



**Mineralogical Services**

**Diamond Indicator Mineral Extraction,  
Selection, Analysis and Interpretation:  
Jackson Inlet Bulk Samples #1 and #2 -  
Spring Processing Campaign**

**submitted by  
Twin Mining Corp.**

**Project Managed by: Bruce Craig Jago, Ph.D.**

**Submission Date: November 15, 2001**

**Project No.: 8901-221/LIMS#MI1007-JUN01 and MI1001-JUL01**

**Note**

This report refers to the samples as received. The practice of this Company in issuing reports of this nature is to require the recipient not to publish the report or any part thereof without the written consent of Lakefield Research Limited.

Neither Lakefield Research Limited, nor its subcontractors, consultants, agents, officers, or employees shall be held responsible for any loss or damage resulting directly or indirectly from any default, negligence, error or omission. The liability of Lakefield Research Limited, if any, shall be limited in total to the invoiced value of this project.

## 1.0 Summary and Recommendations

Interpretation of the electron microprobe analyses from garnet, chromite and Cr-diopside grains selected from mineral concentrates and a comparison of this data with diamond grades as determined from mini-bulk samples, indicates:

1. The vast majority (>95%) of garnet and clinopyroxene grains have a peridotitic rather than eclogitic parentage.
2. Although garnet populations have a dominantly lherzolitic (G9, Cr-pyrope) mineral chemistry, between 25% (Sobolev 1973) and 30% (Gurney 1985) of garnets from mini-bulk Sample #1 and between 5% (Sobolev 1973) and 12% (Gurney 1986) of garnets from mini-bulk Sample #2 have a harzburgitic (G10, sub-calcic, Cr-pyrope) parentage and are compositionally similar to sub-calcic, Cr-pyrope garnet inclusions in diamond.
3. Approximately 43% of chromite grains are compositionally similar to chromite inclusions in diamond and chromite intergrowths with diamond.
4. Clinopyroxene grains are Cr-rich (> 1.0 wt. % Cr<sub>2</sub>O<sub>3</sub>) and classified as Cr-diopside; interpretative plots indicate that such grains have been derived from four-phase garnet-lherzolite xenoliths.
5. P/T arrays calculated from single clinopyroxene grains roughly define a 46 to 48 mW/m<sup>2</sup> geotherm.
6. The P/T array calculated from single clinopyroxene grains from both samples extends well into the diamond stability field. This indicates that the host kimberlites were derived from within the diamond stability field and could have sampled potentially diamond-bearing garnet- and chromite-harzburgite prior to eruption and emplacement into the upper crust. Both of these potentially diamond-bearing sources are interpreted to have been present in the sub-continental lithospheric mantle beneath Jackson Inlet as indicated by the presence of sub-calcic, Cr-pyrope (G10, Cr-pyrope) garnet and chromite both having compositions similar to garnet and chromite inclusions in diamond.
7. Bulk sample #1, which has the highest diamond grade (0.28 vs 0.18 ct/t) also has the greatest proportion of sub-calcic, Cr-pyrope garnets (G10 Cr-pyropes), interpreted to have been derived from diamond-bearing garnet harzburgite, while the proportion of chromite grains,

that are compositionally similar to chromite inclusions in diamond, is approximately equal in both samples.

Collection of bulk samples of up to 100 tonnes in mass with concurrent studies of microdiamond distributions and the mineral chemistry of diamond indicator minerals that yield information regarding diamond prospectivity are recommended on the basis of the favourable mineral chemistry reported herein. Microdiamond samples should have a mass of at least 100-kg and at least 100 grains of garnet and chromite should be analysed in the mineral chemical study.

Graphical and mathematical models should be investigated that will provide a statistically robust framework within which to interpret the relationship between the microdiamond distributions, mini-bulk sample results and diamond indicator mineral results.

Field work and follow-up laboratory studies (e.g. diamond drilling, microdiamond and diamond indicator mineral study) should be used to determine whether the weaker diamond grade and mineral chemical results at sample site #2 are the result of conditions at the surface of the sample site (e.g. contamination by soil, non-representivity) or reliably reflect the diamond grade of sub-cropping kimberlite.

LAKEFIELD RESEARCH LIMITED



Bruce Craig Jago, Ph.D.

Manager – Mineralogical Services

Lakefield Research Limited

November 23, 2001

Microprobe Analysis: Oleg Valeyev, Ph.D.

## 2.0 Introduction

Two mini-bulk samples (Sample #1 – 1.91 t; Sample #2 – 16.1 t) of kimberlite from Twin Mining's Jackson Inlet project area were processed for macrodiamond content by Lakefield Research in the period May-June, 2001 (Project # 10284). The samples yielded diamond grades of 0.287 and 0.167 ct/t, respectively using a bottom screen-size cut-off of 1.18mm. Mineral concentrates were produced from 10kg splits of corresponding 50kg microdiamond samples (Project 8901-221/LIMS#MI0009-JUN01 and MI0014-JUN01) of each of the mini-bulk samples. Electron microprobe analysis of selected indicator minerals were used to determine whether mineral chemistry could be correlated with micro- and macrodiamond content, in the hope that the forthcoming information could then be used to prioritise other targets on Twin Mining's other mining claims.

Mineral concentrates were produced through a combination of stage crushing, wet screening (10 and 60 mesh) and heavy liquid separation (Methylene iodide @ 3.1 g/cc). Mineral concentrates were systematically scanned with a binocular microscope with targets of approximately 100 grains of garnet and chromite, 50 grains of ilmenite and 25 grains Cr-diopside set to ensure that representative populations of each mineral were obtained.

Diamond indicator mineral grains were mounted in epoxy and analysed for major and minor element contents by electron microprobe (JEOL 733 Superprobe) under standard operating conditions (15 KeV, 20 nA operating current) using natural standards.

Mineral analyses were interpreted using industry-standard classification schemes and bi-variate diagrams published by Gurney (1985), Sobolev (1973), Dawson and Stephens (1975), McCandless and Gurney (1989), Schulze (1997), Fipke et al. (1995) and Nimis and Taylor (2000).

## 3.0 Results

Mineral classification results are summarised in Table 1. Bi-variate classification diagrams are given in Appendix A and corresponding electron microprobe analyses in Appendix B.

**Table 1: Summary of Garnet, Chromite and Cr-diopside Classification Results**  
**A. Garnet**

Diamond Grade (Ct)	Sobolev (1973) Plotting Methods - # of Grains				Gurney (1985) and McCandless and Gurney (1989) Plotting Methods - # of Grains			
	# of Garnets	Harzburgitic	Lherzoltitic	Barren Eclogite	Harzburgitic	Lherzoltitic	Diamond Eclogite	Barren Eclogite
Bulk Sample #1 0.287	102	24	78	2	30	69	1	2
Bulk Sample #2 0.167	101	5	96	0	12	89	0	0

Diamond Grade (Ct)	Sobolev (1973) Plotting Methods - % of Grains				Gurney (1985) and McCandless and Gurney (1989) Plotting Methods - % of Grains			
	# of Garnets	Harzburgitic	Lherzoltitic	Barren Eclogite	Harzburgitic	Lherzoltitic	Diamond Eclogite	Barren Eclogite
Bulk Sample #1 0.287	102	23.5	76.5	2.0	29.4	67.6	1.0	2.0
Bulk Sample #2 0.167	101	5.0	95.0	0.0	11.9	88.1	0.0	0.0

**Dawson and Stephens' (1975) Statistical Classification Method**

D&S (1975)	Sample (# of Grains) Classification	Sample (% of Grains)		Bulk Sample #1	Bulk Sample #2	Bulk Sample #1	Bulk Sample #2
		D&S (1975)	Sample (% of Grains)				
G1	Sheared Lherzolite 1	1.0	1.0	1.0	9	1.0	8.9
G2	T-rich Megacryst	-	-	-	-	-	-
G3	Diamondiferous Eclogite 1	1.0	1.0	1.0	-	1.0	-
G4	Diamondiferous Eclogite 2	-	-	-	-	-	-
G5	Crustal ?	1.0	1.0	1.0	-	1.0	-
G6	Al-Diamondiferous Eclogite	-	-	-	-	-	-
G7	Grossular	-	-	-	-	-	-
G8	Kyanite-Eclogite	-	-	-	-	-	-
G9	Granular Lherzolite	67	65.7	65.7	86	65.7	85.1
G10	Harzburgite	19	18.6	18.6	5	18.6	5.0
G11	Sheared Lherzolite 2	10	9.8	9.8	1	9.8	1.0
G12	Cr-rich Megacryst	3	2.9	2.9	-	2.9	-
Total		102	100	100	101	100	100
Diamond Grade		0.287 ctt	0.287 ctt	0.287 ctt	0.167 ctt	0.287 ctt	0.167 ctt

**C. Chromite**

	# of Chromites	Di* Chromite - #	Di* Chromite - %
Bulk Sample #1	86	36	42
Bulk Sample #2	88	39	44

\* - Di Chromite = diamond inclusion chromite (Fipke et al. 1995)

**D. Cr-Diopside**

Diamond Grade (Ct)	# of Cr-Diopsides	Peridotitic	Eclogitic	Crustal	Diamond Field* Cr-Diopside
Bulk Sample #1 0.287	25	25	0	0	17
Bulk Sample #2 0.167	25	25	0	0	16

\* - Nimis and Taylor (2000)

### 3.1 Garnet

Approximately 100 garnets were selected from mineral concentrates produced from each mini-bulk sample. Microprobe analyses plotted Figure 1a and 2 and summarised in Table 1 show that the majority of garnets have a peridotitic parentage and plot along a linear trend defined by lherzolitic garnets (Gurney 1985, Sobolev 1973). The majority of these garnets are classified as G9, Cr-pyrope garnets according to the classification scheme of Dawson and Stephens (1975). Only three garnets suspected to have an eclogitic parentage were found in the mineral concentrate produced from mini-bulk Sample #1, while none were found in sample #2. Figure 1 also shows that a significant number of garnets (Table 1) from each sample plot with the field of sub-calcic, Cr-pyrope garnet regardless of whether the field boundaries of Gurney (1985) or Sobolev (1973) are used although the numbers of garnets so-classified is less using the Sobolev (1973) method. Sub-calcic Cr-pyrope garnets have been interpreted as being derived from garnet harzburgite or garnet dunite (Gurney 1985 and Sobolev 1973), both, potential hosts to diamond in the mantle and therefore are of interest.

Electron microprobe analyses are plotted according to garnet group membership, based on Dawson and Stephens' (1975) classification-method, in Figures 1b and 1c and the data are summarised in Table 1. Examination of figures and table show that the vast majority of garnets belong to Dawson and Stephens (1975) Group 9 which are interpreted as having a lherzolitic parentage in accord with conclusions using the Gurney (1985) and Sobolev (1973) plotting methods. On Figure 1b and 1c, the majority of these grains plot within the lherzolitic field as defined by Gurney (1985) and Sobolev (1973) however, a significant number of Group 9 garnets (and Group 11 and 12) also plot in Gurney's (1985) harzburgitic field, and less so, Sobolev's (1973) harzburgitic field. This discrepancy results from:

- The small number of grains originally used to formulate Dawson and Stephens' (1975) classification method.
- The CaO vs Cr<sub>2</sub>O<sub>3</sub> plot is a two dimensional representation of at least six dimensional compositional space.

The mineral concentrate produced from mini-bulk sample #1 contained garnets belonging to Dawson and Stephens' (1975) Group 1, Group 3, Group 5, Group 9, Group 10, Group 11 and Group 12. Sample #2 contained a compositionally less diverse suite and included garnets belonging only to Group 1, Group 9, Group 10 and Group 11. Group 10 was established on the basis of peridotitic garnet inclusions in diamond while Group 3 was established on the basis of eclogitic garnet inclusions in diamond and eclogitic garnet in diamondiferous eclogite xenoliths.

Significantly, garnet megacrysts are essentially absent from the garnet population in both samples. This observation is in accord with the general lack of megacrystic ilmenite and Cr-diopside (see below) in the Jackson Inlet kimberlite samples examined to date.

Data summarised in Table 1 shows that both mineral concentrates produced from both mini-bulk samples contain significant numbers of sub-calcic Cr-pyrope garnets as well as various lherzolitic, megacrystic and eclogitic types. Sub-calcic, Cr-pyrope has been interpreted to have been derived from garnet-harzburgite and garnet-dunite xenoliths, which were erupted from the mantle and disaggregated during ascent and emplacement by mantle-derived magmas into the upper crust. Garnet-harzburgite and garnet-dunite xenoliths are potentially diamond-bearing rock types in the mantle so the presence of sub-calcic Cr-pyrope garnets is a positive indicator of diamond prospectivity.

Table 1 shows that eclogitic garnet is rare to absent in concentrates from both samples, concentrates from Sample #1 having three grains compared to zero in Sample #2. McCandless and Gurney (1989) and Dawson and Stephens' (1975) classification methods indicate that only a single garnet from Sample #1 is compositionally similar to eclogitic garnet associated with diamondiferous environments in the mantle. The garnet interpreted to have an eclogitic parentage that has a high FeO content (23.5 %) may, instead, have a crustal parentage (Schulze 1997).

### 3.2 Chromite

Figure 3 and data summarised in Table 1 show that approximately 43% of the chromite grains in both samples are compositionally similar to chromite inclusions and chromite intergrowths with diamond (Fipke et al. 1995). The remaining chromite grains plot along compositional trends established for spinel group minerals which have crystallised in a variety of mantle-derived, alkaline, ultrabasic rocks, including, but not exclusively, kimberlite (Mitchell 1986).

The compositional similarity of these chromite grains to chromite inclusions and chromite intergrowths with diamond is a positive indicator of diamond prospectivity and the compositional similarity with chromite from chromite-harzburgite xenoliths indicates a genetic link with this potentially diamondiferous, mantle-derived rock type.

### 3.3 Ilmenite

A single ilmenite grain was recovered from the mineral concentrates. The grain had a low MgO (<0.5 wt. %) and Cr<sub>2</sub>O<sub>3</sub> (<0.05 wt. %) content and is interpreted to have a crustal parentage. This grain is not included in any of the attached tables and its composition has not been plotted on any interpretative plots.

The lack of ilmenite, which generally is regarded as a megacryst phase, accords with the lack of other megacrystic minerals, such as Ti-garnet and sub-calcic, Cr-diopside and does not have any impact on the use of mineral chemistry otherwise to determine diamond prospectivity in the Jackson Inlet kimberlites.

### 3.4 Cr-diopside

Cr-diopside compositions plotted on Figure 4 (Ramsay and Tompkins 1994) all fall within the field of clinopyroxene derived from garnet lherzolite xenoliths.



Pressures and temperatures were calculated from electron microprobe analyses of single clinopyroxene grains using the method of Nimis and Taylor (2000). Data are plotted on Figure 5 together with reference curves for the diamond-graphite invariant (Kennedy and Kennedy 1976) and various geotherms (Pollack and Chapman 1977).

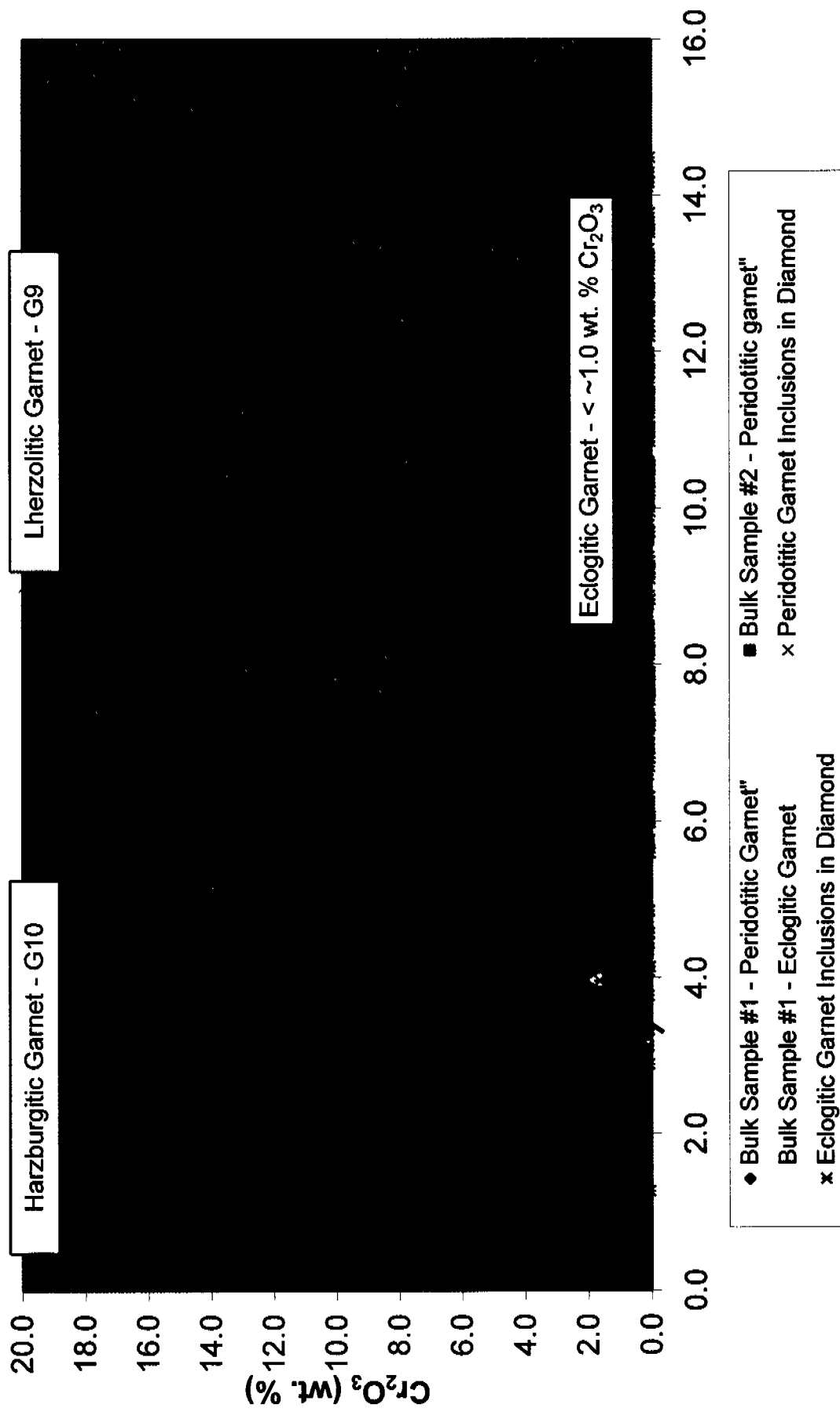
Calculated pressures and temperatures for grains from both mini-bulks samples form a P/T array that roughly corresponding to a 46-48 mW/m<sup>2</sup> geotherm (Pollack and Chapman 1977). Significantly, about 65% of each population of Cr-diopsides fall on the high-pressure side of the boundary between the graphite and diamond stability field indicating that the host intrusives to mini-bulk Samples #1 and #2 was derived from within the diamond stability field.

### **3.0 Correlation between Diamond Grade, Microdiamond Distribution and Mineral Chemistry**

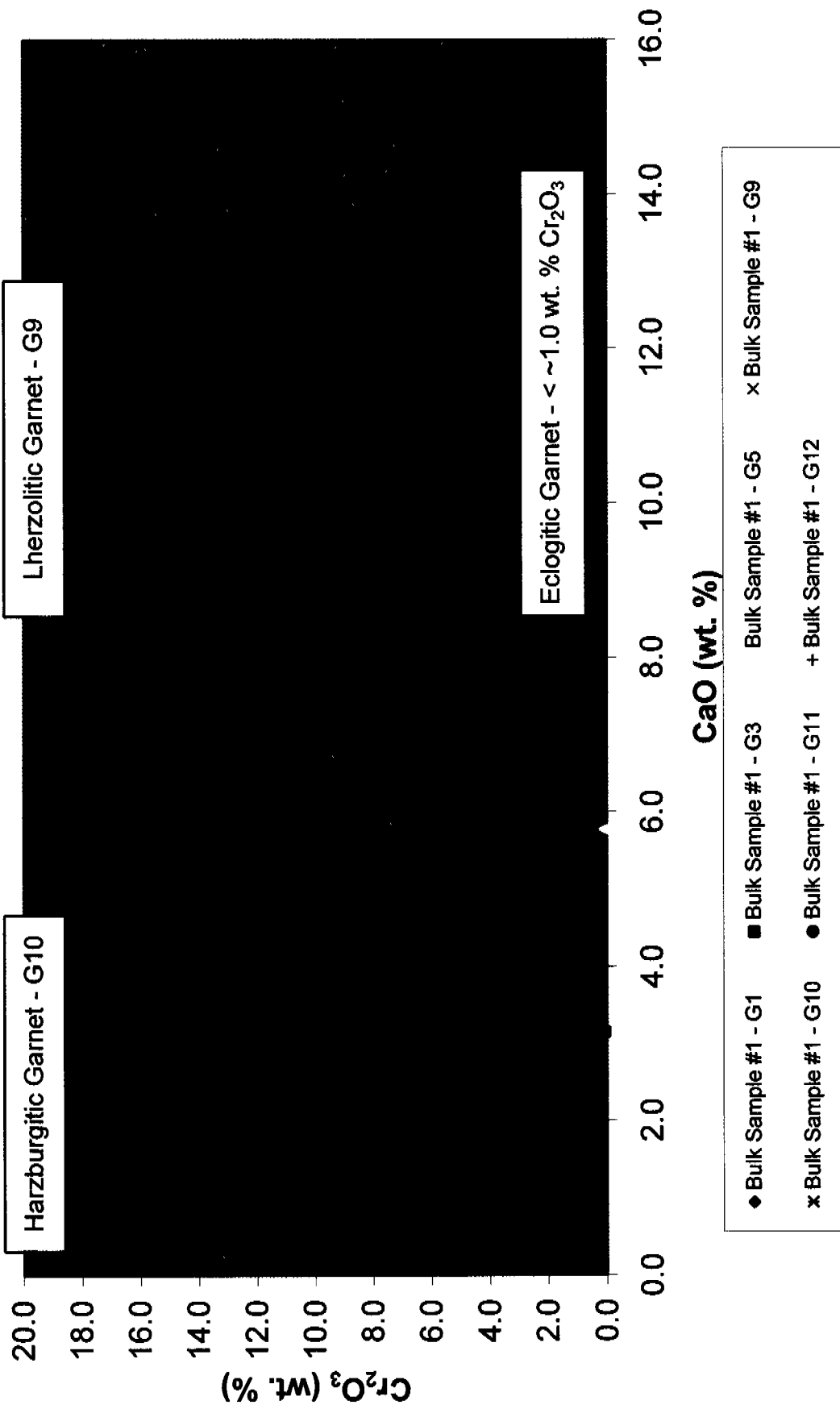
Examination of diamond and mineral chemistry results presented in Table 1 shows that mini-bulk sample #1, which has the highest diamond grade (0.287 vs 0.167 ct/t), also has the greatest proportion of sub-calcic, Cr-pyrope (G10) garnet, regardless of the method chosen to define such grains (i.e. Sobolev vs Gurney vs Dawson and Stephens). The proportion of chromite grains that are similar to chromite inclusions in diamond is approximately equal in both samples. Unfortunately, the microdiamond yield from the 50-kg feed samples was too low to provide reliable interpretative data. Larger microdiamond samples, on the order of 100-kg, are recommended to provide data for comparative studies.

**APPENDIX A**  
**Bi-variate Classification Diagrams**

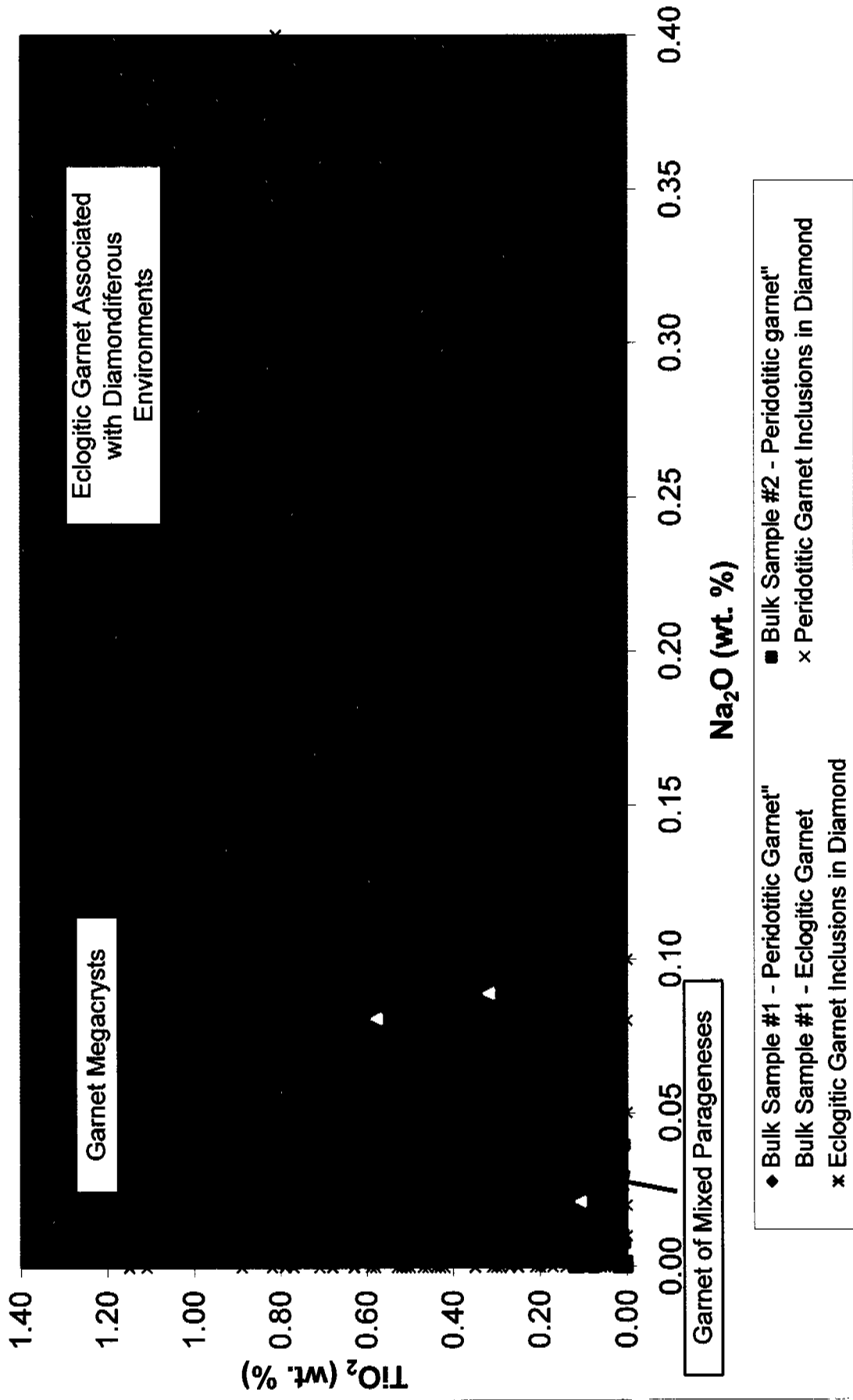
**Figure 1a: CaO vs Cr<sub>2</sub>O<sub>3</sub> Garnet Plot**



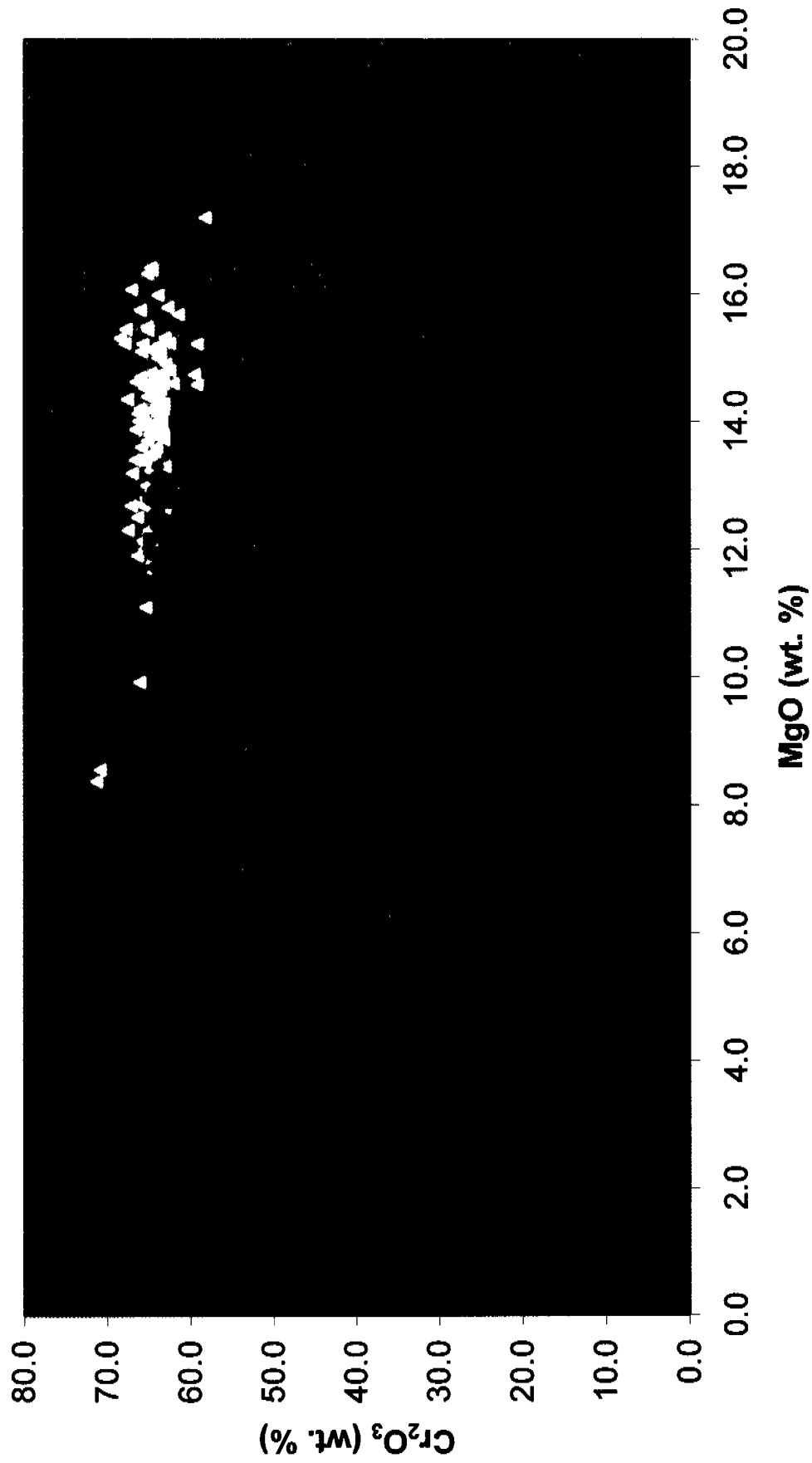
**Figure 1b: CaO vs Cr<sub>2</sub>O<sub>3</sub> Garnet Plot  
 Bulk Sample #1 - D&S (1975) Classification**



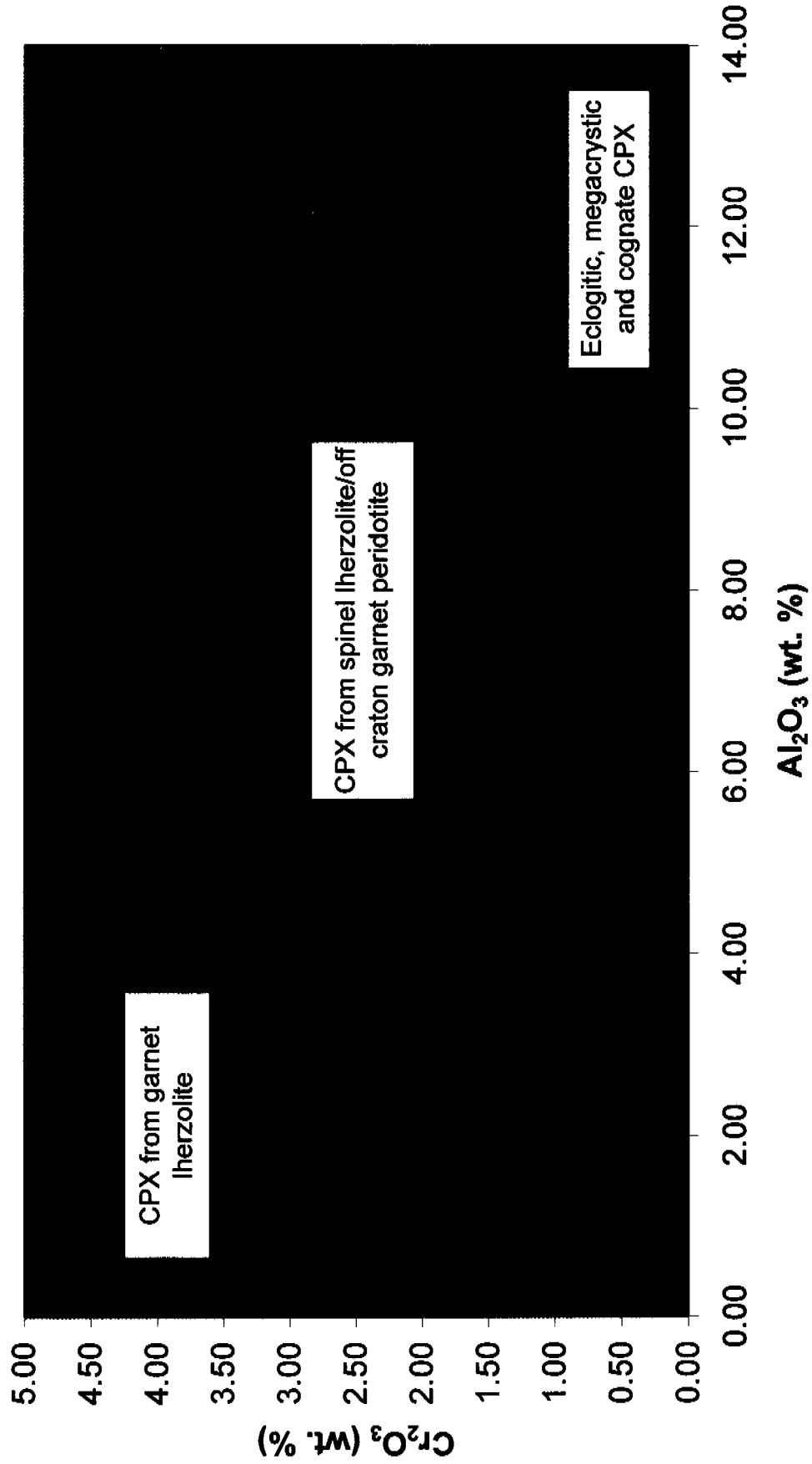
**Figure 2: Na<sub>2</sub>O vs TiO<sub>2</sub> Garnet Plot**



**Figure 3: MgO vs Cr<sub>2</sub>O<sub>3</sub> Chromite Plot**

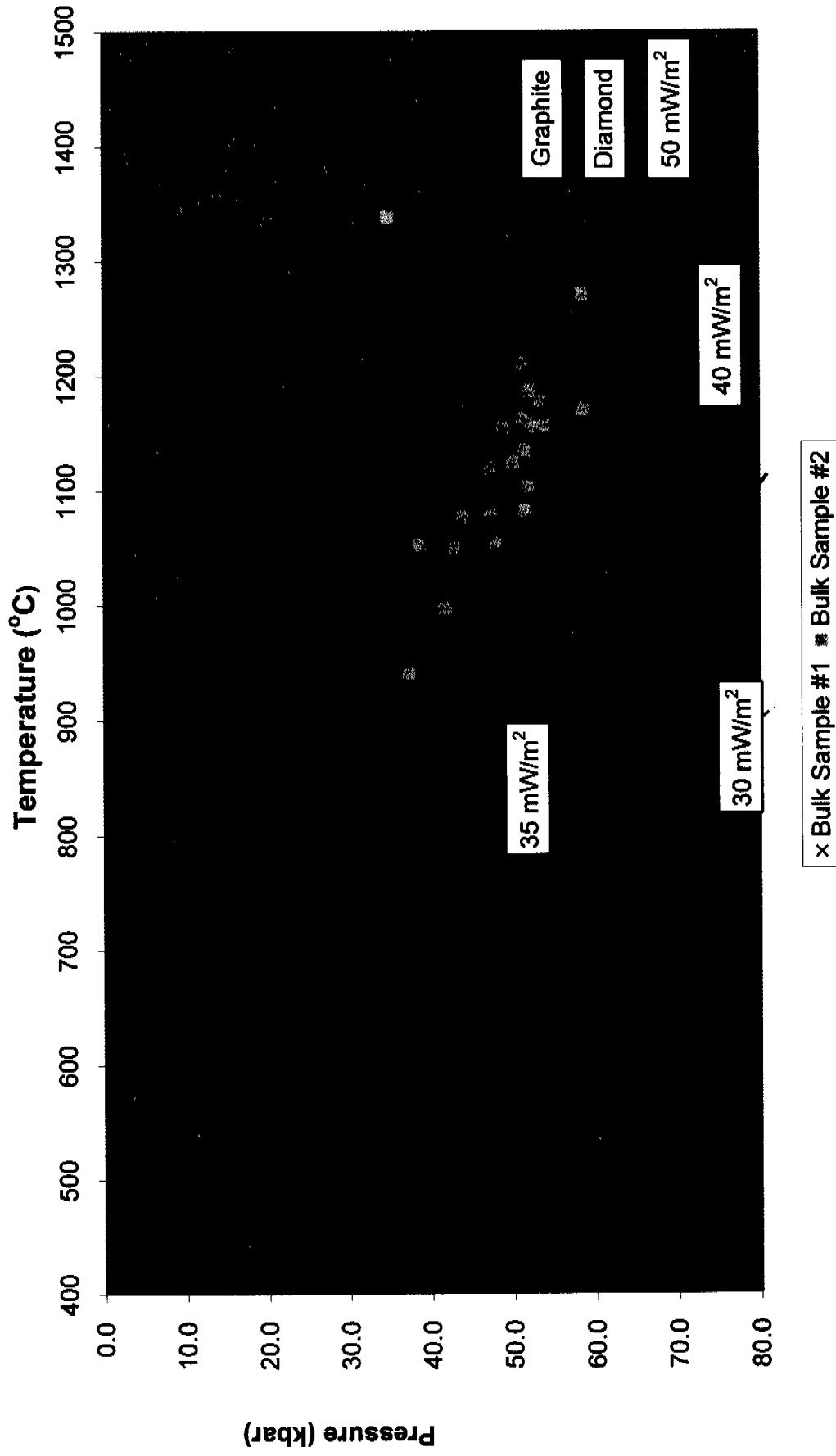


**Figure 4: Al<sub>2</sub>O<sub>3</sub> vs Cr<sub>2</sub>O<sub>3</sub> Clinopyroxene Plot**



x Bulk Sample #1 • Bulk Sample #2

**Figure 5: Geotherm Calculated from Clinopyroxene Analyses**



Diamond - graphite univariant curve - Kennedy and Kennedy (1976)  
Continental geotherms - Pollack and Chapman (1977)

Calculation after Nimis and Taylor (2000)



**APPENDIX B  
Electron Microprobe Analyses**



51	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	42.41	0.76	8.05	16.76	6.91	19.80	0.33	6.12	0.05	101.19
52	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	42.00	0.43	8.14	17.41	7.62	19.75	0.36	5.71	0.06	101.47
53	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	41.85	0.02	8.50	17.81	7.81	18.30	0.47	6.70	0.00	101.46
54	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	41.06	0.06	9.28	16.14	6.76	17.58	0.36	6.82	0.04	98.10
55	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	41.84	0.10	9.31	16.91	7.42	18.73	0.44	6.86	0.02	101.23
56	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	42.35	0.38	9.40	16.96	7.18	18.69	0.38	6.32	0.00	101.29
57	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	42.26	0.13	9.46	16.88	7.14	18.62	0.45	6.73	0.00	101.67
58	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	41.69	0.07	9.53	16.82	7.43	18.46	0.47	6.75	0.01	101.23
59	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	41.71	0.09	9.63	17.35	6.98	18.35	0.47	6.74	0.01	101.33
60	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	41.17	0.02	9.74	17.51	8.01	17.64	0.47	7.01	0.02	101.59
61	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	41.78	0.09	9.74	16.43	7.13	18.41	0.33	6.91	0.02	100.83
62	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	42.58	0.08	9.80	16.76	6.50	21.87	0.36	3.46	0.02	101.43
63	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	41.25	0.06	9.82	17.04	7.21	18.29	0.46	7.19	0.01	101.33
64	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	42.45	0.20	9.88	16.78	6.98	21.35	0.42	3.88	0.07	102.03
65	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	41.65	0.11	9.98	16.67	7.91	17.09	0.57	7.73	0.00	101.71
66	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	41.59	0.26	9.99	16.12	6.82	19.04	0.32	6.32	0.02	101.08
67	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	41.99	0.04	10.42	15.77	6.54	19.41	0.26	6.33	0.01	100.76
68	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	41.79	0.82	10.51	15.41	6.65	18.79	0.38	7.06	0.05	101.45
69	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	41.86	0.25	10.52	15.93	7.65	18.22	0.47	6.68	0.07	101.44
70	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	42.55	0.01	10.80	15.48	6.76	19.02	0.42	6.84	0.00	101.88
71	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	42.21	0.20	10.80	15.65	6.33	20.19	0.30	5.56	0.00	101.24
72	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	42.64	0.06	10.84	16.21	6.80	22.80	0.37	2.08	0.02	101.82
73	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	42.24	0.55	10.85	15.21	6.77	19.14	0.26	8.48	0.02	101.51
74	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	41.75	0.11	10.87	15.77	7.55	18.20	0.45	7.18	0.00	101.88
75	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	41.71	0.14	10.89	15.86	7.17	17.92	0.49	6.93	0.03	101.14
76	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	42.23	0.09	10.91	15.88	6.69	22.60	0.30	2.09	0.00	100.80
77	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	42.56	0.05	10.92	16.15	6.39	23.12	0.37	1.70	0.03	101.29
78	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	43.43	0.14	10.98	16.17	6.64	22.55	0.40	2.00	0.01	102.32
79	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	42.22	0.05	11.03	16.50	6.34	22.65	0.43	2.08	0.03	101.33
80	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	40.96	0.15	11.05	15.85	7.39	17.94	0.46	7.30	0.03	101.13
81	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	42.12	0.12	11.08	15.92	6.29	22.53	0.34	2.08	0.01	100.49
82	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	42.26	0.13	11.11	15.99	6.27	22.52	0.43	2.05	0.01	100.76
83	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	42.41	0.08	11.16	15.95	6.36	22.54	0.29	2.49	0.01	101.28
84	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	41.48	0.11	11.29	15.76	7.21	18.11	0.44	7.20	0.02	101.62
85	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	41.69	0.14	11.36	15.97	7.19	18.06	0.45	7.09	0.04	101.99
86	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	40.88	0.29	11.52	15.20	6.59	18.54	0.32	7.23	0.07	100.64
87	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	42.30	0.03	11.60	15.84	6.49	21.81	0.35	2.92	0.00	101.13
88	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	42.45	0.10	11.64	16.00	6.22	22.77	0.28	2.33	0.02	101.82
89	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	42.10	0.12	11.89	15.82	6.07	22.85	0.28	2.44	0.02	101.61
90	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	41.53	0.09	12.08	15.61	6.09	22.91	0.36	2.41	0.04	101.12
91	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	41.74	0.54	12.15	14.44	6.69	20.47	0.30	4.71	0.05	101.09
92	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	42.61	0.09	12.22	15.10	6.03	22.64	0.36	2.40	0.04	101.48
93	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	41.06	0.53	12.26	14.50	6.38	20.23	0.35	4.86	0.08	100.25
94	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	41.88	0.09	12.35	15.53	5.81	22.60	0.36	2.45	0.02	101.09
95	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	42.20	0.28	13.19	13.96	6.53	20.68	0.36	4.56	0.04	101.80
96	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	41.94	0.11	13.37	13.70	6.44	18.77	0.40	7.07	0.01	101.81
97	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	41.07	0.33	13.45	14.14	6.40	20.52	0.36	4.60	0.01	100.88
98	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	41.77	0.17	13.60	13.72	6.28	20.17	0.32	4.78	0.01	100.82
99	JULY1001	PS12448	Bulk #1	--	Peridotitic Garnet	41.10	0.08	14.53	12.78	6.54	19.12	0.36	6.17	0.01	100.66
1	JUN1007	PS12447	Bulk #2	--	Peridotitic Garnet	42.50	0.61	1.22	22.73	7.34	21.68	0.31	3.86	0.07	100.32
2	JUN1007	PS12447	Bulk #2	--	Peridotitic Garnet	42.90	0.30	1.92	22.83	7.99	20.98	0.41	4.12	0.04	101.48



57	JUN1007	PS12447	Bulk #2	-	42.50	0.45	5.91	19.54	6.88	20.42	0.41	5.29	0.06	101.46
58	JUN1007	PS12447	Bulk #2	-	41.82	0.07	6.35	19.78	7.24	19.70	0.33	5.45	0.04	100.77
59	JUN1007	PS12447	Bulk #2	-	42.42	0.07	6.42	19.78	7.38	19.79	0.34	5.30	0.00	101.50
60	JUN1007	PS12447	Bulk #2	-	42.03	0.00	6.43	19.49	7.65	19.20	0.40	5.80	0.00	101.01
61	JUN1007	PS12447	Bulk #2	-	42.08	0.04	6.55	19.85	7.81	18.67	0.55	5.84	0.01	101.20
62	JUN1007	PS12447	Bulk #2	-	41.92	0.19	6.59	19.31	8.00	19.04	0.50	5.30	0.06	100.91
63	JUN1007	PS12447	Bulk #2	-	42.18	0.19	6.73	19.45	7.19	20.03	0.36	5.14	0.05	101.33
64	JUN1007	PS12447	Bulk #2	-	41.82	0.12	6.83	18.80	7.61	18.50	0.36	6.42	0.02	100.48
65	JUN1007	PS12447	Bulk #2	-	42.77	0.02	7.13	19.15	6.26	24.01	0.43	1.25	0.01	101.04
66	JUN1007	PS12447	Bulk #2	-	41.86	0.19	7.39	18.24	7.27	19.63	0.44	5.57	0.01	100.60
67	JUN1007	PS12447	Bulk #2	-	41.81	0.07	7.59	18.85	7.97	18.18	0.57	6.23	0.04	101.31
68	JUN1007	PS12447	Bulk #2	-	41.37	0.01	7.70	18.56	8.18	17.58	0.53	6.79	0.03	100.75
69	JUN1007	PS12447	Bulk #2	-	40.71	0.00	7.72	18.57	8.32	17.52	0.48	6.95	0.00	100.27
70	JUN1007	PS12447	Bulk #2	-	41.81	0.04	7.81	18.04	7.21	19.25	0.43	5.94	0.03	100.56
71	JUN1007	PS12447	Bulk #2	-	41.49	0.10	7.82	18.35	7.21	19.05	0.44	6.07	0.02	100.55
72	JUN1007	PS12447	Bulk #2	-	41.45	0.13	7.93	18.23	7.20	18.78	0.54	6.15	0.03	100.43
73	JUN1007	PS12447	Bulk #2	-	41.83	0.19	8.19	17.87	7.24	18.91	0.41	6.11	0.05	100.79
74	JUN1007	PS12447	Bulk #2	-	41.07	0.25	8.75	17.35	7.64	18.02	0.54	6.23	0.05	99.91
75	JUN1007	PS12447	Bulk #2	-	41.11	0.14	8.78	17.51	7.26	18.75	0.39	5.98	0.03	98.95
76	JUN1007	PS12447	Bulk #2	-	41.54	0.20	8.92	17.20	7.70	17.10	0.60	7.74	0.02	101.01
77	JUN1007	PS12447	Bulk #2	-	42.02	0.02	9.05	17.28	7.13	17.99	0.46	7.43	0.00	101.38
78	JUN1007	PS12447	Bulk #2	-	41.74	0.12	9.12	17.29	7.25	18.78	0.36	6.38	0.01	101.05
79	JUN1007	PS12447	Bulk #2	-	42.02	0.08	9.22	17.25	6.88	19.81	0.39	5.07	0.03	100.86
80	JUN1007	PS12447	Bulk #2	-	41.37	0.12	9.29	17.23	7.09	18.53	0.48	6.58	0.03	100.69
81	JUN1007	PS12447	Bulk #2	-	41.16	0.01	9.33	17.09	7.93	17.01	0.58	7.40	0.01	100.50
82	JUN1007	PS12447	Bulk #2	-	41.22	0.09	9.46	16.58	7.16	18.38	0.47	6.74	0.01	100.12
83	JUN1007	PS12447	Bulk #2	-	41.21	0.04	9.50	17.05	6.62	18.94	0.39	6.22	0.02	99.99
84	JUN1007	PS12447	Bulk #2	-	41.58	0.10	9.60	16.77	7.30	18.13	0.42	7.03	0.02	100.94
85	JUN1007	PS12447	Bulk #2	-	41.21	0.12	9.63	16.72	7.18	18.72	0.30	6.49	0.04	100.41
86	JUN1007	PS12447	Bulk #2	-	41.37	0.16	9.90	16.44	7.42	17.73	0.44	7.30	0.03	100.78
87	JUN1007	PS12447	Bulk #2	-	41.25	0.02	9.98	16.61	7.21	18.08	0.40	7.10	0.01	100.64
88	JUN1007	PS12447	Bulk #2	-	41.74	0.11	9.96	16.60	7.42	18.32	0.57	6.85	0.00	101.37
89	JUN1007	PS12447	Bulk #2	-	41.67	0.08	10.39	16.41	6.57	21.31	0.34	3.72	0.00	100.49
90	JUN1007	PS12447	Bulk #2	-	41.14	0.12	10.42	16.36	7.42	17.80	0.53	6.92	0.00	100.71
91	JUN1007	PS12447	Bulk #2	-	41.50	0.07	10.44	16.07	7.21	18.06	0.39	7.35	0.02	101.11
92	JUN1007	PS12447	Bulk #2	-	41.23	0.02	10.46	16.13	7.11	17.92	0.48	7.35	0.03	100.71
93	JUN1007	PS12447	Bulk #2	-	41.40	0.12	10.61	15.94	7.19	18.59	0.45	6.52	0.03	100.85
94	JUN1007	PS12447	Bulk #2	-	41.57	0.09	10.74	15.91	6.86	20.58	0.38	4.26	0.00	100.39
95	JUN1007	PS12447	Bulk #2	-	41.03	0.11	10.82	16.09	7.23	18.15	0.45	7.04	0.04	100.96
96	JUN1007	PS12447	Bulk #2	-	40.40	0.00	10.83	16.13	7.70	15.89	0.51	8.80	0.00	100.28
97	JUN1007	PS12447	Bulk #2	-	40.96	0.03	11.00	15.87	7.29	17.84	0.40	7.19	0.02	100.60
98	JUN1007	PS12447	Bulk #2	-	42.33	0.30	11.23	15.70	6.60	21.90	0.33	2.95	0.03	101.37
99	JUN1007	PS12447	Bulk #2	-	41.29	0.21	11.36	15.22	7.18	17.67	0.43	7.30	0.01	100.65
100	JUN1007	PS12447	Bulk #2	-	41.55	0.25	11.61	15.63	6.31	22.24	0.29	2.46	0.03	100.37
101	JUN1007	PS12447	Bulk #2	-	42.26	0.38	11.84	14.98	6.47	21.63	0.36	3.22	0.04	101.18
1	JULY1001	PS12448	Bulk #2	-	39.84	0.11	0.07	21.72	24.67	8.67	0.41	5.77	0.02	101.28
2	JULY1001	PS12448	Bulk #2	-	40.98	0.32	0.08	22.51	21.39	13.23	0.30	3.15	0.09	102.04
3	JULY1001	PS12448	Bulk #2	-	43.10	0.58	1.79	22.13	8.79	20.89	0.38	3.97	0.08	101.70

Analysis	Sample #	ize Fraction	D&S Code	D&S Classification	SiO2	TiO2	Al2O3	Cr2O3	MgO	FeO	MnO	CaO	Na2O	Total
1	JULY1001	PS12448	G1	Sheared Ti-Iherzolite	43.10	0.58	22.13	1.79	20.89	8.79	0.36	3.97	0.08	101.71
1	JULY1001	PS12448	G3	Dia. Eclogite 1	40.98	0.32	22.51	0.08	13.23	21.39	0.30	3.15	0.09	102.05
1	JULY1001	PS12448	G5	Crustal ?	39.84	0.11	21.72	0.07	8.67	24.67	0.41	5.77	0.02	101.28
1	JULY1001	PS12448	G9	Granular Iherzolite	42.92	0.28	22.19	2.89	21.10	7.76	0.32	4.47	0.04	101.77
2	JULY1001	PS12448	G9	Granular Iherzolite	42.30	0.36	21.38	3.93	20.80	7.84	0.42	4.88	0.05	101.76
3	JULY1001	PS12448	G9	Granular Iherzolite	43.21	0.31	21.08	3.93	21.46	7.49	0.33	4.28	0.05	102.14
4	JULY1001	PS12448	G9	Granular Iherzolite	42.57	0.19	21.57	4.06	19.89	8.12	0.35	4.77	0.03	101.95
5	JULY1001	PS12448	G9	Granular Iherzolite	42.12	0.31	20.98	5.02	19.61	8.19	0.51	5.16	0.06	101.96
6	JULY1001	PS12448	G9	Granular Iherzolite	42.62	0.29	20.30	5.07	20.48	7.26	0.41	4.86	0.03	101.32
7	JULY1001	PS12448	G9	Granular Iherzolite	42.27	0.11	20.81	5.31	19.54	7.79	0.39	5.82	0.00	101.84
8	JULY1001	PS12448	G9	Granular Iherzolite	42.43	0.28	20.01	5.38	19.98	7.84	0.42	5.04	0.03	101.41
9	JULY1001	PS12448	G9	Granular Iherzolite	42.59	0.10	20.20	5.81	20.41	7.62	0.42	5.07	0.01	102.23
10	JULY1001	PS12448	G9	Granular Iherzolite	42.59	0.16	19.97	5.82	20.07	7.45	0.38	5.19	0.04	101.87
11	JULY1001	PS12448	G9	Granular Iherzolite	42.52	0.07	19.84	5.88	18.93	8.06	0.43	5.78	0.00	101.51
12	JULY1001	PS12448	G9	Granular Iherzolite	42.50	0.02	19.72	5.98	19.49	7.67	0.38	5.90	0.00	101.86
13	JULY1001	PS12448	G9	Granular Iherzolite	42.71	0.37	19.19	6.08	20.81	6.65	0.35	4.76	0.07	100.99
14	JULY1001	PS12448	G9	Granular Iherzolite	42.54	0.03	19.69	6.08	19.58	7.37	0.43	6.02	0.00	101.74
15	JULY1001	PS12448	G9	Granular Iherzolite	42.26	0.30	19.79	6.15	19.97	7.29	0.37	5.11	0.03	101.27
16	JULY1001	PS12448	G9	Granular Iherzolite	42.30	0.37	19.63	6.21	20.75	7.03	0.39	5.00	0.05	101.73
17	JULY1001	PS12448	G9	Granular Iherzolite	42.46	0.00	20.02	6.27	19.38	7.35	0.47	6.06	0.00	102.01
18	JULY1001	PS12448	G9	Granular Iherzolite	42.26	0.01	19.31	6.44	19.24	7.23	0.42	6.10	0.00	101.01
19	JULY1001	PS12448	G9	Granular Iherzolite	42.53	0.41	18.86	6.48	20.85	6.55	0.29	4.73	0.04	100.74
20	JULY1001	PS12448	G9	Granular Iherzolite	42.69	0.12	19.00	6.62	21.60	6.66	0.38	4.03	0.06	101.16
21	JULY1001	PS12448	G9	Granular Iherzolite	42.98	0.10	19.12	6.64	21.46	6.86	0.40	3.95	0.03	101.54
22	JULY1001	PS12448	G9	Granular Iherzolite	42.96	0.12	19.10	6.70	21.82	6.71	0.34	3.93	0.04	101.57
23	JULY1001	PS12448	G9	Granular Iherzolite	43.39	0.12	19.07	6.71	21.84	6.71	0.36	3.93	0.02	101.95
24	JULY1001	PS12448	G9	Granular Iherzolite	41.58	0.10	19.25	6.87	19.47	7.28	0.39	5.82	0.03	100.77
25	JULY1001	PS12448	G9	Granular Iherzolite	42.64	0.09	18.54	7.08	19.30	7.75	0.43	5.78	0.00	101.61
26	JULY1001	PS12448	G9	Granular Iherzolite	42.69	0.20	18.17	7.20	19.89	7.08	0.33	6.05	0.01	101.82
27	JULY1001	PS12448	G9	Granular Iherzolite	42.37	0.14	18.25	7.33	18.76	7.27	0.45	6.27	0.04	100.88
28	JULY1001	PS12448	G9	Granular Iherzolite	42.63	0.09	18.33	7.34	19.16	7.57	0.50	6.18	0.02	101.82
29	JULY1001	PS12448	G9	Granular Iherzolite	42.23	0.06	18.66	7.43	19.25	7.26	0.36	5.90	0.04	101.19
30	JULY1001	PS12448	G9	Granular Iherzolite	42.58	0.12	18.42	7.50	19.01	7.53	0.39	6.21	0.04	101.78
31	JULY1001	PS12448	G9	Granular Iherzolite	42.58	0.09	18.34	7.54	18.85	7.38	0.42	6.26	0.00	101.46
32	JULY1001	PS12448	G9	Granular Iherzolite	42.30	0.08	18.95	7.55	19.23	7.49	0.41	5.88	0.02	101.91
33	JULY1001	PS12448	G9	Granular Iherzolite	42.32	0.09	18.35	7.55	19.07	7.37	0.45	6.17	0.00	101.37
34	JULY1001	PS12448	G9	Granular Iherzolite	42.63	0.08	17.88	7.59	19.99	6.88	0.34	6.09	0.01	101.49
35	JULY1001	PS12448	G9	Granular Iherzolite	41.49	0.12	18.58	7.61	19.18	7.41	0.37	6.36	0.02	101.14
36	JULY1001	PS12448	G9	Granular Iherzolite	42.19	0.07	18.15	7.62	18.86	7.34	0.41	6.17	0.00	100.81
37	JULY1001	PS12448	G9	Granular Iherzolite	42.04	0.31	17.37	7.63	19.74	7.33	0.32	5.49	0.03	100.26
38	JULY1001	PS12448	G9	Granular Iherzolite	42.98	0.13	18.36	7.65	19.11	7.24	0.47	6.29	0.03	102.27
39	JULY1001	PS12448	G9	Granular Iherzolite	42.14	0.16	18.28	7.66	19.31	7.44	0.42	5.86	0.05	101.32
40	JULY1001	PS12448	G9	Granular Iherzolite	42.52	0.14	18.42	7.70	19.19	7.26	0.40	5.60	0.03	101.26
41	JULY1001	PS12448	G9	Granular Iherzolite	41.43	0.12	18.44	7.78	19.31	7.61	0.46	5.63	0.03	101.01
42	JULY1001	PS12448	G9	Granular Iherzolite	42.07	0.03	18.26	7.97	18.52	7.69	0.46	6.09	0.03	101.12
43	JULY1001	PS12448	G9	Granular Iherzolite	41.78	0.03	18.17	8.00	17.99	7.85	0.58	6.81	0.00	101.21
44	JULY1001	PS12448	G9	Granular Iherzolite	42.06	0.06	17.89	8.01	18.06	7.87	0.51	6.91	0.02	101.39
45	JULY1001	PS12448	G9	Granular Iherzolite	42.00	0.43	17.41	8.14	19.75	7.82	0.36	5.71	0.06	101.48
46	JULY1001	PS12448	G9	Granular Iherzolite	41.85	0.02	17.81	8.50	18.30	7.81	0.47	6.82	0.04	101.46
47	JULY1001	PS12448	G9	Granular Iherzolite	41.06	0.06	16.14	9.28	17.58	6.76	0.36	6.82	0.04	98.10
48	JULY1001	PS12448	G9	Granular Iherzolite	41.64	0.10	16.91	9.31	18.73	7.42	0.44	6.66	0.02	101.23
49	JULY1001	PS12448	G9	Granular Iherzolite	42.35	0.01	16.96	9.40	18.69	7.18	0.38	6.32	0.00	101.29
50	JULY1001	PS12448	G9	Granular Iherzolite	42.26	0.13	16.88	9.48	18.62	7.14	0.45	6.73	0.00	101.67

51	JULY1001	PS12448	Bulk #1	G9	41.89	16.82	9.53	18.46	7.43	0.47	6.75	0.01	101.23
52	JULY1001	PS12448	Bulk #1	G9	41.71	17.35	9.63	18.35	6.98	0.47	6.74	0.01	101.33
53	JULY1001	PS12448	Bulk #1	G8	41.17	17.51	9.74	17.94	8.01	0.47	7.01	0.02	101.59
54	JULY1001	PS12448	Bulk #1	G9	41.76	16.43	9.74	18.41	7.13	0.33	6.91	0.03	100.83
55	JULY1001	PS12448	Bulk #1	G9	41.25	17.04	9.82	18.29	7.21	0.46	7.19	0.01	101.33
56	JULY1001	PS12448	Bulk #1	G9	42.45	16.79	9.88	21.35	6.98	0.42	3.88	0.07	102.02
57	JULY1001	PS12448	Bulk #1	G9	41.65	16.67	9.98	17.99	7.91	0.57	7.73	0.00	101.71
58	JULY1001	PS12448	Bulk #1	G9	41.59	16.12	9.99	19.64	6.82	0.32	6.32	0.02	101.08
59	JULY1001	PS12448	Bulk #1	G9	41.99	15.77	10.42	19.41	6.54	0.26	6.33	0.01	100.77
60	JULY1001	PS12448	Bulk #1	G9	41.66	15.93	10.52	18.22	7.65	0.47	6.68	0.07	101.45
61	JULY1001	PS12448	Bulk #1	G9	42.55	15.48	10.80	19.02	6.76	0.42	6.84	0.00	101.88
62	JULY1001	PS12448	Bulk #1	G9	42.21	15.65	10.80	20.19	6.33	0.30	5.56	0.00	101.24
63	JULY1001	PS12448	Bulk #1	G9	41.75	15.77	10.87	18.20	7.55	0.45	7.18	0.00	101.88
64	JULY1001	PS12448	Bulk #1	G9	41.71	15.86	10.89	17.92	7.17	0.49	6.93	0.03	101.14
65	JULY1001	PS12448	Bulk #1	G9	40.96	15.85	11.05	17.94	7.39	0.46	7.30	0.03	101.13
66	JULY1001	PS12448	Bulk #1	G9	41.48	15.78	11.29	18.11	7.21	0.44	7.20	0.02	101.82
67	JULY1001	PS12448	Bulk #1	G9	41.69	15.97	11.36	18.06	7.19	0.45	7.09	0.04	101.99
1	JULY1001	PS12448	Bulk #1	G10	42.81	18.56	7.84	23.21	6.67	0.33	1.90	0.03	101.36
2	JULY1001	PS12448	Bulk #1	G10	43.53	18.73	7.86	23.13	6.82	0.37	1.76	0.01	102.25
3	JULY1001	PS12448	Bulk #1	G10	43.04	18.62	7.93	23.31	6.99	0.35	1.90	0.01	102.07
4	JULY1001	PS12448	Bulk #1	G10	42.80	18.91	7.98	22.95	6.99	0.35	1.78	0.01	101.77
5	JULY1001	PS12448	Bulk #1	G10	42.58	18.76	9.80	21.87	6.50	0.36	3.46	0.02	101.43
6	JULY1001	PS12448	Bulk #1	G10	42.64	16.21	10.84	22.80	6.80	0.37	2.08	0.02	101.82
7	JULY1001	PS12448	Bulk #1	G10	42.23	15.88	10.91	22.60	6.69	0.30	2.09	0.00	100.79
8	JULY1001	PS12448	Bulk #1	G10	42.56	16.15	10.92	23.12	6.39	0.37	1.70	0.03	101.29
9	JULY1001	PS12448	Bulk #1	G10	43.43	16.17	10.98	22.55	6.64	0.40	2.00	0.01	102.32
10	JULY1001	PS12448	Bulk #1	G10	42.22	16.50	11.08	22.65	6.29	0.34	2.08	0.03	101.33
11	JULY1001	PS12448	Bulk #1	G10	42.12	15.92	11.08	22.53	6.29	0.43	2.08	0.01	100.49
12	JULY1001	PS12448	Bulk #1	G10	42.26	15.99	11.11	22.52	6.27	0.43	2.05	0.01	100.77
13	JULY1001	PS12448	Bulk #1	G10	42.41	15.95	11.16	22.54	6.36	0.29	2.49	0.00	101.27
14	JULY1001	PS12448	Bulk #1	G10	42.30	15.64	11.60	21.81	6.49	0.35	2.92	0.00	101.14
15	JULY1001	PS12448	Bulk #1	G10	42.45	16.00	11.64	22.77	6.22	0.33	2.33	0.02	101.81
16	JULY1001	PS12448	Bulk #1	G10	42.10	15.82	11.89	22.85	6.07	0.29	2.44	0.02	101.60
17	JULY1001	PS12448	Bulk #1	G10	41.53	15.61	12.08	22.91	6.09	0.36	2.41	0.04	101.12
18	JULY1001	PS12448	Bulk #1	G10	42.61	15.10	12.22	22.64	6.03	0.36	2.40	0.04	101.49
19	JULY1001	PS12448	Bulk #1	G10	41.88	15.53	12.35	22.60	5.81	0.36	2.45	0.02	101.09
1	JULY1001	PS12448	Bulk #1	G11	42.60	19.09	5.39	19.75	7.78	0.38	5.46	0.07	101.19
2	JULY1001	PS12448	Bulk #1	G11	42.24	18.99	6.10	20.46	7.35	0.35	5.19	0.11	101.79
3	JULY1001	PS12448	Bulk #1	G11	42.41	16.78	8.05	19.80	6.91	0.33	6.12	0.05	101.19
4	JULY1001	PS12448	Bulk #1	G11	41.79	15.41	10.51	18.79	6.65	0.38	7.06	0.05	101.46
5	JULY1001	PS12448	Bulk #1	G11	42.24	15.20	10.85	19.14	6.77	0.26	6.48	0.02	101.50
6	JULY1001	PS12448	Bulk #1	G11	40.88	15.20	11.52	18.54	6.59	0.32	7.23	0.07	100.64
7	JULY1001	PS12448	Bulk #1	G11	41.74	14.44	12.15	20.47	6.69	0.30	4.71	0.05	101.09
8	JULY1001	PS12448	Bulk #1	G11	41.06	14.50	12.26	20.23	6.38	0.35	4.86	0.08	100.25
9	JULY1001	PS12448	Bulk #1	G11	42.20	13.96	13.19	20.68	6.53	0.36	4.56	0.05	101.81
10	JULY1001	PS12448	Bulk #1	G11	41.07	14.14	13.45	20.52	6.40	0.36	4.60	0.01	100.88
1	JULY1001	PS12448	Bulk #1	G12	41.94	13.70	13.37	18.77	6.44	0.40	7.07	0.01	101.81
2	JULY1001	PS12448	Bulk #1	G12	41.77	13.72	13.60	20.17	6.28	0.32	4.78	0.01	100.82
3	JULY1001	PS12448	Bulk #1	G12	41.10	12.78	14.53	19.12	6.54	0.36	6.17	0.01	100.87
1	JUN1007	PS12447	Bulk #2	G1	42.50	22.73	1.22	21.68	7.34	0.31	3.86	0.07	100.32
2	JUN1007	PS12447	Bulk #2	G1	42.63	22.45	2.14	20.62	7.78	0.30	4.13	0.11	100.62
3	JUN1007	PS12447	Bulk #2	G1	42.19	21.81	2.32	20.89	8.00	0.33	4.01	0.11	100.23

4	JUN1007	PS12447	Bulk #2	G1	Sheared Ti-herzolite	42.60	0.48	21.20	2.83	21.10	7.80	0.35	4.31	0.03	100.70
5	JUN1007	PS12447	Bulk #2	G1	Sheared Ti-herzolite	42.59	0.43	21.94	2.83	21.22	7.33	0.33	4.17	0.07	100.91
6	JUN1007	PS12447	Bulk #2	G1	Sheared Ti-herzolite	42.53	0.43	21.76	3.00	20.59	7.90	0.43	4.30	0.05	100.99
7	JUN1007	PS12447	Bulk #2	G1	Sheared Ti-herzolite	41.86	0.82	20.25	3.31	19.46	9.89	0.24	3.79	0.10	98.52
8	JUN1007	PS12447	Bulk #2	G1	Sheared Ti-herzolite	42.87	0.56	21.16	3.35	20.91	7.61	0.34	4.31	0.07	101.28
9	JUN1007	PS12447	Bulk #2	G1	Sheared Ti-herzolite	42.83	0.50	20.82	4.02	21.24	7.37	0.33	4.31	0.08	101.39
1	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.90	0.30	22.83	1.92	20.98	7.96	0.41	4.12	0.04	101.49
2	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.72	0.32	22.79	2.14	20.35	8.18	0.39	4.51	0.02	101.42
3	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.55	0.15	22.75	2.22	19.86	9.32	0.51	4.18	0.03	101.57
4	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.28	0.28	22.48	2.35	20.21	7.84	0.35	4.51	0.03	100.31
5	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	43.28	0.31	22.25	2.48	21.12	7.97	0.41	4.13	0.07	102.02
6	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.44	0.26	22.06	2.55	19.52	9.40	0.29	4.79	0.03	101.34
7	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.35	0.34	21.93	2.67	20.40	8.16	0.43	4.55	0.05	100.88
8	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.63	0.02	22.70	2.70	19.75	8.05	0.48	4.59	0.02	100.94
9	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.33	0.07	22.39	2.76	20.70	7.36	0.39	4.59	0.01	100.60
10	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.18	0.27	22.23	2.78	19.80	8.31	0.49	4.51	0.04	100.62
11	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.62	0.23	22.02	2.82	20.28	8.08	0.39	4.48	0.05	100.95
12	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.65	0.30	22.07	2.86	20.16	8.19	0.47	4.58	0.05	101.33
13	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	41.52	0.21	21.90	2.96	19.41	8.20	0.49	5.17	0.03	99.89
14	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.02	0.31	21.88	3.01	19.79	8.45	0.48	4.60	0.07	100.71
15	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.28	0.24	22.08	3.04	20.48	7.39	0.34	4.51	0.06	100.42
16	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.56	0.36	21.07	3.09	21.07	7.53	0.31	4.29	0.05	100.64
17	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.28	0.02	22.61	3.10	20.30	8.06	0.35	4.66	0.02	101.40
18	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.13	0.31	21.52	3.21	21.01	7.46	0.37	4.40	0.03	100.44
19	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	41.98	0.23	22.00	3.24	20.58	7.54	0.40	4.47	0.04	100.48
20	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.53	0.31	21.85	3.28	19.82	8.18	0.52	4.63	0.04	100.96
21	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.57	0.10	21.36	3.34	20.77	7.58	0.32	4.35	0.07	100.87
22	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.58	0.10	21.36	3.43	20.79	7.39	0.28	4.35	0.04	100.87
23	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.61	0.39	21.16	3.57	21.75	6.64	0.35	4.13	0.05	100.65
24	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.19	0.16	21.50	3.72	19.36	8.48	0.55	4.91	0.04	100.91
25	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.54	0.09	21.79	3.84	19.74	8.38	0.45	4.83	0.02	101.68
26	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.50	0.32	20.76	3.91	19.48	8.70	0.37	4.78	0.04	100.86
27	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.44	0.18	21.39	4.03	20.60	7.35	0.35	4.50	0.04	100.88
28	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.76	0.11	21.14	4.09	20.75	7.33	0.43	4.69	0.03	101.30
29	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.68	0.24	21.42	4.15	19.73	7.58	0.48	4.92	0.03	101.23
30	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.10	0.32	21.00	4.27	20.38	7.04	0.35	4.85	0.04	100.35
31	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.44	0.17	21.42	4.30	19.38	8.66	0.47	5.02	0.03	101.89
32	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.55	0.49	20.63	4.32	21.13	7.22	0.38	4.33	0.05	101.10
33	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.76	0.48	20.37	4.39	20.76	7.40	0.35	4.94	0.08	101.23
34	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.10	0.26	21.01	4.41	20.72	7.00	0.30	4.75	0.05	100.45
35	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.09	0.37	20.71	4.57	20.38	7.06	0.40	4.75	0.04	100.37
36	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.37	0.60	20.22	4.59	20.37	7.67	0.36	4.76	0.12	100.86
37	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.17	0.42	20.26	4.74	20.94	6.73	0.34	4.70	0.05	100.35
38	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.76	0.07	20.54	5.08	20.24	7.70	0.43	4.96	0.04	101.81
39	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.43	0.01	20.35	5.13	19.66	7.90	0.39	5.44	0.04	101.35
40	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.58	0.39	20.10	5.23	20.29	7.08	0.38	4.99	0.08	101.12
41	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.04	0.11	20.22	5.35	19.15	7.99	0.51	5.37	0.04	100.78
42	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.17	0.01	20.47	5.40	18.11	8.56	0.52	6.18	0.06	101.42
43	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.58	0.42	19.75	5.40	20.72	6.97	0.41	4.65	0.07	100.97
44	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	41.69	0.05	20.18	5.41	19.51	7.61	0.38	5.12	0.02	99.97
45	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.28	0.10	20.25	5.60	18.62	8.43	0.49	6.09	0.02	101.88
46	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.41	0.22	19.70	5.71	20.34	7.35	0.43	4.86	0.04	101.06
47	JUN1007	PS12447	Bulk #2	G9	Granular herzolite	42.09	0.25	19.88	5.80	19.57	7.20	0.40	5.28	0.05	100.52



48	JUN1007	PS12447	Bulk #2	G9	42.50	0.45	19.54	5.91	20.42	6.88	0.41	5.29	0.06	101.46
49	JUN1007	PS12447	Bulk #2	G9	41.82	0.07	19.78	6.35	19.70	7.24	0.33	5.45	0.04	100.78
50	JUN1007	PS12447	Bulk #2	G9	42.42	0.07	19.78	6.42	19.79	7.38	0.34	5.30	0.00	101.50
51	JUN1007	PS12447	Bulk #2	G9	42.03	0.00	19.49	6.43	19.20	7.65	0.40	5.80	0.00	101.00
52	JUN1007	PS12447	Bulk #2	G9	42.08	0.04	19.65	6.55	18.67	7.81	0.55	5.84	0.01	101.20
53	JUN1007	PS12447	Bulk #2	G9	41.92	0.19	19.31	6.59	19.04	8.00	0.50	5.30	0.06	100.91
54	JUN1007	PS12447	Bulk #2	G9	42.18	0.19	19.45	6.73	20.03	7.19	0.36	5.14	0.05	101.32
55	JUN1007	PS12447	Bulk #2	G9	41.82	0.12	18.80	6.83	18.50	7.61	0.36	6.42	0.02	100.48
56	JUN1007	PS12447	Bulk #2	G9	41.86	0.19	18.24	7.39	19.63	7.27	0.44	5.57	0.01	100.60
57	JUN1007	PS12447	Bulk #2	G9	41.81	0.07	18.85	7.59	18.18	7.97	0.57	6.23	0.04	101.31
58	JUN1007	PS12447	Bulk #2	G9	41.37	0.01	18.56	7.70	17.58	8.18	0.53	6.79	0.03	100.75
59	JUN1007	PS12447	Bulk #2	G9	40.71	0.00	18.57	7.72	17.52	8.32	0.48	6.95	0.00	100.27
60	JUN1007	PS12447	Bulk #2	G9	41.81	0.04	18.04	7.81	19.25	7.21	0.43	5.94	0.03	100.56
61	JUN1007	PS12447	Bulk #2	G9	41.49	0.10	18.35	7.82	19.05	7.21	0.44	6.07	0.02	100.55
62	JUN1007	PS12447	Bulk #2	G9	41.45	0.13	18.23	7.93	18.78	7.20	0.54	6.15	0.03	100.44
63	JUN1007	PS12447	Bulk #2	G9	41.83	0.19	17.87	8.19	18.91	7.24	0.41	6.11	0.05	100.80
64	JUN1007	PS12447	Bulk #2	G9	41.07	0.25	17.35	8.19	18.02	7.64	0.54	6.23	0.05	99.90
65	JUN1007	PS12447	Bulk #2	G9	41.11	0.14	17.51	8.78	18.75	7.26	0.39	5.98	0.03	99.95
66	JUN1007	PS12447	Bulk #2	G9	41.54	0.20	17.20	8.92	17.10	7.70	0.60	7.74	0.02	101.02
67	JUN1007	PS12447	Bulk #2	G9	42.02	0.02	17.28	9.05	17.99	7.13	0.46	7.43	0.00	101.38
68	JUN1007	PS12447	Bulk #2	G9	41.74	0.12	17.29	9.12	18.78	7.25	0.36	6.38	0.01	101.05
69	JUN1007	PS12447	Bulk #2	G9	42.02	0.08	17.25	9.22	19.91	8.88	0.39	5.07	0.04	100.86
70	JUN1007	PS12447	Bulk #2	G9	41.37	0.12	17.23	9.29	18.53	7.09	0.48	6.56	0.03	100.70
71	JUN1007	PS12447	Bulk #2	G9	41.16	0.01	17.09	9.33	17.01	7.93	0.47	7.40	0.01	100.50
72	JUN1007	PS12447	Bulk #2	G9	41.22	0.09	16.58	9.48	18.38	7.18	0.47	6.74	0.02	100.12
73	JUN1007	PS12447	Bulk #2	G9	41.21	0.04	17.05	9.50	18.94	6.62	0.39	6.22	0.02	99.99
74	JUN1007	PS12447	Bulk #2	G9	41.58	0.10	16.77	9.60	18.13	7.30	0.42	7.03	0.02	100.95
75	JUN1007	PS12447	Bulk #2	G9	41.21	0.12	16.72	9.63	18.72	7.18	0.30	6.49	0.04	100.41
76	JUN1007	PS12447	Bulk #2	G9	41.37	0.16	16.44	9.90	17.73	7.42	0.44	7.30	0.03	100.79
77	JUN1007	PS12447	Bulk #2	G9	41.25	0.02	16.61	9.96	18.08	7.21	0.40	7.10	0.01	100.64
78	JUN1007	PS12447	Bulk #2	G9	41.74	0.11	16.60	9.96	18.32	7.42	0.57	6.65	0.00	101.37
79	JUN1007	PS12447	Bulk #2	G9	41.14	0.12	16.36	10.42	17.80	7.42	0.53	6.92	0.00	100.71
80	JUN1007	PS12447	Bulk #2	G9	41.50	0.07	16.07	10.44	18.06	7.21	0.39	7.35	0.02	101.11
81	JUN1007	PS12447	Bulk #2	G9	41.23	0.02	16.13	10.46	17.92	7.11	0.48	7.35	0.03	100.71
82	JUN1007	PS12447	Bulk #2	G9	41.40	0.12	15.94	10.61	18.59	7.19	0.45	6.52	0.03	100.85
83	JUN1007	PS12447	Bulk #2	G9	41.57	0.09	15.91	10.74	20.58	6.86	0.38	4.28	0.00	100.39
84	JUN1007	PS12447	Bulk #2	G9	41.03	0.11	16.09	10.82	18.15	7.23	0.45	7.04	0.04	100.96
85	JUN1007	PS12447	Bulk #2	G9	40.40	0.00	16.13	10.83	15.89	7.70	0.51	8.80	0.00	100.28
86	JUN1007	PS12447	Bulk #2	G9	40.86	0.03	15.87	11.00	17.84	7.29	0.40	7.19	0.02	100.60
1	JUN1007	PS12447	Bulk #2	G10	42.77	0.02	18.15	7.13	24.01	6.28	0.43	1.25	0.01	101.03
2	JUN1007	PS12447	Bulk #2	G10	41.67	0.08	16.41	10.39	21.31	6.57	0.34	3.72	0.00	100.49
3	JUN1007	PS12447	Bulk #2	G10	42.33	0.30	15.70	11.23	21.90	6.80	0.33	2.95	0.03	101.37
4	JUN1007	PS12447	Bulk #2	G10	41.55	0.25	15.63	11.61	22.24	6.31	0.29	2.46	0.03	100.37
5	JUN1007	PS12447	Bulk #2	G10	42.26	0.38	14.98	11.84	21.63	6.47	0.36	3.22	0.05	101.19
1	JUN1007	PS12447	Bulk #2	G11	41.29	0.21	15.22	11.36	17.67	7.16	0.43	7.30	0.01	100.65

Sheared Cr-Iherzolite

**Table 2: Electron microprobe analyses of chromite**

	Mineral	Grain#	Pt#	SiO2	TiO2	Cr2O3	Al2O3	FeO	MgO	MnO	CaO	V2O5	NiO	ZnO	Total
1	JULY1001 PS12448	Bulk #1	356	0.16	1.56	61.13	5.58	18.34	13.28	0.30	0.00	0.477	0.000	0.031	100.87
2	JULY1001 PS12448	Bulk #1	357	0.18	1.24	53.72	8.51	23.36	11.44	0.26	0.00	0.495	0.000	0.020	99.20
3	JULY1001 PS12448	Bulk #1	358	0.10	0.12	65.06	6.58	16.55	12.02	0.36	0.00	0.384	0.000	0.000	101.20
4	JULY1001 PS12448	Bulk #1	359	0.06	0.87	63.14	6.09	17.81	12.01	0.37	0.00	0.362	0.000	0.177	100.69
5	JULY1001 PS12448	Bulk #1	360	0.11	0.41	64.49	5.46	16.31	12.92	0.26	0.03	0.427	0.000	0.062	100.48
6	JULY1001 PS12448	Bulk #1	361	0.11	0.48	62.52	5.78	17.23	12.73	0.28	0.00	0.419	0.000	0.099	99.64
7	JULY1001 PS12448	Bulk #1	362	0.12	0.27	65.01	5.98	15.89	12.82	0.29	0.00	0.361	0.000	0.037	100.57
8	JULY1001 PS12448	Bulk #1	363	0.07	0.61	62.36	6.45	18.33	11.79	0.30	0.00	0.372	0.000	0.104	100.39
9	JULY1001 PS12448	Bulk #1	364	0.12	0.31	63.93	5.89	16.38	13.30	0.25	0.01	0.426	0.000	0.110	100.73
10	JULY1001 PS12448	Bulk #1	365	0.09	0.31	43.43	22.29	20.80	13.28	0.33	0.00	0.230	0.000	0.134	100.91
11	JULY1001 PS12448	Bulk #1	366	0.07	0.87	64.44	5.55	16.19	12.94	0.32	0.01	0.406	0.000	0.071	100.75
12	JULY1001 PS12448	Bulk #1	367	0.04	0.05	57.88	14.30	15.93	11.89	0.36	0.00	0.340	0.000	0.054	100.84
13	JULY1001 PS12448	Bulk #1	368	0.03	0.29	57.76	12.85	17.46	11.99	0.32	0.00	0.360	0.000	0.139	101.20
14	JULY1001 PS12448	Bulk #1	369	0.04	0.53	54.45	11.56	20.82	11.96	0.24	0.01	0.439	0.000	0.212	100.26
15	JULY1001 PS12448	Bulk #1	370	0.11	0.14	63.58	6.23	16.53	12.01	0.32	0.00	0.511	0.000	0.144	101.09
16	JULY1001 PS12448	Bulk #1	371	0.10	0.14	64.77	5.53	17.52	12.36	0.33	0.01	0.362	0.000	0.062	100.95
17	JULY1001 PS12448	Bulk #1	372	0.12	0.95	64.16	5.08	17.52	11.62	0.29	0.02	0.552	0.000	0.086	100.58
18	JULY1001 PS12448	Bulk #1	373	0.03	0.40	61.05	10.34	16.90	12.15	0.31	0.01	0.484	0.000	0.153	101.62
19	JULY1001 PS12448	Bulk #1	374	0.04	0.20	57.09	12.27	17.92	11.62	0.29	0.00	0.561	0.000	0.048	100.02
20	JULY1001 PS12448	Bulk #1	375	0.02	0.32	58.68	12.75	17.10	12.16	0.32	0.00	0.418	0.000	0.133	101.93
21	JULY1001 PS12448	Bulk #1	376	0.12	3.31	52.98	5.72	26.42	10.54	0.32	0.01	0.561	0.000	0.048	100.02
22	JULY1001 PS12448	Bulk #1	377	0.05	0.06	29.35	40.00	14.71	15.94	0.24	0.04	0.124	0.000	0.154	100.67
23	JULY1001 PS12448	Bulk #1	378	0.12	0.20	43.24	23.51	18.71	14.19	0.27	0.00	0.247	0.000	0.080	100.57
24	JULY1001 PS12448	Bulk #1	379	0.31	1.79	59.39	7.38	17.30	13.46	0.34	0.01	0.397	0.000	0.017	100.40
25	JULY1001 PS12448	Bulk #1	380	0.05	0.09	56.68	14.95	15.61	12.02	0.34	0.03	0.345	0.000	0.162	100.28
26	JULY1001 PS12448	Bulk #1	381	0.03	0.05	57.09	15.07	15.78	11.97	0.29	0.02	0.408	0.000	0.164	100.87
27	JULY1001 PS12448	Bulk #1	382	0.04	0.17	57.46	15.25	14.83	12.56	0.25	0.01	0.268	0.000	0.162	100.99
28	JULY1001 PS12448	Bulk #1	383	0.13	2.78	58.10	3.98	21.60	12.43	0.33	0.02	0.486	0.000	0.000	98.85
29	JULY1001 PS12448	Bulk #1	384	0.12	0.31	64.08	5.75	16.52	12.80	0.35	0.01	0.448	0.000	0.000	100.59
30	JULY1001 PS12448	Bulk #1	385	0.11	0.57	62.79	5.51	17.31	12.33	0.27	0.01	0.358	0.000	0.082	99.15
31	JULY1001 PS12448	Bulk #1	386	0.07	1.27	63.37	3.73	19.19	12.30	0.33	0.00	0.334	0.000	0.080	100.68
32	JULY1001 PS12448	Bulk #1	387	0.09	0.14	64.69	6.56	17.25	11.93	0.29	0.00	0.268	0.000	0.011	101.23
33	JULY1001 PS12448	Bulk #1	388	0.00	0.17	39.09	31.32	15.06	14.36	0.21	0.01	0.253	0.000	0.064	100.53
34	JULY1001 PS12448	Bulk #1	389	0.10	0.69	63.82	5.20	17.30	12.80	0.36	0.00	0.461	0.000	0.006	100.74
35	JULY1001 PS12448	Bulk #1	392	0.09	1.14	63.01	6.29	17.91	11.89	0.31	0.01	0.358	0.000	0.000	101.12
36	JULY1001 PS12448	Bulk #1	393	0.13	1.51	63.43	4.58	17.23	13.14	0.30	0.00	0.448	0.000	0.076	100.85
37	JULY1001 PS12448	Bulk #1	394	0.05	0.14	39.85	30.53	15.35	14.69	0.31	0.01	0.226	0.000	0.000	101.15
38	JULY1001 PS12448	Bulk #1	395	0.07	0.06	64.40	5.90	17.46	11.73	0.36	0.00	0.262	0.000	0.000	100.24
39	JULY1001 PS12448	Bulk #1	396	0.12	2.81	54.89	9.39	17.47	14.96	0.26	0.00	0.573	0.000	0.023	100.49
40	JULY1001 PS12448	Bulk #1	397	0.05	0.15	57.60	12.24	17.89	11.69	0.28	0.00	0.317	0.000	0.178	100.46
41	JULY1001 PS12448	Bulk #1	398	0.03	0.17	61.82	10.34	15.97	11.81	0.41	0.00	0.387	0.000	0.090	100.96
42	JULY1001 PS12448	Bulk #1	400	0.00	0.12	59.07	13.06	17.08	12.26	0.31	0.02	0.337	0.000	0.130	101.39
43	JULY1001 PS12448	Bulk #1	401	0.07	0.43	63.59	6.69	17.56	11.85	0.32	0.00	0.388	0.000	0.203	101.10
44	JULY1001 PS12448	Bulk #1	402	0.17	1.53	55.93	9.82	17.84	14.05	0.27	0.03	0.440	0.000	0.000	100.07
45	JULY1001 PS12448	Bulk #1	404	0.13	0.03	63.32	6.84	16.01	12.97	0.26	0.02	0.430	0.000	0.003	100.03
46	JULY1001 PS12448	Bulk #1	405	0.12	0.80	63.76	5.17	17.67	12.57	0.29	0.01	0.460	0.000	0.023	100.88
47	JULY1001 PS12448	Bulk #1	406	0.06	0.07	37.95	32.17	15.95	14.15	0.31	0.02	0.278	0.000	0.164	101.13
48	JULY1001 PS12448	Bulk #1	407	0.03	0.30	60.85	9.53	18.37	11.17	0.33	0.00	0.555	0.000	0.175	101.30
49	JULY1001 PS12448	Bulk #1	408	0.10	1.91	61.97	4.03	20.13	11.95	0.33	0.00	0.375	0.000	0.090	100.88
50	JULY1001 PS12448	Bulk #1	409	0.01	0.26	58.74	13.89	15.56	12.66	0.30	0.00	0.432	0.000	0.233	102.09



16	JUN1007	PS12447	Bulk #2	Chromite	19	99	0.12	0.33	63.35	5.53	16.54	12.84	0.32	0.02	0.434	0.000	0.000	0.000	99.47
17	JUN1007	PS12447	Bulk #2	Chromite	20	100	0.05	0.12	56.80	12.52	17.60	11.85	0.31	0.00	0.397	0.000	0.000	0.000	99.72
18	JUN1007	PS12447	Bulk #2	Chromite	21	101	0.03	0.05	52.42	19.05	14.87	13.00	0.29	0.02	0.224	0.000	0.000	0.135	99.89
19	JUN1007	PS12447	Bulk #2	Chromite	22	102	0.09	0.22	62.94	6.44	17.35	11.85	0.31	0.00	0.265	0.000	0.000	0.255	99.82
20	JUN1007	PS12447	Bulk #2	Chromite	23	103	0.05	0.27	56.24	12.70	17.11	11.58	0.41	0.00	0.386	0.000	0.000	0.172	98.92
21	JUN1007	PS12447	Bulk #2	Chromite	25	48	0.05	0.23	58.86	12.80	17.80	11.44	0.27	0.02	0.379	0.000	0.000	0.152	98.80
22	JUN1007	PS12447	Bulk #2	Chromite	27	50	0.08	0.42	63.73	5.83	16.24	12.44	0.31	0.01	0.377	0.000	0.000	0.058	98.49
23	JUN1007	PS12447	Bulk #2	Chromite	28	51	0.02	0.24	57.30	12.58	17.16	11.68	0.29	0.00	0.434	0.000	0.000	0.298	100.01
24	JUN1007	PS12447	Bulk #2	Chromite	29	52	0.08	0.21	52.84	13.85	19.84	11.96	0.24	0.02	0.274	0.000	0.000	0.155	99.27
25	JUN1007	PS12447	Bulk #2	Chromite	30	53	0.11	2.35	60.87	4.89	17.34	13.21	0.38	0.00	0.567	0.000	0.000	0.118	98.83
26	JUN1007	PS12447	Bulk #2	Chromite	32	55	0.09	0.55	63.10	5.38	17.92	12.32	0.30	0.00	0.287	0.000	0.000	0.038	98.97
27	JUN1007	PS12447	Bulk #2	Chromite	33	56	0.00	0.43	57.18	12.53	17.10	11.86	0.33	0.02	0.312	0.000	0.000	0.149	98.71
28	JUN1007	PS12447	Bulk #2	Chromite	34	57	0.14	0.34	63.76	6.27	15.57	13.13	0.39	0.01	0.420	0.000	0.000	0.107	100.15
29	JUN1007	PS12447	Bulk #2	Chromite	35	58	0.12	0.25	60.87	8.55	16.06	13.23	0.32	0.01	0.625	0.000	0.000	0.022	100.06
30	JUN1007	PS12447	Bulk #2	Chromite	36	59	0.07	0.14	57.31	13.04	17.33	11.71	0.27	0.00	0.420	0.000	0.000	0.215	100.51
31	JUN1007	PS12447	Bulk #2	Chromite	37	60	0.11	0.39	62.99	6.64	17.48	11.51	0.29	0.01	0.292	0.000	0.000	0.047	99.76
32	JUN1007	PS12447	Bulk #2	Chromite	38	61	0.20	1.09	54.25	11.48	16.97	14.50	0.25	0.00	0.414	0.000	0.000	0.066	99.22
33	JUN1007	PS12447	Bulk #2	Chromite	39	62	0.15	0.81	63.81	4.70	17.99	11.95	0.26	0.00	0.284	0.000	0.000	0.000	98.75
34	JUN1007	PS12447	Bulk #2	Chromite	40	63	0.20	0.50	48.63	19.07	15.29	15.84	0.22	0.02	0.353	0.000	0.000	0.170	100.30
35	JUN1007	PS12447	Bulk #2	Chromite	41	64	0.04	0.17	57.53	12.10	17.71	11.95	0.22	0.00	0.368	0.000	0.000	0.116	100.20
36	JUN1007	PS12447	Bulk #2	Chromite	42	65	0.18	1.10	42.65	12.41	32.50	8.19	0.38	0.01	0.463	0.000	0.000	0.082	98.97
37	JUN1007	PS12447	Bulk #2	Chromite	43	66	0.04	0.05	58.11	12.88	16.29	11.28	0.33	0.00	0.386	0.000	0.000	0.209	98.58
38	JUN1007	PS12447	Bulk #2	Chromite	44	67	0.00	0.24	55.99	13.25	17.75	11.62	0.24	0.00	0.357	0.000	0.000	0.193	99.64
39	JUN1007	PS12447	Bulk #2	Chromite	45	68	0.11	0.45	51.10	11.40	24.91	10.74	0.30	0.00	0.272	0.000	0.000	0.071	98.96
40	JUN1007	PS12447	Bulk #2	Chromite	46	69	0.11	0.22	63.51	5.98	18.76	11.92	0.31	0.00	0.222	0.000	0.000	0.093	99.14
41	JUN1007	PS12447	Bulk #2	Chromite	48	71	0.02	0.52	61.24	9.86	14.89	12.64	0.31	0.02	0.375	0.000	0.000	0.121	98.99
42	JUN1007	PS12447	Bulk #2	Chromite	49	72	0.05	0.08	62.97	7.48	16.84	12.01	0.30	0.01	0.373	0.000	0.000	0.175	100.15
43	JUN1007	PS12447	Bulk #2	Chromite	50	73	0.05	0.76	54.12	11.54	18.90	11.95	0.30	0.02	0.466	0.000	0.000	0.176	98.27
44	JUN1007	PS12447	Bulk #2	Chromite	51	74	0.12	0.04	62.16	5.91	16.40	12.76	0.26	0.00	0.426	0.000	0.000	0.208	98.30
45	JUN1007	PS12447	Bulk #2	Chromite	52	75	0.12	0.83	62.11	5.28	16.59	12.86	0.28	0.00	0.447	0.000	0.000	0.025	98.51
46	JUN1007	PS12447	Bulk #2	Chromite	53	76	0.00	0.05	58.78	14.37	15.32	12.40	0.38	0.00	0.341	0.000	0.000	0.143	98.79
47	JUN1007	PS12447	Bulk #2	Chromite	54	77	0.03	0.12	57.54	12.66	17.04	11.68	0.33	0.00	0.345	0.000	0.000	0.167	98.92
48	JUN1007	PS12447	Bulk #2	Chromite	55	24	1.94	5.39	44.79	5.07	22.93	14.04	0.38	0.57	0.513	0.000	0.000	0.000	95.62
49	JUN1007	PS12447	Bulk #2	Chromite	56	25	0.13	1.44	58.70	6.21	18.01	12.49	0.30	0.00	0.479	0.000	0.000	0.011	96.77
50	JUN1007	PS12447	Bulk #2	Chromite	57	26	0.06	0.12	63.86	6.01	16.74	11.49	0.30	0.01	0.261	0.000	0.000	0.050	98.82
51	JUN1007	PS12447	Bulk #2	Chromite	58	27	0.03	0.24	57.00	12.54	17.06	11.65	0.28	0.03	0.436	0.000	0.000	0.128	99.36
52	JUN1007	PS12447	Bulk #2	Chromite	59	28	0.10	0.40	62.77	6.45	17.46	12.06	0.30	0.03	0.246	0.000	0.000	0.083	98.90
53	JUN1007	PS12447	Bulk #2	Chromite	61	30	0.12	1.50	46.02	13.86	23.77	12.64	0.23	0.00	0.358	0.000	0.000	0.097	98.59
54	JUN1007	PS12447	Bulk #2	Chromite	62	31	0.04	0.50	57.99	11.90	16.43	12.03	0.33	0.00	0.381	0.000	0.000	0.158	98.76
55	JUN1007	PS12447	Bulk #2	Chromite	63	32	0.08	0.06	63.17	6.82	17.44	11.84	0.42	0.03	0.366	0.000	0.000	0.028	100.04
56	JUN1007	PS12447	Bulk #2	Chromite	64	33	0.14	0.74	42.29	13.48	31.74	9.50	0.39	0.00	0.381	0.000	0.000	0.102	98.77
57	JUN1007	PS12447	Bulk #2	Chromite	65	34	0.14	0.13	62.86	6.01	17.67	11.43	0.32	0.01	0.313	0.000	0.000	0.190	99.01
58	JUN1007	PS12447	Bulk #2	Chromite	66	35	0.13	0.26	62.70	6.43	17.88	11.40	0.34	0.00	0.341	0.000	0.000	0.000	98.48
59	JUN1007	PS12447	Bulk #2	Chromite	67	36	0.19	0.78	63.80	5.54	15.66	12.80	0.36	0.00	0.414	0.000	0.000	0.138	98.68
60	JUN1007	PS12447	Bulk #2	Chromite	68	37	0.15	1.19	60.45	17.99	17.99	12.86	0.32	0.00	0.450	0.000	0.000	0.185	99.24
61	JUN1007	PS12447	Bulk #2	Chromite	69	38	0.07	0.48	58.23	12.28	15.80	12.00	0.35	0.01	0.342	0.000	0.000	0.139	98.70
62	JUN1007	PS12447	Bulk #2	Chromite	70	39	0.06	0.55	56.56	11.87	18.66	10.97	0.33	0.01	0.402	0.000	0.000	0.127	98.53
63	JUN1007	PS12447	Bulk #2	Chromite	71	40	0.07	0.14	57.97	11.17	17.93	11.75	0.37	0.00	0.369	0.000	0.000	0.174	98.94
64	JUN1007	PS12447	Bulk #2	Chromite	72	41	0.03	0.03	57.51	14.21	15.88	11.59	0.31	0.00	0.333	0.000	0.000	0.202	100.11
65	JUN1007	PS12447	Bulk #2	Chromite	73	42	0.12	2.41	56.95	5.88	21.05	12.54	0.34	0.00	0.421	0.000	0.000	0.102	98.91

66	JUN1007	PS12447	Bulk #2	Chromite	74	43	0.01	0.00	57.33	14.35	15.64	11.65	0.32	0.02	0.330	0.000	0.153	99.81
67	JUN1007	PS12447	Bulk #2	Chromite	75	44	0.07	0.25	62.60	6.70	17.57	11.60	0.36	0.00	0.368	0.000	0.074	99.58
68	JUN1007	PS12447	Bulk #2	Chromite	76	45	0.03	0.53	56.39	11.31	18.94	11.37	0.30	0.00	0.508	0.000	0.119	98.49
69	JUN1007	PS12447	Bulk #2	Chromite	77	46	0.07	0.09	61.84	7.22	16.89	11.87	0.30	0.00	0.400	0.000	0.072	98.76
70	JUN1007	PS12447	Bulk #2	Chromite	78	47	0.02	0.00	37.98	32.86	13.68	14.98	0.21	0.00	0.162	0.000	0.218	100.13
71	JUN1007	PS12447	Bulk #2	Chromite	79	2	0.06	0.16	52.03	16.30	17.54	13.30	0.25	0.00	0.245	0.000	0.028	99.94
72	JUN1007	PS12447	Bulk #2	Chromite	81	4	0.05	0.08	34.36	33.31	16.49	14.98	0.28	0.01	0.211	0.000	0.125	99.90
73	JUN1007	PS12447	Bulk #2	Chromite	83	6	0.03	0.13	61.20	10.94	14.58	12.28	0.34	0.00	0.417	0.000	0.100	100.02
74	JUN1007	PS12447	Bulk #2	Chromite	85	8	0.07	0.06	63.37	6.85	16.69	11.91	0.33	0.00	0.299	0.000	0.042	99.64
75	JUN1007	PS12447	Bulk #2	Chromite	86	9	0.04	0.19	48.15	22.22	15.88	12.78	0.32	0.01	0.260	0.000	0.253	100.11
76	JUN1007	PS12447	Bulk #2	Chromite	87	10	0.03	0.73	54.48	11.55	20.33	11.64	0.31	0.00	0.454	0.000	0.220	99.71
77	JUN1007	PS12447	Bulk #2	Chromite	88	11	0.03	0.14	56.26	11.00	20.61	11.24	0.36	0.00	0.357	0.000	0.039	100.03
78	JUN1007	PS12447	Bulk #2	Chromite	89	12	0.07	0.09	62.80	7.55	18.71	11.68	0.45	0.00	0.367	0.000	0.103	99.52
79	JUN1007	PS12447	Bulk #2	Chromite	90	13	0.05	0.62	56.20	11.35	18.51	11.49	0.37	0.00	0.518	0.000	0.086	99.19
80	JUN1007	PS12447	Bulk #2	Chromite	91	14	0.09	1.19	60.28	7.56	16.13	13.40	0.27	0.00	0.544	0.000	0.006	99.47
81	JUN1007	PS12447	Bulk #2	Chromite	92	15	0.12	0.12	64.87	4.84	16.96	12.17	0.40	0.00	0.311	0.000	0.000	99.78
82	JUN1007	PS12447	Bulk #2	Chromite	93	16	0.02	1.39	55.18	12.41	17.67	12.85	0.28	0.00	0.644	0.000	0.176	100.62
83	JUN1007	PS12447	Bulk #2	Chromite	94	17	0.11	0.09	62.98	5.99	18.04	11.77	0.32	0.02	0.354	0.000	0.119	99.78
84	JUN1007	PS12447	Bulk #2	Chromite	95	18	0.01	0.02	57.89	13.37	15.89	11.89	0.32	0.00	0.187	0.000	0.136	99.72
85	JUN1007	PS12447	Bulk #2	Chromite	96	19	0.01	0.39	53.36	15.70	17.60	12.19	0.36	0.02	0.351	0.000	0.131	100.11
86	JUN1007	PS12447	Bulk #2	Chromite	98	21	0.06	0.21	63.07	6.54	17.22	11.76	0.29	0.01	0.331	0.000	0.028	99.54
87	JUN1007	PS12447	Bulk #2	Chromite	99	22	0.00	0.02	57.76	13.17	15.96	11.72	0.25	0.00	0.219	0.000	0.206	99.31
88	JUN1007	PS12447	Bulk #2	Chromite	100	23	0.07	0.13	62.32	6.65	17.85	11.48	0.39	0.00	0.345	0.000	0.000	99.23

**Table 3: Electron microprobe analyses of clinopyroxene**

	Mineral	Grain#	Pt#	SiO2	TiO2	Al2O3	Cr2O3	FeO	MnO	MgO	CaO	Na2O	K2O	Total P	T (°C)	
JULY100	PS12448	Bulk #1	331	57.27	0.21	1.93	1.96	2.08	0.12	16.71	20.59	1.859	0.010	102.74	44.9	1001
JULY100	PS12448	Bulk #1	332	55.54	0.12	0.95	2.81	1.88	0.05	16.62	20.62	1.360	0.013	99.97	45.3	1033
JULY100	PS12448	Bulk #1	333	56.08	0.02	1.10	1.62	2.04	0.10	17.05	20.93	1.129	0.023	100.09	49.7	1073
JULY100	PS12448	Bulk #1	334	56.47	0.12	2.41	2.16	2.24	0.11	16.32	17.83	2.231	0.031	99.92	48.4	1148
JULY100	PS12448	Bulk #1	335	56.48	0.11	1.63	2.38	2.50	0.09	17.13	18.54	1.823	0.049	100.73	52.0	1172
JULY100	PS12448	Bulk #1	336	56.04	0.17	1.27	2.15	2.48	0.06	17.45	18.99	1.573	0.081	100.26	55.8	1171
JULY100	PS12448	Bulk #1	337	56.55	0.21	2.43	1.37	2.57	0.07	16.51	18.21	2.182	0.037	100.15	55.0	1140
JULY100	PS12448	Bulk #1	338	55.93	0.24	1.19	1.65	2.16	0.12	17.36	20.22	1.201	0.034	100.11	51.4	1126
JULY100	PS12448	Bulk #1	339	56.92	0.12	2.43	2.17	2.08	0.11	16.28	18.09	2.201	0.033	100.44	47.4	1143
JULY100	PS12448	Bulk #1	340	56.71	0.03	1.56	2.66	2.19	0.09	17.02	18.22	1.940	0.067	100.50	53.4	1184
JULY100	PS12448	Bulk #1	341	56.75	0.25	2.89	2.03	2.76	0.08	16.53	16.77	2.509	0.081	100.65	49.3	1181
JULY100	PS12448	Bulk #1	342	55.62	0.21	0.46	2.14	1.81	0.07	17.33	21.59	0.887	0.007	100.12	50.1	1045
JULY100	PS12448	Bulk #1	343	56.38	0.11	2.37	2.21	2.01	0.16	16.25	18.37	2.223	0.064	100.15	47.1	1102
JULY100	PS12448	Bulk #1	344	56.76	0.11	1.87	2.07	1.95	0.05	17.01	19.04	1.826	0.095	100.78	50.0	1133
JULY100	PS12448	Bulk #1	345	55.68	0.17	3.30	2.54	2.11	0.07	14.54	19.05	2.684	0.000	100.14	33.6	883
JULY100	PS12448	Bulk #1	346	56.50	0.19	1.65	1.65	2.56	0.08	17.23	18.85	1.655	0.096	100.45	56.8	1176
JULY100	PS12448	Bulk #1	347	56.73	0.04	1.18	1.52	2.17	0.08	17.57	19.74	1.078	0.097	100.21	53.9	1202
JULY100	PS12448	Bulk #1	348	56.19	0.24	2.16	2.43	1.84	0.08	16.10	18.83	2.162	0.007	100.04	45.6	1068
JULY100	PS12448	Bulk #1	349	56.60	0.17	1.91	1.60	2.45	0.06	17.85	18.17	1.691	0.081	100.57	54.3	1222
JULY100	PS12448	Bulk #1	350	56.78	0.12	1.83	1.53	2.52	0.14	17.64	17.97	1.668	0.039	100.24	56.2	1245
JULY100	PS12448	Bulk #1	351	56.37	0.11	1.56	1.45	2.41	0.06	17.56	19.46	1.473	0.069	100.52	54.9	1161
JULY100	PS12448	Bulk #1	352	56.90	0.11	1.83	2.57	2.25	0.13	16.67	18.29	2.053	0.059	100.87	51.1	1158
JULY100	PS12448	Bulk #1	353	56.82	0.00	1.72	2.19	2.61	0.05	17.67	17.83	1.850	0.076	100.81	55.6	1231
JULY100	PS12448	Bulk #1	354	56.86	0.14	1.31	2.18	2.44	0.06	17.30	19.05	1.593	0.109	101.04	56.0	1179
JULY100	PS12448	Bulk #1	355	56.10	0.01	1.73	2.22	2.53	0.10	17.75	18.10	1.837	0.072	100.46	53.5	1202

Mineral	Grain#	Pt#	SiO2	TiO2	Al2O3	Cr2O3	FeO	MnO	MgO	CaO	Na2O	K2O	Total P (kbars)	T (°C)
JUN1007PS12447 Bulk #2	1	114	55.65	0.05	1.46	1.80	2.43	0.11	17.36	19.50	1.469	0.067	99.90	51.6
JUN1007PS12447 Bulk #2	2	115	55.44	0.08	1.71	1.54	2.48	0.13	17.49	18.93	1.536	0.182	99.52	53.9
JUN1007PS12447 Bulk #2	3	116	55.53	0.22	1.58	2.13	2.02	0.06	17.30	19.16	1.671	0.047	99.72	50.1
JUN1007PS12447 Bulk #2	4	117	53.71	0.08	2.40	2.04	1.77	0.07	16.33	19.06	1.698	0.027	97.17	38.7
JUN1007PS12447 Bulk #2	5	118	55.29	0.09	2.20	0.97	2.97	0.15	17.07	18.52	1.718	0.070	99.04	42.6
JUN1007PS12447 Bulk #2	6	119	55.90	0.04	1.87	2.12	2.50	0.05	16.82	18.55	1.782	0.054	99.68	58.9
JUN1007PS12447 Bulk #2	7	120	55.62	0.18	1.98	2.22	2.10	0.15	16.29	19.30	1.773	0.029	99.65	43.8
JUN1007PS12447 Bulk #2	8	121	55.49	0.06	1.31	1.60	2.33	0.11	17.57	19.34	1.179	0.083	99.07	52.1
JUN1007PS12447 Bulk #2	9	122	54.13	0.17	3.83	0.97	3.41	0.09	20.39	16.38	0.679	0.006	100.06	34.8
JUN1007PS12447 Bulk #2	10	123	55.40	0.19	1.90	1.92	1.84	0.10	16.27	20.25	1.643	0.017	99.53	41.8
JUN1007PS12447 Bulk #2	11	124	55.59	0.24	2.65	0.95	2.64	0.09	16.53	18.43	1.934	0.069	99.12	47.3
JUN1007PS12447 Bulk #2	12	125	55.35	0.06	1.24	2.06	2.27	0.08	17.28	19.22	1.377	0.117	99.05	52.6
JUN1007PS12447 Bulk #2	13	126	55.63	0.14	1.83	1.30	2.44	0.09	17.40	19.04	1.493	0.073	99.44	51.3
JUN1007PS12447 Bulk #2	14	127	55.42	0.25	2.23	1.38	2.26	0.11	16.49	19.73	1.659	0.035	99.56	42.8
JUN1007PS12447 Bulk #2	15	128	55.72	0.15	2.06	1.34	2.53	0.09	17.02	18.55	1.723	0.094	99.28	52.2
JUN1007PS12447 Bulk #2	16	129	55.11	0.25	2.61	2.47	1.76	0.03	15.50	19.36	2.254	0.000	99.34	37.3
JUN1007PS12447 Bulk #2	17	130	55.34	0.03	1.14	1.45	2.12	0.13	17.32	20.64	1.100	0.105	99.36	51.5
JUN1007PS12447 Bulk #2	18	131	55.84	0.01	0.99	1.18	1.76	0.08	17.39	21.69	0.808	0.016	99.76	48.0
JUN1007PS12447 Bulk #2	19	132	55.37	0.30	1.33	1.25	2.99	0.12	18.50	18.13	1.174	0.070	99.25	58.5
JUN1007PS12447 Bulk #2	20	133	55.85	0.07	1.89	2.25	1.93	0.08	16.46	18.80	1.801	0.102	99.23	47.3
JUN1007PS12447 Bulk #2	21	134	55.64	0.20	1.89	1.53	2.80	0.12	17.55	18.21	1.534	0.078	99.54	51.2
JUN1007PS12447 Bulk #2	22	135	55.96	0.00	0.67	1.10	1.74	0.09	17.85	21.79	0.565	0.046	99.81	51.8
JUN1007PS12447 Bulk #2	23	136	56.23	0.16	1.21	1.52	2.32	0.07	17.54	19.64	1.317	0.082	100.09	58.6
JUN1007PS12447 Bulk #2	24	137	55.64	0.29	1.64	1.55	2.22	0.08	17.70	18.89	1.497	0.093	99.59	53.5
JUN1007PS12447 Bulk #2	25	138	55.57	0.12	2.20	1.36	2.20	0.07	16.58	19.22	1.823	0.019	99.16	47.4