



Environmental Chemists, Inc.

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ANALYTICAL & CONSULTING CHEMISTS

info@environmentalchemists.com

August 8, 2017

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

Report #2017-10894

Enclosed please find your analytical report.

Sincerely,

A handwritten signature in cursive script that reads "Tammy Duran".
Tammy Duran

Environmental Chemists, Inc.

ANALYTICAL REPORT

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

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

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

Printed: 08/08/17 Page 1 of 1

MLS Project: 284123
 MLS Customer: 96259

Fax: 910 392 4424 Phone: 910 392 0223

Project: GenX and PFCs by EPA 537M

26126 NLS ID: 1007906

COC: 192201:1 Matrix: DW

Collected: 07/27/17 10:35 Received: 08/01/17

Parameter: Solid Phase Extraction by EPA Method 537
 GenX and PFCs by EPA 537

Result: yes
 see attached

Units:

Dilution:

LOD:

LOQ/MCL:

Analyzed: 08/02/17
 08/03/17

Method: EPA 537
 EPA 537

Lab: 721026460
 721026460

26127 NLS ID: 1007907

COC: 192201:2 Matrix: DW

Collected: 07/27/17 10:35 Received: 08/01/17

Parameter: Solid Phase Extraction by EPA Method 537
 GenX and PFCs by EPA 537

Result: yes
 see attached

Units:

Dilution:

LOD:

LOQ/MCL:

Analyzed: 08/02/17
 08/03/17

Method: EPA 537
 EPA 537

Lab: 721026460
 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/or LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution 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 Shaded results indicate >MCL.
 MCL = Maximum Contaminant Levels for Drinking Water Samples.

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: 284123
 Project Description: GenX and PFCs by EPA 537M
 Project Title: Template: 537PTGENX Printed: 08/08/2017 17:23

Sample: 1007906 26126 Collected: 07/27/17 Analyzed: 08/03/17 Analytes: 13

ANALYTE NAME	RESULT	UNITS	WWB	DIL	LOD	LOQ	MCL	Note
perfluorobutanesulfonic acid (PFBS)	ND	ppt		1	6.6	21		
perfluorohexanoic acid (PFHxA)	10.3	ppt		1	1.3	4.0		
perfluoro-2-propoxypropanoic acid (GenX)	36.9	ppt		1	0.73	2.3		
perfluorooctanoic acid (PFHxA)	8.6	ppt		1	0.80	2.6		
perfluorohexanesulfonic acid (PFHxS)	[6.54]	ppt		1	2.8	8.8		J
perfluorooctanoic acid (PFOA)	7.86	ppt		1	1.2	3.9		
perfluorononanoic acid (PFNA)	[1.73]	ppt		1	1.5	4.9		J
perfluorodecanesulfonic acid (PFOS)	14.5	ppt		1	1.7	5.3		
perfluorodecanoic acid (PFDA)	[1.33]	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 (PFTDA)	ND	ppt		1	3.2	10		
perfluorotetradecanoic acid (PFTA)	ND	ppt		1	2.8	8.9		
C13-PFHxA (SURR)	70.819%							S
C13-PFDA (SURR)	90.893%							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.

Sample: 1007907 26127 Collected: 07/27/17 Analyzed: 08/03/17 Analytes: 13

ANALYTE NAME	RESULT	UNITS	WWB	DIL	LOD	LOQ	MCL	Note
perfluorobutanesulfonic acid (PFBS)	ND	ppt		1	6.6	21		
perfluorohexanoic acid (PFHxA)	9.56	ppt		1	1.3	4.0		
perfluoro-2-propoxypropanoic acid (GenX)	35	ppt		1	0.73	2.3		
perfluorooctanoic acid (PFHxA)	7.4	ppt		1	0.80	2.6		
perfluorohexanesulfonic acid (PFHxS)	[5.33]	ppt		1	2.8	8.8		J
perfluorooctanoic acid (PFOA)	6.28	ppt		1	1.2	3.9		
perfluorononanoic acid (PFNA)	ND	ppt		1	1.5	4.9		
perfluorodecanesulfonic acid (PFOS)	9.66	ppt		1	1.7	5.3		
perfluorodecanoic acid (PFDA)	[1.06]	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 (PFTDA)	ND	ppt		1	3.2	10		
perfluorotetradecanoic acid (PFTA)	ND	ppt		1	2.8	8.9		
C13-PFHxA (SURR)	74.859%							S
C13-PFDA (SURR)	95.336%							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.

The PFOA branch isotope peak is included in the PFOA calculation per EPA directive. GenX analysis performed by Modified EPA Method 537.



Analytical & Consulting Chemists

ENVIRONMENTAL CHEMISTS, INC

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

6502 Windmill Way Wilmington, NC 28405
OFFICE: 910-392-0223 FAX 910-392-4424
info@environmentalchemists.com

COLLECTION AND CHAIN OF CUSTODY

CLIENT: Brunswick County Water
 ADDRESS: P.O. Box 249
 Bolivia N.C. 28422

PROJECT NAME: _____
 CONTACT NAME: Glenn Walker
 REPORT TO: Same
 COPY TO: _____

REPORT NO: 17-10894
 PO NO: _____
 PHONE/FAX: _____
 email: glenn.walker@brunswick.com

Sampled By: Thaddeus Hill
 SAMPLE TYPE: I = Influent, E = Effluent, W = Well, ST = Stream, SO = Soil, SL = Sludge, Other: NC, 90

Sample Identification	Collection			Sample Type	Composite or Grab	Container (P or G)	Chlorine mg/L	LAB ID NUMBER	PRESERVATION						ANALYSIS REQUESTED			
	Date	Time	Temp						NONE	HCL	H2SO4	HNO3	NAOH	THIO		Zn acetate		
72717-801	7/27/17	1035	30.5	Raw	C	P		26126								Other	EPA 537 + GenX	
72717-E01	7/27/17	1035	30.5	DW	C	G		26127										
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