tyco Fire Protection Products

One Stanton Street
Marinette, WI 54143

September 3, 2019

David Neste
Remediation and Redevelopment Program
Wisconsin Department of Natural Resources
625 E. County Road Y, Suite 700
Oshkosh, WI 54901

RE: Request for Additional Site Information in Marinette, Wisconsin
DNR BRRTS ACTIVITY #S 02-38-581955 & 02-38-580694

Dear Mr. Neste:

We received your letter dated July 2, 2019 concerning the subject above (the "Information Request"), addressed to Jeffrey Danko at Johnson Controls International, plc; please note that Mr. Danko is not employed by Johnson Controls International, plc. Mr. Danko's business address is correctly identified as 5757 N. Green Bay Avenue, and he therefore forwarded the letter to me. I am the Senior Project Manager – Fire Suppression Products at Tyco Fire Products LP ("Tyco").

We understand that Johnson Controls International, plc responded to the DNR Letter for the purpose of clarifying Johnson Controls International plc's corporate status and activities in the State of Wisconsin. However, the issues addressed in the DNR Letter relate to Tyco's operations in Marinette, Wisconsin.

In keeping with the spirit of cooperation between Tyco Fire Products LP ("Tyco") and the WDNR, although the Information Request was not addressed to Tyco, Tyco is voluntarily providing the following in response to the Information Request. This Response is submitted only on behalf of Tyco.

Tyco has generated the enclosed information summary in response to this request (Attachment 1).

Tyco appreciates the WDNR's attention to this matter and looks forward to our continued cooperation. If you have any questions regarding this submission, please feel free to contact me.

Sincerely,

Scott Wahl

Senior Program Manager

**ATTACHMENT 1**

**RESPONSE OF TYCO FIRE PRODUCTS LP TO WISCONSIN DEPARTMENT OF NATURAL RESOURCES' REQUEST FOR ADDITIONAL SITE INFORMATION IN MARINETTE, WISCONSIN**

**DNR BRRTS ACTIVITY #S 02-38-581955 & 02-38-580694**

**September 3, 2019**

The Wisconsin Department of Natural Resources ("WDNR") Information Request dated July 2, 2019 ("Information Request") is addressed to Jeffery Danko, Johnson Controls International, plc. Johnson Controls International, plc is incorporated under the laws of the Republic of Ireland and is not registered to transact business in the State of Wisconsin. Johnson Controls International, plc has no employees or operations in the State of Wisconsin. In addition, please note that Mr. Danko is not employed by Johnson Controls International, plc. Mr. Danko's business address was correctly identified as 5757 N. Green Bay Avenue, and he therefore forwarded the letter to Tyco Fire Products LP.

In keeping with the spirit of cooperation between Tyco Fire Products LP ("Tyco") and the WDNR, although the Information Request was not addressed to Tyco, Tyco is voluntarily providing the following in response to the Information Request. This Response is submitted only on behalf of Tyco.

Tyco is the owner and operator of the properties located at: 1 Stanton Street, Marinette, Wisconsin (identified as BRRTS Activity Number 02-38-581955), and 2700 Industrial Parkway, Marinette, Wisconsin (identified as BRRTS Activity Number 02-38-580694) (collectively, the "Tyco Properties"). Tyco is also identified as the Responsible Party in the DNR BRRTS website for Activities #02-38-581955 and #02-38-580694. Although the Information Request asks that Johnson Controls International, plc. provide future submittals for the Tyco Properties, for the reasons stated above, Tyco will solely continue to submit information required by the DNR for the Tyco Properties.

All responses were prepared with the assistance and advice of counsel and such discussions are covered by attorney/client and attorney work product privileges.

## GENERAL OBJECTIONS

Tyco's objections are made without in any way waiving or intending to waive but, on the contrary, preserving and intending to preserve:

(a) all questions and/or objections as to competency, relevancy, materiality, privilege, and admissibility as evidence for any purpose of the responses or subject matter thereof, in any subsequent proceeding involving Tyco;

(b) the right to object on any ground to the use of these responses or the subject matter thereof in any subsequent proceeding involving Tyco; and

(c) the right to object on any ground at any time to other requests or discovery procedures involving or relating to the subject of these responses.

Tyco has a corporate document retention program that limits the availability of older records and information. These responses are based on, and therefore necessarily limited by, the records and information still in existence, presently recollected, and thus far discovered in the course of preparing these responses. Tyco reserves the right to supplement and make any changes to these responses if it appears at any time that omissions or errors have been made or that more accurate information is available.

Tyco objects to each and every instruction and request to the extent that it seeks information that is not relevant or otherwise beyond that authorized by Wisconsin statutes.

Tyco objects to each and every instruction and request to the extent that it seeks information protected by the attorney/client privilege, the attorney work product doctrine, or any other applicable privilege or restriction, and Tyco has not included in this response copies of any such documents protected by such privileges, doctrines, or restrictions.

Tyco objects to each and every request to the extent that such requests are overly broad and unduly burdensome.

Tyco objects to this Information Request to the extent it lacks any definitions for the terminology utilized in the requests, such that Tyco is unable to determine what information is being sought by WDNR. Nothing in this response or in any subsequent or previous response to the Information Request shall be considered or deemed to be a waiver of these objections.

Tyco objects to this Information Request to the extent it asks duplicative questions from the responses to the WDNR's Information Request dated August 16, 2018, to which Tyco responded on October 18, 2018 and the WDNR's Information Request dated January 16, 2018, to which Tyco responded on March 12, 2018. Tyco incorporates all responses to the August 16, 2018 and January 16, 2018 Information Requests herein by reference.

Tyco's response is provided below[1]. The following responses correspond to the numbered requests in the Information Request (the Information Request language is set forth in italics). Tyco emphasizes that the information provided in this response is based on the Company's reasonable and good faith searches conducted to date for responsive information. WDNR's request for information is broad, calling for information spanning different products,

[1] This response is provided without any admission of liability of Tyco or its officers, directors, employees, agents or representatives, or as a waiver of any rights, objections, privileges or defenses. Tyco reserves the right to object to the use, in whole or in part, of any document or information submitted with this response in any proceeding for any purpose.

constituents, and activities that may date back a number decades. Tyco to date has not located comprehensive collections of information that are responsive to all parts of WDNR's requests, to the extent they may even exist. This response is being provided in good faith and in the spirit of cooperation with WDNR. Tyco reserves the right to amend this response as appropriate as it learns additional or different information.

**REQUEST NO. 1:** *Where was wastewater generated by JCI/Tyco transported to prior to the recent or current practice of off-site transportation of wastewater to the Publicly Owned Treatment Works ("POTW") located in Kimberly, Wisconsin by Covanta or out-of-state wastewater transportation to Ohio? Please provide a list of service providers and associated local POTWs denoting years utilized by Ansul, Tyco International, plc and JCI for the disposal of PFAS-containing wastewater.*

**RESPONSE:**

Based on available records and information, prior to sending wastewater to the POTW located in Kimberly, Wisconsin or to out-of-state wastewater transportation to Vickery, Ohio, Tyco sent wastewater to Heritage Environmental Solutions, LLC ("Heritage"). Based on our records, we understand that wastewater produced by Tyco was sent to Heritage since at least 2007. While we have not identified records going back further than 2007, we understand from interviews with Tyco employees that Heritage was likely used by Tyco going back to at least 2001. Based on available records, waste streams sent to Heritage were sent to the following locations: Indianapolis, Indiana; East Liverpool, Ohio; Oak Creek, Wisconsin; and Phoenix, Arizona, all of which were licensed to receive these materials.

Tyco has not located any additional information regarding where PFAS-containing wastewater was sent prior to the POTW located in Kimberly, Wisconsin or to out-of-state wastewater transportation to Vickery, Ohio.

**REQUEST NO.2:** *Where was the solid waste found in the wastewater generated by JCI/Tyco, the out-of-specification or out-of-date products created by JCI/Tyco, or clean up material generated by JCI/Tyco transported to prior to the recent or current practice of out-of-state transportation of solids by Heritage Environmental Services to Indianapolis, IN? Please provide a list of service providers and associated landfills or incineration facilities denoting years utilized by Ansul, Tyco International, plc and JCI for the disposal of PFAS-containing solid waste and waste products.*

**RESPONSE:**

Based on available records and information, Tyco sent other PFAS-containing waste products to Heritage since at least 2007. Please see Response to DNR Request No. 1.

**REQUEST NO. 3:** *Where were totes previously containing PFAS transported to for reconditioning or disposal prior to the current or recent or current practice of off-site transportation to Menominee Falls, Wisconsin by Covanta, and to the Kitzinger Cooperage facility in St. Francis, Wisconsin? Please provide a list of service providers and facilities denoting years*

*utilized by Ansul, Tyco International, plc and JCI for the reconditioning or disposal of PFAS-containing totes and containers.*

**RESPONSE:**

Based on available records and information, prior to sending totes previously containing PFAS to Menominee Falls, Wisconsin by Covanta, and to the Kitzinger Cooperage facility in St. Francis, Wisconsin, Tyco sent totes previously containing PFAS materials to Heritage since at least 2007. Please see Response to DNR Request No. 1. Tyco has not located any additional information regarding where totes previously containing PFAS materials were previously sent.

**REQUEST NO. 4:** *Please provide a list of entities and businesses acquired by JCI and your predecessors that manufactured PFAS-containing products such as Rockwood Systems, Inc. (dba Rockwood Foam) previously located at 171 Stephenson Ave in Peshtigo, Wisconsin.*

**RESPONSE:**

Tyco has never owned nor operated the facility located at 171 Stephenson Ave in Peshtigo, Wisconsin. On or about May 18, 1993, Wormald U.S. Inc.("Wormald") acquired certain assets of Rockwood Systems Corporation ("Rockwood") through Rockwood's bankruptcy proceeding in the Northern District of Texas U.S. Bankruptcy Court. Tyco did not acquire the Rockwood entity, only certain assets.

At the time of Rockwood's bankruptcy and Wormald's acquisition, Rockwood operations were solely located in Dallas. The assets were acquired from Rockwood in Dallas and were moved to Tyco's facility in Marinette. (Through a series of mergers, Wormald was eventually merged into Tyco.) Wormwald only purchased assets, however, based on available information, Rockwood never owned or operated the facility located at 171 Stephenson Avenue in Peshtigo, Wisconsin. Therefore, neither Wormald nor Tyco ever owned or operated the facility located at 171 Stephenson Avenue in Peshtigo, Wisconsin, either.

Tyco is not aware of any acquisition of entities or assets relating to PFAS-containing products in the state of Wisconsin.

**REQUEST NO. 5:** *Please provide all field sampling data of PFAS that was collected on or off the FTC property by your previous environmental consultant, O&M Inc. or any other parties prior to 2016. Please provide any reports generated by O&M Inc. pertaining to this data.*

**RESPONSE:**

Laboratory data for PFAS compounds for field sampling conducted by O&M, Inc. are provided in Appendix A. Tyco has not identified any other field sampling data for PFAS prior to 2016.

*One Stanton Street*
*Marinette, WI 54143*

# Appendix A

## Southeast ACCUTEST Laboratories Technical Reports for O&M, Inc.
## Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI

Southeast
ACCUTEST
LABORATORIES

11/19/13

## Technical Report for

O & M, Inc

Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI

493

Accutest Job Number: FA9482

Sampling Date: 10/23/13

Report to:

O & M, Inc
450 Montbrook Ln
Knoxville, TN 37919
efrauen@oandm-inc.com

ATTN: Eric Frauen

Total number of pages in report: **43**

NELAP ACCREDITED TNI LABORATORY

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Harry Behzadi, Ph.D.
Laboratory Director

Client Service contact: Muna Mohammed 407-425-6700

Certifications: FL (E83510), LA (03051), KS (E-10327), IA (366), IL (200063), NC (573), NJ (FL002), SC (96038001) DoD ELAP (L-A-B L2229), CA (04226CA), TX (T104704404), PA (68-03573), VA (460177), AK, AR, GA, KY, MA, NV, OK, UT, WA

Sections: 1 2 3 4 5

# Table of Contents

-1-


**Section 1: Sample Summary** ..... **3**
**Section 2: Summary of Hits** ..... **5**
Section 3: Sample Results ..... 8
3.1: FA9482-1: FTC-58-S ..... 9
3.2: FA9482-2: FTC-59 ..... 10
3.3: FA9482-3: FTC-59-S ..... 11
3.4: FA9482-4: FTC-60 ..... 12
3.5: FA9482-5: FTC-60-S ..... 13
3.6: FA9482-6: FTC-61-S ..... 14
3.7: FA9482-7: FTC-62 ..... 15
3.8: FA9482-8: FTC-62-S ..... 16
3.9: FA9482-9: FTC-63-S ..... 17
3.10: FA9482-10: FTC-71 ..... 18
3.11: FA9482-11: FTC-71 ..... 19
3.12: FA9482-12: FTC-72 ..... 20
3.13: FA9482-13: FTC-72 ..... 21
3.14: FA9482-14: FTC-73 ..... 22
3.15: FA9482-15: FTC-74 ..... 23
3.16: FA9482-16: FTC-75 ..... 24
3.17: FA9482-17: FTC-76 ..... 25
3.18: FA9482-18: FTC-77 ..... 26
3.19: FA9482-19: FTC-77 ..... 27
**Section 4: Misc. Forms** ..... **28**
**4.1:** Chain of Custody ..... 29
Section 5: GC/MS Semi-volatiles - QC Data Summaries ..... 32
5.1: Method Blank Summary ..... 33
5.2: Blank Spike Summary ..... 38
5.3: Matrix Spike/Matrix Spike Duplicate Summary ..... 41

# Sample Summary

O & M, Inc

Job No: FA9482

Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI
Project No: 493

| Sample Number | Collected Date | Time | By | Received | Matrix Code | Matrix Type | Client Sample ID |
|---|---|---|---|---|---|---|---|
| FA9482-1 | 10/23/13 | 10:25 | EF | 10/26/13 | AQ | Ground Water | FTC-58-S |
| FA9482-2 | 10/23/13 | 10:45 | EF | 10/26/13 | SO | Soil | FTC-59 |
| FA9482-3 | 10/23/13 | 10:50 | EF | 10/26/13 | AQ | Ground Water | FTC-59-S |
| FA9482-4 | 10/23/13 | 11:10 | EF | 10/26/13 | SO | Soil | FTC-60 |
| FA9482-5 | 10/23/13 | 11:15 | EF | 10/26/13 | AQ | Ground Water | FTC-60-S |
| FA9482-6 | 10/23/13 | 12:25 | EF | 10/26/13 | AQ | Ground Water | FTC-61-S |
| FA9482-7 | 10/23/13 | 13:10 | EF | 10/26/13 | SO | Soil | FTC-62 |
| FA9482-8 | 10/23/13 | 13:15 | EF | 10/26/13 | AQ | Ground Water | FTC-62-S |
| FA9482-9 | 10/23/13 | 13:30 | EF | 10/26/13 | AQ | Ground Water | FTC-63-S |
| FA9482-10 | 10/23/13 | 15:48 | EF | 10/26/13 | SO | Soil | FTC-71 |
| FA9482-11 | 10/23/13 | 15:55 | EF | 10/26/13 | AQ | Ground Water | FTC-71 |
| FA9482-12 | 10/23/13 | 16:25 | EF | 10/26/13 | SO | Soil | FTC-72 |
| FA9482-13 | 10/23/13 | 16:30 | EF | 10/26/13 | AQ | Ground Water | FTC-72 |

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

# Sample Summary
(continued)

O & M, Inc

Job No: FA9482

Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI
Project No: 493

| Sample Number | Collected Date | Time | By | Received | Matrix Code | Matrix Type | Client Sample ID |
|---|---|---|---|---|---|---|---|
| FA9482-14 | 10/23/13 | 16:40 | EF | 10/26/13 | AQ | Ground Water | FTC-73 |
| FA9482-15 | 10/23/13 | 16:55 | EF | 10/26/13 | AQ | Ground Water | FTC-74 |
| FA9482-16 | 10/23/13 | 17:10 | EF | 10/26/13 | AQ | Ground Water | FTC-75 |
| FA9482-17 | 10/23/13 | 17:25 | EF | 10/26/13 | AQ | Ground Water | FTC-76 |
| FA9482-18 | 10/23/13 | 17:40 | EF | 10/26/13 | SO | Soil | FTC-77 |
| FA9482-19 | 10/23/13 | 17:45 | EF | 10/26/13 | AQ | Ground Water | FTC-77 |

The reported LOD and LOQ values have been adjusted for dry weight unless otherwise indicated on the results page. The reported LOD and LOQ values have been adjusted for the same dilution factor as that used for the sample result unless otherwise indicated on the results page. LOD = MDL and LOQ = RL.

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

# Summary of Hits



2

**Job Number:** FA9482
**Account:** O & M, Inc
**Project:** Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI
**Collected:** 10/23/13

| Lab Sample ID / Analyte | Client Sample ID | Result/ Qual | RL | MDL | Units | Method |
|---|---|---|---|---|---|---|
| **FA9482-1** | **FTC-58-S** | | | | | |
| Perfluoroheptanoic acid | | 15.8 | 10 | 4.0 | ug/l | EPA 537 MOD |
| Perfluorooctanoic acid | | 31.2 | 10 | 4.0 | ug/l | EPA 537 MOD |
| **FA9482-2** | **FTC-59** | | | | | |
| Perfluorooctanoic acid [a] | | 35.6 | 26 | 10 | ug/kg | EPA 537 MOD |
| **FA9482-3** | **FTC-59-S** | | | | | |
| Perfluoroheptanoic acid | | 16.0 J | 20 | 8.0 | ug/l | EPA 537 MOD |
| Perfluorooctanoic acid | | 136 | 20 | 8.0 | ug/l | EPA 537 MOD |
| **FA9482-4** | **FTC-60** | | | | | |
| Perfluorooctanoic acid [a] | | 122 | 29 | 12 | ug/kg | EPA 537 MOD |
| Perfluorooctanesulfonic acid [a] | | 19.1 J | 29 | 12 | ug/kg | EPA 537 MOD |
| **FA9482-5** | **FTC-60-S** | | | | | |
| Perfluoroheptanoic acid [b] | | 21.9 J | 50 | 20 | ug/l | EPA 537 MOD |
| Perfluorooctanoic acid [b] | | 254 | 50 | 20 | ug/l | EPA 537 MOD |
| Perfluorobutanesulfonic acid [b] | | 22.1 J | 50 | 20 | ug/l | EPA 537 MOD |
| **FA9482-6** | **FTC-61-S** | | | | | |
| Perfluorohexanoic acid | | 4.0 J | 5.0 | 2.0 | ug/l | EPA 537 MOD |
| Perfluoroheptanoic acid | | 1.1 | 0.20 | 0.080 | ug/l | EPA 537 MOD |
| Perfluorooctanoic acid | | 11.8 | 5.0 | 2.0 | ug/l | EPA 537 MOD |
| Perfluorononanoic acid | | 0.46 | 0.20 | 0.080 | ug/l | EPA 537 MOD |
| Perfluorodecanoic acid | | 0.23 | 0.20 | 0.080 | ug/l | EPA 537 MOD |
| Perfluoroundecanoic acid | | 0.32 | 0.20 | 0.080 | ug/l | EPA 537 MOD |
| Perfluorotridecanoic acid | | 0.082 J | 0.20 | 0.080 | ug/l | EPA 537 MOD |
| Perfluorohexanesulfonic acid | | 0.46 | 0.20 | 0.080 | ug/l | EPA 537 MOD |
| Perfluorooctanesulfonic acid | | 0.75 | 0.20 | 0.080 | ug/l | EPA 537 MOD |
| **FA9482-7** | **FTC-62** | | | | | |
| Perfluorooctanoic acid | | 84.9 | 13 | 5.3 | ug/kg | EPA 537 MOD |
| Perfluoroundecanoic acid | | 6.7 J | 13 | 5.3 | ug/kg | EPA 537 MOD |
| **FA9482-8** | **FTC-62-S** | | | | | |
| Perfluorohexanoic acid | | 16.9 | 10 | 4.0 | ug/l | EPA 537 MOD |

# Summary of Hits

**Job Number:** FA9482
**Account:** O & M, Inc
**Project:** Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI
**Collected:** 10/23/13

| Lab Sample ID / Analyte | Client Sample ID | Result/ Qual | RL | MDL | Units | Method |
|---|---|---|---|---|---|---|
| Perfluoroheptanoic acid | | 6.7 J | 10 | 4.0 | ug/l | EPA 537 MOD |
| Perfluorooctanoic acid | | 32.6 | 10 | 4.0 | ug/l | EPA 537 MOD |
| Perfluoroundecanoic acid | | 6.9 J | 10 | 4.0 | ug/l | EPA 537 MOD |
| Perfluorooctanesulfonic acid | | 22.0 | 10 | 4.0 | ug/l | EPA 537 MOD |
| **FA9482-9** | **FTC-63-S** | | | | | |
| Perfluorooctanoic acid [b] | | 84.5 | 50 | 20 | ug/l | EPA 537 MOD |
| Perfluorobutanesulfonic acid [b] | | 36.1 J | 50 | 20 | ug/l | EPA 537 MOD |
| **FA9482-10** | **FTC-71** | | | | | |
| Perfluorooctanesulfonic acid [b] | | 308 | 63 | 25 | ug/kg | EPA 537 MOD |
| **FA9482-11** | **FTC-71** | | | | | |
| Perfluorohexanoic acid | | 251 | 50 | 20 | ug/l | EPA 537 MOD |
| Perfluoroheptanoic acid | | 77.2 | 50 | 20 | ug/l | EPA 537 MOD |
| Perfluorooctanoic acid | | 50.3 | 50 | 20 | ug/l | EPA 537 MOD |
| Perfluorobutanesulfonic acid | | 27.5 J | 50 | 20 | ug/l | EPA 537 MOD |
| **FA9482-12** | **FTC-72** | | | | | |
| Perfluorohexanoic acid | | 12.6 | 12 | 4.9 | ug/kg | EPA 537 MOD |
| Perfluoroheptanoic acid | | 16.4 | 12 | 4.9 | ug/kg | EPA 537 MOD |
| Perfluorooctanoic acid | | 35.8 | 12 | 4.9 | ug/kg | EPA 537 MOD |
| Perfluorononanoic acid | | 5.4 J | 12 | 4.9 | ug/kg | EPA 537 MOD |
| Perfluorooctanesulfonic acid | | 13.5 | 12 | 4.9 | ug/kg | EPA 537 MOD |
| **FA9482-13** | **FTC-72** | | | | | |
| Perfluorohexanoic acid | | 56.6 | 8.0 | 3.2 | ug/l | EPA 537 MOD |
| Perfluoroheptanoic acid | | 16.3 | 5.0 | 2.0 | ug/l | EPA 537 MOD |
| Perfluorooctanoic acid | | 16.2 | 5.0 | 2.0 | ug/l | EPA 537 MOD |
| **FA9482-14** | **FTC-73** | | | | | |
| Perfluorohexanoic acid | | 84.2 | 10 | 4.0 | ug/l | EPA 537 MOD |
| Perfluoroheptanoic acid | | 10.4 | 10 | 4.0 | ug/l | EPA 537 MOD |
| Perfluorooctanoic acid | | 34.8 | 10 | 4.0 | ug/l | EPA 537 MOD |
| Perfluorobutanesulfonic acid | | 10.2 | 10 | 4.0 | ug/l | EPA 537 MOD |
| **FA9482-15** | **FTC-74** | | | | | |
| Perfluorohexanoic acid | | 25.5 | 10 | 4.0 | ug/l | EPA 537 MOD |

# Summary of Hits

**Job Number:** FA9482
**Account:** O & M, Inc
**Project:** Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI
**Collected:** 10/23/13

| Lab Sample ID / Analyte | Client Sample ID | Result/ Qual | RL | MDL | Units | Method |
|---|---|---|---|---|---|---|
| Perfluoroheptanoic acid | | 11.4 | 10 | 4.0 | ug/l | EPA 537 MOD |
| Perfluorooctanoic acid | | 24.6 | 5.0 | 2.0 | ug/l | EPA 537 MOD |
| Perfluorononanoic acid | | 2.9 J | 5.0 | 2.0 | ug/l | EPA 537 MOD |
| **FA9482-16** | **FTC-75** | | | | | |
| Perfluorohexanoic acid | | 68.9 | 8.0 | 3.2 | ug/l | EPA 537 MOD |
| Perfluoroheptanoic acid | | 13.1 | 8.0 | 3.2 | ug/l | EPA 537 MOD |
| Perfluorooctanoic acid | | 14.7 | 8.0 | 3.2 | ug/l | EPA 537 MOD |
| Perfluorobutanesulfonic acid | | 3.4 J | 8.0 | 3.2 | ug/l | EPA 537 MOD |
| **FA9482-17** | **FTC-76** | | | | | |
| Perfluorohexanoic acid [b] | | 142 | 50 | 20 | ug/l | EPA 537 MOD |
| Perfluoroheptanoic acid [b] | | 22.1 J | 50 | 20 | ug/l | EPA 537 MOD |
| Perfluorooctanoic acid [b] | | 40.9 J | 50 | 20 | ug/l | EPA 537 MOD |
| Perfluorobutanesulfonic acid [b] | | 26.2 J | 50 | 20 | ug/l | EPA 537 MOD |
| **FA9482-18** | **FTC-77** | | | | | |
| Perfluorohexanoic acid | | 11.4 J | 12 | 4.8 | ug/kg | EPA 537 MOD |
| Perfluorooctanoic acid | | 17.6 | 12 | 4.8 | ug/kg | EPA 537 MOD |
| Perfluorodecanoic acid | | 47.3 | 12 | 4.8 | ug/kg | EPA 537 MOD |
| Perfluoroundecanoic acid | | 61.2 | 12 | 4.8 | ug/kg | EPA 537 MOD |
| Perfluorododecanoic acid | | 18.2 | 12 | 4.8 | ug/kg | EPA 537 MOD |
| Perfluorotridecanoic acid | | 17.6 | 12 | 4.8 | ug/kg | EPA 537 MOD |
| Perfluorotetradecanoic acid | | 6.0 J | 12 | 4.8 | ug/kg | EPA 537 MOD |
| Perfluorooctanesulfonic acid | | 580 | 120 | 48 | ug/kg | EPA 537 MOD |
| **FA9482-19** | **FTC-77** | | | | | |
| Perfluorohexanoic acid [b] | | 87.2 | 50 | 20 | ug/l | EPA 537 MOD |

(a) Dilution required due to matrix interference (internal standard failure).
(b) Dilution required due to matrix interference.

## Sample Results

Report of Analysis

Accutest Laboratories

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | FTC-58-S | | |
| **Lab Sample ID:** | FA9482-1 | **Date Sampled:** | 10/23/13 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 10/26/13 |
| **Method:** | EPA 537 MOD IN HOUSE | **Percent Solids:** | n/a |
| **Project:** | Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | Q3632.D | 2 | 11/12/13 | MRE | 11/05/13 | OP49318 | SQ101 |
| Run #2 | | | | | | | |

| | Initial Volume | Final Volume |
|---|---|---|
| Run #1 | 1.0 ml | 2.0 ml |
| Run #2 | | |

**Perfluorinated Carboxylic Acids and Sulfonates**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| **PERFLUOROALKYLCARBOXYLIC ACIDS** | | | | | | |
| 307-24-4 | Perfluorohexanoic acid | ND | 10 | 4.0 | ug/l | |
| 375-85-9 | Perfluoroheptanoic acid | 15.8 | 10 | 4.0 | ug/l | |
| 335-67-1 | Perfluorooctanoic acid | 31.2 | 10 | 4.0 | ug/l | |
| 375-95-1 | Perfluorononanoic acid | ND | 10 | 4.0 | ug/l | |
| 335-76-2 | Perfluorodecanoic acid | ND | 10 | 4.0 | ug/l | |
| 2058-94-8 | Perfluoroundecanoic acid | ND | 10 | 4.0 | ug/l | |
| 307-55-1 | Perfluorododecanoic acid | ND | 10 | 4.0 | ug/l | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 10 | 4.0 | ug/l | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 10 | 4.0 | ug/l | |
| **PERFLUOROALKYLSULFONATES** | | | | | | |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | 10 | 4.0 | ug/l | |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 10 | 4.0 | ug/l | |
| | Perfluoroheptanesulfonic acid | ND | 10 | 4.0 | ug/l | |
| 1763-23-1 | Perfluorooctanesulfonic acid | ND | 10 | 4.0 | ug/l | |
| | Perfluorodecanesulfonic acid | ND | 10 | 4.0 | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| | 13C2-PFHxA | 93% | | 70-130% |
| | 13C2-PFDA | 102% | | 70-130% |

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | FTC-59 | | |
| **Lab Sample ID:** | FA9482-2 | **Date Sampled:** | 10/23/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 10/26/13 |
| **Method:** | EPA 537 MOD IN HOUSE | **Percent Solids:** | 80.2 |
| **Project:** | Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | Q3465.D | 2 | 11/05/13 | MRE | 11/01/13 | OP49273 | SQ96 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 1.2 g | 5.0 ml |
| Run #2 | | |

**Perfluorinated Carboxylic Acids and Sulfonates**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| **PERFLUOROALKYLCARBOXYLIC ACIDS** | | | | | | |
| 307-24-4 | Perfluorohexanoic acid | ND | 26 | 10 | ug/kg | |
| 375-85-9 | Perfluoroheptanoic acid | ND | 26 | 10 | ug/kg | |
| 335-67-1 | Perfluorooctanoic acid | 35.6 | 26 | 10 | ug/kg | |
| 375-95-1 | Perfluorononanoic acid | ND | 26 | 10 | ug/kg | |
| 335-76-2 | Perfluorodecanoic acid | ND | 26 | 10 | ug/kg | |
| 2058-94-8 | Perfluoroundecanoic acid | ND | 26 | 10 | ug/kg | |
| 307-55-1 | Perfluorododecanoic acid | ND | 26 | 10 | ug/kg | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 26 | 10 | ug/kg | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 26 | 10 | ug/kg | |
| **PERFLUOROALKYLSULFONATES** | | | | | | |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | 26 | 10 | ug/kg | |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 26 | 10 | ug/kg | |
| | Perfluoroheptanesulfonic acid | ND | 26 | 10 | ug/kg | |
| 1763-23-1 | Perfluorooctanesulfonic acid | ND | 26 | 10 | ug/kg | |
| | Perfluorodecanesulfonic acid | ND | 26 | 10 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| | 13C2-PFHxA | 96% | | 70-130% |
| | 13C2-PFDA | 111% | | 70-130% |

(a) Dilution required due to matrix interference (internal standard failure).

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | FTC-59-S | | |
| **Lab Sample ID:** | FA9482-3 | **Date Sampled:** | 10/23/13 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 10/26/13 |
| **Method:** | EPA 537 MOD IN HOUSE | **Percent Solids:** | n/a |
| **Project:** | Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | Q3633.D | 4 | 11/12/13 | MRE | 11/05/13 | OP49318 | SQ101 |
| Run #2 | | | | | | | |

| | Initial Volume | Final Volume |
|---|---|---|
| Run #1 | 1.0 ml | 2.0 ml |
| Run #2 | | |

**Perfluorinated Carboxylic Acids and Sulfonates**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| **PERFLUOROALKYLCARBOXYLIC ACIDS** | | | | | | |
| 307-24-4 | Perfluorohexanoic acid | ND | 20 | 8.0 | ug/l | |
| 375-85-9 | Perfluoroheptanoic acid | 16.0 | 20 | 8.0 | ug/l | J |
| 335-67-1 | Perfluorooctanoic acid | 136 | 20 | 8.0 | ug/l | |
| 375-95-1 | Perfluorononanoic acid | ND | 20 | 8.0 | ug/l | |
| 335-76-2 | Perfluorodecanoic acid | ND | 20 | 8.0 | ug/l | |
| 2058-94-8 | Perfluoroundecanoic acid | ND | 20 | 8.0 | ug/l | |
| 307-55-1 | Perfluorododecanoic acid | ND | 20 | 8.0 | ug/l | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 20 | 8.0 | ug/l | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 20 | 8.0 | ug/l | |
| **PERFLUOROALKYLSULFONATES** | | | | | | |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | 20 | 8.0 | ug/l | |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 20 | 8.0 | ug/l | |
| | Perfluoroheptanesulfonic acid | ND | 20 | 8.0 | ug/l | |
| 1763-23-1 | Perfluorooctanesulfonic acid | ND | 20 | 8.0 | ug/l | |
| | Perfluorodecanesulfonic acid | ND | 20 | 8.0 | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| | 13C2-PFHxA | 123% | | 70-130% |
| | 13C2-PFDA | 123% | | 70-130% |

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | FTC-60 | | |
| **Lab Sample ID:** | FA9482-4 | **Date Sampled:** | 10/23/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 10/26/13 |
| **Method:** | EPA 537 MOD IN HOUSE | **Percent Solids:** | 80.0 |
| **Project:** | Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | Q3466.D | 2 | 11/05/13 | MRE | 11/01/13 | OP49273 | SQ96 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 1.1 g | 5.0 ml |
| Run #2 | | |

**Perfluorinated Carboxylic Acids and Sulfonates**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| **PERFLUOROALKYLCARBOXYLIC ACIDS** | | | | | | |
| 307-24-4 | Perfluorohexanoic acid | ND | 29 | 12 | ug/kg | |
| 375-85-9 | Perfluoroheptanoic acid | ND | 29 | 12 | ug/kg | |
| 335-67-1 | Perfluorooctanoic acid | 122 | 29 | 12 | ug/kg | |
| 375-95-1 | Perfluorononanoic acid | ND | 29 | 12 | ug/kg | |
| 335-76-2 | Perfluorodecanoic acid | ND | 29 | 12 | ug/kg | |
| 2058-94-8 | Perfluoroundecanoic acid | ND | 29 | 12 | ug/kg | |
| 307-55-1 | Perfluorododecanoic acid | ND | 29 | 12 | ug/kg | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 29 | 12 | ug/kg | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 29 | 12 | ug/kg | |
| **PERFLUOROALKYLSULFONATES** | | | | | | |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | 29 | 12 | ug/kg | |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 29 | 12 | ug/kg | |
| | Perfluoroheptanesulfonic acid | ND | 29 | 12 | ug/kg | |
| 1763-23-1 | Perfluorooctanesulfonic acid | 19.1 | 29 | 12 | ug/kg | J |
| | Perfluorodecanesulfonic acid | ND | 29 | 12 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| | 13C2-PFHxA | 95% | | 70-130% |
| | 13C2-PFDA | 127% | | 70-130% |

(a) Dilution required due to matrix interference (internal standard failure).

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | FTC-60-S | | |
| **Lab Sample ID:** | FA9482-5 | **Date Sampled:** | 10/23/13 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 10/26/13 |
| **Method:** | EPA 537 MOD IN HOUSE | **Percent Solids:** | n/a |
| **Project:** | Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | Q3634.D | 10 | 11/12/13 | MRE | 11/05/13 | OP49318 | SQ101 |
| Run #2 | | | | | | | |

| | Initial Volume | Final Volume |
|---|---|---|
| Run #1 | 1.0 ml | 2.0 ml |
| Run #2 | | |

**Perfluorinated Carboxylic Acids and Sulfonates**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| **PERFLUOROALKYLCARBOXYLIC ACIDS** | | | | | | |
| 307-24-4 | Perfluorohexanoic acid | ND | 50 | 20 | ug/l | |
| 375-85-9 | Perfluoroheptanoic acid | 21.9 | 50 | 20 | ug/l | J |
| 335-67-1 | Perfluorooctanoic acid | 254 | 50 | 20 | ug/l | |
| 375-95-1 | Perfluorononanoic acid | ND | 50 | 20 | ug/l | |
| 335-76-2 | Perfluorodecanoic acid | ND | 50 | 20 | ug/l | |
| 2058-94-8 | Perfluoroundecanoic acid | ND | 50 | 20 | ug/l | |
| 307-55-1 | Perfluorododecanoic acid | ND | 50 | 20 | ug/l | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 50 | 20 | ug/l | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 50 | 20 | ug/l | |
| **PERFLUOROALKYLSULFONATES** | | | | | | |
| 375-73-5 | Perfluorobutanesulfonic acid | 22.1 | 50 | 20 | ug/l | J |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 50 | 20 | ug/l | |
| | Perfluoroheptanesulfonic acid | ND | 50 | 20 | ug/l | |
| 1763-23-1 | Perfluorooctanesulfonic acid | ND | 50 | 20 | ug/l | |
| | Perfluorodecanesulfonic acid | ND | 50 | 20 | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| | 13C2-PFHxA | 0% [b] | | 70-130% |
| | 13C2-PFDA | 0% [b] | | 70-130% |

(a) Dilution required due to matrix interference.
(b) Outside control limits due to dilution.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | FTC-61-S | | |
| **Lab Sample ID:** | FA9482-6 | **Date Sampled:** | 10/23/13 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 10/26/13 |
| **Method:** | EPA 537 MOD IN HOUSE | **Percent Solids:** | n/a |
| **Project:** | Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | Q3601.D | 1 | 11/11/13 | MRE | 11/06/13 | OP49408 | SQ100 |
| Run #2 | Q3617.D | 25 | 11/12/13 | MRE | 11/06/13 | OP49408 | SQ101 |

| | Initial Volume | Final Volume |
|---|---|---|
| Run #1 | 25.0 ml | 2.0 ml |
| Run #2 | 25.0 ml | 2.0 ml |

**Perfluorinated Carboxylic Acids and Sulfonates**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| **PERFLUOROALKYLCARBOXYLIC ACIDS** | | | | | | |
| 307-24-4 | Perfluorohexanoic acid | 4.0 [a] | 5.0 | 2.0 | ug/l | J |
| 375-85-9 | Perfluoroheptanoic acid | 1.1 | 0.20 | 0.080 | ug/l | |
| 335-67-1 | Perfluorooctanoic acid | 11.8 [a] | 5.0 | 2.0 | ug/l | |
| 375-95-1 | Perfluorononanoic acid | 0.46 | 0.20 | 0.080 | ug/l | |
| 335-76-2 | Perfluorodecanoic acid | 0.23 | 0.20 | 0.080 | ug/l | |
| 2058-94-8 | Perfluoroundecanoic acid | 0.32 | 0.20 | 0.080 | ug/l | |
| 307-55-1 | Perfluorododecanoic acid | ND | 0.20 | 0.080 | ug/l | |
| 72629-94-8 | Perfluorotridecanoic acid | 0.082 | 0.20 | 0.080 | ug/l | J |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 0.20 | 0.080 | ug/l | |
| **PERFLUOROALKYLSULFONATES** | | | | | | |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | 0.20 | 0.080 | ug/l | |
| 355-46-4 | Perfluorohexanesulfonic acid | 0.46 | 0.20 | 0.080 | ug/l | |
| | Perfluoroheptanesulfonic acid | ND | 0.20 | 0.080 | ug/l | |
| 1763-23-1 | Perfluorooctanesulfonic acid | 0.75 | 0.20 | 0.080 | ug/l | |
| | Perfluorodecanesulfonic acid | ND | 0.20 | 0.080 | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| | 13C2-PFHxA | 112% | 0% [b] | 70-130% |
| | 13C2-PFDA | 126% | 0% [b] | 70-130% |

(a) Result is from Run# 2
(b) Outside control limits due to dilution.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | FTC-62 | | |
| **Lab Sample ID:** | FA9482-7 | **Date Sampled:** | 10/23/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 10/26/13 |
| **Method:** | EPA 537 MOD IN HOUSE | **Percent Solids:** | 86.8 |
| **Project:** | Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | Q3452.D | 1 | 11/04/13 | MRE | 11/01/13 | OP49273 | SQ95 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 1.1 g | 5.0 ml |
| Run #2 | | |

**Perfluorinated Carboxylic Acids and Sulfonates**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| **PERFLUOROALKYLCARBOXYLIC ACIDS** | | | | | | |
| 307-24-4 | Perfluorohexanoic acid | ND | 13 | 5.3 | ug/kg | |
| 375-85-9 | Perfluoroheptanoic acid | ND | 13 | 5.3 | ug/kg | |
| 335-67-1 | Perfluorooctanoic acid | 84.9 | 13 | 5.3 | ug/kg | |
| 375-95-1 | Perfluorononanoic acid | ND | 13 | 5.3 | ug/kg | |
| 335-76-2 | Perfluorodecanoic acid | ND | 13 | 5.3 | ug/kg | |
| 2058-94-8 | Perfluoroundecanoic acid | 6.7 | 13 | 5.3 | ug/kg | J |
| 307-55-1 | Perfluorododecanoic acid | ND | 13 | 5.3 | ug/kg | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 13 | 5.3 | ug/kg | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 13 | 5.3 | ug/kg | |
| **PERFLUOROALKYLSULFONATES** | | | | | | |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | 13 | 5.3 | ug/kg | |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 13 | 5.3 | ug/kg | |
| | Perfluoroheptanesulfonic acid | ND | 13 | 5.3 | ug/kg | |
| 1763-23-1 | Perfluorooctanesulfonic acid | ND | 13 | 5.3 | ug/kg | |
| | Perfluorodecanesulfonic acid | ND | 13 | 5.3 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| | 13C2-PFHxA | 94% | | 70-130% |
| | 13C2-PFDA | 92% | | 70-130% |

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | FTC-62-S | | |
| **Lab Sample ID:** | FA9482-8 | **Date Sampled:** | 10/23/13 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 10/26/13 |
| **Method:** | EPA 537 MOD IN HOUSE | **Percent Solids:** | n/a |
| **Project:** | Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | Q3625.D | 50 | 11/12/13 | MRE | 11/06/13 | OP49408 | SQ101 |
| Run #2 | | | | | | | |

| | Initial Volume | Final Volume |
|---|---|---|
| Run #1 | 25.0 ml | 2.0 ml |
| Run #2 | | |

**Perfluorinated Carboxylic Acids and Sulfonates**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| **PERFLUOROALKYLCARBOXYLIC ACIDS** | | | | | | |
| 307-24-4 | Perfluorohexanoic acid | 16.9 | 10 | 4.0 | ug/l | |
| 375-85-9 | Perfluoroheptanoic acid | 6.7 | 10 | 4.0 | ug/l | J |
| 335-67-1 | Perfluorooctanoic acid | 32.6 | 10 | 4.0 | ug/l | |
| 375-95-1 | Perfluorononanoic acid | ND | 10 | 4.0 | ug/l | |
| 335-76-2 | Perfluorodecanoic acid | ND | 10 | 4.0 | ug/l | |
| 2058-94-8 | Perfluoroundecanoic acid | 6.9 | 10 | 4.0 | ug/l | J |
| 307-55-1 | Perfluorododecanoic acid | ND | 10 | 4.0 | ug/l | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 10 | 4.0 | ug/l | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 10 | 4.0 | ug/l | |
| **PERFLUOROALKYLSULFONATES** | | | | | | |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | 10 | 4.0 | ug/l | |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 10 | 4.0 | ug/l | |
| | Perfluoroheptanesulfonic acid | ND | 10 | 4.0 | ug/l | |
| 1763-23-1 | Perfluorooctanesulfonic acid | 22.0 | 10 | 4.0 | ug/l | |
| | Perfluorodecanesulfonic acid | ND | 10 | 4.0 | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| | 13C2-PFHxA | 0% [a] | | 70-130% |
| | 13C2-PFDA | 0% [a] | | 70-130% |

(a) Outside control limits due to dilution.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | FTC-63-S | | |
| **Lab Sample ID:** | FA9482-9 | **Date Sampled:** | 10/23/13 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 10/26/13 |
| **Method:** | EPA 537 MOD IN HOUSE | **Percent Solids:** | n/a |
| **Project:** | Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | Q3655.D | 10 | 11/13/13 | MRE | 11/05/13 | OP49318 | SQ102 |
| Run #2 | | | | | | | |

| | Initial Volume | Final Volume |
|---|---|---|
| Run #1 | 1.0 ml | 2.0 ml |
| Run #2 | | |

**Perfluorinated Carboxylic Acids and Sulfonates**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| **PERFLUOROALKYLCARBOXYLIC ACIDS** | | | | | | |
| 307-24-4 | Perfluorohexanoic acid | ND | 50 | 20 | ug/l | |
| 375-85-9 | Perfluoroheptanoic acid | ND | 50 | 20 | ug/l | |
| 335-67-1 | Perfluorooctanoic acid | 84.5 | 50 | 20 | ug/l | |
| 375-95-1 | Perfluorononanoic acid | ND | 50 | 20 | ug/l | |
| 335-76-2 | Perfluorodecanoic acid | ND | 50 | 20 | ug/l | |
| 2058-94-8 | Perfluoroundecanoic acid | ND | 50 | 20 | ug/l | |
| 307-55-1 | Perfluorododecanoic acid | ND | 50 | 20 | ug/l | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 50 | 20 | ug/l | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 50 | 20 | ug/l | |
| **PERFLUOROALKYLSULFONATES** | | | | | | |
| 375-73-5 | Perfluorobutanesulfonic acid | 36.1 | 50 | 20 | ug/l | J |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 50 | 20 | ug/l | |
| | Perfluoroheptanesulfonic acid | ND | 50 | 20 | ug/l | |
| 1763-23-1 | Perfluorooctanesulfonic acid | ND | 50 | 20 | ug/l | |
| | Perfluorodecanesulfonic acid | ND | 50 | 20 | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| | 13C2-PFHxA | 0% [b] | | 70-130% |
| | 13C2-PFDA | 0% [b] | | 70-130% |

(a) Dilution required due to matrix interference.
(b) Outside control limits due to dilution.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | FTC-71 | | |
| **Lab Sample ID:** | FA9482-10 | **Date Sampled:** | 10/23/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 10/26/13 |
| **Method:** | EPA 537 MOD IN HOUSE | **Percent Solids:** | 94.6 |
| **Project:** | Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | Q3467.D | 5 | 11/05/13 | MRE | 11/01/13 | OP49273 | SQ96 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 1.1 g | 5.0 ml |
| Run #2 | | |

**Perfluorinated Carboxylic Acids and Sulfonates**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| **PERFLUOROALKYLCARBOXYLIC ACIDS** | | | | | | |
| 307-24-4 | Perfluorohexanoic acid | ND | 63 | 25 | ug/kg | |
| 375-85-9 | Perfluoroheptanoic acid | ND | 63 | 25 | ug/kg | |
| 335-67-1 | Perfluorooctanoic acid | ND | 63 | 25 | ug/kg | |
| 375-95-1 | Perfluorononanoic acid | ND | 63 | 25 | ug/kg | |
| 335-76-2 | Perfluorodecanoic acid | ND | 63 | 25 | ug/kg | |
| 2058-94-8 | Perfluoroundecanoic acid | ND | 63 | 25 | ug/kg | |
| 307-55-1 | Perfluorododecanoic acid | ND | 63 | 25 | ug/kg | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 63 | 25 | ug/kg | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 63 | 25 | ug/kg | |
| **PERFLUOROALKYLSULFONATES** | | | | | | |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | 63 | 25 | ug/kg | |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 63 | 25 | ug/kg | |
| | Perfluoroheptanesulfonic acid | ND | 63 | 25 | ug/kg | |
| 1763-23-1 | Perfluorooctanesulfonic acid | 308 | 63 | 25 | ug/kg | |
| | Perfluorodecanesulfonic acid | ND | 63 | 25 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| | 13C2-PFHxA | 104% | | 70-130% |
| | 13C2-PFDA | 111% | | 70-130% |

(a) Dilution required due to matrix interference.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | FTC-71 | | |
| **Lab Sample ID:** | FA9482-11 | **Date Sampled:** | 10/23/13 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 10/26/13 |
| **Method:** | EPA 537 MOD IN HOUSE | **Percent Solids:** | n/a |
| **Project:** | Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | Q3638.D | 10 | 11/12/13 | MRE | 11/05/13 | OP49318 | SQ101 |
| Run #2 | | | | | | | |

| | Initial Volume | Final Volume |
|---|---|---|
| Run #1 | 1.0 ml | 2.0 ml |
| Run #2 | | |

**Perfluorinated Carboxylic Acids and Sulfonates**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| **PERFLUOROALKYLCARBOXYLIC ACIDS** | | | | | | |
| 307-24-4 | Perfluorohexanoic acid | 251 | 50 | 20 | ug/l | |
| 375-85-9 | Perfluoroheptanoic acid | 77.2 | 50 | 20 | ug/l | |
| 335-67-1 | Perfluorooctanoic acid | 50.3 | 50 | 20 | ug/l | |
| 375-95-1 | Perfluorononanoic acid | ND | 50 | 20 | ug/l | |
| 335-76-2 | Perfluorodecanoic acid | ND | 50 | 20 | ug/l | |
| 2058-94-8 | Perfluoroundecanoic acid | ND | 50 | 20 | ug/l | |
| 307-55-1 | Perfluorododecanoic acid | ND | 50 | 20 | ug/l | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 50 | 20 | ug/l | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 50 | 20 | ug/l | |
| **PERFLUOROALKYLSULFONATES** | | | | | | |
| 375-73-5 | Perfluorobutanesulfonic acid | 27.5 | 50 | 20 | ug/l | J |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 50 | 20 | ug/l | |
| | Perfluoroheptanesulfonic acid | ND | 50 | 20 | ug/l | |
| 1763-23-1 | Perfluorooctanesulfonic acid | ND | 50 | 20 | ug/l | |
| | Perfluorodecanesulfonic acid | ND | 50 | 20 | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| | 13C2-PFHxA | 113% | | 70-130% |
| | 13C2-PFDA | 115% | | 70-130% |

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | FTC-72 | | |
| **Lab Sample ID:** | FA9482-12 | **Date Sampled:** | 10/23/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 10/26/13 |
| **Method:** | EPA 537 MOD IN HOUSE | **Percent Solids:** | 94.5 |
| **Project:** | Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | Q3456.D | 1 | 11/04/13 | MRE | 11/01/13 | OP49273 | SQ95 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 1.1 g | 5.0 ml |
| Run #2 | | |

**Perfluorinated Carboxylic Acids and Sulfonates**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| **PERFLUOROALKYLCARBOXYLIC ACIDS** | | | | | | |
| 307-24-4 | Perfluorohexanoic acid | 12.6 | 12 | 4.9 | ug/kg | |
| 375-85-9 | Perfluoroheptanoic acid | 16.4 | 12 | 4.9 | ug/kg | |
| 335-67-1 | Perfluorooctanoic acid | 35.8 | 12 | 4.9 | ug/kg | |
| 375-95-1 | Perfluorononanoic acid | 5.4 | 12 | 4.9 | ug/kg | J |
| 335-76-2 | Perfluorodecanoic acid | ND | 12 | 4.9 | ug/kg | |
| 2058-94-8 | Perfluoroundecanoic acid | ND | 12 | 4.9 | ug/kg | |
| 307-55-1 | Perfluorododecanoic acid | ND | 12 | 4.9 | ug/kg | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 12 | 4.9 | ug/kg | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 12 | 4.9 | ug/kg | |
| **PERFLUOROALKYLSULFONATES** | | | | | | |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | 12 | 4.9 | ug/kg | |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 12 | 4.9 | ug/kg | |
| | Perfluoroheptanesulfonic acid | ND | 12 | 4.9 | ug/kg | |
| 1763-23-1 | Perfluorooctanesulfonic acid | 13.5 | 12 | 4.9 | ug/kg | |
| | Perfluorodecanesulfonic acid | ND | 12 | 4.9 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| | 13C2-PFHxA | 123% | | 70-130% |
| | 13C2-PFDA | 128% | | 70-130% |

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | FTC-72 | | |
| **Lab Sample ID:** | FA9482-13 | **Date Sampled:** | 10/23/13 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 10/26/13 |
| **Method:** | EPA 537 MOD IN HOUSE | **Percent Solids:** | n/a |
| **Project:** | Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | Q3626.D | 25 | 11/12/13 | MRE | 11/06/13 | OP49408 | SQ101 |
| Run #2 | Q3666.D | 40 | 11/13/13 | MRE | 11/06/13 | OP49408 | SQ102 |
| Run #3 [a] | Q3639.D | 4 | 11/12/13 | MRE | 11/05/13 | OP49318 | SQ101 |

| | Initial Volume | Final Volume |
|---|---|---|
| Run #1 | 25.0 ml | 2.0 ml |
| Run #2 | 25.0 ml | 2.0 ml |
| Run #3 | 1.0 ml | 2.0 ml |

**Perfluorinated Carboxylic Acids and Sulfonates**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| **PERFLUOROALKYLCARBOXYLIC ACIDS** | | | | | | |
| 307-24-4 | Perfluorohexanoic acid | 56.6 [b] | 8.0 | 3.2 | ug/l | |
| 375-85-9 | Perfluoroheptanoic acid | 16.3 | 5.0 | 2.0 | ug/l | |
| 335-67-1 | Perfluorooctanoic acid | 16.2 | 5.0 | 2.0 | ug/l | |
| 375-95-1 | Perfluorononanoic acid | ND | 5.0 | 2.0 | ug/l | |
| 335-76-2 | Perfluorodecanoic acid | ND | 5.0 | 2.0 | ug/l | |
| 2058-94-8 | Perfluoroundecanoic acid | ND | 5.0 | 2.0 | ug/l | |
| 307-55-1 | Perfluorododecanoic acid | ND | 5.0 | 2.0 | ug/l | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 5.0 | 2.0 | ug/l | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 5.0 | 2.0 | ug/l | |
| **PERFLUOROALKYLSULFONATES** | | | | | | |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | 5.0 | 2.0 | ug/l | |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 5.0 | 2.0 | ug/l | |
| | Perfluoroheptanesulfonic acid | ND | 5.0 | 2.0 | ug/l | |
| 1763-23-1 | Perfluorooctanesulfonic acid | ND | 5.0 | 2.0 | ug/l | |
| | Perfluorodecanesulfonic acid | ND | 5.0 | 2.0 | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Run# 3 | Limits |
|---|---|---|---|---|---|
| | 13C2-PFHxA | 0% [c] | 0% [c] | 129% | 70-130% |
| | 13C2-PFDA | 0% [c] | 0% [c] | 100% | 70-130% |

(a) Confirmation run.
(b) Result is from Run# 2
(c) Outside control limits due to dilution.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | FTC-73 | | |
| **Lab Sample ID:** | FA9482-14 | **Date Sampled:** | 10/23/13 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 10/26/13 |
| **Method:** | EPA 537 MOD IN HOUSE | **Percent Solids:** | n/a |
| **Project:** | Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | Q3656.D | 2 | 11/13/13 | MRE | 11/05/13 | OP49318 | SQ102 |
| Run #2 | | | | | | | |

| | Initial Volume | Final Volume |
|---|---|---|
| Run #1 | 1.0 ml | 2.0 ml |
| Run #2 | | |

**Perfluorinated Carboxylic Acids and Sulfonates**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| **PERFLUOROALKYLCARBOXYLIC ACIDS** | | | | | | |
| 307-24-4 | Perfluorohexanoic acid | 84.2 | 10 | 4.0 | ug/l | |
| 375-85-9 | Perfluoroheptanoic acid | 10.4 | 10 | 4.0 | ug/l | |
| 335-67-1 | Perfluorooctanoic acid | 34.8 | 10 | 4.0 | ug/l | |
| 375-95-1 | Perfluorononanoic acid | ND | 10 | 4.0 | ug/l | |
| 335-76-2 | Perfluorodecanoic acid | ND | 10 | 4.0 | ug/l | |
| 2058-94-8 | Perfluoroundecanoic acid | ND | 10 | 4.0 | ug/l | |
| 307-55-1 | Perfluorododecanoic acid | ND | 10 | 4.0 | ug/l | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 10 | 4.0 | ug/l | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 10 | 4.0 | ug/l | |
| **PERFLUOROALKYLSULFONATES** | | | | | | |
| 375-73-5 | Perfluorobutanesulfonic acid | 10.2 | 10 | 4.0 | ug/l | |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 10 | 4.0 | ug/l | |
| | Perfluoroheptanesulfonic acid | ND | 10 | 4.0 | ug/l | |
| 1763-23-1 | Perfluorooctanesulfonic acid | ND | 10 | 4.0 | ug/l | |
| | Perfluorodecanesulfonic acid | ND | 10 | 4.0 | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| | 13C2-PFHxA | 116% | | 70-130% |
| | 13C2-PFDA | 94% | | 70-130% |

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | FTC-74 | | |
| **Lab Sample ID:** | FA9482-15 | **Date Sampled:** | 10/23/13 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 10/26/13 |
| **Method:** | EPA 537 MOD IN HOUSE | **Percent Solids:** | n/a |
| **Project:** | Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | Q3667.D | 25 | 11/13/13 | MRE | 11/06/13 | OP49408 | SQ102 |
| Run #2 | Q3700.D | 50 | 11/18/13 | MRE | 11/06/13 | OP49408 | SQ105 |
| Run #3 [a] | Q3643.D | 4 | 11/12/13 | MRE | 11/05/13 | OP49318 | SQ101 |

| | Initial Volume | Final Volume |
|---|---|---|
| Run #1 | 25.0 ml | 2.0 ml |
| Run #2 | 25.0 ml | 2.0 ml |
| Run #3 | 1.0 ml | 2.0 ml |

**Perfluorinated Carboxylic Acids and Sulfonates**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| **PERFLUOROALKYLCARBOXYLIC ACIDS** | | | | | | |
| 307-24-4 | Perfluorohexanoic acid | 25.5 [b] | 10 | 4.0 | ug/l | |
| 375-85-9 | Perfluoroheptanoic acid | 11.4 [b] | 10 | 4.0 | ug/l | |
| 335-67-1 | Perfluorooctanoic acid | 24.6 | 5.0 | 2.0 | ug/l | |
| 375-95-1 | Perfluorononanoic acid | 2.9 | 5.0 | 2.0 | ug/l | J |
| 335-76-2 | Perfluorodecanoic acid | ND | 5.0 | 2.0 | ug/l | |
| 2058-94-8 | Perfluoroundecanoic acid | ND | 5.0 | 2.0 | ug/l | |
| 307-55-1 | Perfluorododecanoic acid | ND | 5.0 | 2.0 | ug/l | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 5.0 | 2.0 | ug/l | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 5.0 | 2.0 | ug/l | |
| **PERFLUOROALKYLSULFONATES** | | | | | | |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | 5.0 | 2.0 | ug/l | |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 5.0 | 2.0 | ug/l | |
| | Perfluoroheptanesulfonic acid | ND | 5.0 | 2.0 | ug/l | |
| 1763-23-1 | Perfluorooctanesulfonic acid | ND | 5.0 | 2.0 | ug/l | |
| | Perfluorodecanesulfonic acid | ND | 5.0 | 2.0 | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Run# 3 | Limits |
|---|---|---|---|---|---|
| | 13C2-PFHxA | 0% [c] | 0% [c] | 128% | 70-130% |
| | 13C2-PFDA | 0% [c] | 0% [c] | 121% | 70-130% |

(a) Confirmation run.
(b) Result is from Run# 2
(c) Outside control limits due to dilution.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | FTC-75 | | |
| **Lab Sample ID:** | FA9482-16 | **Date Sampled:** | 10/23/13 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 10/26/13 |
| **Method:** | EPA 537 MOD IN HOUSE | **Percent Solids:** | n/a |
| **Project:** | Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | Q3628.D | 40 | 11/12/13 | MRE | 11/06/13 | OP49408 | SQ101 |
| Run #2 [a] | Q3665.D | 4 | 11/13/13 | MRE | 11/05/13 | OP49318 | SQ102 |

| | Initial Volume | Final Volume |
|---|---|---|
| Run #1 | 25.0 ml | 2.0 ml |
| Run #2 | 1.0 ml | 2.0 ml |

**Perfluorinated Carboxylic Acids and Sulfonates**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| **PERFLUOROALKYLCARBOXYLIC ACIDS** | | | | | | |
| 307-24-4 | Perfluorohexanoic acid | 68.9 | 8.0 | 3.2 | ug/l | |
| 375-85-9 | Perfluoroheptanoic acid | 13.1 | 8.0 | 3.2 | ug/l | |
| 335-67-1 | Perfluorooctanoic acid | 14.7 | 8.0 | 3.2 | ug/l | |
| 375-95-1 | Perfluorononanoic acid | ND | 8.0 | 3.2 | ug/l | |
| 335-76-2 | Perfluorodecanoic acid | ND | 8.0 | 3.2 | ug/l | |
| 2058-94-8 | Perfluoroundecanoic acid | ND | 8.0 | 3.2 | ug/l | |
| 307-55-1 | Perfluorododecanoic acid | ND | 8.0 | 3.2 | ug/l | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 8.0 | 3.2 | ug/l | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 8.0 | 3.2 | ug/l | |
| **PERFLUOROALKYLSULFONATES** | | | | | | |
| 375-73-5 | Perfluorobutanesulfonic acid | 3.4 | 8.0 | 3.2 | ug/l | J |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 8.0 | 3.2 | ug/l | |
| | Perfluoroheptanesulfonic acid | ND | 8.0 | 3.2 | ug/l | |
| 1763-23-1 | Perfluorooctanesulfonic acid | ND | 8.0 | 3.2 | ug/l | |
| | Perfluorodecanesulfonic acid | ND | 8.0 | 3.2 | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| | 13C2-PFHxA | 0% [b] | 139% | 70-130% |
| | 13C2-PFDA | 0% [b] | 176% | 70-130% |

(a) Confirmation run.
(b) Outside control limits due to dilution.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | FTC-76 | | |
| **Lab Sample ID:** | FA9482-17 | **Date Sampled:** | 10/23/13 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 10/26/13 |
| **Method:** | EPA 537 MOD IN HOUSE | **Percent Solids:** | n/a |
| **Project:** | Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | Q3657.D | 10 | 11/13/13 | MRE | 11/05/13 | OP49318 | SQ102 |
| Run #2 [b] | Q3645.D | 5 | 11/12/13 | MRE | 11/05/13 | OP49318 | SQ101 |

| | Initial Volume | Final Volume |
|---|---|---|
| Run #1 | 1.0 ml | 2.0 ml |
| Run #2 | 1.0 ml | 2.0 ml |

**Perfluorinated Carboxylic Acids and Sulfonates**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| **PERFLUOROALKYLCARBOXYLIC ACIDS** | | | | | | |
| 307-24-4 | Perfluorohexanoic acid | 142 | 50 | 20 | ug/l | |
| 375-85-9 | Perfluoroheptanoic acid | 22.1 | 50 | 20 | ug/l | J |
| 335-67-1 | Perfluorooctanoic acid | 40.9 | 50 | 20 | ug/l | J |
| 375-95-1 | Perfluorononanoic acid | ND | 50 | 20 | ug/l | |
| 335-76-2 | Perfluorodecanoic acid | ND | 50 | 20 | ug/l | |
| 2058-94-8 | Perfluoroundecanoic acid | ND | 50 | 20 | ug/l | |
| 307-55-1 | Perfluorododecanoic acid | ND | 50 | 20 | ug/l | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 50 | 20 | ug/l | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 50 | 20 | ug/l | |
| **PERFLUOROALKYLSULFONATES** | | | | | | |
| 375-73-5 | Perfluorobutanesulfonic acid | 26.2 | 50 | 20 | ug/l | J |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 50 | 20 | ug/l | |
| | Perfluoroheptanesulfonic acid | ND | 50 | 20 | ug/l | |
| 1763-23-1 | Perfluorooctanesulfonic acid | ND | 50 | 20 | ug/l | |
| | Perfluorodecanesulfonic acid | ND | 50 | 20 | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| | 13C2-PFHxA | 141% [c] | 236% | 70-130% |
| | 13C2-PFDA | 118% | 194% | 70-130% |

(a) Dilution required due to matrix interference.
(b) Confirmation run for surrogate recoveries.
(c) Outside control limits due to matrix interference. Confirmed by reanalysis.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | FTC-77 | | |
| **Lab Sample ID:** | FA9482-18 | **Date Sampled:** | 10/23/13 |
| **Matrix:** | SO - Soil | **Date Received:** | 10/26/13 |
| **Method:** | EPA 537 MOD IN HOUSE | **Percent Solids:** | 90.8 |
| **Project:** | Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | Q3463.D | 1 | 11/05/13 | MRE | 11/01/13 | OP49273 | SQ96 |
| Run #2 | Q3464.D | 10 | 11/05/13 | MRE | 11/01/13 | OP49273 | SQ96 |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 1.2 g | 5.0 ml |
| Run #2 | 1.2 g | 5.0 ml |

**Perfluorinated Carboxylic Acids and Sulfonates**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| **PERFLUOROALKYLCARBOXYLIC ACIDS** | | | | | | |
| 307-24-4 | Perfluorohexanoic acid | 11.4 | 12 | 4.8 | ug/kg | J |
| 375-85-9 | Perfluoroheptanoic acid | ND | 12 | 4.8 | ug/kg | |
| 335-67-1 | Perfluorooctanoic acid | 17.6 | 12 | 4.8 | ug/kg | |
| 375-95-1 | Perfluorononanoic acid | ND | 12 | 4.8 | ug/kg | |
| 335-76-2 | Perfluorodecanoic acid | 47.3 | 12 | 4.8 | ug/kg | |
| 2058-94-8 | Perfluoroundecanoic acid | 61.2 | 12 | 4.8 | ug/kg | |
| 307-55-1 | Perfluorododecanoic acid | 18.2 | 12 | 4.8 | ug/kg | |
| 72629-94-8 | Perfluorotridecanoic acid | 17.6 | 12 | 4.8 | ug/kg | |
| 376-06-7 | Perfluorotetradecanoic acid | 6.0 | 12 | 4.8 | ug/kg | J |
| **PERFLUOROALKYLSULFONATES** | | | | | | |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | 12 | 4.8 | ug/kg | |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 12 | 4.8 | ug/kg | |
| | Perfluoroheptanesulfonic acid | ND | 12 | 4.8 | ug/kg | |
| 1763-23-1 | Perfluorooctanesulfonic acid | 580 [a] | 120 | 48 | ug/kg | |
| | Perfluorodecanesulfonic acid | ND | 12 | 4.8 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| | 13C2-PFHxA | 114% | 117% | 70-130% |
| | 13C2-PFDA | 87% | 123% | 70-130% |

(a) Result is from Run# 2

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | FTC-77 | | |
| **Lab Sample ID:** | FA9482-19 | **Date Sampled:** | 10/23/13 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 10/26/13 |
| **Method:** | EPA 537 MOD IN HOUSE | **Percent Solids:** | n/a |
| **Project:** | Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | Q3658.D | 10 | 11/13/13 | MRE | 11/05/13 | OP49318 | SQ102 |
| Run #2 [b] | Q3646.D | 4 | 11/12/13 | MRE | 11/05/13 | OP49318 | SQ101 |

| | Initial Volume | Final Volume |
|---|---|---|
| Run #1 | 1.0 ml | 2.0 ml |
| Run #2 | 1.0 ml | 2.0 ml |

**Perfluorinated Carboxylic Acids and Sulfonates**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| **PERFLUOROALKYLCARBOXYLIC ACIDS** | | | | | | |
| 307-24-4 | Perfluorohexanoic acid | 87.2 | 50 | 20 | ug/l | |
| 375-85-9 | Perfluoroheptanoic acid | ND | 50 | 20 | ug/l | |
| 335-67-1 | Perfluorooctanoic acid | ND | 50 | 20 | ug/l | |
| 375-95-1 | Perfluorononanoic acid | ND | 50 | 20 | ug/l | |
| 335-76-2 | Perfluorodecanoic acid | ND | 50 | 20 | ug/l | |
| 2058-94-8 | Perfluoroundecanoic acid | ND | 50 | 20 | ug/l | |
| 307-55-1 | Perfluorododecanoic acid | ND | 50 | 20 | ug/l | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 50 | 20 | ug/l | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 50 | 20 | ug/l | |
| **PERFLUOROALKYLSULFONATES** | | | | | | |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | 50 | 20 | ug/l | |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 50 | 20 | ug/l | |
| | Perfluoroheptanesulfonic acid | ND | 50 | 20 | ug/l | |
| 1763-23-1 | Perfluorooctanesulfonic acid | ND | 50 | 20 | ug/l | |
| | Perfluorodecanesulfonic acid | ND | 50 | 20 | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| | 13C2-PFHxA | 150% [c] | 207% | 70-130% |
| | 13C2-PFDA | 112% | 196% | 70-130% |

(a) Dilution required due to matrix interference.
(b) Confirmation run for surrogate recoveries.
(c) Outside control limits due to matrix interference. Confirmed by reanalysis.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

## Misc. Forms

# Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

ACCUTEST LABORATORIES

# Accutest Laboratories Southeast
## Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.accutest.com

ACCUTEST JOB #: FA9482 PAGE ____ OF ____

Accutest Quote # | SKIFF #

**Client / Reporting Information**

Company Name: O+M, Inc.
Address: 450 Montbrook Ln.
City: Knoxville State: TN Zip: 37919
Project Contact: Eric Frauen E-mail: EFrauen@OandM-Inc.com
Phone #: 414-963-6210
Sampler(s) Name(s) (Printed) Sampler 1: ETF Sampler 2:

**Project Information**

Project Name: Tyco Marinette FTC
Street: 2900 Industrial Parkway S
City: Marinette State: WI
Project #: 493
Fax #:
Client Purchase Order #: 493

**Analytical Information**

PFCs

**Matrix Codes**

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid

| Accutest Sample # | Field ID / Point of Collection | Collection Date | Collection Time | Sampled By: | Matrix | Total # of Bottles | Container Information | PFCs | LAB USE ONLY |
|---|---|---|---|---|---|---|---|---|---|
| | [redacted] | | | | | | | X | |
| 11 | FTC-58-S | | 10:25 | | W | 1 | X | X | 1 |
| 12 | FTC-59 | | 10:45 | | S | | | | 2 |
| 13 | FTC-59-S | | 10:50 | | W | | | | 3 |
| | FTC-60 | | 11:10 | | S | | | | 4 |
| | FTC-60-S | | 11:15 | | W | | | | 5 |
| | [redacted] | | | | | | | | |
| | FTC-61-S | | 12:25 | | W | | | | 6 |
| | FTC-62 MS/MSD | | 13:10 | | S | | | | 7 |
| | FTC-62-S MS/MSD | | 13:15 | | W | | | | 8 |
| | FTC-63-S | | 13:30 | | W | | | | 9 |

**Turnaround Time (Business days)**

Std. 10 Business Days
7 Day *RUSH*
5 Day *RUSH*
3 Day *EMERGENCY*
2 Day *EMERGENCY*
1 Day *EMERGENCY*
Other
Approved By: / Date/Rush Code:
Emergency or Rush T/A Data Available VIA Email or Labl ink

**Data Deliverable Information**

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

**Comments / Remarks**

CHICAGO SC

**Sample Custody must be documented below each time samples change possession, including courier delivery.**

| | Relinquished by Sampler/Affiliation | Date Time: | Received By/Affiliation | Relinquished By/Affiliation | Date Time: | Received By/Affiliation |
|---|---|---|---|---|---|---|
| 1 | | 10/25/13 11:46 | 2 | 3 | | 4 |
| 5 | FED EX 10-26-13 | 9:15 | 6 | 7 CHICAGO SC | | 8 CHICAGO SC |

Lab Use Only: Custody Seal in Place: Y N Temp Blank Provided: Y N Preserved Where Applicable: Y N Total # of Coolers: ____ Cooler Temperature (s) Celsius: 3.7

**FA9482: Chain of Custody**
**Page 1 of 3**

ACCUTEST LABORATORIES

# Accutest Laboratories Southeast
## Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.accutest.com

FA9482

ACCUTEST JOB #: PAGE____OF____

| Accutest Quote # | SKIFF # |
|---|---|
| | |

**Client / Reporting Information**

Company Name: O+M, Inc.
Address: 450 Montbrook Ln.
City: Knoxville State: TN Zip: 37919
Project Contact: Eric Frauen E-mail: efrauen@OandM-Inc.com
Phone #: 414-963-6210
Sampler(s) Name(s) (Printed) Sampler 1: ETE Sampler 2:

**Project Information**

Project Name: Tyco Marinette FTC
Street: 2700 Industrial Parkway S
City: Marinette State: WI
Project #: 493
Fax #:
Client Purchase Order #: 493

**Analytical Information**

PFCs

**Matrix Codes**

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid

| Accutest Sample # | Field ID / Point of Collection | COLLECTION DATE | COLLECTION TIME | SAMPLED BY: | MATRIX | TOTAL # OF BOTTLES | CONTAINER INFORMATION: OTHER | NONE | HCl | HNO3 | H2SO4 | NaOH+ZnA | DI WATER | MEOH | LAB USE ONLY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ~~FTC-65~~ | 10/23 | ~~16:05~~ | | | | | X | | | | | | | |
| | ~~Trip Blank~~ | | | | | | | | | | | | | | |
| 1 | FTC-71 | | 15:48 | | S | 1 | | | | | | | | X | 8 10 |
| 2 | FTC-71 | | 15:55 | | W | | | | | | | | | X | 9 11 |
| 3 | FTC-72 | | 16:25 | | S | | | | | | | | | | 10 12 |
| 4 | FTC-72 | | 16:30 | | W | | | | | | | | | | 11 13 |
| 5 | FTC-73 | | 16:40 | | W | | | | | | | | | | 12 14 |
| 6 | FTC-74 | | 16:55 | | W | | | | | | | | | | 13 15 |
| 7 | FTC-75 | | 17:10 | | W | | | | | | | | | | 14 16 |
| 8 | FTC-76 | | 17:25 | | W | | | | | | | | | | 15 17 |
| 9 | FTC-77 | | 17:40 | | S | | | | | | | | | | 16 18 |
| 10 | FTC-77 | | 17:45 | | W | | | | | | | | | | 17 19 |

**Turnaround Time ( Business days)**

Std. 10 Business Days — Approved By: / Date/Rush Code:
7 Day *RUSH*
5 Day *RUSH*
3 Day *EMERGENCY*
2 Day *EMERGENCY*
1 Day *EMERGENCY*
Other
Emergency or Rush T/A Data Available VIA Email or Lablink

**Data Deliverable Information**

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

**Comments / Remarks**

CHICAGO SC

Sample Custody must be documented below each time samples change possession, including courier delivery.

| Relinquished by Sampler/Affiliation | Date Time: | Received By/Affiliation | Relinquished By/Affiliation | Date Time: | Received By/Affiliation |
|---|---|---|---|---|---|
| 1 ETE | 10/25/13 11:46 | 2 | 3 | | 4 FED |
| Relinquished by/Affiliation | Date Time: | Received By/Affiliation | Relinquished By/Affiliation | Date Time: | Received By/Affiliation |
| 5 FED 10/26/13 | 915 | 6 | 7 | | 8 |

Lab Use Only: Custody Seal In Place: Y N Temp Blank Provided: Y N Preserved Where Applicable: Y N Total # of Coolers: Cooler Temperature (s) Celsius:

**FA9482: Chain of Custody**
**Page 2 of 3**

ACCUTEST'S JOB NUMBER: FA9482 CLIENT: O&M PROJECT: Tyco Marinette

DATE/TIME RECEIVED: 10-26-13 915 (MM/DD/YY 24:00) NUMBER OF COOLERS RECEIVED: 1

METHOD OF DELIVERY: (FEDEX) UPS ACCUTEST COURIER GREYHOUND DELIVERY OTHER

AIRBILL NUMBERS: 8037 1296 3952

**COOLER INFORMATION**

- [ ] CUSTODY SEAL NOT PRESENT OR NOT INTACT
- [ ] CHAIN OF CUSTODY NOT RECEIVED (COC)
- [ ] ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- [ ] SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- [ ] TEMPERATURE CRITERIA NOT MET
- [ ] WET ICE PRESENT

**TRIP BLANK INFORMATION**

- [ ] TRIP BLANK PROVIDED
- [x] TRIP BLANK NOT PROVIDED
- [x] TRIP BLANK NOT ON COC
- [ ] TRIP BLANK INTACT
- [ ] TRIP BLANK NOT INTACT
- [ ] RECEIVED WATER TRIP BLANK
- [ ] RECEIVED SOIL TRIP BLANK

**MISC. INFORMATION**

NUMBER OF ENCORES ? 25-GRAM _____ 5-GRAM _____

NUMBER OF 5035 FIELD KITS ? _____

NUMBER OF LAB FILTERED METALS ? _____

**TEMPERATURE INFORMATION**

- [ ] IR THERM ID 1 CORR. FACTOR -0.4
- [ ] OBSERVED TEMPS: 2.8
- [ ] CORRECTED TEMPS: 3.2

**SAMPLE INFORMATION**

- [ ] SAMPLE LABELS PRESENT ON ALL BOTTLES
- [ ] INCORRECT NUMBER OF CONTAINERS USED
- [ ] SAMPLE RECEIVED IMPROPERLY PRESERVED
- [ ] INSUFFICIENT VOLUME FOR ANALYSIS
- [ ] DATES/TIMES ON COC DO NOT MATCH SAMPLE LABEL
- [ ] ID'S ON COC DO NOT MATCH LABEL
- [ ] VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- [ ] BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- [ ] NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- [ ] UNCLEAR FILTERING OR COMPOSITING INSTRUCTIONS
- [ ] SAMPLE CONTAINER(S) RECEIVED BROKEN
- [ ] % SOLIDS JAR NOT RECEIVED
- [ ] 5035 FIELD KIT FROZEN WITHIN 48 HOUR'S
- [ ] RESIDUAL CHLORINE PRESENT

(APPICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS)

SUMMARY OF COMMENTS:

TECHNICIAN SIGNATURE/DATE: 10/26/13 REVIEWER SIGNATURE/DATE: 10/26/13

NF 12/10 receipt confirmation 122910.xls

**FA9482: Chain of Custody**
**Page 3 of 3**

GC/MS Semi-volatiles

5

# QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

# Method Blank Summary



**Job Number:** FA9482
**Account:** OMTNK O & M, Inc
**Project:** Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP49273-MB | Q3449.D | 1 | 11/04/13 | MRE | 11/01/13 | OP49273 | SQ95 |



**The QC reported here applies to the following samples:** **Method:** EPA 537 MOD

FA9482-2, FA9482-4, FA9482-7, FA9482-10, FA9482-12, FA9482-18

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 307-24-4 | Perfluorohexanoic acid | ND | 13 | 5.0 | ug/kg | |
| 375-85-9 | Perfluoroheptanoic acid | ND | 13 | 5.0 | ug/kg | |
| 335-67-1 | Perfluorooctanoic acid | ND | 13 | 5.0 | ug/kg | |
| 375-95-1 | Perfluorononanoic acid | ND | 13 | 5.0 | ug/kg | |
| 335-76-2 | Perfluorodecanoic acid | ND | 13 | 5.0 | ug/kg | |
| 2058-94-8 | Perfluoroundecanoic acid | ND | 13 | 5.0 | ug/kg | |
| 307-55-1 | Perfluorododecanoic acid | ND | 13 | 5.0 | ug/kg | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 13 | 5.0 | ug/kg | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 13 | 5.0 | ug/kg | |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | 13 | 5.0 | ug/kg | |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 13 | 5.0 | ug/kg | |
| | Perfluoroheptanesulfonic acid | ND | 13 | 5.0 | ug/kg | |
| 1763-23-1 | Perfluorooctanesulfonic acid | ND | 13 | 5.0 | ug/kg | |
| | Perfluorodecanesulfonic acid | ND | 13 | 5.0 | ug/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| | 13C2-PFHxA | 96% | 70-130% |
| | 13C2-PFDA | 92% | 70-130% |

# Method Blank Summary



**Job Number:** FA9482
**Account:** OMTNK O & M, Inc
**Project:** Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP49273-MB | Q3462.D | 1 | 11/05/13 | MRE | 11/01/13 | OP49273 | SQ96 |



**The QC reported here applies to the following samples:** **Method:** EPA 537 MOD

FA9482-2, FA9482-4, FA9482-7, FA9482-10, FA9482-12, FA9482-18

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 307-24-4 | Perfluorohexanoic acid | ND | 13 | 5.0 | ug/kg | |
| 375-85-9 | Perfluoroheptanoic acid | ND | 13 | 5.0 | ug/kg | |
| 335-67-1 | Perfluorooctanoic acid | ND | 13 | 5.0 | ug/kg | |
| 375-95-1 | Perfluorononanoic acid | ND | 13 | 5.0 | ug/kg | |
| 335-76-2 | Perfluorodecanoic acid | ND | 13 | 5.0 | ug/kg | |
| 2058-94-8 | Perfluoroundecanoic acid | ND | 13 | 5.0 | ug/kg | |
| 307-55-1 | Perfluorododecanoic acid | ND | 13 | 5.0 | ug/kg | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 13 | 5.0 | ug/kg | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 13 | 5.0 | ug/kg | |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | 13 | 5.0 | ug/kg | |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 13 | 5.0 | ug/kg | |
| | Perfluoroheptanesulfonic acid | ND | 13 | 5.0 | ug/kg | |
| 1763-23-1 | Perfluorooctanesulfonic acid | ND | 13 | 5.0 | ug/kg | |
| | Perfluorodecanesulfonic acid | ND | 13 | 5.0 | ug/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| | 13C2-PFHxA | 97% | 70-130% |
| | 13C2-PFDA | 99% | 70-130% |

# Method Blank Summary



**Job Number:** FA9482
**Account:** OMTNK O & M, Inc
**Project:** Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP49318-MB | Q3631.D | 1 | 11/12/13 | MRE | 11/05/13 | OP49318 | SQ101 |

5.1.3
5

**The QC reported here applies to the following samples:** **Method:** EPA 537 MOD

FA9482-1, FA9482-3, FA9482-5, FA9482-9, FA9482-11, FA9482-14, FA9482-17, FA9482-19

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 307-24-4 | Perfluorohexanoic acid | ND | 5.0 | 2.0 | ug/l | |
| 375-85-9 | Perfluoroheptanoic acid | ND | 5.0 | 2.0 | ug/l | |
| 335-67-1 | Perfluorooctanoic acid | ND | 5.0 | 2.0 | ug/l | |
| 375-95-1 | Perfluorononanoic acid | ND | 5.0 | 2.0 | ug/l | |
| 335-76-2 | Perfluorodecanoic acid | ND | 5.0 | 2.0 | ug/l | |
| 2058-94-8 | Perfluoroundecanoic acid | ND | 5.0 | 2.0 | ug/l | |
| 307-55-1 | Perfluorododecanoic acid | ND | 5.0 | 2.0 | ug/l | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 5.0 | 2.0 | ug/l | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 5.0 | 2.0 | ug/l | |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | 5.0 | 2.0 | ug/l | |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 5.0 | 2.0 | ug/l | |
| | Perfluoroheptanesulfonic acid | ND | 5.0 | 2.0 | ug/l | |
| 1763-23-1 | Perfluorooctanesulfonic acid | ND | 5.0 | 2.0 | ug/l | |
| | Perfluorodecanesulfonic acid | ND | 5.0 | 2.0 | ug/l | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| | 13C2-PFHxA | 105% | 70-130% |
| | 13C2-PFDA | 97% | 70-130% |

# Method Blank Summary



**Job Number:** FA9482
**Account:** OMTNK O & M, Inc
**Project:** Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP49408-MB | Q3600.D | 1 | 11/11/13 | MRE | 11/06/13 | OP49408 | SQ100 |

5.1.4 5

**The QC reported here applies to the following samples:** **Method:** EPA 537 MOD

FA9482-6, FA9482-8, FA9482-13, FA9482-15, FA9482-16

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 307-24-4 | Perfluorohexanoic acid | ND | 0.20 | 0.080 | ug/l | |
| 375-85-9 | Perfluoroheptanoic acid | ND | 0.20 | 0.080 | ug/l | |
| 335-67-1 | Perfluorooctanoic acid | ND | 0.20 | 0.080 | ug/l | |
| 375-95-1 | Perfluorononanoic acid | ND | 0.20 | 0.080 | ug/l | |
| 335-76-2 | Perfluorodecanoic acid | ND | 0.20 | 0.080 | ug/l | |
| 2058-94-8 | Perfluoroundecanoic acid | ND | 0.20 | 0.080 | ug/l | |
| 307-55-1 | Perfluorododecanoic acid | ND | 0.20 | 0.080 | ug/l | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 0.20 | 0.080 | ug/l | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 0.20 | 0.080 | ug/l | |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | 0.20 | 0.080 | ug/l | |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 0.20 | 0.080 | ug/l | |
| | Perfluoroheptanesulfonic acid | ND | 0.20 | 0.080 | ug/l | |
| 1763-23-1 | Perfluorooctanesulfonic acid | ND | 0.20 | 0.080 | ug/l | |
| | Perfluorodecanesulfonic acid | ND | 0.20 | 0.080 | ug/l | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| | 13C2-PFHxA | 96% | 70-130% |
| | 13C2-PFDA | 91% | 70-130% |

# Method Blank Summary



**Job Number:** FA9482
**Account:** OMTNK O & M, Inc
**Project:** Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP49408-MB | Q3612.D | 1 | 11/12/13 | MRE | 11/06/13 | OP49408 | SQ101 |



**The QC reported here applies to the following samples:** **Method:** EPA 537 MOD

FA9482-6, FA9482-8, FA9482-13, FA9482-15, FA9482-16

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 307-24-4 | Perfluorohexanoic acid | ND | 0.20 | 0.080 | ug/l | |
| 375-85-9 | Perfluoroheptanoic acid | ND | 0.20 | 0.080 | ug/l | |
| 335-67-1 | Perfluorooctanoic acid | ND | 0.20 | 0.080 | ug/l | |
| 375-95-1 | Perfluorononanoic acid | ND | 0.20 | 0.080 | ug/l | |
| 335-76-2 | Perfluorodecanoic acid | ND | 0.20 | 0.080 | ug/l | |
| 2058-94-8 | Perfluoroundecanoic acid | ND | 0.20 | 0.080 | ug/l | |
| 307-55-1 | Perfluorododecanoic acid | ND | 0.20 | 0.080 | ug/l | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 0.20 | 0.080 | ug/l | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 0.20 | 0.080 | ug/l | |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | 0.20 | 0.080 | ug/l | |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 0.20 | 0.080 | ug/l | |
| | Perfluoroheptanesulfonic acid | ND | 0.20 | 0.080 | ug/l | |
| 1763-23-1 | Perfluorooctanesulfonic acid | ND | 0.20 | 0.080 | ug/l | |
| | Perfluorodecanesulfonic acid | ND | 0.20 | 0.080 | ug/l | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| | 13C2-PFHxA | 106% | 70-130% |
| | 13C2-PFDA | 92% | 70-130% |

# Blank Spike Summary



**Job Number:** FA9482
**Account:** OMTNK O & M, Inc
**Project:** Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP49273-BS | Q3448.D | 1 | 11/04/13 | MRE | 11/01/13 | OP49273 | SQ95 |



**The QC reported here applies to the following samples:** **Method:** EPA 537 MOD

FA9482-2, FA9482-4, FA9482-7, FA9482-10, FA9482-12, FA9482-18

| CAS No. | Compound | Spike ug/kg | BSP ug/kg | BSP % | Limits |
|---|---|---|---|---|---|
| 307-24-4 | Perfluorohexanoic acid | 100 | 85.4 | 85 | 70-130 |
| 375-85-9 | Perfluoroheptanoic acid | 100 | 89.6 | 90 | 70-130 |
| 335-67-1 | Perfluorooctanoic acid | 100 | 87.2 | 87 | 70-130 |
| 375-95-1 | Perfluorononanoic acid | 100 | 84.0 | 84 | 70-130 |
| 335-76-2 | Perfluorodecanoic acid | 100 | 82.8 | 83 | 70-130 |
| 2058-94-8 | Perfluoroundecanoic acid | 100 | 86.1 | 86 | 70-130 |
| 307-55-1 | Perfluorododecanoic acid | 100 | 82.4 | 82 | 70-130 |
| 72629-94-8 | Perfluorotridecanoic acid | 100 | 84.2 | 84 | 70-130 |
| 376-06-7 | Perfluorotetradecanoic acid | 100 | 85.1 | 85 | 70-130 |
| 375-73-5 | Perfluorobutanesulfonic acid | 100 | 96.3 | 96 | 70-130 |
| 355-46-4 | Perfluorohexanesulfonic acid | 100 | 90.2 | 90 | 70-130 |
| 1763-23-1 | Perfluorooctanesulfonic acid | 100 | 87.1 | 87 | 70-130 |
| | Perfluorodecanesulfonic acid | 100 | 86.8 | 87 | 70-130 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| | 13C2-PFHxA | 86% | 70-130% |
| | 13C2-PFDA | 82% | 70-130% |

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** FA9482
**Account:** OMTNK O & M, Inc
**Project:** Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP49318-BS | Q3630.D | 1 | 11/12/13 | MRE | 11/05/13 | OP49318 | SQ101 |



**The QC reported here applies to the following samples:** **Method:** EPA 537 MOD

FA9482-1, FA9482-3, FA9482-5, FA9482-9, FA9482-11, FA9482-14, FA9482-17, FA9482-19

| CAS No. | Compound | Spike ug/l | BSP ug/l | BSP % | Limits |
|---|---|---|---|---|---|
| 307-24-4 | Perfluorohexanoic acid | 40 | 42.2 | 106 | 70-130 |
| 375-85-9 | Perfluoroheptanoic acid | 40 | 41.9 | 105 | 70-130 |
| 335-67-1 | Perfluorooctanoic acid | 40 | 42.6 | 107 | 70-130 |
| 375-95-1 | Perfluorononanoic acid | 40 | 41.5 | 104 | 70-130 |
| 335-76-2 | Perfluorodecanoic acid | 40 | 44.0 | 110 | 70-130 |
| 2058-94-8 | Perfluoroundecanoic acid | 40 | 40.5 | 101 | 70-130 |
| 307-55-1 | Perfluorododecanoic acid | 40 | 38.5 | 96 | 70-130 |
| 72629-94-8 | Perfluorotridecanoic acid | 40 | 32.7 | 82 | 70-130 |
| 376-06-7 | Perfluorotetradecanoic acid | 40 | 33.5 | 84 | 70-130 |
| 375-73-5 | Perfluorobutanesulfonic acid | 40 | 44.1 | 110 | 70-130 |
| 355-46-4 | Perfluorohexanesulfonic acid | 40 | 38.7 | 97 | 70-130 |
| 1763-23-1 | Perfluorooctanesulfonic acid | 40 | 40.4 | 101 | 70-130 |
| | Perfluorodecanesulfonic acid | 40 | 39.4 | 99 | 70-130 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| | 13C2-PFHxA | 108% | 70-130% |
| | 13C2-PFDA | 99% | 70-130% |

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** FA9482
**Account:** OMTNK O & M, Inc
**Project:** Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP49408-BS | Q3599.D | 1 | 11/11/13 | MRE | 11/06/13 | OP49408 | SQ100 |



**The QC reported here applies to the following samples:** **Method:** EPA 537 MOD

FA9482-6, FA9482-8, FA9482-13, FA9482-15, FA9482-16

| CAS No. | Compound | Spike ug/l | BSP ug/l | BSP % | Limits |
|---|---|---|---|---|---|
| 307-24-4 | Perfluorohexanoic acid | 1.6 | 1.6 | 100 | 70-130 |
| 375-85-9 | Perfluoroheptanoic acid | 1.6 | 1.4 | 88 | 70-130 |
| 335-67-1 | Perfluorooctanoic acid | 1.6 | 1.6 | 100 | 70-130 |
| 375-95-1 | Perfluorononanoic acid | 1.6 | 1.4 | 88 | 70-130 |
| 335-76-2 | Perfluorodecanoic acid | 1.6 | 1.4 | 88 | 70-130 |
| 2058-94-8 | Perfluoroundecanoic acid | 1.6 | 1.5 | 94 | 70-130 |
| 307-55-1 | Perfluorododecanoic acid | 1.6 | 1.6 | 100 | 70-130 |
| 72629-94-8 | Perfluorotridecanoic acid | 1.6 | 1.3 | 81 | 70-130 |
| 376-06-7 | Perfluorotetradecanoic acid | 1.6 | 1.3 | 81 | 70-130 |
| 375-73-5 | Perfluorobutanesulfonic acid | 1.6 | 1.5 | 94 | 70-130 |
| 355-46-4 | Perfluorohexanesulfonic acid | 1.6 | 1.5 | 94 | 70-130 |
| 1763-23-1 | Perfluorooctanesulfonic acid | 1.6 | 1.4 | 88 | 70-130 |
| | Perfluorodecanesulfonic acid | 1.6 | 1.4 | 88 | 70-130 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| | 13C2-PFHxA | 111% | 70-130% |
| | 13C2-PFDA | 99% | 70-130% |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA9482
**Account:** OMTNK O & M, Inc
**Project:** Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP49273-MS | Q3468.D | 5 | 11/05/13 | MRE | 11/01/13 | OP49273 | SQ96 |
| OP49273-MSD | Q3469.D | 5 | 11/05/13 | MRE | 11/01/13 | OP49273 | SQ96 |
| FA9482-10 [a] | Q3467.D | 5 | 11/05/13 | MRE | 11/01/13 | OP49273 | SQ96 |



**The QC reported here applies to the following samples:** **Method:** EPA 537 MOD

FA9482-2, FA9482-4, FA9482-7, FA9482-10, FA9482-12, FA9482-18

| CAS No. | Compound | FA9482-10 ug/kg | Q | Spike ug/kg | MS ug/kg | MS % | MSD ug/kg | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| 307-24-4 | Perfluorohexanoic acid | ND | | 103 | 132 | 129 | 120 | 131* | 10 | 70-130/30 |
| 375-85-9 | Perfluoroheptanoic acid | ND | | 103 | 117 | 114 | 110 | 120 | 6 | 70-130/30 |
| 335-67-1 | Perfluorooctanoic acid | ND | | 103 | 120 | 117 | 109 | 119 | 10 | 70-130/30 |
| 375-95-1 | Perfluorononanoic acid | ND | | 103 | 118 | 115 | 105 | 114 | 12 | 70-130/30 |
| 335-76-2 | Perfluorodecanoic acid | ND | | 103 | 126 | 123 | 116 | 126 | 8 | 70-130/30 |
| 2058-94-8 | Perfluoroundecanoic acid | ND | | 103 | 136 | 133* | 123 | 134* | 10 | 70-130/30 |
| 307-55-1 | Perfluorododecanoic acid | ND | | 103 | 138 | 134* | 127 | 138* | 8 | 70-130/30 |
| 72629-94-8 | Perfluorotridecanoic acid | ND | | 103 | 138 | 134* | 127 | 138* | 8 | 70-130/30 |
| 376-06-7 | Perfluorotetradecanoic acid | ND | | 103 | 144 | 140* | 126 | 137* | 13 | 70-130/30 |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | | 103 | 116 | 113 | 103 | 112 | 12 | 70-130/30 |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | | 103 | 112 | 109 | 110 | 120 | 2 | 70-130/30 |
| 1763-23-1 | Perfluorooctanesulfonic acid | 308 | | 103 | 440 | 129 | 447 | 151* [b] | 2 | 70-130/30 |
| | Perfluorodecanesulfonic acid | ND | | 103 | 109 | 106 | 109 | 119 | 0 | 70-130/30 |

| CAS No. | Surrogate Recoveries | MS | MSD | FA9482-10 | Limits |
|---|---|---|---|---|---|
| | 13C2-PFHxA | 114% | 113% | 104% | 70-130% |
| | 13C2-PFDA | 122% | 115% | 111% | 70-130% |

(a) Dilution required due to matrix interference.
(b) Outside control limits due to high level in sample relative to spike amount.

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA9482
**Account:** OMTNK O & M, Inc
**Project:** Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP49318-MS | Q3659.D | 10 | 11/13/13 | MRE | 11/05/13 | OP49318 | SQ102 |
| OP49318-MSD | Q3660.D | 10 | 11/13/13 | MRE | 11/05/13 | OP49318 | SQ102 |
| FA9482-19 [a] | Q3646.D | 4 | 11/12/13 | MRE | 11/05/13 | OP49318 | SQ101 |
| FA9482-19 [b] | Q3658.D | 10 | 11/13/13 | MRE | 11/05/13 | OP49318 | SQ102 |



**The QC reported here applies to the following samples:** **Method:** EPA 537 MOD

FA9482-1, FA9482-3, FA9482-5, FA9482-9, FA9482-11, FA9482-14, FA9482-17, FA9482-19

| CAS No. | Compound | FA9482-19 ug/l | Q | Spike ug/l | MS ug/l | MS % | MSD ug/l | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| 307-24-4 | Perfluorohexanoic acid | 87.2 [c] | | 40 | 183 | 85 | 199 | 125 | 8 | 70-130/30 |
| 375-85-9 | Perfluoroheptanoic acid | ND [c] | | 40 | 86.1 | 157* | 89.9 | 166* | 4 | 70-130/30 |
| 335-67-1 | Perfluorooctanoic acid | ND [c] | | 40 | 85.0 | 141* | 85.1 | 141* | 0 | 70-130/30 |
| 375-95-1 | Perfluorononanoic acid | ND [c] | | 40 | 69.2 | 173* | 73.5 | 184* | 6 | 70-130/30 |
| 335-76-2 | Perfluorodecanoic acid | ND [c] | | 40 | 68.5 | 171* | 67.7 | 169* | 1 | 70-130/30 |
| 2058-94-8 | Perfluoroundecanoic acid | ND [c] | | 40 | 66.0 | 165* | 66.8 | 167* | 1 | 70-130/30 |
| 307-55-1 | Perfluorododecanoic acid | ND [c] | | 40 | 61.4 | 154* | 59.5 | 149* | 3 | 70-130/30 |
| 72629-94-8 | Perfluorotridecanoic acid | ND [c] | | 40 | 48.0 | 120 | 49.8 | 125 | 4 | 70-130/30 |
| 376-06-7 | Perfluorotetradecanoic acid | ND [c] | | 40 | 47.6 | 119 | 47.0 | 118 | 1 | 70-130/30 |
| 375-73-5 | Perfluorobutanesulfonic acid | ND [c] | | 40 | 63.4 | 159* | 59.2 | 148* | 7 | 70-130/30 |
| 355-46-4 | Perfluorohexanesulfonic acid | ND [c] | | 40 | 51.8 | 130 | 52.0 | 130 | 0 | 70-130/30 |
| | Perfluoroheptanesulfonic acid | ND [c] | | 40 | ND | 0* | ND | 0* | nc | 70-130/30 |
| 1763-23-1 | Perfluorooctanesulfonic acid | ND [c] | | 40 | 52.2 | 131* | 52.6 | 132* | 1 | 70-130/30 |
| | Perfluorodecanesulfonic acid | ND [c] | | 40 | 53.7 | 134* | 52.4 | 131* | 2 | 70-130/30 |

| CAS No. | Surrogate Recoveries | MS | MSD | FA9482-19 | FA9482-19 | Limits |
|---|---|---|---|---|---|---|
| | 13C2-PFHxA | 177%* [e] | 190%* [e] | 207%* | 150%* [d] | 70-130% |
| | 13C2-PFDA | 161%* [e] | 154%* [e] | 196%* | 112% | 70-130% |

(a) Confirmation run for surrogate recoveries.
(b) Dilution required due to matrix interference.
(c) Result is from Run #2.
(d) Outside control limits due to matrix interference. Confirmed by reanalysis.
(e) Outside control limits due to dilution.

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA9482
**Account:** OMTNK O & M, Inc
**Project:** Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP49408-MS | Q3624.D | 10 | 11/12/13 | MRE | 11/06/13 | OP49408 | SQ101 |
| OP49408-MSD | Q3618.D | 10 | 11/12/13 | MRE | 11/06/13 | OP49408 | SQ101 |
| FA9482-6 | Q3601.D | 1 | 11/11/13 | MRE | 11/06/13 | OP49408 | SQ100 |
| FA9482-6 | Q3617.D | 25 | 11/12/13 | MRE | 11/06/13 | OP49408 | SQ101 |



**The QC reported here applies to the following samples:** **Method:** EPA 537 MOD

FA9482-6, FA9482-8, FA9482-13, FA9482-15, FA9482-16

| CAS No. | Compound | FA9482-6 ug/l | Q | Spike ug/l | MS ug/l | MS % | MSD ug/l | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|
| 307-24-4 | Perfluorohexanoic acid | 4.0 [b] | J | 1.6 | 5.7 | 106 | 5.1 | 69* [a] | 11 | 70-130/30 |
| 375-85-9 | Perfluoroheptanoic acid | 1.1 | | 1.6 | 2.7 | 100 | 2.6 | 94 | 4 | 70-130/30 |
| 335-67-1 | Perfluorooctanoic acid | 11.8 [b] | | 1.6 | 12.6 | 50* [a] | 12.7 | 56* [a] | 1 | 70-130/30 |
| 375-95-1 | Perfluorononanoic acid | 0.46 | | 1.6 | 2.2 | 109 | 2.2 | 109 | 0 | 70-130/30 |
| 335-76-2 | Perfluorodecanoic acid | 0.23 | | 1.6 | 2.0 | 111 | 1.9 | 104 | 5 | 70-130/30 |
| 2058-94-8 | Perfluoroundecanoic acid | 0.32 | | 1.6 | 1.9 | 99 | 1.9 | 99 | 0 | 70-130/30 |
| 307-55-1 | Perfluorododecanoic acid | ND | | 1.6 | 1.1 | 69* | 1.2 | 75 | 9 | 70-130/30 |
| 72629-94-8 | Perfluorotridecanoic acid | 0.082 | J | 1.6 | ND | -5* | ND | -5* | nc | 70-130/30 |
| 376-06-7 | Perfluorotetradecanoic acid | ND | | 1.6 | ND | 0* | ND | 0* | nc | 70-130/30 |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | | 1.6 | 1.7 | 106 | 1.7 | 106 | 0 | 70-130/30 |
| 355-46-4 | Perfluorohexanesulfonic acid | 0.46 | | 1.6 | 1.7 | 78 | 1.9 | 90 | 11 | 70-130/30 |
| 1763-23-1 | Perfluorooctanesulfonic acid | 0.75 | | 1.6 | 2.2 | 91 | 2.1 | 84 | 5 | 70-130/30 |
| | Perfluorodecanesulfonic acid | ND | | 1.6 | 0.94 | 59* | 0.94 | 59* | 0 | 70-130/30 |

| CAS No. | Surrogate Recoveries | MS | MSD | FA9482-6 | FA9482-6 | Limits |
|---|---|---|---|---|---|---|
| | 13C2-PFHxA | 125% | 118% | 112% | 0%* [c] | 70-130% |
| | 13C2-PFDA | 129% | 120% | 126% | 0%* [c] | 70-130% |

(a) Outside control limits due to high level in sample relative to spike amount.
(b) Result is from Run #2.
(c) Outside control limits due to dilution.

* = Outside of Control Limits.

Southeast
ACCUTEST
LABORATORIES

05/21/14

## Technical Report for

O & M, Inc

Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI

493

Accutest Job Number: FA14553

Sampling Date: 04/21/14

Report to:

O & M, Inc
450 Montbrook Ln
Knoxville, TN 37919
efrauen@oandm-inc.com; jrost@tycoint.com

ATTN: Judy Rost

Total number of pages in report: **19**

NELAP ACCREDITED TNI LABORATORY

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Harry Behzadi, Ph.D.
Laboratory Director

Client Service contact: Muna Mohammed 407-425-6700

Certifications: FL (E83510), LA (03051), KS (E-10327), IA (366), IL (200063), NC (573), NJ (FL002), SC (96038001)
DoD ELAP (L-A-B L2229), CA (04226CA), TX (T104704404), PA (68-03573), VA (460177),
AK, AR, GA, KY, MA, NV, OK, UT, WA

Sections: 1 2 3 4 5

# Table of Contents

-1-


**Section 1: Sample Summary** ..... **3**
**Section 2: Summary of Hits** ..... **4**
Section 3: Sample Results ..... 5
3.1: FA14553-1: FTC-82 ..... 6
3.2: FA14553-2: FTC-83 ..... 7
3.3: FA14553-3: FTC-82 ..... 8
3.4: FA14553-4: FTC-83 ..... 9
**Section 4: Misc. Forms** ..... **10**
**4.1:** Chain of Custody ..... 11
Section 5: GC/MS Semi-volatiles - QC Data Summaries ..... 14
5.1: Method Blank Summary ..... 15
5.2: Blank Spike Summary ..... 17
5.3: Matrix Spike/Matrix Spike Duplicate Summary ..... 19

Accutest Laboratories

# Sample Summary

O & M, Inc

Job No: FA14553

Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI
Project No: 493

| Sample Number | Collected Date | Time | By | Received | Matrix Code | Matrix Type | Client Sample ID |
|---|---|---|---|---|---|---|---|
| FA14553-1 | 04/21/14 | 13:00 | CF | 04/26/14 | SO | Soil | FTC-82 |
| FA14553-2 | 04/21/14 | 13:30 | CF | 04/26/14 | SO | Soil | FTC-83 |
| FA14553-3 | 04/21/14 | 13:10 | CF | 04/26/14 | AQ | Ground Water | FTC-82 |
| FA14553-4 | 04/21/14 | 13:30 | CF | 04/26/14 | AQ | Ground Water | FTC-83 |

The reported LOD and LOQ values have been adjusted for dry weight unless otherwise indicated on the results page. The reported LOD and LOQ values have been adjusted for the same dilution factor as that used for the sample result unless otherwise indicated on the results page. LOD = MDL and LOQ = RL.

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

# Summary of Hits



**Job Number:** FA14553
**Account:** O & M, Inc
**Project:** Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI
**Collected:** 04/21/14

| Lab Sample ID / Analyte | Client Sample ID | Result/ Qual | RL | MDL | Units | Method |
|---|---|---|---|---|---|---|
| **FA14553-1** | **FTC-82** | | | | | |
| Perfluoroheptanoic acid | | 5.8 J | 14 | 5.4 | ug/kg | EPA 537 MOD |
| Perfluorooctanoic acid | | 14.8 | 14 | 5.4 | ug/kg | EPA 537 MOD |
| Perfluorononanoic acid | | 113 | 14 | 6.3 | ug/kg | EPA 537 MOD |
| Perfluoroundecanoic acid | | 10.3 J | 14 | 8.3 | ug/kg | EPA 537 MOD |
| Perfluorooctanesulfonic acid | | 234 | 54 | 22 | ug/kg | EPA 537 MOD |
| **FA14553-2** | **FTC-83** | | | | | |
| Perfluorooctanoic acid | | 5.3 J | 13 | 5.2 | ug/kg | EPA 537 MOD |
| **FA14553-3** | **FTC-82** | | | | | |
| Perfluorohexanoic acid | | 2.01 B | 1.2 | 0.49 | ug/l | EPA 537 MOD |
| Perfluoroheptanoic acid | | 1.41 B | 1.2 | 0.49 | ug/l | EPA 537 MOD |
| Perfluorooctanoic acid | | 22.3 B | 1.2 | 0.49 | ug/l | EPA 537 MOD |
| Perfluorononanoic acid | | 9.17 | 1.2 | 0.49 | ug/l | EPA 537 MOD |
| Perfluorodecanoic acid | | 1.17 J | 1.2 | 0.49 | ug/l | EPA 537 MOD |
| Perfluoroundecanoic acid | | 1.27 | 1.2 | 0.49 | ug/l | EPA 537 MOD |
| Perfluorohexanesulfonic acid | | 10.4 | 1.2 | 0.49 | ug/l | EPA 537 MOD |
| Perfluoroheptanesulfonic acid | | 1.86 | 1.2 | 0.49 | ug/l | EPA 537 MOD |
| Perfluorooctanesulfonic acid | | 64.0 E | 2.4 | 0.98 | ug/l | EPA 537 MOD |
| **FA14553-4** | **FTC-83** | | | | | |
| Perfluorohexanoic acid | | 0.931 B | 0.12 | 0.048 | ug/l | EPA 537 MOD |
| Perfluoroheptanoic acid | | 0.412 B | 0.12 | 0.048 | ug/l | EPA 537 MOD |
| Perfluorooctanoic acid | | 0.336 B | 0.12 | 0.048 | ug/l | EPA 537 MOD |
| Perfluorononanoic acid | | 0.103 J | 0.12 | 0.048 | ug/l | EPA 537 MOD |
| Perfluorodecanoic acid | | 0.248 | 0.12 | 0.048 | ug/l | EPA 537 MOD |
| Perfluoroundecanoic acid | | 0.0860 J | 0.12 | 0.048 | ug/l | EPA 537 MOD |
| Perfluorooctanesulfonic acid | | 0.566 | 0.12 | 0.048 | ug/l | EPA 537 MOD |

## Sample Results

Report of Analysis

Accutest Laboratories

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | FTC-82 | | |
| **Lab Sample ID:** | FA14553-1 | **Date Sampled:** | 04/21/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 04/26/14 |
| **Method:** | EPA 537 MOD IN HOUSE | **Percent Solids:** | 84.9 |
| **Project:** | Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | Q5089.D | 1 | 05/15/14 | MRE | 05/03/14 | OP51479 | SQ167 |
| Run #2 | Q5084.D | 4 | 05/15/14 | MRE | 05/03/14 | OP51479 | SQ167 |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 1.1 g | 5.0 ml |
| Run #2 | 1.1 g | 5.0 ml |

**Perfluorinated Carboxylic Acids and Sulfonates**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| **PERFLUOROALKYLCARBOXYLIC ACIDS** | | | | | | |
| 307-24-4 | Perfluorohexanoic acid | ND | 14 | 5.4 | ug/kg | |
| 375-85-9 | Perfluoroheptanoic acid | 5.8 | 14 | 5.4 | ug/kg | J |
| 335-67-1 | Perfluorooctanoic acid | 14.8 | 14 | 5.4 | ug/kg | |
| 375-95-1 | Perfluorononanoic acid | 113 | 14 | 6.3 | ug/kg | |
| 335-76-2 | Perfluorodecanoic acid | ND | 14 | 6.9 | ug/kg | |
| 2058-94-8 | Perfluoroundecanoic acid | 10.3 | 14 | 8.3 | ug/kg | J |
| 307-55-1 | Perfluorododecanoic acid | ND | 14 | 5.4 | ug/kg | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 14 | 6.9 | ug/kg | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 14 | 5.4 | ug/kg | |
| **PERFLUOROALKYLSULFONATES** | | | | | | |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | 14 | 5.4 | ug/kg | |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 14 | 5.4 | ug/kg | |
| | Perfluoroheptanesulfonic acid | ND | 14 | 5.4 | ug/kg | |
| 1763-23-1 | Perfluorooctanesulfonic acid | 234 [a] | 54 | 22 | ug/kg | |
| | Perfluorodecanesulfonic acid | ND | 14 | 5.4 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| | 13C2-PFHxA | 101% | 74% | 70-130% |
| | 13C2-PFDA | 103% | 70% | 70-130% |

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | FTC-83 | | |
| **Lab Sample ID:** | FA14553-2 | **Date Sampled:** | 04/21/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 04/26/14 |
| **Method:** | EPA 537 MOD IN HOUSE | **Percent Solids:** | 79.0 |
| **Project:** | Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | Q5085.D | 1 | 05/15/14 | MRE | 05/03/14 | OP51479 | SQ167 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 1.2 g | 5.0 ml |
| Run #2 | | |

**Perfluorinated Carboxylic Acids and Sulfonates**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| **PERFLUOROALKYLCARBOXYLIC ACIDS** | | | | | | |
| 307-24-4 | Perfluorohexanoic acid | ND | 13 | 5.2 | ug/kg | |
| 375-85-9 | Perfluoroheptanoic acid | ND | 13 | 5.2 | ug/kg | |
| 335-67-1 | Perfluorooctanoic acid | 5.3 | 13 | 5.2 | ug/kg | J |
| 375-95-1 | Perfluorononanoic acid | ND | 13 | 6.0 | ug/kg | |
| 335-76-2 | Perfluorodecanoic acid | ND | 13 | 6.6 | ug/kg | |
| 2058-94-8 | Perfluoroundecanoic acid | ND | 13 | 7.9 | ug/kg | |
| 307-55-1 | Perfluorododecanoic acid | ND | 13 | 5.2 | ug/kg | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 13 | 6.6 | ug/kg | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 13 | 5.2 | ug/kg | |
| **PERFLUOROALKYLSULFONATES** | | | | | | |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | 13 | 5.2 | ug/kg | |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 13 | 5.2 | ug/kg | |
| | Perfluoroheptanesulfonic acid | ND | 13 | 5.2 | ug/kg | |
| 1763-23-1 | Perfluorooctanesulfonic acid | ND | 13 | 5.2 | ug/kg | |
| | Perfluorodecanesulfonic acid | ND | 13 | 5.2 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| | 13C2-PFHxA | 98% | | 70-130% |
| | 13C2-PFDA | 94% | | 70-130% |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | FTC-82 | | |
| **Lab Sample ID:** | FA14553-3 | **Date Sampled:** | 04/21/14 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 04/26/14 |
| **Method:** | EPA 537 MOD IN HOUSE | **Percent Solids:** | n/a |
| **Project:** | Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | Q5153.D | 10 | 05/20/14 | MRE | 05/03/14 | OP51478 | SQ169 |
| Run #2 | Q5154.D | 20 | 05/20/14 | MRE | 05/03/14 | OP51478 | SQ169 |

| | Initial Volume | Final Volume |
|---|---|---|
| Run #1 | 205 ml | 10.0 ml |
| Run #2 | 205 ml | 10.0 ml |

**Perfluorinated Carboxylic Acids and Sulfonates**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| **PERFLUOROALKYLCARBOXYLIC ACIDS** | | | | | | |
| 307-24-4 | Perfluorohexanoic acid | 2.01 | 1.2 | 0.49 | ug/l | B |
| 375-85-9 | Perfluoroheptanoic acid | 1.41 | 1.2 | 0.49 | ug/l | B |
| 335-67-1 | Perfluorooctanoic acid | 22.3 | 1.2 | 0.49 | ug/l | B |
| 375-95-1 | Perfluorononanoic acid | 9.17 | 1.2 | 0.49 | ug/l | |
| 335-76-2 | Perfluorodecanoic acid | 1.17 | 1.2 | 0.49 | ug/l | J |
| 2058-94-8 | Perfluoroundecanoic acid | 1.27 | 1.2 | 0.49 | ug/l | |
| 307-55-1 | Perfluorododecanoic acid | ND | 1.2 | 0.49 | ug/l | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 1.2 | 0.49 | ug/l | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 1.2 | 0.49 | ug/l | |
| **PERFLUOROALKYLSULFONATES** | | | | | | |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | 1.2 | 0.49 | ug/l | |
| 355-46-4 | Perfluorohexanesulfonic acid | 10.4 | 1.2 | 0.49 | ug/l | |
| | Perfluoroheptanesulfonic acid | 1.86 | 1.2 | 0.49 | ug/l | |
| 1763-23-1 | Perfluorooctanesulfonic acid | 64.0 [a] | 2.4 | 0.98 | ug/l | E |
| | Perfluorodecanesulfonic acid | ND | 1.2 | 0.49 | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| | 13C2-PFHxA | 110% | 0% [b] | 70-130% |
| | 13C2-PFDA | 99% | 0% [b] | 70-130% |

(a) Result is from Run# 2
(b) Outside control limits due to dilution.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | FTC-83 | | |
| **Lab Sample ID:** | FA14553-4 | **Date Sampled:** | 04/21/14 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 04/26/14 |
| **Method:** | EPA 537 MOD IN HOUSE | **Percent Solids:** | n/a |
| **Project:** | Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | Q5152.D | 1 | 05/20/14 | MRE | 05/03/14 | OP51478 | SQ169 |
| Run #2 | | | | | | | |

| | Initial Volume | Final Volume |
|---|---|---|
| Run #1 | 210 ml | 10.0 ml |
| Run #2 | | |

**Perfluorinated Carboxylic Acids and Sulfonates**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| **PERFLUOROALKYLCARBOXYLIC ACIDS** | | | | | | |
| 307-24-4 | Perfluorohexanoic acid | 0.931 | 0.12 | 0.048 | ug/l | B |
| 375-85-9 | Perfluoroheptanoic acid | 0.412 | 0.12 | 0.048 | ug/l | B |
| 335-67-1 | Perfluorooctanoic acid | 0.336 | 0.12 | 0.048 | ug/l | B |
| 375-95-1 | Perfluorononanoic acid | 0.103 | 0.12 | 0.048 | ug/l | J |
| 335-76-2 | Perfluorodecanoic acid | 0.248 | 0.12 | 0.048 | ug/l | |
| 2058-94-8 | Perfluoroundecanoic acid | 0.0860 | 0.12 | 0.048 | ug/l | J |
| 307-55-1 | Perfluorododecanoic acid | ND | 0.12 | 0.048 | ug/l | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 0.12 | 0.048 | ug/l | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 0.12 | 0.048 | ug/l | |
| **PERFLUOROALKYLSULFONATES** | | | | | | |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | 0.12 | 0.048 | ug/l | |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 0.12 | 0.048 | ug/l | |
| | Perfluoroheptanesulfonic acid | ND | 0.12 | 0.048 | ug/l | |
| 1763-23-1 | Perfluorooctanesulfonic acid | 0.566 | 0.12 | 0.048 | ug/l | |
| | Perfluorodecanesulfonic acid | ND | 0.12 | 0.048 | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| | 13C2-PFHxA | 77% | | 70-130% |
| | 13C2-PFDA | 71% | | 70-130% |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

## Misc. Forms

# Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

# Accutest Laboratories Southeast
# Chain of Custody

ACCUTEST LABORATORIES

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 • FAX: 407-425-0707
www.accutest.com

Accutest JOB # FA14553 PAGE ____ OF ____

Accutest Quote # | SKIFF#

**Client / Reporting Information**

Company Name D+M, Inc.
Address 4830 N. Berkeley
City Whitefish Bay State WI Zip 53217
Project Contact Eric Fraueu E-mail efraueu@D+M-Inc.com
Phone # 414-963-6210
Sampler(s) Name(s) (Printed) Chris Fraueu

**Project Information**

Project Name: FTC Marinette
Street 2700 Industrial Pkwy
City Marinette State WI
Project # 493
Fax #
Client Purchase Order # 493

**Analytical Information**

PFCs

**Matrix Codes**

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe

| Accutest Sample # | Field ID / Point of Collection | Collection Date | Collection Time | Sampled By | Matrix | Total # of Bottles | Container Information | Lab Use Only |
|---|---|---|---|---|---|---|---|---|
| 1 | FTC-82 | 4/21/14 | 13:00 | CF | S | 1 | X | X |
| 2 | FTC-83 | | 13:30 | | S | 1 | X | X |
| 3 | FTC-82 | | 13:00 | | W | 1 | X | X |
| 4 | FTC-83 | | 13:30 | | W | 1 | X | X |
| ~~5~~ | ~~FB-1~~ | | ~~14:00~~ | | ~~S~~ | | | X |

**TURNAROUND TIME (Business Days)**

Approved By: / Rush Code

- [X] 10 Days Standard
- [ ] 7 Day RUSH
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] OTHER

Emergency or Rush T/A Data Available VIA Email or Lablink

**Data Deliverable Information**

- [X] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULT1 (EPA LEVEL 4)
- [ ] EDD'S

**Comments / Remarks**

Sample Custody must be documented below each time samples change possession, including courier delivery.

| Relinquished by Sampler: | Date Time: | Received By: | Relinquished by: | Date Time: | Received By: |
|---|---|---|---|---|---|
| 1 | 4/23/14 11:30 | 2 | 3 FP 04-26-14 | 1000 | 4 |
| Relinquished by: | Date Time: | Received By: | Relinquished by: | Date Time: | Received By: |
| 5 | | 6 | 7 | | 8 |

**Lab Use Only:** Custody Seal in Place: Y N Temp Blank Provided: Y N Preserved where Applicable: Y N Total # of Coolers: Cooler Temperature (s) Celsius: 2.6

4.1 4

**FA14553: Chain of Custody**
**Page 1 of 3**

## ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION

ACCUTEST'S JOB NUMBER: FA14553 CLIENT: D&M PROJECT: FTC

DATE/TIME RECEIVED: 04-26-14 1000 {MM/DD/YY 24:00} NUMBER OF COOLERS RECEIVED: 1

METHOD OF DELIVERY: (FEDEX) UPS ACCUTEST COURIER GREYHOUND DELIVERY OTHER

AIRBILL NUMBERS: 8046 2065 4300

### COOLER INFORMATION

- [ ] CUSTODY SEAL NOT PRESENT OR NOT INTACT
- [ ] CHAIN OF CUSTODY NOT RECEIVED (COC)
- [ ] ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- [ ] SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- [ ] TEMPERATURE CRITERIA NOT MET

### TRIP BLANK INFORMATION

- [ ] TRIP BLANK PROVIDED
- [X] TRIP BLANK NOT PROVIDED
- [X] TRIP BLANK NOT ON COC
- [ ] TRIP BLANK INTACT
- [ ] TRIP BLANK NOT INTACT
- [ ] RECEIVED WATER TRIP BLANK
- [ ] RECEIVED SOIL TRIP BLANK

### MISC. INFORMATION

NUMBER OF ENCORES ? 25-GRAM_____ 5-GRAM_____

NUMBER OF 5035 FIELD KITS ? _____

NUMBER OF LAB FILTERED METALS ? _____

### TEMPERATURE INFORMATION

- [ ] IR THERM ID 1 CORR. FACTOR -0.4
- [ ] OBSERVED TEMPS: 3.0
- [ ] CORRECTED TEMPS: 2.6

### SAMPLE INFORMATION

- [ ] INCORRECT NUMBER OF CONTAINERS USED
- [ ] SAMPLE RECEIVED IMPROPERLY PRESERVED
- [ ] INSUFFICIENT VOLUME FOR ANALYSIS
- [ ] DATES/TIMES ON COC DO NOT MATCH SAMPLE LABEL
- [ ] ID'S ON COC DO NOT MATCH LABEL
- [ ] VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- [ ] BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- [ ] NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- [ ] UNCLEAR FILTERING OR COMPOSITING INSTRUCTIONS
- [ ] SAMPLE CONTAINER(S) RECEIVED BROKEN
- [ ] 5035 FIELD KITS NOT RECEIVED WITHIN 48 HOURS
- [ ] BULK VOA SOIL JARS NOT RECEIVED WITHIN 48 HOURS
- [ ] % SOLIDS JAR NOT RECEIVED
- [ ] RESIDUAL CHLORINE PRESENT

{APPICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS}

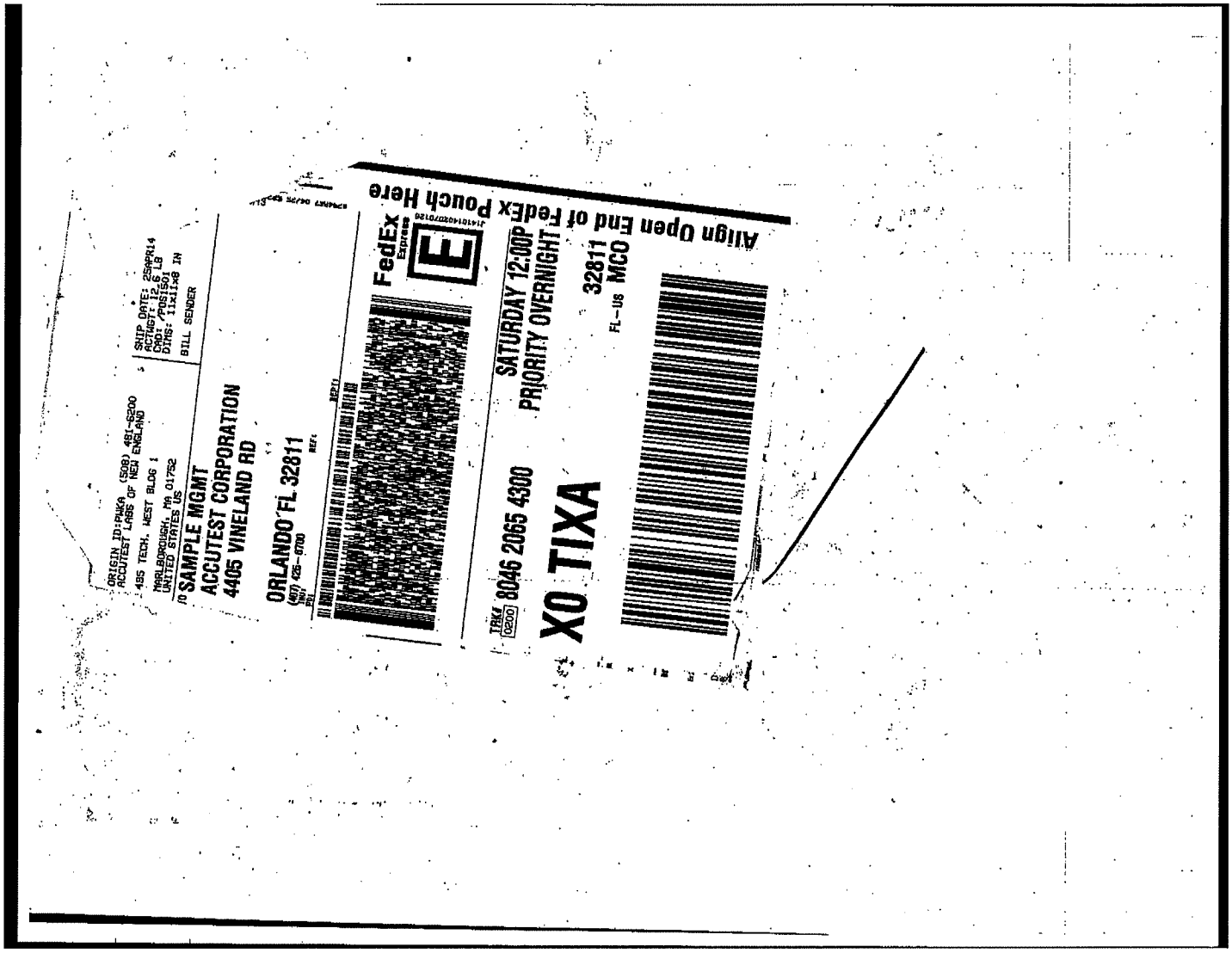
SUMMARY OF COMMENTS:

TECHNICIAN SIGNATURE/DATE: 04-26-14 REVIEWER SIGNATURE/DATE: 4-26-14

RS 04/14 receipt confirmation 041514.xls

4.1 4

**FA14553: Chain of Custody**
**Page 2 of 3**




**FA14553: Chain of Custody**
**Page 3 of 3**

Southeast ACCUTEST LABORATORIES



## GC/MS Semi-volatiles

# QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

# Method Blank Summary



**Job Number:** FA14553
**Account:** OMTNK O & M, Inc
**Project:** Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP51479-MB | Q5083.D | 1 | 05/15/14 | MRE | 05/03/14 | OP51479 | SQ167 |



**The QC reported here applies to the following samples:** **Method:** EPA 537 MOD

FA14553-1, FA14553-2

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 307-24-4 | Perfluorohexanoic acid | ND | 13 | 5.0 | ug/kg | |
| 375-85-9 | Perfluoroheptanoic acid | ND | 13 | 5.0 | ug/kg | |
| 335-67-1 | Perfluorooctanoic acid | ND | 13 | 5.0 | ug/kg | |
| 375-95-1 | Perfluorononanoic acid | ND | 13 | 5.8 | ug/kg | |
| 335-76-2 | Perfluorodecanoic acid | ND | 13 | 6.4 | ug/kg | |
| 2058-94-8 | Perfluoroundecanoic acid | ND | 13 | 7.7 | ug/kg | |
| 307-55-1 | Perfluorododecanoic acid | ND | 13 | 5.0 | ug/kg | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 13 | 6.4 | ug/kg | |
| 376-06-7 | Perfluorotetradecanoic acid | 7.1 | 13 | 5.0 | ug/kg | J |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | 13 | 5.0 | ug/kg | |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 13 | 5.0 | ug/kg | |
| | Perfluoroheptanesulfonic acid | ND | 13 | 5.0 | ug/kg | |
| 1763-23-1 | Perfluorooctanesulfonic acid | ND | 13 | 5.0 | ug/kg | |
| | Perfluorodecanesulfonic acid | ND | 13 | 5.0 | ug/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| | 13C2-PFHxA | 99% | 70-130% |
| | 13C2-PFDA | 91% | 70-130% |

# Method Blank Summary



**Job Number:** FA14553
**Account:** OMTNK O & M, Inc
**Project:** Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP51478-MB | Q5150.D | 1 | 05/20/14 | MRE | 05/03/14 | OP51478 | SQ169 |



**The QC reported here applies to the following samples:** **Method:** EPA 537 MOD

FA14553-3, FA14553-4

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 307-24-4 | Perfluorohexanoic acid | 0.00971 | 0.020 | 0.0080 | ug/l | J |
| 375-85-9 | Perfluoroheptanoic acid | 0.0110 | 0.020 | 0.0080 | ug/l | J |
| 335-67-1 | Perfluorooctanoic acid | 0.0124 | 0.020 | 0.0080 | ug/l | J |
| 375-95-1 | Perfluorononanoic acid | ND | 0.020 | 0.0080 | ug/l | |
| 335-76-2 | Perfluorodecanoic acid | ND | 0.020 | 0.0080 | ug/l | |
| 2058-94-8 | Perfluoroundecanoic acid | ND | 0.020 | 0.0080 | ug/l | |
| 307-55-1 | Perfluorododecanoic acid | ND | 0.020 | 0.0080 | ug/l | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 0.020 | 0.0080 | ug/l | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 0.020 | 0.0080 | ug/l | |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | 0.020 | 0.0080 | ug/l | |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 0.020 | 0.0080 | ug/l | |
| | Perfluoroheptanesulfonic acid | ND | 0.020 | 0.0080 | ug/l | |
| 1763-23-1 | Perfluorooctanesulfonic acid | ND | 0.020 | 0.0080 | ug/l | |
| | Perfluorodecanesulfonic acid | ND | 0.020 | 0.0080 | ug/l | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| | 13C2-PFHxA | 100% | 70-130% |
| | 13C2-PFDA | 110% | 70-130% |

# Blank Spike Summary



**Job Number:** FA14553
**Account:** OMTNK O & M, Inc
**Project:** Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP51479-BS | Q5082.D | 1 | 05/15/14 | MRE | 05/03/14 | OP51479 | SQ167 |



**The QC reported here applies to the following samples:** **Method:** EPA 537 MOD

FA14553-1, FA14553-2

| CAS No. | Compound | Spike ug/kg | BSP ug/kg | BSP % | Limits |
|---|---|---|---|---|---|
| 307-24-4 | Perfluorohexanoic acid | 100 | 112 | 112 | 70-130 |
| 375-85-9 | Perfluoroheptanoic acid | 100 | 99.2 | 99 | 70-130 |
| 335-67-1 | Perfluorooctanoic acid | 100 | 113 | 113 | 70-130 |
| 375-95-1 | Perfluorononanoic acid | 100 | 97.3 | 97 | 70-130 |
| 335-76-2 | Perfluorodecanoic acid | 100 | 106 | 106 | 70-130 |
| 2058-94-8 | Perfluoroundecanoic acid | 100 | 80.1 | 80 | 70-130 |
| 307-55-1 | Perfluorododecanoic acid | 100 | 102 | 102 | 70-130 |
| 72629-94-8 | Perfluorotridecanoic acid | 100 | 195 | 195* | 70-130 |
| 376-06-7 | Perfluorotetradecanoic acid | 100 | 94.6 | 95 | 70-130 |
| 375-73-5 | Perfluorobutanesulfonic acid | 100 | 103 | 103 | 70-130 |
| 355-46-4 | Perfluorohexanesulfonic acid | 100 | 101 | 101 | 70-130 |
| 1763-23-1 | Perfluorooctanesulfonic acid | 100 | 101 | 101 | 70-130 |
| | Perfluorodecanesulfonic acid | 100 | 103 | 103 | 70-130 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| | 13C2-PFHxA | 109% | 70-130% |
| | 13C2-PFDA | 103% | 70-130% |

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** FA14553
**Account:** OMTNK O & M, Inc
**Project:** Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP51478-BS [a] | Q5149.D | 1 | 05/20/14 | MRE | 05/03/14 | OP51478 | SQ169 |



**The QC reported here applies to the following samples:** **Method:** EPA 537 MOD

FA14553-3, FA14553-4

| CAS No. | Compound | Spike ug/l | BSP ug/l | BSP % | Limits |
|---|---|---|---|---|---|
| 307-24-4 | Perfluorohexanoic acid | 0.16 | 0.177 | 111 | 70-130 |
| 375-85-9 | Perfluoroheptanoic acid | 0.16 | 0.170 | 106 | 70-130 |
| 335-67-1 | Perfluorooctanoic acid | 0.16 | 0.186 | 116 | 70-130 |
| 375-95-1 | Perfluorononanoic acid | 0.16 | 0.176 | 110 | 70-130 |
| 335-76-2 | Perfluorodecanoic acid | 0.16 | 0.196 | 123 | 70-130 |
| 2058-94-8 | Perfluoroundecanoic acid | 0.16 | 0.162 | 101 | 70-130 |
| 307-55-1 | Perfluorododecanoic acid | 0.16 | 0.126 | 79 | 70-130 |
| 72629-94-8 | Perfluorotridecanoic acid | 0.16 | 0.134 | 84 | 70-130 |
| 376-06-7 | Perfluorotetradecanoic acid | 0.16 | 0.118 | 74 | 70-130 |
| 375-73-5 | Perfluorobutanesulfonic acid | 0.16 | 0.175 | 109 | 70-130 |
| 355-46-4 | Perfluorohexanesulfonic acid | 0.16 | 0.176 | 110 | 70-130 |
| 1763-23-1 | Perfluorooctanesulfonic acid | 0.16 | 0.179 | 112 | 70-130 |
| | Perfluorodecanesulfonic acid | 0.16 | 0.164 | 103 | 70-130 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| | 13C2-PFHxA | 104% | 70-130% |
| | 13C2-PFDA | 114% | 70-130% |

(a) Insufficient sample for MS/MSD.

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA14553
**Account:** OMTNK O & M, Inc
**Project:** Tyco Marinette FTC; 2700 Industrial Pkwy S, Marinette, WI

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP51479-MS | Q5086.D | 1 | 05/15/14 | MRE | 05/03/14 | OP51479 | SQ167 |
| OP51479-MSD | Q5087.D | 1 | 05/15/14 | MRE | 05/03/14 | OP51479 | SQ167 |
| FA14553-2 | Q5085.D | 1 | 05/15/14 | MRE | 05/03/14 | OP51479 | SQ167 |



**The QC reported here applies to the following samples:** **Method:** EPA 537 MOD

FA14553-1, FA14553-2

| CAS No. | Compound | FA14553-2 ug/kg | Q | Spike ug/kg | MS ug/kg | MS % | Spike ug/kg | MSD ug/kg | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 307-24-4 | Perfluorohexanoic acid | ND | | 97.4 | 107 | 110 | 80.6 | 89.2 | 111 | 18 | 70-130/30 |
| 375-85-9 | Perfluoroheptanoic acid | ND | | 97.4 | 92.3 | 95 | 80.6 | 78.6 | 97 | 16 | 70-130/30 |
| 335-67-1 | Perfluorooctanoic acid | 5.3 | J | 97.4 | 94.2 | 91 | 80.6 | 78.9 | 91 | 18 | 70-130/30 |
| 375-95-1 | Perfluorononanoic acid | ND | | 97.4 | 88.8 | 91 | 80.6 | 73.3 | 91 | 19 | 70-130/30 |
| 335-76-2 | Perfluorodecanoic acid | ND | | 97.4 | 102 | 105 | 80.6 | 88.3 | 110 | 14 | 70-130/30 |
| 2058-94-8 | Perfluoroundecanoic acid | ND | | 97.4 | 77.5 | 80 | 80.6 | 65.5 | 81 | 17 | 70-130/30 |
| 307-55-1 | Perfluorododecanoic acid | ND | | 97.4 | 125 | 128 | 80.6 | 106 | 131* | 16 | 70-130/30 |
| 72629-94-8 | Perfluorotridecanoic acid | ND | | 97.4 | 91.3 | 94 | 80.6 | 79.1 | 98 | 14 | 70-130/30 |
| 376-06-7 | Perfluorotetradecanoic acid | ND | | 97.4 | 88.2 | 91 | 80.6 | 78.8 | 98 | 11 | 70-130/30 |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | | 97.4 | 98.5 | 101 | 80.6 | 83.8 | 104 | 16 | 70-130/30 |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | | 97.4 | 95.2 | 98 | 80.6 | 82.1 | 102 | 15 | 70-130/30 |
| 1763-23-1 | Perfluorooctanesulfonic acid | ND | | 97.4 | 95.2 | 98 | 80.6 | 82.0 | 102 | 15 | 70-130/30 |
| | Perfluorodecanesulfonic acid | ND | | 97.4 | 95.9 | 98 | 80.6 | 82.4 | 102 | 15 | 70-130/30 |

| CAS No. | Surrogate Recoveries | MS | MSD | FA14553-2 | Limits |
|---|---|---|---|---|---|
| | 13C2-PFHxA | 102% | 104% | 98% | 70-130% |
| | 13C2-PFDA | 100% | 103% | 94% | 70-130% |

* = Outside of Control Limits.