envirochem (SM)

ANALYTICAL & CONSULTING CHEMISTS

Environmental Chemists, Inc.

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info@environmentalchemists.com

September 12, 2017

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

Report #2017-12763

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: 286230
NLS Customer: 96259

Fax: 910 392 4424 Phone: 910 392 0223

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

Project: GenX Samples

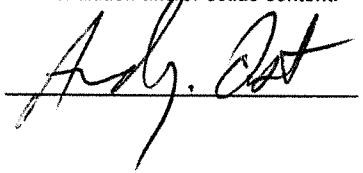
17-30563 NLS ID: 1015010
COC: 227622:1 Matrix: DW
Collected: 08/24/17 11:25 Received: 08/31/17

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Solid Phase Extraction by EPA Method 537	yes					09/05/17	EPA 537	721026460
GenX and PFCs by EPA 537	see attached					09/06/17	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: 286230**

Project Description: GenX Samples

Project Title: **Template: 537PPTGENX** **Printed: 09/12/2017 08:20**

Sample: 1015010 17-30563 Collected: 08/24/17 Anelyzed: 09/06/17 - Analytes: 13

ANALYTE NAME	RESULT	UNITS WWB	DIL	LOD	LOQ	MCL	Note
perfluorobutanesulfonic acid (PFBS)	ND	ppt	1	6.6	21		
perfluorohexanoic acid (PFHxA)	16.4	ppt	1	1.3	4.0		
perfluoro-2-propoxypropanoic acid (GenX)	18.2	ppt	1	0.73	2.3		
perfluoroheptanoic acid (PFHpA)	14.8	ppt	1	0.80	2.6		
perfluorohexanesulfonic acid (PFHxS)	[5.07]	ppt	1	2.8	8.8		J
perfluorooctanoic acid (PFOA)	9.98	ppt	1	1.2	3.9		
perfluorononanoic acid (PFNA)	[2.21]	ppt	1	1.5	4.9		J
perfluorooctanesulfonic acid (PFOS)	10.2	ppt	1	1.7	5.3		
perfluorodecanoic acid (PFDA)	[1.58]	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)	78.481%						S
C13-PFDA (SURR)	91.87%						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.

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
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ANALYTICAL REPORT

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

NLS Project: 286230
NLS Customer: 96259

Fax: 910 392 4424 Phone: 910 392 0223

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

Project: GenX Samples

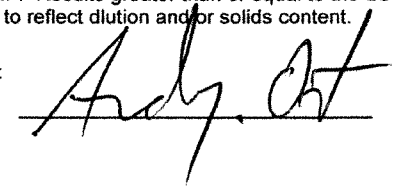
17-30564 NLS ID: 1015012
COC: 227622:3 Matrix: DW
Collected: 08/24/17 11:25 Received: 08/31/17

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Solid Phase Extraction by EPA Method 537	yes					09/05/17	EPA 537	721026460
GenX and PFCs by EPA 537	see attached					09/06/17	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: 286230**

Project Description: GenX Samples

Project Title: **Template: 537PPTGENX** **Printed: 09/12/2017 08:20**

Sample: 1015012 17-30564 Collected: 08/24/17 Analyzed: 09/06/17 - Analytes: 13

ANALYTE NAME	RESULT	UNITS WWB	DIL	LOD	LOQ	MCL	Note
perfluorobutanesulfonic acid (PFBS)	ND	ppt	1	6.6	21		
perfluorohexanoic acid (PFHxA)	17.6	ppt	1	1.3	4.0		
perfluoro-2-propoxypropanoic acid (GenX)	16.6	ppt	1	0.73	2.3		
perfluoroheptanoic acid (PFHpA)	14.9	ppt	1	0.80	2.6		
perfluorohexanesulfonic acid (PFHxS)	[4.95]	ppt	1	2.8	8.8		J
perfluorooctanoic acid (PFOA)	9.18	ppt	1	1.2	3.9		
perfluorononanoic acid (PFNA)	[1.81]	ppt	1	1.5	4.9		J
perfluorooctanesulfonic acid (PFOS)	7.54	ppt	1	1.7	5.3		
perfluorodecanoic acid (PFDA)	[1.12]	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)	83.833%						S
C13-PFDA (SURR)	91.775%						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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ENVIRONMENTAL CHEMISTS, INC

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

6602 Windmill Way Wilmington, NC 28405
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: 17-12763
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
82417-S01	8/24/17	11 25/am	29.5°c		C	(P)		30563								EPA 537 GENX
					(G)	G										
82417-E01	8/24/17	11 25/am	29.5°c		C	(P)		30564								EPA 537 GENX
					(G)	G										
					C	P										
					G	G										
					C	P										
					G	G										
					C	P										
					G	G										
					C	P										
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					G	G										
					C	P										
					G	G										
					C	P										
					G	G										

Transfer	Relinquished By:	Date/Time	Received By:	Date/Time
1.	[signature]	8/24/17 11 25/am		
2.				

Temperature when Received:_____ Accepted:_____ Rejected:_____ Resample Requested:_____

Delivered By:_____ Received By: [signature] Date: 8-24-17 Time: 450p

Comments:_____ TURNAROUND:_____