



ALS Scandinavia AB

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An INAB accredited testing laboratory Reg. No. 173T. Accredited methods are listed in the Scope of Accreditation available on request.

To: GEOLOGICAL SURVEY OF NORWAY (NGU)
POSTBOKS 6315 TORGARDEN
NO-7491 TRONDHEIM
NORWAY

Page: 1
Total # Pages: 6 (A - E)
Plus Appendix Pages
Finalized Date: 4-JAN-2019
Account: ONUSEG

QC CERTIFICATE PI18302159

Project: Not provided

P.O. No.: 379500

This report is for 174 1/4 Core samples submitted to our lab in Pitea, Sweden on 28-NOV-2018.

The following have access to data associated with this certificate:

NOLWENN COINT

SVEN DAHLGREN

HENRIK SCHIELLERUP

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
CRU-31	Fine crushing - 70% <2mm
SPL-22Y	Split Sample - Boyd Rotary Splitter
PUL-31	Pulverize split to 85% <75 um
LOG-24	Pulp Login - Rcd w/o Barcode
CRU-QC	Crushing QC Test
PUL-QC	Pulverizing QC Test

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION
ME-MS61	48 element four acid ICP-MS
ME-MS81h	High grade REE by fusion/ICPMS ICP-MS

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Comments: Samples were received on 27-Nov-2018 and the SSF/Request on 28-Nov-2018.

Signature:

Andrey Tairov, Technical Manager, Ireland



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QC CERTIFICATE OF ANALYSIS PI18302159

Sample Description	Method Analyte Units LOD	ME-MS81h Ce ppm 3	ME-MS81h Dy ppm 0.3	ME-MS81h Er ppm 0.2	ME-MS81h Eu ppm 0.2	ME-MS81h Gd ppm 0.3	ME-MS81h Hf ppm 1	ME-MS81h Ho ppm 0.05	ME-MS81h La ppm 3	ME-MS81h Lu ppm 0.05	ME-MS81h Nb ppm 1	ME-MS81h Nd ppm 0.5	ME-MS81h Pr ppm 0.2	ME-MS81h Rb ppm 1	ME-MS81h Sm ppm 0.2	ME-MS81h Sn ppm 5
STANDARDS																
AMISO304		8430	134.0	35.3	155.5	364	27	17.90	3670	2.06	>5000	3880	1060	11	611	26
AMISO304		8320	135.5	35.3	158.0	362	27	18.05	3520	2.00	>5000	3860	1020	11	613	23
AMISO304		8120	135.0	33.7	154.5	346	26	18.10	3410	1.89	>5000	4020	1010	11	588	23
Target Range - Lower Bound		7520	122.5	31.4	139.5	319	25	16.70	3350	1.81	4830	3600	956	9	535	15
Upper Bound		8660	141.5	36.6	160.5	367	31	19.30	3870	2.19	>5000	4150	1100	13	615	36
EMOG-17																
EMOG-17																
EMOG-17																
EMOG-17																
Target Range - Lower Bound																
Upper Bound																
GRE-04		6020	90.6	26.6	98.0	217	22	12.70	2800	1.71	3750	2730	743	1	399	75
GRE-04		6090	92.3	26.6	96.4	222	22	13.00	2800	1.74	3660	2600	744	1	393	76
GRE-04		6160	96.0	26.9	99.8	222	19	13.60	2850	1.74	3700	2890	758	1	406	80
Target Range - Lower Bound		5700	89.5	26.4	93.3	216	18	12.50	2540	1.59	3300	2510	670	<1	363	59
Upper Bound		6560	103.5	30.8	108.0	249	23	14.50	2930	1.93	3800	2890	772	2	418	81
GRE-3		4470	90.2	26.9	76.4	182.0	20	13.05	2290	1.83	3720	1800	501	1	281	45
GRE-3		4300	87.0	27.4	74.1	182.5	20	12.65	2160	1.83	3720	1745	470	1	275	41
GRE-3		4400	90.2	27.4	73.2	184.0	19	12.70	2230	1.72	3650	1750	510	1	277	44
Target Range - Lower Bound		4050	85.6	26.6	69.8	177.5	17	12.55	2070	1.63	3280	1705	462	<1	260	34
Upper Bound		4660	99.1	31.1	80.7	205	22	14.55	2380	1.99	3770	1965	532	3	299	56
MRGeo08																
MRGeo08																
MRGeo08																
MRGeo08																
Target Range - Lower Bound																
Upper Bound																
OGGeo08																
OGGeo08																
OGGeo08																
Target Range - Lower Bound																
Upper Bound																
OREAS 920																
OREAS 920																
OREAS 920																
Target Range - Lower Bound																
Upper Bound																
REE-1		4160	848	668	24.5	427	499	209	1730	94.3	3770	1475	443	1040	396	490

Comments: Samples were received on 27-Nov-2018 and the SSF/Request on 28-Nov-2018.

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302159

Sample Description	Method Analyte Units LOD	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61
		Ta	Tb	Th	Tm	U	W	Y	Yb	Zr	Ag	Al	As	Ba	Be
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
		0.5	0.05	0.3	0.05	0.3	5	3	0.2	10	0.01	0.01	0.2	10	0.05
STANDARDS															
AMISO304		12.2	37.0	464	3.55	23.8	6	419	17.9	1170					
AMISO304		12.7	36.6	453	3.71	23.6	5	425	17.8	1150					
AMISO304		11.7	35.3	438	3.47	23.3	5	419	17.2	1180					
Target Range - Lower Bound		11.6	32.5	406	3.21	22.0	<5	378	15.6	1030					
Upper Bound		14.4	37.5	468	3.80	26.0	15	442	18.4	1210					
EMOG-17											65.8	4.58	592	400	1.89
EMOG-17											68.6	4.75	589	350	1.82
EMOG-17											64.6	4.69	589	500	1.85
EMOG-17											67.5	4.63	574	430	1.82
Target Range - Lower Bound											60.9	4.18	515	310	1.60
Upper Bound											74.5	5.13	629	440	2.06
GRE-04		127.0	23.5	134.0	2.86	126.5	<5	309	14.3	980					
GRE-04		126.0	22.8	136.5	2.83	130.0	<5	316	14.4	990					
GRE-04		125.5	23.4	136.5	2.99	131.5	<5	330	14.2	950					
Target Range - Lower Bound		113.0	22.7	123.5	2.75	116.0	<5	294	13.8	870					
Upper Bound		131.0	26.2	142.5	3.27	134.0	10	345	16.3	1020					
GRE-3		172.5	20.1	111.0	3.06	116.0	9	312	15.1	980					
GRE-3		160.0	20.1	113.5	2.91	112.0	<5	295	14.4	980					
GRE-3		160.5	20.2	114.5	3.03	112.5	7	309	15.0	980					
Target Range - Lower Bound		149.5	20.1	109.0	2.81	103.5	<5	295	14.2	890					
Upper Bound		173.5	23.2	126.0	3.35	120.0	13	346	16.8	1050					
MRGeo08											4.36	7.59	31.9	1100	3.47
MRGeo08											4.34	7.22	32.0	1070	3.22
MRGeo08											4.32	7.52	33.1	1100	3.57
MRGeo08											4.40	6.97	29.7	1030	3.09
Target Range - Lower Bound											4.00	6.64	29.5	920	2.98
Upper Bound											4.92	8.14	36.5	1270	3.76
OGGeo08											20.5	6.43	119.5	850	3.02
OGGeo08											20.2	6.78	118.0	880	3.14
OGGeo08											19.35	7.16	119.0	890	2.61
Target Range - Lower Bound											18.15	6.07	106.0	700	2.59
Upper Bound											22.2	7.44	130.0	980	3.27
OREAS 920											0.08	7.57	5.4	540	2.69
OREAS 920											0.12	7.68	5.6	550	2.70
OREAS 920											0.11	7.00	5.0	550	2.71
Target Range - Lower Bound											0.08	6.91	4.4	450	2.54
Upper Bound											0.13	8.47	5.8	640	3.22
REE-1		222	106.0	796	109.5	140.5	14	5690	688	19850					

Comments: Samples were received on 27-Nov-2018 and the SSF/Request on 28-Nov-2018.

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302159

Sample Description	Method Analyte Units LOD	ME-MS61 Ca %	ME-MS61 Cd ppm	ME-MS61 Ce ppm	ME-MS61 Co ppm	ME-MS61 Cr ppm	ME-MS61 Cs ppm	ME-MS61 Cu ppm	ME-MS61 Fe %	ME-MS61 Ga ppm	ME-MS61 Ge ppm	ME-MS61 Hf ppm	ME-MS61 In ppm	ME-MS61 K %	ME-MS61 La ppm	ME-MS61 Li ppm
		0.01	0.02	0.01	0.1	1	0.05	0.2	0.01	0.05	0.05	0.1	0.005	0.01	0.5	0.2
STANDARDS																
AMISO304																
AMISO304																
AMISO304																
Target Range - Lower Bound																
Upper Bound																
EMOG-17		1.94	20.2	47.3	775	51	7.39	8670	4.90	12.65	0.38	1.9	0.945	1.65	25.0	26.1
EMOG-17		1.96	20.5	51.7	767	53	7.25	8380	5.01	12.60	0.40	1.9	0.915	1.69	27.0	26.2
EMOG-17		1.92	20.9	51.8	765	52	7.35	7840	4.89	12.80	0.35	1.9	0.904	1.68	26.3	27.3
EMOG-17		1.92	20.0	51.9	757	56	7.54	8310	4.95	12.05	0.34	1.7	0.917	1.61	26.1	25.4
Target Range - Lower Bound		1.72	18.15	42.9	686	49	6.56	7750	4.42	10.75	0.07	1.6	0.823	1.49	20.7	23.9
Upper Bound		2.12	22.2	52.5	838	62	8.12	8910	5.42	13.25	0.29	2.2	1.015	1.85	26.4	29.7
GRE-04																
GRE-04																
GRE-04																
Target Range - Lower Bound																
Upper Bound																
GRE-3																
GRE-3																
GRE-3																
Target Range - Lower Bound																
Upper Bound																
MRGeo08		2.63	2.16	71.4	19.5	93	11.90	619	3.98	19.25	0.14	3.3	0.171	3.09	34.8	32.1
MRGeo08		2.61	2.26	66.5	18.5	88	11.40	616	3.88	18.60	0.14	3.1	0.173	3.04	31.5	30.2
MRGeo08		2.62	2.25	71.3	19.5	93	12.15	626	4.03	19.45	0.14	3.0	0.177	3.08	33.0	35.3
MRGeo08		2.58	2.24	65.2	18.5	91	11.45	616	3.92	17.90	0.13	3.1	0.168	3.00	29.7	30.4
Target Range - Lower Bound		2.35	2.00	66.2	17.7	81	11.20	587	3.55	17.50	<0.05	2.8	0.155	2.79	31.1	29.5
Upper Bound		2.90	2.48	81.0	21.9	102	13.80	675	4.37	21.5	0.27	3.6	0.201	3.43	39.1	36.5
OGGeo08		2.18	16.85	66.8	96.1	82	10.50	8310	5.28	17.45	0.43	2.9	1.475	2.86	31.8	32.5
OGGeo08		2.23	20.3	66.4	97.8	83	10.60	8540	5.35	17.80	0.47	2.9	1.465	2.95	31.8	31.3
OGGeo08		2.22	19.35	78.9	95.2	84	10.85	8220	5.49	17.00	0.47	2.8	1.420	2.90	38.8	30.0
Target Range - Lower Bound		1.98	16.70	64.8	87.2	78	9.85	7800	4.81	16.05	0.25	2.5	1.320	2.59	31.0	29.7
Upper Bound		2.44	20.5	79.2	107.0	98	12.15	8980	5.91	19.75	0.49	3.3	1.620	3.19	39.0	36.7
OREAS 920		0.49	0.06	87.9	15.0	81	8.21	110.5	4.14	20.4	0.12	4.7	0.087	2.88	42.0	27.5
OREAS 920		0.49	0.05	97.7	14.9	80	8.18	109.0	4.13	20.9	0.11	4.4	0.081	2.89	44.7	28.1
OREAS 920		0.46	0.07	80.2	15.3	86	7.82	115.0	3.99	20.2	0.18	4.8	0.080	2.86	36.7	31.3
Target Range - Lower Bound		0.44	0.04	84.6	13.9	70	7.72	104.0	3.72	18.65	0.06	4.0	0.070	2.59	41.0	26.0
Upper Bound		0.56	0.12	103.5	17.3	88	9.54	120.0	4.56	22.9	0.28	5.2	0.098	3.19	51.2	32.2
REE-1																

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Sample Description	Method Analyte Units LOD	ME-MS61 Mg %	ME-MS61 Mn ppm	ME-MS61 Mo ppm	ME-MS61 Na %	ME-MS61 Nb ppm	ME-MS61 Ni ppm	ME-MS61 P ppm	ME-MS61 Pb ppm	ME-MS61 Rb ppm	ME-MS61 Re ppm	ME-MS61 S %	ME-MS61 Sb ppm	ME-MS61 Sc ppm	ME-MS61 Se ppm	ME-MS61 Sn ppm
		0.01	5	0.05	0.01	0.1	0.2	10	0.5	0.1	0.002	0.01	0.05	0.1	1	0.2
STANDARDS																
AMIS0304																
AMIS0304																
AMIS0304																
Target Range - Lower Bound																
Upper Bound																
EMOG-17		0.99	697	1025	1.06	12.7	7290	770	7480	113.5	0.315	3.25	744	8.3	8	2.8
EMOG-17		0.97	772	1120	1.11	15.5	7770	820	7320	120.0	0.336	3.30	794	8.5	6	2.8
EMOG-17		0.97	713	1015	1.11	15.3	7120	770	7230	113.0	0.321	3.23	752	8.2	7	2.6
EMOG-17		0.96	752	1110	1.10	16.2	7590	800	7270	120.0	0.299	3.22	783	8.3	7	2.7
Target Range - Lower Bound		0.86	670	997	0.99	12.7	6820	700	6570	98.9	0.286	2.91	643	7.2	4	2.2
Upper Bound		1.08	830	1220	1.23	15.7	8330	880	8030	121.0	0.354	3.57	869	9.0	9	3.2
GRE-04																
GRE-04																
GRE-04																
Target Range - Lower Bound																
Upper Bound																
GRE-3																
GRE-3																
GRE-3																
Target Range - Lower Bound																
Upper Bound																
MRGeo08		1.34	572	14.65	1.98	21.6	706	1040	1070	193.5	0.013	0.31	4.62	11.6	<1	3.9
MRGeo08		1.31	580	13.85	1.95	21.5	694	1030	1060	186.5	0.008	0.30	4.43	11.1	<1	4.0
MRGeo08		1.33	570	14.55	2.00	20.8	697	1030	1075	190.5	0.011	0.30	4.58	11.9	1	4.0
MRGeo08		1.29	550	14.40	1.98	19.8	684	1010	1060	168.5	0.008	0.30	4.29	11.1	<1	3.9
Target Range - Lower Bound		1.17	497	13.65	1.76	19.0	622	930	971	173.5	0.005	0.27	3.89	11.1	<1	3.5
Upper Bound		1.45	619	16.75	2.18	23.4	760	1160	1185	212	0.013	0.35	5.39	13.7	4	4.7
OGGeo08		1.21	519	902	1.81	19.0	8800	830	7170	168.5	1.315	2.76	26.9	9.7	12	14.0
OGGeo08		1.25	534	941	1.88	16.7	8890	860	7420	174.0	1.370	2.82	27.3	9.8	12	13.7
OGGeo08		1.24	515	935	1.80	18.7	8850	850	7260	196.5	1.325	2.79	26.0	10.6	10	13.4
Target Range - Lower Bound		1.11	447	841	1.62	15.4	8000	760	6520	164.5	1.285	2.51	22.8	9.2	8	12.5
Upper Bound		1.38	557	1030	2.00	19.0	9770	950	7970	201	1.575	3.09	31.0	11.4	14	15.7
OREAS 920		1.38	587	0.53	0.64	19.2	39.7	680	24.4	161.5	0.002	0.03	1.48	13.1	1	4.9
OREAS 920		1.38	584	0.46	0.64	17.3	39.3	710	21.3	178.0	0.003	0.03	1.51	13.2	1	4.9
OREAS 920		1.26	583	0.53	0.64	16.4	41.7	710	22.7	151.0	<0.002	0.04	1.49	12.9	<1	5.0
Target Range - Lower Bound		1.23	535	0.34	0.56	15.6	37.4		20.7	158.5	<0.002	<0.01	1.22	12.8	<1	4.3
Upper Bound		1.53	665	0.58	0.71	19.2	46.2		26.4	193.5	0.004	0.05	1.76	15.8	2	5.7
REE-1																

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Sample Description	Method Analyte Units LOD	ME-MS61 Sr ppm 0.2	ME-MS61 Ta ppm 0.05	ME-MS61 Te ppm 0.05	ME-MS61 Th ppm 0.01	ME-MS61 Ti % 0.005	ME-MS61 Tl ppm 0.02	ME-MS61 U ppm 0.1	ME-MS61 V ppm 1	ME-MS61 W ppm 0.1	ME-MS61 Y ppm 0.1	ME-MS61 Zn ppm 2	ME-MS61 Zr ppm 0.5
STANDARDS													
AMISO304													
AMISO304													
AMISO304													
Target Range - Lower Bound													
Upper Bound													
EMOG-17		198.5	0.93	1.38	10.35	0.295	2.23	3.1	68	4.1	16.0	7190	64.9
EMOG-17		213	1.01	1.35	11.25	0.327	2.33	3.5	73	3.8	17.1	7720	65.5
EMOG-17		196.5	1.01	1.32	11.05	0.299	2.18	3.2	70	4.1	15.7	7070	64.8
EMOG-17		203	1.00	1.39	11.90	0.319	2.09	3.2	74	3.8	16.7	7530	64.1
Target Range - Lower Bound		184.5	0.78	1.10	10.35	0.294	1.89	2.8	67	3.3	14.3	6800	55.6
Upper Bound		226	1.08	1.46	12.65	0.370	2.61	3.7	84	4.7	17.7	8320	76.4
GRE-04													
GRE-04													
GRE-04													
Target Range - Lower Bound													
Upper Bound													
GRE-3													
GRE-3													
GRE-3													
Target Range - Lower Bound													
Upper Bound													
MRGeo08		310	1.57	<0.05	18.05	0.503	1.11	5.3	106	5.0	25.9	806	106.5
MRGeo08		306	1.63	<0.05	16.10	0.493	1.03	4.9	110	4.8	24.8	803	103.5
MRGeo08		310	1.57	<0.05	18.05	0.500	1.09	5.2	109	4.7	24.8	802	109.0
MRGeo08		284	1.47	<0.05	18.15	0.495	0.98	5.1	109	4.7	24.1	794	105.5
Target Range - Lower Bound		277	1.39	<0.05	17.90	0.443	0.89	4.9	97	4.1	23.8	722	92.2
Upper Bound		339	1.81	0.14	21.9	0.553	1.25	6.2	121	5.8	29.3	886	126.0
OGGeo08		252	1.39	0.18	14.75	0.398	1.68	4.8	84	4.8	22.9	7070	95.5
OGGeo08		258	1.30	0.15	15.85	0.407	1.72	4.6	88	4.8	22.0	7220	90.9
OGGeo08		257	1.30	0.11	20.4	0.399	1.66	4.9	83	4.5	25.4	6860	91.3
Target Range - Lower Bound		224	1.19	0.09	16.90	0.353	1.43	4.5	77	3.9	21.1	6500	78.6
Upper Bound		274	1.57	0.31	20.7	0.443	1.98	5.8	97	5.4	26.0	7950	107.5
OREAS 920		80.1	1.38	<0.05	17.55	0.462	0.89	3.6	97	3.3	30.1	116	152.0
OREAS 920		79.0	1.42	<0.05	17.50	0.464	0.88	3.4	96	2.9	31.9	115	152.0
OREAS 920		75.0	1.40	<0.05	16.35	0.479	0.88	3.5	98	3.4	29.8	116	155.0
Target Range - Lower Bound		73.6	1.08	<0.05	17.35	0.434	0.76	3.3	86	2.5	29.8	102	128.0
Upper Bound		90.4	1.43	0.10	21.2	0.542	1.08	4.2	108	3.7	36.6	130	174.0
REE-1													

Comments: Samples were received on 27-Nov-2018 and the SSF/Request on 28-Nov-2018.

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To: GEOLOGICAL SURVEY OF NORWAY (NGU)

POSTBOKS 6315 TORGARDEN

NO-7491 TRONDHEIM

NORWAY

Page: 3 - A

Total # Pages: 6 (A - E)

Plus Appendix Pages

Finalized Date: 4-JAN-2019

Account: ONUSEG

An INAB accredited testing laboratory Reg. No. 173T. Accredited methods are listed in the Scope of Accreditation available on request.

Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302159

Sample Description	Method Analyte Units LOD	ME-MS81h Ce ppm 3	ME-MS81h Dy ppm 0.3	ME-MS81h Er ppm 0.2	ME-MS81h Eu ppm 0.2	ME-MS81h Gd ppm 0.3	ME-MS81h Hf ppm 1	ME-MS81h Ho ppm 0.05	ME-MS81h La ppm 3	ME-MS81h Lu ppm 0.05	ME-MS81h Nb ppm 1	ME-MS81h Nd ppm 0.5	ME-MS81h Pr ppm 0.2	ME-MS81h Rb ppm 1	ME-MS81h Sm ppm 0.2	ME-MS81h Sn ppm 5
STANDARDS																
REE-1		4170	849	706	24.2	440	500	210	1770	94.4	4180	1490	463	1065	399	510
REE-1		4050	857	708	23.7	432	494	199.5	1685	92.4	3860	1445	455	1025	386	492
Target Range - Lower Bound		3680	787	652	21.7	402	444	193.5	1540	85.9	3770	1355	404	973	354	458
Upper Bound		4240	907	750	25.3	464	514	223	1780	98.9	4330	1560	466	1120	408	538
BLANKS																
BLANK																
BLANK																
BLANK																
BLANK																
BLANK																
BLANK																
BLANK																
BLANK																
Target Range - Lower Bound																
Upper Bound																
BLANK		<3	<0.3	<0.2	<0.2	<0.3	<1	<0.05	<3	<0.05	<1	<0.5	<0.2	<1	<0.2	<5
BLANK		<3	<0.3	<0.2	<0.2	<0.3	<1	<0.05	<3	<0.05	<1	<0.5	<0.2	<1	<0.2	<5
BLANK		<3	<0.3	<0.2	<0.2	<0.3	<1	<0.05	<3	<0.05	<1	<0.5	<0.2	<1	<0.2	<5
BLANK		<3	<0.3	<0.2	<0.2	<0.3	<1	<0.05	<3	<0.05	<1	<0.5	<0.2	<1	<0.2	<5
BLANK		<3	<0.3	<0.2	<0.2	<0.3	<1	<0.05	<3	<0.05	<1	<0.5	<0.2	<1	<0.2	<5
BLANK		<3	0.3	<0.2	<0.2	<0.3	<1	<0.05	<3	<0.05	<1	<0.5	<0.2	<1	<0.2	<5
Target Range - Lower Bound		<3	<0.3	<0.2	<0.2	<0.3	<1	<0.05	<3	<0.05	<1	<0.5	<0.2	<1	<0.2	<5
Upper Bound		6	0.6	0.4	0.4	0.6	2	0.10	6	0.10	2	1.0	0.4	2	0.4	10
DUPLICATES																
ORIGINAL																
DUP																
Target Range - Lower Bound																
Upper Bound																

Comments: Samples were received on 27-Nov-2018 and the SSF/Request on 28-Nov-2018.

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To: GEOLOGICAL SURVEY OF NORWAY (NGU)

POSTBOKS 6315 TORGARDEN

NO-7491 TRONDHEIM

NORWAY

Page: 3 - B

Total # Pages: 6 (A - E)

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Finalized Date: 4-JAN-2019

Account: ONUSEG

An INAB accredited testing laboratory Reg. No. 173T. Accredited methods are listed in the Scope of Accreditation available on request.

Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302159

Sample Description	Method Analyte Units LOD	ME-MS81h Ta ppm 0.5	ME-MS81h Tb ppm 0.05	ME-MS81h Th ppm 0.3	ME-MS81h Tm ppm 0.05	ME-MS81h U ppm 0.3	ME-MS81h W ppm 5	ME-MS81h Y ppm 3	ME-MS81h Yb ppm 0.2	ME-MS81h Zr ppm 10	ME-MS61 Ag ppm 0.01	ME-MS61 Al % 0.01	ME-MS61 As ppm 0.2	ME-MS61 Ba ppm 10	ME-MS61 Be ppm 0.05	ME-MS61 Bi ppm 0.01
STANDARDS																
REE-1		232	109.5	770	111.5	139.5	7	5790	690	20000						
REE-1		231	110.5	760	107.0	134.5	15	5720	671	19700						
Target Range - Lower Bound		214	98.7	668	98.5	127.0	<5	5090	630	17750						
Upper Bound		248	113.5	770	113.5	147.0	20	5870	726	20400						
BLANKS																
BLANK											<0.01	<0.01	0.2	<10	<0.05	0.01
BLANK											0.02	<0.01	0.3	<10	<0.05	0.01
BLANK											<0.01	<0.01	<0.2	<10	<0.05	0.01
BLANK											0.01	<0.01	0.2	<10	<0.05	0.02
BLANK											0.01	<0.01	<0.2	<10	<0.05	0.01
BLANK											0.02	<0.01	<0.2	<10	<0.05	0.01
BLANK											<0.01	<0.01	<0.2	<10	<0.05	0.02
BLANK											0.01	<0.01	0.4	<10	<0.05	0.01
Target Range - Lower Bound											<0.01	<0.01	<0.2	<10	<0.05	<0.01
Upper Bound											0.02	0.02	0.4	20	0.10	0.02
BLANK		<0.5	<0.05	<0.3	<0.05	<0.3	8	<3	<0.2	<10						
BLANK		<0.5	<0.05	<0.3	<0.05	<0.3	<5	<3	<0.2	<10						
BLANK		<0.5	<0.05	<0.3	0.06	<0.3	<5	<3	<0.2	<10						
BLANK		0.6	<0.05	<0.3	<0.05	<0.3	<5	<3	<0.2	<10						
BLANK		<0.5	<0.05	<0.3	<0.05	<0.3	7	<3	<0.2	<10						
BLANK		0.8	<0.05	<0.3	<0.05	<0.3	<5	<3	<0.2	<10						
Target Range - Lower Bound		<0.5	<0.05	<0.3	<0.05	<0.3	<5	<3	<0.2	<10						
Upper Bound		1.0	0.10	0.6	0.10	0.6	10	6	0.4	20						
DUPLICATES																
ORIGINAL											0.04	4.30	267	10	0.60	0.08
DUP											0.05	4.24	267	10	0.48	0.07
Target Range - Lower Bound											0.03	4.05	253	<10	0.46	0.06
Upper Bound											0.06	4.49	281	20	0.62	0.09

Comments: Samples were received on 27-Nov-2018 and the SSF/Request on 28-Nov-2018.

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To: GEOLOGICAL SURVEY OF NORWAY (NGU)

POSTBOKS 6315 TORGARDEN

NO-7491 TRONDHEIM

NORWAY

Page: 3 - C

Total # Pages: 6 (A - E)

Plus Appendix Pages

Finalized Date: 4-JAN-2019

Account: ONUSEG

An INAB accredited testing laboratory Reg. No. 173T. Accredited methods are listed in the Scope of Accreditation available on request.

Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302159

Sample Description	Method Analyte Units LOD	ME-MS61 Ca %	ME-MS61 Cd ppm	ME-MS61 Ce ppm	ME-MS61 Co ppm	ME-MS61 Cr ppm	ME-MS61 Cs ppm	ME-MS61 Cu ppm	ME-MS61 Fe %	ME-MS61 Ga ppm	ME-MS61 Ge ppm	ME-MS61 Hf ppm	ME-MS61 In ppm	ME-MS61 K %	ME-MS61 La ppm	ME-MS61 Li ppm
		0.01	0.02	0.01	0.1	1	0.05	0.2	0.01	0.05	0.05	0.1	0.005	0.01	0.5	0.2
STANDARDS																
REE-1																
REE-1																
Target Range - Lower Bound																
Upper Bound																
BLANKS																
BLANK		<0.01	<0.02	<0.01	<0.1	<1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.1	<0.005	<0.01	<0.5	<0.2
BLANK		<0.01	<0.02	0.01	<0.1	<1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.1	<0.005	<0.01	<0.5	<0.2
BLANK		<0.01	<0.02	<0.01	<0.1	<1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.1	<0.005	<0.01	<0.5	<0.2
BLANK		<0.01	<0.02	<0.01	<0.1	<1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.1	<0.005	<0.01	<0.5	0.2
BLANK		<0.01	<0.02	<0.01	<0.1	<1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.1	<0.005	<0.01	<0.5	<0.2
BLANK		<0.01	<0.02	<0.01	<0.1	<1	<0.05	0.2	<0.01	<0.05	<0.05	<0.1	<0.005	<0.01	0.9	<0.2
BLANK		<0.01	<0.02	0.02	<0.1	1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.1	<0.005	<0.01	<0.5	<0.2
BLANK		<0.01	<0.02	0.01	<0.1	1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.1	<0.005	<0.01	<0.5	<0.2
Target Range - Lower Bound		<0.01	<0.02	<0.01	<0.1	<1	<0.05	<0.2	<0.01	<0.05	<0.05	<0.1	<0.005	<0.01	<0.5	<0.2
Upper Bound		0.02	0.04	0.02	0.2	2	0.10	0.4	0.02	0.10	0.10	0.2	0.010	0.02	1.0	0.4
BLANK																
BLANK																
BLANK																
BLANK																
BLANK																
BLANK																
Target Range - Lower Bound																
Upper Bound																
DUPLICATES																
ORIGINAL		0.05	0.03	24.8	97.6	1460	3.67	42.7	13.40	10.25	0.24	0.6	0.034	0.27	12.3	22.5
DUP		0.06	0.03	27.0	98.9	1410	3.75	43.4	13.35	10.20	0.22	0.6	0.033	0.26	13.7	21.7
Target Range - Lower Bound		0.04	<0.02	24.6	93.2	1360	3.47	41.3	12.70	9.66	0.17	0.5	0.027	0.24	11.9	20.8
Upper Bound		0.07	0.04	27.2	103.5	1510	3.95	44.8	14.05	10.80	0.29	0.7	0.040	0.29	14.2	23.4

Comments: Samples were received on 27-Nov-2018 and the SSF/Request on 28-Nov-2018.

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To: GEOLOGICAL SURVEY OF NORWAY (NGU)

POSTBOKS 6315 TORGARDEN

NO-7491 TRONDHEIM

NORWAY

Page: 3 - D

Total # Pages: 6 (A - E)

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Finalized Date: 4-JAN-2019

Account: ONUSEG

An INAB accredited testing laboratory Reg. No. 173T. Accredited methods are listed in the Scope of Accreditation available on request.

Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302159

Sample Description	Method Analyte Units LOD	ME-MS61 Mg %	ME-MS61 Mn ppm	ME-MS61 Mo ppm	ME-MS61 Na %	ME-MS61 Nb ppm	ME-MS61 Ni ppm	ME-MS61 P ppm	ME-MS61 Pb ppm	ME-MS61 Rb ppm	ME-MS61 Re ppm	ME-MS61 S %	ME-MS61 Sb ppm	ME-MS61 Sc ppm	ME-MS61 Se ppm	ME-MS61 Sn ppm
		0.01	5	0.05	0.01	0.1	0.2	10	0.5	0.1	0.002	0.01	0.05	0.1	1	0.2
STANDARDS																
REE-1																
REE-1																
Target Range - Lower Bound																
Upper Bound																
BLANKS																
BLANK		<0.01	<5	<0.05	<0.01	<0.1	0.2	<10	<0.5	<0.1	<0.002	<0.01	<0.05	0.1	<1	<0.2
BLANK		<0.01	<5	<0.05	<0.01	<0.1	<0.2	<10	<0.5	<0.1	<0.002	<0.01	<0.05	<0.1	<1	<0.2
BLANK		<0.01	<5	<0.05	<0.01	0.1	<0.2	<10	<0.5	<0.1	<0.002	<0.01	<0.05	<0.1	<1	<0.2
BLANK		<0.01	<5	<0.05	<0.01	<0.1	<0.2	<10	<0.5	<0.1	<0.002	<0.01	<0.05	<0.1	1	<0.2
BLANK		<0.01	<5	<0.05	<0.01	0.1	<0.2	<10	<0.5	<0.1	<0.002	<0.01	<0.05	<0.1	1	<0.2
BLANK		<0.01	<5	0.07	<0.01	<0.1	<0.2	<10	<0.5	<0.1	<0.002	<0.01	<0.05	<0.1	1	<0.2
BLANK		<0.01	<5	0.05	<0.01	<0.1	<0.2	<10	<0.5	<0.1	<0.002	<0.01	<0.05	<0.1	<1	<0.2
BLANK		<0.01	<5	0.06	<0.01	0.1	0.2	<10	<0.5	<0.1	<0.002	<0.01	<0.05	<0.1	1	<0.2
Target Range - Lower Bound		<0.01	<5	<0.05	<0.01	<0.1	<0.2	<10	<0.5	<0.1	<0.002	<0.01	<0.05	<0.1	<1	<0.2
Upper Bound		0.02	10	0.10	0.02	0.2	0.4	20	1.0	0.2	0.004	0.02	0.10	0.2	2	0.4
BLANK																
BLANK																
BLANK																
BLANK																
BLANK																
BLANK																
Target Range - Lower Bound																
Upper Bound																
DUPLICATES																
ORIGINAL		0.22	349	1.86	0.01	8.9	1140	350	5.5	14.0	<0.002	0.04	32.3	5.9	<1	0.9
DUP		0.22	365	2.01	0.01	9.6	1150	350	5.4	14.3	<0.002	0.04	32.7	5.8	<1	0.9
Target Range - Lower Bound		0.20	334	1.79	<0.01	8.7	1090	320	4.7	13.3	<0.002	0.03	30.0	5.5	<1	0.7
Upper Bound		0.24	380	2.08	0.02	9.8	1200	380	6.2	15.0	0.004	0.05	35.0	6.2	2	1.1

Comments: Samples were received on 27-Nov-2018 and the SSF/Request on 28-Nov-2018.

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NO-7491 TRONDHEIM

NORWAY

Page: 3 - E

Total # Pages: 6 (A - E)

Plus Appendix Pages

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Account: ONUSEG

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302159

Sample Description	Method Analyte Units LOD	ME-MS61 Sr ppm 0.2	ME-MS61 Ta ppm 0.05	ME-MS61 Te ppm 0.05	ME-MS61 Th ppm 0.01	ME-MS61 Ti % 0.005	ME-MS61 Tl ppm 0.02	ME-MS61 U ppm 0.1	ME-MS61 V ppm 1	ME-MS61 W ppm 0.1	ME-MS61 Y ppm 0.1	ME-MS61 Zn ppm 2	ME-MS61 Zr ppm 0.5
STANDARDS													
REE-1													
REE-1													
Target Range - Lower Bound													
Upper Bound													
BLANKS													
BLANK		<0.2	<0.05	<0.05	<0.01	<0.005	<0.02	0.1	<1	0.1	<0.1	<2	<0.5
BLANK		0.2	<0.05	<0.05	0.01	<0.005	<0.02	0.1	<1	0.2	<0.1	<2	<0.5
BLANK		0.2	<0.05	<0.05	0.01	<0.005	<0.02	0.1	<1	0.1	<0.1	<2	<0.5
BLANK		0.3	<0.05	<0.05	0.01	<0.005	<0.02	<0.1	<1	0.2	<0.1	<2	<0.5
BLANK		0.2	<0.05	<0.05	<0.01	<0.005	<0.02	<0.1	<1	0.1	<0.1	<2	<0.5
BLANK		<0.2	<0.05	<0.05	<0.01	<0.005	<0.02	<0.1	<1	0.1	<0.1	<2	<0.5
BLANK		<0.2	<0.05	<0.05	0.02	<0.005	<0.02	<0.1	<1	0.1	<0.1	<2	<0.5
BLANK		<0.2	<0.05	<0.05	0.01	<0.005	<0.02	0.1	<1	0.1	<0.1	<2	0.5
Target Range - Lower Bound		<0.2	<0.05	<0.05	<0.01	<0.005	<0.02	<0.1	<1	<0.1	<0.1	<2	<0.5
Upper Bound		0.4	0.10	0.10	0.02	0.010	0.04	0.2	2	0.2	0.2	4	1.0
BLANK													
BLANK													
BLANK													
BLANK													
BLANK													
BLANK													
Target Range - Lower Bound													
Upper Bound													
DUPLICATES													
ORIGINAL		31.3	0.60	<0.05	2.08	0.402	1.27	0.7	62	1.2	4.8	30	18.9
DUP		31.2	0.61	<0.05	2.21	0.403	1.20	0.7	64	1.3	4.7	31	21.8
Target Range - Lower Bound		29.5	0.52	<0.05	2.03	0.377	1.12	0.6	59	1.1	4.4	27	18.3
Upper Bound		33.0	0.69	0.10	2.26	0.428	1.35	0.8	67	1.4	5.1	34	22.4

Comments: Samples were received on 27-Nov-2018 and the SSF/Request on 28-Nov-2018.

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Page: 4 - A

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302159

Sample Description	Method Analyte Units LOD	ME-MS81h Ce ppm 3	ME-MS81h Dy ppm 0.3	ME-MS81h Er ppm 0.2	ME-MS81h Eu ppm 0.2	ME-MS81h Gd ppm 0.3	ME-MS81h Hf ppm 1	ME-MS81h Ho ppm 0.05	ME-MS81h La ppm 3	ME-MS81h Lu ppm 0.05	ME-MS81h Nb ppm 1	ME-MS81h Nd ppm 0.5	ME-MS81h Pr ppm 0.2	ME-MS81h Rb ppm 1	ME-MS81h Sm ppm 0.2	ME-MS81h Sn ppm 5
DUPLICATES																
199017		7000	11.0	2.6	27.5	46.5	1	1.37	4370	0.29	606	1865	668	4	153.0	14
DUP		7090	11.4	2.7	28.1	45.8	1	1.40	4490	0.29	579	1880	694	4	154.5	13
Target Range - Lower Bound		6800	10.5	2.4	26.6	44.2	<1	1.29	4270	0.23	571	1805	657	3	148.0	8
Upper Bound		7290	11.9	2.9	29.0	48.1	2	1.48	4590	0.35	614	1940	705	5	159.5	19
199018																
DUP																
Target Range - Lower Bound																
Upper Bound																
199032		7580	13.0	3.2	29.5	51.5	1	1.62	4780	0.23	660	2000	720	10	161.5	15
DUP		7740	13.3	3.2	28.6	48.7	1	1.71	4880	0.23	587	2050	740	10	169.0	13
Target Range - Lower Bound		7390	12.4	2.9	27.8	48.0	<1	1.56	4660	0.17	601	1955	704	9	159.5	9
Upper Bound		7930	13.9	3.5	30.3	52.2	2	1.77	5000	0.29	646	2100	756	11	171.0	19
199033																
DUP																
Target Range - Lower Bound																
Upper Bound																
FEN198272																
DUP																
Target Range - Lower Bound																
Upper Bound																
199051		5660	5.5	1.5	17.2	24.1	1	0.70	3460	0.15	474	1475	498	2	103.0	7
DUP		5560	5.2	1.6	17.1	24.3	1	0.69	3420	0.16	390	1450	501	2	101.5	6
Target Range - Lower Bound		5410	4.9	1.3	16.3	23.1	<1	0.62	3320	0.10	416	1410	482	<1	98.5	<5
Upper Bound		5810	5.8	1.8	18.0	25.3	2	0.77	3560	0.21	448	1515	517	3	106.0	10
199052																
DUP																
Target Range - Lower Bound																
Upper Bound																
199066		6650	5.0	1.5	18.8	28.4	<1	0.69	4210	0.21	376	1635	578	24	113.5	<5
DUP		6570	5.2	1.5	18.8	26.9	<1	0.69	4190	0.18	389	1630	571	23	110.5	<5
Target Range - Lower Bound		6380	4.6	1.2	17.9	26.4	<1	0.62	4050	0.14	368	1575	554	22	108.0	<5
Upper Bound		6840	5.6	1.8	19.7	28.9	2	0.76	4350	0.25	397	1690	595	25	116.0	10

Comments: Samples were received on 27-Nov-2018 and the SSF/Request on 28-Nov-2018.

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To: GEOLOGICAL SURVEY OF NORWAY (NGU)

POSTBOKS 6315 TORGARDEN

NO-7491 TRONDHEIM

NORWAY

Page: 4 - B

Total # Pages: 6 (A - E)

Plus Appendix Pages

Finalized Date: 4-JAN-2019

Account: ONUSEG

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302159

Sample Description	Method Analyte Units LOD	ME-MS81h Ta ppm 0.5	ME-MS81h Tb ppm 0.05	ME-MS81h Th ppm 0.3	ME-MS81h Tm ppm 0.05	ME-MS81h U ppm 0.3	ME-MS81h W ppm 5	ME-MS81h Y ppm 3	ME-MS81h Yb ppm 0.2	ME-MS81h Zr ppm 10	ME-MS61 Ag ppm 0.01	ME-MS61 Al % 0.01	ME-MS61 As ppm 0.2	ME-MS61 Ba ppm 10	ME-MS61 Be ppm 0.05	ME-MS61 Bi ppm 0.01
DUPLICATES																
199017		5.7	3.56	136.0	0.35	5.5	<5	33	2.0	50						
DUP		5.1	3.65	136.0	0.34	5.3	<5	34	2.1	50						
Target Range - Lower Bound		4.7	3.43	131.0	0.28	4.9	<5	29	1.8	40						
Upper Bound		6.1	3.78	141.0	0.41	5.9	10	38	2.3	60						
199018											0.60	0.11	6.7	3300	0.67	1.21
DUP											0.55	0.11	7.4	2060	0.71	1.17
Target Range - Lower Bound											0.54	0.09	6.5	2470	0.61	1.12
Upper Bound											0.61	0.13	7.6	2890	0.77	1.26
199032		10.8	4.22	168.0	0.36	6.3	<5	33	1.6	80						
DUP		6.2	4.18	164.0	0.35	5.6	<5	35	1.7	90						
Target Range - Lower Bound		7.7	4.00	160.0	0.29	5.4	<5	30	1.4	70						
Upper Bound		9.3	4.40	172.0	0.42	6.5	10	38	1.9	100						
199033											0.26	0.25	6.0	3460	0.61	0.62
DUP											0.18	0.25	7.0	1310	0.64	0.64
Target Range - Lower Bound											0.20	0.23	6.0	2200	0.54	0.59
Upper Bound											0.24	0.27	7.0	2570	0.71	0.67
FEN198272											0.30	0.33	8.2	5040	0.88	2.04
DUP											0.21	0.33	8.2	5130	0.99	2.08
Target Range - Lower Bound											0.23	0.30	7.6	4690	0.84	1.95
Upper Bound											0.28	0.36	8.8	5480	1.03	2.17
199051		2.4	1.78	45.9	0.19	2.4	<5	18	1.0	40						
DUP		1.5	1.83	44.4	0.18	2.1	<5	18	1.0	40						
Target Range - Lower Bound		1.4	1.69	43.3	0.13	1.9	<5	14	0.8	30						
Upper Bound		2.5	1.92	47.0	0.24	2.6	10	22	1.2	50						
199052											0.37	0.03	2.2	2490	0.69	0.38
DUP											0.36	0.03	2.0	2490	0.62	0.38
Target Range - Lower Bound											0.34	0.02	1.8	2290	0.57	0.35
Upper Bound											0.39	0.04	2.4	2690	0.74	0.41
199066		3.6	1.83	58.9	0.21	3.5	<5	14	1.2	30						
DUP		4.1	1.87	57.6	0.21	3.7	<5	14	1.2	30						
Target Range - Lower Bound		3.2	1.74	55.9	0.15	3.2	<5	11	1.0	20						
Upper Bound		4.5	1.96	60.6	0.27	4.0	10	17	1.4	40						

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Page: 4 - C

Total # Pages: 6 (A - E)

Plus Appendix Pages

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302159

Sample Description	Method Analyte Units LOD	ME-MS61 Ca %	ME-MS61 Cd ppm	ME-MS61 Ce ppm	ME-MS61 Co ppm	ME-MS61 Cr ppm	ME-MS61 Cs ppm	ME-MS61 Cu ppm	ME-MS61 Fe %	ME-MS61 Ga ppm	ME-MS61 Ge ppm	ME-MS61 Hf ppm	ME-MS61 In ppm	ME-MS61 K %	ME-MS61 La ppm	ME-MS61 Li ppm
		0.01	0.02	0.01	0.1	1	0.05	0.2	0.01	0.05	0.05	0.1	0.005	0.01	0.5	0.2
199017 DUP Target Range - Lower Bound Upper Bound		DUPLICATES														
199018 DUP Target Range - Lower Bound Upper Bound		17.65 17.45 16.65 18.45	8.91 8.66 8.33 9.24	>500 >500 475 >500	12.1 11.2 11.0 12.3	5 4 3 6	2.83 2.93 2.69 3.07	2.4 2.5 2.2 2.7	9.58 9.56 9.08 10.05	30.4 30.7 29.0 32.1	2.52 2.57 2.37 2.72	0.8 0.8 0.7 0.9	0.764 0.769 0.723 0.810	0.10 0.10 0.09 0.12	3980 3990 3790 4180	36.4 38.2 35.2 39.4
199032 DUP Target Range - Lower Bound Upper Bound																
199033 DUP Target Range - Lower Bound Upper Bound		18.25 17.95 17.20 19.00	2.80 2.85 2.66 2.99	>500 >500 475 >500	13.0 14.1 12.8 14.3	6 4 4 6	2.52 2.55 2.36 2.71	2.1 2.5 2.0 2.6	8.74 8.77 8.31 9.20	25.5 25.8 24.3 27.0	1.94 1.95 1.80 2.09	1.0 1.0 0.9 1.2	0.502 0.506 0.474 0.534	0.16 0.16 0.14 0.18	3420 3350 3220 3550	37.6 37.4 35.4 39.6
FEN198272 DUP Target Range - Lower Bound Upper Bound		30.3 30.6 28.9 32.0	0.42 0.44 0.39 0.47	>500 >500 475 >500	10.2 10.1 9.5 10.8	17 16 15 18	0.11 0.11 <0.05 0.17	33.1 33.4 31.9 34.6	3.54 3.60 3.38 3.76	12.85 13.20 12.30 13.75	1.85 1.92 1.74 2.03	1.9 1.9 1.7 2.1	0.455 0.465 0.432 0.488	<0.01 <0.01 <0.01 0.02	1410 1410 1340 1480	5.6 6.0 5.3 6.3
199051 DUP Target Range - Lower Bound Upper Bound																
199052 DUP Target Range - Lower Bound Upper Bound		18.40 18.55 17.55 19.40	1.02 1.06 0.97 1.11	>500 >500 475 >500	13.2 13.1 12.4 13.9	5 5 4 6	0.53 0.56 0.47 0.62	2.2 2.2 1.9 2.5	9.20 9.26 8.76 9.70	29.0 29.2 27.6 30.6	2.52 2.54 2.35 2.71	0.4 0.4 0.3 0.5	0.506 0.506 0.476 0.536	0.05 0.05 0.04 0.06	3550 3540 3370 3720	13.0 13.3 12.3 14.0
199066 DUP Target Range - Lower Bound Upper Bound																

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NORWAY

Page: 4 - D

Total # Pages: 6 (A - E)

Plus Appendix Pages

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302159

Sample Description	Method Analyte Units LOD	ME-MS61 Mg %	ME-MS61 Mn ppm	ME-MS61 Mo ppm	ME-MS61 Na %	ME-MS61 Nb ppm	ME-MS61 Ni ppm	ME-MS61 P ppm	ME-MS61 Pb ppm	ME-MS61 Rb ppm	ME-MS61 Re ppm	ME-MS61 S %	ME-MS61 Sb ppm	ME-MS61 Sc ppm	ME-MS61 Se ppm	ME-MS61 Sn ppm
		0.01	5	0.05	0.01	0.1	0.2	10	0.5	0.1	0.002	0.01	0.05	0.1	1	0.2
199017 DUP Target Range - Lower Bound Upper Bound		DUPLICATES														
199018 DUP Target Range - Lower Bound Upper Bound		6.51 6.37 6.11 6.77	12400 12250 11700 12950	346 343 327 362	0.03 0.02 <0.01 0.04	310 303 291 322	3.6 3.2 3.0 3.8	280 260 250 290	41.8 42.6 39.6 44.8	9.2 9.1 8.6 9.7	0.009 0.014 0.009 0.014	0.71 0.68 0.65 0.74	0.22 0.21 0.15 0.28	22.3 22.4 21.1 23.6	<1 <1 <1 2	3.4 3.0 2.8 3.6
199032 DUP Target Range - Lower Bound Upper Bound																
199033 DUP Target Range - Lower Bound Upper Bound		6.99 6.77 6.53 7.23	12550 12150 11750 12950	236 227 220 243	0.03 0.02 <0.01 0.04	>500 >500 475 >500	5.0 5.6 4.8 5.8	1130 1100 1050 1180	27.7 29.6 26.7 30.6	18.0 18.1 17.0 19.1	0.008 0.007 0.005 0.010	0.62 0.61 0.57 0.66	0.19 0.20 0.13 0.26	19.8 20.0 18.8 21.0	<1 <1 <1 2	3.6 4.1 3.5 4.2
FEN198272 DUP Target Range - Lower Bound Upper Bound		1.87 1.88 1.77 1.98	4920 4940 4680 5180	8.75 9.34 8.54 9.55	<0.01 <0.01 <0.01 0.02	420 421 399 442	16.9 17.5 16.1 18.3	3230 3280 3080 3430	19.0 18.7 17.4 20.3	0.4 0.5 0.3 0.6	0.008 0.008 0.006 0.010	0.30 0.30 0.28 0.33	0.26 0.24 0.18 0.32	69.1 70.5 66.2 73.4	<1 1 <1 2	3.8 4.0 3.5 4.3
199051 DUP Target Range - Lower Bound Upper Bound																
199052 DUP Target Range - Lower Bound Upper Bound		6.31 6.36 6.01 6.66	12600 12700 12000 13300	188.0 191.5 180.0 199.5	0.02 0.02 <0.01 0.03	20.9 22.7 20.6 23.0	8.8 8.7 8.1 9.4	790 800 750 840	24.9 25.1 23.3 26.8	5.0 4.9 4.6 5.3	0.002 0.004 <0.002 0.004	0.56 0.57 0.53 0.60	0.18 0.13 0.09 0.22	14.8 15.0 14.1 15.7	<1 <1 <1 2	0.4 0.4 <0.2 0.6
199066 DUP Target Range - Lower Bound Upper Bound																

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Page: 4 - E

Total # Pages: 6 (A - E)

Plus Appendix Pages

Finalized Date: 4-JAN-2019

Account: ONUSEG

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302159

Sample Description	Method Analyte Units LOD	ME-MS61 Sr ppm 0.2	ME-MS61 Ta ppm 0.05	ME-MS61 Te ppm 0.05	ME-MS61 Th ppm 0.01	ME-MS61 Ti % 0.005	ME-MS61 Tl ppm 0.02	ME-MS61 U ppm 0.1	ME-MS61 V ppm 1	ME-MS61 W ppm 0.1	ME-MS61 Y ppm 0.1	ME-MS61 Zn ppm 2	ME-MS61 Zr ppm 0.5
199017 DUP Target Range - Lower Bound Upper Bound		DUPLICATES											
199018 DUP Target Range - Lower Bound Upper Bound		2830 2790 2670 2950	3.35 3.86 3.37 3.84	0.29 0.29 0.23 0.35	231 235 221 245	0.025 0.025 0.019 0.031	0.22 0.22 0.18 0.26	3.5 3.6 3.3 3.8	29 29 27 31	1.6 1.6 1.4 1.8	32.8 32.9 31.1 34.6	1810 1740 1685 1865	46.2 44.8 41.6 49.4
199032 DUP Target Range - Lower Bound Upper Bound													
199033 DUP Target Range - Lower Bound Upper Bound		2750 2640 2560 2830	4.99 4.91 4.65 5.25	0.25 0.27 0.20 0.32	126.5 127.5 120.5 133.5	0.019 0.017 0.012 0.024	0.26 0.24 0.21 0.29	4.5 4.6 4.2 4.9	25 23 22 26	1.5 1.5 1.3 1.7	24.5 24.6 23.2 25.9	369 366 347 388	76.3 73.3 68.7 80.9
FEN198272 DUP Target Range - Lower Bound Upper Bound		860 866 820 906	3.05 3.21 2.92 3.34	0.06 0.07 <0.05 0.10	480 480 456 504	0.117 0.116 0.106 0.127	0.04 0.04 <0.02 0.06	14.7 14.9 14.0 15.6	38 39 36 41	3.3 3.4 3.0 3.7	199.0 200 189.5 210	345 345 326 364	55.6 54.6 50.5 59.7
199051 DUP Target Range - Lower Bound Upper Bound													
199052 DUP Target Range - Lower Bound Upper Bound		3150 3160 3000 3310	0.38 0.30 0.27 0.41	0.14 0.16 0.09 0.21	154.5 151.0 145.0 160.5	0.007 0.007 <0.005 0.010	0.07 0.06 0.04 0.09	1.8 1.8 1.6 2.0	16 17 15 18	0.3 0.4 0.2 0.5	29.6 29.8 28.1 31.3	94 100 90 104	33.4 33.8 30.6 36.6
199066 DUP Target Range - Lower Bound Upper Bound													

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Page: 5 - A

Total # Pages: 6 (A - E)

Plus Appendix Pages

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302159

Sample Description	Method Analyte Units LOD	ME-MS81h Ce ppm 3	ME-MS81h Dy ppm 0.3	ME-MS81h Er ppm 0.2	ME-MS81h Eu ppm 0.2	ME-MS81h Gd ppm 0.3	ME-MS81h Hf ppm 1	ME-MS81h Ho ppm 0.05	ME-MS81h La ppm 3	ME-MS81h Lu ppm 0.05	ME-MS81h Nb ppm 1	ME-MS81h Nd ppm 0.5	ME-MS81h Pr ppm 0.2	ME-MS81h Rb ppm 1	ME-MS81h Sm ppm 0.2	ME-MS81h Sn ppm 5
DUPLICATES																
199086		9880	10.1	2.2	35.9	54.2	1	1.19	6620	0.20	100	2660	943	3	206	<5
DUP		10300	10.9	2.3	37.0	57.2	1	1.20	6780	0.25	101	2750	965	4	216	<5
Target Range - Lower Bound		9730	9.8	2.0	35.0	53.5	<1	1.10	6460	0.17	96	2610	920	2	203	<5
Upper Bound		10450	11.2	2.5	37.9	57.9	2	1.29	6940	0.28	105	2800	988	5	219	10
199087																
DUP																
Target Range - Lower Bound																
Upper Bound																
199100		13250	13.5	2.5	44.8	69.2	<1	1.44	8580	0.21	23	3500	1230	1	265	<5
DUP		12750	13.1	2.5	42.9	71.1	1	1.46	8100	0.21	21	3590	1165	1	252	<5
Target Range - Lower Bound		12550	12.5	2.2	42.1	67.4	<1	1.35	8050	0.15	20	3420	1155	<1	249	<5
Upper Bound		13450	14.1	2.8	45.6	72.9	2	1.55	8630	0.27	24	3670	1240	2	268	10
199120		6910	8.9	2.6	21.5	33.9	2	1.13	4230	0.34	1030	1695	640	26	118.5	<5
DUP		6950	9.4	2.4	21.2	33.9	1	1.11	4180	0.37	1080	1705	636	26	119.0	<5
Target Range - Lower Bound		6680	8.5	2.2	20.4	32.4	<1	1.03	4050	0.29	1015	1640	615	24	114.5	<5
Upper Bound		7180	9.8	2.8	22.3	35.4	2	1.21	4360	0.42	1095	1760	661	28	123.0	10
199134		9590	11.8	3.7	35.3	54.1	1	1.54	5860	0.42	379	2560	906	19	198.0	<5
DUP		9570	12.9	3.8	36.0	55.3	1	1.64	5810	0.37	445	2660	929	21	199.5	<5
Target Range - Lower Bound		9240	11.6	3.4	34.2	52.5	<1	1.48	5630	0.33	397	2520	885	18	191.5	<5
Upper Bound		9920	13.1	4.1	37.1	56.9	2	1.70	6040	0.46	427	2700	950	22	206	10
199135																
DUP																
Target Range - Lower Bound																
Upper Bound																
199154		4820	11.4	3.2	21.3	36.3	1	1.35	3120	0.40	914	1305	443	8	104.5	5
DUP		5090	10.9	3.1	20.7	33.1	1	1.43	3180	0.38	923	1365	469	10	108.5	5
Target Range - Lower Bound		4780	10.5	2.8	20.1	33.2	<1	1.29	3040	0.33	885	1290	440	8	102.5	<5
Upper Bound		5130	11.8	3.5	21.9	36.2	2	1.49	3260	0.45	952	1380	472	10	110.5	10
199169		6050	8.8	2.0	28.7	41.3	<1	0.96	3890	0.17	366	1725	576	7	137.0	<5
DUP		5970	9.0	2.3	28.5	41.0	<1	0.89	3890	0.21	395	1725	572	7	138.0	<5
Target Range - Lower Bound		5800	8.3	1.9	27.4	39.4	<1	0.84	3750	0.13	366	1665	554	6	132.5	<5
Upper Bound		6220	9.5	2.4	29.8	42.9	2	1.01	4030	0.25	395	1785	594	8	142.5	10

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NORWAY

Page: 5 - B

Total # Pages: 6 (A - E)

Plus Appendix Pages

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302159

Sample Description	Method Analyte Units LOD	ME-MS81h Ta ppm 0.5	ME-MS81h Tb ppm 0.05	ME-MS81h Th ppm 0.3	ME-MS81h Tm ppm 0.05	ME-MS81h U ppm 0.3	ME-MS81h W ppm 5	ME-MS81h Y ppm 3	ME-MS81h Yb ppm 0.2	ME-MS81h Zr ppm 10	ME-MS61 Ag ppm 0.01	ME-MS61 Al % 0.01	ME-MS61 As ppm 0.2	ME-MS61 Ba ppm 10	ME-MS61 Be ppm 0.05	ME-MS61 Bi ppm 0.01
DUPLICATES																
199086		1.0	3.48	103.0	0.27	2.4	<5	24	1.6	70						
DUP		0.8	3.69	104.5	0.30	2.6	<5	25	1.5	70						
Target Range - Lower Bound		<0.5	3.41	99.8	0.23	2.1	<5	21	1.3	60						
Upper Bound		1.0	3.76	107.5	0.34	2.9	10	28	1.8	80						
199087											0.20	0.01	<0.2	7120	0.33	0.24
DUP											0.25	0.01	<0.2	6920	0.32	0.25
Target Range - Lower Bound											0.20	<0.01	<0.2	6480	0.26	0.22
Upper Bound											0.25	0.02	0.4	7560	0.39	0.27
199100		0.5	4.53	128.0	0.22	1.9	<5	29	1.6	60	0.43	<0.01	3.3	900	1.05	0.39
DUP		<0.5	5.10	122.0	0.27	1.9	<5	27	1.4	60	0.41	<0.01	4.1	1050	0.96	0.38
Target Range - Lower Bound		<0.5	4.60	120.5	0.19	1.5	<5	24	1.2	50	0.39	<0.01	3.3	890	0.90	0.36
Upper Bound		1.0	5.03	129.5	0.30	2.3	10	32	1.8	70	0.45	0.02	4.1	1060	1.11	0.41
199120		6.4	2.93	101.5	0.34	5.9	8	25	2.3	100	1.45	0.32	6.3	3100	0.64	1.26
DUP		6.9	2.87	100.5	0.33	5.8	9	25	2.2	100	1.00	0.32	6.7	3270	0.66	1.28
Target Range - Lower Bound		5.9	2.75	97.2	0.27	5.3	<5	21	2.0	90	1.15	0.29	6.0	2940	0.57	1.20
Upper Bound		7.4	3.05	105.0	0.40	6.4	10	29	2.5	110	1.30	0.35	7.0	3430	0.73	1.34
199134		3.5	3.88	162.0	0.42	4.1	8	36	2.8	140						
DUP		3.8	4.05	162.5	0.44	4.5	10	36	3.0	140						
Target Range - Lower Bound		3.0	3.78	156.5	0.36	3.8	<5	32	2.6	130						
Upper Bound		4.3	4.15	168.0	0.50	4.8	10	40	3.2	150						
199135											0.91	0.12	3.3	920	0.47	1.46
DUP											0.80	0.12	3.8	700	0.50	1.52
Target Range - Lower Bound											0.80	0.10	3.2	740	0.41	1.41
Upper Bound											0.91	0.14	3.9	880	0.56	1.57
199154		11.3	3.45	160.0	0.44	8.6	5	33	2.6	80						
DUP		12.9	3.00	157.0	0.36	8.8	<5	34	2.8	90						
Target Range - Lower Bound		11.2	3.06	152.5	0.34	8.1	<5	29	2.4	70						
Upper Bound		13.0	3.39	164.5	0.46	9.3	10	38	3.0	100						
199169		8.0	2.90	124.5	0.22	11.0	<5	29	1.4	50						
DUP		8.8	2.89	124.0	0.22	11.1	<5	28	1.4	50						
Target Range - Lower Bound		7.6	2.74	119.5	0.16	10.4	<5	25	1.2	40						
Upper Bound		9.2	3.05	129.0	0.28	11.7	10	32	1.6	60						

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POSTBOKS 6315 TORGARDEN

NO-7491 TRONDHEIM

NORWAY

Page: 5 - C

Total # Pages: 6 (A - E)

Plus Appendix Pages

Finalized Date: 4-JAN-2019

Account: ONUSEG

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302159

Sample Description	Method Analyte Units LOD	ME-MS61 Ca %	ME-MS61 Cd ppm	ME-MS61 Ce ppm	ME-MS61 Co ppm	ME-MS61 Cr ppm	ME-MS61 Cs ppm	ME-MS61 Cu ppm	ME-MS61 Fe %	ME-MS61 Ga ppm	ME-MS61 Ge ppm	ME-MS61 Hf ppm	ME-MS61 In ppm	ME-MS61 K %	ME-MS61 La ppm	ME-MS61 Li ppm
		0.01	0.02	0.01	0.1	1	0.05	0.2	0.01	0.05	0.05	0.1	0.005	0.01	0.5	0.2
199086 DUP Target Range - Lower Bound Upper Bound		DUPLICATES														
199087 DUP Target Range - Lower Bound Upper Bound		17.95 17.80 16.95 18.80	3.42 3.23 3.14 3.51	>500 >500 475 >500	5.7 5.3 5.1 5.9	4 4 3 5	0.13 0.12 0.07 0.18	1.2 1.0 0.9 1.3	7.24 7.17 6.83 7.58	51.8 50.3 48.4 53.7	4.07 4.07 3.82 4.32	0.5 0.5 0.4 0.6	0.559 0.545 0.519 0.585	<0.01 <0.01 <0.01 0.02	6970 6890 6580 7280	4.0 4.0 3.6 4.4
199100 DUP Target Range - Lower Bound Upper Bound		18.45 14.15 15.50 17.15	1.53 1.51 1.42 1.62	>500 >500 475 >500	12.7 12.1 11.7 13.1	7 10 7 10	0.14 0.13 0.08 0.19	1.4 1.8 1.3 1.9	7.69 7.76 7.33 8.12	37.9 37.7 35.9 39.7	4.66 4.53 4.32 4.87	0.4 0.4 0.3 0.5	0.480 0.478 0.450 0.508	0.03 0.03 0.02 0.04	6350 6450 6080 6720	8.4 7.8 7.5 8.7
199120 DUP Target Range - Lower Bound Upper Bound		18.60 19.30 18.00 19.90	0.93 1.03 0.91 1.05	>500 >500 475 >500	15.8 16.0 15.0 16.8	6 6 5 7	4.05 4.11 3.83 4.33	3.4 3.3 3.0 3.7	8.40 8.49 8.01 8.88	21.4 21.8 20.5 22.7	2.44 2.34 2.22 2.56	1.2 1.3 1.1 1.4	0.388 0.390 0.365 0.413	0.34 0.35 0.32 0.37	3510 3610 3380 3740	93.8 89.6 86.9 96.5
199134 DUP Target Range - Lower Bound Upper Bound																
199135 DUP Target Range - Lower Bound Upper Bound		18.15 18.45 17.40 19.25	1.06 1.24 1.07 1.23	>500 >500 475 >500	11.8 14.3 12.3 13.8	4 4 3 5	2.20 2.32 2.10 2.42	1.7 1.9 1.5 2.1	8.33 8.42 7.95 8.80	29.9 31.0 28.9 32.0	2.62 2.68 2.47 2.83	0.8 0.7 0.6 0.9	0.500 0.545 0.491 0.554	0.13 0.13 0.11 0.15	3840 3830 3640 4030	44.3 46.7 43.0 48.0
199154 DUP Target Range - Lower Bound Upper Bound																
199169 DUP Target Range - Lower Bound Upper Bound																

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NORWAY

Page: 5 - D

Total # Pages: 6 (A - E)

Plus Appendix Pages

Finalized Date: 4-JAN-2019

Account: ONUSEG

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302159

Sample Description	Method Analyte Units LOD	ME-MS61 Mg %	ME-MS61 Mn ppm	ME-MS61 Mo ppm	ME-MS61 Na %	ME-MS61 Nb ppm	ME-MS61 Ni ppm	ME-MS61 P ppm	ME-MS61 Pb ppm	ME-MS61 Rb ppm	ME-MS61 Re ppm	ME-MS61 S %	ME-MS61 Sb ppm	ME-MS61 Sc ppm	ME-MS61 Se ppm	ME-MS61 Sn ppm
		0.01	5	0.05	0.01	0.1	0.2	10	0.5	0.1	0.002	0.01	0.05	0.1	1	0.2
199086 DUP Target Range - Lower Bound Upper Bound		DUPLICATES														
199087 DUP Target Range - Lower Bound Upper Bound		6.17 6.14 5.84 6.47	11600 11600 11000 12200	24.5 23.6 22.8 25.3	0.02 0.02 <0.01 0.03	75.7 78.3 73.1 81.0	3.5 3.5 3.1 3.9	1020 1040 970 1090	28.9 30.1 27.5 31.5	0.5 0.4 0.3 0.6	0.004 0.002 <0.002 0.004	0.30 0.30 0.28 0.33	0.07 0.08 <0.05 0.10	16.2 15.9 15.1 17.0	1 1 <1 2	0.7 0.7 0.5 0.9
199100 DUP Target Range - Lower Bound Upper Bound		5.64 5.77 5.41 6.00	10900 11100 10450 11550	103.0 102.0 97.3 107.5	0.01 0.01 <0.01 0.02	16.8 17.5 16.2 18.1	4.6 5.7 4.7 5.6	2100 2140 2000 2240	20.9 20.4 19.1 22.2	1.1 1.1 0.9 1.3	0.004 0.005 <0.002 0.007	0.71 0.73 0.67 0.77	0.10 0.10 <0.05 0.16	15.4 15.3 14.5 16.2	<1 <1 <1 2	0.5 0.5 0.3 0.7
199120 DUP Target Range - Lower Bound Upper Bound		6.61 6.91 6.41 7.11	10600 11000 10250 11350	658 684 637 705	0.04 0.04 0.03 0.05	>500 >500 475 >500	5.6 6.4 5.5 6.5	2050 2150 1990 2220	24.7 24.9 23.1 26.5	25.8 26.3 24.6 27.5	0.036 0.040 0.034 0.042	0.69 0.74 0.67 0.76	0.19 0.21 0.14 0.27	15.3 15.1 14.3 16.1	<1 <1 <1 2	2.9 2.7 2.5 3.1
199134 DUP Target Range - Lower Bound Upper Bound																
199135 DUP Target Range - Lower Bound Upper Bound		6.24 6.31 5.95 6.60	12000 12250 11500 12750	481 488 460 509	0.04 0.04 0.03 0.05	500 >500 475 >500	3.9 4.0 3.6 4.3	430 440 400 470	25.5 27.9 24.9 28.5	14.6 15.2 14.1 15.7	0.012 0.013 0.010 0.015	0.73 0.75 0.69 0.79	0.12 0.13 0.07 0.18	22.4 23.8 21.8 24.4	<1 <1 <1 2	1.5 1.6 1.3 1.8
199154 DUP Target Range - Lower Bound Upper Bound																
199169 DUP Target Range - Lower Bound Upper Bound																

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NORWAY

Page: 5 - E

Total # Pages: 6 (A - E)

Plus Appendix Pages

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302159

Sample Description	Method Analyte Units LOD	ME-MS61 Sr ppm 0.2	ME-MS61 Ta ppm 0.05	ME-MS61 Te ppm 0.05	ME-MS61 Th ppm 0.01	ME-MS61 Ti % 0.005	ME-MS61 Tl ppm 0.02	ME-MS61 U ppm 0.1	ME-MS61 V ppm 1	ME-MS61 W ppm 0.1	ME-MS61 Y ppm 0.1	ME-MS61 Zn ppm 2	ME-MS61 Zr ppm 0.5
199086 DUP Target Range - Lower Bound Upper Bound		DUPLICATES											
199087 DUP Target Range - Lower Bound Upper Bound		3400 3390 3230 3560	0.37 0.44 0.33 0.48	0.09 0.14 0.06 0.17	128.5 127.0 121.5 134.0	<0.005 <0.005 <0.005 0.010	<0.02 <0.02 <0.02 0.04	1.9 1.9 1.7 2.1	10 11 9 12	0.7 0.7 0.5 0.9	24.1 23.3 22.4 25.0	325 317 303 339	50.3 47.3 44.6 53.0
199100 DUP Target Range - Lower Bound Upper Bound		2740 2780 2620 2900	0.09 0.10 <0.05 0.10	0.22 0.23 0.16 0.29	144.5 143.5 137.0 151.0	<0.005 <0.005 <0.005 0.010	0.03 0.04 <0.02 0.04	1.9 1.8 1.7 2.0	10 9 8 11	0.5 0.4 0.3 0.6	28.8 28.6 27.2 30.2	73 78 70 81	30.8 29.9 27.6 33.1
199120 DUP Target Range - Lower Bound Upper Bound		2900 2980 2790 3090	6.95 7.12 6.63 7.44	0.42 0.43 0.35 0.50	115.0 116.5 110.0 121.5	0.017 0.018 0.012 0.023	0.37 0.39 0.33 0.43	5.7 5.7 5.3 6.1	13 12 11 14	1.3 1.3 1.1 1.5	26.2 26.8 25.1 27.9	88 87 81 94	82.3 87.6 78.1 91.8
199134 DUP Target Range - Lower Bound Upper Bound													
199135 DUP Target Range - Lower Bound Upper Bound		2390 2410 2280 2520	2.27 2.57 2.25 2.59	0.35 0.43 0.32 0.46	118.5 117.0 112.0 123.5	0.011 0.012 0.006 0.017	0.17 0.16 0.13 0.20	2.9 2.8 2.6 3.1	16 15 14 17	1.2 1.4 1.1 1.5	25.0 26.4 24.3 27.1	221 227 211 237	68.3 71.7 64.3 75.8
199154 DUP Target Range - Lower Bound Upper Bound													
199169 DUP Target Range - Lower Bound Upper Bound													

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NORWAY

Page: 6 - A

Total # Pages: 6 (A - E)

Plus Appendix Pages

Finalized Date: 4-JAN-2019

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302159

Sample Description	Method Analyte Units LOD	ME-MS81h Ce ppm 3	ME-MS81h Dy ppm 0.3	ME-MS81h Er ppm 0.2	ME-MS81h Eu ppm 0.2	ME-MS81h Gd ppm 0.3	ME-MS81h Hf ppm 1	ME-MS81h Ho ppm 0.05	ME-MS81h La ppm 3	ME-MS81h Lu ppm 0.05	ME-MS81h Nb ppm 1	ME-MS81h Nd ppm 0.5	ME-MS81h Pr ppm 0.2	ME-MS81h Rb ppm 1	ME-MS81h Sm ppm 0.2	ME-MS81h Sn ppm 5
199170 DUP Target Range - Lower Bound Upper Bound																
199320 DUP Target Range - Lower Bound Upper Bound		6040 6270 5940 6370	5.7 5.6 5.2 6.1	1.0 1.0 0.8 1.2	23.7 23.7 22.7 24.7	38.9 38.6 37.1 40.4	<1 <1 <1 2	0.59 0.61 0.53 0.67	3830 3950 3750 4030	0.11 0.15 0.08 0.18	358 297 315 340	1615 1645 1570 1690	549 563 536 576	<1 <1 <1 2	129.0 131.5 125.5 135.0	<5 <5 <5 10
199333 DUP Target Range - Lower Bound Upper Bound		7840 7650 7470 8020	10.1 9.8 9.3 10.6	1.8 1.5 1.4 1.9	27.3 26.6 25.8 28.1	45.5 43.7 42.7 46.5	<1 <1 <1 2	1.11 1.11 1.02 1.20	4920 4880 4730 5070	0.14 0.13 0.08 0.19	414 363 374 403	2060 2050 1985 2130	695 698 672 721	1 1 <1 2	150.0 149.0 144.0 155.0	<5 <5 <5 10
199052 199052 PREP DUP		7230 7580	11.7 12.3	2.4 2.3	34.5 38.8	60.9 68.0	<1 <1	1.28 1.28	4400 4660	0.19 0.13	23 20	2120 2360	695 753	5 5	189.0 200	<5 <5
199102 199102 PREP DUP		5580 5400	5.7 5.0	1.3 1.1	17.6 16.9	27.7 26.5	1 <1	0.63 0.49	3870 3700	0.14 0.06	538 612	1300 1335	506 478	9 9	97.8 92.4	<5 <5
199152 199152 PREP DUP		5630 6170	14.0 15.2	4.3 4.9	25.8 28.0	49.2 50.3	1 1	1.93 2.03	3980 4400	0.47 0.56	1480 1600	1500 1630	511 566	6 6	131.5 145.5	8 8

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Page: 6 - B

Total # Pages: 6 (A - E)

Plus Appendix Pages

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302159

Sample Description	Method Analyte Units LOD	ME-MS81h Ta ppm 0.5	ME-MS81h Tb ppm 0.05	ME-MS81h Th ppm 0.3	ME-MS81h Tm ppm 0.05	ME-MS81h U ppm 0.3	ME-MS81h W ppm 5	ME-MS81h Y ppm 3	ME-MS81h Yb ppm 0.2	ME-MS81h Zr ppm 10	ME-MS61 Ag ppm 0.01	ME-MS61 Al % 0.01	ME-MS61 As ppm 0.2	ME-MS61 Ba ppm 10	ME-MS61 Be ppm 0.05	ME-MS61 Bi ppm 0.01
DUPLICATES																
199170											0.55	0.31	3.9	1960	0.66	1.58
DUP											0.51	0.32	4.0	3610	0.62	1.61
Target Range - Lower Bound											0.49	0.29	3.6	2570	0.56	1.51
Upper Bound											0.57	0.34	4.3	3000	0.72	1.68
199320		4.3	2.38	102.5	0.13	4.4	8	10	0.8	10						
DUP		2.7	2.23	104.0	0.15	3.0	8	11	0.8	10						
Target Range - Lower Bound		2.9	2.17	99.3	0.09	3.3	<5	7	0.6	<10						
Upper Bound		4.1	2.44	107.0	0.19	4.1	10	14	1.0	20						
199333		8.8	3.55	126.0	0.21	5.7	8	21	1.0	10						
DUP		7.4	3.31	121.5	0.19	5.5	8	21	1.0	10						
Target Range - Lower Bound		7.3	3.26	119.0	0.14	5.1	<5	17	0.8	<10						
Upper Bound		8.9	3.60	128.5	0.26	6.1	10	25	1.2	20						
PREP DUPLICATES																
199052		<0.5	3.98	152.0	0.26	1.6	<5	29	1.3	50	0.37	0.03	2.2	2490	0.69	0.38
199052 PREP DUP		0.8	4.80	161.5	0.25	1.6	<5	32	1.2	50	0.40	0.05	3.0	2430	0.69	0.41
199102		3.0	2.07	60.1	0.19	2.3	<5	13	1.0	60	0.28	0.06	1.4	4680	0.84	0.33
199102 PREP DUP		3.1	2.04	56.5	0.10	2.1	<5	13	0.8	60	0.35	0.10	1.4	4830	1.01	0.36
199152		14.4	4.06	154.0	0.50	13.1	5	50	3.6	90	0.79	0.43	2.2	4830	0.70	0.69
199152 PREP DUP		15.6	4.37	169.5	0.53	14.3	7	52	4.0	90	0.56	0.43	2.5	2470	0.61	0.70

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Page: 6 - C
 Total # Pages: 6 (A - E)
 Plus Appendix Pages
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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302159

Sample Description	Method Analyte Units LOD	ME-MS61 Ca %	ME-MS61 Cd ppm	ME-MS61 Ce ppm	ME-MS61 Co ppm	ME-MS61 Cr ppm	ME-MS61 Cs ppm	ME-MS61 Cu ppm	ME-MS61 Fe %	ME-MS61 Ga ppm	ME-MS61 Ge ppm	ME-MS61 Hf ppm	ME-MS61 In ppm	ME-MS61 K %	ME-MS61 La ppm	ME-MS61 Li ppm
		0.01	0.02	0.01	0.1	1	0.05	0.2	0.01	0.05	0.05	0.1	0.005	0.01	0.5	0.2
DUPLICATES																
199170		14.00	1.03	>500	8.0	3	1.58	1.3	8.50	28.0	1.94	0.9	0.498	0.08	3170	22.3
DUP		14.55	1.09	>500	7.7	2	1.58	1.4	8.44	27.5	1.93	0.9	0.498	0.08	3250	21.2
Target Range - Lower Bound		13.55	0.99	475	7.4	<1	1.45	1.1	8.04	26.3	1.79	0.8	0.468	0.07	3050	20.5
Upper Bound		15.00	1.13	>500	8.3	4	1.71	1.6	8.90	29.2	2.08	1.0	0.528	0.09	3370	23.0
199320																
DUP																
Target Range - Lower Bound																
Upper Bound																
199333																
DUP																
Target Range - Lower Bound																
Upper Bound																
PREP DUPLICATES																
199052		18.40	1.02	>500	13.2	5	0.53	2.2	9.20	29.0	2.52	0.4	0.506	0.05	3550	13.0
199052 PREP DUP		14.85	1.24	>500	13.6	3	0.52	2.2	9.35	31.4	2.03	0.5	0.501	0.04	3800	13.9
199102		18.95	1.04	>500	6.8	6	0.91	1.0	7.19	17.30	1.75	0.4	0.375	0.09	3260	30.4
199102 PREP DUP		18.90	1.03	>500	6.9	<1	0.89	0.7	7.40	23.2	1.31	0.4	0.390	0.09	3400	31.0
199152		15.25	2.90	>500	7.6	2	1.86	1.9	8.15	26.4	1.48	1.0	0.485	0.09	3580	20.5
199152 PREP DUP		18.00	2.87	>500	7.5	2	1.87	2.6	8.12	25.4	1.51	1.1	0.474	0.09	3500	20.7

Comments: Samples were received on 27-Nov-2018 and the SSF/Request on 28-Nov-2018.

***** See Appendix Page for comments regarding this certificate *****



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To: GEOLOGICAL SURVEY OF NORWAY (NGU)

POSTBOKS 6315 TORGARDEN

NO-7491 TRONDHEIM

NORWAY

Page: 6 - D

Total # Pages: 6 (A - E)

Plus Appendix Pages

Finalized Date: 4-JAN-2019

Account: ONUSEG

An INAB accredited testing laboratory Reg. No. 173T. Accredited methods are listed in the Scope of Accreditation available on request.

Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302159

Sample Description	Method Analyte Units LOD	ME-MS61 Mg %	ME-MS61 Mn ppm	ME-MS61 Mo ppm	ME-MS61 Na %	ME-MS61 Nb ppm	ME-MS61 Ni ppm	ME-MS61 P ppm	ME-MS61 Pb ppm	ME-MS61 Rb ppm	ME-MS61 Re ppm	ME-MS61 S %	ME-MS61 Sb ppm	ME-MS61 Sc ppm	ME-MS61 Se ppm	ME-MS61 Sn ppm
		0.01	5	0.05	0.01	0.1	0.2	10	0.5	0.1	0.002	0.01	0.05	0.1	1	0.2
DUPLICATES																
199170		5.55	10950	293	0.10	142.5	3.6	7800	15.8	8.8	0.006	0.45	0.16	21.2	1	2.8
DUP		5.66	11250	302	0.13	268	2.9	7800	15.8	8.7	0.006	0.49	0.14	21.4	1	3.3
Target Range - Lower Bound		5.31	10550	283	0.10	195.0	2.9	7400	14.5	8.2	0.004	0.44	0.09	20.1	<1	2.7
Upper Bound		5.90	11650	312	0.13	216	3.6	8200	17.1	9.3	0.008	0.50	0.21	22.5	2	3.4
199320																
DUP																
Target Range - Lower Bound																
Upper Bound																
199333																
DUP																
Target Range - Lower Bound																
Upper Bound																
PREP DUPLICATES																
199052		6.31	12600	188.0	0.02	20.9	8.8	790	24.9	5.0	0.002	0.56	0.18	14.8	<1	0.4
199052 PREP DUP		6.18	12050	188.0	0.08	17.9	8.9	840	26.0	4.6	<0.002	0.61	0.15	13.9	1	0.4
199102		7.37	12500	171.0	0.02	460	4.1	1380	15.2	9.0	0.011	0.33	0.09	12.9	<1	1.5
199102 PREP DUP		7.46	12200	177.0	<0.01	490	3.6	1350	18.0	9.3	0.012	0.31	0.10	12.1	1	1.5
199152		6.62	10400	203	0.18	>500	4.9	4330	14.9	6.2	0.012	0.43	0.23	22.6	2	6.1
199152 PREP DUP		6.52	10250	202	0.25	>500	4.6	4430	15.7	6.0	0.014	0.38	0.23	22.2	1	6.1

Comments: Samples were received on 27-Nov-2018 and the SSF/Request on 28-Nov-2018.

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Page: 6 - E

Total # Pages: 6 (A - E)

Plus Appendix Pages

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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302159

Sample Description	Method Analyte Units LOD	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61
		Sr	Ta	Te	Th	Ti	Tl	U	V	W	Y	Zn	Zr
		ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		0.2	0.05	0.05	0.01	0.005	0.02	0.1	1	0.1	0.1	2	0.5
DUPLICATES													
199170		2830	1.75	0.34	305	0.012	0.25	3.2	19	1.3	62.5	96	78.0
DUP		2870	4.07	0.29	315	0.013	0.21	3.7	19	1.0	61.7	104	78.3
Target Range - Lower Bound		2710	2.71	0.25	294	0.007	0.19	3.2	17	1.0	58.9	93	71.8
Upper Bound		2990	3.11	0.38	326	0.018	0.27	3.7	21	1.3	65.3	107	84.5
199320													
DUP													
Target Range - Lower Bound													
Upper Bound													
199333													
DUP													
Target Range - Lower Bound													
Upper Bound													
PREP DUPLICATES													
199052		3150	0.38	0.14	154.5	0.007	0.07	1.8	16	0.3	29.6	94	33.4
199052 PREP DUP		3070	0.14	0.11	172.0	0.005	0.06	1.6	17	0.3	28.0	124	32.8
199102		3080	2.37	0.12	66.3	0.005	0.09	2.1	12	1.2	13.3	75	36.6
199102 PREP DUP		3100	2.21	0.19	61.9	0.006	0.10	2.1	13	0.4	12.6	75	40.4
199152		2740	3.66	0.22	183.5	0.020	0.26	14.3	19	5.3	47.8	559	76.2
199152 PREP DUP		2740	1.88	0.19	182.0	0.019	0.25	15.0	19	5.3	46.8	536	76.5

Comments: Samples were received on 27-Nov-2018 and the SSF/Request on 28-Nov-2018.

***** See Appendix Page for comments regarding this certificate *****



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To: GEOLOGICAL SURVEY OF NORWAY (NGU)
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Page: Appendix 1
 Total # Appendix Pages: 1
 Finalized Date: 4-JAN-2019
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Project: Not provided

QC CERTIFICATE OF ANALYSIS PI18302159

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: REE's may not be totally soluble in this method.
 ME-MS61

ACCREDITATION COMMENTS

Applies to Method: The methods immediately below this line are ISO 17025:2005 Accredited. INAB Registration No: 173T
 ME-MS61



LABORATORY ADDRESSES

Applies to Method:	Processed at ALS Pitea located at Hammarvagen 22, SE-943 36, Ojebyn, Sweden.			
	CRU-31	CRU-QC	LOG-22	LOG-24
	PUL-31	PUL-QC	SPL-22Y	WEI-21
Applies to Method:	Processed at ALS Loughrea located at Dublin Road, Loughrea, Co. Galway, Ireland.			
	ME-MS61	ME-MS81h		