

ABNER RANGE
SEL 9779

Appendix 5.3

HM Sampling - Microprobe Data

Appendix 5.3
5.3_Heavy Mineral Analysis_Probe data.xls

Job Number	Sample Number	Stub Number	Grain Number	Morphology Group	Min Grainsize	Core Rim	Probe Date	Mineral Returned	Grain Assessment	OxNo	SiO2	TiO2	Al2O3	Cr2O3	Fe2O3	V2O3	Nb2O5	FeO	MnO	MgO	CaO	ZnO	NiO	CoO	Na2O
04070	0408002	177	31	B1	0.3	C1	1/12/2004	OT	C	10	30.95	1	22.94	0		0	0	42.92	0.4	0.43	0.27	0	0	0	
04070	0408002	177	11	B1	0.3	C1	1/12/2004	SP	C	4		0	43.8744	26.1287	0	0.4949		13.0593	0	16.2913		0	0	0	
04070	0408002	177	12	B1	0.3	C1	1/12/2004	SP	C	4		0	39.37	31.63	0	0		13.39	0	15.06		0	0.51	0.56	
04070	0408002	177	13	B1	0.3	C1	1/12/2004	SP	C	4		0.23	44.18	26.12	0	0		13.45	0	15.49		0	0.52	0	
04070	0408002	177	14	B1	0.3	C1	1/12/2004	SP	C	4		0.19	41.31	29.79	0	0.22		13.25	0	14.31		0	0	0	
04070	0408002	177	15	B1	0.3	C1	1/12/2004	SP	C	4		0.2828	39.0971	31.5423	0	0.3535		13.9683	0	14.7258		0	0	0	
04070	0408002	177	16	B1	0.3	C1	1/12/2004	SP	C	4		0.3	40.33	29.28	0	0.34		13.42	0	15.14		0	0	0	
04070	0408002	177	17	B1	0.3	C1	1/12/2004	SP	C	4		0.4646	30.7949	36.8246	0	0		21.3514	0	10.403		0	0	0	
04070	0408002	177	18	B1	0.3	C1	1/12/2004	SP	C	4		0	44.0461	27.1892	0	0		12.6452	0	15.8469		0	0	0	
04070	0408002	177	19	B1	0.3	C1	1/12/2004	SP	C	4		0	32.96	34.96	0	0.27		18.91	0	11.49		0	0	0.66	
04070	0408002	177	20	B1	0.3	C1	1/12/2004	SP	C	4		0	36.85	31.21	0	0		17.43	0	14.25		0	0	0	
04070	0408002	177	21	B1	0.3	C1	1/12/2004	SP	C	4		0.29	19.76	41.02	0	0		26.23	0.48	11.51		0	0	0	
04070	0408002	177	22	B1	0.3	C1	1/12/2004	SP	C	4		0	31.8756	39.895	0	0.2626		15.049	0	12.4432		0	0	0	
04070	0408002	177	23	B1	0.3	C1	1/12/2004	SP	C	4		0	14.49	56.8	0	0.8		18.71	0	8.91		0	0	0	
04070	0408002	177	24	B1	0.3	C1	1/12/2004	SP	C	4		0.23	37.19	34.16	0	0		12.96	0	14.66		0	0	0	
04070	0408002	177	25	B1	0.3	C1	1/12/2004	SP	C	4		0	37.91	33.95	0	0.22		13.43	0	14.85		0	0	0	
04070	0408002	177	26	B1	0.3	C1	1/12/2004	SP	C	4		0.42	35.51	32.13	0	0.26		20.93	0	11.04		0	0	0	
04070	0408002	177	27	B1	0.3	C1	1/12/2004	SP	A	4		0.15	9.64	62.02	0	0.29		14.81	0	8.67		4.14	0	0	
04070	0408002	177	28	B1	0.3	C1	1/12/2004	SP	C	4		0.62	27.03	43.63	0	0.33		16.38	0	11.52		0	0	0	
04070	0408002	177	29	B1	0.3	C1	1/12/2004	SP	C	4		0	37.6427	34.0471	0	0		12.8775	0	14.8167		0	0	0	
04070	0408002	177	30	B1	0.3	C1	1/12/2004	SP	C	4		0	27.74	44.03	0	0.35		16.35	0	10.89		0	0	0	
04070	0408002	177	32	B1	0.3	C1	1/12/2004	SP	C	4		0	38.23	32.5	0	0.49		13.88	0	14.13		0	0	0	
04070	0408002	177	33	B1	0.3	C1	1/12/2004	SP	C	4		0	40.2586	29.9566	0	0.2626		14.9884	0	14.1804		0	0	0	
04070	0408002	177	34	B1	0.3	C1	1/12/2004	SP	C	4		0.3	30.91	38.71	0	0.51		16.98	0	11.87		0	0	0	
04070	0408002	177	35	B1	0.3	C1	1/12/2004	SP	C	4		0	40.7636	29.896	0	0		14.4834	0	14.443		0	0	0	
04070	0408003	177	36	B1	0.3	C1	1/12/2004	SP	A	4		0	3.76	69.8	0	0.43		12.99	0	11.19		0.96	0	0	
04070	0408003	177	37	B1	0.3	C1	1/12/2004	SP	A	4		2.15	3.88	68.11	0	0		16.75	0.56	8.32		0	0	0	
04070	0408003	177	38	B1	0.3	C1	1/12/2004	SP	C	4		0.23	29.74	40.81	0	0		16.12	0.59	12.67		0	0	0	
04070	0408003	177	39	B1	0.3	C1	1/12/2004	SP	C	4		0	24.42	44.99	0	0.51		18.61	0	10.92		0	0	0	
04070	0408003	177	40	B1	0.3	C1	1/12/2004	SP	C	4		0	27.53	44.55	0	0.44		14.69	0	12.24		0	0	0	
04070	0408003	177	41	B1	0.3	C1	1/12/2004	SP	C	4		0.2929	32.0271	34.2289	0	0.3939		21.21	0	11.5443		0	0	0	
04070	0408003	177	42	B1	0.3	C1	1/12/2004	SP	C	4		0.46	25.63	45.32	0	0		19.42	0	8.59		0	0	0	
04070	0408003	177	43	B1	0.3	C1	1/12/2004	SP	C	4		0.28	25.56	47.14	0	0.26		14.79	0	11.42		0	0	0	
04070	0408003	177	44	B1	0.3	C1	1/12/2004	SP	C	4		0	38.19	32.66	0	0		13.25	0.49	14.72		0	0	0	
04070	0408003	177	45	B1	0.3	C1	1/12/2004	SP	C	4		0	41.2	29.19	0	0.39		14.08	0	14.78		0	0	0	
04070	0408003	177	46	B1	0.3	C1	1/12/2004	SP	C	4		0	31.8352	37.5316	0	0.2828		19.3415	0	10.706		0	0	0	
04070	0408002	177	11	B1	0.3	C1	1/12/2004	SP	C	4		0	43.8744	26.1287	0	0.4949		13.0593	0	16.2913		0	0	0	
04070	0408002	177	12	B1	0.3	C1	1/12/2004	SP	C	4		0	39.37	31.63	0	0		13.39	0	15.06		0	0.51	0.56	
04070	0408002	177	13	B1	0.3	C1	1/12/2004	SP	C	4		0.23	44.18	26.12	0	0		13.45	0	15.49		0	0.52	0	
04070	0408002	177	14	B1	0.3	C1	1/12/2004	SP	C	4		0.19	41.31	29.79	0	0.22		13.25	0	14.31		0	0	0	
04070	0408002	177	15	B1	0.3	C1	1/12/2004	SP	C	4		0.2828	39.0971	31.5423	0	0.3535		13.9683	0	14.7258		0	0	0	
04070	0408002	177	16	B1	0.3	C1	1/12/2004	SP	C	4		0.3	40.33	29.28	0	0.34		13.42	0	15.14		0	0	0	
04070	0408002	177	17	B1	0.3	C1	1/12/2004	SP	C	4		0.4646	30.7949	36.8246	0	0		21.3514	0	10.403		0	0	0	
04070	0408002	177	18	B1	0.3	C1	1/12/2004	SP	C	4		0	44.0461	27.1892	0	0		12.6452	0	15.8469		0	0	0	
04070	0408002	177	19	B1	0.3	C1	1/12/2004	SP	C	4		0	32.96	34.96	0	0.27		18.91	0	11.49		0	0	0.66	
04070	0408002	177	20	B1	0.3	C1	1/12/2004	SP	C	4		0	36.85	31.21	0	0		17.43	0	14.25		0	0	0	
04070	0408002	177	21	B1	0.3	C1	1/12/2004	SP	C	4		0.29	19.76	41.02	0	0		26.23	0.48	11.51		0	0	0	
04070	0408002	177	22	B1	0.3	C1	1/12/2004	SP	C	4		0	31.8756	39.895	0	0.2626		15.049	0	12.4432		0	0	0	
04070	0408002	177	23	B1	0.3	C1	1/12/2004	SP	C	4		0	14.49	56.8	0	0.8		18.71	0	8.91		0	0	0	
04070	0408002	177	24	B1	0.3	C1	1/12/2004	SP	C	4		0.23	37.19	34.16	0	0		12.96	0	14.66		0	0	0	
04070	0408002	177	25	B1	0.3	C1	1/12/2004	SP	C	4		0	37.91	33.95	0	0.22		13.43	0	14.85		0	0	0	
04070	0408002	177	26	B1	0.3	C1	1/12/2004	SP	C	4		0.42	35.51	32.13	0	0.26		20.93	0	11.04		0	0	0	
04070	0408002	177	27	B1	0.3	C1	1/12/2004	SP	A	4		0.15	9.64	62.02	0	0.29		14.81	0	8.67		4.14	0	0	
04070	0408002	177	28	B1	0.3	C1	1/12/2004	SP	C	4		0.62	27.03	43.63	0	0.33		16.38	0	11.52		0	0	0	
04070	0408002	177	29	B1	0.3	C1	1/12/2004	SP	C	4		0	37.6427	34.0471	0	0		12.8775	0	14.8167		0	0	0	
04070	0408002	177	30	B1	0.3	C1	1/12/2004	SP	C	4		0	27.74	44.03	0	0.35		16.35	0	10.89		0	0	0	
04070	0408002	177	31	B1	0.3	C1	1/12/2004	OT	C	10	30.95	1	22.94	0		0	0	42.92	0.4	0.43	0.27	0	0	0	
04070	0408002	177	32	B1	0.3	C1	1/12/2004	SP	C	4		0	38.23	32.5	0	0.49		13.88	0	14.13		0	0	0	
04070	0408002	177	33	B1	0.3	C1	1/12/2004	SP	C	4		0	40.2586	29.9566	0	0.2626		14.9884	0	14.1804		0	0	0	
04070	0408002	177	34	B1	0.3	C1	1/12/2004	SP	C	4		0.3	30.91	38.71	0	0.51		16.98	0	11.87		0	0	0	
04070	0408002	177	35	B1	0.3	C1	1/12/2004	SP	C	4		0	40.7636	29.896	0	0		14.4834	0	14.443		0	0	0	
04070	0408002	183	1	B1	0.																				

Appendix 5.3
5.3_Heavy Mineral Analysis_Probe data.xls

Job Number	Sample Number	Stub Number	Grain Number	Morphology Group	Min Grainsize	Core Rim	Probe Date	Mineral Returned	Grain Assessment	OxNo	SiO2	TiO2	Al2O3	Cr2O3	Fe2O3	V2O3	Nb2O5	FeO	MnO	MgO	CaO	ZnO	NiO	CoO	Na2O
04070	0408002	183	3	B1	0.3	R1	2/02/2005	SP		4		0.18	33.2	35.18	0	0.4		19.97	0	10.85		0	0	0	
04070	0408002	183	4	B1	0.3	C1	2/02/2005	SP		4		0.73	8.99	62.35	0	0.16		14.25	0	10.73		2.15	0	0	
04070	0408002	183	4	B1	0.3	R1	2/02/2005	SP		4		0.66	9.34	62.6	0	0.24		15.24	0	11.15		0	0	0	
04070	0408002	183	5	B1	0.3	C1	2/02/2005	SP		4		0.24	29.31	41.38	0	0.36		16.88	0.6	10.99		0	0	0	
04070	0408002	183	5	B1	0.3	R1	2/02/2005	SP		4		0.17	29.65	41.13	0	0.24		16.61	0	11.48		0	0	0	
04070	0408002	183	6	B1	0.3	C1	2/02/2005	SP		4		0.63	19.89	50.67	0	0.25		17.48	0	10.34		0	0	0	
04070	0408002	183	6	B1	0.3	R1	2/02/2005	SP		4		1.22	3.97	65.19	0	0.26		19.78	0	9.2		0	0	0	
04070	0408002	183	7	B1	0.3	C1	2/02/2005	OT		49	25.73	0.5	23.8	0		0	0.38	39.18	0	0.5	0.17	0	0	0	
04070	0408002	183	8	B1	0.3	C1	2/02/2005	SP		4		0	42.02	27.88	0	0.27		13.25	0	15.97		0	0	0	
04070	0408002	183	8	B1	0.3	R1	2/02/2005	SP		4		0	43.28	27.46	0	0.32		12.18	0	15.61		0	0	0.34	
04070	0408002	183	9	B1	0.3	C1	2/02/2005	SP		4		0.54	19.59	49.84	0	0.59		19.56	0	9.73		0	0	0	
04070	0408002	183	9	B1	0.3	R1	2/02/2005	SP		4		0.33	19.9	48.99	0	0.33		20	0	9.77		0	0	0	
04070	0408002	183	10	B1	0.3	C1	2/02/2005	SP		4		0	27.01	44.66	0	0.32		14.54	0	12.09		0.59	0	0	
04070	0408002	183	10	B1	0.3	R1	2/02/2005	SP		4		1.84	1.46	62.62	0	0.37		24.79	0	6.35		1.56	0	0	
04070	0408002	183	11	B1	0.3	C1	2/02/2005	SP		4		0.3	27.2	45.05	0	0.23		14.98	0	11.94		0	0	0	
04070	0408002	183	11	B1	0.3	R1	2/02/2005	SP		4		0.12	24.93	46.86	0	0.2		13.15	0.36	13.49		0	0	0	
04070	0408002	183	12	B1	0.3	C1	2/02/2005	SP		4		0	21.71	51.31	0	0.25		16	0	10.74		0	0	0	
04070	0408002	183	12	B1	0.3	R1	2/02/2005	SP		4		0.32	16.37	53.14	0	0.38		18.82	0	9.99		0	0	0	
04070	0408002	183	13	B1	0.3	C1	2/02/2005	SP		4	0.1616	42.0665	27.4013	0	0.1616		14.3622	0	15.6651		0	0	0		
04070	0408002	183	13	B1	0.3	R1	2/02/2005	SP		4	0	43.67	24.87	0	0.3		13.24	0	16.56		0.61	0.5	0	0	
04070	0408002	184	1	B1	0.4	C1	2/02/2005	SP		4	1.21	10.02	60.41	0	0.34		15.57	0	12.16		0	0	0		
04070	0408002	184	1	B1	0.4	R1	2/02/2005	SP		4	1.62	13.87	50.62	0	0		21.47	0	11.19		0.91	0	0		
04070	0408002	184	2	B1	0.4	C1	2/02/2005	SP		4	0	38.2	32.94	0	0.38		13.16	0	14.75		0	0	0		
04070	0408002	184	2	B1	0.4	R1	2/02/2005	SP		4	0	39.95	31.03	0	0		13.27	0	15.53		0	0	0		
04070	0408002	184	3	B1	0.4	C1	2/02/2005	SP		4	0	41.3	29.76	0	0.25		13.67	0	15.79		0	0	0		
04070	0408002	184	3	B1	0.4	R1	2/02/2005	SP		4	0	43.05	28.26	0	0		13.05	0	15.4		0	0	0		
04070	0408002	184	4	B1	0.4	C1	2/02/2005	SP		4	0.14	31.5	39.98	0	0.31		14.15	0	12.68		0.59	0	0		
04070	0408002	184	4	B1	0.4	R1	2/02/2005	SP		4	0	32.18	40.18	0	0.4		14.31	0	12.81		0	0	0		
04070	0408002	184	5	B1	0.4	C1	2/02/2005	SP		4	0	28.73	42.93	0	0.41		14.5	0	12.29		0.93	0	0		
04070	0408002	184	5	B1	0.4	R1	2/02/2005	SP		4	0	29.56	42.7	0	0.47		14.73	0	11.94		0.67	0	0		
04070	0408002	184	6	B1	0.4	C1	2/02/2005	OT		2	0.22	99.17	0	0	0.52		0	0	0		0	0	0		
04070	0408002	184	6	B1	0.4	R1	2/02/2005	OT		2	0	98.55	0	0.53	0.66		0	0	0		0	0	0		
04070	0408002	184	7	B1	0.4	C1	2/02/2005	SP		4	0	38.59	31.64	0	0		15.05	0	13.82		0	0	0		
04070	0408002	184	7	B1	0.4	R1	2/02/2005	SP		4	0	38.99	31.49	0	0.26		14.72	0	14.25		0	0	0		
04070	0408002	184	8	B1	0.4	C1	2/02/2005	SP		4	0	35.3	35.59	0	0.3		13.8	0	14.2		0	0	0		
04070	0408002	184	8	B1	0.4	R1	2/02/2005	SP		4	0	28.26	40.82	0	0.35		16.47	0	13.07		0	0	0		
04070	0408002	184	9	B1	0.4	C1	2/02/2005	SP		4	1.73	5.99	64	0	0		22.43	0	5.48		0	0	0		
04070	0408002	184	9	B1	0.4	R1	2/02/2005	SP		4	0.78	8.49	62.45	0	0		17.63	0	10.06		0	0	0		
04070	0408002	184	10	B1	0.4	C1	2/02/2005	SP		4	0.27	28.98	37.04	0	0.33		22.24	0	10.77		0	0	0		
04070	0408002	184	10	B1	0.4	R1	2/02/2005	SP		4	0.43	29.5	36.21	0	0.33		22.49	0	10.79		0	0.37	0		
04070	0408002	184	11	B1	0.4	C1	2/02/2005	SP		4	0	39.34	31.19	0	0		15.18	0	14.09		0	0	0		
04070	0408002	184	11	B1	0.4	R1	2/02/2005	SP		4	0.24	34.84	34.73	0	0.25		14.78	0.53	14.34		0	0	0		
04070	0408002	184	12	B1	0.4	C1	2/02/2005	SP		4	0.91	7.83	62.65	0	0.37		17.11	0	11.07		0	0	0		
04070	0408002	184	12	B1	0.4	R1	2/02/2005	SP		4	1.56	1.82	67.39	0	0.39		21.3	0	7.26		0	0	0		
04070	0408002	184	13	B1	0.4	C1	2/02/2005	SP		4	0	37.61	32.63	0	0		15.69	0	13.13		0	0	0		
04070	0408002	184	13	B1	0.4	R1	2/02/2005	SP		4	0	36.4	34.4	0	0.28		16.24	0	12.65		0	0	0		
04070	0408002	184	14	B1	0.4	C1	2/02/2005	SP		4	0.18	29.42	39.75	0	0.52		18.45	0	11.37		0	0	0		
04070	0408002	184	14	B1	0.4	R1	2/02/2005	SP		4	0.22	28.31	41.05	0	0		19.88	0	10.34		0	0	0		
04070	0408002	184	15	B1	0.4	C1	2/02/2005	SP		4	0	40.56	30.92	0	0.2		13.63	0	14.24		0	0	0		
04070	0408002	184	15	B1	0.4	R1	2/02/2005	SP		4	0	40.29	31.22	0	0		13.07	0	14.87		0	0	0		
04070	0408002	184	16	B1	0.4	C1	2/02/2005	SP		4	0	33.92	37	0	0.25		14.26	0	14.2		0	0	0		
04070	0408002	184	16	B1	0.4	R1	2/02/2005	SP		4	0	33.83	37.02	0	0.18		14.39	0	13.23		0	0.35	0		
04070	0408002	184	17	B1	0.4	C1	2/02/2005	SP		4	0	38.87	30.95	0	0		13.62	0	16.12		0	0	0		
04070	0408002	184	17	B1	0.4	R1	2/02/2005	SP		4	0	39.02	30.46	0	0		13.8	0.42	14.83		0.9	0	0		
04070	0408002	184	18	B1	0.4	C1	2/02/2005	SP		4	0	30.12	41.76	0	0.48		15.88	0	11.55		0	0	0		
04070	0408002	184	18	B1	0.4	R1	2/02/2005	SP		4	0.27	31.93	39.11	0	0		14.54	0	13.25		0	0	0		
04070	0408002	184	19	B1	0.4	C1	2/02/2005	SP		4	0.35	23.28	43.47	0	0.32		22.93	0	8.93		0	0	0		
04070	0408002	184	19	B1	0.4	R1	2/02/2005	SP		4	0.14	23.56	43.8	0	0.31		22.59	0.52	9.12		0	0	0		
04070	0408002	184	20	B1	0.4	C1	2/02/2005	SP		4	0.21	29.88	41.72	0	0.26		15.66	0	11.74		0	0	0		
04070	0408002	184	20	B1	0.4	R1	2/02/2005	SP		4	3.98	1.8	55.07	0	0		32.07	0	5.85		0	0	0		
04070	0408002	184	21	B1	0.4	C1	2/02/2005	SP		4	0	11.31	62.28	0	0.4		15.25	0	9.76		0.69	0	0		
04070	0408002	184	21	B1	0.4	R1	2/02/2005	SP		4	1.38	2.4	67.12	0	0		20.83	0	6.76		1.44	0	0		
04070	0408002	184	22	B1	0.4	C1	2/02/2005	SP		4	0.81	18.49	49.44	0	0.6		20.85	0	8.87		0	0	0		
04070	0408002	184	22	B1	0.4	R1	2/02/2005	SP		4	1.26</														

Appendix 5.3
5.3_Heavy Mineral Analysis_Probe data.xls

Job Number	Sample Number	Stub Number	Grain Number	Morphology Group	Min Grainsize	Core Rim	Probe Date	Mineral Returned	Grain Assessment	OxNo	SiO2	TiO2	Al2O3	Cr2O3	Fe2O3	V2O3	Nb2O5	FeO	MnO	MgO	CaO	ZnO	NiO	CoO	Na2O
04070	0408002	184	24	B1	0.4	C1	2/02/2005	SP		4		0.39	35.52	36.09	0	0.42		13.84	0	13.49		0	0	0	
04070	0408002	184	24	B1	0.4	R1	2/02/2005	SP		4		0.33	36.11	35.4	0	0.22		13.76	0	13.34		0	0	0	
04070	0408002	184	25	B1	0.4	C1	2/02/2005	SP		4		0.27	13.17	59.15	0	0.57		17.82	0	8.74		0	0	0	
04070	0408002	184	25	B1	0.4	R1	2/02/2005	SP		4		1.4	0.79	67.24	0	0.32		21.32	0	6.44		1.68	0	0	
04070	0408002	184	26	B1	0.4	C1	2/02/2005	SP		4	0.1414	37.9558	32.1887	0	0.2626			15.15	0	14.0693		0	0	0	
04070	0408002	184	26	B1	0.4	R1	2/02/2005	SP		4		0.12	36.86	32.68	0	0.18		15.23	0.32	14.33		0	0	0	
04070	0408002	184	27	B1	0.4	C1	2/02/2005	SP		4		0.16	14.73	57.56	0	0.62		17.44	0	8.73		0	0	0	
04070	0408002	184	27	B1	0.4	R1	2/02/2005	SP		4		1.39	3.63	64.98	0	0		20.11	0	7.95		1.2	0	0	
04070	0408002	184	28	B1	0.4	C1	2/02/2005	SP		4		0.15	36.83	30.27	0	0.34		20.08	0	11.5		0	0	0	
04070	0408002	184	28	B1	0.4	R1	2/02/2005	SP		4		0.34	36.25	30.74	0	0.38		19.75	0	11.19		0.65	0	0	
04070	0408002	184	29	B1	0.4	C1	2/02/2005	SP		4		0.2	33.83	36.85	0	0		14.58	0	13.75		0	0	0	
04070	0408002	184	29	B1	0.4	R1	2/02/2005	SP		4	0.57	25.85	44.31	0	0.2			16.22	0.41	12.17		0	0	0	
04070	0408002	184	30	B1	0.4	C1	2/02/2005	SP		4		0	39.69	31.58	0	0		14.31	0	13.8		0	0	0	
04070	0408002	184	30	B1	0.4	R1	2/02/2005	SP		4		0	39.23	31.3	0	0		14.11	0	14.41		0	0.36	0	
04070	0408002	184	31	B1	0.4	C1	2/02/2005	SP		4		0	41.96	27.53	0	0		15.06	0	14.71		0.69	0	0	
04070	0408002	184	31	B1	0.4	R1	2/02/2005	SP		4		0	42.79	26.91	0	0		14.93	0	14.5		0	0	0	
04070	0408002	184	32	B1	0.4	C1	2/02/2005	SP		4		0	43.13	26.61	0	0.22		12.4	0	16.38		0	0	0.42	
04070	0408002	184	32	B1	0.4	R1	2/02/2005	SP		4		0	43.62	26.41	0	0.24		12.12	0	16.41		0.7	0	0	
05033	159518	214	66	B1	0.3	C1	13-Jun-05	SP	B	4		0.4	31.43	36.36	0	0		21.5	0	9.82		0	0	0	
05033	159518	213	6	B1	0.4	C1	13-Jun-05	SP	A	4		1.515	8.4537	61.8221	0	0		18.9678	0	9.09		0	0	0	
05033	159518	214	69	B1	0.3	C1	13-Jun-05	SP	A	4		0	9.1405	63.6401	0	0.4646		17.7659	0	8.7769		0	0	0	
05033	159518	214	67	B1	0.3	C1	13-Jun-05	SP	B	4		0	40.0061	30.1182	0	0		13.9077	0	15.6449		0	0	0	
05033	159518	214	65	B1	0.3	C1	13-Jun-05	SP	B	4		0	19.4627	53.2068	0	0.5454		16.3115	0	10.1101		0	0	0	
05033	159518	214	64	B1	0.3	C1	13-Jun-05	SP	B	4		0.3333	26.1186	45.7025	0	0		15.7156	0	11.7059		0	0	0	
05033	159518	214	63	B1	0.3	C1	13-Jun-05	SP	B	4		0.65	21.14	47.15	0	0.52		21.28	0	8.8		0	0	0	
05033	159518	214	57	B1	0.3	C1	13-Jun-05	SP	B	4		0.98	28.66	36.64	0	0		19.3	0	13.26		0	0.69	0	
05033	159518	214	68	B1	0.3	C1	13-Jun-05	SP	B	4		0	31.68	36.07	0	0		20.29	0	10.5		0	0	0	
05033	159518	214	56	A1	0.3	C1	13-Jun-05	SP	B	4		0.303	30.603	37.875	0	0		19.7657	0	10.7868		0	0	0	
05033	159518	214	62	B1	0.3	C1	13-Jun-05	SP	B	4		0	34.78	36.83	0	0		14.22	0	13.16		0	0	0	
05033	159518	214	58	B1	0.3	C1	13-Jun-05	SP	A	4		1.83	8.29	64.78	0	0		17.88	0	6.53		0	0	0	
05033	159518	214	59	B1	0.3	C1	13-Jun-05	SP	B	4		0.63	26.26	42.75	0	0		18.27	0	11.06		0	0	0	
05033	159518	214	60	B1	0.3	C1	13-Jun-05	SP	B	4		0	39.67	31.92	0	0		13.04	0	14.66		0	0	0	
05033	159518	214	61	B1	0.3	C1	13-Jun-05	SP	B	4		0.35	36.29	31.81	0	0		17.28	0	13.5		0	0	0	
05033	159519	214	82	B1	0.3	C1	13-Jun-05	SP	B	4		0	39.74	30.88	0	0.45		12.72	0	15.12		0	0	0	
05033	159519	214	78	B1	0.3	C1	13-Jun-05	SP	B	4		0	33.57	38.26	0	0		14	0	13.83		0	0	0	
05033	159519	214	86	B1	0.3	C1	13-Jun-05	SP	B	4		0.4	18.68	53.51	0	0		15.89	0	11.47		0	0	0	
05033	159519	214	85	B1	0.3	C1	13-Jun-05	SP	B	4		0	32.5119	39.5112	0	0		13.7562	0	13.5138		0	0	0	
05033	159519	214	83	B1	0.3	C1	13-Jun-05	SP	B	4		1.0302	16.6549	47.2478	0	0.4343		26.3509	0	7.7164		0	0	0	
05033	159519	214	81	B1	0.3	C1	13-Jun-05	SP	B	4		0.47	29.83	41.32	0	0		15.1	0	12.19		0	0	0	
05033	159519	214	80	B1	0.3	C1	13-Jun-05	IL	C	3		50.04	0	0	0	0	0	47.17	2.66	0	0	0	0	0	
05033	159519	214	79	B1	0.3	C1	13-Jun-05	SP	B	4		0	33.6936	37.4205	0	0		15.5237	0	12.7967		0	0	0	
05033	159519	214	87	B1	0.3	C1	13-Jun-05	SP	B	4		0.3737	25.6944	43.0563	0	0		21.0585	0	9.6758		0	0	0	
05033	159519	214	70	B1	0.3	C1	13-Jun-05	SP	B	4		0	35.63	34.85	0	0.43		13.62	0	14.77		0	0	0	
05033	159519	214	77	B1	0.3	C1	13-Jun-05	SP	B	4		0	39.794	31.7039	0	0		13.9582	0	14.0491		0	0	0	
05033	159519	214	84	B1	0.3	C1	13-Jun-05	SP	B	4		0.48	28.86	39.55	0	0		19.83	0	11.46		0	0	0	
05033	159519	213	8	B1	0.4	C1	13-Jun-05	SP	B	4		0	32.28	39.3	0	0		13.72	0	13.83		0	0	0	
05033	159519	214	71	B1	0.3	C1	13-Jun-05	SP	B	4		0	30.9	40.73	0	0.39		14.45	0	13.23		0	0	0	
05033	159519	214	72	B1	0.3	C1	13-Jun-05	SP	B	4		0	31.2494	39.7233	0	0		15.4732	0	13.1805		0	0	0	
05033	159519	213	7	B1	0.4	C1	13-Jun-05	SP	B	4		0	34.0168	37.2993	0	0		14.9581	0	13.4431		0	0	0	
05033	159519	214	73	B1	0.3	C1	13-Jun-05	SP	B	4		0	38.78	31.8	0	0		12.76	0	15.67		0	0	0	
05033	159519	214	74	B1	0.3	C1	13-Jun-05	SP	B	4		0.38	31.53	37.85	0	0		15.03	0.7	13.73		0	0	0	
05033	159519	214	75	B1	0.3	C1	13-Jun-05	SP	B	4		0	40.78	30	0	0		14.26	0	13.96		0	0	0	
05033	159519	214	76	B1	0.3	C1	13-Jun-05	SP	B	4		0	33.62	34.97	0	0		20.09	0	10.59		0	0	0	
05033	159520	214	100	B1	0.3	C1	13-Jun-05	SP	B	4		0	38.95	31.11	0	0		14.6	0	13.91		0	0	0	
05033	159520	214	89	B1	0.3	C1	13-Jun-05	SP	B	4		0	30.75	38.23	0	0		20.25	0	10.54		0	0	0	
05033	159520	214	98	B1	0.3	C1	13-Jun-05	SP	B	4		0	40.44	30.57	0	0		13.8	0	14.37		0	0	0	
05033	159520	214	97	B1	0.3	C1	13-Jun-05	SP	B	4		0.4	30.09	40.07	0	0		16.18	0	12.39		0	0	0	
05033	159520	214	96	B1	0.3	C1	13-Jun-05	SP	B	4		0	29.37	38.47	0	0		21.64	0	9.52		0	0	0	
05033	159520	214	95	B1	0.3	C1	13-Jun-05	SP	B	4		0	24.22	47.53	0	0.48		15.62	0	11.47		0	0	0	
05033	159520	214	94	B1	0.3	C1	13-Jun-05	SP	B	4		0.98	20.06	52.9	0	0		17.04	0	7.96		0	0	0	
05033	159520	214	93	B1	0.3	C1	13-Jun-05	SP	B	4		0	20.02	51.54	0	0		16.59	0	10.79		0	0	0	
05033	159520	214	99	B1	0.3	C1	13-Jun-05	SP	B	4		0	40.6727	30.2596	0	0		14.5036	0	14.4329		0	0	0	
05033	159520	213	9	A1	0.4	C1	13-Jun-05	SP	B	4		0	39.57988	32.14335	0	0		13.80195	0	14.261		0	0	0	</

Appendix 5.3
5.3_Heavy Mineral Analysis_Probe data.xls

Job Number	Sample Number	Stub Number	Grain Number	Morphology Group	Min Grainsize	Core Rim	Probe Date	Mineral Returned	Grain Assessment	OxNo	SiO2	TiO2	Al2O3	Cr2O3	Fe2O3	V2O3	Nb2O5	FeO	MnO	MgO	CaO	ZnO	NiO	CoO	Na2O
05033	159520	213	12	A1	0.3	C1	13-Jun-05	SP	B	4		0	38.61	31.89	0	0.41		14.34	0	13.98		0	0	0	
05033	159520	213	11	B1	0.4	C1	13-Jun-05	SP	B	4		0	28.2194	43.2684	0	0		18.4022	0	10.0091		0	0	0	
05033	159520	213	10	B1	0.4	C1	13-Jun-05	SP	B	4		0	32.94	35.56	0	0		17.37	0	13.16		0	0	0	
05033	159520	214	92	B1	0.3	C1	13-Jun-05	SP	B	4		0	37.2084	34.0067	0	0		14.443	0	14.0996		0	0	0	
05033	159520	214	91	B1	0.3	C1	13-Jun-05	SP	B	4		0.63	18.46	48.45	0	0		21.31	0	10.36		0	0	0	
05033	159521	215	3	B1	0.3	C1	13-Jun-05	SP	B	4		0	36.95	34.28	0	0		14.12	0	13.61		0	0	0	
05033	159521	215	4	B1	0.3	C1	13-Jun-05	SP	B	4		0	30.5828	41.3797	0	0		15.3217	0	12.2715		0	0	0	
05033	159521	215	5	B1	0.3	C1	13-Jun-05	SP	B	4		0	42.3594	29.2496	0	0		12.2513	0	15.5944		0	0	0	
05033	159521	215	6	B1	0.3	C1	13-Jun-05	SP	B	4		0	41.14	29.42	0	0		13.79	0	14.71		0	0	0	
05033	159521	215	7	B1	0.3	C1	13-Jun-05	SP	B	4		0	26.77	46.27	0	0		15.08	0	11.52		0	0	0	
05033	159521	215	2	B1	0.3	C1	13-Jun-05	SP	B	4		0	39.93	30.18	0	0		15.33	0	14.04		0	0	0	
05033	159521	213	16	B1	0.4	C1	13-Jun-05	SP	B	4		0.32	30.15	37.32	0	0		20.99	0	10.41		0	0	0	
05033	159521	213	18	B1	0.4	C1	13-Jun-05	SP	B	4		0	37.2791	34.4612	0	0		13.6148	0	14.4531		0	0	0	
05033	159521	215	1	B1	0.3	C1	13-Jun-05	SP	B	4		0.27	31.57	36.24	0	0		20.07	0	10.84		0	0	0	
05033	159521	213	15	B1	0.4	C1	13-Jun-05	SP	B	4		0	33.78	34.01	0	0.48		20.05	0	10.94		0	0	0	
05033	159521	213	17	B1	0.4	C1	13-Jun-05	SP	B	4		0.35	37.97	32.7	0	0		13.85	0	14.64		0	0	0	
05033	159521	213	14	B1	0.4	C1	13-Jun-05	SP	B	4		0	39.4506	31.8958	0	0		14.3925	0	13.9784		0	0	0	
05033	159521	213	19	B1	0.4	C1	13-Jun-05	SP	B	4		0	25.1086	45.9045	0	0.4343		15.8671	0	12.0594		0	0	0	
05033	159522	215	28	B1	0.3	C1	13-Jun-05	SP	B	4		0	31.94	36.37	0	0		20.18	0	10.4		0	0	0	
05033	159522	215	27	B1	0.3	C1	13-Jun-05	SP	B	4		0.25	31.68	33.11	0	0		23.1	0	11.21		0	0	0	
05033	159522	215	24	B1	0.3	C1	13-Jun-05	SP	B	4		0	42.82	28.25	0	0		13.64	0	15.54		0	0	0	
05033	159522	215	17	B1	0.3	C1	13-Jun-05	SP	B	4		0	37.08	31.26	0	0		17.64	0	13.07		0	0	0	
05033	159522	215	23	B1	0.3	C1	13-Jun-05	SP	B	4		0	36.7	32.69	0	0		16.49	0	13.07		0	0	0	
05033	159522	215	22	B1	0.3	C1	13-Jun-05	SP	B	4		0.3838	40.0061	31.1383	0	0		13.635	0	14.5339		0	0	0	
05033	159522	215	21	B1	0.3	C1	13-Jun-05	SP	B	4		0.57	23.88	42.34	0	0		24.04	0	8.54		0	0	0	
05033	159522	215	20	B1	0.3	C1	13-Jun-05	SP	B	4		0.4242	26.0782	44.7733	0	0		14.443	0	13.5138		0	0	0	
05033	159522	215	19	B1	0.3	C1	13-Jun-05	SP	B	4		0	35.99	34.93	0	0.36		14.22	0	13.58		0	0	0	
05033	159522	215	18	B1	0.3	C1	13-Jun-05	SP	B	4		0.35	29.3	38.48	0	0		21.19	0	9.78		0	0	0	
05033	159522	215	25	B1	0.3	C1	13-Jun-05	SP	B	4		0	42.43	28.19	0	0		13.21	0	15.1		0	0	0	
05033	159522	215	9	B1	0.3	C1	13-Jun-05	SP	B	4		0	35.76471	35.02003	0	0		18.07617	0	11.75155		0	0	0	
05033	159522	215	26	B1	0.3	C1	13-Jun-05	SP	B	4		0	31.9564	36.0267	0	0		19.7657	0	10.9989		0	0.5959	0	
05033	159522	213	21	B1	0.4	C1	13-Jun-05	SP	B	4		0.4	30.85	35.18	0	0		21.49	0	11.11		0	0	0	
05033	159522	215	16	B1	0.3	C1	13-Jun-05	SP	B	4		0.3232	38.2689	31.512	0	0		15.5742	0	14.0188		0	0	0	
05033	159522	215	8	B1	0.3	C1	13-Jun-05	SP	B	4		0	31.1383	38.5214	0	0		15.4833	0	13.2108		0	0.5757	0	
05033	159522	213	20	B1	0.4	C1	13-Jun-05	SP	B	4		0	33.34	36.61	0	0		15.41	0	13.6		0	0	0	
05033	159522	215	10	B1	0.3	C1	13-Jun-05	OT	C	3	0.41	67.15	1.06	0	0	0.84	0	28.34	0	0.33	0	0	0	0	
05033	159522	215	11	B1	0.3	C1	13-Jun-05	SP	B	4		0	35.51	34.99	0	0		14.16	0	14.36		0	0	0	
05033	159522	215	12	B1	0.3	C1	13-Jun-05	SP	B	4		0	23.74	45.28	0	0		20.16	0	9.8		0	0	0	
05033	159522	215	13	B1	0.3	C1	13-Jun-05	SP	B	4		0	31.6534	36.0166	0	0		21.7453	0	10.1303		0	0	0	
05033	159522	215	14	B1	0.3	C1	13-Jun-05	SP	B	4		0	38.08	29.31	0	0.41		17.23	0	13.81		0	0	0	
05033	159522	215	15	B1	0.3	C1	13-Jun-05	SP	B	4		0.42	31.49	34.56	0	0		21.68	0	10.78		0	0	0	
05033	159522	213	22	B1	0.4	C1	13-Jun-05	SP	B	4		0	34.0168	35.7742	0	0		17.6649	0	12.0392		0	0	0	
05033	159523	215	34	B1	0.3	C1	13-Jun-05	SP	B	4		0.35	28.77	39.63	0	0		19.42	0	10.96		0	0	0	
05033	159523	215	35	B1	0.3	C1	13-Jun-05	SP	B	4		1.05	14.34	55.53	0	0.54		17.89	0	9.73		0	0	0	
05033	159523	215	36	B1	0.3	C1	13-Jun-05	SP	B	4		0	40.76	28.92	0	0.43		14	0	14.92		0	0	0	
05033	159523	215	37	B1	0.3	C1	13-Jun-05	SP	B	4		0	39.93	30.76	0	0		14.12	0	14.72		0	0	0	
05033	159523	215	38	B1	0.3	C1	13-Jun-05	SP	A	4		0.2323	9.9384	63.2563	0	0.4545		16.6044	0	9.0799		0	0	0	
05033	159523	215	39	B1	0.3	C1	13-Jun-05	SP	B	4		0.7575	21.1393	49.3486	0	0		17.978	0	10.0091		0	0	0	
05033	159523	215	40	B1	0.3	C1	13-Jun-05	SP	C	4		0	16.09	48.85	0	0		31.07	0	1.28		1.61	0	0	
05033	159523	215	33	B1	0.3	C1	13-Jun-05	SP	B	4		0	33.81	36.65	0	0.37		14.61	0	13.89		0	0	0	
05033	159523	215	43	B1	0.3	C1	13-Jun-05	SP	B	4		0	37.23	32.51	0	0		15.64	0	13.93		0	0	0	
05033	159523	213	26	A1	0.4	C1	13-Jun-05	SP	B	4		0	30.8858	37.5215	0	0		20.2202	0	10.4838		0	0	0	
05033	159523	215	41	B1	0.3	C1	13-Jun-05	SP	B	4		0.6	25.24	45.88	0	0		16.13	0	11.61		0	0	0	
05033	159523	215	32	A1	0.3	C1	13-Jun-05	SP	B	4		0.53	27.54	42.87	0	0		15.57	0	12.8		0	0	0	
05033	159523	215	31	A1	0.3	C1	13-Jun-05	SP	B	4		0	37.1074	34.643	0	0		14.3925	0	13.6451		0	0	0	
05033	159523	215	30	A1	0.3	C1	13-Jun-05	SP	B	4		0.7777	18.7557	49.187	0	0		21.7049	0	9.2415		0	0	0	
05033	159523	215	29	A1	0.3	C1	13-Jun-05	SP	B	4		0	43.7172	27.54	0	0		13.056	0	15.81		0	0	0	
05033	159523	213	29	B1	0.4	C1	13-Jun-05	SP	B	4		0	29.8354	41.9958	0	0.3939		15.6348	0	11.7261		0	0	0	
05033	159523	213	27	A1	0.4	C1	13-Jun-05	SP	B	4		0	30.0071	36.764	0	0.4848		20.2101	0	11.7766		0	0	0	
05033	159523	213	25	A1	0.4	C1	13-Jun-05	SP	B	4		0	32.62	34.91	0	0.39		21.72	0	9.87		0	0	0	
05033	159523	213	24	A1	0.4	C1	13-Jun-05	SP	B	4		0.4848	22.6846	44.6521	0	0		21.9776	0	9.797		0	0	0	
05033	159523	213	23	A1	0.4	C1	13-Jun-05	SP	B	4		0	39.25	31.46	0	0		14.42	0	14.47		0	0	0	
05033	159523	215	44	B1	0.3	C1	13-Jun-05	OT	C	4	126.16	0	2.38	0	0	0	0	13.68	0	0	1.57	0	0	0	
05033	159523																								

Appendix 5.3
5.3_Heavy Mineral Analysis_Probe data.xls

Job Number	Sample Number	Stub Number	Grain Number	Morphology Group	Min Grainsize	Core Rim	Probe Date	Mineral Returned	Grain Assessment	OxNo	SiO2	TiO2	Al2O3	Cr2O3	Fe2O3	V2O3	Nb2O5	FeO	MnO	MgO	CaO	ZnO	NiO	CoO	Na2O
05033	159523	215	42	B1	0.3	C1	13-Jun-05	SP	B	4		0	39.12	32.37	0	0		13.22	0	14.36		0	0	0	
05033	159524	215	59	B1	0.3	C1	13-Jun-05	SP	B	4		0	37.5821	33.8451	0	0.4646		14.0491	0	13.7663		0	0	0	
05033	159524	215	67	B1	0.3	C1	13-Jun-05	SP	B	4		0	20.97	51.1	0	0		15.97	0	11.17		0	0	0	
05033	159524	215	66	B1	0.3	C1	13-Jun-05	OT	C	49	41.75	0.43	39.93	0		0	0	14.88	0	2.04	0	0	0	0	
05033	159524	215	65	B1	0.3	C1	13-Jun-05	SP	B	4		0	34.2289	37.7538	0	0		14.0289	0	13.3118		0	0	0	
05033	159524	215	64	B1	0.3	C1	13-Jun-05	SP	B	4		0.2727	15.4328	56.4994	0	0.4141		17.2003	0	9.8677		0	0	0	
05033	159524	215	63	B1	0.3	C1	13-Jun-05	SP	B	4		0	20.4323	51.1666	0	0.4545		16.8872	0	10.6959		0	0	0	
05033	159524	215	62	B1	0.3	C1	13-Jun-05	OT	C	5	27.89	0.65	53.76	0		0	0	14.79	0	2.27	0	0	0	0	
05033	159524	215	60	B1	0.3	C1	13-Jun-05	SP	B	4		0	40.03	31.89	0	0		13.52	0	14.62		0	0	0	
05033	159524	215	68	B1	0.3	C1	13-Jun-05	SP	B	4		0	32.5119	38.6022	0	0		16.0691	0	12.4735		0	0	0	
05033	159524	215	58	B1	0.3	C1	13-Jun-05	SP	B	4		0.6	26.96	44.02	0	0.36		15.97	0	11.39		0	0	0	
05033	159524	215	57	B1	0.3	C1	13-Jun-05	SP	B	4		0	36.0166	35.148	0	0		15.6146	0	13.029		0	0	0	
05033	159524	215	48	B1	0.3	C1	13-Jun-05	SP	B	4		0	15.756	56.8024	0	0.6262		16.3014	0	10.2111		0	0	0	
05033	159524	215	61	B1	0.3	C1	13-Jun-05	SP	B	4		0	40.198	30.401	0	0.3737		14.0289	0	14.4834		0	0	0	
05033	159524	215	47	B1	0.4	C1	13-Jun-05	SP	B	4		0	34.68	37.27	0	0		14.25	0	13.4		0	0	0	
05033	159524	215	56	B1	0.3	C1	13-Jun-05	SP	A	4		0.53	10.05	63.55	0	0.45		16.49	0	8.31		0	0	0	
05033	159524	215	49	B1	0.3	C1	13-Jun-05	SP	B	4		0	35.21	32.27	0	0		20.9	0	10.78		0	0	0	
05033	159524	215	50	B1	0.3	C1	13-Jun-05	SP	B	4		0	31.1787	39.895	0	0.4343		14.2006	0	13.7461		0	0	0	
05033	159524	215	51	B1	0.3	C1	13-Jun-05	SP	B	4	0.3838		31.8251	36.5216	0	0		20.0586	0	10.605		0	0	0	
05033	159524	215	52	B1	0.3	C1	13-Jun-05	SP	B	4		0	31.7241	39.8344	0	0		15.8166	0	12.4937		0	0	0	
05033	159524	215	53	B1	0.3	C1	13-Jun-05	SP	B	4		0	40.93	29.96	0	0		12.74	0	15.42		0	0	0	
05033	159524	215	54	B1	0.3	C1	13-Jun-05	SP	B	4		0	35.87	35.64	0	0		15.68	0	12.88		0	0	0	
05033	159524	215	55	B1	0.3	C1	13-Jun-05	SP	B	4		0	38.21	32.25	0	0		14.7	0	13.89		0	0	0	
05033	159524	213	30	B1	0.4	C1	13-Jun-05	SP	B	4		0.58	30.09	39.49	0	0		15.55	0	13.48		0	0	0	
05033	159525	215	74	B1	0.3	C1	13-Jun-05	IL	C	3		46.35	0	0	0	0	0	51.9	1.3	0	0	0	0	0	
05033	159525	215	81	B1	0.3	C1	13-Jun-05	SP	B	4		0	35.9055	32.0675	0	0		19.5233	0	11.5039		0	0	0	
05033	159525	215	80	B1	0.3	C1	13-Jun-05	SP	B	4		0	26.69	45.99	0	0.37		14.13	0	12.1		0	0	0	
05033	159525	215	79	B1	0.3	C1	13-Jun-05	SP	B	4		0.37	37.76	33.51	0	0		14.16	0	13.2		0	0	0	
05033	159525	215	78	B1	0.3	C1	13-Jun-05	SP	B	4		0.3535	32.8351	34.9359	0	0		19.4829	0	12.0897		0	0	0	
05033	159525	215	77	B1	0.3	C1	13-Jun-05	SP	B	4		0.6565	21.3312	49.793	0	0		18.0891	0	10.0091		0	0	0	
05033	159525	215	76	B1	0.3	C1	13-Jun-05	SP	B	4		0	47.5609	22.4624	0	0		11.9584	0	17.7154		0	0	0	
05033	159525	215	75	B1	0.3	C1	13-Jun-05	SP	B	4		0.33	28.18	41.11	0	0		19.47	0	10.1		0	0	0	
05033	159525	213	31	B1	0.4	C1	13-Jun-05	SP	B	4		0.3	31.38	36.49	0	0		20.42	0	10.99		0	0	0	
05033	159525	215	72	B1	0.3	C1	13-Jun-05	SP	B	4		0	25.149	44.5612	0	0		19.1294	0	10.4333		0	0	0	
05033	159525	215	71	B1	0.3	C1	13-Jun-05	OT	C	3	0	64.43	0.76	0.64		0	0	32.52	0	0.43	0	0	0	0	
05033	159525	215	70	B1	0.3	C1	13-Jun-05	SP	B	4		0.3	30.75	36.81	0	0		20.37	0	10.59		0	0	0	
05033	159525	215	69	B1	0.3	C1	13-Jun-05	OT	C	3	0	69.04	0.42	0		0	0	29.22	0	0.56	0	0	0	0	
05033	159525	213	34	B1	0.4	C1	13-Jun-05	SP	B	4		0	37.5518	34.0067	0	0		13.7764	0	13.6956		0	0	0	
05033	159525	213	33	B1	0.4	C1	13-Jun-05	SP	B	4		0	30.9	36.46	0	0		21.42	0	10.16		0	0	0	
05033	159525	215	73	B1	0.3	C1	13-Jun-05	SP	B	4		0	40.5212	30.8656	0	0		13.4936	0	14.4329		0	0	0	
05033	159525	213	32	B1	0.4	C1	13-Jun-05	SP	B	4		0	28.75	38.7	0	0		19.7	0	11.94		0	0	0	
05033	159526	215	83	B1	0.3	C1	13-Jun-05	SP	B	4		0	41.2	29.18	0	0		13.53	0	15.34		0	0	0	
05033	159526	215	82	B1	0.3	C1	13-Jun-05	SP	B	4		0	32.32	38.16	0	0		15.39	0	13.46		0	0	0	
05033	159526	213	35	B1	0.4	C1	13-Jun-05	SP	B	4		0.4	34.72	32.4	0	0		19.74	0.66	11.71		0	0	0	
05033	159526	213	36	B1	0.4	C1	13-Jun-05	OT	C	49	37.656	0.747	31.689	0		0	0	15.912	0.837	3.717	0.882	0	0	0	
05033	159527	215	88	B1	0.3	C1	13-Jun-05	SP	B	4		0	40.50817	29.30747	0	0		15.00567	0	14.80165		0	0	0	
05033	159527	215	93	B1	0.3	C1	13-Jun-05	SP	B	4		0	36.764	34.2996	0	0		13.8067	0	14.7864		0	0	0	
05033	159527	215	90	B1	0.3	C1	13-Jun-05	SP	B	4		0.32	29.28	40.32	0	0		17.68	0	11.72		0	0	0	
05033	159527	215	91	B1	0.3	C1	13-Jun-05	SP	B	4		0	27.88	43.23	0	0.46		15.47	0	11.85		0	0	0	
05033	159527	215	89	B1	0.3	C1	13-Jun-05	SP	B	4		0	41.3292	30.1687	0	0		13.231	0	14.8571		0	0	0	
05033	159527	215	86	B1	0.3	C1	13-Jun-05	SP	B	4		0	27.7043	44.6925	0	0		14.2713	0	12.524		0	0	0	
05033	159527	215	85	B1	0.3	C1	13-Jun-05	SP	B	4		0	36.1378	32.5018	0	0		17.4326	0	13.2108		0	0	0	
05033	159527	215	87	B1	0.3	C1	13-Jun-05	SP	B	4		0	38.38	33.51	0	0		13.88	0	13.18		0	0	0	
05033	159527	215	84	B1	0.3	C1	13-Jun-05	SP	B	4		0	39.188	31.3504	0	0		13.7764	0	14.8369		0	0	0	
05033	159527	213	38	B1	0.4	C1	13-Jun-05	OT	C	49	37.845	1.098	34.227	0		0	0	9.666	0	5.22	1.206	0	0	0	
05033	159527	213	37	B1	0.4	C1	13-Jun-05	SP	B	4		0	41.7837	29.2799	0	0		13.2512	0	15.3217		0	0	0	
05033	159527	215	92	B1	0.3	C1	13-Jun-05	SP	B	4		0	38.12	32.62	0	0		13.45	0	14.71		0	0	0	
05033	159528	215	110	B1	0.3	C1	13-Jun-05	SP	B	4		0	34.3198	34.5925	0	0		19.2102	0	11.6352		0	0	0	
05033	159528	215	102	B1	0.3	C1	13-Jun-05	SP	B	4		0	38.74	32.49	0	0		13.86	0	14.31		0	0	0	
05033	159528	215	103	B1	0.3	C1	13-Jun-05	SP	B	4		0.438643	34.35697	35.08124	0	0		18.62703	0	11.33331		0	0	0	
05033	159528	215	104	B1	0.3	C1	13-Jun-05	SP	B	4		0	38.6325	32.6735	0	0		12.9886	0	15.2409		0	0	0	
05033	159528	215	105	B1	0.3	C1	13-Jun-05	SP	B	4		0.404	25.0076	46.1469	0	0		16.1398	0	11.6352		0	0	0	
05033	159528	215	106	B1	0.3	C1	13-Jun-05	SP	B	4		0	39.3799	31.9059	0	0									

Appendix 5.3
5.3_Heavy Mineral Analysis_Probe data.xls

Job Number	Sample Number	Stub Number	Grain Number	Morphology Group	Min Grainsize	Core Rim	Probe Date	Mineral Returned	Grain Assessment	OxNo	SiO2	TiO2	Al2O3	Cr2O3	Fe2O3	V2O3	Nb2O5	FeO	MnO	MgO	CaO	ZnO	NiO	CoO	Na2O
05033	159528	215	108	B1	0.3	C1	13-Jun-05	SP	B	4		0	29.189	42.3796	0	0		15.1298	0	12.6048		0	0	0	
05033	159528	215	100	B1	0.3	C1	13-Jun-05	SP	B	4		0	34.9864	35.7641	0	0		14.342	0	13.8976		0	0	0	
05033	159528	215	98	B1	0.3	C1	13-Jun-05	SP	B	4		0	36.9155	34.4511	0	0		14.3925	0	13.433		0	0	0	
05033	159528	215	97	B1	0.3	C1	13-Jun-05	SP	B	4		0	40.86	29.53	0	0		13.09	0	15.54		0	0	0	
05033	159528	215	96	B1	0.3	C1	13-Jun-05	SP	B	4		0	41.14	30.73	0	0		13.94	0	14.67		0	0	0	
05033	159528	215	95	B1	0.3	C1	13-Jun-05	SP	B	4		0	22.42	48.23	0	0		17.13	0	11.08		0	0	0	
05033	159528	215	94	B1	0.3	C1	13-Jun-05	SP	B	4		0.3333	22.3008	46.2378	0	0		19.3314	0	11.5241		0	0	0	
05033	159528	213	40	B1	0.4	C1	13-Jun-05	SP	B	4		0	33.02	38.73	0	0		14.92	0	12.58		0	0	0	
05033	159528	213	39	A1	0.4	C1	13-Jun-05	SP	B	4		0.3737	29.9566	37.5518	0	0		20.907	0	10.7868		0	0	0	
05033	159528	215	101	B1	0.3	C1	13-Jun-05	SP	B	4		0	39.6122	31.6433	0	0		13.8875	0	14.3521		0	0	0	
05033	159530	213	41	B1	0.4	C1	13-Jun-05	SP	B	4		0	40.71	27.81	0	0		13.9	0	17.08		0	0	0	
05033	159530	215	111	A1	0.3	C1	13-Jun-05	SP	B	4		0.55	36.27	29.88	0	0		17.04	0	15.62		0	0	0	
05033	159530	215	112	B1	0.3	C1	13-Jun-05	SP	B	4		0.8383	19.0789	43.9855	0	0		23.937	0.5757	11.2413		0	0	0	
05033	159531	215	113	B1	0.3	C1	13-Jun-05	SP	B	4		0	26.7852	43.43	0	0		15.1399	0	14.4834		0	0	0	
05033	159531	215	116	B1	0.3	C1	13-Jun-05	SP	B	4		0	40.501	30.0071	0	0.3737		13.3825	0	15.5742		0	0	0	
05033	159531	215	115	B1	0.3	C1	13-Jun-05	SP	B	4		0	27.2599	40.3899	0	0		20.6545	0	11.0191		0	0	0	
05033	159531	215	114	B1	0.3	C1	13-Jun-05	SP	B	4		0	41.9756	27.0074	0	0		13.3118	0	17.3821		0	0	0	
05033	159532	215	117	B1	0.3	C1	13-Jun-05	SP	B	4		0	44.2784	24.0885	0	0		11.4534	0	18.7052		0	0	0	
05033	159532	215	118	B1	0.3	C1	13-Jun-05	SP	B	4		0	38.5214	32.4715	0	0		15.453	0	13.332		0	0	0	
05033	159534	213	42	B1	0.4	C1	13-Jun-05	SP	B	4		0	36.68	32.09	0	0		14.6	0	15.85		0	0	0	
05033	159534	215	119	B1	0.3	C1	13-Jun-05	SP	B	4		0.47	22.54	40.91	0	0		24.28	0.74	10.51		0	0	0	
05033	159535	215	120	B1	0.3	C1	13-Jun-05	SP	B	4		0.63	22.38	48.16	0	0.57		17.88	0	9.43		0	0	0	
05033	159535	215	121	B1	0.3	C1	13-Jun-05	SP	B	4		0	42.2	28.68	0	0		12.77	0	15.6		0	0	0	
05033	159536	213	43	A1	0.4	C1	13-Jun-05	SP	B	4		0	37.18	32.3	0	0.45		16.42	0	13.35		0	0	0	
05033	159536	215	122	B1	0.3	C1	13-Jun-05	SP	B	4		0	36.06	35.26	0	0		14.8	0	13.1		0	0	0	
05032	159802	214	40	B1	0.3	C1	13-Jun-05	SP	B	4		0	16.3115	55.2975	0	0		17.877	0	10.0798		0	0	0	
05032	159802	214	44	B1	0.3	C1	13-Jun-05	SP	B	4		0.3	30.47	34.49	0	0		21.41	0	12.24		0	0	0	
05032	159802	214	43	B1	0.3	C1	13-Jun-05	SP	B	4		1.1	24.01	41.75	0	0		19.43	0	12.77		0	0	0	
05032	159802	214	41	B1	0.3	C1	13-Jun-05	SP	B	4		0	32.64	38.03	0	0		14.96	0	13.38		0	0	0	
05032	159802	214	39	B1	0.3	C1	13-Jun-05	SP	B	4		0	35.74	35.73	0	0		13.46	0	14.34		0	0	0	
05032	159802	214	38	A1	0.3	C1	13-Jun-05	SP	B	4		0.28	31.02	37.06	0	0		19.57	0	10.98		0	0	0	
05032	159802	213	5	A1	0.4	C1	13-Jun-05	SP	B	4		0.3	33.34	36.51	0	0		14.03	0	15.1		0	0	0	
05032	159802	214	42	B1	0.3	C1	13-Jun-05	SP	B	4		0.38	26.45	40.56	0	0		22.57	0	9.35		0	0	0	
05032	159809	214	45	B1	0.3	C1	13-Jun-05	SP	A	4		2.1	3.7	67.37	0	0		17.03	0.75	7.86		1.03	0	0	
05032	159810	214	46	B1	0.3	C1	13-Jun-05	OT	C																
05032	159811	214	47	B1	0.4	C1	13-Jun-05	SP	B	4		0.82	29.28	35.6	0	0		18.99	0	14.96		0	0	0	
05032	159811	214	48	B1	0.3	C1	13-Jun-05	SP	B	4		0.97	21.16	45.26	0	0		18.29	0	13.25		0	0	0	
05032	159811	214	49	B1	0.3	C1	13-Jun-05	SP	B	4		0.85	29.07	37.5	0	0		16.98	0	14.33		0	0.59	0	
05032	159811	214	50	B1	0.3	C1	13-Jun-05	SP	B	4		0.85	28.07	39.69	0	0		17.95	0	13.18		0	0	0	
05032	159811	214	51	B1	0.3	C1	13-Jun-05	SP	B	4		0	39.3395	30.1384	0	0		14.1299	0	16.1398		0	0	0	
05032	159814	214	53	B1	0.3	C1	13-Jun-05	SP	B	4		0	25.29	48.06	0	0.34		14.11	0	11.44		0	0	0	
05032	159815	214	55	B1	0.3	C1	13-Jun-05	SP	B	4		0	36.6731	32.4412	0	0		17.3316	0	13.0593		0	0	0	
05032	159815	214	54	B1	0.3	C1	13-Jun-05	SP	B	4		0.42	28.81	40.75	0	0.57		17.68	0	10.93		0	0	0	
05051	159537	282	5	B1	0.3	C1	23/09/2005	SP		4		0	32.91	35.91	0	0		14.72	0	15.82		0	0	0	
05051	159537	282	6	C1	0.3	C1	23/09/2005	GT		12	40.17	0	22.16	0	0	0		16.8	0.32	13.25	6.76				
05051	159538	282	7	C1	0.3	C1	23/09/2005	SP		4		0	7.474	64.5592	0	0.5252		17.9275	0	9.1102		0	0	0	
05051	159538	282	8	C1	0.3	C1	23/09/2005	SP		4		0	5.57	68.16	0	0		16.37	0	8.97		0	0	0	
05051	159538	282	9	C1	0.3	C1	23/09/2005	GT		12	38.59	0	20.85	0	0	0		28.27	1.63	9.62	0.94				
05051	159539	282	10	B1	0.3	C1	23/09/2005	SP		4		0	30.38	38.35	0	0.46		19.38	0	10.88		0	0	0	
05051	159539	282	11	B1	0.3	C1	23/09/2005	SP		4		0	32.51	35.7	0	0		20.81	0	10.96		0	0	0	
05051	159539	282	12	B1	0.3	C1	23/09/2005	SP		4		0.35	18.72	52.95	0	0		16.32	0	11.09		0	0	0	
05051	159539	282	13	B1	0.3	C1	23/09/2005	SP		4		0	43.22	26.94	0	0		12.74	0	16.26		0	0	0	
05051	159540	282	14	B1	0.3	C1	23/09/2005	SP		4		0	31.2292	36.461	0	0		21.4322	0	9.9283		0	0	0	
05051	159540	282	15	B1	0.3	C1	23/09/2005	SP		4		0.5252	28.7749	38.986	0	0		18.4224	0	12.8472		0	0	0	
05051	159540	282	16	C1	0.3	C1	23/09/2005	GT		12	38.72	0	20.87	0	0	0		26.3	0.62	7.86	5.23				
05051	159540	282	17	C1	0.3	C1	23/09/2005	GT		12	38.1	0	20.95	0	0	0		31.43	0.45	7.81	0.77				
05051	159542	282	18	C1	0.3	C1	23/09/2005	SP		4		0	4.25	66.86	0	0		18.66	0	9.75		0	0	0	
05051	159545	282	19	B1	0.3	C1	23/09/2005	SP		4		0	36.23	30.79	0	0		20.55	0	12.05		0	0	0	
05051	159545	282	20	B1	0.3	C1	23/09/2005	SP		4		0	34.06	37.15	0	0		15.56	0	13.46		0	0	0	
05051	159546	282	21	B1	0.3	C1	23/09/2005	SP		4		0.4	29.47	38.86	0	0		20.54	0	9.85		0	0	0	
05051	159546	282	22	C1	0.3	C1	23/09/2005	GT		12	37.97	0	20.68	0	0	0		32.2	0.49	6.83	1.78				
05051	159547	282	23	B1	0.3	C1	23/09/2005	SP		4		0	40.6727	28.4113	0	0		13.5441	0	17.1599		0	0	0	
05051	159548	282	24	A1	0.3	C1	23/09/2005	SP		4		0	36.764	33.4209	0	0		15.0692	0	14.0491		0	0	0	
05051	159548	282	25																						

Appendix 5.3
5.3_Heavy Mineral Analysis_Probe data.xls

Job Number	Sample Number	Stub Number	Grain Number	Morphology Group	Min Grainsize	Core Rim	Probe Date	Mineral Returned	Grain Assessment	OxNo	SiO2	TiO2	Al2O3	Cr2O3	Fe2O3	V2O3	Nb2O5	FeO	MnO	MgO	CaO	ZnO	NiO	CoO	Na2O
05051	159548	282	28	B1	0.3	C1	23/09/2005	SP		4		0	31.6	40.41	0	0		13.59	0	13.84		0	0	0	
05051	159548	282	29	B1	0.3	C1	23/09/2005	SP		4		0	6.72	65.18	0	0.64		22.29	0	5.01		0	0	0	
05051	159548	282	30	B1	0.3	C1	23/09/2005	SP		4		0.27	30.87	36.04	0	0		21.17	0	10.86		0	0	0	
05051	159548	282	31	B1	0.3	C1	23/09/2005	SP		4		0	33.27	37.06	0	0		14.92	0	13.91		0	0	0	
05051	159548	282	32	C1	0.3	C1	23/09/2005	GT		12	38.03	0	21.25	0	0	0		30.17	1.1	8.24	1.34				
05051	159549	282	33	B1	0.3	C1	23/09/2005	SP		4		0	36.68	32.25	0	0		15.65	0	14.86		0	0	0	
05051	159549	282	34	B1	0.3	C1	23/09/2005	SP		4		0.3333	15.9883	57.7821	0	0		14.5036	0	11.2413		0	0	0	
05051	159549	282	35	B1	0.3	C1	23/09/2005	SP		4		0	37.7033	34.1582	0	0		13.0896	0	14.9682		0	0	0	
05051	159549	282	36	B1	0.3	C1	23/09/2005	SP		4		0.38	27.88	36.73	0	0		22.7	0	11.27		0	0	0	
05051	159549	282	37	B1	0.3	C1	23/09/2005	SP		4		0	29.64	38.55	0	0		20.43	0	10.61		0	0	0	
05051	159549	282	38	B1	0.3	C1	23/09/2005	SP		4		0	30.21	39.96	0	0.55		15.35	0.67	13.21		0	0	0	
05051	159549	282	39	B1	0.3	C1	23/09/2005	SP		4		0	30.9464	42.6119	0	0.5252		16.4024	0	8.1002		1.2827	0	0	
05051	159549	282	40	B1	0.3	C1	23/09/2005	SP		4		0	9.6	62.19	0	0.68		16.96	0	9.88		0	0	0	
05051	159549	282	41	B1	0.3	C1	23/09/2005	SP		4		0	21.4019	49.6314	0	0		16.7458	0	11.8877		0	0	0	
05051	159549	282	42	B1	0.3	C1	23/09/2005	SP		4		0	17.7659	55.5096	0	0		15.5439	0	10.9484		0	0	0	
05051	159549	282	43	B1	0.3	C1	23/09/2005	SP		4		0.7272	22.1291	48.6214	0	0		16.7862	0	11.4231		0	0	0	
05051	159549	282	44	B1	0.3	C1	23/09/2005	SP		4		0	25.01	47.49	0	0		14.47	0	12.15		0	0	0	
05051	159549	282	45	B1	0.3	C1	23/09/2005	SP		4		0.3535	35.8348	34.0976	0	0		17.4225	0	11.8372		0	0	0	
05051	159549	282	46	B1	0.3	C1	23/09/2005	SP		4		0.52	33.15	33.41	0	0		20.87	0.62	10.66		0	0	0	
05051	159549	282	47	B1	0.3	C1	23/09/2005	SP		4		0	37.72	32.73	0	0		13.22	0	15.4		0	0	0	
05051	159549	282	48	B1	0.3	C1	23/09/2005	SP		4		0	19.8061	53.6411	0	0		15.4732	0	10.7464		0	0	0	
05051	159549	282	49	B1	0.3	C1	23/09/2005	SP		4		0	26.3307	46.0661	0	0		15.0894	0	12.4129		0	0	0	
05051	159549	282	50	B1	0.3	C1	23/09/2005	SP		4		0.4343	33.4108	35.7944	0	0		16.5135	0	13.0088		0	0	0	
05051	159549	282	51	B1	0.3	C1	23/09/2005	SP		4		0.707	20.4727	47.47	0	0.505		21.3615	0	8.8577		0	0	0	
05051	159549	282	52	B1	0.3	C1	23/09/2005	SP		4		0.663	30.9978	43.3908	0	0		17.799	0	6.9972		0	0	0	
05051	159549	282	53	B1	0.3	C1	23/09/2005	SP		4		0.47	30.21	37.27	0	0		20.81	0	10.25		0	0	0	
05051	159549	282	54	B1	0.3	C1	23/09/2005	SP		4		0	34.2087	36.9256	0	0.5555		14.6854	0	13.4633		0	0	0	
05051	159549	282	55	B1	0.3	C1	23/09/2005	SP		4		0	25.1634	45.2268	0	0		19.3902	0	9.945		0	0	0	
05051	159549	282	56	B1	0.3	C1	23/09/2005	SP		4		0	37.5768	33.8844	0	0		14.586	0	13.7292		0	0	0	
05051	159549	282	57	B1	0.3	C1	23/09/2005	SP		4		0	38.0063	31.7039	0	0		13.6653	0	15.6247		0	0	0	
05051	159549	282	58	B1	0.3	C1	23/09/2005	SP		4		0	33.2391	35.0268	0	0		20.7959	0	10.4131		0	0	0	
05051	159549	282	59	B1	0.3	C1	23/09/2005	SP		4		0	31.17	36.39	0	0.5		21.05	0	11.08		0	0	0	
05051	159549	282	60	B1	0.3	C1	23/09/2005	SP		4		0	35.04	35.54	0	0		13.54	0	14.89		0	0	0	
05051	159551	282	62	B1	0.3	C1	23/09/2005	SP		4		1.18	9.24	60.15	0	0.43		17.49	0	9.65		1.01	0	0	
05051	159551	282	63	B1	0.3	C1	23/09/2005	SP		4		0	38.5	32.35	0	0		13.49	0	14.69		0	0	0	
05051	159551	282	64	B1	0.3	C1	23/09/2005	SP		4		0.93	14.32	56.83	0	0.57		17.59	0	9.15		0	0	0	
05051	159551	282	65	B1	0.3	C1	23/09/2005	SP		4		0	45.9954	24.3208	0	0		11.7766	0	17.5639		0	0	0	
05051	159551	282	66	B1	0.3	C1	23/09/2005	SP		4		0	3.46	69.81	0	0		16.17	0	9.07		1.05	0	0	
05051	159551	282	67	B1	0.3	C1	23/09/2005	SP		4		0.52	26.58	38.06	0	0		22.32	0	11.24		0	0	0	
05051	159552	282	68	C1	0.3	C1	23/09/2005	SP		4		0	12.13	57.76	0	0		17.1	0	11.97		0	0	0	
05051	159552	282	69	C1	0.3	C1	23/09/2005	SP		4		0	16.23	52.34	0	0		19.48	0	11.34		0	0	0	
05051	159552	282	70	B1	0.3	C1	23/09/2005	SP		4		1.2322	7.7871	61.004	0	0		19.4324	0	9.7667		0	0	0	
05051	159552	282	71	B1	0.3	C1	23/09/2005	SP		4		0	12.92	57.35	0	0		17.75	0	11.47		0	0	0	
05051	159552	282	72	B1	0.3	C1	23/09/2005	SP		4		0	5.18	65.73	0	0.5		16.94	0.74	10		0	0	0	
05051	159552	282	73	B1	0.3	C1	23/09/2005	SP		4		1.12	8.01	63.41	0	0		18.67	0	8.89		0	0	0	
05051	159552	282	74	B1	0.3	C1	23/09/2005	SP		4		0	4.31	67.12	0	0		17.72	0	9.9		0	0	0	
05051	159537	283	1	B1	0.3	C1	23/09/2005	SP		4		0	6.1206	68.1447	0	0		15.3217	0	9.6152		0	0	0	
05051	159540	283	2	C1	0.3	C1	23/09/2005	SP		4		0	5.0702	68.175	0	0		17.2912	0	9.1809		0	0	0	
05051	159545	283	4	B1	0.3	C1	23/09/2005	SP		4		0	23.028	48.5507	0	0		16.8165	0	11.4332		0	0	0	
05051	159546	283	5	B1	0.3	C1	23/09/2005	SP		4		0	15.49	55.31	0	0.37		16.4	0	12.15		0	0	0	
05051	159548	283	6	B1	0.3	C1	23/09/2005	SP		4		0	0.684	0	0	1.0355		91.7605	0	0		0	0	0	
05051	159548	283	7	B1	0.3	C1	23/09/2005	SP		4		0	33.3098	38.7638	0	0		13.9279	0	13.9178		0	0	0	
05051	159548	283	8	B1	0.3	C1	23/09/2005	SP		4		0	18.08	51.29	0	0		17.16	0.67	12.43		0	0	0	
05051	159548	283	9	B1	0.3	C1	23/09/2005	SP		4		0	31.0373	40.4404	0	0		15.453	0	12.9482		0	0	0	
05051	159539	284	1	B1	0.3	C1	23/09/2005	SP		4		0	1.1211	73.2957	0	0		16.5135	0	8.7567		0	0	0	
05051	159539	284	2	B1	0.4	C1	23/09/2005	SP		4		0	40.8646	29.8556	0	0		13.5946	0	15.4429		0	0	0	
05051	159539	284	3	B1	0.4	C1	23/09/2005	SP		4		0.37	31.28	37.09	0	0		18.69	0	11.61		0	0	0	
05051	159539	284	4	C1	0.4	C1	23/09/2005	SP		4		0	12.07	58.9	0	0		16.36	0	12.42		0	0	0	
05051	159540	284	5	C1	0.4	C1	23/09/2005	SP		4		0	1.5251	70.4475	0	0		18.0891	0	9.3324		0	0	0	
05051	159542	284	6	C1	0.4	C1	23/09/2005	SP		4		0	4.65	67.47	0	0		18.36	0	9.09		0	0	0	
05051	159542	284	7	C1	0.4	C1	23/09/2005	GT		12	41	0	21.84	0.86	0	0		12.67	0.37	17.36	5.68				
05051	159545	284	8	B1	0.3	C1	23/09/2005	SP		4		0.5353	19.897	45.248	0	0.707		23.9471	0	8.9385		0	0	0	
05051	159545	28																							

Appendix 5.3
5.3_Heavy Mineral Analysis_Probe data.xls

Job Number	Sample Number	Stub Number	Grain Number	Morphology Group	Min Grainsize	Core Rim	Probe Date	Mineral Returned	Grain Assessment	OxNo	SiO2	TiO2	Al2O3	Cr2O3	Fe2O3	V2O3	Nb2O5	FeO	MnO	MgO	CaO	ZnO	NiO	CoO	Na2O
05051	159545	284	13	B1	0.4	C1	23/09/2005	SP		4		0	41.58	28.7	0	0		12.71	0	16.07		0	0	0	
05051	159545	284	14	B1	0.4	C1	23/09/2005	SP		4		0.3	37.31	26.11	0	0		20.6	0	14.54		0	0	0	
05051	159546	284	15	B1	0.4	C1	23/09/2005	SP		4		0.82	18.29	47.08	0	0		25.33	0	7.39		0	0	0	
05051	159546	284	16	C1	0.4	C1	23/09/2005	GT		12	37.69	0	21.01	0.28	0	0		29.76	3.65	6.5	0.94				
05051	159546	284	17	C1	0.4	C1	23/09/2005	GT		12	37.37	0	20.7	0	0	0		34.68	0.79	5.06	1.51				
05051	159548	284	18	B1	0.4	C1	23/09/2005	SP		4		0.2323	33.1381	37.3397	0	0		14.3824	0	14.7157		0	0	0	
05051	159548	284	19	B1	0.4	C1	23/09/2005	SP		4		0.47	30.38	34.09	0	0		21.3	0	12.63		0	0	0	
05051	159549	284	20	B1	0.4	C1	23/09/2005	SP		4		0.38	26.41	41.1	0	0		19.3	0	11.9		0	0	0	
05051	159549	284	21	B1	0.4	C1	23/09/2005	SP		4		0.22	30.15	36.4	0	0.34		20.82	0	11.19		0	0	0	
05051	159549	284	22	B1	0.4	C1	23/09/2005	SP		4		0.5	22.01	45.63	0	0.64		19.21	0	11.29		0	0	0	
05051	159549	284	23	B1	0.4	C1	23/09/2005	SP		4		0	41.0363	29.2395	0	0.4343		13.9077	0	14.9581		0	0	0	
05051	159549	284	24	B1	0.4	C1	23/09/2005	SP		4		0	27.4518	44.8844	0	0		14.5642	0	12.5947		0	0	0	
05051	159551	284	25	B1	0.4	C1	23/09/2005	SP		4		1.3635	7.6659	61.7413	0	0		18.8365	0	9.999		0	0	0	
05051	159552	284	26	B1	0.3	C1	23/09/2005	SP		4		0	5.36	69.56	0	0		15.82	0	8.49		0	0	0	
05051	159552	284	27	B1	0.4	C1	23/09/2005	SP		4		0.22	18.95	51.73	0	0.62		16.02	0	11.52		0	0	0	
05051	159548	282	26	B1	0.3	I1	23/09/2005	PX		6	53.65	0	0.98	1.58	0			1.86	0	17.74	23.78				0.55
05051	159537	282	1	B1	0.3	C1	23/09/2005	SP		4		0	10.64219	61.53081	0	0		16.29648	0	11.23791		0	0	0	
05051	159537	282	2	B1	0.3	C1	23/09/2005	SP		4		0	10.5	58.87	0	0		19.86	0	10.35		0	0	0	
05051	159537	282	3	B1	0.3	C1	23/09/2005	SP		4		0.63	21.69	47.46	0	0		19.11	0	10.48		0	0	0	
05051	159537	282	4	B1	0.3	C1	23/09/2005	SP		4		0	4.57	65.59	0	0		20.1	0	8.97		0	0	0	

Appendix 5.3
5.3_Heavy Mineral Analysis_Probe data.xls

Job Number	Sample Number	K2O	ClOxideTotal	Fe2O3r	FeOr	Totalr	Si	Ti	Al	Cr	Fe3+	V	Nb	Fe2+	Mn	Mg	Ca	Zn	Ni	Co	Na	K	Cl-ation total	Pyrope
04070	0408002		98.91				2.177	0.053	1.902	0		0	0	2.528	0.024	0.045	0.02	0	0	0				6.749
04070	0408002		99.8486	0	13.0593	99.8486		0	1.433	0.572	0	0.011		0.303	0	0.673		0	0	0				2.992
04070	0408002		100.52	0	13.39	100.52		0	1.311	0.706	0	0		0.316	0	0.634		0	0.012	0.013				2.991
04070	0408002		99.99	0	13.45	99.99		0.005	1.445	0.573	0	0		0.312	0	0.64		0	0.012	0				2.986
04070	0408002		99.07	0	13.25	99.07		0.004	1.378	0.667	0	0.005		0.314	0	0.604		0	0	0				2.971
04070	0408002		99.9698	0	13.9683	99.9698		0.006	1.307	0.707	0	0.008		0.331	0	0.622		0	0	0				2.983
04070	0408002		98.81	0	13.42	98.81		0.006	1.352	0.658	0	0.008		0.319	0	0.641		0	0	0				2.985
04070	0408002		99.8385	0	21.3514	99.8385		0.011	1.099	0.881	0	0		0.54	0	0.469		0	0	0				3
04070	0408002		99.7274	0	12.6452	99.7274		0	1.439	0.596	0	0		0.293	0	0.655		0	0	0				2.983
04070	0408002		99.25	0.1	18.82	99.26		0	1.164	0.828	0.002	0.006		0.471	0	0.513		0	0	0.016				3
04070	0408002		99.74	1.55	16.03	99.9		0	1.254	0.712	0.034	0		0.387	0	0.613		0	0	0				3
04070	0408002		99.29	9.92	17.3	100.28		0.007	0.732	1.019	0.235	0		0.455	0.013	0.539		0	0	0				3
04070	0408002		99.5254	0	15.049	99.5254		0	1.112	0.934	0	0.006		0.373	0	0.549		0	0	0				2.974
04070	0408002		99.71	0	18.71	99.71		0	0.556	1.462	0	0.021		0.509	0	0.432		0	0	0				2.981
04070	0408002		99.2	0	12.96	99.2		0.005	1.259	0.775	0	0		0.311	0	0.627		0	0	0				2.978
04070	0408002		100.36	0	13.43	100.36		0	1.269	0.762	0	0.005		0.319	0	0.628		0	0	0				2.982
04070	0408002		100.29	0	20.93	100.29		0.009	1.233	0.748	0	0.006		0.516	0	0.485		0	0	0				2.997
04070	0408002		99.72	0	14.81	99.72		0.004	0.38	1.641	0	0.008		0.414	0	0.432		0.102	0	0				2.982
04070	0408002		99.51	0	16.38	99.51		0.014	0.968	1.047	0	0.008		0.416	0	0.521		0	0	0				2.974
04070	0408002		99.384	0	12.8775	99.384		0	1.27	0.77	0	0		0.308	0	0.632		0	0	0				2.98
04070	0408002		99.36	0	16.35	99.36		0	0.994	1.058	0	0.009		0.416	0	0.493		0	0	0				2.97
04070	0408002		99.23	0	13.88	99.23		0	1.293	0.737	0	0.011		0.333	0	0.604		0	0	0				2.979
04070	0408002		99.6466	0	14.9884	99.6466		0	1.349	0.673	0	0.006		0.356	0	0.601		0	0	0				2.986
04070	0408002		99.28	0	16.98	99.28		0.007	1.092	0.917	0	0.012		0.425	0	0.53		0	0	0				2.983
04070	0408002		99.586	0	14.4834	99.586		0	1.362	0.67	0	0		0.343	0	0.61		0	0	0				2.984
04070	0408003		99.13	0	12.99	99.13		0	0.15	1.868	0	0.012		0.368	0	0.564		0.024	0	0				2.985
04070	0408003		99.77	0	16.75	99.77		0.055	0.155	1.829	0	0		0.476	0.016	0.421		0	0	0				2.953
04070	0408003		100.16	0	16.12	100.16		0.005	1.045	0.962	0	0		0.402	0.015	0.563		0	0	0				2.991
04070	0408003		99.45	0	18.61	99.45		0	0.893	1.103	0	0.013		0.483	0	0.505		0	0	0				2.996
04070	0408003		99.45	0	14.69	99.45		0	0.979	1.063	0	0.011		0.371	0	0.55		0	0	0				2.974
04070	0408003		99.6971	1.717	19.6647	99.6688		0.007	1.129	0.809	0.039	0.009		0.492	0	0.515		0	0	0				3
04070	0408003		99.42	0	19.42	99.42		0.011	0.938	1.113	0	0		0.504	0	0.398		0	0	0				2.964
04070	0408003		99.45	0	14.79	99.45		0.006	0.919	1.136	0	0.006		0.377	0	0.519		0	0	0				2.963
04070	0408003		99.31	0	13.25	99.31		0	1.289	0.739	0	0		0.317	0.012	0.628		0	0	0				2.986
04070	0408003		99.64	0	14.08	99.64		0	1.371	0.651	0	0.009		0.332	0	0.622		0	0	0				2.985
04070	0408003		99.6971	0	19.3415	99.6971		0	1.126	0.891	0	0.007		0.485	0	0.479		0	0	0				2.988
04070	0408002		99.8486	0	13.0593	99.8486		0	1.433	0.572	0	0.011		0.303	0	0.673		0	0	0				2.992
04070	0408002		100.52	0	13.39	100.52		0	1.311	0.706	0	0		0.316	0	0.634		0	0.012	0.013				2.991
04070	0408002		99.99	0	13.45	99.99		0.005	1.445	0.573	0	0		0.312	0	0.64		0	0.012	0				2.986
04070	0408002		99.07	0	13.25	99.07		0.004	1.378	0.667	0	0.005		0.314	0	0.604		0	0	0				2.971
04070	0408002		99.9698	0	13.9683	99.9698		0.006	1.307	0.707	0	0.008		0.331	0	0.622		0	0	0				2.983
04070	0408002		98.81	0	13.42	98.81		0.006	1.352	0.658	0	0.008		0.319	0	0.641		0	0	0				2.985
04070	0408002		99.8385	0	21.3514	99.8385		0.011	1.099	0.881	0	0		0.54	0	0.469		0	0	0				3
04070	0408002		99.7274	0	12.6452	99.7274		0	1.439	0.596	0	0		0.293	0	0.655		0	0	0				2.983
04070	0408002		99.25	0.1	18.82	99.26		0	1.164	0.828	0.002	0.006		0.471	0	0.513		0	0	0.016				3
04070	0408002		99.74	1.55	16.03	99.9		0	1.254	0.712	0.034	0		0.387	0	0.613		0	0	0				3
04070	0408002		99.29	9.92	17.3	100.28		0.007	0.732	1.019	0.235	0		0.455	0.013	0.539		0	0	0				3
04070	0408002		99.5254	0	15.049	99.5254		0	1.112	0.934	0	0.006		0.373	0	0.549		0	0	0				2.974
04070	0408002		99.71	0	18.71	99.71		0	0.556	1.462	0	0.021		0.509	0	0.432		0	0	0				2.981
04070	0408002		99.2	0	12.96	99.2		0.005	1.259	0.775	0	0		0.311	0	0.627		0	0	0				2.978
04070	0408002		100.36	0	13.43	100.36		0	1.269	0.762	0	0.005		0.319	0	0.628		0	0	0				2.982
04070	0408002		100.29	0	20.93	100.29		0.009	1.233	0.748	0	0.006		0.516	0	0.485		0	0	0				2.997
04070	0408002		99.72	0	14.81	99.72		0.004	0.38	1.641	0	0.008		0.414	0	0.432		0.102	0	0				2.982
04070	0408002		99.51	0	16.38	99.51		0.014	0.968	1.047	0	0.008		0.416	0	0.521		0	0	0				2.974
04070	0408002		99.384	0	12.8775	99.384		0	1.27	0.77	0	0		0.308	0	0.632		0	0	0				2.98
04070	0408002		99.36	0	16.35	99.36		0	0.994	1.058	0	0.009		0.416	0	0.493		0	0	0				2.97
04070	0408002		98.91				2.177	0.053	1.902	0		0	0	2.528	0.024	0.045	0.02	0	0	0				6.749
04070	0408002		99.23	0	13.88	99.23		0	1.293	0.737	0	0.011		0.333	0	0.604		0	0	0				2.979
04070	0408002		99.6466	0	14.9884	99.6466		0	1.349	0.673	0	0.006		0.356	0	0.601		0	0	0				2.986
04070	0408002		99.28	0	16.98	99.28		0.007	1.092	0.917	0	0.012		0.425	0	0.53		0	0	0				2.983
04070	0408002		99.586	0	14.4834	99.586		0	1.362	0.67	0	0		0.343	0	0.61		0	0	0				2.984
04070	0408002		99.04	0	13.66	99.04		0.004	1.286	0.76	0	0		0.329	0	0.595		0	0	0				2.973
04070	0408002		99.74	0	14.34	99.74		0.003	1.326	0.716	0	0.008		0.342	0	0.567		0	0.009	0				2.972
04070	0408002		99.67	0	12.66	99.67		0	1.421	0.611	0	0		0.295	0	0.647		0	0	0.01		</		

Appendix 5.3
5.3_Heavy Mineral Analysis_Probe data.xls

Job Number	Sample Number	K2O	ClOxideTotal	Fe2O3r	FeOr	Totalr	Si	Ti	Al	Cr	Fe3+	V	Nb	Fe2+	Mn	Mg	Ca	Zn	Ni	Co	Na	K	Cl-ation total	Pyrope
04070	0408002		99.78	0	19.97	99.78		0.004	1.168	0.83	0	0.01		0.498	0	0.482		0	0	0			2.992	
04070	0408002		99.36	0	14.25	99.36		0.018	0.351	1.635	0	0.004		0.395	0	0.53		0.053	0	0			2.987	
04070	0408002		99.23	0	15.24	99.23		0.016	0.363	1.631	0	0.006		0.42	0	0.548		0	0	0			2.984	
04070	0408002		99.76	0	16.88	99.76		0.005	1.042	0.986	0	0.009		0.426	0.015	0.494		0	0	0			2.976	
04070	0408002		99.28	0	16.61	99.28		0.004	1.053	0.98	0	0.006		0.419	0	0.515		0	0	0			2.977	
04070	0408002		99.26	0	17.48	99.26		0.015	0.741	1.266	0	0.006		0.462	0	0.487		0	0	0			2.978	
04070	0408002		99.62	0.18	19.62	99.64		0.031	0.16	1.765	0.005	0.007		0.562	0	0.47		0	0	0			3	
04070	0408002		90.25				9.772	0.141	10.654	0		0	0.065	12.444	0	0.285	0.07	0	0	0			33.432	
04070	0408002		99.39	0	13.25	99.39		0	1.39	0.618	0	0.006		0.311	0	0.668		0	0	0			2.993	
04070	0408002		99.19	0	12.18	99.19		0	1.425	0.606	0	0.007		0.285	0	0.65		0	0	0.008			2.981	
04070	0408002		99.85	0	19.56	99.85		0.013	0.733	1.25	0	0.015		0.519	0	0.46		0	0	0			2.989	
04070	0408002		99.32	0	20	99.32		0.008	0.748	1.235	0	0.008		0.533	0	0.464		0	0	0			2.997	
04070	0408002		99.21	0	14.54	99.21		0	0.967	1.072	0	0.008		0.369	0	0.547		0.013	0	0			2.977	
04070	0408002		98.99	2.5	22.54	99.24		0.049	0.061	1.763	0.067	0.011		0.671	0	0.337		0.041	0	0			3	
04070	0408002		99.7	0	14.98	99.7		0.007	0.968	1.075	0	0.006		0.378	0	0.537		0	0	0			2.969	
04070	0408002		99.11	0	13.15	99.11		0.003	0.894	1.127	0	0.005		0.335	0.009	0.612		0	0	0			2.984	
04070	0408002		100.01	0	16	100.01		0	0.794	1.259	0	0.006		0.415	0	0.497		0	0	0			2.971	
04070	0408002		99.02	0	18.82	99.02		0.008	0.625	1.36	0	0.01		0.51	0	0.482		0	0	0			2.995	
04070	0408002		99.8183	0	14.3622	99.8183		0.003	1.39	0.607	0	0.004		0.337	0	0.654		0	0	0			2.996	
04070	0408002		99.75	0.81	12.51	99.83		0	1.43	0.546	0.017	0.007		0.291	0	0.686		0.013	0.011	0			3	
04070	0408002		99.71	0	15.57	99.71		0.03	0.385	1.557	0	0.009		0.424	0	0.591		0	0	0			2.995	
04070	0408002		99.68	4.15	17.74	100.1		0.039	0.528	1.292	0.101	0		0.479	0	0.539		0.022	0	0			3	
04070	0408002		99.42	0	13.16	99.42		0	1.286	0.744	0	0.009		0.314	0	0.628		0	0	0			2.981	
04070	0408002		99.78	0	13.27	99.78		0	1.33	0.693	0	0		0.313	0	0.654		0	0	0			2.989	
04070	0408002		100.77	0	13.67	100.77		0	1.356	0.655	0	0.006		0.318	0	0.656		0	0	0			2.991	
04070	0408002		99.76	0	13.05	99.76		0	1.415	0.623	0	0		0.304	0	0.64		0	0	0			2.981	
04070	0408002		99.35	0	14.15	99.35		0.003	1.101	0.937	0	0.007		0.351	0	0.56		0.013	0	0			2.974	
04070	0408002		99.88	0	14.31	99.88		0	1.115	0.934	0	0.01		0.352	0	0.561		0	0	0			2.971	
04070	0408002		99.79	0	14.5	99.79		0	1.016	1.018	0	0.01		0.364	0	0.549		0.021	0	0			2.978	
04070	0408002		100.07	0	14.73	100.07		0	1.04	1.007	0	0.011		0.368	0	0.531		0.015	0	0			2.971	
04070	0408002		99.91				0.003	0.987	0	0		0.006		0	0	0	0	0	0	0			0.995	
04070	0408002		99.74				0	0.985	0	0.006		0.007	0	0	0	0	0	0	0	0			0.998	
04070	0408002		99.1	0	15.05	99.1		0	1.31	0.72	0	0		0.362	0	0.593		0	0	0			2.985	
04070	0408002		99.71	0	14.72	99.71		0	1.312	0.711	0	0.006		0.351	0	0.606		0	0	0			2.986	
04070	0408002		99.19	0	13.8	99.19		0	1.209	0.817	0	0.007		0.335	0	0.615		0	0	0			2.983	
04070	0408002		98.97	0.28	16.22	99		0	1.008	0.977	0.006	0.008		0.41	0	0.59		0	0	0			3	
04070	0408002		99.63	0	22.43	99.63		0.045	0.243	1.745	0	0		0.647	0	0.282		0	0	0			2.961	
04070	0408002		99.41	0	17.63	99.41		0.02	0.334	1.646	0	0		0.492	0	0.5		0	0	0			2.991	
04070	0408002		99.63	2.11	20.34	99.84		0.006	1.04	0.891	0.048	0.008		0.518	0	0.489		0	0	0			3	
04070	0408002		100.12	2.4	20.33	100.36		0.01	1.052	0.866	0.055	0.008		0.514	0	0.486		0	0.009	0			3	
04070	0408002		99.8	0	15.18	99.8		0	1.323	0.703	0	0		0.362	0	0.599		0	0	0			2.987	
04070	0408002		99.71	0	14.78	99.71		0.005	1.194	0.798	0	0.006		0.359	0.013	0.621		0	0	0			2.996	
04070	0408002		99.94	0	17.11	99.94		0.023	0.306	1.641	0	0.01		0.474	0	0.546		0	0	0			2.999	
04070	0408002		99.72	0	21.3	99.72		0.041	0.075	1.86	0	0.011		0.622	0	0.378		0	0	0			2.986	
04070	0408002		99.06	0	15.69	99.06		0	1.286	0.748	0	0		0.381	0	0.568		0	0	0			2.983	
04070	0408002		99.97	0	16.24	99.97		0	1.244	0.789	0	0.007		0.394	0	0.547		0	0	0			2.98	
04070	0408002		99.69	0	18.45	99.69		0.004	1.048	0.949	0	0.013		0.466	0	0.512		0	0	0			2.991	
04070	0408002		99.8	0	19.88	99.8		0.005	1.018	0.99	0	0		0.507	0	0.47		0	0	0			2.991	
04070	0408002		99.55	0	13.63	99.55		0	1.354	0.692	0	0.005		0.323	0	0.601		0	0	0			2.975	
04070	0408002		99.45	0	13.07	99.45		0	1.344	0.698	0	0		0.309	0	0.627		0	0	0			2.979	
04070	0408002		99.63	0	14.26	99.63		0	1.165	0.852	0	0.006		0.348	0	0.617		0	0	0			2.988	
04070	0408002		99	0	14.39	99		0	1.173	0.861	0	0.004		0.354	0	0.58		0	0.008	0			2.981	
04070	0408002		99.56	0.24	13.41	99.58		0	1.301	0.694	0.005	0		0.318	0	0.682		0	0	0			3	
04070	0408002		99.43	0	13.8	99.43		0	1.316	0.689	0	0		0.33	0.01	0.632		0.019	0	0			2.997	
04070	0408002		99.79	0	15.88	99.79		0	1.061	0.987	0	0.011		0.397	0	0.514		0	0	0			2.97	
04070	0408002		99.1	0	14.54	99.1		0.006	1.114	0.915	0	0		0.36	0	0.584		0	0	0			2.979	
04070	0408002		99.28	0.82	22.19	99.36		0.008	0.868	1.087	0.019	0.008		0.587	0	0.421		0	0	0			3	
04070	0408002		100.04	1.23	21.48	100.16		0.003	0.871	1.086	0.029	0.008		0.563	0.014	0.426		0	0	0			3	
04070	0408002		99.47	0	15.66	99.47		0.005	1.055	0.988	0	0.006		0.392	0	0.524		0	0	0			2.971	
04070	0408002		98.77	5.95	26.71	99.37		0.107	0.076	1.551	0.16	0		0.796	0	0.311		0	0	0			3	
04070	0408002		99.69	0	15.25	99.69		0	0.437	1.612	0	0.011		0.418	0	0.476		0.017	0	0			2.97	
04070	0408002		99.93	0	20.83	99.93		0.036	0.099	1.854	0	0		0.609	0	0.352		0.037	0	0			2.987	
04070	0408002		99.06	0	20.85	99.06		0.02	0.704	1.262	0	0.016		0.563	0	0.427		0	0	0			2.99	
04070	0408002		99.14	0	20	99.14		0.033	0.174	1.765	0	0.009		0.576	0	0.437		0	0	0			2.993	
04070	0408002		99.85	0	14.49	99.85		0.003	1.243	0.791	0	0.008		0.35	0	0.572								

Appendix 5.3
5.3_Heavy Mineral Analysis_Probe data.xls

Job Number	Sample Number	K2O	ClOxideTotal	Fe2O3r	FeOr	Totalr	Si	Ti	Al	Cr	Fe3+	V	Nb	Fe2+	Mn	Mg	Ca	Zn	Ni	Co	Na	K	Cl-ation total	Pyrope
04070	0408002		99.75	0	13.84	99.75		0.008	1.21	0.825	0	0.01		0.335	0	0.581		0	0	0			2.969	
04070	0408002		99.16	0	13.76	99.16		0.007	1.234	0.811	0	0.005		0.334	0	0.576		0	0	0			2.968	
04070	0408002		99.72	0	17.82	99.72		0.007	0.507	1.528	0	0.015		0.487	0	0.425		0	0	0			2.969	
04070	0408002		99.19	0	21.32	99.19		0.038	0.033	1.894	0	0.009		0.635	0	0.342		0.044	0	0			2.995	
04070	0408002		99.7678	0	15.15	99.7678		0.003	1.283	0.73	0	0.006		0.363	0	0.601		0	0	0			2.987	
04070	0408002		99.72	0	15.23	99.72		0.003	1.253	0.745	0	0.004		0.367	0.008	0.616		0	0	0			2.996	
04070	0408002		99.24	0	17.44	99.24		0.004	0.565	1.481	0	0.016		0.475	0	0.423		0	0	0			2.965	
04070	0408002		99.26	0	20.11	99.26		0.036	0.149	1.785	0	0		0.584	0	0.412		0.031	0	0			2.997	
04070	0408002		99.17	0	20.08	99.17		0.003	1.281	0.706	0	0.008		0.495	0	0.506		0	0	0			2.999	
04070	0408002		99.3	0	19.75	99.3		0.008	1.264	0.719	0	0.009		0.489	0	0.493		0.014	0	0			2.996	
04070	0408002		99.21	0	14.58	99.21		0.004	1.169	0.854	0	0		0.357	0	0.6		0	0	0			2.984	
04070	0408002		99.73	0	16.22	99.73		0.013	0.928	1.066	0	0.005		0.413	0.011	0.552		0	0	0			2.988	
04070	0408002		99.38	0	14.31	99.38		0	1.335	0.712	0	0		0.342	0	0.587		0	0	0			2.976	
04070	0408002		99.41	0	14.11	99.41		0	1.321	0.707	0	0		0.337	0	0.613		0	0.008	0			2.986	
04070	0408002		99.94	0	15.06	99.94		0	1.395	0.614	0	0		0.355	0	0.618		0.014	0	0			2.996	
04070	0408002		99.13	0	14.93	99.13		0	1.424	0.601	0	0		0.353	0	0.61		0	0	0			2.988	
04070	0408002		99.16	0	12.4	99.16		0	1.42	0.588	0	0.005		0.29	0	0.682		0	0	0.009			2.994	
04070	0408002		99.5	0	12.12	99.5		0	1.43	0.581	0	0.005		0.282	0	0.68		0.014	0	0			2.992	
05033	159518		99.51	0	21.5	99.51		0.009	1.124	0.872	0	0		0.545	0	0.444		0	0	0			2.993	
05033	159518		99.8486	0	18.9678	99.8486		0.038	0.332	1.63	0	0		0.529	0	0.452		0	0	0			2.981	
05033	159518		99.788	0	17.7659	99.788		0	0.359	1.675	0	0.012		0.495	0	0.436		0	0	0			2.977	
05033	159518		99.6769	0	13.9077	99.6769		0	1.334	0.674	0	0		0.329	0	0.66		0	0	0			2.996	
05033	159518		99.6365	0	16.3115	99.6365		0	0.723	1.326	0	0.014		0.43	0	0.475		0	0	0			2.968	
05033	159518		99.5759	0	15.7156	99.5759		0.008	0.937	1.099	0	0		0.4	0	0.531		0	0	0			2.974	
05033	159518		99.54	0	21.28	99.54		0.016	0.792	1.185	0	0.013		0.566	0	0.417		0	0	0			2.989	
05033	159518		99.53	3.19	16.43	99.85		0.022	1.014	0.869	0.072	0		0.412	0	0.593		0	0.017	0			3	
05033	159518		98.54	0	20.29	98.54		0	1.137	0.868	0	0		0.517	0	0.476		0	0	0			2.998	
05033	159518		99.3335	0	19.7657	99.3335		0.007	1.092	0.907	0	0		0.501	0	0.487		0	0	0			2.993	
05033	159518		98.99	0	14.22	98.99		0	1.2	0.852	0	0		0.348	0	0.574		0	0	0			2.974	
05033	159518		99.31	0	17.88	99.31		0.046	0.329	1.723	0	0		0.503	0	0.327		0	0	0			2.928	
05033	159518		98.97	0	18.27	98.97		0.015	0.954	1.041	0	0		0.471	0	0.508		0	0	0			2.988	
05033	159518		99.29	0	13.04	99.29		0	1.329	0.717	0	0		0.31	0	0.621		0	0	0			2.977	
05033	159518		99.23	0.07	17.22	99.24		0.008	1.249	0.734	0.002	0		0.42	0	0.587		0	0	0			3	
05033	159519		98.91	0	12.72	98.91		0	1.333	0.695	0	0.01		0.303	0	0.641		0	0	0			2.981	
05033	159519		99.66	0	14	99.66		0	1.155	0.883	0	0		0.342	0	0.602		0	0	0			2.981	
05033	159519		99.95	0	15.89	99.95		0.009	0.691	1.327	0	0		0.417	0	0.536		0	0	0			2.981	
05033	159519		99.2931	0	13.7562	99.2931		0	1.127	0.919	0	0		0.338	0	0.592		0	0	0			2.977	
05033	159519		99.4345	2.9391	23.7047	99.7274		0.025	0.643	1.223	0.072	0.011		0.649	0	0.376		0	0	0			3	
05033	159519		98.91	0	15.1	98.91		0.011	1.056	0.981	0	0		0.379	0	0.545		0	0	0			2.971	
05033	159519		99.87	2.16	45.22	100.09		0.959	0	0	0.041	0	0	0.963	0.057	0	0	0	0	0			2.021	
05033	159519		99.4345	0	15.5237	99.4345		0	1.168	0.87	0	0		0.382	0	0.561		0	0	0			2.981	
05033	159519		99.8587	0	21.0585	99.8587		0.009	0.939	1.055	0	0		0.546	0	0.447		0	0	0			2.995	
05033	159519		99.3	0	13.62	99.3		0	1.215	0.797	0	0.01		0.33	0	0.637		0	0	0			2.989	
05033	159519		99.5052	0	13.9582	99.5052		0	1.335	0.713	0	0		0.332	0	0.596		0	0	0			2.976	
05033	159519		100.18	0.26	19.6	100.21		0.011	1.028	0.945	0.006	0		0.495	0	0.516		0	0	0			3	
05033	159519		99.13	0	13.72	99.13		0	1.121	0.915	0	0		0.338	0	0.607		0	0	0			2.982	
05033	159519		99.7	0	14.45	99.7		0	1.078	0.953	0	0.009		0.357	0	0.583		0	0	0			2.98	
05033	159519		99.6264	0	15.4732	99.6264		0	1.092	0.931	0	0		0.384	0	0.582		0	0	0			2.989	
05033	159519		99.7173	0	14.9581	99.7173		0	1.171	0.861	0	0		0.365	0	0.585		0	0	0			2.984	
05033	159519		99.01	0	12.76	99.01		0	1.303	0.717	0	0		0.304	0	0.666		0	0	0			2.99	
05033	159519		99.22	0	15.03	99.22		0.008	1.103	0.888	0	0		0.373	0.018	0.607		0	0	0			2.996	
05033	159519		99	0	14.26	99		0	1.369	0.676	0	0		0.34	0	0.593		0	0	0			2.977	
05033	159519		99.27	0	20.09	99.27		0	1.188	0.828	0	0		0.503	0	0.473		0	0	0			2.992	
05033	159520		98.57	0	14.6	98.57		0	1.324	0.709	0	0		0.352	0	0.598		0	0	0			2.983	
05033	159520		99.77	0	20.25	99.77		0	1.096	0.913	0	0		0.512	0	0.475		0	0	0			2.996	
05033	159520		99.18	0	13.8	99.18		0	1.355	0.687	0	0		0.328	0	0.609		0	0	0			2.979	
05033	159520		99.13	0	16.18	99.13		0.009	1.064	0.95	0	0		0.406	0	0.554		0	0	0			2.984	
05033	159520		99	0	21.64	99		0	1.067	0.937	0	0		0.558	0	0.437		0	0	0			2.998	
05033	159520		99.32	0	15.62	99.32		0	0.879	1.157	0	0.012		0.402	0	0.526		0	0	0			2.976	
05033	159520		98.94	0	17.04	98.94		0.023	0.752	1.33	0	0		0.453	0	0.377		0	0	0			2.936	
05033	159520		98.94	0	16.59	98.94		0	0.746	1.289	0	0		0.439	0	0.509		0	0	0			2.982	
05033	159520		99.8688	0	14.5036	99.8688		0	1.356	0.677	0	0		0.343	0	0.608		0	0	0			2.984	
05033	159520		99.78618	0	13.80195	99.78618		0	1.325	0.721	0	0		0.328	0	0.603		0	0	0			2.977	
05033	159520		99.6567	0	20.5131	99.6567		0.013	0.792	1.196	0	0		0.543	0	0.45		0	0	0			2.993	
05033	159520		99.2931	1.6261	20.1697	99.4547		0	1.11	0.841	0.037	0.012		0.51	0	0.49								

Appendix 5.3
5.3_Heavy Mineral Analysis_Probe data.xls

Job Number	Sample Number	K2O	ClOxideTotal	Fe2O3r	FeOr	Totalr	Si	Ti	Al	Cr	Fe3+	V	Nb	Fe2+	Mn	Mg	Ca	Zn	Ni	Co	Na	K	Cl-ation total	Pyrope
05033	159520		99.23	0	14.34	99.23		0	1.306	0.723	0	0.009		0.344	0	0.598		0	0	0			2.981	
05033	159520		99.8991	0	18.4022	99.8991		0	1.012	1.04	0	0		0.468	0	0.454		0	0	0			2.974	
05033	159520		99.03	0.59	16.84	99.09		0	1.152	0.834	0.013	0		0.418	0	0.582		0	0	0			3	
05033	159520		99.7577	0	14.443	99.7577		0	1.26	0.772	0	0		0.347	0	0.604		0	0	0			2.984	
05033	159520		99.21	2.02	19.49	99.41		0.015	0.696	1.225	0.049	0		0.521	0	0.494		0	0	0			3	
05033	159521		98.96	0	14.12	98.96		0	1.262	0.785	0	0		0.342	0	0.588		0	0	0			2.977	
05033	159521		99.5557	0	15.3217	99.5557		0	1.074	0.975	0	0		0.382	0	0.545		0	0	0			2.976	
05033	159521		99.4547	0	12.2513	99.4547		0	1.396	0.646	0	0		0.286	0	0.65		0	0	0			2.979	
05033	159521		99.06	0	13.79	99.06		0	1.375	0.659	0	0		0.327	0	0.621		0	0	0			2.983	
05033	159521		99.64	0	15.08	99.64		0	0.956	1.109	0	0		0.382	0	0.52		0	0	0			2.967	
05033	159521		99.48	0	15.33	99.48		0	1.344	0.681	0	0		0.366	0	0.597		0	0	0			2.988	
05033	159521		99.19	0.05	20.94	99.2		0.007	1.084	0.9	0.001	0		0.534	0	0.473		0	0	0			3	
05033	159521		99.8082	0	13.6148	99.8082		0	1.258	0.78	0	0		0.326	0	0.617		0	0	0			2.981	
05033	159521		98.99	0	20.07	98.99		0.006	1.127	0.867	0	0		0.508	0	0.489		0	0	0			2.997	
05033	159521		99.26	0	20.05	99.26		0	1.191	0.804	0	0.012		0.502	0	0.488		0	0	0			2.996	
05033	159521		99.51	0	13.85	99.51		0.008	1.28	0.739	0	0		0.331	0	0.624		0	0	0			2.983	
05033	159521		99.7173	0	14.3925	99.7173		0	1.325	0.718	0	0		0.343	0	0.593		0	0	0			2.979	
05033	159521		99.3739	0	15.8671	99.3739		0	0.907	1.112	0	0.011		0.406	0	0.55		0	0	0			2.986	
05033	159522		98.89	0	20.18	98.89		0	1.141	0.871	0	0		0.511	0	0.47		0	0	0			2.994	
05033	159522		99.35	3.44	20	99.69		0.006	1.123	0.787	0.078	0		0.503	0	0.502		0	0	0			3	
05033	159522		100.25	0	13.64	100.25		0	1.404	0.621	0	0		0.317	0	0.644		0	0	0			2.987	
05033	159522		99.05	0.01	17.63	99.05		0	1.277	0.722	0	0		0.431	0	0.569		0	0	0			3	
05033	159522		98.95	0	16.49	98.95		0	1.264	0.755	0	0		0.403	0	0.569		0	0	0			2.991	
05033	159522		99.6971	0	13.635	99.6971		0.008	1.335	0.697	0	0		0.323	0	0.613		0	0	0			2.976	
05033	159522		99.37	1.03	23.11	99.47		0.014	0.89	1.058	0.024	0		0.611	0.014	0.402		0	0	0			3	
05033	159522		99.2325	0	14.443	99.2325		0.01	0.931	1.072	0	0		0.366	0	0.61		0	0	0			2.989	
05033	159522		99.08	0	14.22	99.08		0	1.233	0.803	0	0.008		0.346	0	0.588		0	0	0			2.978	
05033	159522		99.1	0	21.19	99.1		0.008	1.061	0.934	0	0		0.544	0	0.448		0	0	0			2.995	
05033	159522		98.93	0	13.21	98.93		0	1.409	0.628	0	0		0.311	0	0.634		0	0	0			2.982	
05033	159522		100.6125	0	17.8972	99.6163		0	1.227	0.806	0	0		0.44	0	0.51		0	0	0			2.983	
05033	159522		99.3436	0.2828	19.5132	99.3739		0	1.135	0.858	0.006	0		0.492	0	0.494		0	0.014	0			3	
05033	159522		99.03	1.63	20.03	99.19		0.009	1.102	0.843	0.037	0		0.507	0	0.502		0	0	0			3	
05033	159522		99.6971	0	15.5742	99.6971		0.007	1.294	0.715	0	0		0.374	0	0.599		0	0	0			2.989	
05033	159522		98.9295	0	15.4833	98.9295		0	1.097	0.91	0	0		0.387	0	0.588		0	0.014	0			2.996	
05033	159522		98.96	0	15.41	98.96		0	1.16	0.854	0	0		0.38	0	0.598		0	0	0			2.993	
05033	159522		98.13				0.009	1.172	0.029	0		0.013	0	0.55	0	0.011	0	0	0	0			1.785	
05033	159522		99.02	0	14.16	99.02		0	1.218	0.805	0	0		0.344	0	0.622		0	0	0			2.989	
05033	159522		98.98	0	20.16	98.98		0	0.881	1.126	0	0		0.53	0	0.459		0	0	0			2.997	
05033	159522		99.5456	0.3434	21.4322	99.5759		0	1.13	0.862	0.008	0		0.543	0	0.457		0	0	0			3	
05033	159522		98.84	0.7	16.6	98.91		0	1.303	0.672	0.015	0.01		0.403	0	0.597		0	0	0			3	
05033	159522		98.93	1.19	20.61	99.05		0.01	1.125	0.828	0.027	0		0.523	0	0.487		0	0	0			3	
05033	159522		99.4951	0	17.6649	99.4951		0	1.186	0.836	0	0		0.437	0	0.53		0	0	0			2.989	
05033	159523		99.13	0	19.42	99.13		0.008	1.036	0.957	0	0		0.496	0	0.499		0	0	0			2.996	
05033	159523		99.08	0	17.89	99.08		0.026	0.55	1.429	0	0.014		0.487	0	0.472		0	0	0			2.978	
05033	159523		99.03	0	14	99.03		0	1.365	0.649	0	0.01		0.333	0	0.632		0	0	0			2.988	
05033	159523		99.53	0	14.12	99.53		0	1.337	0.691	0	0		0.335	0	0.623		0	0	0			2.986	
05033	159523		99.5658	0	16.6044	99.5658		0.006	0.388	1.655	0	0.012		0.459	0	0.448		0	0	0			2.967	
05033	159523		99.2325	0	17.978	99.2325		0.018	0.785	1.229	0	0		0.474	0	0.47		0	0	0			2.975	
05033	159523		98.9	0.25	30.84	98.93		0	0.657	1.337	0.007	0		0.893	0	0.066		0.041	0	0			3	
05033	159523		99.33	0	14.61	99.33		0	1.167	0.848	0	0.009		0.358	0	0.606		0	0	0			2.988	
05033	159523		99.31	0	15.64	99.31		0	1.27	0.744	0	0		0.379	0	0.601		0	0	0			2.993	
05033	159523		99.1113	0	20.2202	99.1113		0	1.106	0.901	0	0		0.514	0	0.475		0	0	0			2.996	
05033	159523		99.46	0	16.13	99.46		0.014	0.91	1.11	0	0		0.413	0	0.529		0	0	0			2.976	
05033	159523		99.31	0	15.57	99.31		0.012	0.981	1.024	0	0		0.393	0	0.576		0	0	0			2.986	
05033	159523		99.788	0	14.3925	99.788		0	1.258	0.788	0	0		0.346	0	0.585		0	0	0			2.977	
05033	159523		99.6668	0.2222	21.5029	99.687		0.019	0.709	1.248	0.005	0		0.577	0	0.442		0	0	0			3	
05033	159523		100.1232	0	13.056	100.1232		0	1.427	0.603	0	0		0.302	0	0.652		0	0	0			2.985	
05033	159523		99.586	0	15.6348	99.586		0	1.053	0.994	0	0.009		0.392	0	0.523		0	0	0			2.972	
05033	159523		99.2426	1.8079	18.584	99.4244		0	1.069	0.878	0.041	0.012		0.47	0	0.53		0	0	0			3	
05033	159523		99.51	0	21.72	99.51		0	1.162	0.834	0	0.009		0.549	0	0.444		0	0	0			2.998	
05033	159523		99.5961	1.0908	20.9979	99.7072		0.011	0.841	1.11	0.026	0		0.552	0	0.459		0	0	0			3	
05033	159523		99.6	0	14.42	99.6		0	1.319	0.709	0	0		0.344	0	0.615		0	0	0			2.986	
05033	159523		143.79				1.871	0	0.042	0		0	0	0.17	0	0	0.025	0	0	0			2.108	
05033	159523		99.86	0	15.03	99.86		0	1.109	0.931	0	0		0.37	0	0.57		0	0	0			2.98	
05033	159523		99.6971	0.2222	13.7461	99.7173		0	1.356	0.64	0.005	0		0.324	0	0.676		0	0	0			3	
05033	1595																							

Appendix 5.3
5.3_Heavy Mineral Analysis_Probe data.xls

Job Number	Sample Number	K2O	ClOxideTotal	Fe2O3r	FeOr	Totalr	Si	Ti	Al	Cr	Fe3+	V	Nb	Fe2+	Mn	Mg	Ca	Zn	Ni	Co	Na	K	Cl-ation total	Pyrope
05033	159523		99.07	0	13.22	99.07		0	1.317	0.731	0	0		0.316	0	0.611		0	0	0			2.976	
05033	159524		99.7072	0	14.0491	99.7072		0	1.271	0.768	0	0.011		0.337	0	0.589		0	0	0			2.975	
05033	159524		99.21	0	15.97	99.21		0	0.774	1.266	0	0		0.418	0	0.521		0	0	0			2.98	
05033	159524		99.03				12.017	0.094	13.548	0		0	0	3.581	0	0.875	0	0	0	0			30.115	
05033	159524		99.3234	0	14.0289	99.3234		0	1.179	0.872	0	0		0.343	0	0.58		0	0	0			2.974	
05033	159524		99.687	0	17.2003	99.687		0.007	0.586	1.438	0	0.011		0.463	0	0.473		0	0	0			2.977	
05033	159524		99.6365	0	16.8872	99.6365		0	0.756	1.27	0	0.011		0.443	0	0.5		0	0	0			2.981	
05033	159524		99.36				0.832	0.015	1.891	0		0	0	0.369	0	0.101	0	0	0	0			3.208	
05033	159524		100.06	0	13.52	100.06		0	1.332	0.712	0	0		0.319	0	0.615		0	0	0			2.978	
05033	159524		99.6567	0	16.0691	99.6567		0	1.133	0.902	0	0		0.397	0	0.55		0	0	0			2.982	
05033	159524		99.3	0	15.97	99.3		0.014	0.966	1.058	0	0.009		0.406	0	0.516		0	0	0			2.97	
05033	159524		99.8082	0	15.6146	99.8082		0	1.232	0.806	0	0		0.379	0	0.563		0	0	0			2.981	
05033	159524		99.6971	0	16.3014	99.6971		0	0.595	1.439	0	0.016		0.437	0	0.488		0	0	0			2.975	
05033	159524		99.485	0	14.0289	99.485		0	1.345	0.682	0	0.009		0.333	0	0.613		0	0	0			2.982	
05033	159524		99.6	0	14.25	99.6		0	1.19	0.858	0	0		0.347	0	0.581		0	0	0			2.976	
05033	159524		99.38	0	16.49	99.38		0.013	0.393	1.666	0	0.012		0.457	0	0.411		0	0	0			2.952	
05033	159524		99.16	0.03	20.87	99.16		0	1.238	0.761	0.001	0		0.521	0	0.479		0	0	0			3	
05033	159524		99.4547	0	14.2006	99.4547		0	1.086	0.932	0	0.01		0.351	0	0.605		0	0	0			2.986	
05033	159524		99.3941	0	20.0586	99.3941		0.009	1.131	0.87	0	0		0.505	0	0.476		0	0	0			2.991	
05033	159524		99.8688	0	15.8166	99.8688		0	1.107	0.932	0	0		0.391	0	0.551		0	0	0			2.981	
05033	159524		99.05	0	12.74	99.05		0	1.364	0.669	0	0		0.301	0	0.649		0	0	0			2.984	
05033	159524		100.07	0	15.68	100.07		0	1.226	0.817	0	0		0.38	0	0.556		0	0	0			2.979	
05033	159524		99.05	0	14.7	99.05		0	1.298	0.735	0	0		0.354	0	0.597		0	0	0			2.984	
05033	159524		99.19	0	15.55	99.19		0.013	1.059	0.932	0	0		0.388	0	0.6		0	0	0			2.992	
05033	159525		99.55	5.13	47.29	100.06		0.9	0	0	0.1	0	0	1.021	0.028	0	0	0	0	0			2.05	
05033	159525		99.0002	0	19.5233	99.0002		0	1.254	0.751	0	0		0.484	0	0.508		0	0	0			2.997	
05033	159525		99.28	0	14.13	99.28		0	0.953	1.102	0	0.009		0.358	0	0.546		0	0	0			2.968	
05033	159525		99	0	14.16	99		0.008	1.285	0.765	0	0		0.342	0	0.568		0	0	0			2.967	
05033	159525		99.6971	0.5454	18.9981	99.7476		0.008	1.151	0.821	0.012	0		0.472	0	0.536		0	0	0			3	
05033	159525		99.8789	0	18.0891	99.8789		0.015	0.787	1.232	0	0		0.473	0	0.467		0	0	0			2.975	
05033	159525		99.6971	0	11.9584	99.6971		0	1.524	0.483	0	0		0.272	0	0.718		0	0	0			2.997	
05033	159525		99.19	0	19.47	99.19		0.008	1.019	0.997	0	0		0.499	0	0.462		0	0	0			2.984	
05033	159525		99.58	0.07	20.35	99.59		0.007	1.115	0.87	0.002	0		0.513	0	0.494		0	0	0			3	
05033	159525		99.2729	0	19.1294	99.2729		0	0.92	1.094	0	0		0.497	0	0.483		0	0	0			2.993	
05033	159525		98.78				0	1.146	0.021	0.012		0	0	0.643	0	0.015	0	0	0	0			1.837	
05033	159525		98.82	0	20.37	98.82		0.007	1.104	0.887	0	0		0.519	0	0.481		0	0	0			2.998	
05033	159525		99.24				0	1.2	0.011	0		0	0	0.565	0	0.019	0	0	0	0			1.795	
05033	159525		99.0305	0	13.7764	99.0305		0	1.277	0.776	0	0		0.332	0	0.589		0	0	0			2.974	
05033	159525		98.94	0.38	21.08	98.98		0	1.112	0.88	0.009	0		0.538	0	0.462		0	0	0			3	
05033	159525		99.3133	0	13.4936	99.3133		0	1.355	0.692	0	0		0.32	0	0.61		0	0	0			2.977	
05033	159525		99.09	1.79	18.09	99.27		0	1.03	0.929	0.041	0		0.459	0	0.541		0	0	0			3	
05033	159526		99.25	0	13.53	99.25		0	1.372	0.652	0	0		0.32	0	0.646		0	0	0			2.988	
05033	159526		99.33	0	15.39	99.33		0	1.126	0.892	0	0		0.38	0	0.593		0	0	0			2.991	
05033	159526		99.63	0.57	19.23	99.69		0.009	1.211	0.758	0.013	0		0.476	0.017	0.516		0	0	0			3	
05033	159526		91.44				12.062	0.181	11.965	0		0	0	4.263	0.227	1.774	0.302	0	0	0			30.775	
05033	159527		99.62296	0	15.00567	99.62296		0	1.355	0.657	0	0		0.356	0	0.626		0	0	0			2.994	
05033	159527		99.6567	0	13.8067	99.6567		0	1.245	0.779	0	0		0.332	0	0.633		0	0	0			2.988	
05033	159527		99.32	0	17.68	99.32		0.007	1.043	0.964	0	0		0.447	0	0.528		0	0	0			2.989	
05033	159527		98.89	0	15.47	98.89		0	0.998	1.038	0	0.011		0.393	0	0.536		0	0	0			2.976	
05033	159527		99.586	0	13.231	99.586		0	1.372	0.672	0	0		0.312	0	0.623		0	0	0			2.978	
05033	159527		99.1921	0	14.2713	99.1921		0	0.985	1.066	0	0		0.36	0	0.563		0	0	0			2.974	
05033	159527		99.283	0.101	17.3417	99.2931		0	1.246	0.752	0.002	0		0.424	0	0.576		0	0	0			3	
05033	159527		98.95	0	13.88	98.95		0	1.303	0.763	0	0		0.334	0	0.566		0	0	0			2.967	
05033	159527		99.1517	0	13.7764	99.1517		0	1.319	0.708	0	0		0.329	0	0.631		0	0	0			2.987	
05033	159527		89.262				11.964	0.26	12.751	0		0	0	2.554	0	2.461	0.409	0	0	0			30.4	
05033	159527		99.6365	0	13.2512	99.6365		0	1.382	0.65	0	0		0.311	0	0.641		0	0	0			2.984	
05033	159527		98.9	0	13.45	98.9		0	1.291	0.741	0	0		0.323	0	0.63		0	0	0			2.984	
05033	159528		99.7577	0	19.2102	99.7577		0	1.198	0.81	0	0		0.476	0	0.513		0	0	0			2.996	
05033	159528		99.4	0	13.86	99.4		0	1.305	0.734	0	0		0.331	0	0.61		0	0	0			2.98	
05033	159528		99.83719	0	18.62703	99.83719		0.01	1.196	0.819	0	0		0.46	0	0.499		0	0	0			2.983	
05033	159528		99.5355	0	12.9886	99.5355		0	1.295	0.735	0	0		0.309	0	0.646		0	0	0			2.985	
05033	159528		99.3335	0	16.1398	99.3335		0.009	0.904	1.119	0	0		0.414	0	0.532		0	0	0			2.979	
05033	159528		99.4446	0	14.2309	99.4446		0	1.325	0.72	0	0		0.34	0	0.592		0	0	0			2.977	
05033	159528		99.5557	0	20.7858	99.5557		0	1.081	0.934	0	0		0.529	0	0.448		0	0	0			2.992	
05033	159528		99.6365	3.9592	18.6951	100.0304		0.011	0.954	0.933	0.091	0		0.477	0	0.533		0	0	0			3	
05033	159528		99.6																					

Appendix 5.3
5.3_Heavy Mineral Analysis_Probe data.xls

Job Number	Sample Number	K2O	ClOxideTotal	Fe2O3r	FeOr	Totalr	Si	Ti	Al	Cr	Fe3+	V	Nb	Fe2+	Mn	Mg	Ca	Zn	Ni	Co	Na	K	Cl-ation total	Pyrope		
05033	159528		99.3032	0	15.1298	99.3032		0	1.033	1.005	0	0		0.38	0	0.564		0	0	0				2.981		
05033	159528		98.9901	0	14.342	98.9901		0	1.204	0.826	0	0		0.35	0	0.605		0	0	0				2.985		
05033	159528		99.1921	0	14.3925	99.1921		0	1.26	0.788	0	0		0.348	0	0.579		0	0	0				2.976		
05033	159528		99.02	0	13.09	99.02		0	1.363	0.661	0	0		0.31	0	0.655		0	0	0				2.988		
05033	159528		100.48	0	13.94	100.48		0	1.359	0.681	0	0		0.327	0	0.613		0	0	0				2.98		
05033	159528		98.86	0	17.13	98.86		0	0.828	1.195	0	0		0.449	0	0.517		0	0	0				2.989		
05033	159528		99.7274	1.2524	18.2002	99.8486		0.008	0.818	1.137	0.029	0		0.474	0	0.534		0	0	0				3		
05033	159528		99.25	0	14.92	99.25		0	1.149	0.904	0	0		0.368	0	0.553		0	0	0				2.974		
05033	159528		99.5759	0.4343	20.5131	99.6163		0.009	1.072	0.901	0.01	0		0.521	0	0.488		0	0	0				3		
05033	159528		99.4951	0	13.8875	99.4951		0	1.329	0.712	0	0		0.33	0	0.609		0	0	0				2.98		
05033	159530		99.5	1.85	12.24	99.69		0	1.345	0.616	0.039	0		0.287	0	0.713		0	0	0				3		
05033	159530		99.36	3.11	14.24	99.67		0.012	1.23	0.679	0.067	0		0.343	0	0.669		0	0	0				3		
05033	159530		99.6567	6.5246	18.0689	100.3132		0.02	0.709	1.096	0.155	0		0.476	0.015	0.528		0	0	0				3		
05033	159531		99.8385	1.1413	14.1097	99.9496		0	0.946	1.028	0.026	0		0.354	0	0.647		0	0	0				3		
05033	159531		99.8385	0	13.3825	99.8385		0	1.344	0.668	0	0.008		0.315	0	0.654		0	0	0				2.99		
05033	159531		99.3234	1.4746	19.3314	99.4749		0	0.986	0.98	0.034	0		0.496	0	0.504		0	0	0				3		
05033	159531		99.6769	1.4342	12.019	99.8183		0	1.376	0.594	0.03	0		0.28	0	0.72		0	0	0				3		
05033	159532		98.5255	1.6261	9.9889	98.6871		0	1.441	0.526	0.034	0		0.231	0	0.769		0	0	0				3		
05033	159532		99.7779	0	15.453	99.7779		0	1.303	0.737	0	0		0.371	0	0.57		0	0	0				2.98		
05033	159534		99.22	1.35	13.38	99.36		0	1.242	0.729	0.029	0		0.322	0	0.678		0	0	0				3		
05033	159534		99.45	5.7	19.15	100.02		0.011	0.832	1.012	0.134	0		0.501	0.02	0.49		0	0	0				3		
05033	159535		99.05	0	17.88	99.05		0.015	0.829	1.196	0	0.014		0.47	0	0.441		0	0	0				2.965		
05033	159535		99.25	0	12.77	99.25		0	1.396	0.636	0	0		0.3	0	0.652		0	0	0				2.984		
05033	159536		99.7	0	16.42	99.7		0	1.268	0.739	0	0.01		0.397	0	0.576		0	0	0				2.991		
05033	159536		99.22	0	14.8	99.22		0	1.237	0.811	0	0		0.36	0	0.568		0	0	0				2.976		
05032	159802		99.5658	0	17.877	99.5658		0	0.618	1.406	0	0		0.481	0	0.483		0	0	0				2.988		
05032	159802		98.91	3.63	18.14	99.27		0.007	1.082	0.822	0.082	0		0.457	0	0.55		0	0	0				3		
05032	159802		99.06	2.63	17.06	99.32		0.025	0.872	1.016	0.061	0		0.439	0	0.586		0	0	0				3		
05032	159802		99.01	0	14.96	99.01		0	1.138	0.889	0	0		0.37	0	0.59		0	0	0				2.987		
05032	159802		99.27	0	13.46	99.27		0	1.22	0.818	0	0		0.326	0	0.619		0	0	0				2.981		
05032	159802		98.91	0	19.57	98.91		0.006	1.109	0.888	0	0		0.496	0	0.496		0	0	0				2.995		
05032	159802		99.28	0	14.03	99.28		0.007	1.148	0.843	0	0		0.343	0	0.657		0	0	0				2.998		
05032	159802		99.31	0.54	22.08	99.36		0.009	0.971	0.999	0.013	0		0.575	0	0.434		0	0	0				3		
05032	159809		99.84	0	17.03	99.84		0.054	0.149	1.822	0	0		0.487	0.022	0.401		0.026	0	0				2.961		
05032	159810																									
05032	159811		99.65	4.97	14.52	100.15		0.018	1.021	0.832	0.111	0		0.359	0	0.659		0	0	0				3		
05032	159811		98.93	2.85	15.72	99.22		0.023	0.776	1.112	0.067	0		0.409	0	0.614		0	0	0				3		
05032	159811		99.32	2.47	14.75	99.57		0.019	1.022	0.884	0.056	0		0.368	0	0.637		0	0.014	0				3		
05032	159811		99.74	1.01	17.04	99.84		0.019	0.995	0.944	0.023	0		0.429	0	0.591		0	0	0				3		
05032	159811		99.7476	0.6767	13.5138	99.8183		0	1.312	0.674	0.014	0		0.32	0	0.68		0	0	0				3		
05032	159814		99.24	0	14.11	99.24		0	0.911	1.16	0	0.008		0.36	0	0.521		0	0	0				2.96		
05032	159815		99.5052	0	17.3316	99.5052		0	1.26	0.747	0	0		0.422	0	0.567		0	0	0				2.996		
05032	159815		99.16	0	17.68	99.16		0.01	1.032	0.979	0	0.014		0.449	0	0.495		0	0	0				2.978		
05051	159537		99.36	2.03	12.89	99.56		0	1.129	0.826	0.044	0		0.314	0	0.686		0	0	0				3		
05051	159537		99.46	1.21	15.71	99.58	2.989	0	1.944	0	0.068	0		0.978	0.02	1.469	0.539							8.006	49.16	
05051	159538		99.5961	0	17.9275	99.5961		0	0.296	1.716	0	0.014		0.504	0	0.456		0	0	0				2.987		
05051	159538		99.07	0	16.37	99.07		0	0.223	1.831	0	0		0.465	0	0.454		0	0	0				2.973		
05051	159538		99.9	1.96	26.5	100.1	2.985	0	1.901	0	0.114	0		1.714	0.107	1.109	0.078							8.008	37.15	
05051	159539		99.45	0	19.38	99.45		0	1.084	0.918	0	0.011		0.49	0	0.491		0	0	0				2.994		
05051	159539		99.98	0.41	20.44	100.02		0	1.146	0.844	0.009	0		0.511	0	0.489		0	0	0				3		
05051	159539		99.43	0	16.32	99.43		0.008	0.697	1.323	0	0		0.431	0	0.522		0	0	0				2.982		
05051	159539		99.16	0	12.74	99.16		0	1.423	0.595	0	0		0.297	0	0.677		0	0	0				2.991		
05051	159540		99.0507	0	21.4322	99.0507		0	1.123	0.879	0	0		0.547	0	0.451		0	0	0				2.999		
05051	159540		99.5557	1.2322	17.3114	99.6769		0.012	1.021	0.928	0.028	0		0.436	0	0.576		0	0	0				3		
05051	159540		99.6	1.58	24.87	99.76	3.002	0	1.908	0	0.092	0		1.613	0.041	0.908	0.434							7.998	30.31	
05051	159540		99.51	1.16	30.38	99.63	2.992	0	1.939	0	0.069	0		1.995	0.03	0.914	0.065							8.004	30.55	
05051	159542		99.52	1.06	17.7	99.63		0	0.171	1.802	0.027	0		0.505	0	0.495								3		
05051	159545		99.62	1.43	19.26	99.76		0	1.254	0.715	0.032	0		0.473	0	0.527		0	0	0				3		
05051	159545		100.23	0	15.56	100.23		0	1.169	0.855	0	0		0.379	0	0.584		0	0	0				2.988		
05051	159546		99.12	0	20.54	99.12		0.009	1.064	0.941	0	0		0.526	0	0.449		0	0	0				2.989		
05051	159546		99.95	1.61	30.75	100.11	2.987	0	1.918	0	0.095	0		2.023	0.033	0.801	0.15							8.007	26.81	
05051	159547		99.788	1.5049	12.1907	99.9395		0	1.34	0.628	0.032	0		0.285	0	0.715		0	0	0				3		
05051	159548		99.3032	0	15.0692	99.3032		0	1.255	0.765	0	0		0.365	0	0.606		0	0	0				2.99		
05051	159548		99.27	3.07	17.8	99.58		0	0.4																	

Appendix 5.3
5.3_Heavy Mineral Analysis_Probe data.xls

Job Number	Sample Number	K2O	ClOxideTotal	Fe2O3r	FeOr	Totalr	Si	Ti	Al	Cr	Fe3+	V	Nb	Fe2+	Mn	Mg	Ca	Zn	Ni	Co	Na	K	Cl-ation total	Pyrope
05051	159548	99.44	0	13.59	99.44			0	1.097	0.941	0	0		0.335	0	0.608		0	0	0			2.981	
05051	159548	99.84	0	22.29	99.84			0	0.273	1.776	0	0.018		0.642	0	0.257		0	0	0			2.967	
05051	159548	99.21	0.92	20.34	99.3			0.006	1.103	0.864	0.021	0		0.516	0	0.491		0	0	0			3	
05051	159548	99.16	0	14.92	99.16			0	1.154	0.862	0	0		0.367	0	0.61		0	0	0			2.992	
05051	159548	100.13	1.48	28.84	100.28		2.962	0	1.951	0	0.087	0		1.878	0.073	0.956	0.112						8.019	32.29
05051	159549	99.44	0.77	14.96	99.52			0	1.248	0.736	0.017	0		0.361	0	0.639		0	0	0			3	
05051	159549	99.8486	0	14.5036	99.8486			0.008	0.598	1.448	0	0		0.385	0	0.531		0	0	0			2.969	
05051	159549	99.9193	0	13.0896	99.9193			0	1.266	0.769	0	0		0.312	0	0.635		0	0	0			2.982	
05051	159549	98.96	3.77	19.31	99.34			0.009	1.006	0.889	0.087	0		0.494	0	0.514		0	0	0			3	
05051	159549	99.23	0.17	20.28	99.25			0	1.066	0.93	0.004	0		0.518	0	0.482		0	0	0			3	
05051	159549	99.95	0	15.35	99.95			0	1.059	0.939	0	0.013		0.382	0.017	0.585		0	0	0			2.995	
05051	159549	99.8688	0	16.4024	99.8688			0	1.1	1.016	0	0.013		0.414	0	0.364	0.029		0	0			2.935	
05051	159549	99.31	0	16.96	99.31			0	0.376	1.633	0	0.018		0.471	0	0.489		0	0	0			2.987	
05051	159549	99.6668	0	16.7458	99.6668			0	0.786	1.222	0	0		0.436	0	0.552		0	0	0			2.996	
05051	159549	99.7678	0	15.5439	99.7678			0	0.662	1.387	0	0		0.411	0	0.516		0	0	0			2.976	
05051	159549	99.687	0	16.7862	99.687			0.017	0.809	1.192	0	0		0.435	0	0.528		0	0	0			2.982	
05051	159549	99.12	0	14.47	99.12			0	0.902	1.149	0	0		0.37	0	0.554		0	0	0			2.975	
05051	159549	99.5456	0	17.4225	99.5456			0.008	1.238	0.79	0	0		0.427	0	0.517		0	0	0			2.979	
05051	159549	99.23	0.3	20.6	99.26			0.012	1.175	0.794	0.007	0		0.518	0.016	0.478		0	0	0			3	
05051	159549	99.07	0	13.22	99.07			0	1.275	0.742	0	0		0.317	0	0.658		0	0	0			2.992	
05051	159549	99.6668	0	15.4732	99.6668			0	0.732	1.329	0	0		0.406	0	0.502		0	0	0			2.969	
05051	159549	99.8991	0	15.0894	99.8991			0	0.938	1.101	0	0		0.382	0	0.559		0	0	0			2.98	
05051	159549	99.1618	0	16.5135	99.1618			0.01	1.164	0.836	0	0		0.408	0	0.573		0	0	0			2.99	
05051	159549	99.3739	0	21.3615	99.3739			0.017	0.771	1.199	0	0.013		0.571	0	0.422		0	0	0			2.992	
05051	159549	99.8478	0	17.799	99.8478			0.015	1.103	1.035	0	0		0.449	0	0.315		0	0	0			2.916	
05051	159549	99.01	0	20.81	99.01			0.011	1.087	0.9	0	0		0.531	0	0.466		0	0	0			2.996	
05051	159549	99.8385	0	14.6854	99.8385			0	1.175	0.851	0	0.013		0.358	0	0.585		0	0	0			2.981	
05051	159549	99.7254	0	19.3902	99.7254			0	0.919	1.107	0	0		0.502	0	0.459		0	0	0			2.987	
05051	159549	99.7764	0	14.586	99.7764			0	1.272	0.769	0	0		0.35	0	0.588		0	0	0			2.979	
05051	159549	99.0002	0	13.6653	99.0002			0	1.285	0.719	0	0		0.328	0	0.668		0	0	0			2.998	
05051	159549	99.4749	0	20.7959	99.4749			0	1.177	0.831	0	0		0.522	0	0.466		0	0	0			2.996	
05051	159549	100.19	1.03	20.13	100.29			0	1.102	0.863	0.023	0.012		0.505	0	0.495		0	0	0			3	
05051	159549	99.01	0	13.54	99.01			0	1.201	0.817	0	0		0.329	0	0.645		0	0	0			2.991	
05051	159551	99.15	0	17.49	99.15			0.03	0.364	1.589	0	0.012		0.489	0	0.481	0.025		0	0			2.988	
05051	159551	99.03	0	13.49	99.03			0	1.3	0.733	0	0		0.323	0	0.627		0	0	0			2.983	
05051	159551	99.39	0	17.59	99.39			0.023	0.548	1.459	0	0.015		0.478	0	0.443		0	0	0			2.966	
05051	159551	99.6567	0	11.7766	99.6567			0	1.484	0.526	0	0		0.269	0	0.716		0	0	0			2.995	
05051	159551	99.56	0	16.17	99.56			0	0.14	1.891	0	0		0.463	0	0.463	0.027		0	0			2.984	
05051	159551	98.72	3.47	19.19	99.07			0.012	0.967	0.928	0.081	0		0.495	0	0.517		0	0	0			3	
05051	159552	98.96	1.91	15.38	99.15			0	0.466	1.487	0.047	0		0.419	0	0.581		0	0	0			3	
05051	159552	99.39	2.6	17.14	99.65			0	0.613	1.325	0.063	0		0.459	0	0.541		0	0	0			3	
05051	159552	99.2224	0.2222	19.2304	99.2426			0.031	0.309	1.623	0.006	0		0.541	0	0.49		0	0	0			3	
05051	159552	99.49	1.46	16.43	99.64			0	0.494	1.47	0.036	0		0.446	0	0.554		0	0	0			3	
05051	159552	99.09	0.41	16.57	99.13			0	0.208	1.768	0.01	0.014		0.472	0.021	0.507		0	0	0			3	
05051	159552	100.1	0	18.67	100.1			0.028	0.315	1.672	0	0		0.521	0	0.442		0	0	0			2.978	
05051	159552	99.05	0.44	17.32	99.09			0	0.174	1.815	0.011	0		0.495	0	0.505		0	0	0			3	
05051	159537	99.2022	0	15.3217	99.2022			0	0.243	1.814	0	0		0.432	0	0.483		0	0	0			2.971	
05051	159540	99.7173	0	17.2912	99.7173			0	0.203	1.828	0	0		0.49	0	0.464		0	0	0			2.985	
05051	159545	99.8284	0	16.8165	99.8284			0	0.839	1.187	0	0		0.435	0	0.527		0	0	0			2.987	
05051	159546	99.72	0.6	15.86	99.78			0	0.582	1.394	0.014	0.009		0.423	0	0.577		0	0	0			3	
05051	159548	93.48	67.26	31.236	100.2155			0	0.031	0	1.937	0.032		1	0	0		0	0	0			3	
05051	159548	99.9193	0	13.9279	99.9193			0	1.144	0.893	0	0		0.339	0	0.604		0	0	0			2.981	
05051	159548	99.63	2.22	15.16	99.85			0	0.671	1.276	0.053	0		0.399	0.018	0.583		0	0	0			3	
05051	159548	99.8789	0	15.453	99.8789			0	1.084	0.947	0	0		0.383	0	0.571		0	0	0			2.985	
05051	159539	99.687	0	16.5135	99.687			0	0.046	2.002	0	0		0.477	0	0.451		0	0	0			2.976	
05051	159539	99.7577	0	13.5946	99.7577			0	1.357	0.665	0	0		0.32	0	0.648		0	0	0			2.989	
05051	159539	99.04	0	18.69	99.04			0.008	1.111	0.883	0	0		0.471	0	0.521		0	0	0			2.995	
05051	159539	99.75	1.59	14.93	99.91			0	0.459	1.502	0.039	0		0.403	0	0.597		0	0	0			3	
05051	159540	99.3941	0.2525	17.8568	99.4244			0	0.062	1.931	0.007	0		0.518	0	0.482		0	0	0			3	
05051	159542	99.57	0	18.36	99.57			0	0.187	1.822	0	0		0.524	0	0.463		0	0	0			2.996	
05051	159542	99.78	1.88	10.98	99.97		2.978	0	1.87	0.049	0.103	0		0.667	0.023	1.879	0.442						8.011	63.1
05051	159545	99.2729	2.3432	21.8362	99.5052			0.013	0.752	1.147	0.057	0.018		0.586	0	0.427		0	0	0			3	
05051	159545	99.56	0	16.26	99.56			0	0.981	1.05	0	0.009		0.412	0	0.527		0	0	0			2.98	
05051	159545	99.8183	0.9999	19.9879	99.9193			0.008	1.089	0.872	0.023	0		0.503	0	0.505		0	0	0			3	
05051	159545	99.01	0	16.73	99.01			0.012	0.															

Appendix 5.3
5.3_Heavy Mineral Analysis_Probe data.xls

Job Number	Sample Number	K2O	ClOxideTotal	Fe2O3r	FeOr	Totalr	Si	Ti	Al	Cr	Fe3+	V	Nb	Fe2+	Mn	Mg	Ca	Zn	Ni	Co	Na	K	Cl-ation total	Pyrope
05051	159545		99.06	0	12.71	99.06		0	1.379	0.639	0	0		0.299	0	0.674		0	0	0			2.991	
05051	159545		98.86	5.43	15.71	99.4		0.007	1.272	0.597	0.118	0		0.38	0	0.627		0	0	0			3	
05051	159546		98.91	1.39	24.08	99.05		0.02	0.706	1.219	0.034	0		0.66	0	0.361		0	0	0			3	
05051	159546		99.83	0.77	29.06	99.91	2.979	0	1.958	0.017	0.046	0		1.921	0.244	0.766	0.08						8.011	25.17
05051	159546		100.11	1.34	33.47	100.24	2.976	0	1.943	0	0.08	0		2.229	0.053	0.601	0.129						8.012	20.18
05051	159548		99.8082	0	14.3824	99.8082		0.005	1.139	0.861	0	0		0.351	0	0.639		0	0	0			2.995	
05051	159548		98.87	4.03	17.68	99.27		0.011	1.077	0.811	0.091	0		0.445	0	0.566		0	0	0			3	
05051	159549		99.09	1.32	18.11	99.22		0.009	0.955	0.997	0.03	0		0.465	0	0.544		0	0	0			3	
05051	159549		99.12	1.29	19.66	99.25		0.005	1.079	0.873	0.03	0.008		0.499	0	0.506		0	0	0			3	
05051	159549		99.28	0.77	18.52	99.36		0.012	0.813	1.13	0.018	0.016		0.485	0	0.527		0	0	0			3	
05051	159549		99.5759	0	13.9077	99.5759		0	1.366	0.653	0	0.01		0.328	0	0.629		0	0	0			2.986	
05051	159549		99.4951	0	14.5642	99.4951		0	0.975	1.069	0	0		0.367	0	0.566		0	0	0			2.978	
05051	159551		99.6062	0	18.8365	99.6062		0.034	0.303	1.634	0	0		0.527	0	0.499		0	0	0			2.997	
05051	159552		99.23	0	15.82	99.23		0	0.214	1.867	0	0		0.449	0	0.429		0	0	0			2.959	
05051	159552		99.06	0	16.02	99.06		0.005	0.706	1.293	0	0.016		0.424	0	0.543		0	0	0			2.987	
05051	159548		100.14	1.29	0.7	100.27	1.946	0	0.042	0.045	0.035			0.021	0	0.959	0.924				0.039		4.012	
05051	159537		99.70738	0	16.29648	99.70738		0	0.411	1.593	0	0		0.446	0	0.548		0	0	0			2.998	
05051	159537		99.58	2.28	17.81	99.81		0	0.408	1.535	0.057	0		0.491	0	0.509		0	0	0			3	
05051	159537		99.37	0	19.11	99.37		0.015	0.804	1.18	0	0		0.503	0	0.491		0	0	0			2.993	
05051	159537		99.23	1.38	18.86	99.37		0	0.185	1.78	0.036	0		0.541	0	0.459		0	0	0			3	

[illegible]

	Sample Number	Almandine	Grossular	pessartine	Uvarovite	Andradite	Knorringite	chloromite	Ulvo spinel	Spinel	Chromite	Magnetite	VgNumber	CrNumber	FeNumber	XTiO3	Hematite	Iimenite	yrophanite	Geikielite	Other	Quad'ollastonite	Enstatite	Ferrosilite	Forsterite
04070	0408002								0.82	58.71	40	0.47	63.46	40.5	36.5										
04070	0408002								0.7	59.76	39.29	0.25	63.34	39.7	36.7										
04070	0408002								0.64	24.59	74.05	0.72	46.64	75.1	53.4										
04070	0408002								3.73	1.65	94.17	0.45	34.99	98.3	65										
04070	0408002								0.3	63.36	36.04	0.3	62.33	36.3	37.7										
04070	0408002								0.26	62.42	37.11	0.21	62.64	37.3	37.4										
04070	0408002								0.38	27.3	71.54	0.78	47.15	72.4	52.9										
04070	0408002								3.62	7.41	88.97	0	41.33	92.3	58.7										
04070	0408002								0.33	63.99	35.27	0.4	50.51	35.5	49.5										
04070	0408002								0.75	62.98	35.82	0.45	50.24	36.3	49.8										
04070	0408002								0.43	57.54	42.03	0	62.69	42.2	37.3										
04070	0408002								1.28	45.81	52.67	0.24	57.21	53.5	42.8										
04070	0408002								0	65.21	34.79	0	63.21	34.8	36.8										
04070	0408002								0	65.14	34.86	0	64.54	34.9	35.5										
04070	0408002								0	69.44	30.56	0	63.51	30.6	36.5										
04070	0408002								0	70.34	29.66	0	63.38	29.7	36.6										
04070	0408002								0	70.56	29.19	0.24	70.18	29.3	29.8										
04070	0408002								0	70.93	28.8	0.27	70.7	28.9	29.3										
05033	159518								0.91	55.8	43.29	0	44.87	43.7	55.1										
05033	159518								3.73	16.31	79.97	0	46.06	83.1	53.9										
05033	159518								0	17.53	81.86	0.61	46.82	82.4	53.2										
05033	159518								0	66.45	33.55	0	66.72	33.5	33.3										
05033	159518								0	35.06	64.27	0.67	52.48	64.7	47.5										
05033	159518								0.74	45.67	53.59	0	57.03	54	43										
05033	159518								1.54	39.19	58.62	0.66	42.43	59.9	57.6										

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Sample Number	Almandine	Grossular	pessartine	Uvarovite	Andradite	Knorringite	chloromite	Ulvospinel	Spinel	Chromite	Magnetite	VgNumber	CrNumber	FeNumber	XTiO3	Hematite	Ilmenite	yrophanite	Geikielite	Other	Quad	ollastonite	Enstatite	Ferrosilite	Forsterite
05033	159520							0	64.06	35.48	0.46	63.47	35.6	36.5											
05033	159520							0	49.3	50.7	0	49.22	50.7	50.8											
05033	159520							0	57.62	41.72	0.66	58.2	42	41.8											
05033	159520							0	62	38	0	63.5	38	36.5											
05033	159520							1.52	34.8	61.25	2.43	48.64	63.8	51.4											
05033	159521							0	61.65	38.35	0	63.2	38.4	36.8											
05033	159521							0	52.43	47.57	0	58.8	47.6	41.2											
05033	159521							0	68.35	31.65	0	69.4	31.7	30.6											
05033	159521							0	67.59	32.41	0	65.53	32.4	34.5											
05033	159521							0	46.32	53.68	0	57.65	53.7	42.3											
05033	159521							0	66.36	33.64	0	62.01	33.6	38											
05033	159521							0.73	54.21	45	0.06	46.97	45.4	53											
05033	159521							0	61.73	38.27	0	65.42	38.3	34.6											
05033	159521							0.61	56.16	43.23	0	49.04	43.5	51											
05033	159521							0	59.35	40.07	0.57	49.3	40.3	50.7											
05033	159521							0.74	62.92	36.34	0	65.32	36.6	34.7											
05033	159521							0	64.84	35.16	0	63.38	35.2	36.6											
05033	159521							0	44.69	54.79	0.53	57.53	55.1	42.5											
05033	159522							0	56.7	43.3	0	47.87	43.3	52.1											
05033	159522							0.57	56.17	39.37	3.9	49.97	41.2	50											
05033	159522							0	69.33	30.67	0	67	30.7	33											
05033	159522							0	63.87	36.11	0.02	56.92	36.1	43.1											
05033	159522							0	62.6	37.4	0	58.55	37.4	41.5											
05033	159522							0.8	65.18	34.02	0	65.51	34.3	34.5											
05033	159522							1.36	44.5	52.92	1.22	39.7	54.3	60.3											
05033	159522							0.96	46.04	53.01	0	62.51	53.5	37.5											
05033	159522							0	60.33	39.26	0.41	62.99	39.4	37											
05033	159522							0.8	52.74	46.45	0	45.13	46.8	54.9											
05033	159522							0	69.18	30.82	0	67.07	30.8	32.9											
05033	159522							0	60.36	39.64	0	53.67	39.6	46.3											
05033	159522							0	56.76	42.91	0.32	50.12	43.1	49.9											
05033	159522							0.91	55.1	42.14	1.85	49.71	43.3	50.3											
05033	159522							0.69	63.98	35.33	0	61.6	35.6	38.4											
05033	159522							0	54.66	45.34	0	60.32	45.3	39.7											
05033	159522							0	57.59	42.41	0	61.13	42.4	38.9											
05033	159522																								
05033	159522							0	60.21	39.79	0	64.38	39.8	35.6											
05033	159522							0	43.88	56.12	0	46.42	56.1	53.6											
05033	159522							0	56.5	43.11	0.39	45.71	43.3	54.3											
05033	159522							0	65.14	33.62	1.24	59.72	34	40.3											
05033	159522							0.96	56.27	41.42	1.35	48.24	42.4	51.8											
05033	159522							0	58.64	41.36	0	54.84	41.4	45.2											
05033	159523							0.8	51.57	47.63	0	50.14	48	49.9											
05033	159523							2.51	26.91	69.89	0.69	49.22	72.2	50.8											
05033	159523							0	67.43	32.08	0.48	65.51	32.2	34.5											
05033	159523							0	65.94	34.06	0	65.01	34.1	35											
05033	159523							0.56	18.76	80.09	0.58	49.35	81	50.6											
05033	159523							1.75	38.3	59.95	0	49.8	61	50.2											
05033	159523							0	32.83	66.84	0.33	6.89	67.1	93.1											
05033	159523							0	57.66	41.91	0.43	62.88	42.1	37.1											
05033	159523							0	63.07	36.93	0	61.35	36.9	38.7											
05033	159523							0	55.11	44.89	0	48.02	44.9	52											
05033	159523							1.35	44.46	54.19	0	56.19	54.9	43.8											
05033	159523							1.19	48.35	50.47	0	59.43	51.1	40.6											
05033	159523							0	61.5	38.5	0	62.82	38.5	37.2											
05033	159523							1.88	35.47	62.38	0.27	43.37	63.8	56.6											
05033	159523							0	70.3	29.7	0	68.33	29.7	31.7											
05033	159523							0	51.21	48.33	0.46	57.2	48.6	42.8											
05033	159523							0	53.45	43.91	2.64	53.03	45.1	47											
05033	159523							0	57.94	41.59	0.47	44.74	41.8	55.3											
05033	159523							1.15	42.05	55.51	1.29	45.4	56.9	54.6											
05033	159523							0	65.04	34.96	0	64.13	35	35.9											
05033	159523																								
05033	159523							0	54.37	45.63	0	60.59	45.6	39.4											
05033	159523							0	67.78	31.99	0.23	67.64	32.1	32.4											
05033	159523							1.36	31.33	67.31	0	51.72	68.2	48.3											

Sample Number	Almandine	Grossular	pessartine	Uvarovite	Andradite	Knorringite	chloromite	Ulvospinel	Spinel	Chromite	Magnetite	MgNumber	CrNumber	FeNumber	XTiO3	Hematite	Ilmenite	yrophanite	Geikielite	Other	Quad'ollastonite	Enstatite	Ferrosilite	Forsterite
05033	159523							0	64.31	35.69	0	65.94	35.7	34.1										
05033	159524							0	62.02	37.46	0.52	63.58	37.7	36.4										
05033	159524							0	37.96	62.04	0	55.48	62	44.5										
05033	159524																							
05033	159524							0	57.48	42.52	0	62.84	42.5	37.2										
05033	159524							0.64	28.6	70.23	0.52	50.55	71.1	49.4										
05033	159524							0	37.11	62.33	0.56	53.02	62.7	47										
05033	159524																							
05033	159524							0	65.18	34.82	0	65.83	34.8	34.2										
05033	159524							0	55.67	44.33	0	58.04	44.3	42										
05033	159524							1.33	46.89	51.35	0.43	55.96	52.3	44										
05033	159524							0	60.44	39.56	0	59.79	39.6	40.2										
05033	159524							0	29.03	70.19	0.78	52.75	70.7	47.3										
05033	159524							0	66.07	33.51	0.42	64.78	33.7	35.2										
05033	159524							0	58.12	41.88	0	62.63	41.9	37.4										
05033	159524							1.26	18.73	79.44	0.57	47.31	80.9	52.7										
05033	159524							0	61.91	38.05	0.03	47.92	38.1	52.1										
05033	159524							0	53.55	45.95	0.51	63.3	46.2	36.7										
05033	159524							0.86	56.02	43.11	0	48.51	43.5	51.5										
05033	159524							0	54.29	45.71	0	58.46	45.7	41.5										
05033	159524							0	67.07	32.93	0	68.32	32.9	31.7										
05033	159524							0	60.01	39.99	0	59.41	40	40.6										
05033	159524							0	63.86	36.14	0	62.74	36.1	37.3										
05033	159524							1.29	52.5	46.21	0	60.7	46.8	39.3										
05033	159525											0			90.03	9.97	87.59	2.44	0					
05033	159525							0	62.54	37.46	0	51.22	37.5	48.8										
05033	159525							0	46.19															

Sample Number	Almandine	Grossular	pessartine	Uvarovite	Andradite	Knorringite	chloromite	Ulvospinel	Spinel	Chromite	Magnetite	WgNumber	CrNumber	FeNumber	XTiO3	Hematite	Ilmenite	yrophanite	Geikieelite	Other	Quad /ollastonite	Enstatite	Ferrosilite	Forsterite
05033	159528							0	50.67	49.33	0	59.75	49.3	40.2										
05033	159528							0	59.33	40.67	0	63.33	40.7	36.7										
05033	159528							0	61.51	38.49	0	62.45	38.5	37.5										
05033	159528							0	67.36	32.64	0	67.9	32.6	32.1										
05033	159528							0	66.63	33.37	0	65.22	33.4	34.8										
05033	159528							0	40.94	59.06	0	53.54	59.1	46.5										
05033	159528							0.78	40.89	56.86	1.47	53.01	58.2	47										
05033	159528							0	55.97	44.03	0	60.04	44	40										
05033	159528							0.85	53.59	45.05	0.5	48.38	45.7	51.6										
05033	159528							0	65.12	34.88	0	64.81	34.9	35.2										
05033	159530							0	67.24	30.81	1.95	71.33	31.4	28.7										
05033	159530							1.19	61.48	33.97	3.36	66.15	35.6	33.8										
05033	159530							1.99	35.46	54.82	7.74	52.58	60.7	47.4										
05033	159531							0	47.29	51.42	1.29	64.65	52.1	35.4										
05033	159531							0	66.53	33.05	0.42	67.47	33.2	32.5										
05033	159531							0	49.31	48.99	1.7	50.39	49.8	49.6										
05033	159531							0	68.81	29.69	1.5	72.04	30.1	28										
05033	159532							0	72.03	26.28	1.69	76.93	26.7	23.1										
05033	159532							0	63.89	36.11	0	60.59	36.1	39.4										
05033	159534							0	62.1	36.44	1.46	67.85	37	32.2										
05033	159534							1.11	41.58	50.61	6.71	49.44	54.9	50.6										
05033	159535							1.44	40.06	57.81	0.69	48.45	59.1	51.6										
05033	159535							0	68.69	31.31	0	68.52	31.3	31.5										
05033	159536							0	62.86	36.62	0.52	59.16	36.8	40.8										
05033	159536							0	60.4	39.6	0	61.2	39.6	38.8										
05032	159802							0	30.55	69.45	0	50.12	69.5	49.9					</					

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Job Number	Sample Number	Almandine	Grossular	psessartine	Uvarovite	Andradite	Knorringite	choriomite	Ulvospinel	Spinel	Chromite	Magnetite	VgNumber	CrNumber	FeNumber	XTiO3	Hematite	Ilmenite	yrophanite	Geikielite	Other	Quad/ollastonite	Enstatite	Ferrosilite	Forsterite
05051	159548								0	53.83	46.17	0	64.47	46.2	35.5										
05051	159548								0	13.21	85.93	0.86	28.6	86.7	71.4										
05051	159548								0.62	55.15	43.18	1.05	48.75	43.9	51.2										
05051	159548								0	57.24	42.76	0	62.42	42.8	37.6										
05051	159548	62.79	0	0.52	0	3.78	0	0					33.74												
05051	159549								0	62.39	36.78	0.83	63.9	37.1	36.1										
05051	159549								0.77	28.98	70.25	0	58	70.8	42										
05051	159549								0	62.21	37.79	0	67.08	37.8	32.9										
05051	159549								0.88	50.32	44.46	4.34	50.98	46.9	49										
05051	159549								0	53.31	46.5	0.19	48.25	46.6	51.8										
05051	159549								0	52.65	46.7	0.65	60.53	47	39.5										
05051	159549								0	51.68	47.72	0.6	46.81	48	53.2										
05051	159549								0	18.54	80.56	0.89	50.93	81.3	49.1										
05051	159549								0	39.14	60.86	0	55.85	60.9	44.2										
05051	159549								0	32.31	67.69	0	55.66	67.7	44.3										
05051	159549								1.67	39.76	58.58	0	54.8	59.6	45.2										
05051	159549								0	43.99	56.01	0	59.94	56	40.1										
05051	159549								0.76	60.58	38.66	0	54.77	39	45.2										
05051	159549								1.18	58.77	39.72	0.34	47.97	40.3	52										
05051	159549								0	63.22	36.78	0	67.49	36.8	32.5										
05051	159549								0	35.51	64.49	0	55.31	64.5	44.7										
05051	159549								0	46.01	53.99	0	59.45	54	40.6										
05051	159549								0.96	57.64	41.41	0	58.4	41.8	41.6										
05051	159549								1.68	38.23	59.44	0.64	42.49	60.9	57.5										
05051	159549								1.39	50.86	47.75	0	41.19	48.4	58.8										
05051	159549								1.07	54.14	44.79	0	46.74	45.3	53.3										
05051	159549								0	57.64	41.72	0.64	62.03	42	38										
05051	159549								0	45.35	54.65	0	47.75	54.7	52.2										
05051	159549								0	62.32	37.68	0	62.65	37.7	37.4										
05051	159549								0	64.13	35.87	0	67.08	35.9	32.9										
05051	159549								0	58.59	41.41	0	47.15	41.4	52.8										
05051	159549								0	55.1	43.14	1.76	49.52	43.9	50.5										
05051	159549								0	59.52	40.48	0	66.21	40.5	33.8										
05051	159551								2.93	17.99	78.52	0.57	49.58	81.4	50.4										
05051	159551								0	63.96	36.04	0	65.99	36	34										
05051	159551								2.2	26.52	70.57	0.72	48.1	72.7	51.9										
05051	159551								0	73.82	26.18	0	72.66	26.2	27.3										
05051	159551								0	6.88	93.12	0	49.99	93.1	50										
05051	159551								1.21	48.34	46.42	4.03	51.07	49	48.9										
05051	159552								0	23.29	74.37	2.34	58.1	76.2	41.9										
05051	159552								0	30.63	66.24	3.13	54.1	68.4	45.9										
05051	159552								3.12	15.45	81.16	0.28	47.5	84	52.5										
05051	159552								0	24.7	73.52	1.79	55.43	74.9	44.6										
05051	159552								0	10.39	88.41	1.2	51.81	89.5	48.2										
05051	159552								2.75	15.41	81.84	0	45.9	84.1	54.1										
05051	159552								0	8.69	90.74	0.57	50.46	91.3	49.5										
05051	159537								0	11.81	88.19	0	52.79	88.2	47.2										
05051	159540								0	9.98	90.02	0	48.62	90	51.4										
05051	159545								0	41.43	58.57	0	54.78	58.6	45.2										
05051	159546								0	29.11	69.7	1.19	57.72	70.5	42.3										
05051	159548								0	1.54	0	98.46	0	0	100										
05051	159548								0	56.17	43.83	0	64.04	43.8	36										
05051	159548								0	33.55	63.82	2.63	59.37	65.5	40.6										
05051	159548								0	53.37	46.63	0	59.89	46.6	40.1										
05051	159539								0	2.23	97.77	0	48.58	97.8	51.4										
05051	159539								0	67.12	32.88	0	66.93	32.9	33.1										
05051	159539								0.83	55.24	43.93	0	52.54	44.3	47.5										
05051	159539								0	22.95	75.12	1.93	59.72	76.6	40.3										
05051	159540								0	3.12	96.55	0.33	48.22	96.9	51.8										
05051	159542								0	9.32	90.68	0	46.87	90.7	53.1										
05051	159542	22.4	6.84	0	2.49	5.17	0	0					73.8												
05051	159545								1.29	37.61	57.36	3.74	42.17	60.4	57.8										
05051	159545								0	48.08	51.45	0.46	56.1	51.7	43.9										
05051	159545								0.8	54.47	43.6	1.13	50.08	44.5	49.9										
05051	159545								1.19	45.17	53.63	0	56.61	54.3	43.4										
05051	159545								0.51	52.76	46.29	0.44	47.82	46.7	52.2										

[illegible]