

Appendix 4A

Geological Survey of Canada  
Banks Island KIM samples - TABLING DATA

Overburden Drilling Management Limited – Laboratory Sample Log																	
Sample Number	Field Processing	Weight (kg wet)			Sample Description											CLASS	Sample Material <sup>2</sup>
		Bulk Rec'd	+2.0 mm Clasts	Table Feed	Clasts (> 2.0 mm) <sup>1</sup>					Matrix (<2.0 mm)							
					Size	Percentage				Distribution				Colour			
						V/S	GR	LS	OT	S/U	SD	ST	CY	SD	CY		
15SUV001	wet sieved (<2.38 mm)	24.9	0.8	24.1	G	100	Tr	0	0	S	MC	-	N	LOC	NA	SAND + GRAVEL	SS
15SUV002	wet sieved (<2.38 mm)	22.4	4.3	18.1	P	100	Tr	0	0	S	MC	-	N	LOC	NA	SAND + GRAVEL	SS
15SUV003	wet sieved (<2.38 mm)	21.7	4.0	17.7	G	100	Tr	0	0	S	MC	-	N	LOC	NA	SAND + GRAVEL	SS
15SUV004	wet sieved (<2.38 mm)	27.9	2.5	25.4	G	100	Tr	0	0	S	MC	-	N	LOC	NA	SAND + GRAVEL	SS
15SUV005	wet sieved (<2.38 mm)	23.0	3.0	20.0	G	100	Tr	0	0	S	MC	-	N	LOC	NA	SAND + GRAVEL	SS
15SUV006	wet sieved (<2.38 mm)	22.4	2.2	20.2	G	100	Tr	0	0	S	MC	-	N	LOC	NA	SAND + GRAVEL	SS
15SUV008	bulk	26.5	17.5	9.0	C	100	Tr	0	0	S	FMC	Y	N	OC	NA	SAND + GRAVEL	SS
15SUV009	bulk	25.3	13.9	11.4	C	100	Tr	0	0	S	FMC	Y	N	OC	NA	SAND + GRAVEL	SS
15SUV010	wet sieved (<2.38 mm)	25.6	2.4	23.2	G	100	Tr	0	0	S	MC	-	N	OC	NA	SAND + GRAVEL	SS
15SUV014	wet sieved (<2.38 mm)	20.1	1.6	18.5	G	100	Tr	0	0	S	MC	-	N	OC	NA	SAND + GRAVEL	SS
15SUV015	bulk	24.2	16.0	8.2	C	100	Tr	0	0	S	FMC	Y	N	DOC	NA	SAND + GRAVEL	BF
15SUV018	bulk	21.9	11.0	10.9	P	100	Tr	0	0	S	FMC	Y	N	DOC	NA	SAND + GRAVEL	BF
15SUV019	bulk	27.3	14.1	13.2	P	95	Tr	5	0	S	MC	-	N	OC	NA	SAND + GRAVEL	BF
15SUV020	wet sieved (<2.38 mm)	24.0	2.4	21.6	G	95	5	0	0	S	MC	-	N	OC	NA	SAND + GRAVEL	SS
15SUV021	wet sieved (<2.38 mm)	23.2	2.0	21.2	G	100	Tr	0	0	S	MC	-	N	LOC	NA	SAND + GRAVEL	SS
15SUV022	bulk	23.9	3.8	20.1	P	100	Tr	0	0	U	-	+	+	LOC	LOC	TILL	T
15SUV023	bulk	21.9	3.1	18.8	P	100	Tr	0	0	U	-	+	+	LOC	LOC	TILL	T
15SUV024	dry sieved (<2.38 mm)	16.6	1.1	15.5	G	100	Tr	0	0	S	MC	-	N	DOC	NA	SAND + GRAVEL	GF
15SUV025	wet sieved (<2.38 mm)	19.6	1.5	18.1	G	100	Tr	0	0	S	MC	-	N	GY	NA	SAND + GRAVEL	SS
15SUV026	wet sieved (<2.38 mm)	19.9	1.8	18.1	G	100	Tr	0	0	S	MC	-	N	GY	NA	SAND + GRAVEL	SS
15SUV027	wet sieved (<2.38 mm)	22.0	2.5	19.5	G	100	Tr	0	0	S	C	-	N	GY	NA	SAND + GRAVEL	SS
15SUV028	bulk	25.4	17.5	7.9	C	100	Tr	0	0	S	MC	-	N	OC	NA	SAND + GRAVEL	BF
15SUV030	bulk	24.7	11.3	13.4	C	100	Tr	0	0	S	FMC	Y	N	OC	NA	SAND + GRAVEL	BF
15SUV031	wet sieved (<2.38 mm)	15.3	0.9	14.4	G	100	Tr	0	0	S	MC	N	N	LOC	NA	SAND + GRAVEL	SS
15SUV032	wet sieved (<2.38 mm)	19.6	1.3	18.3	G	100	Tr	0	0	U	Y	Y	Y	LOC	LOC	TILL	SS
15SUV033	wet sieved (<2.38 mm)	22.1	0.1	22.0	G	100	Tr	0	0	S	FM	Y	N	LOC	NA	SAND + SILT	SS
15SUV050	wet sieved (<2.38 mm)	22.0	2.8	19.2	G	100	Tr	0	0	S	MC	-	N	LOC	NA	SAND + GRAVEL	SS
15SUV051	dry sieved (<2.38 mm)	20.1	3.5	16.6	G	100	Tr	Tr	0	S	MC	-	N	LOC	NA	SAND + GRAVEL	SS
15SUV052	wet sieved (<2.38 mm)	30.2	3.4	26.8	G	100	Tr	Tr	0	S	MC	-	N	LOC	NA	SAND + GRAVEL	SS
15SUV053	wet sieved (<2.38 mm)	25.0	2.0	23.0	G	60	0	40	0	S	MC	-	N	LOC	NA	SAND + GRAVEL	SS
15SUV054	dry sieved (<2.38 mm)	18.7	2.7	16.0	C	30	Tr	70	0	U	Y	Y	Y	OC	OC	TILL	T
15SUV055*	wet sieved (<2.38 mm)	13.1	0.9	12.2	G	30	Tr	70	0	S	MC	N	N	LOC	NA	SAND + GRAVEL	SS
16SUV013	bulk	22.9	13.1	9.8	P	20	0	80	0	S	MC	-	N	LOC	NA	SAND + GRAVEL	GF
16SUV014	wet sieved (<2.38 mm)	21.3	2.3	19.0	G	30	0	70	0	S	MC	-	N	LOC	NA	SAND + GRAVEL	SS
16SUV015	wet sieved (<2.38 mm)	25.1	1.8	23.3	P	10	0	90	0	S	MC	-	N	LOC	NA	SAND + GRAVEL	SS
16SUV016	wet sieved (<2.38 mm)	21.4	1.6	19.8	P	20	0	80	0	S	FM	-	N	LOC	NA	SAND + GRAVEL	SS
16SUV017	bulk	26.6	20.4	6.2	P	80	0	Tr	20	S	MC	-	N	GB	NA	SAND + GRAVEL	GF
16SUV018	bulk	23.3	12.3	11.0	P	80	0	Tr	20	S	MC	-	N	GB	NA	SAND + GRAVEL	GF
16SUV019	bulk	15.1	1.0	14.1	P	30	Tr	40	30	S	-	+	Y	GB	GB	TILL	T
16SUV020	bulk	16.5	0.8	15.7	P	60	Tr	20	20	S	-	Y	+	GB	GB	TILL	T
16SUV022	bulk	23.2	0.1	23.1	P	100**	0	0	0	S	FM	-	N	GB	NA	SAND	R
16SUV023	bulk	26.2	15.0	11.2	P	40	0	10	50	S	FMC	-	N	OC	NA	SAND + GRAVEL	BF
16SUV024	dry sieved (<2.38 mm)	23.4	0.5	22.9	G	10	90	0	0	S	FM	-	N	GB	NA	SAND + GRAVEL	R
16SUV025	wet sieved (<2.38 mm)	23.7	2.0	21.7	G	10	Tr	20	70	S	MC	-	N	OC	NA	SAND + GRAVEL	SS
16SUV026	bulk	23.1	7.1	16.0	P	Tr	0	10	90	S	MC	-	N	OC	NA	SAND + GRAVEL	BF
16SUV027	wet sieved (<2.38 mm)	20.5	2.8	17.7	G	10	Tr	20	70	S	MC	-	N	OC	NA	SAND + GRAVEL	SS
16SUV028	wet sieved (<2.38 mm)	29.6	2.1	27.5	G	10	Tr	10	80	S	MC	-	N	OC	NA	SAND + GRAVEL	SS
16SUV030	wet sieved (<2.38 mm)	18.3	2.5	15.8	G	20	Tr	Tr	80	S	MC	-	N	OC	NA	SAND + GRAVEL	SS
Blanks																	
15SUV017	bulk	18.6	0.7	17.9	G	0	100	0	0	S	FM	-	N	OC	NA	SAND + GRAVEL	GF
15SUV029	bulk	16.6	2.8	13.8	P	10	90	Tr	0	U	+	Y	-	LOC	LOC	TILL	T
16SUV021	bulk	16.6	2.3	14.3	P	0	50	20	20	S	Y	Y	-	OC	OC	TILL	T
16SUV029	bulk	17.2	0.8	16.4	G	0	100	0	0	S	MC	-	N	OC	NA	SAND	GF

Note, abbreviations used in the table are defined in the final data table tab; shading identifies Beaufort Fm. samples  
<sup>1</sup>V/S=volcanics and/or sediments, GR=granite, LS=limestone and carbonates, OT=red & buff Proterozoic sediments.

<sup>2</sup>Sample Material: BF=Beaufort Formation, GF=glaciofluvial, R=bedrock, SS=stream sediment, T=till

\*sample 15SUV055 is a field duplicate of 15SUV031

\*\*Limonite cemented silica sand.

Shading identifies Beaufort Formation samples.

Appendix 4B

Geological Survey of Canada

Banks Island KIM samples - HEAVY MINERAL CONCENTRATE PROCESSING WEIGHTS

Sample Number	Mass (g)													Normalized Picking Fraction Mass Determination					
	<2.0 mm Table Concentrate													Total HMC (0.18 - 2.0 mm) / Table Feed (<2 mm) (g)	Total HMC (0.18 - 2.0 mm) / Table Feed (<2 mm) (g)	Total HMC (0.25 - 2.0 mm) SG>3.2 (g)	Total HMC (0.25 - 2.0 mm) SG>3.2 normalized to 10 kg Table Feed (<2 mm)	Nonferromagnetic HMC 0.25 - 0.5 mm picking fraction (g)	normalization to 50 g of 0.25 - 0.5 mm picking fraction
	0.18 to 2.0 mm Heavy Liquid Separation S.G 3.20																		
	0.25-2.0 mm HMC SG>3.2																		
Total	-0.18 mm	Total	Lights <3.2 S.G.	Total 0.18 to 0.25 mm HMC	Total	<0.25 mm (wash)	Mag HMC	Nonferromagnetic HMC Processed Split <sup>1</sup>				Total HMC (0.25 - 2.0 mm) normalized to 10 kg Table Feed (<2 mm)	Nonferromagnetic HMC 0.25 - 0.5 mm picking fraction (g)	normalization to 50 g of 0.25 - 0.5 mm picking fraction					
								0.25 to 0.5 mm	0.5 to 1.0 mm	1.0 to 2.0 mm									
15SUV001	1763.8	512.0	1251.8	939.5	61.9	250.4	16.7	93.1	140.6	81.2	37.5	21.9	24,100	312.3	0.01296	250.4	103.9	81.2	0.616
15SUV002	1453.2	302.0	1151.2	858.2	32.6	260.4	9.6	105.7	145.1	65.6	45.2	34.3	18,100	293.0	0.01619	260.4	143.9	65.6	0.762
15SUV003	1408.2	247.8	1160.4	853.2	29.8	277.4	11.4	88.5	177.5	77.8	66.2	33.5	17,700	307.2	0.01736	277.4	156.7	77.8	0.643
15SUV004	2715.3	1,019.3	1,696.0	1,313.7	106.2	276.1	14.2	120.8	141.1	84.3	33.7	23.1	25,400	382.3	0.01505	276.1	108.7	84.3	0.593
15SUV005	2263.7	723.6	1,540.1	1,360.5	29.9	149.7	3.5	58.9	87.3	47.5	27.0	12.8	20,000	179.6	0.00898	149.7	74.9	47.5	1.053
15SUV006	1291.9	379.6	912.3	786.0	39.0	87.3	2.8	27.1	57.4	42.1	11.0	4.3	20,200	126.3	0.00625	87.3	43.2	42.1	1.188
15SUV008	1,112.7	506.2	606.5	574.9	8.9	22.7	2.6	2.5	17.6	11.5	4.4	1.7	9,000	31.6	0.00351	22.7	25.2	11.5	4.348
15SUV009	1,655.3	530.5	1,124.8	917.2	13.0	194.6	7.3	45.9	141.4	32.0	63.5	45.9	11,400	207.6	0.01821	194.6	170.7	32.0	1.563
15SUV010	1,764.3	649.9	1,114.4	911.4	23.3	179.7	11.1	23.8	144.8	57.9	61.8	25.1	23,200	203.0	0.00875	179.7	77.5	57.9	0.864
15SUV014	1,792.4	365.2	1,427.2	1,162.5	20.5	244.2	13.9	43.8	186.5	53.9	78.6	54.0	18,500	264.7	0.01431	244.2	132.0	53.9	0.928
15SUV015	1,391.1	487.1	904.0	722.6	28.1	153.3	23.5	2.4	127.4	58.1	49.0	20.3	8,200	181.4	0.02212	153.3	187.0	58.1	0.861
15SUV018	961.7	239.5	722.2	683.2	4.3	34.7	0.7	0.6	33.4	7.6	13.4	12.4	10,900	39.0	0.00358	34.7	31.8	7.6	6.579
15SUV019	1,339.1	362.2	976.9	855.3	25.1	96.5	4.2	0.5	91.8	60.7	22.5	8.6	13,200	121.6	0.00921	96.5	73.1	60.7	0.824
15SUV020	1,288.3	323.6	964.7	652.9	27.8	284.0	5.9	115.1	163.0	42.9	66.4	53.7	21,600	311.8	0.01444	284.0	131.5	42.9	1.166
15SUV021	1,021.3	312.7	708.6	582.9	26.0	99.7	2.5	34.7	62.5	35.3	20.5	6.7	21,200	125.7	0.00593	99.7	47.0	35.3	1.416
15SUV022	930.2	380.8	549.4	546.2	1.1	2.1	0.2	0.4	1.5	0.9	0.4	0.2	20,100	3.2	0.00016	2.1	1.0	0.9	55.556
15SUV023	958.8	322.9	635.9	633.5	0.9	1.5	0.0	0.4	1.1	0.7	0.3	0.1	18,800	2.4	0.00013	1.5	0.8	0.7	71.429
15SUV024	1,793.4	460.1	1,333.3	1,312.5	9.8	11.0	0.8	2.4	7.8	6.7	0.8	0.3	15,500	20.8	0.00134	11.0	7.1	6.7	7.463
15SUV025	1,778.6	788.6	990.0	884.8	17.3	87.9	2.1	12.5	73.3	27.1	15.5	30.7	18,100	105.2	0.00581	87.9	48.6	27.1	1.845
15SUV026	1,686.1	561.1	1,125.0	949.7	33.4	141.9	2.1	25.5	114.3	48.2	36.2	29.9	18,100	175.3	0.00969	141.9	78.4	48.2	1.037
15SUV027	1,375.6	290.2	1,085.4	1,013.3	9.3	62.8	3.3	8.1	51.4	18.6	20.0	12.8	19,500	72.1	0.00370	62.8	32.2	18.6	2.688
15SUV028	1,109.2	245.0	864.2	844.1	4.6	15.5	0.6	1.9	13.0	8.6	2.5	1.9	7,900	20.1	0.00254	15.5	19.6	8.6	5.814
15SUV030	1,152.7	321.9	830.8	763.8	22.1	44.9	1.8	12.9	30.2	18.4	7.4	4.4	13,400	67.0	0.00500	44.9	33.5	18.4	2.717
15SUV031	1,502.0	499.1	1,002.9	858.1	47.0	97.8	3.5	38.7	55.6	41.1	10.0	4.5	14,400	144.8	0.01006	97.8	67.9	41.1	1.217
15SUV032	1,002.4	411.4	591.0	501.1	20.7	69.2	1.4	24.0	43.8	27.6	13.8	2.4	18,300	89.9	0.00491	69.2	37.8	27.6	1.812
15SUV033	1,085.2	731.8	353.4	322.3	14.8	16.3	0.8	4.7	10.8	7.1	2.8	0.9	22,000	31.1	0.00141	16.3	7.4	7.1	7.042
15SUV050	1,538.3	499.7	1,038.6	927.7	25.1	85.8	3.0	17.5	65.3	38.4	19.3	7.6	19,200	110.9	0.00578	85.8	44.7	38.4	1.302
15SUV051	1,294.7	340.5	954.2	792.4	24.6	137.2	3.4	50.4	83.4	47.6	29.2	6.6	16,600	161.8	0.00975	137.2	82.7	47.6	1.050
15SUV052	1,479.0	584.9	894.1	674.7	58.7	160.7	8.1	74.9	77.7	49.6	20.2	7.9	26,800	219.4	0.00819	160.7	60.0	49.6	1.008
15SUV053	1,197.0	465.6	731.4	579.7	47.3	104.4	5.4	45.5	53.5	34.7	14.9	3.9	23,000	151.7	0.00660	104.4	45.4	34.7	1.441
15SUV054	725.9	311.3	414.6	395.9	7.3	11.4	1.2	3.4	6.8	4.7	1.7	0.4	16,000	18.7	0.00117	11.4	7.1	4.7	10.638
15SUV055*	1,417.0	429.0	988.0	860.3	37.8	89.9	4.2	32.9	52.8	38.4	10.3	4.1	12,200	127.7	0.01047	89.9	73.7	38.4	1.302
16SUV-013	1734.2	814.7	919.5	870.5		49.0	4.6	13.00	31.4	18.1	6.3	7.0	9,800	49.0	0.00500	49.0	50.0	18.1	2.762
16SUV-014	1096.0	503.8	592.2	341.8		250.4	13.0	141.30	96.1	36.1	23.0	37.0	19,000	250.4	0.01318	250.4	131.8	36.1	1.385
16SUV-015	1655.0	850.8	804.2	764.2		40.0	4.4	6.20	29.4	14.2	8.3	6.9	23,300	40.0	0.00172	40.0	17.2	14.2	3.521
16SUV-016	1409.5	740.8	668.7	611.3		57.4	4.7	8.90	43.8	19.9	14.1	9.8	19,800	57.4	0.00290	57.4	29.0	19.9	2.513
16SUV-017	1670.1	769.8	900.3	899.4		0.9	0.0	0.01	0.8	0.8	0.01	0.03	6,200	0.9	0.00015	0.9	1.5	0.8	62.500
16SUV-018	1603.1	649.6	953.5	951.6		1.9	0.2	0.01	1.7	1.5	0.1	0.08	11,000	1.9	0.00017	1.9	1.7	1.5	33.333
16SUV-019	1033.0	838.7	194.3	181.2		13.1	3.6	0.50	9.0	3.5	3.2	2.3	14,100	13.1	0.00093	13.1	9.3	3.5	14.286
16SUV-020	781.1	611.8	169.3	151.9		17.4	5.1	0.40	11.9	4.7	4.1	3.1	15,700	17.4	0.00111	17.4	11.1	4.7	10.638
16SUV-022	861.5	811.0	50.5	49.4		1.1	0.1	0.01	1.0	0.7	0.1	0.2	23,100	1.1	0.00005	1.1	0.5	0.7	71.429
16SUV-023	1095.2	678.6	416.6	410.0		6.6	0.5	0.40	5.7	2.6	1.6	1.5	11,200	6.6	0.00059	6.6	5.9	2.6	19.231
16SUV-024	1941.1	1035.5	905.6	895.0		10.6	1.2	0.01	9.4	6.5	2.4	0.5	22,900	10.6	0.00046	10.6	4.6	6.5	7.692
16SUV-025	2080.6	794.8	1285.8	1121.5		164.3	18.5	14.20	131.6	69.9	45.4	16.3	21,700	164.3	0.00757	164.3	75.7	69.9	0.715
16SUV-026	1715.4	824.7	890.7	849.2		41.5	8.3	1.20	32.0	23.6	6.2	2.2	16,000	41.5	0.00259	41.5	25.9	23.6	2.119
16SUV-027	1872.5	446.2	1426.3	1268.1		158.2	13.1	44.90	100.2	45.9	29.7	24.6	17,700	158.2	0.00894	158.2	89.4	45.9	1.089
16SUV-028	1373.4	504.9	868.5	714.5		154.0	8.3	48.50	97.2	45.3	30.7	21.2	27,500	154.0	0.00560	154.0	56.0	45.3	1.104
16SUV-030	960.3	315.8	644.5	572.7		71.8	6.2	24.20	41.4	18.8	10.7	11.9	15,800	71.8	0.00454	71.8	45.4	18.8	2.660
Blanks																			
15SUV017	1,367.8	669.3	698.5	481.2	96.6	120.7	14.6	26.0	80.1	72.4	7.5	0.2	17,900	217.3	0.01214	120.7	67.4	72.4	0.691
15SUV029	951.7	511.3	440.4	283.8	68.5	88.1	5.0	8.3	74.8	56.9	15.2	2.7	13,800	156.6	0.01135	88.1	63.8	56.9	0.879
16SUV-021	1114.9	813.1	301.8	216.6		85.2	9.3	8.10	67.8	49.1	14.3	4.4	14,300	85.2	0.00596	85.2	59.6	49.1	1.018
16SUV-029	1539.3	881.8	658.0	504.2		153.8	38.3	22.60	92.9	78.6	13.7	0.6	16,400	153.8	0.00938	153.8	93.8	78.6	0.636

<sup>1</sup>Values greater than 0.1 g were only weighed to one decimal place

\*sample 15SUV055 is a field duplicate of 15SUV031

\*\*Shading identifies Beaufort Formation samples.

Average	
Total HMC (0.25 - 0.5 mm) SG>3.2 Mass (g)	
Sediment Type	Normalized to 10 kg Table Feed (<2 mm)
Stream Sediments	74.6
Beaufort Fm.	53.8*
Till	5.9
Glaciofluvial	17.7
Bedrock	2.6

\*Note, if sample 15SUV015 is excluded (187 g), the average total HMC mass for Beaufort Fm. samples is 31.6 g / 10 kg Table Feed (<2 mm)





Appendix 4E

Geological Survey of Canada

Banks Island KIM samples - KIMBERLITE INDICATOR MINERAL COUNTS - CORRECTED FOR EPMA GEOCHEMISTRY DETERMINATIONS and then NORMALIZED TO 50 g OF THE NONFERROMAGNETIC HMC 0.25-0.50 mm PICKING FRACTION

Sample Number	Sample Material <sup>1</sup>	normalization conversion to 50 g of 0.25-0.5 mm picking fraction	Selected MMSIMs <sup>2</sup>			KIMs <sup>3</sup>						Total (KIMs)
			0.25 to 0.5 mm			0.25 to 0.5 mm						
			Low-Cr diopside	Cpy	Gh	GP	GO	DC	IM	CR	FO	
15SUV001	SS	0.616	0	8.6	0	0	0	0	1.8	12.9	1.2	16.0
15SUV002	SS	0.762	0	3.8	0	0	0	0	0	10.7	0	10.7
15SUV003	SS	0.643	0	9.0	0	0	0	0	0.6	9.6	0	10.3
15SUV004	SS	0.593	1.2	59.3	0	0.6	0	0	0	1.2	0	1.8
15SUV005	SS	1.053	0	15.8	0	0	0	0	0	1.1	0	1.1
15SUV006	SS	1.188	0	4.8	0	0	0	0	0	1.2	0	1.2
15SUV008	SS	4.348	0	0	0	0	0	0	0	4.3	26.1	30.4
15SUV009	SS	1.563	0	4.7	0	1.6	0	0	0	60.9	1.6	64.1
15SUV010	SS	0.864	0	1.7	0	0	0	0	0	1.7	0	1.7
15SUV014	SS	0.928	0	9.3	0	1.9	0	0.9	0.9	4.6	0	8.3
15SUV015	BF	0.861	0	0	0	0	0	0	0	0	0	0
15SUV018	BF	6.579	0	0	0	0	0	0	0	19.7	0	19.7
15SUV019*	BF	0.824	0	0	0	1.6	0	0	0	0	0	1.6
15SUV020	SS	1.166	0	10.5	0	1.2	0	0	4.7	40.8	2.3	49.0
15SUV021	SS	1.416	1.4	5.7	0	0	0	0	0	0	0	0
15SUV022	T	55.556	0	0	0	0	0	0	0	0	0	0
15SUV023	T	71.429	0	0	0	0	0	0	0	0	0	0
15SUV024	GF	7.463	0	0	0	14.9	7.5	7.5	0	7.5	0	37.3
15SUV025	SS	1.845	0	9.2	0	0	0	0	0	1.8	1.8	3.7
15SUV026	SS	1.037	0	1.0	0	1.0	0	0	0	7.3	3.1	11.4
15SUV027	SS	2.688	2.7	8.1	0	0	0	0	0	0	0	0
15SUV028	BF	5.814	11.6	0	5.8	5.8	0	0	0	0	0	5.8
15SUV030	BF	2.717	0	0	0	2.7	0	0	0	13.6	0	16.3
15SUV031	SS	1.217	0	15.8	0	0	0	0	0	1.2	0	1.2
15SUV032	SS	1.812	16.3	10.9	0	0	0	0	0	0	0	0
15SUV033	SS	7.042	0	7.0	0	0	0	0	0	0	0	0
15SUV050	SS	1.302	0	9.1	0	0	0	0	0	3.9	1.3	5.2
15SUV051	SS	1.050	0	20.0	0	1.1	0	0	1.1	3.2	4.2	9.5
15SUV052	SS	1.008	1.0	50.4	0	0	0	0	0	0	0	0
15SUV053	SS	1.441	0	57.6	0	0	0	0	0	0	0	0
15SUV054	T	10.638	0	10.6	0	0	0	0	0	21.3	0	21.3
15SUV055*	SS	1.302	0	16.9	0	0	0	0	0	0	0	0
16SUV013	GF	2.762	0	0	0	0	0	0	0	0	0	0
16SUV014	SS	1.385	0	6.9	0	0	0	0	0	5.5	0	5.5
16SUV015	SS	3.521	0	14.1	0	3.5	0	0	3.5	0	0	7.0
16SUV016	SS	2.513	0	2.5	0	0	0	0	0	0	0	0
16SUV017	GF	62.500	0	0	0	0	0	0	0	0	0	0
16SUV018	GF	33.333	0	0	0	0	0	0	0	133.3	0	133.3
16SUV019	T	14.286	0	0	0	0	0	0	0	0	0	0
16SUV020	T	10.638	0	0	0	0	0	0	0	0	0	0
16SUV022	R	71.429	0	0	0	0	0	0	0	0	0	0
16SUV023	BF	19.231	0	0	0	365.4	0.0	0	173.1	173.1	0	711.5
16SUV024	R	7.692	0	0	0	0	0	0	0	23.1	0	23.1
16SUV025	SS	0.715	0	7.9	0	1.4	0	0	0	0	0	1.4
16SUV026	BF	2.119	0	0	0	0	0	0	0	0	0	0
16SUV027	SS	1.089	0	7.6	0	0	0	0	2.2	43.6	0	45.8
16SUV028	SS	1.104	0	1.1	0	1.1	1.1	0	1	13.2	1.1	17.7
16SUV030	SS	2.660	0	0	0	0	0	0	0	2.7	0	2.7

KIM Percentage Compositions						
	GP	GO	DC	IM	CR	FO
# of 0.25-0.5 mm KIMs (n=1282.5)	403.8	8.6	8.4	191.8	627.2	42.8
% of 0.25-0.5 mm KIMs	31.5	0.7	0.7	15.0	48.9	3.3

<sup>1</sup>Sample Material: BF=Beaufort Formation, GF=glaciofluvial, R=bedrock, SS=stream sediment, T=till

<sup>2</sup>Metamorphosed/Magmatic Massive Sulphide Indicator Minerals; Cpy=Chalcopyrite, Gh=Gahnite

<sup>3</sup>Kimberlite Indicator Minerals: CR=Chromite, DC=Cr-diopside, FO=forsterite, GO=Eclogitic garnet, GP=Peridotitic garnet, IM=Mg-ilmenite

\*sample 15SUV019 is a field duplicate of 15SUV018; 15SUV055 is a field duplicate of 15SUV031

\*\*Shading identifies Beaufort Formation samples

Appendix 4F

Geological Survey of Canada

Banks Island KIM samples - KIMBERLITE INDICATOR MINERAL ODM PICKING FOOTNOTES

SAMPLE NO.	INPUT ASSEMBLAGE	INPUT REMARKS
15SUV001	Augite/diopside	SEM checks from 0.5-1.0 mm fraction: 3 GO versus almandine candidates = 1 almandine and 2 spessartine; 4 IM versus crustal ilmenite candidates = 2 IM and 2 crustal ilmenite. SEM checks from 0.25-0.5 mm fraction: 24 IM versus crustal ilmenite candidates = 3 IM, 8 crustal ilmenite, 11 CR and 2 andradite; 10 FO versus diopside candidates = 2 FO, 1 fayalite and 7 vesuvianite; and 5 grey-brown augite (major paramagnetic assemblage mineral) versus orthopyroxene candidates = 5 augite.
15SUV002	Augite-goethite/diopside	SEM checks from 0.5-1.0 mm fraction: 3 andradite candidates = 3 vesuvianite. SEM checks from 0.25-0.5 mm fraction: 9 CR candidates = 9 CR; 1 IM versus crustal ilmenite candidate = 1 crustal ilmenite; and 3 barite candidates = 3 barite.
15SUV003	Goethite-orthopyroxene/diopside	SEM checks from 0.5-1.0 mm fraction: 4 CR candidates = 2 CR and 2 hercynite. SEM checks from 0.25-0.5 mm fraction: 2 GO versus almandine candidates = 2 almandine; 14 IM versus crustal ilmenite candidates = 1 IM, 2 crustal ilmenite and 11 CR; 5 FO versus diopside candidates = 5 vesuvianite; and 1 blue-green garnite versus spinel candidate = 1 hercynite.
15SUV004	Augite-goethite/diopside-marcasite	SEM checks from 0.25-0.5 mm fraction: 1 GP versus zircon candidate = 1 GP; 1 blue-green garnite versus spinel candidate = 1 spinel; 3 sphalerite versus rutile candidates = 3 sphalerite; 1 galena candidate = 1 galena; 5 barite versus diopside candidates = 5 barite; and 5 augite (major paramagnetic assemblage mineral) versus orthopyroxene candidates = 5 augite. Also picked an additional 6 of ~20 sphalerite from 0.25-0.5 mm fraction. (*Note, 3 of the 9 total sphalerite grains picked were subsequently identified by EPMA as vesuvianite).
15SUV005	Augite/diopside	SEM check from 0.5-1.0 mm fraction: 1 GO versus almandine candidate = 1 almandine. SEM checks from 0.25-0.5 mm fraction: 1 GO versus almandine candidate = 1 almandine; 1 CR versus tourmaline candidate = 1 CR; and 5 FO versus diopside candidates = 4 fayalite and 1 vesuvianite.
15SUV006	Augite/diopside	SEM checks from 0.25-0.5 mm fraction: 2 orange GO versus almandine candidates = 2 almandine; 3 IM versus crustal ilmenite candidates = 2 crustal ilmenite and 1 CR; 5 FO versus diopside candidates = 3 fayalite, 1 diopside and 1 bronzite; and 5 grey-brown augite (major paramagnetic assemblage mineral) versus orthopyroxene candidates = 5 augite.
15SUV008	Augite/diopside	No KIM remarks.
15SUV009	Augite-goethite/diopside	SEM check from 0.5-1.0 mm fraction: 1 CR candidate = 1 CR. SEM checks from 0.25-0.5 mm fraction: 1 GP versus almandine candidate = 1 GP; 1 GO versus almandine candidate = 1 almandine; and 1 FO versus diopside candidate = 1 FO.
15SUV010	Goethite-almandine/diopside	SEM checks from 0.5-1.0 mm fraction: 2 IM versus crustal ilmenite candidates = 2 crustal ilmenite; 5 FO versus titanite candidates = 5 vesuvianite; and 1 malachite candidate = 1 malachite. SEM checks from 0.25-0.5 mm fraction: 3 CR versus tourmaline candidates = 2 CR and 1 tourmaline; and 5 FO versus fayalite candidates = 3 fayalite and 2 vesuvianite.
15SUV014	Goethite-augite/diopside-marcasite	SEM checks from 0.25-0.5 mm fraction: 1 GP versus ruby corundum candidate = 1 GP; 3 IM versus crustal ilmenite candidates = 1 IM, 1 CR and 1 hercynite; 5 CR versus tourmaline candidates = 3 CR, 1 hercynite and 1 tourmaline; 1 FO versus vesuvianite candidate = 1 vesuvianite. Also picked 1 sphalerite from 0.5-1.0 mm fraction and 4 from 0.25-0.5 mm fraction. (*Note, sphalerite grains later confirmed by EPMA; vial with 4 sphalerite grains also contained a monazite grain)
15SUV015		No KIM remarks.
15SUV018		SEM checks from 0.25-0.5 mm fraction: 4 CR versus crustal ilmenite candidates = 3 CR and 1 crustal ilmenite. SEM checks from 0.18-0.25 mm fraction: 4 CR versus rutile candidates = 4 CR; and 2 greengahnite versus spinel candidates = 2 hercynite (1 with minor Zn)
15SUV019		SEM checks from 0.18-0.25 mm fraction: 3 GP versus almandine candidates = 2 GP and 1 almandine; 2 CR versus tourmaline candidates = 1 CR and 1 hematite; and 2 FO versus diopside candidates = 1 diopside and 1 apatite.
15SUV020	Augite-goethite-almandine/diopside	SEM checks from 0.5-1.0 mm fraction: 2 IM versus crustal ilmenite candidates = 1 IM and 1 hercynite; and 3 CR versus tourmaline candidates = 1 CR, 1 tourmaline and 1 hercynite. SEM checks from 0.25-0.5 mm fraction: 1 GO versus almandine candidate = 1 spessartine; 15 IM versus crustal ilmenite candidates = 4 IM, 8 crustal ilmenite and 3 CR; 14 CR versus hercynite candidates = 14 CR; and 7 FO versus fayalite candidates = 4 FO and 3 fayalite. Also picked 1 malachite from 0.25-0.5 mm fraction.
15SUV021		SEM checks from 0.5-1.0 mm fraction: 2 FO versus fayalite candidates = 1 fayalite and 1 hedenbergite; and 1 barite candidate = 1 barite. SEM checks from 0.25-0.5 mm fraction: 2 FO versus diopside candidates = 2 vesuvianite; 1 sphalerite candidate = 1 sphalerite; and 4 anglesite candidates = 4 pyrite + calcite. (*Note, 2 sphalerite grains were returned in vials; 1 was later confirmed by EPMA as sphalerite, the other was rejected as clinopyroxene)
15SUV022		No KIM remarks.
15SUV023		SEM checks from 0.25-0.5 mm fraction: 4 FO versus fayalite candidates = 4 fayalite.
15SUV024		SEM checks from 0.25-0.5 mm fraction: 1 GP versus almandine candidate = 1 almandine; 11 GO versus almandine candidates = 2 GO (Cr-poor pyrope), 6 almandine, 2 staurolite and 1 zircon; 10 CR versus crustal ilmenite candidates = 1 CR and 9 crustal ilmenite; and 4 FO versus vesuvianite candidates = 4 vesuvianite.
15SUV025	Goethite/diopside-marcasite	SEM checks from 0.5-1.0 mm fraction: 1 IM versus crustal ilmenite candidate = 1 crustal ilmenite; 1 galena candidate = 1 galena. SEM checks from 0.25-0.5 mm fraction: 5 IM versus crustal ilmenite candidates = 4 crustal ilmenite and 1 CR; 3 CR versus hercynite candidates = 1 hercynite and 2 andradite; and 1 FO versus diopside candidate = 1 FO. Also picked 1 sphalerite from 1.0-2.0 mm fraction; 3 sphalerite from 0.5-1.0 mm fraction; and 8 sphalerite and 3 galena from 0.25-0.5 mm fraction.
15SUV026	Goethite-augite/diopside	SEM checks from 0.5-1.0 mm fraction: 3 IM versus crustal ilmenite candidates = 1 crustal ilmenite, 1 CR and 1 hercynite; and 1 FO versus diopside candidate = 1 vesuvianite. SEM checks from 0.25-0.5 mm fraction: 5 IM versus crustal ilmenite candidates = 1 crustal ilmenite and 4 CR; and 6 FO versus diopside candidates = 3 FO, 2 diopside and 1 vesuvianite. Also picked 1 sphalerite from 0.5-1.0 mm fraction and 2 from 0.25-0.5 mm fraction.
15SUV027	Goethite-siderite/marcasite-diopside	SEM checks from 0.5-1.0 mm fraction: 1 sphalerite candidate = 1 vesuvianite. SEM checks from 0.25-0.5 mm fraction: 5 sphalerite versus vesuvianite candidates = 5 vesuvianite.
15SUV028		SEM check from 0.25-0.5 mm fraction: 1 CR versus hematite candidate = 1 hematite.
15SUV030		SEM check from 0.5-1.0 mm fraction: 1 IM versus crustal ilmenite candidate = 1 crustal ilmenite. SEM checks from 0.18-0.25 mm fraction: 1 FO versus diopside candidate = 1 FO.

Geological Survey of Canada  
Banks Island KIM samples - KIMBERLITE INDICATOR MINERAL ODM PICKING FOOTNOTES

SAMPLE NO.	INPUT ASSEMBLAGE	INPUT REMARKS
15SUV001	Augite/diopside	SEM checks from 0.5-1.0 mm fraction: 3 GO versus almandine candidates = 1 almandine and 2 spessartine; 4 IM versus crustal ilmenite candidates = 2 IM and 2 crustal ilmenite. SEM checks from 0.25-0.5 mm fraction: 24 IM versus crustal ilmenite candidates = 3 IM, 8 crustal ilmenite, 11 CR and 2 andradite; 10 FO versus diopside candidates = 2 FO, 1 fayalite and 7 vesuvianite; and 5 grey-brown augite (major paramagnetic assemblage mineral) versus orthopyroxene candidates = 5 augite.
15SUV031	Augite/diopside	No KIM remarks.
15SUV032	Augite/diopside	No KIM remarks.
15SUV033	Augite/diopside	SEM check from 0.25-0.5 mm fraction: 1 IM versus rutile candidate = 1 crustal ilmenite.
15SUV050	Augite/diopside	SEM checks from 0.25-0.5 mm fraction: 1 CR versus crustal ilmenite candidate = 1 CR; 1 FO versus diopside candidate = 1 FO; and 5 sphalerite candidates = 1 sphalerite and 4 vesuvianite. Also picked 5 sphalerite from 0.5-1.0 mm fraction and 2 additional sphalerite from 0.25-0.5 mm fraction.
15SUV051	Augite/diopside	SEM checks from 0.5-1.0 mm fraction: 2 CR versus hercynite candidates = 1 CR and 1 hercynite. SEM checks from 0.25-0.5 mm fraction: 3 IM versus crustal ilmenite candidates = 1 IM and 2 andradite; 3 CR versus rutile candidates = 2 CR and 1 andradite; and 4 FO versus diopside candidates = 4 FO.
15SUV052	Augite-hematite/diopside-macassite	SEM checks from 0.5-1.0 mm fraction: 3 GP versus almandine candidates = 3 almandine. Also picked 1 galena from 0.5-1.0 mm fraction and 1 from 0.25-0.5 mm fraction.
15SUV053	Augite/diopside	SEM checks from 0.25-0.5 mm fraction: 2 GP versus almandine candidates = 2 almandine.
15SUV054	Augite-hematite-almandine/diopside	SEM checks from 0.25-0.5 mm fraction: 2 CR versus rutile candidates = 2 CR; and 1 FO versus diopside candidate = 1 zoisite.
15SUV055*	Augite/diopside	SEM check from 0.25-0.5 mm fraction: 1 GO versus almandine candidate = 1 grossular (lost in transfer to vial).
16SUV-013		SEM checks from 0.25-0.5 mm fraction: 2 CR candidates = 2 CR; and 2 FO versus vesuvianite candidates = 2 vesuvianite.
16SUV-014	Augite-goethite-almandine/diopside-marcasite	SEM checks from 0.5-1.0 mm fraction: 2 IM versus crustal ilmenite candidates = 1 IM and 1 crustal ilmenite; 1 CR versus tourmaline candidate = 1 tourmaline; and 1 sphalerite versus titanite candidate = 1 sphalerite. SEM checks from 0.25-0.5 mm fraction: 10 IM versus crustal ilmenite candidates = 1 IM and 9 crustal ilmenite; 4 CR versus crustal ilmenite candidates = 2 CR and 2 crustal ilmenite; and 6 FO versus fayalite candidates = 1 FO and 5 fayalite.
16SUV-015	Almandine-goethite-augite/marcasite	SEM check from 0.25-0.5 mm fraction: 1 GP versus zircon candidate = 1 zircon; and 1 IM versus crustal ilmenite candidate = 1 IM.
16SUV-016	Augite-goethite/marcasite	SEM checks from 0.25-0.5 mm fraction: 7 FO versus fayalite candidates = 7 fayalite.
16SUV-017		No KIM remarks.
16SUV-018		SEM checks from 0.25-0.5 mm fraction: 5 CR candidates = 3 CR and 2 hercynite.
16SUV-019		No KIM remarks.
16SUV-020		No KIM remarks.
16SUV-022		No KIM remarks.
16SUV-023		SEM checks from 0.25-0.5 mm fraction: 2 GO versus almandine candidates = 2 almandine; 5 GO versus staurolite candidates = 5 staurolite; 15 IM versus crustal ilmenite candidates = 9 IM, 2 crustal ilmenite and 4 tourmaline; and 12 CR versus tourmaline candidates = 7 CR, 1 tourmaline and 4 hercynite. SEM checks from 0.18-0.25 mm fraction: 4 GO candidates = 2 GO (Cr-poor pyrope), 1 almandine and 1 grossular; and 6 IM candidates = 6 IM.
16SUV-024		SEM checks from 1.0-2.0 mm fraction: 3 CR versus tourmaline candidates = 3 tourmaline. SEM checks from 0.25-0.5 mm fraction: 1 worn GP versus zircon candidate = 1 zircon; 1 CR versus tourmaline candidate = 1 CR.
16SUV-025	Goethite/marcasite-diopside	SEM checks from 0.25-0.5 mm fraction: 3 GP versus zircon candidates = 1 GP, 1 zircon and 1 fluorite.
16SUV-026		No KIM remarks.
16SUV-027	Augite-almandine/diopside	SEM checks from 0.5-1.0 mm fraction: 1 IM versus crustal ilmenite candidate = 1 IM; 6 CR versus tourmaline candidates = 3 CR, 1 tourmaline, 1 hercynite and 1 andradite; and 1 sphalerite versus titanite candidate = 1 sphalerite. SEM checks from 0.25-0.5 mm fraction: 10 IM versus crustal ilmenite candidates = 1 IM and 9 crustal ilmenite; and 10 CR versus hercynite candidates = 8 CR, 1 hercynite and 1 andradite.
16SUV-028	Augite-almandine-goethite/diopside-marcasite	SEM checks from 0.5-1.0 mm fraction: 4 GO versus almandine candidates = 1 GO (Cr-poor pyrope) and 3 almandine; and 1 IM versus CR candidate = 1 CR. SEM checks from 0.25-0.5 mm fraction: 2 GP versus almandine candidates = 1 ruby corundum and 1 spinel; 2 GO versus almandine candidates = 1 GO (Cr-poor pyrope) and 1 almandine; 5 IM versus crustal ilmenite candidates = 4 crustal ilmenite and 1 perovskite; 6 CR candidates = 5 CR and 1 crustal ilmenite; and 3 FO versus diopside candidates = 1 FO, 1 diopside and 1 andradite.
16SUV-030	Goethite-augite/diopside-marcasite	SEM checks from 1.0-2.0 mm fraction: 1 CR versus hercynite candidate = 1 hercynite. SEM check from 0.25-0.5 mm fraction: 1 CR versus hercynite candidate = 1 CR.
BLANKS		
15SUV017	Hornblende/titanite-zircon	SEM checks from 0.5-1.0 mm fraction: 4 IM versus CR candidates = 4 CR; 1 CR versus Cr-magnetite candidate = 1 CR; and 2 FO versus diopside candidates = 2 FO.
15SUV029	Hornblende-almandine/diopside-titanite-apatite	SEM checks from 0.5-1.0 mm fraction: 4 GO versus almandine candidates = 4 almandine; 2 IM versus crustal ilmenite candidates = 2 crustal ilmenite; 3 FO versus diopside candidates = 3 diopside; and 1 blue-green garnet versus spinel candidate = 1 spinel.
16SUV-021	Hornblende-almandine/diopside-titanite-apatite	SEM checks from 0.5-1.0 mm fraction: 1 GP versus almandine candidate = 1 GP; 3 GO versus almandine candidates = 3 almandine; and 4 IM versus crustal ilmenite candidates = 4 crustal ilmenite. SEM checks from 0.25-0.5 mm fraction: 6 GO versus almandine candidates = 1 GO (pyrope almandine), 4 almandine and 1 grossular; 2 IM versus crustal ilmenite candidates = 2 crustal ilmenite; 2 CR candidates = 2 CR; and 6 FO versus diopside candidates = 5 FO and 1 diopside. Sole IM from 0.5-1.0 mm fraction has partial alteration mantle.
16SUV-029	Hornblende/titanite-zircon	SEM checks from 0.25-0.5 mm fraction: 1 CR candidate = 1 CR; and 3 FO versus diopside candidates = 3 FO.

\*sample 15SUV019 is a field duplicate of 15SUV018; 15SUV055 is a field duplicate of 15SUV031  
\*\*Shading identifies Beaufort Formation samples

Appendix 4G

Geological Survey of Canada

Banks Island KIM Samples - METAMORPHOSED or MAGMATIC MASSIVE SULPHIDE INDICATOR MINERALS (MMSIM) - 0.25-0.5 mm

Sample Number	Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals													Phosphates		Remarks	Picked Grains	
	>1 amp			<1.0 amp	>1.0 amp												<0.8 amp		>1.0 amp			
	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Misc. Prime MMSIMs	Red Rutile	% Ky	% Sil	% Tr	% St	% Sps	% Fay	% Opx	% Cr	% Ap	% Mz					
15SUV015	0	Tr sphalerite (2 gr) Tr barite (1 gr)	99 (-300,000 gr)	25	0	0	0	Tr	Tr	0	0	0	0	0	0	0	0	0	0	0	Siderite-goethite/marcasite assemblage. SEM checks: 4 sphalerite versus vesuvianite candidates = 2 sphalerite and 2 vesuvianite resembling sphalerite; and 2 barite candidates = 1 barite and 1 dolomite.	0.25-0.5 mm fraction: 2 sphalerite 2 vesuvianite resembling sphalerite 1 barite 1 dolomite resembling barite
15SUV018	0	0.4% galena (10 gr) Tr barite (1 gr)	0.1 (3 gr)	95	0	0	Tr (1 gr)	15	Tr	0	0	0	0	0	0	Tr (3 gr; see KIM data)	0	0	0	0	Goethite/diopside-kyanite assemblage. SEM checks: 5 barite versus kyanite candidates = 1 barite, 3 kyanite and 1 diopside.	0.25-0.5 mm fraction: 10 <sup>1</sup> galena 1 barite 1 diopside resembling barite 3 kyanite 1 red rutile 3 chromite (picked as KIMs) <b>*(1 of 10 galena revealed by EPMA to be goethite)</b>
15SUV019	0	0	Tr (10 gr)	99	0	0	0	40	0	0	0	0	0	0	0	0	0	0	15	0	Goethite/diopside-kyanite-monazite assemblage.	
15SUV022	Tr (2 gr)	0	70 (-3000 gr)	Tr	0	0	0	Tr	Tr	0	0	Tr	0	0	0	Tr	Tr	Tr	Tr	0	Almandine-augite/marcasite-diopside assemblage.	0.25-0.5 mm fraction: 2 chalcocopyrite
15SUV023	0.5 (10 gr)	Tr sphalerite (1 gr)	50 (-1000 gr)	0	0	0	0	0	Tr	Tr	0	Tr	Tr	0	0	Tr	0	0	0	0	Almandine-augite-hematite/marcasite-diopside assemblage. SEM checks: 1 yellow sphalerite candidate = 1 sphalerite; 2 barite versus apatite candidates = 2 apatite; and 1 hercynite versus tourmaline candidate = 1 tourmaline.	0.25-0.5 mm fraction: 10 chalcocopyrite 1 sphalerite 2 apatite resembling barite 1 tourmaline resembling hercynite
15SUV024	0	0	Tr (1 gr)	1	0	0	0	Tr	0	0	0	Tr	0	0	Tr (1 gr; see KIM data)	0	Tr	0	Tr	0	Almandine-augite/diopside assemblage.	0.25-0.5 mm fraction: 1 chromite (picked as KIM)
15SUV028	0	Tr barite (5 gr)	Tr (10 gr)	90	1 blue-green gahnite, 1 blue-green spinel	Tr low-Cr diopside (2 gr)	Tr (2 gr)	1	Tr	0	Tr	Tr	0	0	0	0	0	0	0	0	Goethite/diopside assemblage. SEM checks: 3 barite versus diopside candidates = 1 barite and 2 diopside; and 2 blue-green gahnite versus spinel candidates = 1 gahnite and 1 spinel.	0.25-0.5 mm fraction: 5 barite 2 diopside resembling barite 1 gahnite 1 spinel 2 low-Cr diopside 2 red rutile
15SUV030	0	Tr barite (2 gr)	0	60	0	0	Tr (10 gr)	Tr	Tr	0	0	1	0	0	Tr (6 gr; see KIM data)	0	0	0	0	0	Goethite-almandine-augite/diopside assemblage.	0.25-0.5 mm fraction: 2 barite 10 red rutile 6 chromite (picked as KIMs)
16SUV-013	Tr (7 gr)	0	0.5 (-200 gr)	30	1 blue green	0	Tr (8 gr)	0	Tr	1	Tr	Tr	0	0	Tr (2 gr)	0	0	0	0	0	Augite-goethite-almandine/diopside assemblage. SEM checks: 1 sphalerite versus titanite candidate = 1 titanite; and 1 blue-green gahnite versus spinel candidate = 1 spinel.	0.25-0.5 mm fraction: 7 chalcocopyrite 1 titanite resembling sphalerite 1 spinel 8 red rutile 2 chromite
16SUV-017	0	0	0	0	0	Tr sapphire corundum (2 gr)	0	15	2	3	60	0	0	0	0	0	0	0	0	0	Almandine/staurolite-epidote-kyanite assemblage. SEM checks: 5 white diopside versus epidote (major nonparamagnetic assemblage mineral) candidates = 5 epidote.	0.25-0.5 mm fraction: 2 sapphire corundum 5 representative epidote
16SUV-018	0	0	3 (-200 gr)	0	2 black hercynite	Tr sapphire corundum (16 gr)	0	15	4	1	60	0	0	0	Tr (4 gr)	0	0	0	0	0	Almandine-siderite/staurolite-kyanite-epidote assemblage. "Pyrite" is mostly marcasite.	0.25-0.5 mm fraction: 2 hercynite (see KIM notes) 16 sapphire corundum 4 chromite
16SUV-019	0	Tr sphalerite (1 gr) Tr barite (1 gr)	99 (-20,000 gr)	15	0	0	0	0	Tr	Tr	Tr	0	0	0	0	0	0	0	0	0	Siderite-almandine-hematite-goethite/marcasite assemblage. SEM checks: 1 brown sphalerite versus rutile candidate = 1 sphalerite; and 3 barite candidates = 1 barite and 2 diopside.	0.25-0.5 mm fraction: 1 sphalerite 2 diopside resembling barite
16SUV-020	0	Tr barite (3 gr)	99 (-40,000 gr)	10	0	0	0	0	0	Tr	Tr	0	0	0	0	0	0	0	0	0	Siderite/marcasite assemblage.	0.25-0.5 mm fraction: 3 barite
16SUV-022	0	0	30 (-150 gr)	0	0	0	0	30	0	6	6	0	0	0	0	0	0	0	0	0	Almandine-ilmenite/marcasite-kyanite-leucosene-rutile assemblage. SEM checks: 5 tourmaline candidates = 5 tourmaline; and 5 black rutile (major nonparamagnetic assemblage mineral) candidates = 5 rutile.	0.25-0.5 mm fraction: 5 representative tourmaline 5 representative rutile
16SUV-023	0	0	Tr (3 gr)	50	4 black hercynite; 1 blue-green spinel	Tr sapphire corundum (4 gr) Tr corundum (1 gr)	Tr (5 gr)	15	1	1	2	0	0	0	Tr (10 gr)	0	0	0	0	0	Goethite-almandine/diopside-kyanite assemblage. SEM checks: 1 blue-green gahnite versus spinel candidate = 1 spinel; 1 sapphire corundum versus kyanite candidate = 1 sapphire corundum; and 1 corundum candidate = 1 corundum.	0.25-0.5 mm fraction: 4 hercynite (see KIM notes) 1 spinel 4 sapphire corundum 1 corundum 5 red rutile 5 tourmaline (see KIM notes) 10 chromite
16SUV-024	0	0	0	0	5 blue-green gahnite	0	Tr (5 gr)	2	0	5	2	0	0	0	Tr (3 gr)	Tr	0	0	0	0	Almandine-ilmenite/zircon-rutile-leucosene assemblage. SEM checks: 5 blue-green gahnite versus spinel candidates = 5 gahnite.	0.25-0.5 mm fraction: 5 gahnite 5 red rutile 3 chromite
16SUV-026	Tr (9 gr)	Tr sphalerite (9 gr)	90 (-40,000 gr)	40	0	0	0	Tr	0	Tr	Tr	0	0	0	0	0	0	0	0	0	Siderite-goethite/marcasite assemblage. SEM checks: 1 sphalerite versus rutile candidate = 1 sphalerite. 2 chalcocopyrite from 0.25-0.5 mm fraction lost in transfer to vial.	0.5-1.0 mm fraction: 1 chalcocopyrite 0.25-0.5 mm fraction: 9 chalcocopyrite 9 sphalerite

\*Shading identifies Beaufort Formation samples



Appendix 4I

GEOLOGICAL SURVEY OF CANADA

Banks Island Samples - GOLD GRAIN SUMMARY AND METALLIC MINERALS IN PAN CONCENTRATE

Sample Number	Number of Visible Gold Grains				Dimensions (microns)			Nonmag HMC Weight (g)	Calculated PPB Visible Gold in HMC				Metallic Minerals in Pan Concentrate
	Total	Reshaped	Modified	Pristine	Thickness	Width	Length		Total	Reshaped	Modified	Pristine	
15SUV001	1	1	0	0	18C	75	100	96.4	10	10	0	0	~10 grains pyrite (25-50µm).
15SUV002	0	0	0	0	No Visible Gold			72.4	0				~200 grains pyrite (25-100µm).
15SUV003	0	0	0	0	No Visible Gold			70.8	0				1 grain galena (75µm). ~100 grains pyrite (25-100µm).
15SUV004	0	0	0	0	No Visible Gold			101.6	0				~10 grains galena (75-100µm). ~2000 grains pyrite (25-250µm). ~5000 grains marcasite (25-100µm).
15SUV005	1	0	1	0	8C	25	50	80.0	1	0	1	0	~0.5% pyrite (25-1000µm). ~200 grains marcasite (25-75µm).
15SUV006	0	0	0	0	No Visible Gold			80.8	0				~2000 grains pyrite (25-1000µm). ~200 grains marcasite (25-75µm).
15SUV008	0	0	0	0	No Visible Gold			36.0	0				~10 grains pyrite (25-50µm).
15SUV009	1	1	0	0	5C	25	25	45.6	1	1	0	0	~10 grains pyrite (25-50µm).
15SUV010	0	0	0	0	No Visible Gold			92.8	0				~10 grains pyrite (25-50µm).
15SUV014	0	0	0	0	No Visible Gold			74.0	0				~500 grains pyrite (25-100µm). ~500 grains marcasite (25-50µm).
15SUV015	0	0	0	0	No Visible Gold			32.8	0				~1% pyrite (25-1000µm). ~1% marcasite (25-100µm).
15SUV018	0	0	0	0	No Visible Gold			43.6	0				~30 grains galena (25-500µm). ~20 grains pyrite (25-100µm).
15SUV019*	1	1	0	0	20C	75	125	52.8	28	28	0	0	~5000 grains pyrite (25-250µm). Gold grain viald.
15SUV020	1	1	0	0	50M	150	200	86.4	133	133	0	0	~100 grains pyrite (25-100µm).
15SUV021	1	1	0	0	5C	25	25	84.8	<1	<1	0	0	~2000 grains pyrite (25-250µm). ~200 grains marcasite (25-75µm).
15SUV022	0	0	0	0	No Visible Gold			80.4	0				~0.5% pyrite (25-1000µm).
15SUV023	0	0	0	0	No Visible Gold			75.2	0				~5000 grains pyrite (25-1000µm).
15SUV024	0	0	0	0	No Visible Gold			62.0	0				~1000 grains pyrite (25-250µm). ~1000 grains marcasite (25-50µm).
15SUV025	0	0	0	0	No Visible Gold			72.4	0				~2000 grains pyrite (25-250µm).
15SUV026	1	1	0	0	50M	75	125	72.4	52	52	0	0	~20 grains pyrite (25-50µm).
15SUV027	0	0	0	0	No Visible Gold			78.0	0				~0.5% pyrite (25-1000µm). ~0.5% marcasite (25-75µm).
15SUV028	0	0	0	0	No Visible Gold			31.6	0				~20 grains pyrite (25-100µm). 5 grains marcasite (50-75µm).
15SUV030	0	0	0	0	No Visible Gold			53.6	0				~20 grains pyrite (25-75µm).
15SUV031	0	0	0	0	No Visible Gold			57.6	0				~1000 grains pyrite (25-250µm).
15SUV032	0	0	0	0	No Visible Gold			73.2	0				~5000 grains pyrite (25-1000µm). ~50 grains marcasite (25-75µm).
15SUV033	0	0	0	0	No Visible Gold			88.0	0				5 grains galena (50-75µm). ~0.5% pyrite (25-1000µm). ~0.5% marcasite (25-100µm).
15SUV050	0	0	0	0	No Visible Gold			76.8	0				~50 grains pyrite (25-100µm).
15SUV051	0	0	0	0	No Visible Gold			66.4	0				~100 grains pyrite (25-100µm).
15SUV052	1	0	1	0	25M	50	125	107.2	13	0	13	0	~2000 grains pyrite (25-1000µm). ~2000 grains marcasite (25-100µm).
15SUV053	2	1	1	0	10C 50M	25 125	75 225	92.0	127	125	2	0	~2000 grains pyrite (25-1000µm). ~500 grains marcasite (25-100µm).
15SUV054	0	0	0	0	No Visible Gold			64.0	0				No Sulphides.
15SUV055*	1	1	0	0	13C	50	75	48.8	8	8	0	0	~1000 grains pyrite (25-250µm). ~50 grains marcasite (25-75µm).

Sample Number	Number of Visible Gold Grains				Dimensions (microns)			Nonmag HMC Weight (g)	Calculated PPB Visible Gold in HMC				Metallic Minerals in Pan Concentrate
	Total	Reshaped	Modified	Pristine	Thickness	Width	Length		Total	Reshaped	Modified	Pristine	
16SUV013	0	0	0	0	No Visible Gold			39.2	0				Tr (~2000 grains) pyrite (25-250µm). Tr (~500 grains) marcasite (25-50µm).
16SUV014	1	1	0	0	40C	200	225	76.0	178	178	0	0	Tr (~1000 grains) pyrite (25-250µm). Tr (~1000 grains) marcasite (25-100µm).
16SUV015	1	1	0	0	10C	25	75	93.2	2	2	0	0	Tr (~500 grains) pyrite (25-250µm). ~0.5% (~1,000,000 grains) marcasite (25-50µm).
16SUV016	0	0	0	0	No Visible Gold			79.2	0				Tr (~2000 grains) pyrite (25-250µm). ~0.5% (~1,000,000 grains) marcasite (25-50µm).
16SUV017	0	0	0	0	No Visible Gold			24.8	0				Tr (~200 grains) pyrite (25-75µm). Tr (~2000 grains) marcasite (25-50µm).
16SUV018	0	0	0	0	No Visible Gold			44.0	0				Tr (~50 grains) pyrite (25-75µm). Tr (~300 grains) marcasite (25-50µm).
16SUV019	0	0	0	0	No Visible Gold			56.4	0				~80% undifferentiated pyrite/marcasite grains (25-100µm).
16SUV020	0	0	0	0	No Visible Gold			62.8	0				~0.5% marcasite grains (25µm).
16SUV022	0	0	0	0	No Visible Gold			92.4	0				Tr (~5000 grains) marcasite (25-200µm).
16SUV023	9	4	5	0	3C	15	15	44.8	300	289	11	0	1 grain cinnabar (25µm).
					5C	25	25						
					8C	25	50						
					10C	50	50						
					27C	125	150						
					36C	150	225						
16SUV024	0	0	0	0	No Visible Gold			91.6	0				No sulphides.
16SUV025	1	1	0	0	10C	50	50	86.8	2	2	0	0	Tr (~200 grains) pyrite (25-75µm). ~0.5% marcasite (25µm).
16SUV026	0	0	0	0	No Visible Gold			64.0	0				Tr (~2000 grains) pyrite (25-200µm). ~2% marcasite (25µm).
16SUV027	1	1	0	0	8C	25	50	70.8	1	1	0	0	Tr (~100 grains) pyrite (25-75µm).
16SUV028	0	0	0	0	No Visible Gold			110.0	0				Tr (~200 grains) pyrite (25-75µm). Tr (~100 grains) marcasite (25µm).
16SUV030	0	0	0	0	No Visible Gold			63.2	0				Tr (~300 grains) marcasite (15-50µm).

\*sample 16SUV019 is a field duplicate of 16SUV018; 16SUV055 is a field duplicate of 16SUV031

\*\*Shading depicts Beaufort Formation samples

Appendix 4J

GEOLOGICAL SURVEY OF CANADA

Banks Island Samples - Overburden Drilling Management LABORATORY ABBREVIATIONS

**SEDIMENT LOG**

<p><b>Largest Clasts Present:</b>  G: Granules  P: Pebbles  C: Cobbles</p> <p><b>Clast Composition:</b>  V/S: Volcanics and/or sediments  GR: Granitics  LS: Limestone, carbonates  OT: Other Lithologies (refer to footnotes)  TR: Only trace present  NA: Not applicable  OX: Very oxidized, undifferentiated</p> <p><b>Matrix Grain Size Distribution:</b>  S/U: Sorted or Unsorted  SD: Sand (F: Fine; M: Medium; C: Coarse)  ST: Silt  CY: Clay  Y: Fraction present  +: Fraction more abundant than normal  -: Fraction less abundant than normal  N: Fraction not present</p>	<p><b>Matrix Organics:</b>  ORG: Y: Organics present in matrix  N: Organics absent or negligible in matrix  +: Matrix is mainly organic</p> <p><b>Matrix Colour:</b>  Primary:  BE: Beige                      PP: Purple  BR: Brick Red                PK: Pink  GY: Grey                      PB: Pink-Beige  GB: Grey-beige  GN: Green  GG: Grey-green  MN: Maroon</p> <p>Secondary (soil):  OC: Ochre  BN: Brown  BK: Black</p> <p><b>Secondary Colour Modifier:</b>  L: Light  M: Medium  D: Dark</p>
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**GOLD GRAIN LOG**

<p><b>Thickness:</b>  VG: Visible gold grains  M: Actual measured thickness of grain (microns)  C: Thickness of grain (microns) calculated from measured width and length</p>
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**KIM (kimberlite indicator mineral) LOG**

<p>GP: Purple to red peridotitic garnet (G9/10 Cr-pyrope)  GO: Orange mantle garnet; includes both eclogitic pyrope-almandine (G3) and Cr-poor megacrystic pyrope (G1/G2) varieties; may include unchecked (by SEM) grains of common crustal garnet (G5) lacking diagnostic inclusions or crystal faces  DC: Cr-diopside; distinctly emerald green (paler emerald green low-Cr diopside picked separately)  IM: Mg-ilmenite; may include unchecked (by SEM) grains of common crustal ilmenite lacking diagnostic inclusions or crystal faces  CR: Chromite  FO: Forsterite</p>
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**MMSIM (metamorphosed or magmatic massive sulphide indicator mineral) and PCIM (porphyry Cu indicator mineral) LOGS**

Adr: Andradite	Cpy: Chalcopyrite	Gth: Goethite	Opx: Orthopyroxene	St: Staurolite
Ap: Apatite	Cr: Chromite	Ilm: Ilmenite	Py: Pyrite	Tm: Tourmaline
Ase: Anatase	Fay: Fayalite	Ky: Kyanite	Sil: Sillimanite	Ttn: Titanite
Aspy: Arsenopyrite	Gh: Gahnite	Mz: Monazite	Sp: Spinel	Zir: Zircon
Ax: Axinite	Gr: Grossular	Ol: Olivine	Sps: Spessartine	