

Client: Wild Alaska Sole Association
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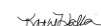
Email: pat.shanahan@shanahaninc.com

Ref Number: 23-09481

PO Number:

Project Name: Alaska Flatfish Nutrient
 Testing
 Various

Analyst:

Approved By: 

Katie Hallaian

Date Received: 6/6/2023

Date Reported: 12/8/2023

Certificate of Analysis

ESS Lab # 35921			Sample Description Rock Sole - Cooked						
Sample Prep			Cooked, Freeze Dried and Homogenize						
Analyte	Unit	Result per 100g	MRL	Method	ISO	Analyst	Approved	Analyzed	
Calories	kCal	100							
Calories from Fat	kCal	21							
Proximates									
Fat	g	2.38	0.3	AOAC 935.29	Yes	MR	KW	7/28/2023	
Protein	g	19.6	0.5	AOAC 992.23	Yes	MR	KW	7/18/2023	
Moisture	g	68.5	0.1	AOAC 935.29	Yes	MR	KH	7/17/2023	
Ash	g	2.00	0.1	AOAC 923.03	Yes	MR	KW	7/26/2023	
Carbohydrates	g	0.00	0.10	FDA 21 CFR 101.9		MR	KW	7/28/2023	
Starch	g	0.00	0.18	AOAC 996.11		SCP	KW	7/24/2023	
Sugar Profile*									
Fructose	g	0.00	0.5	AOAC 980.13	Yes	BG	JF	7/20/2023	
Glucose	g	0.00	0.5	AOAC 980.13	Yes	BG	JF	7/20/2023	
Lactose	g	0.00	0.5	AOAC 980.13	Yes	BG	JF	7/20/2023	
Maltose	g	0.00	0.5	AOAC 980.13	Yes	BG	JF	7/20/2023	
Sucrose	g	0.00	0.5	AOAC 980.13	Yes	BG	JF	7/20/2023	
Minerals									
Calcium	mg	20.0	1.0	AOAC 2011.14 (mod)	Yes	MH	MR	7/20/2023	
Iron	mg	0.00	0.050	AOAC 2015.01 (mod)	Yes	MH	MR	7/20/2023	
Potassium	mg	318	10.0	AOAC 2011.14 (mod)	Yes	MH	MR	7/20/2023	
Sodium	mg	152	10.0	AOAC 2011.14 (mod)	Yes	MH	MR	7/20/2023	
Copper	mg	0.00	0.0080	AOAC 2015.01 (mod)	Yes	MH	MR	7/20/2023	
Iodine	mg	0.03	0.050	FDA EAM 4.13 (mod)		MH	MR	7/19/2023	
Magnesium	mg	21.3	1.0	AOAC 2011.14 (mod)	Yes	MH	MR	7/20/2023	
Manganese	mg	0.00	0.0045	AOAC 2015.01 (mod)	Yes	MH	MR	7/20/2023	
Phosphorus	mg	188	1.0	AOAC 2011.14 (mod)	Yes	MH	MR	7/20/2023	
Selenium	mg	0.064	0.0020	AOAC 2015.01 (mod)	Yes	MH	MR	7/19/2023	
Zinc	mg	0.60	1.0	AOAC 2011.14 (mod)	Yes	MH	MR	7/20/2023	
Nutritional									
Total Dietary Fiber	g	0.00	1.5	AOAC 985.29 (mod)	Yes	SCP	MR	7/26/2023	
Cholesterol	mg	101.0	1.0	AOAC 994.10	Yes	CM	GL	7/26/2023	
Vitamins									
Vitamin A (Beta-carotene)	mcg	0.00	0.65	AOAC 2005.07 (mod)		JF	KH	7/21/2023	
Vitamin A (Retinol))	mcg	0.00	0.1	USP HPLC		JF	KH	7/21/2023	
Vitamin B1 (Thiamine)	mcg	70.0	10.0	AOAC 942.23	Yes	MH	KS	7/21/2023	
Vitamin B12 (Total)	mcg	2.40	0.50	AOAC 960.46	Yes	MH	KS	7/28/2023	
Vitamin B2 (Riboflavin)	mcg	120	1.0	AOAC 960.46	Yes	MH	KS	7/21/2023	
Vitamin B3 (Total)	mcg	2000	0.016	AOAC 960.46	Yes	MH	KS	7/21/2023	
Vitamin B5 (Total)	mcg	400	0.0067	AOAC 960.46	Yes	MH	KS	7/20/2023	
Vitamin B6 (as Pyridoxine HCl)	mcg	64.0	1.0	AOAC 960.46	Yes	MH	KS	7/21/2023	
Vitamin B9 (Folic)	mcg	19.0	1.0	AOAC 960.46	Yes	MH	KH	12/7/2023	
Vitamin D	mcg	0.00	5.00	AOAC 2002.05	Yes	SNJ	KH	7/21/2023	
Vitamin D2	mcg	0.00	5.00	AOAC 2002.05 (MOD)	Yes	SNJ	KH	7/21/2023	
Vitamin D3	mcg	0.00	5.00	AOAC 2002.05 (MOD)	Yes	SNJ	KH	7/21/2023	
Vitamin E (total tocopherols)	mg	2.82	0.400	HPLC-UV	Yes	JF	KOH	7/26/2023	
Fat Breakdown									
Mon-Unsaturated Fatty Acids	g	0.65	0.1	FDA 21 CFR 101.9	Yes	NB	GL	7/21/2023	
Poly-Unsaturated Fatty Acids	g	0.94	0.1	FDA 21 CFR 101.9	Yes	NB	GL	7/21/2023	
Saturated Fatty Acids	g	0.49	0.1	FDA 21 CFR 101.9	Yes	NB	GL	7/21/2023	
Total Trans Fatty Acids	g	0.07	0.1	FDA 21 CFR 101.9	Yes	NB	GL	7/21/2023	

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Sample Prep		Cooked, Freeze Dried and Homogenize						
Analyte	Unit	Result per 100g	MRL	Method	ISO	Analyst	Approved	Analyzed
Fatty Acids								
C08:0 Caprylic Acid	mg	0.00	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C10:0 Capric Acid	mg	0.00	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C11:0 Undecanoic Acid	mg	0.00	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C12:0 Lauric Acid	mg	0.00	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C13:0 Tridecanoic Acid	mg	0.00	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C14:0 Myristic Acid	mg	102	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C14:1 Myristoleic Acid	mg	0.00	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C15:0 Pentadecanoic Acid	mg	0.00	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C15:1 Pentadecenoic Acid	mg	0.00	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C16:0 Palmitic Acid	mg	319	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C16:1 Palmitoleic Acid	mg	317	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C17:0 Margaric Acid	mg	0.00	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C17:1 Heptadecenoic Acid	mg	0.00	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C18:0 Stearic Acid	mg	64.3	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C18:1 Oleic Acid	mg	276	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C18:2 Linoleic Acid	mg	30.9	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C18:3 Alpha Linolenic Acid	mg	124	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C18:3a Gamma Linolenic Acid	mg	0.00	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C18:4 Stearidonic Acid	mg	21.4	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C20:0 Arachidic Acid	mg	0.00	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C20:1 Eicosenoic Acid	mg	54.7	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C20:2 Eicosadienoic Acid	mg	9.52	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C20:3 Dihomo-gamma Linolenic Acid (DGLA)	mg	0.00	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C20:3 Eicosatrienoic Acid	mg	0.0	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C20:4 Arachidonic acid	mg	42.8	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C20:4 Eicosatetraenoic Acid	mg	0.00	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C20:5 Eicosapentaenoic Acid (EPA)	mg	414	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C22:0 Behenic Acid	mg	0.00	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C22:1 Erucic Acid	mg	7.14	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C22:2 Docosadienoic Acid	mg	0.00	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C22:5 Docosapentaenoic Acid (DPA)	mg	73.8	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C22:6 Docosahexaenoic Acid (DHA)	mg	152	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C24:0 Lignoceric Acid	mg	0.00	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
C24:1 Nervonic Acid	mg	0.00	0.780	AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
Sum of EPA & DHA	mg	566		AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
Omega 3 Fatty Acids	mg	783		AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
Omega 6 Fatty Acids	mg	83		AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
Omega 9 Fatty Acids	mg	338		AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
Other Fatty Acids	mg	298		AOCS Ce 1b-89 (mod)	Yes	NB	GL	7/21/2023
Amino Acids								
Alanine	mg	404	50.00	AOAC 994.12 (mod)		OS	KH	8/2/2023
Arginine	mg	568	50.00	AOAC 994.12 (mod)		OS	KH	8/2/2023
Aspartic Acid	mg	694	50.00	AOAC 994.12 (mod)		OS	KH	8/2/2023
Cystine	mg	88	10.00	AOAC 994.12 (mod)		OS	KH	8/2/2023
Glutamic Acid	mg	1209	50.00	AOAC 994.12 (mod)		OS	KH	8/2/2023
Glycine	mg	627	50.00	AOAC 994.12 (mod)		OS	KH	8/2/2023
Histidine	mg	174	50.00	AOAC 994.12 (mod)		OS	KH	8/2/2023
Isoleucine	mg	339	50.00	AOAC 994.12 (mod)		OS	KH	8/2/2023
Leucine	mg	598	50.00	AOAC 994.12 (mod)		OS	KH	8/2/2023
Lysine	mg	706	50.00	AOAC 994.12 (mod)		OS	KH	8/2/2023
Methionine	mg	251	10.00	AOAC 994.12 (mod)		OS	KH	8/2/2023
Phenylalanine	mg	318	50.00	AOAC 994.12 (mod)		OS	KH	8/2/2023
Proline	mg	370	50.00	AOAC 994.12 (mod)		OS	KH	8/2/2023
Serine	mg	370	50.00	AOAC 994.12 (mod)		OS	KH	8/2/2023
Threonine	mg	463	50.00	AOAC 994.12 (mod)		OS	KH	8/2/2023
Tryptophan	mg	78	10.00	AOAC 994.12 (mod)		OS	KH	8/2/2023
Tyrosine	mg	290	50.00	AOAC 994.12 (mod)		OS	KH	8/2/2023
Valine	mg	355	50.00	AOAC 994.12 (mod)		OS	KH	8/2/2023

* Analytical method does not distinguish between natural and added sugars.

ISO - ISO/IEC 17025 Accredited

MRL - Method Detection Limit