**MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY**

**INTEROFFICE COMMUNICATION**

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

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

DATE: May 21, 2019

SUBJECT: Loud Drive PFC Contamination, Iosco County, Site ID #35000152
GSS Job #829 (Part 3)
Groundwater Sampling Data Package-April 2019

This data package is for Part 201 work requested by the Department of Environment, Great Lakes, and Energy (EGLE), Remediation and Redevelopment Division's (RRD's), Bay City District office for the subject site located in Iosco County, Michigan (Fig 1). On April 15, 2019, RRD's Geological Services Section (GSS) collected groundwater samples from 4 monitor wells (Fig 2). GSS received the final laboratory results on May 8, 2019.

The data package includes the following:

- Site Location Map (Fig 1)
- Monitor Well Location Map (Fig 2)
- Groundwater Contour Map (Fig 3)
- Sampling Field Data (Table 1)
- Laboratory Tables with Comparison to Action Levels (Table 2)
- Elevation Data (Table 3)
- Vista Analytical Laboratory Results (Appendix A)

On April 15, 2019, GSS collected groundwater samples from 4 monitor wells at the site using a low flow method. The field data collected at the time of sampling is included on Table 1. The groundwater samples were submitted to Vista Analytical Laboratory and analyzed for Perfluorinated Hydrocarbons (PFCs) (Table 2) (Appendix A).

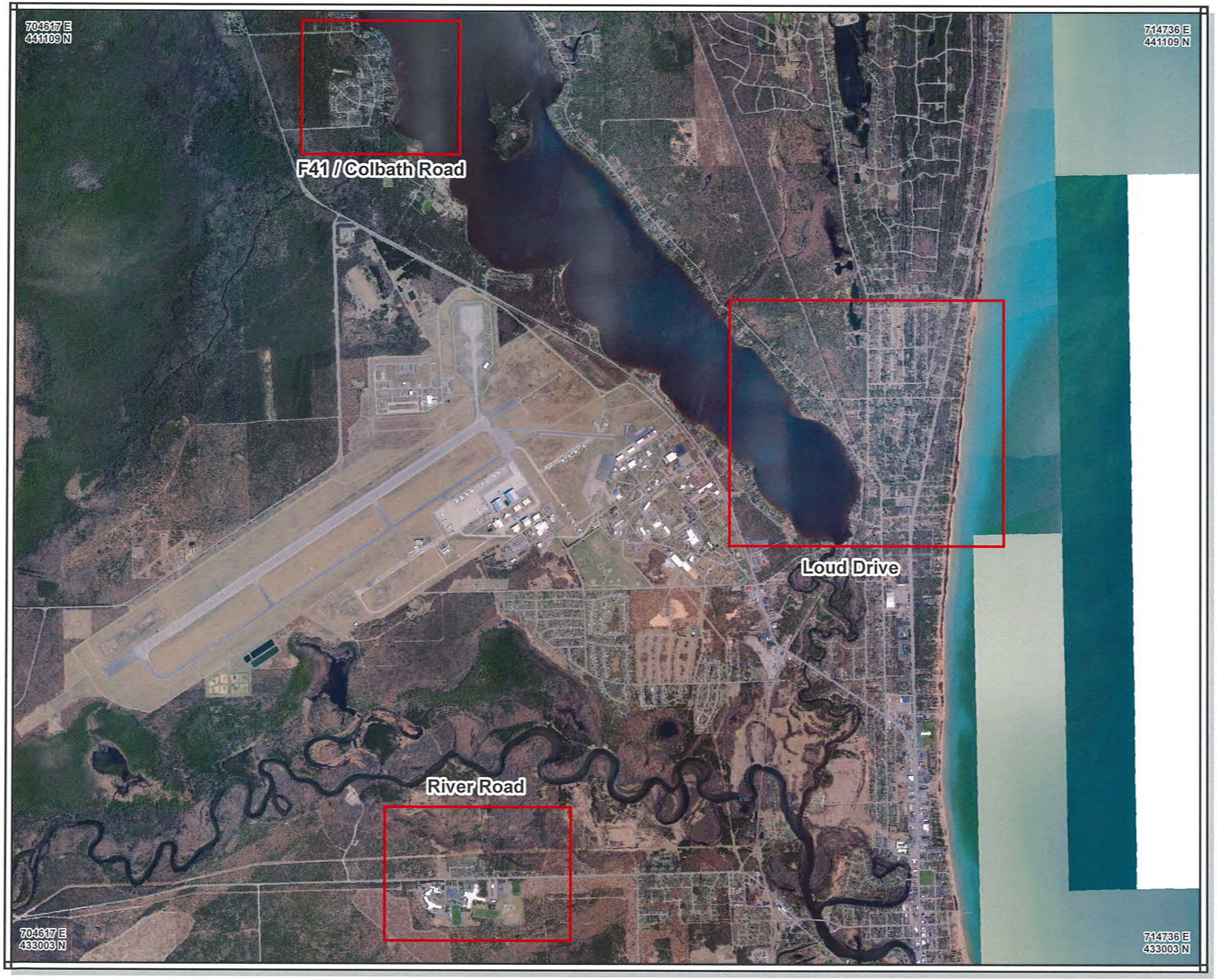
Laboratory results show PFCs were detected in the groundwater samples collected from LD-MW-1, LD-MW-3, and LD-MW-5. The concentrations of total PFOA and PFOS in the sample from LD-MW-1 was 6.86 ng/L, LD-MW-3 was 1.62 ng/L, and LD-MW-5 was 4.79 ng/L. These concentrations are all below the PFC Action Level of 70 ng/L.

Static water levels were measured at the time of sampling and converted to a top of groundwater elevation (Table 3). Staff used the top of groundwater elevations to create a Groundwater Contour Map (Fig 3) which indicates that there is a groundwater high between Lake Huron and Van Etten Lake with groundwater flowing both to the east and west.

If you have any questions, contact me at 517-243-3171. Jeff Pincumbe (KZ)

Attachments

cc: Burrell P. Shirey, EGLE




## LEGEND

- 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

0 180 360 720 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<br>Jeff Pincumbe<br>Geological Services Unit | EGLE<br>MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY | CREATION DATE<br>October 2018 |
| Remediation and Redevelopment Division | | FIGURE 1 |


## LEGEND

- Soil Boring / Monitor Well
- Lake Sample

- 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 65 130 260 Meters

0 250 500 1,000 Feet

1 inch = 1,000 feet

**Wurtsmith - Loud Drive**
**ERNIE ID # 35000152**
OSCODA TOWNSHIP, IOSCO COUNTY
T24N R9E SECTIONS 21, 22 & 27

**SITE MAP**

| GEOLOGIST | | CREATION DATE |
|---|---|---|
| Jeff Pincumbe<br>Geological Services Unit | EGLE | October 2018 |
| Remediation and Redevelopment Division | | FIGURE 2 |


## LEGEND

- Soil Boring / Monitor Well
- April 2019 Groundwater Contour
- Lake Sample

- 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 65 130 260 Meters

0 250 500 1,000 Feet

1 inch = 1,000 feet

**Wurtsmith - Loud Drive**
**ERNIE ID # 35000152**
OSCODA TOWNSHIP, IOSCO COUNTY
T24N R9E SECTIONS 21, 22 & 27

**April 2019**
**Groundwater Contour Map**

| GEOLOGIST | | CREATION DATE |
|---|---|---|
| Jeff Pincumbe<br>Geological Services Unit | EGLE | May 2019 |
| Remediation and Redevelopment Division | | FIGURE 3 |

Sampling Field Data
*(April 15, 2019)*

Loud Drive PFC Contamination,
Iosco County



(last 5 readings before sampling)

| WELL | SCREEN INTERVAL | DATE | TIME | BEGINNING STATIC | FINAL STATIC | pH ± 0.1 | | | | | CONDUCTIVITY 3% | | | | | Percent Dissolved Oxygen 10% | | | | | TURBIDITY 10% | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ft | | | ft | ft | | | | | | mS/cm | | | | | % | | | | | NTU | | | | |
| LD-MW-1 | 14.75 | 4/15/2019 | 11:35 | 8.70 | 8.83 | 7.87 | 7.87 | 7.79 | 7.76 | | 0.220 | 0.211 | 0.205 | 0.201 | | 46.6 | 49.1 | 48.3 | 48.0 | | 2.04 | 1.41 | 1.02 | 1.53 | |
| LD-MW-3 | 9.40 | 4/15/2019 | 12:15 | 11.15 | 11.18 | 7.79 | 7.74 | 7.72 | 7.72 | | 0.219 | 0.217 | 0.216 | 0.215 | | 53.1 | 52.4 | 52.4 | 52.1 | | 0.7 | 0.84 | 0.72 | 0.73 | |
| LD-MW-4 | 15.00 | 4/15/2019 | 12:45 | 5.95 | 6.33 | 8.14 | 8.11 | 8.14 | 8.15 | 8.16 | 0.285 | 0.283 | 0.286 | 0.209 | 0.287 | 8.7 | 9.0 | 8.6 | 8.6 | 8.6 | 3257 | 42 | 60.9 | 6.75 | 20 |
| LD-MW-5 | 10.40 | 4/15/2019 | 11:55 | 0.55 | 0.65 | 7.29 | 7.31 | 7.16 | 7.39 | 7.42 | 0.608 | 0.619 | 0.641 | 0.653 | 0.651 | 0.4 | 0.5 | 0.2 | 0.2 | 0.1 | 38.5 | 30.2 | 11.2 | 5.14 | 2.91 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |

Vista Analytical Laboratory Report

Table #2
(Page 1 of 1)

Vista Work Order No.: 1803165
Report Date: 9/18/18
Client: EGLE-RRD-BAY CITY
Attention: Mike Jury
Project Name: LOUD DRIVE PCE
Site No.: 35000152

| Location | | LD-MW-1 | LD-MW-3 | LD-MW-3 Dup | LD-MW-4 | LD-MW-5 |
|---|---|---|---|---|---|---|
| Depth | | | | | | |
| Date | | 4/15/2019 | 4/15/2019 | 4/15/2019 | 4/15/2019 | 4/15/2019 |
| | Action Level | | | | | |
| Perfluorooctanoic Acid (PFOA) | 70 ng/l | **5.12** | **1.62** | **2.17** | ND | **2.54** |
| Perfluorooctane Sulfonate (PFOS) | 70 ng/l | **1.74** | ND | ND | ND | **2.25** |
| | | | | | | |
| Total PFOA and PFOS | 70 ng/l | **6.86** | **1.62** | **2.17** | ND | **4.79** |

ND = Not Detected.

| Monitor Wells | Top of Casing (TOC) Elevation | Ground Elevation | Total Depth from TOC | Total Depth from Ground | Static Water Level (TOC) 4/15/19 | Groundwater Elevation 4/15/19 |
|---|---|---|---|---|---|---|
| LD-MW-1 | 597.13 | 597.69 | 14.20 | 14.76 | 8.70 | 588.43 |
| LD-MW-3 | 597.29 | 597.87 | 15.90 | 16.48 | 11.15 | 586.14 |
| LD-MW-4 | 598.74 | 598.82 | 15.00 | 15.09 | 5.95 | 592.79 |
| LD-MW-5 | 586.64 | 586.91 | 10.10 | 10.37 | 0.41 | 586.23 |
| LD-B-1 | NA | 599.44 | | | | |
| LD-B-2 | NA | 599.49 | | | | |
| LD-B-3 | NA | 596.451 | | | | |
| LD-B-4 | NA | 595.54 | | | | |
| LD-B-5 | NA | 596.30 | | | | |
| LD-B-6 | NA | 604.11 | | | | |
| LD-B-7 | NA | 593.74 | | | | |
| LD-B-8 | NA | 591.67 | | | | |

NA = Not Available

# APPENDIX A

Loud Drive PFC Contamination, Iosco County
Site ID #35000152

Vista Analytical Laboratory Results

May 08, 2019

**Vista Work Order No. 1900775**

Ms. Maya Murshak
Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Dear Ms. Murshak,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on April 17, 2019 under your Project Name 'Loud Drive'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at mmaier@vista-analytical.com.

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

Martha Maier
Laboratory Director

**Vista Work Order No. 1900775**
**Case Narrative**

**Sample Condition on Receipt:**

Five aqueous samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology. The matrix was not listed on the CoC; the samples have been reported as "aqueous".

**Analytical Notes:**

**PFAS Isotope Dilution Method**

Samples "LD-MW-4" and "LD-MW-5" contained particulate and were centrifuged prior to extraction.

The samples were extracted and analyzed for a selected list of PFAS using the PFAS Isotope Dilution Method (Modified EPA Method 537). The results for PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Results for all other analytes include the linear isomers only.

Holding Times

The samples were extracted and analyzed within the method hold times.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the method acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank above 1/2 the LOQ. The OPR recoveries were within the method acceptance criteria.

The labeled standard recoveries outside of the acceptance criteria are listed in the table below.

QC Anomalies

| LabNumber | SampleName | Analysis | Analyte | Flag | %Rec |
|---|---|---|---|---|---|
| B9D0174-BS1 | B9D0174-BS1 | PFAS Isotope Dilution Method | 13C2-PFUnA | H | 59.2 |

H = Recovery was outside laboratory acceptance criteria.

TABLE OF CONTENTS

# Sample Inventory Report

| Vista Sample ID | Client Sample ID | Sampled | Received | Components/Containers |
|---|---|---|---|---|
| 1900775-01 | LD-MW-1 | 15-Apr-19 11:35 | 17-Apr-19 10:33 | HDPE Bottle, 250 mL |
| | | | | HDPE Bottle, 250 mL |
| 1900775-02 | LD-MW-3 | 15-Apr-19 12:15 | 17-Apr-19 10:33 | HDPE Bottle, 250 mL |
| | | | | HDPE Bottle, 250 mL |
| 1900775-03 | LD-MW-3 DUP | 15-Apr-19 12:15 | 17-Apr-19 10:33 | HDPE Bottle, 250 mL |
| | | | | HDPE Bottle, 250 mL |
| 1900775-04 | LD-MW-4 | 15-Apr-19 12:35 | 17-Apr-19 10:33 | HDPE Bottle, 250 mL |
| | | | | HDPE Bottle, 250 mL |
| 1900775-05 | LD-MW-5 | 15-Apr-19 11:55 | 17-Apr-19 10:33 | HDPE Bottle, 250 mL |
| | | | | HDPE Bottle, 250 mL |

**ANALYTICAL RESULTS**

## Sample ID: Method Blank

**PFAS Isotope Dilution Method**

**Client Data**

Name: Merit Laboratories, Inc.
Project: Loud Drive
Matrix: Aqueous

**Laboratory Data**

Lab Sample: B9D0174-BLK1
Column: BEH C18

| Analyte | Conc. (ng/L) | DL | LOD | LOQ | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|---|---|
| L-PFBA | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| L-PFPeA | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| L-PFBS | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| L-4:2 FTS | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| L-PFHxA | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| L-PFPeS | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| L-PFHpA | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| L-PFHxS | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| Br-PFHxS | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| Total PFHxS | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| L-6:2 FTS | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| L-PFOA | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| Br-PFOA | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| Total PFOA | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| L-PFHpS | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| L-PFNA | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| L-PFOSA | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| L-PFOS | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| Br-PFOS | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| Total PFOS | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| L-PFDA | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| L-8:2FTS | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| L-PFNS | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| L-MeFOSAA | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| Br-MeFOSAA | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| Total MeFOSAA | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| L-EtFOSAA | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| Br-EtFOSAA | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| Total EtFOSAA | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| L-PFUnA | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| L-PFDS | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| L-PFDoA | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| L-PFTrDA | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| L-PFTeDA | ND | 1.37 | 2.00 | 4.00 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |

| Labeled Standards | Type | % Recovery | Limits | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| 13C3-PFBA | IS | 95.0 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| 13C3-PFPeA | IS | 93.2 | 60 - 150 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| 13C3-PFBS | IS | 91.2 | 60 - 150 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |

**Sample ID: Method Blank** **PFAS Isotope Dilution Method**

**Client Data**

Name: Merit Laboratories, Inc. Matrix: Aqueous

Project: Loud Drive

**Laboratory Data**

Lab Sample: B9D0174-BLK1 Column: BEH C18

| Labeled Standards | Type | % Recovery | Limits | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| 13C2-4:2 FTS | IS | 84.0 | 40 - 150 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| 13C2-PFHxA | IS | 89.1 | 70 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| 13C4-PFHpA | IS | 90.7 | 60 - 150 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| 13C3-PFHxS | IS | 89.4 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| 13C2-6:2 FTS | IS | 92.7 | 40 - 150 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| 13C2-PFOA | IS | 80.4 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| 13C5-PFNA | IS | 78.7 | 50 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| 13C8-PFOSA | IS | 52.9 | 20 - 150 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| 13C8-PFOS | IS | 80.7 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| 13C2-PFDA | IS | 67.5 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| 13C2-8:2 FTS | IS | 90.7 | 40 - 150 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| d3-MeFOSAA | IS | 69.0 | 50 - 150 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| d5-EtFOSAA | IS | 71.4 | 50 - 150 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| 13C2-PFUnA | IS | 70.1 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| 13C2-PFDoA | IS | 47.7 | 30 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |
| 13C2-PFTeDA | IS | 31.5 | 20 - 150 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:36 | 1 |

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

**Sample ID: OPR** **PFAS Isotope Dilution Method**

**Client Data**

Name: Merit Laboratories, Inc.
Project: Loud Drive
Matrix: Aqueous

**Laboratory Data**

Lab Sample: B9D0174-BS1
Column: BEH C18

| Analyte | Amt Found (ng/L) | Spike Amt | % Rec | Limits | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|---|---|
| L-PFBA | 41.3 | 40.0 | 103 | 70 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| L-PFPeA | 40.9 | 40.0 | 102 | 70 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| L-PFBS | 42.5 | 40.0 | 106 | 70 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| L-4:2 FTS | 46.6 | 40.0 | 116 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| L-PFHxA | 41.7 | 40.0 | 104 | 70 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| L-PFPeS | 46.7 | 40.0 | 117 | 70 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| L-PFHpA | 42.5 | 40.0 | 106 | 70 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| Total PFHxS | 35.9 | 40.0 | 89.8 | 70 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| L-6:2 FTS | 46.0 | 40.0 | 115 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| Total PFOA | 41.5 | 40.0 | 104 | 70 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| L-PFHpS | 41.8 | 40.0 | 104 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| L-PFNA | 40.1 | 40.0 | 100 | 70 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| L-PFOSA | 40.0 | 40.0 | 100 | 70 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| Total PFOS | 37.4 | 40.0 | 93.6 | 70 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| L-PFDA | 42.5 | 40.0 | 106 | 70 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| L-8:2FTS | 39.6 | 40.0 | 99.0 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| L-PFNS | 36.3 | 40.0 | 90.7 | 70 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| Total MeFOSAA | 40.1 | 40.0 | 100 | 70 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| Total EtFOSAA | 34.9 | 40.0 | 87.4 | 70 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| L-PFUnA | 43.3 | 40.0 | 108 | 70 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| L-PFDS | 25.2 | 40.0 | 63.1 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| L-PFDoA | 46.7 | 40.0 | 117 | 70 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| L-PFTrDA | 34.7 | 40.0 | 86.8 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| L-PFTeDA | 42.5 | 40.0 | 106 | 70 - 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |

| Labeled Standards | Type | % Rec | Limits | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| 13C3-PFBA | IS | 92.8 | 60- 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| 13C3-PFPeA | IS | 90.4 | 60- 150 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| 13C3-PFBS | IS | 90.0 | 60- 150 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| 13C2-4:2 FTS | IS | 86.8 | 40- 150 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| 13C2-PFHxA | IS | 94.0 | 70- 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| 13C4-PFHpA | IS | 83.3 | 60- 150 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| 13C3-PFHxS | IS | 91.8 | 60- 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| 13C2-6:2 FTS | IS | 84.1 | 40- 150 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| 13C2-PFOA | IS | 86.6 | 60- 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| 13C5-PFNA | IS | 78.6 | 50- 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |

**Sample ID: OPR** **PFAS Isotope Dilution Method**

**Client Data**

Name: Merit Laboratories, Inc.
Project: Loud Drive
Matrix: Aqueous

**Laboratory Data**

Lab Sample: B9D0174-BS1
Column: BEH C18

| Labeled Standards | Type | % Rec | Limits | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| 13C8-PFOSA | IS | 57.9 | 20- 150 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| 13C8-PFOS | IS | 81.1 | 60- 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| 13C2-PFDA | IS | 75.8 | 60- 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| 13C2-8:2 FTS | IS | 79.8 | 40- 150 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| d3-MeFOSAA | IS | 76.4 | 50- 150 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| d5-EtFOSAA | IS | 84.2 | 50- 150 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| 13C2-PFUnA | IS | 59.2 | 60- 130 | H | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| 13C2-PFDoA | IS | 43.8 | 30- 130 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |
| 13C2-PFTeDA | IS | 33.0 | 20- 150 | | B9D0174 | 26-Apr-19 | 0.250 L | 30-Apr-19 23:25 | 1 |

## Sample ID: LD-MW-1

**PFAS Isotope Dilution Method**

**Client Data**

Name: Merit Laboratories, Inc.
Project: Loud Drive
Matrix: Aqueous
Date Collected: 15-Apr-19 11:35

**Laboratory Data**

Lab Sample: 1900775-01
Date Received: 17-Apr-19 10:33
Column: BEH C18

| Analyte | Conc. (ng/L) | DL | LOD | LOQ | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|---|---|
| L-PFBA | 3.88 | 1.37 | 1.99 | 3.99 | J | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| L-PFPeA | 4.89 | 1.37 | 1.99 | 3.99 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| L-PFBS | 2.06 | 1.37 | 1.99 | 3.99 | J | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| L-4:2 FTS | ND | 1.37 | 1.99 | 3.99 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| L-PFHxA | 5.83 | 1.37 | 1.99 | 3.99 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| L-PFPeS | ND | 1.37 | 1.99 | 3.99 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| L-PFHpA | 2.14 | 1.37 | 1.99 | 3.99 | J | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| L-PFHxS | 3.17 | 1.37 | 1.99 | 3.99 | J | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| Br-PFHxS | ND | 1.37 | 1.99 | 3.99 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| Total PFHxS | 3.65 | 1.37 | 1.99 | 3.99 | J | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| L-6:2 FTS | ND | 1.37 | 1.99 | 3.99 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| L-PFOA | 4.40 | 1.37 | 1.99 | 3.99 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| Br-PFOA | ND | 1.37 | 1.99 | 3.99 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| Total PFOA | 5.12 | 1.37 | 1.99 | 3.99 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| L-PFHpS | ND | 1.37 | 1.99 | 3.99 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| L-PFNA | ND | 1.37 | 1.99 | 3.99 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| L-PFOSA | ND | 1.37 | 1.99 | 3.99 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| L-PFOS | ND | 1.37 | 1.99 | 3.99 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| Br-PFOS | ND | 1.37 | 1.99 | 3.99 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| Total PFOS | 1.74 | 1.37 | 1.99 | 3.99 | J | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| L-PFDA | ND | 1.37 | 1.99 | 3.99 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| L-8:2FTS | ND | 1.37 | 1.99 | 3.99 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| L-PFNS | ND | 1.37 | 1.99 | 3.99 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| L-MeFOSAA | ND | 1.37 | 1.99 | 3.99 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| Br-MeFOSAA | ND | 1.37 | 1.99 | 3.99 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| Total MeFOSAA | ND | 1.37 | 1.99 | 3.99 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| L-EtFOSAA | ND | 1.37 | 1.99 | 3.99 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| Br-EtFOSAA | ND | 1.37 | 1.99 | 3.99 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| Total EtFOSAA | ND | 1.37 | 1.99 | 3.99 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| L-PFUnA | ND | 1.37 | 1.99 | 3.99 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| L-PFDS | ND | 1.37 | 1.99 | 3.99 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| L-PFDoA | ND | 1.37 | 1.99 | 3.99 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| L-PFTrDA | ND | 1.37 | 1.99 | 3.99 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| L-PFTeDA | ND | 1.37 | 1.99 | 3.99 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |

| Labeled Standards | Type | % Recovery | Limits | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| 13C3-PFBA | IS | 97.3 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| 13C3-PFPeA | IS | 95.5 | 60 - 150 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| 13C3-PFBS | IS | 98.6 | 60 - 150 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |

## Sample ID: LD-MW-1

**PFAS Isotope Dilution Method**

**Client Data**

Name: Merit Laboratories, Inc.
Project: Loud Drive
Matrix: Aqueous
Date Collected: 15-Apr-19 11:35

**Laboratory Data**

Lab Sample: 1900775-01
Date Received: 17-Apr-19 10:33
Column: BEH C18

| Labeled Standards | Type | % Recovery | Limits | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| 13C2-4:2 FTS | IS | 101 | 40 - 150 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| 13C2-PFHxA | IS | 90.9 | 70 - 130 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| 13C4-PFHpA | IS | 90.5 | 60 - 150 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| 13C3-PFHxS | IS | 100 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| 13C2-6:2 FTS | IS | 102 | 40 - 150 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| 13C2-PFOA | IS | 95.0 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| 13C5-PFNA | IS | 90.3 | 50 - 130 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| 13C8-PFOSA | IS | 71.8 | 20 - 150 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| 13C8-PFOS | IS | 98.3 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| 13C2-PFDA | IS | 82.8 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| 13C2-8:2 FTS | IS | 96.5 | 40 - 150 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| d3-MeFOSAA | IS | 90.9 | 50 - 150 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| d5-EtFOSAA | IS | 97.3 | 50 - 150 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| 13C2-PFUnA | IS | 86.4 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| 13C2-PFDoA | IS | 67.2 | 30 - 130 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |
| 13C2-PFTeDA | IS | 66.8 | 20 - 150 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:29 | 1 |

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

## Sample ID: LD-MW-3

**PFAS Isotope Dilution Method**

**Client Data**

Name: Merit Laboratories, Inc.
Project: Loud Drive
Matrix: Aqueous
Date Collected: 15-Apr-19 12:15

**Laboratory Data**

Lab Sample: 1900775-02
Date Received: 17-Apr-19 10:33
Column: BEH C18

| Analyte | Conc. (ng/L) | DL | LOD | LOQ | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|---|---|
| L-PFBA | 1.49 | 1.36 | 1.99 | 3.98 | J | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| L-PFPeA | 1.52 | 1.36 | 1.99 | 3.98 | J | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| L-PFBS | ND | 1.36 | 1.99 | 3.98 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| L-4:2 FTS | ND | 1.36 | 1.99 | 3.98 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| L-PFHxA | 2.24 | 1.36 | 1.99 | 3.98 | J | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| L-PFPeS | ND | 1.36 | 1.99 | 3.98 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| L-PFHpA | ND | 1.36 | 1.99 | 3.98 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| L-PFHxS | 1.41 | 1.36 | 1.99 | 3.98 | J | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| Br-PFHxS | ND | 1.36 | 1.99 | 3.98 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| Total PFHxS | 1.41 | 1.36 | 1.99 | 3.98 | J | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| L-6:2 FTS | ND | 1.36 | 1.99 | 3.98 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| L-PFOA | 1.62 | 1.36 | 1.99 | 3.98 | J | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| Br-PFOA | ND | 1.36 | 1.99 | 3.98 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| Total PFOA | 1.62 | 1.36 | 1.99 | 3.98 | J | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| L-PFHpS | ND | 1.36 | 1.99 | 3.98 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| L-PFNA | ND | 1.36 | 1.99 | 3.98 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| L-PFOSA | ND | 1.36 | 1.99 | 3.98 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| L-PFOS | ND | 1.36 | 1.99 | 3.98 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| Br-PFOS | ND | 1.36 | 1.99 | 3.98 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| Total PFOS | ND | 1.36 | 1.99 | 3.98 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| L-PFDA | ND | 1.36 | 1.99 | 3.98 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| L-8:2FTS | ND | 1.36 | 1.99 | 3.98 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| L-PFNS | ND | 1.36 | 1.99 | 3.98 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| L-MeFOSAA | ND | 1.36 | 1.99 | 3.98 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| Br-MeFOSAA | ND | 1.36 | 1.99 | 3.98 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| Total MeFOSAA | ND | 1.36 | 1.99 | 3.98 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| L-EtFOSAA | ND | 1.36 | 1.99 | 3.98 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| Br-EtFOSAA | ND | 1.36 | 1.99 | 3.98 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| Total EtFOSAA | ND | 1.36 | 1.99 | 3.98 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| L-PFUnA | ND | 1.36 | 1.99 | 3.98 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| L-PFDS | ND | 1.36 | 1.99 | 3.98 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| L-PFDoA | ND | 1.36 | 1.99 | 3.98 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| L-PFTrDA | ND | 1.36 | 1.99 | 3.98 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| L-PFTeDA | ND | 1.36 | 1.99 | 3.98 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |

| Labeled Standards | Type | % Recovery | Limits | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| 13C3-PFBA | IS | 95.8 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| 13C3-PFPeA | IS | 96.8 | 60 - 150 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| 13C3-PFBS | IS | 100 | 60 - 150 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |

## Sample ID: LD-MW-3

**PFAS Isotope Dilution Method**

**Client Data**

Name: Merit Laboratories, Inc.
Project: Loud Drive
Matrix: Aqueous
Date Collected: 15-Apr-19 12:15

**Laboratory Data**

Lab Sample: 1900775-02
Date Received: 17-Apr-19 10:33
Column: BEH C18

| Labeled Standards | Type | % Recovery | Limits | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| 13C2-4:2 FTS | IS | 94.7 | 40 - 150 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| 13C2-PFHxA | IS | 94.0 | 70 - 130 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| 13C4-PFHpA | IS | 96.2 | 60 - 150 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| 13C3-PFHxS | IS | 96.8 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| 13C2-6:2 FTS | IS | 93.9 | 40 - 150 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| 13C2-PFOA | IS | 95.3 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| 13C5-PFNA | IS | 90.5 | 50 - 130 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| 13C8-PFOSA | IS | 77.3 | 20 - 150 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| 13C8-PFOS | IS | 94.2 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| 13C2-PFDA | IS | 85.4 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| 13C2-8:2 FTS | IS | 89.6 | 40 - 150 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| d3-MeFOSAA | IS | 92.3 | 50 - 150 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| d5-EtFOSAA | IS | 107 | 50 - 150 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| 13C2-PFUnA | IS | 90.7 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| 13C2-PFDoA | IS | 67.9 | 30 - 130 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |
| 13C2-PFTeDA | IS | 60.4 | 20 - 150 | | B9D0174 | 26-Apr-19 | 0.251 L | 01-May-19 03:39 | 1 |

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

## Sample ID: LD-MW-3 DUP

**PFAS Isotope Dilution Method**

**Client Data**

Name: Merit Laboratories, Inc.
Project: Loud Drive
Matrix: Aqueous
Date Collected: 15-Apr-19 12:15

**Laboratory Data**

Lab Sample: 1900775-03
Date Received: 17-Apr-19 10:33
Column: BEH C18

| Analyte | Conc. (ng/L) | DL | LOD | LOQ | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|---|---|
| L-PFBA | ND | 1.32 | 1.93 | 3.86 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| L-PFPeA | 1.64 | 1.32 | 1.93 | 3.86 | J | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| L-PFBS | ND | 1.32 | 1.93 | 3.86 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| L-4:2 FTS | ND | 1.32 | 1.93 | 3.86 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| L-PFHxA | 2.02 | 1.32 | 1.93 | 3.86 | J | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| L-PFPeS | ND | 1.32 | 1.93 | 3.86 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| L-PFHpA | ND | 1.32 | 1.93 | 3.86 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| L-PFHxS | ND | 1.32 | 1.93 | 3.86 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| Br-PFHxS | ND | 1.32 | 1.93 | 3.86 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| Total PFHxS | 1.34 | 1.32 | 1.93 | 3.86 | J | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| L-6:2 FTS | ND | 1.32 | 1.93 | 3.86 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| L-PFOA | 2.17 | 1.32 | 1.93 | 3.86 | J | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| Br-PFOA | ND | 1.32 | 1.93 | 3.86 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| Total PFOA | 2.17 | 1.32 | 1.93 | 3.86 | J | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| L-PFHpS | ND | 1.32 | 1.93 | 3.86 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| L-PFNA | ND | 1.32 | 1.93 | 3.86 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| L-PFOSA | ND | 1.32 | 1.93 | 3.86 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| L-PFOS | ND | 1.32 | 1.93 | 3.86 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| Br-PFOS | ND | 1.32 | 1.93 | 3.86 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| Total PFOS | ND | 1.32 | 1.93 | 3.86 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| L-PFDA | ND | 1.32 | 1.93 | 3.86 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| L-8:2FTS | ND | 1.32 | 1.93 | 3.86 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| L-PFNS | ND | 1.32 | 1.93 | 3.86 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| L-MeFOSAA | ND | 1.32 | 1.93 | 3.86 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| Br-MeFOSAA | ND | 1.32 | 1.93 | 3.86 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| Total MeFOSAA | ND | 1.32 | 1.93 | 3.86 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| L-EtFOSAA | ND | 1.32 | 1.93 | 3.86 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| Br-EtFOSAA | ND | 1.32 | 1.93 | 3.86 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| Total EtFOSAA | ND | 1.32 | 1.93 | 3.86 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| L-PFUnA | ND | 1.32 | 1.93 | 3.86 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| L-PFDS | ND | 1.32 | 1.93 | 3.86 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| L-PFDoA | ND | 1.32 | 1.93 | 3.86 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| L-PFTrDA | ND | 1.32 | 1.93 | 3.86 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| L-PFTeDA | ND | 1.32 | 1.93 | 3.86 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |

| Labeled Standards | Type | % Recovery | Limits | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| 13C3-PFBA | IS | 96.6 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| 13C3-PFPeA | IS | 94.9 | 60 - 150 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| 13C3-PFBS | IS | 103 | 60 - 150 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |

## Sample ID: LD-MW-3 DUP

**PFAS Isotope Dilution Method**

**Client Data**

Name: Merit Laboratories, Inc.
Project: Loud Drive
Matrix: Aqueous
Date Collected: 15-Apr-19 12:15

**Laboratory Data**

Lab Sample: 1900775-03
Date Received: 17-Apr-19 10:33
Column: BEH C18

| Labeled Standards | Type | % Recovery | Limits | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| 13C2-4:2 FTS | IS | 107 | 40 - 150 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| 13C2-PFHxA | IS | 97.9 | 70 - 130 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| 13C4-PFHpA | IS | 96.6 | 60 - 150 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| 13C3-PFHxS | IS | 104 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| 13C2-6:2 FTS | IS | 98.7 | 40 - 150 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| 13C2-PFOA | IS | 99.9 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| 13C5-PFNA | IS | 86.7 | 50 - 130 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| 13C8-PFOSA | IS | 72.7 | 20 - 150 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| 13C8-PFOS | IS | 87.5 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| 13C2-PFDA | IS | 101 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| 13C2-8:2 FTS | IS | 86.7 | 40 - 150 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| d3-MeFOSAA | IS | 84.8 | 50 - 150 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| d5-EtFOSAA | IS | 96.9 | 50 - 150 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| 13C2-PFUnA | IS | 84.4 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| 13C2-PFDoA | IS | 75.9 | 30 - 130 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |
| 13C2-PFTeDA | IS | 56.4 | 20 - 150 | | B9D0174 | 26-Apr-19 | 0.259 L | 01-May-19 03:50 | 1 |

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

## Sample ID: LD-MW-4

**PFAS Isotope Dilution Method**

**Client Data**

Name: Merit Laboratories, Inc.
Project: Loud Drive
Matrix: Aqueous
Date Collected: 15-Apr-19 12:35

**Laboratory Data**

Lab Sample: 1900775-04
Date Received: 17-Apr-19 10:33
Column: BEH C18

| Analyte | Conc. (ng/L) | DL | LOD | LOQ | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|---|---|
| L-PFBA | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| L-PFPeA | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| L-PFBS | 5.12 | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| L-4:2 FTS | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| L-PFHxA | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| L-PFPeS | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| L-PFHpA | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| L-PFHxS | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| Br-PFHxS | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| Total PFHxS | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| L-6:2 FTS | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| L-PFOA | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| Br-PFOA | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| Total PFOA | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| L-PFHpS | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| L-PFNA | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| L-PFOSA | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| L-PFOS | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| Br-PFOS | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| Total PFOS | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| L-PFDA | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| L-8:2FTS | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| L-PFNS | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| L-MeFOSAA | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| Br-MeFOSAA | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| Total MeFOSAA | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| L-EtFOSAA | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| Br-EtFOSAA | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| Total EtFOSAA | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| L-PFUnA | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| L-PFDS | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| L-PFDoA | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| L-PFTrDA | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| L-PFTeDA | ND | 1.35 | 1.98 | 3.95 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |

| Labeled Standards | Type | % Recovery | Limits | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| 13C3-PFBA | IS | 94.7 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| 13C3-PFPeA | IS | 96.4 | 60 - 150 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| 13C3-PFBS | IS | 92.5 | 60 - 150 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |

## Sample ID: LD-MW-4

**PFAS Isotope Dilution Method**

**Client Data**

Name: Merit Laboratories, Inc.
Project: Loud Drive
Matrix: Aqueous
Date Collected: 15-Apr-19 12:35

**Laboratory Data**

Lab Sample: 1900775-04
Date Received: 17-Apr-19 10:33
Column: BEH C18

| Labeled Standards | Type | % Recovery | Limits | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| 13C2-4:2 FTS | IS | 86.6 | 40 - 150 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| 13C2-PFHxA | IS | 94.5 | 70 - 130 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| 13C4-PFHpA | IS | 97.4 | 60 - 150 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| 13C3-PFHxS | IS | 95.9 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| 13C2-6:2 FTS | IS | 88.4 | 40 - 150 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| 13C2-PFOA | IS | 92.6 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| 13C5-PFNA | IS | 85.5 | 50 - 130 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| 13C8-PFOSA | IS | 56.6 | 20 - 150 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| 13C8-PFOS | IS | 90.3 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| 13C2-PFDA | IS | 83.8 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| 13C2-8:2 FTS | IS | 90.2 | 40 - 150 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| d3-MeFOSAA | IS | 70.1 | 50 - 150 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| d5-EtFOSAA | IS | 83.8 | 50 - 150 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| 13C2-PFUnA | IS | 70.7 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| 13C2-PFDoA | IS | 65.9 | 30 - 130 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |
| 13C2-PFTeDA | IS | 57.7 | 20 - 150 | | B9D0174 | 26-Apr-19 | 0.253 L | 01-May-19 04:01 | 1 |

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

## Sample ID: LD-MW-5

**PFAS Isotope Dilution Method**

**Client Data**

Name: Merit Laboratories, Inc.
Project: Loud Drive
Matrix: Aqueous
Date Collected: 15-Apr-19 11:55

**Laboratory Data**

Lab Sample: 1900775-05
Date Received: 17-Apr-19 10:33
Column: BEH C18

| Analyte | Conc. (ng/L) | DL | LOD | LOQ | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|---|---|
| L-PFBA | 6.07 | 1.39 | 2.03 | 4.06 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| L-PFPeA | ND | 1.39 | 2.03 | 4.06 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| L-PFBS | 6.80 | 1.39 | 2.03 | 4.06 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| L-4:2 FTS | ND | 1.39 | 2.03 | 4.06 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| L-PFHxA | ND | 1.39 | 2.03 | 4.06 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| L-PFPeS | ND | 1.39 | 2.03 | 4.06 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| L-PFHpA | ND | 1.39 | 2.03 | 4.06 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| L-PFHxS | 3.99 | 1.39 | 2.03 | 4.06 | J | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| Br-PFHxS | ND | 1.39 | 2.03 | 4.06 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| Total PFHxS | 5.14 | 1.39 | 2.03 | 4.06 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| L-6:2 FTS | ND | 1.39 | 2.03 | 4.06 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| L-PFOA | 2.54 | 1.39 | 2.03 | 4.06 | J | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| Br-PFOA | ND | 1.39 | 2.03 | 4.06 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| Total PFOA | 2.54 | 1.39 | 2.03 | 4.06 | J | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| L-PFHpS | ND | 1.39 | 2.03 | 4.06 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| L-PFNA | ND | 1.39 | 2.03 | 4.06 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| L-PFOSA | ND | 1.39 | 2.03 | 4.06 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| L-PFOS | ND | 1.39 | 2.03 | 4.06 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| Br-PFOS | 1.91 | 1.39 | 2.03 | 4.06 | J, Q | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| Total PFOS | 2.25 | 1.39 | 2.03 | 4.06 | J | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| L-PFDA | ND | 1.39 | 2.03 | 4.06 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| L-8:2FTS | ND | 1.39 | 2.03 | 4.06 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| L-PFNS | ND | 1.39 | 2.03 | 4.06 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| L-MeFOSAA | ND | 1.39 | 2.03 | 4.06 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| Br-MeFOSAA | ND | 1.39 | 2.03 | 4.06 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| Total MeFOSAA | ND | 1.39 | 2.03 | 4.06 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| L-EtFOSAA | ND | 1.39 | 2.03 | 4.06 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| Br-EtFOSAA | ND | 1.39 | 2.03 | 4.06 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| Total EtFOSAA | ND | 1.39 | 2.03 | 4.06 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| L-PFUnA | ND | 1.39 | 2.03 | 4.06 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| L-PFDS | ND | 1.39 | 2.03 | 4.06 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| L-PFDoA | ND | 1.39 | 2.03 | 4.06 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| L-PFTrDA | ND | 1.39 | 2.03 | 4.06 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| L-PFTeDA | ND | 1.39 | 2.03 | 4.06 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |

| Labeled Standards | Type | % Recovery | Limits | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| 13C3-PFBA | IS | 95.8 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| 13C3-PFPeA | IS | 97.5 | 60 - 150 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| 13C3-PFBS | IS | 95.8 | 60 - 150 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |

## Sample ID: LD-MW-5

**PFAS Isotope Dilution Method**

**Client Data**

Name: Merit Laboratories, Inc.
Project: Loud Drive
Matrix: Aqueous
Date Collected: 15-Apr-19 11:55

**Laboratory Data**

Lab Sample: 1900775-05
Date Received: 17-Apr-19 10:33
Column: BEH C18

| Labeled Standards | Type | % Recovery | Limits | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| 13C2-4:2 FTS | IS | 96.2 | 40 - 150 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| 13C2-PFHxA | IS | 94.2 | 70 - 130 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| 13C4-PFHpA | IS | 95.7 | 60 - 150 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| 13C3-PFHxS | IS | 95.1 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| 13C2-6:2 FTS | IS | 90.1 | 40 - 150 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| 13C2-PFOA | IS | 93.2 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| 13C5-PFNA | IS | 90.3 | 50 - 130 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| 13C8-PFOSA | IS | 64.3 | 20 - 150 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| 13C8-PFOS | IS | 94.4 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| 13C2-PFDA | IS | 92.8 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| 13C2-8:2 FTS | IS | 95.5 | 40 - 150 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| d3-MeFOSAA | IS | 75.9 | 50 - 150 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| d5-EtFOSAA | IS | 82.6 | 50 - 150 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| 13C2-PFUnA | IS | 80.8 | 60 - 130 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| 13C2-PFDoA | IS | 72.8 | 30 - 130 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |
| 13C2-PFTeDA | IS | 61.5 | 20 - 150 | | B9D0174 | 26-Apr-19 | 0.246 L | 01-May-19 04:11 | 1 |

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
Results reported to the DL.

# DATA QUALIFIERS & ABBREVIATIONS

| | |
|---|---|
| B | This compound was also detected in the method blank |
| Conc. | Concentration |
| D | Dilution |
| DL | Detection limit |
| E | The associated compound concentration exceeded the calibration range of the instrument |
| H | Recovery and/or RPD was outside laboratory acceptance limits |
| I | Chemical Interference |
| J | The amount detected is below the Reporting Limit/LOQ |
| LOD | Limits of Detection |
| LOQ | Limits of Quantitation |
| M | Estimated Maximum Possible Concentration (CA Region 2 projects only) |
| NA | Not applicable |
| ND | Not Detected |
| P | The reported concentration may include contribution from chlorinated diphenyl ether(s). |
| Q | The ion transition ratio is outside of the acceptance criteria. |
| TEQ | Toxic Equivalency |
| U | Not Detected (specific projects only) |
| * | See Cover Letter |

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

## Vista Analytical Laboratory Certifications

| Accrediting Authority | Certificate Number |
|---|---|
| Alaska Department of Environmental Conservation | 17-013 |
| Arkansas Department of Environmental Quality | 19-013-0 |
| California Department of Health – ELAP | 2892 |
| DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005 | 3091.01 |
| Florida Department of Health | E87777 |
| Hawaii Department of Health | N/A |
| Louisiana Department of Environmental Quality | 01977 |
| Maine Department of Health | 2018017 |
| Michigan Department of Environmental Quality | 9932 |
| Minnesota Department of Health | 1521520 |
| New Hampshire Environmental Accreditation Program | 207718 |
| New Jersey Department of Environmental Protection | CA003 |
| New York Department of Health | 11411 |
| Oregon Laboratory Accreditation Program | 4042-010 |
| Pennsylvania Department of Environmental Protection | 015 |
| Texas Commission on Environmental Quality | T104704189-19-10 |
| Virginia Department of General Services | 9618 |
| Washington Department of Ecology | C584-19 |
| Wisconsin Department of Natural Resources | 998036160 |

*Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request.*

## NELAP Accredited Test Methods

| MATRIX: Air | |
|---|---|
| **Description of Test** | **Method** |
| Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans | EPA 23 |
| Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans | EPA TO-9A |

| MATRIX: Biological Tissue | |
|---|---|
| **Description of Test** | **Method** |
| Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS | EPA 1613B |
| Brominated Diphenyl Ethers by HRGC/HRMS | EPA 1614A |
| Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS | EPA 1668A/C |
| Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS | EPA 1699 |
| Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS | EPA 537 |
| Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS | EPA 8280A/B |
| Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS | EPA 8290/8290A |

| MATRIX: Drinking Water | |
|---|---|
| **Description of Test** | **Method** |
| 2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD) GC/HRMS | EPA 1613/1613B |
| 1,4-Dioxane (1,4-Diethyleneoxide) analysis by GC/HRMS | EPA 522 |
| Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS | EPA 537 |
| Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS | ISO 25101 2009 |

| MATRIX: Non-Potable Water | |
|---|---|
| **Description of Test** | **Method** |
| Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS | EPA 1613B |
| Brominated Diphenyl Ethers by HRGC/HRMS | EPA 1614A |
| Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS | EPA 1668A/C |
| Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS | EPA 1699 |
| Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS | EPA 537 |
| Dioxin by GC/HRMS | EPA 613 |
| Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS | EPA 8280A/B |
| Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS | EPA 8290/8290A |

| MATRIX: Solids | |
|---|---|
| **Description of Test** | **Method** |
| Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS | EPA 1613 |
| Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS | EPA 1613B |
| Brominated Diphenyl Ethers by HRGC/HRMS | EPA 1614A |
| Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS | EPA 1668A/C |
| Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS | EPA 1699 |
| Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS | EPA 537 |
| Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS | EPA 8280A/B |
| Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS | EPA 8290/8290A |

Rev. No.: 0
Rev. Date: 06/27/2017

ID: LR - 537COC

Vista Analytical Laboratory

# CHAIN OF CUSTODY

**For Laboratory Use Only**
Work Order #: 1900775 Temp: 4.6 °C
Storage ID: IDR-2 Storage Secured: Yes ☑ No ☐

Project ID: LOUD DRIVE PO#: JOB # GB16 Sampler: JEFF PINCUMBE (name)

TAT (check one): Standard: ☒ 21 days; Rush (surcharge may apply): ☐ 14 days ☐ 7 days Specify: _____

| Invoice to: Name | Company | Address | City | State | Ph# | Fax# |
|---|---|---|---|---|---|---|
| MICH. DEPART. OF ENV. QUALITY | | 525 ALLEGAN ST | LANSING | MICH. | 517 243 3171 | |

| Relinquished by (printed name and signature) | Date | Time | Received by (printed name and signature) | Date | Time |
|---|---|---|---|---|---|
| JEFF PINCUMBE Jeff Pin | 4-16-19 | 1600 | Ashley Mass | 04/17/19 | 1033 |
| Relinquished by (printed name and signature) | Date | Time | Received by (printed name and signature) | Date | Time |

SHIP TO: Vista Analytical Laboratory
1104 Windfield Way
El Dorado Hills, CA 95762
(916) 673-1520 * Fax (916) 673-0106

Method of Shipment: _____

ATTN: _____ Tracking No.: _____

Add Analysis(es) Requested

| Sample ID | Date | Time | Location/Sample Description | Container(s) Quantity | Type | Matrix | Mod. EPA Method 537: PFOA/PFOS | UCMR3 PFAS List:6 | 537 List: 14 | Full List of 26 | Other: Please List Below | EPA Method 537(DW only): PFOA/PFOS | UCMR3 PFAS List:6 | PFAS List: 14 | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LD-MW-1 | 4-15-19 | 1135 | | 2 | | | | | | X | | | | | |
| LD-MW-3 | | 1215 | | 2 | | | | | | X | | | | | |
| LD-MW-3 DUP | | 1215 | | 2 | | | | | | X | | | | | |
| LD-MW-4 | | 1235 | | 2 | | | | | | X | | | | | |
| LD-MW-5 | | 1155 | | 2 | | | | | | X | | | | | |

Special Instructions/Comments:
SEND COPY TO JURYM2@MICHIGAN.GOV.

**SEND DOCUMENTATION AND RESULTS TO:**

Name: JEFF PINCUMBE
Company: MDEQ
Address: 635 FILLEY ST.
City: LANSING State: MI Zip: 48906
Phone: 517 243 3171 Fax: _____
Email: PINCUMBEJ@MICHIGAN.GOV

**Container Types:** P= HDPE, PJ= HDPE Jar, O = Other: _____

**Bottle Preservation Type:** T = Thiosulfate, TZ = Trizma: _____

**Matrix Types:** AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other: _____

Page: 1 of 1

Vista Analytical Laboratory

# Sample Log-In Checklist

Page # 1 of 1

Vista Work Order #: 1900775 TAT Std

| | | | |
|---|---|---|---|
| **Samples Arrival:** | **Date/Time** 4/17/19 1033 | **Initials:** AM | **Location:** WR-2 **Shelf/Rack:** N/A |
| **Logged In:** | **Date/Time** 04/17/19 1446 | **Initials:** MWS | **Location:** WR-2 **Shelf/Rack:** B-2, E-3 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Delivered By:** | FedEx | UPS | On Trac | GSO | DHL | Hand Delivered | Other |
| **Preservation:** | Ice | | Blue Ice | | Dry Ice | | None |

| | | | |
|---|---|---|---|
| **Temp °C:** 4.7 | (uncorrected) | **Probe used:** Y / (N) | **Thermometer ID:** IR-4 |
| **Temp °C:** 4.6 | (corrected) | | |

| | YES | NO | NA |
|---|---|---|---|
| Adequate Sample Volume Received? | ✓ | | |
| Holding Time Acceptable? | ✓ | | |
| Shipping Container(s) Intact? | ✓ | | |
| Shipping Custody Seals Intact? | ✓ | | |
| Shipping Documentation Present? | ✓ | | |
| Airbill ✓ Trk # 1Z 459 110 22 1004 5997 | ✓ | | |
| Sample Container Intact? | ✓ | | |
| Sample Custody Seals Intact? | | | ✓ |
| Chain of Custody / Sample Documentation Present? * SEE ANOMALY | ✓ | | |
| COC Anomaly/Sample Acceptance Form completed? | ✓ | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| If Chlorinated or Drinking Water Samples, Acceptable Preservation? | | | | | | ✓ |
| Preservation Documented: | $Na_2S_2O_3$ Trizma None Other | | | | Yes | No | (NA) |
| Shipping Container | (Vista) | Client | Retain | Return | Dispose | |

Comments: * * NO MATRIX ON COC

| Sample # | Vista label (coc) | Client label |
|---|---|---|
| 4 | "LD-MW-4" | "LMW-4" |
| 5 | "LD-MW-5" | "L-MW-5" |

# Chain of Custody Anomaly/Sample Acceptance Form

Vista Analytical Laboratory

| | | | |
|---|---|---|---|
| Client: | Merit Laboratories, Inc. | Workorder Number: | 1900775 |
| Contact: | Maya Murshak | Date Received: | 17-Apr-19 10:33 |
| Email: | mayamurshak@meritlabs.com | Documented by/date: | M Sparks 04/17/19 |
| Phone: | (517) 827-2744 | | |

Please review the following information and complete the Client Authorization section. To comply with NELAC regulations, we must receive authorization before proceeding with sample analysis.

- [ ] Sample Collection Date and/or Time not provided
- [ ] Temperature outside Method Requirement (WI-PHT)
  Temperature _____°C Ice Present? Yes No Melted
- [ ] Sample ID Not Reconcilable
- [ ] Sample Holding Time Missed
- [ ] Insufficient Sample Size
- [ ] All Sample Container(s) Broken
- [ ] Drinking Water Incorrect Container Type
- [ ] Chain-of-Custody not received, illegible or destroyed
- [X] Other: **See Comments**

**Comments/Samples Affected:**

- ✓ Chain of Custody received with no Matrix listed
- ✓ Sample ID discrepancies:

| Chain of Custody ID | Container Label ID |
|---|---|
| LD-MW-4 | LMW-4 |
| LD-MW-5 | L-MW-5 |

**Client Authorization**

Proceed with Analysis: (YES) NO Signature and Date [signature] 05/07/19

Client Comments/Instructions Client notified via email on 04/22/19. Reporting samples using CoC IDs; "aqueous" matrix.