



**Alaska Department of Environmental Conservation**  
Office of the State Veterinarian Fish Monitoring Program  
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## **ANALYTICAL RESULTS FOR PERFLUORINTED COMPOUNDS IN FISH TISSUE SAMPLES**

Analytical Analysis for perfluorinated compounds performed by:  
SGS AXYS Analytical Services Ltd.  
2045 Mills Road West  
Sidney, BC, Canada V8L 5X2  
<https://www.axysanalytical.com/>

### **Summary report prepared by:**

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**Report to: FMP**

**Sample Location(s): Fairbanks Area, Willow Area, Bering Sea, Seldovia**

**Analytes: PFAS**

**Date of Report: September 15, 2022**

**Narrative:****SAMPLES AND ANALYSIS:**

Samples were received at the State Environmental Health Lab (EHL). They were stored at -20°C and processed according to standard operation procedures (SOP) of the Fish Monitoring Program and EHL. Standard EHL QA/QC procedures were followed. samples were sent to SGS-AXYS Analytical on March 9, 2021 for Per- and Polyfluoroalkyl Substances (PFAS) analysis. The burbot is one individual fish while the remainder of the samples analyzed were composites of many fish. Contact the Fish Monitoring Program for more detail.

PFAS compounds reported by SGS-AXYS include: PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFNA, PFDA, PFUnA, PFDoA, PFTrDA, PFTeDA, PFBS, PFPeS, PFHxS, PFHpS, PFOS, PFNS, PFDS, PFDoS, 4:2 FTS, 6:2 FTS, 8:2 FTS, PFOSA, N-MeFOSA, N-EtFOSA, MeFOSAA, EtFOSAA, N-MeFOSE, N-EtFOSE, HFPO-DA, ADONA, 9Cl-PF3ONS, 11Cl-PF3OUdS, 3:3 FTCA, 5:3 FTCA, 7:3 FTCA, PFEESA, PFMPA, PFMBA, and NFDHA. Compounds in tissue were quantified using AXYS method MLA-043 which is an isotopic dilution method via HPLC/MS-MS.

**RESULTS:**

A table of the data is provided below. Results are reported in ng/g (parts per billion) wet weight. PFAS Compounds (see above) not listed in Table 2 were not detected in the tissue samples.

See our website: <http://dec.alaska.gov/eh/vet/fish-monitoring-program> for further information about contaminants in fish and shellfish from the State of Alaska.

Fish consumption guidelines for Alaska can be found at <http://dhss.alaska.gov/dph/Epi/eph/Pages/fish/default.aspx>

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Table 1: PFAS in Fish Samples- Blank Corrected

Location	Species	Tissue	COMPOUND	Date collected	n	Conc (ng/g)	DL	LMCL
Bering Sea	C. opilio	Muscle	PFDA	2021-04-19	1	0.145	0.095	0.381
Bering Sea	C. opilio	Muscle	PFDoA	2021-04-19	1	0.003	0.076	0.310
Bering Sea	C. opilio	Muscle	PFNA	2021-04-19	1	0.032	0.095	0.381
Bering Sea	C. opilio	Muscle	PFTrDA	2021-04-19	1	0.058	0.095	0.381
Fairbanks Area	Burbot	Fillet	N-EtFOSE	2021-03-15	1	2.700	0.909	3.640
Fairbanks Area	Burbot	Liver	PFNA	2021-03-15	1	0.558	0.400	1.600
Fairbanks Area	Burbot	Liver	PFUnA	2021-03-15	1	0.046	0.400	1.600
<b>Fairbanks Area</b>	<b>Northern Pike</b>	<b>Fillet</b>	<b>N-EtFOSE</b>	<b>2020-06-19</b>	<b>1</b>	<b>3.900</b>	<b>1.020</b>	<b>3.790</b>
Fairbanks Area	Northern Pike	Fillet	N-EtFOSE	2020-07-16	1	2.110	0.966	3.860
Fairbanks Area	Northern Pike	Fillet	N-EtFOSE	2020-07-28	1	2.670	0.990	3.960
<b>Fairbanks Area</b>	<b>Northern Pike</b>	<b>Fillet</b>	<b>N-EtFOSE</b>	<b>2020-07-31</b>	<b>1</b>	<b>4.140</b>	<b>0.957</b>	<b>3.830</b>
Fairbanks Area	Northern Pike	Fillet	N-EtFOSE	2020-08-20	1	3.260	0.995	3.980
Fairbanks Area	Northern Pike	Fillet	PFDA	2020-07-31	1	0.160	0.096	0.383
Fairbanks Area	Northern Pike	Fillet	PFDoA	2020-07-31	1	0.004	0.077	0.311
Fairbanks Area	Northern Pike	Fillet	PFHxS	2020-07-28	1	0.182	0.099	0.396
Fairbanks Area	Northern Pike	Fillet	PFHxS	2020-07-31	1	0.213	0.096	0.383
Fairbanks Area	Northern Pike	Fillet	PFNA	2020-07-28	1	0.246	0.099	0.396
Fairbanks Area	Northern Pike	Fillet	PFNA	2020-07-31	1	0.043	0.096	0.383
Fairbanks Area	Northern Pike	Fillet	PFOA	2020-07-28	1	0.106	0.099	0.396
<b>Fairbanks Area</b>	<b>Northern Pike</b>	<b>Fillet</b>	<b>PFOS</b>	<b>2020-06-19</b>	<b>1</b>	<b>0.880</b>	<b>0.095</b>	<b>0.379</b>
<b>Fairbanks Area</b>	<b>Northern Pike</b>	<b>Fillet</b>	<b>PFOS</b>	<b>2020-07-28</b>	<b>1</b>	<b>1.030</b>	<b>0.099</b>	<b>0.396</b>
<b>Fairbanks Area</b>	<b>Northern Pike</b>	<b>Fillet</b>	<b>PFOS</b>	<b>2020-07-31</b>	<b>1</b>	<b>4.500</b>	<b>0.096</b>	<b>0.383</b>
<b>Fairbanks Area</b>	<b>Northern Pike</b>	<b>Fillet</b>	<b>PFOS</b>	<b>2020-08-20</b>	<b>1</b>	<b>2.150</b>	<b>0.100</b>	<b>0.398</b>
Fairbanks Area	Northern Pike	Fillet	PFOSA	2020-07-31	1	0.072	0.096	0.383
Seldovia	Pacific Herring	Fillet	6:2 FTS	2021-05-06	1	0.672	0.356	1.430
Seldovia	Pacific Herring	Fillet	N-EtFOSE	2021-05-06	1	2.120	0.990	3.960
Seldovia	Pacific Herring	Fillet	PFHxA	2021-05-06	1	0.106	0.099	0.396
Seldovia	Pacific Herring	Roe	PFNA	2021-05-06	1	0.325	0.400	1.600
Willow Area	Northern Pike	Fillet	N-EtFOSE	2020-06-02	1	1.580	1.010	4.020
<b>Willow Area</b>	<b>Northern Pike</b>	<b>Fillet</b>	<b>N-EtFOSE</b>	<b>2020-09-29</b>	<b>1</b>	<b>4.180</b>	<b>0.985</b>	<b>3.940</b>

Table 1: PFAS in Fish Samples- Blank Corrected (*continued*)

Location	Species	Tissue	COMPOUND	Date collected	n	Conc (ng/g)	DL	LMCL
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*Note:*

DL = Detection Limit (ng/g)

LMCL = Limit of Quantification (ng/g)

Blank corrected for: PFNA = 0.141, PFUnA = 0.368, PFTrDA = 0.254, PFOS = 0.29, PFDoA = 0.088, PFOSA = 0.28

Some blank corrected concentrations are reported below the DL

All Conc less than the limit of quantification (LOQ)) and are considered estimates.

Darker shaded rows indicate concentrations above the LMCL

Table 2: Mean Length (cm) of Fish

Species	n	Mean	SD	Median	Min	Max
Burbot	1	59.600	NA	59.60	59.60	59.60
Northern Pike	7	43.057	12.968	36.10	32.30	63.00
Pacific Herring	1	24.050	NA	24.05	24.05	24.05

*Note:*

Mean = arithmetic mean

SD = standard deviation