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October 20, 2005

FEDERAL EXPRESS

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RECEIVED
OPPT/NOIC
2005 NOV 18 AM 8:08

Re: Perfluorochemical Residential Exposure Data For Washington County, Minnesota

Ladies and Gentlemen:

In a letter dated May 12, 2005, we provided information regarding levels of various perfluorochemicals, including PFOA and PFOS, detected in blood, soil, and water in the vicinity of 3M's perfluorochemical operations in Minnesota. Since that submission, we have arranged for additional blood samples of individuals residing in communities that may have been impacted

Dr. Charles M. Auer
Jennifer Seed
Mary Dominiak
James Kelly
David Douglas
Donald Kriens
October 20, 2005
Page 2

from perfluorochemical wastes attributable to 3M's Minnesota operations. In recognition of the potential threat to human health and the environment revealed by this data, and in response to USEPA's prior public requests for perfluorochemical monitoring data, we are providing copies of this additional data to you for inclusion in USEPA's Administrative Record 226 and OPPT-2003-0012.

The perfluorochemical (including PFOS and PFOA) results for serum samples collected and analyzed on behalf of Plaintiffs are summarized below. Please note that all results were provided by Axys Analytical Services LTD in Canada and were obtained, arranged for, and paid for without any involvement by 3M.

In our May 12, 2005, letter, we presented charts summarizing the PFOA and PFOS serum and whole blood data collected from residents of Washington County, Minnesota, with the data organized by drinking water source. Since our May 12, 2005, submission, additional blood data has been collected from individuals consuming water provided by the City of Oakdale, Minnesota, where testing of the City's water supply wells has, on occasion, confirmed PFOS in levels exceeding the State of Minnesota's recommended Health Based Value ("HBV") of 1 part per billion (1 ppb), and levels of PFOA just below 1 ppb. (See AR-226-1929, 1933, and 1935) 3M also has reported detecting PFOS in tap samples from Oakdale as high as 0.95 ppb and PFOA as high as 0.71 ppb, indicating that the combined level of PFOS and PFOA in Oakdale water has exceeded the State's Hazard Index ("HI") of 1 for drinking water containing both PFOS and PFOA. (See AR-226-2737-39; AR-226-1945-46; Exhibit A (3M's HI calculations)) As 3M explained in its June 14, 2005, letter to USEPA, such cumulative amounts of PFCs in tap water exceeding the HI of 1 represent a level of PFCs that also exceeds the State's current, recommended HBVs, which the State uses to assess whether there is an unreasonable risk to human health. (See *id.*)

There are now also data suggesting the possibility of additional perfluorochemicals, including PFBS (C-4) (a chemical 3M uses in on-going manufacturing processes), in the water near the impacted public water supplies. The presence of these other perfluorochemicals in water already contaminated with both PFOS and PFOA contributes to the threat of even greater cumulative toxicity concerns. (See Exhibit B) Some of these other PFCs, including PFBS (C-4), already have been detected in the blood of area residents, leading to very high cumulative PFC levels in their blood. (See Exhibit D; May 12, 2005, Letter (attached lab sheets)) Chart A below

Dr. Charles M. Auer
Jennifer Seed
Mary Dominiak
James Kelly
David Douglas
Donald Kriens
October 20, 2005
Page 3

includes all of the original and new blood data for City of Oakdale water customers, including the cumulative, total amount of various perfluorochemicals detected in the blood samples.^{1/} The new data are in bold type.

In our May 12, 2005, submission, we also provided data regarding the level of perfluorochemicals found in the blood of individuals consuming drinking water from private wells in the area of 3M's Minnesota operations. Since that submission, we have collected additional blood data from private well users in the Lake Elmo, Minnesota, area and have obtained some additional information from 3M and MDH regarding the level of PFOS and PFOA in some of those wells. (See Exhibit C (Excerpts from 3M's September 2, 2005, Answers to Plaintiffs' Interrogatories))^{2/}. Chart B below provides a summary of all of the original Lake Elmo area private well blood and water data (now with cumulative totals for the perfluorochemical blood data), plus the new data obtained since May 12, 2005. The new data is in bold type. In order to avoid identification of individual identities, we have provided available private water well PFC data in a general range, as opposed to specific results.

The lab results for the blood results are attached at Exhibit D. For privacy reasons, the names, addresses, and specific ages of each of those sampled are omitted from this submission.

^{1/} Although the individual blood test result sheets attached to our May 12, 2005, letter referenced the levels of various perfluorochemicals detected in the individual blood samples, we did not include the cumulative totals in the charts set forth in our original, May 12, 2005, letter. We have now included the cumulative total PFC results from those lab sheets in the current charts.

^{2/} The Minnesota Department of Health is currently using detection/reporting limits of 0.5 ppb and 1.0 ppb for PFOS and PFOA, respectively. (See Exhibit C)

Dr. Charles M. Auer
 Jennifer Seed
 Mary Dominiak
 James Kelly
 David Douglas
 Donald Kriens
 October 20, 2005
 Page 4

CHART A - OAKDALE CITY WATER CUSTOMERS

<u>SEX</u>	<u>AGE</u>	<u>YEARS ON WATER</u>	<u>PFOA (ppb)/Dup.</u>	<u>PFOS (ppb)/Dup.</u>	<u>TOTAL PFCs(ppb)*</u>
M	41-50	N/A	121.0	109.0	267.12
F	51-60	>30	117.0	91.8	240.06
M	>70	>30	105.0	113.0	241.45
M	51-60	20-30	104.0/103.0	70.3/72.7	192.44/195.54
M	61-70	20-30	100.00	131.0	293.08
F	51-60	20-30	96.1	67.8	180.2
F	41-50	<10	95.1/89.1	85.9/79.8	200.71/186.15
M	51-60	20-30	86.8	125.0	248.01
M	>70	N/A	82.3	118.0	221.79
F	61-70	20-30	80.5	163.0	212.40
M	>70	>30	78.6	112.0	210.63
F	41-50	N/A	77.5	78.4	178.51
F	51-60	20-30	74.9	61.1	152.72
M	31-40	10-20	74.6	91.0	182.36
F	>70	>30	69.3	102.0	191.84
F	41-50	N/A	69.0	77.2	163.79
M	<18	<10	68.3	50.1	134.12
M	41-50	10-20	63.3	76.7	158.88

Dr. Charles M. Auer
 Jennifer Seed
 Mary Dominiak
 James Kelly
 David Douglas
 Donald Kriens
 October 20, 2005
 Page 5

<u>SEX</u>	<u>AGE</u>	<u>YEARS ON WATER</u>	<u>PFOA (ppb)/Dup.</u>	<u>PFOS (ppb)/Dup.</u>	<u>TOTAL PFCs(ppb)*</u>
F	41-50	<10	63.3	73.1	150.11
F	61-70	N/A	59.9	71.0	145.61
F	61-70	>30	58.7	73.4	149.48
M	61-70	<10	58.7	61.7	134.64
F	61-70	20-30	58.3	68.1	154.95
F	41-50	20-30	57.8	70.4	146.46
F	31-40	10-20	48.4	71.9	132.83
M	51-60	10-20	44.6	60.4	115.40
M	41-50	<10	44.1	55.2	114.29
M	18-30	10-20	43.5	54.4	107.12
M	<18	10-20	42.4	51.1	107.84
M	61-70	20-30	39.8	46.5	104.37
F	18-30	20-30	38.8	47.6	96.33
M	51-60	>30	37.1	51.1	102.01
F	51-60	10-20	33.2	59.5	105.24
F	41-50	<10	32.7	41.5	89.66
M	41-50	10-20	32.1	57.6	103.35
F	<10	<10	30.7	56.8	99.11
F	<10	<10	27.5	62.0	98.63

Dr. Charles M. Auer
 Jennifer Seed
 Mary Dominiak
 James Kelly
 David Douglas
 Donald Kriens
 October 20, 2005
 Page 6

<u>SEX</u>	<u>AGE</u>	<u>YEARS ON WATER</u>	<u>PFOA (ppb)/Dup.</u>	<u>PFOS (ppb)/Dup.</u>	<u>TOTAL PFCs(ppb)*</u>
M	51-60	10-20	24.5	37.2	69.72
F	18-30	20-30	23.1	29.2	59.83
F	51-60	20-30	22.2	46.1	74.88
F	31-40	N/A	21.1/19.6	12.8/8.81	29.64/36.80
F	<18	10-20	19.1	42.9	71.21
F	<18	<10	17.1	20.1	43.08
M	31-40	<10	15.5	12.7	29.31
M	41-50	<10	14.6	30.8	49.49
F	18-30	<10	13.3	12.3	27.14
F	18-30	<10	10.7	23.1	35.87
M	>70	20-30	10.2	24.2	35.31
F	18-30	<10	7.35	10.5	19.39
M	51-60	<10	7.21	38.9	57.56
F	61-70	>30	6.96	22.6	36.00
F	18-30	10-20	6.09	17.7	26.79

N/A=data not available

*Total of detected levels of PFPeA, PFHxA, PFHpA, PFOA, PFNA, PFDA, PFUnA, PFDoA, PFBS, PFHxS, PFOS, and PFOSA in the blood sample

Dr. Charles M. Auer
 Jennifer Seed
 Mary Dominiak
 James Kelly
 David Douglas
 Donald Kriens
 October 20, 2005
 Page 7

CHART B - LAKE ELMO AREA PRIVATE WELL USERS

<u>SEX</u>	<u>AGE</u>	<u>YEARS ON WATER</u>	<u>PFOA (ppb)/ Dup.</u>	<u>PFOS (ppb) /Dup.</u>	<u>PPB PFOA IN WATER</u>	<u>PPB PFOS IN WATER</u>	<u>TOTAL PFCs (ppb)*</u>
F	<18	<10	110.0	111.0	1.0-1.4	0.5-0.9	247.19
F	41-50	10-20	72.9	87.6	1.0-1.4	0.5-0.9	175.25
F	<18	10-20	55.4	60.0	1.0-1.4	0.5-0.9	124.35
M	41-50	20-30	45.7	19.7	ND	ND	72.11
F	61-70	20-30	30.9	88.6	0.5-0.9	ND	128.93
M	51-60	10-20	27.0/26.7	28.5/32.7	1.0-1.4	0.5-0.9	62.32/65.74
M	61-70	20-30	24.2	38.0	0.5-0.9	ND	69.91
F	51-60	>30	24.0	17.0	ND	ND	50.96
M	N/A	N/A	16.4	22.1	ND	ND	44.43
F	41-50	10-20	15.7	9.27	N/A	N/A	27.68
F	>70	>30	14.3	8.90	ND	ND	26.27
M	61-70	>30	12.1	9.78	ND	ND	24.89
M	41-50	10-20	9.66	26.6	ND	ND	42.51
F	41-50	<10	9.25	28.4	N/A	N/A	41.58
M	18-30	20-30	7.56	17.3	N/A	N/A	33.70
M	61-70	20-30	6.95	43.1	N/A	N/A	55.00
M	51-60	20-30	6.78	21.0	N/A	N/A	36.91

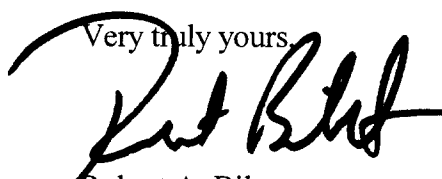
Dr. Charles M. Auer
 Jennifer Seed
 Mary Dominiak
 James Kelly
 David Douglas
 Donald Kriens
 October 20, 2005
 Page 8

<u>SEX</u>	<u>AGE</u>	<u>YEARS ON WATER</u>	<u>PFOA (ppb)/ Dup.</u>	<u>PFOS (ppb) /Dup.</u>	<u>PPB PFOA IN WATER</u>	<u>PPB PFOS IN WATER</u>	<u>TOTAL PFCs (ppb)*</u>
M	61-70	>30	6.1	43.7	N/A	N/A	54.19
F	51-60	10-20	5.92	29.5	ND	ND	41.26
M	51-60	N/A	5.35	20.4	N/A	N/A	29.02
F	41-50	N/A	3.14	11.2	N/A	N/A	16.29
F	18-30	<10	2.63	17.4	N/A	N/A	26.09
F	61-70	>30	2.4	12.0	N/A	N/A	17.91

N/A=data not available

ND= not detected above reported detection limits

*Total of detected levels of PFPeA, PFHxA, PFHpA, PFOA, PFNA, PFDA, PFUnA, PFDaA, PFBS, PFHxS, PFOS, and PFOSA in the blood sample

Very truly yours,

 Robert A. Bilott

RAB/mdm
 Enclosures

Dr. Charles M. Auer
Jennifer Seed
Mary Dominiak
James Kelly
David Douglas
Donald Kriens
October 20, 2005
Page 9

cc: Timothy J. Keane, Esq. (w/ encls.)(City of Oakdale Counsel)
Jerome P. Filla, Esq. (w/ encls.)(City of Lake Elmo Counsel)
Gale D. Pearson, Esq. (w/o encls.)
Stephen J. Randall, Esq. (w/o encls.)
Rhon E. Jones, Esq. (w/o encls.)
J. Mark Englehart, Esq. (w/o encls.)
David B. Byrne III, Esq. (w/o encls.)
R. Edison Hill, Esq. (w/o encls.)
Larry A. Winter, Esq. (w/o encls.)
Gerald J. Rapien, Esq. (w/o encls.)

Location	Well No.	Pump Capacity, gpm	PFOA Avg				PFOS Avg				Hazard Index			
			12-22-04	1-25-06	2-28-05	3-29-05	12-22-04	1-25-05	2-28-05	3-29-05	12-22-04	1-25-05	2-28-05	3-29-05
Oakdale	1	750	0.093	0.077	0.087	0.091	0.056	<0.051	0.053	0.061	0.07	<0.06	0.07	0.07
	3	1000	ND	ND	ND	ND	ND	ND	ND	ND	<0.03	<0.03	<0.03	<0.03
	6	1200	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8	960	0.68	0.66	0.51	0.48	0.88	1.0	0.67	0.63	0.98	1.09	0.74	0.70

Analytical work by Exogen Research. All results in ug/L (ppb), averages of sample and duplicate

NS - Not sampled

ND - Not detected at or above 0.025 ug/L

NO - Not quantifiable = Measured at concentration between 0.025 ug/L & the Limit of Quantitation (LOQ) of 0.050 ug/L

Pump capacity values from MDH database. Sum of all wells = 9010 gpm

3MA00402756

Exhibit B

Analytical Results From Oakdale Combined Effluent Discharge
(ug/L)

Date	PFOA	PFOS	FOSA	PFBS	PFHS
8/11/04	66.1	30.1	ND	4.0	7.6
9/17/04	53.1	28.2	ND	8.8	8.1

Analytical Results From Woodbury Pumpout System
(ug/L)

	PFOA	PFOS	FOSA	PFBS	PFHS
Result	2.2	0.8	ND	2.4	7.8
Dupl	2.4	0.9	ND	2.6	8.1

Kathy,

The issue of a pot might
be in Wddy municipal wells
came up again this morning.
I came back, dug them out
& have forwarded ^{it} to M. Nash
so they'll have it if they need
it today. FYI
Harry

3MA00402704

From: Virginia Yingling
To: James Kelly; Paul Swedenborg
Date: 3/9/2005 12:14:10 PM
Subject: Re: Fwd: Other FCs (in addition to F-8) in Washington Closed Landfill

Hi Paul:

Jim mentioned that you were looking at C4 and C6 acids in samples to test the standards and methods. If you're looking for others to check, we just brought in about 28 samples and a few more are coming today, tomorrow, and next week. If they haven't already been run, the ones that might be interesting are:

Sample No.	Sample Location
208450	Larson (collected Monday)
W0020112	Eldredge (collected Monday)
82W01047	Lindblom (collected Tuesday)
82W01038	Conlin (this one is being collected today)
413551	Loetscher (this one is being collected today)

Thanks.

Ginny

Ginny Yingling
 virginia.yingling@health.state.mn.us
 ph - 651-215-0917
 fax - 651-215-0975

>>> James Kelly 03/09/05 11:42 AM >>>

FYI....3M will supply some standards, and it looks like the lab has found low levels of C4 and C6 acids in some Oakdale samples.

Jim

James Kelly, M.S.
 Health Assessor
 Site Assessment & Consultation Unit
 Environmental Health Division
 Minnesota Dept. of Health
 (651) 215-0913

james.kelly@health.state.mn.us

>>> Paul Swedenborg 03/09/05 11:19 AM >>>

Jim,

It would be great if we could receive PFBS and PFHS in the 1 to 5 gram category. Any information on purity and by-products would be useful as well. Have them please ship the chemicals directly to me. My address should be in the signature below. They are welcome to contact me if they have questions. FYI. We have been screening samples for PFBA, PFPeA, PFHxA, and PFHpA. We are seeing the C4 and C6 in some of the Oakdale samples at low levels. Thanks again. Paul.

Paul Swedenborg (Organic Unit Supervisor)
 MN Department of Health
 Public Health Laboratory Division

From: "Oliaei, Fardin" <Fardin.Oliaei@state.mn.us>
To: "Oliaei, Fardin" <Fardin.Oliaei@state.mn.us>, "Helen Goeden" <Helen.Goeden@state.mn.us>, <Fardin.Oliaei@state.mn.us>, <James.Kelly@state.mn.us>, <Laura.Solem@state.mn.us>
Date: 2/28/2005 2:35:07 PM
Subject: RE: Other FCs (in addition to F-8) in Washington ClosedLandfill

Helen,

I am not sure why I can not insert the attached memo. Here, I just copied the entire memo and sending it to you again. Please let me know if you will receive it. If not, I can just fax it to you. I am not sure what the problem is. Did you get the data in a readable format?
Thanks, Fardin

To: Paul Hoff

From: Fardin Oliaei

Date: February 25, 2005

Re: Lower Fluorinated Organic Compounds (3M)

As you know 3M received EPA approval for, and is manufacturing, 18 new fluorochemicals. These new fluorinated compounds are based on the 4 carbon (C-4) perfluorobutane sulfonate (PFBS) compound, and serve as substitutes for the 8 carbon chain perfluorinated chemicals associated with PFOS, PFOA, etc. for which 3M terminated production. Although there are significant uncertainties surrounding the behavior of fluorocarbon compounds in general in the environment in the areas of partitioning behavior, degradation, chronic toxicity and bioaccumulation, 3M conducted some 40 toxicity and other tests to demonstrate the relative non-toxicity of these PFBS-based fluorochemicals.

PFBS does not significantly bioaccumulate and, based on the testing completed to date, does appear to be relatively non-toxic. However, PFBS and related C-4 fluorochemicals will remain very persistent in the environment since they are relatively non-biodegradable, and it is anticipated that concentrations of PFBS will "accumulate" in blood of humans. Although not bioaccumulative, the PFBS levels in blood are expected in part due to the ubiquitous nature of the PFBS based fluorochemical products and also likely due to a relatively higher volatility versus PFOS, PFOA, etc. There is some information that suggests that the half life of shorter perfluorinated compounds is longer than C-8 based compounds in humans. Although a very brief review of tests completed by 3M appears to demonstrate the relative non-toxicity of PFBS, the long term effects of these new fluorochemicals are of course unknown.

Because of the heightened sensitivity and awareness of the toxicities associated with PFOS, PFOA, and related higher chain fluorochemical compounds it may be prudent to begin some evaluation of the new C-4 PFBS chemicals, in order to respond in an informed fashion to inquiries. In part this also appears reasonable simply because PFBS is a short chain

halogenated organic, and numerous other short chain halogenated compounds have known problems. It seems probable that the public or others may ask about the safety of the new C-4 based fluorochemicals. Therefore, at some point we may want to consider the following potential evaluations:

1. Conduct a literature review of all studies conducted for PFBS regarding toxicity, degradation, etc, in order to provide informed answers to any questions on this issue that may arise.
2. Evaluate the disposition of PFBS regarding air, water, and solid waste media at the 3M Cottage Grove plant. Discuss whether monitoring should be required by 3M for PFBS and related C-4 FC compounds in the water discharge, sludges generated, and air emissions.
3. Determine whether any additional studies should be required of 3M regarding aquatic toxicity. Are the present studies adequate concerning potentially affected species in the receiving water. Involve water quality staff in this effort.
4. Evaluate the mammalian toxicity studies. Is any health risk assessment needed with respect to drinking water.
5. Since the PFBS and related C-4 compounds are expected to be widely distributed in human blood, are the studies completed adequate to assess long term impacts, if any.
6. Is there adequate information developed to assess the distribution of PFBS to the environment and potential impacts, if any. Is there adequate information regarding breakdown products and potential impacts, if any.

(As a separate note we found PFBS at high concentrations in the pumpout water and standing water at the Washington County Landfill.)

These evaluations would primarily be conducted to assure that we may answer questions related to PFBS in the Minnesota environment, and do not necessarily presume a problem with PFBS. However, I believe it would be appropriate to be prepared to assure that studies to date are adequate for environmental protection, and so that we may respond to any inquiries in an informed fashion.

—Original Message—

From: Oliaei, Fardin

Sent: Monday, February 28, 2005 2:28 PM

To: 'Helen Goeden'; 'Fardin.Oliaei@state.mn.us';

'James.Kelly@state.mn.us'; 'Laura.Solem@state.mn.us'

Cc: 'Larry Gust'; 'Rita Messing'; 'Carl.Herbrandson@state.mn.us';

'Douglas.Day@state.mn.us'; 'Hillary.Carpenter@state.mn.us';

'Ingrid.Verhagen@state.mn.us'; 'Joseph.Julik@state.mn.us';

'Paul.Swedenborg@state.mn.us'

Subject: RE: Other FCs (in addition to F-8) in Washington ClosedLandfill

Hi Helen,

I am sorry for not attaching the memo. Here is a copy of the memo.

Please feel free to revise and complement this memo as you see it best fit with your position at the MDH on this issues. Thanks for your time,

Fardin

—Original Message—

From: Helen Goeden [mailto:Helen.Goeden@state.mn.us]
 Sent: Monday, February 28, 2005 2:09 PM
 To: Fardin.Oliaei@state.mn.us; Helen.Goeden@state.mn.us;
 James.Kelly@state.mn.us; Laura.Solem@state.mn.us
 Cc: Larry Gust; Rita Messing; Carl.Herbrandson@state.mn.us;
 Douglas.Day@state.mn.us; Hillary.Carpenter@state.mn.us;
 Ingrid.Verhagen@state.mn.us; Joseph.Julik@state.mn.us;
 Paul.Swedenborg@state.mn.us
 Subject: RE: Other FCs (in addition to F-8) in Washington ClosedLandfill

Fardin,
 Jim and I will be coordinating a response from our units to your questions. The copy of your memo to Paul Hoff was not attached to the e-mail. Could you forward a copy of the memo to us?

Thanks,
 Helen

Helen Goeden, Ph.D.
 Minnesota Department of Health
 P.O. Box 64975
 St. Paul, MN 55164-0975
 (651)215-0874
 helen.goeden@health.state.mn.us

>>> "Olai, Fardin" <Fardin.Oliaei@state.mn.us> 02/28/05 1:04 PM >>>

> Dear Helen, Laura, and Jim,
 >
 > Now that I submitted a copy of the following preliminary data for 3M
 > to review, I should also share them with you for your review. The
 > following data are on the levels of FCs in the Washington County's
 > contaminated well (V2), clean, reference well (J), and two surface
 > water samples (created with the V2 being sprayed over the surface area
 > of the closed landfill).
 >
 > I am concern. Specially, with the high concentrations of C-4
 > compounds. Let me know what you think. Based on the ongoing EPA-
 > SAB panel discussion on cancer classification for PFOA, are we going
 > to revise the MDH HRV values for PFOS/PFOS? Is there sufficient data
 > to develop toxicity values for C-4, C-5, and C-6 Fluorinated
 > compounds?
 >
 > I also attached a copy of a memo that I put together for my
 > supervisor, Paul Hoff per his request on this issue. In my view, this
 > memo needs to be expanded, suggesting a comprehensive environmental
 > monitoring (conducted by MPCA), and bio monitoring (conducted by MDH)
 > for a period of five year (financially supported by 3M).
 >

> << File: Paul-PFBS.doc >>

> The following are the preliminary data on contaminated well (V2),
> clean and reference well (J), and two samples of the surface water
> (where the V2 is being sprayed over the closed landfill). I need to
> explain more about these data.

>

> CLIENT ID Wash-CL (surface water#1) Wash-CL (surface water#2)
> Wash-CL (clean Well J) Wash-CL (polluted Well V2)

>

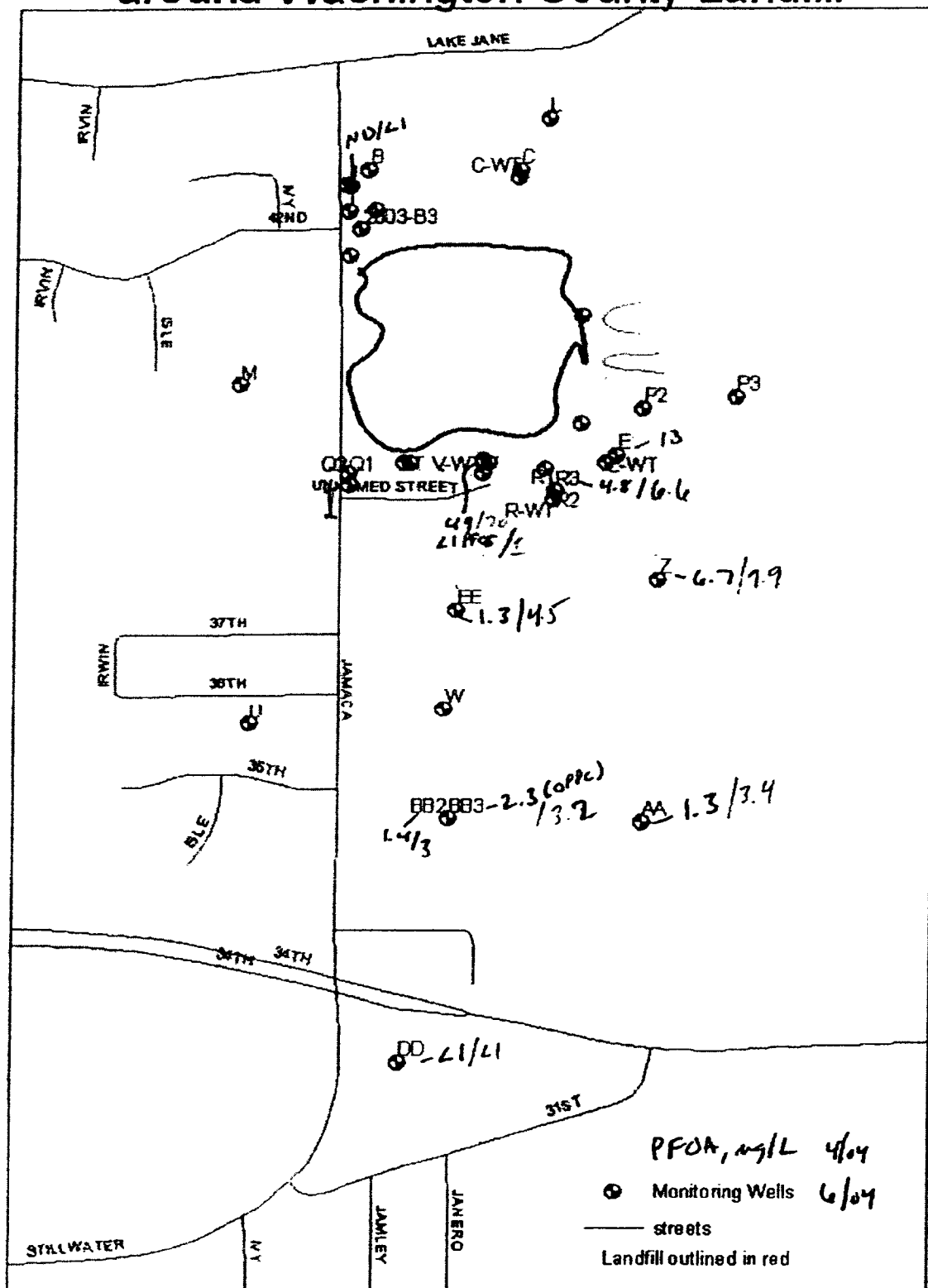
>

UNITS	ng/mL	ng/mL	ng/mL
> ng/mL			
> PFBA	371		352
> <0.110		1170 (F-4)	
> (this high conc. is my concern, and it is a substitute for F-8!)			
>			
PFPeA	7.98		6.89
> <0.0205	43.1 (F-5)		
>			
PFHxA	3.36		3.28
> <0.0037	15.6 (F-6)		
>			
PFHpA	0.582		0.659
> <0.0044	2.38 (F-7)		
> PFOA	10.9		15.2
> <0.0027	41.6 (F-8)		
> PFNA	0.009		0.006
> 0.001		0.012	
> PFDA	<0.0156		0.027
> <0.0015		0.006	
> PFUnA	<0.0068		0.016
> <0.0009	<0.0039		
>			
PFDaA	<0.0142		0.016
> 0.002		<0.0032	
> PFTA	<0.0202		<0.0103
> <0.0005	<0.0020		
> PFBS	<0.333		<0.252
> <0.0201		1.31	
>			
PFHxS	<0.422		<0.300
> <0.0257	1.77 (F-6)		
> PFOS	1.35		1.67
> <0.0030	2.69 (F-8)		
> (only PFOA and PFOS are being reported by MDH)			
>			
> Thanks for your time, Fardin			
>			
> Fardin Oliaei, Ph.D.			
> Research Scientist III			
> Emerging Contaminants Coordinator			
> Minnesota Pollution Control Agency (MPCA)			
>			
> E-mail: fardin.oliaei@pca.state.mn.us			
> Phone: (651) 296-7967			
>			

>
> << File: Paul-PFBS.doc >>

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Groundwater Monitoring Network around Washington County Landfill



CLIENT ID	Wash-CL-waters#1	Wash-CL-waters#2	Washington Co. Well J	Washington Co. Well V2	LAB BLANK	LAB BLANK	SPIKED MATRIX	Washington Co. Well V2 (DUPLICATE)	Washington Co. Well J (DUPLICATE)
AYYE ID	L7418-1R	L7418-2R	L7418-3	L7418-4	WG14580-101	WG14580-101	WG14580-102	WG14580-103	WG14580-104
WORKGROUP	WG14580	WG14580	WG14580	WG14580	WG14580	WG14580	WG14580	WG14580	WG14580
Sample Size	5.05 mL	5.12 mL	50.2 mL	48.3 mL	50.0 mL	5.00 mL	WG14580	4.97 mL	50.2 mL
UNITS	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL	% REC	ng/mL	ng/mL
PFBa	371	352	<0.110	1170	<0.168	<0.168	122	1250	<0.134
PFPBa	7.86	6.88	<0.0205	43.1	<0.0216	<0.216	128	26.6	<0.0301
PFHxA	3.36	3.28	<0.0037	15.8	<0.0042	<0.0418	111	10.6	<0.0041
PFHbA	0.582	0.559	<0.0044	2.38	<0.0017	<0.0189	101	1.98	<0.0041
PFOA	10.8	15.2	<0.0027	41.6	<0.0027	<0.0271	108	38.6	<0.0024
PFOA	0.009	0.006	0.001	0.012	<0.0018	<0.0175	103	0.014	<0.0024
PFOA	<0.0156	0.027	<0.0016	0.006	0.003	0.026	114	<0.0145	<0.0024
PFOA	<0.0085	0.016	<0.0009	<0.0038	0.003	0.031	104	0.019	0.003
PFOA	<0.0142	0.016	0.002	<0.0032	0.006	0.063	108	0.017	0.002
PFTA	<0.0202	<0.0103	<0.0005	<0.0020	<0.0006	<0.0069	107	<0.0062	<0.0007
PFBs	<0.333	<0.252	<0.0201	1.31	<0.0031	<0.0307	97	0.545	<0.0167
PFBs	<0.422	<0.300	<0.0287	1.77	<0.0058	<0.0580		<1.46	<0.0204
PFOs	1.35	1.67	<0.0030	2.89	<0.0030	<0.0303	105	2.61	<0.0048

Exhibit C

INTERROGATORY NO. 3:

Identify each human drinking water supply in Minnesota or Wisconsin where any PFCs have ever been detected, specifying the dates of each such detection for each such water supply, the level and/or concentration of each PFC detected, and the identity of the entity(s) who conducted and/or arranged for the sampling and analysis.

ANSWER:

Subject to and without waiving its general objections and the objections to this interrogatory stated below, 3M states as follows:

The following water supplies have been tested and showed no detectable PFOA or PFOS:

- the City of Cottage Grove,
- the City of Hastings,

- the City of Woodbury,
- the City of Lake Elmo,
- the City of North St. Paul,
- Whispering Oaks mobile home park water supply,
- Cimarron Park public water supply wells in Lake Elmo,
- private wells near the eastern side of the Cottage Grove facility,
- private wells in Woodbury, and
- many private wells in Lake Elmo.

3M is aware of PFOA or PFOS being detected in the following water supplies: City of Oakdale water wells and Oakdale City tap water in two buildings in Oakdale, one private well in Oakdale, and certain Lake Elmo private wells. 3M's Cottage Grove plant also has had detectable levels in drinking water.

3M notes, however, that the mere detection of these compounds at part per billion or part per trillion levels does not indicate a potential for adverse health effects. Even detections above the MDH Health Based Values, which comprise a small subset of the findings, do not mean there are adverse health effects in humans. The MDH Health Based Values of 1 ppb for PFOS and 7 ppb for PFOA incorporate substantial safety factors compared to the levels of exposure that cause effects in a laboratory study of monkeys. The Health Based Value for PFOS

includes a safety factor of 1,000 and the Health Based Value for PFOA includes a safety factor of 3,000. Moreover, these values are intended to be protective for lifetime exposure.

Much of the drinking water data has been collected by the Minnesota Department of Health (MDH). In addition to documents 3M will produce in connection with this interrogatory response, 3M refers Plaintiffs to data available from MDH or the relevant local governmental entities.

Oakdale

3M and the State have been analyzing split samples taken from Oakdale municipal wells since December 2004. The Minnesota Department of Health conducted all of the State's analyses of these samples. Exygen Research conducted 3M's analyses of these samples through May 2005. From June 2005 forward, 3M's in-house environmental laboratory analyzed 3M's split samples. The following tables summarize the results of 3M's and the State's sampling.

Municipal Wells**Oakdale December 22, 2005 Sampling Results (ug/L)**

Well Number	PFOA					
	Exygen Result	Exygen Duplicate	Exygen Average	MDH Measured Value	MDH Measured Value Duplicate	MDH Average
1	NA	NA	NA	ND	NA	NC
2	NA	NA	NA	ND	NA	NC
3	NA	NA	NA	ND	NA	NC
5	0.747	0.718	0.733	0.7067	0.7402	0.7235
7	0.258	0.268	0.263	0.2458	NA	NC
8	0.539	0.452	0.496	0.4248	NA	NC
9	0.727	0.772	0.750	0.7781	NA	NC
Well Number	PFOS					
	Exygen Result	Exygen Duplicate	Exygen Average	MDH Measured Value	MDH Measured Value Duplicate	MDH Average
1	NA	NA	NA	ND	NA	NC
2	NA	NA	NA	ND	NA	NC
3	NA	NA	NA	ND	NA	NC
5	1.13	1.10	1.12	1.0884	1.2332	1.1608
7	0.259	0.267	0.263	0.1918	NA	NC
8	0.794	0.692	0.743	0.7335	NA	NC
9	0.63	0.666	0.648	0.5087	NA	NC

All results in ug/L (parts per billion or ppb).

NS - Not sampled.

ND - Not detected.

NC - Not calculated.

NA - Not analyzed.

For Exygen data:

ND - Not detected at or above 0.025 ug/L (25 parts per trillion).

NQ - Not quantifiable = Measured at concentration between 0.025 ug/L and the Limit of Quantitation (LOQ) of 0.050 ug/L (50 parts per trillion).

For MDH data:

Report level is 0.5 ppb for PFOS and 1.0 ppb for PFOA. Where data is reported at less than these values, it represents Measured Values.

Oakdale January 25, 2005 Sampling Results (ug/L)

Well Number	PFOA					
	Oxygen Result	Oxygen Duplicate	Oxygen Average	MDH Measured Value	MDH Measured Value Duplicate	MDH Average
1	0.0746	0.0790	0.0768	ND	NA	NC
2	0.0773	0.0750	0.0762	ND	NA	NC
3	ND	ND	ND	ND	NA	NC
5	0.821	0.736	0.779	0.799	NA	NC
7	0.285	0.274	0.280	0.211	0.235	0.223
8	0.668	0.647	0.658	0.628	NA	NC
9	0.825	0.892	0.859	0.737	NA	NC
Well Number	PFOS					
	Oxygen Result	Oxygen Duplicate	Oxygen Average	MDH Measured Value	MDH Measured Value Duplicate	MDH Average
1	NQ	0.0514	NC	ND	NA	NC
2	NQ	ND	NC	ND	NA	NC
3	ND	ND	ND	ND	NA	NC
5	1.12	1.01	1.07	1.125	NA	NC
7	0.276	0.269	0.273	0.187	0.117	0.152
8	1.02	0.977	0.999	0.936	NA	NC
9	0.583	0.653	0.618	0.613	NA	NC

All results in ug/L (parts per billion).

NS - Not sampled.

ND - Not detected.

NC - Not calculated.

NA - Not analyzed.

For Oxygen data:

ND - Not detected at or above 0.025 ug/L (25 parts per trillion).

NQ - Not quantifiable = Measured at concentration between 0.025 ug/L & the Limit of Quantitation (LOQ) of 0.050 ug/L (50 parts per trillion).

For MDH data:

Report level is 0.5 ppb for PFOS and 1.0 ppb for PFOA. Where data is reported at less than these values, it represents Measured Values.

Oakdale February 28, 2005 Sampling Results (ug/L)

Well Number	PFOA					
	Exygen Result	Exygen Duplicate	Exygen Average	MDH Measured Value	MDH Measured Value Duplicate	MDH Average
1	0.0892	0.0852	0.0872	ND	NA	NC
2	0.0807	0.0871	0.0839	ND	NA	NC
3	ND	ND	ND	ND	NA	NC
5	0.714	0.761	0.738	0.693	0.727	0.710
7	0.274	0.305	0.290	0.214	NA	NC
8	0.523	0.503	0.513	0.423	NA	NC
9	NS	NS	NS	NS	NS	NC
Oakdale Public Works Bldg. Lunch Room Sink Well Number	0.687	0.709	0.698	0.624	NA	NC
Well Number	PFOS					
	Exygen Result	Exygen Duplicate	Exygen Average	MDH Measured Value	MDH Measured Value Duplicate	MDH Average
1	0.0516	0.0541	0.0529	ND	NA	NC
2	NQ	NQ	NQ	ND	NA	NC
3	ND	ND	ND	ND	NA	NC
5	0.889	0.968	0.929	1.054	1.004	1.029
7	0.238	0.273	0.256	0.242	NA	NC
8	0.687	0.662	0.675	0.693	NA	NC
9	NS	NS	NS	NS	NS	NS
Oakdale Public Works Bldg. Lunch Room Sink	0.872	0.949	0.911	0.947	NA	NC

All results in ug/L (parts per billion).

NS - Not sampled.

ND - Not detected.

NC - Not calculated.

NA - Not analyzed.

For Exygen data:

ND - Not detected at or above 0.025 ug/L (25 parts per trillion).

NQ - Not quantifiable = Measured at concentration between 0.025 ug/L & the Limit of Quantitation (LOQ) of 0.050 ug/L (50 parts per trillion).

For MDH data:

Report level is 0.5 ppb for PFOS and 1.0 ppb for PFOA. Where data is reported at less than these values, it represents Measured Values.

Oakdale March 29, 2005 Sampling Results (ug/L)

Well Number	PFOA					
	Exygen Result	Exygen Duplicate	Exygen Average	MDH Measured Value	MDH Measured Value Duplicate	MDH Average
1	0.0887	0.0939	0.0913	ND	NA	NC
2	0.0823	0.0817	0.0820	ND	NA	NC
3	ND	ND	ND	ND	NA	NC
5	0.779	0.710	0.745	0.5281	NA	NC
7	NS	NS	NS	NS	NS	NS
8	0.503	0.457	0.480	ND	NA	NC
9	0.813	0.763	0.788	0.8650	0.7575	0.8113
Well Number	PFOS					
	Exygen Result	Exygen Duplicate	Exygen Average	MDH Measured Value	MDH Measured Value Duplicate	MDH Average
1	0.0619	0.0609	0.0614	ND	NA	NC
2	NQ	NQ	NC	ND	NA	NC
3	ND	ND	ND	ND	NA	NC
5	1.14	0.941	1.04	0.9007	NA	NC
7	NS	NS	NS	NS	NS	NS
8	0.704	0.551	0.628	0.8500	NA	NC
9	0.58	0.502	0.541	0.7147	0.5727	0.6437

All results in ug/L (parts per billion or ppb).

NS - Not sampled.

ND - Not detected.

NC - Not calculated.

NA - Not analyzed.

For Exygen data:

ND - Not detected at or above 0.025 ug/L (25 parts per trillion).

NQ - Not quantifiable = Measured at concentration between 0.025 ug/L & the Limit of Quantitation (LOQ) of 0.050 ug/L (50 parts per trillion).

For MDH data:

Report level is 0.5 ppb for PFOS and 1.0 ppb for PFOA. Where data is reported at less than these values, it represents Measured Values.

Oakdale April 2005 Sampling Results (ug/L)

Well Number	PFOA					
	Exygen Result	Exygen Duplicate	Exygen Average	MDH Measured Value	MDH Measured Value Duplicate	MDH Average
1	ND	NS	NC	*	*	*
2	ND	NS	NC	*	*	*
3	ND	NS	NC	*	*	*
5	0.528	NS	NC	*	*	*
7	NS	NS	NC	*	*	*
8	ND	NS	NC	*	*	*
9	0.865	0.758	0.812	*	*	*
Well Number	PFOS					
	Exygen Result	Exygen Duplicate	Exygen Average	MDH Measured Value	MDH Measured Value Duplicate	MDH Average
1	ND	NS	NC	*	*	*
2	ND	NS	NC	*	*	*
3	ND	NS	NC	*	*	*
5	0.901	NS	NC	*	*	*
7	NS	NS	NC	*	*	*
8	0.850	NS	NC	*	*	*
9	0.715	0.573	0.644	*	*	*

*3M does not have any MDH sampling data from April, and believes MDH did not sample in April.

All results in ug/L (parts per billion or ppb).

NS - Not sampled.

ND - Not detected.

NC - Not calculated.

NA - Not analyzed.

For Exygen data:

ND - Not detected at or above 0.025 ug/L (25 parts per trillion).

NQ - Not quantifiable = Measured at concentration between 0.025 ug/L & the Limit of Quantitation (LOQ) of 0.050 ug/L (50 parts per trillion).

For MDH data:

Report level is 0.5 ppb for PFOS and 1.0 ppb for PFOA. Where data is reported at less than these values, it represents Measured Values.

Oakdale May 18, 2005 Sampling Results (ug/L)

Well Number	PFOA					
	Exygen Result	Exygen Duplicate	Exygen Average	MDH Measured Value	MDH Measured Value Duplicate	MDH Average
1	NA	NA	NA	ND	NA	NC
2	NA	NA	NA	ND	NA	NC
3	NA	NA	NA	ND	NA	NC
5	NA	NA	NA	NS	NS	NS
7	NA	NA	NA	0.3184	NA	NC
8	NA	NA	NA	0.5594	0.5195	0.5395
9	NA	NA	NA	0.7740	NA	NC
Well Number	PFOS					
	Exygen Result	Exygen Duplicate	Exygen Average	MDH Measured Value	MDH Measured Value Duplicate	MDH Average
1	NA	NA	NA	ND	NA	NC
2	NA	NA	NA	ND	NA	NC
3	NA	NA	NA	ND	NA	NC
5	NA	NA	NA	NS	NS	NS
7	NA	NA	NA	ND	NA	NC
8	NA	NA	NA	0.7409	0.6620	0.7015
9	NA	NA	NA	0.6539	NA	NC

All results in ug/L (parts per billion or ppb).

NS - Not sampled.

ND - Not detected.

NC - Not calculated.

NA - Not analyzed.

For Exygen data:

ND - Not detected at or above 0.025 ug/L (25 parts per trillion).

NQ - Not quantifiable = Measured at concentration between 0.025 ug/L & the Limit of Quantitation (LOQ) of 0.050 ug/L (50 parts per trillion).

For MDH data:

Report level is 0.5 ppb for PFOS and 1.0 ppb for PFOA. Where data is reported at less than these values, it represents Measured Values.

Oakdale June 16, 2005 Sampling Results (ug/L)

Well Number	PFOA					
	3M Env Lab Result	3M Env Lab Duplicate	3M Env Lab Average	MDH Measured Value	MDH Measured Value Duplicate	MDH Average
1	NA	NA	NA	ND	NA	NC
2	NA	NA	NA	ND	NA	NC
3	NA	NA	NA	ND	NA	NC
5	0.887	0.948	0.918	0.9195	NA	NC
7	NA	NA	NA	0.3057	NA	NC
8	0.472	0.506	0.489	0.5390	NA	NC
9	*	*	0.923	0.8605	0.9686	0.9146
Well Number	PFOS					
	3M Env Lab Result	3M Env Lab Duplicate	3M Env Lab Average	MDH Measured Value	MDH Measured Value Duplicate	MDH Average
1	NA	NA	NA	ND	NA	NC
2	NA	NA	NA	ND	NA	NC
3	NA	NA	NA	ND	NA	NC
5	1.16	1.20	1.18	1.1482	NA	NC
7	NA	NA	NA	0.1937	NA	NC
8	0.698	0.709	0.704	0.5303	NA	NC
9	0.872	0.945	0.909	0.6474	0.5513	0.5994

All results in ug/L (parts per billion or ppb).

NS - Not sampled.

ND - Not detected.

NC - Not calculated.

NA - Not analyzed.

For Exygen data:

Lower limit of quantitation (LOQ) for PFOA for two extraction sets were 0.00492 ug/L (4.92 parts per trillion) and 0.00738 ug/L (7.38 parts per trillion).

Lower limit of quantitation (LOQ) for PFOS for two extraction sets were 0.00496 ug/L (4.96 parts per trillion) and 0.00992 ug/L (9.92 parts per trillion).

For MDH data:

Report level is 0.5 ppb for PFOS and 1.0 ppb for PFOA. Where data is reported at less than these values, it represents Measured Values.

* Sample and duplicate were run for two separate extractions with the following four results: 0.967, 0.938, 0.881, 0.906 ug/L.

Oakdale July 13, 2005 Sampling Results (ug/L)

Well Number	PFOA					
	3M Env Lab Result	3M Env Lab Duplicate	3M Env Lab Average	MDH Measured Value	MDH Measured Value Duplicate	MDH Average
1	NA	NA	NA	ND	NA	NC
2	NA	NA	NA	ND	NA	NC
3	NA	NA	NA	ND	NA	NC
5	0.747	0.718	0.733	0.7067	0.7402	0.7235
7	0.258	0.268	0.263	0.2458	NA	NC
8	0.539	0.452	0.496	0.4248	NA	NC
9	0.727	0.772	0.750	0.7781	NA	NC
Well Number	PFOS					
	3M Env Lab Result	3M Env Lab Duplicate	3M Env Lab Average	MDH Measured Value	MDH Measured Value Duplicate	MDH Average
1	NA	NA	NA	ND	NA	NC
2	NA	NA	NA	ND	NA	NC
3	NA	NA	NA	ND	NA	NC
5	1.13	1.10	1.12	1.0884	1.2332	1.1608
7	0.259	0.267	0.263	0.1918	NA	NC
8	0.794	0.692	0.743	0.7335	NA	NC
9	0.63	0.666	0.648	0.5087	NA	NC

All results in ug/L (parts per billion or ppb).

NS - Not sampled.

ND - Not detected.

NC - Not calculated.

NA - Not analyzed.

For Exygen data:

Lower limit of quantitation (LOQ) for PFOA for two extraction sets were 0.00492 ug/L (4.92 parts per trillion) and 0.00738 ug/L (7.38 parts per trillion) .

Lower limit of quantitation (LOQ) for PFOS for two extraction sets were 0.00496 ug/L (4.96 parts per trillion) and 0.00992 ug/L (9.92 parts per trillion).

For MDH data:

Report level is 0.5 ppb for PFOS and 1.0 ppb for PFOA. Where data is reported at less than these values, it represents Measured Values.

Oakdale August 12, 2005 Sampling Results (ug/L)

Well Number	PFOA					
	3M Env Lab Result	3M Env Lab Duplicate	3M Env Lab Average	MDH Measured Value	MDH Measured Value Duplicate	MDH Average
1	*	*	*	ND	NA	NC
2	*	*	*	ND	NA	NC
3	*	*	*	ND	NA	NC
5	*	*	*	0.9350	NA	NC
7	*	*	*	0.5344	0.4720	0.5032
8	*	*	*	0.6903	NA	NC
9	*	*	*	ND	NA	NC
Well Number	PFOS					
	3M Env Lab Result	3M Env Lab Duplicate	3M Env Lab Average	MDH Measured Value	MDH Measured Value Duplicate	MDH Average
1	*	*	*	ND	NA	NC
2	*	*	*	ND	NA	NC
3	*	*	*	ND	NA	NC
5	*	*	*	1.1630	NA	NC
7	*	*	*	0.6302	0.6471	0.6387
8	*	*	*	0.6903	NA	NC
9	*	*	*	ND	NA	NC

All results in ug/L (parts per billion or ppb).

* - 3M results not yet available.

NS - Not sampled.

ND - Not detected.

NC - Not calculated.

NA - Not analyzed.

For Exygen data:

Lower limit of quantitation (LOQ) for PFOA for two extraction sets were 0.00492 ug/L (4.92 parts per trillion) and 0.00738 ug/L (7.38 parts per trillion).

Lower limit of quantitation (LOQ) for PFOS for two extraction sets were 0.00496 ug/L (4.96 parts per trillion) and 0.00992 ug/L (9.92 parts per trillion).

For MDH data:

Report level is 0.5 ppb for PFOS and 1.0 ppb for PFOA. Where data is reported at less than these values, it represents Measured Values.

MDH has also tested a public water supply at Whispering Oaks mobile home park sampled on January 25, 2005, and found no detectable levels of PFOS or PFOA.

3M sampled water at the office building occupied by its subsidiary Dyneon in Oakdale on January 4, 2005, with the following results:

Dyneon Oakdale Building Samples (ug/L or parts per billion)

	<i>PFOA (ug/L)</i>	<i>PFOS (ug/L)</i>
E05-0007-77781 Reception area rest room	0.75	0.86
E05-0007-77782 Reception area rest room Dup	0.66	0.86
E05-0007-77785 Ctr office rest m fin	0.18	0.14
E05-0007-77786 Ctr office rest rm fln Dup	0.19	0.16
E05-0007-77789 Break room sink	0.14	0.18
E05-0007-77790 Break room sink Dup	0.14	0.15
E05-0007-77793 Utility room janitor sink	0.67	0.84
E05-0007-77794 Utility room janitor sink Dup	0.71	0.88

MDH collected samples from the Oakdale Public Works Building on February 28, 2005.

February 28, 2005 Sampling Results (ug/L or parts per billion)

Location	PFOA					
	Exygen Result	Exygen Duplicate	Exygen Average	MDH Measured Value	MDH Measured Value Duplicate	MDH Average
Oakdale Public Works Bldg. Lunch Room Sink	0.687	0.709	0.698	0.624	NA	NC
Location	PFOS					
	Exygen Result	Exygen Duplicate	Exygen Average	MDH Measured Value	MDH Measured Value Duplicate	MDH Average
Oakdale Public Works Bldg. Lunch Room Sink	0.872	0.949	0.911	0.947	NA	NC

All results in ug/L (ppb).

NS - Not sampled. ND - Not detected. NC - Not calculated. NA - Not analyzed.

For Exygen data:

ND - Not detected at or above 0.025 ug/L.

NQ - Not quantifiable = Measured at concentration between 0.025 ug/L & the Limit of Quantitation (LOQ) of 0.050 ug/L.

For MDH data: Report level is 0.5 ppb for PFOS and 1.0 ppb for PFOA. Where data is reported at less than these values, it represents Measured Values.

Private Wells in Oakdale

In March 2005, MDH analyzed samples collected from several private wells located in or around Oakdale:

Oakdale Private Wells

	Street No.	Street Name	Sample Date	PFOS	PFOA
OAKDALE					
W82W0020113	3465	Geneva Ave. N	3/7/2005	ND	ND
unk	3445	Geneva Ave. N	3/7/2005	ND	ND
W82W0020112	3315	Geneva Ave. N	3/7/2005	ND	ND
unk	3307	Geneva Ave. N	3/7/2005	ND	ND
unk	3301	Geneva Ave. N	3/8/2005	ND	ND
174298	7641	10 th St. N.	3/7/2005	ND	ND
unk	7287	Stillwater Blvd. N	3/7/2005	ND	0.662 ug/L or ppb

Lake Elmo

Public Water Supplies

MDH tested municipal drinking water from well number 1 in the City of Lake Elmo municipal water supply, sampled January 26, 2005, and found no detectable PFOS or PFOA.

MDH testing of wells #1 and 2 of the public water supply in Cimarron Park in Lake Elmo sampled on January 26, 2005 showed no detectable levels of PFOS or PFOA.

Private Wells

Between April 2005 and July 2005, MDH collected and analyzed water samples from private wells located in Lake Elmo. MDH has provided 3M with the following data:

Lake Elmo Private Wells (ug/L or parts per billion)

	Street No.	Street Name	Sample Date	PFOS	PFOA
LAKE ELMO					
82W01045	4111	Isle Ave. N	4/13/2005	ND	ND
404104	4077	Isle Ave. N	4/13/2005	ND	ND
82W01033	8830	42nd St. N	3/7/2005	ND	ND
82W01022	3490	Kelvin Ave. N.	6/21/2004	ND	ND
82W01018	3508	Kelvin Ave. N.	6/21/2004	ND	ND
82W01014	3509	Kelvin Ave. N.	6/21/2004	ND	ND
82W01026	3533	Kelvin Ave. N.	6/21/2004	ND	ND
493185	3551	Kelvin Ave. N.	6/21/2004	ND	ND
82W01015	3567	Kelvin Ave. N.	6/21/2004	ND	ND
82W01016	3597	Kelvin Ave. N.	6/21/2004	ND	ND
439126	3681	Kelvin Ave. N.	6/21/2004	ND	ND
539248	3691	Kelvin Ave. N.	6/21/2004	ND	ND
82W01044	3322	Ideal Ave. N	3/8/2005	ND	ND
134754	3240	Ideal Ave. N	3/8/2005	ND	ND
710053	8931-8945	34th St. N.	4/13/2005; VOCs	ND	ND
670792	8971-8975				
710051	8981-8985				
82W01034	8611	34th St. N.	3/8/2005	ND	ND
82W01035	8633	34th St. N.	3/8/2005	ND	ND
413596	10120	Stillwater Lane	6/21/2004	ND	ND
82W01021	10174	Stillwater Lane	6/21/2004	ND	ND
82W01017	10212	Stillwater Lane	6/21/2004	ND	ND
670770	9018	31st St. N.	6/22/2004	ND	ND
82W01003	9038	31st St. N.	6/22/2004	ND	0.5
			7/20/2004	ND	0.4
			4/27/2005	ND	0.5
82W01004	9046	31st St. N.	6/22/2004	ND	0.4
			7/20/2004	ND	0.2
			4/27/2005	ND	0.6
82W01047	9051	31st St. N.	4/13/2005	ND	ND
82W01029	9066	31st St. N.	7/20/2004	ND	0.3
			4/27/2005	ND	
604274	9077	31st St. N.	7/20/2004	ND	0.3
			4/27/2005	ND	0.6

82W01019	9078	31st St. N.	6/22/2004	ND	0.4
			7/20/2004	ND	0.2
			4/27/2005	ND	0.5
82W01005	9095	31st St. N.	6/22/2004	ND	ND
82W01024	9098	31st St. N.	6/22/2004	ND	ND
82W01006	9141	31st St. N.	6/22/2004	ND	ND
82W01007	9148	31st St. N.	6/22/2004	ND	ND
82W01008	9181	31st St. N.	6/22/2004	ND	ND
82W01028	9198	31st St. N.	7/20/2004	ND	ND
82W01023	9202	31st St. N.	6/21/2004	ND	ND
616698	9260	31st St. N.	7/20/2004	ND	0.1
			4/27/2005	ND	0.3
82W01009	9343	31st St. N.	6/21/2004	ND	ND
82W01020	9345	31st St. N.	6/21/2004	ND	0.9
			4/27/2005	ND	1
82W01200	3030	Janero Ave. N.	6/13/2005	ND	ND
82W01133	3010	Janero Ave. N.	6/13/2005	ND	0.2
82W01134	2990	Janero Ave. N.	6/13/2005	ND	0.2
82W01135	2950	Janero Ave. N.	6/13/2005	ND	ND
208450	3052	Jamley Ave. N.	3/7/2005	ND	ND
536672	3014	Jamley Ave. N.	3/17/2005	ND	0.647
413551	3053	Jamley Ave. N.	3/9/2005	ND	ND
82W01048	3023	Jamley Ave. N.	4/13/2005	ND	ND
82W01050	2991	Jamley Ave. N.	4/13/2005	ND	ND
604259	2994	Jamley Ave. N.	4/13/2005	ND	ND
82W01136	2970	Jamley Ave. N.	6/13/2005	ND	0.4
82W01137	2940	Jamley Ave. N.	6/13/2005	ND	0.3
82W01138	2935	Jamley Ave. N.	6/13/2005	ND	ND
82W01122	2959	Jamley Ave. N.	5/16/2005	ND	0.7
82W01139	2909	Jamley Ave. N.	6/13/2005	ND	ND
82W01140	2904	Jamley Ave. N.	6/13/2005	ND	0.3
82W01141	2877	Jamley Ave. N.	6/13/2005	ND	ND
493576	2850	Jamley Ave. N.			
82W01142	2809	Jamley Ave. N.	6/13/2005	ND	0.2
451602	2805	Jamley Ave. N.	6/13/2005	ND	ND
82W01124	2798	Jamley Ave. N.	5/16/2005	ND	ND
82W01123	2751	Jamley Ave. N.	5/16/2005	ND	ND
110523	2819	Ivy Ave N.	4/18/2005	ND	ND
82W01037	8866	Stillwater Blvd	3/8/2005	ND	ND
82W01064	8863	Stillwater Blvd.	4/18/2005	ND	ND
82W01038	8740	Stillwater Blvd	3/9/2005	ND	ND
82W01063	8707	Stillwater Blvd.	4/13/2005; VOCs	0.178	ND
583343	8680	Stillwater Blvd	3/7/2005	2.2	1.5
			7/22/2005 - GAC	ND	ND

82W01062	8659	Stillwater Blvd.	4/18/2005	1.876	1.72
676479	8643	Stillwater Blvd.	4/15/2005	0.233	0.423
82W01061	8627	Stillwater Blvd.		0.3	0.5
558222	8620	Stillwater Blvd	3/7/2005	1.4	1.7
			6/21/2005 - GAC	ND	ND
82W01060	8583	Stillwater Blvd.	4/15/2005	ND	ND
82W01059	8567	Stillwater Blvd.	4/13/2005; VOCs	0.155	ND
82W01058	8511	Stillwater Blvd.	4/13/2005	ND	ND
82W01057	8488	Stillwater Blvd.	4/15/2005	ND	ND
82W01056	8464	Stillwater Blvd.	4/15/2005	ND	0.793
82W01055	8428	Stillwater Blvd.	4/13/2005; VOCs	ND	ND
82W01054	8404	Stillwater Blvd.	4/13/2005	ND	ND
82W01053	8384	Stillwater Blvd.	4/13/2005; VOCs	ND	ND
599973	8364	Stillwater Blvd.	4/13/2005	0.398	ND
82W01039	8308	Stillwater Blvd	3/7/2005	1.4	1
			6/13/2005 - GAC	ND	ND
154476	8282	Stillwater Blvd	3/7/2005	1.2	0.6
			6/13/2005 - GAC	ND	ND
634270	8268	Stillwater Blvd	3/7/2005	ND	0.48
82W01132	8255	Stillwater Blvd.	4/18/2005	ND	ND
82W01025	9517	Stillwater Blvd.	6/21/2004	ND	ND
82W01010	9521	Stillwater Blvd.	6/21/2004	ND	ND
539268	9524	Stillwater Blvd.	6/21/2004	ND	ND
151756	10240	Stillwater Blvd.	6/21/2004	ND	ND
569744	3082	Inwood Ave. N	3/7/2005	3.3	3
			7/22/2005 - GAC	ND	ND
687850	3077	Inwood Ave. N	3/10/2005	1.4	1.3
			6/13/2005 - GAC	ND	ND
613401	3036	Inwood Ave. N	3/7/2005	1.4	1
			7/13/2005 - GAC	ND	ND
622211	3033	Inwood Ave. N	3/10/2005	1.4	1.8
			6/24/2005 - GAC	ND	ND
82W01065	2961	Inwood Ave. N.	4/13/2005	ND	ND
154443	2915	Inwood Ave. N.	4/13/2005	ND	ND
156421	2895	Inwood Ave. N.	4/18/2005	ND	ND
121060	2875	Inwood Ave. N.	4/13/2005	ND	ND
440560	2856	Inwood Ave. N.	4/15/2005	0.694	0.868
			7/13/2005	1	0.8
437308	2816	Inwood Ave. N	3/7/2005	0.285	0.426
428479	2796	Inwood Ave. N	3/8/2005	ND	ND
82W01067	2793	Inwood Ave. N.	4/15/2005	ND	ND
82W01068	2773	Inwood Ave. N.	4/15/2005	0.629	1.006
			7/13/2005	0.7	0.7
82W01069	2731	Inwood Ave. N.	4/14/2005	ND	ND
82W01130	2298	Inwood Ave. N.	5/18/2005	ND	ND
82W01131	2038	Inwood Ave. N.	5/23/2005	ND	ND

82W01073	2965	Innsdale Ave. N.	4/18/2005	0.177	ND
471065	2960	Innsdale Ave. N.	4/13/2005	0.804	1.245
			6/22/2005 - GAC	ND	ND
428478	2935	Innsdale Ave N	3/7/2005	ND	ND
82W01070	2930	Innsdale Ave. N.	4/13/2005	ND	ND
440566	2906	Innsdale Ave N	3/9/2005	ND	ND
82W01072	2895	Innsdale Ave. N.	4/18/2005	ND	ND
82W01071	2876	Innsdale Ave. N.	4/13/2005	ND	ND
453245	2655	Innsdale Ave. N.	5/16/2005	ND	ND
519084	2626	Innsdale Ave. N.	5/16/2005	ND	ND
82W01129	2621	Innsdale Ave. N.	5/16/2005	ND	ND
82W01074	8520	Ironwood Trl. N.	4/15/2005 7/13/2005	0.791 0.8	0.833 1.7
82W01075	8521	Ironwood Trl. N.	4/15/2005	ND	0.791
82W01076	8540	Ironwood Trl. N.	4/15/2005 7/13/2005	0.692 0.9	1.095 0.7
82W01077	8549	Ironwood Trl. N.	4/15/2005 7/13/2005	0.676 0.6	1.004 0.4
82W01078	8580	Ironwood Trl. N.	4/18/2005 7/13/2005	0.644 0.9	0.93 0.7
82W01079	8592	Ironwood Trl. N.	4/15/2005	ND	ND
82W01080	8603	Ironwood Trl. N.	4/15/2005	ND	ND
82W01081	8618	Ironwood Trl. N.	4/15/2005	ND	ND
82W01082	8628	Ironwood Trl. N.	4/15/2005	0.408	0.746
82W01083	8633	Ironwood Trl. N.	4/15/2005	ND	ND
424136	8650	Ironwood Trl. N.	3/8/2005	0.296	0.302
82W01084	8652	Ironwood Trl. N.	4/15/2005	ND	ND
82W01085	8657	Ironwood Trl. N.	4/14/2005	ND	ND
82W01086	8674	Ironwood Trl. N.	4/14/2005	ND	ND
82W01087	8690	Ironwood Trl. N.	4/15/2005 (inside)	ND	ND
82W01088	8695	Ironwood Trl. N.	4/15/2005	0.545	0.86
82W01089	8702	Ironwood Trl. N.	4/15/2005	0.402	0.693
82W01090	8716	Ironwood Trl. N.	4/15/2005	0.286	0.668
110434	8722	Ironwood Trl. N.	4/15/2005	0.513	0.858
82W01091	8725	Ironwood Trl. N.	4/15/2005	ND	ND
82W01092	8748	Ironwood Trl. N.	4/14/2005	ND	ND
82W01093	8772	Ironwood Trl. N.	4/15/2005	0.482	0.713
82W01094	8775	Ironwood Trl. N.	4/15/2005	ND	ND
82W01095	8780	Ironwood Trl. N.	4/15/2005	ND	ND
82W01096	8785	Ironwood Trl. N.	4/15/2005	ND	ND
82W01097	2811	Irish Ave. N.	4/15/2005	ND	ND
671999	2770	Irish Ave. N.	4/15/2005	ND	ND
82W01099	2759	Irish Ave. N.	4/15/2005 7/13/2005	0.143 0.2	ND 0.3

585145	2895	Imperial Ave. N	3/8/2005	0.257	0.323
575148	2890	Imperial Ave. N.	4/13/2005	ND	ND
588139	2850	Imperial Ave. N.	4/13/2005	ND	ND
576160	2841	Imperial Ave. N	3/8/2005	0.351	ND
614269	2769	Imperial Ave. N.	4/13/2005	ND	ND
609537	2760	Imperial Ave. N.	4/13/2005	ND	ND
598819	2811	Imperial Ave. N.	4/13/2005	0.264	ND
617699	2696	Imperial Ave. N.	5/16/2005	ND	ND
678196	2699	Imperial Ave. N.	5/16/2005	0.2	ND
606937	2677	Imperial Ave. N.	5/16/2005	ND	ND
607488	2678	Imperial Ave. N.	5/16/2005	ND	ND
569982	2655	Imperial Ave. N.	5/16/2005	ND	ND
554316	2656	Imperial Ave. N.	5/16/2005	ND	ND
569782	2618	Imperial Ave. N	3/8/2005	ND	ND
569978	2580	Imperial Ave. N.	5/16/2005	ND	ND
82W01100	8623	28th St. N.	4/15/2005	ND	ND
82W01101	8643	28th St. N.	5/16/2005	0.2	ND
82W01102	8648	28th St. N.	4/14/2005	ND	ND
82W01103	8687	28th St. N.	4/15/2005	ND	ND
446288	9043	28th St. N.	5/16/2005	ND	ND
82W01125	9049	28th St. N.	5/16/2005	ND	ND
82W01126	9065	28th St. N.	5/16/2005	ND	ND
82W01127	9079	28th St. N.	5/16/2005	ND	ND
82W01128	9155	28th St. N.	5/16/2005	ND	ND
511739	8244	27th St. N.	4/15/2005	ND	ND
457680	8247	27th St. N.	4/15/2005	ND	ND
465954	8282	27th St. N.	4/15/2005	ND	ND
440589	8301	27th St. N.	4/15/2005	ND	ND
196939	8310	27th St. N.	4/15/2005	0.733	0.863
			7/13/2005	0.3	0.2
442140	8341	27th St. N.	4/15/2005	ND	ND
82W01104	8352	27th St. N.	4/15/2005	ND	ND
440577	8375	27th St. N.	4/15/2005	ND	ND
503288	8478	27th St. N.	4/15/2005	ND	ND
453250	8483	27th St. N.	4/15/2005	ND	ND
670740	8555	27th St. N.	4/15/2005	0.857	1.232
			7/13/2005 - GAC	ND	ND
700594	8570	27th St. N.	4/14/2005	ND	ND
670739	8605	27th St. N.	4/14/2005	0.899	1.052
			6/23/2005	ND	ND
679966	8623	27th St. N.	4/15/2005	ND	ND
82W01106	8639	27th St. N.	4/14/2005	ND	ND
82W01107	8644	27th St. N.	4/14/2005	0.416	0.686
82W01108	8650	27th St. N.	4/14/2005	0.813	0.884
			7/13/2005	0.9	0.7

82W01109	8655	27th St. N.	4/22/2005	0.214	ND
82W01110	8656	27th St. N.	4/14/2005	ND	ND
82W01111	8685	27th St. N.	4/14/2005	ND	ND
82W01112	8709	27th St. N.	4/14/2005	ND	ND
82W01113	8715	27th St. N.	4/14/2005	0.356	0.675
415659	8735	27th St. N.	4/14/2005	ND	ND
176046	8755	27th St. N.	4/14/2005	ND	ND
194159	8785	27th St. N.	4/14/2005	ND	ND
176036	8815	27th St. N.	4/14/2005	0.386	ND
174267	8845	27th St. N.	4/14/2005	0.709	0.708
			7/13/2005	0.7	0.4
82W01114	8875	27th St. N.	4/14/2005	0.414	0.582
82W01115	8905	27th St. N.	4/14/2005	0.488	ND
173927	8925	27th St. N.	4/14/2005	0.454	ND

176020	8770	27th St. Ct. N.	4/14/2005	ND	ND
82W01117	8780	27th St. Ct. N.	4/14/2005	ND	ND
176049	8790	27th St. Ct. N.	4/14/2005	ND	ND
182679	8800	27th St. Ct. N.	4/14/2005	0.301	ND
173925	8810	27th St. Ct. N.	4/14/2005	ND	ND
185945	8820	27th St. Ct. N.	4/14/2005	0.357	ND
162931	8830	27th St. Ct. N.	4/15/2005	0.727	0.697
			7/13/2005	1.2	0.5
187000	8840	27th St. Ct. N.	4/14/2005	0.608	ND
173938	8850	27th St. Ct. N.	4/18/2005	0.711	0.887
			7/13/2005	0.5	0.6
182731	8860	27th St. Ct. N.	4/14/2005	0.65	ND

577036	8119	26th St. N.	5/16/2005	ND	ND
616945	8154	26th St. N.	5/16/2005	ND	ND
554311	8165	26th St. N.	5/16/2005	ND	ND
598818	8215	26th St. N.	5/16/2005	ND	ND
590036	8281	26th St. N.	5/23/2005	ND	ND
577037	8284	26th St. N.	5/16/2005	ND	ND
588140	8364	26th St. N.	5/16/2005	0.2	ND
569984	8367	26th St. N.	5/16/2005	ND	ND
582669	8454	26th St. N.	5/16/2005	ND	ND
587849	8457	26th St. N.	5/16/2005	ND	ND

590079	8042	22nd St. Ct. N.	3/7/2005	ND	ND
656705	8125	22nd St. N.	3/8/2005	ND	ND
597121	8382	22nd St. N.	5/16/2005	ND	ND
641705	8414	22nd St. N.	5/16/2005	ND	ND

641458	1873	Ivory Ave. N.	5/16/2005	ND	ND
633298	1849	Ivory Ave. N.	5/16/2005	ND	ND
637433	1827	Ivory Ave. N.	5/16/2005	ND	ND

633269	1805	Ivory Ave. N.	5/16/2005	ND	ND
633266	1779	Ivory Ave. N.	5/16/2005	ND	ND
628276	1757	Ivory Ave. N.	5/16/2005	ND	ND
622311	1743	Ivory Ave. N.	5/16/2005	ND	ND
623865	1709	Ivory Ave. N.	6/13/2005	0.2	0.2
633264	1694	Ivory Ave. N.	6/13/2005	ND	ND
645610	1697	Ivory Ave. N.	6/13/2005	ND	ND
628279	1680	Ivory Ave. N.	6/13/2005	ND	ND
633276	1681	Ivory Ave. N.	6/13/2005	ND	ND
637406	1668	Ivory Ave. N.	6/13/2005	ND	ND
615494	1663	Ivory Ave. N.	6/13/2005	ND	ND

658982	1696	Ivy Ave. N.	5/16/2005	0.2	ND
82W01147	1683	Ivy Ave. N.	6/13/2005	ND	ND
672580	1665	Ivy Ave. N.	6/13/2005	ND	ND
658960	1634	Ivy Ave. N.	6/13/2005	ND	ND

478956	8281	15th St. N.	3/8/2005	ND	ND
512491	8280	15th St. N.	3/8/2005	ND	ND

3M Cottage Grove Plant

Both the State and 3M have sampled the water supply to Building 116 at the Cottage Grove facility, which comes from site groundwater wells. Exygen conducted the fluorochemical analysis for 3M, and MDH conducted the analysis for the State.

Building 116 Sampling Results for May 16, 2003 Exygen Results

Sample ID	PFOS (ug/L or parts per billion)	PFOA (ug/L or parts per billion)
Bldg 116 Outlet	0.596	5.29
Bldg 116 Outlet*	0.517	5.58

ND = Not detected = Response between 0 and 0.025 ug/L

NQ = Not quantifiable = Response between 0.025 ug/L and LOQ (0.050 ug/L)

*Laboratory Duplicate

Building 116 Sampling Results for December 7, 2004
Exygen Results

Sample ID	PFOS (ug/L or parts per billion)	PFOA (ug/L or parts per billion)
Effluent	ND	ND
Effluent*	ND	ND
Effluent Dup	ND	ND

ND = Not detected = Response between 0 and 0.025 ug/L

NQ = Not quantifiable = Response between 0.025 ug/L and LOQ (0.050 ug/L)

*Laboratory Duplicate

Building 116 Sampling Results for February 14, 2005
MDH Results, ug/L or parts per billion

Sample ID	Field ID	PFOS		PFOA	
		Measured Value (ug/L)	Reported Level (ug/L)	Measured Value (ug/L)	Reported Level (ug/L)
200502990	05-173 final	0.0	< 0.5	0.0	<1.0

Note: The reporting level is 0.5 ppb for PFOS and 1.0 ppb for PFOA.

Building 116 Sampling Results for June 6, 2005
Exygen Results
ug/L or parts per billion

Sample ID	PFOS (ug/L)	PFOA (ug/L)
Effluent	ND	ND
Effluent*	ND	ND
Effluent Dup	ND	ND

ND = Not detected = Response between 0 and 0.025 ug/L

NQ = Not quantifiable = Response between 0.025 ug/L and LOQ (0.050 ug/L)

*Laboratory Duplicate

3M has tested a well at the site of a Trap Range on the Cottage Grove site which may occasionally have been used for drinking water. Results from August 17, 2001 sampling showed

non-quantifiable levels of PFOS at a limit of quantitation of 0.025 ug/L. PFOA was measured at 0.541 ug/L (parts per billion), with 0.0565 ug/L in the laboratory duplicate and 0.0571 ug/L in the field duplicate.

Private Wells Near Cottage Grove Facility

MDH also sampled several private wells east of the 3M Cottage Grove facility. This work was done by MDH and is referenced in its Site Consultation Report concerning the facility. 3M has not located any copy of the MDH data; however, the Site Consultation Report (which Plaintiffs have) at page 17 indicates that neither PFOA nor PFOS was detected in those wells.

Woodbury

MDH tested Woodbury municipal wells numbers 10-15 sampled on January 27, 2005, and found no detectable PFOS or PFOA.

MDH sampled a number of private wells in Woodbury and provided 3M with the following results:

Woodbury June 15-16, 2005 Sampling Results
ug/L or parts per billion

Sample ID	Field ID		PFOS		PFOA	
			Measured Value	Reported Value (ppb)	Measured Value	Reported Value (ppb)
200515731	233142		0.0000	< 0.5	0.0000	< 1.0
200515732	408198		0.0000	< 0.5	0.0000	< 1.0
200515733	406171		0.0000	< 0.5	0.0000	< 1.0
200515734	151763		0.0000	< 0.5	0.0000	< 1.0
200515735	440575		0.0000	< 0.5	0.0000	< 1.0

200515736	544438		0.0000	< 0.5	0.0000	< 1.0
200515737	641472		0.0000	< 0.5	0.0000	< 1.0
200515738	TB1SW001	trip blank	0.0000	< 0.5	0.0000	< 1.0
200515739	427043		0.0000	< 0.5	0.0000	< 1.0
200515740	471471		0.0000	< 0.5	0.0000	< 1.0
200515741	460152		0.0000	< 0.5	0.0000	< 1.0
200515742	402592		0.0000	< 0.5	0.0000	< 1.0
200515743	698214		0.0000	< 0.5	0.0000	< 1.0
200515744	109708		0.0000	< 0.5	0.0000	< 1.0
200515745	109738		0.0000	< 0.5	0.0000	< 1.0
200515746	162915		0.0000		0.0000	
(duplicate)			0.0000	< 0.5	0.0000	< 1.0

Note:

1. The reporting level is 0.5 ppb for PFOS and 1.0 ppb for PFOA.
2. One sample (200515746) is measured twice and performed duplicate matrix spike measurement.

City of Hastings

3M analyzed a number of samples from the municipal wells of the City of Hastings and found no measurable levels of PFOA or PFOS.

Hastings December 22, 2004 Sampling Results ug/L or parts per billion

Sample ID	PFOS (ug/L)	PFOA (ug/L)
H-W6-207643	NQ	ND
H-W6-207643*	NQ	ND
H-W4-207993	ND	ND
H-W4-207993*	ND	ND
H-W5-207639	ND	ND
H-W5-207639*	ND	ND
H-W3-206333	ND	ND
H-W3-206333*	ND	ND
H-W7-509053	ND	ND
H-W7-509053*	ND	ND

ND = Not detected = Response between 0 and 0.025 ug/L

NQ = Not quantifiable = Response between 0.025 ug/L and LOQ (0.050 ug/L)

*Laboratory Duplicate

Hastings February 28, 2005 Sampling Results
ug/L or parts per billion

Sample ID	PFOS (ug/L)	PFOA (ug/L)
H-W6-207643	ND	ND
H-W6-207643*	ND	ND

ND = Not detected = Response between 0 and 0.025 ug/L

NQ = Not quantifiable = Response between 0.025 ug/L and LOQ (0.050 ug/L)

*Laboratory Duplicate

City of Cottage Grove

3M analyzed a number of samples from the municipal wells of the City of Cottage Grove and found no detectable levels of PFOA or PFOS.

Cottage Grove December 22 and 29, 2004 Sampling Results
ug/L or parts per billion

Sample ID	PFOS (ug/L)	PFOA (ug/L)
CG-W6-201238	ND	ND
CG-W6-201238*	ND	ND
CG-W9-165602	ND	ND
CG-W9-165602*	ND	ND
CG-W5-208806	ND	ND
CG-W5-208806*	ND	ND
CG-W3-208807	ND	ND
CG-W3-208807*	ND	ND
CG-W7-201227	ND	ND
CG-W7-201227*	ND	ND
CG-W8-110464	ND	ND
CG-W8-110464*	ND	ND
CG-W11-655944	ND	ND
CG-W11-655944*	ND	ND
CG-W10-191904	ND	ND
CG-W10-191904*	ND	ND
CG-W2-208809	ND	ND

CG-W2-208809*	ND	ND
CG-W1-208808	ND	ND
CG-W1-208808*	ND	ND

ND = Not detected = Response between 0 and 0.025 ug/L

NQ = Not quantifiable = Response between 0.025 ug/L and LOQ (0.050 ug/L)

*Laboratory Duplicate

City of North St. Paul

MDH has informed 3M of the results of MDH samples collected from the City of North St. Paul on January 27, 2005. The analyses show no detectable PFOA or PFOS.

North St. Paul January 27, 2005 Sampling Results ug/L or parts per billion

Sample ID	PFOS (ug/L)	PFOA (ug/L)
200501452 (Well 3)	ND	ND
200501453 (Well 4)	ND	ND

ND = < 0.5 ug/L

Objections:

3M objects to Interrogatory No. 3 as overly broad and not reasonably calculated to lead to the discovery of admissible evidence to the extent it seeks information about drinking water supplies in Wisconsin or PFCs other than PFOA and PFOS.

Exhibit D

AXYS METHOD MLA-042 Rev 03

PFOS_S1_D12

Form 1A/2

CLIENT ID:

PERFLUORINATED ORGANICS ANALYSIS REPORT

Sample Collection: 16-Jun-2005 18:15

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.: 4191

Lab Sample ID: L7909-1 Y2

Matrix: N/A

Sample Size: 1.00 mL

Sample Receipt date: 22-Jun-2005

Initial Calibration Date: 13-Sep-2005

Extraction Date: 06-Sep-2005

Instrument ID: LC-MS/MS

Analysis Date: 13-Sep-2005 Time: 8:38:26

LC Column ID: C18

Extract Volume (mL): 2

Sample Datafile: FC5G_168S017

Injection Volume (µL): 30.0

Blank Data Filename: FC5G_168S015

Dilution Factor: N/A

Cal. Ver. Data Filename: FC5G_168S010
CAL VER ID: PFC-LIN-048CS-F

Concentration Units : ng/mL

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	U		0.256	
PFHxA	U		0.248	
PFHpA		0.410	0.251	4.27
PFOA	U		0.247	
PFNA	U		0.268	
PFDA	U		0.259	
PFUnA	U		0.257	
PFDoA	U		0.255	
PFBS		0.291	0.254	3.77
PFHxS	U		0.255	
PFOS	U		0.258	
PFOSA	U		0.250	

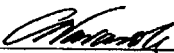
LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA		12.0	3.99	33.2	4.70
13C4-PFOS(80)		12.0	6.03	50.3	5.56
13C4-PFOS(99)		12.0	4.77	39.7	5.56
13C2-PFDA		12.0	10.7	88.9	5.41

(1) U = not detected

(2) R (%) = Percent recovery

16814PFD3_2.xls, S4

Approved by: _____



QA/QC Chemist

11-10-2005
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 02

PFOS_S1_D12

Form 1A/2

CLIENT ID:

PERFLUORINATED ORGANICS ANALYSIS REPORT

Sample Collection: 28-Jun-2005 10:27

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-1
Matrix:	SERUM	Sample Size:	1.00 mL
Sample Receipt Date:	29-Jun-2005	Initial Calibration Date:	05-Aug-2005
Extraction Date:	04-Aug-2005	Instrument ID:	LC-MS/MS
Analysis Date:	05-Aug-2005	Time:	21:17:29
LC Column ID:	C18, Zorbax XDB	Sample data Filename:	FC5G_131S040
Extract Volume (mL):	2	Blank data Filename:	FC5G_131S024
Injection Volume (µL):	30.0	Cal. Ver. data Filename:	FC5G_131S037
Dilution Factor:	N/A	CAL VER ID:	PFC-LIN-039CS-F
Concentration Units :	ng/mL		

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	U		0.638	
PFHxA	U		0.620	
PFHpA	U		0.251	
PFOA		30.9	0.247	4.70
PFNA		2.60	0.268	5.07
PFDA		0.510	0.259	5.38
PFUnA		0.290	0.256	5.67
PFDoA	U		0.255	
PFBS	U		0.254	
PFHxS		6.03	0.255	4.90
PFOS		88.6	0.258	5.50
PFOSA	U		0.250	

LABELLED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C-PFOA		12.0	7.69	64.1	4.70
13C-PFDA		12.0	10.3	85.8	5.34

(1) U = not detected

(2) R (%) = Percent recovery

16535PFD2_2.xls, S2

Approved by: Chavante QA/QC Chemist11-10-2005
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 02
PFOS_S1_D12

Form 1A/2
PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT ID:

Sample Collection: 28-Jun-2005 10:30

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-2
Matrix:	SERUM	Sample Size:	1.00 mL
Sample Receipt Date:	29-Jun-2005	Initial Calibration Date:	05-Aug-2005
Extraction Date:	04-Aug-2005	Instrument ID:	LC-MS/MS
Analysis Date:	05-Aug-2005	Time:	21:42:08
LC Column ID:	C18, Zorbax XDB	Sample Datafile:	FC5G_131S042
Extract Volume (mL):	2	Blank Data Filename:	FC5G_131S024
Injection Volume (µL):	30.0	Cal. Ver. Data Filename:	FC5G_131S037
Dilution Factor:	N/A	CAL VER ID:	PFC-LIN-039CS-F
Concentration Units :	ng/mL		

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	U		0.638	
PFHxA	U		0.620	
PFHpA	U		0.251	
PFOA		24.2	0.247	4.70
PFNA		1.48	0.268	5.07
PFDA	U		0.259	
PFUnA	U		0.256	
PFDoA	U		0.255	
PFBS	U		0.254	
PFHxS		6.23	0.255	4.90
PFOS		38.0	0.258	5.50
PFOSA	U		0.250	

LABELLED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C-PFOA		12.0	8.09	67.4	4.70
13C-PFDA		12.0	11.2	93.0	5.34

(1) U = not detected
(2) R (%) = Percent recovery

16535PFD2_2.xls, S4

Approved by: *Chenard* QA/QC Chemist

11-10-2005
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 02
PFOS_S1_D12

Form 1A/2
PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT ID:

Sample Collection: 01-Jul-2005 13:03

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-4
Matrix:	SERUM	Sample Size:	1.00 mL
Sample Receipt Date:	06-Jul-2005	Initial Calibration Date:	05-Aug-2005
Extraction Date:	04-Aug-2005	Instrument ID:	LC-MS/MS
Analysis Date:	05-Aug-2005	Time:	21:54:26
		LC Column ID:	C18, Zorbax XDB
Extract Volume (mL):	2	Sample Datafile:	FC5G_131S043
Injection Volume (µL):	30.0	Blank Data Filename:	FC5G_131S024
Dilution Factor:	N/A	Cal. Ver. Data Filename:	FC5G_131S037
		CAL VER ID:	PFC-LIN-039CS-F
Concentration Units :	ng/mL		

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	U		0.638	
PFHxA	U		0.620	
PFHpA	U		0.251	
PFOA		9.25	0.247	4.66
PFNA		1.40	0.268	5.01
PFDA	U		0.259	
PFUnA	U		0.256	
PFDoA	U		0.255	
PFBS	U		0.254	
PFHxS		2.53	0.255	4.90
PFOS		28.4	0.258	5.50
PFOSA	U		0.250	

LABELLED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C-PFOA		12.0	8.14	67.9	4.66
13C-PFDA		12.0	10.7	88.8	5.34

(1) U = not detected

(2) R (%) = Percent recovery

16535PFD2_2.xls, S5

Approved by:



QA/QC Chemist

11-10-2005
dd-mm-yyyy



AXYS ANALYTICAL SERVICES LTD

P.O. BOX 2219, 2045 MILLS RD. WEST, SIDNEY, B.C., CANADA V8L 3S8 TEL (250) 655-5800 FAX (250) 655-5811

AXYS METHOD MLA-042 Rev 02

PFOS_S1_D12

Form 1A/2

CLIENT ID:

PERFLUORINATED ORGANICS ANALYSIS REPORT

Sample Collection: 08-Aug-2005 11:41

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-16 Y2 (A)	
Matrix:	SERUM	Sample Size:	1.00 mL	
Sample Receipt date:	10-Aug-2005	Initial Calibration Date:	12-Sep-2005	
Extraction Date:	29-Aug-2005	Instrument ID:	LC-MS/MS	
Analysis Date:	12-Sep-2005	Time: 18:50:23	LC Column ID:	C18
Extract Volume (mL):	2	Sample Datafile:	FC5G_167S033	
Injection Volume (µL):	30.0	Blank Data Filename:	FC5G_167S031	
Dilution Factor:	N/A	Cal. Ver. Data Filename:	FC5G_167S027	
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-044CS-F	

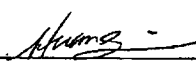
COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	U		0.256	
PFHxA	U		0.248	
PFHpA		0.753	0.251	4.22
PFOA	E			
PFNA		0.967	0.268	5.05
PFDA		0.417	0.259	5.41
PFUnA		0.273	0.257	5.70
PFDoA	U		0.255	
PFBS	U		2.54	
PFHxS		17.3	2.55	4.87
PFOS		85.9	0.258	5.51
PFOSA	U		0.250	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA		12.0	11.3	94.5	4.70
13C4-PFOS(80)		12.0	12.8	107	5.56
13C4-PFOS(99)		12.0	11.9	99.2	5.56
13C2-PFDA		12.0	12.0	100	5.36

(1) U = not detected; E = exceeds calibrated linear range, see dilution data

(2) R (%) = Percent recovery

16755PF_D1_2.xls, S4

Approved by:  QA/QC Chemist11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 02

PFOS_S1_D12

Form 1A/2

CLIENT ID:

PERFLUORINATED ORGANICS ANALYSIS REPORT

Sample Collection: 09-Aug-2005 11:41

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	WG16755-104 Y2 (DUP L7932-16)	
Matrix:	SERUM	Sample Size:	1.00 mL	
Sample Receipt date:	10-Aug-2005	Initial Calibration Date:	12-Sep-2005	
Extraction Date:	29-Aug-2005	Instrument ID:	LC-MS/MS	
Analysis Date:	12-Sep-2005	Time: 19:04:39	LC Column ID:	C18
Extract Volume (mL):	2	Sample Datafile:	FC5G_167S034	
Injection Volume (µL):	30.0	Blank Data Filename:	FC5G_167S031	
Dilution Factor:	N/A	Cal. Ver. Data Filename:	FC5G_167S027	
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-044CS-F	

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	U		0.256	
PFHxA	U		0.248	
PFHpA		0.945	0.251	4.22
PFOA	E			
PFNA		1.37	0.268	5.05
PFDA		0.439	0.259	5.36
PFUnA	U		0.257	
PFDoA	U		0.255	
PFBS	U		2.54	
PFHxS		14.5	2.55	4.87
PFOS		79.8	0.258	5.51
PFOSA	U		0.250	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA		12.0	11.7	97.7	4.70
13C4-PFOS(80)		12.0	14.2	118	5.56
13C4-PFOS(99)		12.0	13.7	114	5.56
13C2-PFDA		12.0	14.3	119	5.36

(1) U = not detected; E = exceeds calibrated linear range, see dilution data

(2) R (%) = Percent recovery

16755PF_D1_2.xls, S5

Approved by: _____



QA/QC Chemist

11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 02
PFOS_S1_D12

Form 1A/2
PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT ID:

Sample Collection: 08-Aug-2005 11:41

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	WG16755-104 Y2i (DUP L7932-16 Y2i (A))
Matrix:	SERUM	Sample Size:	1.00 mL
Sample Receipt date:	10-Aug-2005	Initial Calibration Date:	12-Sep-2005
Extraction Date:	29-Aug-2005	Instrument ID:	LC-MS/MS
Analysis Date:	13-Sep-2005	Time:	1:43:59
LC Column ID:	C18	Sample Datafile:	FC5G_167S062
Extract Volume (mL):	2	Blank Data Filename:	FC5G_167S031
Injection Volume (µL):	10.0	Cal. Ver. Data Filename:	FC5G_167S059
Dilution Factor:	3	CAL VER ID:	PFC-LIN-044CS-F
Concentration Units :	ng/mL		

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA				
PFHxA				
PFHpA				
PFOA	D	89.1	0.741	4.70
PFNA				
PFDA				
PFUnA				
PFDoA				
PFBS				
PFHxS				
PFOS				
PFOSA				

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA	D	12.0	11.5	95.8	4.70
13C4-PFOS(80)					
13C4-PFOS(99)					
13C2-PFDA					

(1) U = not detected; D = dilution data
(2) R (%) = Percent recovery

16755PF_D3_2.xls, S3

Approved by: _____



QA/QC Chemist

11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 02

PFOS_S1_D12

Form 1A/2

CLIENT ID:

PERFLUORINATED ORGANICS ANALYSIS REPORT

Sample Collection: 08-Aug-2005 11:41

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.: 4191

Lab Sample ID: L7932-16 Y2i (A)

Matrix: SERUM

Sample Size: 1.00 mL

Sample Receipt date: 10-Aug-2005

Initial Calibration Date: 12-Sep-2005

Extraction datae: 29-Aug-2005

Instrument ID: LC-MS/MS

Analysis datae: 13-Sep-2005 Time: 1:29:43

LC Column ID: C18

Extract Volume (mL): 2

Sample data Filename: FC5G_167S061

Injection Volume (µL): 10.0

Blank data Filename: FC5G_167S031

Dilution Factor: 3

Cal. Ver. data Filename: FC5G_167S059

Concentration Units : ng/mL

CAL VER ID: PFC-LIN-044CS-F

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA				
PFHxA				
PFHpA				
PFOA	D	95.1	0.741	4.70
PFNA				
PFDA				
PFUnA				
PFDoA				
PFBS				
PFHxS				
PFOS				
PFOSA				

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA	D	12.0	9.79	81.6	4.70
13C4-PFOS(80)					
13C4-PFOS(99)					
13C2-PFDA					

(1) U = not detected; D = dilution data

(2) R (%) = Percent recovery

16755PF_D3_2.xls, S2

Approved by: _____



QA/QC Chemist

11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 02
PFOS_S1_D12

Form 1A/2
PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT ID:

Sample Collection: 08-Aug-2005 13:31

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-17 Y2	
Matrix:	SERUM	Sample Size:	1.00 mL	
Sample Receipt date:	10-Aug-2005	Initial Calibration Date:	12-Sep-2005	
Extraction Date:	29-Aug-2005	Instrument ID:	LC-MS/MS	
Analysis Date:	12-Sep-2005	Time: 19:18:55	LC Column ID:	C18
Extract Volume (mL):	2	Sample Datafile:	FC5G_167S035	
Injection Volume (µL):	30.0	Blank Data Filename:	FC5G_167S031	
Dilution Factor:	N/A	Cal. Ver. Data Filename:	FC5G_167S027	
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-044CS-F	

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	U		0.256	
PFHxA	U		0.248	
PFHpA		0.367	0.251	4.22
PFOA		42.4	0.247	4.70
PFNA		1.07	0.268	5.05
PFDA	U		0.259	
PFUnA	U		0.257	
PFDoA	U		0.255	
PFBS	U		2.54	
PFHxS		12.9	2.55	4.87
PFOS		51.1	0.258	5.56
PFOSA	U		0.250	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA		12.0	10.8	90.2	4.70
13C4-PFOS(80)		12.0	11.5	95.7	5.56
13C4-PFOS(99)		12.0	12.5	104	5.56
13C2-PFDA		12.0	12.8	107	5.41

- (1) U = not detected
(2) R (%) = Percent recovery

16755PF_D1_2.xls, S6

Approved by: _____

QA/QC Chemist

11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 02

PFOS_S1_D12

Form 1A/2

CLIENT ID:

PERFLUORINATED ORGANICS ANALYSIS REPORT

Sample Collection: 08-Aug-2005 13:17

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-19 Y2	
Matrix:	SERUM	Sample Size:	1.00 mL	
Sample Receipt date:	10-Aug-2005	Initial Calibration Date:	12-Sep-2005	
Extraction Date:	29-Aug-2005	Instrument ID:	LC-MS/MS	
Analysis Date:	12-Sep-2005	Time: 19:47:27	LC Column ID:	C18
Extract Volume (mL):	2	Sample Datafile:	FC5G_167S037	
Injection Volume (µL):	30.0	Blank Data Filename:	FC5G_167S031	
Dilution Factor:	N/A	Cal. Ver. Data Filename:	FC5G_167S027	
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-044CS-F	

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	U		0.256	
PFHxA	U		0.248	
PFHpA		0.276	0.251	4.22
PFOA		43.5	0.247	4.70
PFNA		1.03	0.268	5.05
PFDA		0.315	0.259	5.41
PFUnA	U		0.257	
PFDoA	U		0.255	
PFBS	U		2.54	
PFHxS		10.6	2.55	4.87
PFOS		51.4	0.258	5.56
PFOSA	U		0.250	

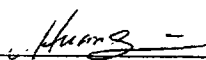
LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA		12.0	10.1	84.1	4.70
13C4-PFOS(80)		12.0	12.2	102	5.56
13C4-PFOS(99)		12.0	12.0	99.8	5.56
13C2-PFDA		12.0	12.3	103	5.41

(1) U = not detected

(2) R (%) = Percent recovery

16755PF_D1_2.xls, S8

Approved by: _____



QA/QC Chemist

11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 02

PFOS_S1_012

Form 1A/2

CLIENT ID:

PERFLUORINATED ORGANICS ANALYSIS REPORT

Sample Collection: 08-Aug-2005 13:10

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.: 4191

Lab Sample ID: L7932-20 Y2

Matrix: SERUM

Sample Size: 1.00 mL

Sample Receipt date: 10-Aug-2005

Initial Calibration Date: 12-Sep-2005

Extraction Date: 29-Aug-2005

Instrument ID: LC-MS/MS

Analysis Date: 12-Sep-2005 Time: 20:01:42

LC Column ID: C18

Extract Volume (mL): 2

Sample Datafile: FC5G_167S038

Injection Volume (µL): 30.0

Blank Data Filename: FC5G_167S031

Dilution Factor: N/A

Cal. Ver. Data Filename: FC5G_167S027

Concentration Units : ng/mL

CAL VER ID: PFC-LIN-044CS-F

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	U		0.256	
PFHxA	U		0.248	
PFHpA	U		0.251	
PFOA		63.3	0.247	4.70
PFNA		1.55	0.268	5.05
PFDA		0.331	0.259	5.36
PFUnA	U		0.257	
PFDoA	U		0.255	
PFBS	U		2.54	
PFHxS		17.0	2.55	4.87
PFOS		76.7	0.258	5.51
PFOSA	U		0.250	

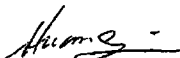
LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA		12.0	10.3	85.6	4.70
13C4-PFOS(80)		12.0	10.8	89.8	5.56
13C4-PFOS(99)		12.0	11.5	95.6	5.56
13C2-PFDA		12.0	11.1	92.3	5.36

(1) U = not detected

(2) R (%) = Percent recovery

16755PF_D1_2.xls, S9

Approved by: _____



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11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 02
PFOS_S1_D12

Form 1A/2
PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT ID:

Sample Collection: 08-Aug-2005 13:14

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-21 Y2
Matrix:	SERUM	Sample Size:	1.00 mL
Sample Receipt date:	10-Aug-2005	Initial Calibration Date:	12-Sep-2005
Extraction Date:	29-Aug-2005	Instrument ID:	LC-MS/MS
Analysis Date:	12-Sep-2005	Time:	20:15:59
LC Column ID:	C18	Sample Datafile:	FC5G_167S039
Extract Volume (mL):	2	Blank Data Filename:	FC5G_167S031
Injection Volume (µL):	30.0	Cal. Ver. Data Filename:	FC5G_167S027
Dilution Factor:	N/A	CAL VER ID:	PFC-LIN-044CS-F
Concentration Units :	ng/mL		

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	U		0.256	
PFHxA	U		0.248	
PFHpA	U		0.251	
PFOA		48.4	0.247	4.70
PFNA		0.626	0.268	5.05
PFDA	U		0.259	
PFUnA	U		0.257	
PFDoA	U		0.255	
PFBS	U		2.54	
PFHxS		11.9	2.55	4.87
PFOS		71.9	0.258	5.51
PFOSA	U		0.250	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA		12.0	10.9	90.7	4.70
13C4-PFOS(80)		12.0	14.0	117	5.56
13C4-PFOS(99)		12.0	12.9	108	5.56
13C2-PFDA		12.0	14.6	122	5.41

(1) U = not detected

(2) R (%) = Percent recovery

16755PF_D1_2.xls, S10

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[Signature]

QA/QC Chemist

11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 02

PFOS_S1_D12

Form 1A/2

CLIENT ID:

PERFLUORINATED ORGANICS ANALYSIS REPORT

Sample Collection: 11-Aug-2005 10:56

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-24 Y2	
Matrix:	SERUM	Sample Size:	1.00 mL	
Sample Receipt date:	12-Aug-2005	Initial Calibration Date:	12-Sep-2005	
Extraction Date:	29-Aug-2005	Instrument ID:	LC-MS/MS	
Analysis Date:	12-Sep-2005	Time: 20:44:30	LC Column ID:	C18
Extract Volume (mL):	2	Sample Datafile:	FC5G_167S041	
Injection Volume (µL):	30.0	Blank Data Filename:	FC5G_167S031	
Dilution Factor:	N/A	Cal. Ver. Data Filename:	FC5G_167S027	
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-044CS-F	

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	U		0.256	
PFHxA	U		0.248	
PFHpA		0.321	0.251	4.22
PFOA		10.7	0.247	4.70
PFNA		0.877	0.268	5.05
PFDA		0.458	0.259	5.36
PFUnA		0.415	0.257	5.70
PFDoA	U		0.255	
PFBS	U		2.54	
PFHxS	U		2.55	
PFOS		23.1	0.258	5.56
PFOSA	U		0.250	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA		12.0	10.9	90.5	4.70
13C4-PFOS(80)		12.0	12.3	103	5.56
13C4-PFOS(99)		12.0	13.0	108	5.56
13C2-PFDA		12.0	12.4	103	5.36

(1) U = not detected

(2) R (%) = Percent recovery

16755PF_D1_2.xls, S12

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11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 02

PFOS_S1_D12

Form 1A/2

CLIENT ID:

PERFLUORINATED ORGANICS ANALYSIS REPORT

Sample Collection: 11-Aug-2005 10:59

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-25 Y2	
Matrix:	SERUM	Sample Size:	1.00 mL	
Sample Receipt date:	12-Aug-2005	Initial Calibration Date:	12-Sep-2005	
Extraction Date:	29-Aug-2005	Instrument ID:	LC-MS/MS	
Analysis Date:	12-Sep-2005	Time: 20:58:46	LC Column ID:	C18
Extract Volume (mL):	2	Sample Datafile:	FC5G_167S042	
Injection Volume (µL):	30.0	Blank Data Filename:	FC5G_167S031	
Dilution Factor:	N/A	Cal. Ver. Data Filename:	FC5G_167S027	
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-044CS-F	

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	U		0.256	
PFHxA	U		0.248	
PFHpA		0.373	0.251	4.22
PFOA		17.1	0.247	4.70
PFNA		0.848	0.268	5.05
PFDA		0.498	0.259	5.36
PFUnA		0.398	0.257	5.70
PFDoA	U		0.255	
PFBS	U		2.54	
PFHxS		3.76	2.55	4.87
PFOS		20.1	0.258	5.51
PFOSA	U		0.250	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA		12.0	10.1	84.2	4.70
13C4-PFOS(80)		12.0	11.9	98.9	5.56
13C4-PFOS(99)		12.0	13.6	114	5.51
13C2-PFDA		12.0	12.5	104	5.36

(1) U = not detected

(2) R (%) = Percent recovery

16755PF_D1_2.xls, S13

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QA/QC Chemist

11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 02

PFOS_S1_D12

Form 1A/2

CLIENT ID:

PERFLUORINATED ORGANICS ANALYSIS REPORT

Sample Collection: 11-Aug-2005 12:31

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-23 Y2	
Matrix:	SERUM	Sample Size:	1.00 mL	
Sample Receipt date:	12-Aug-2005	Initial Calibration Date:	12-Sep-2005	
Extraction Date:	29-Aug-2005	Instrument ID:	LC-MS/MS	
Analysis Date:	12-Sep-2005	Time: 20:30:13	LC Column ID:	C18
Extract Volume (mL):	2	Sample Datafile:	FC5G_167S040	
Injection Volume (µL):	30.0	Blank Data Filename:	FC5G_167S031	
Dilution Factor:	N/A	Cal. Ver. Data Filename:	FC5G_167S027	
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-044CS-F	

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	U		0.256	
PFHxA	U		0.248	
PFHpA		0.711	0.251	4.22
PFOA	E			
PFNA		1.46	0.268	5.05
PFDA		0.376	0.259	5.36
PFUnA	U		0.257	
PFDoA	U		0.255	
PFBS	U		2.54	
PFHxS		20.9	2.55	4.87
PFOS	E			
PFOSA	U		0.250	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA		12.0	12.3	103	4.70
13C4-PFOS(80)		12.0	15.5	129	5.56
13C4-PFOS(99)		12.0	13.7	114	5.56
13C2-PFDA		12.0	15.2	126	5.36

(1) U = not detected; E = exceeds calibrated linear range, see dilution data

(2) R (%) = Percent recovery

16755PF_D1_2.xls, S11

Approved by: _____



QA/QC Chemist

11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 02
PFOS_S1_D12

Form 1A/2
PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT ID:

Sample Collection: 11-Aug-2005 12:31

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-23 Y2i	
Matrix:	SERUM	Sample Size:	1.00 mL	
Sample Receipt date:	12-Aug-2005	Initial Calibration Date:	12-Sep-2005	
Extraction Date:	29-Aug-2005	Instrument ID:	LC-MS/MS	
Analysis Date:	13-Sep-2005	Time: 2:12:31	LC Column ID:	C18
Extract Volume (mL):	2	Sample Datafile:	FC5G_167S064	
Injection Volume (µL):	10.0	Blank Data Filename:	FC5G_167S031	
Dilution Factor:	3	Cal. Ver. Data Filename:	FC5G_167S059	
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-044CS-F	

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA				
PFHxA				
PFHpA				
PFOA	D	105	0.741	4.70
PFNA				
PFDA				
PFUnA				
PFDoA				
PFBS				
PFHxS				
PFOS	D	113	0.774	5.56
PFOSA				

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA	D	12.0	13.3	111	4.70
13C4-PFOS(80)					
13C4-PFOS(99)	D	12.0	11.6	96.4	5.56
13C2-PFDA					

(1) U = not detected; D = dilution data
(2) R (%) = Percent recovery

16755PF_D3_2.xls, S5

Approved by: _____

QA/QC Chemist

11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 02

PFOS_S1_D12

Form 1A/2

CLIENT ID:

PERFLUORINATED ORGANICS ANALYSIS REPORT

Sample Collection: 11-Aug-2005 12:33

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-26 Y4	
Matrix:	SERUM	Sample Size:	1.00 mL	
Sample Receipt date:	12-Aug-2005	Initial Calibration Date:	12-Sep-2005	
Extraction datae:	29-Aug-2005	Instrument ID:	LC-MS/MS	
Analysis datae:	12-Sep-2005	Time: 21:55:49	LC Column ID:	C18
Extract Volume (mL):	2	Sample data Filename:	FC5G_167S046	
Injection Volume (µL):	30.0	Blank data Filename:	FC5G_167S031	
Dilution Factor:	N/A	Cal. Ver. data Filename:	FC5G_167S044	
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-044CS-F	

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	U		0.256	
PFHxA	U		0.248	
PFHpA		0.665	0.251	4.23
PFOA		58.7	0.247	4.70
PFNA		1.74	0.268	5.05
PFDA		0.670	0.259	5.41
PFUnA	U		0.257	
PFDoA	U		0.255	
PFBS	U		2.54	
PFHxS		14.3	2.55	4.87
PFOS		73.4	0.258	5.51
PFOSA	U		0.250	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA		12.0	10.2	84.9	4.70
13C4-PFOS(80)		12.0	12.3	102	5.56
13C4-PFOS(99)		12.0	10.4	87.0	5.56
13C2-PFDA		12.0	11.0	92.0	5.36

(1) U = not detected

(2) R (%) = Percent recovery

16755PF_D2_2.xls, S2

Approved by: _____



QA/QC Chemist

11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 02
PFOS_S1_D12

Form 1A/2
PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT ID:

Sample Collection: 15-Aug-2005 13:54

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-28 Y2	
Matrix:	SERUM	Sample Size:	1.00 mL	
Sample Receipt date:	17-Aug-2005	Initial Calibration Date:	12-Sep-2005	
Extraction Date:	29-Aug-2005	Instrument ID:	LC-MS/MS	
Analysis Date:	12-Sep-2005	Time: 22:10:04	LC Column ID:	C18
Extract Volume (mL):	2	Sample Datafile:	FC5G_167S047	
Injection Volume (µL):	30.0	Blank Data Filename:	FC5G_167S031	
Dilution Factor:	N/A	Cal. Ver. Data Filename:	FC5G_167S044	
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-044CS-F	

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	U		0.256	
PFHxA	U		0.248	
PFHpA	U		0.251	
PFOA		5.92	0.247	4.70
PFNA		1.32	0.268	5.05
PFDA		0.486	0.259	5.41
PFUnA		0.272	0.257	5.75
PFDoA	U		0.255	
PFBS	U		2.54	
PFHxS		3.76	2.55	4.87
PFOS		29.5	0.258	5.56
PFOSA	U		0.250	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA		12.0	10.5	87.2	4.70
13C4-PFOS(80)		12.0	11.3	94.4	5.56
13C4-PFOS(99)		12.0	10.4	86.4	5.56
13C2-PFDA		12.0	13.6	113	5.41

(1) U = not detected

(2) R (%) = Percent recovery

16755PF_D2_2.xls, S3

Approved by: _____

QA/QC Chemist

11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 02
PFOS_S1_D12

Form 1A/2
PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT ID:

Sample Collection: 16-Aug-2005 09:43

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-29 Y4	
Matrix:	SERUM	Sample Size:	1.00 mL	
Sample Receipt date:	17-Aug-2005	Initial Calibration Date:	12-Sep-2005	
Extraction Date:	29-Aug-2005	Instrument ID:	LC-MS/MS	
Analysis Date:	12-Sep-2005	Time: 22:24:21	LC Column ID:	C18
Extract Volume (mL):	2	Sample Datafile:	FC5G_167S048	
Injection Volume (µL):	30.0	Blank Data Filename:	FC5G_167S031	
Dilution Factor:	N/A	Cal. Ver. Data Filename:	FC5G_167S044	
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-044CS-F	

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	U		0.256	
PFHxA	U		0.248	
PFHpA		1.16	0.251	4.23
PFOA		30.7	0.247	4.70
PFNA		2.96	0.268	5.05
PFDA		0.362	0.259	5.36
PFUnA	U		0.257	
PFDoA	U		0.255	
PFBS	U		2.54	
PFHxS		7.13	2.55	4.87
PFOS		56.8	0.258	5.51
PFOSA	U		0.250	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA		12.0	10.5	87.8	4.70
13C4-PFOS(80)		12.0	11.9	99.0	5.56
13C4-PFOS(99)		12.0	13.7	114	5.56
13C2-PFDA		12.0	13.4	112	5.36

- (1) U = not detected
(2) R (%) = Percent recovery

16755PF_D2_2.xls, S4

Approved by: _____

QA/QC Chemist

11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 02

PFOS_S1_D12

Form 1A/2

CLIENT ID:

PERFLUORINATED ORGANICS ANALYSIS REPORT

Sample Collection: 16-Aug-2005 09:40

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.: 4191

Lab Sample ID: L7932-30 Y2

Matrix: SERUM

Sample Size: 1.00 mL

Sample Receipt date: 17-Aug-2005

Initial Calibration Date: 12-Sep-2005

Extraction Date: 29-Aug-2005

Instrument ID: LC-MS/MS

Analysis Date: 12-Sep-2005 Time: 22:38:38

LC Column ID: C18

Extract Volume (mL): 2

Sample Datafile: FC5G_167S049

Injection Volume (µL): 30.0

Blank Data Filename: FC5G_167S031

Dilution Factor: N/A

Cal. Ver. Data Filename: FC5G_167S044
CAL VER ID: PFC-LIN-044CS-F

Concentration Units : ng/mL

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	U		0.256	
PFHxA	U		0.248	
PFHpA		1.06	0.251	4.23
PFOA		27.5	0.247	4.70
PFNA		2.60	0.268	5.05
PFDA		0.430	0.259	5.36
PFUnA	U		0.257	
PFDoA	U		0.255	
PFBS	U		2.54	
PFHxS		5.04	2.55	4.87
PFOS		62.0	0.258	5.51
PFOSA	U		0.250	

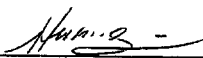
LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA		12.0	10.3	86.2	4.70
13C4-PFOS(80)		12.0	13.1	109	5.56
13C4-PFOS(99)		12.0	12.2	101	5.56
13C2-PFDA		12.0	13.7	115	5.36

(1) U = not detected

(2) R (%) = Percent recovery

16755PF_D2_2.xls, S5

Approved by: _____



QA/QC Chemist

11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 02
PFOS_S1_D12

Form 1A/2
PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT ID:

Sample Collection: 16-Aug-2005 09:37

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-32 Y2	
Matrix:	SERUM	Sample Size:	1.00 mL	
Sample Receipt date:	17-Aug-2005	Initial Calibration Date:	12-Sep-2005	
Extraction Date:	29-Aug-2005	Instrument ID:	LC-MS/MS	
Analysis Date:	12-Sep-2005	Time: 22:52:53	LC Column ID:	C18
Extract Volume (mL):	2	Sample Datafile:	FC5G_167S050	
Injection Volume (µL):	30.0	Blank Data Filename:	FC5G_167S031	
Dilution Factor:	N/A	Cal. Ver. Data Filename:	FC5G_167S044	
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-044CS-F	

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	U		0.256	
PFHxA	U		0.248	
PFHpA		0.253	0.251	4.23
PFOA		13.3	0.247	4.70
PFNA		1.02	0.268	5.05
PFDA		0.265	0.259	5.36
PFUnA	U		0.257	
PFDoA	U		0.255	
PFBS	U		2.54	
PFHxS	U		2.55	
PFOS		12.3	0.258	5.51
PFOSA	U		0.250	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA		12.0	8.70	72.5	4.70
13C4-PFOS(80)		12.0	12.6	105	5.56
13C4-PFOS(99)		12.0	13.7	114	5.56
13C2-PFDA		12.0	11.2	93.7	5.36

(1) U = not detected

(2) R (%) = Percent recovery

16755PF_D2_2.xls, S6

Approved by: _____

QA/QC Chemist

11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 02

PFOS_S1_D12

Form 1A/2

CLIENT ID:

PERFLUORINATED ORGANICS ANALYSIS REPORT

Sample Collection: 16-Aug-2005 09:35

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-33 Y2	
Matrix:	SERUM	Sample Size:	1.00 mL	
Sample Receipt date:	17-Aug-2005	Initial Calibration Date:	12-Sep-2005	
Extraction Date:	29-Aug-2005	Instrument ID:	LC-MS/MS	
Analysis Date:	12-Sep-2005	Time: 23:07:08	LC Column ID:	C18
Extract Volume (mL):	2	Sample Datafile:	FC5G_167S051	
Injection Volume (µL):	30.0	Blank Data Filename:	FC5G_167S031	
Dilution Factor:	N/A	Cal. Ver. Data Filename:	FC5G_167S044	
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-044CS-F	

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	U		0.256	
PFHxA	U		0.248	
PFHpA		0.454	0.251	4.23
PFOA		15.5	0.247	4.70
PFNA		0.660	0.268	5.05
PFDA	U		0.259	
PFUnA	U		0.257	
PFDoA	U		0.255	
PFBS	U		2.54	
PFHxS	U		2.55	
PFOS		12.7	0.258	5.51
PFOSA	U		0.250	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA		12.0	10.7	89.1	4.70
13C4-PFOS(80)		12.0	14.0	116	5.56
13C4-PFOS(99)		12.0	15.2	126	5.56
13C2-PFDA		12.0	14.1	118	5.36

(1) U = not detected

(2) R (%) = Percent recovery

16755PF_D2_2.xls, S7

Approved by:  QA/QC Chemist11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 02
PFOS_S1_D12

Form 1A/2
PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT ID:

Sample Collection: 17-Aug-2005 18:11

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-35 Y2	
Matrix:	SERUM	Sample Size:	1.00 mL	
Sample Receipt date:	19-Aug-2005	Initial Calibration Date:	12-Sep-2005	
Extraction Date:	29-Aug-2005	Instrument ID:	LC-MS/MS	
Analysis Date:	12-Sep-2005	Time: 23:21:23	LC Column ID:	C18
Extract Volume (mL):	2	Sample Datafile:	FC5G_167S052	
Injection Volume (µL):	30.0	Blank Data Filename:	FC5G_167S031	
Dilution Factor:	N/A	Cal. Ver. Data Filename:	FC5G_167S044	
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-044CS-F	

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	U		0.256	
PFHxA	U		0.248	
PFHpA		0.352	0.251	4.23
PFOA		74.6	0.247	4.70
PFNA		2.16	0.268	5.05
PFDA		0.466	0.259	5.36
PFUnA		0.384	0.257	5.70
PFDoA	U		0.255	
PFBS	U		2.54	
PFHxS		13.4	2.55	4.87
PFOS		91.0	0.258	5.51
PFOSA	U		0.250	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA		12.0	9.13	76.0	4.70
13C4-PFOS(80)		12.0	11.3	94.3	5.56
13C4-PFOS(99)		12.0	11.3	94.6	5.56
13C2-PFDA		12.0	11.6	96.5	5.36

(1) U = not detected

(2) R (%) = Percent recovery

16755PF_D2_2.xls, S8

Approved by: _____

QA/QC Chemist

11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 02
PFOS_S1_D12

Form 1A/2
PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT ID:

Sample Collection: 18-Aug-2005 18:15

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-39 Y4	
Matrix:	SERUM	Sample Size:	1.00 mL	
Sample Receipt date:	23-Aug-2005	Initial Calibration Date:	12-Sep-2005	
Extraction Date:	29-Aug-2005	Instrument ID:	LC-MS/MS	
Analysis Date:	13-Sep-2005	Time: 0:18:25	LC Column ID:	C18
Extract Volume (mL):	2	Sample Datafile:	FC5G_167S056	
Injection Volume (µL):	30.0	Blank Data Filename:	FC5G_167S031	
Dilution Factor:	N/A	Cal. Ver. Data Filename:	FC5G_167S044	
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-044CS-F	

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	U		0.256	
PFHxA	U		0.248	
PFHpA	U		0.251	
PFOA		9.66	0.247	4.70
PFNA		1.35	0.268	5.05
PFDA		0.375	0.259	5.36
PFUnA	U		0.257	
PFDoA	U		0.255	
PFBS	U		2.54	
PFHxS		4.52	2.55	4.87
PFOS		26.6	0.258	5.51
PFOSA	U		0.250	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA		12.0	9.15	76.2	4.70
13C4-PFOS(80)		12.0	13.8	115	5.56
13C4-PFOS(99)		12.0	12.8	107	5.56
13C2-PFDA		12.0	12.8	106	5.36

(1) U = not detected

(2) R (%) = Percent recovery

16755PF_D2_2.xls, S12

Approved by: _____

QA/QC Chemist

11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 02
PFOS_S1_D12

Form 1A/2
PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT ID:

Sample Collection: 18-Aug-2005 18:17

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.: 4191

Lab Sample ID: WG16755-105 Y2i
(DUP L7932-37 Y2i (A))
Sample Size: 1.00 mL

Matrix: SERUM

Sample Receipt date: 23-Aug-2005

Initial Calibration Date: 12-Sep-2005

Extraction Date: 29-Aug-2005

Instrument ID: LC-MS/MS

Analysis Date: 13-Sep-2005 Time: 3:09:35

LC Column ID: C18

Extract Volume (mL): 2

Sample Datafile: FC5G_167S068

Injection Volume (µL): 10.0

Blank Data Filename: FC5G_167S031

Dilution Factor: 3

Cal. Ver. Data Filename: FC5G_167S059
CAL VER ID: PFC-LIN-044CS-F

Concentration Units : ng/mL

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFP ₆ A				
PFH _x A				
PFHpA				
PFOA	D	103	0.741	4.70
PFNA				
PFDA				
PFUnA				
PFDoA				
PFBS				
PFH _x S				
PFOS				
PFOSA				

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA	D	12.0	9.66	80.5	4.70
13C4-PFOS(80)					
13C4-PFOS(99)					
13C2-PFDA					

(1) U = not detected; D = dilution data

(2) R (%) = Percent recovery

16755PF_D3_2.xls, S9

Approved by:  QA/QC Chemist

11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 02
PFOS_S1_D12

Form 1A/2
PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT ID:

Sample Collection: 18-Aug-2005 18:17

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	WG16755-105 Y2 (DUP L7932-37 Y2)
Matrix:	SERUM	Sample Size:	1.00 mL
Sample Receipt date:	23-Aug-2005	Initial Calibration Date:	12-Sep-2005
Extraction Date:	29-Aug-2005	Instrument ID:	LC-MS/MS
Analysis Date:	12-Sep-2005	Time: 23:49:55	LC Column ID: C18
Extract Volume (mL):	2	Sample Datafile:	FC5G_167S054
Injection Volume (µL):	30.0	Blank Data Filename:	FC5G_167S031
Dilution Factor:	N/A	Cal. Ver. Data Filename:	FC5G_167S044
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-044CS-F

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	U		0.256	
PFHxA	U		0.248	
PFHpA		2.62	0.251	4.18
PFOA	E			
PFNA		1.83	0.268	5.05
PFDA		0.894	0.259	5.36
PFUnA	U		0.257	
PFDaA	U		0.255	
PFBS	U		2.54	
PFHxS		14.5	2.55	4.87
PFOS		72.7	0.258	5.51
PFOSA	U		0.250	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA		12.0	10.2	85.0	4.70
13C4-PFOS(80)		12.0	14.5	121	5.51
13C4-PFOS(99)		12.0	13.2	110	5.51
13C2-PFDA		12.0	15.0	125	5.36

(1) U = not detected; E = exceeds calibrated linear range, see dilution data

(2) R (%) = Percent recovery

16755PF_D2_2.xls, S10

Approved by: _____

QA/QC Chemist

11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 02

PFOS_S1_D12

Form 1A/2

CLIENT ID:

PERFLUORINATED ORGANICS ANALYSIS REPORT

Sample Collection: 18-Aug-2005 18:17

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-37 Y2	
Matrix:	SERUM	Sample Size:	1.00 mL	
Sample Receipt date:	23-Aug-2005	Initial Calibration Date:	12-Sep-2005	
Extraction Date:	29-Aug-2005	Instrument ID:	LC-MS/MS	
Analysis Date:	12-Sep-2005	Time: 23:35:39	LC Column ID:	C18
Extract Volume (mL):	2	Sample Datafile:	FC5G_167S053	
Injection Volume (µL):	30.0	Blank Data Filename:	FC5G_167S031	
Dilution Factor:	N/A	Cal. Ver. Data Filename:	FC5G_167S044	
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-044CS-F	

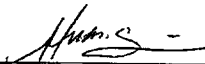
COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	U		0.256	
PFHxA	U		0.248	
PFHpA		2.08	0.251	4.23
PFOA	E			
PFNA		1.75	0.268	5.05
PFDA		0.910	0.259	5.36
PFUnA	U		0.257	
PFDoA	U		0.255	
PFBS	U		2.54	
PFHxS		13.4	2.55	4.87
PFOS		70.3	0.258	5.51
PFOSA	U		0.250	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA		12.0	9.98	83.1	4.70
13C4-PFOS(80)		12.0	13.5	112	5.51
13C4-PFOS(99)		12.0	13.0	108	5.51
13C2-PFDA		12.0	13.7	114	5.36

(1) U = not detected; E = exceeds calibrated linear range, see dilution data

(2) R (%) = Percent recovery

16755PF_D2_2.xls, S9

Approved by:  QA/QC Chemist11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 02
PFOS_S1_D12

Form 1A/2
PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT ID:

Sample Collection: 18-Aug-2005 18:17

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.: 4191

Lab Sample ID: L7932-37 Y2i (A)

Matrix: SERUM

Sample Size: 1.00 mL

Sample Receipt date: 23-Aug-2005

Initial Calibration Date: 12-Sep-2005

Extraction Date: 29-Aug-2005

Instrument ID: LC-MS/MS

Analysis Date: 13-Sep-2005 Time: 2:55:19

LC Column ID: C18

Extract Volume (mL): 2

Sample Datafile: FC5G_167S067

Injection Volume (µL): 10.0

Blank Data Filename: FC5G_167S031

Dilution Factor: 3

Cal. Ver. Data Filename: FC5G_167S059
CAL VER ID: PFC-LIN-044CS-F

Concentration Units : ng/mL

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA PFHxA PFHpA PFOA PFNA PFDA PFUnA PFDoA PFBS PFHxS PFOS PFOSA	D	104	0.741	4.70

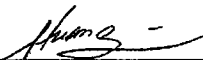
LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA 13C4-PFOS(80) 13C4-PFOS(99) 13C2-PFDA	D	12.0	9.67	80.6	4.70

(1) U = not detected; D = dilution data

(2) R (%) = Percent recovery

16755PF_D3_2.xls, S8

Approved by: _____



QA/QC Chemist

11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 02
PFOS_S1_D12

Form 1A/2
PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT ID:

Sample Collection: 18-Aug-2005 18:11

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-38 Y2i	
Matrix:	SERUM	Sample Size:	1.00 mL	
Sample Receipt date:	23-Aug-2005	Initial Calibration Date:	12-Sep-2005	
Extraction Date:	29-Aug-2005	Instrument ID:	LC-MS/MS	
Analysis Date:	13-Sep-2005	Time: 3:23:49	LC Column ID:	C18
Extract Volume (mL):	2	Sample Datafile:	FC5G_167S069	
Injection Volume (µL):	10.0	Blank Data Filename:	FC5G_167S031	
Dilution Factor:	3	Cal. Ver. Data Filename:	FC5G_167S059	
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-044CS-F	

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	UD		0.767	
PFHxA	UD		0.744	
PFHpA	UD		0.753	
PFOA	D	96.1	0.741	4.70
PFNA	UD		0.804	
PFDA	UD		0.777	
PFUnA	UD		0.770	
PFDaA	UD		0.765	
PFBS	UD		7.62	
PFHxS	D	16.3	7.65	4.87
PFOS	D	67.8	0.774	5.51
PFOSA	UD		0.750	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA	D	12.0	11.4	94.7	4.70
13C4-PFOS(80)	D	12.0	12.1	101	5.56
13C4-PFOS(99)	D	12.0	11.1	92.7	5.56
13C2-PFDA	D	12.0	9.86	82.2	5.41

(1) U = not detected; D = dilution data

(2) R (%) = Percent recovery

16755PF_D3_2.xls, S10

Approved by: _____

Handwritten Signature

QA/QC Chemist

11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 03

PFOS_S1_D12

Form 1A/2

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT ID:

Sample Collection: 22-Aug-2005 16:20

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-41 Y4 (A)	
Matrix:	SERUM	Sample Size:	1.00 mL	
Sample Receipt date:	24-Aug-2005	Initial Calibration Date:	15-Sep-2005	
Extraction date:	06-Sep-2005	Instrument ID:	LC-MS/MS	
Analysis date:	16-Sep-2005	Time: 13:23:23	LC Column ID:	C18
Extract Volume (mL):	2	Sample data Filename:	FC5G_176S011	
Injection Volume (µL):	10.0	Blank data Filename:	FC5G_159S016	
Dilution Factor:	3	Cal. Ver. data Filename:	FC5G_176S008	
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-048CS-F	

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	UD		0.638	
PFHxA	UD		0.620	
PFHpA	UD		0.628	
PFOA	D	19.6	0.618	4.70
PFNA	D	1.78	0.670	5.12
PFDA	D	0.952	0.648	5.46
PFUnA	UD		0.640	
PFDoA	UD		0.638	
PFBS	UD		0.635	
PFHxS	D	5.56	0.638	4.93
PFOS	D	8.91	2.58	5.56
PFOSA	UD		0.625	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA	D	12.0	11.1	92.9	4.70
13C4-PFOS(80)	D	12.0	11.3	94.3	5.56
13C4-PFOS(99)	D	12.0	13.6	113	5.56
13C2-PFDA	D	12.0	11.7	97.6	5.41

(1) U = not detected; D = dilution data

(2) R (%) = Percent recovery

16814PFD5_2.xls, S2

Approved by:  QA/QC Chemist11-10-2005
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 03
PFOS_S1_D12

Form 1A/2
PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT ID:

Sample Collection: 22-Aug-2005 16:20

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	WG16814-104 Y3	
Matrix:	SERUM	Sample Size:	1.00 mL	
Sample Receipt date:	24-Aug-2005	Initial Calibration Date:	15-Sep-2005	
Extraction Date:	06-Sep-2005	Instrument ID:	LC-MS/MS	
Analysis Date:	16-Sep-2005	Time: 0:08:02	LC Column ID:	C18
Extract Volume (mL):	2	Sample Datafile:	FC5G_175S013	
Injection Volume (µL):	10.0	Blank Data Filename:	FC5G_159S016	
Dilution Factor:	3	Cal. Ver. Data Filename:	FC5G_175S010	
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-048CS-F	

COMPOUND	LAB FLAG *	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	UD		0.638	
PFHxA	UD		0.620	
PFHpA	UD		0.628	
PFOA	D	21.1	0.618	4.70
PFNA	D	1.56	0.670	5.05
PFDA	D	1.00	0.648	5.41
PFUnA	UD		0.640	
PFDaA	UD		0.638	
PFBS	UD		0.635	
PFHxS	D	2.62	0.638	4.87
PFOS	D	12.8	2.58	5.51
PFOSA	UD		0.625	

LABELED COMPOUND	LAB FLAG *	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA	D	12.0	13.4	112	4.70
13C4-PFOS(80)	D	12.0	14.7	122	5.56
13C4-PFOS(99)	D	12.0	12.2	102	5.56
13C2-PFDA	D	12.0	13.8	115	5.41

(1) U = not detected; D = dilution data

(2) R (%) = Percent recovery

16814PFD4_2.xls, S3

Approved by: *Marceli* QA/QC Chemist

11-10-2005
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 03
PFOS_S1_D12

Form 1A/2
PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT ID:

Sample Collection: 24-Aug-2005 17:18

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-44 Y3	
Matrix:	SERUM	Sample Size:	1.00 mL	
Sample Receipt date:	26-Aug-2005	Initial Calibration Date:	15-Sep-2005	
Extraction Date:	06-Sep-2005	Instrument ID:	LC-MS/MS	
Analysis Date:	16-Sep-2005	Time: 0:36:32	LC Column ID:	C18
Extract Volume (mL):	2	Sample Datafile:	FC5G_175S015	
Injection Volume (µL):	10.0	Blank Data Filename:	FC5G_159S016	
Dilution Factor:	3	Cal. Ver. Data Filename:	FC5G_175S010	
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-048CS-F	

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	UD		0.638	
PFHxA	UD		0.620	
PFHpA	UD		0.628	
PFOA	D	32.7	0.618	4.70
PFNA	D	0.963	0.670	5.05
PFDA	UD		0.648	
PFUnA	UD		0.640	
PFDoA	UD		0.638	
PFBS	UD		0.635	
PFHxS	D	14.5	0.638	4.87
PFOS	D	41.5	2.58	5.51
PFOSA	UD		0.625	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA	D	12.0	15.1	126	4.70
13C4-PFOS(80)	D	12.0	14.2	118	5.56
13C4-PFOS(99)	D	12.0	14.4	120	5.56
13C2-PFDA	D	12.0	14.2	118	5.41

(1) U = not detected; D = dilution data

(2) R (%) = Percent recovery

16814PFD4_2.xls, S5

Approved by:

Chawandi

QA/QC Chemist

11-10-2005
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 03

PFOS_S1_D12

Form 1A/2

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT ID:

Sample Collection: 25-Aug-2005 10:45

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.: 4191

Lab Sample ID: L7932-43 Y3

Matrix: SERUM

Sample Size: 1.00 mL

Sample Receipt date: 26-Aug-2005

Initial Calibration Date: 15-Sep-2005

Extraction Date: 06-Sep-2005

Instrument ID: LC-MS/MS

Analysis Date: 16-Sep-2005 Time: 0:22:18

LC Column ID: C18

Extract Volume (mL): 2

Sample Datafile: FC5G_175S014

Injection Volume (µL): 10.0

Blank Data Filename: FC5G_159S016

Dilution Factor: 3

Cal. Ver. Data Filename: FC5G_175S010
CAL VER ID: PFC-LIN-048CS-F

Concentration Units : ng/mL

COMPOUND	LAB FLAG '1	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	UD		0.638	
PFHxA	UD		0.620	
PFHpA	UD		0.628	
PFOA	D	10.2	0.618	4.70
PFNA	UD		0.670	
PFDA	UD		0.648	
PFUnA	UD		0.640	
PFDoA	UD		0.638	
PFBS	UD		0.635	
PFHxS	D	0.905	0.638	4.87
PFOS	D	24.2	2.58	5.56
PFOSA	UD		0.625	

LABELED COMPOUND	LAB FLAG '1	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA	D	12.0	12.7	106	4.70
13C4-PFOS(80)	D	12.0	11.2	92.9	5.56
13C4-PFOS(99)	D	12.0	14.5	121	5.56
13C2-PFDA	D	12.0	14.2	118	5.41

(1) U = not detected; D = dilution data

(2) R (%) = Percent recovery

16814PFD4_2.xls, S4

Approved by: *Manarola* QA/QC Chemist11-10-2005
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 03
PFOS_S1_D12

Form 1A/2
PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT ID:

Sample Collection: 25-Aug-2005 10:48

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-45 Y2	
Matrix:	SERUM	Sample Size:	1.00 mL	
Sample Receipt date:	26-Aug-2005	Initial Calibration Date:	13-Sep-2005	
Extraction Date:	06-Sep-2005	Instrument ID:	LC-MS/MS	
Analysis Date:	13-Sep-2005	Time: 10:03:59	LC Column ID:	C18
Extract Volume (mL):	2	Sample Datafile:	FC5G_168S023	
Injection Volume (µL):	30.0	Blank Data Filename:	FC5G_168S015	
Dilution Factor:	N/A	Cal. Ver. Data Filename:	FC5G_168S010	
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-048CS-F	

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	U		0.256	
PFHxA	U		0.248	
PFHpA		0.401	0.251	4.18
PFOA		80.5	0.247	4.70
PFNA		1.77	0.268	5.05
PFDA		0.841	0.259	5.36
PFUnA		0.343	0.257	5.70
PFDoA	U		0.255	
PFBS	U		0.254	
PFHxS		49.4	0.255	4.87
PFOS	E			
PFOSA	U		0.250	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA		12.0	11.5	95.9	4.70
13C4-PFOS(80)		12.0	10.3	86.0	5.56
13C4-PFOS(99)		12.0	12.7	106	5.56
13C2-PFDA		12.0	12.6	105	5.36

(1) U = not detected; E = exceeds calibrated linear range, see dilution data

(2) R (%) = Percent recovery

16814PFD3_2.xls, S10

Approved by: *Maranda* QA/QC Chemist

11-10-2005
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 03

PFOS_S1_D12

Form 1A/2

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT ID:

Sample Collection: 25-Aug-2005 10:48

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.: 4191

Lab Sample ID: L7932-45 Y2i

Matrix: SERUM

Sample Size: 1.00 mL

Sample Receipt date: 26-Aug-2005

Initial Calibration Date: 13-Sep-2005

Extraction Date: 06-Sep-2005

Instrument ID: LC-MS/MS

Analysis Date: 13-Sep-2005 Time: 11:29:32

LC Column ID: C18

Extract Volume (mL): 2

Sample Datafile: FC5G_168S029

Injection Volume (µL): 10.0

Blank Data Filename: FC5G_168S015

Dilution Factor: 3

Cal. Ver. Data Filename: FC5G_168S010

CAL VER ID: PFC-LIN-048CS-F

Concentration Units : ng/mL

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	X			
PFHxA	X			
PFHpA	X			
PFOA	X			
PFNA	X			
PFDA	X			
PFUnA	X			
PFDoA	X			
PFBS	X			
PFHxS	X			
PFOS	D	163	0.645	5.51
PFOSA	X			

LABELLED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA	X				
13C4-PFOS(80)	X				
13C4-PFOS(99)	D	12.0	10.7	89.0	5.56
13C2-PFDA	X				

(1) D = dilution data; X = results reported separately

(2) R (%) = Percent recovery

16814PFD3_2.xls, S15

Approved by:  QA/QC Chemist11-10-2005
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 03
PFOS_S1_D12

Form 1A/2
PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT ID:

Sample Collection: 25-Aug-2005 18:35

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-47 Y2i	
Matrix:	SERUM	Sample Size:	1.00 mL	
Sample Receipt date:	31-Aug-2005	Initial Calibration Date:	13-Sep-2005	
Extraction Date:	06-Sep-2005	Instrument ID:	LC-MS/MS	
Analysis Date:	13-Sep-2005	Time: 11:43:48	LC Column ID:	C18
Extract Volume (mL):	2	Sample Datafile:	FC5G_168S030	
Injection Volume (µL):	10.0	Blank Data Filename:	FC5G_168S015	
Dilution Factor:	3	Cal. Ver. Data Filename:	FC5G_168S010	
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-048CS-F	

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	UD		0.638	
PFHxA	UD		0.620	
PFHpA	UD		0.627	
PFOA	D	63.3	0.617	4.70
PFNA	D	1.03	0.670	5.05
PFDA	D	0.775	0.647	5.36
PFUnA	UD		0.641	
PFDoA	UD		0.637	
PFBS	UD		0.635	
PFHxS	D	11.9	0.637	4.87
PFOS	D	73.1	0.645	5.56
PFOSA	UD		0.625	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA	D	12.0	13.4	112	4.70
13C4-PFOS(80)	D	12.0	13.4	111	5.56
13C4-PFOS(99)	D	12.0	12.1	101	5.56
13C2-PFDA	D	12.0	11.4	95.2	5.41

(1) U = not detected; D = dilution data

(2) R (%) = Percent recovery

16814PFD3_2.xls, S16

Approved by: *Manali* QA/QC Chemist

11-10-2005
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AXYS METHOD MLA-042 Rev 03

PFOS_S1_D12

Form 1A/2

CLIENT ID:

PERFLUORINATED ORGANICS ANALYSIS REPORT

Sample Collection: 25-Aug-2005 18:39

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-48 Y1
Matrix:	SERUM	Sample Size:	1.00 mL
Sample Receipt date:	31-Aug-2005	Initial Calibration Date:	13-Sep-2005
Extraction Date:	06-Sep-2005	Instrument ID:	LC-MS/MS
Analysis Date:	13-Sep-2005	Time:	10:32:29
LC Column ID:	C18	Sample Datafile:	FC5G_168S025
Extract Volume (mL):	2	Blank Data Filename:	FC5G_168S015
Injection Volume (µL):	30.0	Cal. Ver. Data Filename:	FC5G_168S010
Dilution Factor:	N/A	CAL VER ID:	PFC-LIN-048CS-F
Concentration Units :	ng/mL		

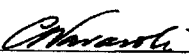
COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	U		0.256	
PFHxA	U		0.248	
PFHpA	U		0.251	
PFOA		14.6	0.247	4.70
PFNA		1.49	0.268	5.05
PFDA		0.312	0.259	5.36
PFUnA	U		0.257	
PFDoA	U		0.255	
PFBS	U		0.254	
PFHxS		2.29	0.255	4.87
PFOS		30.8	0.258	5.51
PFOSA	U		0.250	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA		12.0	12.0	99.8	4.70
13C4-PFOS(80)		12.0	15.7	131	5.51
13C4-PFOS(99)		12.0	15.9	133	5.51
13C2-PFDA		12.0	16.2	135	5.36

(1) U = not detected

(2) R (%) = Percent recovery

16814PFD3_2.xls, S12

Approved by:  QA/QC Chemist11-10-2005
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 03

PFOS_S1_D12

Form 1A/2

CLIENT ID:

PERFLUORINATED ORGANICS ANALYSIS REPORT

Sample Collection: 29-Aug-2005 09:59

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-49 Y3	
Matrix:	SERUM	Sample Size:	1.00 mL	
Sample Receipt date:	31-Aug-2005	Initial Calibration Date:	15-Sep-2005	
Extraction Date:	06-Sep-2005	Instrument ID:	LC-MS/MS	
Analysis Date:	16-Sep-2005	Time: 0:50:49	LC Column ID:	C18
Extract Volume (mL):	2	Sample Datafile:	FC5G_175S016	
Injection Volume (µL):	10.0	Blank Data Filename:	FC5G_159S016	
Dilution Factor:	3	Cal. Ver. Data Filename:	FC5G_175S010	
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-048CS-F	

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	UD		0.638	
PFHxA	UD		0.620	
PFHpA	UD		0.628	
PFOA	D	7.21	0.618	4.70
PFNA	D	1.30	0.670	5.05
PFDA	D	0.650	0.648	5.41
PFUnA	UD		0.640	
PFDoA	UD		0.638	
PFBS	UD		0.635	
PFHxS	D	9.50	0.638	4.87
PFOS	D	38.9	2.58	5.56
PFOSA	UD		0.625	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA	D	12.0	10.9	91.0	4.70
13C4-PFOS(80)	D	12.0	11.9	99.4	5.56
13C4-PFOS(99)	D	12.0	10.7	89.2	5.56
13C2-PFDA	D	12.0	10.8	89.7	5.41

(1) U = not detected; D = dilution data

(2) R (%) = Percent recovery

16814PFD4_2.xls, S6

Approved by: Marcel QA/QC Chemist11-10-2005
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 03

PFOS_S1_D12

Form 1A/2

CLIENT ID:

PERFLUORINATED ORGANICS ANALYSIS REPORT

Sample Collection: 31-Aug-2005 09:56

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	WG16982-104 i
Matrix:	SERUM	Sample Size:	1.00 mL
Sample Receipt date:	01-Sep-2005	Initial Calibration Date:	22-Sep-2005
Extraction Date:	21-Sep-2005	Instrument ID:	LC-MS/MS
Analysis Date:	23-Sep-2005	Time: 0:41:20	LC Column ID: C18
Extract Volume (mL):	2	Sample Datafile:	FC5G_181S054
Injection Volume (µL):	10.0	Blank Data Filename:	FC5G_181S070
Dilution Factor:	3	Cal. Ver. Data Filename:	FC5G_181S048
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-055CS-F

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	UD		0.639	
PFHxA	UD		0.620	
PFHpA	UD		0.628	
PFOA	D	26.7	0.618	4.65
PFNA	D	1.00	0.670	5.05
PFDA	UD		0.648	
PFUnA	UD		0.641	
PFDoA	UD		0.638	
PFBS	UD		0.635	
PFHxS	D	5.34	0.638	4.80
PFOS	D	32.7	0.645	5.46
PFOSA	UD		0.625	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
¹³ C2-PFOA	D	12.0	12.3	103	4.65
¹³ C4-PFOS (80)	D	12.0	12.4	103	5.46
¹³ C4-PFOS (99)	D	12.0	11.6	97.0	5.46
¹³ C2-PFDA	D	12.0	10.5	87.3	5.36

(1) U = not detected; D = dilution data

(2) R (%) = Percent recovery

16982PFD1_2.xls, S4

Approved by: _____



QA/QC Chemist

11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 03
PFOS_S1_D12

Form 1A/2
PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT ID:

Sample Collection: 31-Aug-2005 09:56

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-51 i (A)	
Matrix:	SERUM	Sample Size:	1.00 mL	
Sample Receipt date:	01-Sep-2005	Initial Calibration Date:	22-Sep-2005	
Extraction Date:	21-Sep-2005	Instrument ID:	LC-MS/MS	
Analysis Date:	23-Sep-2005	Time: 0:27:07	LC Column ID:	C18
Extract Volume (mL):	2	Sample Datafile:	FC5G_181S053	
Injection Volume (µL):	10.0	Blank Data Filename:	FC5G_181S070	
Dilution Factor:	3	Cal. Ver. Data Filename:	FC5G_181S048	
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-055CS-F	

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	UD		0.639	
PFHxA	UD		0.620	
PFHpA	UD		0.628	
PFOA	D	27.0	0.618	4.65
PFNA	D	1.55	0.670	4.99
PFDA	UD		0.648	
PFUnA	UD		0.641	
PFDoA	UD		0.638	
PFBS	UD		0.635	
PFHxS	D	5.27	0.638	4.80
PFOS	D	28.5	0.645	5.46
PFOSA	UD		0.625	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA	D	12.0	11.4	94.9	4.65
13C4-PFOS (80)	D	12.0	14.6	122	5.46
13C4-PFOS (99)	D	12.0	13.5	113	5.46
13C2-PFDA	D	12.0	10.1	83.8	5.36

(1) U = not detected; D = dilution data

(2) R (%) = Percent recovery

16982PFD1_2.xls, S3

Approved by: _____

[Signature]

QA/QC Chemist

11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 03

PFOS_S1_D12

Form 1A/2

CLIENT ID:

PERFLUORINATED ORGANICS ANALYSIS REPORT

Sample Collection: 31-Aug-2005 10:03

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-52 i	
Matrix:	SERUM	Sample Size:	1.00 mL	
Sample Receipt date:	01-Sep-2005	Initial Calibration Date:	22-Sep-2005	
Extraction Date:	21-Sep-2005	Instrument ID:	LC-MS/MS	
Analysis Date:	23-Sep-2005	Time: 0:55:34	LC Column ID:	C18
Extract Volume (mL):	2	Sample Datafile:	FC5G_181S055	
Injection Volume (µL):	10.0	Blank Data Filename:	FC5G_181S070	
Dilution Factor:	3	Cal. Ver. Data Filename:	FC5G_181S048	
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-055CS-F	

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	UD		0.639	
PFHxA	UD		0.620	
PFHpA	UD		0.628	
PFOA	D	72.9	0.618	4.65
PFNA	D	1.51	0.670	4.99
PFDA	D	0.739	0.648	5.36
PFUnA	UD		0.641	
PFDoA	UD		0.638	
PFBS	UD		0.635	
PFHxS	D	12.5	0.638	4.80
PFOS	D	87.6	0.645	5.46
PFOSA	UD		0.625	

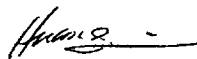
LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA	D	12.0	12.2	102	4.65
13C4-PFOS (80)	D	12.0	12.9	108	5.46
13C4-PFOS (99)	D	12.0	13.2	110	5.46
13C2-PFDA	D	12.0	10.3	85.6	5.36

(1) U = not detected; D = dilution data

(2) R (%) = Percent recovery

16982PFD1_2.xls, S5

Approved by: _____



QA/QC Chemist

11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 03

PFOS_S1_D12

Form 1A/2

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT ID:

Sample Collection: 31-Aug-2005 10:32

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.: 4191

Lab Sample ID: L7932-53 i

Matrix: SERUM

Sample Size: 1.00 mL

Sample Receipt date: 01-Sep-2005

Initial Calibration Date: 22-Sep-2005

Extraction Date: 21-Sep-2005

Instrument ID: LC-MS/MS

Analysis Date: 23-Sep-2005 Time: 1:09:49

LC Column ID: C18

Extract Volume (mL): 2

Sample Datafile: FC5G_181S056

Injection Volume (µL): 10.0

Blank Data Filename: FC5G_181S070

Dilution Factor: 3

Cal. Ver. Data Filename: FC5G_181S048
CAL VER ID: PFC-LIN-055CS-F

Concentration Units : ng/mL

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	UD		0.639	
PFHxA	UD		0.620	
PFHpA	D	1.95	0.628	4.18
PFOA	D	110	0.618	4.65
PFNA	D	2.92	0.670	5.05
PFDA	D	1.32	0.648	5.36
PFUnA	UD		0.641	
PFDoA	UD		0.638	
PFBS	UD		0.635	
PFHxS	D	20.0	0.638	4.80
PFOS	D	111	0.645	5.46
PFOSA	UD		0.625	

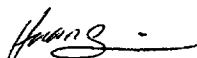
LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA	D	12.0	12.1	101	4.65
13C4-PFOS (80)	D	12.0	12.0	99.6	5.46
13C4-PFOS (99)	D	12.0	12.7	106	5.46
13C2-PFDA	D	12.0	10.8	90.0	5.36

(1) U = not detected; D = dilution data

(2) R (%) = Percent recovery

16982PFD1_2.xls, S6

Approved by: _____



QA/QC Chemist

11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 03

PFOS_S1_D12

Form 1A/2

CLIENT ID:

PERFLUORINATED ORGANICS ANALYSIS REPORT

Sample Collection: 31-Aug-2005 10:30

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-54 i
Matrix:	SERUM	Sample Size:	1.00 mL
Sample Receipt date:	01-Sep-2005	Initial Calibration Date:	22-Sep-2005
Extraction Date:	21-Sep-2005	Instrument ID:	LC-MS/MS
Analysis Date:	23-Sep-2005	Time:	1:24:02
LC Column ID:	C18	Sample Datafile:	FC5G_181S057
Extract Volume (mL):	2	Blank Data Filename:	FC5G_181S070
Injection Volume (µL):	10.0	Cal. Ver. Data Filename:	FC5G_181S048
Dilution Factor:	3	CAL VER ID:	PFC-LIN-055CS-F
Concentration Units :	ng/mL		

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	UD		0.639	
PFHxA	UD		0.620	
PFHpA	UD		0.628	
PFOA	D	55.4	0.618	4.65
PFNA	D	2.36	0.670	5.05
PFDA	UD		0.648	
PFUnA	UD		0.641	
PFDoA	UD		0.638	
PFBS	UD		0.635	
PFHxS	D	6.59	0.638	4.80
PFOS	D	60.0	0.645	5.46
PFOSA	UD		0.625	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA	D	12.0	11.8	98.2	4.65
13C4-PFOS (80)	D	12.0	15.0	125	5.51
13C4-PFOS (99)	D	12.0	13.4	112	5.46
13C2-PFDA	D	12.0	10.1	84.4	5.36

(1) U = not detected; D = dilution data

(2) R (%) = Percent recovery

16982PFD1_2.xls, S7

Approved by: _____



QA/QC Chemist

11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 03

PFOS_S1_D12

Form 1A/2

CLIENT ID:

PERFLUORINATED ORGANICS ANALYSIS REPORT

Sample Collection: 08-Sep-2005 11:48

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.: 4191

Lab Sample ID: L7932-56 i

Matrix: SERUM

Sample Size: 1.00 mL

Sample Receipt date: 09-Sep-2005

Initial Calibration Date: 22-Sep-2005

Extraction Date: 21-Sep-2005

Instrument ID: LC-MS/MS

Analysis Date: 23-Sep-2005 Time: 1:38:15

LC Column ID: C18

Extract Volume (mL): 2

Sample Datafile: FC5G_181S058

Injection Volume (µL): 10.0

Blank Data Filename: FC5G_181S070

Dilution Factor: 3

Cal. Ver. Data Filename: FC5G_181S048
CAL VER ID: PFC-LIN-055CS-F

Concentration Units : ng/mL

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	UD		0.639	
PFHxA	UD		0.620	
PFHpA	UD		0.628	
PFOA	D	2.63	0.618	4.65
PFNA	D	0.866	0.670	4.99
PFDA	UD		0.648	
PFUnA	UD		0.641	
PFDoA	UD		0.638	
PFBS	UD		0.635	
PFHxS	D	5.19	0.638	4.80
PFOS	D	17.4	0.645	5.46
PFOSA	UD		0.625	

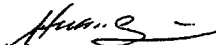
LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA	D	12.0	12.9	107	4.65
13C4-PFOS (80)	D	12.0	17.0	142	5.46
13C4-PFOS (99)	D	12.0	14.1	117	5.46
13C2-PFDA	D	12.0	11.5	96.1	5.36

(1) U = not detected; D = dilution data

(2) R (%) = Percent recovery

16982PFD1_2.xls, S8

Approved by: _____



QA/QC Chemist

11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 03

PFOS_S1_D12

Form 1A/2

CLIENT ID:

PERFLUORINATED ORGANICS ANALYSIS REPORT

Sample Collection: 12-Sep-2005 17:42

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-58 i	
Matrix:	SERUM	Sample Size:	1.00 mL	
Sample Receipt date:	14-Sep-2005	Initial Calibration Date:	22-Sep-2005	
Extraction Date:	21-Sep-2005	Instrument ID:	LC-MS/MS	
Analysis Date:	23-Sep-2005	Time: 1:52:30	LC Column ID:	C18
Extract Volume (mL):	2	Sample Datafile:	FC5G_181S059	
Injection Volume (µL):	10.0	Blank Data Filename:	FC5G_181S070	
Dilution Factor:	3	Cal. Ver. Data Filename:	FC5G_181S048	
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-055CS-F	

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	UD		0.639	
PFHxA	UD		0.620	
PFHpA	UD		0.628	
PFOA	D	7.35	0.618	4.65
PFNA	UD		0.670	
PFDA	UD		0.648	
PFUnA	UD		0.641	
PFDoA	UD		0.638	
PFBS	UD		0.635	
PFHxS	D	1.54	0.638	4.87
PFOS	D	10.5	0.645	5.46
PFOSA	UD		0.625	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA	D	12.0	11.7	97.8	4.65
13C4-PFOS (80)	D	12.0	15.1	126	5.46
13C4-PFOS (99)	D	12.0	15.2	127	5.46
13C2-PFDA	D	12.0	10.6	88.0	5.36

(1) U = not detected; D = dilution data

(2) R (%) = Percent recovery

16982PFD1_2.xls, S9

Approved by:  QA/QC Chemist11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 03

PFOS_S1_D12

Form 1A/2

CLIENT ID:

PERFLUORINATED ORGANICS ANALYSIS REPORT

Sample Collection: 12-Sep-2005 17:46

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.: 4191

Lab Sample ID: L7932-59 i

Matrix: SERUM

Sample Size: 1.00 mL

Sample Receipt date: 14-Sep-2005

Initial Calibration Date: 22-Sep-2005

Extraction Date: 21-Sep-2005

Instrument ID: LC-MS/MS

Analysis Date: 23-Sep-2005 Time: 2:06:42

LC Column ID: C18

Extract Volume (mL): 2

Sample Datafile: FC5G_181S060

Injection Volume (µL): 10.0

Blank Data Filename: FC5G_181S070

Dilution Factor: 3

Cal. Ver. Data Filename: FC5G_181S048
CAL VER ID: PFC-LIN-055CS-F

Concentration Units : ng/mL

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	UD		0.639	
PFHxA	UD		0.620	
PFHpA	D	0.962	0.628	4.14
PFOA	D	68.3	0.618	4.65
PFNA	D	0.957	0.670	4.99
PFDA	UD		0.648	
PFUnA	UD		0.641	
PFDoA	UD		0.638	
PFBS	UD		0.635	
PFHxS	D	13.8	0.638	4.80
PFOS	D	50.1	0.645	5.46
PFOSA	UD		0.625	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA	D	12.0	11.8	98.4	4.65
13C4-PFOS (80)	D	12.0	15.0	125	5.46
13C4-PFOS (99)	D	12.0	14.1	117	5.46
13C2-PFDA	D	12.0	12.7	106	5.36

(1) U = not detected; D = dilution data

(2) R (%) = Percent recovery

16982PFD1_2.xls, S10

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AXYS METHOD MLA-042 Rev 03
PFOS_S1_D12

Form 1A/2
PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT ID:

Sample Collection: 13-Sep-2005 18:33

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-61 i
Matrix:	SERUM	Sample Size:	1.00 mL
Sample Receipt date:	15-Sep-2005	Initial Calibration Date:	22-Sep-2005
Extraction Date:	21-Sep-2005	Instrument ID:	LC-MS/MS
Analysis Date:	23-Sep-2005	Time: 2:20:55	LC Column ID: C18
Extract Volume (mL):	2	Sample Datafile:	FC5G_181S061
Injection Volume (µL):	10.0	Blank Data Filename:	FC5G_181S070
Dilution Factor:	3	Cal. Ver. Data Filename:	FC5G_181S048
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-055CS-F

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	UD		0.639	
PFHxA	UD		0.620	
PFHpA	UD		0.628	
PFOA	D	69.0	0.618	4.65
PFNA	D	1.05	0.670	4.99
PFDA	D	0.835	0.648	5.36
PFUnA	UD		0.641	
PFDoA	UD		0.638	
PFBS	UD		0.635	
PFHxS	D	15.7	0.638	4.87
PFOS	D	77.2	0.645	5.46
PFOSA	UD		0.625	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA	D	12.0	12.1	101	4.65
13C4-PFOS (80)	D	12.0	14.3	119	5.46
13C4-PFOS (99)	D	12.0	14.6	122	5.46
13C2-PFDA	D	12.0	11.0	91.6	5.36

(1) U = not detected; D = dilution data

(2) R (%) = Percent recovery

16982PFD1_2.xls, S11

Approved by: _____

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QA/QC Chemist

11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 03
PFOS_S1_D12

Form 1A/2
PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT ID:

Sample Collection: 15-Sep-2005 11:03

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-63 i
Matrix:	SERUM	Sample Size:	1.00 mL
Sample Receipt date:	16-Sep-2005	Initial Calibration Date:	22-Sep-2005
Extraction Date:	21-Sep-2005	Instrument ID:	LC-MS/MS
Analysis Date:	23-Sep-2005	Time: 2:35:09	LC Column ID: C18
Extract Volume (mL):	2	Sample Datafile:	FC5G_181S062
Injection Volume (µL):	10.0	Blank Data Filename:	FC5G_181S070
Dilution Factor:	3	Cal. Ver. Data Filename:	FC5G_181S048
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-055CS-F

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	UD		0.639	
PFHxA	UD		0.620	
PFHpA	D	2.16	0.628	4.18
PFOA	D	100	0.618	4.65
PFNA	D	1.32	0.670	4.99
PFDA	UD		0.648	
PFUnA	UD		0.641	
PFDoA	UD		0.638	
PFBS	UD		0.635	
PFHxS	D	58.6	0.638	4.80
PFOS	D	131	0.645	5.46
PFOSA	UD		0.625	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA	D	12.0	9.60	80.0	4.65
13C4-PFOS (80)	D	12.0	9.83	81.9	5.46
13C4-PFOS (99)	D	12.0	9.52	79.3	5.46
13C2-PFDA	D	12.0	8.67	72.2	5.36

(1) U = not detected; D = dilution data

(2) R (%) = Percent recovery

16982PFD1_2.xls, S12

Approved by: *Humg* QA/QC Chemist

11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 03

PFOS_S1_D12

Form 1A/2

CLIENT ID:

PERFLUORINATED ORGANICS ANALYSIS REPORT

Sample Collection: 15-Sep-2005 11:05

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-64 i	
Matrix:	SERUM	Sample Size:	1.00 mL	
Sample Receipt date:	16-Sep-2005	Initial Calibration Date:	22-Sep-2005	
Extraction Date:	21-Sep-2005	Instrument ID:	LC-MS/MS	
Analysis Date:	23-Sep-2005	Time: 2:49:23	LC Column ID:	C18
Extract Volume (mL):	2	Sample Datafile:	FC5G_181S063	
Injection Volume (µL):	10.0	Blank Data Filename:	FC5G_181S070	
Dilution Factor:	3	Cal. Ver. Data Filename:	FC5G_181S048	
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-055CS-F	

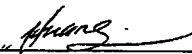
COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	UD		0.639	
PFHxA	UD		0.620	
PFHpA	UD		0.628	
PFOA	D	86.8	0.618	4.65
PFNA	D	1.71	0.670	4.99
PFDA	UD		0.648	
PFUnA	UD		0.641	
PFDoA	UD		0.638	
PFBS	UD		0.635	
PFHxS	D	34.5	0.638	4.80
PFOS	D	125	0.645	5.46
PFOSA	UD		0.625	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA	D	12.0	12.7	106	4.65
13C4-PFOS (80)	D	12.0	16.2	135	5.46
13C4-PFOS (99)	D	12.0	14.0	116	5.46
13C2-PFDA	D	12.0	13.6	113	5.36

(1) U = not detected; D = dilution data

(2) R (%) = Percent recovery

16982PFD1_2.xls, S13

Approved by:  QA/QC Chemist11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 02
PFOS_S1_D12

Form 1A/2
PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT ID:

Sample Collection: N/A

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.: 4191

Lab Sample ID: L7932-12

Matrix:

Sample Size: 1.00 mL

Sample Receipt Date: 19-Jul-2005

Initial Calibration Date: 05-Aug-2005

Extraction Date: 04-Aug-2005

Instrument ID: LC-MS/MS

Analysis Date: 05-Aug-2005 Time: 22:43:43

LC Column ID: C18, Zorbax XDB

Extract Volume (mL): 2

Sample Datafile: FC5G_131S047

Injection Volume (µL): 30.0

Blank Data Filename: FC5G_131S024

Dilution Factor: N/A

Cal. Ver. Data Filename: FC5G_131S037

Concentration Units : ng/mL

CAL VER ID: PFC-LIN-039CS-F

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	U		0.638	
PFHxA	U		0.620	
PFHpA	U		0.251	
PFOA	U		0.247	
PFNA	U		0.268	
PFDA	U		0.259	
PFUnA	U		0.256	
PFDoA	U		0.255	
PFBS	U		0.254	
PFHxS	U		0.255	
PFOS	U		0.258	
PFOSA	U		0.250	

LABELLED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C-PFOA		12.0	9.16	76.3	4.70
13C-PFDA		12.0	9.10	75.8	5.34

(1) U = not detected

(2) R (%) = Percent recovery

16535PFD2_2.xls, S9

Approved by: _____

QA/QC Chemist

11-10-2005
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 02

PFOS_S1_D12

Form 1A/2

CLIENT ID:

PERFLUORINATED ORGANICS ANALYSIS REPORT

Sample Collection: N/A

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-18 Y4
Matrix:	N/A	Sample Size:	1.00 mL
Sample Receipt date:	10-Aug-2005	Initial Calibration Date:	12-Sep-2005
Extraction Date:	29-Aug-2005	Instrument ID:	LC-MS/MS
Analysis Date:	12-Sep-2005	Time:	19:33:09
LC Column ID:	C18	Sample Datafile:	FC5G_167S036
Extract Volume (mL):	2	Blank Data Filename:	FC5G_167S031
Injection Volume (µL):	30.0	Cal. Ver. Data Filename:	FC5G_167S027
Dilution Factor:	N/A	CAL VER ID:	PFC-LIN-044CS-F
Concentration Units :	ng/mL		

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	U		0.256	
PFHxA	U		0.248	
PFHpA	U		0.251	
PFOA	U		0.247	
PFNA	U		0.268	
PFDA	U		0.259	
PFUnA	U		0.257	
PFDoA	U		0.255	
PFBS	U		2.54	
PFHxS	U		2.55	
PFOS	U		0.258	
PFOSA	U		0.250	

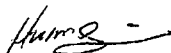
LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA		12.0	8.36	69.7	4.70
13C4-PFOS(80)		12.0	8.61	71.8	5.56
13C4-PFOS(99)		12.0	9.47	79.0	5.56
13C2-PFDA		12.0	10.2	85.0	5.36

(1) U = not detected

(2) R (%) = Percent recovery

16755PF_D1_2.xls, S7

Approved by: _____



QA/QC Chemist

11-10-05
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 03

PFOS_S1_D12

Form 1A/2

CLIENT ID:

PERFLUORINATED ORGANICS ANALYSIS REPORT

Sample Collection: N/A

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.: 4191

Lab Sample ID: L7932-50 Y2

Matrix: N/A

Sample Size: 1.00 mL

Sample Receipt date: 31-Aug-2005

Initial Calibration Date: 13-Sep-2005

Extraction Date: 06-Sep-2005

Instrument ID: LC-MS/MS

Analysis Date: 13-Sep-2005 Time: 11:01:03

LC Column ID: C18

Extract Volume (mL): 2

Sample Datafile: FC5G_168S027

Injection Volume (µL): 30.0

Blank Data Filename: FC5G_168S015

Dilution Factor: N/A

Cal. Ver. Data Filename: FC5G_168S010
CAL VER ID: PFC-LIN-048CS-F

Concentration Units : ng/mL

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	U		0.256	
PFHxA	U		0.248	
PFHpA	U		0.251	
PFOA	U		0.247	
PFNA	U		0.268	
PFDA	U		0.259	
PFUnA	U		0.257	
PFDoA	U		0.255	
PFBS	U		0.254	
PFHxS	U		0.255	
PFOS	U		0.258	
PFOSA	U		0.250	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA		12.0	4.15	34.6	4.65
13C4-PFOS(80)		12.0	5.94	49.5	5.51
13C4-PFOS(99)		12.0	4.52	37.6	5.51
13C2-PFDA		12.0	10.7	89.0	5.36

(1) U = not detected

(2) R (%) = Percent recovery

16814PFD3_2.xls, S14

Approved by: *M. Marzetti* QA/QC Chemist11-10-2005
dd-mm-yyyy

AXYS METHOD MLA-042 Rev 03

PFOS_S1_D12

Form 1A/2

CLIENT ID:

PERFLUORINATED ORGANICS ANALYSIS REPORT

Sample Collection: N/A

Lab Name: AXYS ANALYTICAL SERVICES

Contract No.:	4191	Lab Sample ID:	L7932-65 I
Matrix:	N/A	Sample Size:	1.00 mL
Sample Receipt date:	16-Sep-2005	Initial Calibration Date:	22-Sep-2005
Extraction Date:	21-Sep-2005	Instrument ID:	LC-MS/MS
Analysis Date:	23-Sep-2005	Time: 3:03:37	LC Column ID: C18
Extract Volume (mL):	2	Sample Datafile:	FC5G_181S064
Injection Volume (µL):	10.0	Blank Data Filename:	FC5G_181S070
Dilution Factor:	3	Cal. Ver. Data Filename:	FC5G_181S048
Concentration Units :	ng/mL	CAL VER ID:	PFC-LIN-055CS-F

COMPOUND	LAB FLAG ¹	CONC FOUND	DETECTION LIMIT	RETENTION TIME
PFPeA	UD		0.639	
PFHxA	UD		0.620	
PFHpA	UD		0.628	
PFOA	UD		0.618	
PFNA	UD		0.670	
PFDA	UD		0.648	
PFUnA	UD		0.641	
PFDoA	UD		0.638	
PFBS	UD		0.635	
PFHxS	UD		0.638	
PFOS	UD		0.645	
PFOSA	UD		0.625	

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC. (ng)	CONC. FOUND (ng)	R (%) ²	RETENTION TIME
13C2-PFOA	D	12.0	12.8	107	4.65
13C4-PFOS (80)	D	12.0	13.6	114	5.46
13C4-PFOS (99)	D	12.0	14.5	121	5.46
13C2-PFDA	D	12.0	15.2	127	5.36

(1) U = not detected; D = dilution data

(2) R (%) = Percent recovery

16982PFD1_2.xls, S14

Approved by: _____



QA/QC Chemist

11-10-05
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