GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171
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gel.com

December 12, 2017

Bob Walker
H2GO Brunswick Regional Water & Sewer
516 Village Road, NE
Leland, North Carolina 28451

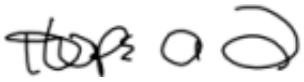
Re: Sample Analysis
Work Order: 438608

Dear Bob Walker:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on November 24, 2017. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4778.

Sincerely,



Hope Taylor
Project Manager

Purchase Order: signed quote
Enclosures

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 − (843) 556−8171 − www.gel.com

Certificate of Analysis Report
for

H2GO001 H2GO Brunswick Regional Water & Sewer

Client SDG: 438608 GEL Work Order: 438608

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a Tracer compound

** Analyte is a surrogate compound

J Value is estimated

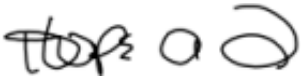
U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Hope Taylor.

Reviewed by 

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Certificate of Analysis

Report Date: December 12, 2017

Company :	H2GO Brunswick Regional Water & Sewer
Address :	516 Village Road, NE
	Leland, North Carolina 28451
Contact:	Bob Walker
Project:	Sample Analysis

Client Sample ID:	247 Ross Ct.	Project:	H2GO00117
Sample ID:	438608001	Client ID:	H2GO001
Matrix:	Drinking Water (Potable)		
Collect Date:	13-NOV-17 17:15		
Receive Date:	24-NOV-17		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
LCMSMS PFCs												
NC 6 PFCs by LC-MS/MS "As Received"												
Nafion Byproduct 1	UX	ND			ng/L	0.0201	1	JLS	11/28/17	2034	1721782	1
Nafion Byproduct 2	UX	ND			ng/L	0.0201	1					
Perfluoro(3,5,7,9-tetraoxadecanoic) acid (PFO4DA)	UX	ND			ng/L	0.0201	1					
Perfluoro(3,5,7-trioxaoctanoic) acid (PFO3OA)	UX	ND			ng/L	0.0201	1					
Perfluoro(3,5-dioxahexanoic) acid (PFO2HxA)	UX	ND			ng/L	0.0201	1					
Perfluoro-2-methoxyacetic acid (PFMOAA)	UX	ND			ng/L	0.0201	1					
Perfluoro-3-methoxypropanoic acid (PFMOPrA)	UX	ND			ng/L	0.0201	1					
Perfluoro-4-methoxybutanic acid (PFMOBA)	X	0.938			ng/L	0.0201	1					
PFOA, PFOS by LC-MS/MS "As Received"												
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid (PFPrOPrA)	U	ND	0.663	2.01	ng/L	0.0201	1	JLS	11/28/17	2034	1721782	2
Fluorotelomer sulfonate 4:2 (4:2 FTS)	U	ND	1.33	3.77	ng/L	0.0201	1					
Fluorotelomer sulfonate 6:2 (6:2 FTS)	U	ND	1.33	3.81	ng/L	0.0201	1					
Fluorotelomer sulfonate 8:2 (8:2 FTS)	U	ND	1.33	3.85	ng/L	0.0201	1					
Perfluorobutanesulfonate (PFBS)	U	ND	0.663	1.79	ng/L	0.0201	1					
Perfluorobutyric acid (PFBA)	U	ND	0.663	2.01	ng/L	0.0201	1					
Perfluorodecanesulfonate (PFDS)	U	ND	0.663	1.95	ng/L	0.0201	1					
Perfluorodecanoic acid (PFDA)	U	ND	0.663	2.01	ng/L	0.0201	1					
Perfluorododecanoic acid (PFDoA)	U	ND	0.663	2.01	ng/L	0.0201	1					
Perfluoroheptanesulfonate (PFHpS)	U	ND	0.663	1.91	ng/L	0.0201	1					
Perfluoroheptanoic acid (PFHpA)	U	ND	0.663	2.01	ng/L	0.0201	1					
Perfluorohexanesulfonate (PFHxS)	U	ND	0.663	1.83	ng/L	0.0201	1					
Perfluorohexanoic acid (PFHxA)	U	ND	0.663	2.01	ng/L	0.0201	1					
Perfluorononanesulfonate (PFNS)	U	ND	0.663	1.93	ng/L	0.0201	1					
Perfluorononanoic acid (PFNA)	U	ND	0.663	2.01	ng/L	0.0201	1					
Perfluorooctanesulfonamide (PFOSA)	U	ND	0.663	1.87	ng/L	0.0201	1					
Perfluorooctanesulfonate (PFOS)	U	ND	0.663	2.01	ng/L	0.0201	1					
Perfluorooctanoic acid (PFOA)	U	ND	0.663	2.01	ng/L	0.0201	1					

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Certificate of Analysis

Report Date: December 12, 2017

Company : H2GO Brunswick Regional Water & Sewer
Address : 516 Village Road, NE

Leland, North Carolina 28451
Contact: Bob Walker
Project: Sample Analysis

Client Sample ID: 247 Ross Ct. Project: H2GO00117
Sample ID: 438608001 Client ID: H2GO001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time	Batch	Method
LCMSMS PFCs											
PFOA, PFOS by LC-MS/MS "As Received"											
Perfluoropentanesulfonate (PFPeS)	U	ND	0.663	1.89	ng/L	0.0201	1				
Perfluoropentanoic acid (PFPeA)	U	ND	0.663	2.01	ng/L	0.0201	1				
Perfluorotetradecanoic acid (PFTeDA)	U	ND	0.663	2.01	ng/L	0.0201	1				
Perfluorotridecanoic acid (PFTrDA)	U	ND	0.663	2.01	ng/L	0.0201	1				
Perfluoroundecanoic acid (PFUdA)	U	ND	0.663	2.01	ng/L	0.0201	1				

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 537	PFCs Extraction in Drinking Water	GXC1	11/27/17	1300	1721781

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 537	
2	EPA 537	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: December 12, 2017

Company :	H2GO Brunswick Regional Water & Sewer
Address :	516 Village Road, NE
	Leland, North Carolina 28451
Contact:	Bob Walker
Project:	Sample Analysis

Client Sample ID:	247 Ross Ct.	Project:	H2GO00117
Sample ID:	438608002	Client ID:	H2GO001
Matrix:	Drinking Water (Potable)		
Collect Date:	13-NOV-17 17:15		
Receive Date:	24-NOV-17		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
LCMSMS PFCs												
NC 6 PFCs by LC-MS/MS "As Received"												
Nafion Byproduct 1	X	0.508			ng/L	0.0191	1	JLS	11/28/17	1833	1721782	1
Nafion Byproduct 2	X	1.57			ng/L	0.0191	1					
Perfluoro(3,5,7,9-tetraoxadecanoic) acid (PFO4DA)	X	0.758			ng/L	0.0191	1					
Perfluoro(3,5,7-trioxaoctanoic) acid (PFO3OA)	UX	ND			ng/L	0.0191	1					
Perfluoro(3,5-dioxahexanoic) acid (PFO2HxA)	X	10.7			ng/L	0.0191	1					
Perfluoro-2-methoxyacetic acid (PFMOAA)	X	0.237			ng/L	0.0191	1					
Perfluoro-3-methoxypropanoic acid (PFMOPrA)	X	11.5			ng/L	0.0191	1					
Perfluoro-4-methoxybutanic acid (PFMOBA)	X	0.415			ng/L	0.0191	1					
PFOA, PFOS by LC-MS/MS "As Received"												
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid (PFPrOPrA)		34.5	0.631	1.91	ng/L	0.0191	1	JLS	11/28/17	1833	1721782	2
Fluorotelomer sulfonate 4:2 (4:2 FTS)	U	ND	1.26	3.59	ng/L	0.0191	1					
Fluorotelomer sulfonate 6:2 (6:2 FTS)	U	ND	1.26	3.63	ng/L	0.0191	1					
Fluorotelomer sulfonate 8:2 (8:2 FTS)	U	ND	1.26	3.67	ng/L	0.0191	1					
Perfluorobutanesulfonate (PFBS)		4.36	0.631	1.70	ng/L	0.0191	1					
Perfluorobutyric acid (PFBA)		21.2	0.631	1.91	ng/L	0.0191	1					
Perfluorodecanesulfonate (PFDS)	U	ND	0.631	1.85	ng/L	0.0191	1					
Perfluorodecanoic acid (PFDA)	J	1.59	0.631	1.91	ng/L	0.0191	1					
Perfluorododecanoic acid (PFDoA)	U	ND	0.631	1.91	ng/L	0.0191	1					
Perfluoroheptanesulfonate (PFHpS)	U	ND	0.631	1.82	ng/L	0.0191	1					
Perfluoroheptanoic acid (PFHpA)		35.3	0.631	1.91	ng/L	0.0191	1					
Perfluorohexanesulfonate (PFHxS)		5.41	0.631	1.74	ng/L	0.0191	1					
Perfluorononanesulfonate (PFNS)	U	ND	0.631	1.84	ng/L	0.0191	1					
Perfluorononanoic acid (PFNA)		2.06	0.631	1.91	ng/L	0.0191	1					
Perfluorooctanesulfonamide (PFOSA)	U	ND	0.631	1.78	ng/L	0.0191	1					
Perfluorooctanesulfonate (PFOS)		6.41	0.631	1.91	ng/L	0.0191	1					
Perfluorooctanoic acid (PFOA)		13.4	0.631	1.91	ng/L	0.0191	1					
Perfluoropentanesulfonate (PFPeS)	J	0.847	0.631	1.80	ng/L	0.0191	1					

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Certificate of Analysis

Report Date: December 12, 2017

Company : H2GO Brunswick Regional Water & Sewer
Address : 516 Village Road, NE

Leland, North Carolina 28451
Contact: Bob Walker
Project: Sample Analysis

Client Sample ID: 247 Ross Ct. Project: H2GO00117
Sample ID: 438608002 Client ID: H2GO001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
LCMSMS PFCs												
PFOA, PFOS by LC-MS/MS "As Received"												
Perfluorotetradecanoic acid (PFTeDA)	U	ND	0.631	1.91	ng/L	0.0191	1					
Perfluorotridecanoic acid (PFTrDA)	U	ND	0.631	1.91	ng/L	0.0191	1					
Perfluoroundecanoic acid (PFUdA)	U	ND	0.631	1.91	ng/L	0.0191	1					
Perfluorohexanoic acid (PFHxA)		56.0	3.15	9.56	ng/L	0.0191	5	JLS	12/01/17	1645	1721782	3
Perfluoropentanoic acid (PFPeA)		58.1	3.15	9.56	ng/L	0.0191	5					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 537	PFCs Extraction in Drinking Water	GXC1	11/27/17	1300	1721781

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 537	
2	EPA 537	
3	EPA 537	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: December 12, 2017

Company :	H2GO Brunswick Regional Water & Sewer
Address :	516 Village Road, NE
	Leland, North Carolina 28451
Contact:	Bob Walker
Project:	Sample Analysis

Client Sample ID:	247 Ross Ct.	Project:	H2GO00117
Sample ID:	438608003	Client ID:	H2GO001
Matrix:	Soil		
Collect Date:	13-NOV-17 17:15		
Receive Date:	24-NOV-17		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
LCMSMS PFCs												
NC 6 PFCs by LC-MS/MS "As Received"												
Nafion Byproduct 1	UX	ND			ng/kg	7.43	1	JLS	12/03/17	1346	1721803	1
Nafion Byproduct 2	UX	ND			ng/kg	7.43	1					
Perfluoro(3,5,7,9-tetraoxadecanoic) acid (PFO4DA)	UX	ND			ng/kg	7.43	1					
Perfluoro(3,5,7-trioxaoctanoic) acid (PFO3OA)	UX	ND			ng/kg	7.43	1					
Perfluoro(3,5-dioxahexanoic) acid (PFO2HxA)	UX	ND			ng/kg	7.43	1					
Perfluoro-2-methoxyacetic acid (PFMOAA)	UX	ND			ng/kg	7.43	1					
Perfluoro-3-methoxypropanoic acid (PFMOPrA)	UX	ND			ng/kg	7.43	1					
Perfluoro-4-methoxybutanic acid (PFMOBA)	UX	ND			ng/kg	7.43	1					
PFOA, PFOS by LC-MS/MS "As Received"												
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid (PFPrOPrA)		0.00			ng/kg	7.43	1	JLS	12/03/17	1346	1721803	2
Fluorotelomer sulfonate 4:2 (4:2 FTS)	U	ND	595	1490	ng/kg	7.43	1					
Fluorotelomer sulfonate 6:2 (6:2 FTS)	U	ND	580	1490	ng/kg	7.43	1					
Fluorotelomer sulfonate 8:2 (8:2 FTS)	U	ND	572	1490	ng/kg	7.43	1					
Perfluorobutanesulfonate (PFBS)	U	ND	245	743	ng/kg	7.43	1					
Perfluorobutyric acid (PFBA)	J	280	245	743	ng/kg	7.43	1					
Perfluorodecanesulfonate (PFDS)	U	ND	245	743	ng/kg	7.43	1					
Perfluorodecanoic acid (PFDA)	U	ND	550	1490	ng/kg	7.43	1					
Perfluorododecanoic acid (PFDoA)	U	ND	245	743	ng/kg	7.43	1					
Perfluoroheptanesulfonate (PFHpS)	U	ND	275	743	ng/kg	7.43	1					
Perfluoroheptanoic acid (PFHpA)	U	ND	245	743	ng/kg	7.43	1					
Perfluorohexanesulfonate (PFHxS)	U	ND	245	743	ng/kg	7.43	1					
Perfluorohexanoic acid (PFHxA)	U	ND	245	743	ng/kg	7.43	1					
Perfluorononanesulfonate (PFNS)	U	ND	245	743	ng/kg	7.43	1					
Perfluorononanoic acid (PFNA)	U	ND	245	743	ng/kg	7.43	1					
Perfluorooctanesulfonamide (PFOSA)	U	ND	245	743	ng/kg	7.43	1					
Perfluorooctanesulfonate (PFOS)	U	ND	245	743	ng/kg	7.43	1					
Perfluorooctanoic acid (PFOA)	U	ND	245	743	ng/kg	7.43	1					

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Certificate of Analysis

Report Date: December 12, 2017

Company : H2GO Brunswick Regional Water & Sewer
Address : 516 Village Road, NE

Leland, North Carolina 28451
Contact: Bob Walker
Project: Sample Analysis

Client Sample ID: 247 Ross Ct. Project: H2GO00117
Sample ID: 438608003 Client ID: H2GO001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time	Batch	Method
LCMSMS PFCs											
PFOA, PFOS by LC-MS/MS "As Received"											
Perfluoropentanesulfonate (PFPeS)	U	ND	245	743	ng/kg	7.43	1				
Perfluoropentanoic acid (PFPeA)	U	ND	245	743	ng/kg	7.43	1				
Perfluorotetradecanoic acid (PFTeDA)	U	ND	245	743	ng/kg	7.43	1				
Perfluorotridecanoic acid (PFTrDA)	U	ND	245	743	ng/kg	7.43	1				
Perfluoroundecanoic acid (PFUdA)	U	ND	245	743	ng/kg	7.43	1				

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 537 Modified	PFCs Extraction in Solid	GXC1	11/27/17	1440	1721802

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 537 Modified	
2	EPA 537 Modified	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: December 12, 2017

Company : H2GO Brunswick Regional Water & Sewer
Address : 516 Village Road, NE

Leland, North Carolina 28451
Contact: Bob Walker
Project: Sample Analysis

Client Sample ID: Ground Storage Tank/BPS
Sample ID: 438608004
Matrix: Drinking Water (Potable)
Collect Date: 15-NOV-17 13:35
Receive Date: 24-NOV-17
Collector: Client

Project: H2GO00117
Client ID: H2GO001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
LCMSMS PFCs												
NC 6 PFCs by LC-MS/MS "As Received"												
Nafion Byproduct 1	UX	ND			ng/L	0.0199	1	JLS	11/28/17	1848	1721782	1
Nafion Byproduct 2	UX	ND			ng/L	0.0199	1					
Perfluoro(3,5,7,9-tetraoxadecanoic) acid (PFO4DA)	UX	ND			ng/L	0.0199	1					
Perfluoro(3,5,7-trioxaoctanoic) acid (PFO3OA)	UX	ND			ng/L	0.0199	1					
Perfluoro(3,5-dioxahexanoic) acid (PFO2HxA)	UX	ND			ng/L	0.0199	1					
Perfluoro-2-methoxyacetic acid (PFMOAA)	UX	ND			ng/L	0.0199	1					
Perfluoro-3-methoxypropanoic acid (PFMOPrA)	UX	ND			ng/L	0.0199	1					
Perfluoro-4-methoxybutanic acid (PFMOBA)	X	0.161			ng/L	0.0199	1					
PFOA, PFOS by LC-MS/MS "As Received"												
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid (PFPrOPrA)	U	ND	0.658	1.99	ng/L	0.0199	1	JLS	11/28/17	1848	1721782	2
Fluorotelomer sulfonate 4:2 (4:2 FTS)	U	ND	1.32	3.75	ng/L	0.0199	1					
Fluorotelomer sulfonate 6:2 (6:2 FTS)	U	ND	1.32	3.79	ng/L	0.0199	1					
Fluorotelomer sulfonate 8:2 (8:2 FTS)	U	ND	1.32	3.83	ng/L	0.0199	1					
Perfluorobutanesulfonate (PFBS)	U	ND	0.658	1.77	ng/L	0.0199	1					
Perfluorobutyric acid (PFBA)	U	ND	0.658	1.99	ng/L	0.0199	1					
Perfluorodecanesulfonate (PFDS)	U	ND	0.658	1.93	ng/L	0.0199	1					
Perfluorodecanoic acid (PFDA)	U	ND	0.658	1.99	ng/L	0.0199	1					
Perfluorododecanoic acid (PFDoA)	U	ND	0.658	1.99	ng/L	0.0199	1					
Perfluoroheptanesulfonate (PFHpS)	U	ND	0.658	1.89	ng/L	0.0199	1					
Perfluoroheptanoic acid (PFHpA)	U	ND	0.658	1.99	ng/L	0.0199	1					
Perfluorohexanesulfonate (PFHxS)	U	ND	0.658	1.81	ng/L	0.0199	1					
Perfluorohexanoic acid (PFHxA)	U	ND	0.658	1.99	ng/L	0.0199	1					
Perfluorononanesulfonate (PFNS)	U	ND	0.658	1.91	ng/L	0.0199	1					
Perfluorononanoic acid (PFNA)	U	ND	0.658	1.99	ng/L	0.0199	1					
Perfluorooctanesulfonamide (PFOSA)	U	ND	0.658	1.85	ng/L	0.0199	1					
Perfluorooctanesulfonate (PFOS)	U	ND	0.658	1.99	ng/L	0.0199	1					
Perfluorooctanoic acid (PFOA)	U	ND	0.658	1.99	ng/L	0.0199	1					

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Report Date: December 12, 2017

Company : H2GO Brunswick Regional Water & Sewer
Address : 516 Village Road, NE

Leland, North Carolina 28451
Contact: Bob Walker
Project: Sample Analysis

Client Sample ID: Ground Storage Tank/BPS
Sample ID: 438608004
Project: H2GO00117
Client ID: H2GO001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time	Batch	Method
LCMSMS PFCs											
PFOA, PFOS by LC-MS/MS "As Received"											
Perfluoropentanesulfonate (PFPeS)	U	ND	0.658	1.87	ng/L	0.0199	1				
Perfluoropentanoic acid (PFPeA)	U	ND	0.658	1.99	ng/L	0.0199	1				
Perfluorotetradecanoic acid (PFTeDA)	U	ND	0.658	1.99	ng/L	0.0199	1				
Perfluorotridecanoic acid (PFTrDA)	U	ND	0.658	1.99	ng/L	0.0199	1				
Perfluoroundecanoic acid (PFUdA)	U	ND	0.658	1.99	ng/L	0.0199	1				

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 537	PFCs Extraction in Drinking Water	GXC1	11/27/17	1300	1721781

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 537	
2	EPA 537	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: December 12, 2017

Company : H2GO Brunswick Regional Water & Sewer
Address : 516 Village Road, NE

Leland, North Carolina 28451
Contact: Bob Walker
Project: Sample Analysis

Client Sample ID: Ground Storage Tank/BPS
Sample ID: 438608005
Matrix: Drinking Water (Potable)
Collect Date: 15-NOV-17 13:35
Receive Date: 24-NOV-17
Collector: Client

Project: H2GO00117
Client ID: H2GO001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
LCMSMS PFCs												
NC 6 PFCs by LC-MS/MS "As Received"												
Nafion Byproduct 1	X	0.830			ng/L	0.0192	1	JLS	11/28/17	2019	1721782	1
Nafion Byproduct 2	X	4.51			ng/L	0.0192	1					
Perfluoro(3,5,7,9-tetraoxadecanoic) acid (PFO4DA)	X	1.77			ng/L	0.0192	1					
Perfluoro(3,5,7-trioxaoctanoic) acid (PFO3OA)	UX	ND			ng/L	0.0192	1					
Perfluoro(3,5-dioxahexanoic) acid (PFO2HxA)	X	13.7			ng/L	0.0192	1					
Perfluoro-2-methoxyacetic acid (PFMOAA)	X	0.457			ng/L	0.0192	1					
Perfluoro-3-methoxypropanoic acid (PFMOPrA)	X	11.9			ng/L	0.0192	1					
Perfluoro-4-methoxybutanic acid (PFMOBA)	X	0.685			ng/L	0.0192	1					
PFOA, PFOS by LC-MS/MS "As Received"												
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid (PFPrOPrA)		36.9	0.634	1.92	ng/L	0.0192	1	JLS	11/28/17	2019	1721782	2
Fluorotelomer sulfonate 4:2 (4:2 FTS)	U	ND	1.27	3.61	ng/L	0.0192	1					
Fluorotelomer sulfonate 6:2 (6:2 FTS)	U	ND	1.27	3.65	ng/L	0.0192	1					
Fluorotelomer sulfonate 8:2 (8:2 FTS)	U	ND	1.27	3.69	ng/L	0.0192	1					
Perfluorobutanesulfonate (PFBS)		5.17	0.634	1.71	ng/L	0.0192	1					
Perfluorobutyric acid (PFBA)		17.7	0.634	1.92	ng/L	0.0192	1					
Perfluorodecanesulfonate (PFDS)	U	ND	0.634	1.86	ng/L	0.0192	1					
Perfluorodecanoic acid (PFDA)	J	1.67	0.634	1.92	ng/L	0.0192	1					
Perfluorododecanoic acid (PFDoA)	U	ND	0.634	1.92	ng/L	0.0192	1					
Perfluoroheptanesulfonate (PFHpS)	U	ND	0.634	1.82	ng/L	0.0192	1					
Perfluoroheptanoic acid (PFHpA)		27.0	0.634	1.92	ng/L	0.0192	1					
Perfluorohexanesulfonate (PFHxS)		7.16	0.634	1.75	ng/L	0.0192	1					
Perfluorononanesulfonate (PFNS)	U	ND	0.634	1.84	ng/L	0.0192	1					
Perfluorononanoic acid (PFNA)		2.41	0.634	1.92	ng/L	0.0192	1					
Perfluorooctanesulfonamide (PFOSA)	U	ND	0.634	1.79	ng/L	0.0192	1					
Perfluorooctanesulfonate (PFOS)		7.89	0.634	1.92	ng/L	0.0192	1					
Perfluorooctanoic acid (PFOA)		12.1	0.634	1.92	ng/L	0.0192	1					
Perfluoropentanesulfonate (PFPeS)	J	1.13	0.634	1.81	ng/L	0.0192	1					

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Leland, North Carolina 28451
Contact: Bob Walker
Project: Sample Analysis

Client Sample ID: Ground Storage Tank/BPS
Sample ID: 438608005
Project: H2GO00117
Client ID: H2GO001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
LCMSMS PFCs												
PFOA, PFOS by LC-MS/MS "As Received"												
Perfluorotetradecanoic acid (PFTeDA)	U	ND	0.634	1.92	ng/L	0.0192	1					
Perfluorotridecanoic acid (PFTrDA)	U	ND	0.634	1.92	ng/L	0.0192	1					
Perfluoroundecanoic acid (PFUdA)	U	ND	0.634	1.92	ng/L	0.0192	1					
Perfluorohexanoic acid (PFHxA)		40.4	3.17	9.60	ng/L	0.0192	5	JLS	11/28/17	1903	1721782	3
Perfluoropentanoic acid (PFPeA)		44.3	3.17	9.60	ng/L	0.0192	5					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 537	PFCs Extraction in Drinking Water	GXC1	11/27/17	1300	1721781

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 537	
2	EPA 537	
3	EPA 537	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

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Company :	H2GO Brunswick Regional Water & Sewer
Address :	516 Village Road, NE
	Leland, North Carolina 28451
Contact:	Bob Walker
Project:	Sample Analysis

Client Sample ID:	Ground Storage Tank/BPS	Project:	H2GO00117
Sample ID:	438608006	Client ID:	H2GO001
Matrix:	Drinking Water (Potable)		
Collect Date:	15-NOV-17 13:35		
Receive Date:	24-NOV-17		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
LCMSMS PFCs												
NC 6 PFCs by LC-MS/MS "As Received"												
Nafion Byproduct 1	X	1.05			ng/L	0.0195	1	JLS	11/28/17	2004	1721782	1
Nafion Byproduct 2	X	4.84			ng/L	0.0195	1					
Perfluoro(3,5,7,9-tetraoxadecanoic) acid (PFO4DA)	X	1.26			ng/L	0.0195	1					
Perfluoro(3,5,7-trioxaoctanoic) acid (PFO3OA)	UX	ND			ng/L	0.0195	1					
Perfluoro(3,5-dioxahexanoic) acid (PFO2HxA)	X	12.6			ng/L	0.0195	1					
Perfluoro-2-methoxyacetic acid (PFMOAA)	X	0.454			ng/L	0.0195	1					
Perfluoro-3-methoxypropanoic acid (PFMOPrA)	X	10.7			ng/L	0.0195	1					
Perfluoro-4-methoxybutanic acid (PFMOBA)	UX	ND			ng/L	0.0195	1					
Nafion Byproduct 1	X	0.941			ng/L	0.0195	5	JLS	11/28/17	1918	1721782	2
Nafion Byproduct 2	X	4.68			ng/L	0.0195	5					
Perfluoro(3,5,7,9-tetraoxadecanoic) acid (PFO4DA)	X	1.49			ng/L	0.0195	5					
Perfluoro(3,5,7-trioxaoctanoic) acid (PFO3OA)	UX	ND			ng/L	0.0195	5					
Perfluoro(3,5-dioxahexanoic) acid (PFO2HxA)	X	13.9			ng/L	0.0195	5					
Perfluoro-2-methoxyacetic acid (PFMOAA)	UX	ND			ng/L	0.0195	5					
Perfluoro-3-methoxypropanoic acid (PFMOPrA)	X	12.0			ng/L	0.0195	5					
Perfluoro-4-methoxybutanic acid (PFMOBA)	UX	ND			ng/L	0.0195	5					
PFOA, PFOS by LC-MS/MS "As Received"												
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid (PFPrOPrA)		33.2	0.645	1.95	ng/L	0.0195	1	JLS	11/28/17	2004	1721782	3
Fluorotelomer sulfonate 4:2 (4:2 FTS)	U	ND	1.29	3.67	ng/L	0.0195	1					
Fluorotelomer sulfonate 6:2 (6:2 FTS)	U	ND	1.29	3.71	ng/L	0.0195	1					
Fluorotelomer sulfonate 8:2 (8:2 FTS)	U	ND	1.29	3.75	ng/L	0.0195	1					
Perfluorobutanesulfonate (PFBS)		5.56	0.645	1.74	ng/L	0.0195	1					
Perfluorobutyric acid (PFBA)		17.1	0.645	1.95	ng/L	0.0195	1					

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Address : 516 Village Road, NE

Leland, North Carolina 28451
Contact: Bob Walker
Project: Sample Analysis

Client Sample ID: Ground Storage Tank/BPS
Sample ID: 438608006
Project: H2GO00117
Client ID: H2GO001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
LCMSMS PFCs												
PFOA, PFOS by LC-MS/MS "As Received"												
Perfluorodecanesulfonate (PFDS)	U	ND	0.645	1.90	ng/L	0.0195	1					
Perfluorodecanoic acid (PFDA)	J	1.76	0.645	1.95	ng/L	0.0195	1					
Perfluorododecanoic acid (PFDoA)	U	ND	0.645	1.95	ng/L	0.0195	1					
Perfluoroheptanesulfonate (PFHpS)	U	ND	0.645	1.86	ng/L	0.0195	1					
Perfluoroheptanoic acid (PFHpA)		23.9	0.645	1.95	ng/L	0.0195	1					
Perfluorohexanesulfonate (PFHxS)		7.17	0.645	1.78	ng/L	0.0195	1					
Perfluorononanesulfonate (PFNS)	U	ND	0.645	1.88	ng/L	0.0195	1					
Perfluorononanoic acid (PFNA)		2.37	0.645	1.95	ng/L	0.0195	1					
Perfluorooctanesulfonamide (PFOSA)	U	ND	0.645	1.82	ng/L	0.0195	1					
Perfluorooctanesulfonate (PFOS)		8.69	0.645	1.95	ng/L	0.0195	1					
Perfluorooctanoic acid (PFOA)		11.7	0.645	1.95	ng/L	0.0195	1					
Perfluoropentanesulfonate (PFPeS)	J	1.04	0.645	1.84	ng/L	0.0195	1					
Perfluorotetradecanoic acid (PFTeDA)	U	ND	0.645	1.95	ng/L	0.0195	1					
Perfluorotridecanoic acid (PFTrDA)	U	ND	0.645	1.95	ng/L	0.0195	1					
Perfluoroundecanoic acid (PFUdA)	U	ND	0.645	1.95	ng/L	0.0195	1					
Perfluorohexanoic acid (PFHxA)		42.6	3.22	9.77	ng/L	0.0195	5	JLS	11/28/17	1918	1721782	4
Perfluoropentanoic acid (PFPeA)		41.1	3.22	9.77	ng/L	0.0195	5					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 537	PFCs Extraction in Drinking Water	GXC1	11/27/17	1300	1721781

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 537	
2	EPA 537	
3	EPA 537	
4	EPA 537	

Notes:

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Company :	H2GO Brunswick Regional Water & Sewer
Address :	516 Village Road, NE
	Leland, North Carolina 28451
Contact:	Bob Walker
Project:	Sample Analysis

Client Sample ID:	Ground Storage Tank/BPS	Project:	H2GO00117
Sample ID:	438608006	Client ID:	H2GO001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

QC Summary

Report Date: December 12, 2017

H2GO Brunswick Regional Water & Sewer
516 Village Road, NE
Leland, North Carolina

Contact: **Bob Walker**

Workorder: **438608**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Perfluorinated Compounds											
Batch 1721782											
QC1203927195 LCS											
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid (PFPrOPrA)	19.9			19.5	ng/L		98	(70%-130%)	JLS	11/28/17	17:47
Fluorotelomer sulfonate 4:2 (4:2 FTS)	18.6			17.6	ng/L		95	(70%-130%)			
Fluorotelomer sulfonate 6:2 (6:2 FTS)	18.9			20.5	ng/L		108	(70%-130%)			
Fluorotelomer sulfonate 8:2 (8:2 FTS)	19.1			18.5	ng/L		97	(70%-130%)			
Perfluorobutanesulfonate (PFBS)	17.6			18.3	ng/L		104	(70%-130%)			
Perfluorobutyric acid (PFBA)	19.9			20.9	ng/L		105	(70%-130%)			
Perfluorodecanesulfonate (PFDS)	19.2			19.6	ng/L		102	(70%-130%)			
Perfluorodecanoic acid (PFDA)	19.9			20.0	ng/L		100	(70%-130%)			
Perfluorododecanoic acid (PFDoA)	19.9			19.6	ng/L		98	(70%-130%)			
Perfluoroheptanesulfonate (PFHpS)	18.9			19.3	ng/L		102	(70%-130%)			
Perfluoroheptanoic acid (PFHpA)	19.9			23.5	ng/L		118	(70%-130%)			
Perfluorohexanesulfonate (PFHxS)	18.1			19.6	ng/L		108	(70%-130%)			
Perfluorohexanoic acid (PFHxA)	19.9			19.9	ng/L		100	(70%-130%)			

QC Summary

Workorder: **438608**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Perfluorinated Compounds										
Batch 1721782										
Perfluorononanesulfonate (PFNS)	19.1			18.1	ng/L		95	(70%-130%)	JLS	11/28/17 17:47
Perfluorononanoic acid (PFNA)	19.9			17.4	ng/L		87	(70%-130%)		
Perfluorooctanesulfonamide (PFOSA)	18.4			19.3	ng/L		105	(70%-130%)		
Perfluorooctanesulfonate (PFOS)	19.9			18.7	ng/L		94	(70%-130%)		
Perfluorooctanoic acid (PFOA)	19.9			21.4	ng/L		107	(70%-130%)		
Perfluoropentanesulfonate (PFPeS)	18.7			19.0	ng/L		102	(70%-130%)		
Perfluoropentanoic acid (PFPeA)	19.9			20.2	ng/L		101	(70%-130%)		
Perfluorotetradecanoic acid (PFTeDA)	19.9			18.8	ng/L		94	(70%-130%)		
Perfluorotridecanoic acid (PFTrDA)	19.9			20.1	ng/L		101	(70%-130%)		
Perfluoroundecanoic acid (PFUdA)	19.9			20.2	ng/L		101	(70%-130%)		
QC1203927196 LCSD										
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid (PFPrOPrA)	19.8			20.3	ng/L	4	103	(0%-30%)		11/28/17 18:02
Fluorotelomer sulfonate 4:2 (4:2 FTS)	18.5			18.1	ng/L	3	98	(0%-30%)		
Fluorotelomer sulfonate 6:2 (6:2 FTS)	18.8			19.1	ng/L	7	102	(0%-30%)		
Fluorotelomer sulfonate 8:2 (8:2 FTS)	19.0			18.8	ng/L	2	99	(0%-30%)		
Perfluorobutanesulfonate (PFBS)	17.5			18.3	ng/L	0	104	(0%-30%)		

QC Summary

Workorder: **438608**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Perfluorinated Compounds											
Batch 1721782											
Perfluorobutyric acid (PFBA)	19.8			20.5	ng/L	2	103	(0%-30%)	JLS	11/28/17	18:02
Perfluorodecanesulfonate (PFDS)	19.1			20.7	ng/L	5	108	(0%-30%)			
Perfluorodecanoic acid (PFDA)	19.8			20.9	ng/L	4	105	(0%-30%)			
Perfluorododecanoic acid (PFDoA)	19.8			20.6	ng/L	5	104	(0%-30%)			
Perfluoroheptanesulfonate (PFHpS)	18.8			17.6	ng/L	9	93	(0%-30%)			
Perfluoroheptanoic acid (PFHpA)	19.8			21.1	ng/L	11	106	(0%-30%)			
Perfluorohexanesulfonate (PFHxS)	18.0			19.1	ng/L	2	106	(0%-30%)			
Perfluorohexanoic acid (PFHxA)	19.8			20.8	ng/L	4	105	(0%-30%)			
Perfluorononanesulfonate (PFNS)	19.0			17.6	ng/L	3	92	(0%-30%)			
Perfluorononanoic acid (PFNA)	19.8			18.7	ng/L	7	94	(0%-30%)			
Perfluorooctanesulfonamide (PFOSA)	18.3			19.1	ng/L	1	104	(0%-30%)			
Perfluorooctanesulfonate (PFOS)	19.8			17.0	ng/L	9	86	(0%-30%)			
Perfluorooctanoic acid (PFOA)	19.8			20.7	ng/L	3	104	(0%-30%)			
Perfluoropentanesulfonate (PFPeS)	18.6			21.1	ng/L	11	114	(0%-30%)			
Perfluoropentanoic acid (PFPeA)	19.8			21.0	ng/L	4	106	(0%-30%)			

QC Summary

Workorder: **438608**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Perfluorinated Compounds											
Batch 1721782											
Perfluorotetradecanoic acid (PFTeDA)	19.8			19.8	ng/L	5	100	(0%-30%)	JLS	11/28/17	18:02
Perfluorotridecanoic acid (PFTrDA)	19.8			20.3	ng/L	1	103	(0%-30%)			
Perfluoroundecanoic acid (PFUdA)	19.8			21.7	ng/L	7	109	(0%-30%)			
QC1203927194 MB											
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid (PFPrOPrA)			U	ND	ng/L					11/28/17	17:32
Fluorotelomer sulfonate 4:2 (4:2 FTS)			U	ND	ng/L						
Fluorotelomer sulfonate 6:2 (6:2 FTS)			U	ND	ng/L						
Fluorotelomer sulfonate 8:2 (8:2 FTS)			U	ND	ng/L						
Nafion Byproduct 1			UX	ND	ng/L						
Nafion Byproduct 2			UX	ND	ng/L						
Perfluoro(3,5,7,9-tetraoxadecanoic) acid (PFO4DA)			UX	ND	ng/L						
Perfluoro(3,5,7-trioxaoctanoic) acid (PFO3OA)			UX	ND	ng/L						
Perfluoro(3,5-dioxahexanoic) acid (PFO2HxA)			UX	ND	ng/L						
Perfluoro-2-methoxyacetic acid (PFMOAA)			UX	ND	ng/L						
Perfluoro-3-methoxypropanoic acid (PFMOPrA)			UX	ND	ng/L						
Perfluoro-4-methoxybutanic acid (PFMOBA)			UX	ND	ng/L						

QC Summary

Workorder: **438608**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Perfluorinated Compounds											
Batch 1721782											
Perfluorobutanesulfonate (PFBS)			U	ND	ng/L				JLS	11/28/17	17:32
Perfluorobutyric acid (PFBA)			U	ND	ng/L						
Perfluorodecanesulfonate (PFDS)			U	ND	ng/L						
Perfluorodecanoic acid (PFDA)			U	ND	ng/L						
Perfluorododecanoic acid (PFDoA)			U	ND	ng/L						
Perfluoroheptanesulfonate (PFHpS)			U	ND	ng/L						
Perfluoroheptanoic acid (PFHpA)			U	ND	ng/L						
Perfluorohexanesulfonate (PFHxS)			U	ND	ng/L						
Perfluorohexanoic acid (PFHxA)			U	ND	ng/L						
Perfluorononanesulfonate (PFNS)			U	ND	ng/L						
Perfluorononanoic acid (PFNA)			U	ND	ng/L						
Perfluorooctanesulfonamide (PFOSA)			U	ND	ng/L						
Perfluorooctanesulfonate (PFOS)			U	ND	ng/L						
Perfluorooctanoic acid (PFOA)			U	ND	ng/L						
Perfluoropentanesulfonate (PFPeS)			U	ND	ng/L						

QC Summary

Workorder: **438608**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Perfluorinated Compounds											
Batch 1721782											
Perfluoropentanoic acid (PFPeA)			U	ND	ng/L				JLS	11/28/17	17:32
Perfluorotetradecanoic acid (PFTeDA)			U	ND	ng/L						
Perfluorotridecanoic acid (PFTrDA)			U	ND	ng/L						
Perfluoroundecanoic acid (PFUdA)			U	ND	ng/L						
Batch 1721803											
QC1203927256 LCS											
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid (PFPrOPrA)	5000			5720	ng/kg		114		JLS	12/03/17	13:15
Fluorotelomer sulfonate 4:2 (4:2 FTS)	4680			4360	ng/kg		93	(70%-130%)			
Fluorotelomer sulfonate 6:2 (6:2 FTS)	4750			5040	ng/kg		106	(70%-130%)			
Fluorotelomer sulfonate 8:2 (8:2 FTS)	4800			4710	ng/kg		98	(70%-130%)			
Perfluorobutanesulfonate (PFBS)	4430			5090	ng/kg		115	(70%-130%)			
Perfluorobutyric acid (PFBA)	5000			5670	ng/kg		113	(70%-130%)			
Perfluorodecanesulfonate (PFDS)	4830			4900	ng/kg		102	(70%-130%)			
Perfluorodecanoic acid (PFDA)	5000			5810	ng/kg		116	(70%-130%)			
Perfluorododecanoic acid (PFDoA)	5000			5830	ng/kg		117	(70%-130%)			
Perfluoroheptanesulfonate (PFHpS)	4750			5410	ng/kg		114	(70%-130%)			

QC Summary

Workorder: **438608**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Perfluorinated Compounds											
Batch 1721803											
Perfluoroheptanoic acid (PFHpA)	5000			5070	ng/kg		101	(70%-130%)	JLS	12/03/17	13:15
Perfluorohexanesulfonate (PFHxS)	4560			5380	ng/kg		118	(70%-130%)			
Perfluorohexanoic acid (PFHxA)	5000			6230	ng/kg		125	(70%-130%)			
Perfluorononanesulfonate (PFNS)	4800			5030	ng/kg		105	(70%-130%)			
Perfluorononanoic acid (PFNA)	5000			5750	ng/kg		115	(70%-130%)			
Perfluorooctanesulfonamide (PFOSA)	4630			5390	ng/kg		116	(70%-130%)			
Perfluorooctanesulfonate (PFOS)	5000			5170	ng/kg		103	(70%-130%)			
Perfluorooctanoic acid (PFOA)	5000			5180	ng/kg		104	(70%-130%)			
Perfluoropentanesulfonate (PFPeS)	4700			5210	ng/kg		111	(70%-130%)			
Perfluoropentanoic acid (PFPeA)	5000			6060	ng/kg		121	(70%-130%)			
Perfluorotetradecanoic acid (PFTeDA)	5000			5460	ng/kg		109	(70%-130%)			
Perfluorotridecanoic acid (PFTrDA)	5000			5150	ng/kg		103	(70%-130%)			
Perfluoroundecanoic acid (PFUdA)	5000			5450	ng/kg		109	(70%-130%)			
QC1203927257 LCSD											
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid (PFPrOPrA)	4980			5320	ng/kg	7	107			12/03/17	13:30
Fluorotelomer sulfonate 4:2 (4:2 FTS)	4650			5510	ng/kg	23	118	(0%-30%)			

QC Summary

Workorder: **438608**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Perfluorinated Compounds											
Batch 1721803											
Fluorotelomer sulfonate 6:2 (6:2 FTS)	4730			4510	ng/kg	11	95	(0%-30%)	JLS	12/03/17	13:30
Fluorotelomer sulfonate 8:2 (8:2 FTS)	4780			4860	ng/kg	3	102	(0%-30%)			
Perfluorobutanesulfonate (PFBS)	4400			5260	ng/kg	3	119	(0%-30%)			
Perfluorobutyric acid (PFBA)	4980			5670	ng/kg	0	114	(0%-30%)			
Perfluorodecanesulfonate (PFDS)	4800			4570	ng/kg	7	95	(0%-30%)			
Perfluorodecanoic acid (PFDA)	4980			5710	ng/kg	2	115	(0%-30%)			
Perfluorododecanoic acid (PFDoA)	4980			6030	ng/kg	3	121	(0%-30%)			
Perfluoroheptanesulfonate (PFHpS)	4730			4860	ng/kg	11	103	(0%-30%)			
Perfluoroheptanoic acid (PFHpA)	4980			5600	ng/kg	10	113	(0%-30%)			
Perfluorohexanesulfonate (PFHxS)	4540			5790	ng/kg	7	128	(0%-30%)			
Perfluorohexanoic acid (PFHxA)	4980			5640	ng/kg	10	113	(0%-30%)			
Perfluorononanesulfonate (PFNS)	4780			4940	ng/kg	2	103	(0%-30%)			
Perfluorononanoic acid (PFNA)	4980			6550	ng/kg	13	132*	(0%-30%)			
Perfluorooctanesulfonamide (PFOSA)	4600			5650	ng/kg	5	123	(0%-30%)			
Perfluorooctanesulfonate (PFOS)	4980			4680	ng/kg	10	94	(0%-30%)			

QC Summary

Workorder: **438608**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Perfluorinated Compounds											
Batch 1721803											
Perfluorooctanoic acid (PFOA)	4980			5570	ng/kg	7	112	(0%-30%)	JLS	12/03/17	13:30
Perfluoropentanesulfonate (PFPeS)	4680			6260	ng/kg	18	134*	(0%-30%)			
Perfluoropentanoic acid (PFPeA)	4980			5820	ng/kg	4	117	(0%-30%)			
Perfluorotetradecanoic acid (PFTeDA)	4980			5830	ng/kg	7	117	(0%-30%)			
Perfluorotridecanoic acid (PFTrDA)	4980			5500	ng/kg	7	111	(0%-30%)			
Perfluoroundecanoic acid (PFUdA)	4980			5420	ng/kg	1	109	(0%-30%)			
QC1203927255 MB											
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid (PFPrOPrA)				0.00	ng/kg					12/03/17	13:00
Fluorotelomer sulfonate 4:2 (4:2 FTS)			U	ND	ng/kg						
Fluorotelomer sulfonate 6:2 (6:2 FTS)			U	ND	ng/kg						
Fluorotelomer sulfonate 8:2 (8:2 FTS)			U	ND	ng/kg						
Nafion Byproduct 1			UX	ND	ng/kg						
Nafion Byproduct 2			UX	ND	ng/kg						
Perfluoro(3,5,7,9-tetraoxadecanoic) acid (PFO4DA)			UX	ND	ng/kg						
Perfluoro(3,5,7-trioxaoctanoic) acid (PFO3OA)			UX	ND	ng/kg						
Perfluoro(3,5-dioxahexanoic) acid (PFO2HxA)			UX	ND	ng/kg						

QC Summary

Workorder: **438608**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Perfluorinated Compounds											
Batch 1721803											
Perfluoro-2-methoxyacetic acid (PFMOAA)			UX	ND	ng/kg				JLS	12/03/17	13:00
Perfluoro-3-methoxypropanoic acid (PFMOPrA)			UX	ND	ng/kg						
Perfluoro-4-methoxybutanic acid (PFMOBA)			UX	ND	ng/kg						
Perfluorobutanesulfonate (PFBS)			U	ND	ng/kg						
Perfluorobutyric acid (PFBA)			U	ND	ng/kg						
Perfluorodecanesulfonate (PFDS)			U	ND	ng/kg						
Perfluorodecanoic acid (PFDA)			U	ND	ng/kg						
Perfluorododecanoic acid (PFDoA)			U	ND	ng/kg						
Perfluoroheptanesulfonate (PFHpS)			U	ND	ng/kg						
Perfluoroheptanoic acid (PFHpA)			U	ND	ng/kg						
Perfluorohexanesulfonate (PFHxS)			U	ND	ng/kg						
Perfluorohexanoic acid (PFHxA)			U	ND	ng/kg						
Perfluorononanesulfonate (PFNS)			U	ND	ng/kg						
Perfluorononanoic acid (PFNA)			U	ND	ng/kg						
Perfluorooctanesulfonamide (PFOSA)			U	ND	ng/kg						

QC Summary

Workorder: **438608**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Perfluorinated Compounds											
Batch 1721803											
Perfluorooctanesulfonate (PFOS)			U	ND	ng/kg				JLS	12/03/17	13:00
Perfluorooctanoic acid (PFOA)			U	ND	ng/kg						
Perfluoropentanesulfonate (PFPeS)			U	ND	ng/kg						
Perfluoropentanoic acid (PFPeA)			U	ND	ng/kg						
Perfluorotetradecanoic acid (PFTeDA)			U	ND	ng/kg						
Perfluorotridecanoic acid (PFTrDA)			U	ND	ng/kg						
Perfluoroundecanoic acid (PFUdA)			U	ND	ng/kg						

Notes:

The Qualifiers in this report are defined as follows:

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B The target analyte was detected in the associated blank.
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- E Concentration of the target analyte exceeds the instrument calibration range
- H Analytical holding time was exceeded
- J Value is estimated
- JNX Non Calibrated Compound
- N Organics--Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
- N Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
- N/A RPD or %Recovery limits do not apply.
- N1 See case narrative
- ND Analyte concentration is not detected above the detection limit

QC Summary

Workorder: **438608**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

P Organics--The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, the difference is >70%.

Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.

R Sample results are rejected

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

UJ Compound cannot be extracted

X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

Y QC Samples were not spiked with this compound

^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.

h Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

LCMSMS-Misc
Technical Case Narrative
H2GO Brunswick Regional Water & Sewer (H2GO)
SDG #: 438608

Product: **The Extraction and Analysis of Per and Polyfluroalkyl Substances Using LCMSMS**
Analytical Method: EPA 537
Analytical Procedure: GL-OA-E-076 REV# 4
Analytical Batches: 1721782 and 1721781

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
438608001	247 Ross Ct.
438608002	247 Ross Ct.
438608004	Ground Storage Tank/BPS
438608005	Ground Storage Tank/BPS
438608006	Ground Storage Tank/BPS
1203927194	Method Blank (MB)
1203927195	Laboratory Control Sample (LCS)
1203927196	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Sample Dilutions
The following samples were diluted to bring the over range concentrations within the calibration range. 438608001 (247 Ross Ct.), 438608002 (247 Ross Ct.), 438608005 (Ground Storage Tank/BPS) and 438608006 (Ground Storage Tank/BPS).

Analyte	438608		
	002	005	006
Several	5X 1X	5X 1X	5X 1X

Miscellaneous Information

Additional Comments
Results reported with the X qualifier are estimated concentrations and were obtained the GenX calibration curve because authentic standards are not available at this time. 1203927194 (MB), 438608001 (247 Ross Ct.), 438608002 (247 Ross Ct.), 438608004 (Ground Storage Tank/BPS), 438608005 (Ground Storage Tank/BPS) and 438608006 (Ground Storage Tank/BPS).

Product: **The Extraction and Analysis of Per and Polyfluroalkyl Substances Using LCMSMS**
Analytical Method: EPA 537 Modified
Analytical Procedure: GL-OA-E-076 REV# 4
Analytical Batches: 1721803 and 1721802

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
438608003	247 Ross Ct.
1203927255	Method Blank (MB)
1203927256	Laboratory Control Sample (LCS)
1203927257	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Miscellaneous Information

Additional Comments
Results reported with the X qualifier are estimated concentrations and were obtained the GenX calibration curve because authentic standards are not available at this time.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

Page: 1 of 1
Project #:
GEL Quote #:
COC Number (1):
PO Number:

GEL Chain of Custody and Analytical Request

GEL Work Order Number: 438609

GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
Phone: (843) 556-8171
Fax: (843) 766-1178

Client Name: H2GO Phone #: 910-371-9949
Project/Site Name: Fax #:
Address:
Collected by: Send Results To:

Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	Should this sample be considered: Radioactive	Should this sample be considered: TSCA Regulated	Total number of containers	Sample Analysis Requested (5) (Fill in the number of containers for each test): GenX 46	EPA 537	NnEtFOSAA By-Products	1,4 Dioxane	<-- Preservative Type (6)
247 Ross Ct.	11-13-17	17:15	TB	N					✓	✓	✓		
247 Ross Ct.	11-13-17	17:15	N	N	DW/SD				✓	✓	✓		
Ground Storage Tank/BPS	11-15-17	13:35	TB	N					✓	✓	✓	✓	
Ground Storage Tank/BPS	11-15-17	13:35	N	N	DW				✓	✓	✓	✓	
Ground Storage Tank/BPS	11-15-17	13:35	N	N	DW				✓	✓	✓	✓	

Comments
Note: extra sample is required for sample specific QC

TAT Requested: Normal: Rush: Specify: (Subject to Surcharge)
Fax Results: Yes / No
Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards*

Sample Collection Time Zone
Eastern Pacific
Central Other _____
Mountain

Chain of Custody Signatures

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1	Bob Walker	11-21-17	16:25		11-24-17	850
2						
3						

Sample Shipping and Delivery Details

GEL PM:
Method of Shipment: Date Shipped:
Airbill #:
Airbill #:

1.) Chain of Custody Number = Client Determined
2.) QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite
3.) Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered.
4.) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
5.) Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. *8260B* - 3, *6010B/7470A* - 1).
6.) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? YES NO
Cooler Temp: 13 C

WHITE = LABORATORY YELLOW = FILE PINK = CLIENT

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: H2GO	SDG/AR/COC/Work Order: 438608
Received By: Stacy Boone	Date Received: 11-24-17
Carrier and Tracking Number	Circle Applicable: FedEx Express FedEx Ground UPS Field Services Courier Other 7336 9700 3845

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
COC/Samples marked or classified as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
Is package, COC, and/or Samples marked HAZ?		✓	If yes, select Hazards below, and contact the GEL Safety Group. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	✓			
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	SB ✓		✓	Preservation Method: Wet Ice Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius ICE PK MELTED TEMP: 15 c
4	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: IR3-17 Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?		✓		Sample ID's and Containers Affected: If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?			✓	If Yes, Are Encores or Soil Kits present? Yes___ No___ (If yes, take to VOA Freezer) Do VOA vials contain acid preservation? Yes No___ N/A (If unknown, select No) VOA vials free of headspace? Yes No___ N/A Sample ID's and containers affected:
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Sample ID's affected:
11	Number of containers received match number indicated on COC?	✓			Sample ID's affected:
12	Are sample containers identifiable as GEL provided?	✓			
13	COC form is properly signed in relinquished/received sections?	✓			

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials JR Date 11-24-17 Page 1 of 1

GL-CHL-SR-001 Rev 5

List of current GEL Certifications as of 12 December 2017

State	Certification
Alaska	UST−0110
Arkansas	88−0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH−0169
Delaware	SC00012
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330−15−00283, P330−15−00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C−SC−01
Kansas NELAP	E−10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA170010
Maryland	270
Massachusetts	M−SC012
Michigan	9976
Mississippi	SC00012
Nebraska	NE−OS−26−13
Nevada	SC000122018−1
New Hampshire NELAP	205415
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R−158
Oklahoma	9904
Pennsylvania NELAP	68−00485
Puerto Rico	SC00012
S.Carolina Radchem	10120002
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235−17−12
Utah NELAP	SC000122017−24
Vermont	VT87156
Virginia NELAP	460202
Washington	C780
West Virginia	997404