



BUREAU MINERAL LABORATORIES
VERITAS Canada

www.bureauveritas.com/um

Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada

PHONE (604) 253-3158

Client: **Noble Exploration Services Ltd.**
3890 Trailhead Drive
Jordan River British Columbia V9Z 1L1 Canada

Submitted By: Wayne Jackaman
Receiving Lab: Canada-Vancouver
Received: November 04, 2019
Report Date: November 29, 2019
Page: 1 of 5

CERTIFICATE OF ANALYSIS

VAN19003329.1

CLIENT JOB INFORMATION

Project: HMC_2019_SS
Shipment ID:
P.O. Number
Number of Samples: 115

SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps
PICKUP-RJT Client to Pickup Rejects

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

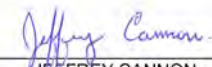
Invoice To: Noble Exploration Services Ltd.
3890 Trailhead Drive
Jordan River British Columbia V9Z 1L1
Canada

CC:

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
DY060	115	Dry at 60C			VAN
SS80	103	Dry at 60C sieve 100g to -80 mesh			VAN
SPTRF	6	Split samples by riffle splitter			VAN
SVRJT	103	Save all or part of Soil Reject			VAN
SLBHP	12	Sort, label and box pulps			VAN
AQ250_EXT_REE	115	1:1:1 Aqua Regia digestion Ultratrace ICP-MS analysis	0.5	Completed	VAN
TG001	115	LOI by loss on ignition	1	Completed	VAN

ADDITIONAL COMMENTS


JEFFREY CANNON
Geochemistry Department Supervisor

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
*** asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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Method Analyte Unit MDL		AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	1	0.01	0.001
HMC-1001 DUP of HMC-1017B	Pulp DUP	0.83	5.50	7.87	57.6	65	7.1	6.0	600	2.63	1.3	3.2	1.5	8.1	31.9	0.24	0.08	0.17	47	0.41	0.098
HMC-1002	Stream	0.92	6.38	5.58	41.0	42	10.5	5.2	397	1.72	0.8	5.1	0.4	9.0	36.3	0.12	0.06	0.07	36	0.37	0.122
HMC-1003	Stream	0.88	10.63	3.81	52.8	36	28.4	11.1	522	2.63	0.8	1.4	0.7	3.5	42.6	0.13	0.06	0.05	56	0.54	0.156
HMC-1004	Stream	1.27	17.72	7.99	53.5	97	23.6	10.3	675	2.30	2.7	3.0	1.0	4.2	81.2	0.15	0.15	0.11	50	0.58	0.103
HMC-1005	Stream	0.40	6.82	6.20	42.7	59	9.6	5.8	426	2.66	0.6	3.6	1.2	6.3	41.6	0.17	0.04	0.14	51	0.47	0.110
HMC-1006	Stream	0.47	9.13	5.51	47.7	43	16.6	7.2	470	2.12	0.4	3.2	0.5	5.3	49.5	0.14	0.07	0.12	41	0.53	0.142
HMC-1007	Rock Pulp	13.29	163.29	7.23	48.3	76	12.8	12.1	406	4.37	5.3	0.4	62.1	1.0	49.1	0.28	0.19	0.51	94	0.71	0.059
HMC-1008	Stream	0.13	4.28	2.25	23.0	17	6.3	2.9	199	1.46	0.3	0.7	0.2	2.4	13.7	0.04	0.04	0.10	24	0.24	0.078
HMC-1009	Stream	0.87	14.40	7.13	64.5	56	21.4	9.1	470	2.27	1.4	7.1	1.0	5.4	44.8	0.17	0.11	0.23	44	0.64	0.165
HMC-1010	Moss	0.79	9.06	9.09	45.3	101	15.1	6.5	306	2.65	0.4	13.0	6.2	19.5	45.9	0.13	0.12	0.14	70	0.64	0.196
HMC-1011	Stream	1.07	12.73	8.78	53.9	52	24.1	9.0	373	2.08	2.1	18.4	0.5	5.5	52.5	0.16	0.15	0.16	54	0.57	0.146
HMC-1012	Stream	0.96	12.54	5.44	34.6	34	24.1	9.9	258	2.69	2.0	3.7	1.1	7.4	41.6	0.12	0.10	0.55	89	0.61	0.214
HMC-1013	Stream	1.02	22.36	5.03	65.3	135	19.5	7.8	447	3.32	4.2	2.8	2.0	4.5	54.8	0.46	0.22	0.14	71	0.66	0.148
HMC-1014	Stream	0.64	6.94	6.55	46.0	71	6.0	5.6	453	3.81	1.6	29.2	0.9	9.6	27.7	0.17	0.09	0.13	68	0.37	0.083
HMC-1015	Stream	0.87	11.23	5.51	52.5	114	10.6	7.8	606	2.47	0.8	1.7	0.9	4.0	33.2	0.18	0.08	0.12	46	0.54	0.159
HMC-1016	Moss	0.84	8.65	6.76	61.1	55	11.9	10.7	580	3.55	0.7	2.7	3.1	4.8	47.0	0.15	0.07	0.15	78	0.59	0.159
HMC-1017A	Stream	0.68	4.82	6.01	49.7	82	6.0	4.3	467	2.30	1.2	4.5	0.5	5.8	31.6	0.23	0.07	0.15	40	0.38	0.101
HMC-1017B	Stream	0.82	5.24	7.18	61.0	60	7.5	5.6	586	2.54	1.2	3.2	3.3	8.9	33.2	0.28	0.08	0.15	44	0.40	0.094
HMC-1018	Stream	1.03	16.90	5.12	57.5	117	18.0	7.5	431	2.35	6.1	1.3	0.7	5.2	42.3	0.30	0.38	0.07	45	0.45	0.082
HMC-1019	Stream	0.69	6.56	4.60	42.8	41	12.9	4.7	332	1.54	0.4	3.7	<0.2	6.4	23.8	0.11	0.04	0.16	30	0.36	0.096
HMC-1020	Stream	0.71	4.73	8.24	35.0	41	9.8	4.3	359	3.11	0.8	10.0	<0.2	13.7	23.4	0.09	0.05	0.17	68	0.28	0.093
HMC-1021 DUP of HMC-1037B	Pulp DUP	1.45	12.51	14.61	57.3	82	11.2	8.6	594	3.70	1.1	8.9	<0.2	31.9	53.7	0.32	0.17	0.15	87	0.51	0.118
HMC-1022	Stream	0.99	28.15	6.22	42.7	60	11.5	6.1	257	3.39	2.8	5.6	0.6	11.1	36.1	0.12	0.09	0.10	107	0.53	0.130
HMC-1023	Stream	3.82	18.06	10.78	54.5	93	8.4	4.0	373	1.29	1.0	11.8	<0.2	4.8	38.2	0.19	0.07	0.15	24	0.33	0.076
HMC-1024	Moss	1.24	6.26	7.48	38.7	28	12.5	5.4	338	3.62	0.4	6.0	<0.2	13.7	31.8	0.09	0.04	0.22	92	0.48	0.149
HMC-1025	Stream	0.61	10.01	13.48	36.6	70	32.4	11.8	332	9.36	1.4	5.4	0.3	43.4	39.8	0.13	0.09	0.13	258	0.70	0.259
HMC-1026	Stream	1.99	16.80	14.69	65.3	141	19.5	9.4	406	2.75	2.5	7.8	1.4	9.1	69.9	0.32	0.17	0.21	64	0.73	0.175
HMC-1027	Stream	2.41	14.37	30.94	116.4	212	12.2	6.5	451	3.07	1.0	35.2	<0.2	18.5	85.6	0.48	0.18	0.38	69	0.57	0.156
HMC-1028	Stream	0.81	14.44	8.37	49.4	70	21.4	8.9	321	5.71	1.5	4.4	<0.2	13.8	55.4	0.21	0.13	0.11	170	0.90	0.258
HMC-1029	Stream	0.28	12.38	4.08	30.5	17	25.4	9.4	217	3.30	0.4	1.6	<0.2	6.4	91.5	0.03	0.03	0.03	145	0.98	0.422



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		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Ti	S	Hg	Se	Te	Ga	Cs	Ge	Hf
		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm
		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	0.02
HMC-1001 DUP of HMC-1017B	Pulp DUP	21.2	14.7	0.50	54.7	0.056	<20	0.92	0.012	0.14	0.1	2.4	0.14	<0.02	15	<0.1	<0.02	4.3	1.69	<0.1	<0.02
HMC-1002	Stream	31.1	14.7	0.30	72.3	0.085	<20	0.81	0.013	0.08	<0.1	2.0	0.09	<0.02	15	0.2	<0.02	3.9	0.82	<0.1	0.02
HMC-1003	Stream	16.1	28.9	0.57	84.2	0.210	<20	1.17	0.023	0.07	<0.1	2.9	0.07	<0.02	18	0.3	<0.02	4.2	0.68	<0.1	0.08
HMC-1004	Stream	20.9	30.1	0.58	145.1	0.109	<20	1.36	0.023	0.16	<0.1	3.9	0.14	<0.02	21	0.3	0.02	4.8	1.48	<0.1	0.09
HMC-1005	Stream	20.4	26.1	0.47	48.9	0.059	<20	0.93	0.011	0.07	0.2	1.9	0.07	<0.02	17	0.1	0.02	4.0	1.11	<0.1	<0.02
HMC-1006	Stream	19.2	28.5	0.58	99.4	0.075	<20	0.98	0.013	0.10	0.1	1.8	0.11	<0.02	19	0.3	0.03	4.4	1.66	<0.1	<0.02
HMC-1007	Rock Pulp	4.6	20.6	0.68	54.6	0.134	<20	1.99	0.021	0.04	<0.1	5.3	0.03	0.66	22	3.0	0.48	5.5	0.34	<0.1	0.13
HMC-1008	Stream	10.8	13.2	0.21	23.4	0.027	<20	0.31	0.008	0.04	<0.1	1.0	0.03	<0.02	<5	<0.1	<0.02	2.2	0.55	<0.1	<0.02
HMC-1009	Stream	23.0	38.0	0.69	102.9	0.079	<20	0.97	0.019	0.16	0.4	3.2	0.14	0.05	11	0.7	0.03	5.1	2.08	<0.1	<0.02
HMC-1010	Moss	51.7	59.5	0.40	171.5	0.079	<20	0.73	0.013	0.16	0.3	2.3	0.13	0.05	14	0.4	0.03	4.6	1.42	<0.1	0.02
HMC-1011	Stream	26.0	62.2	0.62	128.0	0.124	<20	1.00	0.011	0.20	0.2	2.6	0.18	0.03	30	0.5	0.03	4.4	2.64	<0.1	<0.02
HMC-1012	Stream	31.4	92.8	0.62	123.2	0.123	<20	0.72	0.015	0.20	0.3	2.1	0.16	<0.02	15	0.3	<0.02	4.0	1.42	<0.1	0.03
HMC-1013	Stream	16.7	26.4	0.60	68.3	0.089	<20	1.23	0.017	0.11	1.0	3.0	0.12	<0.02	17	0.7	0.03	5.4	1.81	<0.1	<0.02
HMC-1014	Stream	18.4	16.0	0.41	47.8	0.048	<20	0.78	0.008	0.10	0.1	1.9	0.10	0.05	6	<0.1	<0.02	4.0	1.39	<0.1	<0.02
HMC-1015	Stream	23.3	20.3	0.44	97.4	0.068	<20	0.91	0.011	0.10	0.5	2.3	0.10	0.04	26	0.2	<0.02	3.5	1.03	<0.1	<0.02
HMC-1016	Moss	21.9	26.3	0.54	88.8	0.192	<20	1.09	0.018	0.11	0.2	3.1	0.10	0.04	22	0.3	<0.02	4.8	0.98	<0.1	0.07
HMC-1017A	Stream	19.8	12.9	0.36	47.7	0.046	<20	0.77	0.009	0.10	0.1	2.0	0.10	<0.02	11	0.2	<0.02	3.6	1.48	<0.1	<0.02
HMC-1017B	Stream	23.7	14.8	0.52	56.0	0.060	<20	0.96	0.011	0.14	0.1	2.3	0.14	<0.02	10	0.1	<0.02	4.5	1.89	<0.1	<0.02
HMC-1018	Stream	12.8	24.5	0.60	57.2	0.053	<20	1.08	0.009	0.07	<0.1	2.9	0.07	<0.02	12	0.6	<0.02	3.5	0.82	<0.1	<0.02
HMC-1019	Stream	28.5	21.8	0.44	61.1	0.051	<20	0.80	0.012	0.07	0.6	2.2	0.07	<0.02	10	<0.1	<0.02	4.3	1.49	<0.1	<0.02
HMC-1020	Stream	46.1	27.2	0.23	51.3	0.033	<20	0.64	0.007	0.06	0.2	1.3	0.06	0.03	13	0.2	<0.02	4.4	0.95	<0.1	<0.02
HMC-1021 DUP of HMC-1037B	Pulp DUP	39.2	35.8	0.50	89.8	0.082	<20	0.84	0.011	0.10	0.6	2.0	0.10	<0.02	15	0.4	<0.02	4.2	1.46	<0.1	0.03
HMC-1022	Stream	41.6	41.3	0.42	50.0	0.055	<20	0.89	0.012	0.07	1.0	2.4	0.06	0.02	19	0.3	<0.02	4.3	1.53	<0.1	0.03
HMC-1023	Stream	44.9	19.8	0.29	98.2	0.036	<20	0.99	0.009	0.06	0.2	1.5	0.09	0.02	21	0.4	<0.02	4.2	1.60	<0.1	<0.02
HMC-1024	Moss	43.8	47.4	0.35	55.6	0.055	<20	0.72	0.013	0.07	1.8	1.8	0.06	0.02	13	0.2	<0.02	4.4	1.00	<0.1	0.02
HMC-1025	Stream	72.6	196.0	0.28	47.8	0.075	<20	0.48	0.007	0.05	0.5	1.4	0.05	<0.02	6	0.2	<0.02	5.8	0.84	0.1	0.04
HMC-1026	Stream	45.4	43.2	0.67	117.9	0.098	<20	1.16	0.022	0.11	1.6	3.4	0.11	<0.02	16	0.5	0.05	4.8	3.15	<0.1	0.03
HMC-1027	Stream	70.0	41.3	0.34	95.7	0.070	<20	0.93	0.011	0.09	3.1	1.9	0.08	0.02	26	0.3	0.02	4.7	1.85	0.1	0.03
HMC-1028	Stream	45.2	119.2	0.48	65.9	0.095	<20	0.95	0.022	0.12	0.9	2.3	0.08	0.02	<5	0.3	0.02	5.5	1.38	0.1	0.03
HMC-1029	Stream	43.6	90.5	0.60	231.3	0.100	<20	0.69	0.017	0.19	0.2	1.7	0.07	<0.02	8	0.1	<0.02	4.5	0.61	0.1	0.02



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		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
HMC-1001 DUP of HMC-1017B	Pulp DUP	0.46	18.6	0.4	<0.05	0.6	6.27	37.8	<0.02	<1	0.4	21.3	4.03	14.33	2.29	0.47	1.78	0.24	1.41	0.21	0.61
HMC-1002	Stream	1.34	10.2	0.4	<0.05	1.6	10.97	53.7	<0.02	<1	0.6	15.4	6.62	23.18	4.05	0.45	3.25	0.39	2.48	0.36	1.10
HMC-1003	Stream	1.35	8.2	0.4	<0.05	4.5	9.25	31.2	0.02	<1	0.4	10.9	3.90	15.07	2.73	0.45	2.55	0.34	1.82	0.31	0.84
HMC-1004	Stream	0.84	13.5	0.7	<0.05	4.6	11.89	38.8	0.03	<1	0.6	12.9	4.87	18.82	3.55	0.56	3.04	0.40	2.48	0.43	1.13
HMC-1005	Stream	0.89	8.7	0.2	<0.05	0.7	5.05	32.7	<0.02	<1	0.4	15.9	3.50	11.83	1.76	0.39	1.37	0.14	0.95	0.18	0.50
HMC-1006	Stream	1.07	11.7	0.2	<0.05	0.9	4.49	31.3	<0.02	<1	0.4	19.0	3.45	12.74	1.95	0.38	1.39	0.15	0.94	0.16	0.39
HMC-1007	Rock Pulp	0.24	1.6	0.5	<0.05	5.0	5.95	9.0	0.06	15	0.3	4.2	1.23	5.19	1.29	0.38	1.27	0.19	1.28	0.23	0.66
HMC-1008	Stream	0.59	3.4	0.2	<0.05	0.9	2.85	18.7	<0.02	<1	0.2	7.1	2.16	7.71	1.21	0.27	0.81	0.11	0.56	0.10	0.27
HMC-1009	Stream	1.30	18.0	0.6	<0.05	0.8	8.09	37.8	0.02	<1	0.5	21.5	4.34	15.80	2.69	0.60	2.06	0.29	1.53	0.29	0.77
HMC-1010	Moss	2.85	19.5	0.5	<0.05	1.0	17.30	97.0	<0.02	<1	0.4	12.7	11.11	39.59	7.37	0.55	5.63	0.77	3.85	0.65	1.61
HMC-1011	Stream	2.44	28.6	0.5	<0.05	0.9	9.79	45.5	<0.02	<1	0.5	19.7	5.58	20.25	3.57	0.51	2.71	0.37	1.91	0.35	0.90
HMC-1012	Stream	1.68	23.8	0.4	<0.05	1.7	9.35	56.0	<0.02	<1	0.2	14.0	6.35	24.90	3.87	0.50	3.05	0.35	1.78	0.32	0.77
HMC-1013	Stream	0.78	11.9	0.2	<0.05	0.8	5.91	27.9	<0.02	<1	0.3	25.4	3.03	10.56	1.88	0.41	1.73	0.18	1.09	0.18	0.57
HMC-1014	Stream	0.52	14.9	0.3	<0.05	0.6	7.00	27.8	<0.02	<1	0.2	15.9	3.48	12.78	2.30	0.47	1.77	0.23	1.36	0.24	0.67
HMC-1015	Stream	0.78	11.9	0.2	<0.05	0.9	8.66	39.0	<0.02	<1	0.6	11.3	4.70	18.56	3.13	0.65	2.52	0.32	1.76	0.31	0.86
HMC-1016	Moss	1.54	13.6	0.4	<0.05	4.4	11.27	38.2	0.03	<1	0.5	14.1	4.80	18.22	3.34	0.60	2.75	0.37	2.19	0.39	1.02
HMC-1017A	Stream	0.59	15.1	0.3	<0.05	0.6	6.82	33.7	<0.02	<1	0.2	15.7	4.01	14.06	2.38	0.49	1.88	0.23	1.25	0.22	0.65
HMC-1017B	Stream	0.43	19.8	0.3	<0.05	0.7	6.28	38.9	<0.02	<1	0.5	23.6	4.28	14.74	2.41	0.51	1.84	0.23	1.26	0.21	0.64
HMC-1018	Stream	0.44	8.2	0.2	<0.05	1.0	8.59	19.3	<0.02	<1	0.4	16.1	2.63	10.10	2.07	0.50	1.92	0.25	1.51	0.30	0.80
HMC-1019	Stream	1.19	11.0	0.6	<0.05	0.5	7.12	43.5	0.02	<1	0.6	22.2	5.30	18.45	3.03	0.56	1.95	0.26	1.48	0.24	0.66
HMC-1020	Stream	1.24	8.3	0.4	<0.05	0.4	9.80	76.9	<0.02	<1	0.6	14.8	9.75	33.42	5.42	0.66	3.31	0.43	2.17	0.34	0.85
HMC-1021 DUP of HMC-1037B	Pulp DUP	3.28	12.6	0.2	<0.05	1.5	7.75	52.0	0.02	<1	1.8	15.3	6.31	21.70	2.89	0.54	2.06	0.25	1.37	0.27	0.71
HMC-1022	Stream	0.96	8.3	0.5	<0.05	1.3	9.48	63.5	<0.02	<1	0.6	15.2	8.20	30.11	5.05	0.67	3.45	0.36	2.06	0.33	0.88
HMC-1023	Stream	1.24	12.7	0.3	<0.05	0.5	11.87	55.0	<0.02	<1	1.0	18.7	9.38	32.15	5.52	0.84	4.19	0.44	2.30	0.38	1.03
HMC-1024	Moss	2.12	8.0	0.5	<0.05	0.8	9.04	64.1	<0.02	<1	0.5	16.0	8.32	28.87	4.27	0.67	2.91	0.31	1.87	0.31	0.75
HMC-1025	Stream	2.60	8.4	0.2	<0.05	2.4	9.80	109.2	<0.02	<1	0.6	6.4	11.82	40.81	5.25	0.80	3.65	0.37	1.88	0.31	0.95
HMC-1026	Stream	2.43	17.8	0.3	<0.05	2.2	10.36	68.7	0.02	<1	0.9	16.9	8.57	31.21	4.83	0.83	3.37	0.38	2.02	0.37	0.88
HMC-1027	Stream	5.58	13.8	0.4	<0.05	1.4	10.41	95.4	0.04	<1	1.6	14.4	11.48	37.32	5.34	0.98	3.44	0.41	2.12	0.34	0.89
HMC-1028	Stream	1.24	12.1	0.3	<0.05	1.3	10.00	76.5	0.02	<1	0.3	10.9	8.50	30.35	4.64	0.66	3.09	0.38	2.00	0.33	0.96
HMC-1029	Stream	0.92	14.2	0.1	<0.05	1.5	11.15	84.1	<0.02	<1	0.1	7.7	10.36	40.23	6.43	0.97	4.65	0.52	2.44	0.39	1.08



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3890 Trailhead Drive

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Method Analyte Unit MDL		AQ250	AQ250	AQ250	AQ250	AQ250	TG001
		Tm	Yb	Lu	Pd	Pt	LOI
		ppm	ppm	ppm	ppb	ppb	%
		0.02	0.02	0.02	10	2	-5.11
HMC-1001 DUP of HMC-1017B	Pulp DUP	0.10	0.62	0.09	<10	<2	3.6
HMC-1002	Stream	0.14	0.90	0.12	<10	<2	3.8
HMC-1003	Stream	0.13	0.84	0.10	<10	<2	5.0
HMC-1004	Stream	0.18	1.14	0.15	<10	<2	5.9
HMC-1005	Stream	0.07	0.51	0.08	<10	<2	3.7
HMC-1006	Stream	0.06	0.42	0.06	<10	<2	5.5
HMC-1007	Rock Pulp	0.10	0.57	0.08	<10	<2	5.5
HMC-1008	Stream	0.04	0.22	0.03	<10	<2	1.1
HMC-1009	Stream	0.11	0.67	0.10	<10	<2	5.1
HMC-1010	Moss	0.20	1.14	0.16	<10	<2	6.5
HMC-1011	Stream	0.12	0.70	0.10	<10	<2	7.6
HMC-1012	Stream	0.10	0.71	0.09	<10	<2	3.6
HMC-1013	Stream	0.09	0.48	0.07	<10	<2	4.8
HMC-1014	Stream	0.10	0.73	0.10	<10	<2	4.2
HMC-1015	Stream	0.11	0.73	0.10	<10	<2	8.0
HMC-1016	Moss	0.16	0.94	0.14	<10	<2	7.9
HMC-1017A	Stream	0.10	0.64	0.09	<10	<2	3.9
HMC-1017B	Stream	0.09	0.63	0.09	<10	<2	3.8
HMC-1018	Stream	0.11	0.73	0.11	<10	<2	5.3
HMC-1019	Stream	0.10	0.59	0.08	<10	<2	3.7
HMC-1020	Stream	0.12	0.82	0.10	<10	<2	5.7
HMC-1021 DUP of HMC-1037B	Pulp DUP	0.10	0.70	0.10	<10	<2	4.7
HMC-1022	Stream	0.13	0.77	0.10	<10	<2	6.2
HMC-1023	Stream	0.14	0.89	0.12	<10	<2	6.1
HMC-1024	Moss	0.10	0.71	0.11	<10	<2	4.5
HMC-1025	Stream	0.11	0.81	0.11	<10	<2	2.3
HMC-1026	Stream	0.13	0.86	0.11	<10	<2	5.5
HMC-1027	Stream	0.13	0.82	0.13	<10	<2	9.0
HMC-1028	Stream	0.13	0.79	0.12	<10	<2	3.3
HMC-1029	Stream	0.13	0.75	0.10	<10	<2	1.5



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CERTIFICATE OF ANALYSIS

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	Method Analyte Unit MDL	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca
		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%
		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	1	0.01
HMC-1030	Stream	0.90	13.53	12.18	42.6	97	19.9	7.6	483	3.29	1.4	8.6	0.6	5.8	68.9	0.13	0.10	0.15	88	0.66
HMC-1031	Stream	1.09	10.55	7.09	47.8	55	47.6	9.2	514	2.35	0.8	13.0	<0.2	4.0	73.9	0.12	0.07	0.12	54	0.62
HMC-1032	Stream	5.38	20.48	43.84	156.0	235	21.6	8.6	773	4.50	1.7	19.4	0.3	46.5	116.4	0.69	0.18	0.33	83	0.88
HMC-1033	Rock Pulp	14.12	162.78	7.10	45.6	81	13.2	11.3	404	4.33	5.9	0.4	35.7	1.3	52.3	0.23	0.20	0.50	93	0.71
HMC-1034	Moss	1.70	15.24	17.89	86.9	112	28.0	9.7	777	4.97	1.2	6.5	<0.2	27.1	133.3	0.49	0.11	0.17	102	1.05
HMC-1035	Stream	1.10	12.13	14.91	52.8	67	11.7	6.6	444	3.92	1.0	11.8	<0.2	12.7	80.8	0.21	0.15	0.14	85	0.83
HMC-1036	Stream	1.50	13.36	21.52	74.4	146	10.0	6.1	421	3.71	0.7	21.3	3.2	14.8	85.8	0.27	0.13	0.38	77	0.58
HMC-1037A	Stream	1.21	10.33	12.61	56.9	76	9.9	7.4	548	3.71	1.1	7.6	1.0	18.4	46.4	0.32	0.17	0.15	82	0.55
HMC-1037B	Stream	1.24	11.91	13.98	56.9	70	9.6	8.4	558	4.01	1.4	9.9	<0.2	35.0	51.6	0.32	0.16	0.15	90	0.55
HMC-1038	Stream	1.30	25.92	4.89	52.3	60	18.0	9.0	276	2.43	10.9	1.4	<0.2	3.1	45.6	0.19	0.07	9.88	60	0.60
HMC-1039	Stream	2.37	17.70	7.10	55.1	48	22.5	8.5	415	2.62	0.8	9.5	0.3	3.7	35.3	0.17	0.09	0.24	61	0.42
HMC-1040	Moss	0.37	11.03	4.64	39.8	19	7.5	6.3	250	4.54	0.6	2.1	<0.2	17.4	19.7	0.10	0.10	0.07	88	0.64
HMC-1041 DUP of HMC-1055B	Pulp DUP	0.43	6.68	3.36	23.3	13	5.9	4.3	290	1.44	0.5	3.4	<0.2	11.3	42.9	0.05	0.05	0.08	27	0.32
HMC-1042	Stream	1.79	20.80	11.45	66.5	109	47.6	12.2	442	3.68	0.9	37.7	0.5	7.0	101.8	0.26	0.18	0.21	112	0.78
HMC-1043	Stream	0.90	9.83	8.57	55.4	36	30.6	8.6	337	3.56	0.3	16.8	<0.2	12.5	62.0	0.14	0.08	0.17	96	0.55
HMC-1044	Rock Pulp	13.45	159.27	6.84	50.1	105	13.0	11.5	407	4.14	5.7	0.4	208.8	1.0	49.5	0.22	0.21	0.49	90	0.67
HMC-1045	Moss	0.80	6.50	6.64	52.6	33	16.3	5.3	336	1.91	0.6	19.5	0.4	7.3	46.6	0.19	0.09	0.10	38	0.49
HMC-1046	Stream	0.86	3.73	4.61	19.4	18	4.9	2.5	179	1.62	0.5	5.1	<0.2	11.8	55.4	0.05	0.04	0.06	38	0.46
HMC-1047	Stream	1.12	4.80	8.25	35.0	32	5.1	3.6	224	3.14	0.7	6.0	<0.2	26.2	46.8	0.06	0.05	0.12	73	0.51
HMC-1048	Stream	1.24	12.95	5.85	30.4	57	11.0	4.8	189	2.15	1.4	5.6	<0.2	7.2	63.7	0.11	0.08	0.07	50	0.50
HMC-1049	Stream	0.87	26.46	7.51	33.0	213	8.6	4.6	473	1.77	1.4	7.8	<0.2	2.3	65.9	0.18	0.13	0.10	35	0.78
HMC-1050	Stream	0.65	5.33	5.11	22.2	21	5.9	3.1	166	1.74	0.6	5.3	<0.2	15.7	51.2	0.04	0.03	0.06	41	0.55
HMC-1051	Stream	0.41	9.08	1.35	25.9	33	11.9	4.6	185	1.72	0.4	1.7	<0.2	5.3	21.5	0.05	0.03	<0.02	37	0.54
HMC-1052	Stream	0.66	8.46	2.64	42.9	32	13.8	8.7	409	2.35	0.7	1.0	<0.2	3.5	42.1	0.09	0.03	0.03	45	0.56
HMC-1053	Stream	0.60	11.09	6.84	46.0	70	16.8	6.0	496	1.72	1.6	1.7	<0.2	3.6	98.5	0.15	0.09	0.09	36	0.64
HMC-1054	Stream	0.22	1.55	2.51	12.6	4	3.3	1.8	107	1.51	0.2	1.9	<0.2	14.4	20.9	0.02	0.03	0.02	31	0.26
HMC-1055A	Stream	0.32	4.95	3.09	19.0	12	4.9	3.4	256	1.47	0.4	3.2	<0.2	13.6	33.1	0.04	0.04	0.04	29	0.31
HMC-1055B	Stream	0.41	6.05	3.59	24.4	10	6.2	4.4	285	1.42	0.6	3.1	<0.2	9.5	38.4	0.05	0.06	0.09	27	0.31
HMC-1056	Stream	1.59	7.09	4.52	37.6	42	17.1	5.9	287	1.92	0.8	2.9	<0.2	5.8	40.4	0.07	0.06	0.07	39	0.38
HMC-1057	Stream	0.50	17.03	7.48	52.1	91	20.3	9.4	347	2.42	2.0	1.6	<0.2	3.5	49.4	0.13	0.09	0.10	67	0.60



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	Method Analyte Unit MDL	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Ti	S	Hg	Se	Te	Ga	Cs	Ge
		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm
		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1
HMC-1030	Stream	62.5	75.2	0.48	168.9	0.087	<20	1.06	0.014	0.12	0.2	2.7	0.10	<0.02	29	0.3	0.03	4.8	1.47	0.1
HMC-1031	Stream	31.0	65.8	0.73	109.5	0.110	<20	1.36	0.015	0.13	0.2	2.7	0.13	<0.02	21	0.3	<0.02	5.3	2.60	<0.1
HMC-1032	Stream	144.0	55.0	0.50	268.6	0.077	<20	1.05	0.012	0.16	7.6	2.7	0.16	0.04	39	0.4	0.03	4.8	1.75	0.1
HMC-1033	Rock Pulp	4.6	20.2	0.70	56.5	0.137	<20	2.01	0.021	0.04	<0.1	5.3	0.03	0.62	25	3.0	0.49	5.9	0.35	<0.1
HMC-1034	Moss	97.3	80.5	0.55	305.9	0.105	<20	0.82	0.012	0.14	0.7	2.0	0.13	0.03	24	0.4	<0.02	5.3	2.00	0.2
HMC-1035	Stream	104.4	42.5	0.37	84.4	0.093	<20	0.75	0.025	0.07	0.6	2.0	0.06	<0.02	23	0.5	<0.02	4.9	0.92	0.2
HMC-1036	Stream	60.8	33.7	0.33	80.5	0.078	<20	0.76	0.012	0.06	2.1	1.8	0.08	0.02	29	0.3	<0.02	4.2	1.21	0.2
HMC-1037A	Stream	39.8	33.6	0.47	75.9	0.069	<20	0.78	0.010	0.09	0.6	1.7	0.09	<0.02	11	0.3	<0.02	4.1	1.36	0.1
HMC-1037B	Stream	39.6	36.9	0.49	79.2	0.078	<20	0.83	0.010	0.09	0.8	1.9	0.09	<0.02	18	0.4	<0.02	4.5	1.46	0.1
HMC-1038	Stream	11.7	33.0	0.70	142.1	0.105	<20	1.11	0.018	0.19	5.1	2.9	0.12	0.02	6	0.4	0.06	4.1	1.89	<0.1
HMC-1039	Stream	19.4	38.5	0.61	115.8	0.091	<20	1.18	0.012	0.12	0.8	2.3	0.12	<0.02	22	0.3	<0.02	4.8	1.89	<0.1
HMC-1040	Moss	47.4	17.1	0.35	100.6	0.104	<20	0.72	0.011	0.28	3.4	2.6	0.16	0.02	6	0.2	<0.02	6.9	0.99	0.1
HMC-1041 DUP of HMC-1055B	Pulp DUP	29.9	8.4	0.29	52.2	0.056	<20	0.57	0.012	0.06	<0.1	1.5	0.06	<0.02	<5	0.3	<0.02	3.0	0.55	<0.1
HMC-1042	Stream	33.6	75.8	0.78	144.4	0.093	<20	1.01	0.012	0.13	0.6	2.4	0.12	0.05	37	0.7	0.04	5.1	1.72	<0.1
HMC-1043	Stream	28.9	52.1	0.54	94.4	0.068	<20	0.60	0.010	0.10	0.4	1.4	0.07	0.02	7	0.3	0.03	4.5	1.04	<0.1
HMC-1044	Rock Pulp	4.6	21.2	0.68	50.0	0.135	<20	1.96	0.021	0.04	<0.1	5.5	0.03	0.53	19	3.0	0.53	5.7	0.38	<0.1
HMC-1045	Moss	26.8	28.7	0.44	72.7	0.075	<20	0.76	0.014	0.11	2.2	1.8	0.13	<0.02	9	0.4	<0.02	4.4	1.66	<0.1
HMC-1046	Stream	53.4	12.9	0.18	46.7	0.062	<20	0.56	0.009	0.05	0.1	1.3	0.05	<0.02	9	0.2	<0.02	3.3	0.72	0.1
HMC-1047	Stream	65.8	19.7	0.25	35.9	0.080	<20	0.68	0.010	0.05	0.3	1.7	0.04	<0.02	9	0.2	<0.02	4.7	0.70	0.1
HMC-1048	Stream	46.5	20.6	0.26	159.0	0.055	<20	0.85	0.009	0.08	<0.1	2.2	0.08	<0.02	10	0.3	<0.02	3.6	0.75	<0.1
HMC-1049	Stream	44.3	16.3	0.32	153.3	0.051	<20	1.43	0.015	0.08	0.1	3.0	0.09	0.05	40	0.7	<0.02	4.8	1.33	<0.1
HMC-1050	Stream	56.0	17.2	0.21	56.8	0.061	<20	0.57	0.008	0.06	0.1	1.4	0.05	<0.02	<5	<0.1	<0.02	3.3	0.62	0.1
HMC-1051	Stream	20.1	15.7	0.35	45.4	0.105	<20	0.54	0.016	0.08	<0.1	1.7	0.05	<0.02	<5	0.1	<0.02	2.6	0.35	<0.1
HMC-1052	Stream	15.3	21.1	0.45	65.5	0.202	<20	0.80	0.019	0.07	<0.1	2.5	0.05	<0.02	6	0.2	<0.02	3.8	0.43	<0.1
HMC-1053	Stream	17.1	25.3	0.47	119.0	0.081	<20	0.91	0.028	0.11	0.1	2.7	0.10	<0.02	16	0.5	<0.02	3.6	1.38	<0.1
HMC-1054	Stream	46.3	9.6	0.12	24.3	0.049	<20	0.28	0.007	0.03	<0.1	0.9	0.03	<0.02	<5	<0.1	<0.02	3.1	0.32	<0.1
HMC-1055A	Stream	40.2	8.8	0.21	41.1	0.051	<20	0.48	0.009	0.05	<0.1	1.3	0.05	<0.02	10	0.1	<0.02	3.0	0.47	<0.1
HMC-1055B	Stream	32.1	8.3	0.30	53.8	0.057	<20	0.58	0.013	0.07	<0.1	1.6	0.06	<0.02	12	<0.1	<0.02	3.0	0.54	<0.1
HMC-1056	Stream	18.9	20.1	0.42	78.6	0.120	<20	0.68	0.020	0.07	<0.1	2.1	0.06	<0.02	<5	<0.1	<0.02	3.4	0.69	<0.1
HMC-1057	Stream	15.6	25.8	0.71	101.1	0.067	<20	1.21	0.025	0.15	<0.1	3.3	0.10	<0.02	12	0.3	<0.02	4.4	1.14	<0.1



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Method Analyte Unit MDL		AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
HMC-1030	Stream	2.26	17.2	0.3	<0.05	1.6	14.05	93.6	<0.02	<1	0.7	16.1	13.48	46.41	7.73	1.26	4.77	0.58	3.13	0.49	1.25
HMC-1031	Stream	2.24	21.4	0.5	<0.05	1.1	10.44	45.2	<0.02	1	0.7	28.6	6.67	24.28	4.11	0.86	3.05	0.34	1.81	0.31	0.90
HMC-1032	Stream	5.06	24.7	0.5	<0.05	1.8	19.83	185.3	0.03	<1	1.8	14.7	23.69	77.79	10.84	1.95	7.02	0.76	3.89	0.65	1.76
HMC-1033	Rock Pulp	0.25	1.7	0.7	<0.05	4.9	5.72	9.3	0.07	16	0.1	3.9	1.29	5.28	1.36	0.39	1.24	0.18	1.18	0.21	0.62
HMC-1034	Moss	4.25	21.9	0.3	<0.05	2.5	12.02	134.4	0.02	<1	0.8	15.1	15.04	49.30	6.46	1.17	3.89	0.47	2.44	0.38	1.02
HMC-1035	Stream	3.83	10.2	0.3	<0.05	4.4	12.22	148.9	0.03	<1	0.8	12.2	16.26	54.13	7.08	1.44	4.18	0.50	2.37	0.40	1.14
HMC-1036	Stream	4.42	9.8	0.3	<0.05	1.9	10.52	79.3	0.04	<1	1.0	11.5	10.34	33.55	4.61	0.93	3.65	0.39	2.00	0.33	0.94
HMC-1037A	Stream	2.42	10.9	0.2	<0.05	1.1	7.18	54.5	0.02	<1	1.8	13.7	6.08	19.97	2.94	0.50	2.01	0.24	1.37	0.24	0.65
HMC-1037B	Stream	3.21	12.0	0.2	<0.05	1.4	7.64	55.8	<0.02	<1	1.6	15.0	6.96	21.89	2.89	0.53	2.49	0.26	1.46	0.25	0.74
HMC-1038	Stream	0.60	15.0	0.1	<0.05	1.3	4.19	22.6	<0.02	1	0.4	14.3	2.54	8.67	1.47	0.29	1.13	0.13	0.87	0.14	0.37
HMC-1039	Stream	1.52	16.6	0.3	<0.05	1.2	6.57	29.2	0.02	<1	0.7	24.7	4.14	14.34	2.45	0.49	2.14	0.25	1.27	0.23	0.65
HMC-1040	Moss	1.73	29.1	0.9	<0.05	0.4	16.28	90.3	0.02	<1	0.2	7.8	10.51	38.31	7.28	0.70	6.24	0.76	3.84	0.65	1.66
HMC-1041 DUP of HMC-1055B	Pulp DUP	1.22	8.5	0.4	<0.05	1.2	7.61	52.6	<0.02	<1	0.2	8.8	6.30	21.31	3.43	0.41	2.80	0.31	1.55	0.24	0.76
HMC-1042	Stream	2.13	15.7	0.4	<0.05	0.9	10.92	49.2	0.03	<1	0.8	16.2	6.93	25.11	4.13	0.75	2.99	0.40	2.11	0.38	1.01
HMC-1043	Stream	1.36	11.6	0.4	<0.05	0.9	6.63	50.3	<0.02	<1	0.5	12.2	5.56	19.19	2.94	0.50	1.92	0.26	1.31	0.24	0.63
HMC-1044	Rock Pulp	0.24	1.6	0.7	<0.05	4.8	5.70	8.7	0.07	12	0.2	4.0	1.16	4.96	1.20	0.36	1.20	0.19	1.16	0.23	0.63
HMC-1045	Moss	1.70	15.9	0.8	<0.05	0.6	7.81	44.6	<0.02	<1	0.4	22.8	5.13	17.95	2.95	0.45	2.18	0.30	1.57	0.27	0.71
HMC-1046	Stream	1.68	7.8	0.4	<0.05	0.9	9.32	92.4	<0.02	<1	0.3	10.0	11.51	43.36	6.62	0.68	3.96	0.41	2.07	0.31	0.74
HMC-1047	Stream	2.14	6.4	0.5	<0.05	1.8	9.98	117.8	<0.02	<1	0.6	11.7	13.65	44.41	5.79	0.64	3.91	0.43	2.13	0.33	0.94
HMC-1048	Stream	0.92	11.5	0.2	<0.05	1.1	10.53	63.7	<0.02	<1	0.6	9.6	10.88	39.98	6.40	1.15	4.13	0.43	2.32	0.36	1.03
HMC-1049	Stream	1.08	12.8	0.2	<0.05	2.7	20.65	35.9	<0.02	1	0.7	18.1	10.63	38.59	6.49	1.51	5.38	0.56	3.05	0.56	1.70
HMC-1050	Stream	1.44	8.0	0.2	<0.05	1.0	9.89	99.5	<0.02	<1	0.4	9.3	12.36	41.15	6.11	0.74	3.49	0.40	2.09	0.35	0.93
HMC-1051	Stream	0.97	7.4	0.1	<0.05	1.9	7.16	35.2	<0.02	<1	<0.1	5.0	4.11	14.02	2.38	0.29	2.22	0.28	1.52	0.25	0.69
HMC-1052	Stream	1.24	6.9	0.3	<0.05	5.9	8.22	27.3	<0.02	<1	<0.1	7.8	3.33	12.58	2.37	0.41	2.30	0.26	1.60	0.28	0.80
HMC-1053	Stream	1.02	12.6	0.4	<0.05	3.6	10.80	31.7	<0.02	<1	0.5	14.2	4.09	15.53	2.88	0.46	2.81	0.37	1.92	0.35	1.02
HMC-1054	Stream	1.20	5.3	0.4	<0.05	1.4	9.53	86.1	<0.02	<1	<0.1	4.9	9.13	31.31	4.70	0.44	3.42	0.39	2.01	0.32	0.87
HMC-1055A	Stream	1.11	6.7	0.4	<0.05	1.1	8.53	71.8	<0.02	<1	0.2	7.5	8.13	29.86	4.53	0.47	2.92	0.34	1.83	0.31	0.76
HMC-1055B	Stream	1.06	8.8	0.3	<0.05	1.2	7.36	55.1	<0.02	<1	0.2	10.2	6.31	21.89	3.56	0.46	2.63	0.27	1.51	0.26	0.70
HMC-1056	Stream	0.90	7.8	0.3	<0.05	3.6	7.90	35.3	<0.02	<1	0.4	10.6	4.12	15.09	2.78	0.42	2.24	0.28	1.46	0.27	0.74
HMC-1057	Stream	0.43	12.9	0.2	<0.05	2.6	7.60	25.1	<0.02	<1	0.3	12.2	3.70	13.64	2.34	0.42	2.14	0.26	1.46	0.25	0.71



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Method Analyte Unit MDL		AQ250	AQ250	AQ250	AQ250	AQ250	TG001
		Tm	Yb	Lu	Pd	Pt	LOI
		ppm	ppm	ppm	ppb	ppb	%
		0.02	0.02	0.02	10	2	-5.11
HMC-1030	Stream	0.18	1.06	0.16	<10	<2	6.8
HMC-1031	Stream	0.13	0.85	0.11	<10	<2	6.4
HMC-1032	Stream	0.24	1.52	0.21	<10	<2	11.0
HMC-1033	Rock Pulp	0.08	0.57	0.07	<10	<2	5.4
HMC-1034	Moss	0.15	0.84	0.13	<10	<2	7.3
HMC-1035	Stream	0.15	0.93	0.13	<10	<2	5.8
HMC-1036	Stream	0.14	0.85	0.12	<10	<2	6.7
HMC-1037A	Stream	0.09	0.61	0.09	<10	<2	4.9
HMC-1037B	Stream	0.10	0.72	0.10	<10	<2	4.8
HMC-1038	Stream	0.05	0.40	0.05	<10	<2	2.8
HMC-1039	Stream	0.08	0.56	0.08	<10	<2	6.0
HMC-1040	Moss	0.20	1.24	0.17	<10	<2	2.5
HMC-1041 DUP of HMC-1055B	Pulp DUP	0.10	0.64	0.09	<10	<2	3.2
HMC-1042	Stream	0.14	0.84	0.12	<10	<2	11.0
HMC-1043	Stream	0.08	0.53	0.08	<10	<2	4.2
HMC-1044	Rock Pulp	0.09	0.54	0.07	<10	<2	5.3
HMC-1045	Moss	0.09	0.56	0.08	<10	<2	5.9
HMC-1046	Stream	0.11	0.73	0.08	<10	<2	2.8
HMC-1047	Stream	0.12	0.81	0.11	<10	<2	3.0
HMC-1048	Stream	0.13	0.88	0.11	<10	<2	4.6
HMC-1049	Stream	0.21	1.51	0.24	<10	<2	13.8
HMC-1050	Stream	0.13	0.72	0.10	<10	<2	2.9
HMC-1051	Stream	0.09	0.65	0.07	<10	<2	1.9
HMC-1052	Stream	0.12	0.65	0.11	<10	<2	3.9
HMC-1053	Stream	0.14	1.00	0.14	<10	<2	6.1
HMC-1054	Stream	0.13	0.75	0.10	<10	<2	1.2
HMC-1055A	Stream	0.11	0.67	0.09	<10	<2	2.6
HMC-1055B	Stream	0.09	0.64	0.08	<10	<2	3.0
HMC-1056	Stream	0.11	0.63	0.09	<10	<2	2.3
HMC-1057	Stream	0.10	0.71	0.11	<10	<2	4.7



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Method Analyte Unit MDL		AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	1	0.01	0.001
HMC-1058	Stream	1.22	9.70	6.62	45.9	67	9.1	5.8	363	1.78	1.2	6.4	0.9	3.1	25.4	0.05	0.06	0.14	38	0.38	0.074
HMC-1059	Stream	1.17	15.42	4.59	35.4	83	7.3	4.5	282	1.72	5.1	1.9	0.2	2.7	33.9	0.11	0.12	0.10	36	0.50	0.067
HMC-1060	Stream	1.25	18.71	2.90	35.9	44	8.4	5.4	284	1.49	0.8	3.7	<0.2	6.9	30.5	0.08	0.05	0.24	31	0.47	0.084
HMC-1061 DUP of HMC-1080B	Pulp DUP	0.65	11.93	8.26	42.9	41	12.1	7.5	295	4.27	1.1	8.0	<0.2	28.0	100.6	0.07	0.07	0.09	113	0.74	0.215
HMC-1062	Stream	0.86	9.64	8.54	46.0	115	9.8	6.6	494	2.25	2.3	2.6	<0.2	6.1	23.6	0.19	0.09	0.17	39	0.49	0.141
HMC-1063	Stream	0.39	11.36	4.76	38.9	69	6.5	6.1	227	1.88	2.5	1.3	<0.2	4.0	18.2	0.12	0.09	0.10	37	0.38	0.104
HMC-1064	Stream	0.60	6.45	3.80	51.0	29	8.3	5.0	405	2.49	1.9	1.0	<0.2	4.5	21.9	0.11	0.08	0.07	44	0.35	0.090
HMC-1065	Stream	0.74	5.17	3.74	39.3	35	5.9	4.4	409	2.65	0.5	2.8	<0.2	4.8	21.0	0.09	0.05	0.05	52	0.44	0.147
HMC-1066	Stream	0.48	4.34	4.23	31.1	21	7.9	4.0	350	2.16	0.3	2.2	<0.2	8.4	29.6	0.06	0.04	0.04	46	0.47	0.151
HMC-1067	Stream	0.75	5.03	3.49	31.5	24	6.1	3.4	207	1.90	0.5	8.2	<0.2	5.0	27.5	0.08	0.05	0.07	42	0.35	0.106
HMC-1068	Stream	0.50	8.35	4.17	29.0	11	15.3	5.3	229	2.21	0.4	2.7	<0.2	9.8	50.2	0.06	0.04	0.04	54	0.57	0.228
HMC-1069	Stream	0.82	6.85	3.54	29.5	14	28.9	7.0	244	2.32	0.6	2.9	<0.2	14.9	50.2	0.06	0.04	0.03	58	0.52	0.167
HMC-1070	Stream	0.58	11.62	5.67	46.1	61	9.3	5.7	337	2.67	1.7	2.8	2.9	5.8	24.0	0.14	0.10	0.12	63	0.43	0.123
HMC-1071	Moss	0.61	6.05	4.69	45.6	53	8.6	6.8	348	6.60	1.7	11.7	1.5	9.7	22.6	0.12	0.09	0.21	151	0.56	0.193
HMC-1072	Stream	2.09	18.05	7.85	65.0	48	7.7	7.5	1137	2.67	1.3	4.2	1.7	6.2	91.5	0.09	0.13	0.22	60	0.53	0.094
HMC-1073	Stream	0.72	11.29	4.44	40.1	25	40.4	7.2	221	2.28	0.5	2.8	0.5	14.2	138.9	0.05	0.08	0.05	57	1.21	0.510
HMC-1074	Rock Pulp	1.10	37.58	36.40	168.8	335	21.7	15.0	3653	3.36	21.4	7.2	8.5	0.7	31.1	1.13	2.17	0.51	49	1.63	0.160
HMC-1075	Stream	1.18	11.24	4.53	41.9	21	51.5	11.0	420	3.02	0.7	3.6	0.7	11.6	64.6	0.09	0.08	0.06	72	0.87	0.354
HMC-1076	Stream	1.07	21.16	12.48	60.2	147	20.6	8.0	1075	2.83	2.1	4.2	5.5	4.0	207.0	0.15	0.17	0.14	54	0.96	0.140
HMC-1077	Stream	2.36	62.22	14.81	143.8	302	17.9	12.7	823	3.05	55.9	1.2	4.8	3.1	68.7	1.37	1.27	0.28	64	0.91	0.090
HMC-1078	Stream	0.41	5.05	4.37	27.2	33	8.1	3.5	172	2.48	0.6	8.0	<0.2	8.0	42.2	0.06	0.06	0.04	67	0.37	0.108
HMC-1079	Stream	0.70	16.39	11.59	81.7	126	12.5	6.8	375	4.17	4.4	14.0	0.8	31.6	151.0	0.19	0.16	0.17	118	0.73	0.187
HMC-1080A	Stream	0.63	13.24	8.34	44.3	51	12.7	7.6	279	3.95	1.2	7.1	<0.2	27.6	101.6	0.06	0.06	0.09	111	0.68	0.221
HMC-1080B	Stream	0.64	13.12	8.83	48.3	54	13.1	7.9	298	4.20	1.3	11.0	<0.2	23.9	106.1	0.07	0.08	0.43	115	0.71	0.250
HMC-1081 DUP of HMC-1087B	Pulp DUP	0.72	9.63	6.11	37.3	87	11.4	5.0	239	2.77	1.0	3.2	4.3	14.1	40.8	0.08	0.06	0.30	71	0.61	0.213
HMC-1082	Stream	0.30	5.24	4.38	24.4	20	7.9	3.4	153	1.34	0.7	6.9	0.4	8.9	71.2	0.04	0.07	0.04	30	0.44	0.093
HMC-1083	Stream	0.69	19.91	8.16	60.9	39	30.6	11.5	674	3.15	3.2	1.9	<0.2	5.9	82.1	0.09	0.18	0.07	88	1.00	0.130
HMC-1084	Stream	0.51	18.03	10.92	53.8	68	43.5	10.0	356	3.01	4.6	3.2	12.0	13.7	67.9	0.19	0.15	0.18	66	0.49	0.132
HMC-1085	Stream	0.73	13.00	4.86	42.4	23	73.3	12.6	343	3.96	0.7	2.7	<0.2	7.5	50.2	0.06	0.05	0.05	108	0.60	0.240
HMC-1086	Moss	1.24	16.99	6.91	42.2	58	47.9	10.8	561	5.27	1.0	8.2	0.3	15.0	69.5	0.10	0.09	0.08	173	0.99	0.343



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		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Ti	S	Hg	Se	Te	Ga	Cs	Ge
		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm
		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1
HMC-1058	Stream	18.7	17.7	0.47	78.5	0.052	<20	0.95	0.010	0.05	<0.1	3.5	0.07	<0.02	8	0.3	<0.02	3.9	0.85	<0.1
HMC-1059	Stream	15.0	12.6	0.34	50.4	0.048	<20	0.73	0.011	0.06	1.2	2.3	0.05	0.02	8	0.6	<0.02	3.1	0.83	<0.1
HMC-1060	Stream	13.8	13.0	0.38	51.7	0.059	<20	0.80	0.011	0.11	0.2	2.3	0.09	<0.02	16	0.4	0.03	3.0	1.17	<0.1
HMC-1061 DUP of HMC-1080B	Pulp DUP	56.6	53.8	0.48	89.0	0.103	<20	0.80	0.019	0.11	0.2	2.0	0.07	<0.02	<5	0.1	<0.02	4.6	1.16	0.1
HMC-1062	Stream	20.9	19.3	0.46	61.4	0.041	<20	0.75	0.009	0.09	0.1	2.7	0.08	0.05	12	0.3	0.02	3.3	1.05	<0.1
HMC-1063	Stream	15.0	14.7	0.41	41.6	0.040	<20	0.68	0.009	0.06	0.1	2.5	0.05	0.02	11	0.1	0.02	3.0	0.90	<0.1
HMC-1064	Stream	16.5	15.7	0.51	43.4	0.068	<20	0.77	0.009	0.08	<0.1	2.1	0.07	<0.02	<5	<0.1	<0.02	3.5	0.99	<0.1
HMC-1065	Stream	23.8	11.8	0.28	63.0	0.060	<20	0.69	0.009	0.08	<0.1	1.9	0.09	0.03	10	0.2	<0.02	3.9	0.86	<0.1
HMC-1066	Stream	29.5	16.2	0.29	42.5	0.065	<20	0.62	0.008	0.06	<0.1	1.7	0.07	<0.02	6	0.2	<0.02	3.7	0.71	0.1
HMC-1067	Stream	23.2	16.6	0.25	49.6	0.057	<20	0.70	0.011	0.09	1.0	1.3	0.09	0.03	14	0.1	<0.02	4.0	0.90	<0.1
HMC-1068	Stream	50.1	34.2	0.41	79.4	0.091	<20	0.79	0.011	0.14	1.2	1.4	0.11	<0.02	13	<0.1	<0.02	4.6	1.28	<0.1
HMC-1069	Stream	31.5	71.5	0.63	85.9	0.085	<20	0.76	0.013	0.11	0.2	1.2	0.09	<0.02	12	<0.1	<0.02	3.8	0.77	<0.1
HMC-1070	Stream	21.3	24.0	0.47	52.0	0.054	<20	0.83	0.012	0.08	0.2	2.5	0.08	<0.02	8	<0.1	<0.02	3.9	1.05	<0.1
HMC-1071	Moss	31.0	33.6	0.33	33.4	0.080	<20	0.62	0.010	0.06	1.1	1.9	0.05	0.03	<5	0.1	0.02	4.9	0.68	0.1
HMC-1072	Stream	22.1	14.3	0.60	85.4	0.067	<20	1.30	0.014	0.11	0.1	3.4	0.10	<0.02	10	0.2	0.03	5.9	1.86	<0.1
HMC-1073	Stream	97.1	42.1	0.68	221.7	0.125	<20	0.89	0.014	0.31	0.1	1.8	0.12	<0.02	12	0.2	<0.02	4.6	0.60	0.1
HMC-1074	Rock Pulp	23.9	30.0	0.80	287.7	0.035	<20	1.25	0.026	0.09	0.2	3.9	0.28	0.21	119	1.9	0.07	3.9	1.21	0.1
HMC-1075	Stream	57.7	83.4	0.83	109.4	0.082	<20	0.86	0.014	0.12	0.2	1.6	0.10	0.02	24	<0.1	<0.02	4.3	0.72	0.2
HMC-1076	Stream	55.3	32.6	0.61	240.5	0.059	<20	1.52	0.016	0.12	0.1	3.5	0.10	0.03	40	0.5	0.02	5.8	2.59	0.1
HMC-1077	Stream	23.3	22.2	0.66	82.9	0.060	<20	1.49	0.020	0.09	0.3	4.3	0.10	0.05	28	1.8	0.09	5.2	2.16	<0.1
HMC-1078	Stream	44.6	26.8	0.21	58.2	0.065	<20	0.67	0.009	0.06	0.1	1.6	0.07	<0.02	22	0.1	<0.02	4.5	0.86	<0.1
HMC-1079	Stream	66.7	58.1	0.39	98.1	0.107	<20	1.15	0.017	0.13	1.3	2.7	0.10	0.02	27	0.3	<0.02	6.2	1.10	0.1
HMC-1080A	Stream	56.2	51.9	0.47	85.4	0.101	<20	0.78	0.021	0.11	0.2	2.0	0.07	<0.02	8	0.1	<0.02	4.5	1.15	0.1
HMC-1080B	Stream	62.3	53.9	0.47	93.1	0.102	<20	0.79	0.020	0.12	0.3	2.0	0.08	<0.02	8	<0.1	<0.02	4.8	1.19	0.1
HMC-1081 DUP of HMC-1087B	Pulp DUP	45.9	43.1	0.37	64.9	0.062	<20	0.62	0.011	0.07	0.2	1.6	0.06	<0.02	9	<0.1	<0.02	3.6	0.87	0.1
HMC-1082	Stream	36.6	16.1	0.23	61.0	0.060	<20	0.83	0.010	0.07	0.1	1.5	0.07	0.02	19	0.4	<0.02	3.4	0.58	<0.1
HMC-1083	Stream	28.6	31.8	1.00	77.4	0.168	<20	1.29	0.019	0.12	0.3	5.0	0.07	0.02	8	0.2	<0.02	5.9	2.32	0.1
HMC-1084	Stream	37.5	76.4	0.76	74.0	0.069	<20	0.94	0.017	0.07	0.9	2.7	0.05	<0.02	10	0.2	0.03	4.1	1.05	0.1
HMC-1085	Stream	44.0	92.4	1.01	107.3	0.114	<20	0.70	0.010	0.18	0.2	1.9	0.09	<0.02	5	0.1	<0.02	4.7	1.06	0.1
HMC-1086	Moss	63.8	155.4	0.73	116.4	0.115	<20	0.84	0.011	0.14	0.2	2.3	0.13	0.02	20	0.2	<0.02	4.9	1.77	0.2



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	Method Analyte Unit MDL	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
HMC-1058	Stream	0.76	9.2	0.2	<0.05	1.7	10.66	26.7	0.02	<1	0.9	15.1	4.39	16.18	3.13	0.58	2.71	0.30	1.79	0.37	1.07
HMC-1059	Stream	0.86	6.8	<0.1	<0.05	1.1	6.91	22.2	<0.02	<1	0.3	10.0	3.05	11.36	2.04	0.37	1.71	0.19	1.16	0.22	0.66
HMC-1060	Stream	0.53	12.1	<0.1	<0.05	0.9	5.65	22.3	<0.02	<1	0.3	12.3	2.81	10.77	1.89	0.34	1.50	0.19	1.08	0.21	0.54
HMC-1061 DUP of HMC-1080B	Pulp DUP	1.64	11.5	0.3	<0.05	3.6	8.38	103.5	<0.02	<1	0.4	10.5	11.07	36.63	5.15	0.90	3.47	0.33	1.82	0.29	0.89
HMC-1062	Stream	0.44	10.8	0.2	<0.05	0.6	9.06	37.4	<0.02	<1	0.3	13.0	4.28	16.46	3.03	0.61	2.54	0.28	1.56	0.32	0.83
HMC-1063	Stream	0.38	7.7	0.2	<0.05	1.0	5.59	26.7	<0.02	<1	0.2	14.3	3.01	10.77	1.83	0.38	1.72	0.20	1.09	0.19	0.55
HMC-1064	Stream	0.33	10.3	0.2	<0.05	1.7	5.21	28.5	<0.02	<1	0.3	16.0	3.02	10.61	1.83	0.39	1.70	0.18	1.03	0.19	0.55
HMC-1065	Stream	0.99	12.1	0.3	<0.05	0.8	8.85	42.4	<0.02	<1	0.4	13.6	4.78	17.52	2.93	0.56	2.58	0.30	1.68	0.30	0.83
HMC-1066	Stream	1.10	10.6	0.3	<0.05	0.9	8.67	55.2	<0.02	<1	0.4	13.6	6.20	20.94	3.38	0.41	2.48	0.31	1.67	0.29	0.83
HMC-1067	Stream	2.12	12.1	0.5	<0.05	0.8	8.03	39.9	<0.02	<1	0.3	15.6	4.71	16.55	2.84	0.39	2.59	0.28	1.67	0.28	0.83
HMC-1068	Stream	1.99	18.9	0.4	<0.05	1.0	9.90	93.9	<0.02	<1	0.2	13.1	9.62	34.02	5.45	0.65	3.41	0.40	2.07	0.35	0.86
HMC-1069	Stream	1.42	12.7	0.2	<0.05	0.7	6.37	56.9	<0.02	<1	0.2	8.4	6.17	22.25	3.40	0.48	2.63	0.26	1.44	0.24	0.58
HMC-1070	Stream	0.64	10.2	0.4	<0.05	0.8	6.89	36.0	0.03	<1	0.2	16.8	4.05	14.51	2.48	0.45	1.87	0.24	1.33	0.26	0.72
HMC-1071	Moss	0.70	7.1	0.5	<0.05	1.7	9.33	51.9	<0.02	<1	0.2	11.0	5.46	19.98	3.39	0.55	2.65	0.31	1.87	0.30	0.93
HMC-1072	Stream	0.84	12.1	0.6	<0.05	1.9	8.30	43.3	0.02	<1	0.8	21.5	4.75	17.72	3.02	0.56	2.61	0.30	1.73	0.31	0.84
HMC-1073	Stream	0.87	21.0	0.3	<0.05	1.0	12.02	195.8	<0.02	<1	0.3	10.6	22.41	81.57	11.21	1.83	7.14	0.66	2.88	0.39	1.00
HMC-1074	Rock Pulp	0.65	8.7	1.8	<0.05	0.5	25.24	39.1	0.05	2	0.5	9.4	6.75	26.76	5.56	1.23	5.55	0.69	4.37	0.86	2.43
HMC-1075	Stream	1.56	12.8	0.5	<0.05	1.2	11.81	117.5	<0.02	<1	0.2	7.4	12.73	48.37	7.09	1.01	4.66	0.54	2.70	0.40	1.05
HMC-1076	Stream	1.38	14.9	0.5	<0.05	2.8	17.53	79.1	<0.02	<1	2.6	19.9	12.46	44.64	7.25	1.40	5.75	0.63	3.27	0.56	1.60
HMC-1077	Stream	1.58	10.1	0.4	<0.05	1.6	11.29	37.9	0.04	1	0.5	17.4	4.88	18.37	3.46	0.67	3.01	0.34	1.94	0.39	1.09
HMC-1078	Stream	1.28	8.3	0.5	<0.05	1.0	8.33	73.0	<0.02	<1	0.5	12.0	9.60	32.93	4.92	0.71	3.26	0.38	1.83	0.26	0.72
HMC-1079	Stream	1.82	10.3	0.5	<0.05	3.6	13.13	114.5	0.02	<1	0.6	15.4	14.35	50.62	7.77	1.27	5.00	0.53	2.59	0.39	1.04
HMC-1080A	Stream	1.57	12.0	0.4	<0.05	3.4	8.61	98.8	<0.02	<1	0.5	11.3	10.68	37.65	5.23	0.77	3.29	0.38	1.98	0.32	0.86
HMC-1080B	Stream	1.40	12.4	0.3	<0.05	3.7	9.23	111.5	<0.02	<1	0.3	11.4	11.64	40.81	5.26	0.92	3.84	0.39	2.13	0.31	0.90
HMC-1081 DUP of HMC-1087B	Pulp DUP	1.42	8.8	0.5	<0.05	1.3	8.74	77.1	<0.02	<1	0.4	12.3	8.61	29.53	4.52	0.74	3.29	0.36	1.89	0.30	0.81
HMC-1082	Stream	1.48	9.2	0.3	<0.05	1.4	7.92	59.8	<0.02	<1	0.5	12.2	8.17	28.97	4.96	0.81	3.45	0.35	1.68	0.26	0.72
HMC-1083	Stream	1.94	10.5	0.5	<0.05	7.4	9.72	48.2	<0.02	<1	0.7	15.4	6.07	22.16	3.65	0.66	2.66	0.33	1.93	0.34	0.93
HMC-1084	Stream	1.65	7.9	0.2	<0.05	2.2	5.03	59.8	<0.02	<1	0.4	11.5	7.10	25.19	3.33	0.63	2.23	0.21	1.15	0.17	0.48
HMC-1085	Stream	1.46	19.4	0.4	<0.05	1.8	9.99	85.1	<0.02	<1	0.4	11.3	9.13	35.33	5.41	0.73	3.96	0.44	2.31	0.37	0.93
HMC-1086	Moss	2.49	17.4	0.4	<0.05	2.1	15.55	110.5	<0.02	1	0.6	10.5	14.82	52.06	7.54	1.10	5.78	0.64	3.25	0.51	1.40



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		Method	AQ250	AQ250	AQ250	AQ250	AQ250	TG001
		Analyte	Tm	Yb	Lu	Pd	Pt	LOI
		Unit	ppm	ppm	ppm	ppb	ppb	%
		MDL	0.02	0.02	0.02	10	2	-5.11
HMC-1058	Stream		0.15	0.93	0.15	<10	<2	4.4
HMC-1059	Stream		0.09	0.64	0.09	<10	<2	4.3
HMC-1060	Stream		0.08	0.52	0.08	<10	<2	3.7
HMC-1061 DUP of HMC-1080B	Pulp DUP		0.11	0.71	0.10	<10	<2	2.5
HMC-1062	Stream		0.12	0.78	0.11	<10	<2	3.7
HMC-1063	Stream		0.08	0.49	0.08	<10	<2	2.2
HMC-1064	Stream		0.07	0.45	0.07	<10	<2	2.5
HMC-1065	Stream		0.10	0.74	0.12	<10	<2	4.0
HMC-1066	Stream		0.09	0.74	0.10	<10	<2	2.8
HMC-1067	Stream		0.11	0.65	0.10	<10	<2	7.2
HMC-1068	Stream		0.12	0.74	0.10	<10	<2	3.0
HMC-1069	Stream		0.07	0.53	0.07	<10	<2	3.9
HMC-1070	Stream		0.10	0.66	0.09	<10	<2	2.8
HMC-1071	Moss		0.13	0.84	0.13	<10	<2	2.1
HMC-1072	Stream		0.11	0.72	0.10	<10	<2	4.7
HMC-1073	Stream		0.14	0.85	0.10	<10	<2	3.9
HMC-1074	Rock Pulp		0.34	2.13	0.35	<10	<2	30.0
HMC-1075	Stream		0.15	0.88	0.12	<10	<2	7.2
HMC-1076	Stream		0.22	1.34	0.19	<10	2	15.8
HMC-1077	Stream		0.15	0.98	0.13	<10	<2	10.9
HMC-1078	Stream		0.10	0.60	0.08	<10	<2	5.6
HMC-1079	Stream		0.16	1.03	0.13	<10	<2	7.6
HMC-1080A	Stream		0.12	0.72	0.10	<10	<2	2.6
HMC-1080B	Stream		0.13	0.85	0.11	<10	<2	2.6
HMC-1081 DUP of HMC-1087B	Pulp DUP		0.10	0.75	0.09	<10	<2	2.5
HMC-1082	Stream		0.10	0.61	0.07	<10	<2	7.4
HMC-1083	Stream		0.14	0.85	0.12	<10	<2	6.4
HMC-1084	Stream		0.07	0.44	0.05	<10	<2	3.9
HMC-1085	Stream		0.13	0.71	0.09	<10	2	3.3
HMC-1086	Moss		0.19	1.25	0.17	<10	<2	7.9



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Method Analyte Unit MDL		AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	1	0.01	0.001
HMC-1087A	Stream	0.64	8.75	5.81	33.7	83	10.4	5.4	229	3.14	0.9	2.7	17.1	14.0	41.5	0.06	0.06	0.09	81	0.65	0.236
HMC-1087B	Stream	0.78	12.80	6.51	37.8	87	11.4	5.0	253	2.88	1.0	2.8	3.4	9.1	41.8	0.07	0.06	0.15	72	0.65	0.221
HMC-1088	Stream	0.45	5.55	4.11	40.4	24	7.2	5.0	250	3.05	0.4	1.3	<0.2	8.9	41.6	0.04	0.03	0.04	70	0.59	0.232
HMC-1089	Stream	0.83	19.49	6.55	37.5	88	8.6	4.8	274	1.73	0.5	5.9	<0.2	4.3	43.9	0.09	0.06	0.11	41	0.43	0.086
HMC-1090	Stream	0.40	11.24	3.93	30.2	19	18.1	5.6	177	2.14	0.5	1.8	<0.2	11.1	51.9	0.07	0.04	0.03	71	0.75	0.351
HMC-1091	Stream	1.14	67.87	9.03	62.5	120	14.1	8.1	634	2.23	13.3	1.5	3.4	4.5	114.3	0.35	0.36	0.13	49	1.29	0.119
HMC-1092	Stream	0.71	15.59	8.39	48.9	99	11.7	5.9	342	1.80	3.8	2.3	0.6	4.8	63.3	0.16	0.16	0.08	42	0.54	0.095
HMC-1093	Stream	0.43	13.77	4.57	32.3	70	10.8	5.2	250	2.12	2.0	0.8	6.8	2.6	29.0	0.07	0.11	0.04	51	0.51	0.077
HMC-1094	Stream	0.89	7.53	13.54	47.9	56	10.3	5.9	519	3.55	0.6	5.5	<0.2	12.0	38.7	0.11	0.09	0.12	80	0.46	0.142
HMC-1095	Rock Pulp	14.83	170.70	7.18	49.0	76	12.5	11.4	416	4.28	6.1	0.4	13.9	1.1	49.0	0.36	0.20	0.52	96	0.75	0.058
HMC-1096	Stream	0.78	5.29	7.69	37.8	26	28.1	5.7	331	2.84	0.2	6.8	<0.2	15.4	43.8	0.07	0.06	0.10	57	0.37	0.121
HMC-1097	Stream	0.35	13.73	10.76	42.9	31	80.2	11.0	308	2.21	0.4	8.9	<0.2	10.5	73.8	0.08	0.07	0.14	42	0.68	0.254
HMC-1098	Stream	0.45	4.82	4.97	29.5	15	8.5	3.7	210	2.08	0.3	2.5	<0.2	6.9	37.7	0.04	0.05	0.06	51	0.36	0.093
HMC-1099	Stream	0.71	7.07	5.47	32.4	15	28.0	9.1	263	8.08	0.3	2.0	<0.2	17.4	37.7	0.04	0.04	0.07	262	0.67	0.267
HMC-1100	Stream	0.74	17.31	5.26	51.1	17	60.3	12.2	290	2.84	0.4	1.7	0.2	8.7	38.6	0.05	0.04	0.04	77	0.58	0.222
HMC-1101 DUP of HMC-1108	Pulp DUP	0.57	54.95	11.67	97.6	306	44.5	8.9	796	2.30	9.8	0.7	17.2	1.1	161.1	0.92	0.46	0.15	47	5.19	0.104
HMC-1102	Stream	0.69	7.24	4.73	38.9	24	16.3	5.2	175	2.53	0.3	3.9	2.4	7.6	24.5	0.04	0.04	0.10	63	0.41	0.160
HMC-1103	Stream	1.81	16.52	8.54	51.6	63	24.5	8.3	467	3.56	2.2	6.1	0.4	10.2	61.8	0.12	0.19	0.07	100	0.70	0.228
HMC-1104	Stream	1.46	9.38	13.92	46.6	104	10.4	5.1	370	2.79	1.6	5.4	0.2	22.3	35.7	0.09	0.10	0.13	65	0.54	0.160
HMC-1105	Stream	1.55	11.82	10.26	51.2	67	11.8	5.9	355	3.58	2.0	3.2	0.8	12.0	32.0	0.11	0.13	0.11	93	0.46	0.125
HMC-1106	Rock Pulp	13.81	160.88	6.62	49.4	87	13.1	11.4	400	4.12	5.9	0.4	28.1	1.0	48.8	0.21	0.25	0.48	92	0.67	0.051
HMC-1107	Stream	0.45	8.51	5.66	29.4	47	8.5	4.4	185	2.62	<0.1	4.4	<0.2	19.9	15.7	0.05	0.06	0.08	68	0.32	0.071
HMC-1108	Stream	0.55	57.78	11.14	108.2	297	40.9	7.8	745	2.52	9.0	0.7	14.2	1.2	155.8	0.99	0.44	0.16	55	4.76	0.098
HMC-1109	Stream	0.24	11.31	4.03	24.4	37	9.6	5.6	197	1.35	0.5	2.0	<0.2	5.4	20.2	0.08	0.05	0.12	30	0.45	0.100
HMC-1110	Stream	2.43	17.70	13.40	73.6	127	25.0	9.9	919	2.79	2.8	5.3	<0.2	5.0	103.2	0.46	0.13	0.24	56	0.89	0.198



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Project: HMC_2019_SS

Report Date: November 29, 2019

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CERTIFICATE OF ANALYSIS

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	Method Analyte Unit MDL	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Ti	S	Hg	Se	Te	Ga	Cs	Ge
		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm
		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1
HMC-1087A	Stream	47.3	47.7	0.34	55.6	0.060	<20	0.56	0.011	0.06	0.5	1.7	0.06	<0.02	9	0.1	<0.02	3.8	0.77	<0.1
HMC-1087B	Stream	43.5	46.3	0.38	63.5	0.063	<20	0.63	0.012	0.07	0.2	1.7	0.06	<0.02	10	0.2	<0.02	3.9	0.87	<0.1
HMC-1088	Stream	40.8	19.7	0.36	92.5	0.078	<20	0.79	0.009	0.11	<0.1	1.6	0.07	<0.02	11	<0.1	<0.02	4.7	0.47	<0.1
HMC-1089	Stream	30.3	16.7	0.34	66.5	0.047	<20	0.90	0.012	0.05	0.1	2.6	0.06	<0.02	19	0.3	<0.02	3.6	1.32	<0.1
HMC-1090	Stream	58.8	55.7	0.39	83.9	0.072	<20	0.56	0.013	0.09	0.2	1.7	0.06	<0.02	7	0.3	<0.02	3.3	0.73	0.1
HMC-1091	Stream	35.9	22.9	0.46	99.3	0.093	<20	1.06	0.035	0.11	0.3	2.9	0.10	0.11	30	1.0	0.04	4.2	1.75	0.1
HMC-1092	Stream	36.5	19.8	0.44	92.2	0.074	<20	0.99	0.020	0.11	0.1	2.7	0.08	0.02	23	0.4	0.02	4.0	1.70	<0.1
HMC-1093	Stream	11.3	23.9	0.32	60.8	0.053	<20	0.56	0.017	0.07	0.1	1.6	0.05	0.05	13	0.5	0.03	2.5	0.65	<0.1
HMC-1094	Stream	55.4	35.6	0.29	63.3	0.076	<20	0.68	0.012	0.07	0.4	1.8	0.07	<0.02	11	0.2	<0.02	4.2	1.25	0.1
HMC-1095	Rock Pulp	4.7	20.7	0.70	54.4	0.134	<20	2.06	0.023	0.04	<0.1	5.5	0.03	0.63	16	3.0	0.51	5.6	0.36	<0.1
HMC-1096	Stream	39.9	47.2	0.44	57.1	0.061	<20	0.80	0.009	0.09	0.1	1.5	0.10	<0.02	12	<0.1	<0.02	4.8	1.07	<0.1
HMC-1097	Stream	44.4	161.2	0.92	106.4	0.092	<20	0.88	0.010	0.16	0.1	1.2	0.16	<0.02	13	0.1	<0.02	4.0	1.17	0.1
HMC-1098	Stream	26.7	22.1	0.28	53.1	0.065	<20	0.69	0.009	0.06	0.1	1.4	0.05	<0.02	7	<0.1	<0.02	4.5	0.62	<0.1
HMC-1099	Stream	81.1	87.1	0.37	40.5	0.079	<20	0.42	0.006	0.06	<0.1	1.7	0.03	<0.02	6	<0.1	<0.02	9.6	0.58	0.2
HMC-1100	Stream	39.0	70.4	1.06	133.5	0.175	<20	0.90	0.014	0.33	0.3	1.9	0.16	<0.02	<5	<0.1	<0.02	5.1	1.66	0.1
HMC-1101 DUP of HMC-1108	Pulp DUP	21.1	38.6	0.57	169.1	0.051	<20	1.18	0.021	0.11	0.2	2.2	0.10	0.08	48	1.2	0.03	3.9	1.81	<0.1
HMC-1102	Stream	29.8	38.7	0.44	42.7	0.048	<20	0.60	0.007	0.07	0.1	1.6	0.05	<0.02	8	<0.1	<0.02	3.9	0.89	<0.1
HMC-1103	Stream	59.4	85.5	0.58	131.3	0.140	<20	1.02	0.015	0.18	0.2	2.5	0.13	<0.02	20	0.3	<0.02	5.4	2.71	0.2
HMC-1104	Stream	67.2	41.2	0.31	66.9	0.077	<20	0.67	0.013	0.08	0.3	1.9	0.05	<0.02	7	0.3	<0.02	5.0	1.20	0.1
HMC-1105	Stream	47.7	51.9	0.34	47.2	0.089	<20	0.69	0.012	0.08	0.2	2.1	0.06	<0.02	6	0.3	0.02	5.1	1.59	0.1
HMC-1106	Rock Pulp	4.4	21.1	0.67	48.9	0.131	<20	1.95	0.020	0.04	<0.1	5.4	0.03	0.56	20	3.3	0.51	5.6	0.38	<0.1
HMC-1107	Stream	29.7	33.5	0.24	51.9	0.051	<20	0.66	0.009	0.09	0.3	1.7	0.07	<0.02	8	0.3	<0.02	3.7	0.75	<0.1
HMC-1108	Stream	20.5	41.9	0.52	163.2	0.052	<20	1.05	0.020	0.10	0.2	2.0	0.09	0.07	33	1.0	0.04	3.7	1.82	<0.1
HMC-1109	Stream	18.4	18.5	0.30	55.5	0.077	<20	0.82	0.022	0.13	0.4	2.1	0.10	<0.02	15	0.2	<0.02	3.3	1.21	<0.1
HMC-1110	Stream	36.0	41.7	0.66	286.1	0.121	<20	1.41	0.016	0.18	3.8	3.2	0.20	0.04	24	0.6	0.03	5.0	2.06	<0.1



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Project: HMC_2019_SS

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CERTIFICATE OF ANALYSIS

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Method Analyte Unit MDL		AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
HMC-1087A	Stream	1.43	8.1	0.4	<0.05	1.5	9.32	80.7	<0.02	<1	0.4	10.5	9.38	32.59	4.71	0.72	3.80	0.39	2.15	0.32	0.85
HMC-1087B	Stream	1.63	9.1	0.4	<0.05	1.4	8.90	71.8	<0.02	<1	0.5	12.4	8.17	29.95	4.33	0.69	3.15	0.37	1.97	0.31	0.77
HMC-1088	Stream	1.31	13.0	0.5	<0.05	1.3	10.98	78.1	<0.02	<1	0.3	8.7	9.05	36.31	6.15	0.71	4.55	0.50	2.38	0.37	0.99
HMC-1089	Stream	1.04	8.7	0.4	<0.05	0.9	8.89	43.5	<0.02	<1	0.8	26.8	6.39	23.14	3.95	0.66	2.82	0.33	1.90	0.28	0.74
HMC-1090	Stream	1.33	11.8	0.3	<0.05	1.0	13.61	111.6	<0.02	<1	0.3	6.6	13.12	47.98	7.37	0.69	5.26	0.60	3.18	0.48	1.18
HMC-1091	Stream	3.36	11.4	0.5	<0.05	4.9	8.21	58.3	0.02	2	0.4	13.3	6.58	25.37	4.00	0.64	2.74	0.29	1.51	0.27	0.68
HMC-1092	Stream	1.58	12.9	0.4	<0.05	2.2	7.87	56.6	<0.02	<1	0.4	14.9	7.86	27.25	4.06	0.74	2.71	0.32	1.52	0.27	0.66
HMC-1093	Stream	1.02	6.9	0.2	<0.05	1.0	3.17	19.6	<0.02	2	0.2	6.5	2.13	7.79	1.24	0.22	1.09	0.10	0.67	0.12	0.33
HMC-1094	Stream	3.62	10.3	0.6	<0.05	2.8	8.65	88.4	<0.02	<1	0.9	15.4	10.18	34.01	4.80	0.77	3.59	0.36	1.97	0.31	0.77
HMC-1095	Rock Pulp	0.22	1.7	0.7	<0.05	5.0	5.82	9.7	0.08	27	0.3	4.4	1.25	5.31	1.21	0.38	1.46	0.19	1.29	0.24	0.67
HMC-1096	Stream	1.75	15.5	0.5	<0.05	1.1	7.51	63.9	<0.02	<1	0.6	17.6	7.60	26.29	4.15	0.46	2.87	0.31	1.78	0.28	0.70
HMC-1097	Stream	1.28	21.5	0.3	<0.05	1.0	8.38	74.1	<0.02	<1	0.6	17.2	9.03	33.86	5.02	0.75	3.05	0.34	1.79	0.31	0.71
HMC-1098	Stream	1.05	7.9	0.6	<0.05	1.4	6.23	48.2	<0.02	<1	0.4	8.1	5.21	18.91	3.04	0.44	2.22	0.26	1.30	0.22	0.60
HMC-1099	Stream	1.00	7.9	0.7	<0.05	2.7	13.53	149.6	<0.02	<1	0.3	5.3	16.71	63.07	8.79	0.81	6.77	0.64	3.25	0.47	1.21
HMC-1100	Stream	2.05	36.7	0.5	<0.05	2.5	9.03	74.1	<0.02	<1	0.4	12.8	8.58	32.69	5.17	0.48	3.98	0.41	2.06	0.31	0.82
HMC-1101 DUP of HMC-1108	Pulp DUP	1.37	9.3	0.4	<0.05	1.6	8.32	34.4	0.03	<1	0.4	14.0	4.17	16.57	2.64	0.58	2.22	0.25	1.52	0.27	0.71
HMC-1102	Stream	0.72	9.9	0.3	<0.05	0.8	7.56	54.7	<0.02	<1	0.5	13.2	6.56	23.51	4.05	0.46	2.44	0.33	1.68	0.27	0.69
HMC-1103	Stream	3.35	24.3	0.6	<0.05	2.4	12.27	103.0	<0.02	<1	1.0	17.7	12.89	44.05	6.30	0.91	4.83	0.55	2.85	0.47	1.16
HMC-1104	Stream	2.86	9.3	0.8	<0.05	5.1	13.26	118.8	<0.02	<1	0.9	10.4	13.52	46.21	6.79	0.77	4.16	0.55	2.77	0.49	1.26
HMC-1105	Stream	1.49	11.0	0.7	<0.05	2.7	9.80	82.0	<0.02	<1	0.7	10.9	9.27	32.21	4.72	0.62	2.91	0.39	2.02	0.36	0.95
HMC-1106	Rock Pulp	0.22	1.6	0.7	<0.05	4.7	5.58	8.5	0.07	16	0.2	4.0	1.13	4.89	1.19	0.36	1.16	0.19	1.15	0.22	0.62
HMC-1107	Stream	0.96	13.0	0.6	<0.05	1.0	10.21	51.6	<0.02	<1	0.4	7.5	6.57	23.36	3.98	0.52	2.85	0.39	2.08	0.37	1.00
HMC-1108	Stream	1.34	9.0	0.3	<0.05	1.6	8.05	34.5	0.03	2	0.7	13.4	4.50	16.02	2.52	0.57	1.98	0.24	1.34	0.26	0.67
HMC-1109	Stream	1.76	16.7	0.5	<0.05	1.0	9.46	34.1	<0.02	<1	0.3	9.0	4.39	15.53	2.94	0.36	2.38	0.32	1.91	0.32	0.90
HMC-1110	Stream	3.19	28.2	0.3	<0.05	2.0	10.18	55.3	0.03	2	0.5	16.7	7.38	25.96	3.98	0.81	3.22	0.36	1.99	0.36	1.02



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Project: HMC_2019_SS

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CERTIFICATE OF ANALYSIS

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Method Analyte Unit MDL		AQ250	AQ250	AQ250	AQ250	AQ250	TG001
		Tm	Yb	Lu	Pd	Pt	LOI
		ppm	ppm	ppm	ppb	ppb	%
		0.02	0.02	0.02	10	2	-5.11
HMC-1087A	Stream	0.11	0.74	0.08	<10	<2	1.9
HMC-1087B	Stream	0.12	0.64	0.08	<10	<2	2.3
HMC-1088	Stream	0.12	0.73	0.10	<10	<2	2.7
HMC-1089	Stream	0.11	0.71	0.10	<10	<2	5.2
HMC-1090	Stream	0.17	0.95	0.14	<10	<2	2.5
HMC-1091	Stream	0.10	0.64	0.08	<10	<2	8.8
HMC-1092	Stream	0.09	0.62	0.09	<10	<2	5.1
HMC-1093	Stream	0.05	0.31	0.04	<10	<2	5.2
HMC-1094	Stream	0.11	0.69	0.08	<10	<2	3.2
HMC-1095	Rock Pulp	0.10	0.57	0.08	<10	<2	5.6
HMC-1096	Stream	0.10	0.65	0.08	<10	<2	3.7
HMC-1097	Stream	0.09	0.66	0.09	<10	<2	4.5
HMC-1098	Stream	0.08	0.48	0.06	<10	2	2.8
HMC-1099	Stream	0.16	0.97	0.11	<10	<2	1.1
HMC-1100	Stream	0.10	0.66	0.08	<10	<2	3.3
HMC-1101 DUP of HMC-1108	Pulp DUP	0.10	0.69	0.09	<10	<2	22.4
HMC-1102	Stream	0.10	0.62	0.08	<10	<2	2.1
HMC-1103	Stream	0.16	0.97	0.14	<10	<2	5.3
HMC-1104	Stream	0.16	0.98	0.14	<10	<2	3.0
HMC-1105	Stream	0.12	0.74	0.11	<10	<2	2.9
HMC-1106	Rock Pulp	0.09	0.53	0.07	<10	<2	5.4
HMC-1107	Stream	0.13	0.80	0.11	<10	<2	3.2
HMC-1108	Stream	0.08	0.59	0.09	<10	<2	20.6
HMC-1109	Stream	0.11	0.65	0.10	<10	<2	3.3
HMC-1110	Stream	0.12	0.78	0.12	<10	<2	9.2



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QUALITY CONTROL REPORT

VAN19003329.1

Method Analyte Unit MDL		AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	1	0.01	0.001
Pulp Duplicates																					
HMC-1023	Stream Sedim	3.82	18.06	10.78	54.5	93	8.4	4.0	373	1.29	1.0	11.8	<0.2	4.8	38.2	0.19	0.07	0.15	24	0.33	0.076
REP HMC-1023	QC																				
HMC-1058	Stream Sedim	1.22	9.70	6.62	45.9	67	9.1	5.8	363	1.78	1.2	6.4	0.9	3.1	25.4	0.05	0.06	0.14	38	0.38	0.074
REP HMC-1058	QC																				
HMC-1077	Stream Sedim	2.36	62.22	14.81	143.8	302	17.9	12.7	823	3.05	55.9	1.2	4.8	3.1	68.7	1.37	1.27	0.28	64	0.91	0.090
REP HMC-1077	QC	2.33	64.16	14.62	140.9	306	17.9	12.2	840	3.03	52.9	1.2	5.3	2.7	63.9	1.46	1.16	0.28	62	1.02	0.095
HMC-1094	Stream Sedim	0.89	7.53	13.54	47.9	56	10.3	5.9	519	3.55	0.6	5.5	<0.2	12.0	38.7	0.11	0.09	0.12	80	0.46	0.142
REP HMC-1094	QC																				
HMC-1110	Stream Sedim	2.43	17.70	13.40	73.6	127	25.0	9.9	919	2.79	2.8	5.3	<0.2	5.0	103.2	0.46	0.13	0.24	56	0.89	0.198
REP HMC-1110	QC																				
Reference Materials																					
STD BVGEO01	Standard	11.31	4315.52	190.99	1744.7	2572	158.6	24.5	756	3.62	124.4	4.0	226.8	14.9	54.1	7.24	2.68	26.11	70	1.33	0.079
STD BVGEO01	Standard	10.33	4266.56	184.64	1670.4	2478	158.1	23.8	675	3.68	115.7	3.8	210.4	14.7	54.9	6.67	2.70	24.62	72	1.25	0.077
STD DOLOMITE-3	Standard																				
STD DOLOMITE-3	Standard																				
STD DOLOMITE-3	Standard																				
STD DOLOMITE-3	Standard																				
STD DS11	Standard	15.45	158.20	137.97	346.4	1760	79.4	14.2	1046	3.08	45.4	2.7	193.1	7.7	63.3	2.63	7.48	12.20	47	1.06	0.076
STD DS11	Standard	14.79	150.68	139.38	347.5	1586	82.3	14.4	961	3.12	45.7	2.6	69.1	8.0	66.8	2.55	7.37	12.09	49	1.03	0.074
STD DS11	Standard	15.26	146.75	130.43	354.6	1940	83.4	14.5	1006	3.09	43.5	2.5	129.7	7.9	62.1	2.59	7.98	10.93	48	1.03	0.068
STD OREAS262	Standard	0.68	117.26	55.26	150.6	457	61.5	27.8	493	3.14	36.9	1.2	67.7	9.0	32.8	0.70	3.91	1.02	20	2.80	0.038
STD OREAS262	Standard	0.67	116.16	55.79	156.2	453	65.0	27.3	515	3.17	36.4	1.2	63.8	8.7	32.9	0.66	3.59	1.01	20	2.98	0.040
STD OREAS262	Standard	0.65	123.62	58.54	154.8	481	65.2	27.6	539	3.38	37.5	1.2	55.8	10.1	36.5	0.76	3.26	1.07	22	3.00	0.041
STD OREAS262	Standard	0.59	120.43	54.61	152.1	434	67.2	27.8	515	3.17	36.8	1.2	57.2	9.2	34.8	0.68	2.80	1.01	21	2.91	0.041
STD OREAS262	Standard	0.70	110.13	53.37	151.4	482	65.1	28.2	512	3.17	35.4	1.4	76.5	9.4	33.0	0.67	4.55	0.95	21	2.87	0.038
STD DOLOMITE-3 Expected																					
STD BVGEO01 Expected		10.8	4415	187	1741	2530	163	25	733	3.7	121	3.77	219	14.4	55	6.5	2.2	25.6	73	1.3219	0.0727
STD DS11 Expected		13.9	149	138	345	1710	77.7	14.2	1055	3.1	42.8	2.59	79	7.65	67.3	2.37	7.2	12.2	50	1.063	0.0701



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Method Analyte Unit MDL		AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Ti	S	Hg	Se	Te	Ga	Cs	Ge	Hf
		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm
		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	0.02
Pulp Duplicates																					
HMC-1023	Stream Sedim	44.9	19.8	0.29	98.2	0.036	<20	0.99	0.009	0.06	0.2	1.5	0.09	0.02	21	0.4	<0.02	4.2	1.60	<0.1	<0.02
REP HMC-1023	QC																				
HMC-1058	Stream Sedim	18.7	17.7	0.47	78.5	0.052	<20	0.95	0.010	0.05	<0.1	3.5	0.07	<0.02	8	0.3	<0.02	3.9	0.85	<0.1	0.03
REP HMC-1058	QC																				
HMC-1077	Stream Sedim	23.3	22.2	0.66	82.9	0.060	<20	1.49	0.020	0.09	0.3	4.3	0.10	0.05	28	1.8	0.09	5.2	2.16	<0.1	0.03
REP HMC-1077	QC	20.9	22.7	0.65	83.4	0.057	<20	1.50	0.019	0.09	0.8	4.6	0.10	0.05	22	1.7	0.09	5.3	2.05	<0.1	0.04
HMC-1094	Stream Sedim	55.4	35.6	0.29	63.3	0.076	<20	0.68	0.012	0.07	0.4	1.8	0.07	<0.02	11	0.2	<0.02	4.2	1.25	0.1	0.03
REP HMC-1094	QC																				
HMC-1110	Stream Sedim	36.0	41.7	0.66	286.1	0.121	<20	1.41	0.016	0.18	3.8	3.2	0.20	0.04	24	0.6	0.03	5.0	2.06	<0.1	0.03
REP HMC-1110	QC																				
Reference Materials																					
STD BVGEO01	Standard	28.5	172.4	1.32	351.0	0.241	<20	2.36	0.202	0.93	3.7	6.1	0.65	0.69	110	4.9	1.07	7.7	7.78	0.2	0.24
STD BVGEO01	Standard	25.6	156.5	1.27	332.0	0.227	<20	2.21	0.187	0.89	4.0	5.6	0.62	0.65	97	4.5	0.97	6.9	7.18	0.1	0.26
STD DOLOMITE-3	Standard																				
STD DOLOMITE-3	Standard																				
STD DOLOMITE-3	Standard																				
STD DOLOMITE-3	Standard																				
STD DS11	Standard	19.1	59.2	0.86	381.5	0.097	<20	1.20	0.076	0.42	3.0	3.4	5.14	0.26	258	2.2	4.73	5.3	3.01	0.1	0.06
STD DS11	Standard	18.3	55.7	0.86	378.9	0.093	<20	1.20	0.075	0.42	3.0	3.3	5.10	0.28	274	2.3	4.74	4.9	2.87	<0.1	0.06
STD DS11	Standard	18.0	61.8	0.84	366.9	0.086	<20	1.12	0.068	0.40	2.9	3.1	4.97	0.27	274	2.5	4.78	5.1	2.94	<0.1	0.06
STD OREAS262	Standard	15.7	40.4	1.16	251.7	0.003	<20	1.24	0.066	0.28	0.1	3.3	0.47	0.25	163	0.4	0.22	3.8	2.74	<0.1	0.14
STD OREAS262	Standard	15.3	41.2	1.20	250.1	0.003	<20	1.29	0.071	0.30	0.1	3.2	0.46	0.27	159	0.4	0.25	3.8	2.59	<0.1	0.13
STD OREAS262	Standard	16.6	42.8	1.20	266.4	0.003	<20	1.27	0.071	0.31	0.1	3.3	0.49	0.26	174	0.5	0.24	3.9	2.49	<0.1	0.23
STD OREAS262	Standard	15.4	40.2	1.17	249.3	0.003	<20	1.28	0.070	0.31	0.1	3.3	0.43	0.27	170	0.5	0.22	4.0	2.42	<0.1	0.15
STD OREAS262	Standard	16.8	43.0	1.13	231.6	0.003	<20	1.15	0.065	0.30	0.2	3.1	0.47	0.26	175	0.6	0.23	3.9	2.96	<0.1	0.16
STD DOLOMITE-3 Expected																					
STD BVGEO01 Expected		25.9	171	1.2963	340	0.233		2.347	0.1924	0.89	3.5	5.97	0.62	0.6655	100	4.84	1.02	7.37	7.36	0.15	0.32
STD DS11 Expected		18.6	61.5	0.85	417	0.0976		1.129	0.0694	0.4	2.9	3.1	4.9	0.2835	260	2.2	4.56	4.7	2.88	0.08	0.06



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QUALITY CONTROL REPORT

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Method Analyte Unit MDL		AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Pulp Duplicates																					
HMC-1023	Stream Sedim	1.24	12.7	0.3	<0.05	0.5	11.87	55.0	<0.02	<1	1.0	18.7	9.38	32.15	5.52	0.84	4.19	0.44	2.30	0.38	1.03
REP HMC-1023	QC																				
HMC-1058	Stream Sedim	0.76	9.2	0.2	<0.05	1.7	10.66	26.7	0.02	<1	0.9	15.1	4.39	16.18	3.13	0.58	2.71	0.30	1.79	0.37	1.07
REP HMC-1058	QC																				
HMC-1077	Stream Sedim	1.58	10.1	0.4	<0.05	1.6	11.29	37.9	0.04	1	0.5	17.4	4.88	18.37	3.46	0.67	3.01	0.34	1.94	0.39	1.09
REP HMC-1077	QC	1.62	9.6	0.4	<0.05	1.6	11.65	38.2	0.04	2	0.8	16.8	4.57	17.81	3.21	0.67	2.91	0.35	2.07	0.41	1.12
HMC-1094	Stream Sedim	3.62	10.3	0.6	<0.05	2.8	8.65	88.4	<0.02	<1	0.9	15.4	10.18	34.01	4.80	0.77	3.59	0.36	1.97	0.31	0.77
REP HMC-1094	QC																				
HMC-1110	Stream Sedim	3.19	28.2	0.3	<0.05	2.0	10.18	55.3	0.03	2	0.5	16.7	7.38	25.96	3.98	0.81	3.22	0.36	1.99	0.36	1.02
REP HMC-1110	QC																				
Reference Materials																					
STD BVGEO01	Standard	0.16	94.5	5.8	<0.05	7.4	14.97	56.4	0.48	4	0.6	23.0	6.34	23.88	4.32	0.50	3.71	0.45	2.88	0.53	1.54
STD BVGEO01	Standard	0.16	94.1	5.4	<0.05	7.9	13.50	49.6	0.47	4	0.6	19.7	5.84	21.28	4.15	0.45	3.21	0.46	2.62	0.48	1.36
STD DOLOMITE-3	Standard																				
STD DOLOMITE-3	Standard																				
STD DOLOMITE-3	Standard																				
STD DOLOMITE-3	Standard																				
STD DS11	Standard	1.29	35.6	1.8	<0.05	2.6	7.99	39.1	0.27	48	0.6	22.9	3.95	15.62	2.73	0.48	2.30	0.30	1.69	0.30	0.72
STD DS11	Standard	1.21	35.8	1.6	<0.05	2.6	8.16	36.3	0.27	46	0.8	23.6	4.01	15.53	2.60	0.48	2.12	0.27	1.65	0.28	0.77
STD DS11	Standard	1.19	32.9	1.8	<0.05	2.7	7.61	34.1	0.23	47	0.7	22.5	3.65	13.77	2.49	0.47	1.90	0.27	1.48	0.28	0.77
STD OREAS262	Standard	<0.02	18.8	0.4	<0.05	6.8	10.19	32.2	0.04	2	1.0	17.9	3.69	14.66	3.09	0.65	3.08	0.36	2.14	0.39	1.02
STD OREAS262	Standard	<0.02	18.4	0.5	<0.05	7.0	10.28	31.0	0.03	<1	0.8	17.2	3.78	15.01	3.24	0.64	2.76	0.40	2.18	0.39	0.98
STD OREAS262	Standard	<0.02	18.7	0.6	<0.05	8.3	10.46	32.6	0.03	2	1.2	18.2	4.09	15.52	3.46	0.72	2.97	0.38	2.15	0.40	1.11
STD OREAS262	Standard	<0.02	18.6	0.4	<0.05	7.5	10.22	30.3	0.04	<1	1.1	16.8	3.83	15.82	3.35	0.60	2.79	0.41	2.25	0.37	0.99
STD OREAS262	Standard	<0.02	17.9	0.5	<0.05	8.6	10.23	31.1	0.03	1	1.0	16.7	3.74	14.59	3.18	0.61	2.74	0.38	2.07	0.39	1.02
STD DOLOMITE-3 Expected																					
STD BVGEO01 Expected		0.23	95	5.64		9.1	14.5	53	0.47	4	0.69	21.4	6.19	22.4	4.08	0.48	3.53	0.48	2.85	0.54	1.5
STD DS11 Expected		1.2	33.6	1.8		2.4	7.82	37	0.24	50	0.67	23.3	4	14.9	2.68	0.54	2.22	0.29	1.57	0.29	0.81



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Project: HMC_2019_SS

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QUALITY CONTROL REPORT

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	Method Analyte Unit MDL	AQ250	AQ250	AQ250	AQ250	AQ250	TG001
		Tm	Yb	Lu	Pd	Pt	LOI
		ppm	ppm	ppm	ppb	ppb	%
		0.02	0.02	0.02	10	2	-5.11
Pulp Duplicates							
HMC-1023	Stream Sedim	0.14	0.89	0.12	<10	<2	6.1
REP HMC-1023	QC						6.0
HMC-1058	Stream Sedim	0.15	0.93	0.15	<10	<2	4.4
REP HMC-1058	QC						4.6
HMC-1077	Stream Sedim	0.15	0.98	0.13	<10	<2	10.9
REP HMC-1077	QC	0.14	0.98	0.14	<10	<2	
HMC-1094	Stream Sedim	0.11	0.69	0.08	<10	<2	3.2
REP HMC-1094	QC						3.1
HMC-1110	Stream Sedim	0.12	0.78	0.12	<10	<2	9.2
REP HMC-1110	QC						9.5
Reference Materials							
STD BVGEO01	Standard	0.21	1.38	0.20	101	191	
STD BVGEO01	Standard	0.19	1.23	0.18	113	172	
STD DOLOMITE-3	Standard						48.5
STD DOLOMITE-3	Standard						48.7
STD DOLOMITE-3	Standard						48.7
STD DOLOMITE-3	Standard						48.7
STD DS11	Standard	0.11	0.82	0.11	97	177	
STD DS11	Standard	0.12	0.76	0.11	96	178	
STD DS11	Standard	0.11	0.71	0.10	96	183	
STD OREAS262	Standard	0.13	0.89	0.13	<10	<2	
STD OREAS262	Standard	0.14	0.97	0.12	<10	<2	
STD OREAS262	Standard	0.13	0.89	0.14	<10	<2	
STD OREAS262	Standard	0.13	0.93	0.12	<10	<2	
STD OREAS262	Standard	0.13	0.83	0.12	<10	<2	
STD DOLOMITE-3 Expected							48.69
STD BVGEO01 Expected		0.21	1.32	0.18	134	182	
STD DS11 Expected		0.11	0.75	0.11	100	172	



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		AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	1	0.01	0.001
STD OREAS262 Expected		0.68	118	56	154	450	62	26.9	530	3.284	35.8	1.22	65	9.33	36	0.61	3.39	1.03	22.5	2.98	0.04
BLK	Blank	<0.01	<0.01	0.02	<0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<1	<0.01	<0.001
BLK	Blank	<0.01	<0.01	0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<1	<0.01	<0.001
BLK	Blank	<0.01	0.02	<0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	0.02	<1	<0.01	<0.001
BLK	Blank	<0.01	<0.01	0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<1	<0.01	<0.001
BLK	Blank	<0.01	<0.01	<0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<1	<0.01	<0.001



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QUALITY CONTROL REPORT

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		AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	Ge	Hf
		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm
		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	0.02
STD OREAS262 Expected		15.9	41.7	1.17	248	0.003		1.204	0.071	0.312	0.13	3.24	0.47	0.253	170	0.4	0.23	3.73	2.8		0.27
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	<0.02



Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada

PHONE (604) 253-3158

Client: **Noble Exploration Services Ltd.**
3890 Trailhead Drive
Jordan River British Columbia V9Z 1L1 Canada

Project: HMC_2019_SS
Report Date: November 29, 2019

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Part: 3 of 4

QUALITY CONTROL REPORT

VAN19003329.1

		AQ250 Nb ppm 0.02	AQ250 Rb ppm 0.1	AQ250 Sn ppm 0.1	AQ250 Ta ppm 0.05	AQ250 Zr ppm 0.1	AQ250 Y ppm 0.01	AQ250 Ce ppm 0.1	AQ250 In ppm 0.02	AQ250 Re ppb 1	AQ250 Be ppm 0.1	AQ250 Li ppm 0.1	AQ250 Pr ppm 0.02	AQ250 Nd ppm 0.02	AQ250 Sm ppm 0.02	AQ250 Eu ppm 0.02	AQ250 Gd ppm 0.02	AQ250 Tb ppm 0.02	AQ250 Dy ppm 0.02	AQ250 Ho ppm 0.02	AQ250 Er ppm 0.02
STD OREAS262 Expected			18.6	0.5		8.3	11.2	32	0.033		1.14	17.8	4	15	3.3	0.72	2.93	0.43	2.29	0.41	1.17
BLK	Blank	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
BLK	Blank	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
BLK	Blank	<0.02	<0.1	<0.1	<0.05	0.3	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
BLK	Blank	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
BLK	Blank	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02



Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada

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Jordan River British Columbia V9Z 1L1 Canada

Project: HMC_2019_SS

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Page: 2 of 2

Part: 4 of 4

QUALITY CONTROL REPORT

VAN19003329.1

		AQ250	AQ250	AQ250	AQ250	AQ250	TG001
		Tm	Yb	Lu	Pd	Pt	LOI
		ppm	ppm	ppm	ppb	ppb	%
		0.02	0.02	0.02	10	2	-5.11
STD OREAS262 Expected		0.14	0.86	0.13			
BLK	Blank	<0.02	<0.02	<0.02	<10	<2	
BLK	Blank	<0.02	<0.02	<0.02	<10	<2	
BLK	Blank	<0.02	<0.02	<0.02	<10	<2	
BLK	Blank	<0.02	<0.02	<0.02	<10	<2	
BLK	Blank	<0.02	<0.02	<0.02	<10	<2	



Your Project #: VAN19003329A

Attention: Susie Woo

Bureau Veritas Commodities
9050 Shaughnessy Street
Vancouver, BC
Canada V6P 6E5

Report Date: 2019/12/13

Report #: R6003529

Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9X4211

Received: 2019/11/26, 09:50

Sample Matrix: Soil
Samples Received: 115

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Trace Metals by Neutron Activation	115	N/A	2019/12/12	BQL SOP-00001	Neutron Activation

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

Encryption Key

Mayank Nigam
Technician
16 Dec 2019 09:24:26

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Mayank Nigam, Technician

Email: Mayank.Nigam@bvlabs.com

Phone# (905) 826-3080

=====

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Total Cover Pages : 1

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RESULTS OF ANALYSES OF SOIL

BV Labs ID		LKO219	LKO223	LKO224	LKO225	LKO226	LKO227		
Sampling Date									
	UNITS	HMC-1001 DUP OF HMC-1017B	HMC-1002	HMC-1003	HMC-1004	HMC-1005	HMC-1006	RDL	QC Batch
Bromine	ppm	1.6	3.4	3.1	1.8	1.9	2.7	0.5	6466519
Antimony (Sb)	ppm	0.3	0.1	0.2	0.3	0.1	0.1	0.1	6466519
Arsenic (As)	ppm	1.6	0.8	1.5	3.2	0.9	<0.5	0.5	6466519
Barium (Ba)	ppm	910	1100	1000	1100	750	970	50	6466519
Cadmium (Cd)	ppm	<5	<5	<5	<5	<5	<5	5	6466519
Cerium (Ce)	ppm	57	230	78	67	80	91	5	6466519
Cesium (Cs)	ppm	3.2	1.8	1.3	3.5	2.1	2.6	0.5	6466519
Chromium (Cr)	ppm	53	71	150	120	80	120	20	6466519
Cobalt (Co)	ppm	6	7	14	12	5	9	5	6466519
Europium (Eu)	ppm	2	2	2	1	<1	2	1	6466519
Gold (Au)	ppm	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002	6466519
Hafnium (Hf)	ppm	8	9	9	6	9	6	1	6466519
Iridium (Ir)	ppm	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	6466519
Iron (Fe)	ppm	36000	24000	40000	31000	37000	31000	2000	6466519
Lanthanum (La)	ppm	29	130	43	38	42	49	2	6466519
Lutetium (Lu)	ppm	0.2	0.5	0.4	0.3	0.3	0.3	0.2	6466519
Molybdenum (Mo)	ppm	<1	1	<1	<1	<1	<1	1	6466519
Nickel (Ni)	ppm	15	<10	38	26	19	19	10	6466519
Rubidium (Rb)	ppm	100	100	54	87	82	83	5	6466519
Samarium (Sm)	ppm	5.1	14.1	7.1	5.9	6.5	7.5	0.1	6466519
Scandium (Sc)	ppm	6.0	6.4	12.0	9.0	7.6	7.9	0.2	6466519
Selenium (Se)	ppm	<5	<5	<5	<5	<5	<5	5	6466519
Silver (Ag)	ppm	<2	<2	<2	<2	<2	<2	2	6466519
Sodium (Na)	ppm	22800	21400	20900	19000	22700	22900	200	6466519
Tantalum (Ta)	ppm	2.0	3.0	1.8	1.6	2.3	2.3	0.5	6466519
Tellurium (Te)	ppm	<10	<10	<10	<10	<10	<10	10	6466519
Terbium (Tb)	ppm	0.5	1.3	0.9	0.8	0.8	0.8	0.5	6466519
Thorium (Th)	ppm	11.0	47.2	10.0	10.0	12.0	13.0	0.2	6466519
Tin (Sn)	ppm	<100	<100	<100	<100	<100	<100	100	6466519
Titanium (Ti)	ppm	3200	3700	6500	3800	3200	3600	500	6466519
Tungsten (W)	ppm	1	1	<1	1	2	<1	1	6466519
Uranium (U)	ppm	5.8	13.0	3.8	5.2	8.2	6.5	0.2	6466519
Ytterbium (Yb)	ppm	<2	<2	3	2	3	2	2	6466519
Zinc (Zn)	ppm	<100	<100	120	<100	<100	<100	100	6466519
Zirconium (Zr)	ppm	350	290	290	<200	<200	<200	200	6466519
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									



RESULTS OF ANALYSES OF SOIL

BV Labs ID		LKO228	LKO229	LKO230	LKO231	LKO232	LKO233	LKO234		
Sampling Date										
	UNITS	HMC-1007	HMC-1008	HMC-1009	HMC-1010	HMC-1011	HMC-1112	HMC-1013	RDL	QC Batch
Bromine	ppm	6.0	<0.5	4.3	4.6	6.6	2.5	2.6	0.5	6466519
Antimony (Sb)	ppm	0.8	<0.1	0.2	0.2	0.2	0.2	0.5	0.1	6466519
Arsenic (As)	ppm	7.5	<0.5	1.3	1.2	2.4	2.1	4.6	0.5	6466519
Barium (Ba)	ppm	440	1100	980	930	860	1000	1000	50	6466519
Cadmium (Cd)	ppm	<5	<5	<5	<5	<5	<5	<5	5	6466519
Cerium (Ce)	ppm	26	77	170	783	130	130	140	5	6466519
Cesium (Cs)	ppm	0.7	1.4	2.7	2.2	3.3	2.1	2.6	0.5	6466519
Chromium (Cr)	ppm	58	47	100	170	160	270	110	20	6466519
Cobalt (Co)	ppm	14	<5	9	10	15	18	9	5	6466519
Europium (Eu)	ppm	<1	<1	3	4	<1	2	2	1	6466519
Gold (Au)	ppm	0.040	<0.002	<0.002	<0.002	0.011	<0.002	0.364	0.002	6466519
Hafnium (Hf)	ppm	3	7	8	36	7	10	10	1	6466519
Iridium (Ir)	ppm	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	6466519
Iron (Fe)	ppm	56000	22000	40000	43000	39000	55000	66000	2000	6466519
Lanthanum (La)	ppm	14	43	96	422	73	69	79	2	6466519
Lutetium (Lu)	ppm	0.3	<0.2	0.5	1.1	0.3	0.4	0.7	0.2	6466519
Molybdenum (Mo)	ppm	15	<1	1	<1	<1	<1	<1	1	6466519
Nickel (Ni)	ppm	24	<10	32	26	42	40	19	10	6466519
Rubidium (Rb)	ppm	26	93	77	84	89	77	58	5	6466519
Samarium (Sm)	ppm	3.5	4.6	11.4	51.0	10.0	10.6	11.5	0.1	6466519
Scandium (Sc)	ppm	20.0	4.0	13.0	11.0	13.0	16.0	16.0	0.2	6466519
Selenium (Se)	ppm	<5	<5	<5	<5	<5	<5	<5	5	6466519
Silver (Ag)	ppm	<2	<2	<2	<2	<2	<2	<2	2	6466519
Sodium (Na)	ppm	15000	32000	21600	20000	19000	21300	19000	200	6466519
Tantalum (Ta)	ppm	<0.5	1.4	3.2	3.1	2.0	2.5	3.9	0.5	6466519
Tellurium (Te)	ppm	<10	<10	<10	<10	<10	<10	<10	10	6466519
Terbium (Tb)	ppm	<0.5	<0.5	1.2	4.3	1.0	1.1	1.5	0.5	6466519
Thorium (Th)	ppm	2.2	9.2	20.0	185	20.0	17.0	19.0	0.2	6466519
Tin (Sn)	ppm	<100	<100	<100	<100	<100	<100	<100	100	6466519
Titanium (Ti)	ppm	5400	2200	5800	4300	4100	5100	5900	500	6466519
Tungsten (W)	ppm	<1	<1	2	3	1	2	5	1	6466519
Uranium (U)	ppm	1.3	3.3	10.0	28.5	21.4	7.5	9.3	0.2	6466519
Ytterbium (Yb)	ppm	3	<2	4	<2	<2	3	5	2	6466519
Zinc (Zn)	ppm	120	<100	110	<100	<100	100	130	100	6466519
Zirconium (Zr)	ppm	<200	270	330	980	<200	380	390	200	6466519

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch



RESULTS OF ANALYSES OF SOIL

BV Labs ID		LKO235	LKO236	LKO237	LKO238	LKO239	LKO240	LKO241		
Sampling Date										
	UNITS	HMC-1014	HMC-1015	HMC-1016	HMC-1017A	HMC-1017B	HMC-1018	HMC-1019	RDL	QC Batch
Bromine	ppm	2.0	4.5	2.8	2.3	1.5	2.3	2.3	0.5	6466519
Antimony (Sb)	ppm	0.2	0.2	0.2	0.2	0.2	0.8	<0.1	0.1	6466519
Arsenic (As)	ppm	1.7	1.3	0.9	1.5	1.7	6.8	0.5	0.5	6466519
Barium (Ba)	ppm	790	950	820	810	920	890	1000	50	6466519
Cadmium (Cd)	ppm	<5	<5	<5	<5	<5	<5	<5	5	6466519
Cerium (Ce)	ppm	55	87	87	59	60	51	110	5	6466519
Cesium (Cs)	ppm	2.8	1.7	1.7	2.6	3.2	2.2	2.5	0.5	6466519
Chromium (Cr)	ppm	58	110	95	59	41	130	88	20	6466519
Cobalt (Co)	ppm	9	10	12	5	6	9	9	5	6466519
Europium (Eu)	ppm	2	1	1	1	2	2	2	1	6466519
Gold (Au)	ppm	0.040	<0.002	0.020	0.002	<0.002	<0.002	<0.002	0.002	6466519
Hafnium (Hf)	ppm	14	12	25	9	8	8	9	1	6466519
Iridium (Ir)	ppm	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	6466519
Iron (Fe)	ppm	72000	38000	54000	36000	37000	39000	27000	2000	6466519
Lanthanum (La)	ppm	31	46	49	32	32	27	62	2	6466519
Lutetium (Lu)	ppm	0.3	0.4	0.6	0.3	0.3	0.4	0.4	0.2	6466519
Molybdenum (Mo)	ppm	<1	2	1	<1	1	1	1	1	6466519
Nickel (Ni)	ppm	<10	14	19	<10	15	16	17	10	6466519
Rubidium (Rb)	ppm	89	68	65	93	100	68	100	5	6466519
Samarium (Sm)	ppm	4.7	7.1	7.7	5.2	4.9	5.3	8.2	0.1	6466519
Scandium (Sc)	ppm	6.1	8.2	11.0	6.0	6.5	11.0	7.4	0.2	6466519
Selenium (Se)	ppm	<5	<5	<5	<5	<5	<5	<5	5	6466519
Silver (Ag)	ppm	<2	<2	<2	<2	<2	<2	<2	2	6466519
Sodium (Na)	ppm	21400	20400	20000	23300	23800	20100	26300	200	6466519
Tantalum (Ta)	ppm	1.6	1.5	2.2	2.0	2.1	1.2	3.1	0.5	6466519
Tellurium (Te)	ppm	<10	<10	<10	<10	<10	<10	<10	10	6466519
Terbium (Tb)	ppm	0.6	0.9	1.0	0.7	0.7	0.8	0.9	0.5	6466519
Thorium (Th)	ppm	10.0	12.0	14.0	10.0	11.0	6.9	16.0	0.2	6466519
Tin (Sn)	ppm	<100	<100	<100	<100	<100	<100	<100	100	6466519
Titanium (Ti)	ppm	2700	3900	7100	2800	3200	4100	3800	500	6466519
Tungsten (W)	ppm	6	2	2	1	1	2	1	1	6466519
Uranium (U)	ppm	7.3	5.2	7.0	5.9	5.8	3.5	7.4	0.2	6466519
Ytterbium (Yb)	ppm	<2	3	4	<2	<2	3	2	2	6466519
Zinc (Zn)	ppm	<100	<100	100	<100	<100	<100	100	100	6466519
Zirconium (Zr)	ppm	400	460	770	300	280	280	<200	200	6466519

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch



RESULTS OF ANALYSES OF SOIL

BV Labs ID		LKO242	LKO243	LKO244	LKO245	LKO246	LKO247		
Sampling Date									
	UNITS	HMC-1020	HMC-1021 DUP OF HMC-1037B	HMC-1022	HMC-1023	HMC-1024	HMC-1025	RDL	QC Batch
Bromine	ppm	3.3	8.0	4.7	5.0	4.1	3.4	0.5	6466519
Antimony (Sb)	ppm	<0.1	0.5	0.3	0.2	<0.1	0.3	0.1	6466519
Arsenic (As)	ppm	<0.5	1.9	3.5	0.8	0.6	1.8	0.5	6466519
Barium (Ba)	ppm	1000	1200	1100	1200	990	1300	50	6466519
Cadmium (Cd)	ppm	<5	<5	<5	<5	<5	<5	5	6466519
Cerium (Ce)	ppm	645	160	538	140	250	340	5	6466519
Cesium (Cs)	ppm	1.7	2.5	2.5	3.0	2.2	2.2	0.5	6466519
Chromium (Cr)	ppm	200	94	96	41	160	420	20	6466519
Cobalt (Co)	ppm	5	10	11	<5	9	20	5	6466519
Europium (Eu)	ppm	3	2	<1	<1	3	3	1	6466519
Gold (Au)	ppm	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002	6466519
Hafnium (Hf)	ppm	17	26	12	7	27	73	1	6466519
Iridium (Ir)	ppm	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	6466519
Iron (Fe)	ppm	48000	64000	58000	20000	63000	180000	2000	6466519
Lanthanum (La)	ppm	356	99	319	92	150	190	2	6466519
Lutetium (Lu)	ppm	0.8	0.6	0.5	0.3	0.8	1.0	0.2	6466519
Molybdenum (Mo)	ppm	<1	1	<1	4	<1	<1	1	6466519
Nickel (Ni)	ppm	<10	<10	13	14	17	36	10	6466519
Rubidium (Rb)	ppm	110	92	92	140	97	120	5	6466519
Samarium (Sm)	ppm	35.9	10.0	29.0	10.4	16.3	20.3	0.1	6466519
Scandium (Sc)	ppm	5.7	12.0	12.0	6.1	8.3	10.0	0.2	6466519
Selenium (Se)	ppm	<5	<5	<5	<5	<5	<5	5	6466519
Silver (Ag)	ppm	<2	<2	<2	<2	<2	<2	2	6466519
Sodium (Na)	ppm	20000	21000	20000	21300	22900	22500	200	6466519
Tantalum (Ta)	ppm	8.5	5.9	3.3	2.5	6.3	12.0	0.5	6466519
Tellurium (Te)	ppm	<10	<10	<10	<10	<10	<10	10	6466519
Terbium (Tb)	ppm	2.8	1.0	1.8	0.9	1.6	2.0	0.5	6466519
Thorium (Th)	ppm	142	30.5	106	26.8	44.8	52.3	0.2	6466519
Tin (Sn)	ppm	<100	<100	<100	<100	<100	<100	100	6466519
Titanium (Ti)	ppm	4300	5300	5200	2600	5400	9000	500	6466519
Tungsten (W)	ppm	3	5	2	1	5	3	1	6466519
Uranium (U)	ppm	26.0	13.0	12.0	14.0	16.0	15.0	0.2	6466519
Ytterbium (Yb)	ppm	<2	3	<2	<2	5	5	2	6466519
Zinc (Zn)	ppm	150	<100	<100	<100	<100	120	100	6466519
Zirconium (Zr)	ppm	570	990	<200	<200	850	2700	200	6466519
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									



RESULTS OF ANALYSES OF SOIL

BV Labs ID		LKO248	LKO249	LKO250	LKO251	LKO252	LKO253	LKO254		
Sampling Date										
	UNITS	HMC-1026	HMC-1027	HMC-1028	HMC-1029	HMC-1031	HMC-1032	HMC-1033	RDL	QC Batch
Bromine	ppm	4.7	9.0	4.5	0.9	6.0	8.6	6.2	0.5	6466519
Antimony (Sb)	ppm	0.6	0.4	0.4	<0.1	0.2	0.3	0.8	0.1	6466519
Arsenic (As)	ppm	3.4	1.6	2.1	1.0	0.8	1.2	8.1	0.5	6466519
Barium (Ba)	ppm	1200	1300	1100	1400	1400	1200	490	50	6466519
Cadmium (Cd)	ppm	<5	<5	<5	<5	<5	<5	<5	5	6466519
Cerium (Ce)	ppm	140	280	200	200	89	260	29	5	6466519
Cesium (Cs)	ppm	5.2	3.0	2.3	1.1	3.7	1.7	0.7	0.5	6466519
Chromium (Cr)	ppm	120	61	310	320	210	100	52	20	6466519
Cobalt (Co)	ppm	13	7	15	20	14	9	16	5	6466519
Europium (Eu)	ppm	2	3	3	2	3	4	<1	1	6466519
Gold (Au)	ppm	0.005	<0.002	0.014	<0.002	<0.002	<0.002	0.034	0.002	6466519
Hafnium (Hf)	ppm	12	22	48	9	6	30	4	1	6466519
Iridium (Ir)	ppm	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	6466519
Iron (Fe)	ppm	45000	46000	110000	74000	37000	55000	61000	2000	6466519
Lanthanum (La)	ppm	81	170	110	110	55	170	15	2	6466519
Lutetium (Lu)	ppm	0.5	0.7	0.7	0.3	0.3	0.7	0.4	0.2	6466519
Molybdenum (Mo)	ppm	2	<1	<1	<1	1	5	16	1	6466519
Nickel (Ni)	ppm	29	19	33	45	64	19	24	10	6466519
Rubidium (Rb)	ppm	120	140	80	72	94	110	27	5	6466519
Samarium (Sm)	ppm	9.4	14.5	12.4	13.3	7.4	13.9	3.7	0.1	6466519
Scandium (Sc)	ppm	13.0	7.0	14.0	17.0	10.0	7.5	20.7	0.2	6466519
Selenium (Se)	ppm	<5	<5	<5	<5	<5	<5	<5	5	6466519
Silver (Ag)	ppm	<2	<2	<2	<2	<2	<2	<2	2	6466519
Sodium (Na)	ppm	23500	24500	20500	21800	22200	18000	17000	200	6466519
Tantalum (Ta)	ppm	3.9	10.0	4.0	1.4	2.1	8.9	<0.5	0.5	6466519
Tellurium (Te)	ppm	<10	<10	<10	<10	<10	<10	<10	10	6466519
Terbium (Tb)	ppm	1.0	1.2	1.3	1.1	0.8	1.0	0.6	0.5	6466519
Thorium (Th)	ppm	19.0	44.4	34.6	20.4	11.0	58.2	2.3	0.2	6466519
Tin (Sn)	ppm	<100	<100	<100	<100	<100	<100	<100	100	6466519
Titanium (Ti)	ppm	5100	4900	6600	6700	3900	5100	5900	500	6466519
Tungsten (W)	ppm	4	6	8	<1	2	13	1	1	6466519
Uranium (U)	ppm	12.0	42.5	11.0	3.8	15.0	23.5	1.4	0.2	6466519
Ytterbium (Yb)	ppm	3	3	4	<2	<2	3	2	2	6466519
Zinc (Zn)	ppm	110	130	110	120	<100	220	<100	100	6466519
Zirconium (Zr)	ppm	400	640	1700	430	290	1100	<200	200	6466519

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch



RESULTS OF ANALYSES OF SOIL

BV Labs ID		LKO255	LKO256	LKO257	LKO258	LKO259	LKO260	LKO261		
Sampling Date										
	UNITS	HMC-1034	HMC-1035	HMC-1036	HMC-1037A	HMC-1037B	HMC-1038	HMC-1039	RDL	QC Batch
Bromine	ppm	8.9	8.4	8.3	8.2	7.8	1.6	4.2	0.5	6466519
Antimony (Sb)	ppm	0.2	0.3	0.2	0.4	0.5	0.3	0.2	0.1	6466519
Arsenic (As)	ppm	1.0	0.8	<0.5	1.4	2.0	2.1	1.2	0.5	6466519
Barium (Ba)	ppm	1400	1400	1300	1200	1200	1100	990	50	6466519
Cadmium (Cd)	ppm	<5	<5	<5	<5	<5	<5	<5	5	6466519
Cerium (Ce)	ppm	310	340	230	180	160	74	140	5	6466519
Cesium (Cs)	ppm	2.3	1.6	2.2	2.1	2.0	2.8	2.7	0.5	6466519
Chromium (Cr)	ppm	210	80	74	110	99	140	210	20	6466519
Cobalt (Co)	ppm	17	14	10	14	12	19	14	5	6466519
Europium (Eu)	ppm	4	4	<1	2	3	<1	3	1	6466519
Gold (Au)	ppm	0.026	<0.002	<0.002	<0.002	<0.002	0.003	<0.002	0.002	6466519
Hafnium (Hf)	ppm	42	18	14	26	24	9	14	1	6466519
Iridium (Ir)	ppm	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	6466519
Iron (Fe)	ppm	87000	76000	56000	73000	66000	53000	52000	2000	6466519
Lanthanum (La)	ppm	190	205	150	110	100	41	78	2	6466519
Lutetium (Lu)	ppm	0.8	0.7	0.7	0.7	0.6	0.4	0.5	0.2	6466519
Molybdenum (Mo)	ppm	2	<1	<1	2	1	2	2	1	6466519
Nickel (Ni)	ppm	33	22	20	13	15	39	40	10	6466519
Rubidium (Rb)	ppm	87	98	110	86	90	52	80	5	6466519
Samarium (Sm)	ppm	15.7	17.1	12.7	10.0	9.1	6.0	10.5	0.1	6466519
Scandium (Sc)	ppm	13.0	12.0	8.6	14.0	14.0	22.9	14.0	0.2	6466519
Selenium (Se)	ppm	<5	<5	<5	<5	<5	<5	<5	5	6466519
Silver (Ag)	ppm	<2	<2	<2	<2	<2	<2	<2	2	6466519
Sodium (Na)	ppm	20600	27200	26300	22400	21900	21100	22200	200	6466519
Tantalum (Ta)	ppm	10.0	8.3	7.1	5.7	5.6	1.6	2.4	0.5	6466519
Tellurium (Te)	ppm	<10	<10	<10	<10	<10	<10	<10	10	6466519
Terbium (Tb)	ppm	1.5	1.4	1.3	1.0	1.1	0.7	1.2	0.5	6466519
Thorium (Th)	ppm	49.3	31.0	29.0	32.8	28.2	8.7	24.5	0.2	6466519
Tin (Sn)	ppm	<100	<100	<100	<100	<100	<100	<100	100	6466519
Titanium (Ti)	ppm	6800	6900	5300	5300	4900	4700	4700	500	6466519
Tungsten (W)	ppm	11	2	9	4	5	17	5	1	6466519
Uranium (U)	ppm	14.0	18.0	25.9	13.0	12.0	4.1	14.0	0.2	6466519
Ytterbium (Yb)	ppm	4	3	3	4	3	3	3	2	6466519
Zinc (Zn)	ppm	110	120	170	110	120	130	130	100	6466519
Zirconium (Zr)	ppm	1500	590	510	990	930	340	500	200	6466519

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch



BV Labs Job #: B9X4211
Report Date: 2019/12/13

Bureau Veritas Commodities
Client Project #: VAN19003329A

RESULTS OF ANALYSES OF SOIL

BV Labs ID		LKO262		LKO263	LKO264	LKO265	LKO266	LKO267		
Sampling Date										
	UNITS	HMC-1040	RDL	HMC-1041 DUP OF HMC-1055B	HMC-1042	HMC-1043	HMC-1044	HMC-1045	RDL	QC Batch
Bromine	ppm	3.0	0.5	2.3	13.0	3.1	6.1	5.6	0.5	6466519
Antimony (Sb)	ppm	0.2	0.1	0.1	0.3	0.2	0.8	0.2	0.1	6466519
Arsenic (As)	ppm	<0.5	0.5	1.1	1.1	0.7	8.0	<0.5	0.5	6466519
Barium (Ba)	ppm	830	50	1400	940	1000	480	890	50	6466519
Cadmium (Cd)	ppm	<5	5	<5	<5	<5	<5	<5	5	6466519
Cerium (Ce)	ppm	1650	5	290	110	170	28	250	5	6466519
Cesium (Cs)	ppm	1.4	0.5	1.0	2.4	2.1	0.9	2.4	0.5	6466519
Chromium (Cr)	ppm	69	20	30	220	210	58	180	20	6466519
Cobalt (Co)	ppm	12	5	5	17	16	15	10	5	6466519
Europium (Eu)	ppm	6	1	<1	2	2	<1	2	1	6466519
Gold (Au)	ppm	<0.002	0.002	<0.002	<0.002	<0.002	0.047	<0.002	0.002	6466519
Hafnium (Hf)	ppm	78	1	7	10	10	4	13	1	6466519
Iridium (Ir)	ppm	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	6466519
Iron (Fe)	ppm	110000	2000	23000	59000	55000	60000	44000	2000	6466519
Lanthanum (La)	ppm	905	2	160	65	95	16	140	2	6466519
Lutetium (Lu)	ppm	1.9	0.2	0.2	0.3	0.4	0.3	0.8	0.2	6466519
Molybdenum (Mo)	ppm	<2.8	2.8	<1	<1	<1	16	<1	1	6466519
Nickel (Ni)	ppm	<10	10	<10	61	54	15	29	10	6466519
Rubidium (Rb)	ppm	66	5	110	82	100	31	70	5	6466519
Samarium (Sm)	ppm	105	0.1	14.3	9.3	11.6	3.7	17.1	0.1	6466519
Scandium (Sc)	ppm	17.0	0.2	5.5	12.0	12.0	20.6	13.0	0.2	6466519
Selenium (Se)	ppm	<5	5	<5	<5	<5	<5	<5	5	6466519
Silver (Ag)	ppm	<2	2	<2	<2	<2	<2	<2	2	6466519
Sodium (Na)	ppm	19000	200	23600	18000	20600	16000	21500	200	6466519
Tantalum (Ta)	ppm	3.5	0.5	2.9	3.3	4.1	0.6	6.3	0.5	6466519
Tellurium (Te)	ppm	<10	10	<10	<10	<10	<10	<10	10	6466519
Terbium (Tb)	ppm	8.3	0.5	1.0	1.1	1.2	0.6	1.8	0.5	6466519
Thorium (Th)	ppm	355	0.2	49.4	15.0	26.5	2.4	37.2	0.2	6466519
Tin (Sn)	ppm	<100	100	<100	<100	<100	<100	<100	100	6466519
Titanium (Ti)	ppm	9100	500	3900	5000	5200	5800	5500	500	6466519
Tungsten (W)	ppm	5	1	1	2	2	1	8	1	6466519
Uranium (U)	ppm	29.4	0.2	8.9	24.3	16.0	1.4	25.6	0.2	6466519
Ytterbium (Yb)	ppm	<2	2	<2	<2	2	2	4	2	6466519
Zinc (Zn)	ppm	<100	100	<100	<100	150	<100	120	100	6466519
Zirconium (Zr)	ppm	2100	200	<200	290	380	<200	470	200	6466519

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch



RESULTS OF ANALYSES OF SOIL

BV Labs ID		LKO268	LKO269	LKO270	LKO271	LKO272	LKO273	LKO274		
Sampling Date										
	UNITS	HMC-1046	HMC-1047	HMC-1048	HMC-1049	HMC-1050	HMC-1051	HMC-1052	RDL	QC Batch
Bromine	ppm	2.0	1.9	2.7	15.0	2.4	1.3	1.7	0.5	6466519
Antimony (Sb)	ppm	<0.1	0.1	0.2	0.3	0.2	<0.1	<0.1	0.1	6466519
Arsenic (As)	ppm	<0.5	1.3	1.7	2.2	1.6	<0.5	<0.5	0.5	6466519
Barium (Ba)	ppm	1700	1400	1500	920	1600	1000	900	50	6466519
Cadmium (Cd)	ppm	<5	<5	<5	<5	<5	<5	<5	5	6466519
Cerium (Ce)	ppm	300	350	240	87	280	120	77	5	6466519
Cesium (Cs)	ppm	1.8	2.1	1.8	2.9	1.3	0.8	<0.5	0.5	6466519
Chromium (Cr)	ppm	39	56	90	57	62	120	85	20	6466519
Cobalt (Co)	ppm	<5	6	7	6	6	8	13	5	6466519
Europium (Eu)	ppm	3	2	3	2	3	1	2	1	6466519
Gold (Au)	ppm	<0.002	<0.002	<0.002	0.003	<0.002	<0.002	<0.002	0.002	6466519
Hafnium (Hf)	ppm	22	34	17	13	17	14	9	1	6466519
Iridium (Ir)	ppm	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	6466519
Iron (Fe)	ppm	34000	54000	41000	28000	34000	37000	39000	2000	6466519
Lanthanum (La)	ppm	170	202	140	72	150	65	38	2	6466519
Lutetium (Lu)	ppm	0.5	0.6	0.3	0.5	0.4	0.5	0.3	0.2	6466519
Molybdenum (Mo)	ppm	<1	2	<1	1	1	<1	1	1	6466519
Nickel (Ni)	ppm	<10	<10	14	16	<10	23	23	10	6466519
Rubidium (Rb)	ppm	100	120	80	68	100	43	53	5	6466519
Samarium (Sm)	ppm	16.6	17.3	14.1	9.0	14.8	8.6	6.3	0.1	6466519
Scandium (Sc)	ppm	8.1	10.0	9.2	9.2	9.2	12.0	10.0	0.2	6466519
Selenium (Se)	ppm	<5	<5	<5	<5	<5	<5	<5	5	6466519
Silver (Ag)	ppm	<2	<2	<2	<2	<2	<2	<2	2	6466519
Sodium (Na)	ppm	26800	25200	23200	20000	26000	23400	22700	200	6466519
Tantalum (Ta)	ppm	4.3	5.2	1.9	1.1	3.4	1.4	1.4	0.5	6466519
Tellurium (Te)	ppm	<10	<10	<10	<10	<10	<10	<10	10	6466519
Terbium (Tb)	ppm	1.2	1.3	1.1	1.0	1.0	0.9	0.8	0.5	6466519
Thorium (Th)	ppm	28.6	41.2	26.3	11.0	25.8	17.0	8.6	0.2	6466519
Tin (Sn)	ppm	<100	<100	<100	<100	<100	<100	<100	100	6466519
Titanium (Ti)	ppm	6800	8000	6000	3400	6000	4700	6200	500	6466519
Tungsten (W)	ppm	<1	3	1	<1	<1	<1	2	1	6466519
Uranium (U)	ppm	8.9	12.0	8.2	10.0	7.8	3.5	2.9	0.2	6466519
Ytterbium (Yb)	ppm	2	4	<2	3	2	3	2	2	6466519
Zinc (Zn)	ppm	<100	100	<100	<100	<100	<100	<100	100	6466519
Zirconium (Zr)	ppm	820	1200	570	400	580	420	270	200	6466519

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch



RESULTS OF ANALYSES OF SOIL

BV Labs ID		LKO275	LKO276	LKO277	LKO278	LKO279	LKO280	LKO281		
Sampling Date										
	UNITS	HMC-1053	HMC-1054	HMC-1055A	HMC-1055B	HMC-1056	HMC-1057	HMC-1058	RDL	QC Batch
Bromine	ppm	7.9	0.8	2.5	2.4	1.5	6.4	2.8	0.5	6466519
Antimony (Sb)	ppm	0.2	<0.1	<0.1	<0.1	0.1	0.3	0.2	0.1	6466519
Arsenic (As)	ppm	1.7	<0.5	0.8	0.8	0.9	2.5	1.7	0.5	6466519
Barium (Ba)	ppm	1200	1300	1300	1300	1200	850	940	50	6466519
Cadmium (Cd)	ppm	<5	<5	<5	<5	<5	<5	<5	5	6466519
Cerium (Ce)	ppm	58	579	440	270	94	60	62	5	6466519
Cesium (Cs)	ppm	3.7	0.9	1.2	1.4	1.8	2.0	2.1	0.5	6466519
Chromium (Cr)	ppm	130	45	<20	38	99	120	37	20	6466519
Cobalt (Co)	ppm	7	<5	<5	<5	10	17	9	5	6466519
Europium (Eu)	ppm	1	3	3	<1	1	1	<1	1	6466519
Gold (Au)	ppm	<0.002	<0.002	0.003	<0.002	<0.002	<0.002	<0.002	0.002	6466519
Hafnium (Hf)	ppm	7	13	10	7	7	6	5	1	6466519
Iridium (Ir)	ppm	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	6466519
Iron (Fe)	ppm	26000	31000	23000	20000	27000	43000	28000	2000	6466519
Lanthanum (La)	ppm	32	339	251	160	53	34	36	2	6466519
Lutetium (Lu)	ppm	0.3	0.5	0.4	0.3	0.4	0.3	0.3	0.2	6466519
Molybdenum (Mo)	ppm	<1	<1	<1	<1	<1	<1	1	1	6466519
Nickel (Ni)	ppm	21	<10	<10	10	19	30	12	10	6466519
Rubidium (Rb)	ppm	100	91	99	110	95	67	79	5	6466519
Samarium (Sm)	ppm	5.7	29.8	22.3	14.2	7.2	5.5	5.6	0.1	6466519
Scandium (Sc)	ppm	8.1	6.5	5.6	5.6	7.8	15.0	10.0	0.2	6466519
Selenium (Se)	ppm	<5	<5	<5	<5	<5	<5	<5	5	6466519
Silver (Ag)	ppm	<2	<2	<2	<2	<2	<2	<2	2	6466519
Sodium (Na)	ppm	21100	21100	21600	22200	23300	20000	24400	200	6466519
Tantalum (Ta)	ppm	1.4	5.9	4.2	2.9	2.1	1.2	1.7	0.5	6466519
Tellurium (Te)	ppm	<10	<10	<10	<10	<10	<10	<10	10	6466519
Terbium (Tb)	ppm	0.7	1.9	1.4	0.8	0.8	0.8	0.8	0.5	6466519
Thorium (Th)	ppm	9.3	111	82.6	49.0	17.0	9.0	9.2	0.2	6466519
Tin (Sn)	ppm	<100	<100	<100	<100	<100	<100	<100	100	6466519
Titanium (Ti)	ppm	3700	6900	4900	3700	3900	4500	3800	500	6466519
Tungsten (W)	ppm	1	1	1	<1	<1	2	2	1	6466519
Uranium (U)	ppm	3.9	12.0	12.0	8.3	6.9	3.4	8.7	0.2	6466519
Ytterbium (Yb)	ppm	<2	<2	<2	<2	2	2	2	2	6466519
Zinc (Zn)	ppm	<100	<100	<100	<100	<100	120	<100	100	6466519
Zirconium (Zr)	ppm	240	<200	<200	<200	<200	<200	240	200	6466519

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch



RESULTS OF ANALYSES OF SOIL

BV Labs ID		LKO282	LKO283	LKO284	LKO285	LKO286	LKO287		
Sampling Date									
	UNITS	HMC-1059	HMC-1060	HMC-1061 DUP OF HMC-1080B	HMC-1062	HMC-1063	HMC-1064	RDL	QC Batch
Bromine	ppm	4.2	4.1	1.7	1.6	1.1	0.9	0.5	6466519
Antimony (Sb)	ppm	0.3	0.2	0.3	0.2	0.3	0.3	0.1	6466519
Arsenic (As)	ppm	5.8	1.2	1.9	2.6	2.8	2.4	0.5	6466519
Barium (Ba)	ppm	1100	1100	1400	1100	1100	1000	50	6466519
Cadmium (Cd)	ppm	<5	<5	<5	<5	<5	<5	5	6466519
Cerium (Ce)	ppm	69	60	250	63	63	52	5	6466519
Cesium (Cs)	ppm	1.9	2.0	2.2	2.3	2.3	2.1	0.5	6466519
Chromium (Cr)	ppm	33	53	100	75	52	51	20	6466519
Cobalt (Co)	ppm	5	9	10	9	9	5	5	6466519
Europium (Eu)	ppm	1	<1	3	2	1	<1	1	6466519
Gold (Au)	ppm	<0.002	<0.002	<0.002	0.017	<0.002	<0.002	0.002	6466519
Hafnium (Hf)	ppm	6	7	22	10	6	7	1	6466519
Iridium (Ir)	ppm	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	6466519
Iron (Fe)	ppm	26000	32000	62000	34000	31000	40000	2000	6466519
Lanthanum (La)	ppm	41	32	130	34	34	27	2	6466519
Lutetium (Lu)	ppm	0.2	0.3	0.4	0.3	0.3	0.3	0.2	6466519
Molybdenum (Mo)	ppm	<1	2	<1	<1	<1	<1	1	6466519
Nickel (Ni)	ppm	13	14	23	16	11	17	10	6466519
Rubidium (Rb)	ppm	77	75	81	85	82	95	5	6466519
Samarium (Sm)	ppm	5.4	5.5	14.2	5.6	5.2	4.4	0.1	6466519
Scandium (Sc)	ppm	7.8	14.0	12.0	7.9	9.3	7.5	0.2	6466519
Selenium (Se)	ppm	<5	<5	<5	<5	<5	<5	5	6466519
Silver (Ag)	ppm	<2	<2	<2	<2	<2	<2	2	6466519
Sodium (Na)	ppm	22400	22900	23300	22700	22500	23600	200	6466519
Tantalum (Ta)	ppm	1.9	1.2	3.6	1.8	1.7	1.3	0.5	6466519
Tellurium (Te)	ppm	<10	<10	<10	<10	<10	<10	10	6466519
Terbium (Tb)	ppm	0.6	0.7	1.1	0.7	0.7	0.6	0.5	6466519
Thorium (Th)	ppm	12.0	9.4	43.5	10.0	8.6	8.5	0.2	6466519
Tin (Sn)	ppm	<100	<100	<100	<100	<100	<100	100	6466519
Titanium (Ti)	ppm	2900	3300	6500	3500	3300	3500	500	6466519
Tungsten (W)	ppm	2	<1	2	5	2	3	1	6466519
Uranium (U)	ppm	5.5	5.0	13.0	5.8	3.5	3.1	0.2	6466519
Ytterbium (Yb)	ppm	<2	2	<2	2	<2	<2	2	6466519
Zinc (Zn)	ppm	<100	<100	<100	<100	<100	<100	100	6466519
Zirconium (Zr)	ppm	<200	<200	650	230	<200	230	200	6466519
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									



RESULTS OF ANALYSES OF SOIL

BV Labs ID		LKO288	LKO289	LKO290	LKO291	LKO292	LKO293	LKO294		
Sampling Date										
	UNITS	HMC-1065	HMC-1066	HMC-1067	HMC-1068	HMC-1069	HMC-1070	HMC-1071	RDL	QC Batch
Bromine	ppm	2.5	1.4	3.6	2.3	2.4	1.8	1.9	0.5	6466519
Antimony (Sb)	ppm	0.1	<0.1	0.1	<0.1	0.1	0.3	0.3	0.1	6466519
Arsenic (As)	ppm	0.5	<0.5	0.6	0.5	1.0	2.3	2.3	0.5	6466519
Barium (Ba)	ppm	1000	1100	860	1200	1300	1000	780	50	6466519
Cadmium (Cd)	ppm	<5	<5	<5	<5	<5	<5	<5	5	6466519
Cerium (Ce)	ppm	130	200	190	260	210	130	200	5	6466519
Cesium (Cs)	ppm	1.7	1.3	1.8	1.8	1.3	2.1	1.4	0.5	6466519
Chromium (Cr)	ppm	77	76	63	170	350	91	230	20	6466519
Cobalt (Co)	ppm	7	7	7	9	19	8	13	5	6466519
Europium (Eu)	ppm	3	2	2	2	1	1	2	1	6466519
Gold (Au)	ppm	0.006	<0.002	<0.002	<0.002	<0.002	0.002	0.140	0.002	6466519
Hafnium (Hf)	ppm	16	12	9	10	10	9	50	1	6466519
Iridium (Ir)	ppm	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	6466519
Iron (Fe)	ppm	44000	43000	31000	40000	49000	44000	130000	2000	6466519
Lanthanum (La)	ppm	69	110	110	140	110	73	110	2	6466519
Lutetium (Lu)	ppm	0.5	0.5	0.5	0.3	0.3	0.3	0.9	0.2	6466519
Molybdenum (Mo)	ppm	1	<1	<1	<1	<1	<1	<1	1	6466519
Nickel (Ni)	ppm	13	<10	<10	27	56	<10	<10	10	6466519
Rubidium (Rb)	ppm	68	84	87	87	75	79	69	5	6466519
Samarium (Sm)	ppm	10.0	13.5	13.0	14.9	12.2	8.8	14.1	0.1	6466519
Scandium (Sc)	ppm	8.2	9.0	7.9	11.0	16.0	10.0	10.0	0.2	6466519
Selenium (Se)	ppm	<5	<5	<5	<5	<5	<5	<5	5	6466519
Silver (Ag)	ppm	<2	<2	<2	<2	<2	<2	<2	2	6466519
Sodium (Na)	ppm	23000	24000	20900	21100	19000	21800	19000	200	6466519
Tantalum (Ta)	ppm	2.5	3.2	5.7	2.3	2.0	2.9	3.8	0.5	6466519
Tellurium (Te)	ppm	<10	<10	<10	<10	<10	<10	<10	10	6466519
Terbium (Tb)	ppm	1.1	1.3	1.4	1.2	1.1	0.9	1.7	0.5	6466519
Thorium (Th)	ppm	18.0	34.6	39.9	37.2	26.0	23.0	40.0	0.2	6466519
Tin (Sn)	ppm	<100	<100	<100	<100	<100	<100	<100	100	6466519
Titanium (Ti)	ppm	4600	4900	3600	4200	4400	4100	7000	500	6466519
Tungsten (W)	ppm	2	<1	3	<1	1	3	9	1	6466519
Uranium (U)	ppm	7.6	8.6	16.0	5.8	4.0	7.5	16.0	0.2	6466519
Ytterbium (Yb)	ppm	3	3	3	<2	<2	<2	5	2	6466519
Zinc (Zn)	ppm	100	<100	<100	<100	120	<100	<100	100	6466519
Zirconium (Zr)	ppm	510	350	240	<200	<200	<200	1600	200	6466519

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch



RESULTS OF ANALYSES OF SOIL

BV Labs ID		LKO295	LKO296	LKO297	LKO298	LKO299	LKO300	LKO301		
Sampling Date										
	UNITS	HMC-1072	HMC-1073	HMC-1074	HMC-1075	HMC-1076	HMC-1077	HMC-1078	RDL	QC Batch
Bromine	ppm	3.3	2.9	39.0	6.1	12.0	16.0	7.2	0.5	6466519
Antimony (Sb)	ppm	0.5	<0.1	3.3	0.1	0.3	2.1	0.1	0.1	6466519
Arsenic (As)	ppm	1.9	<0.5	22.0	0.9	2.0	52.6	1.3	0.5	6466519
Barium (Ba)	ppm	1300	1500	640	1100	1300	1000	1500	50	6466519
Cadmium (Cd)	ppm	<5	<5	<5	<5	<5	<5	<5	5	6466519
Cerium (Ce)	ppm	100	330	50	280	100	68	505	5	6466519
Cesium (Cs)	ppm	3.6	1.0	1.8	1.1	6.0	4.4	1.6	0.5	6466519
Chromium (Cr)	ppm	22	150	68	380	65	50	150	20	6466519
Cobalt (Co)	ppm	10	14	19	20	10	12	7	5	6466519
Europium (Eu)	ppm	2	4	2	3	2	1	3	1	6466519
Gold (Au)	ppm	<0.002	<0.002	0.006	<0.002	<0.002	0.011	<0.002	0.002	6466519
Hafnium (Hf)	ppm	6	12	6	12	6	6	15	1	6466519
Iridium (Ir)	ppm	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	6466519
Iron (Fe)	ppm	32000	40000	50000	55000	39000	41000	53000	2000	6466519
Lanthanum (La)	ppm	57	170	29	150	72	38	286	2	6466519
Lutetium (Lu)	ppm	<0.2	0.3	0.5	0.3	0.4	0.3	0.3	0.2	6466519
Molybdenum (Mo)	ppm	3	<1	<1	1	<1	2	<1	1	6466519
Nickel (Ni)	ppm	15	94	30	77	24	17	<10	10	6466519
Rubidium (Rb)	ppm	130	66	30	67	120	84	82	5	6466519
Samarium (Sm)	ppm	7.1	23.3	7.0	15.9	9.4	5.2	27.0	0.1	6466519
Scandium (Sc)	ppm	7.4	11.0	13.0	16.0	9.2	11.0	10.0	0.2	6466519
Selenium (Se)	ppm	<5	<5	<5	<5	<5	<5	<5	5	6466519
Silver (Ag)	ppm	<2	<2	<2	<2	<2	<2	<2	2	6466519
Sodium (Na)	ppm	22700	22200	14000	18000	16000	19000	22400	200	6466519
Tantalum (Ta)	ppm	2.0	1.7	<0.5	2.3	1.8	1.2	2.9	0.5	6466519
Tellurium (Te)	ppm	<10	<10	<10	<10	<10	<10	<10	10	6466519
Terbium (Tb)	ppm	0.7	1.4	1.0	1.2	0.9	0.6	1.5	0.5	6466519
Thorium (Th)	ppm	19.0	24.7	3.6	33.7	14.0	10.0	80.7	0.2	6466519
Tin (Sn)	ppm	<100	<100	<100	<100	<100	<100	<100	100	6466519
Titanium (Ti)	ppm	3500	5600	4300	5000	3900	3200	7900	500	6466519
Tungsten (W)	ppm	2	<1	<1	<1	1	2	1	1	6466519
Uranium (U)	ppm	6.4	4.5	8.3	5.9	6.9	3.4	14.0	0.2	6466519
Ytterbium (Yb)	ppm	<2	<2	4	<2	2	<2	<2	2	6466519
Zinc (Zn)	ppm	<100	<100	220	<100	<100	160	110	100	6466519
Zirconium (Zr)	ppm	<200	380	<200	360	280	230	270	200	6466519
RDL = Reportable Detection Limit										
QC Batch = Quality Control Batch										



RESULTS OF ANALYSES OF SOIL

BV Labs ID		LKO302	LKO303	LKO304	LKO305	LKO306	LKO307		
Sampling Date									
	UNITS	HMC-1079	HMC-1080A	HMC-1080B	HMC-1081 DUP OF HMC-1087B	HMC-1082	HMC-1083	RDL	QC Batch
Bromine	ppm	4.5	2.2	1.8	1.8	7.2	12.0	0.5	6466519
Antimony (Sb)	ppm	0.5	0.3	0.4	0.2	<0.1	0.8	0.1	6466519
Arsenic (As)	ppm	4.4	2.1	2.0	0.9	<0.5	5.0	0.5	6466519
Barium (Ba)	ppm	1300	1500	1500	1100	1600	1300	50	6466519
Cadmium (Cd)	ppm	<5	<5	<5	<5	<5	<5	5	6466519
Cerium (Ce)	ppm	745	260	250	190	220	88	5	6466519
Cesium (Cs)	ppm	1.9	2.2	1.9	1.7	1.2	3.7	0.5	6466519
Chromium (Cr)	ppm	84	97	96	140	66	200	20	6466519
Cobalt (Co)	ppm	8	12	13	11	<5	16	5	6466519
Europium (Eu)	ppm	4	3	3	3	3	2	1	6466519
Gold (Au)	ppm	0.100	<0.002	<0.002	0.003	<0.002	<0.002	0.002	6466519
Hafnium (Hf)	ppm	35	24	23	10	8	9	1	6466519
Iridium (Ir)	ppm	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	6466519
Iron (Fe)	ppm	73000	67000	65000	45000	24000	48000	2000	6466519
Lanthanum (La)	ppm	414	140	140	100	120	45	2	6466519
Lutetium (Lu)	ppm	0.6	0.5	0.4	0.3	<0.2	0.3	0.2	6466519
Molybdenum (Mo)	ppm	<1	<1	<1	<1	<1	<1	1	6466519
Nickel (Ni)	ppm	<10	<10	21	17	18	37	10	6466519
Rubidium (Rb)	ppm	75	88	87	86	80	86	5	6466519
Samarium (Sm)	ppm	38.6	14.9	14.9	12.8	12.1	6.7	0.1	6466519
Scandium (Sc)	ppm	12.0	12.0	12.0	11.0	6.6	15.0	0.2	6466519
Selenium (Se)	ppm	<5	<5	<5	<5	<5	<5	5	6466519
Silver (Ag)	ppm	<2	<2	<2	<2	<2	<2	2	6466519
Sodium (Na)	ppm	19000	24200	24000	22100	25300	22400	200	6466519
Tantalum (Ta)	ppm	3.7	3.8	3.7	4.1	1.5	1.4	0.5	6466519
Tellurium (Te)	ppm	<10	<10	<10	<10	<10	<10	10	6466519
Terbium (Tb)	ppm	2.2	1.2	1.2	1.2	0.8	0.7	0.5	6466519
Thorium (Th)	ppm	126	49.5	44.6	26.2	23.0	11.0	0.2	6466519
Tin (Sn)	ppm	<100	<100	<100	<100	<100	<100	100	6466519
Titanium (Ti)	ppm	8000	6500	6500	4800	3900	4500	500	6466519
Tungsten (W)	ppm	4	2	2	2	<1	2	1	6466519
Uranium (U)	ppm	24.6	14.0	12.0	6.4	8.7	3.9	0.2	6466519
Ytterbium (Yb)	ppm	<2	3	3	<2	<2	<2	2	6466519
Zinc (Zn)	ppm	<100	110	120	110	<100	<100	100	6466519
Zirconium (Zr)	ppm	1000	720	670	<200	260	340	200	6466519
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									



RESULTS OF ANALYSES OF SOIL

BV Labs ID		LKO308	LKO309	LKO310	LKO311	LKO312	LKO313	LKO314		
Sampling Date										
	UNITS	HMC-1084	HMC-1085	HMC-1086	HMC-1087A	HMC-1087B	HMC-1088	HMC-1089	RDL	QC Batch
Bromine	ppm	5.0	1.9	7.7	1.7	1.3	2.1	4.9	0.5	6466519
Antimony (Sb)	ppm	0.4	0.1	0.2	0.2	0.2	<0.1	0.2	0.1	6466519
Arsenic (As)	ppm	6.0	1.3	1.1	1.7	1.2	0.7	0.6	0.5	6466519
Barium (Ba)	ppm	1300	1600	1100	1100	1200	1500	1200	50	6466519
Cadmium (Cd)	ppm	<5	<5	<5	<5	<5	<5	<5	5	6466519
Cerium (Ce)	ppm	190	190	190	250	210	250	210	5	6466519
Cesium (Cs)	ppm	2.0	2.0	2.9	1.7	1.5	1.0	2.5	0.5	6466519
Chromium (Cr)	ppm	490	420	520	160	140	52	62	20	6466519
Cobalt (Co)	ppm	16	18	19	10	11	8	11	5	6466519
Europium (Eu)	ppm	2	3	2	3	2	2	2	1	6466519
Gold (Au)	ppm	0.150	<0.002	<0.002	<0.002	0.003	<0.002	<0.002	0.002	6466519
Hafnium (Hf)	ppm	12	13	23	13	12	16	10	1	6466519
Iridium (Ir)	ppm	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	6466519
Iron (Fe)	ppm	48000	69000	82000	56000	51000	47000	36000	2000	6466519
Lanthanum (La)	ppm	110	98	110	140	120	140	120	2	6466519
Lutetium (Lu)	ppm	0.3	0.3	0.4	0.5	0.4	0.3	0.3	0.2	6466519
Molybdenum (Mo)	ppm	<1	2	1	<1	1	1	1	1	6466519
Nickel (Ni)	ppm	69	110	78	28	18	<10	20	10	6466519
Rubidium (Rb)	ppm	69	93	85	93	86	86	100	5	6466519
Samarium (Sm)	ppm	10.3	11.8	13.5	15.5	13.7	14.9	12.5	0.1	6466519
Scandium (Sc)	ppm	12.0	15.0	17.0	13.0	12.0	8.6	13.0	0.2	6466519
Selenium (Se)	ppm	<5	<5	<5	<5	<5	<5	<5	5	6466519
Silver (Ag)	ppm	<2	<2	<2	<2	<2	<2	<2	2	6466519
Sodium (Na)	ppm	23900	21700	17000	24800	24200	27200	22600	200	6466519
Tantalum (Ta)	ppm	2.0	2.5	2.6	4.6	4.4	2.3	2.3	0.5	6466519
Tellurium (Te)	ppm	<10	<10	<10	<10	<10	<10	<10	10	6466519
Terbium (Tb)	ppm	0.9	1.0	1.3	1.3	1.2	1.2	1.1	0.5	6466519
Thorium (Th)	ppm	24.0	20.5	20.0	33.0	28.0	27.2	32.6	0.2	6466519
Tin (Sn)	ppm	<100	<100	<100	<100	<100	<100	<100	100	6466519
Titanium (Ti)	ppm	5200	5800	6000	5500	5100	5200	4800	500	6466519
Tungsten (W)	ppm	2	1	1	2	1	<1	2	1	6466519
Uranium (U)	ppm	6.0	5.5	11.0	7.0	6.8	3.8	8.8	0.2	6466519
Ytterbium (Yb)	ppm	<2	<2	3	3	2	<2	<2	2	6466519
Zinc (Zn)	ppm	<100	<100	120	120	<100	110	<100	100	6466519
Zirconium (Zr)	ppm	410	350	760	350	340	380	290	200	6466519

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch



RESULTS OF ANALYSES OF SOIL

BV Labs ID		LKO315	LKO316	LKO317	LKO318	LKO319	LKO320	LKO321		
Sampling Date										
	UNITS	HMC-1090	HMC-1091	HMC-1092	HMC-1093	HMC-1094	HMC-1095	HMC-1096	RDL	QC Batch
Bromine	ppm	1.3	23.0	5.4	12.0	4.1	6.0	2.5	0.5	6466519
Antimony (Sb)	ppm	<0.1	1.0	0.6	0.5	0.1	0.8	0.1	0.1	6466519
Arsenic (As)	ppm	<0.5	13.0	5.1	3.0	<0.5	8.4	<0.5	0.5	6466519
Barium (Ba)	ppm	950	1200	1400	1100	1100	470	1000	50	6466519
Cadmium (Cd)	ppm	<5	<5	<5	<5	<5	<5	<5	5	6466519
Cerium (Ce)	ppm	230	84	83	72	170	32	210	5	6466519
Cesium (Cs)	ppm	1.1	2.8	3.4	1.3	2.5	<0.5	2.1	0.5	6466519
Chromium (Cr)	ppm	180	97	56	110	97	54	380	20	6466519
Cobalt (Co)	ppm	14	8	8	11	11	17	10	5	6466519
Europium (Eu)	ppm	2	2	2	1	2	1	3	1	6466519
Gold (Au)	ppm	<0.002	0.355	<0.002	0.010	<0.002	0.044	<0.002	0.002	6466519
Hafnium (Hf)	ppm	11	6	7	11	14	4	9	1	6466519
Iridium (Ir)	ppm	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	6466519
Iron (Fe)	ppm	48000	32000	25000	48000	49000	61000	45000	2000	6466519
Lanthanum (La)	ppm	120	46	48	40	100	15	110	2	6466519
Lutetium (Lu)	ppm	0.4	<0.2	<0.2	0.3	0.4	0.4	0.3	0.2	6466519
Molybdenum (Mo)	ppm	<1	1	<1	<1	1	16	<1	1	6466519
Nickel (Ni)	ppm	23	27	15	19	13	25	61	10	6466519
Rubidium (Rb)	ppm	72	73	89	64	140	30	100	5	6466519
Samarium (Sm)	ppm	14.5	5.3	6.3	5.3	10.2	3.7	13.1	0.1	6466519
Scandium (Sc)	ppm	16.0	8.9	8.0	12.0	7.1	21.2	8.0	0.2	6466519
Selenium (Se)	ppm	<5	<5	<5	<5	<5	<5	<5	5	6466519
Silver (Ag)	ppm	<2	<2	<2	<2	<2	<2	<2	2	6466519
Sodium (Na)	ppm	20400	18000	23300	19000	27600	16000	23800	200	6466519
Tantalum (Ta)	ppm	2.9	1.1	1.3	1.6	5.6	<0.5	4.3	0.5	6466519
Tellurium (Te)	ppm	<10	<10	<10	<10	<10	<10	<10	10	6466519
Terbium (Tb)	ppm	1.3	0.6	0.6	0.6	1.1	0.6	1.2	0.5	6466519
Thorium (Th)	ppm	25.8	10.0	10.0	8.8	27.3	2.4	32.4	0.2	6466519
Tin (Sn)	ppm	<100	<100	<100	<100	<100	<100	<100	100	6466519
Titanium (Ti)	ppm	6700	3400	3300	4500	4400	5700	3900	500	6466519
Tungsten (W)	ppm	2	2	2	2	2	<1	<1	1	6466519
Uranium (U)	ppm	4.2	3.3	4.3	3.3	12.0	1.3	11.0	0.2	6466519
Ytterbium (Yb)	ppm	3	<2	<2	2	2	2	<2	2	6466519
Zinc (Zn)	ppm	140	110	<100	<100	<100	<100	120	100	6466519
Zirconium (Zr)	ppm	<200	<200	<200	400	410	<200	310	200	6466519

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch



RESULTS OF ANALYSES OF SOIL

BV Labs ID		LKO322	LKO323	LKO324	LKO325	LKO326	LKO327		
Sampling Date									
	UNITS	HMC-1097	HMC-1098	HMC-1099	HMC-1100	HMC-1101 DUP OF HMC-1108	HMC-1102	RDL	QC Batch
Bromine	ppm	3.1	2.4	0.9	1.6	32.0	1.3	0.5	6466519
Antimony (Sb)	ppm	0.1	0.1	<0.1	<0.1	1.0	<0.1	0.1	6466519
Arsenic (As)	ppm	0.6	1.0	0.9	0.7	10.0	0.6	0.5	6466519
Barium (Ba)	ppm	820	1500	1200	1800	810	1300	50	6466519
Cadmium (Cd)	ppm	<5	<5	<5	<5	<5	<5	5	6466519
Cerium (Ce)	ppm	180	310	832	200	61	150	5	6466519
Cesium (Cs)	ppm	1.9	1.6	1.0	2.5	3.7	1.9	0.5	6466519
Chromium (Cr)	ppm	1000	74	420	240	170	120	20	6466519
Cobalt (Co)	ppm	30	6	18	18	8	7	5	6466519
Europium (Eu)	ppm	2	2	4	<1	<1	1	1	6466519
Gold (Au)	ppm	<0.002	<0.002	<0.002	<0.002	0.033	<0.002	0.002	6466519
Hafnium (Hf)	ppm	8	9	40	8	6	9	1	6466519
Iridium (Ir)	ppm	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	6466519
Iron (Fe)	ppm	52000	37000	150000	51000	36000	34000	2000	6466519
Lanthanum (La)	ppm	90	170	463	110	33	78	2	6466519
Lutetium (Lu)	ppm	0.3	0.2	0.5	0.2	<0.2	<0.2	0.2	6466519
Molybdenum (Mo)	ppm	<1	<1	<1	<1	<1	<1	1	6466519
Nickel (Ni)	ppm	210	14	60	86	47	28	10	6466519
Rubidium (Rb)	ppm	76	100	71	110	59	110	5	6466519
Samarium (Sm)	ppm	12.3	16.3	37.4	11.1	4.4	9.3	0.1	6466519
Scandium (Sc)	ppm	17.0	7.7	20.0	13.0	8.4	7.4	0.2	6466519
Selenium (Se)	ppm	<5	<5	<5	<5	<5	<5	5	6466519
Silver (Ag)	ppm	<2	<2	<2	<2	<2	<2	2	6466519
Sodium (Na)	ppm	20000	23300	19000	24100	15000	22900	200	6466519
Tantalum (Ta)	ppm	3.0	2.6	6.1	1.9	1.1	2.3	0.5	6466519
Tellurium (Te)	ppm	<10	<10	<10	<10	<10	<10	10	6466519
Terbium (Tb)	ppm	1.2	1.0	2.1	0.9	0.5	0.8	0.5	6466519
Thorium (Th)	ppm	18.0	51.0	115	23.5	7.2	24.7	0.2	6466519
Tin (Sn)	ppm	<100	<100	<100	<100	<100	<100	100	6466519
Titanium (Ti)	ppm	3800	5100	13000	4900	3800	3500	500	6466519
Tungsten (W)	ppm	1	<1	3	<1	<1	<1	1	6466519
Uranium (U)	ppm	12.0	5.9	10.0	3.2	2.5	6.2	0.2	6466519
Ytterbium (Yb)	ppm	3	<2	<2	<2	<2	<2	2	6466519
Zinc (Zn)	ppm	150	<100	200	150	<100	<100	100	6466519
Zirconium (Zr)	ppm	270	330	1200	<200	<200	290	200	6466519
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									



RESULTS OF ANALYSES OF SOIL

BV Labs ID		LKO328	LKO329	LKO330	LKO331	LKO332	LKO336	LKO340		
Sampling Date										
	UNITS	HMC-1103	HMC-1104	HMC-1105	HMC-1106	HMC-1107	HMC-1108	HMC-1109	RDL	QC Batch
Bromine	ppm	3.9	1.7	2.9	5.3	2.8	31.0	2.9	0.5	6466519
Antimony (Sb)	ppm	0.5	0.3	0.4	0.6	0.2	1.0	<0.1	0.1	6466519
Arsenic (As)	ppm	3.1	2.5	2.6	6.7	1.4	8.9	<0.5	0.5	6466519
Barium (Ba)	ppm	1300	1300	1300	420	760	810	690	50	6466519
Cadmium (Cd)	ppm	<5	<5	<5	<5	<5	<5	<5	5	6466519
Cerium (Ce)	ppm	180	210	170	28	310	67	170	5	6466519
Cesium (Cs)	ppm	4.4	3.7	4.1	0.9	1.7	3.7	2.1	0.5	6466519
Chromium (Cr)	ppm	220	94	140	51	88	160	79	20	6466519
Cobalt (Co)	ppm	14	8	10	14	9	9	10	5	6466519
Europium (Eu)	ppm	3	2	1	<1	2	2	2	1	6466519
Gold (Au)	ppm	<0.002	<0.002	<0.002	0.038	<0.002	0.023	<0.002	0.002	6466519
Hafnium (Hf)	ppm	22	30	37	4	15	7	14	1	6466519
Iridium (Ir)	ppm	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	6466519
Iron (Fe)	ppm	62000	41000	56000	56000	49000	37000	34000	2000	6466519
Lanthanum (La)	ppm	100	120	99	14	160	35	80	2	6466519
Lutetium (Lu)	ppm	0.4	0.5	0.6	0.3	0.8	<0.2	0.6	0.2	6466519
Molybdenum (Mo)	ppm	3	2	2	13	2	<1	<1	1	6466519
Nickel (Ni)	ppm	41	<10	18	<10	14	49	16	10	6466519
Rubidium (Rb)	ppm	130	190	160	24	130	60	85	5	6466519
Samarium (Sm)	ppm	12.1	11.2	10.0	3.2	19.5	4.3	11.6	0.1	6466519
Scandium (Sc)	ppm	15.0	8.0	12.0	19.0	12.0	8.7	13.0	0.2	6466519
Selenium (Se)	ppm	<5	<5	<5	<5	<5	<5	<5	5	6466519
Silver (Ag)	ppm	<2	<2	<2	<2	<2	<2	<2	2	6466519
Sodium (Na)	ppm	23000	27600	28400	15000	18000	16000	20100	200	6466519
Tantalum (Ta)	ppm	3.8	4.9	4.1	<0.5	3.6	1.2	2.3	0.5	6466519
Tellurium (Te)	ppm	<10	<10	<10	<10	<10	<10	<10	10	6466519
Terbium (Tb)	ppm	1.1	0.9	0.9	0.6	2.1	<0.5	1.4	0.5	6466519
Thorium (Th)	ppm	20.0	26.1	23.8	2.1	51.9	7.2	24.2	0.2	6466519
Tin (Sn)	ppm	<100	<100	<100	<100	<100	<100	<100	100	6466519
Titanium (Ti)	ppm	5900	4500	6400	5100	6700	3600	5500	500	6466519
Tungsten (W)	ppm	2	3	1	<1	6	<1	<1	1	6466519
Uranium (U)	ppm	10.0	10.0	9.5	1.2	8.6	2.3	5.8	0.2	6466519
Ytterbium (Yb)	ppm	3	3	4	3	5	<2	4	2	6466519
Zinc (Zn)	ppm	150	<100	<100	<100	<100	140	<100	100	6466519
Zirconium (Zr)	ppm	780	940	1300	<200	320	<200	<200	200	6466519

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch



RESULTS OF ANALYSES OF SOIL

BV Labs ID		LKO341	LKO342		
Sampling Date					
	UNITS	HMC-1110	HMC-1030	RDL	QC Batch
Bromine	ppm	8.5	6.1	0.5	6466519
Antimony (Sb)	ppm	0.4	0.3	0.1	6466519
Arsenic (As)	ppm	3.9	3.0	0.5	6466519
Barium (Ba)	ppm	1300	1200	50	6466519
Cadmium (Cd)	ppm	<5	<5	5	6466519
Cerium (Ce)	ppm	170	170	5	6466519
Cesium (Cs)	ppm	3.0	2.3	0.5	6466519
Chromium (Cr)	ppm	130	180	20	6466519
Cobalt (Co)	ppm	17	10	5	6466519
Europium (Eu)	ppm	2	2	1	6466519
Gold (Au)	ppm	<0.002	<0.002	0.002	6466519
Hafnium (Hf)	ppm	11	12	1	6466519
Iridium (Ir)	ppm	<0.05	<0.05	0.05	6466519
Iron (Fe)	ppm	47000	58000	2000	6466519
Lanthanum (La)	ppm	93	87	2	6466519
Lutetium (Lu)	ppm	0.3	<0.2	0.2	6466519
Molybdenum (Mo)	ppm	2	<1	1	6466519
Nickel (Ni)	ppm	30	45	10	6466519
Rubidium (Rb)	ppm	68	99	5	6466519
Samarium (Sm)	ppm	9.5	10.5	0.1	6466519
Scandium (Sc)	ppm	15.0	12.0	0.2	6466519
Selenium (Se)	ppm	<5	<5	5	6466519
Silver (Ag)	ppm	<2	<2	2	6466519
Sodium (Na)	ppm	21900	28800	200	6466519
Tantalum (Ta)	ppm	3.1	2.9	0.5	6466519
Tellurium (Te)	ppm	<10	<10	10	6466519
Terbium (Tb)	ppm	0.9	1.1	0.5	6466519
Thorium (Th)	ppm	15.0	17.0	0.2	6466519
Tin (Sn)	ppm	<100	<100	100	6466519
Titanium (Ti)	ppm	5100	5100	500	6466519
Tungsten (W)	ppm	3	<1	1	6466519
Uranium (U)	ppm	8.3	11.0	0.2	6466519
Ytterbium (Yb)	ppm	3	2	2	6466519
Zinc (Zn)	ppm	120	110	100	6466519
Zirconium (Zr)	ppm	<200	640	200	6466519
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					



BV Labs Job #: B9X4211
Report Date: 2019/12/13

Bureau Veritas Commodities
Client Project #: VAN19003329A

GENERAL COMMENTS

Results relate only to the items tested.



BV Labs Job #: B9X4211
Report Date: 2019/12/13

Bureau Veritas Commodities
Client Project #: VAN19003329A

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

A handwritten signature in black ink, appearing to be "Blake Barber", written over a horizontal line.

Blake Barber, Senior Analyst

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.