

# COMPLETE PFAS SAMPLING RESULTS

Contaminant of Concern (ng/L)	ADEC Action Levels	Public Water System Source by Community														
		Ambler		Buckland	Deering	Kiana		Kivalina	Kobuk	Kotzebue		Noatak		Noorvik	Selawik	Shungnak
		2002 Well	1982 Well	Buckland River	Inmachuk River	Upper Well	Lower Well	Wulik River	Main Well	Devils Lake	Vortac Lake	Well # 5	Well # 6	Kobuk River	Selawik River	Kobuk River
PFOA	Combination of the analytes should not exceed 70 ng/L	0.31	0.36	ND	ND	ND	ND	ND	0.32	ND	ND	ND	ND	0.23	0.41	ND
PFOS		ND	ND	ND	ND	ND	ND	ND	0.29	ND	ND	ND	ND	ND	0.43	ND
PFHpA	No Action Levels	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PFNA		ND	ND	ND	0.21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PFHxS		0.34	0.39	ND	ND	ND	ND	ND	ND	5.43	ND	ND	ND	ND	ND	ND
PFBS		0.27	0.28	ND	0.38	ND	ND	ND	ND	ND	3.82	ND	ND	ND	ND	ND

 Detectable Concentration

## ND = Not Detected

Results are “Not Detected” when the concentration is lower than the Detection Limit.

## Measurement Equivalents

1 ng/L = 1 ppt

One nanogram per liter equals one part per trillion

## Contaminants Name and Acronym

Perfluorooctanoic Acid (PFOA)

Perfluorooctane Sulfonate (PFOS)

Perfluoroheptanoic Acid (PFHpA)

Perfluorononanoic Acid (PFNA)

Perfluorohexane Sulfonate (PFHxS)

Perfluorobutane Sulfonate (PFBS)

Presented are the complete PFAS sampling results from each public water system source in the Northwest Arctic Borough (2019). The Department of Environmental Conservation (ADEC) recommends drinking water samples check for 6 different PFAS contaminants. On the left are all six of the PFAS contaminant acronyms that were analyzed. The second table column shows the ADEC Action Levels which mirror the EPA Health Advisory Limit of 70 ng/L for the sum of PFOA and PFOS concentrations (PFOA and PFOS results are outlined red in the table). 11 communities were investigated and 15 different water sources were sampled.

**According to ADEC’s current health guidelines, all public water system sources in the Northwest Arctic Borough have safe PFAS levels.**

Generic  
Maniilaq Association

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**Work Order:** 1195574  
Deering

**Client:** Maniilaq Association

**Report Date:** October 14, 2019

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Enclosed are the analytical results associated with the above work order. The results apply to the samples as received. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. If you have any questions regarding this report, or if we can be of any other assistance, please contact your SGS Project Manager at 907-562-2343. This document is issued by the Company under its General Conditions of Service accessible at <<http://www.sgs.com/en/Terms-and-Conditions.aspx>>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO 17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8015C, 8021B, 8082A, 8260C, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification, and only those analytes will be reported to the State of Alaska for compliance. Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
DF	Analytical Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
GT	Greater Than
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LLQC/LLIQC	Low Level Quantitation Check
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content.  
All DRO/RRO analyses are integrated per SOP.



1. The first step is to identify the problem or question that needs to be addressed. This involves understanding the context and the specific requirements of the task.

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5301 8656

SGS

☐ Client pickup Date: \_\_\_\_\_ Time: \_\_\_\_\_

**Be sure to ask if client will ship by ground (DOT) or air carrier (IATA)**

## Does a Profile exist in LIMS?

<b>Client Name:</b>	Zender Environmental
<b>Ordered By:</b>	Sean Peterson
<b>Email:</b>	speterson@zenderarizona.org
<b>Project Name:</b>	Deering
<b>Quote #:</b>	
<b>Delivery Address:</b>	Kotzebue, Alaska (OTZ) c/o Zender Environmental attn: Sean Peterson (907) 854-0505

Filename: SKIT\_Zender Environmental\_Deering\_2019-08-19

Filename: SKIT\_Zender Environmental\_Deering\_2019-08-19

### \*Required Items

[illegible]☐ Pack for Shipping via **ground** (DOT) ☐ Total # includes bottles for % Solids☒ Pack for Shipping via **air carrier** (IATA) ☐ Track all Lot#? (Required for DOD)

☒ Temperature Blank (circle one: 120-ml OR 500-ml) ☐ Foreign Soil

☐ Soil VOA Trip Blank - Lot#:

☐ Soil VOA Trip Blank Lot#:

☐ Water VOA Trip Blank - Lot#:

☐ 524 VQA Trip Blank - Lot#

☐ J24 VOA Trip Blank - Lot#:

☐ Low Level Mercury Trip Blank - Lot#:

☐ Low Level Mercury Trip Blank- Lot#:

☒ Coolers

<input checked="" type="checkbox"/>	Coolers
<input type="checkbox"/>	Cellars

☒ Gel Ice  
☐ Double Wall☒ Bubble☒ Labels☒ Custody Seals☒ SGS COCs - **Circle req'd forma** ☐ Blank COC

**Send additional instructions/documents (Note**

**Attention Client/Sampler:**

1. Do not rinse container; be aware of any acid preservative in container.
  2. Fill container, but do not overfill (except volatile waters).
  3. Label the container with your sample ID as well as the date/time of collection.
  4. Fill out the Chain of Custody.
  5. Add frozen gel packs or ice to your cooler & pack to prevent breakage.
- Charges may be invoiced for bottles which are unused or improperly used. If you have any questions concerning this sample kit, please contact your Project Manager for assistance. Thank you.**

**\*This will email a copy of this form for confirmation to the client email and save the form to the network. This should not be used outside of SGS.**

F083 KitRequest 20190102



## e-Sample Receipt Form

SGS Workorder #:

1195574



1 1 9 5 5 7 4

Review Criteria		Condition (Yes, No, N/A)	Exceptions Noted below	
<b>Chain of Custody / Temperature Requirements</b>			N/A	Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	Yes		1 front	
COC accompanied samples?	Yes			
DOD: Were samples received in COC corresponding coolers?	N/A			
N/A **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required				
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID:	Box	@ 0.8 °C Therm. ID: D30
If samples received without a temperature blank, the "cooler temperature" will be documented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.		Cooler ID:		@ °C Therm. ID:
		Cooler ID:		@ °C Therm. ID:
		Cooler ID:		@ °C Therm. ID:
		Cooler ID:		@ °C Therm. ID:
*If >6°C, were samples collected <8 hours ago?		N/A		
If <0°C, were sample containers ice free?		N/A		
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.				
<b>Holding Time / Documentation / Sample Condition Requirements</b>		Note: Refer to form F-083 "Sample Guide" for specific holding times.		
Were samples received within holding time?	Yes			
Do samples match COC** (i.e., sample IDs, dates/times collected)?	Yes			
**Note: If times differ <1hr, record details & login per COC.				
***Note: If sample information on containers differs from COC, SGS will default to COC information				
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes			
Were proper containers (type/mass/volume/preservative***) used?		N/A	***Exemption permitted for metals (e.g., 200.8/6020A).	
<b>Volatile / LL-Hg Requirements</b>				
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	N/A			
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	N/A			
Were all soil VOAs field extracted with MeOH+BFB?	N/A			
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.				
Additional notes (if applicable):				

## Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1195574001-A	Trizma	OK			
1195574001-B	Trizma	OK			

### Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM - The container was received damaged.

FR - The container was received frozen and not usable for Bacteria or BOD analyses.

IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.

NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

QN - Insufficient sample quantity provided.



## FINAL LAB REPORT

**1195574**

31901653

11-Oct-2019

Prepared by

**SGS NORTH AMERICA**

Prepared for

**SGS North America Inc.**

Julie Shumway

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*This report is approved by*

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Tamara Burkamper

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Senior Project Manager

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## Laboratory Qualifiers

### Report Definitions

DL	Method, Instrument, or Estimated Detection Limit per Analytical Method
CL	Control Limits for the recovery result of a parameter
LOQ	Reporting Limit
DF	Dilution Factor
RPD	Relative Percent Difference
LCS(D)	Laboratory Control Spike (Duplicate)
MS(D)	Matrix Spike (Duplicate)
MB	Method Blank

### Qualifier Definitions

*	Recovery or RPD outside of control limits
B	Analyte was detected in the Lab Method Blank at a level above the LOQ
U	Undetected (Reported as ND or < DL)
J	Estimated Concentration.
E	Amount detected is greater than the Upper Calibration Limit
TIC	Tentatively Identified Compound
ND	Not Detected
P	RPD > 40% between results of dual columns
D	Spike or surrogate was diluted out in order to achieve a parameter result within instrument calibration range

Samples requiring manual integrations for various congeners and/or standards are marked and dated by the analyst. A code definition is provided below:

M1	Mis-identified peak
M2	Software did not integrate peak
M3	Incorrect baseline construction (i.e. not all of peak included; two peaks integrated as one)
M4	Pattern integration required (i.e. DRO, GRO, PCB, Toxaphene and Technical Chlordane)
M5	Other - Explained in case narrative

**Note** Results pages that include a value for "Solids (%)" have been adjusted for moisture content.



### Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
Source Water	31901653001	09/18/2019 15:54	09/24/2019 10:26	Drinking Water

**Case Narrative**

The LCS associated with this project has marginally high recovery for PFBS at 132%. Any hits in the samples may have a slight high bias. Samples were not re-extracted due to expired hold times.

**Source Water**

Surrogate recovery for d5-NEtFOSAA is marginally low; there is no effect on the data as this surrogate is not used to quantitate any of the compounds reported.

### Results of Source Water

Client Sample ID: **Source Water**  
 Client Project ID: **1195574**  
 Lab Sample ID: 31901653001-A  
 Lab Project ID: 31901653

Collection Date: 09/18/2019 15:54  
 Received Date: 09/24/2019 10:26  
 Matrix: Drinking Water  
 Solids (%):

### Results by EPA 537 v1.1

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>DL</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
PFHpA	<b>0.212</b>	J	0.204	2.04	ng/L	1	10/8/2019 18:48
PFOA	ND	U	0.204	2.04	ng/L	1	10/8/2019 18:48
PFNA	ND	U	0.204	2.04	ng/L	1	10/8/2019 18:48
PFBS	<b>0.376</b>	J	0.204	2.04	ng/L	1	10/8/2019 18:48
PFHxS	ND	U	0.204	2.04	ng/L	1	10/8/2019 18:48
PFOS	ND	U	0.204	2.04	ng/L	1	10/8/2019 18:48
<b>Surrogates</b>							
13C2-PFHxA	81.5			70.0-130	%	1	10/8/2019 18:48
13C2-PFDA	70.7			70.0-130	%	1	10/8/2019 18:48
d5-NEtFOSAA	56.7*			70.0-130	%	1	10/8/2019 18:48

### Batch Information

Analytical Batch: **XLC1401**  
 Analytical Method: **EPA 537 v1.1**  
 Instrument: **TQS2**  
 Analyst: **FNS**

Prep Batch: **HXX2421**  
 Prep Method: **EPA 537 v1.1 Prep**  
 Prep Date/Time: **09/25/2019 17:23**  
 Prep Initial Wt./Vol.: **245 mL**  
 Prep Extract Vol: **1 mL**

1195574

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F088\_COC\_REF\_LAB\_20190411

### Sample Receipt Checklist (SRC)

Work Order No.: **31901653**

- Comments: \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

Date: 9/24/2019