APPENDIX 8 Ni-in-Garnet Geothermometry

GEOLOGICAL SURVEY OF CANADA
Banks Island G9, G10, G11 and G12 Garnets

				Notes:	1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
								T°C Ni-in-Garnet	T°C Ni-in-Garnet	T°C Ni-in-Garnet	T°C Ni-in-Garnet	Projections to Modelled Geotherms in P (kbar)									Conversions to Depth (km) of Projections to Modelled Geotherms in P (kbar)								
GSC Sample #	Lab Sample #	Mount	Sample Material	Grain Size	G-Class	Ni_ppm	D=Ni(grt)/Ni(ol)	(Griffin_et_al.,1989) [±50]	(Ryan_et_al.,1996) [±50]	(Canil,1999) [±50]	(Average)	P(kbar)[35mW]	P(kbar)[36mW]	P(kbar)[38mW]	P(kbar)[40mW]	P(kbar)[42mW]	P(kbar)[44mW]	P(kbar)[45mW]	P(kbar)[46mW]	P(kbar)[50mW]	Depth(km)[35mW]	Depth(km)[36mW]	Depth(km)[38mW]	Depth(km)[40mW]	Depth(km)[42mW]	Depth(km)[44mW]	Depth(km)[45mW]	Depth(km)[46mW]	Depth(km)[50mW]
Lab Standard	4_055				G9	70.64	0.023547	1223.5	1152.9	1123.9	1173.7	69.6	64.6	57.0	51.1	46.1	42.0	40.2	38.6	33.0	217.4	201.8	178.0	159.6	143.9	131.2	125.7	120.6	103.0
15SUV014	Gar15SUV014row2grain3 - 1	2015_1	stream sediments	0.25-0.5	G10D	47.8	0.015933	1074.7	1017.1	1042.1	1058.4	60.3	56.2	49.7	44.6	40.3	36.7	35.1	33.7	28.8	188.3	175.6	155.3	139.4	125.9	114.7	109.8	105.3	89.9
15SUV014_rpt	Gar15SUV014row2grain3 - 2	2015_1	stream sediments	0.25-0.5	G10D	44.4	0.014800	1049.9	994.3	1027.7	1038.8	58.7	54.8	48.5	43.5	39.3	35.8	34.3	32.9	28.0	183.5	171.2	151.5	136.0	122.8	111.9	107.1	102.7	87.6
15SUV014_rpt	Gar15SUV014row2grain3 - 3	2015_1	stream sediments	0.25-0.5	G10D	42.1	0.014033	1032.5	978.4	1017.5	1025.0	57.6	53.8	47.6	42.7	38.6	35.2	33.7	32.3	27.5	180.1	168.1	148.8	133.6	120.7	110.0	105.3	100.9	86.1
15SUV014_AVG	Gar15SUV014row2grain3	2015_1	stream sediments	0.25-0.5	G10D	44.8	0.014922	1052.6	996.8	1029.3	1041.0	58.9	54.9	48.6	43.6	39.4	35.9	34.4	33.0	28.1	184.0	171.7	151.9	136.3	123.2	112.2	107.4	103.0	87.9
15SUV014	Gar15SUV014row2grain4 - 1	2015_1	stream sediments	0.25-0.5	G10D	46.3	0.015433	1063.9	1007.2	1035.9	1049.9	59.6	55.6	49.2	44.1	39.9	36.3	34.8	33.3	28.4	186.2	173.7	153.6	137.9	124.5	113.5	108.7	104.2	88.9
16SUV023	Gar16SUV023row1grain14 - 1	Mount 3	Beaufort Fm.	0.18-0.25	G10D	59.9	0.019967	1156.9	1092.2	1088.2	1122.5	65.4	60.8	53.7	48.2	43.5	39.7	38.0	36.4	31.1	204.4	190.1	167.9	150.6	135.9	123.9	118.6	113.8	97.2
16SUV023	Gar16SUV023row2grain1 - 1	Mount 1	Beaufort Fm.	0.25-0.5	G10D	70.2	0.023400	1220.9	1150.5	1122.5	1171.7	69.4	64.4	56.8	51.0	46.0	41.9	40.1	38.5	32.9	216.9	201.3	177.6	159.2	143.6	130.9	125.4	120.3	102.7
16SUV023	Gar16SUV023row2grain5 - 1	Mount 3	Beaufort Fm.	0.18-0..25	G10D	85.4	0.028467	1308.4	1229.7	1167.5	1237.9	74.9	69.3	61.0	54.7	49.3	44.9	43.0	41.3	35.3	233.9	216.6	190.8	170.9	153.9	140.4	134.5	129.0	110.3
16SUV025	Gar16SUV025row3grain6 - 1	Mount 1	stream sediments	0.25-0.5	G10D	38.8	0.012933	1006.7	954.7	1002.2	1004.5	56.0	52.3	46.3	41.6	37.6	34.2	32.8	31.4	26.8	175.1	163.5	144.8	130.0	117.5	107.0	102.4	98.2	83.7
15SUV026	Gar15SUV026row2grain9 - 1	2015_1	stream sediments	0.25-0.5	G10	23	0.007667	863.1	821.8	912.1	887.6	47.0	44.1	39.1	35.1	31.7	28.9	27.6	26.5	22.5	147.0	137.8	122.2	109.7	99.2	90.3	86.4	82.7	70.4
15SUV026_rpt	Gar15SUV026row2grain9 - 2	2015_1	stream sediments	0.25-0.5	G10	22	0.007333	852.4	811.8	905.0	878.7	46.4	43.5	38.6	34.6	31.3	28.5	27.3	26.1	22.2	144.9	135.8	120.5	108.2	97.8	89.0	85.2	81.5	69.4
15SUV026_AVG	Gar15SUV026row2grain9	2015_1	stream sediments	0.25-0.5	G10	22.5	0.007500	857.8	816.9	908.6	883.2	46.7	43.8	38.8	34.9	31.5	28.7	27.5	26.3	22.4	145.9	136.8	121.3	109.0	98.5	89.7	85.8	82.1	69.9
16SUV023	Gar16SUV023row1grain12 - 1	Mount 3	Beaufort Fm.	0.18-0.25	G10	31.8	0.010600	948.0	900.5	966.4	957.2	52.4	49.0	43.4	39.0	35.2	32.1	30.7	29.4	25.1	163.6	153.0	135.6	121.8	110.1	100.3	95.9	91.9	78.3
16SUV023	Gar16SUV023row2grain4 - 1	Mount 3	Beaufort Fm.	0.18-0.25	G10	71.7	0.023900	1229.9	1158.6	1127.3	1178.6	70.0	64.9	57.3	51.3	46.3	42.2	40.4	38.8	33.1	218.6	202.9	179.0	160.4	144.7	131.9	126.3	121.2	103.5
16SUV023	Gar16SUV023row2grain7 - 1	Mount 1	Beaufort Fm.	0.25-0.5	G10	22.66	0.007553	859.5	818.5	909.7	884.6	46.8	43.9	38.9	35.0	31.6	28.8	27.5	26.3	22.4	146.3	137.1	121.6	109.2	98.7	89.9	86.0	82.3	70.1
16SUV023	Gar16SUV023row2grain10 - 1	Mount 1	Beaufort Fm.	0.25-0.5	G10	26.7	0.008900	900.7	856.7	936.5	918.6	49.4	46.3	41.0	36.8	33.3	30.3	29.0	27.8	23.7	154.3	144.6	128.1	115.1	104.0	94.7	90.6	86.8	73.9
16SUV028	Gar16SUV028row3grain9 - 1	Mount 1	stream sediments	0.25-0.5	G10	22.99	0.007663	863.0	821.7	912.0	887.5	47.0	44.1	39.1	35.1	31.7	28.9	27.6	26.5	22.5	147.0	137.8	122.2	109.7	99.2	90.3	86.4	82.7	70.4
15SUV019	Gar15SUV019row1grain1 - 1	Mount 3	Beaufort Fm.	0.18-0.25	G11	179.3	0.059767	1758.5	1630.8	1367.3	1562.9	103.0	94.0	82.1	73.2	65.5	59.8	57.3	55.1	47.1	322.0	293.9	256.6	228.7	204.8	186.9	179.1	172.0	147.3
15SUV019	Gar15SUV019row1grain2 - 1	Mount 3	Beaufort Fm.	0.18-0.25	G11	139.6	0.046533	1580.5	1473.5	1294.0	1437.2	91.9	84.3	73.9	66.0	59.2	54.1	51.8	49.7	42.5	287.1	263.5	230.9	206.2	185.1	168.9	161.8	155.4	133.0
15SUV019	Gar15SUV019row2grain5 - 1	2015_1	Beaufort Fm.	0.25-0.5	G11	89.2	0.029733	1329.2	1248.6	1177.8	1253.5	76.2	70.5	62.0	55.6	50.0	45.7	43.7	42.0	35.9	238.0	220.2	193.9	173.6	156.4	142.7	136.6	131.1	112.1
15SUV019_rpt	Gar15SUV019row2grain5 - 2	2015_1	Beaufort Fm.	0.25-0.5	G11	88.2	0.029400	1323.8	1243.6	1175.1	1249.5	75.8	70.2	61.8	55.3	49.8	45.5	43.5	41.8	35.7	236.9	219.2	193.1	172.9	155.7	142.1	136.1	130.6	111.6
15SUV019_rpt	Gar15SUV019row2grain5 - 3	2015_1	Beaufort Fm.	0.25-0.5	G11	87.3	0.029100	1318.8	1239.2	1172.7	1245.8	75.5	69.9	61.5	55.1	49.7	45.3	43.4	41.6	35.6	236.0	218.4	192.3	172.3	155.2	141.5	135.6	130.1	111.2
15SUV019_AVG	Gar15SUV019row2grain5	2015_1	Beaufort Fm.	0.25-0.5	G11	88.2	0.029411	1323.9	1243.8	1175.2	1249.6	75.8	70.2	61.8	55.3	49.8	45.5	43.5	41.8	35.7	237.0	219.3	193.1	172.9	155.8	142.1	136.1	130.6	111.6
15SUV028	Gar15SUV028row1grain4 - 1	Mount 3	Beaufort Fm.	0.18-0.25	G11	259	0.086333	2092.4	1921.1	1488.5	1790.4	124.1	112.1	97.3	86.4	76.9	70.2	67.3	64.7	55.4	387.9	350.4	304.1	269.9	240.3	219.5	210.3	202.1	173.1
15SUV028	Gar15SUV028row2grain11 - 1	2015_1	Beaufort Fm.	0.25-0.5	G11	77.1	0.025700	1261.5	1187.3	1143.7	1202.6	71.9	66.7	58.8	52.7	47.5	43.3	41.5	39.8	34.0	224.8	208.4	183.7	164.7	148.4	135.4	129.6	124.4	106.3
16SUV023	Gar16SUV023row2grain12 - 1	Mount 1	Beaufort Fm.	0.25-0.5	G11	78.3	0.026100	1268.4	1193.6	1147.2	1207.8	72.4	67.1	59.1	53.0	47.8	43.6	41.7	40.0	34.2	226.1	209.6	184.8	165.6	149.2	136.1	130.4	125.1	106.9
16SUV023	Gar16SUV023row2grain13 - 1	Mount 3	Beaufort Fm.	0.18-0.25	G11	148.2	0.049400	1620.1	1508.7	1310.9	1465.5	94.4	86.5	75.7	67.6	60.6	55.4	53.0	50.9	43.6	294.9	270.3	236.7	211.3	189.5	173.0	165.7	159.2	136.2
16SUV023	Gar16SUV023row2grain2 - 1	Mount 1	Beaufort Fm.	0.25-0.5	G11	56.5	0.018833	1134.6	1071.9	1075.9	1105.3	64.0	59.6	52.6	47.2	42.6	38.9	37.2	35.7	30.5	200.0	186.2	164.5	147.6	133.2	121.4	116.3	111.5	95.2
16SUV023	Gar16SUV023row2grain3 - 1	Mount 1	Beaufort Fm.	0.25-0.5	G11	58	0.019333	1144.5	1081.0	1081.4	1113.0	64.6	60.1	53.1	47.7	43.0	39.2	37.5	36.0	30.7	202.0	187.9	166.0	148.9	134.4	122.5	117.3	112.5	96.1
16SUV023	Gar16SUV023row2grain9 - 1	Mount 3	Beaufort Fm.	0.18-0.25	G11	145.5	0.048500	1607.8	1497.7	1305.6	1456.7	93.6	85.8	75.2	67.1	60.2	55.0	52.6	50.6	43.3	292.4	268.2	234.9	209.7	188.1	171.7	164.5	158.0	135.2
16SUV023	Gar16SUV023row2grain6 - 1	Mount 3	Beaufort Fm.	0.18-0.25	G12	36.4	0.012133	987.3	936.7	990.5	988.9	54.8	51.2	45.4	40.7	36.8	33.5	32.1	30.8	26.2	171.3	160.1	141.8	127.3	115.0	104.8	100.3	96.1	81.9
16SUV023	Gar16SUV023row2grain11 - 1	Mount 1	Beaufort Fm.	0.25-0.5	G12	25.42	0.008473	888.0	845.0	928.4	908.2	48.6	45.5	40.4	36.3	32.8	29.8	28.5	27.3	23.3	151.9	142.3	126.1	113.3	102.4	93.2	89.2	85.4	72.8
15SUV001	Gar15SUV001row3grain1 - 1	2015_1	stream sediments	0.25-0.5	G9	0.77	0.000257	384.1	369.9	539.2	461.7	16.8	15.5	13.5	11.9	10.4	9.4	8.9	8.4	7.0	52.5	48.4	42.2	37.1	32.6	29.3	27.9	26.3	22.0
15SUV001_rpt	Gar15SUV001row3grain1 - 2	2015_1	stream sediments	0.25-0.5	G9	0.85	0.000283	392.2	377.7	546.7	469.5	17.3	16.0	14.0	12.3	10.8	9.7	9.3	8.8	7.3	54.1	50.0	43.7	38.4	33.8	30.5	29.0	27.4	22.9
15SUV001_AVG	Gar15SUV001row3grain1	2015_1	stream sediments	0.25-0.5	G9	0.8	0.000270	388.2	373.9	543.1	465.6	17.1	15.7	13.7	12.1	10.6	9.6	9.1	8.6	7.2	53.3	49.2	43.0	37.8	33.2	29.9	28.5	26.9	22.4
15SUV001	Gar15SUV001row3grain2 - 1	2015_1	stream sediments	0.25-0.5	G9	13.8	0.004593	750.6	716.9	835.4	793.0	40.0	37.5	33.3	29.9	27.0	24.6	23.5	22.5	19.1	124.9	117.3	104.1	93.4	84.4	76.8	73.4	70.2	59.7
15SUV019	Gar15SUV019row2grain5 - 1	2015_1	Beaufort Fm.	0.25-0.5	G9	89.2	0.029733	1329.2	1248.6	1177.8	1253.5	76.2	70.5	62.0	55.6	50.0	45.7	43.7	42.0	35.9	238.0	220.2	193.9	173.6	156.4	142.7	136.6	131.1	112.1
15SUV019_rpt	Gar15SUV019row2grain5 - 2	2015_1	Beaufort Fm.	0.25-0.5	G9	88.2	0.029400	1323.8	1243.6	1175.1	1249.5	75.8	70.2	61.8	55.3	49.8	45.5	43.5	41.8	35.7	236.9	219.2	193.1	172.9	155.7	142.1	136.1	130.6	111.6
15SUV019_rpt	Gar15SUV019row2grain5 - 3	2015_1	Beaufort Fm.	0.25-0.5	G9	87.3	0.029100	1318.8	1239.2	1172.7	1245.8	75.5	69.9	61.5	55.1	49.7	45.3	43.4	41.6	35.6	236.0	218.4	192.3	172.3	155.2	141.5	135.6	130.1	111.2
15SUV019_AVG	Gar15SUV019row2grain5	2015_1	Beaufort Fm.	0.25-0.5	G9	88.2	0.029411	1323.9	1243.8	1175.2	1249.6	75.8	70.2	61.8	55.3	49.8	45.5	43.5	41.8	35.7	237.0	219.3	193.1	172.9	155.8	142.1	136.1	130.6	111.6
15SUV019	Gar15SUV019row2grain6 - 1	2015_1	Beaufort Fm.	0.25-0.5	G9	19.2	0.006400	820.7	782.4	883.9	852.3	44.4	41.6	36.9	33.2	30.0	27.3	26.1	25.0	21.3	138.7	130.1	115.4	103.6	93.7	85.2	81.5	78.0	66.4
15SUV019_rpt	Gar15SUV019row2grain6 - 2	2015_1	Beaufort Fm.	0.25-0.5	G9	18.3	0.006100	810.0	772.4	876.6	843.3	43.7	41.0	36.4	32.7	29.5	26.9	25.7	24.6	20.9	136.6	128.1	113.7	102.1	92.3	84.0	80.3	76.8	65.4
15SUV019_AVG	Gar15SUV019row2grain6	2015_1	Beaufort Fm.	0.25-0.5	G9	18.8	0.006250	815.4	777.4	880.3	847.8	44.0	41.3	36.7	32.9	29.7	27.1	25.9	24.8	21.1	137.6	129.1	114.6	102.9	93.0	84.6	80.9	77.4	65.9
15SUV020	Gar15SUV020row2grain7 - 1	2015_1	stream sediments	0.25-0.5	G9	73.1	0.024367	1238.2	1166.2	1131.6	1184.9	70.5	65.4	57.7	51.7	46.6	42.5	40.7	39.0	33.4	220.2	204.3	180.2	161.5	145.7	132.8	127.2	122.0	104.2
15SUV020_rpt	Gar15SUV020row2grain7 - 2	2015_1	stream sediments	0.25-0.5	G9	67.8	0.022600	1206.4	1137.3	1114.9	1160.6	68.5	63.6	56.1	50.3	45.4	41.4	39.6	38.0	32.5	214.0	198.8	175.4	157.3	141.9	129.4	123.9	118.8	101.5
15SUV020_rpt	Gar15SUV020row2grain7 - 3	2015_1	stream sediments	0.25-0.5	G9	71.7	0.023900	1229.9	1158.6	1127.3	1178.6	70.0	64.9	57.3	51.3	46.3	42.2	40.4	38.8	33.1	218.6	202.9	179.0	160.4	144.7	131.9	126.3	121.2	103.5
15SUV020_AVG	Gar15SUV020row2grain7	2015_1	stream sediments	0.25-0.5	G9	70.9	0.023622	1224.9	1154.1	1124.7	1174.8	69.6	64.6	57.0	51.1	46.1	42.0	40.3	38.6	33.0	217.6	202.0	178.2	159.8	144.1	131.4	125.8	120.7	103.1
15SUV024	Gar15SUV024row1grain1 - 1	2015_1	glaciofluvial	0.25-0.5	G9	44.7	0.014900	1052.1	996.3	1029.0	1040.6	58.9	54.9	48.6	43.6	39.4	35.9	34.4	32.9	28.1	183.9	171.6	151.8	136.3	123.1	112.2	107.4	102.9	87.8
15SUV024	Gar15SUV024row2grain8 - 1	2015_1	glaciofluvial	0.25-0.5	G9	51.7	0.017233	1102.2	1042.3	1057.8	1080.0	62.0	57.7	51.0	45.8	41.4	37.7	36.1	34.6	29.5	193.7	180.4	159.5	143.2	129.3	117.8	112.8	108.2	92.3
15SUV024_rpt	Gar15SUV024row2grain8 - 2	2015_1	glaciofluvial	0.25-0.5	G9	50.4	0.016800	1093.1	1034.0	1052.7	1072.9	61.4	57.2	50.6	45.4	41.0	37.4	35.8	34.3	29.3	191.9	178.9	158.1	141.9	128.1	116.8	111.8	107.2	91.5
15SUV024_AVG	Gar15SUV024row2grain8	2015_1	glaciofluvial	0.25-0.5	G9	51.1	0.017017	1097.7	1038.1	1055.2	1076.4	61.7	57.5	50.8	45.6	41.2	37.5	35.9	34.5	29.4	192.8	179.7	158.8	142.5	128.7	117.3	112.3	107.7	91.9
15SUV025	Gar15SUV025row3grain3 - 1	2015_1	stream sediments	0.25-0.5	G9	1.0	0.000320	402.6	387.6	556.2	479.4	18.0	16.6	14.6	12.8	11.3	10.2	9.7	9.2	7.7	56.1	52.0	45.5	40.1	35.4	31.9	30.3	28.7	24.0
15SUV028	Gar15SUV028row1grain3 - 1	Mount 3	Beaufort Fm.	0.18-0.25	G9	168.8	0.056267	1712.5	1590.3	1349.0	1530.8	100.2	91.5	80.0	71.3	63.9	58.3	55.9	53.7	46.0	313.0	286.0	250.0	222.9	199.7	182.3	174.7	167.8	143.6
15SUV028	Gar15SUV028row2grain10 - 1	2015_1	Beaufort Fm.	0.5-1.0	G9	30.9	0.010300	940.0	893.1	961.4	950.7	51.8	48.5	43.0	38.6	34.9	31.8	30.4	29.1	24.8	162.0	151.6	134.3	120.7	109.0	99.3	95.0	91.0	77.6
15SUV028_rpt	Gar15SUV028row2grain10 - 2	2015_1	Beaufort Fm.	0.5-1.0	G9	30.2	0.010067	933.6	887.2	957.4	945.5	51.5	48.2	42.7	38.3	34.6	31.5	30.2	28.9	24.6	160.8	150.5	133.3	119.8	108.2	98.6	94.3	90.4	77.0
15SUV028_rpt	Gar15SUV028row2grain10 - 3	2015_1	Beaufort Fm.	0.5-1.0	G9	30	0.010000	931.8	885.5	956.3	944.0	51.3	48.0	42.6	38.2	34.6	31.5	30.1	28.9	24.6	160.4	150.1	133.1	119.5	108.0	98.4	94.1	90.2	76.8
15SUV028_rpt	Gar15SUV028row2grain10 - 4	2015_1	Beaufort Fm.	0.5-1.0	G9	30.4	0.010133	935.5	888.9	958.5	947.0	51.6	48.3	42.8	38.4	34.7	31.6	30.3	29.0	24.7	161.1	150.8	133.6	120.0	108.5	98.8	94.5	90.6	77.2
15SUV028_AVG	Gar15SUV028row2grain10	2015_1	Beaufort Fm.	0.5-1.0	G9	30.4	0.010125	935.2	888.7	958.4	946.8	51.6	48.2	42.8	38.4	34.7	31.6	30.2	29.0	24.7	161.1	150.8	133.6	120.0	108.4	98.8	94.5	90.5	77.2
15SUV028	Gar15SUV028row2grain11 - 1	2015_1	Beaufort Fm.	0.25-0.5	G9	77.1	0.025700	1261.5	1187.3	1143.7	1202.6	71.9	66.7	58.8	52.7	47.5	43.3	41.5	39.8	34.0	224.8	208.4	183.7	164.7	148.4	135.4	129.6	124.4	106.3
15SUV030	Gar15SUV030row2grain12 - 1	2015_1	Beaufort Fm.	0.25-0.5	G9	32.9	0.010967	957.7	909.4	972.4	965.0	53.0	49.5	43.9	39.4	35.6	32.4	31.0	29.7	25.4	165.5	154.8	137.1	123.1	111.3	101.4	97.0	92.9	79.2
15SUV030_rpt	Gar15SUV030row2grain12 - 2	2015_1	Beaufort Fm.	0.25-0.5	G9	32.1	0.010700	950.7	902.9	968.0	959.3	52.5	49.1	43.5	39.1	35.3	32.2	30.8	29.5	25.1	164.1	153.5	136.0	122.2	110.4	100.6	96.2	92.2	78.6
15SUV030_AVG	Gar15SUV030row2grain12	2015_1	Beaufort Fm.	0.25-0.5	G9	32.5	0.010833	954.2	906.2	970.2	962.2	52.7	49.3	43.7	39.2	35.5	32.3	30.9	29.6	25.3	164.8	154.1	136.6	122.6	110.8	101.0	96.6	92.6	78.9
15SUV051	Gar15SUV051row2grain13 - 1	2015_1	stream sediments	0.25-0.5	G9	58.5	0.019500	1147.8	1083.9	1083.2	1115.5	64.8	60.3	53.3	47.8	43.1	39.3	37.7	36.1	30.8	202.6	188.5	166.5	149.4	134.8	122.9	117.7	112.9	96.4
15SUV051_rpt	Gar15SUV051row2grain13 - 2	2015_1	stream sediments	0.25-0.5	G9	60.6	0.020200	1161.4	1096.3	1090.6	1126.0	65.7	61.1	53.9	48.4	43.7	39.8	38.1	36.6	31.2	205.3	190.9	168.6	151.2	136.4	124.4	119.1	114.2	97.5
15SUV051_AVG	Gar15SUV051row2grain13	2015_1	stream sediments	0.25-0.5	G9	59.6	0.019850	1154.6	1090.2	1086.9	1120.8	65.3	60.7	53.6	48.1	43.4	39.6	37.9	36.3	31.0	203.9	189.7	167.5	150.3	135.6	123.7	118.4	113.5	97.0
16SUV015	Gar16SUV015row1grain6 - 1	Mount 1	stream sediments	0.25-0.5	G9	73.2	0.024400	1238.7	1166.7	1131.9	1185.3	70.5	65.4	57.7	51.7	46.6	42.5	40.7	39.1	33.4	220.3	204.4	180.3	161.6	145.7	132.9	127.3	122.1	104.3
16SUV023	Gar16SUV023row1grain6 - 1	Mount 3	Beaufort Fm.	0.18-0.25	G9	41.4	0.013800	1027.1	973.4	1014.4	1020.8	57.3	53.5	47.3	42.5	38.4	35.0	33.5	32.1	27.4	179.1	167.2	148.0	132.8	120.0	109.3	104.7	100.3	85.6
16SUV023	Gar16SUV023row1grain8 - 1	Mount 3	Beaufort Fm.	0.18-0.25	G9	110.8	0.036933	1441.8	1349.7	1231.8	1336.8	83.2	76.7	67.4	60.3	54.2	49.5	47.4	45.5	38.9	260.0	239.6	210.6	188.4	169.4	154.6	148.1	142.1	121.5
16SUV023	Gar16SUV023row1grain9 - 1	Mount 3	Beaufort Fm.	0.18-0.25	G9	145.8	0.048600	1609.1	1498.9	1306.2	1457.7	93.7	85.9	75.2	67.2	60.3	55.0	52.7	50.6	43.3	292.7	268.4	235.1	209.9	188.3	171.9	164.7	158.1	135.3
16SUV023	Gar16SUV023row1grain10 - 1	Mount 3	Beaufort Fm.	0.18-0.25	G9	184.4	0.061467	1780.6	1650.2	1376.0	1578.3	104.4	95.2	83.1	74.1	66.3	60.5	58.0	55.7	47.7	326.4	297.6	259.8	231.5	207.2	189.1	181.2	174.1	149.0
16SUV023	Gar16SUV023row1grain11 - 1	Mount 3	Beaufort Fm.	0.18-0.25	G9	107.5	0.035833	1425.1	1334.8	1224.1	1324.6	82.2	75.8	66.6	59.6	53.6	48.9	46.8	45.0	38.4	256.7	236.8	208.1	186.2	167.5	152.8	146.4	140.5	120.1
16SUV023	Gar16SUV023row2grain1 - 1	Mount 3	Beaufort Fm.	0.18-0.25	G9	95.3	0.031767	1361.9	1278.1	1193.9	1277.9	78.2	72.3	63.6	56.9	51.3	46.8	44.8	43.0	36.7	244.4	225.9	198.8	177.9	160.2	146.1	140.0	134.3	114.8
16SUV023	Gar16SUV023row2grain2 - 1	Mount 3	Beaufort Fm.	0.18-0.25	G9	181.2	0.060400	1766.8	1638.0	1370.5	1568.7	103.6	94.5	82.5	73.5	65.8	60.1	57.6	55.3	47.3	323.6	295.3	257.8	229.7	205.7	187.8	179.9	172.8	147.9
16SUV023	Gar16SUV023row2grain3 - 1	Mount 3	Beaufort Fm.	0.18-0.25	G9	89.7	0.029900	1331.9	1251.0	1179.2	1255.6	76.3	70.6	62.2	55.7	50.1	45.7	43.8	42.0	35.9	238.5	220.6	194.3	174.0	156.7	142.9	136.9	131.4	112.3
16SUV023	Gar16SUV023row2grain4 - 1	Mount 1	Beaufort Fm.	0.25-0.5	G9	58.4	0.019467	1147.1	1083.3	1082.8	1115.0	64.8	60.3	53.3	47.8	43.1	39.3	37.6	36.1	30.8	202.5	188.4	166.4	149.3	134.7	122.8	117.6	112.8	96.3
16SUV023	Gar16SUV023row2grain5 - 1	Mount 1	Beaufort Fm.	0.25-0.5	G9	76.2	0.025400	1256.3	1182.6	1141.0	1198.6	71.6	66.4	58.5	52.5	47.3	43.1	41.3	39.6	33.9	223.8	207.5	182.9	164.0	147.8	134.8	129.1	123.9	105.8
16SUV023	Gar16SUV023row2grain6 - 1	Mount 1	Beaufort Fm.	0.25-0.5	G9	62.5	0.020833	1173.5	1107.4	1097.2	1135.3	66.4	61.8	54.5	48.9	44.1	40.2	38.5	37.0	31.6	207.6	193.0	170.4	152.8	137.9	125.7	120.4	115.5	98.6
16SUV023	Gar16SUV023row2grain7 - 1	Mount 3	Beaufort Fm.	0.18-0.25	G9	160.8	0.053600	1677.0	1559.0	1334.6	1505.8	97.9	89.6	78.4	69.9	62.7	57.2	54.8	52.6	45.0	306.0	280.0	244.9	218.5	195.8	178.8	171.3	164.5	140.8

16SUV023	**Gar16SUV023row2grain8 - 1**	**Mount 3**	**Beaufort Fm.**	**0.18-0.25**	**G9**	**104.4**	**0.034800**	**1409.3**	**1320.7**	**1216.6**	**1313.0**	**81.2**	**74.9**	**65.9**	**58.9**	**53.0**	**48.4**	**46.3**	**44.5**	**38.0**	**253.6**	**234.0**	**205.8**	**184.1**	**165.7**	**151.2**	**144.8**	**139.0**	**118.8**
16SUV023	**Gar16SUV023row2grain9 - 1**	**Mount 1**	**Beaufort Fm.**	**0.25-0.5**	**G9**	**79.7**	**0.026567**	**1276.4**	**1200.8**	**1151.3**	**1213.9**	**72.9**	**67.5**	**59.5**	**53.3**	**48.1**	**43.8**	**42.0**	**40.3**	**34.4**	**227.7**	**211.0**	**186.0**	**166.6**	**150.2**	**137.0**	**131.2**	**125.9**	**107.5**
16SUV023	**Gar16SUV023row2grain10 - 1**	**Mount 3**	**Beaufort Fm.**	**0.18-0.25**	**G9**	**111.6**	**0.037200**	**1445.8**	**1353.3**	**1233.7**	**1339.7**	**83.4**	**76.9**	**67.6**	**60.4**	**54.4**	**49.6**	**47.5**	**45.6**	**39.0**	**260.8**	**240.3**	**211.2**	**188.9**	**169.9**	**155.0**	**148.5**	**142.5**	**121.9**
16SUV023	**Gar16SUV023row2grain11 - 1**	**Mount 3**	**Beaufort Fm.**	**0.18-0.25**	**G9**	**120.8**	**0.040267**	**1491.1**	**1393.9**	**1254.5**	**1372.8**	**86.3**	**79.4**	**69.7**	**62.3**	**56.0**	**51.1**	**49.0**	**47.0**	**40.2**	**269.6**	**248.2**	**217.8**	**194.7**	**175.0**	**159.7**	**153.0**	**146.9**	**125.6**
16SUV023	**Gar16SUV023row2grain12 - 1**	**Mount 3**	**Beaufort Fm.**	**0.18-0.25**	**G9**	**91.8**	**0.030600**	**1343.3**	**1261.2**	**1184.8**	**1264.0**	**77.0**	**71.2**	**62.7**	**56.2**	**50.6**	**46.1**	**44.2**	**42.4**	**36.2**	**240.7**	**222.6**	**196.0**	**175.5**	**158.0**	**144.2**	**138.1**	**132.5**	**113.3**
16SUV023	**Gar16SUV023row2grain13 - 1**	**Mount 1**	**Beaufort Fm.**	**0.25-0.5**	**G9**	**61.7**	**0.020567**	**1168.4**	**1102.7**	**1094.5**	**1131.4**	**66.1**	**61.5**	**54.3**	**48.7**	**43.9**	**40.1**	**38.4**	**36.8**	**31.4**	**206.6**	**192.1**	**169.6**	**152.2**	**137.3**	**125.2**	**119.9**	**115.0**	**98.2**
16SUV023	**Gar16SUV023row2grain14 - 1**	**Mount 3**	**Beaufort Fm.**	**0.18-0.25**	**G9**	**143.6**	**0.047867**	**1599.0**	**1490.0**	**1301.9**	**1450.5**	**93.0**	**85.3**	**74.8**	**66.7**	**59.9**	**54.7**	**52.4**	**50.3**	**43.0**	**290.7**	**266.7**	**233.6**	**208.6**	**187.2**	**170.8**	**163.7**	**157.2**	**134.5**
16SUV023	**Gar16SUV023row3grain1 - 1**	**Mount 1**	**Beaufort Fm.**	**0.25-0.5**	**G9**	**46.6**	**0.015533**	**1066.0**	**1009.2**	**1037.1**	**1051.6**	**59.7**	**55.7**	**49.3**	**44.2**	**39.9**	**36.4**	**34.8**	**33.4**	**28.5**	**186.7**	**174.1**	**154.0**	**138.2**	**124.8**	**113.8**	**108.9**	**104.4**	**89.1**
16SUV023	**Gar16SUV023row3grain2 - 1**	**Mount 1**	**Beaufort Fm.**	**0.25-0.5**	**G9**	**80.8**	**0.026933**	**1282.6**	**1206.5**	**1154.5**	**1218.6**	**73.3**	**67.9**	**59.8**	**53.6**	**48.3**	**44.0**	**42.2**	**40.5**	**34.6**	**228.9**	**212.1**	**186.9**	**167.5**	**150.9**	**137.7**	**131.8**	**126.5**	**108.1**
16SUV023	**Gar16SUV023row3grain3 - 1**	**Mount 1**	**Beaufort Fm.**	**0.25-0.5**	**G9**	**65.7**	**0.021900**	**1193.5**	**1125.6**	**1108.0**	**1150.7**	**67.7**	**62.9**	**55.5**	**49.8**	**44.9**	**40.9**	**39.2**	**37.6**	**32.1**	**211.5**	**196.5**	**173.5**	**155.5**	**140.3**	**127.9**	**122.5**	**117.5**	**100.4**
16SUV023	**Gar16SUV023row3grain4 - 1**	**Mount 1**	**Beaufort Fm.**	**0.25-0.5**	**G9**	**47.4**	**0.015800**	**1071.8**	**1014.5**	**1040.5**	**1056.2**	**60.1**	**56.0**	**49.6**	**44.5**	**40.2**	**36.6**	**35.0**	**33.6**	**28.7**	**187.8**	**175.1**	**154.9**	**139.0**	**125.5**	**114.4**	**109.5**	**105.0**	**89.6**
16SUV023	**Gar16SUV023row3grain4 - 1**	**Mount 3**	**Beaufort Fm.**	**0.18-0.25**	**G9**	**0.82**	**0.000273**	**389.2**	**374.9**	**544.0**	**466.6**	**17.1**	**15.8**	**13.8**	**12.1**	**10.7**	**9.6**	**9.2**	**8.6**	**7.2**	**53.5**	**49.4**	**43.1**	**37.9**	**33.4**	**30.0**	**28.6**	**27.0**	**22.5**
16SUV023	**Gar16SUV023row3grain5 - 1**	**Mount 1**	**Beaufort Fm.**	**0.25-0.5**	**G9**	**59.6**	**0.019867**	**1154.9**	**1090.5**	**1087.1**	**1121.0**	**65.3**	**60.7**	**53.6**	**48.1**	**43.4**	**39.6**	**37.9**	**36.3**	**31.0**	**204.0**	**189.7**	**167.6**	**150.3**	**135.7**	**123.7**	**118.4**	**113.6**	**97.0**
16SUV025	**Gar16SUV025row3grain7 - 1**	**Mount 1**	**stream sediments**	**0.25-0.5**	**G9**	**42.5**	**0.014167**	**1035.6**	**981.2**	**1019.3**	**1027.5**	**57.8**	**54.0**	**47.8**	**42.9**	**38.7**	**35.3**	**33.8**	**32.4**	**27.6**	**180.7**	**168.7**	**149.3**	**134.0**	**121.0**	**110.3**	**105.6**	**101.2**	**86.3**
16SUV028	**Gar16SUV028row3grain8 - 1**	**Mount 1**	**stream sediments**	**0.5-1.0**	**G9**	**76.7**	**0.025567**	**1259.2**	**1185.2**	**1142.5**	**1200.8**	**71.8**	**66.6**	**58.7**	**52.6**	**47.4**	**43.2**	**41.4**	**39.7**	**33.9**	**224.3**	**208.0**	**183.4**	**164.3**	**148.1**	**135.1**	**129.4**	**124.1**	**106.1**
16SUV030	**Gar16SUV030row3grain10 - 1**	**Mount 1**	**stream sediments**	**0.5-1.0**	**G9**	**67.2**	**0.022400**	**1202.7**	**1134.0**	**1112.9**	**1157.8**	**68.3**	**63.4**	**56.0**	**50.2**	**45.3**	**41.3**	**39.5**	**37.9**	**32.4**	**213.3**	**198.1**	**174.9**	**156.8**	**141.4**	**129.0**	**123.5**	**118.4**	**101.2**

Notes

1 Grütter et al. (2004) garnet classification

2 Assume constant Ni-in-Olivine of 3000 ppm (typically 2900-3200)

3 Griffin et al. (1989): =(1000/((-0.435*(LOG10(Ni ppm/30)))+0.83))-273

4 Ryan et al. (1996): =(1000/(1.506-(0.189*LN(Ni ppm))))-273

5 Canil (1999): =(8772/(2.53-(LN(D))))-273.15 ;where D=Ni(grt)/Ni(ol) and Ni(ol) is assumed to be 3000 ppm

6 T-Ni (average) = Griffin et al. (1989) + Canil (1999) / 2

7 P(kbar)[35mW] = (0.00001082*((TNi(avg))^2))+(0.05641974*(TNi(avg)))-11.56674451 ;where Tni(avg) = (T-Ni(Griffin et al. (1989)) + T-Ni(Canil (1999)))/2

8 P(kbar)[36mW] = (0.000006185*((TNi(avg))^2))+(0.058815136*(TNi(avg)))-12.98946931 ;where Tni(avg) = (T-Ni(Griffin et al. (1989)) + T-Ni(Canil (1999)))/2

9 P(kbar)[38mW] = (0.000003312*((TNi(avg))^2))+(0.055599376*(TNi(avg)))-12.859965371 ;where Tni(avg) = (T-Ni(Griffin et al. (1989)) + T-Ni(Canil (1999)))/2

10 P(kbar)[40mW] = (0.000001639*((TNi(avg))^2))+(0.052362061*(TNi(avg)))-12.652294442 ;where Tni(avg) = (T-Ni(Griffin et al. (1989)) + T-Ni(Canil (1999)))/2

11 P(kbar)[42mW] = (0.050026706*(TNi(avg))-12.666727951 ;where Tni(avg) = (T-Ni(Griffin et al. (1989)) + T-Ni(Canil (1999)))/2

12 P(kbar)[44mW] = (0.04579219*(TNi(avg))-11.75176172 ;where Tni(avg) = (T-Ni(Griffin et al. (1989)) + T-Ni(Canil (1999)))/2

13 P(kbar)[45mW] = (0.04393264*(TNi(avg))-11.349806601 ;where Tni(avg) = (T-Ni(Griffin et al. (1989)) + T-Ni(Canil (1999)))/2

14 P(kbar)[46mW] = (0.04233845*(TNi(avg))-11.11616535 ;where Tni(avg) = (T-Ni(Griffin et al. (1989)) + T-Ni(Canil (1999)))/2

15 P(kbar)[50mW] = (0.03640732*(TNi(avg))-9.77956544 ;where Tni(avg) = (T-Ni(Griffin et al. (1989)) + T-Ni(Canil (1999)))/2

16 Depth(km)[35mW] = P(kbar)[35mW]*3.125

17 Depth(km)[36mW] = P(kbar)[36mW]*3.125

18 Depth(km)[38mW] = P(kbar)[38mW]*3.125

19 Depth(km)[40mW] = P(kbar)[40mW]*3.125

20 Depth(km)[42mW] = P(kbar)[42mW]*3.125

21 Depth(km)[44mW] = P(kbar)[44mW]*3.125

22 Depth(km)[45mW] = P(kbar)[45mW]*3.125

23 Depth(km)[46mW] = P(kbar)[46mW]*3.125

24 Depth(km)[50mW] = P(kbar)[50mW]*3.125