

ANALYTICAL REPORT

Job Number: 280-98587-1

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
6/30/2017 9:15 AM

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The test results in this report relate only to the samples in this report and meet all requirements of NELAP, 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: 280-98587-1

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.
B	Compound was found in the blank and sample.

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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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 6/22/2017 at 9:05 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6° C.

PERFLUORINATED HYDROCARBONS (PFC)

Samples GADSDEN-RAW (280-98587-3) and GADSDEN-FINISHED (280-98587-4) were analyzed for Perfluorinated Hydrocarbons (PFC) in accordance with SOP DV-LC-0012. The samples were prepared on 06/27/2017 and analyzed on 06/28/2017.

Perfluorohexanoic acid (PFHxA) was detected in method blank MB 280-378901/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Internal standard responses were outside of acceptance limits for the following samples: GADSDEN-RAW (280-98587-3), GADSDEN-FINISHED (280-98587-4). The samples show evidence of matrix interference.

The following sample was decanted prior to preparation: GADSDEN-RAW (280-98587-3). A solvent rinse could not be performed.

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: 280-98587-1

Client Sample ID: GADSDEN-RAW

Lab Sample ID: 280-98587-3

Date Collected: 06/20/17 19:00

Matrix: Water

Date Received: 06/22/17 09:05

Method: DV-LC-0012 - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutane Sulfonate (PFBS)	0.094		0.019	0.0078	ug/L		06/27/17 11:11	06/28/17 00:13	1
Perfluorobutanoic acid (PFBA)	0.020		0.019	0.0093	ug/L		06/27/17 11:11	06/28/17 00:13	1
Perfluorodecane sulfonate (PFDS)	0.0087	U	0.019	0.0087	ug/L		06/27/17 11:11	06/28/17 00:13	1
Perfluorodecanoic acid (PFDA)	0.010	J	0.019	0.0074	ug/L		06/27/17 11:11	06/28/17 00:13	1
Perfluorododecanoic acid (PFDoA)	0.014	U	0.029	0.014	ug/L		06/27/17 11:11	06/28/17 00:13	1
Perfluoroheptanoic acid (PFHpA)	0.022	J	0.029	0.013	ug/L		06/27/17 11:11	06/28/17 00:13	1
Perfluorohexane Sulfonate (PFHxS)	0.0066	U	0.029	0.0066	ug/L		06/27/17 11:11	06/28/17 00:13	1
Perfluorohexanoic acid (PFHxA)	0.039	B	0.019	0.0028	ug/L		06/27/17 11:11	06/28/17 00:13	1
Perfluorononanoic acid (PFNA)	0.017	U	0.038	0.017	ug/L		06/27/17 11:11	06/28/17 00:13	1
Perfluorooctanoic acid (PFOA)	0.046		0.019	0.0093	ug/L		06/27/17 11:11	06/28/17 00:13	1
Perfluorooctane Sulfonate (PFOS)	0.096		0.029	0.013	ug/L		06/27/17 11:11	06/28/17 00:13	1
Perfluoropentanoic acid (PFPA)	0.065		0.029	0.010	ug/L		06/27/17 11:11	06/28/17 00:13	1
Perfluorotetradecanoic acid (PFTeA)	0.014	U	0.029	0.014	ug/L		06/27/17 11:11	06/28/17 00:13	1
Perfluorotridecanoic Acid (PFTriA)	0.017	U	0.038	0.017	ug/L		06/27/17 11:11	06/28/17 00:13	1
Perfluoroundecanoic acid (PFUnA)	0.0066	U	0.019	0.0066	ug/L		06/27/17 11:11	06/28/17 00:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 PFOA	129		60 - 155				06/27/17 11:11	06/28/17 00:13	1
13C8 PFOS	119		45 - 130				06/27/17 11:11	06/28/17 00:13	1

Client Sample ID: GADSDEN-FINISHED

Lab Sample ID: 280-98587-4

Date Collected: 06/21/17 10:00

Matrix: Water

Date Received: 06/22/17 09:05

Method: DV-LC-0012 - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutane Sulfonate (PFBS)	0.083		0.019	0.0078	ug/L		06/27/17 11:11	06/28/17 00:26	1
Perfluorobutanoic acid (PFBA)	0.021		0.019	0.0092	ug/L		06/27/17 11:11	06/28/17 00:26	1
Perfluorodecane sulfonate (PFDS)	0.0086	U	0.019	0.0086	ug/L		06/27/17 11:11	06/28/17 00:26	1
Perfluorodecanoic acid (PFDA)	0.0074	U	0.019	0.0074	ug/L		06/27/17 11:11	06/28/17 00:26	1
Perfluorododecanoic acid (PFDoA)	0.014	U	0.028	0.014	ug/L		06/27/17 11:11	06/28/17 00:26	1
Perfluoroheptanoic acid (PFHpA)	0.019	J	0.028	0.012	ug/L		06/27/17 11:11	06/28/17 00:26	1
Perfluorohexane Sulfonate (PFHxS)	0.0066	J	0.028	0.0066	ug/L		06/27/17 11:11	06/28/17 00:26	1
Perfluorohexanoic acid (PFHxA)	0.042	B	0.019	0.0027	ug/L		06/27/17 11:11	06/28/17 00:26	1
Perfluorononanoic acid (PFNA)	0.016	U	0.038	0.016	ug/L		06/27/17 11:11	06/28/17 00:26	1
Perfluorooctanoic acid (PFOA)	0.046		0.019	0.0092	ug/L		06/27/17 11:11	06/28/17 00:26	1
Perfluorooctane Sulfonate (PFOS)	0.049		0.028	0.013	ug/L		06/27/17 11:11	06/28/17 00:26	1
Perfluoropentanoic acid (PFPA)	0.060		0.028	0.010	ug/L		06/27/17 11:11	06/28/17 00:26	1
Perfluorotetradecanoic acid (PFTeA)	0.014	U	0.028	0.014	ug/L		06/27/17 11:11	06/28/17 00:26	1
Perfluorotridecanoic Acid (PFTriA)	0.017	U	0.038	0.017	ug/L		06/27/17 11:11	06/28/17 00:26	1
Perfluoroundecanoic acid (PFUnA)	0.0065	U	0.019	0.0065	ug/L		06/27/17 11:11	06/28/17 00:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 PFOA	126		60 - 155				06/27/17 11:11	06/28/17 00:26	1
13C8 PFOS	123		45 - 130				06/27/17 11:11	06/28/17 00:26	1

Default Detection Limits

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Method: DV-LC-0012 - Perfluorinated Hydrocarbons

Prep: 3535

Analyte	RL	MDL	Units	Method
Perfluorobutane Sulfonate (PFBS)	0.020	0.0082	ug/L	DV-LC-0012
Perfluorobutanoic acid (PFBA)	0.020	0.0098	ug/L	DV-LC-0012
Perfluorodecane sulfonate (PFDS)	0.020	0.0092	ug/L	DV-LC-0012
Perfluorodecanoic acid (PFDA)	0.020	0.0078	ug/L	DV-LC-0012
Perfluorododecanoic acid (PFDoA)	0.030	0.015	ug/L	DV-LC-0012
Perfluoroheptanoic acid (PFHpA)	0.030	0.013	ug/L	DV-LC-0012
Perfluorohexane Sulfonate (PFHxS)	0.030	0.0070	ug/L	DV-LC-0012
Perfluorohexanoic acid (PFHxA)	0.020	0.0029	ug/L	DV-LC-0012
Perfluorononanoic acid (PFNA)	0.040	0.017	ug/L	DV-LC-0012
Perfluorooctane Sulfonate (PFOS)	0.030	0.013	ug/L	DV-LC-0012
Perfluorooctanoic acid (PFOA)	0.020	0.0098	ug/L	DV-LC-0012
Perfluoropentanoic acid (PFPA)	0.030	0.011	ug/L	DV-LC-0012
Perfluorotetradecanoic acid (PFTeA)	0.030	0.015	ug/L	DV-LC-0012
Perfluorotridecanoic Acid (PFTriA)	0.040	0.018	ug/L	DV-LC-0012
Perfluoroundecanoic acid (PFUnA)	0.020	0.0069	ug/L	DV-LC-0012