



**BUREAU
VERITAS**

MINERAL LABORATORIES
Canada

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Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada

PHONE (604) 253-3158

Client:

Ruman

Box 431

Dawson City Yukon Y0B 1G0 Canada

Submitted By: Erini Petroutsas

Receiving Lab: Canada-Whitehorse

Received: November 25, 2019

Report Date: January 03, 2020

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CERTIFICATE OF ANALYSIS

WHI19000767.1

CLIENT JOB INFORMATION

Project: None Given

Shipment ID:

P.O. Number

Number of Samples: 6

SAMPLE DISPOSAL

DISP-PLP Dispose of Pulp After 90 days

DISP-RJT Dispose of Reject After 60 days

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: Ruman
Box 431
Dawson City Yukon Y0B 1G0
Canada

CC:

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	6	Crush, split and pulverize 250 g rock to 200 mesh			WHI
AQ252_EXT	6	1:1:1 Aqua Regia digestion Ultratrace ICP-MS analysis	30	Completed	VAN
BAT01	1	Batch charge of <20 samples			VAN
SHP01	6	Per sample shipping charges for branch shipments			VAN

ADDITIONAL COMMENTS


MAY LAI
Data Validation Specialist

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	WGHT	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252
		Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca
		kg	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%
		0.01	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
1901251	Rock	1.12	0.19	42.34	0.83	29.9	117	99.0	15.7	1617	2.71	27.0	<0.1	<0.2	0.4	140.1	0.05	9.15	<0.02	36	4.87
1901252	Rock	1.11	0.19	1.80	0.44	24.5	8	617.5	35.3	932	2.60	71.7	0.1	1.4	0.1	111.5	0.02	2.98	<0.02	9	1.41
1901253	Rock	0.80	0.15	2.96	0.63	18.1	11	1416.6	69.9	1467	4.15	65.9	0.8	<0.2	<0.1	197.8	<0.01	1.75	<0.02	11	4.71
1901254	Rock	0.81	0.08	38.56	0.09	14.6	140	986.8	63.7	772	4.68	59.2	0.5	0.6	<0.1	25.5	<0.01	1.31	<0.02	27	0.50
1901255	Rock	0.55	0.53	2.86	3.12	26.1	11	1976.7	76.2	822	5.33	2.0	0.7	1.5	<0.1	526.0	<0.01	1.86	<0.02	22	12.07
1901256	Rock	1.61	0.05	8.48	0.51	24.2	38	2260.5	104.4	899	5.56	1.0	0.2	<0.2	<0.1	108.6	<0.01	0.95	<0.02	11	2.42



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	Method	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252
	Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Ti	S	Hg	Se	Te	Ga	Cs	Ge
	Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm
	MDL	0.001	0.5	0.5	0.01	0.5	0.001	1	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
1901251	Rock	0.010	1.0	34.2	3.61	48.4	0.002	<1	0.14	0.002	<0.01	0.1	6.4	<0.02	0.02	12	0.6	<0.02	0.8	0.41	<0.1
1901252	Rock	<0.001	<0.5	257.2	11.59	50.0	<0.001	2	0.08	0.001	0.02	0.6	3.9	0.02	<0.02	<5	1.1	0.02	0.5	3.27	<0.1
1901253	Rock	<0.001	<0.5	578.2	14.08	97.1	<0.001	<1	0.11	0.003	<0.01	0.2	5.4	<0.02	<0.02	19	0.7	0.03	0.6	7.60	<0.1
1901254	Rock	<0.001	<0.5	1007.4	15.12	22.3	<0.001	<1	0.58	<0.001	<0.01	<0.1	7.6	<0.02	<0.02	6	<0.1	<0.02	1.2	1.00	0.2
1901255	Rock	<0.001	<0.5	355.8	14.38	125.4	0.002	<1	0.24	0.002	<0.01	1.4	6.9	0.08	<0.02	80	1.0	0.05	0.5	19.12	0.2
1901256	Rock	<0.001	<0.5	229.2	17.86	294.7	0.001	<1	0.21	0.002	<0.01	0.7	3.4	<0.02	<0.02	21	0.2	<0.02	0.5	21.40	0.1



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CERTIFICATE OF ANALYSIS

WHI19000767.1

	Method Analyte Unit MDL	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252
		Hf	Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb
		0.02	0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2
1901251	Rock	<0.02	<0.02	0.3	0.1	<0.05	1.0	2.03	3.3	0.03	<1	0.2	1.4	<10	<2
1901252	Rock	<0.02	<0.02	1.6	<0.1	<0.05	1.3	1.06	0.6	<0.02	<1	0.1	1.6	<10	3
1901253	Rock	0.03	<0.02	1.7	<0.1	<0.05	2.2	1.37	1.1	<0.02	<1	0.3	1.2	<10	<2
1901254	Rock	<0.02	<0.02	0.3	<0.1	<0.05	1.0	1.50	0.3	<0.02	<1	<0.1	3.3	<10	4
1901255	Rock	0.16	<0.02	6.3	<0.1	<0.05	10.0	2.33	0.9	<0.02	<1	0.4	2.6	<10	2
1901256	Rock	0.02	<0.02	6.4	<0.1	<0.05	4.2	3.48	0.7	<0.02	<1	0.4	3.7	<10	<2



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QUALITY CONTROL REPORT

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	Method Analyte Unit MDL	WGHT	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252
		Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca
		kg	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%
		0.01	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
Pulp Duplicates																					
1901252	Rock	1.11	0.19	1.80	0.44	24.5	8	617.5	35.3	932	2.60	71.7	0.1	1.4	0.1	111.5	0.02	2.98	<0.02	9	1.41
REP 1901252	QC		0.21	1.70	0.41	24.6	9	609.1	34.2	918	2.57	68.0	0.1	0.7	<0.1	111.5	<0.01	2.77	<0.02	9	1.36
Reference Materials																					
STD DS11	Standard		16.13	164.65	147.09	364.5	1818	83.7	15.0	1035	3.12	46.5	2.9	102.8	9.3	71.9	2.72	9.05	13.37	50	1.02
STD OREAS262	Standard		0.73	122.75	61.53	160.2	481	67.7	29.3	536	3.33	38.1	1.4	62.5	10.8	38.6	0.70	5.29	1.13	22	3.06
STD DS11 Expected			14.6	149	138	345	1710	77.7	14.2	1055	3.1	42.8	2.59	79	7.65	67.3	2.37	8.74	12.2	50	1.063
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	5.06	1.03	22.5	2.98
BLK	Blank		<0.01	0.01	<0.01	0.2	<2	<0.1	<0.1	<1	<0.01	0.2	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<1	<0.01
Prep Wash																					
ROCK-WHI	Prep Blank		1.16	3.70	1.24	28.2	9	0.8	3.5	446	1.73	1.2	0.5	0.9	2.2	24.1	<0.01	0.06	<0.02	22	0.61



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Method Analyte Unit MDL		AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252
		P	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
		0.001	0.5	0.5	0.01	0.5	0.001	1	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
Pulp Duplicates																					
1901252	Rock	<0.001	<0.5	257.2	11.59	50.0	<0.001	2	0.08	0.001	0.02	0.6	3.9	0.02	<0.02	<5	1.1	0.02	0.5	3.27	<0.1
REP 1901252	QC	<0.001	<0.5	254.9	11.32	46.6	<0.001	<1	0.08	0.001	0.02	0.5	3.6	<0.02	<0.02	<5	0.9	0.03	0.5	3.01	<0.1
Reference Materials																					
STD DS11	Standard	0.073	20.5	62.0	0.90	388.6	0.096	5	1.17	0.071	0.41	3.4	3.2	5.36	0.28	302	2.4	4.79	5.4	3.05	0.1
STD OREAS262	Standard	0.041	18.6	46.5	1.21	253.5	0.003	4	1.33	0.069	0.32	0.3	3.2	0.50	0.26	180	0.3	0.22	4.3	2.82	<0.1
STD DS11 Expected		0.0701	18.6	61.5	0.85	385	0.0976		1.1795	0.0762	0.4	2.9	3.4	4.9	0.2835	260	2.2	4.56	5.1	2.88	0.08
STD OREAS262 Expected		0.04	15.9	41.7	1.17	248	0.0027	4	1.3	0.071	0.312	0.2	3.24	0.47	0.253	170	0.4	0.23	3.73	2.8	
BLK	Blank	<0.001	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<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
Prep Wash																					
ROCK-WHI	Prep Blank	0.040	6.9	2.4	0.43	52.8	0.073	<1	0.75	0.067	0.09	<0.1	2.5	<0.02	<0.02	<5	<0.1	<0.02	3.4	0.21	<0.1



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Method Analyte Unit MDL		AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252	AQ252
		Hf	Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb
		0.02	0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2
Pulp Duplicates															
1901252	Rock	<0.02	<0.02	1.6	<0.1	<0.05	1.3	1.06	0.6	<0.02	<1	0.1	1.6	<10	3
REP 1901252	QC	<0.02	<0.02	1.5	<0.1	<0.05	1.3	1.07	0.6	<0.02	<1	0.1	1.6	<10	2
Reference Materials															
STD DS11	Standard	0.09	1.96	37.0	2.0	<0.05	4.0	8.55	40.1	0.31	49	0.6	24.3	83	180
STD OREAS262	Standard	0.33	<0.02	20.8	0.6	<0.05	12.3	11.51	36.1	0.04	<1	1.0	18.8	<10	<2
STD DS11 Expected		0.06	1.53	33.6	1.8		3.1	7.82	37	0.24	50	0.67	23.3	100	172
STD OREAS262 Expected		0.27		18.6	0.5		11.7	11.2	32	0.033		1.14	17.8		
BLK	Blank	<0.02	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10	<2
Prep Wash															
ROCK-WHI	Prep Blank	0.10	0.18	2.6	0.3	<0.05	2.8	9.53	13.3	<0.02	<1	0.3	1.5	<10	<2