

ANALYTICAL REPORT

Job Number: 280-92732-1

Job Description: ADEM PFC Sampling - Gadsden

For:

Alabama Dept. Environmental Management
2715 Sandlin Road, SW
Decatur, AL 35603

Attention: Mr. Ed Poolos



Approved for release.
Jessica H DeHerrera
Project Manager I
1/13/2017 3:34 PM

Designee for
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01/13/2017

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

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Definitions/Glossary

Client: Alabama Dept. Environmental Management
Project/Site: ADEM PFC Sampling - Gadsden

TestAmerica Job ID: 280-92732-1

Qualifiers

LCMS

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.
I	Value is EMPC (estimated maximum possible concentration).

Glossary

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

CASE NARRATIVE

Client: Alabama Dept. Environmental Management

Project: ADEM PFC Sampling - Gadsden

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

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

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

RECEIPT

The samples were received on 01/05/2017; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.1 C.

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): GADSDEN-RAW (280-92732-1). The container labels list Sample ID RW, while the COC lists GADSDEN-RAW (280-92732-1). The containers were matched to the sample based on sample collection date and time. The sample was logged per the COC. The laboratory will proceed with analysis unless instructed otherwise by the client. The client was notified on 1/5/17.

The samples for the Gadsden site are be reported under SDG 280-92732-1. The sample for the Centre site is be reported under SDG 280-92732-2.

PERFLUORINATED HYDROCARBONS (PFC)

Samples GADSDEN-RAW (280-92732-1) and GADSDEN-FINISHED (280-92732-2) were analyzed for Perfluorinated Hydrocarbons (PFC) in accordance with SOP DV-LC-0012. The samples were prepared on 01/10/2017 and analyzed on 01/11/2017.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 280-358286.

During the solid phase extraction process, sample GADSDEN-RAW (280-92732-1) clogged the cartridge; the actual amount of the sample extracted was calculated and the surrogate amount was adjusted down to this level.

Internal standard responses were outside of acceptance limits for the following sample: GADSDEN-RAW (280-92732-1). The sample shows evidence of matrix interference. The sample failed for several internal standards. The Method Blank and LCS were in control. Per the laboratory SOP, the sample is reported with narration.

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

PERFLUOROCTANE SULFONAMIDE (FOSA)

Samples GADSDEN-RAW (280-92732-1) and GADSDEN-FINISHED (280-92732-2) were analyzed for Perfluorooctane Sulfonamide (FOSA) in accordance with SOP DV-LC-0012. The samples were prepared on 01/10/2017 and analyzed on 01/12/2017.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 280-358289.

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

Client Sample Results

Client: Alabama Dept. Environmental Management
Project/Site: ADEM PFC Sampling - Gadsden

TestAmerica Job ID: 280-92732-1

Client Sample ID: GADSDEN-RAW

Lab Sample ID: 280-92732-1

Date Collected: 01/03/17 19:30

Matrix: Water

Date Received: 01/05/17 10:05

Method: DV-LC-0012 - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutane Sulfonate (PFBS)	0.083		0.031	0.013	ug/L		01/10/17 15:05	01/11/17 22:19	1
Perfluorobutanoic acid (PFBA)	0.018	J	0.031	0.015	ug/L		01/10/17 15:05	01/11/17 22:19	1
Perfluorodecane sulfonate (PFDS)	0.014	U	0.031	0.014	ug/L		01/10/17 15:05	01/11/17 22:19	1
Perfluorodecanoic acid (PFDA)	0.012	U	0.031	0.012	ug/L		01/10/17 15:05	01/11/17 22:19	1
Perfluorododecanoic acid (PFDoA)	0.023	U	0.047	0.023	ug/L		01/10/17 15:05	01/11/17 22:19	1
Perfluoroheptanoic acid (PFHpA)	0.021	U	0.047	0.021	ug/L		01/10/17 15:05	01/11/17 22:19	1
Perfluorohexane Sulfonate (PFHxS)	0.011	U	0.047	0.011	ug/L		01/10/17 15:05	01/11/17 22:19	1
Perfluorohexanoic acid (PFHxA)	0.064		0.031	0.0045	ug/L		01/10/17 15:05	01/11/17 22:19	1
Perfluorononanoic acid (PFNA)	0.027	U	0.062	0.027	ug/L		01/10/17 15:05	01/11/17 22:19	1
Perfluorooctanoic acid (PFOA)	0.022	J	0.031	0.015	ug/L		01/10/17 15:05	01/11/17 22:19	1
Perfluorooctane Sulfonate (PFOS)	0.021	U	0.047	0.021	ug/L		01/10/17 15:05	01/11/17 22:19	1
Perfluoropentanoic acid (PFPA)	0.081		0.047	0.017	ug/L		01/10/17 15:05	01/11/17 22:19	1
Perfluorotetradecanoic acid (PFTeA)	0.023	U	0.047	0.023	ug/L		01/10/17 15:05	01/11/17 22:19	1
Perfluorotridecanoic Acid (PFTriA)	0.028	U	0.062	0.028	ug/L		01/10/17 15:05	01/11/17 22:19	1
Perfluoroundecanoic acid (PFUnA)	0.011	U	0.031	0.011	ug/L		01/10/17 15:05	01/11/17 22:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 PFOA	105		60 - 155				01/10/17 15:05	01/11/17 22:19	1
13C8 PFOS	99		45 - 130				01/10/17 15:05	01/11/17 22:19	1

Method: PFC -FOSA - FOSA in Water (LC/MS/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctane Sulfonamide (FOSA)	0.0054	U	0.047	0.0054	ug/L		01/10/17 14:55	01/12/17 00:34	1

Client Sample ID: GADSDEN-FINISHED

Lab Sample ID: 280-92732-2

Date Collected: 01/04/17 10:00

Matrix: Water

Date Received: 01/05/17 10:05

Method: DV-LC-0012 - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutane Sulfonate (PFBS)	0.086		0.016	0.0067	ug/L		01/10/17 15:05	01/11/17 22:31	1
Perfluorobutanoic acid (PFBA)	0.021		0.016	0.0079	ug/L		01/10/17 15:05	01/11/17 22:31	1
Perfluorodecane sulfonate (PFDS)	0.0074	U	0.016	0.0074	ug/L		01/10/17 15:05	01/11/17 22:31	1
Perfluorodecanoic acid (PFDA)	0.0063	U	0.016	0.0063	ug/L		01/10/17 15:05	01/11/17 22:31	1
Perfluorododecanoic acid (PFDoA)	0.012	U	0.024	0.012	ug/L		01/10/17 15:05	01/11/17 22:31	1
Perfluoroheptanoic acid (PFHpA)	0.021	J	0.024	0.011	ug/L		01/10/17 15:05	01/11/17 22:31	1
Perfluorohexane Sulfonate (PFHxS)	0.0056	U	0.024	0.0056	ug/L		01/10/17 15:05	01/11/17 22:31	1
Perfluorohexanoic acid (PFHxA)	0.071		0.016	0.0024	ug/L		01/10/17 15:05	01/11/17 22:31	1
Perfluorononanoic acid (PFNA)	0.014	U	0.032	0.014	ug/L		01/10/17 15:05	01/11/17 22:31	1
Perfluorooctanoic acid (PFOA)	0.026		0.016	0.0079	ug/L		01/10/17 15:05	01/11/17 22:31	1
Perfluorooctane Sulfonate (PFOS)	0.018	J	0.024	0.011	ug/L		01/10/17 15:05	01/11/17 22:31	1
Perfluoropentanoic acid (PFPA)	0.078		0.024	0.0088	ug/L		01/10/17 15:05	01/11/17 22:31	1
Perfluorotetradecanoic acid (PFTeA)	0.012	U	0.024	0.012	ug/L		01/10/17 15:05	01/11/17 22:31	1
Perfluorotridecanoic Acid (PFTriA)	0.014	U	0.032	0.014	ug/L		01/10/17 15:05	01/11/17 22:31	1
Perfluoroundecanoic acid (PFUnA)	0.0056	U	0.016	0.0056	ug/L		01/10/17 15:05	01/11/17 22:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 PFOA	109		60 - 155				01/10/17 15:05	01/11/17 22:31	1
13C8 PFOS	103		45 - 130				01/10/17 15:05	01/11/17 22:31	1

Client Sample Results

Client: Alabama Dept. Environmental Management
Project/Site: ADEM PFC Sampling - Gadsden

TestAmerica Job ID: 280-92732-1

Client Sample ID: GADSDEN-FINISHED

Lab Sample ID: 280-92732-2

Date Collected: 01/04/17 10:00

Matrix: Water

Date Received: 01/05/17 10:05

Method: PFC -FOSA - FOSA in Water (LC/MS/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctane Sulfonamide (FOSA)	0.0046	U	0.040	0.0046	ug/L		01/10/17 14:55	01/12/17 00:46	1