1712001
5/12/08
15 samples

From: "Fred Mucci" <fmucci.salem@verizon.net>
To: "'Betty Boros-Russo'" <Betty.Boros-Russo@dep.state.nj.us>
Date: 5/13/2008 10:20:59 AM
Subject: FW: L2604996 - City of Salem PFOA/PFOS (4th round of Sampling)

Good Morning Ms. Boros-Russo,

Attached please find the PFOA/PFOS (PDF file) results for the 2nd quarter (4th round of samples) of 2008 for the City of Salem PWSID 1712001. In addition, please find scans 1 & 2. They are the June 8, 2007 letter I received from the NJDEP in regards to the PFOA/PFOS sampling recommendations. I sampled for 4 quarters as recommended. Can you tell me whether I should continue to sample for the noted parameters or stop at this point? I appreciate your input.

Fred Mucci

→ Vince Carter Michelle Janet Karen

From: Stephen Bobbs [mailto:stebob@qclaboratories.com]
Sent: Monday, April 28, 2008 11:34 AM
To: histlog; fmucci
Subject: L2604996

Hi Fred,...please find subcontracted data, attached.
Thanks, Stephen

----- Forwarded Message -----
From: scanner@qclaboratories.com
To: "Stephen Bobbs" <sbobbs@qclaboratories.com>
Sent: Monday, April 28, 2008 12:30:08 PM (GMT-0500) America/New_York
Subject: Attached Image

City of Salem
E00345

L2604996-1

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

PFOA/PFOS Analysis

Lot #: D8D040261

Nicki Smith

QC Laboratories, Inc.
1205 Industrial Highway
Southampton, PA 18966

TestAmerica Laboratories, Inc.

FOR: **Michelle A. Johnston**
Project Manager

April 17, 2008

Table Of Contents

Standard Deliverables

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Standard Deliverables

The Cover Letter and the Report Cover page are considered integral parts of this Standard Deliverable package. This report is incomplete unless all pages indicated in this Table of Contents are included.

Case Narrative
D8D040261

TestAmerica Denver utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameters listed on the methods summary page in accordance with the methods indicated. Dilution factors and footnotes are provided on each datasheet to assist in the interpretation of the results.

The results relate only to the samples in this report and meet all requirements of NELAC. All data have been reviewed for compliance with the laboratory QA/QC plan and have found to be compliant with laboratory protocols with any exceptions noted below.

Please note that Non-Detect (ND) results have been evaluated down to the Method Detection Limit (MDL) and should be considered ND at the MDL. Unless otherwise noted, results for solids have been dry weight corrected.

Sample Arrival and Receipt
The following report contains the analytical results for one sample received 4/4/08, according to documented sample acceptance procedures. The sample was received in good condition at a temperature of 2.3°C. No anomalies were encountered during sample receipt.

Standards
Analytical standards were prepared using the acid form of the compound perfluorooctanoic acid (PFOA). PFOS is a commercial prepared and certified solution.

Perfluoro-n-[1,2,3,4-$^{13}C_4$]octanoic acid was introduced at the extraction step and was used as an internal standard for quantitation of PFOA. Perfluoro-1-[1,2,3,4-$^{13}C_4$]octanatesulfonate was introduced at the extraction step and was used as an internal standard for quantitation of PFOS.

Sample Extraction and Analysis
The sample presented in this report was analyzed for the target analyte by TestAmerica Denver's SOP DEN-LC-0012A.

For water samples a 250 mL aliquot of each sample is acidified with 1 mL of 6N HCl solution and it is extracted using solid phase extraction technique with methanol conditioned C18 cartridges. Each sample is spiked with the internal standard, prior to extraction. After the sample is passed through the cartridge, the analytes are eluted with 4 mL of methanol. The final volume is brought to 5 mL using methanol and the extract is analyzed by LC/MS/MS.

Method QC Samples
The Method Blank is processed reagent water spiked with surrogate and prepared with each batch of 20 samples of the same matrix. The method blank was non-detect at the reporting limit.

Each batch is prepared with a Laboratory Control Sample (LCS). The recoveries of two concentration levels of Laboratory Control Samples were within control limits.

Analytical Comments

The Standard Operating Procedure (SOP) was altered slightly for these samples in the sample prep and LC conditions. The alterations are listed below.

Sample Prep Differences:

The samples were prepped following the normal procedure for SOP DEN-LC-0012, Revision 4 up until section 10.1.3.10. These samples were not acidified and a Waters Oasis Wax column was used instead of a Phenomenex Strata X column. The samples were rinsed 2 times with 6 mL of formic acid solution instead of HPLC grade water, which differs from section 10.1.3.19. The formic acid solution is prepped by diluting 2.225 mL of 88% formic acid to 100 mL with water. Section 10.1.3.20 was altered by adding 4 mL of 1% ammonium hydroxide in methanol to each cartridge instead of 4 mL of methanol.

No other anomalies were observed.

EXECUTIVE SUMMARY - Detection Highlights

D8D040261

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
L2604996-1 04/02/08 09:00 001				
PFOA	0.0058 J	0.010	ug/L	DEN -LC-0012

METHODS SUMMARY

D8D040261

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
LC/MS/MS, PFOA	DEN -LC-0012	

References:

DEN Severn Trent Laboratores, Denver, Facility Standard Operating Procedure:

METHOD / ANALYST SUMMARY

D8D040261

ANALYTICAL METHOD	ANALYST	ANALYST ID
DEN -LC-0012	Jaqueline Bonnett	003601

References:

DEN Severn Trent Laboratores, Denver, Facility Standard Operating Procedure.

SAMPLE SUMMARY

D8D040261

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
KKQVT	001	L2604996-1	04/02/08	09:00

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

QC Laboratories

Client Sample ID: L2604996-1

HPLC

Lot-Sample #...: D8D040261-001	Work Order #...: KKQVT2AA	Matrix.....: WATER	
Date Sampled...: 04/02/08 09:00	Date Received..: 04/04/08		
Prep Date.....: 04/09/08	Analysis Date..: 04/11/08		
Prep Batch #...: 8100121	Analysis Time..: 00:29		
Dilution Factor: 1			
	Method.....: DEN -LC-0012		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
PFOA	0.0058 J	0.010	ug/L
PFOS	ND	0.010	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	108	(50 - 200)
13C4 PFOS	73	(50 - 200)

NOTE(S):

J Estimated result. Result is less than RL.

QC DATA ASSOCIATION SUMMARY

D8D040261

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WATER	DEN -LC-0012		8100121	8100064

METHOD BLANK REPORT

HPLC

Client Lot #...: D8D040261 **Work Order #...:** KKXWT1AA **Matrix.....:** WATER
MB Lot-Sample #: R8D090000-121

Prep Date.....: 04/09/08 **Analysis Time..:** 23:50
Analysis Date..: 04/10/08 **Prep Batch #...:** 8100121
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
PFOA	ND	0.010	ug/L	DEN -LC-0012
PFOS	ND	0.010	ug/L	DEN -LC-0012

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	101	(50 - 200)
13C4 PFOS	60	(50 - 200)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: D8D040261 **Work Order #...:** KKXWT1AC **Matrix.....:** WATER
LCS Lot-Sample#: R8D090000-121
Prep Date.....: 04/09/08 **Analysis Date..:** 04/11/08
Prep Batch #...: 8100121 **Analysis Time..:** 00:03
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
PFOA	**98**	**(70 - 130)**	**DEN -LC-0012**
PFOS	**93**	**(39 - 120)**	**DEN -LC-0012**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	108	(50 - 200)
13C4 PFOS	72	(50 - 200)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

HPLC

Client Lot #...: D8D040261 **Work Order #...:** KKXWT1AC **Matrix.....:** WATER
LCS Lot-Sample#: R8D090000-121
Prep Date.....: 04/09/08 **Analysis Date..:** 04/11/08
Prep Batch #...: 8100121 **Analysis Time..:** 00:03
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
PFOA	**0.200**	**0.197**	**ug/L**	**98**	**DEN -LC-0012**
PFOS	**0.200**	**0.186**	**ug/L**	**93**	**DEN -LC-0012**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	108	(50 - 200)
13C4 PFOS	72	(50 - 200)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: D8D040261 **Work Order #...:** KKXWT1AD **Matrix.....:** WATER
LCS Lot-Sample#: R8D090000-121
Prep Date.....: 04/09/08 **Analysis Date..:** 04/11/08
Prep Batch #...: 8100121 **Analysis Time..:** 00:16
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
PFOA	**98**	**(70 - 130)**	**DEN -LC-0012**
PFOS	**98**	**(39 - 120)**	**DEN -LC-0012**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	115	(50 - 200)
13C4 PFOS	97	(50 - 200)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

HPLC

Client Lot #...: D8D040261 **Work Order #...:** KKXWT1AD **Matrix.....:** WATER
LCS Lot-Sample#: R8D090000-121
Prep Date.....: 04/09/08 **Analysis Date..:** 04/11/08
Prep Batch #...: 8100121 **Analysis Time..:** 00:16
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
PFOA	**0.0200**	**0.0196**	**ug/L**	**98**	**DEN -LC-0012**
PFOS	**0.0200**	**0.0196**	**ug/L**	**98**	**DEN -LC-0012**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	115	(50 - 200)
13C4 PFOS	97	(50 - 200)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: D8D040261 Work Order #...: KKQVV1AC-MS Matrix.....: WATER
MS Lot-Sample #: D8D040262-001 KKQVV1AD-MSD
Date Sampled...: 04/02/08 08:30 Date Received..: 04/04/08
Prep Date.....: 04/09/08 Analysis Date..: 04/11/08
Prep Batch #...: 8100121 Analysis Time..: 00:55
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
PFOA	**95**	**(70 - 130)**			**DEN -LC-0012**
	95	**(70 - 130)**	**0.44**	**(0-20)**	**DEN -LC-0012**
PFOS	**87**	**(39 - 120)**			**DEN -LC-0012**
	89	**(39 - 120)**	**1.9**	**(0-20)**	**DEN -LC-0012**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	112	(50 - 200)
	112	(50 - 200)
13C4 PFOS	81	(50 - 200)
	84	(50 - 200)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

HPLC

Client Lot #...: D8D040261 **Work Order #...:** KKQVV1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: D8D040262-001 KKQVV1AD-MSD
Date Sampled...: 04/02/08 08:30 **Date Received..:** 04/04/08
Prep Date.....: 04/09/08 **Analysis Date..:** 04/11/08
Prep Batch #...: 8100121 **Analysis Time..:** 00:55
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
PFOA	**0.030**	**0.210**	**0.230**	**ug/L**	**95**		**DEN -LC-0012**
	0.030	**0.210**	**0.229**	**ug/L**	**95**	**0.44**	**DEN -LC-0012**
PFOS	**0.0082**	**0.210**	**0.192**	**ug/L**	**87**		**DEN -LC-0012**
	0.0082	**0.210**	**0.195**	**ug/L**	**89**	**1.9**	**DEN -LC-0012**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	112	(50 - 200)
	112	(50 - 200)
13C4 PFOS	81	(50 - 200)
	84	(50 - 200)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

STL Denver

2nd SUBMITTAL Rec'd 4/4/08

QC Laboratories

1205 Industrial Blvd.
Southampton, PA 18966-0514
Phone: 215-355-3900
Fax: 215-355-7231

CHAIN OF CUSTODY

Page 1 of 1

Lab LIMS No:

LAB USE ONLY

Bill to/Report to: (if different)

Client/Acct. No. QC Laboratories

Address see above

Sampling Site Address: (if different)

City/State/Zip

Phone/Fax ext. 3360

P.O. No.

Client Contact Nicki Smith

QC Contact

MATRIX CODES

DW: DRINKING WATER
GW: GROUND WATER
WW: WASTEWATER
SO: SOIL
SL: SLUDGE
OIL: OIL
SOL: NON SOIL SOLID
MI: MISCELLANEOUS
X: OTHER

LABORATORY ONLY

PROJECT / FIELD ID	Collection Date	Collection Military Time	GRAB	COMP	Matrix Code	Number of Containers Total	H_2SO_4	HCl	NaOH	HNO_3	ZnAc	Unpres	Bact	ANALYSIS REQUESTED	Field pH, Temp (C or F), DO, Cl_2, S. Cond. etc.
L2604996-1	4/3/08	0900			DW	1								PFOA/PFOS	

SAMPLED BY: (Name/Company)

Verbal/fax data due: ___/___/___

Hardcopy due: ___/___/___

Report Format: ☐ Standard ☐ Forms ☐ Standard + QC ☐ NJ Reduced ☐ Disk

Please call for pricing and availability on rush (<14-21 day) turnaround and on all but standard format.

Field Parameters Analyzed By:

Sig: Date/Time:

SAMPLE CUSTODY EXCHANGES MUST BE DOCUMENTED BELOW. USE FULL LEGAL SIGNATURE, DATE AND MILITARY TIME (24 HOUR CLOCK, I.E. 8AM IS 0800, 4 PM IS 1600)

	DATE	TIME		DATE	TIME	
RELINQUISHED BY SAMPLER 1			RECEIVED BY 1			DELIVERY METHOD: ☐ QC COURIER ☐ CLIENT ☐ UPS ☑ FEDEX ☐ OTHER
RELINQUISHED BY 2	4/3/08	1630	RECEIVED BY 2	4/3/08	1030	COMMENTS:
RELINQUISHED BY 3	DATE	TIME	RECEIVED BY 3	4/4/08	0930	
RELINQUISHED BY 4	DATE	TIME	RECEIVED BY 4	DATE	TIME	
RELINQUISHED BY 5	DATE	TIME	RECEIVED BY 5	DATE	TIME	Hazardous: yes / no

Custody Seal Number

For example to aid completion, see reverse side.

FINAL REPORT

TestAmerica

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DEP2-SDWB-000295