

Marine Harvest Markets Norway AS, avd Bergen

Postboks 4102 Sandviken

5035 BERGEN

Attn: Andreas Simensen**AR-19-MO-000786-01****EUNOMO2-00071133**

Received: 07.01.2019

Temperature:

Analysed between: 07.01.2019-17.01.2019

Reference: SPIRUN

ANALYTICAL REPORT

Symbol description:

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Sample code:	440-2019-0107-088	Sampled on:	03.01.2019
Description:	Fish oil	Sampled by:	Oppdragsgiver
Client Sample:	1) 01.01 - 15.02.2019	Analysis date:	07.01.2019

Analysis	Result	Unit	LOQ:	MU	Method
b) Dioxins and Furans (17 PCDD/F)					
b) GFF11 2,3,7,8-TetraCDD	0.0638	ng/kg MC12%	0.063		Internal
b) GFF11 1,2,3,7,8-PentaCDD	0.104	ng/kg MC12%	0.083		Internal
b) GFF11 1,2,3,4,7,8-HexaCDD	< 0.108	ng/kg MC12%	0.13		Internal
b) GFF11 1,2,3,6,7,8-HexaCDD	< 0.147	ng/kg MC12%	0.17		Internal
b) GFF11 1,2,3,7,8,9-HexaCDD	< 0.139	ng/kg MC12%	0.16		Internal
b) GFF11 1,2,3,4,6,7,8-HeptaCDD	< 0.226	ng/kg MC12%	0.27		Internal
b) GFF11 OctaCDD	< 1.64	ng/kg MC12%	1.9		Internal
b) GFF11 2,3,7,8-TetraCDF	1.28	ng/kg MC12%	0.17		Internal
b) GFF11 1,2,3,7,8-PentaCDF	0.188	ng/kg MC12%	0.12		Internal
b) GFF11 2,3,4,7,8-PentaCDF	0.331	ng/kg MC12%	0.19		Internal
b) GFF11 1,2,3,4,7,8-HexaCDF	< 0.167	ng/kg MC12%	0.2		Internal
b) GFF11 1,2,3,6,7,8-HexaCDF	< 0.153	ng/kg MC12%	0.18		Internal
b) GFF11 1,2,3,7,8,9-HexaCDF	< 0.113	ng/kg MC12%	0.13		Internal
b) GFF11 2,3,4,6,7,8-HexaCDF	< 0.139	ng/kg MC12%	0.16		Internal
b) GFF11 1,2,3,4,6,7,8-HeptaCDF	< 0.158	ng/kg MC12%	0.19		Internal
b) GFF11 1,2,3,4,7,8,9-HeptaCDF	< 0.110	ng/kg MC12%	0.13		Internal
b) GFF11 OctaCDF	< 0.340	ng/kg MC12%	0.4		Internal
b) GFF11 WHO(2005)-PCDD/F TEQ (lower-bound)	0.401	ng/kg MC12%			Internal
b) GFF11 WHO(2005)-PCDD/F TEQ (medium-bound)	0.452	ng/kg MC12%			Internal
b) GFF11 WHO(2005)-PCDD/F TEQ (upper-bound)	0.503	ng/kg MC12%	0.34		Internal
b) polychlorinated biphenyls (12 WHO PCB + 6 ICES PCB)					
b) GFF12 PCB 77	23.6	ng/kg MC12%	6		EC Reg 589/2014 (food) and EC Reg 709/2014 (feed)
b) GFF12 PCB 81	< 0.764	ng/kg MC12%	0.9		EC Reg 589/2014 (food) and EC Reg 709/2014 (feed)
b) GFF12 PCB 105	375	ng/kg MC12%	13		EC Reg 589/2014 (food) and EC Reg 709/2014 (feed)
b) GFF12 PCB 114	22.3	ng/kg MC12%	1.8		EC Reg 589/2014 (food) and EC Reg 709/2014 (feed)
b) GFF12 PCB 118	1210	ng/kg MC12%	47		EC Reg 589/2014 (food) and EC Reg 709/2014 (feed)
b) GFF12 PCB 123	12.9	ng/kg MC12%	1.3		EC Reg 589/2014 (food) and EC Reg 709/2014 (feed)
b) GFF12 PCB 126	8.35	ng/kg MC12%	0.83		EC Reg 589/2014 (food) and EC Reg 709/2014 (feed)
b) GFF12 PCB 156	146	ng/kg MC12%	7.3		EC Reg 589/2014 (food) and EC Reg 709/2014 (feed)
b) GFF12 PCB 157	43.7	ng/kg MC12%	1.4		EC Reg 589/2014 (food) and EC Reg 709/2014 (feed)
b) GFF12 PCB 167	98.1	ng/kg MC12%	3.7		EC Reg 589/2014 (food) and EC Reg 709/2014 (feed)

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b)	GFF12 PCB 169	< 3.40 ng/kg MC12%	4		709/2014 (feed) EC Reg 589/2014 (food) and EC Reg 709/2014 (feed)
b)	GFF12 PCB 189	19.1 ng/kg MC12%	1.3		EC Reg 589/2014 (food) and EC Reg 709/2014 (feed)
b)	GFF12 WHO(2005)-PCB TEQ (medium-bound)	0.946 ng/kg MC12%			EC Reg 589/2014 (food) and EC Reg 709/2014 (feed)
b)	GFF12 WHO(2005)-PCB TEQ (lower-bound)	0.895 ng/kg MC12%			EC Reg 589/2014 (food) and EC Reg 709/2014 (feed)
b)	GFF12 WHO(2005)-PCB TEQ (upper-bound)	0.997 ng/kg MC12%	0.21		EC Reg 589/2014 (food) and EC Reg 709/2014 (feed)
b)	GFF12 PCB 28	< 0.283 µg/kg MC12%	0.33		EC Reg 589/2014 (food) and EC Reg 709/2014 (feed)
b)	GFF12 PCB 52	0.675 µg/kg MC12%	0.33		EC Reg 589/2014 (food) and EC Reg 709/2014 (feed)
b)	GFF12 PCB 101	1.51 µg/kg MC12%	0.33		EC Reg 589/2014 (food) and EC Reg 709/2014 (feed)
b)	GFF12 PCB 138	2.31 µg/kg MC12%	0.33		EC Reg 589/2014 (food) and EC Reg 709/2014 (feed)
b)	GFF12 PCB 153	3.79 µg/kg MC12%	0.33		EC Reg 589/2014 (food) and EC Reg 709/2014 (feed)
b)	GFF12 PCB 180	1.25 µg/kg MC12%	0.33		EC Reg 589/2014 (food) and EC Reg 709/2014 (feed)
b)	GFF12 Total 6 ndl-PCB (lower-bound)	9.53 µg/kg MC12%			EC Reg 589/2014 (food) and EC Reg 709/2014 (feed)
b)	GFF12 Total 6 ndl-PCB (medium-bound)	9.67 µg/kg MC12%			EC Reg 589/2014 (food) and EC Reg 709/2014 (feed)
b)	GFF12 Total 6 ndl-PCB (upper-bound)	9.81 µg/kg MC12%	2		EC Reg 589/2014 (food) and EC Reg 709/2014 (feed)
b) TEQ-Totals WHO-PCDD/F and PCB					
b)	GFTE1 WHO(2005)-PCDD/F+PCB TEQ (lower-bound)	1.30 ng/kg MC12%			Internal
b)	GFTE1 WHO(2005)-PCDD/F+PCB TEQ (medium-bou	1.40 ng/kg MC12%			Internal
b)	GFTE1 WHO(2005)-PCDD/F+PCB TEQ (upper-bound)	1.50 ng/kg MC12%		25%	Internal
a)*	CA50X Arsenic (As)	1300 µg/kg	3	30%	EN 13805m:2014, EN ISO 17294m:2016
a)	CA0HW Lead (Pb)	< 1 µg/kg	1		EN 13805m:2014, EN ISO 17294m:2016
a)	CA0HY Cadmium (Cd)	1.6 µg/kg	0.2	30%	EN 13805m:2014, EN ISO 17294m:2016
a)* Cupper (Cu)					
a)*	CA53G Copper (Cu)	160 µg/kg	20	30%	EN 13805m:2014, EN ISO 17294m:2016
a)	CA0HX Mercury (Hg)	< 0.4 µg/kg	0.4		EN 13805m:2014, EN ISO 17294m:2016

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a)* CA52Y Iron (Fe)	< 600 µg/kg	600	EN 13805m:2014, EN ISO 17294m:2016
b) organochlorine pesticides (27 OCP + endosulfane): food, feed, biota, fishoil, fishmeal, milk powder			
b) GFB53 Endosulfan I (alpha-endosulfan)	< 1.21 ng/g	1.3	Internal
b) GFB53 Endosulfan II (beta-Endosulfan)	< 0.971 ng/g	1	Internal
b) GFB53 Endosulfan sulphate	< 0.971 ng/g	1	Internal
b) GFB53 Pentachlorobenzene	< 1.21 ng/g	1.3	Internal
b) GFB53 Hexachlorobenzene (HCB)	3.55 ng/g	1.3	Internal
b) GFB53 alpha-HCH	0.507 ng/g	0.25	Internal
b) GFB53 beta-HCH	0.790 ng/g	0.25	Internal
b) GFB53 gamma-HCH (Lindane)	0.413 ng/g	0.25	Internal
b) GFB53 delta-HCH	< 0.243 ng/g	0.25	Internal
b) GFB53 o,p'-DDT	0.812 ng/g	0.25	Internal
b) GFB53 p,p'-DDT	1.97 ng/g	0.25	Internal
b) GFB53 o,p'-DDE	< 0.243 ng/g	0.25	Internal
b) GFB53 p,p'-DDE	8.40 ng/g	0.25	Internal
b) GFB53 o,p'-DDD	0.610 ng/g	0.25	Internal
b) GFB53 p,p'-DDD	4.73 ng/g	0.25	Internal
b) GFB53 Aldrin	< 0.243 ng/g	0.25	Internal
b) GFB53 Dieldrin	3.86 ng/g	0.38	Internal
b) GFB53 Endrin	< 1.21 ng/g	1.3	Internal
b) GFB53 Toxaphene Parlar 26	< 1.21 ng/g	1.3	Internal
b) GFB53 Toxaphene Parlar 50	2.00 ng/g	1.3	Internal
b) GFB53 Toxaphene Parlar 62	< 2.43 ng/g	2.5	Internal
b) GFB53 Heptachlor	< 0.243 ng/g	0.25	Internal
b) GFB53 Mirex	< 0.243 ng/g	0.25	Internal
b) GFB53 cis-Chlordane	1.10 ng/g	0.25	Internal
b) GFB53 trans-Chlordane	< 0.243 ng/g	0.25	Internal
b) GFB53 oxy-Chlordane	< 0.728 ng/g	0.75	Internal
b) GFB53 trans-Nonachlor	1.57 ng/g	0.13	Internal
b) GFB53 cis-Heptachlorepoxyde	0.550 ng/g	0.38	Internal
b) GFB53 trans-Heptachlorepoxyde	< 1.21 ng/g	1.3	Internal
b) GFB53 Octachlorstyrene	0.189 ng/g	0.13	Internal

Test was performed by / subcontractor:

a)* Eurofins Miljø, Ladelundvej 85, DK-6600, Vejen

a) Eurofins Miljø, Ladelundvej 85, DK-6600, Vejen DS EN ISO/IEC 17025 DANAK 168,

b) Eurofins GfA Lab Service GmbH (Hamburg), Neuländer Kamp 1 a, D-21079, Hamburg DIN EN ISO/IEC 17025:2005 D-PL-14629-01-00,

Copy to:

Rygro (rygro@marineharvest.com)

Bjørn Erik Flem (bjoern.erik.flem@marineharvest.com)

Eivind Sætre (eivind.saetre@marineharvest.com)

Rune Spilde (rune.spilde@marineharvest.com)

Moss 17.01.2019

Tonje Johannessen

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Kjemiingeniør

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