



MICHAEL J. SFERRUZZO, C.P.W.M.
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Superintendent of Water

City of Garfield

413 Midland Avenue
Garfield, New Jersey 07026
WATER DEPARTMENT

RECEIVED

2007 OCT -2 PM 3:05



BUREAU OF SAFE
DRINKING WATER

Telephone (973) 546-2200
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To: Paul Smith

From: Michael James Sferruzzo
Garfield Water Superintendent

Date: September 27, 2007

Subject: PFOA-PFOS Results

Paul, here is the packet that I received from the lab. As per our telephone conversation .

Michael J. Sferruzzo

Michael James Sferruzzo
Garfield Water Superintendent

PWS ID NJ 0221001

SAMPLE POINT ID TP003015

Garfield Water Department

Client Sample ID: G1 ELMWOOD PARK PUMP STATION

HPLC

Lot-Sample #....: D7I060300-001 Work Order #....: J6A2N1AA Matrix.....: WATER
Date Sampled....: 09/05/07 08:40 Date Received...: 09/06/07
Prep Date.....: 09/12/07 Analysis Date...: 09/14/07
Prep Batch #....: 7255149 Analysis Time...: 16:41
Dilution Factor: 1

Method.....: DEN -LC-0012

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>	<u>UNITS</u>
PFOS	0.029	0.010	ug/L
PFOA	0.040	0.015	ug/L

<u>SURROGATE</u>	<u>PERCENT</u>	<u>RECOVERY</u>
	<u>RECOVERY</u>	<u>LIMITS</u>
13C4 PFOA	76	(50 - 200)
13C4 PFOS	52	(50 - 200)

PWS ID NJ0221001

SAMPLE POINT ID TP003015

Garfield Water Department

Client Sample ID: G1 ELMWOOD PARK PUMP STATION DUP

HPLC

Lot-Sample #....: D7I060300-001 Work Order #....: J6A2N1AE Matrix.....: WATER
Date Sampled...: 09/05/07 08:40 Date Received...: 09/06/07
Prep Date.....: 09/12/07 Analysis Date...: 09/14/07
Prep Batch #....: 7255149 Analysis Time...: 17:13
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS
PFOS	0.035	0.010	ug/L
PFOA	0.048	0.015	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	59	(50 - 200)
13C4 PFOS	36 *	(50 - 200)

NOTE(S) :

* Surrogate recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

HPLC

Client Lot #....: D7I060300 Work Order #....: J6A2N1AA -SMP Matrix.....: WATER
SD Lot-Sample #: D7I060300-001 J6A2N1AE -DUP
Date Sampled....: 09/05/07 08:40 Date Received...: 09/06/07 MS Run #.....:
Prep Date.....: 09/12/07 Analysis Date...: 09/14/07
Prep Batch #....: 7255149 Analysis Time...: 17:13
Dilution Factor: 1

PARAMETER	SAMPLE RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD
PFOS	0.029	0.035	ug/L	21	(0-20)	DEN -LC-0012
PFOA	0.040	0.048	ug/L	19	(0-20)	DEN -LC-0012

SURROGATE RECOVERY	SAMPLE % RECOVERY	DUPLICATE % RECOVERY	RECOVERY LIMITS
13C4 PFOA	76	59	(50 - 200)
13C4 PFOS	52	36	(50 - 200)

STL Denver
4955 Yarrow Street
Arvada, CO 80002

Tel: 303 736 0100 Fax: 303 431 7171
www.stl-inc.com

ANALYTICAL REPORT

PFOA/PFOS Analysis

Lot #: D7I060300

Michael Sferruzzo

Garfield Water Dept.
413 Midland Ave.
Garfield, NJ 07026

TestAmerica Denver



Gail DeRuzzo
Project Manager

September 24, 2007

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Standard Deliverables

Report Contents

Total Number of Pages

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.

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Case Narrative

D71060300

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.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Sample Arrival and Receipt

The following report contains the analytical results for one sample received 9/6/07, according to documented sample acceptance procedures. The sample was received in good condition at a temperature of 18.9°C. Although the sample was received outside the preferred 2-6°C temperature, no storage temperature has been defined for these analytes. No other 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-[1,2,3,4-¹³C₄]octanoic acid was introduced at the extraction step and was used as an internal standard for quantitation of PFOA. Perfluoro-1-[1,2,3,4-¹³C₄]octanatesulfonate was introduced at the extraction step and was used as an internal standard for quantitation of PFOS.

Sample Extraction and Analysis

The samples presented in this report were 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 for the target analytes at the reporting limits.

Each batch is prepared with a Laboratory Control Sample (LCS). The recoveries of two concentration levels of Laboratory Control Samples were within control limits. The internal standard recovery for 13C4 PFOS in the mid-level LCS was below the lower control limit. No corrective action was necessary as the control limits for this internal standard are still being established.

Analytical Comments

The sample G1 ELMWOOD PARK PUMP STATION was analyzed in duplicate. The internal standard recovery for 13C4 PFOS was below the lower control limit in the duplicate sample but it was in control in the parent sample. No corrective action was necessary as the control limits for this internal standard are still being established. The RPD (relative percent difference) was outside control limits for the PFOS results. This may indicate some variability in this result.

The MS/MSD was performed on sample G1 ELMWOOD PARK PUMP STATION. The matrix spike and surrogate spike recoveries were in control.

No other anomalies were observed.

EXECUTIVE SUMMARY - Detection Highlights

D7I060300

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>ANALYTICAL METHOD</u>
G1 ELMWOOD PARK PUMP STATION 09/05/07 08:40 001				
PFOS	0.029	0.010	ug/L	DEN -LC-0012
PFOA	0.040	0.015	ug/L	DEN -LC-0012

METHODS SUMMARY

D7I060300

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

References:

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

METHOD / ANALYST SUMMARY

D7I060300

<u>ANALYTICAL METHOD</u>	<u>ANALYST</u>	<u>ANALYST ID</u>
DEN -LC-0012	Jaqueline Bonnett	003601

References:

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

SAMPLE SUMMARY

D7I060300

WO #	SAMPLE#	CLIENT	SAMPLE ID	SAMPLED DATE	SAMP TIME
J6A2N	001	G1	ELMWOOD PARK PUMP STATION	09/05/07	08:40

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.

Garfield Water Department

Client Sample ID: G1 ELMWOOD PARK PUMP STATION

HPLC

Lot-Sample #....: D7I060300-001 Work Order #....: J6A2N1AA Matrix.....: WATER
 Date Sampled....: 09/05/07 08:40 Date Received...: 09/06/07
 Prep Date.....: 09/12/07 Analysis Date...: 09/14/07
 Prep Batch #....: 7255149 Analysis Time...: 16:41
 Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS
PFOS	0.029	0.010	ug/L
PFOA	0.040	0.015	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	76	(50 - 200)
13C4 PFOS	52	(50 - 200)

Garfield Water Department

Client Sample ID: G1 ELMWOOD PARK PUMP STATION DUP

HPLC

Lot-Sample #...: D7I060300-001 Work Order #...: J6A2N1AE Matrix.....: WATER
Date Sampled...: 09/05/07 08:40 Date Received...: 09/06/07
Prep Date.....: 09/12/07 Analysis Date...: 09/14/07
Prep Batch #...: 7255149 Analysis Time...: 17:13
Dilution Factor: 1

Method.....: DEN -LC-0012

PARAMETER	RESULT	REPORTING LIMIT	UNITS
PFOS	0.035	0.010	ug/L
PFOA	0.048	0.015	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	59	(50 - 200)
13C4 PFOS	36 *	(50 - 200)

NOTE(S) :

* Surrogate recovery is outside stated control limits.

QC DATA ASSOCIATION SUMMARY

D7I060300

Sample Preparation and Analysis Control Numbers

<u>SAMPLE#</u>	<u>MATRIX</u>	<u>ANALYTICAL METHOD</u>	<u>LEACH BATCH #</u>	<u>PREP BATCH #</u>	<u>MS RUN#</u>
001	WATER	DEN -LC-0012		7255149	7255093

METHOD BLANK REPORT

HPLC

Client Lot #...: D7I060300 Work Order #...: J6LXD1AA Matrix.....: WATER
 MB Lot-Sample #: R7I120000-149 Prep Date.....: 09/12/07 Analysis Time...: 15:53
 Analysis Date...: 09/14/07 Prep Batch #...: 7255149
 Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
PFOA	ND	0.015	ug/L	DEN -LC-0012
PFOS	ND	0.010	ug/L	DEN -LC-0012

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	65	(50 - 200)
13C4 PFOS	52	(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 #...: D7I060300 Work Order #...: J6LXD1AC Matrix.....: WATER
 LCS Lot-Sample#: R7I120000-149
 Prep Date.....: 09/12/07 Analysis Date...: 09/14/07
 Prep Batch #...: 7255149 Analysis Time...: 16:09
 Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
PFOA	109	(70 - 130)	DEN -LC-0012
PFOS	97	(39 - 120)	DEN -LC-0012

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
13C4 PFOA	65	(50 - 200)
13C4 PFOS	45 *	(50 - 200)

NOTE(S) :

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

Bold print denotes control parameters

* Surrogate recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE DATA REPORT

HPLC

Client Lot #....: D7I060300 Work Order #....: J6LXD1AC Matrix.....: WATER
 LCS Lot-Sample#: R7I120000-149
 Prep Date.....: 09/12/07 Analysis Date...: 09/14/07
 Prep Batch #....: 7255149 Analysis Time...: 16:09
 Dilution Factor: 1

<u>PARAMETER</u>	<u>SPIKE AMOUNT</u>	<u>MEASURED AMOUNT</u>	<u>UNITS</u>	<u>PERCENT RECOVERY</u>	<u>METHOD</u>
PFOA	0.200	0.217	ug/L	109	DEN -LC-0012
PFOS	0.200	0.194	ug/L	97	DEN -LC-0012

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
13C4 PFOA	65	(50 - 200)
13C4 PFOS	45 *	(50 - 200)

NOTE (S) :

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

Bold print denotes control parameters

* Surrogate recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: D7I060300 Work Order #...: J6LXD1AD Matrix.....: WATER
 LCS Lot-Sample#: R7I120000-149
 Prep Date.....: 09/12/07 Analysis Date...: 09/14/07
 Prep Batch #...: 7255149 Analysis Time...: 16:25
 Dilution Factor: 1

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>
PFOA	115	(70 - 130)	DEN -LC-0012
PFOS	103	(39 - 120)	DEN -LC-0012

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
13C4 PFOA	60	(50 - 200)
13C4 PFOS	50	(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 #...: D7I060300 Work Order #...: J6LXD1AD Matrix.....: WATER
 LCS Lot-Sample#: R7I120000-149
 Prep Date.....: 09/12/07 Analysis Date...: 09/14/07
 Prep Batch #...: 7255149 Analysis Time...: 16:25
 Dilution Factor: 1

<u>PARAMETER</u>	<u>SPIKE AMOUNT</u>	<u>MEASURED AMOUNT</u>	<u>UNITS</u>	<u>PERCENT RECOVERY</u>	<u>METHOD</u>
PFOA	0.0200	0.0230	ug/L	115	DEN -LC-0012
PFOS	0.0200	0.0206	ug/L	103	DEN -LC-0012

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
13C4 PFOA	60	(50 - 200)
13C4 PFOS	50	(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

Lot-Sample #...: D7I060300 Work Order #...: J6A2N1AC Matrix.....: WATER
 MS Lot-Sample #: D7I060300-001
 Date Sampled...: 09/05/07 08:40 Date Received...: 09/06/07
 Prep Date.....: 09/12/07 Analysis Date...: 09/14/07
 Prep Batch #...: 7255149
 Dilution Factor: 1

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>
PFOA	113	(70 - 130)	DEN -LC-0012
PFOS	90	(39 - 120)	DEN -LC-0012

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
13C4 PFOA	69	(50 - 200)
13C4 PFOS	58	(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

Lot-Sample #...: D7I060300 Work Order #...: J6A2N1AC Matrix.....: WATER
 MS Lot-Sample #: D7I060300-001
 Date Sampled...: 09/05/07 08:40 Date Received...: 09/06/07
 Prep Date.....: 09/12/07 Analysis Date...: 09/14/07
 Prep Batch #...: 7255149
 Dilution Factor: 1

<u>PARAMETER</u>	<u>SAMPLE AMOUNT</u>	<u>SPIKE AMT</u>	<u>MEASRD AMOUNT</u>	<u>UNITS</u>	<u>PERCENT RECOVERY</u>	<u>METHOD</u>
PFOA	0.040	0.195	0.260	ug/L	113	DEN -LC-0012
PFOS	0.029	0.195	0.205	ug/L	90	DEN -LC-0012

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
13C4 PFOA	69	(50 - 200)
13C4 PFOS	58	(50 - 200)

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.
 Bold print denotes control parameters

SAMPLE DUPLICATE EVALUATION REPORT

HPLC

Client Lot #...: D7I060300 Work Order #...: J6A2N1AA -SMP Matrix.....: WATER
SD Lot-Sample #: D7I060300-001 J6A2N1AE -DUP
Date Sampled...: 09/05/07 08:40 Date Received...: 09/06/07 MS Run #.....:
Prep Date.....: 09/12/07 Analysis Date...: 09/14/07
Prep Batch #...: 7255149 Analysis Time...: 17:13
Dilution Factor: 1

PARAMETER	SAMPLE RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD
PFOS	0.029	0.035	ug/L	21	(0-20)	DEN -LC-0012
PFOA	0.040	0.048	ug/L	19	(0-20)	DEN -LC-0012

SURROGATE RECOVERY	SAMPLE % RECOVERY	DUPLICATE % RECOVERY	RECOVERY LIMITS
13C4 PFOA	76	59	(50 - 200)
13C4 PFOS	52	36	(50 - 200)

