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ANALYTICAL & CONSULTING CHEMISTS

Environmental Chemists, Inc.

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info@environmentalchemists.com

October 2, 2017

Brunswick County Public Utilities
Post Office Box 249
Bolivia, NC 28422
Attn: Glenn Walker

Report #2017-14060

Enclosed please find your analytical report.

Sincerely,

Tammy Duran
Environmental Chemists, Inc.

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Ph: (715)-478-2777 Fax: (715)-478-3060

ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. WI00034

NLS Project: 287723
NLS Customer: 96259

Client: Environmental Chemists
Attn: Ray Porter
6602 Windmill Way
Wilmington, NC 28405

Fax: 910 392 4424 Phone: 910 392 0223

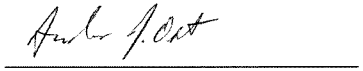
Project: GenX & PFC Samples

33804 NLS ID: 1020210
COC: 228317:1 Matrix: DW
Collected: 09/14/17 09:00 Received: 09/21/17

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Solid Phase Extraction by EPA Method 537	yes					09/25/17	EPA 537	721026460
GenX and PFCs by EPA 537	see attached					09/28/17	EPA 537	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dlution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection LOQ = Limit of Quantitation NA = Not Applicable
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 1000 ug/L = 1 mg/L
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by: 

Authorized by:
R. T. Krueger
President

ANALYTICAL RESULTS: Perfluorinated Chemicals by EPA 537 Rev 1.1 Safe Drinking Water Analysis

Customer: Environmental Chemists NLS Project: 287723

Project Description: GenX & PFC Samples

Project Title: Template: 537PPTGENX Printed: 09/29/2017 14:34

Sample: 1020210 33804 Collected: 09/14/17 Analyzed: 09/28/17 - Analytes: 13

ANALYTE NAME	RESULT	UNITS	WWB	DIL	LOD	LOQ	MCL	Note
perfluorobutanesulfonic acid (PFBS)	ND	ppt		1	6.6	21		
perfluorohexanoic acid (PFHxA)	30	ppt		1	1.3	4.0		
perfluoro-2-propoxypropanoic acid (GenX)	25.9	ppt		1	0.73	2.3		
perfluoroheptanoic acid (PFHpA)	26.9	ppt		1	0.80	2.6		
perfluorohexanesulfonic acid (PFHxS)	[5.56]	ppt		1	2.8	8.8		J
perfluorooctanoic acid (PFOA)	12.9	ppt		1	1.2	3.9		
perfluorononanoic acid (PFNA)	[2.95]	ppt		1	1.5	4.9		J
perfluorooctanesulfonic acid (PFOS)	8.73	ppt		1	1.7	5.3		
perfluorodecanoic acid (PFDA)	[1.57]	ppt		1	0.90	2.7		J
perfluoroundecanoic acid (PFUnA)	ND	ppt		1	1.0	3.0		
perfluorododecanoic acid (PFDoA)	ND	ppt		1	1.9	6.1		
perfluorotridecanoic acid (PFTrDA)	ND	ppt		1	3.2	10		
perfluorotetradecanoic acid (PFTA)	ND	ppt		1	2.8	8.9		
C13-PFHxA (SURR)	77.976%							S
C13-PFDA (SURR)	90.43%							S

NOTES APPLICABLE TO THIS ANALYSIS:

J = Result enclosed in brackets is between LOD and LOQ, a region of less certain quantitation.

S = This compound is a surrogate used to evaluate the quality control of a method.

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ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. WI00034

NLS Project: 287723
NLS Customer: 96259

Client: Environmental Chemists
Attn: Ray Porter
6602 Windmill Way
Wilmington, NC 28405

Fax: 910 392 4424 Phone: 910 392 0223

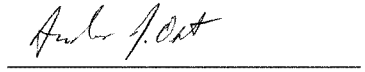
Project: GenX & PFC Samples

33806 NLS ID: 1020211
COC: 228317:2 Matrix: DW
Collected: 09/14/17 09:00 Received: 09/21/17

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Solid Phase Extraction by EPA Method 537	yes					09/25/17	EPA 537	721026460
GenX and PFCs by EPA 537	see attached					09/28/17	EPA 537	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dlution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection LOQ = Limit of Quantitation NA = Not Applicable
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 1000 ug/L = 1 mg/L
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by: 

Authorized by:
R. T. Krueger
President

ANALYTICAL RESULTS: Perfluorinated Chemicals by EPA 537 Rev 1.1 Safe Drinking Water Analysis
Customer: Environmental Chemists NLS Project: 287723
Project Description: GenX & PFC Samples
Project Title: Template: 537PPTGENX Printed: 09/29/2017 14:34

Sample: 1020211 33806 Collected: 09/14/17 Analyzed: 09/28/17 - Analytes: 13

ANALYTE NAME	RESULT	UNITS	WWB	DIL	LOD	LOQ	MCL	Note
perfluorobutanesulfonic acid (PFBS)	ND	ppt		1	6.6	21		
perfluorohexanoic acid (PFHxA)	28.9	ppt		1	1.3	4.0		
perfluoro-2-propoxypropanoic acid (GenX)	20.3	ppt		1	0.73	2.3		
perfluoroheptanoic acid (PFHpA)	28	ppt		1	0.80	2.6		
perfluorohexanesulfonic acid (PFHxS)	[7.4]	ppt		1	2.8	8.8		J
perfluorooctanoic acid (PFOA)	14.9	ppt		1	1.2	3.9		
perfluorononanoic acid (PFNA)	[3.46]	ppt		1	1.5	4.9		J
perfluorooctanesulfonic acid (PFOS)	11.8	ppt		1	1.7	5.3		
perfluorodecanoic acid (PFDA)	[2.0]	ppt		1	0.90	2.7		J
perfluoroundecanoic acid (PFUnA)	ND	ppt		1	1.0	3.0		
perfluorododecanoic acid (PFDoA)	ND	ppt		1	1.9	6.1		
perfluorotridecanoic acid (PFTrDA)	ND	ppt		1	3.2	10		
perfluorotetradecanoic acid (PFTA)	ND	ppt		1	2.8	8.9		
C13-PFHxA (SURR)	74.398%							S
C13-PFDA (SURR)	89.528%							S

NOTES APPLICABLE TO THIS ANALYSIS:

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S = This compound is a surrogate used to evaluate the quality control of a method.

Analytical & Consulting Chemists

ENVIRONMENTAL CHEMISTS, INC

NCDENR: DWQ CERTIFICATION # 94 NCDHHS: DLS CERTIFICATION # 37729

OFFICE: 910-392-0223 FAX 910-392-4424
info@environmentalchemists.com

COLLECTION AND CHAIN OF CUSTODY

CLIENT: Brunswick County Utilities	PROJECT NAME: NWTP		REPORT NO: 17-14060
ADDRESS: PO Box 249	CONTACT NAME: Glenn Walker		PO NO:
Bolivia NC 28422	REPORT TO: same		PHONE/FAX: 910-371-5755
	COPY TO:		email: glenn.walker@brunswickcountync.gov

Sampled By: Billy Benton

SAMPLE TYPE: I = Influent, E = Effluent, W = Well, ST = Stream, SO = Soil, SL = Sludge, Other:

Sample Identification	Collection Date	Collection Time	Collection Temp	Sample Type	Composite or Grab	Container (P or G)	Chlorine mg/L	LAB ID NUMBER	NONE	HCL	H2SO4	HNO3	NAOH	THIO	Zn acetate	ANALYSIS REQUESTED
91417-E01	9/14/17		24.4	DW	C	(P)		33804								
					(G)	G										EPA 537 + GENX
91417-S01	9/14/17		24.4	RAW	C	(P)										
					(G)	G		33806								
					C	P										
					G	G										
					C	P										
					G	G										
					C	P										
					G	G										
					C	P										
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					G	G										
					C	P										
					G	G										

Transfer	Relinquished By:	Date/Time	Received By:	Date/Time
1.	[signature]			
2.				

Temperature when Received: 1.1°C Accepted: ✓ Rejected: Resample Requested:

Delivered By: Received By: [signature] Date: 9/14/17 Time: 1102

Comments: TURNAROUND: