This certificate replaces any previous certificate with the same number.

CERTIFICATE OF ANALYSIS

Work Order	: **ST2135074**	Page	: 1 of 5
Amendment	: **2**		
Client	: **Matís ohf**	Project	: ----
Contact	: Hrólfur Sigurdsson	Purchase Number	: ST2135074
Address	: Food Research, inn. and safety Vinlandsleid 12 -113 Reykjavik Iceland	Sampler Site Date Samples Received	: ---- : ---- : 2021-12-02 14:49
E-mail	: hrolfur@matis.is	Date Analysis Commenced	: 2021-12-03
Telephone	: 3544225000	Issue Date	: 2022-01-03 08:45
C-O-C number	: ----	No. of samples received	: 1
Quote number	: HL2020SE-MAT-OHF0001 (OF191270)	No. of samples analysed	: 1

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This certificate represents the original certificate and may not be modified or reproduced other than in full, except with the prior written approval of the issuing lab. The results apply only to the material that has been identified, received, and tested. Regarding the laboratory's liability in relation to assignment, please refer to our website http://www.alsglobal.se

Workorder Comments

Version 2 - new results regarding metals due to mix up of samples (lab failure).
Should a sample contain sediment it is decanted prior to volatile compounds determination.

Signatories	*Position*
Niels-Kristian Terkildsen	Laboratory Manager

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Laboratory	: ALS Scandinavia AB Danderyd	Webpage	: www.alsglobal.com
Address	: Rinkebyvägen 19C 182 36 Danderyd Sweden	E-mail Telephone	: info.ta@alsglobal.com : +46 8 5277 5200

Analytical Results

Sub-Matrix: **DRINKING WATER**

Client sample ID	**R21-2895-1**						
Laboratory sample ID	*ST2135074-001*						
Client sampling date / time	*Not specified*						
Parameter	**Result**	MU	*Unit*	*LOR*	*Package*	*Method*	*Issuer*
BTEX							
Sum of xylenes (M1)	<0.150	----	µg/L	0.150	OV-5A	W-VOCGMS01	PR
Halogenated Volatile Organic Compounds							
Chloroform	<0.10	----	µg/L	0.10	OV-10	W-VOCGMS01	PR
Bromoform	<0.20	----	µg/L	0.20	OV-10	W-VOCGMS01	PR
Dibromochloromethane	<0.10	----	µg/L	0.10	OV-10	W-VOCGMS01	PR
Bromodichloromethane	<0.10	----	µg/L	0.10	OV-10	W-VOCGMS01	PR
Sum of 4 Trihalomethanes (M1)	<0.250	----	µg/L	0.250	OV-10	W-VOCGMS01	PR
Sample Pre-Preparation							
Stabilisation	Yes *	----	-	-	V-2-S	W-PPV-S	LE
Total Metals/Major Cations							
Aluminum	13.5	± 1.4	µg/L	0.2	V-2	W-SFMS-5A	LE
Arsenic	<0.05	----	µg/L	0.05	V-2	W-SFMS-5A	LE
Barium	0.218	± 0.022	µg/L	0.01	V-2	W-SFMS-5A	LE
Cadmium	0.00977	± 0.00130	µg/L	0.002	V-2	W-SFMS-5A	LE
Calcium	12.4	± 1.2	mg/L	0.1	V-2	W-AES-1A	LE
Chromium	0.0652	± 0.0079	µg/L	0.01	V-2	W-SFMS-5A	LE
Cobalt	0.00765	± 0.00312	µg/L	0.005	V-2	W-SFMS-5A	LE
Copper	2.78	± 0.28	µg/L	0.1	V-2	W-SFMS-5A	LE
Iron	0.0169	± 0.0018	mg/L	0.0004	V-2	W-SFMS-5A	LE
Lead	0.110	± 0.011	µg/L	0.01	V-2	W-SFMS-5A	LE
Magnesium	257	± 26	mg/L	0.09	V-2	W-AES-1A	LE
Manganese	0.431	± 0.046	µg/L	0.03	V-2	W-SFMS-5A	LE
Mercury	<0.002	----	µg/L	0.002	V-2	W-AFS-17V2	LE
Molybdenum	<0.05	----	µg/L	0.05	V-2	W-SFMS-5A	LE
Nickel	0.130	± 0.022	µg/L	0.05	V-2	W-SFMS-5A	LE
Phosphorus	11.3	± 1.3	µg/L	1	V-2	W-SFMS-5A	LE
Potassium	<2	----	mg/L	0.4	V-2	W-AES-1A	LE
Silicon	0.472	± 0.048	mg/L	0.03	V-2	W-AES-1A	LE
Sodium	10.0	± 1.0	mg/L	0.1	V-2	W-AES-1A	LE
Strontium	25.4	± 2.6	µg/L	2	V-2	W-AES-1A	LE
Vanadium	1.70	± 0.17	µg/L	0.005	V-2	W-SFMS-5A	LE
Zinc	11.8	± 1.4	µg/L	0.2	V-2	W-SFMS-5A	LE
Antimony	0.0116	± 0.0059	µg/L	0.01	V-2-ADD	W-SFMS-5A	LE
Boron	<50	----	µg/L	10	V-2-ADD	W-AES-1A	LE
Selenium	<0.3	----	µg/L	0.3	V-2-ADD	W-SFMS-5A	LE
Lithium	0.0918 *	----	µg/L	0.001	V-2-Bas-ADD	W-SFMS-5A	LE
Sulfur	<1	----	mg/L	0.2	V-2-S	W-AES-1A	LE
BTEX							
Benzene	<0.20	----	µg/L	0.20	OV-5A	W-VOCGMS01	PR
Toluene	<0.20	----	µg/L	0.20	OV-5A	W-VOCGMS01	PR
Ethylbenzene	<0.10	----	µg/L	0.10	OV-5A	W-VOCGMS01	PR
meta- & para-Xylene	<0.20	----	µg/L	0.20	OV-5A	W-VOCGMS01	PR
ortho-Xylene	<0.10	----	µg/L	0.10	OV-5A	W-VOCGMS01	PR
Polycyclic Aromatics Hydrocarbons (PAHs)							
Naphthalene	<0.0070	----	µg/L	0.0070	GRV-PAH	W-PAHGMS04	PR
Acenaphthylene	<0.0010	----	µg/L	0.0010	GRV-PAH	W-PAHGMS04	PR

Polycyclic Aromatics Hydrocarbons (PAHs) - Continued							
Acenaphthene	<0.0010	----	µg/L	0.0010	GRV-PAH	W-PAHGMS04	PR
Fluorene	<0.0010	----	µg/L	0.0010	GRV-PAH	W-PAHGMS04	PR
Phenanthrene	<0.0010	----	µg/L	0.0010	GRV-PAH	W-PAHGMS04	PR
Anthracene	<0.0010	----	µg/L	0.0010	GRV-PAH	W-PAHGMS04	PR
Fluoranthene	<0.0010	----	µg/L	0.0010	GRV-PAH	W-PAHGMS04	PR
Pyrene	<0.0010	----	µg/L	0.0010	GRV-PAH	W-PAHGMS04	PR
Benz(a)anthracene	<0.0010	----	µg/L	0.0010	GRV-PAH	W-PAHGMS04	PR
Chrysene	<0.0010	----	µg/L	0.0010	GRV-PAH	W-PAHGMS04	PR
Benzo(b)fluoranthene	<0.0010	----	µg/L	0.0010	GRV-PAH	W-PAHGMS04	PR
Benzo(k)fluoranthene	<0.0010	----	µg/L	0.0010	GRV-PAH	W-PAHGMS04	PR
Benzo(a)pyrene	<0.0010	----	µg/L	0.0010	GRV-PAH	W-PAHGMS04	PR
Indeno(1.2.3.cd)pyrene	<0.00030	----	µg/L	0.00030	GRV-PAH	W-PAHGMS04	PR
Benzo(g.h.i)perylene	<0.00030	----	µg/L	0.00030	GRV-PAH	W-PAHGMS04	PR
Dibenz(a.h)anthracene	<0.00060	----	µg/L	0.00060	GRV-PAH	W-PAHGMS04	PR
Sum of carcinogenic PAH (M1)	<0.0030	----	µg/L	0.0030	GRV-PAH	W-PAHGMS04	PR
Sum of PAH L (M1)	<0.00450	----	µg/L	0.00450	GRV-PAH	W-PAHGMS04	PR
Sum of PAH M (M1)	<0.00250	----	µg/L	0.00250	GRV-PAH	W-PAHGMS04	PR
Sum of PAH H (M1)	<0.00310	----	µg/L	0.00310	GRV-PAH	W-PAHGMS04	PR
Sum of 16 PAH (M1)	<0.0101	----	µg/L	0.101	GRV-PAH	W-PAHGMS04	PR
Sum of other PAH (M1)	<0.00715	----	µg/L	0.00715	GRV-PAH	W-PAHGMS04	PR
Nonmetallic Inorganic Parameters							
Ammonia and ammonium ions as NH4	<0.050	----	mg/L	0.050	Ammonium i vatten	W-NH4-SPC	PR
Ammonia and ammonium ions as N	<0.040	----	mg/L	0.040	Ammonium i vatten	W-NH4-SPC	PR
Total Cyanide	<0.0010	----	mg/L	0.001	Cyanid (total) i vatten	Cyanid_7937,10	HU
Fluoride	<0.200	----	mg/L	0.200	Fluorid i vatten	W-F-IC	PR
Chloride	4.29	± 0.643	mg/L	1.00	Klorid i vatten	W-CL-IC	PR
Nitrate as N	0.046 *	----	mg/L	0.005	Nitrat i vatten(0,02 mg	W-IC-1/AKL	AK
Nitrate	0.204 *	----	mg/L	0.005	Nitrat i vatten(0,02 mg	W-IC-1/AKL	AK
Nitrites	<0.0050	----	mg/L	0.0050	Nitrit i vatten (SPC)	W-NO2-SPC	PR
Nitrite as N	<0.0020	----	mg/L	0.0020	Nitrit i vatten (SPC)	W-NO2-SPC	PR
Sulphate as SO4 2-	<5.00	----	mg/L	5.00	Sulfat i vatten (IC)	W-SO4-IC	PR
Halogenated Volatile Organic Compounds							
Dichloromethane	<0.10	----	µg/L	0.1	OV-6B	OV-6b_6434	HU
1.1-Dichloroethane	<0.020	----	µg/L	0.02	OV-6B	OV-6b_6434	HU
1.2-Dichloroethane	<0.020	----	µg/L	0.02	OV-6B	OV-6b_6434	HU
trans-1.2-Dichloroethene	<0.020	----	µg/L	0.02	OV-6B	OV-6b_6434	HU
cis-1.2-Dichloroethene	<0.020	----	µg/L	0.02	OV-6B	OV-6b_6434	HU
1.2-Dichloropropane	<0.020	----	µg/L	0.02	OV-6B	OV-6b_6434	HU
Chloroform	<0.020	----	µg/L	0.02	OV-6B	OV-6b_6434	HU
Tetrachloromethane	<0.020	----	µg/L	0.02	OV-6B	OV-6b_6434	HU
1.1.1-Trichloroethane	<0.020	----	µg/L	0.02	OV-6B	OV-6b_6434	HU
1.1.2-Trichloroethane	<0.020	----	µg/L	0.02	OV-6B	OV-6b_6434	HU
Trichloroethene	<0.020	----	µg/L	0.02	OV-6B	OV-6b_6434	HU
Tetrachloroethene	<0.020	----	µg/L	0.02	OV-6B	OV-6b_6434	HU
Vinyl chloride	<0.020	----	µg/L	0.02	OV-6B	OV-6b_6434	HU
1.1-Dichloroethene	<0.020	----	µg/L	0.02	OV-6B	OV-6b_6434	HU
Physical Parameters							
Colour (True)	5.0	± 1.5	mgPt/l	5.0	Färg	W-COL-SPC	PR
Other							
Total Organic Carbon	<0.50	----	mg/L	0.50	TOC	W-TOC-IR	PR

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	Method Reference
W-AES-1A	Determination of metals in fresh water, pool and drinking water by ICP-AES according to SS-EN ISO 11885:2009 and US EPA Method 200.7:1994. Samples are acidified with 1 ml high purity nitric acid per 100 ml prior to analysis. No digestion.
W-AFS-17V2	Determination of mercury (Hg) in natural water by AFS according to SS-EN ISO 17852:2008. Samples are acidified with 1 ml high purity nitric acid per 100 ml prior to analysis. No digestion.
W-PPV-S*	Stabilisation with H2O2 prior to W-AES-1A (SE-SOP-0259).
W-SFMS-5A	Determination of metals in fresh water, pool and drinking water by ICP-SFMS according to SS-EN ISO 17294-2:2016 and US EPA Method 200.8:1994. Samples are acidified with 1 ml high purity nitric acid per 100 ml prior to analysis. No digestion.
Cyanid_7937,10	Determination of cyanid total according to DS/EN ISO 14403-2:2012.
OV-6b_6434	Determination of chlorinated aliphates incl. vinyl chloride according to AK210. Measurement is performed with headspace GC-MS. LOD is meant to report less than values (<).
W-IC-1/AKL	Determination of dissolved fluoride, chloride, nitrite, ortho-phosfhate, bromide, nitrate and sulphate ions using liquid chromatography according to SS-EN ISO 10 304-1:2009.
W-CL-IC	CZ_SOP_D06_02_068 (CSN EN ISO 10304-1) Determination of dissolved fluoride, chloride, nitrite, bromide, nitrate and sulphate by ion liquid chromatography and calculation of nitrite nitrogen and nitrate nitrogen and sulphate sulphur from measured values including the calculation of total mineralization.
W-COL-SPC	CZ_SOP_D06_02_079 (CSN EN ISO 7887) Determination of colour by spectrophotometry.
W-F-IC	CZ_SOP_D06_02_068 (CSN EN ISO 10304-1) Determination of dissolved fluoride, chloride, nitrite, bromide, nitrate and sulphate by ion liquid chromatography and calculation of nitrite nitrogen and nitrate nitrogen and sulphate sulphur from measured values including the calculation of total mineralization.
W-NH4-SPC	CZ_SOP_D06_02_019 (ČSN EN ISO 11732, ČSN EN ISO 13395, ČSN EN 16192, SM 4500-NO2-, SM 4500-NO3-) Determination of sum of ammonium and ammonium ions, nitrite and the sum of nitrite and nitrate ions by discrete spectrophotometry and calculation of nitrite, nitrate, ammonia, inorganic, organic, total nitrogen, free ammonia and dissociated ammonium ions from measured values including the calculation of total mineralization
W-NO2-SPC	CZ_SOP_D06_02_019 (ČSN EN ISO 11732, ČSN EN ISO 13395, ČSN EN 16192, SM 4500-NO2-, SM 4500-NO3-) Determination of sum of ammonium and ammonium ions, nitrite and the sum of nitrite and nitrate ions by discrete spectrophotometry and calculation of nitrite, nitrate, ammonia, inorganic, organic, total nitrogen, free ammonia and dissociated ammonium ions from measured values including the calculation of total mineralization
W-PAHGMS04	CZ_SOP_D06_03_161 (US EPA 8270D, US EPA 8082A, CSN EN ISO 6468, US EPA 8000D, samples preparation as per CZ_SOP_D06_03_P01 chap. 9.1, 9.4.1). Determination of semi volatile organic compounds by gas chromatography method with MS or MS/MS detection and calculation of semi volatile organic compounds sums from measured values
W-SO4-IC	CZ_SOP_D06_02_068 (ČSN EN ISO 10304-1) Determination of dissolved fluoride, chloride, nitrite, bromide, nitrate and sulphate by ion liquid chromatography and calculation of nitrite nitrogen and nitrate nitrogen and sulphate sulphur from measured values including the calculation of total mineralization.
W-TOC-IR	CZ_SOP_D06_02_056 (CSN EN 1484, SM 5310) Determination of total organic carbon (TOC), dissolved organic carbon (DOC), total inorganic carbon (TIC) and total carbon (TC) by IR detection.
W-VOCGMS01	CZ_SOP_D06_03_155 except chap. 10.5, 10.6 (US EPA 624, US EPA 8260, US EPA 8015, CSN EN ISO 10301, MADEP 2004, rev. 1.1, CSN ISO 11423, CSN EN ISO 15680) Determination of volatile organic compounds by gas chromatography method with FID and MS detection and calculation of volatile organic compounds sums from measured values.

Key: **LOR** = Limit of reporting represents the standard LOR for the respective parameters in each method. Note that limits of reporting may be affected if, e.g. additional dilution was required because of matrix effects, or the sample quantity was limited.

MU = Measurement Uncertainty

* = Symbol succeding any result indicates laboratory or subcontractor non-accredited test.

Measurement Uncertainty:

The uncertainty is given as extended uncertainty (according to the definition in "Guide to the Expression of Measurement", JCGM 100:2008 Corrected version 2010) calculated with a coverage factor of 2, which give level of approximately 95%. Measurement of uncertainty is reported only for detected substances with levels above the reporting limits.

The uncertainty from subcontractors is often given as extended uncertainty calculated with a coverage factor of 2. Contact the laboratory for further information.

Issuing lab

	Issuer
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