

ANALYTICAL REPORT

Job Number: 280-94734-1

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
3/24/2017 3:08 PM

Designee for
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03/24/2017

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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: 280-94734-1

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.

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 3/10/2017 at 10:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.4° C.

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): GADSDEN-RAW (280-94734-1). The container labels list Sample ID River, while the COC lists GADSDEN-RAW (280-94734-1). The sample was logged per the COC.

PERFLUORINATED HYDROCARBONS (PFC)

Samples GADSDEN-RAW (280-94734-1) and GADSDEN-FINISHED (280-94734-2) were analyzed for Perfluorinated Hydrocarbons (PFC) in accordance with SOP DV-LC-0012. The samples were prepared on 03/16/2017 and analyzed on 03/20/2017.

During the solid phase extraction process, the following sample clogged the cartridge: GADSDEN-RAW (280-94734-1). Therefore, the IS volume was adjusted to match the volume of sample extracted. As such, reporting limits (RLs) are not impacted.

PERFLUOROCTANE SULFONAMIDE (FOSA)

Samples GADSDEN-RAW (280-94734-1) and GADSDEN-FINISHED (280-94734-2) were analyzed for Perfluorooctane Sulfonamide (FOSA) in accordance with SOP DV-LC-0012. The samples were prepared on 03/14/2017 and analyzed on 03/17/2017.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 280-365336. A laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) were analyzed within this batch for QC purposes.

The surrogate recovery (43%) for the blank associated with preparation batch 280-365336 and analytical batch 280-365948 was outside the lower control limit (50%). The surrogate recovered in control in the associated LCS, LCSD, and samples. The associated samples were ND.

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: 280-94734-1

Client Sample ID: GADSDEN-RAW

Lab Sample ID: 280-94734-1

Date Collected: 03/07/17 20:00

Matrix: Water

Date Received: 03/10/17 10:20

Method: DV-LC-0012 - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutane Sulfonate (PFBS)	0.095		0.020	0.0080	ug/L		03/16/17 11:37	03/20/17 17:40	1
Perfluorobutanoic acid (PFBA)	0.022		0.020	0.0096	ug/L		03/16/17 11:37	03/20/17 17:40	1
Perfluorodecane sulfonate (PFDS)	0.0089	U	0.020	0.0089	ug/L		03/16/17 11:37	03/20/17 17:40	1
Perfluorodecanoic acid (PFDA)	0.0076	U	0.020	0.0076	ug/L		03/16/17 11:37	03/20/17 17:40	1
Perfluorododecanoic acid (PFDoA)	0.015	U	0.029	0.015	ug/L		03/16/17 11:37	03/20/17 17:40	1
Perfluoroheptanoic acid (PFHpA)	0.025	J	0.029	0.013	ug/L		03/16/17 11:37	03/20/17 17:40	1
Perfluorohexane Sulfonate (PFHxS)	0.0068	U	0.029	0.0068	ug/L		03/16/17 11:37	03/20/17 17:40	1
Perfluorohexanoic acid (PFHxA)	0.055		0.020	0.0028	ug/L		03/16/17 11:37	03/20/17 17:40	1
Perfluorononanoic acid (PFNA)	0.017	U	0.039	0.017	ug/L		03/16/17 11:37	03/20/17 17:40	1
Perfluorooctanoic acid (PFOA)	0.034		0.020	0.0096	ug/L		03/16/17 11:37	03/20/17 17:40	1
Perfluorooctane Sulfonate (PFOS)	0.036		0.029	0.013	ug/L		03/16/17 11:37	03/20/17 17:40	1
Perfluoropentanoic acid (PFPA)	0.072		0.029	0.011	ug/L		03/16/17 11:37	03/20/17 17:40	1
Perfluorotetradecanoic acid (PFTeA)	0.014	U	0.029	0.014	ug/L		03/16/17 11:37	03/20/17 17:40	1
Perfluorotridecanoic Acid (PFTriA)	0.017	U	0.039	0.017	ug/L		03/16/17 11:37	03/20/17 17:40	1
Perfluoroundecanoic acid (PFUnA)	0.0067	U	0.020	0.0067	ug/L		03/16/17 11:37	03/20/17 17:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 PFOA	109		60 - 155				03/16/17 11:37	03/20/17 17:40	1
13C8 PFOS	105		45 - 130				03/16/17 11:37	03/20/17 17:40	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctane Sulfonamide (FOSA)	0.0055	U	0.048	0.0055	ug/L		03/14/17 09:38	03/17/17 23:45	1

Client Sample ID: GADSDEN-FINISHED

Lab Sample ID: 280-94734-2

Date Collected: 03/08/17 10:15

Matrix: Water

Date Received: 03/10/17 10:20

Method: DV-LC-0012 - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutane Sulfonate (PFBS)	0.095		0.018	0.0075	ug/L		03/16/17 11:37	03/20/17 17:53	1
Perfluorobutanoic acid (PFBA)	0.025		0.018	0.0089	ug/L		03/16/17 11:37	03/20/17 17:53	1
Perfluorodecane sulfonate (PFDS)	0.0083	U	0.018	0.0083	ug/L		03/16/17 11:37	03/20/17 17:53	1
Perfluorodecanoic acid (PFDA)	0.0071	U	0.018	0.0071	ug/L		03/16/17 11:37	03/20/17 17:53	1
Perfluorododecanoic acid (PFDoA)	0.014	U	0.027	0.014	ug/L		03/16/17 11:37	03/20/17 17:53	1
Perfluoroheptanoic acid (PFHpA)	0.025	J	0.027	0.012	ug/L		03/16/17 11:37	03/20/17 17:53	1
Perfluorohexane Sulfonate (PFHxS)	0.0063	U	0.027	0.0063	ug/L		03/16/17 11:37	03/20/17 17:53	1
Perfluorohexanoic acid (PFHxA)	0.058		0.018	0.0026	ug/L		03/16/17 11:37	03/20/17 17:53	1
Perfluorononanoic acid (PFNA)	0.016	U	0.036	0.016	ug/L		03/16/17 11:37	03/20/17 17:53	1
Perfluorooctanoic acid (PFOA)	0.033		0.018	0.0089	ug/L		03/16/17 11:37	03/20/17 17:53	1
Perfluorooctane Sulfonate (PFOS)	0.035		0.027	0.012	ug/L		03/16/17 11:37	03/20/17 17:53	1
Perfluoropentanoic acid (PFPA)	0.066		0.027	0.0099	ug/L		03/16/17 11:37	03/20/17 17:53	1
Perfluorotetradecanoic acid (PFTeA)	0.013	U	0.027	0.013	ug/L		03/16/17 11:37	03/20/17 17:53	1
Perfluorotridecanoic Acid (PFTriA)	0.016	U	0.036	0.016	ug/L		03/16/17 11:37	03/20/17 17:53	1
Perfluoroundecanoic acid (PFUnA)	0.0063	U	0.018	0.0063	ug/L		03/16/17 11:37	03/20/17 17:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 PFOA	108		60 - 155				03/16/17 11:37	03/20/17 17:53	1
13C8 PFOS	101		45 - 130				03/16/17 11:37	03/20/17 17:53	1

Client Sample Results

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

TestAmerica Job ID: 280-94734-1

Client Sample ID: GADSDEN-FINISHED

Lab Sample ID: 280-94734-2

Date Collected: 03/08/17 10:15

Matrix: Water

Date Received: 03/10/17 10:20

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		03/14/17 09:38	03/17/17 23:57	1