



ANALYTICAL REPORT

Job Number: 280-83604-1

Job Description: ADEM PFC Sampling

For:

Alabama Dept. Environmental Management
2715 Sandlin Road, SW
Decatur, AL 35603
Attention: Mr. Ed Poolos

Approved for release.
Stephanie K Kupper
Project Manager I
6/15/2016 10:42 AM

Stephanie K Kupper, Project Manager I
4955 Yarrow Street, Arvada, CO, 80002
(303)736-0182
stephanie.kupper@testamericainc.com
06/15/2016

cc: Mr. Bruce Freeman

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.

TestAmerica Laboratories, Inc.
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CASE NARRATIVE

Client: Alabama Dept. Environmental Management

Project: ADEM PFC Sampling

Report Number: 280-83604-1

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 5/24/2016 at 6:55 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.4° C.

PERFLUORINATED HYDROCARBONS (PFC)

Samples CENTRE WTP-RAW (280-83604-1), CENTRE WTP-FINISHED (280-83604-2), GADSDEN-RAW (280-83604-3), GADSDEN-FINISHED (280-83604-4), COOSA VALLEY-RAW (280-83604-5) and COOSA VALLEY-FINISHED (280-83604-6) were analyzed for Perfluorinated Hydrocarbons (PFC) in accordance with SOP DV-LC-0012. The samples were prepared on 05/31/2016 and analyzed on 06/06/2016.

Sample GADSDEN-RAW (280-83604-3)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Internal standard responses were outside of acceptance limits for the following samples: GADSDEN-RAW (280-83604-3), COOSA VALLEY-RAW (280-83604-5). The samples show evidence of matrix interference.

Samples GADSDEN-RAW (280-83604-3) and COOSA VALLEY-RAW (280-83604-5) were decanted prior to preparation. As a result, the solvent rinse was not able to be performed.

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

PERFLUOROCTANE SULFONAMIDE (FOSA)

Samples CENTRE WTP-RAW (280-83604-1), CENTRE WTP-FINISHED (280-83604-2), GADSDEN-RAW (280-83604-3), GADSDEN-FINISHED (280-83604-4), COOSA VALLEY-RAW (280-83604-5) and COOSA VALLEY-FINISHED (280-83604-6) were analyzed for Perfluorooctane Sulfonamide (FOSA) in accordance with SOP DV-LC-0012. The samples were prepared on 05/31/2016 and analyzed on 06/04/2016.

Samples GADSDEN-RAW (280-83604-3) and COOSA VALLEY-RAW (280-83604-5) were decanted prior to preparation. As a result, the solvent rinse was not able to be performed.

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

METHOD SUMMARY

Client: Alabama Dept. Environmental Management

Job Number: 280-83604-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Perfluorinated Hydrocarbons	TAL DEN	TAL-DEN DV-LC-0012	
Solid-Phase Extraction (SPE)	TAL DEN		SW846 3535
FOSA in Water (LC/MS/MS)	TAL DEN	TAL-DEN PFC -FOSA	
Solid-Phase Extraction (SPE)	TAL DEN		SW846 3535

Lab References:

TAL DEN = TestAmerica Denver

Method References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL-DEN = TestAmerica Laboratories, Denver, Facility Standard Operating Procedure.

Analytical Data

Client: Alabama Dept. Environmental Management

Job Number: 280-83604-1

Client Sample ID: GADSDEN-RAW

Lab Sample ID: 280-83604-3
Client Matrix: Water

Date Sampled: 05/23/2016 1440
Date Received: 05/24/2016 0655

DV-LC-0012 Perfluorinated Hydrocarbons

Analysis Method: DV-LC-0012	Analysis Batch: 280-328741	Instrument ID: LC_LCMS5
Prep Method: 3535	Prep Batch: 280-327703	Lab File ID: PC516F06035.d
Dilution: 2.0		Initial Weight/Volume: 235.7 mL
Analysis Date: 06/06/2016 2022		Final Weight/Volume: 5 mL
Prep Date: 05/31/2016 1150		Injection Volume: 25 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Perfluorobutane Sulfonate (PFBS)	0.061		0.017	0.042
Perfluorobutanoic acid (PFBA)	0.021	U	0.021	0.042
Perfluorodecane sulfonate (PFDS)	0.019	U	0.019	0.042
Perfluorodecanoic acid (PFDA)	0.017	U	0.017	0.042
Perfluorododecanoic acid (PFDoA)	0.032	U	0.032	0.064
Perfluoroheptanoic acid (PFHpA)	0.028	U	0.028	0.064
Perfluorohexane Sulfonate (PFHxS)	0.015	U	0.015	0.064
Perfluorohexanoic acid (PFHxA)	0.033	J	0.0062	0.042
Perfluorononanoic acid (PFNA)	0.037	U	0.037	0.085
Perfluorooctanoic acid (PFOA)	0.025	J	0.021	0.042
Perfluorooctane Sulfonate (PFOS)	0.031	J	0.028	0.064
Perfluoropentanoic acid (PFPA)	0.053	J	0.023	0.064
Perfluorotetradecanoic acid (PFTeA)	0.031	U	0.031	0.064
Perfluorotridecanoic Acid (PFTriA)	0.038	U	0.038	0.085
Perfluoroundecanoic acid (PFUnA)	0.015	U	0.015	0.042

Surrogate	%Rec	Qualifier	Acceptance Limits
13C8 PFOA	101		60 - 155
13C8 PFOS	99		45 - 130

Analytical Data

Client: Alabama Dept. Environmental Management

Job Number: 280-83604-1

Client Sample ID: GADSDEN-FINISHED

Lab Sample ID: 280-83604-4

Date Sampled: 05/23/2016 1442

Client Matrix: Water

Date Received: 05/24/2016 0655

DV-LC-0012 Perfluorinated Hydrocarbons

Analysis Method: DV-LC-0012	Analysis Batch: 280-328741	Instrument ID: LC_LCMS5
Prep Method: 3535	Prep Batch: 280-327703	Lab File ID: PC516F06036.d
Dilution: 1.0		Initial Weight/Volume: 281.7 mL
Analysis Date: 06/06/2016 2034		Final Weight/Volume: 5 mL
Prep Date: 05/31/2016 1150		Injection Volume: 25 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Perfluorobutane Sulfonate (PFBS)	0.055		0.0073	0.018
Perfluorobutanoic acid (PFBA)	0.012	J	0.0087	0.018
Perfluorodecane sulfonate (PFDS)	0.0081	U	0.0081	0.018
Perfluorodecanoic acid (PFDA)	0.0069	U	0.0069	0.018
Perfluorododecanoic acid (PFDoA)	0.013	U	0.013	0.027
Perfluoroheptanoic acid (PFHpA)	0.015	J	0.012	0.027
Perfluorohexane Sulfonate (PFHxS)	0.0062	U	0.0062	0.027
Perfluorohexanoic acid (PFHxA)	0.031		0.0026	0.018
Perfluorononanoic acid (PFNA)	0.015	U	0.015	0.035
Perfluorooctanoic acid (PFOA)	0.031		0.0087	0.018
Perfluorooctane Sulfonate (PFOS)	0.043		0.012	0.027
Perfluoropentanoic acid (PFPA)	0.048		0.0097	0.027
Perfluorotetradecanoic acid (PFTeA)	0.013	U	0.013	0.027
Perfluorotridecanoic Acid (PFTriA)	0.016	U	0.016	0.035
Perfluoroundecanoic acid (PFUnA)	0.0061	U	0.0061	0.018
Surrogate	%Rec	Qualifier	Acceptance Limits	
13C8 PFOA	103		60 - 155	
13C8 PFOS	100		45 - 130	

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Chain of Custody Record

TestAmerica
 THE LEADER IN ENVIRONMENTAL TESTING

Client Information
 Client Contact: Josh Davis
 Company: Alabama Dept. Environmental Management
 Address: 2715 Sandlin Road, SW
 City: Decatur
 State, Zip: AL, 35603
 Phone: 256-432-2083(Tel)
 Email: jdavis@adem.state.al.us
 Project Name: ADEM PFC Sampling Water
 Site:

Sampler: Bruce Freeman
Phone: 256-432-2073
Lab Pkt.: Kupper, Stephanie K
E-Mail: stephanie.kupper@testamericac.com
Carrier Tracking No(s): Fedex Overnight
Page: 1 of 1
Job #:

Due Date Requested:
TAT Requested (days): 10
PO #:
Purchase Order Requested:
Project #: 28009916
SSOW#:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Solid, Semisolid, Other)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFCs	Total Number of Containers	Special Instructions/Note:
<u>Centre WTP - Raw</u>	<u>5/23/16</u>	<u>1320</u>	<u>G</u>	<u>DD</u>	<u>Y</u>	<u>Y</u>	<u></u>	<u></u>	<u></u>
<u>Centre WTP - Finished</u>	<u>5/23/16</u>	<u>1325</u>	<u>G</u>	<u>DD</u>	<u>Y</u>	<u>Y</u>	<u></u>	<u></u>	<u></u>
<u>Gradsden - Raw</u>	<u>5/23/16</u>	<u>1440</u>	<u>G</u>	<u>DD</u>	<u>Y</u>	<u>Y</u>	<u></u>	<u></u>	<u></u>
<u>Gradsden - Finished</u>	<u>5/23/16</u>	<u>1442</u>	<u>G</u>	<u>DD</u>	<u>Y</u>	<u>Y</u>	<u></u>	<u></u>	<u></u>
<u>Coosa Valley - Raw</u>	<u>5/23/16</u>	<u>1600</u>	<u>G</u>	<u>DD</u>	<u>Y</u>	<u>Y</u>	<u></u>	<u></u>	<u></u>
<u>Coosa Valley - Finished</u>	<u>5/23/16</u>	<u>1540</u>	<u>G</u>	<u>DD</u>	<u>Y</u>	<u>Y</u>	<u></u>	<u></u>	<u></u>



Possible Hazard Identification
 Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological
Deliverable Requested: I, II, III, IV, Other (specify)
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month):
 Return To Client Disposal By Lab Archive For Months
Special Instructions/QC Requirements:

Empty Kit Relinquished by: **Date:**
Relinquished by: [Signature] **Date/Time:** 5/23/16 1705 **Company:** ADDEM
Relinquished by: [Signature] **Date/Time:** **Company:**
Relinquished by: **Date/Time:** **Company:**

Custody Seals Intact: Yes No **Custody Seal No.:** 733493
Cooler Temperature(s) °C and Other Remarks: 5400 IRIS Transferred by DD 5/23/16