

Report

Page 1 (5)



T1621672

21T35A51GGY



Date received **2016-09-12**
Issued **2016-09-27**

Matis ohf
Hrólfur Sigurdsson
Food Research, inn. and safety
Vinlandsleid 12
IS-113 Reykjavik
ICELAND

Project
Reference

Analysis of drinking water

Your ID	R16-2523-1					
LabID	O10799991					
Analysis	Results	Uncertainty (±)	Unit	Method	Issuer	Sign
Ca	3.98	0.31	mg/l	1	R	AKR
Fe	0.0458	0.0037	mg/l	1	R	AKR
K	0.672	0.054	mg/l	1	R	AKR
Mg	2.01	0.13	mg/l	1	R	AKR
Na	5.37	0.46	mg/l	1	R	AKR
Si	7.79	0.49	mg/l	1	R	AKR
Al	1.54	0.32	µg/l	1	H	AKR
As	0.0542	0.0179	µg/l	1	H	AKR
Ba	0.105	0.020	µg/l	1	H	AKR
Cd	0.00669	0.00148	µg/l	1	H	AKR
Co	0.0179	0.0049	µg/l	1	H	AKR
Cr	0.0756	0.0185	µg/l	1	H	AKR
Cu	1.03	0.19	µg/l	1	H	AKR
Hg	<0.002		µg/l	1	F	AKR
Mn	3.27	0.34	µg/l	1	R	AKR
Mo	0.0632	0.0148	µg/l	1	H	AKR
Ni	0.0632	0.0215	µg/l	1	H	AKR
P	31.5	6.2	µg/l	1	H	AKR
Pb	0.213	0.039	µg/l	1	H	AKR
Sr	5.07	0.52	µg/l	1	R	AKR
Zn	10.5	1.5	µg/l	1	R	AKR
V	1.92	0.35	µg/l	1	H	AKR
Sb	0.0272	0.0077	µg/l	2	H	AKR
B	<10		µg/l	2	R	AKR
S	0.415	0.063	mg/l	2	R	AKR
Se	<0.5		µg/l	2	H	AKR
naphthalene	<0.030		µg/l	3	1	MB
acenaphthylene	<0.010		µg/l	3	1	MB
acenaphthene	<0.010		µg/l	3	1	MB
fluorene	<0.010		µg/l	3	1	MB
phenanthrene	<0.020		µg/l	3	1	MB
anthracene	<0.010		µg/l	3	1	MB
fluoranthene	<0.010		µg/l	3	1	MB
pyrene	<0.010		µg/l	3	1	MB
benzo(a)anthracene	<0.010		µg/l	3	1	MB
chrysene	<0.010		µg/l	3	1	MB
benzo(b)fluoranthene	<0.010		µg/l	3	1	MB
benzo(k)fluoranthene	<0.010		µg/l	3	1	MB
benzo(a)pyrene	<0.010		µg/l	3	1	MB
dibenzo(ah)anthracene	<0.010		µg/l	3	1	MB
benzo(ghi)perylene	<0.010		µg/l	3	1	MB

Report

Page 2 (5)



T1621672

21T35A51GGY



Your ID	R16-2523-1					
LabID	O10799991					
Analysis	Results	Uncertainty (±)	Unit	Method	Issuer	Sign
indeno(123cd)pyrene	<0.010		µg/l	3	1	MB
PAH, sum 16*	<0.095		µg/l	3	1	MB
PAH, sum carcinogenic*	<0.035		µg/l	3	1	MB
PAH, sum non carcinogenic*	<0.060		µg/l	3	1	MB
PAH, sum L*	<0.025		µg/l	3	1	MB
PAH, sum M*	<0.030		µg/l	3	1	MB
PAH, sum H*	<0.040		µg/l	3	1	MB
benzene	<0.20		µg/l	4	1	MB
toluene	<0.20		µg/l	4	1	MB
ethylbenzene	<0.10		µg/l	4	1	MB
m,p-xylene	<0.20		µg/l	4	1	MB
o-xylene	<0.10		µg/l	4	1	MB
xylene, sum*	<0.20		µg/l	4	1	MB
dichloromethane	<2.0		µg/l	5	1	WIDF
1,1-dichloroethane	<0.10		µg/l	5	1	WIDF
1,2-dichloroethane	<0.50		µg/l	5	1	WIDF
trans-1,2-dichloroethene	<0.10		µg/l	5	1	WIDF
cis-1,2-dichloroethene	<0.10		µg/l	5	1	WIDF
1,2-dichloropropane	<1.0		µg/l	5	1	WIDF
tetrachloromethane	<0.10		µg/l	5	1	WIDF
1,1,1-trichloroethane	<0.10		µg/l	5	1	WIDF
1,1,2-trichloroethane	<0.20		µg/l	5	1	WIDF
trichloroethene	<0.10		µg/l	5	1	WIDF
tetrachloroethene	<0.20		µg/l	5	1	WIDF
vinylchloride	<1.0		µg/l	5	1	WIDF
1,1-dichloroethene	<0.10		µg/l	5	1	WIDF
trichloromethane	<0.30		µg/l	6	1	WIDF
tribromomethane	<0.20		µg/l	6	1	WIDF
dibromochloromethane	<0.10		µg/l	6	1	WIDF
bromodichloromethane	<0.10		µg/l	6	1	WIDF
trihalomethanes, sum*	<0.35		µg/l	6	1	WIDF
ammonium	<0.026		mg/l	7	1	WIDF
ammonium nitrogen	<0.020		mg/l	7	1	WIDF
chloride	4.99	0.748	mg/l	8	1	WIDF
sulphate	1.29	0.194	mg/l	9	1	WIDF
fluoride	<0.200		mg/l	10	1	WIDF
TOC	<0.50		mg/l	11	1	WIDF
CN total	<0.005		mg/l	12	1	WIDF
nitrate	0.190	0.027	mg/l	13	2	STGR
nitrate nitrogen	0.043	0.00688	mg/l	13	2	STGR
colour	<5		mgPt/l	14	3	NEMA
nitrite	<0.01		mg/l	15	3	NEMA

* indicates unaccredited analysis.

Method specification	
1	<p>Package V-2. Determination of metals without digestion. The measurement was carried out according to EPA-method 200.7(mod), SS EN ISO 11885(mod) (ICP-AES) and EPA-method 200.8(mod), SS EN ISO 17294-1,2(mod) (ICP-SFMS). Analysis of Hg with AFS according to SS-EN ISO 17852:2008.</p> <p>Special information for added metals to the package: W; the sample must not be acidified prior to analysis. S; the sample has been stabilized with H₂O₂.</p> <p>Rev 2015-06-25</p>
2	Additional metals
3	<p>Package OV-1. Determination of polycyclic aromatic hydrocarbons, PAH (EPA-16) according to method based on US EPA 8270 and CSN EN ISO 6468.. The measurement is performed with GC-MS.</p> <p>PAH carcinogenic are benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, dibenzo(ah)anthracene and indeno(123cd)pyrene.</p> <p>Sum PAH L: naphtalene, acenaphtene and acenaphtylene. Sum PAH M: fluorene, phenanthrene, anthracene, fluoranthene and pyrene Sum PAH H: benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-c,d)pyrene, dibenzo(a,h)anthracene and benzo(g,h,i)perylene) According to new directives from Swedish EPA, October 2008.</p> <p>Rev 2013-09-18</p>
4	<p>Package OV-5. Determination of monocyclic aromatics (BTEX) according to method based on US EPA 624, US EPA 8260, EN ISO 10301, MADEP 2004, rev. 1.1. Measurement is performed with GC-FID and GC-MS.</p> <p>Rev 2013-09-19</p>
5	<p>Package OV-6. Determination of chlorinated aliphates including vinylchloride according to method based on US EPA 624, US EPA 8260, EN ISO 10301, MADEP 2004, rev.1.1.. The measurement is performed with GC-FID and GC-MS.</p> <p>Rev 2013-09-18</p>
6	<p>Package OV-10. Determination of trihalomethanes according to a method based on US EPA 624, US EPA 8260, EN ISO 10301, MADEP 2004, rev.1.1. The measurement is performed with GC-FID and GC-MS.</p> <p>Rev 2013-09-19</p>
7	<p>Spectrophotometric determination of ammonium NH₄, low LOQ, according to method based on CSN EN ISO 11732, CSN EN ISO 13395, CSN EN 13370 and CSN EN 12506. The method includes filtration of turbid samples.</p> <p>Rev 2013-09-18</p>
8	Determination of chloride using ion chromatography according to CSN EN ISO 10304-1.

Report

Page 4 (5)



T1621672

21T35A51GGY



Method specification	
	The method includes filtration of turbid samples. Rev 2012-05-28
9	Determination of sulfate with low LOQ, using ion chromatography according to a method based on CSN ISO 10304-1&2. The method includes filtration of turbid samples. Rev 2013-03-14
10	Determination of fluoride using ion chromatography according to CSN ISO 10304-1 and CSN EN 12506. The method includes filtration of turbid samples. Rev 2013-09-17
11	Determination of TOC with IR detection according to method based on CSN EN 1484 and CSN EN 13370. The method includes filtration of turbid samples. Rev 2014-11-24
12	Spectrophotometric determination of total cyanide according to method based on TNV 757415. Rev 2013-09-19
13	Determination of nitrate, NO ₃ according to SS-EN ISO 10304-1. The measurement is performed with ion chromatography. Rev 2014-03-03
14	Determination of colour according to SS-EN ISO 7887 edition 2, method C. Photometric determination at 410 nm after filtration. Uncertainty (k=2): ±18% at 20 mg Pt/l and ±12% at 100 mg Pt/l Rev 2016-05-17
15	Determination of nitrite nitrogen according to SS-EN ISO 13395-1 (FIA). Filtration through 0.45 µm filter is included in the method. Sample for the determination of nitrite nitrogen should arrive to the laboratory as soon as possible after sampling, because this parameter is time-sensitive. The determination should be done within 24 hours after sampling according to SS-EN ISO 5667-3. Uncertainty (k=2) Clean water: ±14% at 0.01 mg N/l ±10% at 0.05 mg N/l and ±14% at 0.2 mg N/l Waste water: ±14% at 0.01 mg N/l and ±11% at 0.05 mg N/l and ±15% at 0.2 mg N/l Rev 2016-03-17

Approver	
AKR	Anna-Karin Revell
MB	Maria Bigner
NEMA	Nesrine Mansouri
STGR	Sture Grägg
WIDF	William Di Francesco

	Issuer ¹
F	The determination is performed using AFS The analysis is provided by ALS Scandinavia AB, Aurorum 10, 977 75 Luleå, Sweden, which is a testing laboratory, accredited by the Swedish accreditation body SWEDAC (Reg.No. 2030).
H	The determination is performed using ICP-SFMS The analysis is provided by ALS Scandinavia AB, Aurorum 10, 977 75 Luleå, Sweden, which is a testing laboratory, accredited by the Swedish accreditation body SWEDAC (Reg.No. 2030).
R	The determination is performed using ICP-AES The analysis is provided by ALS Scandinavia AB, Aurorum 10, 977 75 Luleå, Sweden, which is a testing laboratory, accredited by the Swedish accreditation body SWEDAC (Reg.No. 2030).
1	The analysis is provided by ALS Laboratory Group, Na Harfê 9/336, 190 00, Prag 9, Czech Republic, which is a testing laboratory, accredited by the Czech accreditation body CAI (Reg.No 1163). CAI is a signatory to a MLA within EA, the same LA to which the Swedish accreditation body SWEDAC is also a signatory. The laboratories are located in; Prague, Na Harfê 9/336, 190 00, Praha 9, Ceska Lipa, Bendlova 1687/7, 470 03 Ceska Lipa, Pardubice, V Raji 906, 530 02 Pardubice. Contact the laboratory for further information.
2	The analysis is provided by AK Lab AB, Getångsvägen 29, 504 68 Borås, Sweden, which is a testing laboratory, accredited by the Swedish accreditation body SWEDAC (Reg.No. 1790).
3	The analysis is provided by ALS Scandinavia AB, Box 700, 182 17 Danderyd, which is accredited by the Swedish accreditation body SWEDAC (Reg.No. 2030).

The uncertainty is given as extended uncertainty (according to the definition in "Guide to the Expression of Uncertainty in Measurement", JCGM 100:2008 Corrected version 2010) calculated with a coverage factor of 2, which gives a confidence level of approximately 95%.

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

This report may not be reproduced other than in full, except with the prior written approval of the issuing laboratory. 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 latest product catalogue or website <http://www.alsglobal.se>

The digitally signed PDF file represents the original report. Any printouts are to be considered as copies.

¹ The technical unit within ALS Scandinavia where the analysis was carried out, alternatively the subcontractor for the analysis.