

ANALYTICAL REPORT

Job Number: 280-89193-1

Job Description: ADEM PFC Sampling Water - 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
10/19/2016 5:24 PM

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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 Water - Gadsden

TestAmerica Job ID: 280-89193-1

Qualifiers

LCMS

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

Glossary

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

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 10/6/2016 at 9:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.1°C.

PERFLUORINATED HYDROCARBONS (PFC)

Samples GADSDEN-RAW (280-89193-2) and GADSDEN-FINISHED (280-89193-3) were analyzed for Perfluorinated Hydrocarbons (PFC) in accordance with SOP DV-LC-0012. The samples were prepared on 10/12/2016 and analyzed on 10/14/2016.

Internal standard responses were outside of acceptance limits for the following sample: GADSDEN-RAW (280-89193-2). 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.

PERFLUOROOCTANE SULFONAMIDE (FOSA)

Samples GADSDEN-RAW (280-89193-2) and GADSDEN-FINISHED (280-89193-3) were analyzed for Perfluorooctane Sulfonamide (FOSA) in accordance with SOP DV-LC-0012. The samples were prepared on 10/11/2016 and analyzed on 10/12/2016.

The Internal Standard 13C8 FOSA (IS) failed low in batch 345862 in the Method Blank and/or low in the LCS in batch 346074. The LCS was in control for the target analyte, FOSA. Some samples also failed low for IS, but were non-detect. A low internal standard recovery would result in a biased high result for the target analyte. Since samples were non-detect, they are reported.

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 Water - Gadsden

TestAmerica Job ID: 280-89193-1

Client Sample ID: GADSDEN-RAW

Lab Sample ID: 280-89193-2

Date Collected: 10/04/16 19:18

Matrix: Water

Date Received: 10/06/16 09:50

Method: DV-LC-0012 - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutane Sulfonate (PFBS)	0.074		0.023	0.0094	ug/L		10/12/16 16:25	10/14/16 11:44	1
Perfluorobutanoic acid (PFBA)	0.023		0.023	0.011	ug/L		10/12/16 16:25	10/14/16 11:44	1
Perfluorodecane sulfonate (PFDS)	0.010	U	0.023	0.010	ug/L		10/12/16 16:25	10/14/16 11:44	1
Perfluorodecanoic acid (PFDA)	0.0089	U	0.023	0.0089	ug/L		10/12/16 16:25	10/14/16 11:44	1
Perfluorododecanoic acid (PFDoA)	0.017	U	0.034	0.017	ug/L		10/12/16 16:25	10/14/16 11:44	1
Perfluoroheptanoic acid (PFHpA)	0.023	J	0.034	0.015	ug/L		10/12/16 16:25	10/14/16 11:44	1
Perfluorohexane Sulfonate (PFHxS)	0.0081	J	0.034	0.0079	ug/L		10/12/16 16:25	10/14/16 11:44	1
Perfluorohexanoic acid (PFHxA)	0.072		0.023	0.0033	ug/L		10/12/16 16:25	10/14/16 11:44	1
Perfluorononanoic acid (PFNA)	0.020	U	0.046	0.020	ug/L		10/12/16 16:25	10/14/16 11:44	1
Perfluorooctanoic acid (PFOA)	0.037		0.023	0.011	ug/L		10/12/16 16:25	10/14/16 11:44	1
Perfluorooctane Sulfonate (PFOS)	0.036		0.034	0.015	ug/L		10/12/16 16:25	10/14/16 11:44	1
Perfluoropentanoic acid (PFPA)	0.088		0.034	0.012	ug/L		10/12/16 16:25	10/14/16 11:44	1
Perfluorotetradecanoic acid (PFTeA)	0.017	U	0.034	0.017	ug/L		10/12/16 16:25	10/14/16 11:44	1
Perfluorotridecanoic Acid (PFTriA)	0.020	U	0.046	0.020	ug/L		10/12/16 16:25	10/14/16 11:44	1
Perfluoroundecanoic acid (PFUnA)	0.0078	U	0.023	0.0078	ug/L		10/12/16 16:25	10/14/16 11:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 PFOA	103		60 - 155				10/12/16 16:25	10/14/16 11:44	1
13C8 PFOS	96		45 - 130				10/12/16 16:25	10/14/16 11:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctane Sulfonamide (FOSA)	0.0056	U	0.049	0.0056	ug/L		10/11/16 21:25	10/12/16 22:32	1

Client Sample ID: GADSDEN-FINISHED

Lab Sample ID: 280-89193-3

Date Collected: 10/05/16 09:30

Matrix: Water

Date Received: 10/06/16 09:50

Method: DV-LC-0012 - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutane Sulfonate (PFBS)	0.078		0.019	0.0078	ug/L		10/12/16 16:25	10/14/16 11:57	1
Perfluorobutanoic acid (PFBA)	0.022		0.019	0.0092	ug/L		10/12/16 16:25	10/14/16 11:57	1
Perfluorodecane sulfonate (PFDS)	0.0086	U	0.019	0.0086	ug/L		10/12/16 16:25	10/14/16 11:57	1
Perfluorodecanoic acid (PFDA)	0.0074	U	0.019	0.0074	ug/L		10/12/16 16:25	10/14/16 11:57	1
Perfluorododecanoic acid (PFDoA)	0.014	U	0.028	0.014	ug/L		10/12/16 16:25	10/14/16 11:57	1
Perfluoroheptanoic acid (PFHpA)	0.018	J	0.028	0.012	ug/L		10/12/16 16:25	10/14/16 11:57	1
Perfluorohexane Sulfonate (PFHxS)	0.0066	U	0.028	0.0066	ug/L		10/12/16 16:25	10/14/16 11:57	1
Perfluorohexanoic acid (PFHxA)	0.066		0.019	0.0027	ug/L		10/12/16 16:25	10/14/16 11:57	1
Perfluorononanoic acid (PFNA)	0.016	U	0.038	0.016	ug/L		10/12/16 16:25	10/14/16 11:57	1
Perfluorooctanoic acid (PFOA)	0.036		0.019	0.0092	ug/L		10/12/16 16:25	10/14/16 11:57	1
Perfluorooctane Sulfonate (PFOS)	0.038		0.028	0.013	ug/L		10/12/16 16:25	10/14/16 11:57	1
Perfluoropentanoic acid (PFPA)	0.080		0.028	0.010	ug/L		10/12/16 16:25	10/14/16 11:57	1
Perfluorotetradecanoic acid (PFTeA)	0.014	U	0.028	0.014	ug/L		10/12/16 16:25	10/14/16 11:57	1
Perfluorotridecanoic Acid (PFTriA)	0.017	U	0.038	0.017	ug/L		10/12/16 16:25	10/14/16 11:57	1
Perfluoroundecanoic acid (PFUnA)	0.0065	U	0.019	0.0065	ug/L		10/12/16 16:25	10/14/16 11:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 PFOA	106		60 - 155				10/12/16 16:25	10/14/16 11:57	1
13C8 PFOS	103		45 - 130				10/12/16 16:25	10/14/16 11:57	1

TestAmerica Denver

Client Sample Results

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

TestAmerica Job ID: 280-89193-1

Client Sample ID: GADSDEN-FINISHED

Lab Sample ID: 280-89193-3

Date Collected: 10/05/16 09:30

Matrix: Water

Date Received: 10/06/16 09:50

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		10/11/16 21:25	10/12/16 22:45	1