

AR226-3661

Chambers Works
Deepwater, NJ 08023



Attachment A



Comments On The Water Samples Sent To Exygen and Axys Analytical Services Ltd.

Four aqueous samples, a trip blank, and a field blank were sent to Exygen Research and to Axys Analytical Services Ltd. for the analytical determination of thirteen different perfluorinated compounds. Three different analytical methods were used, two by Exygen Research and one by Axys Analytical Services. (Note: There is no standard analytical method for this measurement approved by any governmental agency or testing organization.) The results for perfluorooctanoate from these measurements are given in the table below.

Table 1. Perfluorooctanoate concentration (ng/L) (ppt)

Sample number	Exygen 1	Exygen 2	Axys
3003310	123	98	37.8 ^a
3000563	nd ^b	nd	nd
3001815	171	190	57
5000098	nd	nd	nd
FBLK-1	nd	nd	nd
TBLK-1	nd	nd	nd

^a Average of two measurements (36.7, 38.9).

^b Not detected.

The first Exygen method (Exygen 1) is loosely based on a publication reported to determine four of the thirteen analytes (Risha *et al.*). The Risha method is not validated for any of the sulfur-containing analytes or for perfluorobutanoic, perfluoropentanoic, perfluorohexanoic, perfluoroheptanoic or perfluorododecanoic acids. The process to determine the LOQ in Method 1 is different from that used in the Risha paper. Exygen is now developing a new and different method to determine all thirteen analytes. Thus the data reported here using Method 1 should be considered "estimates derived from a nonvalidated method". These data are not usable for regulatory reporting purposes.

Method 2 is the method usually used by Exygen to determine perfluorooctanoate in water (*viz.*, ground water, drinking water). The method is validated according to US FDA criteria (Guidance for Industry). The method validation includes criteria that must be met for accuracy, precision, selectivity, sensitivity, reproducibility, and stability.

The Axys method is different from both Exygen methods in that the Axys method uses a different volume concentration step (125:1 *vs.* 8:1), a different sorbent for the solid-phase extraction (mixed bed *vs.* C₁₈), no clean-up (*vs.* elution with a 40% methanol solution), a different analytical column (75 mm C₁₈ *vs.* 50 mm C₈), and different elution solvent and gradient program. The internal standards for quantitation and the data acquisition windows for signal accumulation are also different.

Since the reported levels are in a low quantitation range (98 to 190 ppt) and since the laboratories are using two significantly different analytical methods, interlaboratory and method variability must be determined. A round-robin study is being designed that will include the new Exygen method (when it becomes available and validated) and the Axys method. Until the round-robin study is complete, it

will not know whether the perfluorooctanoate data reported from Axys and Exygen are statistically the same or different from each other.

Note that a recent study showed that 12 of 33 experienced laboratories engaged in determining the concentration of a 7.8-ppb aqueous perfluorooctanoate standard were not able to obtain acceptable results (van Leeuwen *et al.*). This level (7.8 ppb) is 41 to 137 times higher in concentration than the concentrations reported above. Generally the lower the concentration, the more difficult it is to obtain good precision and accuracy (US EPA, Compendium).

References

K. Risha, J. Flaherty, R. Willie, W. Buck, F. Morandi, and T. Isemura, *Anal. Chem.*, **77**, 1503-1508 (2005).

S. van Leeuwen, A. Karrman, A. Zammit, B. van Bavel, I. van der Veen, C. Kwadijk, J. de Boer, and G. Lindstrom, "1st Worldwide Interlaboratory Study on Perfluorinated Compound in Human and Environmental Matrices", RIVO-Netherlands Institute for Fisheries Research, Report # C070/05, October, 2005.

"Guidance for Industry: Bioanalytical Method Validation", US FDA, May 2001.

"Compendium Method TO-15", US EPA, 2nd edition, 11.3.2, January 1999.



Chambers Works
Deepwater, NJ 08023

Attachment B

Analytical Report

Fluorochemical Characterization of Aqueous Samples

Chambers Works C8 Sampling 2/06

Exygen Research Laboratory Report No. L0008093

Testing Laboratory

Exygen Research
3058 Research Drive
State College, PA 16801

Requester

Michael D. Aucoin
URS Corporation
Barley Mill Plaza
Bldg 19 Room 2118
Lancaster Pike and Rt 141
Wilmington, DE 19805

Analytical Results Chambers Works C8 Sampling 2/06

DuPont Sample Identification	APFO (ng/L)	PFOA (ng/L)
CWK-G-3003310	102	97.6
CWK-G-3003310 (laboratory duplicate)	104	99.6
CWK-G-3000563	ND	ND
CWK-G-3000563 (laboratory duplicate)	ND	ND
CWK-G-3001815	198	190
CWK-G-3001815 (laboratory duplicate)	197	189
CWK-G-3000098	ND	ND
CWK-G-3000098 (laboratory duplicate)	ND	ND
CWK-K-FBLK-1	ND	ND
CWK-K-TBLK-1	ND	ND

Limit of Detection (LOD) for the procedure is approximately 1.2 ng/L

Limit of Quantitation (LOQ) for the procedure is 6.0 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

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3058 Research Drive
State College, PA 16801, USA
T: 814.272.1039
F: 814.231.1580
exygen.com

Analytical Results Chambers Works C8 Sampling 2/06

DuPont Sample Identification	APFO (ng/L)	PFOA (ng/L)
CWK-G-3003310	103	98.6
CWK-G-3000563	ND	ND
CWK-G-3001815	198	190
CWK-G-3000098	ND	ND
CWK-K-FBLK-1	ND	ND
CWK-K-TBLK-1	ND	ND

Limit of Detection (LOD) for the procedure is approximately 1.2 ng/L

Limit of Quantitation (LOQ) for the procedure is 6.0 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 5X LOQ, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less than 5X LOQ, and the absolute difference is less than LOQ, the average value is reported. If the absolute difference is greater than LOQ, the higher value is reported.

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Analytical Report

Fluorochemical Characterization of Aqueous Samples

Chambers Works PWS Sampling 02/06

Oxygen Research Laboratory Report No. L0007648

Testing Laboratory

Oxygen Research
3058 Research Drive
State College, PA 16801

Requester

Michael D. Aucoin
URS Corporation
Barley Mill Plaza
Bldg 19 Room 2118
Lancaster Pike and Rt 141
Wilmington, DE 19805

Analytical Results Chambers Works PWS Sampling 2/06

DuPont Sample Identification

C4 acid (ng/mL)

CWK-G-3003310	ND
CWK-G-3003310 (laboratory duplicate)	ND
CWK-G-3000563	ND
CWK-G-3000563 (laboratory duplicate)	ND
CWK-G-3001815	ND
CWK-G-3001815 (laboratory duplicate)	ND
CWK-G-5000098	ND
CWK-G-5000098 (laboratory duplicate)	ND
CWK-K-FBLK-1	ND
CWK-K-TBLK-1	ND

Limit of Detection (LOD) for the procedure is approximately 7.2 ng/mL

Limit of Quantitation (LOQ) for the procedure is 36 ng/mL

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Analytical Results Chambers Works PWS Sampling 2/06

DuPont Sample Identification

C4 acid (ng/mL)

CWK-G-3003310
CWK-G-3000563
CWK-G-3001815
CWK-G-5000098
CWK-K-FBLK-1
CWK-K-TBLK-1

ND
ND
ND
ND
ND
ND

Limit of Detection (LOD) for the procedure is approximately 7.2 ng/mL

Limit of Quantitation (LOQ) for the procedure is 36 ng/mL

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 5X LOQ, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less than 5X LOQ, and the absolute difference is less than LOQ, the average value is reported. If the absolute difference is greater than LOQ, the higher value is reported.

Analytical Results Chambers Works PWS Sampling 2/06

DuPont Sample Identification

C5 acid (ng/mL)

CWK-G-3003310	ND
CWK-G-3003310 (laboratory duplicate)	ND
CWK-G-3000563	ND
CWK-G-3000563 (laboratory duplicate)	ND
CWK-G-3001815	ND
CWK-G-3001815 (laboratory duplicate)	ND
CWK-G-5000098	ND
CWK-G-5000098 (laboratory duplicate)	ND
CWK-K-FBLK-1	ND
CWK-K-TBLK-1	ND

Limit of Detection (LOD) for the procedure is approximately 0.28 ng/mL

Limit of Quantitation (LOQ) for the procedure is 1.4 ng/mL

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Analytical Results Chambers Works PWS Sampling 2/06

DuPont Sample Identification

C5 acid (ng/mL)

CWK-G-3003310
CWK-G-3000563
CWK-G-3001815
CWK-G-5000098
CWK-K-FBLK-1
CWK-K-TBLK-1

ND
ND
ND
ND
ND
ND

Limit of Detection (LOD) for the procedure is approximately 0.28 ng/mL

Limit of Quantitation (LOQ) for the procedure is 1.4 ng/mL

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 5X LOQ, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less than 5X LOQ, and the absolute difference is less than LOQ, the average value is reported. If the absolute difference is greater than LOQ, the higher value is reported.

Analytical Results Chambers Works PWS Sampling 2/06

DuPont Sample Identification

C6 acid (ng/L)

CWK-G-3003310	89.7
CWK-G-3003310 (laboratory duplicate)	96.7
CWK-G-3000563	ND
CWK-G-3000563 (laboratory duplicate)	ND
CWK-G-3001815	150
CWK-G-3001815 (laboratory duplicate)	149
CWK-G-5000098	ND
CWK-G-5000098 (laboratory duplicate)	ND
CWK-K-FBLK-1	ND
CWK-K-TBLK-1	ND

Limit of Detection (LOD) for the procedure is approximately 15.8 ng/L

Limit of Quantitation (LOQ) for the procedure is 79.1 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Analytical Results Chambers Works PWS Sampling 2/06

DuPont Sample Identification

C6 acid (ng/L)

CWK-G-3003310	93.2
CWK-G-3000563	ND
CWK-G-3001815	150
CWK-G-5000098	ND
CWK-K-FBLK-1	ND
CWK-K-TBLK-1	ND

Limit of Detection (LOD) for the procedure is approximately 15.8 ng/L

Limit of Quantitation (LOQ) for the procedure is 79.1 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 5X LOQ, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less than 5X LOQ, and the absolute difference is less than LOQ, the average value is reported. If the absolute difference is greater than LOQ, the higher value is reported.

Analytical Results Chambers Works PWS Sampling 2/06

DuPont Sample Identification

C7 acid (ng/L)

CWK-G-3003310	NQ
CWK-G-3003310 (laboratory duplicate)	NQ
CWK-G-3000563	ND
CWK-G-3000563 (laboratory duplicate)	ND
CWK-G-3001815	86.9
CWK-G-3001815 (laboratory duplicate)	73.8
CWK-G-5000098	ND
CWK-G-5000098 (laboratory duplicate)	ND
CWK-K-FBLK-1	ND
CWK-K-TBLK-1	ND

Limit of Detection (LOD) for the procedure is approximately 12.2 ng/L

Limit of Quantitation (LOQ) for the procedure is 61.2 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Analytical Results Chambers Works PWS Sampling 2/06

DuPont Sample Identification

C7 acid (ng/L)

CWK-G-3003310	NQ
CWK-G-3000563	ND
CWK-G-3001815	80.4
CWK-G-5000098	ND
CWK-K-FBLK-1	ND
CWK-K-TBLK-1	ND

Limit of Detection (LOD) for the procedure is approximately 12.2 ng/L

Limit of Quantitation (LOQ) for the procedure is 61.2 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 5X LOQ, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less than 5X LOQ, and the absolute difference is less than LOQ, the average value is reported. If the absolute difference is greater than LOQ, the higher value is reported.

Analytical Results Chambers Works PWS Sampling 2/06

DuPont Sample Identification	APFO (ng/L)	PFOA (ng/L)
CWK-G-3003310	124	119
CWK-G-3003310 (laboratory duplicate)	131	126
CWK-G-3000563	ND	ND
CWK-G-3000563 (laboratory duplicate)	ND	ND
CWK-G-3001815	187	180
CWK-G-3001815 (laboratory duplicate)	169	162
CWK-G-5000098	ND	ND
CWK-G-5000098 (laboratory duplicate)	ND	ND
CWK-K-FBLK-1	ND	ND
CWK-K-TBLK-1	NQ	NQ

Limit of Detection (LOD) for the procedure is approximately 2.3 ng/L

Limit of Quantitation (LOQ) for the procedure is 12 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Analytical Results: Chambers Works PWS Sampling 2/06

DuPont Sample Identification	APFO (ng/L)	PFOA (ng/L)
CWK-G-3003310	128	123
CWK-G-3000563	ND	ND
CWK-G-3001815	178	171
CWK-G-5000098	ND	ND
CWK-K-FBLK-1	ND	ND
CWK-K-TBLK-1	NQ	NQ

Limit of Detection (LOD) for the procedure is approximately 2.3 ng/L

Limit of Quantitation (LOQ) for the procedure is 12 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 5X LOQ, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less than 5X LOQ, and the absolute difference is less than LOQ, the average value is reported. If the absolute difference is greater than LOQ, the higher value is reported.

Analytical Results Chambers Works PWS Sampling 2/06

DuPont Sample Identification

C9 acid (ng/L)

CWK-G-3003310
CWK-G-3003310 (laboratory duplicate)
CWK-G-3000563
CWK-G-3000563 (laboratory duplicate)
CWK-G-3001815
CWK-G-3001815 (laboratory duplicate)
CWK-G-5000098
CWK-G-5000098 (laboratory duplicate)
CWK-K-FBLK-1
CWK-K-TBLK-1

NQ
NQ
ND
ND
NQ
NQ
ND
ND
ND
ND

Limit of Detection (LOD) for the procedure is approximately 13.6 ng/L

Limit of Quantitation (LOQ) for the procedure is 67.8 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Analytical Results: Chambers Works PWS Sampling 2/06

DuPont Sample Identification

C9 acid (ng/L)

CWK-G-3003310
CWK-G-3000563
CWK-G-3001815
CWK-G-5000098
CWK-K-FBLK-1
CWK-K-TBLK-1

NQ
ND
NQ
ND
ND
ND

Limit of Detection (LOD) for the procedure is approximately 13.6 ng/L

Limit of Quantitation (LOQ) for the procedure is 67.8 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 5X LOQ, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less than 5X LOQ, and the absolute difference is less than LOQ, the average value is reported. If the absolute difference is greater than LOQ, the higher value is reported.

Analytical Results Chambers Works PWS Sampling 2/06

DuPont Sample Identification

C10 acid (ng/L)

CWK-G-3003310	ND
CWK-G-3003310 (laboratory duplicate)	ND
CWK-G-3000563	ND
CWK-G-3000563 (laboratory duplicate)	ND
CWK-G-3001815	ND
CWK-G-3001815 (laboratory duplicate)	ND
CWK-G-5000098	ND
CWK-G-5000098 (laboratory duplicate)	ND
CWK-K-FBLK-1	ND
CWK-K-TBLK-1	ND

Limit of Detection (LOD) for the procedure is approximately 20.6 ng/L

Limit of Quantitation (LOQ) for the procedure is 103 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Analytical Results Chambers Works PWS Sampling 2/06

DuPont Sample Identification

C10 acid (ng/L)

CWK-G-3003310	ND
CWK-G-3000563	ND
CWK-G-3001815	ND
CWK-G-5000098	ND
CWK-K-FBLK-1	ND
CWK-K-TBLK-1	ND

Limit of Detection (LOD) for the procedure is approximately 20.6 ng/L

Limit of Quantitation (LOQ) for the procedure is 103 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 5X LOQ, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less than 5X LOQ, and the absolute difference is less than LOQ, the average value is reported. If the absolute difference is greater than LOQ, the higher value is reported.

Analytical Results Chambers Works PWS Sampling 2/06

DuPont Sample Identification

C11 acid (ng/L)

CWK-G-3003310
CWK-G-3003310 (laboratory duplicate)
CWK-G-3000563
CWK-G-3000563 (laboratory duplicate)
CWK-G-3001815
CWK-G-3001815 (laboratory duplicate)
CWK-G-5000098
CWK-G-5000098 (laboratory duplicate)
CWK-K-FBLK-1
CWK-K-TBLK-1

ND
ND
ND
ND
ND
ND
ND
ND
ND
ND

Limit of Detection (LOD) for the procedure is approximately 12.2 ng/L

Limit of Quantitation (LOQ) for the procedure is 60.8 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Analytical Results: Chambers Works PWS Sampling 2/06

DuPont Sample Identification

C11 acid (ng/L)

CWK-G-3003310
CWK-G-3000563
CWK-G-3001815
CWK-G-5000098
CWK-K-FBLK-1
CWK-K-TBLK-1

ND
ND
ND
ND
ND
ND

Limit of Detection (LOD) for the procedure is approximately 12.2 ng/L

Limit of Quantitation (LOQ) for the procedure is 60.8 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 5X LOQ, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less than 5X LOQ, and the absolute difference is less than LOQ, the average value is reported. If the absolute difference is greater than LOQ, the higher value is reported.

Analytical Results Chambers Works PWS Sampling 2/06

DuPont Sample Identification

C12 acid (ng/L)

CWK-G-3003310	ND
CWK-G-3003310 (laboratory duplicate)	ND
CWK-G-3000563	ND
CWK-G-3000563 (laboratory duplicate)	ND
CWK-G-3001815	ND
CWK-G-3001815 (laboratory duplicate)	ND
CWK-G-5000098	ND
CWK-G-5000098 (laboratory duplicate)	ND
CWK-K-FBLK-1	ND
CWK-K-TBLK-1	ND

Limit of Detection (LOD) for the procedure is approximately 13.2 ng/L

Limit of Quantitation (LOQ) for the procedure is 66.2 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Analytical Results Chambers Works PWS Sampling 2/06

DuPont Sample Identification

C12 acid (ng/L)

CWK-G-3003310	ND
CWK-G-3000563	ND
CWK-G-3001815	ND
CWK-G-5000098	ND
CWK-K-FBLK-1	ND
CWK-K-TBLK-1	ND

Limit of Detection (LOD) for the procedure is approximately 13.2 ng/L

Limit of Quantitation (LOQ) for the procedure is 66.2 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 5X LOQ, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less than 5X LOQ, and the absolute difference is less than LOQ, the average value is reported. If the absolute difference is greater than LOQ, the higher value is reported.

Analytical Results Chambers Works PWS Sampling 2/06

DuPont Sample Identification

PFHxS (ng/L)

CWK-G-3003310	ND
CWK-G-3003310 (laboratory duplicate)	ND
CWK-G-3000563	ND
CWK-G-3000563 (laboratory duplicate)	ND
CWK-G-3001815	ND
CWK-G-3001815 (laboratory duplicate)	ND
CWK-G-5000098	ND
CWK-G-5000098 (laboratory duplicate)	ND
CWK-K-FBLK-1	ND
CWK-K-TBLK-1	ND

Limit of Detection (LOD) for the procedure is approximately 1.7 ng/L

Limit of Quantitation (LOQ) for the procedure is 8.5 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Analytical Results Chambers Works PWS Sampling 2/06

DuPont Sample Identification

PFHxS (ng/L)

CWK-G-3003310	ND
CWK-G-3000563	ND
CWK-G-3001815	ND
CWK-G-5000098	ND
CWK-K-FBLK-1	ND
CWK-K-TBLK-1	ND

Limit of Detection (LOD) for the procedure is approximately 1.7 ng/L

Limit of Quantitation (LOQ) for the procedure is 8.5 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 5X LOQ, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less than 5X LOQ, and the absolute difference is less than LOQ, the average value is reported. If the absolute difference is greater than LOQ, the higher value is reported.

Analytical Results Chambers Works PWS Sampling 2/06

DuPont Sample Identification

PFOS (ng/L)

CWK-G-3003310
CWK-G-3003310 (laboratory duplicate)
CWK-G-3000563
CWK-G-3000563 (laboratory duplicate)
CWK-G-3001815
CWK-G-3001815 (laboratory duplicate)
CWK-G-5000098
CWK-G-5000098 (laboratory duplicate)
CWK-K-FBLK-1
CWK-K-TBLK-1

ND
ND
ND
ND
ND
ND
ND
ND
ND
ND

Limit of Detection (LOD) for the procedure is approximately 7.0 ng/L

Limit of Quantitation (LOQ) for the procedure is 35.2 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Analytical Results: Chambers Works PWS Sampling 2/06

DuPont Sample Identification

PFOS (ng/L)

CWK-G-3003310
CWK-G-3000563
CWK-G-3001815
CWK-G-5000098
CWK-K-FBLK-1
CWK-K-TBLK-1

ND
ND
ND
ND
ND
ND

Limit of Detection (LOD) for the procedure is approximately 7.0 ng/L

Limit of Quantitation (LOQ) for the procedure is 35.2 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 5X LOQ, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less than 5X LOQ, and the absolute difference is less than LOQ, the average value is reported. If the absolute difference is greater than LOQ, the higher value is reported.

Analytical Results Chambers Works PWS Sampling 2/06

DuPont Sample Identification

FOSA (ng/L)

CWK-G-3003310	ND
CWK-G-3003310 (laboratory duplicate)	ND
CWK-G-3000563	ND
CWK-G-3000563 (laboratory duplicate)	ND
CWK-G-3001815	ND
CWK-G-3001815 (laboratory duplicate)	ND
CWK-G-5000098	ND
CWK-G-5000098 (laboratory duplicate)	ND
CWK-K-FBLK-1	ND
CWK-K-TBLK-1	ND

Limit of Detection (LOD) for the procedure is approximately 0.3 ng/L

Limit of Quantitation (LOQ) for the procedure is 1.7 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Analytical Results Chambers Works PWS Sampling 2/06

DuPont Sample Identification

FOSA (ng/L)

CWK-G-3003310	ND
CWK-G-3000563	ND
CWK-G-3001815	ND
CWK-G-5000098	ND
CWK-K-FBLK-1	ND
CWK-K-TBLK-1	ND

Limit of Detection (LOD) for the procedure is approximately 0.3 ng/L

Limit of Quantitation (LOQ) for the procedure is 1.7 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 5X LOQ, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less than 5X LOQ, and the absolute difference is less than LOQ, the average value is reported. If the absolute difference is greater than LOQ, the higher value is reported.



Please send samples to Exygen's shipping and receiving address:
3048 Research Drive, State College, PA 16801
T: 814.272.1039 • F: 814.272.1019

Turnaround time (TAT) requirements:
Results Due Date: _____

Preliminary Results Format: ☐ Verbal ☐ Email ☐ Fax

Report Due Date: _____

Storage conditions

☐ Room temperature
☐ Refrigerator
☐ Freezer
☐ Ultra-Low freezer
☐ Desiccated
☐ Lighting required

Stability (°C/%RH):
N/A some ASAP

Stability time period: _____

Safety information

Special handling: _____

☐ MSDS attached

☐ Controlled substance: _____

☐ HAZARDS: _____

Please fill in the diamond
HMIS/NFPA (0-4)
if appropriate

Notes: _____

Relinquished by	Date	Time	Received by	Date	Time
<i>gasham</i>	<i>2/27/00</i>	<i>1300</i>		<i>02/28/00</i>	<i>1028</i>

DuPont

AQUEOUS SAMPLES

PERFLUORINATED ORGANICS ANALYSIS

AXYS METHOD: MLA-040

Contract: 4380
Data Package Identification: WG18696
Analysis WG18544 and WG18650

Prepared for:
DuPont Corporate Remediation Group
4417 Lancaster Pike Bldg 19
Wilmington DE
USA 19805

Prepared by:
AXYS Analytical Services Ltd.
P.O. Box 2219, 2045 Mills Rd West
Sidney, British Columbia V8L 3S8
CANADA

Contact: Todd Fisher
Project Manager

21 March 2006

CLIENT ID	CWK-G-3003310	CWK-G-3000563	CWK-G-3001815	CWK-G-5000098	CWK-K-TBLK-1	Lab Blank	Spiked Matrix	CWK-G-3003310 (Duplicate)
AXYS ID	L8701-1 (A)	L8701-2	L8701-3	L8701-4	L8701-6	WG18544-101	WG18544-102	WG18544-103 (DUP L8701-1)
WORKGROUP	WG18544	WG18544	WG18544	WG18544	WG18544	WG18544	WG18544	WG18544
Sample Size	0.501 L	0.503 L	0.500 L	0.500 L	0.500 L	0.500 L		0.249 L
UNITS	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	% Recov	ng/L
PFBA	16.3	< 1.20	18.6	< 1.21	< 1.21	< 1.21	94.4	21.1
PFPeA	40.3	< 2.20	66.3	< 5.95	< 0.944	< 0.944	97	41.3
PFHxA	42.2	< 1.29	75.5	< 0.968	< 0.968	< 0.968	96.4	43.4
PFHpA	21.5	< 1.06	38.9	< 1.06	< 1.06	< 1.06	107	26
PFOA	36.7	< 0.963	57	< 1.01	< 0.968	< 0.968	105	38.9
PFNA	9.74	< 1.35	12.7	< 1.36	< 1.36	< 1.36	108	9.12
PFDA	1.31	< 1.07	4.06	< 1.07	< 1.07	< 1.07	106	< 2.15
PFUnA	1.19	< 0.947	< 0.953	< 0.952	< 0.952	< 0.952	99.2	< 1.91
PFDoA	< 1.13	< 1.13	< 1.14	< 1.14	< 1.14	< 1.14	94.9	< 2.28
PFBS	< 6.23	< 2.40	< 2.41	< 2.41	< 2.41	< 2.41	102	< 8.36
PFHxS	2.86	< 2.01	3.32	< 2.02	< 2.02	< 2.02	84.4	< 4.06
PFOS	6.15	< 2.00	3.21	< 2.01	< 2.01	< 2.01	88.7	6.14
PFOSA	< 0.918	< 0.940	< 0.921	< 0.920	< 0.920	< 0.920	85.9	< 1.85

See below for definitions of possible flags and labels in the database (sheet tab 'GenericEDD')

< = less than the detection limit
 number following this symbol represents the detection limit
 For homologue totals sums, please see the individual congener data for the detection limit.

E = exceeds calibrated linear range, see dilution data

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CLIENT ID	CWK-K-FBLK-1	Lab Blank	Spiked Matrix
AXYS ID	L8701-5	WG18650-101	WG18650-102
WORKGROUP	WG18650	WG18650	WG18650
Sample Size	0.502 L	0.420 L	
UNITS	ng/L	ng/L	% Recov
PFBA	< 1.20	< 2.31	88.7
PFPeA	< 0.941	< 1.12	90.7
PFHxA	< 0.965	< 1.15	96.8
PFHpA	< 1.06	< 1.27	92.9
PFOA	< 0.965	< 1.15	102
PFNA	< 1.36	< 2.00	111
PFDA	< 1.07	< 1.28	73.8
PFUnA	< 0.949	< 1.13	80.1
PFDoA	< 1.13	< 1.35	101
PFBS	< 2.40	< 2.87	109
PFHxS	< 2.02	< 2.41	103
PFOS	< 2.00	< 2.39	103
PFOSA	< 0.917	< 1.10	91.2

See below for definitions of possible flags and labels in the database (sheet tab 'GenericEDD')

< = less than the detection limit
 number following this symbol represents the detection limit
 For homologue totals sums, please see the individual congener data for the detection limit.

E = exceeds calibrated linear range, see dilution data



**Axys Analytical
Services Ltd**

Post Office Box 2219, 2045 Mills Road West TEL: (250) 655-5800
Sidney, British Columbia, Canada V8L 3S8 FAX: (250) 655-5811

CHAIN OF CUSTODY

AXYS CLIENT #:

4380

REPORT TO:						INVOICE TO:						ANALYSIS REQUESTED													
Company DuPont						Company						Fluorochemicals PFBA, PFPeA, PFHxA, PFHpA, PFDA, PFNA, PFOA, PFUnA, PFDoA, PFBS, PFHzS, PFOS, PFOA													
Address 4417 Lancaster Pk. Bldg M Wilmington, DE 19805						Address																			
Contact Mike Accoin						Contact																			
Phone 302-892-1698						Phone																			
FAX						FAX																			
E-mail						E-mail																			
Project Name/Number: Penns Grove water company						Sampler's Name: J. Lachman, T. McGee Signature: J. Lachman																			
Client Sample Identification			Matrix		Sampling Date		Sampling Time		Container Type/No.		AXYS Lab Sample ID (Lab Use Only)														
CWK-G-3005511			Water		2/27/06		1402		1L natyche		L8701 -1														
CWK-G-3005563			water		2/27/06		1352		↓		↓		-2												
CWK-G-3001915			water		2/27/06		1334		↓		↓		-3												
CWK-G-5000098			water		2/27/06		1422		↓		↓		-4												
CWK-K-FBLK-1			water		2/27/06		1408		↓		↓		-5												
LWK-K-TBLK-1			water		2/27/06		1300		↓		↓		-6												
Relinquished by (Signature) J. Lachman			Date 2/27/06		Time 1500		Received by (Signature) Gary Webb			Date 2/28/06			Time 1120			Courier Fedex			Waybill No.						
Remarks						Received by (Signature)						Sample Receipt													
						Date						Temp °C						Cooler							
												Custody Seal #													
												Seal Intact Y/N													
												Sample Tags Y/N													