

July 19, 2019

Rob King
Hampton Bays Water District
P.O. Box 1013
Hampton Bays, NY 11946

RE: Project: PFAS 6/17
Pace Project No.: 7093877

Dear Rob King:

Enclosed are the analytical results for sample(s) received by the laboratory on June 17, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Stu Murrell
stu.murrell@pacelabs.com
(631)694-3040
Project Manager

Enclosures

cc: Warren Booth, Hampton Bays Water District
John Collins, H2M Group
Stella Michaels, Hampton Bays Water District
Paul Ponturo, H2M Group



REPORT OF LABORATORY ANALYSIS

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WO#: 7093877



7093877

Client Info:

Name or Code: HAMPTON BAYS WATER DISTRICT

Address: PO BOX 1013

HAMPTON BAYS, NEW YORK 11946

(631) 728-0179

Phone #:

Attn:

Proj. # or (Name):

Bill To:

Copies To:

Sample Info:

Date/Time Collected:	Sample Type	Location	Origin	Treatment Type	Purpose	Field Readings Cl ₂ pH/Temp	Analysis	Lab No.
8:00 6-17-19	GW	WELL 1-1	RW	-	RO		BACT, PFC's, N/N, IRON, MANG	001
8:15 6-17-19	GW	WELL 1-2	RW	-	RO		BACT, PFC's, N/N, IRON, MANG	002
8:30 6-17-19	GW	WELL 1-3	RW	-	RO		BACT, PFC's, N/N, IRON, MANG	003
8:45 6-17-19	GW	BLENDED INF	RW	-	RO		BACT, PFC's, N/N, IRON, MANG	004
9:00 6-17-19	GW	BLENDED EFF	D	-	RO		BACT, PFC's, N/N, IRON, MANG	005
9:20 6-17-19	GW	WELL 4-2 S/L	RW	-	RO	70		
9:31 6-17-19	GW	WELL 4-2 1 min	RW	-	RO		IRON, MANG	
9:25 6-17-19	GW	WELL 4-2 5 min	RW	-	RO		IRON, MANG	
9:35 6-17-19	GW	WELL 4-2 15 min	RW	-	RO		IRON, MANG	
10:00 6-17-19	GW	WELL 4-2 1 HR	RW	-	RO		IRON, MANG	
10:15 6-17-19	GW	WELL 4-2 2 HR	RW	-	RO		IRON, MANG	
9:30 6-17-19	GW	WELL 4-1	RW	-	RO		IRON, MANG	

Remarks:

Page 2 of 2

Sample Request Form
PUBLIC WATER SUPPLIER

WELL OFF LINE 4-2 BLOW OFF

Date: 6-17-19

Collected By: W. Booth

Accepted By: [Signature]

Cooler Temp: 2.3 °C 11:55

WELL RUN TO SYSTEM

YES NO VOC'S PRESERVED WITH HCl

Sample Types	Purpose	Origin	Treatment Types
PW - Potable Water	RO - Routine	D - Distribution	AST - Air Stripper
GW - Groundwater	RE - Resample	RW - Raw Well	GAC - Granular Activated Charcoal
SW - Surface Water	S - Special	TW - Treated Well	N - Nitrate Removal Plant
WW - Waste Water		T - Tank	FE - Iron Removal Plant
AQ - Aqueous		MW - Monitoring Well	O - Other
S - Soil		I - Influent	
		E - Effluent	



Sample Condition Upon Receipt

Client Name:

Hampton Bays

Project

WO#: 7093877

PM: SWM Due Date: 07/01/19
CLIENT: HBWCourier: ☐ Fed Ex ☐ UPS ☐ USPS ☒ Client ☐ Commercial ☐ Pace ☐ Other

Tracking #:

Custody Seal on Cooler/Box Present: ☐ Yes ☒ No Seals intact: ☐ Yes ☒ NoPacking Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ Ziploc ☒ None ☐ OtherThermometer Used: TH091Correction Factor: +0.2Cooler Temperature (°C): 23Cooler Temperature Corrected (°C): 23

Temp should be above freezing to 6.0°C

USDA Regulated Soil (☐ N/A, water sample)Date and Initials of person examining contents: 6/17/19Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA (check map)? ☐ YES ☒ NODid samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☒ No

If Yes to either question, fill out a Regulated Soil Checklist (F-LI-C-010) and include with SCUR/COC paperwork.

	COMMENTS:
Chain of Custody Present: ☒ Yes ☐ No	1.
Chain of Custody Filled Out: ☒ Yes ☐ No	2.
Chain of Custody Relinquished: ☒ Yes ☐ No	3.
Sampler Name & Signature on COC: ☒ Yes ☐ No ☐ N/A	4.
Samples Arrived within Hold Time: ☒ Yes ☐ No	5.
Short Hold Time Analysis (<72hr): ☐ Yes ☒ No	6.
Rush Turn Around Time Requested: ☐ Yes ☒ No	7.
Sufficient Volume: (Triple volume provided for MS/MSD) ☐ Yes ☒ No	8.
Correct Containers Used: ☒ Yes ☐ No	9.
-Pace Containers Used: ☒ Yes ☐ No	
Containers Intact: ☒ Yes ☐ No	10.
Filtered volume received for Dissolved tests ☐ Yes ☒ No ☐ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels match COC: ☒ Yes ☐ No	12.
-Includes date/time/ID/Analysis Matrix SL WT OIL	
All containers needing preservation have been checked ☐ Yes ☒ No ☐ N/A	13. ☐ HNO ₃ ☐ H ₂ SO ₄ ☐ NaOH ☐ HCl
pH paper Lot #	Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , HCl, NaOH > 9 Sulfide, NaOH > 12 Cyanide) Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water). Per Method, VOA pH is checked after analysis ☐ Yes ☒ No ☐ N/A	Initial when completed: Lot # of added preservative: Date/Time preservative added:
Samples checked for dechlorination: ☐ Yes ☒ No ☐ N/A	14. Positive for Res. Chlorine? Y N
KI starch test strips Lot #	
Residual Chlorine strips Lot #	
Headspace in VOA Vials (>6mm): ☐ Yes ☒ No ☐ N/A	15.
Trip Blank Present: ☐ Yes ☒ No ☐ N/A	16.
Trip Blank Custody Seals Present ☐ Yes ☒ No ☐ N/A	
Pace Trip Blank Lot # (if applicable):	

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted:

Date/Time:

Comments/ Resolution:

ANALYTICAL REPORT

Eurofins TestAmerica, Burlington
30 Community Drive
Suite 11
South Burlington, VT 05403
Tel: (802)660-1990

Laboratory Job ID: 200-49249-1

Laboratory Sample Delivery Group: 200-49249-1

Client Project/Site: PFAS, NY DW

For:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, New York 11747

Attn: Stu Murrell



Authorized for release by:
7/19/2019 11:34:31 AM

Lori Arnold, Manager of Project Management
(802)923-1043

lori.arnold@testamericainc.com

LINKS

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results through

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Have a Question?



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www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Pace Analytical Services, LLC
Project/Site: PFAS, NY DW

Job ID: 200-49249-1
SDG: 200-49249-1

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Pace Analytical Services, LLC
Project/Site: PFAS, NY DW

Job ID: 200-49249-1
SDG: 200-49249-1

Job ID: 200-49249-1

Laboratory: Eurofins TestAmerica, Burlington

Narrative

CASE NARRATIVE

Client: Pace Analytical Services, LLC

Project: PFAS, NY DW

Report Number: 200-49249-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

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

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 06/18/2019; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 0.1° C.

PERFLUORINATED HYDROCARBONS

Samples S-15687, S-24848, S-31636, BLENDED INF and BLENDED EFF were analyzed for Perfluorinated Hydrocarbons in accordance with Method ISO 25101. The samples were prepared on 06/25/2019 and analyzed on 07/04/2019.

The 18O2 PFHxS and 13C3 PFBS Isotope Dilution Analyte (IDA) recoveries are above the method recommended limits for the samples, S-15687 and BLENDED INF. The 18O2 PFHxS Isotope Dilution Analyte (IDA) recoveries are above the method recommended limits for the samples S-24848 and S-31636. The 13C3 PFBS Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for the continuing calibration verification, CCVL 200-144726/3. The 18O2 PFHxS and 13C4 PFOS Isotope Dilution Analyte (IDA) recoveries are above the method recommended limit for the continuing calibration verification, CCV 200-144726/87. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

The 13C4 PFOA Isotope Dilution Analyte (IDA) recoveries associated with the samples, S-15687, S-24848, S-31636 and BLENDED EFF are below the method recommended limits. Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the samples. All detection limits are below the lower calibration.

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

Detection Summary

Client: Pace Analytical Services, LLC
Project/Site: PFAS, NY DW

Job ID: 200-49249-1
SDG: 200-49249-1

Client Sample ID: S-15687

Lab Sample ID: 200-49249-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoroheptanoic acid (PFHpA)	5.59		1.83		ng/L	1		25101:2009	Total/NA
Perfluorooctanoic acid (PFOA)	9.48		1.83		ng/L	1		25101:2009	Total/NA
Perfluorononanoic acid (PFNA)	5.40		1.83		ng/L	1		25101:2009	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.89		1.83		ng/L	1		25101:2009	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	27.6		1.83		ng/L	1		25101:2009	Total/NA
Perfluorooctanesulfonic acid (PFOS)	98.4		1.83		ng/L	1		25101:2009	Total/NA

Client Sample ID: S-24848

Lab Sample ID: 200-49249-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoroheptanoic acid (PFHpA)	5.99		1.84		ng/L	1		25101:2009	Total/NA
Perfluorooctanoic acid (PFOA)	7.77		1.84		ng/L	1		25101:2009	Total/NA
Perfluorononanoic acid (PFNA)	29.4		1.84		ng/L	1		25101:2009	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.89		1.84		ng/L	1		25101:2009	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	8.31		1.84		ng/L	1		25101:2009	Total/NA
Perfluorooctanesulfonic acid (PFOS)	35.9		1.84		ng/L	1		25101:2009	Total/NA

Client Sample ID: S-31636

Lab Sample ID: 200-49249-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoroheptanoic acid (PFHpA)	5.20		1.85		ng/L	1		25101:2009	Total/NA
Perfluorooctanoic acid (PFOA)	6.15		1.85		ng/L	1		25101:2009	Total/NA
Perfluorononanoic acid (PFNA)	7.77		1.85		ng/L	1		25101:2009	Total/NA
Perfluorobutanesulfonic acid (PFBS)	3.61		1.85		ng/L	1		25101:2009	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	15.2		1.85		ng/L	1		25101:2009	Total/NA
Perfluorooctanesulfonic acid (PFOS)	22.1		1.85		ng/L	1		25101:2009	Total/NA

Client Sample ID: BLENDED INF

Lab Sample ID: 200-49249-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoroheptanoic acid (PFHpA)	4.55		1.88		ng/L	1		25101:2009	Total/NA
Perfluorooctanoic acid (PFOA)	8.20		1.88		ng/L	1		25101:2009	Total/NA
Perfluorononanoic acid (PFNA)	11.5		1.88		ng/L	1		25101:2009	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.74		1.88		ng/L	1		25101:2009	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	16.2		1.88		ng/L	1		25101:2009	Total/NA
Perfluorooctanesulfonic acid (PFOS)	36.0		1.88		ng/L	1		25101:2009	Total/NA

Client Sample ID: BLENDED EFF

Lab Sample ID: 200-49249-5

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Burlington

Client Sample Results

Client: Pace Analytical Services, LLC
Project/Site: PFAS, NY DW

Job ID: 200-49249-1
SDG: 200-49249-1

Client Sample ID: S-15687

Lab Sample ID: 200-49249-1

Date Collected: 06/17/19 08:00

Matrix: Water

Date Received: 06/18/19 10:18

Method: 25101:2009 - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanoic acid (PFHpA)	5.59		1.83		ng/L		06/25/19 07:00	07/04/19 13:43	1
Perfluorooctanoic acid (PFOA)	9.48		1.83		ng/L		06/25/19 07:00	07/04/19 13:43	1
Perfluorononanoic acid (PFNA)	5.40		1.83		ng/L		06/25/19 07:00	07/04/19 13:43	1
Perfluorobutanesulfonic acid (PFBS)	1.89		1.83		ng/L		06/25/19 07:00	07/04/19 13:43	1
Perfluorohexanesulfonic acid (PFHxS)	27.6		1.83		ng/L		06/25/19 07:00	07/04/19 13:43	1
Perfluorooctanesulfonic acid (PFOS)	98.4		1.83		ng/L		06/25/19 07:00	07/04/19 13:43	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
18O2 PFHxS	153	*	50 - 150				06/25/19 07:00	07/04/19 13:43	1
13C4 PFHpA	83		50 - 150				06/25/19 07:00	07/04/19 13:43	1
13C4 PFOA	68	*	70 - 130				06/25/19 07:00	07/04/19 13:43	1
13C4 PFOS	99		70 - 130				06/25/19 07:00	07/04/19 13:43	1
13C5 PFNA	77		50 - 150				06/25/19 07:00	07/04/19 13:43	1
13C3 PFBS	153	*	50 - 150				06/25/19 07:00	07/04/19 13:43	1

Client Sample ID: S-24848

Lab Sample ID: 200-49249-2

Date Collected: 06/17/19 08:15

Matrix: Water

Date Received: 06/18/19 10:18

Method: 25101:2009 - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanoic acid (PFHpA)	5.99		1.84		ng/L		06/25/19 07:00	07/04/19 13:59	1
Perfluorooctanoic acid (PFOA)	7.77		1.84		ng/L		06/25/19 07:00	07/04/19 13:59	1
Perfluorononanoic acid (PFNA)	29.4		1.84		ng/L		06/25/19 07:00	07/04/19 13:59	1
Perfluorobutanesulfonic acid (PFBS)	1.89		1.84		ng/L		06/25/19 07:00	07/04/19 13:59	1
Perfluorohexanesulfonic acid (PFHxS)	8.31		1.84		ng/L		06/25/19 07:00	07/04/19 13:59	1
Perfluorooctanesulfonic acid (PFOS)	35.9		1.84		ng/L		06/25/19 07:00	07/04/19 13:59	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
18O2 PFHxS	160	*	50 - 150				06/25/19 07:00	07/04/19 13:59	1
13C4 PFHpA	81		50 - 150				06/25/19 07:00	07/04/19 13:59	1
13C4 PFOA	64	*	70 - 130				06/25/19 07:00	07/04/19 13:59	1
13C4 PFOS	97		70 - 130				06/25/19 07:00	07/04/19 13:59	1
13C5 PFNA	79		50 - 150				06/25/19 07:00	07/04/19 13:59	1
13C3 PFBS	114		50 - 150				06/25/19 07:00	07/04/19 13:59	1

Client Sample ID: S-31636

Lab Sample ID: 200-49249-3

Date Collected: 06/17/19 08:30

Matrix: Water

Date Received: 06/18/19 10:18

Method: 25101:2009 - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanoic acid (PFHpA)	5.20		1.85		ng/L		06/25/19 07:00	07/04/19 14:15	1
Perfluorooctanoic acid (PFOA)	6.15		1.85		ng/L		06/25/19 07:00	07/04/19 14:15	1
Perfluorononanoic acid (PFNA)	7.77		1.85		ng/L		06/25/19 07:00	07/04/19 14:15	1
Perfluorobutanesulfonic acid (PFBS)	3.61		1.85		ng/L		06/25/19 07:00	07/04/19 14:15	1

Eurofins TestAmerica, Burlington

Client Sample Results

Client: Pace Analytical Services, LLC
Project/Site: PFAS, NY DW

Job ID: 200-49249-1
SDG: 200-49249-1

Client Sample ID: S-31636

Date Collected: 06/17/19 08:30

Date Received: 06/18/19 10:18

Lab Sample ID: 200-49249-3

Matrix: Water

Method: 25101:2009 - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanesulfonic acid (PFHxS)	15.2		1.85		ng/L		06/25/19 07:00	07/04/19 14:15	1
Perfluorooctanesulfonic acid (PFOS)	22.1		1.85		ng/L		06/25/19 07:00	07/04/19 14:15	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
18O2 PFHxS	151	*	50 - 150				06/25/19 07:00	07/04/19 14:15	1
13C4 PFHpA	79		50 - 150				06/25/19 07:00	07/04/19 14:15	1
13C4 PFOA	62	*	70 - 130				06/25/19 07:00	07/04/19 14:15	1
13C4 PFOS	91		70 - 130				06/25/19 07:00	07/04/19 14:15	1
13C5 PFNA	76		50 - 150				06/25/19 07:00	07/04/19 14:15	1
13C3 PFBS	118		50 - 150				06/25/19 07:00	07/04/19 14:15	1

Client Sample ID: BLENDED INF

Date Collected: 06/17/19 08:45

Date Received: 06/18/19 10:18

Lab Sample ID: 200-49249-4

Matrix: Water

Method: 25101:2009 - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanoic acid (PFHpA)	4.55		1.88		ng/L		06/25/19 07:00	07/04/19 14:31	1
Perfluorooctanoic acid (PFOA)	8.20		1.88		ng/L		06/25/19 07:00	07/04/19 14:31	1
Perfluorononanoic acid (PFNA)	11.5		1.88		ng/L		06/25/19 07:00	07/04/19 14:31	1
Perfluorobutanesulfonic acid (PFBS)	2.74		1.88		ng/L		06/25/19 07:00	07/04/19 14:31	1
Perfluorohexanesulfonic acid (PFHxS)	16.2		1.88		ng/L		06/25/19 07:00	07/04/19 14:31	1
Perfluorooctanesulfonic acid (PFOS)	36.0		1.88		ng/L		06/25/19 07:00	07/04/19 14:31	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
18O2 PFHxS	171	*	50 - 150				06/25/19 07:00	07/04/19 14:31	1
13C4 PFHpA	86		50 - 150				06/25/19 07:00	07/04/19 14:31	1
13C4 PFOA	71		70 - 130				06/25/19 07:00	07/04/19 14:31	1
13C4 PFOS	124		70 - 130				06/25/19 07:00	07/04/19 14:31	1
13C5 PFNA	82		50 - 150				06/25/19 07:00	07/04/19 14:31	1
13C3 PFBS	167	*	50 - 150				06/25/19 07:00	07/04/19 14:31	1

Client Sample ID: BLENDED EFF

Date Collected: 06/17/19 09:00

Date Received: 06/18/19 10:18

Lab Sample ID: 200-49249-5

Matrix: Water

Method: 25101:2009 - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanoic acid (PFHpA)	1.84	U	1.84		ng/L		06/25/19 07:00	07/04/19 14:46	1
Perfluorooctanoic acid (PFOA)	1.84	U	1.84		ng/L		06/25/19 07:00	07/04/19 14:46	1
Perfluorononanoic acid (PFNA)	1.84	U	1.84		ng/L		06/25/19 07:00	07/04/19 14:46	1
Perfluorobutanesulfonic acid (PFBS)	1.84	U	1.84		ng/L		06/25/19 07:00	07/04/19 14:46	1
Perfluorohexanesulfonic acid (PFHxS)	1.84	U	1.84		ng/L		06/25/19 07:00	07/04/19 14:46	1
Perfluorooctanesulfonic acid (PFOS)	1.84	U	1.84		ng/L		06/25/19 07:00	07/04/19 14:46	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
18O2 PFHxS	132		50 - 150				06/25/19 07:00	07/04/19 14:46	1
13C4 PFHpA	81		50 - 150				06/25/19 07:00	07/04/19 14:46	1
13C4 PFOA	63	*	70 - 130				06/25/19 07:00	07/04/19 14:46	1

Eurofins TestAmerica, Burlington

Client Sample Results

Client: Pace Analytical Services, LLC
Project/Site: PFAS, NY DW

Job ID: 200-49249-1
SDG: 200-49249-1

Client Sample ID: BLENDED EFF

Lab Sample ID: 200-49249-5

Date Collected: 06/17/19 09:00

Matrix: Water

Date Received: 06/18/19 10:18

Method: 25101:2009 - Fluorinated Alkyl Substances (Continued)

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C4 PFOS	77		70 - 130	06/25/19 07:00	07/04/19 14:46	1
13C5 PFNA	72		50 - 150	06/25/19 07:00	07/04/19 14:46	1
13C3 PFBS	119		50 - 150	06/25/19 07:00	07/04/19 14:46	1

Isotope Dilution Summary

Client: Pace Analytical Services, LLC
Project/Site: PFAS, NY DW

Job ID: 200-49249-1
SDG: 200-49249-1

Method: 25101:2009 - Fluorinated Alkyl Substances

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)					
		PFHxS (50-150)	PFHpA (50-150)	PFOA (70-130)	PFOS (70-130)	PFNA (50-150)	3C3-PFBs (50-150)
200-49249-1	S-15687	153 *	83	68 *	99	77	153 *
200-49249-2	S-24848	160 *	81	64 *	97	79	114
200-49249-3	S-31636	151 *	79	62 *	91	76	118
200-49249-4	BLENDED INF	171 *	86	71	124	82	167 *
200-49249-5	BLENDED EFF	132	81	63 *	77	72	119
LCS 200-144437/2-A	Lab Control Sample	116	74	77	92	78	101
LCSD 200-144437/3-A	Lab Control Sample Dup	126	72	72	90	76	127
MB 200-144437/1-A	Method Blank	132	73	81	97	75	137

Surrogate Legend

PFHxS = 18O2 PFHxS

PFHpA = 13C4 PFHpA

PFOA = 13C4 PFOA

PFOS = 13C4 PFOS

PFNA = 13C5 PFNA

13C3-PFBS = 13C3 PFBS

QC Sample Results

Client: Pace Analytical Services, LLC
Project/Site: PFAS, NY DW

Job ID: 200-49249-1
SDG: 200-49249-1

Method: 25101:2009 - Fluorinated Alkyl Substances

Lab Sample ID: MB 200-144437/1-A

Matrix: Water

Analysis Batch: 144726

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 144437

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanoic acid (PFHpA)	2.00	U	2.00		ng/L		06/25/19 07:00	07/04/19 12:55	1
Perfluorooctanoic acid (PFOA)	2.00	U	2.00		ng/L		06/25/19 07:00	07/04/19 12:55	1
Perfluorononanoic acid (PFNA)	2.00	U	2.00		ng/L		06/25/19 07:00	07/04/19 12:55	1
Perfluorobutanesulfonic acid (PFBS)	2.00	U	2.00		ng/L		06/25/19 07:00	07/04/19 12:55	1
Perfluorohexanesulfonic acid (PFHxS)	2.00	U	2.00		ng/L		06/25/19 07:00	07/04/19 12:55	1
Perfluorooctanesulfonic acid (PFOS)	2.00	U	2.00		ng/L		06/25/19 07:00	07/04/19 12:55	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
18O2 PFHxS	132		50 - 150	06/25/19 07:00	07/04/19 12:55	1
13C4 PFHpA	73		50 - 150	06/25/19 07:00	07/04/19 12:55	1
13C4 PFOA	81		70 - 130	06/25/19 07:00	07/04/19 12:55	1
13C4 PFOS	97		70 - 130	06/25/19 07:00	07/04/19 12:55	1
13C5 PFNA	75		50 - 150	06/25/19 07:00	07/04/19 12:55	1
13C3 PFBS	137		50 - 150	06/25/19 07:00	07/04/19 12:55	1

Lab Sample ID: LCS 200-144437/2-A

Matrix: Water

Analysis Batch: 144726

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 144437

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Perfluoroheptanoic acid (PFHpA)	40.0	43.36		ng/L		108	50 - 150
Perfluorooctanoic acid (PFOA)	40.0	42.74		ng/L		107	70 - 130
Perfluorononanoic acid (PFNA)	40.0	41.79		ng/L		104	50 - 150
Perfluorobutanesulfonic acid (PFBS)	35.4	34.91		ng/L		99	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	36.4	28.22		ng/L		78	50 - 150
Perfluorooctanesulfonic acid (PFOS)	37.1	36.47		ng/L		98	70 - 130

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
18O2 PFHxS	116		50 - 150
13C4 PFHpA	74		50 - 150
13C4 PFOA	77		70 - 130
13C4 PFOS	92		70 - 130
13C5 PFNA	78		50 - 150
13C3 PFBS	101		50 - 150

Lab Sample ID: LCSD 200-144437/3-A

Matrix: Water

Analysis Batch: 144726

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 144437

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluoroheptanoic acid (PFHpA)	40.0	44.28		ng/L		111	50 - 150	2	20
Perfluorooctanoic acid (PFOA)	40.0	47.37		ng/L		118	70 - 130	10	20
Perfluorononanoic acid (PFNA)	40.0	39.99		ng/L		100	50 - 150	4	20
Perfluorobutanesulfonic acid (PFBS)	35.4	29.70		ng/L		84	50 - 150	16	20
Perfluorohexanesulfonic acid (PFHxS)	36.4	31.97		ng/L		88	50 - 150	12	20

Eurofins TestAmerica, Burlington

QC Sample Results

Client: Pace Analytical Services, LLC
Project/Site: PFAS, NY DW

Job ID: 200-49249-1
SDG: 200-49249-1

Method: 25101:2009 - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCSD 200-144437/3-A

Matrix: Water

Analysis Batch: 144726

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 144437

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorooctanesulfonic acid (PFOS)	37.1	37.45		ng/L	—	101	70 - 130	3	20
Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits						
18O2 PFHxS	126		50 - 150						
13C4 PFHpA	72		50 - 150						
13C4 PFOA	72		70 - 130						
13C4 PFOS	90		70 - 130						
13C5 PFNA	76		50 - 150						
13C3 PFBS	127		50 - 150						

QC Association Summary

Client: Pace Analytical Services, LLC
Project/Site: PFAS, NY DW

Job ID: 200-49249-1
SDG: 200-49249-1

LCMS

Prep Batch: 144437

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-49249-1	S-15687	Total/NA	Water	25101:2009 SPE	
200-49249-2	S-24848	Total/NA	Water	25101:2009 SPE	
200-49249-3	S-31636	Total/NA	Water	25101:2009 SPE	
200-49249-4	BLENDED INF	Total/NA	Water	25101:2009 SPE	
200-49249-5	BLENDED EFF	Total/NA	Water	25101:2009 SPE	
MB 200-144437/1-A	Method Blank	Total/NA	Water	25101:2009 SPE	
LCS 200-144437/2-A	Lab Control Sample	Total/NA	Water	25101:2009 SPE	
LCSD 200-144437/3-A	Lab Control Sample Dup	Total/NA	Water	25101:2009 SPE	

Analysis Batch: 144726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-49249-1	S-15687	Total/NA	Water	25101:2009	144437
200-49249-2	S-24848	Total/NA	Water	25101:2009	144437
200-49249-3	S-31636	Total/NA	Water	25101:2009	144437
200-49249-4	BLENDED INF	Total/NA	Water	25101:2009	144437
200-49249-5	BLENDED EFF	Total/NA	Water	25101:2009	144437
MB 200-144437/1-A	Method Blank	Total/NA	Water	25101:2009	144437
LCS 200-144437/2-A	Lab Control Sample	Total/NA	Water	25101:2009	144437
LCSD 200-144437/3-A	Lab Control Sample Dup	Total/NA	Water	25101:2009	144437

Lab Chronicle

Client: Pace Analytical Services, LLC
Project/Site: PFAS, NY DW

Job ID: 200-49249-1
SDG: 200-49249-1

Client Sample ID: S-15687

Date Collected: 06/17/19 08:00

Date Received: 06/18/19 10:18

Lab Sample ID: 200-49249-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	25101:2009 SPE			144437	06/25/19 07:00	TPB	TAL BUR
Total/NA	Analysis	25101:2009		1	144726	07/04/19 13:43	JM1	TAL BUR

Client Sample ID: S-24848

Date Collected: 06/17/19 08:15

Date Received: 06/18/19 10:18

Lab Sample ID: 200-49249-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	25101:2009 SPE			144437	06/25/19 07:00	TPB	TAL BUR
Total/NA	Analysis	25101:2009		1	144726	07/04/19 13:59	JM1	TAL BUR

Client Sample ID: S-31636

Date Collected: 06/17/19 08:30

Date Received: 06/18/19 10:18

Lab Sample ID: 200-49249-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	25101:2009 SPE			144437	06/25/19 07:00	TPB	TAL BUR
Total/NA	Analysis	25101:2009		1	144726	07/04/19 14:15	JM1	TAL BUR

Client Sample ID: BLENDED INF

Date Collected: 06/17/19 08:45

Date Received: 06/18/19 10:18

Lab Sample ID: 200-49249-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	25101:2009 SPE			144437	06/25/19 07:00	TPB	TAL BUR
Total/NA	Analysis	25101:2009		1	144726	07/04/19 14:31	JM1	TAL BUR

Client Sample ID: BLENDED EFF

Date Collected: 06/17/19 09:00

Date Received: 06/18/19 10:18

Lab Sample ID: 200-49249-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	25101:2009 SPE			144437	06/25/19 07:00	TPB	TAL BUR
Total/NA	Analysis	25101:2009		1	144726	07/04/19 14:46	JM1	TAL BUR

Laboratory References:

TAL BUR = Eurofins TestAmerica, Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Eurofins TestAmerica, Burlington

Accreditation/Certification Summary

Client: Pace Analytical Services, LLC
Project/Site: PFAS, NY DW

Job ID: 200-49249-1
SDG: 200-49249-1

Laboratory: Eurofins TestAmerica, Burlington

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP		L2336	02-25-20
ANAB	DoD		L2336	02-25-20
Connecticut	State Program	1	PH-0751	09-30-19
DE Haz. Subst. Cleanup Act (HSCA)	State Program	3	NA	02-01-20
Florida	NELAP	4	E87467	06-30-20
Minnesota	NELAP	5	050-999-436	12-31-19
New Hampshire	NELAP	1	2006	12-18-19
New Jersey	NELAP	2	VT972	06-30-20
New York	NELAP	2	10391	04-01-20
Pennsylvania	NELAP	3	68-00489	04-30-20
Pennsylvania	NELAP		68-00489	04-30-20
Rhode Island	State Program	1	LAO00298	12-30-19
US Fish & Wildlife	Federal		LE-058448-0	07-31-19
USDA	Federal		P330-11-00093	07-24-20
Vermont	State Program	1	VT-4000	12-31-19
Virginia	NELAP	3	460209	12-14-19

Method Summary

Client: Pace Analytical Services, LLC
Project/Site: PFAS, NY DW

Job ID: 200-49249-1
SDG: 200-49249-1

Method	Method Description	Protocol	Laboratory
25101:2009	Fluorinated Alkyl Substances	ISO	TAL BUR
25101:2009 SPE	Solid-Phase Extraction (SPE)	ISO	TAL BUR

Protocol References:

ISO = International Organization for Standardization

Laboratory References:

TAL BUR = Eurofins TestAmerica, Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Sample Summary

Client: Pace Analytical Services, LLC
Project/Site: PFAS, NY DW

Job ID: 200-49249-1
SDG: 200-49249-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
200-49249-1	S-15687	Water	06/17/19 08:00	06/18/19 10:18	
200-49249-2	S-24848	Water	06/17/19 08:15	06/18/19 10:18	
200-49249-3	S-31636	Water	06/17/19 08:30	06/18/19 10:18	
200-49249-4	BLENDED INF	Water	06/17/19 08:45	06/18/19 10:18	
200-49249-5	BLENDED EFF	Water	06/17/19 09:00	06/18/19 10:18	

Chain of Custody



Workorder: 7093877 **Workorder Name:** PFAS 6/17 **Results Requested By:** 7/2/2019
Report / Invoice To: **Subcontract To:**
 Stu Murrell
 Pace Analytical Melville
 575 Broad Hollow Road
 Melville, NY 11747
 Phone (631)694-3040
 Email: stu.murrell@pacelabs.com
 Attn: Lori Arnold
 TestAmerica Burlington
 30 Community Drive
 Suite 11
 South Burlington, VT
 05403
 P.O. 7093877SWM

State of Sample Origin: NY		Subcontracted ISO 25101		Requested Analysis										LAB USE ONLY	
Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Unpreserved	Preserved Containers									
1	S-15687	6/17/2019 08:00	7093877001	Drinking											
2	S-24848	6/17/2019 08:15	7093877002	Drinking											
3	S-31636	6/17/2019 08:30	7093877003	Drinking											
4	BLENDED INF	6/17/2019 08:45	7093877004	Drinking											
5	BLENDED EFF	6/17/2019 09:00	7093877005	Drinking											

Transfers
 1. Released By: *[Signature]* Date/Time: 6/17/19 18:00 Received By: Taylor John Date/Time: 6/19/19
 2.
 3.
 Cooler Temperature on Receipt: 0.1 °C Custody Seal: Y or N Received on Ice: Y or N Samples Intact: Y or N



200-49249 Chain of Custody



ORIGIN ID: ZMVA 821 634-3040
RECEIVING
PACE ANALYTICAL SERVICES
575 BROADHOLLOW RD

MELVILLE, NY 11747
UNITED STATES US

SHIP DATE: 17JUN19
ACTWGT: 25.00 LB MAN
CAD: 499472/CAFE3211

BILL SENDER

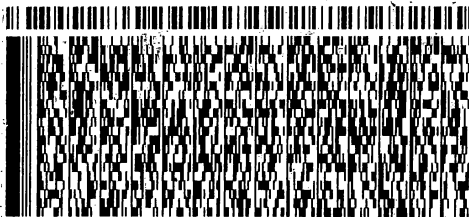
TO TEST AMERICA
TEST AMERICA
30 COMMUNITY DRIVE
SUITE #11
SOUTH BURLINGTON VT 05403

(802) 660-1990

REF:

INV:
PO:

DEPT:



FedEx
Express



J181118060501 W

TRK# 1068 0079 4727
0201

TUE - 18 JUN 10:30A
PRIORITY OVERNIGHT

NC BTVA

05403
VT-US BTV

P&H # 156148-434 RIT EXP 11/19



Login Sample Receipt Checklist

Client: Pace Analytical Services, LLC

Job Number: 200-49249-1

SDG Number: 200-49249-1

Login Number: 49249

List Number: 1

Creator: McNabb, Robert W

List Source: Eurofins TestAmerica, Burlington

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	Not present
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.1°C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Not requested on COC.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	