



CERTIFICATE OF ANALYSIS

City of North Pole WTP
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 North Pole, AK 99705
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Report Date: 1/23/2017
 Sample Date: 1/3/2017
 Sample Time: 12:15 PM
 Sampled By: Jerry Pollen

Project Name: **CONP WTP PFOS Monitoring**
 Analysis: **PFC'S**
 Analysis Method: **EPA 537**
 COC#: **CONP 2017**
 Sample Matrix: **Drinking Water**
 PWS ID#: **AK2310675**

Attached are the results for analysis of your samples. This sample was analyzed by Eurofins Eaton Analytical in South Bend, IN.

Client Sample ID:	Pollen Env ID:	Eurofins Eaton Analytical ID:
Well A	PEF31522-02	3617592

Jerry Pollen
 Pollen Environmental, LLC - Fairbanks

LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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STATE CERTIFICATION LIST

State	Certification	State	Certification
Alabama	40700	Montana	CERT0026
Alaska	IN00035	Nebraska	E87775
Arizona	AZ0432	Nevada	IN00035
Arkansas	IN00035	New Hampshire*	2124
California	2920	New Mexico	IN00035
Colorado	IN035	New Jersey*	IN598
Colorado Radiochemistry	IN035	New York*	11398
Connecticut	PH-0132	North Carolina	18700
Delaware	IN035	North Dakota	R-035
Florida*	E87775	Ohio	87775
Georgia	929	Oklahoma	D9508
Hawaii	IN035	Oregon (Primary AB)*	4074-001
Idaho	IN00035/E87775	Pennsylvania*	68-00466
Illinois*	200001	Puerto Rico	IN00035
Illinois Microbiology	200001	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187-15-8
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA160002	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
Missouri	880		

[*NELAP/TNI Recognized Accreditation Bodies](#)

110 South Hill Street
 South Bend, IN 46617
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 Fax: (574) 233-8207
 1 800 332 4345

Laboratory Report

Client: Pollen Environmental LLC

 Attn: Jerry Pollen
 3536 International Avenue
 Fairbanks, AK 99701

Report: 380491
 Priority: Standard Written
 Status: Final
 PWS ID: AK2310675
 Alaska Lab ID #: IN00035

Sample Information					
EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
3617592	PEF31522-02 Well A	537	01/03/17 12:15	Client	01/07/17 10:15

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Traci Chlebowski at (574) 233-4777.

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 ASM

Authorized Signature

Title

01/23/2017

Date

Client Name: Pollen Environmental LLC
 Report #: 380491

Sampling Point: PEF31522-02 Well A

PWS ID: AK2310675

EEA Methods									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
1763-23-1	Perfluorooctane sulfonate (PFOS)	537	---	2.0	< 2.0	ng/L	01/10/17 07:12	01/11/17 00:58	3617592

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.



Eaton Analytical

Eurofins Eaton Analytical Run Log

Run ID: 224796 Method: 537

<u>Type</u>	<u>Sample Id</u>	<u>Sample Site</u>	<u>Matrix</u>	<u>Instrument ID</u>	<u>Analysis Date</u>	<u>Calibration File</u>
CCL	3617808		OS	CY	01/10/2017 18:00	011017M537a-CY-PFC14.mdb
LRB	3617795		RW	CY	01/10/2017 18:33	011017M537a-CY-PFC14.mdb
FBL	3617796		RW	CY	01/10/2017 18:50	011017M537a-CY-PFC14.mdb
FS	3617592	PEF31522-02 Well A	DW	CY	01/11/2017 00:58	011017M537a-CY-PFC14.mdb
CCH	3617810		OS	CY	01/11/2017 01:15	011017M537a-CY-PFC14.mdb

QC Summary Report

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
CCL	IS-PFOA-13C2	537	N/A	---		12082.40	12082.4	ng/L	100	50 - 150	---	---	1.0	12/28/2016 14:22	01/10/2017 18:00	3617808
CCL	IS-PFOS-13C4	537	N/A	---		9040.91	9040.91	ng/L	100	50 - 150	---	---	1.0	12/28/2016 14:22	01/10/2017 18:00	3617808
CCL	SS-PFDA-13C2	537	N/A	---		97.8609	100	ng/L	98	70 - 130	---	---	1.0	12/28/2016 14:22	01/10/2017 18:00	3617808
CCL	SS-PFHxA-13C2	537	N/A	---		50.8206	50.0	ng/L	102	70 - 130	---	---	1.0	12/28/2016 14:22	01/10/2017 18:00	3617808
CCL	Perfluorooctane sulfonate (PFOS)	537	2.0	---		1.5957	2.0	ng/L	80	50 - 150	---	---	1.0	12/28/2016 14:22	01/10/2017 18:00	3617808
LRB	IS-PFOA-13C2	537	N/A	---		13448.70	12082.4	ng/L	111	50 - 150	---	---	0.92	01/10/2017 07:12	01/10/2017 18:33	3617795
LRB	IS-PFOS-13C4	537	N/A	---		8924.43	9040.91	ng/L	99	50 - 150	---	---	0.92	01/10/2017 07:12	01/10/2017 18:33	3617795
LRB	SS-PFDA-13C2	537	N/A	---		78.0282	100	ng/L	85	70 - 130	---	---	0.92	01/10/2017 07:12	01/10/2017 18:33	3617795
LRB	SS-PFHxA-13C2	537	N/A	---		38.1148	50.0	ng/L	83	70 - 130	---	---	0.92	01/10/2017 07:12	01/10/2017 18:33	3617795
LRB	Perfluorooctane sulfonate (PFOS)	537	2.0	---	<	2.0		ng/L	---	---	---	---	0.92	01/10/2017 07:12	01/10/2017 18:33	3617795
FBL	IS-PFOA-13C2	537	N/A	---		13398.70	12082.4	ng/L	111	50 - 150	---	---	1.0	01/10/2017 07:12	01/10/2017 18:50	3617796
FBL	IS-PFOS-13C4	537	N/A	---		8971.03	9040.91	ng/L	99	50 - 150	---	---	1.0	01/10/2017 07:12	01/10/2017 18:50	3617796
FBL	SS-PFDA-13C2	537	N/A	---		86.4278	100	ng/L	86	70 - 130	---	---	1.0	01/10/2017 07:12	01/10/2017 18:50	3617796
FBL	SS-PFHxA-13C2	537	N/A	---		42.2650	50.0	ng/L	85	70 - 130	---	---	1.0	01/10/2017 07:12	01/10/2017 18:50	3617796
FBL	Perfluorooctane sulfonate (PFOS)	537	2.0	---		1.9133	2.0	ng/L	96	50 - 150	---	---	1.0	01/10/2017 07:12	01/10/2017 18:50	3617796
FS	IS-PFOA-13C2	537	N/A	PEF31522-02 Well A		13710.80	12082.4	ng/L	113	50 - 150	---	---	0.97	01/10/2017 07:12	01/11/2017 00:58	3617592
FS	IS-PFOS-13C4	537	N/A	PEF31522-02 Well A		8755.23	9040.91	ng/L	97	50 - 150	---	---	0.97	01/10/2017 07:12	01/11/2017 00:58	3617592
FS	SS-PFDA-13C2	537	N/A	PEF31522-02 Well A		87.4738	100	ng/L	90	70 - 130	---	---	0.97	01/10/2017 07:12	01/11/2017 00:58	3617592
FS	SS-PFHxA-13C2	537	N/A	PEF31522-02 Well A		39.5786	50.0	ng/L	82	70 - 130	---	---	0.97	01/10/2017 07:12	01/11/2017 00:58	3617592
FS	Perfluorooctane sulfonate (PFOS)	537	2.0	PEF31522-02 Well A	<	2.0		ng/L	---	---	---	---	0.97	01/10/2017 07:12	01/11/2017 00:58	3617592
CCH	IS-PFOA-13C2	537	N/A	---		12527.90	12527.9	ng/L	100	50 - 150	---	---	1.0	12/28/2016 14:22	01/11/2017 01:15	3617810
CCH	IS-PFOS-13C4	537	N/A	---		8088.26	8088.26	ng/L	100	50 - 150	---	---	1.0	12/28/2016 14:22	01/11/2017 01:15	3617810
CCH	SS-PFDA-13C2	537	N/A	---		107.5340	100	ng/L	108	70 - 130	---	---	1.0	12/28/2016 14:22	01/11/2017 01:15	3617810
CCH	SS-PFHxA-13C2	537	N/A	---		47.5035	50.0	ng/L	95	70 - 130	---	---	1.0	12/28/2016 14:22	01/11/2017 01:15	3617810
CCH	Perfluorooctane sulfonate (PFOS)	537	2.0	---		200.1970	200	ng/L	100	70 - 130	---	---	1.0	12/28/2016 14:22	01/11/2017 01:15	3617810

Sample Type Key

<u>Type (Abbr.)</u>	<u>Sample Type</u>	<u>Type (Abbr.)</u>	<u>Sample Type</u>
CCH	Continuing Calibration High		
CCL	Continuing Calibration Low		
FS	Field Sample		
FBL	Fortified Blank Low		
LRB	Laboratory Reagent Blank		

END OF REPORT