

ANALYTICAL REPORT

Job Number: 280-96156-1

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.
Stephanie K Rothmeyer
Project Manager I
5/2/2017 9:21 AM

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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: 280-96156-1

Qualifiers

LCMS

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
X	Surrogate is outside control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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

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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 4/20/2017 at 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.3° C.

PERFLUORINATED HYDROCARBONS (PFC)

Samples GADSDEN-RAW (280-96156-1) and GADSDEN-FINISHED (280-96156-2) were analyzed for Perfluorinated Hydrocarbons (PFC) in accordance with SOP DV-LC-0012. The samples were prepared on 04/25/2017 and analyzed on 04/26/2017.

13C8 PFOS failed the surrogate recovery criteria high for GADSDEN-RAW (280-96156-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Internal standard responses were outside of acceptance limits for the following sample: GADSDEN-RAW (280-96156-1). The sample shows evidence of matrix interference.

During the solid phase extraction process, the following sample clogged the cartridge; therefore the sample was weighed back and the actual amount of surrogate process through the cartridge was calculated and the surrogate amount was adjusted to this level.

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

PERFLUOROOCANE SULFONAMIDE (FOSA)

Samples GADSDEN-RAW (280-96156-1) and GADSDEN-FINISHED (280-96156-2) were analyzed for Perfluorooctane Sulfonamide (FOSA) in accordance with SOP DV-LC-0012. The samples were prepared on 04/24/2017 and analyzed on 04/25/2017.

Internal standard responses were outside of acceptance limits for the following sample: GADSDEN-FINISHED (280-96156-2). The sample shows evidence of matrix interference.

No additional 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: 280-96156-1

Client Sample ID: GADSDEN-RAW

Lab Sample ID: 280-96156-1

Date Collected: 04/18/17 19:00

Matrix: Water

Date Received: 04/20/17 09:00

Method: DV-LC-0012 - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutane Sulfonate (PFBS)	0.091		0.036	0.015	ug/L		04/25/17 11:27	04/26/17 11:35	1
Perfluorobutanoic acid (PFBA)	0.019	J	0.036	0.018	ug/L		04/25/17 11:27	04/26/17 11:35	1
Perfluorodecane sulfonate (PFDS)	0.016	U	0.036	0.016	ug/L		04/25/17 11:27	04/26/17 11:35	1
Perfluorodecanoic acid (PFDA)	0.014	U	0.036	0.014	ug/L		04/25/17 11:27	04/26/17 11:35	1
Perfluorododecanoic acid (PFDoA)	0.027	U	0.054	0.027	ug/L		04/25/17 11:27	04/26/17 11:35	1
Perfluoroheptanoic acid (PFHpA)	0.024	U	0.054	0.024	ug/L		04/25/17 11:27	04/26/17 11:35	1
Perfluorohexane Sulfonate (PFHxS)	0.013	U	0.054	0.013	ug/L		04/25/17 11:27	04/26/17 11:35	1
Perfluorohexanoic acid (PFHxA)	0.038		0.036	0.0052	ug/L		04/25/17 11:27	04/26/17 11:35	1
Perfluorononanoic acid (PFNA)	0.031	U	0.072	0.031	ug/L		04/25/17 11:27	04/26/17 11:35	1
Perfluorooctanoic acid (PFOA)	0.034	J	0.036	0.018	ug/L		04/25/17 11:27	04/26/17 11:35	1
Perfluorooctane Sulfonate (PFOS)	0.071		0.054	0.024	ug/L		04/25/17 11:27	04/26/17 11:35	1
Perfluoropentanoic acid (PFPA)	0.063		0.054	0.020	ug/L		04/25/17 11:27	04/26/17 11:35	1
Perfluorotetradecanoic acid (PFTeA)	0.026	U	0.054	0.026	ug/L		04/25/17 11:27	04/26/17 11:35	1
Perfluorotridecanoic Acid (PFTriA)	0.032	U	0.072	0.032	ug/L		04/25/17 11:27	04/26/17 11:35	1
Perfluoroundecanoic acid (PFUnA)	0.012	U	0.036	0.012	ug/L		04/25/17 11:27	04/26/17 11:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOA	114		60 - 155	04/25/17 11:27	04/26/17 11:35	1
13C8 PFOS	132	X	45 - 130	04/25/17 11:27	04/26/17 11:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctane Sulfonamide (FOSA)	0.0049	U	0.043	0.0049	ug/L		04/24/17 11:40	04/25/17 10:08	1

Client Sample ID: GADSDEN-FINISHED

Lab Sample ID: 280-96156-2

Date Collected: 04/19/17 10:00

Matrix: Water

Date Received: 04/20/17 09:00

Method: DV-LC-0012 - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutane Sulfonate (PFBS)	0.095		0.017	0.0071	ug/L		04/25/17 11:27	04/26/17 11:48	1
Perfluorobutanoic acid (PFBA)	0.022		0.017	0.0084	ug/L		04/25/17 11:27	04/26/17 11:48	1
Perfluorodecane sulfonate (PFDS)	0.0078	U	0.017	0.0078	ug/L		04/25/17 11:27	04/26/17 11:48	1
Perfluorodecanoic acid (PFDA)	0.0067	U	0.017	0.0067	ug/L		04/25/17 11:27	04/26/17 11:48	1
Perfluorododecanoic acid (PFDoA)	0.013	U	0.026	0.013	ug/L		04/25/17 11:27	04/26/17 11:48	1
Perfluoroheptanoic acid (PFHpA)	0.019	J	0.026	0.011	ug/L		04/25/17 11:27	04/26/17 11:48	1
Perfluorohexane Sulfonate (PFHxS)	0.0062	J	0.026	0.0060	ug/L		04/25/17 11:27	04/26/17 11:48	1
Perfluorohexanoic acid (PFHxA)	0.038		0.017	0.0025	ug/L		04/25/17 11:27	04/26/17 11:48	1
Perfluorononanoic acid (PFNA)	0.015	U	0.034	0.015	ug/L		04/25/17 11:27	04/26/17 11:48	1
Perfluorooctanoic acid (PFOA)	0.041		0.017	0.0084	ug/L		04/25/17 11:27	04/26/17 11:48	1
Perfluorooctane Sulfonate (PFOS)	0.046		0.026	0.011	ug/L		04/25/17 11:27	04/26/17 11:48	1
Perfluoropentanoic acid (PFPA)	0.056		0.026	0.0093	ug/L		04/25/17 11:27	04/26/17 11:48	1
Perfluorotetradecanoic acid (PFTeA)	0.013	U	0.026	0.013	ug/L		04/25/17 11:27	04/26/17 11:48	1
Perfluorotridecanoic Acid (PFTriA)	0.015	U	0.034	0.015	ug/L		04/25/17 11:27	04/26/17 11:48	1
Perfluoroundecanoic acid (PFUnA)	0.0059	U	0.017	0.0059	ug/L		04/25/17 11:27	04/26/17 11:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOA	125		60 - 155	04/25/17 11:27	04/26/17 11:48	1
13C8 PFOS	127		45 - 130	04/25/17 11:27	04/26/17 11:48	1

TestAmerica Denver

Client Sample Results

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

TestAmerica Job ID: 280-96156-1

Client Sample ID: GADSDEN-FINISHED

Lab Sample ID: 280-96156-2

Date Collected: 04/19/17 10:00

Matrix: Water

Date Received: 04/20/17 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctane Sulfonamide (FOSA)	0.0051	U	0.045	0.0051	ug/L		04/24/17 11:40	04/25/17 10:21	1