	40.0	40.6		ng/L		102	63 - 135
Perfluorononanoic acid (PFNA)	40.0	40.8		ng/L		102	71 - 140
Perfluorodecanoic acid (PFDA)	40.0	36.8		ng/L		92	66 - 141
Perfluoroundecanoic acid (PFUnA)	40.0	37.6		ng/L		94	68 - 139
Perfluorododecanoic acid (PFDoA)	40.0	39.3		ng/L		98	71 - 139
Perfluorotridecanoic Acid (PFTriA)	40.0	39.0		ng/L		98	51 - 139
Perfluorotetradecanoic acid (PFTeA)	40.0	44.9		ng/L		112	47 - 130
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	42.3		ng/L		106	50 - 150
Perfluoro-n-octadecanoic acid (PFODA)	40.0	47.0		ng/L		118	50 - 150
Perfluorobutanesulfonic acid (PFBS)	35.4	36.4		ng/L		103	55 - 147
Perfluorohexanesulfonic acid (PFHxS)	36.4	35.8		ng/L		98	58 - 138
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.5		ng/L		106	32 - 170
Perfluorodecanesulfonic acid (PFDS)	38.6	36.5		ng/L		95	35 - 157
Perfluorooctane Sulfonamide (FOSA)	40.0	41.5		ng/L		104	59 - 163
6:2FTS	37.9	38.6		ng/L		102	60 - 140
8:2FTS	38.3	39.5		ng/L		103	60 - 140

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFOS	*103*		*25 - 150*
13C4 PFOA	*101*		*25 - 150*
13C8 FOSA	*36*		*25 - 150*
13C4 PFBA	*108*		*25 - 150*
13C2 PFHxA	*97*		*25 - 150*
13C5 PFNA	*103*		*25 - 150*
13C2 PFDA	*112*		*25 - 150*
13C2 PFUnA	*106*		*25 - 150*
13C2 PFDoA	*101*		*25 - 150*
18O2 PFHxS	*108*		*25 - 150*
13C4-PFHpA	*96*		*25 - 150*
13C5-PFPeA	*105*		*25 - 150*
M2-6:2FTS	*79*		*25 - 150*
M2-8:2FTS	*98*		*25 - 150*

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Lab Sample ID: LCSD 320-135789/3-A
Matrix: Water
Analysis Batch: 136370

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 135789

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	41.8		ng/L		104	74 - 138	2	30
Perfluorooctanoic acid (PFOA)			40.0	34.7		ng/L		87	63 - 141	7	30
Perfluorooctane Sulfonate (PFOS)			37.1	34.5		ng/L		93	47 - 162	8	30
Perfluoropentanoic acid (PFPeA)			40.0	35.6		ng/L		89	69 - 134	5	30
Perfluorohexanoic acid (PFHxA)			40.0	37.8		ng/L		94	70 - 136	6	30
Perfluoroheptanoic acid (PFHpA)			40.0	38.1		ng/L		95	63 - 135	6	30
Perfluorononanoic acid (PFNA)			40.0	39.2		ng/L		98	71 - 140	4	30
Perfluorodecanoic acid (PFDA)			40.0	36.0		ng/L		90	66 - 141	2	30
Perfluoroundecanoic acid (PFUnA)			40.0	36.0		ng/L		90	68 - 139	5	30
Perfluorododecanoic acid (PFDoA)			40.0	37.0		ng/L		93	71 - 139	6	30
Perfluorotridecanoic Acid (PFTriA)			40.0	37.8		ng/L		94	51 - 139	3	30
Perfluorotetradecanoic acid (PFTeA)			40.0	43.0		ng/L		107	47 - 130	4	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	38.3		ng/L		96	50 - 150	10	30
Perfluoro-n-octadecanoic acid (PFODA)			40.0	43.1		ng/L		108	50 - 150	9	30
Perfluorobutanesulfonic acid (PFBS)			35.4	34.8		ng/L		98	55 - 147	5	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	33.8		ng/L		93	58 - 138	10	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	38.1		ng/L		100	32 - 170	6	30
Perfluorodecanesulfonic acid (PFDS)			38.6	34.4		ng/L		89	35 - 157	6	30
Perfluorooctane Sulfonamide (FOSA)			40.0	38.8		ng/L		97	59 - 163	7	30
6:2FTS			37.9	40.3		ng/L		106	60 - 140	4	30
8:2FTS			38.3	39.6		ng/L		103	60 - 140	0	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFOS	*109*		*25 - 150*
13C4 PFOA	*108*		*25 - 150*
13C8 FOSA	*24*	*	*25 - 150*
13C4 PFBA	*114*		*25 - 150*
13C2 PFHxA	*104*		*25 - 150*
13C5 PFNA	*109*		*25 - 150*
13C2 PFDA	*116*		*25 - 150*
13C2 PFUnA	*116*		*25 - 150*
13C2 PFDoA	*114*		*25 - 150*
18O2 PFHxS	*110*		*25 - 150*
13C4-PFHpA	*103*		*25 - 150*
13C5-PFPeA	*110*		*25 - 150*
M2-6:2FTS	*84*		*25 - 150*
M2-8:2FTS	*105*		*25 - 150*

LCMS

Prep Batch: 135789

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-23156-1	MW-4 16-21	Total/NA	Water	3535	
320-23156-2	MW-4 26-31	Total/NA	Water	3535	
320-23156-3	MW-4 36-41	Total/NA	Water	3535	
320-23156-4	MW-4 46-51	Total/NA	Water	3535	
320-23156-5	MW-6 16-21	Total/NA	Water	3535	
320-23156-6	MW-6 26-31	Total/NA	Water	3535	
320-23156-7	MW-6 26-31 DUP	Total/NA	Water	3535	
320-23156-8	MW-6 36-41	Total/NA	Water	3535	
320-23156-9	MW-6 46-51	Total/NA	Water	3535	
320-23156-10	MW-3 14-19	Total/NA	Water	3535	
320-23156-11	MW-3 24-29	Total/NA	Water	3535	
320-23156-12	MW-3 34-39	Total/NA	Water	3535	
320-23156-13	MW-3 44-49	Total/NA	Water	3535	
320-23156-14	MW-7 16-21	Total/NA	Water	3535	
320-23156-15	MW-7 26-31	Total/NA	Water	3535	
320-23156-16	MW-7 36-41	Total/NA	Water	3535	
320-23156-17	MW-7 46-51	Total/NA	Water	3535	
MB 320-135789/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-135789/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-135789/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 136370

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-23156-1	MW-4 16-21	Total/NA	Water	537 (modified)	135789
320-23156-2	MW-4 26-31	Total/NA	Water	537 (modified)	135789
320-23156-3	MW-4 36-41	Total/NA	Water	537 (modified)	135789
320-23156-4	MW-4 46-51	Total/NA	Water	537 (modified)	135789
320-23156-5	MW-6 16-21	Total/NA	Water	537 (modified)	135789
320-23156-6	MW-6 26-31	Total/NA	Water	537 (modified)	135789
320-23156-7	MW-6 26-31 DUP	Total/NA	Water	537 (modified)	135789
MB 320-135789/1-A	Method Blank	Total/NA	Water	537 (modified)	135789
LCS 320-135789/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	135789
LCSD 320-135789/3-A	Lab Control Sample Dup	Total/NA	Water	537 (modified)	135789

Analysis Batch: 136851

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-23156-8	MW-6 36-41	Total/NA	Water	537 (modified)	135789
320-23156-9	MW-6 46-51	Total/NA	Water	537 (modified)	135789
320-23156-10	MW-3 14-19	Total/NA	Water	537 (modified)	135789
320-23156-11	MW-3 24-29	Total/NA	Water	537 (modified)	135789
320-23156-12	MW-3 34-39	Total/NA	Water	537 (modified)	135789
320-23156-13	MW-3 44-49	Total/NA	Water	537 (modified)	135789
320-23156-14	MW-7 16-21	Total/NA	Water	537 (modified)	135789
320-23156-15	MW-7 26-31	Total/NA	Water	537 (modified)	135789
320-23156-16	MW-7 36-41	Total/NA	Water	537 (modified)	135789
320-23156-17	MW-7 46-51	Total/NA	Water	537 (modified)	135789

Client Sample ID: MW-4 16-21
Date Collected: 10/26/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			255.2 mL	0.5 mL	135789	11/02/16 17:27	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			136370	11/04/16 14:19	SBC	TAL SAC

Client Sample ID: MW-4 26-31
Date Collected: 10/26/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			261.1 mL	0.5 mL	135789	11/02/16 17:27	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			136370	11/04/16 14:26	SBC	TAL SAC

Client Sample ID: MW-4 36-41
Date Collected: 10/26/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			258.1 mL	0.5 mL	135789	11/02/16 17:27	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			136370	11/04/16 14:34	SBC	TAL SAC

Client Sample ID: MW-4 46-51
Date Collected: 10/26/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			253.4 mL	0.5 mL	135789	11/02/16 17:27	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			136370	11/04/16 14:41	SBC	TAL SAC

Client Sample ID: MW-6 16-21
Date Collected: 10/26/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			261.2 mL	0.5 mL	135789	11/02/16 17:27	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			136370	11/04/16 14:49	SBC	TAL SAC

Client Sample ID: MW-6 26-31
Date Collected: 10/26/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			251.7 mL	0.5 mL	135789	11/02/16 17:27	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			136370	11/04/16 14:56	SBC	TAL SAC

Lab Chronicle

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23156-1

Client Sample ID: MW-6 26-31 DUP

Date Collected: 10/26/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			252.8 mL	0.5 mL	135789	11/02/16 17:27	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			136370	11/04/16 15:04	SBC	TAL SAC

Client Sample ID: MW-6 36-41

Date Collected: 10/26/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			253 mL	0.5 mL	135789	11/02/16 17:27	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			136851	11/08/16 14:17	SBC	TAL SAC

Client Sample ID: MW-6 46-51

Date Collected: 10/26/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			254.4 mL	0.5 mL	135789	11/02/16 17:27	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			136851	11/08/16 14:25	SBC	TAL SAC

Client Sample ID: MW-3 14-19

Date Collected: 10/27/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			251.5 mL	0.5 mL	135789	11/02/16 17:27	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			136851	11/08/16 14:32	SBC	TAL SAC

Client Sample ID: MW-3 24-29

Date Collected: 10/27/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			253.1 mL	0.5 mL	135789	11/02/16 17:27	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			136851	11/08/16 14:40	SBC	TAL SAC

Client Sample ID: MW-3 34-39

Date Collected: 10/27/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			256.5 mL	0.5 mL	135789	11/02/16 17:27	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			136851	11/08/16 14:47	SBC	TAL SAC

Client Sample ID: MW-3 44-49

Date Collected: 10/27/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			254.7 mL	0.5 mL	135789	11/02/16 17:27	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			136851	11/08/16 14:55	SBC	TAL SAC

Client Sample ID: MW-7 16-21

Date Collected: 10/27/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-14

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			259.5 mL	0.5 mL	135789	11/02/16 17:27	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			136851	11/08/16 15:02	SBC	TAL SAC

Client Sample ID: MW-7 26-31

Date Collected: 10/27/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-15

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			258.4 mL	0.5 mL	135789	11/02/16 17:27	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			136851	11/08/16 15:10	SBC	TAL SAC

Client Sample ID: MW-7 36-41

Date Collected: 10/27/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-16

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			257.9 mL	0.5 mL	135789	11/02/16 17:27	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			136851	11/08/16 15:17	SBC	TAL SAC

Client Sample ID: MW-7 46-51

Date Collected: 10/27/16 00:00
Date Received: 11/01/16 09:55

Lab Sample ID: 320-23156-17

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			260.7 mL	0.5 mL	135789	11/02/16 17:27	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			136851	11/08/16 15:25	SBC	TAL SAC

Laboratory References:

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

Certification Summary

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23156-1

Laboratory: TestAmerica Sacramento

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

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-17
Alaska (UST)	State Program	10	UST-055	12-18-16
Arizona	State Program	9	AZ0708	08-11-17
Arkansas DEQ	State Program	6	88-0691	06-17-17
California	State Program	9	2897	01-31-18
Colorado	State Program	8	CA00044	08-31-17
Connecticut	State Program	1	PH-0691	06-30-17
Florida	NELAP	4	E87570	06-30-17
Hawaii	State Program	9	N/A	01-31-17
Illinois	NELAP	5	200060	03-17-17
Kansas	NELAP	7	E-10375	10-31-16 *
Louisiana	NELAP	6	30612	06-30-17
Maine	State Program	1	CA0004	04-18-18
Michigan	State Program	5	9947	01-31-18
Nevada	State Program	9	CA00044	07-31-17
New Jersey	NELAP	2	CA005	06-30-17
New York	NELAP	2	11666	04-01-17
Oregon	NELAP	10	4040	01-29-17
Pennsylvania	NELAP	3	68-01272	03-31-17
Texas	NELAP	6	T104704399	07-31-17
US Fish & Wildlife	Federal		LE148388-0	10-31-17
USDA	Federal		P330-11-00436	12-30-17
USEPA UCMR	Federal	1	CA00044	11-06-18
Utah	NELAP	8	CA00044	02-28-17
Virginia	NELAP	3	460278	03-14-17
Washington	State Program	10	C581	05-05-17
West Virginia (DW)	State Program	3	9930C	12-31-16
Wyoming	State Program	8	8TMS-L	01-29-17

Laboratory: TestAmerica Canton

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

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-14 *
California	State Program	9	2927	04-30-17
Connecticut	State Program	1	PH-0590	12-31-17
Florida	NELAP	4	E87225	06-30-17
Illinois	NELAP	5	200004	07-31-17
Kansas	NELAP	7	E-10336	01-31-17
Kentucky (UST)	State Program	4	58	02-23-17
Kentucky (WW)	State Program	4	98016	12-31-16 *
Minnesota	NELAP	5	039-999-348	12-31-16 *
Minnesota (Petrofund)	State Program	1	3506	07-31-17
Nevada	State Program	9	OH-000482008A	07-31-17
New Jersey	NELAP	2	OH001	06-30-17
New York	NELAP	2	10975	03-31-17
Ohio VAP	State Program	5	CL0024	09-14-17
Oregon	NELAP	10	4062	02-23-17
Pennsylvania	NELAP	3	68-00340	08-31-17
Texas	NELAP	6	T104704517-15-5	08-31-17

* Certification renewal pending - certification considered valid.

Certification Summary

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23156-1

Laboratory: TestAmerica Canton (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
USDA	Federal		P330-13-00319	11-26-16 *
Virginia	NELAP	3	460175	09-14-17
Washington	State Program	10	C971	01-12-17
West Virginia DEP	State Program	3	210	12-31-16 *
Wisconsin	State Program	5	999518190	08-31-17

* Certification renewal pending - certification considered valid.

Laboratory Services Section

Analysis Request Sheet

Lab Work Order Number	Project Name	Matrix
	River Road PFC Contamination	WATER

Site Code/Project Number	AY	CC Email 1	Project TAT Days	Sample Collector
35000154	17	pincumbej		Jeff Pincumbe
Dept-Division-District	**Index**	**CC Email 2**	**Project Due Date**	**Sample Collector Phone**
DEQ-RRD-Saginaw Bay	44031	shireyb		517-335-6418
State Project Manager	**PCA**	**CC Email 3**		**Contract Firm**
Mike Jury	30740			
State Project Manager Email	**Project**	**Overflow Lab Choice 1**	**Accep hold t**	
jurym1	457196	TEST AMERICA		
State Project Manager Phone	**Phase**	**Overflow Lab Choice 2**		
989-894-6255	00			

320-23156 Chain of Custody

	Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1		MW-4 16-21	10-26-16			
2		MW-4 26-31	10-26-16			
3		MW-4 36-41	10-26-16			
4		MW-4 46-51	10-26-16			
5		MW-6 16-21	10-26-16			
6		MW-6 26-31	10-26-16			
7		MW-6 26-31 DUP	10-26-16			
8		MW-6 36-41	10-26-16			
9		MW-6 46-51	10-26-16			
10		MW-3 14-19	10-27-16			

FOR PFC ANALYSIS

ORGANIC CHEMISTRY

	1	2	3	4	5	6	7	8	9	10
VOA - Volatile Organic Acidic										
Volatiles - Full List	1	2	3	4	5	6	7	8	9	10
BTEX/MTBE/TMB only	1	2	3	4	5	6	7	8	9	10
Chlorinated only	1	2	3	4	5	6	7	8	9	10
GRO	1	2	3	4	5	6	7	8	9	10
1,4 Dioxane	1	2	3	4	5	6	7	8	9	10
METH - Methane, Ethane, Ethene										
Methane, Ethane, Ethene	1	2	3	4	5	6	7	8	9	10
ON - Pesticides, PCBs										
Pesticides & PCBs	1	2	3	4	5	6	7	8	9	10
Pesticides only	1	2	3	4	5	6	7	8	9	10
PCBs only	1	2	3	4	5	6	7	8	9	10
Toxaphene	1	2	3	4	5	6	7	8	9	10
Chlordane	1	2	3	4	5	6	7	8	9	10
BNA - Base Neutral Acids										
BNAs	1	2	3	4	5	6	7	8	9	10
Benzidines	1	2	3	4	5	6	7	8	9	10
PNAs only	1	2	3	4	5	6	7	8	9	10
BNs only	1	2	3	4	5	6	7	8	9	10
Acids only	1	2	3	4	5	6	7	8	9	10
Organic Specialty Requests										
Library search - Volatiles	1	2	3	4	5	6	7	8	9	10
Library search - SemiVols	1	2	3	4	5	6	7	8	9	10
Finger Print	1	2	3	4	5	6	7	8	9	10
DRO / ORO	1	2	3	4	5	6	7	8	9	10
METALS CHEMISTRY PACKAGES										
OpMemo2 - Total	1	2	3	4	5	6	7	8	9	10
OpMemo2 - Dissolved	1	2	3	4	5	6	7	8	9	10
(Sb,As,Ba,Be,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Tl,V,Zn)										
Michigan10 - Total	1	2	3	4	5	6	7	8	9	10
Michigan10 - Dissolved	1	2	3	4	5	6	7	8	9	10
(As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)										

MAD - DISSOLVED METALS

	1	2	3	4	5	6	7	8	9	10
Diss - Silver - Ag	1	2	3	4	5	6	7	8	9	10
Diss - Aluminum - Al	1	2	3	4	5	6	7	8	9	10
Diss - Arsenic - As	1	2	3	4	5	6	7	8	9	10
Diss - Boron - B	1	2	3	4	5	6	7	8	9	10
Diss - Barium - Ba	1	2	3	4	5	6	7	8	9	10
Diss - Beryllium - Be	1	2	3	4	5	6	7	8	9	10
Diss - Cadmium - Cd	1	2	3	4	5	6	7	8	9	10
Diss - Cobalt - Co	1	2	3	4	5	6	7	8	9	10
Diss - Chromium - Cr	1	2	3	4	5	6	7	8	9	10
Diss - Copper - Cu	1	2	3	4	5	6	7	8	9	10
Diss - Iron - Fe	1	2	3	4	5	6	7	8	9	10
Diss - Mercury - Hg	1	2	3	4	5	6	7	8	9	10
Diss - Lithium - Li	1	2	3	4	5	6	7	8	9	10
Diss - Manganese - Mn	1	2	3	4	5	6	7	8	9	10
Diss - Molybdenum - Mo	1	2	3	4	5	6	7	8	9	10
Diss - Nickel - Ni	1	2	3	4	5	6	7	8	9	10
Diss - Lead - Pb	1	2	3	4	5	6	7	8	9	10
Diss - Antimony - Sb	1	2	3	4	5	6	7	8	9	10
Diss - Selenium - Se	1	2	3	4	5	6	7	8	9	10
Diss - Strontium - Sr	1	2	3	4	5	6	7	8	9	10
Diss - Titanium - Ti	1	2	3	4	5	6	7	8	9	10
Diss - Thallium - Tl	1	2	3	4	5	6	7	8	9	10
Diss - Uranium - U	1	2	3	4	5	6	7	8	9	10
Diss - Vanadium - V	1	2	3	4	5	6	7	8	9	10
Diss - Zinc - Zn	1	2	3	4	5	6	7	8	9	10
Diss - Calcium - Ca	1	2	3	4	5	6	7	8	9	10
Diss - Potassium - K	1	2	3	4	5	6	7	8	9	10
Diss - Magnesium - Mg	1	2	3	4	5	6	7	8	9	10
Diss - Sodium - Na	1	2	3	4	5	6	7	8	9	10
Diss - Hardness - Ca, Mg	1	2	3	4	5	6	7	8	9	10
MD - Metals Dissolved										
Lab Filtration	1	2	3	4	5	6	7	8	9	10

MA - TOTAL METALS

	1	2	3	4	5	6	7	8	9	10
Silver - Ag	1	2	3	4	5	6	7	8	9	10
Aluminum - Al	1	2	3	4	5	6	7	8	9	10
Arsenic - As	1	2	3	4	5	6	7	8	9	10
Boron - B	1	2	3	4	5	6	7	8	9	10
Barium - Ba	1	2	3	4	5	6	7	8	9	10
Beryllium - Be	1	2	3	4	5	6	7	8	9	10
Cadmium - Cd	1	2	3	4	5	6	7	8	9	10
Cobalt - Co	1	2	3	4	5	6	7	8	9	10
Chromium - Cr	1	2	3	4	5	6	7	8	9	10
Copper - Cu	1	2	3	4	5	6	7	8	9	10
Iron - Fe	1	2	3	4	5	6	7	8	9	10
Mercury - Hg	1	2	3	4	5	6	7	8	9	10
Lithium - Li	1	2	3	4	5	6	7	8	9	10
Manganese - Mn	1	2	3	4	5	6	7	8	9	10
Molybdenum - Mo	1	2	3	4	5	6	7	8	9	10
Nickel - Ni	1	2	3	4	5	6	7	8	9	10
Lead - Pb	1	2	3	4	5	6	7	8	9	10
Antimony - Sb	1	2	3	4	5	6	7	8	9	10
Selenium - Se	1	2	3	4	5	6	7	8	9	10
Strontium - Sr	1	2	3	4	5	6	7	8	9	10
Titanium - Tl	1	2	3	4	5	6	7	8	9	10
Thallium - Tl	1	2	3	4	5	6	7	8	9	10
Uranium - U	1	2	3	4	5	6	7	8	9	10
Vanadium - V	1	2	3	4	5	6	7	8	9	10
Zinc - Zn	1	2	3	4	5	6	7	8	9	10
Calcium - Ca	1	2	3	4	5	6	7	8	9	10
Potassium - K	1	2	3	4	5	6	7	8	9	10
Magnesium - Mg	1	2	3	4	5	6	7	8	9	10
Sodium - Na	1	2	3	4	5	6	7	8	9	10
Hardness - Ca, Mg	1	2	3	4	5	6	7	8	9	10
LHG - Low Level Mercury										
Mercury Low Level - Hg	1	2	3	4	5	6	7	8	9	10

GENERAL CHEMISTRY

		1	2	3	4	5	6	7	8	9	10
GB	Total Cyanide - CN	1	2	3	4	5	6	7	8	9	10
GB	Amenable Cyanide - CN	1	2	3	4	5	6	7	8	9	10
GCN	Available Cyanide - CN	1	2	3	4	5	6	7	8	9	10
CA	Chlorophyll	1	2	3	4	5	6	7	8	9	10
GN	Ortho Phosphate - OP	1	2	3	4	5	6	7	8	9	10
GN	Nitrite - NO_2	1	2	3	4	5	6	7	8	9	10
GN	Nitrate - NO_3 (Calc.)	1	2	3	4	5	6	7	8	9	10
GN	Suspended Solids - SS	1	2	3	4	5	6	7	8	9	10
GN	Dissolved Solids - TDS	1	2	3	4	5	6	7	8	9	10
MN	Diss Solids - TDS (Calc.)	1	2	3	4	5	6	7	8	9	10
GN	Turbidity	1	2	3	4	5	6	7	8	9	10
MN	Total Alkalinity	1	2	3	4	5	6	7	8	9	10
MN	Bicarb/Carb Alkalinity (includes Total Alkalinity)	1	2	3	4	5	6	7	8	9	10
MN	Chloride - Cl	1	2	3	4	5	6	7	8	9	10
MN	Fluoride - F	1	2	3	4	5	6	7	8	9	10
MN	Sulfate - SO4	1	2	3	4	5	6	7	8	9	10
MN	Chromium 6 - Cr+6	1	2	3	4	5	6	7	8	9	10
MN	Conductivity	1	2	3	4	5	6	7	8	9	10
MN	pH	1	2	3	4	5	6	7	8	9	10
GA	Chem Oxyg Dem - COD	1	2	3	4	5	6	7	8	9	10
GA	Diss Org Carbon - DOC (FF) (Field - Filtered & Preserved)	1	2	3	4	5	6	7	8	9	10
GN	Diss Org Carbon - DOC (LF) (Lab - Filtered & Preserved)	1	2	3	4	5	6	7	8	9	10
GA	Total Org Carbon - TOC	1	2	3	4	5	6	7	8	9	10
GA	Ammonia - NH3	1	2	3	4	5	6	7	8	9	10
GA	Nitrate+Nitrite - NO3+NO2	1	2	3	4	5	6	7	8	9	10
GA	Kjeldahl Nitrogen - KN	1	2	3	4	5	6	7	8	9	10
GA	Total Phosphorus - TP	1	2	3	4	5	6	7	8	9	10

Chain of Custody

	Relinquished by	Received By	Date / Time
Print Name & Org.	Jeff Pincumbe - MDEQ	Joshua Puny MDEQ	10/28/16 1149
Signature:			
Print Name & Org.	Joshua Puny MDEQ	Ryan Close TAL	10/31/16 1357
Signature:			
Print Name & Org.	Ryan Close	Wesley Shockley TAMS 11/1/16 0953	10/31/16 15:50
Signature:			

1.7°C

Michigan Department of Environmental Quality
Laboratory Services Section

Analysis Request Sheet

Lab Work Order Number	Project Name	Matrix
	River Road PFC Contamination	WATER

Site Code/Project Number	AY	CC Email 1	Project TAT Days	Sample Collector
35000154	17	pincumbej		Jeff Pincumbe
Dept-Division-District	**Index**	**CC Email 2**	**Project Due Date**	**Sample Collector Phone**
DEQ-RRD-Saginaw Bay	44031	shireyb		517-335-6418
State Project Manager	**PCA**	**CC Email 3**		**Contract Firm**
Mike Jury	30740			
State Project Manager Email	**Project**	**Overflow Lab Choice 1**	**Accept Analysis hold time codes**	**Contract Firm Primary Contact**
jurym1	457196	TEST AMERICA		
State Project Manager Phone	**Phase**	**Overflow Lab Choice 2**		**Primary Contact Phone**
989-894-6255	00			

	Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1		MW-3 24-29	10-27-16			
2		MW-3 34-39	10-27-16			
3		MW-3 44-49	10-27-16			
4		MW-7 ~~44-49~~ 16-21	10-27-16			
5		MW-7 26-31	10-27-16			
6		MW-7 36-41	10-27-16			
7		MW-7 46-51	10-27-16			
8						
9						
10						

FOR PFC ANALYSIS

ORGANIC CHEMISTRY

	1	2	3	4	5	6	7	8	9	10
VOA - Volatile Organic Acidic										
Volatiles - Full List	1	2	3	4	5	6	7	8	9	10
BTEX/MTBE/TMB only	1	2	3	4	5	6	7	8	9	10
Chlorinated only	1	2	3	4	5	6	7	8	9	10
GRO	1	2	3	4	5	6	7	8	9	10
1,4 Dioxane	1	2	3	4	5	6	7	8	9	10
METH - Methane, Ethane, Ethene										
Methane, Ethane, Ethene	1	2	3	4	5	6	7	8	9	10
ON - Pesticides, PCBs										
Pesticides & PCBs	1	2	3	4	5	6	7	8	9	10
Pesticides only	1	2	3	4	5	6	7	8	9	10
PCBs only	1	2	3	4	5	6	7	8	9	10
Toxaphene	1	2	3	4	5	6	7	8	9	10
Chlordane	1	2	3	4	5	6	7	8	9	10
BNA - Base Neutral Acids										
BNAs	1	2	3	4	5	6	7	8	9	10
Benzidines	1	2	3	4	5	6	7	8	9	10
PNAs only	1	2	3	4	5	6	7	8	9	10
BNs only	1	2	3	4	5	6	7	8	9	10
Acids only	1	2	3	4	5	6	7	8	9	10
Organic Specialty Requests										
Library search - Volatiles	1	2	3	4	5	6	7	8	9	10
Library search - SemiVols	1	2	3	4	5	6	7	8	9	10
Finger Print	1	2	3	4	5	6	7	8	9	10
DRO / ORO	1	2	3	4	5	6	7	8	9	10

METALS CHEMISTRY PACKAGES

OpMemo2 - Total	1	2	3	4	5	6	7	8	9	10
OpMemo2 - Dissolved	1	2	3	4	5	6	7	8	9	10
(Sb,As,Ba,Be,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Tl,V,Zn)										
Michigan10 - Total	1	2	3	4	5	6	7	8	9	10
Michigan10 - Dissolved	1	2	3	4	5	6	7	8	9	10
(As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)										

MAD - DISSOLVED METALS

Diss - Silver - Ag	1	2	3	4	5	6	7	8	9	10
Diss - Aluminum - Al	1	2	3	4	5	6	7	8	9	10
Diss - Arsenic - As	1	2	3	4	5	6	7	8	9	10
Diss - Boron - B	1	2	3	4	5	6	7	8	9	10
Diss - Barium - Ba	1	2	3	4	5	6	7	8	9	10
Diss - Beryllium - Be	1	2	3	4	5	6	7	8	9	10
Diss - Cadmium - Cd	1	2	3	4	5	6	7	8	9	10
Diss - Cobalt - Co	1	2	3	4	5	6	7	8	9	10
Diss - Chromium - Cr	1	2	3	4	5	6	7	8	9	10
Diss - Copper - Cu	1	2	3	4	5	6	7	8	9	10
Diss - Iron - Fe	1	2	3	4	5	6	7	8	9	10
Diss - Mercury - Hg	1	2	3	4	5	6	7	8	9	10
Diss - Lithium - Li	1	2	3	4	5	6	7	8	9	10
Diss - Manganese - Mn	1	2	3	4	5	6	7	8	9	10
Diss - Molybdenum - Mo	1	2	3	4	5	6	7	8	9	10
Diss - Nickel - Ni	1	2	3	4	5	6	7	8	9	10
Diss - Lead - Pb	1	2	3	4	5	6	7	8	9	10
Diss - Antimony - Sb	1	2	3	4	5	6	7	8	9	10
Diss - Selenium - Se	1	2	3	4	5	6	7	8	9	10
Diss - Strontium - Sr	1	2	3	4	5	6	7	8	9	10
Diss - Titanium - Ti	1	2	3	4	5	6	7	8	9	10
Diss - Thallium - Tl	1	2	3	4	5	6	7	8	9	10
Diss - Uranium - U	1	2	3	4	5	6	7	8	9	10
Diss - Vanadium - V	1	2	3	4	5	6	7	8	9	10
Diss - Zinc - Zn	1	2	3	4	5	6	7	8	9	10
Diss - Calcium - Ca	1	2	3	4	5	6	7	8	9	10
Diss - Potassium - K	1	2	3	4	5	6	7	8	9	10
Diss - Magnesium - Mg	1	2	3	4	5	6	7	8	9	10
Diss - Sodium - Na	1	2	3	4	5	6	7	8	9	10
Diss - Hardness - Ca, Mg	1	2	3	4	5	6	7	8	9	10
MD - Metals Dissolved										
Lab Filtration	1	2	3	4	5	6	7	8	9	10

MA - TOTAL METALS

Silver - Ag	1	2	3	4	5	6	7	8	9	10
Aluminum - Al	1	2	3	4	5	6	7	8	9	10
Arsenic - As	1	2	3	4	5	6	7	8	9	10
Boron - B	1	2	3	4	5	6	7	8	9	10
Barium - Ba	1	2	3	4	5	6	7	8	9	10
Beryllium - Be	1	2	3	4	5	6	7	8	9	10
Cadmium - Cd	1	2	3	4	5	6	7	8	9	10
Cobalt - Co	1	2	3	4	5	6	7	8	9	10
Chromium - Cr	1	2	3	4	5	6	7	8	9	10
Copper - Cu	1	2	3	4	5	6	7	8	9	10
Iron - Fe	1	2	3	4	5	6	7	8	9	10
Mercury - Hg	1	2	3	4	5	6	7	8	9	10
Lithium - Li	1	2	3	4	5	6	7	8	9	10
Manganese - Mn	1	2	3	4	5	6	7	8	9	10
Molybdenum - Mo	1	2	3	4	5	6	7	8	9	10
Nickel - Ni	1	2	3	4	5	6	7	8	9	10
Lead - Pb	1	2	3	4	5	6	7	8	9	10
Antimony - Sb	1	2	3	4	5	6	7	8	9	10
Selenium - Se	1	2	3	4	5	6	7	8	9	10
Strontium - Sr	1	2	3	4	5	6	7	8	9	10
Titanium - Ti	1	2	3	4	5	6	7	8	9	10
Thallium - Tl	1	2	3	4	5	6	7	8	9	10
Uranium - U	1	2	3	4	5	6	7	8	9	10
Vanadium - V	1	2	3	4	5	6	7	8	9	10
Zinc - Zn	1	2	3	4	5	6	7	8	9	10
Calcium - Ca	1	2	3	4	5	6	7	8	9	10
Potassium - K	1	2	3	4	5	6	7	8	9	10
Magnesium - Mg	1	2	3	4	5	6	7	8	9	10
Sodium - Na	1	2	3	4	5	6	7	8	9	10
Hardness - Ca, Mg	1	2	3	4	5	6	7	8	9	10
LHG - Low Level Mercury										
Mercury Low Level - Hg	1	2	3	4	5	6	7	8	9	10

GENERAL CHEMISTRY

GB Total Cyanide - CN	1	2	3	4	5	6	7	8	9	10
GB Amenable Cyanide - CN	1	2	3	4	5	6	7	8	9	10
GCN Available Cyanide - CN	1	2	3	4	5	6	7	8	9	10
CA Chlorophyll	1	2	3	4	5	6	7	8	9	10
GN Ortho Phosphate - OP	1	2	3	4	5	6	7	8	9	10
GN Nitrite - NO_2	1	2	3	4	5	6	7	8	9	10
GN Nitrate - NO_3 (Calc.)	1	2	3	4	5	6	7	8	9	10
GN Suspended Solids - SS	1	2	3	4	5	6	7	8	9	10
GN Dissolved Solids - TDS	1	2	3	4	5	6	7	8	9	10
MN Diss Solids - TDS (Calc.)	1	2	3	4	5	6	7	8	9	10
GN Turbidity	1	2	3	4	5	6	7	8	9	10
MN Total Alkalinity	1	2	3	4	5	6	7	8	9	10
MN Bicarb/Carb Alkalinity (includes Total Alkalinity)	1	2	3	4	5	6	7	8	9	10
MN Chloride - Cl	1	2	3	4	5	6	7	8	9	10
MN Fluoride - F	1	2	3	4	5	6	7	8	9	10
MN Sulfate - SO4	1	2	3	4	5	6	7	8	9	10
MN Chromium 6 - Cr+6	1	2	3	4	5	6	7	8	9	10
MN Conductivity	1	2	3	4	5	6	7	8	9	10
MN pH	1	2	3	4	5	6	7	8	9	10
GA Chem Oxyg Dem - COD	1	2	3	4	5	6	7	8	9	10
GA Diss Org Carbon - DOC (FF) (Field - Filtered & Preserved)	1	2	3	4	5	6	7	8	9	10
GN Diss Org Carbon - DOC (LF) (Lab - Filtered & Preserved)	1	2	3	4	5	6	7	8	9	10
GA Total Org Carbon - TOC	1	2	3	4	5	6	7	8	9	10
GA Ammonia - NH3	1	2	3	4	5	6	7	8	9	10
GA Nitrate+Nitrite - NO3+NO2	1	2	3	4	5	6	7	8	9	10
GA Kjeldahl Nitrogen - KN	1	2	3	4	5	6	7	8	9	10
GA Total Phosphorus - TP	1	2	3	4	5	6	7	8	9	10

Chain of Custody

	Relinquished by	Received By	Date / Time
Print Name & Org.	Jeff Pincumbe - MDEQ	Joshua Pung MDEQ	10/28/16 1149
Signature:		Joshua R Pung	
Print Name & Org.	Joshua Pung MDEQ	Ryan Clase TAL	10/31/16 1357
Signature:	Joshua R Pung		
Print Name & Org.	Ryan Clase	Wesley Shockley TALS	10/31/16 15:00
Signature:		11/1/16 0845	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Jo

320-23156 Field Sheet

Tracking #: 6209 0767 6465

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations. File in the job folder with the COC.

Notes:

Therm. ID 11 / (12) / AK / Other

Cooler Custody Seal: 796479

Sample Custody Seal: —

Temp: Observed 2.6

Corrected: 1.7

From: Temp Blank ☐ Sample ☒

NCM : Yes ☐ No ☐

	Yes	No	NA
Perchlorate has headspace?	☐	☐	☒
CoC is complete w/o discrepancies?	☒	☐	☐
Samples received within holding time?	☒	☐	☐
Sample preservatives verified?	☐	☐	☒

Initial / Date: WSS 11/11/16

L:\QA\FORMS\QA-812 REV. 1 SAMPLE RECEIVING NOTES.DOC

QA-812 RE 01/22/2016

Michigan Department of Environmental Quality
Laboratory Services Section

Analysis Request Sheet

SAFETY INFORMATION

(MUST BE COMPLETED PRIOR TO SAMPLE SUBMITTAL)

Are samples expected to contain cyanide (CN).....	YES ☐	NO ☐
Are samples expected to be flammable.....	YES ☐	NO ☐
Are samples acidic prior to preservation (pH < 2).....	YES ☐	NO ☐
Are samples caustic prior to preservation (pH > 12).....	YES ☐	NO ☐
Are samples expected to be Biohazardous.....	YES ☐	NO ☐
Are samples expected to be reactive with water or acid.....	YES ☐	NO ☐
Are samples expected to be radioactive.....	YES ☐	NO ☐
Are samples expected to contain dioxin.....	YES ☐	NO ☐
Are samples expected to be explosive.....	YES ☐	NO ☐
Were samples pre-preserved.....	YES ☐	NO ☐

List additional suspected sample hazard information below

Michigan

MDEQ PRESERVATIVE TRACKING N

190

VOA - HCL		CA - MgCO3	
VOA - MeOH		MA/MAD - HNO3	
GA - H2SO4		GCN - NaOH	
GB - NaOH		GCN - PbCO3	

Login Sample Receipt Checklist

Client: Michigan Dept. of Environmental Quality

Job Number: 320-23156-1

Login Number: 23156
List Number: 1
Creator: Hytrek, Cheryl

List Source: TestAmerica Sacramento

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Tel: (916)373-5600

TestAmerica Job ID: 320-23292-1
Client Project/Site: Wurtsmith - 3500058 - River Road PFC

For:
Michigan Dept. of Environmental Quality
Constitution Hall 3rd floor SW
525 W. Allegan Street
Lansing, Michigan 48909

Attn: Bob Delaney

Kris Brooks

Authorized for release by:
11/14/2016 5:04:43 PM

Kris Brooks, Project Manager II
(330)966-9790
kris.brooks@testamericainc.com

Table of Contents

Definitions/Glossary

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23292-1

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 320-23292-1

Laboratory: TestAmerica Sacramento

Narrative

CASE NARRATIVE

Client: Michigan Dept. of Environmental Quality

Project: Wurtsmith - 3500058 - River Road PFC

Report Number: 320-23292-1

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

TestAmerica West Sacramento attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

RECEIPT

The samples were received on 11/4/2016 9:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.2º C.

PERFLUORINATED HYDROCARBONS

Samples MW-5 14-19 (320-23292-1), MW-5 24-29 (320-23292-2), MW-5 24-29 DUP (320-23292-3), MW-5 34-39 (320-23292-4), MW-5 44-49 (320-23292-5), B-3 12-17 (320-23292-6), B-3 22-27 (320-23292-7), B-3 32-37 (320-23292-8) and B-3 42-47 (320-23292-9) were analyzed for Perfluorinated Hydrocarbons in accordance with SOP WS-OC-0025. The samples were prepared on 11/08/2016 and analyzed on 11/09/2016.

Perfluorotetradecanoic acid (PFTeA) was detected in method blank MB 320-136740/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

The Isotope Dilution Analyte (IDA) recoveries for several analytes are above the method recommended limit for the following samples: MW-5 14-19 (320-23292-1), MW-5 24-29 DUP (320-23292-3), MW-5 34-39 (320-23292-4), MW-5 44-49 (320-23292-5), B-3 12-17 (320-23292-6), B-3 42-47 (320-23292-9), (LCS 320-136740/2-A), (LCSD 320-136740/3-A) and (MB 320-136740/1-A). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Job ID: 320-23292-1 (Continued)

Laboratory: TestAmerica Sacramento (Continued)

The Isotope Dilution Analyte (IDA) recovery for 13C8 FOSA in the following samples is below the method recommended limit: MW-5 14-19 (320-23292-1), MW-5 24-29 (320-23292-2), MW-5 24-29 DUP (320-23292-3), MW-5 34-39 (320-23292-4), MW-5 44-49 (320-23292-5), B-3 12-17 (320-23292-6), B-3 22-27 (320-23292-7), B-3 32-37 (320-23292-8) and B-3 42-47 (320-23292-9). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the samples.

Due to the excessive amount of sediment in the sample bottles, the aqueous portion of these samples MW-5 14-19 (320-23292-1), MW-5 24-29 (320-23292-2), MW-5 24-29 DUP (320-23292-3), MW-5 34-39 (320-23292-4), MW-5 44-49 (320-23292-5), B-3 12-17 (320-23292-6), B-3 22-27 (320-23292-7), B-3 32-37 (320-23292-8) and B-3 42-47 (320-23292-9) were decanted to new 250 poly bottles prior to spiking and the extraction.

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

Detection Summary

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23292-1

Client Sample ID: MW-5 14-19 — Lab Sample ID: 320-23292-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	22		1.9	0.44	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	24		1.9	0.72	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonate (PFOS)	100		1.9	1.2	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	28		1.9	0.95	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	20		1.9	0.76	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	6.1		1.9	0.77	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	1.4	J	1.9	0.63	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	2.1		1.9	0.42	ng/L	1		537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	1.1	J	1.9	0.72	ng/L	1		537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	1.6	J	1.9	0.56	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.55	J B	1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	200		1.9	0.89	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	7.0		1.9	0.84	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	1.6	J	1.9	0.69	ng/L	1		537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	39		1.9	1.2	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	89		1.9	0.62	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-5 24-29 — Lab Sample ID: 320-23292-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	36		2.0	0.45	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	24		2.0	0.73	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonate (PFOS)	57		2.0	1.3	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	27		2.0	0.97	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	17		2.0	0.77	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	5.6		2.0	0.79	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	1.3	J	2.0	0.64	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	2.0		2.0	0.43	ng/L	1		537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.60	J	2.0	0.57	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.28	J B	2.0	0.20	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	270		2.0	0.90	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	6.9		2.0	0.85	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.79	J	2.0	0.70	ng/L	1		537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	19		2.0	1.2	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	41		2.0	0.63	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-5 24-29 DUP — Lab Sample ID: 320-23292-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	38		2.0	0.45	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	26		2.0	0.74	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonate (PFOS)	57		2.0	1.3	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	29		2.0	0.98	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	18		2.0	0.78	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	5.6		2.0	0.79	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	1.2	J	2.0	0.65	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	2.0		2.0	0.44	ng/L	1		537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.60	J	2.0	0.58	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.66	J B	2.0	0.20	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

Client Sample ID: MW-5 24-29 DUP (Continued) — Lab Sample ID: 320-23292-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	240		2.0	0.91	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	6.9		2.0	0.86	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.81	J	2.0	0.71	ng/L	1		537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	18		2.0	1.2	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	44		2.0	0.63	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-5 34-39 — Lab Sample ID: 320-23292-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	13		2.0	0.45	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	18		2.0	0.74	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonate (PFOS)	81		2.0	1.3	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	16		2.0	0.98	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	9.5		2.0	0.78	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	3.9		2.0	0.79	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	1.2	J	2.0	0.65	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	2.4		2.0	0.43	ng/L	1		537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	1.2	J	2.0	0.58	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.67	J B	2.0	0.20	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	220		2.0	0.91	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	5.2		2.0	0.86	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	1.1	J	2.0	0.70	ng/L	1		537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	9.3		2.0	1.2	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	61		2.0	0.63	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-5 44-49 — Lab Sample ID: 320-23292-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	1.5	J	1.9	0.44	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	1.6	J	1.9	0.71	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonate (PFOS)	5.9		1.9	1.2	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	1.5	J	1.9	0.94	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	1.3	J	1.9	0.75	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.61	J B	1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	12		1.9	0.87	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	3.4		1.9	0.61	ng/L	1		537 (modified)	Total/NA

Client Sample ID: B-3 12-17 — Lab Sample ID: 320-23292-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctane Sulfonate (PFOS)	1.7	J	2.0	1.3	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.64	J B	2.0	0.20	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	0.85	J	2.0	0.64	ng/L	1		537 (modified)	Total/NA

Client Sample ID: B-3 22-27 — Lab Sample ID: 320-23292-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	0.87	J	2.0	0.74	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonate (PFOS)	1.5	J	2.0	1.3	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: B-3 22-27 (Continued) — Lab Sample ID: 320-23292-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorotetradecanoic acid (PFTeA)	0.69	J B	2.0	0.20	ng/L	1		537 (modified)	Total/NA

Client Sample ID: B-3 32-37 — Lab Sample ID: 320-23292-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.51	J	2.0	0.46	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	4.8		2.0	0.75	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	1.9	J	2.0	0.99	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	4.4		2.0	0.79	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.62	J B	2.0	0.20	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	14		2.0	0.87	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	1.0	J	2.0	0.64	ng/L	1		537 (modified)	Total/NA

Client Sample ID: B-3 42-47 — Lab Sample ID: 320-23292-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorotetradecanoic acid (PFTeA)	0.59	J B	2.0	0.20	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	1.4	J	2.0	0.63	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23292-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Perfluorinated Hydrocarbons	EPA	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

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

Sample Summary

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23292-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-23292-1	MW-5 14-19	Water	10/31/16 00:00	11/04/16 09:50
320-23292-2	MW-5 24-29	Water	10/31/16 00:00	11/04/16 09:50
320-23292-3	MW-5 24-29 DUP	Water	10/31/16 00:00	11/04/16 09:50
320-23292-4	MW-5 34-39	Water	10/31/16 00:00	11/04/16 09:50
320-23292-5	MW-5 44-49	Water	10/31/16 00:00	11/04/16 09:50
320-23292-6	B-3 12-17	Water	11/01/16 00:00	11/04/16 09:50
320-23292-7	B-3 22-27	Water	11/01/16 00:00	11/04/16 09:50
320-23292-8	B-3 32-37	Water	11/01/16 00:00	11/04/16 09:50
320-23292-9	B-3 42-47	Water	11/01/16 00:00	11/04/16 09:50

Client Sample ID: MW-5 14-19
Date Collected: 10/31/16 00:00
Date Received: 11/04/16 09:50

Lab Sample ID: 320-23292-1
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**22**		1.9	0.44	ng/L		11/08/16 15:27	11/09/16 18:50	1
Perfluorooctanoic acid (PFOA)	**24**		1.9	0.72	ng/L		11/08/16 15:27	11/09/16 18:50	1
Perfluorooctane Sulfonate (PFOS)	**100**		1.9	1.2	ng/L		11/08/16 15:27	11/09/16 18:50	1
Perfluoropentanoic acid (PFPeA)	**28**		1.9	0.95	ng/L		11/08/16 15:27	11/09/16 18:50	1
Perfluorohexanoic acid (PFHxA)	**20**		1.9	0.76	ng/L		11/08/16 15:27	11/09/16 18:50	1
Perfluoroheptanoic acid (PFHpA)	**6.1**		1.9	0.77	ng/L		11/08/16 15:27	11/09/16 18:50	1
Perfluorononanoic acid (PFNA)	**1.4**	**J**	1.9	0.63	ng/L		11/08/16 15:27	11/09/16 18:50	1
Perfluorodecanoic acid (PFDA)	**2.1**		1.9	0.42	ng/L		11/08/16 15:27	11/09/16 18:50	1
Perfluoroundecanoic acid (PFUnA)	**1.1**	**J**	1.9	0.72	ng/L		11/08/16 15:27	11/09/16 18:50	1
Perfluorododecanoic acid (PFDoA)	**1.6**	**J**	1.9	0.56	ng/L		11/08/16 15:27	11/09/16 18:50	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.53	ng/L		11/08/16 15:27	11/09/16 18:50	1
Perfluorotetradecanoic acid (PFTeA)	**0.55**	**J B**	1.9	0.19	ng/L		11/08/16 15:27	11/09/16 18:50	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.12	ng/L		11/08/16 15:27	11/09/16 18:50	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		1.9	0.65	ng/L		11/08/16 15:27	11/09/16 18:50	1
Perfluorobutanesulfonic acid (PFBS)	**200**		1.9	0.89	ng/L		11/08/16 15:27	11/09/16 18:50	1
Perfluorohexanesulfonic acid (PFHxS)	**7.0**		1.9	0.84	ng/L		11/08/16 15:27	11/09/16 18:50	1
Perfluoroheptanesulfonic Acid (PFHpS)	**1.6**	**J**	1.9	0.69	ng/L		11/08/16 15:27	11/09/16 18:50	1
Perfluorodecanesulfonic acid (PFDS)	**39**		1.9	1.2	ng/L		11/08/16 15:27	11/09/16 18:50	1
Perfluorooctane Sulfonamide (FOSA)	**89**		1.9	0.62	ng/L		11/08/16 15:27	11/09/16 18:50	1
6:2FTS	ND		19	3.7	ng/L		11/08/16 15:27	11/09/16 18:50	1
8:2FTS	ND		19	3.9	ng/L		11/08/16 15:27	11/09/16 18:50	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*149*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:50*	*1*
13C4 PFOA	*112*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:50*	*1*
13C8 FOSA	*7*	*	*25 - 150*	*11/08/16 15:27*	*11/09/16 18:50*	*1*
13C4 PFBA	*93*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:50*	*1*
13C2 PFHxA	*108*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:50*	*1*
13C5 PFNA	*115*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:50*	*1*
13C2 PFDA	*133*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:50*	*1*
13C2 PFUnA	*138*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:50*	*1*
13C2 PFDoA	*136*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:50*	*1*
18O2 PFHxS	*150*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:50*	*1*
13C4-PFHpA	*107*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:50*	*1*
13C5-PFPeA	*113*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:50*	*1*
M2-6:2FTS	*148*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:50*	*1*
M2-8:2FTS	*207*	*	*25 - 150*	*11/08/16 15:27*	*11/09/16 18:50*	*1*

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23292-1

Client Sample ID: MW-5 24-29
Date Collected: 10/31/16 00:00
Date Received: 11/04/16 09:50

Lab Sample ID: 320-23292-2
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**36**		2.0	0.45	ng/L		11/08/16 15:27	11/09/16 18:58	1
Perfluorooctanoic acid (PFOA)	**24**		2.0	0.73	ng/L		11/08/16 15:27	11/09/16 18:58	1
Perfluorooctane Sulfonate (PFOS)	**57**		2.0	1.3	ng/L		11/08/16 15:27	11/09/16 18:58	1
Perfluoropentanoic acid (PFPeA)	**27**		2.0	0.97	ng/L		11/08/16 15:27	11/09/16 18:58	1
Perfluorohexanoic acid (PFHxA)	**17**		2.0	0.77	ng/L		11/08/16 15:27	11/09/16 18:58	1
Perfluoroheptanoic acid (PFHpA)	**5.6**		2.0	0.79	ng/L		11/08/16 15:27	11/09/16 18:58	1
Perfluorononanoic acid (PFNA)	**1.3**	**J**	2.0	0.64	ng/L		11/08/16 15:27	11/09/16 18:58	1
Perfluorodecanoic acid (PFDA)	**2.0**		2.0	0.43	ng/L		11/08/16 15:27	11/09/16 18:58	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.73	ng/L		11/08/16 15:27	11/09/16 18:58	1
Perfluorododecanoic acid (PFDoA)	**0.60**	**J**	2.0	0.57	ng/L		11/08/16 15:27	11/09/16 18:58	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.54	ng/L		11/08/16 15:27	11/09/16 18:58	1
Perfluorotetradecanoic acid (PFTeA)	**0.28**	**J B**	2.0	0.20	ng/L		11/08/16 15:27	11/09/16 18:58	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.12	ng/L		11/08/16 15:27	11/09/16 18:58	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		2.0	0.66	ng/L		11/08/16 15:27	11/09/16 18:58	1
Perfluorobutanesulfonic acid (PFBS)	**270**		2.0	0.90	ng/L		11/08/16 15:27	11/09/16 18:58	1
Perfluorohexanesulfonic acid (PFHxS)	**6.9**		2.0	0.85	ng/L		11/08/16 15:27	11/09/16 18:58	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.79**	**J**	2.0	0.70	ng/L		11/08/16 15:27	11/09/16 18:58	1
Perfluorodecanesulfonic acid (PFDS)	**19**		2.0	1.2	ng/L		11/08/16 15:27	11/09/16 18:58	1
Perfluorooctane Sulfonamide (FOSA)	**41**		2.0	0.63	ng/L		11/08/16 15:27	11/09/16 18:58	1
6:2FTS	ND		20	3.8	ng/L		11/08/16 15:27	11/09/16 18:58	1
8:2FTS	ND		20	4.0	ng/L		11/08/16 15:27	11/09/16 18:58	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*114*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:58*	*1*
13C4 PFOA	*101*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:58*	*1*
13C8 FOSA	*10*	*	*25 - 150*	*11/08/16 15:27*	*11/09/16 18:58*	*1*
13C4 PFBA	*91*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:58*	*1*
13C2 PFHxA	*101*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:58*	*1*
13C5 PFNA	*106*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:58*	*1*
13C2 PFDA	*110*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:58*	*1*
13C2 PFUnA	*107*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:58*	*1*
13C2 PFDoA	*106*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:58*	*1*
18O2 PFHxS	*112*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:58*	*1*
13C4-PFHpA	*97*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:58*	*1*
13C5-PFPeA	*107*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:58*	*1*
M2-6:2FTS	*104*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:58*	*1*
M2-8:2FTS	*123*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:58*	*1*

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23292-1

Client Sample ID: MW-5 24-29 DUP
Date Collected: 10/31/16 00:00
Date Received: 11/04/16 09:50

Lab Sample ID: 320-23292-3
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**38**		2.0	0.45	ng/L		11/08/16 15:27	11/09/16 19:05	1
Perfluorooctanoic acid (PFOA)	**26**		2.0	0.74	ng/L		11/08/16 15:27	11/09/16 19:05	1
Perfluorooctane Sulfonate (PFOS)	**57**		2.0	1.3	ng/L		11/08/16 15:27	11/09/16 19:05	1
Perfluoropentanoic acid (PFPeA)	**29**		2.0	0.98	ng/L		11/08/16 15:27	11/09/16 19:05	1
Perfluorohexanoic acid (PFHxA)	**18**		2.0	0.78	ng/L		11/08/16 15:27	11/09/16 19:05	1
Perfluoroheptanoic acid (PFHpA)	**5.6**		2.0	0.79	ng/L		11/08/16 15:27	11/09/16 19:05	1
Perfluorononanoic acid (PFNA)	**1.2**	**J**	2.0	0.65	ng/L		11/08/16 15:27	11/09/16 19:05	1
Perfluorodecanoic acid (PFDA)	**2.0**		2.0	0.44	ng/L		11/08/16 15:27	11/09/16 19:05	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.74	ng/L		11/08/16 15:27	11/09/16 19:05	1
Perfluorododecanoic acid (PFDoA)	**0.60**	**J**	2.0	0.58	ng/L		11/08/16 15:27	11/09/16 19:05	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.55	ng/L		11/08/16 15:27	11/09/16 19:05	1
Perfluorotetradecanoic acid (PFTeA)	**0.66**	**J B**	2.0	0.20	ng/L		11/08/16 15:27	11/09/16 19:05	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.12	ng/L		11/08/16 15:27	11/09/16 19:05	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		2.0	0.67	ng/L		11/08/16 15:27	11/09/16 19:05	1
Perfluorobutanesulfonic acid (PFBS)	**240**		2.0	0.91	ng/L		11/08/16 15:27	11/09/16 19:05	1
Perfluorohexanesulfonic acid (PFHxS)	**6.9**		2.0	0.86	ng/L		11/08/16 15:27	11/09/16 19:05	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.81**	**J**	2.0	0.71	ng/L		11/08/16 15:27	11/09/16 19:05	1
Perfluorodecanesulfonic acid (PFDS)	**18**		2.0	1.2	ng/L		11/08/16 15:27	11/09/16 19:05	1
Perfluorooctane Sulfonamide (FOSA)	**44**		2.0	0.63	ng/L		11/08/16 15:27	11/09/16 19:05	1
6:2FTS	ND		20	3.8	ng/L		11/08/16 15:27	11/09/16 19:05	1
8:2FTS	ND		20	4.0	ng/L		11/08/16 15:27	11/09/16 19:05	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*144*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:05*	*1*
13C4 PFOA	*131*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:05*	*1*
13C8 FOSA	*19*	*	*25 - 150*	*11/08/16 15:27*	*11/09/16 19:05*	*1*
13C4 PFBA	*109*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:05*	*1*
13C2 PFHxA	*135*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:05*	*1*
13C5 PFNA	*136*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:05*	*1*
13C2 PFDA	*141*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:05*	*1*
13C2 PFUnA	*145*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:05*	*1*
13C2 PFDoA	*139*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:05*	*1*
18O2 PFHxS	*148*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:05*	*1*
13C4-PFHpA	*129*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:05*	*1*
13C5-PFPeA	*132*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:05*	*1*
M2-6:2FTS	*147*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:05*	*1*
M2-8:2FTS	*166*	*	*25 - 150*	*11/08/16 15:27*	*11/09/16 19:05*	*1*

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23292-1

Client Sample ID: MW-5 34-39
Date Collected: 10/31/16 00:00
Date Received: 11/04/16 09:50

Lab Sample ID: 320-23292-4
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**13**		2.0	0.45	ng/L		11/08/16 15:27	11/09/16 19:43	1
Perfluorooctanoic acid (PFOA)	**18**		2.0	0.74	ng/L		11/08/16 15:27	11/09/16 19:43	1
Perfluorooctane Sulfonate (PFOS)	**81**		2.0	1.3	ng/L		11/08/16 15:27	11/09/16 19:43	1
Perfluoropentanoic acid (PFPeA)	**16**		2.0	0.98	ng/L		11/08/16 15:27	11/09/16 19:43	1
Perfluorohexanoic acid (PFHxA)	**9.5**		2.0	0.78	ng/L		11/08/16 15:27	11/09/16 19:43	1
Perfluoroheptanoic acid (PFHpA)	**3.9**		2.0	0.79	ng/L		11/08/16 15:27	11/09/16 19:43	1
Perfluorononanoic acid (PFNA)	**1.2**	**J**	2.0	0.65	ng/L		11/08/16 15:27	11/09/16 19:43	1
Perfluorodecanoic acid (PFDA)	**2.4**		2.0	0.43	ng/L		11/08/16 15:27	11/09/16 19:43	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.74	ng/L		11/08/16 15:27	11/09/16 19:43	1
Perfluorododecanoic acid (PFDoA)	**1.2**	**J**	2.0	0.58	ng/L		11/08/16 15:27	11/09/16 19:43	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.54	ng/L		11/08/16 15:27	11/09/16 19:43	1
Perfluorotetradecanoic acid (PFTeA)	**0.67**	**J B**	2.0	0.20	ng/L		11/08/16 15:27	11/09/16 19:43	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.12	ng/L		11/08/16 15:27	11/09/16 19:43	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		2.0	0.66	ng/L		11/08/16 15:27	11/09/16 19:43	1
Perfluorobutanesulfonic acid (PFBS)	**220**		2.0	0.91	ng/L		11/08/16 15:27	11/09/16 19:43	1
Perfluorohexanesulfonic acid (PFHxS)	**5.2**		2.0	0.86	ng/L		11/08/16 15:27	11/09/16 19:43	1
Perfluoroheptanesulfonic Acid (PFHpS)	**1.1**	**J**	2.0	0.70	ng/L		11/08/16 15:27	11/09/16 19:43	1
Perfluorodecanesulfonic acid (PFDS)	**9.3**		2.0	1.2	ng/L		11/08/16 15:27	11/09/16 19:43	1
Perfluorooctane Sulfonamide (FOSA)	**61**		2.0	0.63	ng/L		11/08/16 15:27	11/09/16 19:43	1
6:2FTS	ND		20	3.8	ng/L		11/08/16 15:27	11/09/16 19:43	1
8:2FTS	ND		20	4.0	ng/L		11/08/16 15:27	11/09/16 19:43	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*134*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:43*	*1*
13C4 PFOA	*114*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:43*	*1*
13C8 FOSA	*7*	*	*25 - 150*	*11/08/16 15:27*	*11/09/16 19:43*	*1*
13C4 PFBA	*98*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:43*	*1*
13C2 PFHxA	*116*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:43*	*1*
13C5 PFNA	*109*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:43*	*1*
13C2 PFDA	*114*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:43*	*1*
13C2 PFUnA	*116*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:43*	*1*
13C2 PFDoA	*113*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:43*	*1*
18O2 PFHxS	*137*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:43*	*1*
13C4-PFHpA	*110*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:43*	*1*
13C5-PFPeA	*122*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:43*	*1*
M2-6:2FTS	*127*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:43*	*1*
M2-8:2FTS	*145*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:43*	*1*

Client Sample ID: MW-5 44-49
Date Collected: 10/31/16 00:00
Date Received: 11/04/16 09:50

Lab Sample ID: 320-23292-5
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**1.5**	**J**	1.9	0.44	ng/L		11/08/16 15:27	11/09/16 19:50	1
Perfluorooctanoic acid (PFOA)	**1.6**	**J**	1.9	0.71	ng/L		11/08/16 15:27	11/09/16 19:50	1
Perfluorooctane Sulfonate (PFOS)	**5.9**		1.9	1.2	ng/L		11/08/16 15:27	11/09/16 19:50	1
Perfluoropentanoic acid (PFPeA)	**1.5**	**J**	1.9	0.94	ng/L		11/08/16 15:27	11/09/16 19:50	1
Perfluorohexanoic acid (PFHxA)	**1.3**	**J**	1.9	0.75	ng/L		11/08/16 15:27	11/09/16 19:50	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.76	ng/L		11/08/16 15:27	11/09/16 19:50	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.62	ng/L		11/08/16 15:27	11/09/16 19:50	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.42	ng/L		11/08/16 15:27	11/09/16 19:50	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.71	ng/L		11/08/16 15:27	11/09/16 19:50	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.55	ng/L		11/08/16 15:27	11/09/16 19:50	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.52	ng/L		11/08/16 15:27	11/09/16 19:50	1
Perfluorotetradecanoic acid (PFTeA)	**0.61**	**J B**	1.9	0.19	ng/L		11/08/16 15:27	11/09/16 19:50	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.12	ng/L		11/08/16 15:27	11/09/16 19:50	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		1.9	0.64	ng/L		11/08/16 15:27	11/09/16 19:50	1
Perfluorobutanesulfonic acid (PFBS)	**12**		1.9	0.87	ng/L		11/08/16 15:27	11/09/16 19:50	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.83	ng/L		11/08/16 15:27	11/09/16 19:50	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.68	ng/L		11/08/16 15:27	11/09/16 19:50	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	1.1	ng/L		11/08/16 15:27	11/09/16 19:50	1
Perfluorooctane Sulfonamide (FOSA)	**3.4**		1.9	0.61	ng/L		11/08/16 15:27	11/09/16 19:50	1
6:2FTS	ND		19	3.6	ng/L		11/08/16 15:27	11/09/16 19:50	1
8:2FTS	ND		19	3.8	ng/L		11/08/16 15:27	11/09/16 19:50	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*156*	*	*25 - 150*	*11/08/16 15:27*	*11/09/16 19:50*	*1*
13C4 PFOA	*132*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:50*	*1*
13C8 FOSA	*6*	*	*25 - 150*	*11/08/16 15:27*	*11/09/16 19:50*	*1*
13C4 PFBA	*88*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:50*	*1*
13C2 PFHxA	*146*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:50*	*1*
13C5 PFNA	*129*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:50*	*1*
13C2 PFDA	*133*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:50*	*1*
13C2 PFUnA	*130*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:50*	*1*
13C2 PFDoA	*126*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:50*	*1*
18O2 PFHxS	*155*	*	*25 - 150*	*11/08/16 15:27*	*11/09/16 19:50*	*1*
13C4-PFHpA	*127*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:50*	*1*
13C5-PFPeA	*136*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:50*	*1*
M2-6:2FTS	*143*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:50*	*1*
M2-8:2FTS	*165*	*	*25 - 150*	*11/08/16 15:27*	*11/09/16 19:50*	*1*

Client Sample ID: B-3 12-17
Date Collected: 11/01/16 00:00
Date Received: 11/04/16 09:50

Lab Sample ID: 320-23292-6
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0	0.46	ng/L		11/08/16 15:27	11/09/16 19:58	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.75	ng/L		11/08/16 15:27	11/09/16 19:58	1
Perfluorooctane Sulfonate (PFOS)	**1.7**	**J**	2.0	1.3	ng/L		11/08/16 15:27	11/09/16 19:58	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.99	ng/L		11/08/16 15:27	11/09/16 19:58	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.79	ng/L		11/08/16 15:27	11/09/16 19:58	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.80	ng/L		11/08/16 15:27	11/09/16 19:58	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.65	ng/L		11/08/16 15:27	11/09/16 19:58	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.44	ng/L		11/08/16 15:27	11/09/16 19:58	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.75	ng/L		11/08/16 15:27	11/09/16 19:58	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.58	ng/L		11/08/16 15:27	11/09/16 19:58	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.55	ng/L		11/08/16 15:27	11/09/16 19:58	1
Perfluorotetradecanoic acid (PFTeA)	**0.64**	**J B**	2.0	0.20	ng/L		11/08/16 15:27	11/09/16 19:58	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.12	ng/L		11/08/16 15:27	11/09/16 19:58	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		2.0	0.67	ng/L		11/08/16 15:27	11/09/16 19:58	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.92	ng/L		11/08/16 15:27	11/09/16 19:58	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.87	ng/L		11/08/16 15:27	11/09/16 19:58	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.71	ng/L		11/08/16 15:27	11/09/16 19:58	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	1.2	ng/L		11/08/16 15:27	11/09/16 19:58	1
Perfluorooctane Sulfonamide (FOSA)	**0.85**	**J**	2.0	0.64	ng/L		11/08/16 15:27	11/09/16 19:58	1
6:2FTS	ND		20	3.8	ng/L		11/08/16 15:27	11/09/16 19:58	1
8:2FTS	ND		20	4.0	ng/L		11/08/16 15:27	11/09/16 19:58	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*151*	*	*25 - 150*	*11/08/16 15:27*	*11/09/16 19:58*	*1*
13C4 PFOA	*133*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:58*	*1*
13C8 FOSA	*9*	*	*25 - 150*	*11/08/16 15:27*	*11/09/16 19:58*	*1*
13C4 PFBA	*62*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:58*	*1*
13C2 PFHxA	*104*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:58*	*1*
13C5 PFNA	*126*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:58*	*1*
13C2 PFDA	*124*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:58*	*1*
13C2 PFUnA	*125*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:58*	*1*
13C2 PFDoA	*129*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:58*	*1*
18O2 PFHxS	*147*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:58*	*1*
13C4-PFHpA	*131*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:58*	*1*
13C5-PFPeA	*121*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:58*	*1*
M2-6:2FTS	*143*		*25 - 150*	*11/08/16 15:27*	*11/09/16 19:58*	*1*
M2-8:2FTS	*173*	*	*25 - 150*	*11/08/16 15:27*	*11/09/16 19:58*	*1*

Client Sample ID: B-3 22-27
Date Collected: 11/01/16 00:00
Date Received: 11/04/16 09:50

Lab Sample ID: 320-23292-7
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0	0.46	ng/L		11/08/16 15:27	11/09/16 20:05	1
Perfluorooctanoic acid (PFOA)	**0.87**	**J**	2.0	0.74	ng/L		11/08/16 15:27	11/09/16 20:05	1
Perfluorooctane Sulfonate (PFOS)	**1.5**	**J**	2.0	1.3	ng/L		11/08/16 15:27	11/09/16 20:05	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.98	ng/L		11/08/16 15:27	11/09/16 20:05	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.78	ng/L		11/08/16 15:27	11/09/16 20:05	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.80	ng/L		11/08/16 15:27	11/09/16 20:05	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.65	ng/L		11/08/16 15:27	11/09/16 20:05	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.44	ng/L		11/08/16 15:27	11/09/16 20:05	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.74	ng/L		11/08/16 15:27	11/09/16 20:05	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.58	ng/L		11/08/16 15:27	11/09/16 20:05	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.55	ng/L		11/08/16 15:27	11/09/16 20:05	1
Perfluorotetradecanoic acid (PFTeA)	**0.69**	**J B**	2.0	0.20	ng/L		11/08/16 15:27	11/09/16 20:05	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.12	ng/L		11/08/16 15:27	11/09/16 20:05	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		2.0	0.67	ng/L		11/08/16 15:27	11/09/16 20:05	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.91	ng/L		11/08/16 15:27	11/09/16 20:05	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.87	ng/L		11/08/16 15:27	11/09/16 20:05	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.71	ng/L		11/08/16 15:27	11/09/16 20:05	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	1.2	ng/L		11/08/16 15:27	11/09/16 20:05	1
Perfluorooctane Sulfonamide (FOSA)	ND		2.0	0.63	ng/L		11/08/16 15:27	11/09/16 20:05	1
6:2FTS	ND		20	3.8	ng/L		11/08/16 15:27	11/09/16 20:05	1
8:2FTS	ND		20	4.0	ng/L		11/08/16 15:27	11/09/16 20:05	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*128*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:05*	*1*
13C4 PFOA	*111*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:05*	*1*
13C8 FOSA	*12*	*	*25 - 150*	*11/08/16 15:27*	*11/09/16 20:05*	*1*
13C4 PFBA	*89*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:05*	*1*
13C2 PFHxA	*118*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:05*	*1*
13C5 PFNA	*116*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:05*	*1*
13C2 PFDA	*114*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:05*	*1*
13C2 PFUnA	*118*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:05*	*1*
13C2 PFDoA	*111*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:05*	*1*
18O2 PFHxS	*125*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:05*	*1*
13C4-PFHpA	*109*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:05*	*1*
13C5-PFPeA	*119*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:05*	*1*
M2-6:2FTS	*113*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:05*	*1*
M2-8:2FTS	*138*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:05*	*1*

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23292-1

Client Sample ID: B-3 32-37
Date Collected: 11/01/16 00:00
Date Received: 11/04/16 09:50

Lab Sample ID: 320-23292-8
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.51**	**J**	2.0	0.46	ng/L		11/08/16 15:27	11/09/16 20:13	1
Perfluorooctanoic acid (PFOA)	**4.8**		2.0	0.75	ng/L		11/08/16 15:27	11/09/16 20:13	1
Perfluorooctane Sulfonate (PFOS)	ND		2.0	1.3	ng/L		11/08/16 15:27	11/09/16 20:13	1
Perfluoropentanoic acid (PFPeA)	**1.9**	**J**	2.0	0.99	ng/L		11/08/16 15:27	11/09/16 20:13	1
Perfluorohexanoic acid (PFHxA)	**4.4**		2.0	0.79	ng/L		11/08/16 15:27	11/09/16 20:13	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.81	ng/L		11/08/16 15:27	11/09/16 20:13	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.66	ng/L		11/08/16 15:27	11/09/16 20:13	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.44	ng/L		11/08/16 15:27	11/09/16 20:13	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.75	ng/L		11/08/16 15:27	11/09/16 20:13	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.59	ng/L		11/08/16 15:27	11/09/16 20:13	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.55	ng/L		11/08/16 15:27	11/09/16 20:13	1
Perfluorotetradecanoic acid (PFTeA)	**0.62**	**J B**	2.0	0.20	ng/L		11/08/16 15:27	11/09/16 20:13	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.12	ng/L		11/08/16 15:27	11/09/16 20:13	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		2.0	0.68	ng/L		11/08/16 15:27	11/09/16 20:13	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.92	ng/L		11/08/16 15:27	11/09/16 20:13	1
Perfluorohexanesulfonic acid (PFHxS)	**14**		2.0	0.87	ng/L		11/08/16 15:27	11/09/16 20:13	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.72	ng/L		11/08/16 15:27	11/09/16 20:13	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	1.2	ng/L		11/08/16 15:27	11/09/16 20:13	1
Perfluorooctane Sulfonamide (FOSA)	**1.0**	**J**	2.0	0.64	ng/L		11/08/16 15:27	11/09/16 20:13	1
6:2FTS	ND		20	3.8	ng/L		11/08/16 15:27	11/09/16 20:13	1
8:2FTS	ND		20	4.1	ng/L		11/08/16 15:27	11/09/16 20:13	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*114*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:13*	*1*
13C4 PFOA	*102*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:13*	*1*
13C8 FOSA	*5*	*	*25 - 150*	*11/08/16 15:27*	*11/09/16 20:13*	*1*
13C4 PFBA	*81*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:13*	*1*
13C2 PFHxA	*109*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:13*	*1*
13C5 PFNA	*103*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:13*	*1*
13C2 PFDA	*105*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:13*	*1*
13C2 PFUnA	*103*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:13*	*1*
13C2 PFDoA	*100*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:13*	*1*
18O2 PFHxS	*113*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:13*	*1*
13C4-PFHpA	*97*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:13*	*1*
13C5-PFPeA	*112*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:13*	*1*
M2-6:2FTS	*97*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:13*	*1*
M2-8:2FTS	*115*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:13*	*1*

Client Sample ID: B-3 42-47

Date Collected: 11/01/16 00:00
Date Received: 11/04/16 09:50

Lab Sample ID: 320-23292-9

Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0	0.45	ng/L		11/08/16 15:27	11/09/16 20:20	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.74	ng/L		11/08/16 15:27	11/09/16 20:20	1
Perfluorooctane Sulfonate (PFOS)	ND		2.0	1.3	ng/L		11/08/16 15:27	11/09/16 20:20	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.97	ng/L		11/08/16 15:27	11/09/16 20:20	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.77	ng/L		11/08/16 15:27	11/09/16 20:20	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.79	ng/L		11/08/16 15:27	11/09/16 20:20	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.64	ng/L		11/08/16 15:27	11/09/16 20:20	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.43	ng/L		11/08/16 15:27	11/09/16 20:20	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.74	ng/L		11/08/16 15:27	11/09/16 20:20	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.57	ng/L		11/08/16 15:27	11/09/16 20:20	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.54	ng/L		11/08/16 15:27	11/09/16 20:20	1
Perfluorotetradecanoic acid (PFTeA)	**0.59**	**J B**	2.0	0.20	ng/L		11/08/16 15:27	11/09/16 20:20	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.12	ng/L		11/08/16 15:27	11/09/16 20:20	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		2.0	0.66	ng/L		11/08/16 15:27	11/09/16 20:20	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.90	ng/L		11/08/16 15:27	11/09/16 20:20	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.86	ng/L		11/08/16 15:27	11/09/16 20:20	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.70	ng/L		11/08/16 15:27	11/09/16 20:20	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	1.2	ng/L		11/08/16 15:27	11/09/16 20:20	1
Perfluorooctane Sulfonamide (FOSA)	**1.4**	**J**	2.0	0.63	ng/L		11/08/16 15:27	11/09/16 20:20	1
6:2FTS	ND		20	3.8	ng/L		11/08/16 15:27	11/09/16 20:20	1
8:2FTS	ND		20	4.0	ng/L		11/08/16 15:27	11/09/16 20:20	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*157*	*	*25 - 150*	*11/08/16 15:27*	*11/09/16 20:20*	*1*
13C4 PFOA	*148*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:20*	*1*
13C8 FOSA	*12*	*	*25 - 150*	*11/08/16 15:27*	*11/09/16 20:20*	*1*
13C4 PFBA	*97*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:20*	*1*
13C2 PFHxA	*153*	*	*25 - 150*	*11/08/16 15:27*	*11/09/16 20:20*	*1*
13C5 PFNA	*150*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:20*	*1*
13C2 PFDA	*149*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:20*	*1*
13C2 PFUnA	*147*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:20*	*1*
13C2 PFDoA	*137*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:20*	*1*
18O2 PFHxS	*155*	*	*25 - 150*	*11/08/16 15:27*	*11/09/16 20:20*	*1*
13C4-PFHpA	*144*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:20*	*1*
13C5-PFPeA	*145*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:20*	*1*
M2-6:2FTS	*149*		*25 - 150*	*11/08/16 15:27*	*11/09/16 20:20*	*1*
M2-8:2FTS	*169*	*	*25 - 150*	*11/08/16 15:27*	*11/09/16 20:20*	*1*

Isotope Dilution Summary

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23292-1

Method: 537 (modified) - Perfluorinated Hydrocarbons

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	3C4 PFOS (25-150)	3C4 PFOA (25-150)	3C8 FOSA (25-150)	3C4 PFBA (25-150)	3C2 PFHx (25-150)	3C5 PFNA (25-150)	3C2 PFDA (25-150)	3C2 PFUn (25-150)
320-23292-1	MW-5 14-19	149	112	7 *	93	108	115	133	138
320-23292-2	MW-5 24-29	114	101	10 *	91	101	106	110	107
320-23292-3	MW-5 24-29 DUP	144	131	19 *	109	135	136	141	145
320-23292-4	MW-5 34-39	134	114	7 *	98	116	109	114	116
320-23292-5	MW-5 44-49	156 *	132	6 *	88	146	129	133	130
320-23292-6	B-3 12-17	151 *	133	9 *	62	104	126	124	125
320-23292-7	B-3 22-27	128	111	12 *	89	118	116	114	118
320-23292-8	B-3 32-37	114	102	5 *	81	109	103	105	103
320-23292-9	B-3 42-47	157 *	148	12 *	97	153 *	150	149	147
LCS 320-136740/2-A	Lab Control Sample	150	151 *	71	150	148	155 *	153 *	146
LCSD 320-136740/3-A	Lab Control Sample Dup	152 *	153 *	65	154 *	145	156 *	155 *	148
MB 320-136740/1-A	Method Blank	140	145	46	141	130	146	146	141

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	3C2 PFDoA (25-150)	18O2 PFHxS (25-150)	13C4-PFHpA (25-150)	13C5-PFPeA (25-150)	M2-6:2FTS (25-150)	M2-8:2FTS (25-150)		
320-23292-1	MW-5 14-19	136	150	107	113	148	207 *		
320-23292-2	MW-5 24-29	106	112	97	107	104	123		
320-23292-3	MW-5 24-29 DUP	139	148	129	132	147	166 *		
320-23292-4	MW-5 34-39	113	137	110	122	127	145		
320-23292-5	MW-5 44-49	126	155 *	127	136	143	165 *		
320-23292-6	B-3 12-17	129	147	131	121	143	173 *		
320-23292-7	B-3 22-27	111	125	109	119	113	138		
320-23292-8	B-3 32-37	100	113	97	112	97	115		
320-23292-9	B-3 42-47	137	155 *	144	145	149	169 *		
LCS 320-136740/2-A	Lab Control Sample	145	148	142	149	143	165 *		
LCSD 320-136740/3-A	Lab Control Sample Dup	141	154 *	146	151 *	130	156 *		
MB 320-136740/1-A	Method Blank	131	139	136	135	141	164 *		

Surrogate Legend

13C4 PFOS = 13C4 PFOS
13C4 PFOA = 13C4 PFOA
13C8 FOSA = 13C8 FOSA
13C4 PFBA = 13C4 PFBA
13C2 PFHxA = 13C2 PFHxA
13C5 PFNA = 13C5 PFNA
13C2 PFDA = 13C2 PFDA
13C2 PFUnA = 13C2 PFUnA
13C2 PFDoA = 13C2 PFDoA
18O2 PFHxS = 18O2 PFHxS
13C4-PFHpA = 13C4-PFHpA
13C5-PFPeA = 13C5-PFPeA
M2-6:2FTS = M2-6:2FTS
M2-8:2FTS = M2-8:2FTS

Method: 537 (modified) - Perfluorinated Hydrocarbons

Lab Sample ID: MB 320-136740/1-A
Matrix: Water
Analysis Batch: 137073

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 136740

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0	0.46	ng/L		11/08/16 15:27	11/09/16 18:13	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.75	ng/L		11/08/16 15:27	11/09/16 18:13	1
Perfluorooctane Sulfonate (PFOS)	ND		2.0	1.3	ng/L		11/08/16 15:27	11/09/16 18:13	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.99	ng/L		11/08/16 15:27	11/09/16 18:13	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.79	ng/L		11/08/16 15:27	11/09/16 18:13	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.80	ng/L		11/08/16 15:27	11/09/16 18:13	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.65	ng/L		11/08/16 15:27	11/09/16 18:13	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.44	ng/L		11/08/16 15:27	11/09/16 18:13	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.75	ng/L		11/08/16 15:27	11/09/16 18:13	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.58	ng/L		11/08/16 15:27	11/09/16 18:13	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.55	ng/L		11/08/16 15:27	11/09/16 18:13	1
Perfluorotetradecanoic acid (PFTeA)	0.605	J	2.0	0.20	ng/L		11/08/16 15:27	11/09/16 18:13	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.12	ng/L		11/08/16 15:27	11/09/16 18:13	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		2.0	0.67	ng/L		11/08/16 15:27	11/09/16 18:13	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.92	ng/L		11/08/16 15:27	11/09/16 18:13	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.87	ng/L		11/08/16 15:27	11/09/16 18:13	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.71	ng/L		11/08/16 15:27	11/09/16 18:13	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	1.2	ng/L		11/08/16 15:27	11/09/16 18:13	1
Perfluorooctane Sulfonamide (FOSA)	ND		2.0	0.64	ng/L		11/08/16 15:27	11/09/16 18:13	1
6:2FTS	ND		20	3.8	ng/L		11/08/16 15:27	11/09/16 18:13	1
8:2FTS	ND		20	4.0	ng/L		11/08/16 15:27	11/09/16 18:13	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*140*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:13*	*1*
13C4 PFOA	*145*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:13*	*1*
13C8 FOSA	*46*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:13*	*1*
13C4 PFBA	*141*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:13*	*1*
13C2 PFHxA	*130*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:13*	*1*
13C5 PFNA	*146*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:13*	*1*
13C2 PFDA	*146*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:13*	*1*
13C2 PFUnA	*141*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:13*	*1*
13C2 PFDoA	*131*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:13*	*1*
18O2 PFHxS	*139*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:13*	*1*
13C4-PFHpA	*136*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:13*	*1*
13C5-PFPeA	*135*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:13*	*1*
M2-6:2FTS	*141*		*25 - 150*	*11/08/16 15:27*	*11/09/16 18:13*	*1*
M2-8:2FTS	*164*	*	*25 - 150*	*11/08/16 15:27*	*11/09/16 18:13*	*1*

Lab Sample ID: LCS 320-136740/2-A
Matrix: Water
Analysis Batch: 137073

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 136740

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	40.4		ng/L		101	74 - 138
Perfluorooctanoic acid (PFOA)	40.0	37.7		ng/L		94	63 - 141

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Lab Sample ID: LCS 320-136740/2-A
Matrix: Water
Analysis Batch: 137073

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 136740

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctane Sulfonate (PFOS)	37.1	36.1		ng/L		97	47 - 162
Perfluoropentanoic acid (PFPeA)	40.0	37.3		ng/L		93	69 - 134
Perfluorohexanoic acid (PFHxA)	40.0	38.5		ng/L		96	70 - 136
Perfluoroheptanoic acid (PFHpA)	40.0	40.0		ng/L		100	63 - 135
Perfluorononanoic acid (PFNA)	40.0	40.5		ng/L		101	71 - 140
Perfluorodecanoic acid (PFDA)	40.0	39.6		ng/L		99	66 - 141
Perfluoroundecanoic acid (PFUnA)	40.0	36.3		ng/L		91	68 - 139
Perfluorododecanoic acid (PFDoA)	40.0	36.9		ng/L		92	71 - 139
Perfluorotridecanoic Acid (PFTriA)	40.0	37.8		ng/L		94	51 - 139
Perfluorotetradecanoic acid (PFTeA)	40.0	34.5		ng/L		86	47 - 130
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	36.8		ng/L		92	50 - 150
Perfluoro-n-octadecanoic acid (PFODA)	40.0	46.1		ng/L		115	50 - 150
Perfluorobutanesulfonic acid (PFBS)	35.4	36.0		ng/L		102	55 - 147
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.0		ng/L		93	58 - 138
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.3		ng/L		106	32 - 170
Perfluorodecanesulfonic acid (PFDS)	38.6	35.6		ng/L		92	35 - 157
Perfluorooctane Sulfonamide (FOSA)	40.0	41.8		ng/L		104	59 - 163
6:2FTS	37.9	41.0		ng/L		108	60 - 140
8:2FTS	38.3	42.7		ng/L		111	60 - 140

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFOS	*150*		*25 - 150*
13C4 PFOA	*151*	*	*25 - 150*
13C8 FOSA	*71*		*25 - 150*
13C4 PFBA	*150*		*25 - 150*
13C2 PFHxA	*148*		*25 - 150*
13C5 PFNA	*155*	*	*25 - 150*
13C2 PFDA	*153*	*	*25 - 150*
13C2 PFUnA	*146*		*25 - 150*
13C2 PFDoA	*145*		*25 - 150*
18O2 PFHxS	*148*		*25 - 150*
13C4-PFHpA	*142*		*25 - 150*
13C5-PFPeA	*149*		*25 - 150*
M2-6:2FTS	*143*		*25 - 150*
M2-8:2FTS	*165*	*	*25 - 150*

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Lab Sample ID: LCSD 320-136740/3-A
Matrix: Water
Analysis Batch: 137073

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 136740

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	40.0	39.6		ng/L		99	74 - 138	2	30
Perfluorooctanoic acid (PFOA)	40.0	36.9		ng/L		92	63 - 141	2	30
Perfluorooctane Sulfonate (PFOS)	37.1	34.0		ng/L		92	47 - 162	6	30
Perfluoropentanoic acid (PFPeA)	40.0	35.5		ng/L		89	69 - 134	5	30
Perfluorohexanoic acid (PFHxA)	40.0	39.2		ng/L		98	70 - 136	2	30
Perfluoroheptanoic acid (PFHpA)	40.0	38.5		ng/L		96	63 - 135	4	30
Perfluorononanoic acid (PFNA)	40.0	38.0		ng/L		95	71 - 140	6	30
Perfluorodecanoic acid (PFDA)	40.0	37.9		ng/L		95	66 - 141	4	30
Perfluoroundecanoic acid (PFUnA)	40.0	35.1		ng/L		88	68 - 139	3	30
Perfluorododecanoic acid (PFDoA)	40.0	37.6		ng/L		94	71 - 139	2	30
Perfluorotridecanoic Acid (PFTriA)	40.0	37.6		ng/L		94	51 - 139	1	30
Perfluorotetradecanoic acid (PFTeA)	40.0	36.1		ng/L		90	47 - 130	4	30
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	38.8		ng/L		97	50 - 150	5	30
Perfluoro-n-octadecanoic acid (PFODA)	40.0	48.8		ng/L		122	50 - 150	6	30
Perfluorobutanesulfonic acid (PFBS)	35.4	34.5		ng/L		97	55 - 147	4	30
Perfluorohexanesulfonic acid (PFHxS)	36.4	33.1		ng/L		91	58 - 138	3	30
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	38.6		ng/L		101	32 - 170	4	30
Perfluorodecanesulfonic acid (PFDS)	38.6	34.8		ng/L		90	35 - 157	2	30
Perfluorooctane Sulfonamide (FOSA)	40.0	41.1		ng/L		103	59 - 163	2	30
6:2FTS	37.9	45.5		ng/L		120	60 - 140	10	30
8:2FTS	38.3	50.9		ng/L		133	60 - 140	18	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFOS	*152*	*	*25 - 150*
13C4 PFOA	*153*	*	*25 - 150*
13C8 FOSA	*65*		*25 - 150*
13C4 PFBA	*154*	*	*25 - 150*
13C2 PFHxA	*145*		*25 - 150*
13C5 PFNA	*156*	*	*25 - 150*
13C2 PFDA	*155*	*	*25 - 150*
13C2 PFUnA	*148*		*25 - 150*
13C2 PFDoA	*141*		*25 - 150*
18O2 PFHxS	*154*	*	*25 - 150*
13C4-PFHpA	*146*		*25 - 150*
13C5-PFPeA	*151*	*	*25 - 150*
M2-6:2FTS	*130*		*25 - 150*
M2-8:2FTS	*156*	*	*25 - 150*

QC Association Summary

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23292-1

LCMS

Prep Batch: 136740

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-23292-1	MW-5 14-19	Total/NA	Water	3535	
320-23292-2	MW-5 24-29	Total/NA	Water	3535	
320-23292-3	MW-5 24-29 DUP	Total/NA	Water	3535	
320-23292-4	MW-5 34-39	Total/NA	Water	3535	
320-23292-5	MW-5 44-49	Total/NA	Water	3535	
320-23292-6	B-3 12-17	Total/NA	Water	3535	
320-23292-7	B-3 22-27	Total/NA	Water	3535	
320-23292-8	B-3 32-37	Total/NA	Water	3535	
320-23292-9	B-3 42-47	Total/NA	Water	3535	
MB 320-136740/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-136740/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-136740/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 137073

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-23292-1	MW-5 14-19	Total/NA	Water	537 (modified)	136740
320-23292-2	MW-5 24-29	Total/NA	Water	537 (modified)	136740
320-23292-3	MW-5 24-29 DUP	Total/NA	Water	537 (modified)	136740
320-23292-4	MW-5 34-39	Total/NA	Water	537 (modified)	136740
320-23292-5	MW-5 44-49	Total/NA	Water	537 (modified)	136740
320-23292-6	B-3 12-17	Total/NA	Water	537 (modified)	136740
320-23292-7	B-3 22-27	Total/NA	Water	537 (modified)	136740
320-23292-8	B-3 32-37	Total/NA	Water	537 (modified)	136740
320-23292-9	B-3 42-47	Total/NA	Water	537 (modified)	136740
MB 320-136740/1-A	Method Blank	Total/NA	Water	537 (modified)	136740
LCS 320-136740/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	136740
LCSD 320-136740/3-A	Lab Control Sample Dup	Total/NA	Water	537 (modified)	136740

Lab Chronicle

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23292-1

Client Sample ID: MW-5 14-19

Date Collected: 10/31/16 00:00
Date Received: 11/04/16 09:50

Lab Sample ID: 320-23292-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			259 mL	0.5 mL	136740	11/08/16 15:27	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			137073	11/09/16 18:50	SBC	TAL SAC

Client Sample ID: MW-5 24-29

Date Collected: 10/31/16 00:00
Date Received: 11/04/16 09:50

Lab Sample ID: 320-23292-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			254.5 mL	0.5 mL	136740	11/08/16 15:27	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			137073	11/09/16 18:58	SBC	TAL SAC

Client Sample ID: MW-5 24-29 DUP

Date Collected: 10/31/16 00:00
Date Received: 11/04/16 09:50

Lab Sample ID: 320-23292-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			252.4 mL	0.5 mL	136740	11/08/16 15:27	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			137073	11/09/16 19:05	SBC	TAL SAC

Client Sample ID: MW-5 34-39

Date Collected: 10/31/16 00:00
Date Received: 11/04/16 09:50

Lab Sample ID: 320-23292-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			253.2 mL	0.5 mL	136740	11/08/16 15:27	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			137073	11/09/16 19:43	SBC	TAL SAC

Client Sample ID: MW-5 44-49

Date Collected: 10/31/16 00:00
Date Received: 11/04/16 09:50

Lab Sample ID: 320-23292-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			263.1 mL	0.5 mL	136740	11/08/16 15:27	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			137073	11/09/16 19:50	SBC	TAL SAC

Client Sample ID: B-3 12-17

Date Collected: 11/01/16 00:00
Date Received: 11/04/16 09:50

Lab Sample ID: 320-23292-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			249.9 mL	0.5 mL	136740	11/08/16 15:27	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			137073	11/09/16 19:58	SBC	TAL SAC

Lab Chronicle

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23292-1

Client Sample ID: B-3 22-27

Date Collected: 11/01/16 00:00
Date Received: 11/04/16 09:50

Lab Sample ID: 320-23292-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			251.3 mL	0.5 mL	136740	11/08/16 15:27	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			137073	11/09/16 20:05	SBC	TAL SAC

Client Sample ID: B-3 32-37

Date Collected: 11/01/16 00:00
Date Received: 11/04/16 09:50

Lab Sample ID: 320-23292-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			248.6 mL	0.5 mL	136740	11/08/16 15:27	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			137073	11/09/16 20:13	SBC	TAL SAC

Client Sample ID: B-3 42-47

Date Collected: 11/01/16 00:00
Date Received: 11/04/16 09:50

Lab Sample ID: 320-23292-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			254.2 mL	0.5 mL	136740	11/08/16 15:27	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			137073	11/09/16 20:20	SBC	TAL SAC

Laboratory References:

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

Certification Summary

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23292-1

Laboratory: TestAmerica Sacramento

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

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-17
Alaska (UST)	State Program	10	UST-055	12-18-16
Arizona	State Program	9	AZ0708	08-11-17
Arkansas DEQ	State Program	6	88-0691	06-17-17
California	State Program	9	2897	01-31-18
Colorado	State Program	8	CA00044	08-31-17
Connecticut	State Program	1	PH-0691	06-30-17
Florida	NELAP	4	E87570	06-30-17
Hawaii	State Program	9	N/A	01-31-17
Illinois	NELAP	5	200060	03-17-17
Kansas	NELAP	7	E-10375	10-31-16 *
Louisiana	NELAP	6	30612	06-30-17
Maine	State Program	1	CA0004	04-18-18
Michigan	State Program	5	9947	01-31-18
Nevada	State Program	9	CA00044	07-31-17
New Jersey	NELAP	2	CA005	06-30-17
New York	NELAP	2	11666	04-01-17
Oregon	NELAP	10	4040	01-29-17
Pennsylvania	NELAP	3	68-01272	03-31-17
Texas	NELAP	6	T104704399	07-31-17
US Fish & Wildlife	Federal		LE148388-0	10-31-17
USDA	Federal		P330-11-00436	12-30-17
USEPA UCMR	Federal	1	CA00044	11-06-18
Utah	NELAP	8	CA00044	02-28-17
Virginia	NELAP	3	460278	03-14-17
Washington	State Program	10	C581	05-05-17
West Virginia (DW)	State Program	3	9930C	12-31-16
Wyoming	State Program	8	8TMS-L	01-29-17

Laboratory: TestAmerica Canton

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

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-14 *
California	State Program	9	2927	04-30-17
Connecticut	State Program	1	PH-0590	12-31-17
Florida	NELAP	4	E87225	06-30-17
Illinois	NELAP	5	200004	07-31-17
Kansas	NELAP	7	E-10336	01-31-17
Kentucky (UST)	State Program	4	58	02-23-17
Kentucky (WW)	State Program	4	98016	12-31-16 *
Minnesota	NELAP	5	039-999-348	12-31-16 *
Minnesota (Petrofund)	State Program	1	3506	07-31-17
Nevada	State Program	9	OH-000482008A	07-31-17
New Jersey	NELAP	2	OH001	06-30-17
New York	NELAP	2	10975	03-31-17
Ohio VAP	State Program	5	CL0024	09-14-17
Oregon	NELAP	10	4062	02-23-17
Pennsylvania	NELAP	3	68-00340	08-31-17
Texas	NELAP	6	T104704517-15-5	08-31-17

* Certification renewal pending - certification considered valid.

Certification Summary

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23292-1

Laboratory: TestAmerica Canton (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
USDA	Federal		P330-13-00319	11-26-16 *
Virginia	NELAP	3	460175	09-14-17
Washington	State Program	10	C971	01-12-17
West Virginia DEP	State Program	3	210	12-31-16 *
Wisconsin	State Program	5	999518190	08-31-17

* Certification renewal pending - certification considered valid.

Michigan Department of Environmental Quality
Laboratory Services Section

Analysis Request Sheet

Lab Work Order Number	Project Name	Matrix
	River Road PFC Contamination	WATER

Site Code/Project Number	AY	CC Email 1		Sample Collector
35000154	17	pincumbej		Jeff Pincumbe
Dept-Division-District	**Index**	**CC Email 2**		**Sample Collector Phone**
DEQ-RRD-Saginaw Bay	44031	shireyb		517-335-6418
State Project Manager	**PCA**	**CC Email 3**	320-23292 Chain of Custody	**Contract Firm**
Mike Jury	30740			
State Project Manager Email	**Project**	**Overflow Lab Choice 1**	**Accept Analysis hold time codes**	**Contract Firm Primary Contact**
jurym1	457196	TEST AMERICA		
State Project Manager Phone	**Phase**	**Overflow Lab Choice 2**		**Primary Contact Phone**
989-894-6255	00			

	Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1		MW-5 14-19	10-31-16			
2		MW-5 24-29	10-31-16			
3		MW-5 24-29 Dup	10-31-16			
4		MW-5 34-39	10-31-16			
5		MW-5 44-49	10-31-16			
6		B-5 12-17	11-1-16			
7		B-3 22-27	11-1-16			
8		B-3 32-37	11-1-16			
9		B-3 42-47	11-1-16			
10						

PFC ANAL

ORGANIC CHEMISTRY

VOA - Volatile Organic Acidic	
Volatiles - Full List	1 2 3 4 5 6 7 8 9 10
BTEX/MTBE/TMB only	1 2 3 4 5 6 7 8 9 10
Chlorinated only	1 2 3 4 5 6 7 8 9 10
GRO	1 2 3 4 5 6 7 8 9 10
1,4 Dioxane	1 2 3 4 5 6 7 8 9 10
METH - Methane, Ethane, Ethene	
Methane, Ethane, Ethene	1 2 3 4 5 6 7 8 9 10
ON - Pesticides, PCBs	
Pesticides & PCBs	1 2 3 4 5 6 7 8 9 10
Pesticides only	1 2 3 4 5 6 7 8 9 10
PCBs only	1 2 3 4 5 6 7 8 9 10
Toxaphene	1 2 3 4 5 6 7 8 9 10
Chlordane	1 2 3 4 5 6 7 8 9 10
BNA - Base Neutral Acids	
BNAs	1 2 3 4 5 6 7 8 9 10
Benzidines	1 2 3 4 5 6 7 8 9 10
PNAs only	1 2 3 4 5 6 7 8 9 10
BNs only	1 2 3 4 5 6 7 8 9 10
Acids only	1 2 3 4 5 6 7 8 9 10
Organic Specialty Requests	
Library search - Volatiles	1 2 3 4 5 6 7 8 9 10
Library search - SemiVols	1 2 3 4 5 6 7 8 9 10
Finger Print	1 2 3 4 5 6 7 8 9 10
DRO / ORO	1 2 3 4 5 6 7 8 9 10
METALS CHEMISTRY PACKAGES	
OpMemo2 - Total	1 2 3 4 5 6 7 8 9 10
OpMemo2 - Dissolved (Sb,As,Ba,Be,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Tl,V,Zn)	1 2 3 4 5 6 7 8 9 10
Michigan10 - Total	1 2 3 4 5 6 7 8 9 10
Michigan10 - Dissolved (As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)	1 2 3 4 5 6 7 8 9 10

MAD - DISSOLVED METALS

Diss - Silver - Ag	1 2 3 4 5 6 7 8 9 10
Diss - Aluminum - Al	1 2 3 4 5 6 7 8 9 10
Diss - Arsenic - As	1 2 3 4 5 6 7 8 9 10
Diss - Boron - B	1 2 3 4 5 6 7 8 9 10
Diss - Barium - Ba	1 2 3 4 5 6 7 8 9 10
Diss - Beryllium - Be	1 2 3 4 5 6 7 8 9 10
Diss - Cadmium - Cd	1 2 3 4 5 6 7 8 9 10
Diss - Cobalt - Co	1 2 3 4 5 6 7 8 9 10
Diss - Chromium - Cr	1 2 3 4 5 6 7 8 9 10
Diss - Copper - Cu	1 2 3 4 5 6 7 8 9 10
Diss - Iron - Fe	1 2 3 4 5 6 7 8 9 10
Diss - Mercury - Hg	1 2 3 4 5 6 7 8 9 10
Diss - Lithium - Li	1 2 3 4 5 6 7 8 9 10
Diss - Manganese - Mn	1 2 3 4 5 6 7 8 9 10
Diss - Molybdenum - Mo	1 2 3 4 5 6 7 8 9 10
Diss - Nickel - Ni	1 2 3 4 5 6 7 8 9 10
Diss - Lead - Pb	1 2 3 4 5 6 7 8 9 10
Diss - Antimony - Sb	1 2 3 4 5 6 7 8 9 10
Diss - Selenium - Se	1 2 3 4 5 6 7 8 9 10
Diss - Strontium - Sr	1 2 3 4 5 6 7 8 9 10
Diss - Titanium - Ti	1 2 3 4 5 6 7 8 9 10
Diss - Thallium - Tl	1 2 3 4 5 6 7 8 9 10
Diss - Uranium - U	1 2 3 4 5 6 7 8 9 10
Diss - Vanadium - V	1 2 3 4 5 6 7 8 9 10
Diss - Zinc - Zn	1 2 3 4 5 6 7 8 9 10
Diss - Calcium - Ca	1 2 3 4 5 6 7 8 9 10
Diss - Potassium - K	1 2 3 4 5 6 7 8 9 10
Diss - Magnesium - Mg	1 2 3 4 5 6 7 8 9 10
Diss - Sodium - Na	1 2 3 4 5 6 7 8 9 10
Diss - Hardness - Ca, Mg	1 2 3 4 5 6 7 8 9 10
MD - Metals Dissolved	
Lab Filtration	1 2 3 4 5 6 7 8 9 10

MA - TOTAL METALS

Silver - Ag	1 2 3 4 5 6 7 8 9 10
Aluminum - Al	1 2 3 4 5 6 7 8 9 10
Arsenic - As	1 2 3 4 5 6 7 8 9 10
Boron - B	1 2 3 4 5 6 7 8 9 10
Barium - Ba	1 2 3 4 5 6 7 8 9 10
Beryllium - Be	1 2 3 4 5 6 7 8 9 10
Cadmium - Cd	1 2 3 4 5 6 7 8 9 10
Cobalt - Co	1 2 3 4 5 6 7 8 9 10
Chromium - Cr	1 2 3 4 5 6 7 8 9 10
Copper - Cu	1 2 3 4 5 6 7 8 9 10
Iron - Fe	1 2 3 4 5 6 7 8 9 10
Mercury - Hg	1 2 3 4 5 6 7 8 9 10
Lithium - Li	1 2 3 4 5 6 7 8 9 10
Manganese - Mn	1 2 3 4 5 6 7 8 9 10
Molybdenum - Mo	1 2 3 4 5 6 7 8 9 10
Nickel - Ni	1 2 3 4 5 6 7 8 9 10
Lead - Pb	1 2 3 4 5 6 7 8 9 10
Antimony - Sb	1 2 3 4 5 6 7 8 9 10
Selenium - Se	1 2 3 4 5 6 7 8 9 10
Strontium - Sr	1 2 3 4 5 6 7 8 9 10
Titanium - Ti	1 2 3 4 5 6 7 8 9 10
Thallium - Tl	1 2 3 4 5 6 7 8 9 10
Uranium - U	1 2 3 4 5 6 7 8 9 10
Vanadium - V	1 2 3 4 5 6 7 8 9 10
Zinc - Zn	1 2 3 4 5 6 7 8 9 10
Calcium - Ca	1 2 3 4 5 6 7 8 9 10
Potassium - K	1 2 3 4 5 6 7 8 9 10
Magnesium - Mg	1 2 3 4 5 6 7 8 9 10
Sodium - Na	1 2 3 4 5 6 7 8 9 10
Hardness - Ca, Mg	1 2 3 4 5 6 7 8 9 10
LHG - Low Level Mercury	
Mercury Low Level - Hg	1 2 3 4 5 6 7 8 9 10

GENERAL CHEMISTRY

GB	Total Cyanide - CN	1 2 3 4 5 6 7 8 9 10
GB	Amenable Cyanide - CN	1 2 3 4 5 6 7 8 9 10
GCN	Available Cyanide - CN	1 2 3 4 5 6 7 8 9 10
CA	Chlorophyll	1 2 3 4 5 6 7 8 9 10
GN	Ortho Phosphate - OP	1 2 3 4 5 6 7 8 9 10
GN	Nitrite - NO_2	1 2 3 4 5 6 7 8 9 10
GN	Nitrate - NO_3 (Calc.)	1 2 3 4 5 6 7 8 9 10
GN	Suspended Solids - SS	1 2 3 4 5 6 7 8 9 10
GN	Dissolved Solids - TDS	1 2 3 4 5 6 7 8 9 10
MN	Diss Solids - TDS (Calc.)	1 2 3 4 5 6 7 8 9 10
GN	Turbidity	1 2 3 4 5 6 7 8 9 10
MN	Total Alkalinity	1 2 3 4 5 6 7 8 9 10
MN	Bicarb/Carb Alkalinity (includes Total Alkalinity)	1 2 3 4 5 6 7 8 9 10
MN	Chloride - Cl	1 2 3 4 5 6 7 8 9 10
MN	Fluoride - F	1 2 3 4 5 6 7 8 9 10
MN	Sulfate - SO4	1 2 3 4 5 6 7 8 9 10
MN	Chromium 6 - Cr+6	1 2 3 4 5 6 7 8 9 10
MN	Conductivity	1 2 3 4 5 6 7 8 9 10
MN	pH	1 2 3 4 5 6 7 8 9 10
GA	Chem Oxyg Dem - COD	1 2 3 4 5 6 7 8 9 10
GA	Diss Org Carbon - DOC (FF) (Field - Filtered & Preserved)	1 2 3 4 5 6 7 8 9 10
GN	Diss Org Carbon - DOC (LF) (Lab - Filtered & Preserved)	1 2 3 4 5 6 7 8 9 10
GA	Total Org Carbon - TOC	1 2 3 4 5 6 7 8 9 10
GA	Ammonia - NH3	1 2 3 4 5 6 7 8 9 10
GA	Nitrate+Nitrite - NO3+NO2	1 2 3 4 5 6 7 8 9 10
GA	Kjeldahl Nitrogen - KN	1 2 3 4 5 6 7 8 9 10
GA	Total Phosphorus - TP	1 2 3 4 5 6 7 8 9 10

Chain of Custody

	Relinquished by	Received By	Date / Time
Print Name & Org.	Jeff Pincumbe - MDEQ	Melissa Smith	
Signature:			11/2/16 853
Print Name & Org.	Joshua Jury MDEQ	Ryan Clase TAL	
Signature:			11/3/16 16:12
Print Name & Org.		Wesley Shockley TALS	
Signature:			11/3/16 17:00

DEQ Laboratory Services Section
Phone: 517-335-9800

www.michigan.gov/deq
(Revised 10/2014)

11/14/2016

TEST AMERICA

THE LEADER IN ENVIRONMENTAL TESTING

Sample Receiving Notes –

Job

320-23292 Field Sheet

Tracking #: 6289 ~~6469~~ 6947

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations. File in the job folder with the COC.

Notes:

Therm. ID 11 / (12) / AK / Other

Cooler Custody Seal: 796477

Sample Custody Seal:

Temp: Observed 5.1

Corrected: 4.2

From: Temp Blank ☐ Sample ☑

NCM : Yes ☐ No ☐

	Yes	No	NA
Perchlorate has headspace?	☐	☐	☑
CoC is complete w/o discrepancies?	☑	☐	☐
Samples received within holding time?	☑	☐	☐
Sample preservatives verified?	☐	☐	☑

Initial / Date: CJS 11/4/16

L:\QA\FORMS\QA-812 REV. 1 SAMPLE RECEIVING NOTES.DOC

QA-812 RE 01/22/2016


Do Not Lift Using This Tag
FedEx
Temperature Controlle
IF THIS SHIPMENT IS DELAYED IN TRANSIT, STORE AS INDICATED.
Healthcare
Room Temperature 15 to 25 C / 59 to 77 F
Refrigerated 2 to 8 C / 36 to 47 F
Frozen -25 to -10 C / -13 to 14
ORIGIN ID:DEDA (810) 229-2763
SHIPPING DEPARTMENT
TESTAMERICA
10448 CITATION DRIVE
SUITE 200
BRIGHTON, MI 48116
UNITED STATES US
SHIP DATE: 03NOV16
ACTWGT: 50.00 LB MAN
CAD: 0183192/CAFE3009
BILL RECIPIENT
TO SAMPLE RECEIVING
TESTAMERICA INC.
880 RIVERSIDE PARKWAY
WEST SACRAMENTO CA 95605
REF:
INV:
PO:
DEPT:
FedEx
Express
FRI - 04 NOV 3:00P
STANDARD OVERNIGHT
TRK# 0201 6209 0767 6947
XH BLUA
95605
CA-US SMF

Login Sample Receipt Checklist

Client: Michigan Dept. of Environmental Quality

Job Number: 320-23292-1

Login Number: 23292

List Source: TestAmerica Sacramento

List Number: 1

Creator: Nelson, Kym D

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Tel: (916)373-5600

TestAmerica Job ID: 320-23602-1
Client Project/Site: Wurtsmith - 3500058 - River Road PFC

For:
Michigan Dept. of Environmental Quality
Constitution Hall 3rd floor SW
525 W. Allegan Street
Lansing, Michigan 48909

Attn: Bob Delaney

Kris Brooks

Authorized for release by:
12/15/2016 7:35:50 PM

Kris Brooks, Project Manager II
(330)966-9790
kris.brooks@testamericainc.com

Table of Contents

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
H	Sample was prepped or analyzed beyond the specified holding time

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 320-23602-1

Laboratory: TestAmerica Sacramento

Narrative

CASE NARRATIVE

Client: Michigan Dept. of Environmental Quality

Project: Wurtsmith - 3500058 - River Road PFC

Report Number: 320-23602-1

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

The Perfluorinated Hydrocarbons analysis was performed at the TestAmerica Sacramento Laboratory.

TestAmerica Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

RECEIPT

The samples were received on 11/17/2016 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was -0.7º C.

Receipt Exceptions

The following sample(s) was received at the laboratory outside the required temperature criteria:

The temperature taken at receipt for the temperatures was -0.7 C.
The samples were not frozen upon receipt.
The client has not yet been contacted.

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. COC not relinquished.

PERFLUORINATED HYDROCARBONS

Samples MW-3 (320-23602-1), MW-4 (320-23602-2), MW-5 (320-23602-3), MW-6 (320-23602-4), MW-6 DUP (320-23602-5) and MW-7 (320-23602-6) were analyzed for Perfluorinated Hydrocarbons in accordance with SOP WS-OC-0025. The samples were prepared on

Job ID: 320-23602-1 (Continued)

Laboratory: TestAmerica Sacramento (Continued)

11/22/2016 and analyzed on 12/08/2016.

Perfluorotetradecanoic acid (PFTeA) was detected in method blank MB 320-139078/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Method(s) 537 (modified): The Isotope Dilution Analyte (IDA) recovery for 13C8 FOSA the following samples is below the method recommended limit: MW-3 (320-23602-1), MW-4 (320-23602-2), MW-5 (320-23602-3), MW-6 (320-23602-4), MW-6 DUP (320-23602-5), MW-7 (320-23602-6), (LCS 320-139078/2-A), (LCSD 320-139078/3-A) and (MB 320-139078/1-A). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the samples.

Method(s) 537 (modified): The Isotope Dilution Analyte (IDA) recovery for M2-6:2FTS is above the method recommended limit for the following sample: MW-4 (320-23602-2). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-139078.

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

Detection Summary

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23602-1

Client Sample ID: MW-3 — Lab Sample ID: 320-23602-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.92	J	1.9	0.42	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.97	J	1.9	0.69	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonate (PFOS)	1.3	J	1.9	1.2	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.47	J B	1.9	0.18	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	39		1.9	0.85	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-4 — Lab Sample ID: 320-23602-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	1.6	J	1.8	0.42	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	3.2		1.8	0.69	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonate (PFOS)	17		1.8	1.2	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	2.5		1.8	0.91	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	2.2		1.8	0.72	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.0	J	1.8	0.74	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.60	J	1.8	0.40	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.47	J B	1.8	0.18	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	37		1.8	0.84	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.0		1.8	0.80	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-5 — Lab Sample ID: 320-23602-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	11		1.9	0.42	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	8.0		1.9	0.69	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonate (PFOS)	45		1.9	1.2	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	6.3		1.9	0.92	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	4.1		1.9	0.73	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.9		1.9	0.74	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.84	J	1.9	0.61	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	1.0	J	1.9	0.41	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.71	J B	1.9	0.18	ng/L	1		537 (modified)	Total/NA
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.43	J	1.9	0.11	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	210		1.9	0.85	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.3		1.9	0.81	ng/L	1		537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	5.2		1.9	1.1	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	34		1.9	0.59	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-6 — Lab Sample ID: 320-23602-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	1.1	J	1.9	0.43	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	1.1	J	1.9	0.70	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonate (PFOS)	8.7		1.9	1.2	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.88	J	1.9	0.73	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.62	J B	1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.18	J	1.9	0.11	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	5.3		1.9	0.81	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23602-1

Client Sample ID: MW-6 DUP — Lab Sample ID: 320-23602-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	1.1	J	2.0	0.45	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonate (PFOS)	8.1		2.0	1.3	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.95	J	2.0	0.78	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.84	J B	2.0	0.20	ng/L	1		537 (modified)	Total/NA
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.61	J	2.0	0.12	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	5.3		2.0	0.86	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-7 — Lab Sample ID: 320-23602-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	3.4		1.9	0.43	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	7.6		1.9	0.71	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonate (PFOS)	26		1.9	1.2	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	1.8	J	1.9	0.93	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	2.3		1.9	0.74	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	3.1		1.9	0.76	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.61	J B	1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	4.1		1.9	0.82	ng/L	1		537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	2.7		1.9	0.60	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23602-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Perfluorinated Hydrocarbons	EPA	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

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

Sample Summary

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23602-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-23602-1	MW-3	Water	11/15/16 00:00	11/17/16 09:30
320-23602-2	MW-4	Water	11/14/16 00:00	11/17/16 09:30
320-23602-3	MW-5	Water	11/15/16 00:00	11/17/16 09:30
320-23602-4	MW-6	Water	11/14/16 00:00	11/17/16 09:30
320-23602-5	MW-6 DUP	Water	11/14/16 00:00	11/17/16 09:30
320-23602-6	MW-7	Water	11/15/16 00:00	11/17/16 09:30

Client Sample ID: MW-3
Date Collected: 11/15/16 00:00
Date Received: 11/17/16 09:30

Lab Sample ID: 320-23602-1
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.92**	**J**	1.9	0.42	ng/L		11/22/16 11:47	12/08/16 01:10	1
Perfluorooctanoic acid (PFOA)	**0.97**	**J**	1.9	0.69	ng/L		11/22/16 11:47	12/08/16 01:10	1
Perfluorooctane Sulfonate (PFOS)	**1.3**	**J**	1.9	1.2	ng/L		11/22/16 11:47	12/08/16 01:10	1
Perfluoropentanoic acid (PFPeA)	ND		1.9	0.92	ng/L		11/22/16 11:47	12/08/16 01:10	1
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.73	ng/L		11/22/16 11:47	12/08/16 01:10	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.74	ng/L		11/22/16 11:47	12/08/16 01:10	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.61	ng/L		11/22/16 11:47	12/08/16 01:10	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.41	ng/L		11/22/16 11:47	12/08/16 01:10	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.69	ng/L		11/22/16 11:47	12/08/16 01:10	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.54	ng/L		11/22/16 11:47	12/08/16 01:10	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.51	ng/L		11/22/16 11:47	12/08/16 01:10	1
Perfluorotetradecanoic acid (PFTeA)	**0.47**	**J B**	1.9	0.18	ng/L		11/22/16 11:47	12/08/16 01:10	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.11	ng/L		11/22/16 11:47	12/08/16 01:10	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		1.9	0.62	ng/L		11/22/16 11:47	12/08/16 01:10	1
Perfluorobutanesulfonic acid (PFBS)	**39**		1.9	0.85	ng/L		11/22/16 11:47	12/08/16 01:10	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.81	ng/L		11/22/16 11:47	12/08/16 01:10	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.66	ng/L		11/22/16 11:47	12/08/16 01:10	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	1.1	ng/L		11/22/16 11:47	12/08/16 01:10	1
Perfluorooctane Sulfonamide (FOSA)	ND		1.9	0.59	ng/L		11/22/16 11:47	12/08/16 01:10	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*124*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:10*	*1*
13C4 PFOA	*113*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:10*	*1*
13C8 FOSA	*6*	*	*25 - 150*	*11/22/16 11:47*	*12/08/16 01:10*	*1*
13C4 PFBA	*59*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:10*	*1*
13C2 PFHxA	*110*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:10*	*1*
13C5 PFNA	*117*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:10*	*1*
13C2 PFDA	*113*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:10*	*1*
13C2 PFUnA	*115*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:10*	*1*
13C2 PFDoA	*112*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:10*	*1*
18O2 PFHxS	*123*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:10*	*1*
13C4-PFHpA	*127*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:10*	*1*
13C5-PFPeA	*103*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:10*	*1*

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23602-1

Client Sample ID: MW-4
Date Collected: 11/14/16 00:00
Date Received: 11/17/16 09:30

Lab Sample ID: 320-23602-2
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**1.6**	**J**	1.8	0.42	ng/L		11/22/16 11:47	12/08/16 01:18	1
Perfluorooctanoic acid (PFOA)	**3.2**		1.8	0.69	ng/L		11/22/16 11:47	12/08/16 01:18	1
Perfluorooctane Sulfonate (PFOS)	**17**		1.8	1.2	ng/L		11/22/16 11:47	12/08/16 01:18	1
Perfluoropentanoic acid (PFPeA)	**2.5**		1.8	0.91	ng/L		11/22/16 11:47	12/08/16 01:18	1
Perfluorohexanoic acid (PFHxA)	**2.2**		1.8	0.72	ng/L		11/22/16 11:47	12/08/16 01:18	1
Perfluoroheptanoic acid (PFHpA)	**1.0**	**J**	1.8	0.74	ng/L		11/22/16 11:47	12/08/16 01:18	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.60	ng/L		11/22/16 11:47	12/08/16 01:18	1
Perfluorodecanoic acid (PFDA)	**0.60**	**J**	1.8	0.40	ng/L		11/22/16 11:47	12/08/16 01:18	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.69	ng/L		11/22/16 11:47	12/08/16 01:18	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.54	ng/L		11/22/16 11:47	12/08/16 01:18	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.8	0.51	ng/L		11/22/16 11:47	12/08/16 01:18	1
Perfluorotetradecanoic acid (PFTeA)	**0.47**	**J B**	1.8	0.18	ng/L		11/22/16 11:47	12/08/16 01:18	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.8	0.11	ng/L		11/22/16 11:47	12/08/16 01:18	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		1.8	0.62	ng/L		11/22/16 11:47	12/08/16 01:18	1
Perfluorobutanesulfonic acid (PFBS)	**37**		1.8	0.84	ng/L		11/22/16 11:47	12/08/16 01:18	1
Perfluorohexanesulfonic acid (PFHxS)	**3.0**		1.8	0.80	ng/L		11/22/16 11:47	12/08/16 01:18	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.8	0.65	ng/L		11/22/16 11:47	12/08/16 01:18	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.8	1.1	ng/L		11/22/16 11:47	12/08/16 01:18	1
Perfluorooctane Sulfonamide (FOSA)	ND		1.8	0.59	ng/L		11/22/16 11:47	12/08/16 01:18	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*132*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:18*	*1*
13C4 PFOA	*112*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:18*	*1*
13C8 FOSA	*4*	*	*25 - 150*	*11/22/16 11:47*	*12/08/16 01:18*	*1*
13C4 PFBA	*62*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:18*	*1*
13C2 PFHxA	*108*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:18*	*1*
13C5 PFNA	*106*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:18*	*1*
13C2 PFDA	*96*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:18*	*1*
13C2 PFUnA	*104*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:18*	*1*
13C2 PFDoA	*110*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:18*	*1*
18O2 PFHxS	*128*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:18*	*1*
13C4-PFHpA	*124*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:18*	*1*
13C5-PFPeA	*98*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:18*	*1*

Client Sample ID: MW-5
Date Collected: 11/15/16 00:00
Date Received: 11/17/16 09:30

Lab Sample ID: 320-23602-3
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**11**		1.9	0.42	ng/L		11/22/16 11:47	12/08/16 01:55	1
Perfluorooctanoic acid (PFOA)	**8.0**		1.9	0.69	ng/L		11/22/16 11:47	12/08/16 01:55	1
Perfluorooctane Sulfonate (PFOS)	**45**		1.9	1.2	ng/L		11/22/16 11:47	12/08/16 01:55	1
Perfluoropentanoic acid (PFPeA)	**6.3**		1.9	0.92	ng/L		11/22/16 11:47	12/08/16 01:55	1
Perfluorohexanoic acid (PFHxA)	**4.1**		1.9	0.73	ng/L		11/22/16 11:47	12/08/16 01:55	1
Perfluoroheptanoic acid (PFHpA)	**1.9**		1.9	0.74	ng/L		11/22/16 11:47	12/08/16 01:55	1
Perfluorononanoic acid (PFNA)	**0.84**	**J**	1.9	0.61	ng/L		11/22/16 11:47	12/08/16 01:55	1
Perfluorodecanoic acid (PFDA)	**1.0**	**J**	1.9	0.41	ng/L		11/22/16 11:47	12/08/16 01:55	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.69	ng/L		11/22/16 11:47	12/08/16 01:55	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.54	ng/L		11/22/16 11:47	12/08/16 01:55	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.51	ng/L		11/22/16 11:47	12/08/16 01:55	1
Perfluorotetradecanoic acid (PFTeA)	**0.71**	**J B**	1.9	0.18	ng/L		11/22/16 11:47	12/08/16 01:55	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	**0.43**	**J**	1.9	0.11	ng/L		11/22/16 11:47	12/08/16 01:55	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		1.9	0.62	ng/L		11/22/16 11:47	12/08/16 01:55	1
Perfluorobutanesulfonic acid (PFBS)	**210**		1.9	0.85	ng/L		11/22/16 11:47	12/08/16 01:55	1
Perfluorohexanesulfonic acid (PFHxS)	**3.3**		1.9	0.81	ng/L		11/22/16 11:47	12/08/16 01:55	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.66	ng/L		11/22/16 11:47	12/08/16 01:55	1
Perfluorodecanesulfonic acid (PFDS)	**5.2**		1.9	1.1	ng/L		11/22/16 11:47	12/08/16 01:55	1
Perfluorooctane Sulfonamide (FOSA)	**34**		1.9	0.59	ng/L		11/22/16 11:47	12/08/16 01:55	1
6:2FTS	ND		19	3.5	ng/L		11/22/16 11:47	12/08/16 01:55	1
8:2FTS	ND		19	3.7	ng/L		11/22/16 11:47	12/08/16 01:55	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*120*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:55*	*1*
13C4 PFOA	*86*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:55*	*1*
13C8 FOSA	*2*	*	*25 - 150*	*11/22/16 11:47*	*12/08/16 01:55*	*1*
13C4 PFBA	*80*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:55*	*1*
13C2 PFHxA	*100*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:55*	*1*
13C5 PFNA	*71*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:55*	*1*
13C2 PFDA	*55*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:55*	*1*
13C2 PFUnA	*55*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:55*	*1*
13C2 PFDoA	*69*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:55*	*1*
18O2 PFHxS	*122*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:55*	*1*
13C4-PFHpA	*105*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:55*	*1*
13C5-PFPeA	*100*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:55*	*1*
M2-6:2FTS	*130*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:55*	*1*
M2-8:2FTS	*137*		*25 - 150*	*11/22/16 11:47*	*12/08/16 01:55*	*1*

Client Sample ID: MW-6
Date Collected: 11/14/16 00:00
Date Received: 11/17/16 09:30

Lab Sample ID: 320-23602-4
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**1.1**	**J**	1.9	0.43	ng/L		11/22/16 11:47	12/08/16 02:03	1
Perfluorooctanoic acid (PFOA)	**1.1**	**J**	1.9	0.70	ng/L		11/22/16 11:47	12/08/16 02:03	1
Perfluorooctane Sulfonate (PFOS)	**8.7**		1.9	1.2	ng/L		11/22/16 11:47	12/08/16 02:03	1
Perfluoropentanoic acid (PFPeA)	ND		1.9	0.92	ng/L		11/22/16 11:47	12/08/16 02:03	1
Perfluorohexanoic acid (PFHxA)	**0.88**	**J**	1.9	0.73	ng/L		11/22/16 11:47	12/08/16 02:03	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.75	ng/L		11/22/16 11:47	12/08/16 02:03	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.61	ng/L		11/22/16 11:47	12/08/16 02:03	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.41	ng/L		11/22/16 11:47	12/08/16 02:03	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.70	ng/L		11/22/16 11:47	12/08/16 02:03	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.54	ng/L		11/22/16 11:47	12/08/16 02:03	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.51	ng/L		11/22/16 11:47	12/08/16 02:03	1
Perfluorotetradecanoic acid (PFTeA)	**0.62**	**J B**	1.9	0.19	ng/L		11/22/16 11:47	12/08/16 02:03	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	**0.18**	**J**	1.9	0.11	ng/L		11/22/16 11:47	12/08/16 02:03	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		1.9	0.63	ng/L		11/22/16 11:47	12/08/16 02:03	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.86	ng/L		11/22/16 11:47	12/08/16 02:03	1
Perfluorohexanesulfonic acid (PFHxS)	**5.3**		1.9	0.81	ng/L		11/22/16 11:47	12/08/16 02:03	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.67	ng/L		11/22/16 11:47	12/08/16 02:03	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	1.1	ng/L		11/22/16 11:47	12/08/16 02:03	1
Perfluorooctane Sulfonamide (FOSA)	ND		1.9	0.60	ng/L		11/22/16 11:47	12/08/16 02:03	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*120*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:03*	*1*
13C4 PFOA	*108*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:03*	*1*
13C8 FOSA	*4*	*	*25 - 150*	*11/22/16 11:47*	*12/08/16 02:03*	*1*
13C4 PFBA	*46*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:03*	*1*
13C2 PFHxA	*105*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:03*	*1*
13C5 PFNA	*98*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:03*	*1*
13C2 PFDA	*85*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:03*	*1*
13C2 PFUnA	*83*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:03*	*1*
13C2 PFDoA	*91*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:03*	*1*
18O2 PFHxS	*118*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:03*	*1*
13C4-PFHpA	*118*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:03*	*1*
13C5-PFPeA	*89*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:03*	*1*

Client Sample ID: MW-6 DUP
Date Collected: 11/14/16 00:00
Date Received: 11/17/16 09:30

Lab Sample ID: 320-23602-5
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**1.1**	**J**	2.0	0.45	ng/L		11/22/16 11:47	12/08/16 02:10	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.74	ng/L		11/22/16 11:47	12/08/16 02:10	1
Perfluorooctane Sulfonate (PFOS)	**8.1**		2.0	1.3	ng/L		11/22/16 11:47	12/08/16 02:10	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.98	ng/L		11/22/16 11:47	12/08/16 02:10	1
Perfluorohexanoic acid (PFHxA)	**0.95**	**J**	2.0	0.78	ng/L		11/22/16 11:47	12/08/16 02:10	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.80	ng/L		11/22/16 11:47	12/08/16 02:10	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.65	ng/L		11/22/16 11:47	12/08/16 02:10	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.44	ng/L		11/22/16 11:47	12/08/16 02:10	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.74	ng/L		11/22/16 11:47	12/08/16 02:10	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.58	ng/L		11/22/16 11:47	12/08/16 02:10	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.55	ng/L		11/22/16 11:47	12/08/16 02:10	1
Perfluorotetradecanoic acid (PFTeA)	**0.84**	**J B**	2.0	0.20	ng/L		11/22/16 11:47	12/08/16 02:10	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	**0.61**	**J**	2.0	0.12	ng/L		11/22/16 11:47	12/08/16 02:10	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		2.0	0.67	ng/L		11/22/16 11:47	12/08/16 02:10	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.91	ng/L		11/22/16 11:47	12/08/16 02:10	1
Perfluorohexanesulfonic acid (PFHxS)	**5.3**		2.0	0.86	ng/L		11/22/16 11:47	12/08/16 02:10	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.71	ng/L		11/22/16 11:47	12/08/16 02:10	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	1.2	ng/L		11/22/16 11:47	12/08/16 02:10	1
Perfluorooctane Sulfonamide (FOSA)	ND		2.0	0.63	ng/L		11/22/16 11:47	12/08/16 02:10	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*126*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:10*	*1*
13C4 PFOA	*95*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:10*	*1*
13C8 FOSA	*3*	*	*25 - 150*	*11/22/16 11:47*	*12/08/16 02:10*	*1*
13C4 PFBA	*46*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:10*	*1*
13C2 PFHxA	*105*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:10*	*1*
13C5 PFNA	*77*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:10*	*1*
13C2 PFDA	*69*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:10*	*1*
13C2 PFUnA	*69*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:10*	*1*
13C2 PFDoA	*73*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:10*	*1*
18O2 PFHxS	*124*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:10*	*1*
13C4-PFHpA	*110*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:10*	*1*
13C5-PFPeA	*88*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:10*	*1*

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23602-1

Client Sample ID: MW-7
Date Collected: 11/15/16 00:00
Date Received: 11/17/16 09:30

Lab Sample ID: 320-23602-6
Matrix: Water

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**3.4**		1.9	0.43	ng/L		11/22/16 11:47	12/08/16 02:18	1
Perfluorooctanoic acid (PFOA)	**7.6**		1.9	0.71	ng/L		11/22/16 11:47	12/08/16 02:18	1
Perfluorooctane Sulfonate (PFOS)	**26**		1.9	1.2	ng/L		11/22/16 11:47	12/08/16 02:18	1
Perfluoropentanoic acid (PFPeA)	**1.8**	**J**	1.9	0.93	ng/L		11/22/16 11:47	12/08/16 02:18	1
Perfluorohexanoic acid (PFHxA)	**2.3**		1.9	0.74	ng/L		11/22/16 11:47	12/08/16 02:18	1
Perfluoroheptanoic acid (PFHpA)	**3.1**		1.9	0.76	ng/L		11/22/16 11:47	12/08/16 02:18	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.62	ng/L		11/22/16 11:47	12/08/16 02:18	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.42	ng/L		11/22/16 11:47	12/08/16 02:18	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.71	ng/L		11/22/16 11:47	12/08/16 02:18	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.55	ng/L		11/22/16 11:47	12/08/16 02:18	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.52	ng/L		11/22/16 11:47	12/08/16 02:18	1
Perfluorotetradecanoic acid (PFTeA)	**0.61**	**J B**	1.9	0.19	ng/L		11/22/16 11:47	12/08/16 02:18	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		1.9	0.12	ng/L		11/22/16 11:47	12/08/16 02:18	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		1.9	0.63	ng/L		11/22/16 11:47	12/08/16 02:18	1
Perfluorobutanesulfonic acid (PFBS)	ND	H	1.9	0.87	ng/L		11/22/16 11:47	12/08/16 02:18	1
Perfluorohexanesulfonic acid (PFHxS)	**4.1**		1.9	0.82	ng/L		11/22/16 11:47	12/08/16 02:18	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.67	ng/L		11/22/16 11:47	12/08/16 02:18	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	1.1	ng/L		11/22/16 11:47	12/08/16 02:18	1
Perfluorooctane Sulfonamide (FOSA)	**2.7**		1.9	0.60	ng/L		11/22/16 11:47	12/08/16 02:18	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*126*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:18*	*1*
13C4 PFOA	*114*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:18*	*1*
13C8 FOSA	*6*	*	*25 - 150*	*11/22/16 11:47*	*12/08/16 02:18*	*1*
13C4 PFBA	*43*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:18*	*1*
13C2 PFHxA	*109*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:18*	*1*
13C5 PFNA	*102*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:18*	*1*
13C2 PFDA	*95*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:18*	*1*
13C2 PFUnA	*102*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:18*	*1*
13C2 PFDoA	*103*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:18*	*1*
18O2 PFHxS	*124*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:18*	*1*
13C4-PFHpA	*126*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:18*	*1*
13C5-PFPeA	*90*		*25 - 150*	*11/22/16 11:47*	*12/08/16 02:18*	*1*

Isotope Dilution Summary

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23602-1

Method: 537 (modified) - Perfluorinated Hydrocarbons

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	13C4 PFOS (25-150)	13C4 PFOA (25-150)	13C8 FOSA (25-150)	13C4 PFBA (25-150)	13C2 PFHxA (25-150)	13C5 PFNA (25-150)	13C2 PFDA (25-150)	13C2 PFUnA (25-150)
320-23602-1	MW-3	124	113	6 *	59	110	117	113	115
320-23602-2	MW-4	132	112	4 *	62	108	106	96	104
320-23602-3	MW-5	120	86	2 *	80	100	71	55	55
320-23602-4	MW-6	120	108	4 *	46	105	98	85	83
320-23602-5	MW-6 DUP	126	95	3 *	46	105	77	69	69
320-23602-6	MW-7	126	114	6 *	43	109	102	95	102
LCS 320-139078/2-A	Lab Control Sample	124	127	17 *	124	123	125	121	114
LCSD 320-139078/3-A	Lab Control Sample Dup	113	119	19 *	119	117	118	113	109
MB 320-139078/1-A	Method Blank	123	133	15 *	126	124	131	125	123

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	13C2 PFDoA (25-150)	18O2 PFHxS (25-150)	13C4-PFHpA (25-150)	13C5-PFPeA (25-150)	M2-6:2FTS (25-150)	M2-8:2FTS (25-150)		
320-23602-1	MW-3	112	123	127	103				
320-23602-2	MW-4	110	128	124	98				
320-23602-3	MW-5	69	122	105	100	130	137		
320-23602-4	MW-6	91	118	118	89				
320-23602-5	MW-6 DUP	73	124	110	88				
320-23602-6	MW-7	103	124	126	90				
LCS 320-139078/2-A	Lab Control Sample	113	122	138	126	133	119		
LCSD 320-139078/3-A	Lab Control Sample Dup	108	116	132	117	127	106		
MB 320-139078/1-A	Method Blank	118	126	144	125	136	119		

Surrogate Legend

13C4 PFOS = 13C4 PFOS
13C4 PFOA = 13C4 PFOA
13C8 FOSA = 13C8 FOSA
13C4 PFBA = 13C4 PFBA
13C2 PFHxA = 13C2 PFHxA
13C5 PFNA = 13C5 PFNA
13C2 PFDA = 13C2 PFDA
13C2 PFUnA = 13C2 PFUnA
13C2 PFDoA = 13C2 PFDoA
18O2 PFHxS = 18O2 PFHxS
13C4-PFHpA = 13C4-PFHpA
13C5-PFPeA = 13C5-PFPeA
M2-6:2FTS = M2-6:2FTS
M2-8:2FTS = M2-8:2FTS

Method: 537 (modified) - Perfluorinated Hydrocarbons

Lab Sample ID: MB 320-139078/1-A
Matrix: Water
Analysis Batch: 141271

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 139078

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0	0.46	ng/L		11/22/16 11:47	12/08/16 00:10	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.75	ng/L		11/22/16 11:47	12/08/16 00:10	1
Perfluorooctane Sulfonate (PFOS)	ND		2.0	1.3	ng/L		11/22/16 11:47	12/08/16 00:10	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.99	ng/L		11/22/16 11:47	12/08/16 00:10	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.79	ng/L		11/22/16 11:47	12/08/16 00:10	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.80	ng/L		11/22/16 11:47	12/08/16 00:10	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.65	ng/L		11/22/16 11:47	12/08/16 00:10	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.44	ng/L		11/22/16 11:47	12/08/16 00:10	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.75	ng/L		11/22/16 11:47	12/08/16 00:10	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.58	ng/L		11/22/16 11:47	12/08/16 00:10	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.55	ng/L		11/22/16 11:47	12/08/16 00:10	1
Perfluorotetradecanoic acid (PFTeA)	0.862	J	2.0	0.20	ng/L		11/22/16 11:47	12/08/16 00:10	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	ND		2.0	0.12	ng/L		11/22/16 11:47	12/08/16 00:10	1
Perfluoro-n-octadecanoic acid (PFODA)	ND		2.0	0.67	ng/L		11/22/16 11:47	12/08/16 00:10	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.92	ng/L		11/22/16 11:47	12/08/16 00:10	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.87	ng/L		11/22/16 11:47	12/08/16 00:10	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.71	ng/L		11/22/16 11:47	12/08/16 00:10	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	1.2	ng/L		11/22/16 11:47	12/08/16 00:10	1
Perfluorooctane Sulfonamide (FOSA)	ND		2.0	0.64	ng/L		11/22/16 11:47	12/08/16 00:10	1
6:2FTS	ND		20	3.8	ng/L		11/22/16 11:47	12/08/16 00:10	1
8:2FTS	ND		20	4.0	ng/L		11/22/16 11:47	12/08/16 00:10	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*123*		*25 - 150*	*11/22/16 11:47*	*12/08/16 00:10*	*1*
13C4 PFOA	*133*		*25 - 150*	*11/22/16 11:47*	*12/08/16 00:10*	*1*
13C8 FOSA	*15*	*	*25 - 150*	*11/22/16 11:47*	*12/08/16 00:10*	*1*
13C4 PFBA	*126*		*25 - 150*	*11/22/16 11:47*	*12/08/16 00:10*	*1*
13C2 PFHxA	*124*		*25 - 150*	*11/22/16 11:47*	*12/08/16 00:10*	*1*
13C5 PFNA	*131*		*25 - 150*	*11/22/16 11:47*	*12/08/16 00:10*	*1*
13C2 PFDA	*125*		*25 - 150*	*11/22/16 11:47*	*12/08/16 00:10*	*1*
13C2 PFUnA	*123*		*25 - 150*	*11/22/16 11:47*	*12/08/16 00:10*	*1*
13C2 PFDoA	*118*		*25 - 150*	*11/22/16 11:47*	*12/08/16 00:10*	*1*
18O2 PFHxS	*126*		*25 - 150*	*11/22/16 11:47*	*12/08/16 00:10*	*1*
13C4-PFHpA	*144*		*25 - 150*	*11/22/16 11:47*	*12/08/16 00:10*	*1*
13C5-PFPeA	*125*		*25 - 150*	*11/22/16 11:47*	*12/08/16 00:10*	*1*
M2-6:2FTS	*136*		*25 - 150*	*11/22/16 11:47*	*12/08/16 00:10*	*1*
M2-8:2FTS	*119*		*25 - 150*	*11/22/16 11:47*	*12/08/16 00:10*	*1*

Lab Sample ID: LCS 320-139078/2-A
Matrix: Water
Analysis Batch: 141271

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 139078

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	41.6		ng/L		104	74 - 138
Perfluorooctanoic acid (PFOA)	40.0	37.7		ng/L		94	63 - 141

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Lab Sample ID: LCS 320-139078/2-A
Matrix: Water
Analysis Batch: 141271

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 139078

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctane Sulfonate (PFOS)	37.1	34.3		ng/L		92	47 - 162
Perfluoropentanoic acid (PFPeA)	40.0	38.8		ng/L		97	69 - 134
Perfluorohexanoic acid (PFHxA)	40.0	38.8		ng/L		97	70 - 136
Perfluoroheptanoic acid (PFHpA)	40.0	40.3		ng/L		101	63 - 135
Perfluorononanoic acid (PFNA)	40.0	39.2		ng/L		98	71 - 140
Perfluorodecanoic acid (PFDA)	40.0	39.0		ng/L		97	66 - 141
Perfluoroundecanoic acid (PFUnA)	40.0	33.9		ng/L		85	68 - 139
Perfluorododecanoic acid (PFDoA)	40.0	37.8		ng/L		95	71 - 139
Perfluorotridecanoic Acid (PFTriA)	40.0	38.2		ng/L		95	51 - 139
Perfluorotetradecanoic acid (PFTeA)	40.0	46.7		ng/L		117	47 - 130
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	34.3		ng/L		86	50 - 150
Perfluoro-n-octadecanoic acid (PFODA)	40.0	36.0		ng/L		90	50 - 150
Perfluorobutanesulfonic acid (PFBS)	35.4	38.5		ng/L		109	55 - 147
Perfluorohexanesulfonic acid (PFHxS)	36.4	33.8		ng/L		93	58 - 138
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	35.9		ng/L		94	32 - 170
Perfluorodecanesulfonic acid (PFDS)	38.6	34.2		ng/L		89	35 - 157
Perfluorooctane Sulfonamide (FOSA)	40.0	39.6		ng/L		99	59 - 163
6:2FTS	37.9	40.3		ng/L		106	60 - 140
8:2FTS	38.3	41.6		ng/L		108	60 - 140

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFOS	*124*		*25 - 150*
13C4 PFOA	*127*		*25 - 150*
13C8 FOSA	*17*	*	*25 - 150*
13C4 PFBA	*124*		*25 - 150*
13C2 PFHxA	*123*		*25 - 150*
13C5 PFNA	*125*		*25 - 150*
13C2 PFDA	*121*		*25 - 150*
13C2 PFUnA	*114*		*25 - 150*
13C2 PFDoA	*113*		*25 - 150*
18O2 PFHxS	*122*		*25 - 150*
13C4-PFHpA	*138*		*25 - 150*
13C5-PFPeA	*126*		*25 - 150*
M2-6:2FTS	*133*		*25 - 150*
M2-8:2FTS	*119*		*25 - 150*

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Lab Sample ID: LCSD 320-139078/3-A
Matrix: Water
Analysis Batch: 141271

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 139078

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	40.0	43.0		ng/L		107	74 - 138	3	30
Perfluorooctanoic acid (PFOA)	40.0	38.6		ng/L		97	63 - 141	3	30
Perfluorooctane Sulfonate (PFOS)	37.1	36.0		ng/L		97	47 - 162	5	30
Perfluoropentanoic acid (PFPeA)	40.0	40.9		ng/L		102	69 - 134	5	30
Perfluorohexanoic acid (PFHxA)	40.0	40.6		ng/L		102	70 - 136	4	30
Perfluoroheptanoic acid (PFHpA)	40.0	40.7		ng/L		102	63 - 135	1	30
Perfluorononanoic acid (PFNA)	40.0	39.4		ng/L		98	71 - 140	0	30
Perfluorodecanoic acid (PFDA)	40.0	40.4		ng/L		101	66 - 141	4	30
Perfluoroundecanoic acid (PFUnA)	40.0	34.0		ng/L		85	68 - 139	0	30
Perfluorododecanoic acid (PFDoA)	40.0	38.0		ng/L		95	71 - 139	0	30
Perfluorotridecanoic Acid (PFTriA)	40.0	40.7		ng/L		102	51 - 139	6	30
Perfluorotetradecanoic acid (PFTeA)	40.0	49.5		ng/L		124	47 - 130	6	30
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	35.1		ng/L		88	50 - 150	2	30
Perfluoro-n-octadecanoic acid (PFODA)	40.0	37.9		ng/L		95	50 - 150	5	30
Perfluorobutanesulfonic acid (PFBS)	35.4	38.6		ng/L		109	55 - 147	0	30
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.6		ng/L		95	58 - 138	3	30
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	38.8		ng/L		102	32 - 170	8	30
Perfluorodecanesulfonic acid (PFDS)	38.6	36.3		ng/L		94	35 - 157	6	30
Perfluorooctane Sulfonamide (FOSA)	40.0	41.6		ng/L		104	59 - 163	5	30
6:2FTS	37.9	40.9		ng/L		108	60 - 140	1	30
8:2FTS	38.3	41.9		ng/L		109	60 - 140	1	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFOS	*113*		*25 - 150*
13C4 PFOA	*119*		*25 - 150*
13C8 FOSA	*19*	*	*25 - 150*
13C4 PFBA	*119*		*25 - 150*
13C2 PFHxA	*117*		*25 - 150*
13C5 PFNA	*118*		*25 - 150*
13C2 PFDA	*113*		*25 - 150*
13C2 PFUnA	*109*		*25 - 150*
13C2 PFDoA	*108*		*25 - 150*
18O2 PFHxS	*116*		*25 - 150*
13C4-PFHpA	*132*		*25 - 150*
13C5-PFPeA	*117*		*25 - 150*
M2-6:2FTS	*127*		*25 - 150*
M2-8:2FTS	*106*		*25 - 150*

QC Association Summary

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23602-1

LCMS

Prep Batch: 139078

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-23602-1	MW-3	Total/NA	Water	3535	
320-23602-2	MW-4	Total/NA	Water	3535	
320-23602-3	MW-5	Total/NA	Water	3535	
320-23602-4	MW-6	Total/NA	Water	3535	
320-23602-5	MW-6 DUP	Total/NA	Water	3535	
320-23602-6	MW-7	Total/NA	Water	3535	
MB 320-139078/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-139078/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-139078/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 141271

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-23602-1	MW-3	Total/NA	Water	537 (modified)	139078
320-23602-2	MW-4	Total/NA	Water	537 (modified)	139078
320-23602-3	MW-5	Total/NA	Water	537 (modified)	139078
320-23602-4	MW-6	Total/NA	Water	537 (modified)	139078
320-23602-5	MW-6 DUP	Total/NA	Water	537 (modified)	139078
320-23602-6	MW-7	Total/NA	Water	537 (modified)	139078
MB 320-139078/1-A	Method Blank	Total/NA	Water	537 (modified)	139078
LCS 320-139078/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	139078
LCSD 320-139078/3-A	Lab Control Sample Dup	Total/NA	Water	537 (modified)	139078

Lab Chronicle

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23602-1

Client Sample ID: MW-3
Date Collected: 11/15/16 00:00
Date Received: 11/17/16 09:30

Lab Sample ID: 320-23602-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			270.1 mL	0.5 mL	139078	11/22/16 11:47	NS1	TAL SAC
Total/NA	Analysis	537 (modified)		1			141271	12/08/16 01:10	SBC	TAL SAC

Client Sample ID: MW-4
Date Collected: 11/14/16 00:00
Date Received: 11/17/16 09:30

Lab Sample ID: 320-23602-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			272.6 mL	0.5 mL	139078	11/22/16 11:47	NS1	TAL SAC
Total/NA	Analysis	537 (modified)		1			141271	12/08/16 01:18	SBC	TAL SAC

Client Sample ID: MW-5
Date Collected: 11/15/16 00:00
Date Received: 11/17/16 09:30

Lab Sample ID: 320-23602-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			269.5 mL	0.5 mL	139078	11/22/16 11:47	NS1	TAL SAC
Total/NA	Analysis	537 (modified)		1			141271	12/08/16 01:55	SBC	TAL SAC

Client Sample ID: MW-6
Date Collected: 11/14/16 00:00
Date Received: 11/17/16 09:30

Lab Sample ID: 320-23602-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			267.9 mL	0.5 mL	139078	11/22/16 11:47	NS1	TAL SAC
Total/NA	Analysis	537 (modified)		1			141271	12/08/16 02:03	SBC	TAL SAC

Client Sample ID: MW-6 DUP
Date Collected: 11/14/16 00:00
Date Received: 11/17/16 09:30

Lab Sample ID: 320-23602-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			252.1 mL	0.5 mL	139078	11/22/16 11:47	NS1	TAL SAC
Total/NA	Analysis	537 (modified)		1			141271	12/08/16 02:10	SBC	TAL SAC

Client Sample ID: MW-7
Date Collected: 11/15/16 00:00
Date Received: 11/17/16 09:30

Lab Sample ID: 320-23602-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			264.8 mL	0.5 mL	139078	11/22/16 11:47	NS1	TAL SAC
Total/NA	Analysis	537 (modified)		1			141271	12/08/16 02:18	SBC	TAL SAC

Lab Chronicle

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23602-1

Laboratory References:

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

Certification Summary

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23602-1

Laboratory: TestAmerica Sacramento

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

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-17
Alaska (UST)	State Program	10	UST-055	12-18-17
Arizona	State Program	9	AZ0708	08-11-17
Arkansas DEQ	State Program	6	88-0691	06-17-17
California	State Program	9	2897	01-31-18
Colorado	State Program	8	CA00044	08-31-17
Connecticut	State Program	1	PH-0691	06-30-17
Florida	NELAP	4	E87570	06-30-17
Hawaii	State Program	9	N/A	01-31-17
Illinois	NELAP	5	200060	03-17-17
Kansas	NELAP	7	E-10375	10-31-17
Louisiana	NELAP	6	30612	06-30-17
Maine	State Program	1	CA0004	04-18-18
Michigan	State Program	5	9947	01-31-18
Nevada	State Program	9	CA00044	07-31-17
New Jersey	NELAP	2	CA005	06-30-17
New York	NELAP	2	11666	04-01-17
Oregon	NELAP	10	4040	01-29-17
Pennsylvania	NELAP	3	68-01272	03-31-17
Texas	NELAP	6	T104704399	07-31-17
US Fish & Wildlife	Federal		LE148388-0	10-31-17
USDA	Federal		P330-11-00436	12-30-17
USEPA UCMR	Federal	1	CA00044	11-06-18
Utah	NELAP	8	CA00044	02-28-17
Virginia	NELAP	3	460278	03-14-17
Washington	State Program	10	C581	05-05-17
West Virginia (DW)	State Program	3	9930C	12-31-16
Wyoming	State Program	8	8TMS-L	01-29-17

Laboratory: TestAmerica Canton

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

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-14 *
California	State Program	9	2927	04-30-17
Connecticut	State Program	1	PH-0590	12-31-17
Florida	NELAP	4	E87225	06-30-17
Illinois	NELAP	5	200004	07-31-17
Kansas	NELAP	7	E-10336	01-31-17 *
Kentucky (UST)	State Program	4	58	02-23-17
Kentucky (WW)	State Program	4	98016	12-31-16 *
Minnesota	NELAP	5	039-999-348	12-31-16 *
Minnesota (Petrofund)	State Program	1	3506	07-31-17
Nevada	State Program	9	OH-000482008A	07-31-17
New Jersey	NELAP	2	OH001	06-30-17
New York	NELAP	2	10975	03-31-17
Ohio VAP	State Program	5	CL0024	09-14-17
Oregon	NELAP	10	4062	02-23-17
Pennsylvania	NELAP	3	68-00340	08-31-17
Texas	NELAP	6	T104704517-15-5	08-31-17

* Certification renewal pending - certification considered valid.

Certification Summary

Client: Michigan Dept. of Environmental Quality
Project/Site: Wurtsmith - 3500058 - River Road PFC

TestAmerica Job ID: 320-23602-1

Laboratory: TestAmerica Canton (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
USDA	Federal		P330-13-00319	11-26-16 *
Virginia	NELAP	3	460175	09-14-17
Washington	State Program	10	C971	01-12-17
West Virginia DEP	State Program	3	210	12-31-16 *
Wisconsin	State Program	5	999518190	08-31-17

* Certification renewal pending - certification considered valid.

Michigan Department of Environmental Quality
Laboratory Services Section

Analysis Request Sheet

Lab Work Order Number	Project Name	Matrix
	River Road PFC Contamination	WATER

Site Code/Project Number	AY	CC Email 1	Project TAT Days	Sample Collector
35000154	17	pincumbej		Jeff Pincumbe
Dept-Division-District	**Index**	**CC Email 2**	**Project Due Date**	**Sample Collector Phone**
DEQ-RRD-Saginaw Bay	44031	shireyb		517-335-6418
State Project Manager	**PCA**	**CC Email 3**		**Contract Firm**
Mike Jury	30740			
State Project Manager Email	**Project**	**Overflow Lab Choice 1**	**Accept Analysis hold time codes**	**Contract Firm Primary Contact**
jurym1	457196	TEST AMERICA		
State Project Manager Phone	**Phase**	**Overflow Lab Choice 2**		**Primary Contact Phone**
989-894-6255	00			

	Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1		MW-3	11-15-16			
2		MW-4	11-14-16			
3		MW-5	11-15-16			
4		MW-6	11-14-16			pH-6
5		MW-6 Dup	11-14-16			
6		MW-7	11-15-16			
7						
8						
9						
10						

320-23602 Chain of Custody

ORGANIC CHEMISTRY

VOA - Volatile Organic Acidic
- Volatiles - Full List 1 2 3 4 5 6 7 8 9 10
- BTEX/MTBE/TMB only 1 2 3 4 5 6 7 8 9 10
- Chlorinated only 1 2 3 4 5 6 7 8 9 10
- GRO 1 2 3 4 5 6 7 8 9 10
- 1,4 Dioxane 1 2 3 4 5 6 7 8 9 10

METH - Methane, Ethane, Ethene
- Methane, Ethane, Ethene 1 2 3 4 5 6 7 8 9 10

ON - Pesticides, PCBs
- Pesticides & PCBs 1 2 3 4 5 6 7 8 9 10
- Pesticides only 1 2 3 4 5 6 7 8 9 10
- PCBs only 1 2 3 4 5 6 7 8 9 10
- Toxaphene 1 2 3 4 5 6 7 8 9 10
- Chlordane 1 2 3 4 5 6 7 8 9 10

BNA - Base Neutral Acids
- BNAs 1 2 3 4 5 6 7 8 9 10
- Benzidines 1 2 3 4 5 6 7 8 9 10
- PNAs only 1 2 3 4 5 6 7 8 9 10
- BNs only 1 2 3 4 5 6 7 8 9 10
- Acids only 1 2 3 4 5 6 7 8 9 10

Organic Specialty Requests
- Library search - Volatiles 1 2 3 4 5 6 7 8 9 10
- Library search - SemiVols 1 2 3 4 5 6 7 8 9 10
- Finger Print 1 2 3 4 5 6 7 8 9 10
- DRO / ORO 1 2 3 4 5 6 7 8 9 10

METALS CHEMISTRY PACKAGES
- OpMemo2 - Total 1 2 3 4 5 6 7 8 9 10
- OpMemo2 - Dissolved 1 2 3 4 5 6 7 8 9 10
  (Sb,As,Ba,Be,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Tl,V,Zn)
- Michigan10 - Total 1 2 3 4 5 6 7 8 9 10
- Michigan10 - Dissolved 1 2 3 4 5 6 7 8 9 10
  (As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)

MAD - DISSOLVED METALS
- Diss - Silver - Ag 1 2 3 4 5 6 7 8 9 10
- Diss - Aluminum - Al 1 2 3 4 5 6 7 8 9 10
- Diss - Arsenic - As 1 2 3 4 5 6 7 8 9 10
- Diss - Boron - B 1 2 3 4 5 6 7 8 9 10
- Diss - Barium - Ba 1 2 3 4 5 6 7 8 9 10
- Diss - Beryllium - Be 1 2 3 4 5 6 7 8 9 10
- Diss - Cadmium - Cd 1 2 3 4 5 6 7 8 9 10
- Diss - Cobalt - Co 1 2 3 4 5 6 7 8 9 10
- Diss - Chromium - Cr 1 2 3 4 5 6 7 8 9 10
- Diss - Copper - Cu 1 2 3 4 5 6 7 8 9 10
- Diss - Iron - Fe 1 2 3 4 5 6 7 8 9 10
- Diss - Mercury - Hg 1 2 3 4 5 6 7 8 9 10
- Diss - Lithium - Li 1 2 3 4 5 6 7 8 9 10
- Diss - Manganese - Mn 1 2 3 4 5 6 7 8 9 10
- Diss - Molybdenum - Mo 1 2 3 4 5 6 7 8 9 10
- Diss - Nickel - Ni 1 2 3 4 5 6 7 8 9 10
- Diss - Lead - Pb 1 2 3 4 5 6 7 8 9 10
- Diss - Antimony - Sb 1 2 3 4 5 6 7 8 9 10
- Diss - Selenium - Se 1 2 3 4 5 6 7 8 9 10
- Diss - Strontium - Sr 1 2 3 4 5 6 7 8 9 10
- Diss - Titanium - Ti 1 2 3 4 5 6 7 8 9 10
- Diss - Thallium - Tl 1 2 3 4 5 6 7 8 9 10
- Diss - Uranium - U 1 2 3 4 5 6 7 8 9 10
- Diss - Vanadium - V 1 2 3 4 5 6 7 8 9 10
- Diss - Zinc - Zn 1 2 3 4 5 6 7 8 9 10
- Diss - Calcium - Ca 1 2 3 4 5 6 7 8 9 10
- Diss - Potassium - K 1 2 3 4 5 6 7 8 9 10
- Diss - Magnesium - Mg 1 2 3 4 5 6 7 8 9 10
- Diss - Sodium - Na 1 2 3 4 5 6 7 8 9 10
- Diss - Hardness - Ca, Mg 1 2 3 4 5 6 7 8 9 10

MD - Metals Dissolved
- Lab Filtration 1 2 3 4 5 6 7 8 9 10

MA - TOTAL METALS
- Silver - Ag 1 2 3 4 5 6 7 8 9 10
- Aluminum - Al 1 2 3 4 5 6 7 8 9 10
- Arsenic - As 1 2 3 4 5 6 7 8 9 10
- Boron - B 1 2 3 4 5 6 7 8 9 10
- Barium - Ba 1 2 3 4 5 6 7 8 9 10
- Beryllium - Be 1 2 3 4 5 6 7 8 9 10
- Cadmium - Cd 1 2 3 4 5 6 7 8 9 10
- Cobalt - Co 1 2 3 4 5 6 7 8 9 10
- Chromium - Cr 1 2 3 4 5 6 7 8 9 10
- Copper - Cu 1 2 3 4 5 6 7 8 9 10
- Iron - Fe 1 2 3 4 5 6 7 8 9 10
- Mercury - Hg 1 2 3 4 5 6 7 8 9 10
- Lithium - Li 1 2 3 4 5 6 7 8 9 10
- Manganese - Mn 1 2 3 4 5 6 7 8 9 10
- Molybdenum - Mo 1 2 3 4 5 6 7 8 9 10
- Nickel - Ni 1 2 3 4 5 6 7 8 9 10
- Lead - Pb 1 2 3 4 5 6 7 8 9 10
- Antimony - Sb 1 2 3 4 5 6 7 8 9 10
- Selenium - Se 1 2 3 4 5 6 7 8 9 10
- Strontium - Sr 1 2 3 4 5 6 7 8 9 10
- Titanium - Ti 1 2 3 4 5 6 7 8 9 10
- Thallium - Tl 1 2 3 4 5 6 7 8 9 10
- Uranium - U 1 2 3 4 5 6 7 8 9 10
- Vanadium - V 1 2 3 4 5 6 7 8 9 10
- Zinc - Zn 1 2 3 4 5 6 7 8 9 10
- Calcium - Ca 1 2 3 4 5 6 7 8 9 10
- Potassium - K 1 2 3 4 5 6 7 8 9 10
- Magnesium - Mg 1 2 3 4 5 6 7 8 9 10
- Sodium - Na 1 2 3 4 5 6 7 8 9 10
- Hardness - Ca, Mg 1 2 3 4 5 6 7 8 9 10

LHG - Low Level Mercury
- Mercury Low Level - Hg 1 2 3 4 5 6 7 8 9 10

GENERAL CHEMISTRY
- GB Total Cyanide - CN 1 2 3 4 5 6 7 8 9 10
- GB Amenable Cyanide - CN 1 2 3 4 5 6 7 8 9 10
- GCN Available Cyanide - CN 1 2 3 4 5 6 7 8 9 10
- CA Chlorophyll 1 2 3 4 5 6 7 8 9 10
- GN Ortho Phosphate - OP 1 2 3 4 5 6 7 8 9 10
- GN Nitrite - NO_2 1 2 3 4 5 6 7 8 9 10
- GN Nitrate - NO_3 (Calc.) 1 2 3 4 5 6 7 8 9 10
- GN Suspended Solids - SS 1 2 3 4 5 6 7 8 9 10
- GN Dissolved Solids - TDS 1 2 3 4 5 6 7 8 9 10
- MN Diss Solids - TDS (Calc.) 1 2 3 4 5 6 7 8 9 10
- GN Turbidity 1 2 3 4 5 6 7 8 9 10
- MN Total Alkalinity 1 2 3 4 5 6 7 8 9 10
- MN Bicarb/Carb Alkalinity (Includes Total Alkalinity) 1 2 3 4 5 6 7 8 9 10
- MN Chloride - Cl 1 2 3 4 5 6 7 8 9 10
- MN Fluoride - F 1 2 3 4 5 6 7 8 9 10
- MN Sulfate - SO4 1 2 3 4 5 6 7 8 9 10
- MN Chromium 6 - Cr+6 1 2 3 4 5 6 7 8 9 10
- MN Conductivity 1 2 3 4 5 6 7 8 9 10
- MN pH 1 2 3 4 5 6 7 8 9 10
- GA Chem Oxyg Dem - COD 1 2 3 4 5 6 7 8 9 10
- GA Diss Org Carbon - DOC (FF) (Field - Filtered & Preserved) 1 2 3 4 5 6 7 8 9 10
- GN Diss Org Carbon - DOC (LF) (Lab - Filtered & Preserved) 1 2 3 4 5 6 7 8 9 10
- GA Total Org Carbon - TOC 1 2 3 4 5 6 7 8 9 10
- GA Ammonia - NH3 1 2 3 4 5 6 7 8 9 10
- GA Nitrate+Nitrite - NO3+NO2 1 2 3 4 5 6 7 8 9 10
- GA Kjeldahl Nitrogen - KN 1 2 3 4 5 6 7 8 9 10
- GA Total Phosphorus - TP 1 2 3 4 5 6 7 8 9 10

Chain of Custody

Relinquished by	Received By	Date / Time
Print Name & Org. Jeff Pincumbe - MDEQ	Melissa Smith	
Signature:	DEQ	11/15/16 1404
Print Name & Org.	Kevin Mercier TBL	
Signature:		11/16/16 1120
Print Name & Org.	TAWS	
Signature:		11/17/16 0930

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

320-23602 Field Sheet

Job: 23602

Tracking #: 6209 0767 9052

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations. File in the job folder with the COC.

Notes:

No times on Container labels CMR 11/17/16

Therm. ID 11 / 12 / AK / Other

Cooler Custody Seal: TAS 960318

Sample Custody Seal:

Temp: Observed 0.2°C

Corrected: -0.7°C

From: Temp Blank ☐ Sample ☑

NCM : Yes ☐ No ☐

	Yes	No	NA
Perchlorate has headspace?	☐	☐	☐
CoC is complete w/o discrepancies?	☐	☐	☐
Samples received within holding time?	☐	☐	☐
Sample preservatives verified?	☐	☐	☐

Initial / Date: BLH 11/17/2016

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

320-23602 Field Sheet

Job: 23602

Tracking #: 6209 0767 9052

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations. File in the job folder with the COC.

Notes:

No times on Container labels CMR 11/17/16

Therm. ID 11 / 12 / AK / Other

Cooler Custody Seal: TAS 960318

Sample Custody Seal:

Temp: Observed 0.2°C

Corrected: -0.7°C

From: Temp Blank ☐ Sample ☑

NCM : Yes ☐ No ☐

	Yes	No	NA
Perchlorate has headspace?	☐	☐	☐
CoC is complete w/o discrepancies?	☐	☐	☐
Samples received within holding time?	☐	☐	☐
Sample preservatives verified?	☐	☐	☐

Initial / Date: BLM 11/17/2016

Login Sample Receipt Checklist

Client: Michigan Dept. of Environmental Quality

Job Number: 320-23602-1

Login Number: 23602

List Source: TestAmerica Sacramento

List Number: 1

Creator: Edman, Connor M

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