Ministry of
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Open File Report 5908

Results of Overburden Sampling for Kimberlite Heavy Mineral Indicators and Gold Grains, Michipicoten River–Wawa Area, Northeastern Ontario

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Abstract

This report provides data and preliminary interpretations on the types and distribution of kimberlite heavy minerals found within overburden in the Michipicoten River-Wawa area. In addition to Kimberlite indicator minerals, visible gold grains were also identified in the heavy mineral assemblages.

This overburden sampling program focused primarily on the collection of modern alluvium samples was carried out during the 1994 field season. Two sampling strategies, regional and local, were employed. A total of 250 samples were collected and analyzed from which 4 "G10"'s and 4 high chrome chromites were recovered.

The kimberlite heavy mineral indicator and gold grain data can be used to focus exploration efforts for kimberlite and gold deposits in the Michipicoten River-Wawa area. Seven potential areas for kimberlite exploration and 3 potential areas for gold exploration are identified. Further work is required to assess the potential of these areas.

Results of Overburden Sampling for Kimberlite Heavy Mineral Indicators and Gold Grains, Michipicoten River-Wawa Area, Northeastern Ontario.

by T.F. Morris[1], C. Murray[2] and D. Crabtree[3]

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Funding for this project was provided by the Ministry of Northern Development and Mines and the Canada-Ontario Northern Ontario Development Agreement (NODA).

Introduction

Project History

Two diamonds, and possibly a third, were recovered from the Wawa area (Figure 1) by C. Clement (local Prospector) during the summer of 1991. The exact location of the discovery site could not be positively identified. It is thought, however, that the diamonds were collected from either older alluvium (sand and gravel) in a point bar of the Dead River, near the Michipicoten River and/or modern alluvium (sand and gravel) associated with Wawa Creek. This discovery was reported to the Ontario Geological Survey (OGS) in the fall of 1993.

Two of the 3 diamonds were loaned to the Ontario Geological Survey and then forwarded to the Royal Ontario Museum, Department of Mineralogy for confirmation. The stones were identified as industrial grade diamonds with carat weights of 1.05 and 1.13.

A focused sampling program was subsequently initiated by the Ontario Geological Survey in September of 1993, in order to establish authenticity of the diamond find. Ten, 25 kg samples were collected from the areas reported to be the discovery sites (Appendix A): 5 modern alluvium samples from Wawa Creek (Wr1 to Wr5); and 5 older alluvium samples from the point bar associated with the Dead River (Wr6-Wr10).

Kimberlite indicator minerals (KIM's) isolated from these samples include: a) 1, "G10" pyrope garnet with a kelyphite rim (Sample Wr7) and; b) 9 chrome diopsides (2 from sample Wr5, 3 from sample Wr6, 3 from sample Wr8 and 1 from sample Wr9). Most of these indicators were recovered from the Dead River point bar and verified that the 2 industrial grade diamonds could have been recovered from this site.

Study Location and Purpose

As a follow-up to these preliminary discoveries, the OGS undertook a regional sampling program in the Michipicoten River-Wawa area in the summer of 1994 (Figure 2). Two detailed sampling programs were also completed (Figure 3). Sampling was carried out within an area defined by the Hawk Junction NTS map sheet (42 C/2; bounded by lat.48°00'N and 48°15'N and long. 84°30'W and 85°00'W), the north half of the Manitowik Lake NTS map sheet (42 C/1) and the south half of the Franz Lake NTS map sheet (42 C/8; bounded by lat. 48°07'30"N and 48°22'30"N and long. 84°00'W and 84°30'W) and the northern third of the Michipicoten Harbour NTS map sheet (N/15; bounded by lat. 47°53'10"N and 48°00'N and long. 84°30'W and 85°00'W).

The area was considered optimal for kimberlite exploration as: a) it includes the area where the 2 industrial grade diamonds and associated heavy minerals were recovered; b) bedrock and overburden

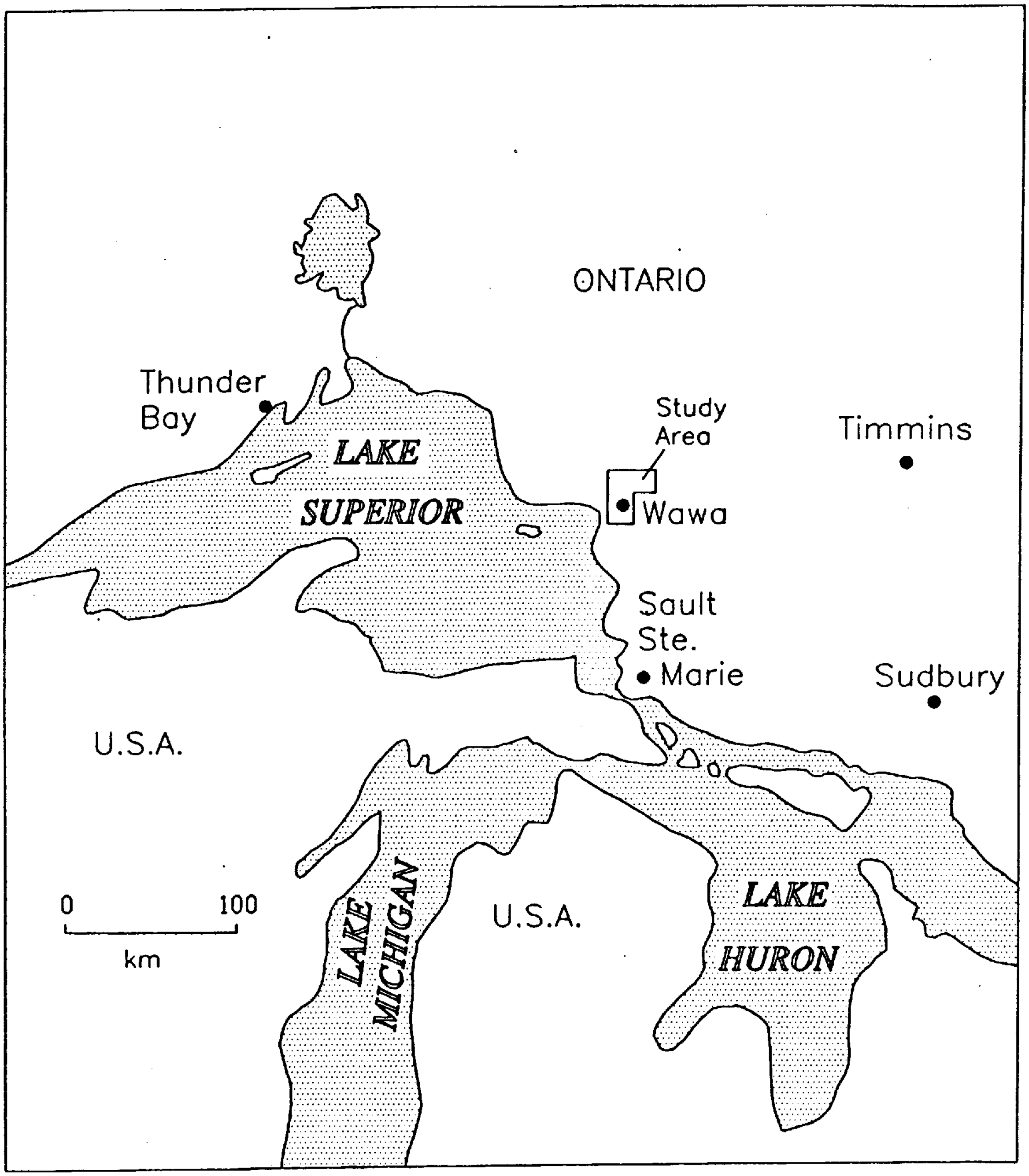


Figure 1: Study area location

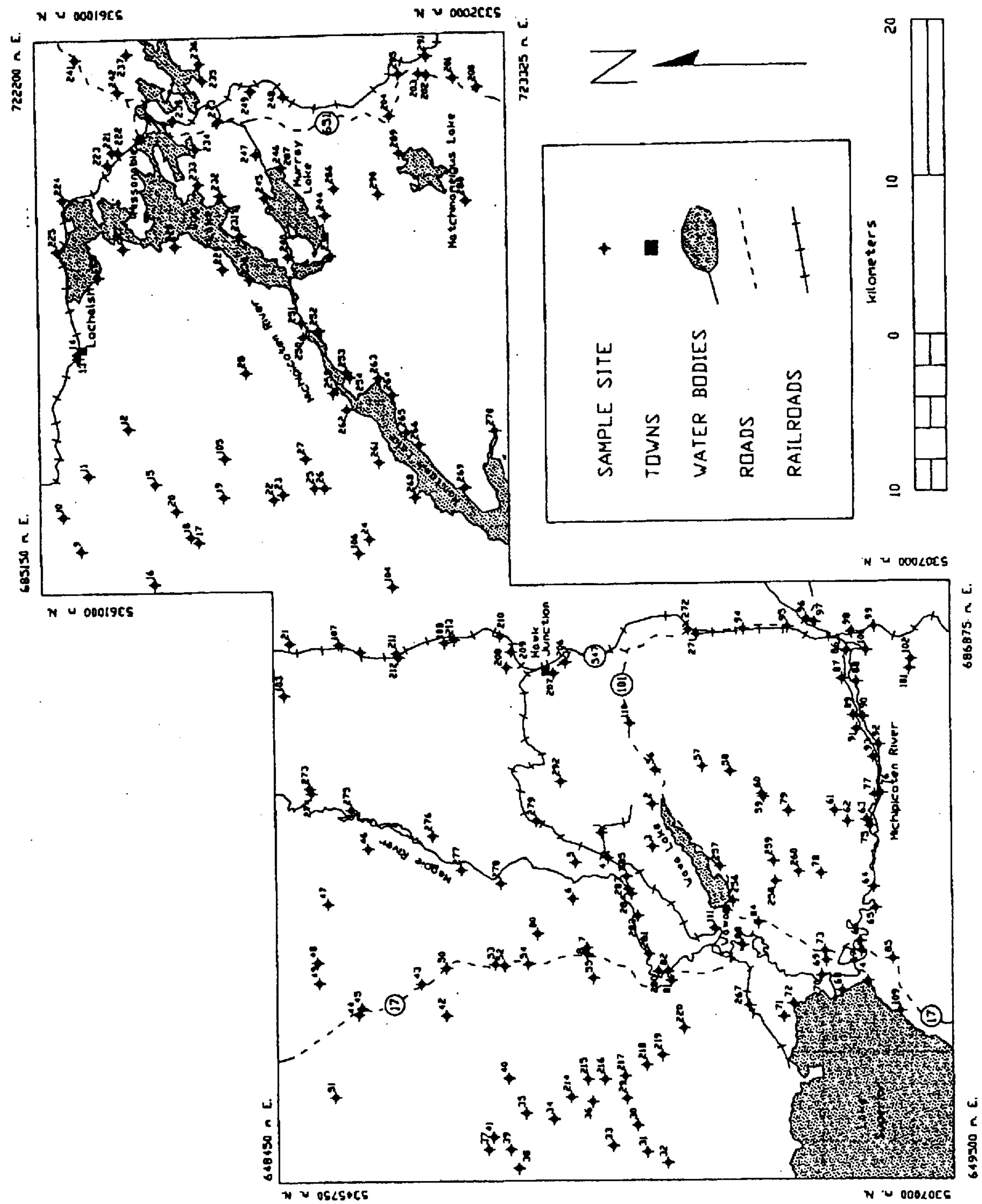


Figure 2: Regional sample site locations. Letter and year codes have been removed from the sample number to facilitate space requirements.

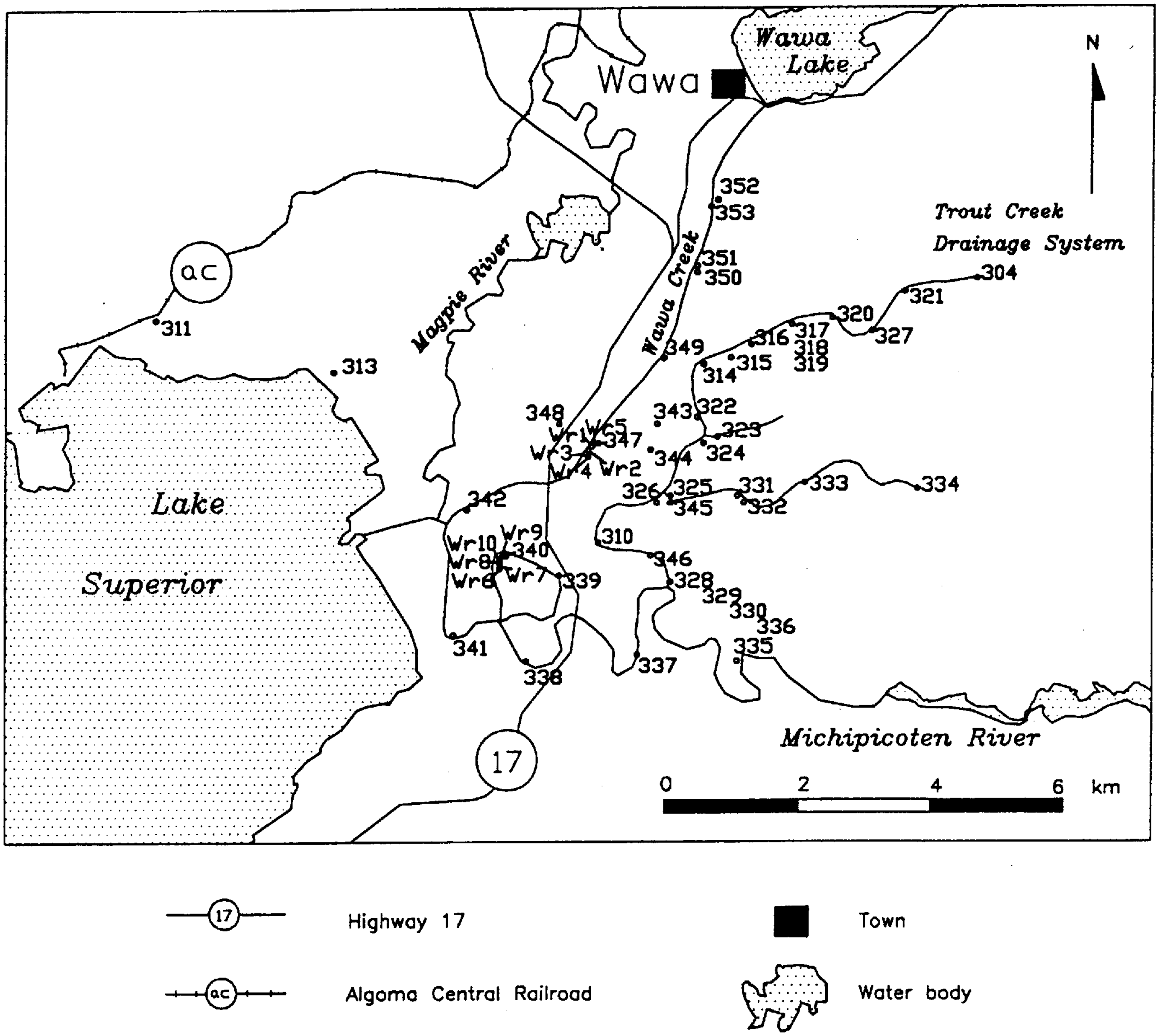


Figure 3: Local detailed studies and fall of 1993 (Wr) sample site locations.

geology is well understood (Morris 1990, 1991, 1992a, 1992b; Sage 1994); and c) the area is close to the Kapuskasing structural zone, an area thought to be a favourable kimberlite host.

The primary objective of this sampling project is to provide regional information on the types and distribution of kimberlite heavy minerals found within overburden in the Michipicoten River-Wawa area. In addition to KIM's, visible gold grains were also identified in the heavy mineral assemblages. A secondary objective was to characterize the way heavy minerals are transported through modern fluvial systems by evaluating variations in concentration and wear on gold grains with distance from a known point source.

Physiography

Topography of the study area is described as moderate to undulating by Boissoneau (1966, 1968) and moderately to severely rugged by Gartner and McQuay (1979). Locally, the landscape can be flat, although relief in some areas can achieve 198 m.

The study area is located south of the Great Lakes-Hudson Bay regional drainage divide and all water within the study area flows south to the Lake Superior basin. Three major drainage basins cross the study area. These are, from west to east: the Dore, Magpie and Michipicoten rivers (the Michipicoten being the largest). The orientation of many of the major rivers and lakes within these drainage basins is controlled by bedrock structural features such as deformation zones (e.g., Emily Bay, Dog Lake and McKewen lake deformation zones, Heather and Buck 1988).

Water flow in the upper reaches of each of the major drainage basins is relatively slow due to low stream gradients. This made modern alluvium sampling difficult in the northern part of the drainage basins as stream sediments were relatively poorly sorted. In addition, drainage within the Magpie and Michipicoten rivers is now largely controlled by hydro electric dams making collection of modern alluvium difficult.

Regional Geology

Bedrock Geology

The study area, which straddles much of the Michipicoten greenstone belt, lies within the Wawa subprovince of the Superior Province of the Canadian Shield. This belt is approximately 38 km wide and extends about 150 km northeast from the Lake Superior basin. Greenstone lithologies consist largely of supracrustal rocks of Archean age. Younger, Archean granitic rock surround the greenstone belt (Figure 4).

The Precambrian geology of the area, and related studies, are summarized by Sage (1994). There are 4 major metasedimentary and metavolcanic rock types recognized within the Michipicoten greenstone belt. These are: 1) intermediate mafic metavolcanic

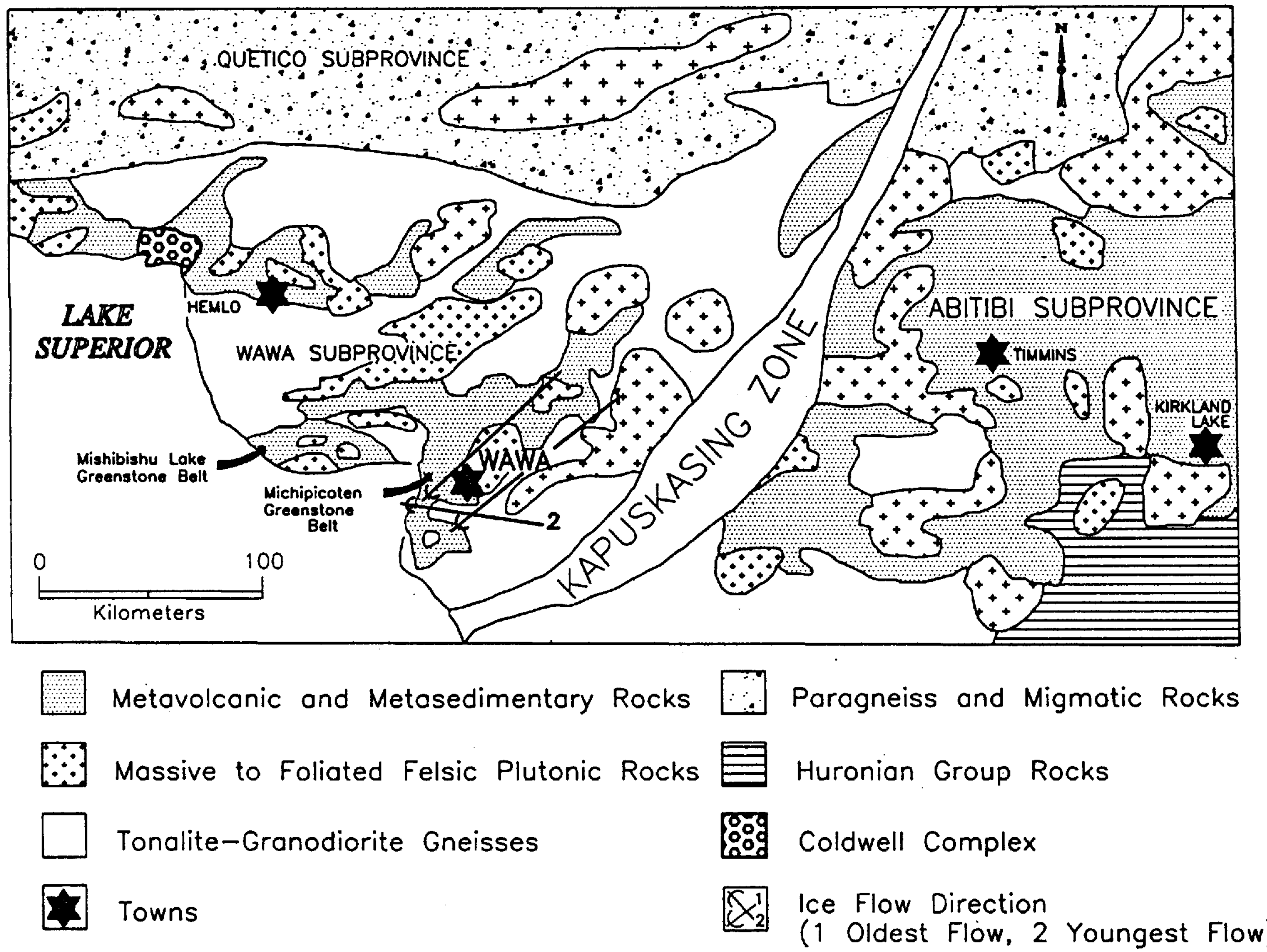


Figure 4: Regional bedrock geology (modified from Sage and Heather 1991).

rocks; 2) intermediate felsic metavolcanic rocks; 3) clastic metasedimentary rocks; and 4) chemical metasedimentary rocks. Granitic rocks comprise the remainder of the map area and several felsic intrusive bodies punctuate supracrustal rocks within the belt (Arias and Heather 1987).

The Kapuskasing structural zone extends east from the shore of Lake Superior, passes south of the study area, and extends to the northeast through Kapuskasing into the Hudson Bay Lowland (Figure 4). This structure is significant as it consists of fractured, crustal material that may host kimberlite rock (Boland and Ellis 1989). Structures associated with this zone extend into the Wawa area. These include northeast striking Proterozoic lamprophyre dykes formed by alkalic magma emplacement. These lamprophyres only occur south of the Wawa-Hawk-Manitowik lakes fault system (Sage 1994). Preliminary studies suggests that these lamprophyre dykes do not contain kimberlite indicator minerals (R. Sage, Ontario Geological Survey, personal communication, 1994).

Quaternary Geology

Most overburden materials within the Michipicoten River-Wawa area are thought to have been deposited during Late Wisconsinan glaciation. Ice flow indicators, such as striae, indicate a prevailing regional ice flow direction of about 225°, varying between 165° to 263°. During the later stages of glaciation, as the ice sheet thinned, local bedrock topography had a greater influence on ice flow direction. In the Michipicoten River valley, this resulted in a set of younger ice flow indicators ranging from 245° to 290° in orientation with a mean of 266°.

The advance of ice over the area left a thin cover (less than 1 m) of compact, stony till deposited primarily by lodgement processes. Clast lithologies and till geochemistry suggest that the till is predominantly of local origin.

The ice margin retreated towards the north and northeast, as marked by the orientation and distribution of recessional moraines, glaciofluvial and glaciolacustrine deposits. These materials may consist of a significant component of distantly transported material.

Recessional moraines are composed of till containing flow structures and ice-contact stratified drift. The texture of this till is more variable than that of the lodgement till. Moraine morphology consists of ridges that range in height from 1 to several meters and are 200 m to 2 km long.

Glaciofluvial materials were deposited as valley-fill sequences within bedrock controlled valleys, or as eskers. These valley-fills consist of sorted sands and gravels and ice-contact stratified drift. Deposits may achieve thickness up to 6 m, such as around Anjigami or Goudreau lakes. Eskers, sinuous ridges up to

3 km long, trend to the southwest.

Glaciolacustrine materials form broad plains that can be areally extensive. In the eastern part of the study area, these plains consist of coarse- and fine-grained materials deposited in lakes formed between the ice margin and bedrock highs. In the west, these materials were deposited within the Lake Superior basin.

As ice receded and streams began downcutting in response to lower base levels within the Lake Superior basin, glacial materials were eroded and re-deposited This process resulted in the deposition of lacustrine and older alluvium deposits as broad plains and terraces. These consist predominantly of fine- to coarse-grained sand.

Modern alluvium associated with active streams and rivers consists of fine- to course-grained sand. Sand is deposited as bars (longitudinal, transverse, point, diagonal) or in sediment traps (i.e. behind boulders).

Sampling Methodology

Modern alluvium was chosen as the preferred sampling medium for this study. This material consists, in part, of heavy minerals derived from bedrock and/or overburden materials. The material is eroded by rivers or streams and redeposited downstream. Because of this, it has been suggested by industry explorationists that a regional KIM signature can be obtained if alluvium samples are collected at the mouths of drainage basins.

In reality, the KIM signature of modern alluvium reflects only the composition of bedrock and overburden along the stream path between the sample site and the first significant sediment trap upstream (i.e. a standing body of water such as a lake). The KIM signature of a modern alluvium sample may reflect a kimberlite body farther up the drainage basin, or beyond, if the basin is aligned parallel to the direction of ice flow. Glacial erosion of such a kimberlite may result in KIM's being transported and deposited within the area of the stream segment that the sample site represents. If the drainage basin being sampled is not aligned in the direction of ice flow, a danger exists in that a KIM signature in that drainage basin may represent a kimberlite located up-ice but within a neighbouring drainage basin.

At each sample site, modern alluvium was collected from bars or sediment traps within streams where heavy minerals would be concentrated. Material was sifted through a 1 cm mesh, steel sieve to exclude the course fraction. A minimum of 10 kg of less than 1 cm sized material was collected from each site. A sample of the greater than 1 cm sized fraction was collected for pebble lithology determination. Modern alluvium was also panned at each site and the concentrate was stored for future reference.

Samples of glaciofluvial, glaciolacustrine and lacustrine sediments, ice-contact stratified drift and older alluvium were also collected (Figure 2, 3; Appendix A). Results for these samples are presented (see Appendix A, B, C, D, E) but are not discussed. The same sampling procedure was followed for these materials as for modern alluvium, however, panning was not always possible due to the absence of water at the collection site. A limited number of till samples were also collected, however, results were not available at the time of publication.

Sample site observations included: a) stream size; b) surrounding surface expression; c) surrounding vegetation; d) material colour and texture; e) bar form and sample site on the bar surface; and f) clast abundance, size range, shape and types. Other site information assembled includes: a) surrounding overburden types and related landforms; b) bedrock types and structures; and c) aeromagnetic information.

Analytical Methodology

The 10 kg samples were sent to Overburden Drilling Management Ltd. in Nepean for processing. The procedure for analysis is summarized in Figure 5. The table feed weights and the non-magnetic and magnetic fraction weights are summarized in Appendix B. The lab procedure was designed to recover gold grains and 5 kimberlite indicator minerals: chrome pyrope garnet, orange garnet (both megacrystic and eclogitic species), chrome diopside, Mg-ilmenite and chromite (Appendix C). The recovery procedure is explained in detail by Avrill and McClenaghan (1994).

Potential KIM's and other heavy minerals of interest isolated and identified by Overburden Drilling Management Ltd. were mounted on epoxy plugs and sent to the Ontario Geosciences Centre (OGC) for microprobe analysis. The calibration routine and operating conditions for the microprobe are summarized in Table 1. The following parameters were used to define each of the KIM's.

Garnet

Garnet types identified include grossular, almandine, spessertine-almandine, almandine-pyrope and pyrope. Garnets of peridotite origin are typically Cr-rich pyropes. These minerals may originate from many different types of peridotite the most important of which are harzburgite and lherzolite. Eighty-five percent of chrome pyropes that occur as inclusions in diamonds are Ca depleted and harzburgitic in origin (Gurney 1984). These types of garnets have been termed "G10" (Dawson and Stephens 1975) and are considered very important KIM's. The recovery of "G10" garnets from overburden is important since it suggests that these minerals originated from harzburgitic peridotite, and are more strongly associated with diamond than are garnets of lherzolitic ("G9") origin (Dawson and Stephens 1975).

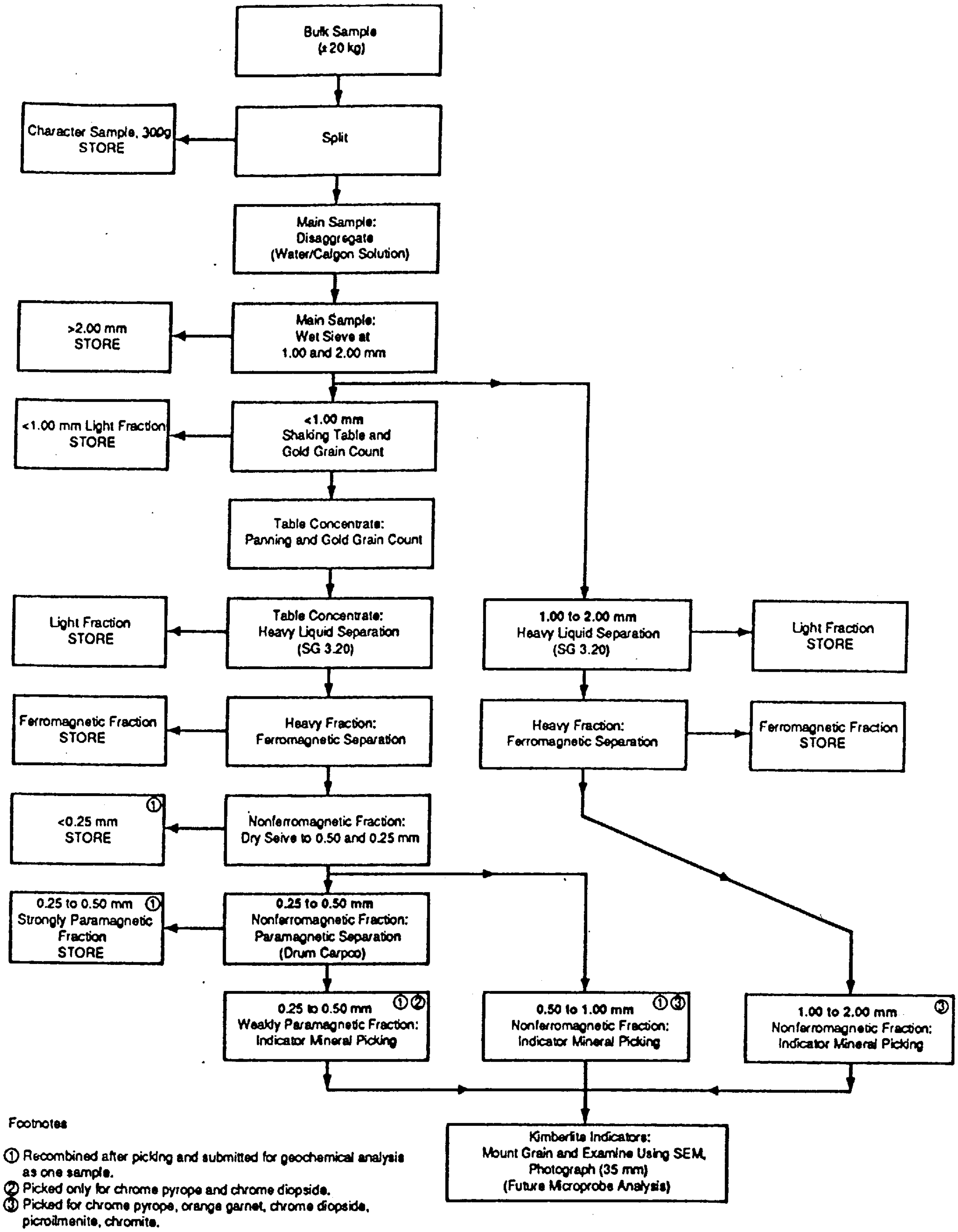


Figure 5: Laboratory procedure used by Overburden Drilling Management Limited (from Avrill and McClenaghan 1994)

Table 1. Ontario Geoscience Centre microprobe operating routine.

Routine	Na2O	MgO	Al2O3	SiO2	Cr2O3
Garnet					
L.O.D wt%	0.011	0.021	0.026	0.032	0.035
L.O.Q wt%	0.037	0.070	0.087	0.107	0.117
Count time(s)	60	15	15	15	35
X-tal	TAP	TAP	TAP	TAP	LiF
Standard	NaCl	Pyrope	Pyrope	Pyrope	Cr2O3
Chromite					
L.O.D wt%	0.018	0.026	0.026	0.029	0.049
L.O.Q wt%	0.059	0.086	0.087	0.097	0.162
Count time(s)	30	20	20	20	20
X-tal	TAP	TAP	TAP	TAP	PET
Standard	NaCl	MgAl2O4	MgAl2O4	pyrope	Cr2O3
Ilmenite					
L.O.D wt%	0.018	0.024	0.026	0.028	0.047
L.O.Q wt%	0.058	0.081	0.086	0.095	0.156
Count time(s)	30	20	20	20	20
X-tal	TAP	TAP	TAP	TAP	PET
Standard	NaCl	MgAl2O4	MgAl2O4	Pyrope	Cr2O3
Pyroxene					
L.O.D wt%	0.017	0.022	0.023	0.037	0.043
L.O.Q wt%	0.056	0.072	0.076	0.122	0.142
Count time(s)	30	15	15	15	25
X-tal	TAP	TAP	TAP	TAP	LiF
Standard	NaCl	MgAl2O4	Pyrope	Pyrope	Cr2O3

Microprobe is a Cameca SX50

Operating conditions are: 15kV accelerating voltage, 20nA beam current, and a beam diameter of approximately 2-5 microns.

Abbreviations: L.O.D., limit of detection; L.O.Q., limit of quantification; X-tal, analyzing crystal; TAP, thallium and phthalate; LiF, lithium fluoride; PET, penta-erythritol; n.d., not determined.

*note: count time (in seconds) is for both peak and background measurements.

Table 1....continued

Routine	MnO	FeO	NiO	K2O	CaO	TiO2	Nb2O5
Garnet							
L.O.D wt%	0.034	0.039	n.d.	0.026	0.020	0.021	n.d.
L.O.Q wt%	0.113	0.130	n.d.	0.087	0.067	0.070	n.d.
Count time(s)	35	35	n.d.	40	25	40	n.d.
X-tal	LiF	LiF	n.d.	PET	PET	PET	n.d.
Standard	Bustamite	Hypersthene	n.d.	KCl	Diopside	Rutile	n.d.
Chromite							
L.O.D wt%	0.054	0.054	0.046	0.034	0.026	0.041	n.d.
L.O.Q wt%	0.181	0.178	0.155	0.114	0.085	0.137	n.d.
Count time(s)	25	25	40	30	20	20	n.d.
X-tal	LiF	LiF	LiF	PET	PET	PET	n.d.
Standard	Bustamite	Hematite	Ni2Si	KCl	Diopside	Rutile	n.d.
Ilmenite							
L.O.D wt%	0.054	0.056	0.050	0.037	0.028	0.041	0.066
L.O.Q wt%	0.179	0.186	0.167	0.122	0.093	0.137	0.220
Count time(s)	25	25	40	30	20	20	30
X-tal	LiF	LiF	LiF	PET	PET	PET	PET
Standard	Bustamite	Hematite	Ni2Si	KCl	Diopside	Rutile	LiNbO3
Pyroxene							
L.O.D wt%	0.032	0.045	n.d.	0.030	0.025	0.026	n.d.
L.O.Q wt%	0.107	0.149	n.d.	0.099	0.083	0.086	n.d.
Count time(s)	25	25	n.d.	30	20	25	n.d.
X-tal	LiF	LiF	n.d.	PET	PET	PET	n.d.
Standard	Bustamite	Hypersthene	n.d.	KCl	Diopside	Rutile	n.d.

Microprobe is a Cameca SX50

Operating conditions are: 15kV accelerating voltage, 20nA beam current, and a beam diameter of approximately 2-5 microns.

Abbreviations: L.O.D., limit of detection; L.O.Q., limit of quantification; X-tal, analyzing crystal; TAP, thallium and phthalate; LiF, lithium fluoride; PET, penta-erythritol; n.d., not determined.
*note: count time (in seconds) is for both peak and background measurements.

Other pyrope garnets associated with kimberlites are the megacrystic suit, which are not directly associated with diamond. These, when found with other KIM's, can also be useful indicators. These minerals may range from Cr-poor to moderate levels (2 to 3%) of Cr_2O_3.

The geochemistry of mantle derived eclogitic garnet is complex and overlap may exist with garnets of both peridotitic and deep crustal origin (Dawson and Stephens 1975). However, eclogitic garnets are typically Cr-poor and range from pyrope to almandine-pyrope in composition. Eclogitic garnet inclusions in diamond have been found to have elevated Na concentrations (Na_2O greater than 0.09%) and can therefore, like the "G10" garnet, be considered a valuable KIM. Low Na eclogitic garnets may also be useful indicators if found in conjunction with other KIM's.

Grossular, almandine and spessertine-almandine garnets are not often associated with kimberlite and are therefore of little interest to kimberlite exploration. The geochemistry of these garnet types identified from the OGC microprobe are listed in Appendix D.

Chromite

Chromites found in diamond inclusions differ from most other chromites by their high Cr_2O_3 content, generally greater than 61 weight percent (Gurney 1984). Finding such a chromite in an overburden or rock sample is just as significant as a finding a "G10" garnet chrome pyrope garnet. Chromites with lower Cr_2O_3 values are individually less important, however, they may indicate the presence of kimberlite if found in association with other KIM's.

Mg-ilmenite

Ilmenite found within kimberlite is generally Mg-rich, with MgO values that range between 4 and 15 weight percent and Cr_2O_3 content greater than 2 weight percent (McCallum and Vos 1993). In this study, such ilmenites recovered from overburden are regarded as useful KIM indicators.

Chrome Diopside

Alone, chrome diopside is not a definitive kimberlite indicator as it occurs within both kimberlite and other basic and ultrabasic rocks. Chrome diopside associated with lherzolitic rock commonly has high chrome values (greater than 1 weight percent; Mitchell 1989; K. Day, Overburden Drilling Management, personal communication, 1994). For this reason, chrome diopsides with Cr_2O_3 values greater than 1 weight percent were chosen as KIM's for this study.

Results

Kimberlite Heavy Mineral Indicators

It is difficult to interpret and evaluate the relevance of the data set generated by this study as there are no similar, publicly available, data sets to compare against. However, identifying the location of important KIM's (such as "G10" and high Cr chromite), and their relative abundance, may reveal areas or sites favourable for kimberlite exploration.

The proportional dot diagrams presented in this section illustrate the relative abundance of various KIM's throughout the region. These diagrams are based on proportional statistics. The recovery of a large number of KIM's from the area south of Wawa is significant. The level of sampling confirms the reproducibility of the data.

The mapped distribution of eclogitic garnets are not presented here, as high Na eclogitic garnets were not found. Possible low Na eclogitic garnets, however, are included in the total KIM plot.

Chrome Pyrope Garnets

Forty-one chrome pyrope garnets were identified. Pyrope's were classified as "G10" or "G9" based on weight percent Cr_2O_3 vs weight percent CaO (Figure 6). Four "G10"'s and 37 "G9"'s were identified.

Six areas emerge as potential kimberlite exploration targets based on: 1) the location of the 4 "G10" garnets; and 2) clusters of sites with 1 or more higher chrome pyrope garnets (Figure 7). These areas include: a) southeast shore of Murray Lake (Wat287S94); b) south of Dalton (Wat291S94); c) the lower reaches of the Magpie River near the overpass at Highway 17 (Wad83S94); d) the Trout Creek drainage basin south of Wawa (Waj319S94, Waj322S94, Waj331S94); e) the lower reaches of the Michipicoten River (Wad70S94, Wr7); and f) the upper reaches of Wawa Creek drainage basin, south of Wawa (Wat351S94).

Two of the 4 "G10" garnets have a kelyphite rim, a fragile, exterior alteration rind (Wr7 and Waj319S94). The presence of these rinds suggests that the grains have not been transported far from source. An alternative explanation could be that the grains were weathered from a local xenolith transported to the site from a great distance.

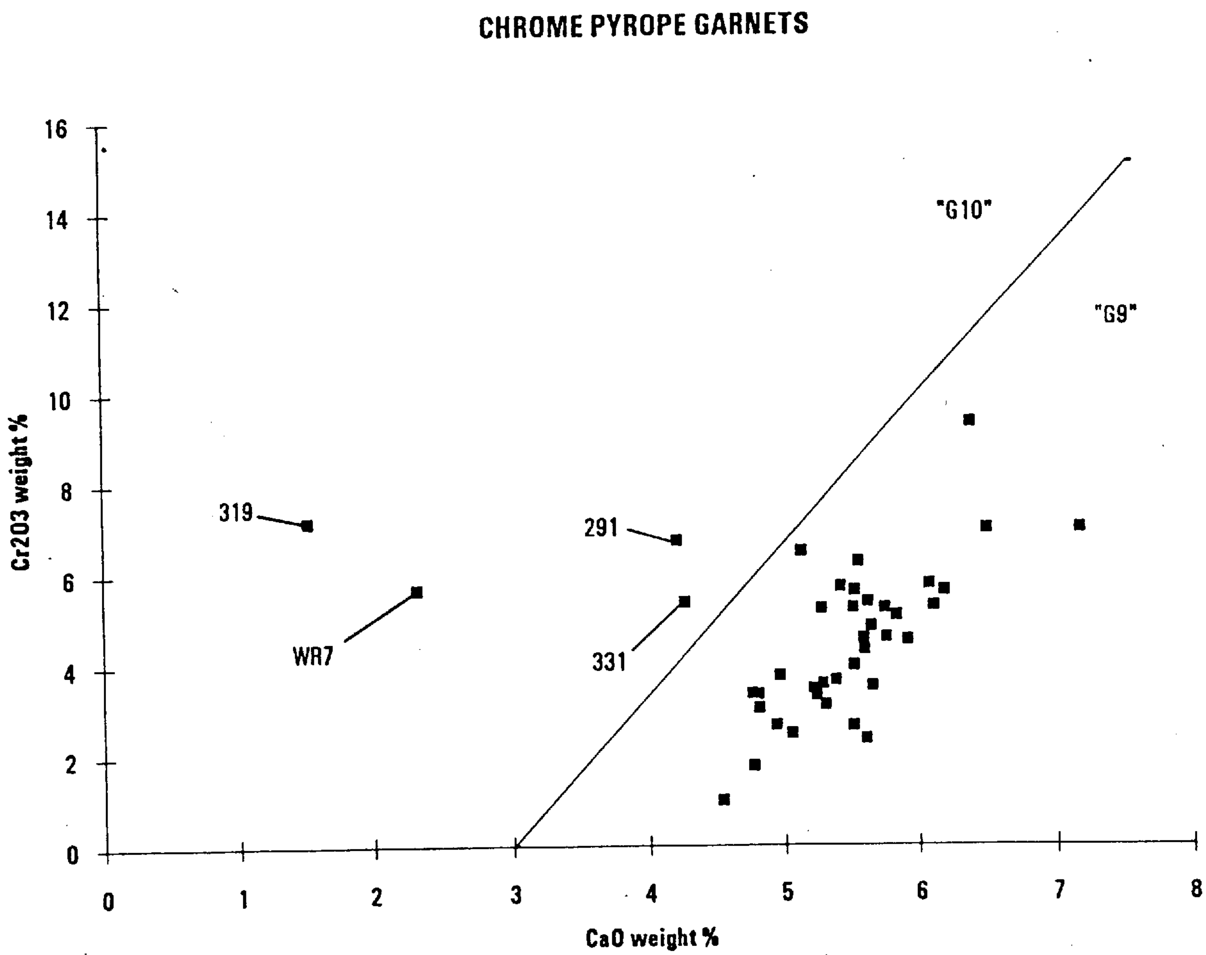
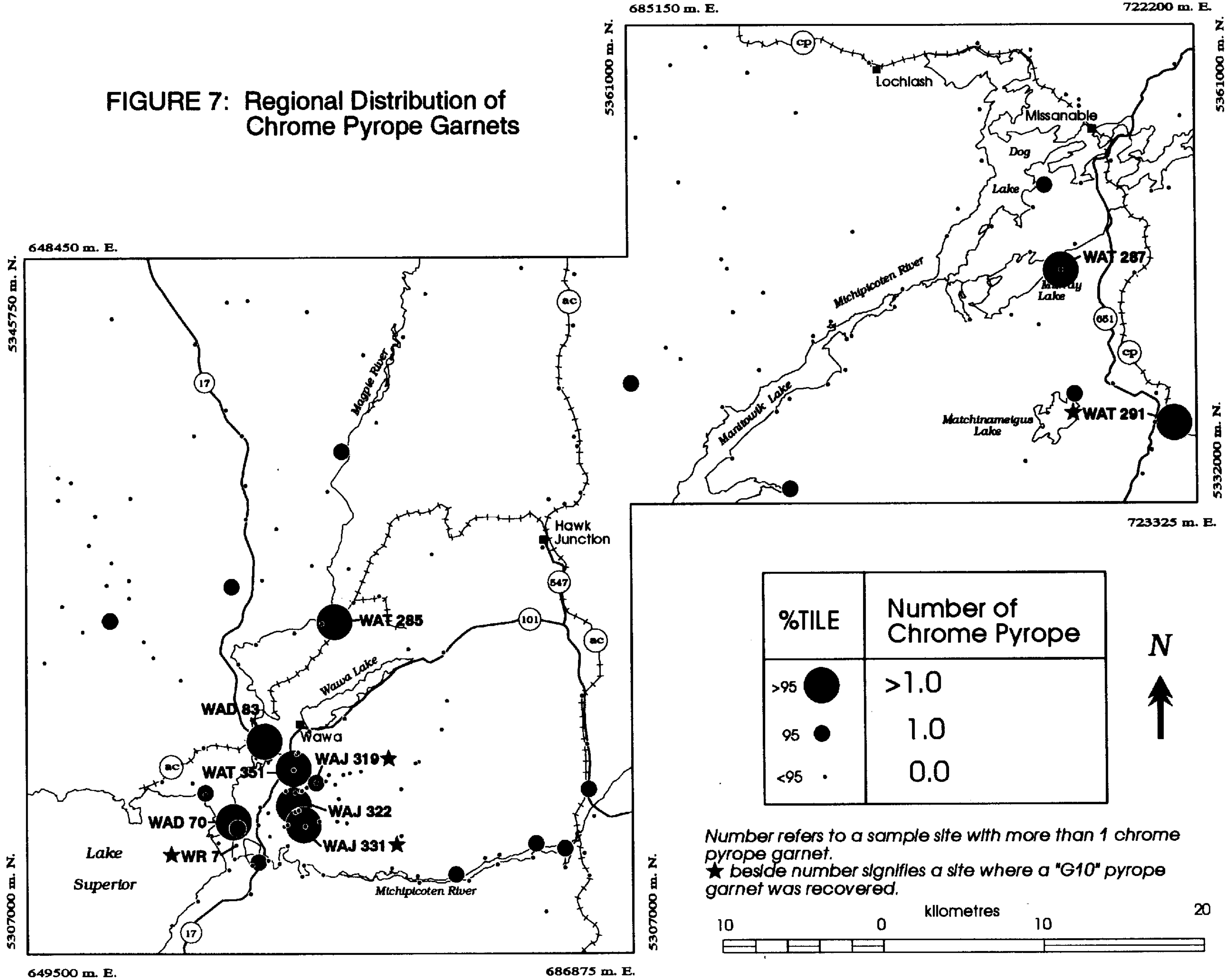


Figure 6: "G10" and "G9" chrome pyrope garnet plot

FIGURE 7: Regional Distribution of Chrome Pyrope Garnets



Chromite

One hundred and eight chromites were identified. Of these, 3 are high Cr chromites containing weight percent of Cr_2O_3 greater than or equal to 61. A fourth chromite contained 60.733 weight percent Cr, and is considered a high Cr Chromite. One of the 3 high Cr chromites was collected from a till sample and not a modern alluvium sample (Wat308S94). There are also several other chromites with a Cr value close to the 61 weight percent cutoff (Figure 8).

Six areas emerge as potential kimberlite exploration targets based on: 1) the location of the 4 high Cr chromites; and 2) clusters of sites with 1 or more higher chromite grains (Figure 9). These areas include: a) northeast shore of Emily Bay located on the southwest shore of Dog Lake (Wat229S94); b) the northwest part of the study area, straddling Highway 17 (Wad49S94, Wad51S94); c) the lower reaches of the Magpie River near the overpass at Highway 17 (Wad83S94); d) the Trout Creek drainage basin south of Wawa (Waj315S94, Waj322S94); e) near the High Falls Dam, Michipicoten River (Wat308S94); and f) the lower reaches of the Michipicoten River (Waj329S94).

Mg-Ilmenite

One hundred and twenty-one Mg-ilmenites were identified. Four areas are identified as potential kimberlite exploration targets. This is based on clusters of sites where one or more higher Mg-ilmenite grains occur (Figure 10). These areas include: a) northeast shore of Emily Bay located on the southwest shore of Dog Lake (Wat229S94); b) an area northwest of Dalton (Wat204S94); c) the upper reaches of Wawa Creek drainage basin, south of Wawa (Wat350S94); and d) the Trout Creek drainage basin south of Wawa (Waj315S94, Waj316S94, Waj317S94, Waj318S94, Waj319S94, Wat260S94).

Chrome Diopside

Thirty nine chrome diopsides were identified. Four areas emerge as potential kimberlite exploration targets based on clusters of sites where one or more higher chrome diopside grains occur (Figure 11). These areas include: a) east and west of the shores of the mid-point of Manitowik Lake (Wat261S94, Wat269S94); b) the High Falls Dam area (Wad93S94); c) the lower reaches of the Michipicoten River (Wat336S94, Wat342S94, Wat336S94, Wat329S94, Wat328S94); and d) the Trout Creek drainage basin south of Wawa (Waj317S94).

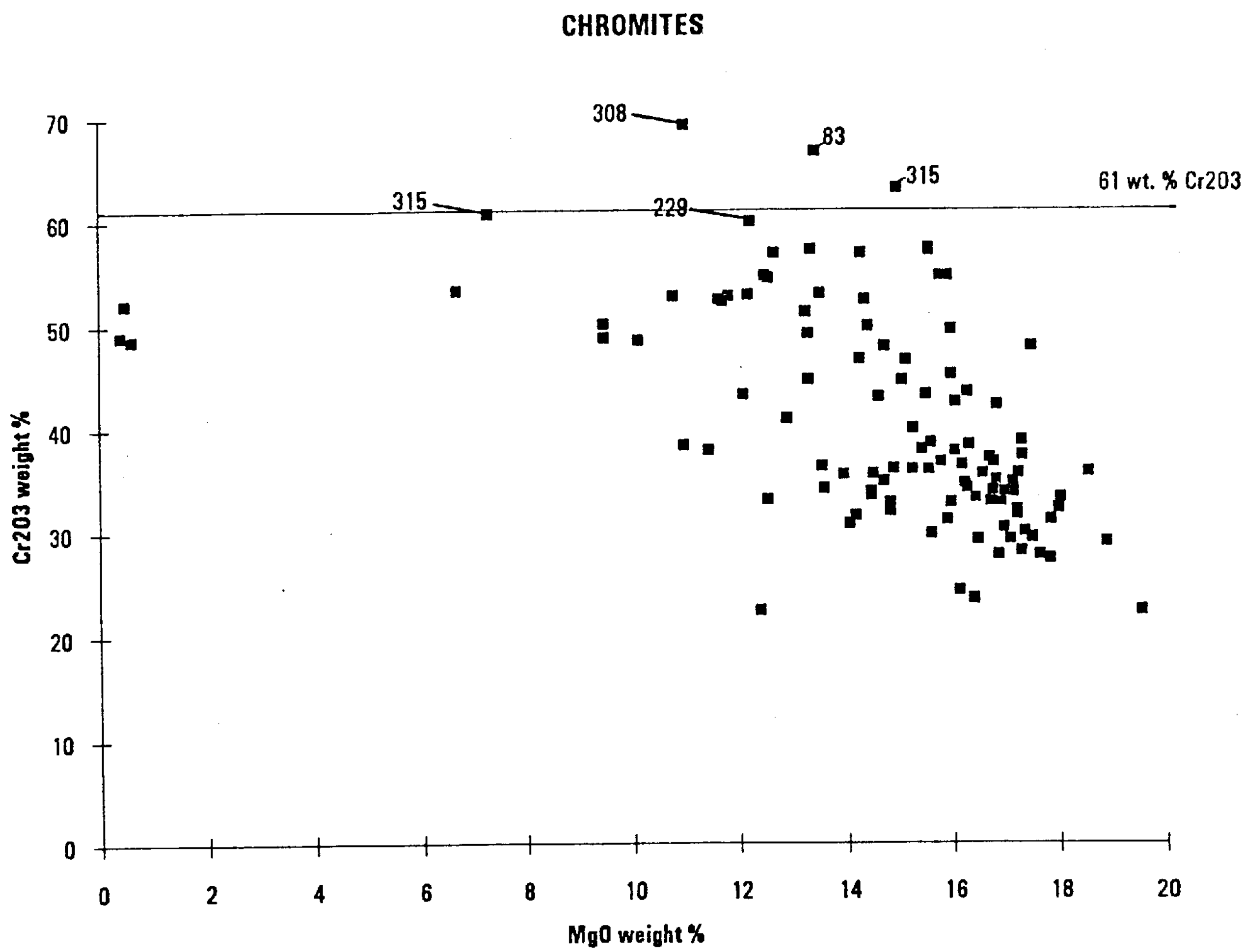


Figure 8: Chromite plot

FIGURE 9: Regional Distribution of Chromite.

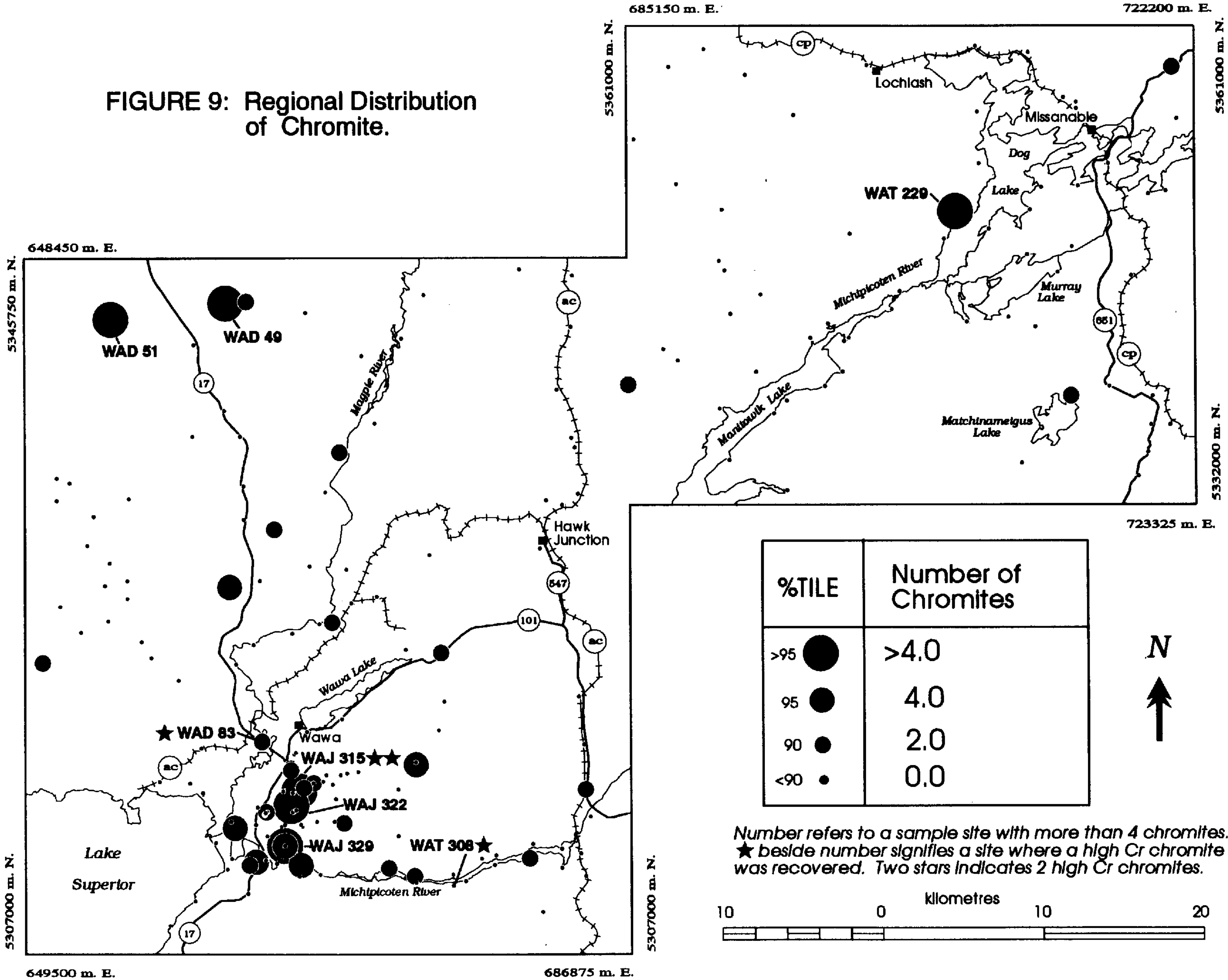


FIGURE 10: Regional Distribution of Mg-Ilmenite.

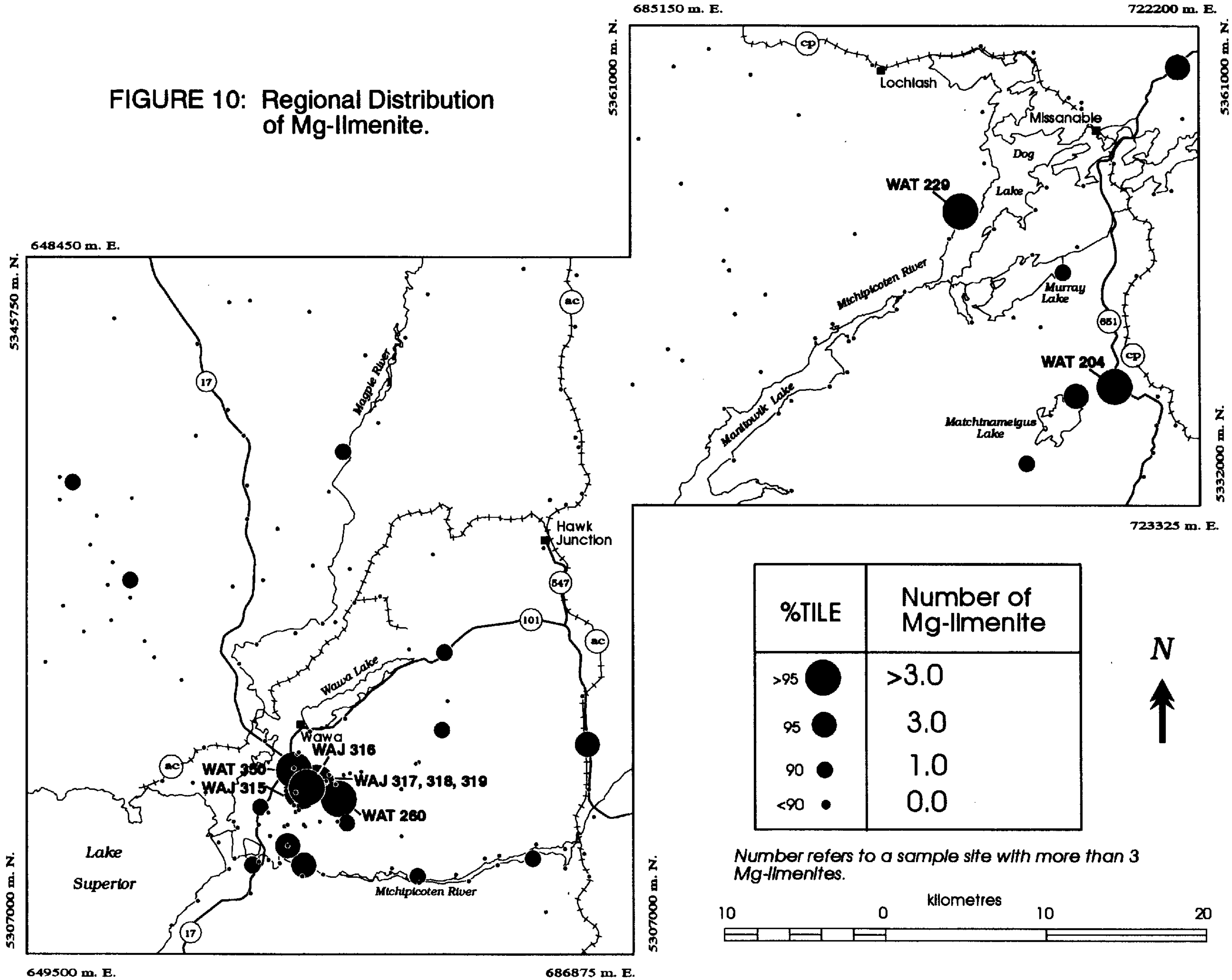
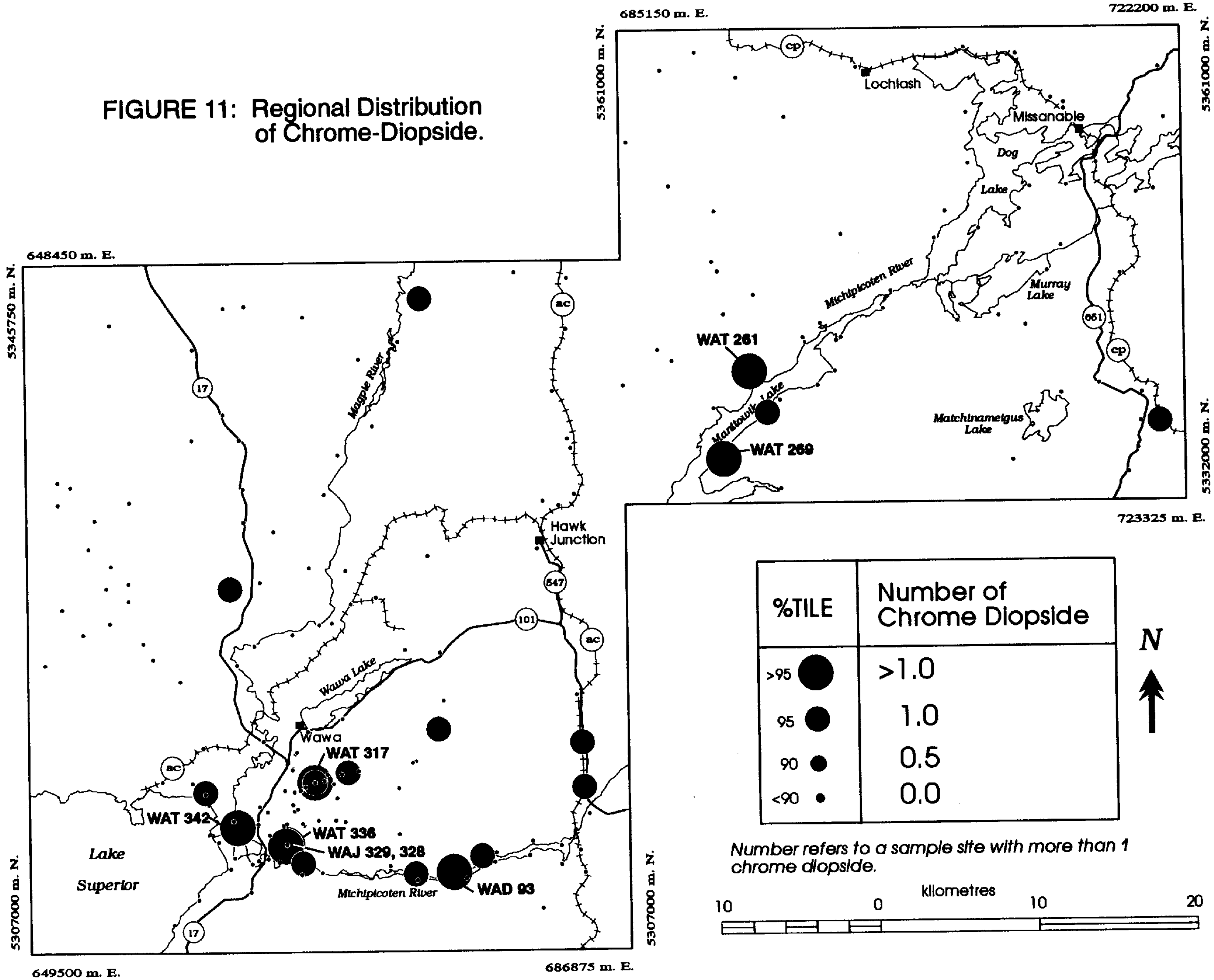


FIGURE 11: Regional Distribution of Chrome-Diopside.



Recommendations for Kimberlite Exploration

Several sites and related areas were identified as favourable for kimberlite exploration from looking at the distribution of individual KIM's. However, a lower number of potential exploration areas, of higher quality, could be recommended if the total number of KIM's were considered for each site (Figure 12). This may be more desirable in that the recommended exploration areas would be based on sample sites containing significant KIM's (e.g. a "G10") or a variety of KIM's (e.g. "G10", Mg-ilmenite and chrome diopside) (Table 2).

These areas include (not listed in any particular order of importance): a) the Dalton area (Wat291); b) northeast shore of Emily Bay located on the southwest shore of Dog Lake (Wat229S94); c) the High Falls Dam area (Wad93S94); d) the northwest part of the study area, straddling Highway 17 (Wad49S94); e) the lower reaches of the Magpie River near the overpass at Highway 17 (Wad83S94); f) the Trout Creek drainage basin south of Wawa (Waj315S94, Waj316S94, Waj317S94, Waj319S94); and g) the lower reaches of the Michipicoten River (Wr7, Waj329S94).

Of particular interest is an area within the Trout Creek drainage basin. A series of 5 samples, from 3 sites, were collected along the northern arm of Trout Creek, west of Ward Lake. A surprising number and variety of KIM's were recovered.

The most easterly sampling site (consisting of 3 samples collected from the downstream, midpoint and upstream parts of a longitudinal bar: Waj317S94, Waj318S94, Waj319S94) contained a total of 35 KIM's, including a very fragile "G10" with a kelyphite rim. Sample Waj315S94, the most westerly of the 3 sites, contained 2 high Cr chromites. The surrounding terrain is largely dominated by bedrock with little glaciofluvial material or till cover, so it is unlikely that the KIM's were all carried into this area by glacial transport.

The area recommended for kimberlite exploration associated with sample Wad49S94 is based wholly on the presence of relatively high numbers of low Cr chromite grains. Given that low Cr chromite can be derived from other rock types, this area may not be as favourable for exploration as the other recommended targets.

Gold Grains

The regional distribution of gold grains recovered in this study are plotted as percentile classes in 2 ways. First, as a function of the number of visible gold grains (Figure 13) and, secondly, as number of pristine visible gold grains (Figure 14).

The number of visible gold grains per sample site ranges from 0 to 475, with a mean value of 8. The percentile data indicates that regionally, a value of greater than 8 gold grains per sample site is significant. Most of the grain counts greater than 8 occur

FIGURE 12: Regional Distribution of Total Kimberlite Indicator Minerals.

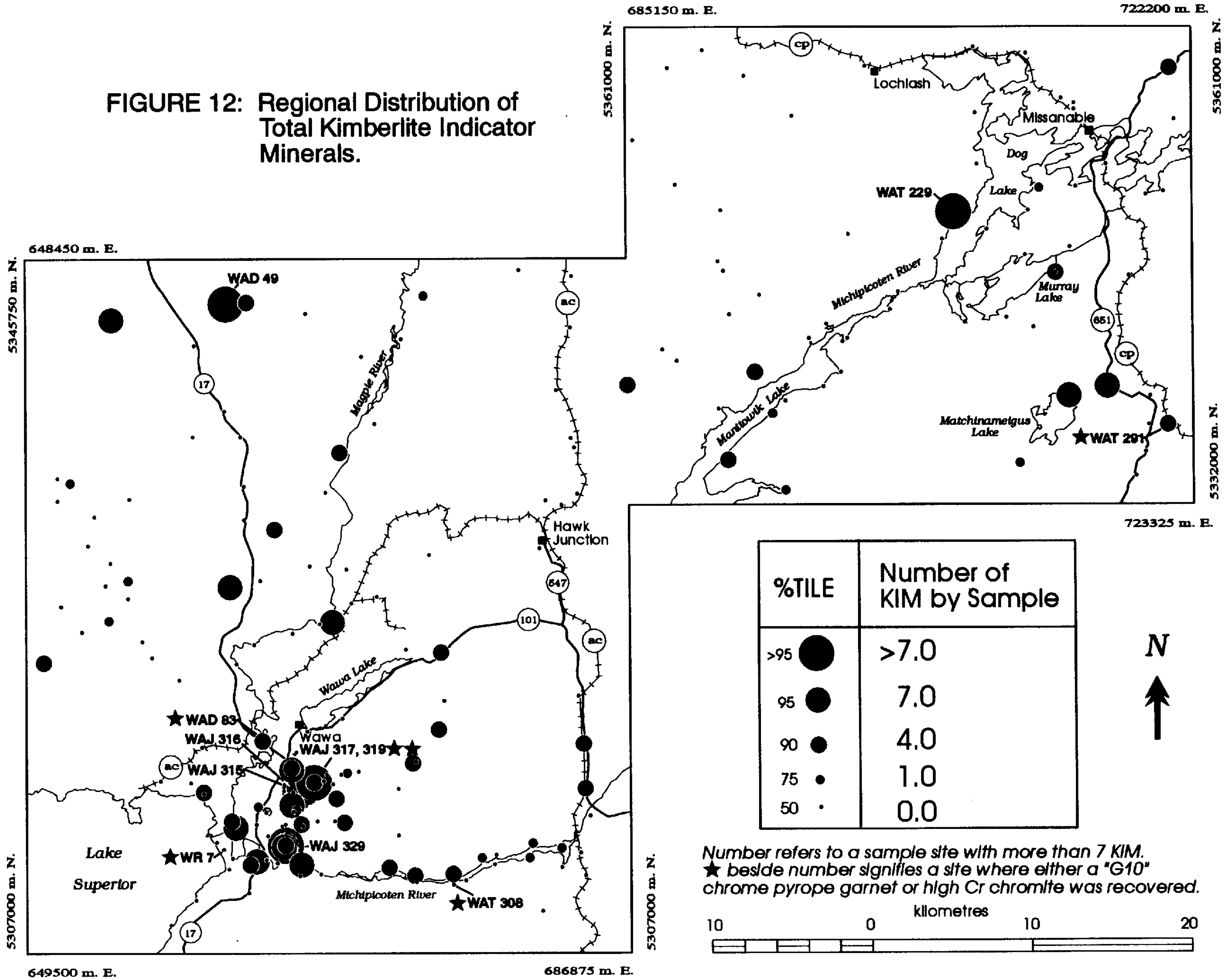


TABLE 2:	RECOMMENDED AREAS FOR KIMBERLITE EXPLORATION
Sample	Justification
No.	
* Wr 7	**1 "G10" Chrome Pyrope Garnet**
Wad 49	8 Chromites
Wad 83	2 "G9" Chrome Pyrope Garnets
	1 High Chrome Chromite
^ Wat 308	2 Chromites
	1 High Chrome Chromite
Wat 229	11 Magensium-rich Ilmenites
	9 Chromites
Wat 291	2 "G9" Chrome Pyrope Garnets
	1 "G10" Chrome Pyrope Garnet
	1 Chrome Diopside
Waj 315	15 Magnesium-rich Ilmenites
	7 Chromites
	2 High Chrome Chromites
	1 Sodium Poor Eclogitic Garnet
Waj 316	21 Magnesium-rich Imenites
	2 Chromites
	2 Sodium Poor Eclogitic Garnets
Waj 317	13 Magnesium-rich Ilmenites
	2 Chrome Diopsides
	1 Sodium Poor Eclogitic Garnet
Waj 319	11 Magnesium-rich Ilmenites
	3 Sodium Poor Eclogitic Garnets
	2 Chromites
	1 "G10" Chrome Pyrope Garnet
Waj 329	12 Chromites
	3 Chrome Diopsides
	* Older Alluvium Site
	^ Till Sample Site

FIGURE 13: Regional Distribution of Visible Gold Grains.

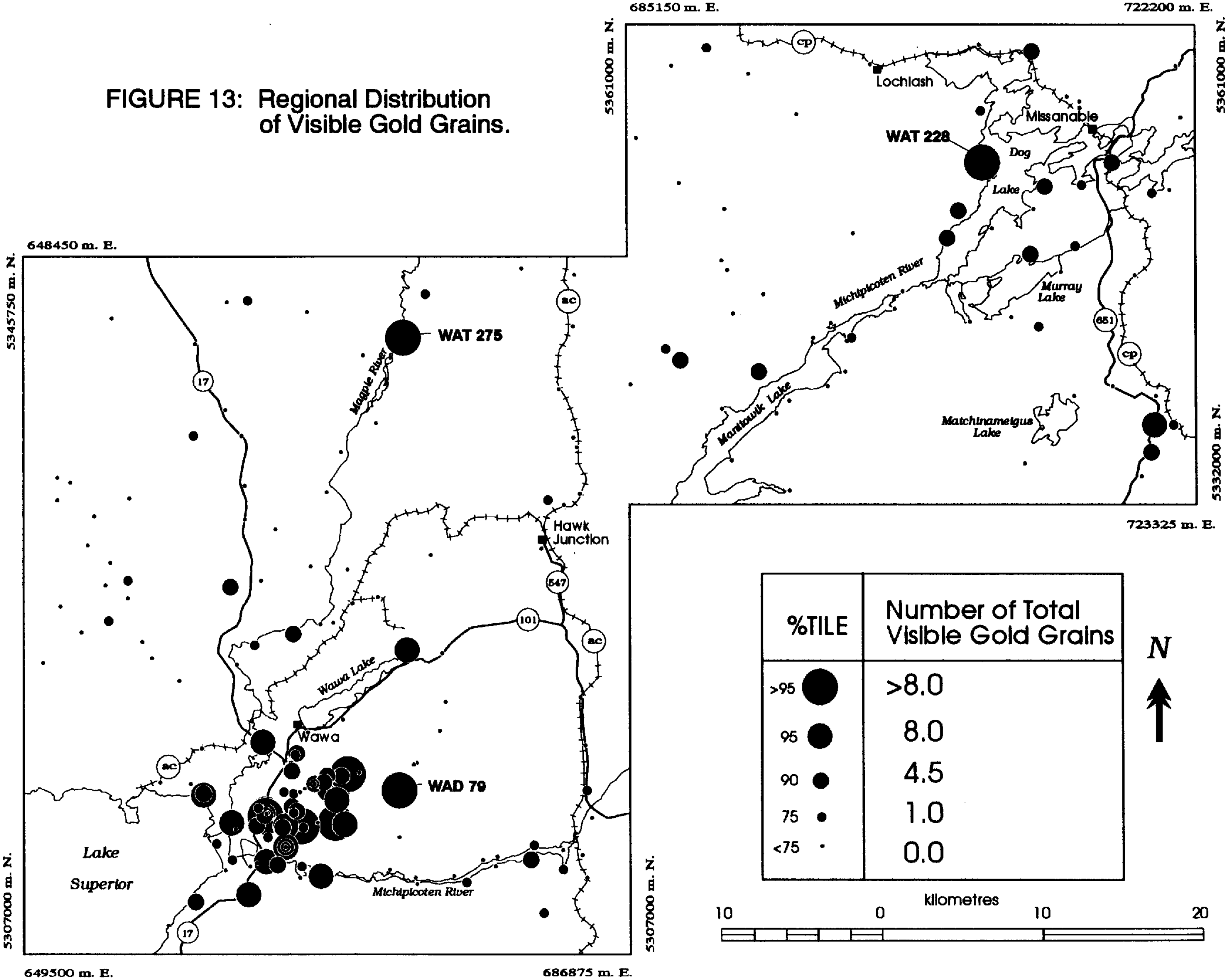
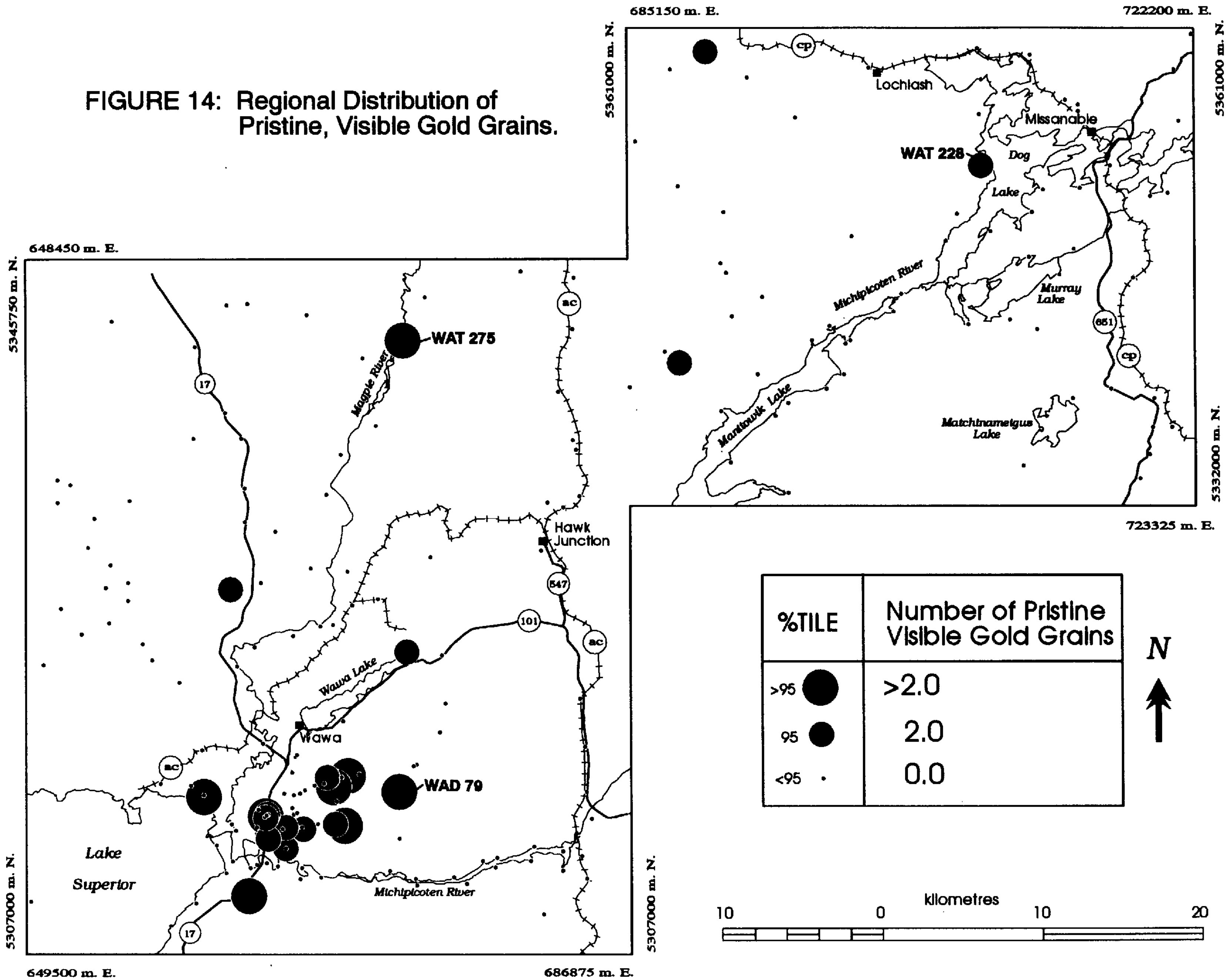


FIGURE 14: Regional Distribution of Pristine, Visible Gold Grains.



in and around the Jubilee Stock area south of Wawa. This area has been an intermittent gold producer since the early 1900's and therefore, the higher number of visible gold grains in this region is not surprising. At site Waj327S94, 475 visible gold grains were recovered from a stream draining mine tailings.

There are 3 sites of interest away from the Jubilee Stock area. These areas are: a) the Leroy Lake area, part of the Firesand Creek system (Wad79S94, Figure 13); north shore of Emily Bay, Dog Lake area (Wat228S94, Figure 13); and c) a stream that drains Perry Lake, east of the Magpie Reservoir (Wat275S94, Figure 13).

Gold grains have been classified as pristine, modified or reshaped as a means of indicating transport distance from the host rock to point of deposition (Avrill 1988). If a grain is pristine, it is assumed to have not travelled far from source, whereas a reshaped grain may have travelled some distance (Avrill 1988; DiLabio 1990). A proportional dot diagram of just the pristine gold grains exhibits a distribution similar to the visible gold grain diagram (Figure 14). This suggests most anomalous samples reflect local source areas. There is a grouping of anomalous sites containing pristine gold grains around the Jubilee Stock area. Away from the Jubilee Stock area, 2 of the 3 anomalous sites that were observed on the total visible gold grain diagram (Figure 13) also occur as anomalies on the pristine gold plot (Wad79S94 and Wat275S94, Figure 14).

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Appendix A

Sample site locations

Summary list of abbreviations:

Gf; Glacial fluvial

Gl; Glacial lacustrine

Ic; Ice contact stratified drift

La; Lacustrine

Ma; Modern alluvium

Oa; Older alluvium

These material types are described in the Quaternary Geology sub-section. They are listed in this appendix by sample number, U.T.M. coordinates and material sampled.

Sample Number	U.T.M. Easting	U.T.M. Northing	Material Sampled
Wr1S93	664200	5312350	Ma
Wr2S93	664150	5312300	Ma
Wr3S93	664100	5312250	Ma
Wr4S93	664150	5312200	Ma
Wr5S93	664250	5312400	Ma
Wr6S93	662800	5310500	Oa
Wr7S93	662800	5310550	Oa
Wr8S93	662800	5310600	Oa
Wr9S93	662850	5310700	Oa
Wr10S93	662800	5310650	Oa
Wad1S94	671200	5325800	Ma
Wad2S94	673000	5322500	Ma
Wad3S94	670300	5322500	Gf
Wad4S94	669600	5325400	Ma
Wad5S94	669300	5327500	Ma
Wad6S94	667000	5327700	Ma
Wad7S94	663900	5326800	Ma
Wad8S94	663500	5326800	Gf
Wad9S94	689600	5358800	Ma
Wad10S94	691800	5359900	Ma
Wad11S94	694400	5358300	Ma
Wad12S94	697400	5355800	Ma
Wad13S94	702000	5358900	Ma
Wad14S94	702300	5358900	Gl
Wad15S94	693800	5354200	Ic
Wad16S94	687400	5354300	Ma
Wad17S94	690050	5351500	Ma
Wad18S94	690400	5352000	Gf
Wad19S94	692900	5349900	Ma
Wad20S94	692100	5352900	Ic
Wad21S94	683500	5345800	Ma
Wad22S94	692700	5346700	Ma
Wad23S94	693050	5346100	Ma
Wad24S94	690100	5340500	Ma
Wad25S94	693400	5344050	Gf
Wad26S94	693400	5343400	Ma
Wad27S94	695300	5344600	Ma
Wad28S94	700900	5348400	Ma
Wad29S94	654400	5324300	Ma
Wad30S94	652700	5323600	Ma
Wad31S94	651000	5323000	Gf
Wad32S94	650300	5321700	Ma
Wad33S94	651400	5325200	Ma
Wad34S94	653100	5329000	Ma
Wad35S94	653500	5330800	Ma
Wad36S94	654200	5326500	Ma
Wad37S94	651200	5333200	Ma
Wad38S94	650000	5331300	Ic
Wad39S94	651200	5331800	Ma
Wad40S94	655700	5331900	Ma
Wad41S94	652000	5332900	Ma
Wad42S94	659700	5335800	Ma
Wad43S94	661700	5337400	Ma

Sample Number	U.T.M. Easting	U.T.M. Northing	Material Sampled
Wad44S94	659800	5341500	Ma
Wad45S94	660200	5341300	Gf
Wad46S94	670300	5340800	Ma
Wad47S94	666800	5343500	Ma
Wad48S94	663100	5344200	Ma
Wad49S94	661800	5344100	Ma
Wad50S94	662700	5335800	Ma
Wad51S94	654600	5343100	Ma
Wad52S94	662800	5332100	Gf
Wad53S94	662900	5332700	Ma
Wad54S94	662900	5330600	Ma
Wad55S94	662000	5326400	Ma
Wad56S94	675200	5322300	Ma
Wad57S94	675400	5319300	Ma
Wad58S94	675050	5317500	Ma
Wad59S94	673400	5315400	Ma
Wad60S94	673600	5315500	Ma
Wad61S94	672500	5310900	Ma
Wad62S94	671800	5310100	Gl
Wad63S94	671900	5308900	Ma
Wad64S94	667600	5308500	Ma
Wad65S94	666300	5308400	Ma
Wad66S94	664200	5309400	Ma
Wad67S94	663600	5309300	Ma
Wad68S94	661100	5310500	Ma
Wad69S94	663000	5311500	La
Wad70S94	662050	5311800	Ma
Wad71S94	659500	5314200	Ma
Wad72S94	660300	5313600	Ma
Wad73S94	663600	5311600	Ma
Wad74S94	660700	5308900	Ma
Wad75S94	671500	5308700	Gl
Wad76S94	673600	5308000	Ma
Wad77S94	673500	5308400	Ma
Wad78S94	668500	5311800	Ma
Wad79S94	672500	5313800	Ma
Wad80S94	664800	5330000	Ma
Wad81S94	661800	5321400	Gl
Wad82S94	662400	5321600	Ma
Wad83S94	664000	5316800	Ma
Wad84S94	665400	5315800	Gl
Wad85S94	663100	5307350	Ma
Wad86S94	682700	5310100	Ma
Wad87S94	680900	5310400	Ma
Wad88S94	680700	5309500	Ma
Wad89S94	678600	5309700	Ma
Wad90S94	678500	5309100	Ma
Wad91S94	677700	5309500	Ma
Wad92S94	676700	5308100	Ma
Wad93S94	675900	5308500	Ma
Wad94S94	684100	5316600	Ma
Wad95S94	684200	5313800	Ma
Wad96S94	684700	5312600	Gl

Sample Number	U.T.M.		Material Sampled
	Easting	Northing	
Wad97S94	684500	5312100	Ma
Wad98S94	683900	5309800	Ma
Wad99S94	684200	5308400	Ma
Wad100S94	682700	5308900	Ma
Wad101S94	681500	5306200	Ma
Wad102S94	682100	5306100	Gl
Wad103S94	680200	5346200	Ma
Wad104S94	687000	5339000	Ma
Wad105S94	695400	5349800	Gl
Wad106S94	689200	5341200	Ma
Wad107S94	683400	5342600	Ma
Wad108S94	683400	5335700	Ma
Wad109S94	659800	5306900	Ma
Wad110S94	678200	5323900	Gl
Wat200S94	718900	5333300	Ma
Wat201S94	719500	5334800	Ma
Wat202S94	719700	5336500	Ma
Wat203S94	719800	5337000	Gl
Wat204S94	717100	5338900	Ma
Wat205S94	719800	5338300	Ma
Wat206S94	682100	5328050	Gl
Wat207S94	681400	5328800	Ma
Wat208S94	681800	5331800	Ma
Wat209S94	682800	5331500	Ma
Wat210S94	683800	5332200	Ma
Wat211S94	682800	5338800	Gf
Wat212S94	682500	5338700	Ma
Wat213S94	683600	5335100	Ma
Wat214S94	654500	5327900	Ma
Wat215S94	655600	5326800	Ma
Wat216S94	655600	5325700	Ma
Wat217S94	655800	5324400	Gf
Wat218S94	656500	5323000	Ma
Wat219S94	657100	5322000	Ma
Wat220S94	658800	5320600	Ma
Wat221S94	715100	5356600	Ma
Wat222S94	715100	5356200	Ma
Wat223S94	714300	5356900	Ma
Wat224S94	712100	5359700	Ma
Wat225S94	708800	5360100	Ma
Wat226S94	707100	5357600	Ic
Wat227S94	708900	5356000	Ma
Wat228S94	709000	5352800	Ma
Wat229S94	707500	5349800	Ma
Wat230S94	706800	5348100	Ma
Wat231S94	709600	5348700	Ma
Wat232S94	712200	5349900	Ma
Wat233S94	712900	5351300	Ma
Wat234S94	715200	5351400	Ma
Wat235S94	719600	5350900	Ma
Wat236S94	720700	5351100	Ma
Wat237S94	721400	5355600	Ma
Wat238S94	717100	5352800	Ma

Sample Number	U.T.M.		Material Sampled
	Easting	Northing	
Wat239S94	708200	5342900	Ma
Wat240S94	708200	5345600	Ic
Wat241S94	721100	5358800	Ma
Wat242S94	719000	5356200	Gf
Wat243S94	716900	5350000	Gf
Wat244S94	710800	5343200	Ma
Wat245S94	712000	5347100	Ma
Wat246S94	713900	5346000	Ma
Wat247S94	714800	5347600	Ma
Wat248S94	718500	5345800	Ma
Wat249S94	718900	5347900	Ic
Wat250S94	703100	5344700	Oa
Wat251S94	704000	5344800	Ma
Wat252S94	703500	5343700	Ma
Wat253S94	700800	5341900	Ma
Wat254S94	700500	5341700	Ma
Wat255S94	699500	5342800	Ma
Wat256S94	666800	5317400	Ma
Wat257S94	669000	5318200	Ma
Wat258S94	668000	5314700	Ma
Wat259S94	669300	5314800	Ma
Wat260S94	668600	5313200	Ma
Wat261S94	695000	5339800	Ma
Wat262S94	698400	5341900	Ma
Wat263S94	700400	5339800	Ma
Wat264S94	699300	5338900	Ma
Wat265S94	696900	5338000	Ma
Wat266S94	696100	5337200	Ma
Wat267S94	660200	5316400	Ma
Wat268S94	692700	5337500	Ma
Wat269S94	693300	5334300	Ma
Wat270S94	696900	5332400	Ma
Wat271S94	683800	5319600	Ma
Wat272S94	684100	5320100	Gf
Wat273S94	674200	5344600	Ma
Wat274S94	673900	5344500	Gl
Wat275S94	672800	5341900	Ma
Wat276S94	671100	5336600	Ma
Wat277S94	668900	5334800	Ma
Wat278S94	668000	5332300	Ma
Wat279S94	672000	5330000	Gf
Wat280S94	662400	5322200	La
Wat281S94	663500	5322800	Ma
Wat282S94	665900	5323500	Ma
Wat283S94	667600	5324100	Ma
Wat284S94	667300	5323900	Gl
Wat285S94	668400	5324200	Ma
Wat286S94	712500	5342600	Ma
Wat287S94	713900	5346000	Ma
Wat288S94	711600	5334100	Ma
Wat289S94	714700	5338300	Ma
Wat290S94	712100	5339700	Gl
Wat291S94	720900	5336500	Ma

Sample Number	U.T.M.		Material Sampled
	Easting	Northing	
Wat292S94	674500	5328400	Ma
Wat304S94	670000	5314900	Ma
Wat310S94	664300	5310900	Ma
Wat311S94	657600	5314300	Ma
Wat313S94	660300	5313500	Ma
Wat335S94	666400	5309100	Ma
Wat336S94	665300	5310200	Ma
Wat337S94	664900	5309200	Ma
Wat338S94	663200	5309100	Ma
Wat339S94	663700	5310400	Oa
Wat340S94	662900	5310700	Oa
Wat341S94	662100	5309500	Ma
Wat342S94	662300	5311400	Ma
Wat343S94	665200	5312700	Gl
Wat344S94	665100	5312300	La
Wat345S94	665400	5311500	La
Wat346S94	665100	5310700	La
Wat347S94	664300	5312400	Ma
Wat348S94	663700	5312700	Ma
Wat349S94	665300	5313700	Ma
Wat350S94	665800	5315000	Ma
Wat351S94	665800	5315100	Ma
Wat352S94	666100	5316100	Ma

Sample Number	U.T.M.		Material Sampled
	Easting	Northing	
Wat353S94	666000	5316000	Ma
Waj314S94	665900	5313600	Ma
Waj315S94	666300	5313700	Ma
Waj316S94	666600	5313900	Ma
Waj317S94	667200	5314200	Ma
Waj318S94	667200	5314200	Ma
Waj319S94	667200	5314200	Ma
Waj320S94	667800	5314300	Ma
Waj321S94	668900	5314700	Ma
Waj322S94	665800	5312800	Ma
Waj323S94	666100	5312500	Ma
Waj324S94	665900	5312400	Ma
Waj325S94	665400	5311600	Ma
Waj326S94	665200	5311500	Ma
Waj327S94	668400	5314100	Ma
Waj328S94	665400	5310300	Ma
Waj329S94	665400	5310300	Ma
Waj330S94	665400	5310300	Ma
Waj331S94	666400	5311600	Ma
Waj332S94	666500	5311500	Ma
Waj333S94	667400	5311800	Ma
Waj334S94	669100	5311700	Ma

Appendix B

Sample Processing Data

Summary list of abbreviations:

Kgs : Kilograms

Conc.: Concentration

M.I. : Methylene Iodide

Mag : Magnetics

Laboratory procedure is discussed in the Analytical Methodology section. This appendix includes all material weights (table feed, non-magnetic and magnetic fractions).

Sample Number	Weight Kgs Wet			Weight Grams			
	Table Split	10 Mesh	Table Feed	Conc. Total	M.I. Lights	Non Mag	Mag
Wr1S93	10.00	0.00	9.90	105.60	326.40	102.60	3.00
Wr2S93	10.00	1.00	8.90	105.10	248.30	90.90	14.20
Wr3S93	12.00	3.30	7.20	91.70	128.30	73.10	18.60
Wr4S93	11.00	1.00	9.20	130.10	493.10	116.70	13.40
Wr5S93	12.00	5.60	5.80	59.50	189.80	48.30	11.20
Wr6S93	10.00	0.60	8.70	115.30	224.50	103.10	12.20
Wr7S93	10.00	0.30	9.50	97.50	374.70	74.80	22.70
Wr8S93	10.00	0.50	8.90	45.70	309.50	35.60	10.10
Wr9S93	10.00	0.70	8.80	48.50	231.90	40.10	8.40
Wr10S93	10.00	0.60	8.70	62.20	298.10	44.10	18.10
Wad1S94	12.05	5.85	3.35	391.00	373.50	16.80	0.70
Wad2S94	9.35	4.15	3.95	317.00	294.20	21.10	1.70
Wad3S94	6.35	1.40	3.50	306.70	291.30	11.60	3.80
Wad4S94	8.60	4.00	3.05	184.60	164.70	17.80	2.10
Wad5S94	8.25	2.70	3.05	305.20	289.40	12.00	3.80
Wad6S94	7.05	2.90	3.10	254.60	248.90	5.50	0.20
Wad7S94	8.25	5.45	1.45	196.90	188.70	5.60	2.60
Wad8S94	6.35	2.10	2.95	241.10	209.70	17.90	13.50
Wad9S94	8.05	0.55	6.10	179.50	163.10	16.20	0.20
Wad10S94	9.90	4.35	2.95	162.40	137.60	16.00	8.80
Wad11S94	7.85	0.60	6.25	442.20	411.50	27.30	3.40
Wad12S94	7.10	0.35	6.20	370.00	329.00	40.60	0.40
Wad13S94	7.20	2.05	2.45	267.90	226.60	39.50	1.80
Wad14S94	8.30	0.60	7.15	321.40	240.10	69.30	12.00
Wad15S94	7.05	1.90	4.40	270.00	210.90	50.50	8.60
Wad16S94	11.05	3.00	6.35	358.60	241.30	113.00	4.30
Wad17S94	10.55	4.15	3.45	206.90	165.50	34.60	6.80
Wad18S94	10.75	0.00	10.70	508.20	369.80	111.10	27.30
Wad19S94	10.30	0.00	10.05	289.20	198.60	90.30	0.30
Wad20S94	10.05	3.90	4.15	280.20	202.40	62.30	15.50
Wad21S94	10.00	2.45	5.35	376.60	348.70	25.50	2.40
Wad22S94	10.15	4.15	5.25	306.30	301.80	4.40	0.10
Wad23S94	10.95	4.05	5.35	206.20	203.60	2.50	0.10
Wad24S94	9.20	3.55	4.35	302.50	298.70	3.70	0.10
Wad25S94	11.85	0.45	10.95	1116.30	1054.40	23.90	38.00
Wad26S94	10.55	4.10	4.15	286.60	278.30	7.10	1.20
Wad27S94	10.20	3.75	4.40	303.20	290.80	12.30	0.10
Wad28S94	10.35	0.85	7.50	328.70	307.80	20.50	0.40
Wad29S94	10.05	5.50	3.05	230.20	207.60	18.70	3.90
Wad30S94	10.75	4.20	5.45	159.20	135.10	16.90	7.20
Wad31S94	10.75	3.35	3.85	305.10	263.10	26.50	15.50
Wad32S94	9.85	3.20	2.70	139.30	123.60	15.00	0.70
Wad33S94	10.20	6.00	2.05	145.10	127.00	14.80	3.30
Wad34S94	10.35	2.85	5.45	400.40	356.30	43.80	0.30
Wad35S94	10.70	2.90	6.65	592.80	500.70	90.70	1.40
Wad36S94	11.20	5.65	3.95	526.60	436.40	76.10	14.10
Wad37S94	11.40	6.85	2.35	161.30	149.20	11.50	0.60
Wad38S94	10.70	0.00	10.45	454.90	347.70	89.60	17.60
Wad39S94	10.40	4.55	4.20	435.90	400.00	35.70	0.20
Wad40S94	10.40	0.75	8.85	726.30	581.90	143.30	1.10
Wad41S94	10.60	3.85	3.90	727.70	654.10	70.70	2.90
Wad42S94	4.55	0.40	3.65	174.30	164.70	7.60	2.00

Sample Number	Weight Kgs Wet			Weight grams			
	Table Split	10 Mesh	Table Feed	Conc. Total	M.I. Lights	Non Mag	Mag
Wad43S94	11.05	4.80	4.30	386.20	360.20	17.40	8.60
Wad44S94	11.05	3.30	6.15	579.00	517.40	48.80	12.80
Wad45S94	10.35	2.15	7.05	663.70	557.40	104.00	2.30
Wad46S94	10.55	8.20	1.20	175.50	164.10	3.00	8.40
Wad47S94	10.20	6.15	1.60	145.70	124.70	8.80	12.20
Wad48S94	10.55	4.30	3.60	290.60	273.70	16.60	0.30
Wad49S94	11.45	5.35	2.75	454.00	433.30	20.40	0.30
Wad50S94	9.60	4.35	2.60	308.70	301.20	6.90	0.60
Wad51S94	10.85	4.60	2.45	240.60	216.40	24.20	0.10
Wad52S94	9.00	0.30	7.80	435.90	385.60	43.70	6.60
Wad53S94	11.30	0.30	3.25	357.40	348.20	8.00	1.20
Wad54S94	11.30	4.80	4.10	618.50	572.00	44.90	1.60
Wad55S94	11.40	5.30	3.40	176.40	154.50	13.30	8.60
Wad56S94	10.50	5.25	2.00	164.70	151.10	13.50	0.10
Wad57S94	10.60	4.85	2.65	279.90	232.10	27.10	20.70
Wad58S94	11.50	3.20	6.30	302.50	259.10	43.10	0.30
Wad59S94	11.15	2.15	6.05	224.30	184.00	34.60	5.70
Wad60S94	11.45	4.10	3.85	431.50	395.00	29.10	7.40
Wad61S94	11.20	5.25	4.25	655.20	608.80	31.80	14.60
Wad62S94	11.20	0.00	11.20	132.60	126.50	5.20	0.90
Wad63S94	11.00	4.75	3.65	282.00	258.00	17.50	6.50
Wad64S94	10.30	3.45	5.55	325.00	218.40	83.10	23.50
Wad65S94	10.60	0.05	10.25	532.80	371.50	134.00	27.30
Wad66S94	10.95	4.45	4.35	434.40	282.70	105.70	46.00
Wad67S94	10.85	3.00	5.40	404.10	299.00	66.00	39.10
Wad68S94	10.55	0.30	7.95	183.50	95.60	67.10	20.80
Wad69S94	11.20	0.15	5.15	504.00	494.70	7.00	2.30
Wad70S94	10.75	3.90	4.15	320.90	237.10	55.40	28.40
Wad71S94	10.20	3.30	4.55	579.20	554.50	12.50	12.20
Wad72S94	11.30	3.35	7.00	783.50	638.60	120.90	24.00
Wad73S94	11.45	4.50	4.95	372.40	242.20	82.40	47.80
Wad74S94	11.00	1.70	7.20	1578.00	1500.00	66.30	11.70
Wad75S94	10.45	0.00	9.95	669.80	575.50	80.80	13.50
Wad76S94	10.50	5.55	2.60	457.50	420.80	26.50	10.20
Wad77S94	10.50	4.35	4.85	320.80	223.70	80.90	16.20
Wad78S94	10.65	4.70	4.55	1368.50	1203.90	113.20	51.40
Wad79S94	10.95	0.00	10.95	570.50	481.00	88.60	0.90
Wad80S94	11.05	6.40	3.25	279.40	247.10	6.80	25.50
Wad81S94	11.30	4.10	4.20	326.10	242.70	45.30	38.10
Wad82S94	10.85	3.75	4.55	637.30	575.20	57.40	4.70
Wad83S94	10.45	4.00	4.05	484.30	299.20	91.10	94.00
Wad84S94	11.00	0.00	11.10	506.60	289.00	182.50	35.10
Wad85S94	11.25	0.00	9.95	770.80	720.60	46.10	4.10
Wad86S94	9.90	2.95	3.75	281.70	269.70	7.80	4.20
Wad87S94	9.40	5.85	1.80	254.40	236.60	13.40	4.40
Wad88S94	10.30	2.85	5.65	447.70	403.10	41.40	3.20
Wad89S94	9.65	3.70	3.70	275.50	263.10	8.00	4.60
Wad90S94	11.10	2.65	6.60	670.40	611.10	49.70	9.60
Wad91S94	10.70	4.15	5.30	301.70	279.80	17.20	4.70
Wad92S94	10.95	5.70	2.95	214.50	181.30	24.10	9.10
Wad93S94	9.75	2.40	5.80	327.70	281.70	43.40	2.60
Wad94S94	11.05	4.35	4.25	394.10	349.60	26.40	18.10

Sample Number	Weight Kgs Wet			Weight grams			
	Table Split	10 Mesh	Table Feed	Conc. Total	M.I. Lights	Non Mag	Mag
Wad95S94	10.80	1.30	8.15	582.90	418.80	117.00	47.10
Wad96S94	11.85	3.70	4.35	578.90	491.90	52.60	34.40
Wad97S94	10.75	4.00	5.15	475.80	400.40	71.10	4.30
Wad98S94	11.00	6.20	2.80	198.20	149.20	38.10	10.90
Wad99S94	11.45	1.85	6.15	1457.50	1400.00	55.60	1.90
Wad100S94	10.85	3.90	4.95	767.30	721.50	40.30	5.50
Wad101S94	10.60	4.50	3.80	713.40	636.70	61.40	15.30
Wad102S94	11.20	0.00	11.20	146.50	55.90	73.00	17.60
Wad103S94	10.05	4.40	3.95	413.50	411.00	2.40	0.10
Wad104S94	10.00	3.55	4.60	449.90	425.00	23.60	1.30
Wad105S94	10.60	1.40	7.40	284.70	219.00	50.30	15.40
Wad106S94	12.00	10.25	0.45	143.10	139.10	1.70	2.30
Wad107S94	10.15	3.00	3.25	663.50	649.60	13.50	0.40
Wad108S94	10.45	5.30	2.35	277.20	262.70	9.90	4.60
Wad109S94	9.90	3.60	3.60	741.50	732.90	8.50	0.10
Wad110S94	10.75	3.65	5.35	656.10	582.10	42.90	31.10
Wat200S94	9.35	0.50	8.30	841.30	774.00	65.90	1.40
Wat201S94	11.90	4.20	5.25	618.40	493.60	106.80	18.00
Wat202S94	12.40	0.00	12.40	955.90	796.80	159.10	13.10
Wat203S94	11.80	0.20	10.70	1185.60	1035.50	126.60	23.50
Wat204S94	11.05	2.45	6.60	566.90	485.20	81.40	0.30
Wat205S94	11.10	0.00	11.10	690.00	602.60	84.70	2.70
Wat206S94	11.20	2.45	4.90	527.10	445.20	59.50	22.40
Wat207S94	11.15	7.45	1.75	125.30	120.50	3.90	0.90
Wat208S94	11.05	2.75	6.30	419.20	315.20	100.70	3.30
Wat209S94	11.10	3.30	5.10	414.90	361.50	53.10	0.30
Wat210S94	10.85	5.20	3.50	185.20	169.40	12.60	3.20
Wat211S94	10.15	1.65	3.10	232.10	186.90	27.40	17.80
Wat212S94	10.50	3.55	5.70	409.30	358.80	37.50	13.00
Wat213S94	9.85	4.05	4.50	173.40	154.70	15.00	3.70
Wat214S94	9.90	3.10	5.10	319.00	256.30	59.40	3.30
Wat215S94	10.10	5.00	3.50	162.40	146.60	14.40	1.40
Wat216S94	9.85	3.60	3.70	210.90	175.10	35.30	0.50
Wat217S94	10.90	3.00	6.40	694.50	579.40	97.70	17.40
Wat218S94	10.30	2.05	6.00	168.60	142.70	23.70	2.20
Wat219S94	10.20	1.30	7.15	251.50	232.30	19.10	0.10
Wat220S94	10.25	4.75	3.35	382.50	379.70	2.70	0.10
Wat221S94	10.00	4.90	3.05	143.00	132.20	10.50	0.30
Wat222S94	10.90	0.10	10.40	207.50	176.30	30.80	0.40
Wat223S94	10.90	1.20	6.20	422.80	371.50	51.00	0.30
Wat224S94	9.65	0.05	9.40	354.80	343.50	1.00	10.30
Wat225S94	9.45	5.35	1.80	248.20	221.80	24.90	1.50
Wat226S94	10.90	0.50	4.85	353.90	348.40	4.80	0.70
Wat227S94	10.80	4.10	4.10	190.70	110.00	34.00	
Wat228S94	10.60	0.50	9.55	278.00	229.70	47.50	0.80
Wat229S94	10.00	4.00	3.75	140.40	125.80	14.40	0.20
Wat230S94	10.25	1.40	7.75	692.50	670.90	16.10	5.50
Wat231S94	10.50	5.15	2.85	207.80	198.40	8.30	1.10
Wat232S94	11.00	1.95	6.55	477.20	437.00	39.80	0.40
Wat233S94	10.35	3.10	4.75	354.30	317.20	35.60	23.10
Wat234S94	11.00	1.30	8.45	553.20	488.30	62.40	2.50
Wat235S94	11.05	2.65	6.40	280.00	210.10	69.80	0.10

Sample Number	Weight Kgs Wet			Weight grams			
	Table Split	10 Mesh	Table Feed	Conc. Total	M.I. Lights	Non Mag	Mag
Wat236S94	10.15	4.10	3.00	178.10	143.40	34.40	0.30
Wat237S94	9.60	0.25	9.35	186.30	132.70	53.60	0.70
Wat238S94	10.15	0.85	8.40	238.60	191.70	46.80	0.10
Wat239S94	11.00	4.25	2.60	152.00	129.90	21.60	0.50
Wat240S94	10.35	2.60	4.25	250.50	217.40	31.50	1.60
Wat241S94	10.25	1.70	4.25	343.50	327.10	16.10	0.30
Wat242S94	10.85	0.00	10.85	506.60	380.90	106.30	19.40
Wat243S94	10.30	0.35	8.50	581.60	493.60	75.20	12.80
Wat244S94	5.55	3.35	1.10	85.20	82.70	2.20	0.30
Wat245S94	10.65	0.00	10.55	424.40	361.80	62.60	0.10
Wat246S94	10.15	5.20	2.45	319.20	273.30	45.90	0.10
Wat247S94	9.65	3.50	2.45	262.70	241.60	21.10	0.10
Wat248S94	10.15	2.60	3.05	365.40	306.10	58.90	0.40
Wat249S94	10.90	8.95	-0.95	131.60	121.80	7.90	1.90
Wat250S94	10.40	5.85	2.65	294.20	264.90	16.30	13.00
Wat251S94	11.15	8.95	1.60	130.50	114.90	12.70	2.90
Wat252S94	10.90	6.55	1.50	239.90	185.10	34.70	20.10
Wat253S94	10.70	5.25	3.25	260.90	218.70	31.20	11.00
Wat254S94	11.20	8.55	0.75	166.40	144.10	15.40	6.90
Wat255S94	11.05	5.95	3.25	235.80	206.00	19.30	10.50
Wat256S94	10.70	7.10	1.75	175.00	160.40	12.90	1.70
Wat257S94	11.80	8.85	1.75	81.60	77.10	3.40	1.10
Wat258S94	11.25	4.90	3.75	231.40	219.40	10.40	1.60
Wat259S94	9.85	4.10	3.45	286.10	262.70	18.80	4.60
Wat260S94	11.10	6.10	3.20	212.30	192.70	14.00	5.60
Wat261S94	10.90	4.65	3.95	328.40	246.40	71.40	10.60
Wat262S94	10.90	8.35	1.25	119.30	106.80	9.80	2.70
Wat263S94	10.80	8.00	0.40	128.10	119.60	8.20	0.30
Wat264S94	11.10	8.55	0.40	150.30	140.90	7.60	1.80
Wat265S94	11.00	8.50	1.10	94.80	89.10	5.40	0.30
Wat266S94	10.30	6.60	1.75	108.60	93.30	5.60	9.70
Wat267S94	9.55	4.05	3.00	417.70	389.00	28.40	0.30
Wat268S94	10.50	4.55	2.65	225.80	188.50	28.00	9.30
Wat269S94	10.10	3.45	3.20	349.00	300.80	39.90	8.30
Wat270S94	10.80	5.70	0.75	119.40	105.20	13.10	1.10
Wat271S94	10.45	1.75	2.70	179.70	172.20	6.70	0.80
Wat272S94	11.65	6.00	2.70	356.90	272.40	58.60	25.90
Wat273S94	9.70	3.05	5.25	210.50	188.40	20.50	1.60
Wat274S94	11.10	0.00	11.10	174.20	33.70	113.50	27.00
Wat275S94	12.60	0.00	12.05	694.30	642.40	42.10	9.80
Wat276S94	10.70	7.90	1.05	300.40	289.60	6.20	4.60
Wat277S94	10.65	2.25	6.10	421.90	382.30	22.50	17.10
Wat278S94	10.00	3.15	4.90	293.20	275.20	17.60	0.40
Wat279S94	10.25	1.70	6.05	748.50	716.30	24.40	7.80
Wat280S94	10.65	2.55	5.95	632.10	510.50	68.50	53.10
Wat281S94	11.60	4.30	4.70	432.70	404.00	16.50	12.20
Wat282S94	10.85	6.40	2.90	279.00	262.70	10.40	5.90
Wat283S94	11.50	3.35	5.80	455.80	381.90	43.30	30.60
Wat284S94	12.10	5.90	3.75	224.50	182.40	28.00	14.10
Wat285S94	11.45	5.30	3.85	329.20	291.40	35.40	2.40
Wat286S94	10.80	3.40	6.10	590.60	553.20	32.90	4.50
Wat287S94	10.80	5.30	3.70	466.30	428.70	37.60	0.10

Sample Number	Weight Kgs Wet			Weight grams			
	Table Split	10 Mesh	Table Feed	Conc. Total	M.I. Lights	Non Mag	Mag
Wat288S94	6.75	0.55	5.95	279.70	268.20	11.50	0.10
Wat289S94	10.30	2.55	6.30	591.30	526.10	65.20	0.10
Wat290S94	11.45	4.85	4.55	537.50	442.10	65.50	29.90
Wat291S94	10.70	4.05	5.35	684.70	475.10	142.90	66.70
Wat292S94	10.90	5.25	3.75	652.20	614.50	22.30	15.40
Wat304S94	10.55	2.70	6.05	464.20	446.60	17.30	0.30
Wat310S94	10.30	2.40	4.70	370.90	334.80	32.80	3.30
Wat311S94	11.10	7.70	1.70	118.00	108.50	8.10	1.40
Wat313S94	10.00	1.40	8.25	566.00	450.50	101.60	13.90
Wat334S94	9.50	2.10	6.60	308.80	264.60	42.10	2.10
Wat335S94	10.90	4.35	4.60	735.10	608.00	74.60	52.50
Wat336S94	11.00	5.40	4.15	437.30	310.80	89.60	36.90
Wat337S94	10.35	0.65	8.55	661.30	580.60	61.20	19.50
Wat338S94	11.20	4.25	5.30	941.70	732.00	139.10	70.60
Wat339S94	11.55	0.00	11.55	448.50	283.80	150.70	14.00
Wat340S94	10.35	2.40	7.10	650.60	508.30	90.70	51.60
Wat341S94	10.80	0.90	8.55	266.80	167.00	77.00	22.80
Wat342S94	10.90	3.80	5.10	296.00	179.90	73.50	42.60
Wat343S94	11.30	0.00	11.30	535.20	351.70	139.60	43.90
Wat344S94	10.50	0.00	9.35	491.60	468.40	17.30	5.90
Wat345S94	10.65	0.00	10.65	733.20	611.50	107.90	13.80
Wat346S94	11.00	0.70	9.60	658.10	541.40	92.20	24.50
Wat347S94	10.60	0.15	8.70	571.80	537.30	31.40	3.10
Wat348S94	10.75	3.45	5.10	340.70	290.90	34.60	15.20
Wat349S94	10.60	4.15	4.00	243.10	177.90	49.20	16.00
Wat350S94	10.35	3.50	5.55	293.00	282.70	9.10	1.20
Wat351S94	10.40	3.90	5.40	392.00	266.00	72.40	53.60
Wat352S94	11.05	0.75	9.90	303.70	292.80	7.80	3.10
Wat353S94	11.45	1.85	8.65	477.10	389.80	84.10	3.20
Waj314S94	10.85	4.95	4.60	204.30	199.90	4.40	0.10
Waj315S94	10.80	3.60	5.75	225.30	217.10	7.00	1.20
Waj316S94	10.75	3.45	6.00	330.50	308.70	21.60	0.20
Waj317S94	11.30	5.25	4.55	251.70	242.20	9.50	0.10
Waj318S94	11.45	5.15	4.60	187.70	180.00	7.70	0.10
Waj319S94	10.30	5.65	2.95	233.90	227.30	6.50	0.10
Waj320S94	10.55	3.95	5.50	270.40	263.90	6.50	0.10
Waj321S94	11.40	1.55	8.00	359.20	354.40	4.60	0.20
Waj322S94	10.80	4.70	4.00	489.50	438.10	46.90	4.50
Waj323S94	11.15	1.25	8.30	390.90	345.20	36.90	8.80
Waj324S94	10.35	5.50	2.65	212.60	185.10	24.80	2.70
Waj325S94	10.60	4.60	5.00	364.30	313.30	47.20	3.80
Waj326S94	10.75	2.40	6.90	268.30	212.00	50.80	5.50
Waj327S94	10.70	0.00	10.70	420.20	376.80	33.50	9.90
Waj328S94	11.30	2.95	5.95	523.00	401.90	85.20	35.90
Waj329S94	10.80	4.95	4.10	299.80	195.80	73.50	30.50
Waj330S94	10.55	5.55	3.00	350.50	263.60	63.50	23.40
Waj331S94	10.20	1.40	7.40	553.60	516.40	28.20	9.00
Waj332S94	10.70	1.15	5.65	300.40	295.50	3.60	1.30
Waj333S94	10.45	4.90	3.65	207.00	199.00	6.10	1.90

Appendix C

Summary of Overburden Drilling Management Ltd. Kimberlite Indicator Minerals and Gold Grain Counts

Summary list of abbreviations:

KIM ; Kimberlite indicator minerals

GP ; Pyrope garnet

GO ; Eclogitic garnet

DC ; Chrome diopside

IM ; Ilmenite

CR ; Chromite

No ; Number

V.G. ; Visible Gold

Calc.; Calculated

PPB ; Parts per billion

The methodology used to isolate and identify these heavy minerals is discussed in the Analytical Methodology section.

SAMPLE NUMBER	KIM COUNT								GOLD	
	0.5 to 1 mm					0.25 to 0.5 mm		KIM Total	No. V.G.	Calc. PPB
	GP	GO	DC	IM	CR	GP	DC			
Wr1S93	0	0	0	0	0	0	0	0	0	0
Wr2S93	0	0	0	0	0	1	0	1	17	189
Wr3S93	1	0	0	0	2	1	0	4	3	504
Wr4S93	0	0	0	0	0	0	0	0	10	178
Wr5S93	0	0	0	0	1	0	0	1	3	278
Wr6S93	0	0	0	0	0	0	2	2	3	23
Wr7S93	0	0	0	0	0	1	0	1	2	66
Wr8S93	0	0	0	0	0	0	0	0	0	0
Wr9S93	0	0	0	0	0	0	0	0	0	0
Wr10S93	0	0	0	0	0	0	0	0	0	0
Wad1S94	0	0	0	0	0	0	0	0	0	0
Wad2S94	0	0	0	0	0	0	0	0	6	4110
Wad3S94	0	0	0	0	0	0	0	0	0	0
Wad4S94	0	0	0	0	0	0	0	0	0	0
Wad5S94	0	0	0	0	0	0	0	0	0	0
Wad6S94	0	0	0	0	0	0	0	0	0	0
Wad7S94	0	0	0	0	0	0	0	0	0	0
Wad8S94	0	0	0	0	0	0	0	0	0	0
Wad9S94	0	0	0	0	0	0	0	0	0	0
Wad10S94	0	0	0	0	0	0	0	0	1	23
Wad11S94	0	0	0	0	0	0	0	0	0	0
Wad12S94	0	0	0	0	0	0	0	0	0	0
Wad13S94	0	0	0	0	0	0	0	0	0	0
Wad14S94	0	0	0	0	0	0	0	0	0	0
Wad15S94	0	0	0	0	0	0	0	0	0	0
Wad16S94	0	0	0	0	0	0	0	0	0	0
Wad17S94	0	0	0	0	0	0	0	0	0	0
Wad18S94	0	0	0	0	0	0	0	0	3	7
Wad19S94	0	0	0	0	0	0	0	0	0	0
Wad20S94	0	0	0	0	0	0	0	0	0	0
Wad21S94	0	0	0	0	0	0	0	0	0	0
Wad22S94	0	0	0	0	0	0	0	0	0	0
Wad23S94	0	0	0	0	0	0	0	0	0	0
Wad24S94	0	0	0	0	0	0	0	0	2	107
Wad25S94	0	0	0	0	0	0	0	0	6	7
Wad26S94	0	0	0	0	0	0	0	0	0	0
Wad27S94	0	0	0	0	0	0	0	0	0	0
Wad28S94	0	0	0	0	0	0	0	0	0	0
Wad29S94	0	0	0	0	0	1	0	1	1	7
Wad30S94	0	0	0	0	0	0	0	0	0	0
Wad31S94	0	0	0	0	0	0	0	0	0	0
Wad32S94	0	0	0	0	2	0	0	2	0	0
Wad33S94	0	0	0	0	0	0	0	0	0	0
Wad34S94	0	0	0	0	0	0	0	0	0	0
Wad35S94	0	0	0	0	0	0	0	0	0	0
Wad36S94	0	0	0	0	0	0	0	0	0	0
Wad37S94	0	0	0	0	0	0	0	0	0	0
Wad38S94	0	0	0	0	0	0	0	0	0	0
Wad39S94	0	0	0	0	0	0	0	0	0	0
Wad40S94	0	0	0	0	0	0	0	0	0	0
Wad41S94	0	0	0	1	0	0	0	1	0	0
Wad42S94	0	0	0	0	0	0	0	0	1	48

SAMPLE NUMBER	KIM COUNT								GOLD	
	0.5 to 1 mm					0.25 to 0.5 mm		KIM Total	No. V.G.	Calc. PPB
	GP	GO	DC	IM	CR	GP	DC			
Wad43S94	0	0	0	0	0	0	0	0	0	0
Wad44S94	0	0	0	0	0	0	0	0	0	0
Wad45S94	0	0	0	0	0	0	0	0	0	0
Wad46S94	0	0	0	0	0	0	0	0	0	0
Wad47S94	0	0	0	0	0	0	0	0	0	0
Wad48S94	0	0	0	0	0	0	0	0	1	22
Wad49S94	0	0	0	0	0	0	0	0	0	0
Wad50S94	0	0	0	0	0	0	0	0	0	0
Wad51S94	0	0	0	0	0	0	0	0	0	0
Wad52S94	0	0	0	0	0	0	0	0	1	4
Wad53S94	0	0	0	0	0	0	0	0	0	0
Wad54S94	0	0	0	0	0	0	0	0	0	0
Wad55S94	0	0	0	0	0	1	0	1	4	991
Wad56S94	0	0	0	1	0	0	0	1	0	0
Wad57S94	0	0	0	0	0	0	0	0	0	0
Wad58S94	0	0	0	1	1	0	0	2	0	0
Wad59S94	0	0	0	0	0	0	0	0	0	0
Wad60S94	0	1	0	0	0	0	0	1	0	0
Wad61S94	0	0	0	0	0	0	0	0	0	0
Wad62S94	0	0	0	0	0	0	0	0	0	0
Wad63S94	0	0	0	0	0	0	0	0	0	0
Wad64S94	0	0	0	0	0	0	0	0	7	176
Wad65S94	0	0	0	0	0	0	0	0	0	0
Wad66S94	0	0	0	0	0	0	0	0	5	28
Wad67S94	0	0	0	0	0	1	0	1	0	0
Wad68S94	0	0	0	0	0	0	0	0	0	0
Wad69S94	0	0	0	0	0	0	0	0	0	0
Wad70S94	0	1	0	0	0	2	0	3	8	457
Wad71S94	0	0	0	0	0	0	0	0	0	0
Wad72S94	0	0	0	0	0	1	0	1	2	269
Wad73S94	0	0	0	0	0	0	0	0	2	47
Wad74S94	0	0	0	0	0	0	0	0	0	0
Wad75S94	0	0	0	0	0	0	0	0	1	1
Wad76S94	0	0	0	0	0	0	0	0	0	0
Wad77S94	0	0	0	1	1	0	0	2	0	0
Wad78S94	0	0	0	0	0	0	0	0	11	179
Wad79S94	0	0	0	0	0	0	0	0	18	38
Wad80S94	0	0	0	0	2	0	0	2	0	0
Wad81S94	0	0	0	0	0	1	0	1	1	64
Wad82S94	0	0	0	0	0	0	0	0	0	0
Wad83S94	0	0	0	0	0	2	0	2	5	83
Wad84S94	0	0	0	0	0	0	0	0	0	0
Wad85S94	0	0	0	0	0	0	0	0	8	54
Wad86S94	0	0	0	0	0	1	0	1	0	0
Wad87S94	0	0	0	0	0	1	0	1	1	49
Wad88S94	0	0	0	1	0	0	0	1	4	69
Wad89S94	0	0	0	0	0	0	0	0	0	0
Wad90S94	0	1	0	0	0	0	0	1	0	0
Wad91S94	0	0	0	0	0	0	0	0	0	0
Wad92S94	0	0	0	0	0	0	0	0	1	8
Wad93S94	0	0	0	0	0	1	0	1	0	0
Wad94S94	0	0	0	3	0	0	0	3	0	0

SAMPLE NUMBER	KIM COUNT								GOLD	
	0.5 to 1 mm					0.25 to 0.5 mm		KIM Total	No. V.G.	Calc. PPB
	GP	GO	DC	IM	CR	GP	DC			
Wad95S94	0	0	0	0	1	1	0	2	1	2
Wad96S94	0	0	0	0	0	0	0	0	1	7
Wad97S94	0	1	0	0	0	0	0	1	0	0
Wad98S94	0	0	0	0	0	0	0	0	0	0
Wad99S94	0	0	0	0	0	0	0	0	0	0
Wad100S94	0	0	0	0	0	0	0	0	1	72
Wad101S94	0	0	0	0	0	0	0	0	1	24
Wad102S94	0	0	0	0	0	0	0	0	0	0
Wad103S94	0	0	0	0	0	0	0	0	0	0
Wad104S94	1	0	0	0	0	0	0	1	0	0
Wad105S94	0	0	0	0	0	1	0	1	0	0
Wad106S94	0	0	0	0	0	0	0	0	1	101
Wad107S94	0	0	0	0	0	0	0	0	0	0
Wad108S94	0	0	0	0	0	0	0	0	0	0
Wad109S94	0	0	0	0	0	0	0	0	2	781
Wad110S94	0	0	0	1	0	0	0	1	7	345
Wat200S94	0	0	0	0	0	0	0	0	0	0
Wat201S94	0	0	0	0	0	0	0	0	3	18
Wat202S94	0	0	0	0	0	0	0	0	5	26
Wat203S94	0	0	0	0	0	1	0	1	0	0
Wat204S94	0	0	0	7	0	0	0	7	0	0
Wat205S94	0	0	0	0	0	0	0	0	0	0
Wat206S94	0	0	0	0	0	0	0	0	0	0
Wat207S94	0	0	0	0	0	0	0	0	0	0
Wat208S94	0	0	0	0	0	0	0	0	1	3
Wat209S94	0	0	0	0	0	0	0	0	0	0
Wat210S94	0	0	0	0	0	0	0	0	0	0
Wat211S94	0	0	0	0	0	0	0	0	0	0
Wat212S94	0	0	0	0	0	0	0	0	0	0
Wat213S94	0	0	0	0	0	0	0	0	0	0
Wat214S94	0	0	0	0	0	0	0	0	0	0
Wat215S94	0	0	0	1	0	0	0	1	1	26
Wat216S94	0	0	0	0	0	0	0	0	0	0
Wat217S94	0	0	0	0	0	0	0	0	2	5
Wat218S94	0	0	0	0	0	0	0	0	0	0
Wat219S94	0	0	0	0	0	0	0	0	0	0
Wat220S94	0	0	0	0	0	0	0	0	0	0
Wat221S94	0	0	0	0	0	0	0	0	0	0
Wat222S94	0	0	0	0	0	0	0	0	0	0
Wat223S94	0	0	0	0	0	0	0	0	0	0
Wat224S94	0	0	0	0	0	0	0	0	3	9
Wat225S94	0	0	0	0	0	0	0	0	0	0
Wat226S94	0	0	0	0	0	0	0	0	0	0
Wat227S94	0	0	0	0	0	0	0	0	1	0
Wat228S94	0	0	0	0	0	0	0	0	1	281
Wat229S94	0	0	0	12	9	0	0	21	3	510
Wat230S94	0	0	0	0	0	0	0	0	3	26
Wat231S94	0	0	0	0	0	0	0	0	0	0
Wat232S94	0	0	0	0	0	0	0	0	0	0
Wat233S94	0	0	0	0	0	1	0	1	2	1
Wat234S94	0	0	0	0	0	0	0	0	1	10
Wat235S94	0	0	0	0	0	0	0	0	1	1

SAMPLE NUMBER	KIM COUNT								GOLD	
	0.5 to 1 mm					0.25 to 0.5 mm		KIM Total	No. V.G.	Calc. PPB
	GP	GO	DC	IM	CR	GP	DC			
Wat236S94	0	0	0	0	0	0	0	0	0	0
Wat237S94	0	0	0	0	0	0	0	0	0	0
Wat238S94	0	0	0	0	0	0	0	0	2	47
Wat239S94	0	0	0	0	0	0	0	0	0	0
Wat240S94	0	0	0	3	0	0	0	3	1	122
Wat241S94	0	0	0	2	1	0	0	3	0	0
Wat242S94	0	0	0	0	0	0	0	0	0	0
Wat243S94	0	0	0	0	0	0	1	1	0	0
Wat244S94	0	0	0	0	0	0	0	0	0	0
Wat245S94	0	0	0	0	0	0	0	0	2	4
Wat246S94	0	0	0	0	0	0	0	0	0	0
Wat247S94	0	0	0	0	0	0	0	0	1	1
Wat248S94	0	0	0	0	0	0	0	0	0	0
Wat249S94	0	0	0	0	0	0	0	0	0	0
Wat250S94	0	0	0	0	0	0	0	0	0	0
Wat251S94	0	0	0	0	0	0	0	0	0	0
Wat252S94	0	0	0	0	0	0	0	0	0	0
Wat253S94	0	0	0	0	0	0	0	0	1	6
Wat254S94	0	0	0	0	0	0	0	0	0	0
Wat255S94	0	0	0	0	0	0	0	0	0	0
Wat256S94	0	0	0	0	0	0	0	0	0	0
Wat257S94	0	0	0	0	0	0	0	0	0	0
Wat258S94	0	0	0	0	0	0	0	0	2	1483
Wat259S94	0	0	0	0	0	0	0	0	17	1271
Wat260S94	0	1	0	4	0	0	0	5	7	36
Wat261S94	0	0	0	0	0	0	0	0	2	3
Wat262S94	0	0	0	0	0	0	0	0	0	0
Wat263S94	0	0	0	0	0	0	0	0	0	0
Wat264S94	0	0	0	0	0	0	0	0	0	0
Wat265S94	0	0	0	0	0	0	0	0	0	0
Wat266S94	0	0	0	0	0	0	0	0	0	0
Wat267S94	0	0	0	0	0	0	0	0	0	0
Wat268S94	0	0	0	0	0	0	0	0	0	0
Wat269S94	0	0	0	0	0	0	0	0	0	0
Wat270S94	0	0	0	0	0	1	0	1	0	0
Wat271S94	0	0	0	0	0	0	0	0	0	0
Wat272S94	0	0	0	0	0	1	0	1	4	49
Wat273S94	0	0	0	0	0	0	0	0	1	9
Wat274S94	0	0	0	0	0	0	0	0	0	0
Wat275S94	0	0	0	0	0	0	0	0	10	65
Wat276S94	0	0	0	0	0	0	0	0	0	0
Wat277S94	0	0	0	1	1	1	0	3	0	0
Wat278S94	0	0	0	0	0	0	0	0	0	0
Wat279S94	0	0	0	0	0	0	0	0	2	83
Wat280S94	0	1	0	0	0	1	0	2	2	2
Wat281S94	0	0	0	0	0	0	0	0	1	11
Wat282S94	0	0	0	0	0	0	0	0	3	92
Wat283S94	0	0	0	0	0	0	0	0	0	0
Wat284S94	0	0	0	0	0	0	0	0	0	0
Wat285S94	0	0	0	0	0	3	0	3	0	0
Wat286S94	0	0	0	0	0	0	0	0	1	1
Wat287S94	0	0	0	1	0	2	0	3	0	0

SAMPLE NUMBER	KIM COUNT								GOLD	
	0.5 to 1 mm					0.25 to 0.5 mm		KIM Total	No. V.G.	Calc. PPB
	GP	GO	DC	IM	CR	GP	DC			
Wat288S94	0	0	0	1	0	0	0	1	0	0
Wat289S94	0	1	0	5	2	1	0	9	0	0
Wat290S94	0	0	0	1	0	1	0	2	0	0
Wat291S94	0	4	0	0	0	4	0	8	1	7
Wat292S94	0	0	0	0	0	0	0	0	0	0
Wat304S94	0	0	0	0	0	0	0	0	0	0
Wat310S94	0	0	0	0	0	0	0	0	1	19
Wat311S94	0	0	0	0	0	0	0	0	0	0
Wat313S94	0	0	0	0	0	0	0	0	5	61
Wat334S94	0	0	0	1	0	1	1	3	8	168
Wat335S94	0	0	0	2	1	0	0	3	1	3
Wat336S94	0	0	0	0	0	0	1	1	0	0
Wat337S94	0	0	0	0	0	0	0	0	2	12
Wat338S94	0	0	0	1	2	0	0	3	0	0
Wat339S94	0	0	0	0	0	0	0	0	0	0
Wat340S94	0	0	0	0	0	0	0	0	1	32
Wat341S94	0	0	0	0	0	0	0	0	1	64
Wat342S94	0	0	0	0	0	1	0	1	0	0
Wat343S94	0	0	0	0	0	1	0	1	0	0
Wat344S94	0	0	0	0	0	0	0	0	0	0
Wat345S94	0	0	0	0	0	0	0	0	0	0
Wat346S94	0	0	0	0	0	0	0	0	1	4
Wat347S94	0	0	0	0	0	0	0	0	0	0
Wat348S94	0	0	0	1	0	0	0	1	1	6
Wat349S94	0	0	0	0	0	0	0	0	1	78
Wat350S94	0	0	0	5	1	0	0	6	3	1176
Wat351S94	0	0	0	2	1	2	0	5	3	59
Wat352S94	0	0	0	0	0	0	0	0	4	125
Wat353S94	0	0	0	0	0	0	0	0	1	2
Waj314S94	0	0	0	0	0	0	0	0	1	83
Waj315S94	0	0	0	17	4	0	0	21	0	0
Waj316S94	0	2	0	27	0	0	0	29	0	0
Waj317S94	0	1	0	15	0	0	2	18	1	38
Waj318S94	0	0	0	7	1	0	0	8	0	0
Waj319S94	0	2	0	21	0	1	0	24	2	82
Waj320S94	0	0	0	0	0	0	0	0	3	192
Waj321S94	0	0	0	0	0	0	0	0	2	126
Waj322S94	0	0	0	0	0	2	0	2	2	69
Waj323S94	0	0	0	0	0	0	0	0	3	21
Waj324S94	0	0	0	0	0	0	0	0	1	26
Waj325S94	0	0	0	0	0	0	0	0	6	148
Waj326S94	0	0	0	0	0	0	0	0	2	13
Waj327S94	0	0	0	0	0	0	0	0	475	745
Waj328S94	0	0	0	0	0	1	3	4	7	541
Waj329S94	0	0	1	0	0	0	2	3	3	87
Waj330S94	0	0	0	2	2	0	0	4	1	0
Waj331S94	0	0	0	0	0	1	0	1	9	311
Waj332S94	0	0	0	0	0	0	0	0	1	110
Waj333S94	0	0	0	0	0	0	0	0	0	0

Appendix D

Summary of Microprobe Data for Kimberlite Indicator Minerals,

Ontario Geological Survey, Ontario Geoscience Centre

Summary list of abbreviations:

; Number

Na_20 ; Sodium dioxide

MgO ; Magnesium oxide

Al_2O_3; Aluminum dioxide

SiO_2 ; Silicon dioxide

Cr_2O_3; Chromium dioxide

MnO ; Manganese oxide

FeO ; Iron oxide

K_2O ; Potassium dioxide

CaO ; Calcium oxide

TiO_2 ; Titanium dioxide

Fe_2O_3; Iron dioxide

Cr ; Chrome

Mg ; Magnesium

Parameters used to define the KIM's are discussed under Analytical Methodology section. Preliminary interpretation of the KIM's distribution is discussed in the Results chapter, Kimberlite Heavy Mineral Indicators subsection.

The sample number is abbreviated to accommodate space restrictions. The individual grains recovered from each sample site are numbered and this is represented by a dashed number following the sample number.

Sample #	Na2O	MgO	Al2O3	SiO2	Cr2O3	MnO	FeO	K2O	CaO	TiO2	Total	Mineral
												Garnets
												Pyropes
												"G10"s
WR7-1	0.028	22.435	19.667	41.541	5.633	0.487	7.874	0.000	2.316	0.045	100.026	Cr-pyrope"G10"
291-3	0.005	22.013	19.481	42.330	6.716	0.286	5.542	0.001	4.206	0.109	100.689	Cr-pyrope"G10"
319-26	0.015	23.634	19.490	41.417	7.146	0.273	5.583	0.000	1.522	0.060	99.140	Cr-pyrope"G10"
331-2	0.015	20.543	19.933	41.019	5.356	0.407	7.234	0.006	4.266	0.096	98.875	Cr-pyrope"G10"
												"G9"s
29-1	0.015	19.586	21.275	41.502	3.502	0.555	8.331	0.000	5.654	0.043	100.463	Cr-pyrope"G9"
55-6	0.011	19.890	20.963	41.399	4.306	0.381	7.138	0.001	5.594	0.017	99.700	Cr-pyrope"G9"
67-6	0.024	19.624	22.375	41.976	2.656	0.411	8.450	0.000	4.938	0.118	100.572	Cr-pyrope"G9"
70-2	0.049	18.634	20.380	41.386	5.052	0.515	8.383	0.000	5.831	0.203	100.433	Cr-pyrope"G9"
70-3	0.042	18.506	21.400	41.018	3.088	0.519	9.745	0.000	5.303	0.187	99.808	Cr-pyrope"G9"
72-2	0.037	18.465	18.910	41.160	6.952	0.528	7.706	0.000	6.486	0.056	100.300	Cr-pyrope"G9"
81-2	0.006	18.737	21.928	40.615	2.342	0.546	9.047	0.000	5.607	0.028	98.856	Cr-pyrope"G9"
83-2	0.024	19.292	21.265	41.504	3.970	0.474	8.253	0.000	5.517	0.119	100.418	Cr-pyrope"G9"
83-3	0.003	18.867	20.319	41.380	5.213	0.520	7.952	0.000	5.746	0.022	100.022	Cr-pyrope"G9"
86-1	0.047	19.571	16.405	40.490	9.284	0.237	6.384	0.000	6.369	0.609	99.396	Cr-pyrope"G9"
87-1	0.046	19.070	19.762	41.374	6.231	0.560	8.008	0.000	5.548	0.073	100.672	Cr-pyrope"G9"
93-1	0.014	20.320	22.896	42.130	2.467	0.377	7.221	0.001	5.051	0.014	100.491	Cr-pyrope"G9"
95-2	0.030	20.100	19.452	41.892	5.680	0.331	7.165	0.000	5.415	0.340	100.405	Cr-pyrope"G9"
104-1	0.039	17.297	18.810	40.865	6.968	0.579	8.406	0.013	7.161	0.023	100.161	Cr-pyrope"G9"
105-1	0.023	19.327	19.888	41.144	5.730	0.395	7.119	0.010	6.072	0.079	99.787	Cr-pyrope"G9"
203-1	0.019	19.687	21.389	41.635	3.307	0.491	8.810	0.001	5.233	0.105	100.677	Cr-pyrope"G9"
233-1	0.018	20.266	19.820	41.990	5.264	0.377	7.408	0.000	6.103	0.070	101.316	Cr-pyrope"G9"
270-1	0.018	18.801	21.296	41.746	3.628	0.481	8.960	0.000	5.378	0.088	100.396	Cr-pyrope"G9"
272-1	0.016	21.046	21.846	41.696	3.341	0.265	6.573	0.012	4.806	0.031	99.632	Cr-pyrope"G9"
277-1	0.031	18.672	20.630	41.332	4.570	0.512	8.131	0.000	5.759	0.134	99.771	Cr-pyrope"G9"
280-1	0.029	18.904	20.491	41.216	4.559	0.514	8.420	0.000	5.589	0.201	99.923	Cr-pyrope"G9"
285-1	0.022	18.922	20.617	41.044	4.511	0.473	7.866	0.000	5.911	0.073	99.439	Cr-pyrope"G9"
285-2	0.012	18.599	19.383	40.748	5.599	0.378	8.042	0.011	6.182	0.119	99.073	Cr-pyrope"G9"
285-3	0.016	19.671	21.531	41.171	3.033	0.410	8.401	0.000	4.807	0.115	99.155	Cr-pyrope"G9"
287-1	0.042	20.662	18.951	41.130	6.471	0.313	6.281	0.000	5.119	0.310	99.279	Cr-pyrope"G9"
287-2	0.030	20.404	20.174	41.327	5.202	0.358	6.774	0.005	5.271	0.190	99.735	Cr-pyrope"G9"
289-1	0.039	20.697	21.105	41.589	3.738	0.339	7.081	0.000	4.963	0.166	99.717	Cr-pyrope"G9"

Sample #	Na2O	MgO	Al2O3	SiO2	Cr2O3	MnO	FeO	K2O	CaO	TiO2	Total	Mineral
290-1	0.000	19.104	22.083	41.913	2.639	0.560	8.389	0.006	5.513	0.012	100.219	Cr-pyrope"G9"
291-1	0.011	21.018	20.710	41.671	3.564	0.243	6.432	0.000	5.283	0.191	99.123	Cr-pyrope"G9"
322-7	0.048	19.778	21.326	41.390	3.350	0.403	7.942	0.000	4.762	0.261	99.260	Cr-pyrope"G9"
322-8	0.023	18.826	20.448	40.952	4.820	0.422	8.496	0.003	5.641	0.153	99.784	Cr-pyrope"G9"
331-1	0.056	20.339	21.629	41.440	1.759	0.272	7.971	0.000	4.767	0.723	98.956	Cr-pyrope"G9"
342-2	0.030	18.629	21.327	40.715	3.470	0.494	9.508	0.000	5.208	0.203	99.584	Cr-pyrope"G9"
343-2	0.052	18.944	20.066	40.769	5.345	0.487	8.128	0.000	5.621	0.198	99.610	Cr-pyrope"G9"
351-1	0.029	18.853	19.885	40.639	5.596	0.468	7.946	0.000	5.521	0.071	99.008	Cr-pyrope"G9"
351-2	0.009	19.295	20.319	40.812	5.226	0.472	7.921	0.000	5.511	0.117	99.682	Cr-pyrope"G9"
351-3	0.036	20.434	21.385	41.855	0.992	0.208	8.896	0.000	4.541	0.815	99.162	Cr-pyrope"G9"
												Pyrope-almandine
315-26	0.024	11.200	22.339	39.120	0.098	1.016	19.728	0.000	6.003	0.091	99.619	Pyrope-almandine
343-3	0.034	13.559	22.902	40.238	0.069	0.306	16.067	0.000	6.091	0.273	99.539	Pyrope-almandine
												Almandine
57-1	0.003	3.493	21.813	37.530	0.000	1.777	26.304	0.000	9.245	0.086	100.251	Almandine
72-3	0.000	6.676	22.116	38.641	0.000	0.983	23.808	0.003	8.678	0.095	101.000	Almandine
317-16	0.002	2.703	20.932	37.070	0.008	1.737	33.736	0.000	4.614	0.005	100.807	Almandine
318-13	0.001	2.385	20.632	36.411	0.052	1.439	32.034	0.000	6.822	0.028	99.804	Almandine
319-25	0.011	4.549	21.409	37.069	0.013	0.348	30.959	0.005	4.881	0.039	99.283	Almandine
319-27	0.015	5.165	21.519	36.773	0.069	0.672	27.678	0.000	7.327	0.046	99.264	Almandine
70-1	0.010	10.964	22.702	39.419	0.007	0.589	20.829	0.000	5.904	0.112	100.536	Almandine-pyrope
90-1	0.016	7.977	21.911	38.214	0.045	0.452	25.670	0.000	6.097	0.082	100.464	Almandine-pyrope
260-1	0.000	7.487	21.670	38.006	0.010	0.670	27.378	0.000	4.464	0.073	99.758	Almandine-pyrope
280-4	0.007	6.854	21.448	38.168	0.097	0.848	25.895	0.000	6.499	0.099	99.915	Almandine-pyrope
289-2	0.000	3.925	21.258	37.118	0.009	5.291	28.106	0.002	4.172	0.027	99.908	Almandine-pyrope
291-10	0.000	5.402	21.292	37.707	0.012	2.296	29.869	0.000	3.949	0.044	100.571	Almandine-pyrope
291-11	0.003	5.980	21.663	37.597	0.037	1.643	29.016	0.000	3.959	0.064	99.962	Almandine-pyrope
291-12	0.002	5.069	20.992	37.399	0.004	2.313	29.991	0.000	4.281	0.058	100.109	Almandine-pyrope
291-13	0.017	5.011	21.088	37.725	0.016	2.170	29.969	0.000	4.324	0.120	100.440	Almandine-pyrope
316-28	0.015	8.440	21.922	38.822	0.005	0.701	23.004	0.000	7.001	0.147	100.057	Almandine-pyrope
316-29	0.000	8.582	21.825	38.290	0.120	1.264	27.176	0.000	2.543	0.027	99.827	Almandine-pyrope
317-20	0.004	7.409	22.054	37.973	0.025	0.488	25.443	0.003	6.003	0.056	99.458	Almandine-pyrope
318-12	0.011	6.515	21.885	37.276	0.010	0.653	26.830	0.000	6.253	0.052	99.485	Almandine-pyrope
319-24	0.009	7.670	22.032	38.234	0.099	0.507	25.034	0.000	5.874	0.032	99.491	Almandine-pyrope
319-28	0.009	5.366	21.572	37.184	0.071	0.639	27.331	0.000	7.236	0.063	99.471	Almandine-pyrope

Sample #	Na2O	MgO	Al2O3	SiO2	Cr2O3	MnO	FeO	K2O	CaO	TiO2	Total	Mineral
319-29	0.005	7.547	21.529	38.071	0.011	0.456	25.308	0.014	6.530	0.115	99.586	Almandine-pyrope
323-1	0.020	10.694	22.318	38.197	0.135	0.660	20.845	0.000	5.851	0.170	98.890	Almandine-pyrope
315-25	0.041	6.972	22.111	38.536	0.102	0.550	20.391	0.006	10.740	0.134	99.583	Almandine-grossular-pyrope
97-1	0.010	1.690	21.145	37.188	0.031	2.348	28.374	0.000	10.263	0.152	101.201	Almandine-grossular
316-32	0.010	4.206	21.051	37.291	0.065	1.302	25.377	0.000	10.085	0.149	99.536	Almandine-grossular
316-33	0.002	4.280	21,192	37.033	0.068	1.269	25.585	0.000	10.041	0.130	99.600	Almandine-grossular
322-6	0.016	3.454	21.826	36.645	0.000	1.438	24.727	0.005	10.847	0.032	98.990	Almandine-grossular
												Spessartines
60-3	0.006	0.000	20.396	35.851	0.000	30.099	13.298	0.000	0.250	0.046	99.946	Spessartine-almandine
												Grossulars
56-3	0.008	0.124	20.397	38.932	0.000	0.356	4.197	0.000	35.233	0.463	99.710	Grossular
56-4	0.000	0.132	18.376	38.142	0.000	0.634	8.129	0.007	33.351	0.370	99.141	Grossular
57-2	0.005	0.078	18.153	38.058	0.002	0.256	7.606	0.000	34.561	0.303	99.022	Grossular
57-3	0.000	0.131	19.927	38.557	0.000	0.479	5.572	0.000	34.626	0.355	99.647	Grossular
57-4	0.000	0.128	20.691	39.197	0.016	0.153	3.827	0.001	35.593	0.409	100.015	Grossular
57-5	0.000	0.146	21.177	39.130	0.000	0.391	3.936	0.003	35.004	0.138	99.925	Grossular
57-6	0.000	0.093	21.007	38.670	0.000	0.856	4.865	0.001	33.671	0.303	99.466	Grossular
58-5	0.000	0.115	21.020	37.383	0.012	2.984	8.538	0.002	28.637	0.165	98.856	Grossular
60-2	0.000	0.180	19.475	39.095	0.014	0.954	6.519	0.004	33.281	0.305	99.827	Grossular
64-4	0.005	0.048	18.886	38.892	0.000	0.278	6.809	0.000	34.547	0.352	99.817	Grossular
64-5	0.001	0.164	19.266	38.754	0.036	0.590	5.854	0.000	34.954	0.311	99.930	Grossular
												Cr-diopsides
WR5-2	0.650	18.744	0.633	55.176	1.323	0.006	2.847	0.000	20.804	0.168	100.353	Cr-diopside
WR6-2	1.980	15.883	1.512	54.607	2.613	0.106	1.876	0.000	20.642	0.063	99.282	Cr-diopside
WR8-1	0.545	17.959	0.533	54.199	1.077	0.101	2.821	0.000	22.315	0.222	99.771	Cr-diopside
WR8-2	0.398	17.809	3.369	52.152	1.555	0.147	3.090	0.010	20.716	0.083	99.329	Cr-diopside
WR9-1	0.216	18.333	1.468	53.611	1.127	0.053	2.603	0.000	22.278	0.147	99.834	Cr-diopside
55-1	0.227	19.641	4.054	51.379	1.765	0.088	3.352	0.000	18.258	0.028	98.792	Cr-diopside
58-4	0.520	18.119	5.410	50.937	1.254	0.104	3.900	0.010	18.841	0.085	99.180	Cr-diopside
72-4	0.623	17.456	1.455	52.801	1.255	0.109	5.269	0.000	20.299	0.391	99.658	Cr-diopside
77-9	0.512	17.787	0.675	54.259	1.066	0.068	3.313	0.009	22.417	0.273	100.379	Cr-diopside
91-1	0.270	19.810	4.821	52.031	1.212	0.103	4.285	0.000	18.065	0.026	100.623	Cr-diopside
93-2	0.459	18.702	0.385	54.612	1.077	0.047	2.563	0.006	22.435	0.219	100.505	Cr-diopside
93-3	0.440	18.475	0.548	54.074	1.011	0.055	2.695	0.000	22.499	0.204	100.001	Cr-diopside

Sample #	Na2O	MgO	Al2O3	SiO2	Cr2O3	MnO	FeO	K2O	CaO	TiO2	Total	Mineral
94-4	0.499	17.978	0.694	54.274	1.081	0.112	3.162	0.018	22.451	0.255	100.524	Cr-diopside
95-3	0.202	18.118	1.225	54.046	1.019	0.084	1.987	0.000	23.737	0.117	100.535	Cr-diopside
96-5	0.377	17.520	2.184	52.703	1.480	0.071	2.103	0.007	23.658	0.142	100.245	Cr-diopside
243-1	0.534	18.055	0.718	54.265	1.191	0.041	2.759	0.01	22.204	0.245	100.02	Cr-diopside
259-1	0.183	18.342	1.292	54.012	1.137	0.027	2.153	0.004	22.889	0.132	100.171	Cr-diopside
261-1	0.496	18.094	4.879	51.291	1.830	0.135	3.476	0.003	19.263	0.128	99.595	Cr-diopside
261-3	0.551	18.071	5.000	51.156	1.670	0.115	3.502	0.002	19.291	0.124	99.482	Cr-diopside
266-1	0.426	20.310	3.905	52.480	1.791	0.130	4.282	0.000	16.324	0.146	99.794	Cr-diopside
269-1	0.586	17.038	3.413	51.833	1.389	0.026	2.889	0.012	22.191	0.132	99.509	Cr-diopside
269-2	0.547	17.017	3.362	51.417	1.646	0.077	2.961	0.013	21.676	0.147	98.863	Cr-diopside
272-3	0.586	17.382	5.968	50.926	1.365	0.149	4.040	0.000	18.991	0.139	99.546	Cr-diopside
272-4	0.402	18.266	4.056	51.818	1.491	0.094	3.282	0.000	19.827	0.082	99.318	Cr-diopside
273-1	0.611	17.831	1.194	53.075	1.336	0.069	5.023	0.003	19.998	0.303	99.443	Cr-diopside
291-4	0.563	18.072	0.700	53.603	1.201	0.033	2.987	0.011	22.043	0.189	99.402	Cr-diopside
317-17	0.208	17.287	1.664	52.909	1.093	0.030	2.535	0.000	23.311	0.200	99.237	Cr-diopside
317-19	0.224	17.515	1.469	53.029	1.023	0.044	2.409	0.001	23.220	0.153	99.087	Cr-diopside
318-14	0.196	17.866	1.740	52.757	1.083	0.041	2.654	0.000	22.794	0.181	99.312	Cr-diopside
328-4	0.160	18.337	1.727	53.047	1.266	0.048	2.672	0.000	21.992	0.122	99.371	Cr-diopside
328-7	0.504	17.738	0.680	53.403	1.166	0.084	3.205	0.001	22.185	0.253	99.219	Cr-diopside
328-8	0.206	18.493	1.310	53.034	1.267	0.084	2.317	0.003	22.218	0.114	99.046	Cr-diopside
328-10	0.538	17.420	1.144	53.126	1.226	0.153	4.788	0.000	20.486	0.246	99.127	Cr-diopside
328-12	0.493	16.773	3.225	52.401	1.279	0.039	3.322	0.001	21.574	0.124	99.231	Cr-diopside
329-15	0.554	16.991	4.688	51.266	1.541	0.119	3.037	0.015	21.007	0.094	99.312	Cr-diopside
329-16	0.166	17.590	2.120	52.753	1.177	0.077	2.809	0.000	22.451	0.120	99.263	Cr-diopside
329-17	1.521	16.178	0.376	54.215	2.341	0.078	2.496	0.000	21.434	0.253	98.892	Cr-diopside
335-1	0.593	17.520	0.680	54.146	1.117	0.056	3.335	0.006	21.604	0.223	99.280	Cr-diopside
336-1	1.988	16.080	1.703	53.882	2.606	0.086	2.024	0.033	19.772	0.301	98.475	Cr-diopside
336-2	0.460	17.291	0.462	54.183	1.052	0.062	2.812	0.005	22.653	0.274	99.254	Cr-diopside
342-1	0.691	17.125	1.560	52.817	1.496	0.058	3.606	0.000	20.952	0.195	98.500	Cr-diopside
342-2	1.326	18.106	1.956	54.218	1.011	0.096	2.329	0.035	18.967	0.155	98.199	Cr-diopside
343-1	1.591	17.273	1.951	54.273	1.201	0.087	3.380	0.036	18.658	0.293	98.743	Cr-diopside
345-1	0.204	17.585	1.993	53.238	1.221	0.080	2.451	0.000	22.315	0.174	99.261	Cr-diopside
												Low Cr-diopsides
WR6-1	0.435	18.401	0.418	54.195	0.826	0.072	2.632	0.004	22.192	0.203	99.378	Low Cr-diopside
WR8-3	0.462	17.823	1.109	53.189	0.759	0.088	3.310	0.011	22.299	0.269	99.318	Low Cr-diopside

Sample #	Na2O	MgO	Al2O3	SiO2	Cr2O3	MnO	FeO	K2O	CaO	TiO2	Total	Mineral
WR6-3	0.473	17.818	0.707	54.111	0.938	0.062	3.025	0.001	22.324	0.180	99.639	Low Cr-diopside
57-7	0.320	18.163	0.394	53.603	0.583	0.050	2.719	0.000	22.638	0.271	98.741	Low Cr-diopside
59-1	0.584	16.119	0.916	53.724	0.434	0.100	3.397	0.000	23.954	0.036	99.264	Low Cr-diopside
59-2	0.931	15.626	1.275	53.445	0.710	0.148	3.508	0.000	23.420	0.068	99.131	Low Cr-diopside
59-3	0.229	18.717	1.417	53.364	0.766	0.045	2.837	0.001	22.040	0.140	99.556	Low Cr-diopside
59-4	0.356	18.648	0.347	54.678	0.561	0.043	2.706	0.000	22.330	0.159	99.828	Low Cr-diopside
59-5	0.402	17.920	0.432	54.242	0.836	0.080	2.782	0.000	23.020	0.248	99.962	Low Cr-diopside
59-6	0.352	18.041	0.605	54.121	0.381	0.092	3.141	0.005	22.852	0.235	99.825	Low Cr-diopside
60-1	0.833	12.562	3.429	50.891	0.050	0.081	9.185	0.010	21.459	0.320	98.820	Low Cr-diopside
60-4	0.332	17.864	0.852	54.006	0.596	0.101	3.484	0.000	22.003	0.133	99.371	Low Cr-diopside
64-2	0.403	18.037	0.498	54.136	0.633	0.093	3.144	0.007	22.992	0.306	100.249	Low Cr-diopside
64-3	0.422	18.023	0.433	53.804	0.887	0.054	2.926	0.002	22.936	0.275	99.762	Low Cr-diopside
77-8	0.361	17.767	0.420	53.986	0.719	0.071	3.019	0.000	23.219	0.306	99.868	Low Cr-diopside
88-1	0.369	17.819	0.499	53.957	0.474	0.064	2.846	0.000	22.885	0.312	99.225	Low Cr-diopside
89-1	0.430	18.193	0.428	54.367	0.984	0.068	2.532	0.007	22.860	0.253	100.122	Low Cr-diopside
95-4	0.430	18.051	0.463	54.714	0.878	0.067	2.971	0.000	23.153	0.252	100.979	Low Cr-diopside
96-1	0.367	18.517	0.567	53.982	0.446	0.036	3.239	0.005	22.709	0.236	100.104	Low Cr-diopside
96-4	0.509	17.743	0.874	54.451	0.850	0.098	3.438	0.021	22.382	0.258	100.624	Low Cr-diopside
96-6	0.162	19.084	1.342	54.031	0.940	0.053	2.505	0.000	21.737	0.098	99.952	Low Cr-diopside
99-1	0.390	18.156	0.391	54.384	0.777	0.014	2.603	0.005	23.050	0.224	99.994	Low Cr-diopside
261-2	0.772	16.158	0.552	54.395	0.455	0.154	3.961	0.000	23.333	0.047	99.827	Low Cr-diopside
267-1	0.748	15.960	0.716	53.270	0.517	0.131	4.346	0.009	23.362	0.030	99.089	Low Cr-diopside
203-2	0.452	17.875	0.376	53.932	0.888	0.106	2.614	0.000	21.916	0.198	98.357	Low Cr-diopside
203-3	0.407	18.203	0.339	54.730	0.821	0.000	2.638	0.000	22.098	0.182	99.418	Low Cr-diopside
243-2	0.879	15.530	1.104	53.906	0.978	0.056	2.950	0.000	23.655	0.062	99.120	Low Cr-diopside
317-18	0.190	18.057	1.369	53.157	0.981	0.063	2.241	0.000	23.008	0.122	99.188	Low Cr-diopside
323-2	0.705	16.219	1.104	54.137	0.943	0.163	4.179	0.000	22.086	0.171	99.707	Low Cr-diopside
328-2	0.645	15.613	0.714	53.549	0.279	0.176	4.291	0.010	23.935	0.027	99.239	Low Cr-diopside
328-3	0.642	15.035	1.024	53.308	0.079	0.131	5.570	0.000	23.604	0.012	99.405	Low Cr-diopside
328-5	0.722	15.500	0.773	53.379	0.339	0.160	4.581	0.000	23.715	0.025	99.194	Low Cr-diopside
328-6	0.746	15.263	0.868	53.695	0.553	0.103	4.360	0.018	23.717	0.032	99.355	Low Cr-diopside
328-9	0.222	17.796	1.844	53.119	0.652	0.084	2.751	0.003	22.214	0.224	98.909	Low Cr-diopside
329-14	0.356	18.062	0.341	54.065	0.696	0.088	2.580	0.003	22.508	0.188	98.887	Low Cr-diopside
334-1	0.415	17.622	0.498	53.789	0.889	0.049	2.926	0.000	22.532	0.273	98.993	Low Cr-diopside
336-3	0.429	17.348	0.842	54.367	0.612	0.076	3.258	0.000	22.564	0.251	99.747	Low Cr-diopside

Sample #	Na2O	MgO	Al2O3	SiO2	MnO	FeO	NiO	K2O	CaO	TiO2	Cr2O3	Fe2O3	Total	Mineral
336-4	0.200	17.820	1.537	53.389	0.722	0.097	2.474	0.002	22.453	0.169	98.863	Low Cr-diopside		
336-5	0.392	17.194	0.665	53.611	0.677	0.069	3.159	0.000	22.603	0.325	98.695	Low Cr-diopside		
345-2	0.386	17.571	0.377	54.050	0.717	0.052	2.891	0.011	22.146	0.273	98.474	Low Cr-diopside		
Sample #	Na2O	MgO	Al2O3	SiO2	MnO	FeO	NiO	K2O	CaO	TiO2	Cr2O3	Fe2O3	Total	Mineral
														Chromites
32-1	0.000	17.592	36.421	0.098	0.118	10.387	0.189	0.005	0.000	0.710	27.740	6.435	99.695	Chromite
32-2	0.014	17.081	28.980	0.158	0.143	9.992	0.247	0.009	0.000	1.298	34.776	7.393	100.091	Chromite
48-1	0.000	16.923	32.228	0.100	0.168	10.386	0.263	0.003	0.000	0.884	30.339	7.711	99.005	Chromite
48-2	0.005	17.246	34.600	0.125	0.163	10.449	0.195	0.000	0.002	0.800	28.111	7.672	99.368	Chromite
49-1	0.000	17.305	33.719	0.105	0.150	10.274	0.291	0.011	0.000	0.820	30.003	7.092	99.770	Chromite
49-2	0.006	13.900	20.512	0.097	0.252	13.048	0.205	0.005	0.002	2.651	35.491	12.931	99.100	Chromite
49-3	0.000	17.158	31.042	0.181	0.155	10.037	0.264	0.000	0.000	1.099	32.040	7.572	99.548	Chromite
49-4	0.000	16.515	28.278	0.180	0.158	10.807	0.209	0.004	0.011	0.987	35.550	7.428	100.127	Chromite
49-5	0.000	15.497	25.228	0.109	0.202	11.444	0.238	0.003	0.021	1.390	36.007	8.981	99.120	Chromite
49-6	0.000	16.866	30.008	0.127	0.137	10.246	0.238	0.002	0.009	1.320	32.870	7.414	99.237	Chromite
49-8	0.000	17.238	26.848	0.135	0.142	9.397	0.207	0.014	0.011	1.082	38.796	5.942	99.812	Chromite
49-9	0.001	14.825	23.636	0.107	0.205	12.388	0.196	0.000	0.001	1.847	36.049	10.273	99.528	Chromite
51-2	0.006	15.923	28.384	0.120	0.172	11.410	0.236	0.009	0.000	1.360	32.757	9.000	99.377	Chromite
51-3	0.000	16.727	26.958	0.126	0.178	10.132	0.186	0.002	0.000	1.252	36.711	7.376	99.648	Chromite
51-4	0.000	15.991	22.957	0.139	0.202	10.607	0.198	0.000	0.000	1.093	42.497	5.917	99.601	Chromite
51-5	0.000	16.126	26.056	0.138	0.119	10.988	0.215	0.004	0.019	1.647	36.417	8.202	99.931	Chromite
51-6	0.012	16.365	36.932	0.112	0.168	12.250	0.234	0.000	0.003	1.112	23.526	9.189	99.903	Chromite
51-7	0.000	17.440	33.884	0.179	0.102	10.065	0.283	0.000	0.000	0.905	29.375	7.222	99.455	Chromite
51-8	0.000	16.091	36.063	0.113	0.203	12.407	0.162	0.000	0.000	1.213	24.267	8.785	99.304	Chromite
55-2	0.008	12.846	16.728	0.094	0.215	14.424	0.148	0.010	0.004	2.596	40.927	11.916	99.916	Chromite
55-3	0.009	16.434	32.350	0.171	0.178	11.460	0.265	0.003	0.000	1.021	29.239	8.966	100.096	Chromite
55-4	0.006	18.840	36.588	0.229	0.101	8.422	0.216	0.000	0.023	0.486	28.989	5.585	99.485	Chromite
55-5	0.001	17.169	31.449	0.117	0.128	10.340	0.227	0.008	0.014	1.384	31.626	7.824	100.287	Chromite
56-2	0.005	17.043	34.092	0.142	0.130	10.677	0.259	0.000	0.000	0.772	29.293	6.987	99.400	Chromite
59-7	0.000	14.450	24.304	0.100	0.205	13.259	0.211	0.003	0.000	2.118	35.567	9.954	100.171	Chromite
59-8	0.014	16.765	24.714	0.121	0.176	10.099	0.215	0.000	0.014	0.898	42.207	5.717	100.940	Chromite
59-9	0.000	14.128	25.842	0.060	0.215	13.913	0.213	0.000	0.000	2.449	31.541	11.691	100.052	Chromite
59-10	0.000	15.848	29.320	0.115	0.178	11.999	0.191	0.000	0.000	1.836	31.122	9.652	100.261	Chromite
63-1	0.008	15.557	29.266	0.134	0.154	11.992	0.143	0.002	0.009	1.868	29.777	9.841	98.751	Chromite
63-2	0.000	14.015	27.596	0.092	0.238	14.315	0.177	0.008	0.006	1.863	30.773	10.760	99.843	Chromite

Sample #	Na2O	MgO	Al2O3	SiO2	MnO	FeO	NiO	K2O	CaO	TiO2	Cr2O3	Fe2O3	Total	Mineral
67-3	0.000	16.767	28.591	0.144	0.142	10.399	0.197	0.000	0.006	1.014	34.976	7.564	99.800	Chromite
67-4	0.000	14.545	19.427	0.147	0.198	12.628	0.180	0.000	0.000	1.676	42.955	9.089	100.845	Chromite
67-5	0.000	14.416	31.239	0.191	0.165	13.971	0.274	0.000	0.016	0.947	33.872	3.445	98.536	Chromite
67-6	0.000	14.414	30.894	0.182	0.177	13.771	0.269	0.000	0.000	0.954	33.471	3.936	98.068	Chromite
77-2	0.000	18.491	33.073	0.314	0.169	8.639	0.242	0.000	0.000	0.000	35.739	3.586	100.253	Chromite
80-1	0.055	0.607	9.476	0.043	0.436	31.126	0.048	0.000	0.000	0.261	48.642	6.687	97.381	Chromite
80-2	0.075	0.492	7.073	0.076	0.511	30.878	0.000	0.009	0.000	0.397	52.059	5.874	97.444	Chromite
83-1	0.001	13.336	4.973	0.285	0.201	12.295	0.158	0.011	0.000	0.115	66.683	2.645	100.703	Chromite
88-3	0.017	16.250	26.158	0.165	0.160	10.849	0.241	0.001	0.000	1.248	38.346	6.732	100.167	Chromite
95-1	0.000	9.427	14.248	0.082	0.299	19.447	0.065	0.008	0.000	0.673	48.739	7.106	100.094	Chromite
96-3	0.007	13.239	16.263	0.137	0.217	13.983	0.229	0.004	0.000	2.301	44.635	9.701	100.716	Chromite
104-1	0.000	12.429	13.502	0.074	0.222	14.873	0.107	0.000	0.000	0.341	54.692	3.974	100.214	Chromite
110-2	0.018	12.037	19.564	0.034	0.222	16.226	0.106	0.000	0.000	0.476	43.194	8.019	99.896	Chromite
229-10	0.000	12.158	8.509	0.051	0.268	14.381	0.069	0.000	0.000	0.085	59.905	4.459	99.885	Chromite
229-11	0.011	15.839	12.238	0.266	0.136	9.419	0.165	0.000	0.000	1.280	54.658	6.168	100.180	Chromite
229-12	0.000	11.385	29.120	0.018	0.098	18.905	0.155	0.009	0.000	0.169	37.867	2.117	99.843	Chromite
229-13	0.000	12.372	36.663	0.017	0.128	18.487	0.220	0.007	0.000	0.476	22.394	9.439	100.203	Chromite
229-14	0.000	11.753	13.890	0.032	0.278	15.778	0.075	0.014	0.013	0.303	52.692	5.037	99.865	Chromite
229-15	0.000	11.645	12.974	0.058	0.287	15.492	0.102	0.010	0.000	0.086	52.237	6.094	98.985	Chromite
229-16	0.005	13.442	15.715	0.019	0.194	13.440	0.129	0.010	0.000	0.151	52.938	3.490	99.533	Chromite
229-17	0.000	14.194	10.056	0.109	0.244	11.173	0.121	0.009	0.010	1.627	56.871	4.659	99.073	Chromite
229-19	0.005	15.052	22.572	0.019	0.167	11.925	0.183	0.001	0.000	0.165	46.539	2.490	99.118	Chromite
241-1	0.016	14.641	20.551	0.035	0.189	12.423	0.180	0.000	0.000	0.261	47.864	3.721	99.881	Chromite
277-3	0.000	14.284	11.927	0.284	0.218	11.660	0.197	0.002	0.009	0.234	52.336	9.167	100.318	Chromite
285-4	0.000	11.577	13.124	0.052	0.286	15.740	0.183	0.003	0.005	0.492	52.409	5.724	99.595	Chromite
285-5	0.001	12.500	17.371	0.096	0.289	14.859	0.189	0.000	0.000	5.416	33.059	16.126	99.906	Chromite
289-13	0.012	15.482	13.074	0.123	0.191	10.022	0.134	0.005	0.000	0.117	57.182	3.567	99.909	Chromite
289-14	0.000	15.474	13.014	0.129	0.170	10.074	0.139	0.000	0.002	0.138	57.331	3.449	99.920	Chromite
315-21	0.000	15.427	26.126	0.026	0.184	12.088	0.104	0.000	0.017	0.016	43.233	2.275	99.496	Chromite
315-22	0.000	15.902	14.509	0.156	0.179	9.685	0.233	0.004	0.000	2.752	49.534	7.711	100.665	Chromite
315-23	0.000	7.241	3.202	0.034	0.379	21.016	0.088	0.000	0.000	0.588	60.733	6.981	100.262	Chromite
315-24	0.008	12.122	12.499	0.066	0.302	14.931	0.105	0.010	0.003	0.428	52.858	6.570	99.902	Chromite
315-27	0.019	14.868	8.720	0.075	0.193	9.972	0.103	0.005	0.010	0.456	63.122	1.328	98.871	Chromite
315-29	0.000	15.693	15.982	0.089	0.170	9.814	0.100	0.001	0.021	0.446	54.657	1.620	98.593	Chromite
315-30	0.000	12.603	12.273	0.049	0.213	14.062	0.165	0.000	0.007	0.195	56.849	2.823	99.239	Chromite

Sample #	Na2O	MgO	Al2O3	SiO2	MnO	FeO	NiO	K2O	CaO	TiO2	Cr2O3	Fe2O3	Total	Mineral
315-31	0.000	14.185	10.959	0.151	0.224	11.136	0.234	0.007	0.000	4.197	46.679	11.368	99.140	Chromite
315-32	0.000	10.726	13.124	0.086	0.289	17.077	0.106	0.000	0.017	0.396	52.710	4.925	99.456	Chromite
316-30	0.001	15.532	27.756	0.218	0.181	12.057	0.168	0.000	0.001	0.293	38.559	4.538	99.304	Chromite
316-31	0.006	14.976	18.073	0.112	0.220	11.327	0.186	0.007	0.000	1.742	44.589	8.405	99.643	Chromite
318-11	0.000	13.226	13.799	0.051	0.178	13.296	0.164	0.005	0.001	1.976	49.120	7.453	99.269	Chromite
319-8	0.006	13.180	12.021	0.051	0.306	15.620	0.196	0.000	0.001	2.693	51.174	4.261	99.509	Chromite
319-30	0.000	15.184	26.450	0.106	0.144	12.286	0.247	0.007	0.000	1.275	35.958	7.716	99.373	Chromite
322-1	0.000	15.987	25.354	0.156	0.177	11.039	0.232	0.000	0.000	1.346	37.745	7.843	99.879	Chromite
322-2	0.000	16.386	29.027	0.159	0.127	11.012	0.289	0.000	0.000	1.166	33.251	8.515	99.932	Chromite
322-3	0.000	15.911	22.141	0.117	0.213	10.588	0.167	0.006	0.000	0.268	45.172	4.860	99.443	Chromite
322-4	0.000	16.212	23.385	0.196	0.196	10.252	0.217	0.000	0.000	0.592	43.479	4.759	99.288	Chromite
322-5	0.000	15.728	26.563	0.145	0.163	11.483	0.225	0.001	0.000	1.275	36.699	7.051	99.333	Chromite
329-1	0.011	13.276	10.047	0.097	0.247	12.617	0.158	0.000	0.000	1.034	57.226	4.565	99.278	Chromite
329-2	0.000	16.643	28.008	0.130	0.196	10.207	0.228	0.008	0.004	1.077	37.085	5.506	99.092	Chromite
329-3	0.000	17.247	28.736	0.180	0.149	9.581	0.247	0.003	0.000	0.783	37.352	5.222	99.500	Chromite
329-4	0.005	9.418	12.047	0.059	0.341	18.761	0.121	0.000	0.000	0.677	50.061	7.841	99.331	Chromite
329-5	0.000	10.067	12.547	0.043	0.302	17.971	0.127	0.007	0.007	1.028	48.482	9.144	99.725	Chromite
329-6	0.000	14.768	26.560	0.121	0.157	12.863	0.233	0.000	0.001	2.300	31.948	10.324	99.275	Chromite
329-8	0.000	17.095	30.004	0.152	0.172	9.863	0.250	0.000	0.002	1.089	33.779	6.796	99.202	Chromite
329-9	0.027	17.773	36.383	0.104	0.128	10.025	0.214	0.009	0.000	1.164	27.381	6.555	99.763	Chromite
329-10	0.017	16.226	28.758	0.133	0.186	10.900	0.216	0.000	0.013	0.792	34.118	7.660	99.019	Chromite
329-11	0.000	13.492	26.052	0.100	0.241	14.650	0.159	0.003	0.005	0.453	36.286	7.402	98.843	Chromite
329-12	0.012	16.669	30.766	0.177	0.180	10.649	0.226	0.000	0.000	0.881	32.882	6.802	99.244	Chromite
329-13	0.013	16.821	34.566	0.221	0.140	11.023	0.242	0.000	0.000	1.039	27.761	7.394	99.220	Chromite
330-1	0.002	17.976	32.895	0.144	0.185	9.073	0.238	0.000	0.002	0.771	33.244	4.911	99.441	Chromite
330-2	0.000	16.916	29.768	0.196	0.113	10.326	0.266	0.005	0.000	1.368	33.880	6.957	99.795	Chromite
330-5	0.005	10.933	21.230	0.030	0.264	17.957	0.134	0.003	0.000	0.506	38.366	10.031	99.459	Chromite
330-6	0.000	16.186	28.748	0.056	0.163	11.149	0.221	0.000	0.000	1.358	34.679	6.849	99.409	Chromite
334-3	0.000	16.713	28.977	0.175	0.159	10.467	0.217	0.000	0.020	1.021	33.947	8.046	99.742	Chromite
335-2	0.000	15.355	23.809	0.061	0.227	11.547	0.183	0.003	0.000	1.361	37.943	8.809	99.298	Chromite
335-3	0.000	13.541	23.663	0.062	0.179	14.442	0.150	0.000	0.000	2.114	34.139	11.340	99.630	Chromite
335-5	0.000	6.645	7.285	0.050	0.379	22.328	0.198	0.000	0.000	0.419	53.288	9.348	99.940	Chromite
336-6	0.003	19.522	42.664	0.191	0.156	8.208	0.239	0.000	0.000	0.525	22.385	5.335	99.228	Chromite
336-7	0.000	17.791	31.774	0.146	0.169	9.143	0.308	0.000	0.000	1.466	31.123	7.713	99.633	Chromite
336-8	0.006	17.934	33.117	0.193	0.163	9.264	0.259	0.004	0.000	0.600	32.234	6.011	99.785	Chromite

Sample #	Na2O	MgO	Al2O3	SiO2	MnO	FeO	NiO	K2O	CaO	TiO2	Cr2O3	Fe2O3	Total	Mineral
338-2	0.006	14.339	14.388	0.380	0.167	11.871	0.206	0.000	0.000	0.292	49.828	8.354	99.831	Chromite
338-3	0.000	17.415	20.859	0.330	0.119	8.315	0.168	0.003	0.015	0.294	47.919	4.400	99.837	Chromite
342-3	0.017	15.185	22.288	0.168	0.179	11.755	0.235	0.008	0.000	1.241	39.968	8.940	99.984	Chromite
342-4	0.015	14.642	24.845	0.110	0.216	12.897	0.274	0.000	0.000	1.450	34.844	10.702	99.995	Chromite
342-5	0.000	14.770	26.965	0.076	0.191	13.056	0.196	0.000	0.005	2.164	32.803	9.431	99.657	Chromite
342-6	0.000	17.179	29.587	0.125	0.151	9.777	0.279	0.000	0.012	0.888	35.648	5.909	99.555	Chromite
350-7	0.031	0.406	7.058	0.174	0.621	30.974	0.020	0.000	0.000	0.152	49.004	9.127	97.567	Chromite
351-6	0.000	12.498	11.775	0.061	0.340	14.281	0.080	0.000	0.005	0.424	54.426	6.071	99.961	Chromite
														Mg-Ilmenites
41-1	0.001	8.422	0.375	0.005	0.457	29.278	0.041	0.003	0.026	49.428	0.086	10.898	99.020	Mg-ilmenite
56-1	0.001	8.597	0.497	0.013	0.243	30.010	0.112	0.005	0.028	49.898	0.761	9.176	99.341	Mg-ilmenite
58-1	0.000	7.598	0.440	0.025	0.231	27.951	0.038	0.000	0.022	45.873	0.353	16.372	98.903	Mg-ilmenite
77-1	0.010	6.470	0.288	0.105	0.265	30.976	0.000	0.000	0.006	47.055	0.550	13.134	98.859	Mg-ilmenite
88-2	0.000	9.479	0.326	0.091	0.376	30.010	0.070	0.004	0.018	51.832	0.945	6.495	99.646	Mg-ilmenite
94-1	0.007	5.790	0.426	0.047	0.417	34.298	0.000	0.000	0.023	49.729	0.045	9.257	100.039	Mg-ilmenite
94-2	0.000	6.435	0.407	0.043	0.366	30.697	0.047	0.007	0.020	46.896	0.169	14.341	99.428	Mg-ilmenite
94-3	0.004	7.116	0.508	0.038	0.317	30.345	0.036	0.000	0.031	47.756	0.102	13.808	100.061	Mg-ilmenite
110-1	0.000	6.107	0.460	0.063	0.374	32.133	0.071	0.011	0.030	47.752	0.281	13.383	100.665	Mg-ilmenite
204-1	0.022	9.707	0.200	0.014	0.339	30.203	0.087	0.000	0.005	51.858	2.275	5.052	99.762	Mg-ilmenite
204-2	0.013	9.957	0.084	0.006	0.297	30.324	0.098	0.004	0.011	52.046	3.199	3.883	99.922	Mg-ilmenite
204-3	0.028	5.587	0.053	0.000	0.313	33.184	0.026	0.000	0.006	47.586	1.333	10.846	98.962	Mg-ilmenite
204-4	0.020	14.787	0.267	0.030	0.184	25.317	0.147	0.000	0.009	56.109	2.572	0.607	100.049	Mg-ilmenite
204-5	0.000	4.613	0.033	0.006	0.294	32.146	0.051	0.000	0.013	44.557	1.215	16.051	98.979	Mg-ilmenite
204-6	0.000	8.459	0.310	0.018	0.215	28.489	0.134	0.000	0.000	47.491	1.819	11.884	98.819	Mg-ilmenite
204-7	0.000	6.989	0.200	0.024	0.206	29.794	0.067	0.011	0.017	46.414	1.232	13.594	98.548	Mg-ilmenite
215-1	0.020	13.770	0.344	0.000	0.197	26.063	0.160	0.001	0.016	55.598	1.202	2.274	99.645	Mg-ilmenite
229-1	0.024	8.013	0.011	0.001	0.427	29.852	0.085	0.000	0.034	48.699	1.621	10.899	99.666	Mg-ilmenite
229-2	0.038	13.167	0.090	0.017	0.355	27.334	0.098	0.004	0.018	55.692	2.155	1.088	100.056	Mg-ilmenite
229-3	0.000	7.450	0.025	0.000	0.356	30.580	0.008	0.012	0.017	48.402	1.432	11.083	99.365	Mg-ilmenite
229-4	0.012	9.425	0.371	0.023	0.242	27.003	0.032	0.000	0.032	48.385	0.583	13.772	99.880	Mg-ilmenite
229-5	0.000	7.696	0.413	0.020	0.295	29.746	0.066	0.000	0.021	48.096	0.468	12.929	99.750	Mg-ilmenite
229-6	0.000	13.823	0.378	0.008	0.454	26.383	0.098	0.000	0.045	55.896	2.008	1.163	100.256	Mg-ilmenite
229-7	0.000	7.174	0.398	0.027	0.233	30.644	0.049	0.000	0.000	48.019	0.435	12.964	99.943	Mg-ilmenite
229-8	0.022	12.922	0.293	0.006	0.357	26.947	0.053	0.000	0.032	54.562	2.261	2.626	100.081	Mg-ilmenite

Sample #	Na2O	MgO	Al2O3	SiO2	MnO	FeO	NiO	K2O	CaO	TiO2	Cr2O3	Fe2O3	Total	Mineral
229-9	0.013	6.392	0.147	0.004	0.271	30.905	0.075	0.000	0.008	46.758	0.892	14.382	99.847	Mg-ilmenite
229-20	0.008	11.764	0.089	0.024	0.329	27.063	0.161	0.000	0.041	52.548	2.219	4.713	98.959	Mg-ilmenite
229-21	0.000	7.800	0.163	0.014	0.247	30.322	0.046	0.000	0.043	49.001	0.628	10.501	98.765	Mg-ilmenite
240-1	0.010	6.663	0.484	0.048	0.266	31.946	0.054	0.006	0.019	48.354	0.570	11.795	100.215	Mg-ilmenite
240-2	0.002	6.692	0.525	0.000	0.267	31.913	0.057	0.000	0.001	48.357	0.543	11.729	100.086	Mg-ilmenite
240-3	0.004	6.560	0.341	0.001	0.303	31.451	0.030	0.000	0.009	47.795	0.489	12.781	99.764	Mg-ilmenite
241-2	0.016	11.868	0.519	0.019	0.280	28.019	0.055	0.000	0.053	54.315	0.523	4.180	99.847	Mg-ilmenite
241-3	0.006	10.196	0.094	0.045	0.320	30.523	0.072	0.000	0.016	52.680	3.348	2.842	100.142	Mg-ilmenite
260-2	0.000	5.694	0.377	0.009	0.492	32.582	0.000	0.000	0.038	47.758	0.040	13.027	100.017	Mg-ilmenite
260-3	0.018	5.253	0.380	0.016	0.352	33.128	0.051	0.000	0.028	47.276	0.142	13.224	99.868	Mg-ilmenite
260-4	0.000	4.731	0.559	0.013	0.472	34.090	0.037	0.008	0.054	47.351	0.055	12.616	99.986	Mg-ilmenite
277-2	0.017	9.673	0.473	0.020	0.203	28.415	0.113	0.006	0.005	50.024	1.151	9.725	99.825	Mg-ilmenite
287-4	0.020	6.247	0.365	0.014	0.264	31.575	0.017	0.000	0.003	47.250	0.490	13.831	100.076	Mg-ilmenite
288-1	0.000	7.942	0.079	0.004	0.533	32.703	0.099	0.000	0.000	51.300	2.562	4.611	99.833	Mg-ilmenite
289-3	0.017	8.743	0.031	0.018	0.370	31.446	0.058	0.006	0.000	51.295	2.659	4.860	99.503	Mg-ilmenite
289-5	0.022	10.200	0.088	0.013	0.299	30.496	0.093	0.011	0.024	52.572	3.476	2.796	100.090	Mg-ilmenite
289-7	0.002	4.576	0.392	0.003	2.426	35.197	0.133	0.000	0.009	49.139	2.849	4.764	99.490	Mg-ilmenite
290-1	0.003	7.540	0.016	0.000	1.343	32.191	0.132	0.000	0.013	52.052	0.365	6.546	100.201	Mg-ilmenite
Sample #	**Na2O**	**MgO**	**Al2O3**	**SiO2**	**MnO**	**FeO**	**NiO**	**Nb2O5**	**CaO**	**TiO2**	**Cr2O3**	**Fe2O3**	**Total**	**Mineral**
315-2	0.009	5.780	0.012	0.007	1.592	32.774	0.000	1.191	0.025	49.679	0.015	9.323	100.407	Mg-ilmenite
315-4	0.000	5.617	0.096	0.006	0.974	34.774	0.000	0.098	0.000	50.828	0.000	7.995	100.388	Mg-ilmenite
315-5	0.000	9.956	0.169	0.027	1.242	28.429	0.000	0.000	0.081	52.605	0.020	8.242	100.771	Mg-ilmenite
315-6	0.010	5.617	0.323	0.001	0.372	35.463	0.034	0.000	0.034	50.565	0.326	7.675	100.420	Mg-ilmenite
315-7	0.017	4.432	0.047	0.010	0.413	33.960	0.077	0.034	0.013	46.716	0.499	14.104	100.322	Mg-ilmenite
315-8	0.000	9.306	0.462	0.005	0.319	29.273	0.041	0.019	0.077	50.897	0.190	10.100	100.689	Mg-ilmenite
315-12	0.013	9.259	0.550	0.020	0.353	29.385	0.081	0.053	0.057	50.779	0.411	9.324	100.285	Mg-ilmenite
315-13	0.005	5.014	0.067	0.046	0.935	35.300	0.009	0.189	0.000	50.195	0.000	9.054	100.814	Mg-ilmenite
315-14	0.024	7.125	0.139	0.000	0.327	32.357	0.069	0.125	0.003	49.416	1.804	8.728	100.117	Mg-ilmenite
315-15	0.006	8.437	0.212	0.011	0.535	31.353	0.049	0.001	0.072	51.689	0.638	7.486	100.489	Mg-ilmenite
315-16	0.000	5.558	0.038	0.019	1.262	34.046	0.000	0.292	0.007	50.247	0.042	8.442	99.953	Mg-ilmenite
315-17	0.018	9.327	0.530	0.020	0.370	29.058	0.099	0.059	0.059	50.568	0.446	9.754	100.308	Mg-ilmenite
315-18	0.019	9.000	0.756	0.060	0.225	28.889	0.136	0.117	0.032	49.279	0.659	11.409	100.581	Mg-ilmenite
315-19	0.000	4.490	0.146	0.018	0.418	31.938	0.000	0.306	0.029	44.772	0.000	18.125	100.242	Mg-ilmenite
315-28	0.007	8.856	0.706	0.030	0.183	28.389	0.089	0.076	0.031	47.442	2.539	11.112	99.460	Mg-ilmenite
316-1	0.005	9.545	0.822	0.033	0.224	28.502	0.092	0.291	0.020	49.626	1.135	8.864	99.159	Mg-ilmenite

Sample #	Na2O	MgO	Al2O3	SiO2	MnO	FeO	NiO	Nb2O5	CaO	TiO2	Cr2O3	Fe2O3	Total	Mineral
316-2	0.012	11.027	0.447	0.023	0.210	26.959	0.090	0.110	0.048	51.102	1.180	8.486	99.694	Mg-ilmenite
316-3	0.025	8.713	0.284	0.000	0.348	31.483	0.138	0.039	0.005	52.236	0.408	5.869	99.548	Mg-ilmenite
316-4	0.016	7.289	0.418	0.022	0.282	28.926	0.098	0.316	0.012	46.177	0.816	14.859	99.231	Mg-ilmenite
316-5	0.028	8.662	0.256	0.005	0.340	30.721	0.164	0.114	0.026	50.752	1.447	6.634	99.149	Mg-ilmenite
316-6	0.003	8.698	0.274	0.000	0.317	31.560	0.156	0.083	0.011	52.270	0.396	5.500	99.268	Mg-ilmenite
316-7	0.030	10.387	0.389	0.018	0.296	27.386	0.097	0.130	0.029	50.042	1.956	8.508	99.268	Mg-ilmenite
316-8	0.000	7.838	0.106	0.002	0.315	31.475	0.038	0.232	0.000	49.430	2.622	7.024	99.082	Mg-ilmenite
316-9	0.000	8.987	0.285	0.013	0.343	30.359	0.153	0.127	0.003	51.052	1.302	6.733	99.357	Mg-ilmenite
316-10	0.002	5.739	0.097	0.005	0.299	32.256	0.045	0.115	0.000	47.133	0.713	13.439	99.843	Mg-ilmenite
316-11	0.018	10.847	0.092	0.000	0.385	27.845	0.087	0.232	0.029	51.830	1.894	5.732	98.991	Mg-ilmenite
316-12	0.014	7.788	0.054	0.011	0.418	32.044	0.051	0.228	0.003	50.119	2.626	5.784	99.140	Mg-ilmenite
316-13	0.023	9.589	0.679	0.012	0.206	28.472	0.079	0.099	0.025	49.946	0.806	9.170	99.106	Mg-ilmenite
316-15	0.014	7.895	0.416	0.033	0.240	29.926	0.049	0.229	0.000	48.307	1.074	11.053	99.236	Mg-ilmenite
316-16	0.013	10.235	0.893	0.000	0.258	26.918	0.153	0.300	0.040	49.168	1.224	9.912	99.114	Mg-ilmenite
316-18	0.000	6.653	0.036	0.019	0.281	29.063	0.048	0.464	0.013	45.298	0.943	16.216	99.034	Mg-ilmenite
316-19	0.000	10.605	0.047	0.010	0.448	28.157	0.043	0.242	0.032	51.870	1.769	6.305	99.528	Mg-ilmenite
316-20	0.006	10.390	0.064	0.000	0.434	28.957	0.099	0.229	0.026	52.371	1.641	5.474	99.691	Mg-ilmenite
316-21	0.000	7.800	0.097	0.011	0.334	31.337	0.159	0.162	0.008	49.299	2.491	8.090	99.788	Mg-ilmenite
316-22	0.013	11.181	0.636	0.036	0.314	27.781	0.121	0.075	0.029	51.734	2.237	5.386	99.543	Mg-ilmenite
316-24	0.024	8.348	0.083	0.000	0.315	31.010	0.108	0.226	0.020	50.167	2.197	6.916	99.414	Mg-ilmenite
317-1	0.000	5.464	0.145	0.000	0.410	32.949	0.030	0.075	0.064	47.812	0.016	12.184	99.149	Mg-ilmenite
317-2	0.006	6.304	0.455	0.054	0.336	31.257	0.031	0.080	0.028	47.163	0.219	13.155	99.088	Mg-ilmenite
317-3	0.000	4.443	0.103	0.001	0.594	32.132	0.011	0.466	0.000	45.107	0.042	16.292	99.191	Mg-ilmenite
317-4	0.026	6.460	0.256	0.000	0.288	29.872	0.085	0.005	0.026	45.933	0.408	16.026	99.385	Mg-ilmenite
317-5	0.016	7.938	0.278	0.012	0.304	30.681	0.116	0.156	0.039	49.521	0.867	9.674	99.602	Mg-ilmenite
317-6	0.003	5.393	0.124	0.043	0.340	32.935	0.013	0.068	0.020	47.590	0.020	12.585	99.134	Mg-ilmenite
317-7	0.012	6.339	0.052	0.001	1.340	33.760	0.000	0.223	0.050	51.576	0.000	6.471	99.824	Mg-ilmenite
317-8	0.000	4.126	0.098	0.000	0.722	35.649	0.000	0.030	0.037	48.552	0.014	10.130	99.358	Mg-ilmenite
317-10	0.000	5.058	0.133	0.001	0.457	33.434	0.046	0.099	0.044	47.615	0.004	12.822	99.713	Mg-ilmenite
317-11	0.000	6.140	0.077	0.003	1.418	32.551	0.037	0.645	0.023	49.905	0.000	8.688	99.487	Mg-ilmenite
317-13	0.007	8.608	0.414	0.025	0.326	31.638	0.025	0.000	0.018	52.055	0.443	5.816	99.375	Mg-ilmenite
317-14	0.000	5.678	0.200	0.011	0.527	32.991	0.013	0.157	0.029	48.355	0.048	11.113	99.122	Mg-ilmenite
317-15	0.000	7.798	0.251	0.018	0.324	28.703	0.061	0.024	0.041	47.430	0.214	15.033	99.897	Mg-ilmenite
318-1	0.006	4.484	0.051	0.010	0.667	34.372	0.032	0.156	0.000	47.771	0.098	11.301	98.948	Mg-ilmenite
318-2	0.000	5.529	0.407	0.015	0.382	32.228	0.000	0.062	0.012	46.828	0.157	13.202	98.822	Mg-ilmenite

Sample #	Na2O	MgO	Al2O3	SiO2	MnO	FeO	NiO	Nb2O5	CaO	TiO2	Cr2O3	Fe2O3	Total	Mineral
318-3	0.008	5.092	0.124	0.024	0.621	32.336	0.007	1.428	0.000	46.655	0.000	13.490	99.785	Mg-ilmenite
318-4	0.006	6.958	0.488	0.009	0.369	32.978	0.026	0.088	0.040	50.365	0.255	7.718	99.300	Mg-ilmenite
318-5	0.000	4.958	0.132	0.000	0.716	33.178	0.043	0.049	0.002	47.414	0.025	12.242	98.759	Mg-ilmenite
318-6	0.008	6.738	0.459	0.010	0.342	30.703	0.088	0.036	0.049	47.231	0.559	12.970	99.193	Mg-ilmenite
318-7	0.000	4.590	0.056	0.000	0.511	31.613	0.022	0.860	0.002	44.784	0.000	16.705	99.143	Mg-ilmenite
319-1	0.004	5.017	0.096	0.015	0.762	33.914	0.000	0.143	0.027	48.442	0.000	11.323	99.743	Mg-ilmenite
319-3	0.000	5.655	0.349	0.030	0.511	32.817	0.021	0.079	0.040	47.999	0.011	11.501	99.013	Mg-ilmenite
319-5	0.000	6.475	0.044	0.031	0.680	32.165	0.031	0.837	0.020	49.321	0.025	10.508	100.137	Mg-ilmenite
319-7	0.000	5.231	0.215	0.019	0.464	32.625	0.012	0.000	0.009	46.978	0.048	13.539	99.140	Mg-ilmenite
319-10	0.000	7.016	0.949	0.021	0.210	29.573	0.048	0.079	0.021	46.053	0.445	14.460	98.875	Mg-ilmenite
319-15	0.032	5.487	0.012	0.006	1.108	33.423	0.039	0.116	0.003	49.283	0.000	9.828	99.337	Mg-ilmenite
319-16	0.002	4.730	0.170	0.031	0.450	33.431	0.000	0.145	0.032	46.909	0.035	13.433	99.368	Mg-ilmenite
319-17	0.000	4.594	0.100	0.003	0.493	33.141	0.031	0.161	0.019	46.424	0.026	14.638	99.630	Mg-ilmenite
319-18	0.000	5.032	0.094	0.023	0.424	31.996	0.046	0.092	0.007	45.759	0.381	15.431	99.285	Mg-ilmenite
319-19	0.017	7.213	0.364	0.007	0.565	31.460	0.021	0.078	0.052	49.612	0.042	10.474	99.905	Mg-ilmenite
330-3	0.003	8.902	0.516	0.033	0.250	29.845	0.107	0.288	0.018	50.175	1.021	8.098	99.256	Mg-ilmenite
330-4	0.008	6.807	0.065	0.013	0.278	34.208	0.000	0.133	0.007	50.326	2.795	5.075	99.715	Mg-ilmenite
334-4	0.008	4.509	0.047	0.009	0.299	32.850	0.000	0.168	0.004	45.338	0.819	15.520	99.571	Mg-ilmenite
335-4	0.023	9.614	0.441	0.026	0.279	29.878	0.074	0.194	0.000	51.689	1.070	5.965	99.253	Mg-ilmenite
335-6	0.000	8.679	1.618	0.030	0.164	26.617	0.197	0.005	0.015	45.666	0.100	16.553	99.644	Mg-ilmenite
338-1	0.028	11.319	0.253	0.023	0.332	28.170	0.045	0.067	0.018	52.805	2.153	4.938	100.151	Mg-ilmenite
348-1	0.000	8.410	0.111	0.000	1.261	26.399	0.000	1.920	0.027	47.360	0.000	14.807	100.295	Mg-ilmenite
350-1	0.000	7.345	0.038	0.015	0.365	31.319	0.086	0.378	0.055	48.859	1.730	10.525	100.715	Mg-ilmenite
350-2	0.000	8.138	0.623	0.000	0.277	29.303	0.056	0.065	0.033	48.417	0.234	12.507	99.653	Mg-ilmenite
350-3	0.000	9.022	0.097	0.013	0.259	29.929	0.107	0.200	0.036	50.027	2.577	6.965	99.232	Mg-ilmenite
350-4	0.006	7.271	0.053	0.018	0.347	31.827	0.092	0.216	0.020	48.897	2.392	8.051	99.190	Mg-ilmenite
350-5	0.000	7.338	0.543	0.006	0.196	31.071	0.000	0.092	0.047	48.817	0.144	11.396	99.650	Mg-ilmenite
Note :	**Values for Fe2O3 are calculated, not measured**													
Note :	**Mg -ilmenite analysies from 315-2 on measure Nb2O3 instead of K2O**													
Note :	**Mg-ilmenite grains found to have significant Nb counts, that may acount for low totals are : 56-1,58-1,204-1,204-2,204-3,204-5,204-6,204-7,**													
	229-1,229-3,229-5,229-6,229-7,229-20,229-21,240-1,240-2,240-3,241-2,241-3													
Note :	**Chromite grains found to have significant Zn counts ,that may account for low totals are 350-7**													

Appendix E

Detailed Gold Grain Summary

Summary list of abbreviations:

No.; Number

Y/N; Yes/ no

T ; Tabled

P ; Panned

Preliminary interpretation of the gold grain data is discussed in the Results section, Gold Grain sub-section.

SAMPLE No.	PANNED Y/N	DIAMETER	THICKNESS	NUMBER OF GRAINS						
				RESHAPED		MODIFIED		PRISTINE		TOTAL
				T	P	T	P	T	P	
Wad2S94	Y	50 X 100	15 C						1	1
		75 X 150	22 C		1					1
		100 X 150	25 C		1					1
		175 X 200	36 C	1						1
		175 X 325	75 M	1						1
		275 X 325	54 C	1						1
			Totals:	3	2	0	0	0	1	6
Wad10S94	Y	50 X 75	13 C					1		1
			Totals:	0	0	0	0	1	0	1
Wad18S94	Y	15 X 25	4 C			1				1
		50 X 75	13 C			1	1			2
			Totals:	0	0	2	1	0	0	3
Wad24S94	Y	50 X 50	10 C					1	1	2
			Totals:	0	0	0	0	1	1	2
Wad25S94	Y	15 X 25	4 C	1						1
		25 X 25	5 C	1						1
		50 X 50	10 C			1				1
		50 X 75	13 C	3						3
			Totals:	5	0	1	0	0	0	6
Wad29S94	Y	50 X 75	13 C	1						1
			Totals:	1	0	0	0	0	0	1
Wad42S94	N	50 X 75	13 C	1						1
			Totals:	1	0	0	0	0	0	1
Wad48S94	N	50 X 75	13 C			1				1
			Totals:	0	0	1	0	0	0	1
Wad52S94	N	50 X 50	10 C	1						1
			Totals:	1	0	0	0	0	0	1
Wad55S94	Y	25 X 50	8 C					1		1
		50 X 75	13 C					1		1
		75 X 275	34 C		1					1
		125 X 250	36 C		1					1
			Totals:	0	2	0	0	2	0	4
Wad64S94	Y	50 X 50	10 C			1				1
		50 X 75	13 C	1		1				2
		75 X 75	15 C	1						1
		75 X 125	20 C			1				1
		100 X 175	27 C			1				1
		100 X 250	34 C	1						1
			Totals:	3	0	4	0	0	0	7

SAMPLE No.	PANNED Y/N	DIAMETER	THICKNESS	NUMBER OF GRAINS						
				RESHAPED		MODIFIED		PRISTINE		TOTAL
				T	P	T	P	T	P	
Wad66S94	N	25 X 25	5 C	1						1
		50 X 50	10 C	1						1
		75 X 75	15 C	2						2
		75 X 125	20 C	1						1
			Totals:	5	0	0	0	0	0	5
Wad68S94	N	75 X 125	20 C	1						1
			Totals:	1	0	0	0	0	0	1
Wad70S94	Y	25 X 50	8 C		1					1
		50 X 50	10 C			1				1
		75 X 125	20 C	1						1
		75 X 150	22 C	1		1				2
		75 X 175	25 C			1				1
		125 X 175	29 C	1						1
		125 X 275	38 C	1						1
			Totals:	4	1	3	0	0	0	8
Wad72S94	N	50 X 50	10 C			1				1
		200 X 375	52 C			1				1
			Totals:	0	0	2	0	0	0	2
Wad73S94	N	75 X 100	18 C	1						1
		100 X 150	25 C	1						1
			Totals:	2	0	0	0	0	0	2
Wad75S94	N	25 X 50	8 C	1						1
			Totals:	1	0	0	0	0	0	1
Wad78S94	Y	50 X 75	13 C				3			3
		50 X 100	15 C		1					1
		75 X 75	15 C	1	2					3
		75 X 100	18 C			1				1
		75 X 125	20 C					1		1
		125 X 125	25 C	1						1
		150 X 250	38 C	1						1
			Totals:	3	3	1	3	1	0	11
Wad79S94	Y	15 X 15	3 C					2	1	3
		25 X 25	5 C			2		1		3
		25 X 50	8 C			1		2	1	4
		25 X 75	10 C			1		1		2
		50 X 50	10 C			1		2		3
		50 X 75	13 C			1				1
		50 X 100	15 C					1		1
		75 X 100	18 C		1					1
			Totals:	0	1	6	0	9	2	18
Wad81S94	N	100 X 150	25 C			1				1
			Totals:	0	0	1	0	0	0	1

SAMPLE No.	PANNED Y/N	DIAMETER	THICKNESS	NUMBER OF GRAINS						
				RESHAPED		MODIFIED		PRISTINE		TOTAL
				T	P	T	P	T	P	
Wad83S94	N	50 X 75	13 C			1				1
		50 X 100	15 C			1				1
		75 X 125	20 C			1				1
		100 X 125	22 C			1				1
		125 X 125	25 C			1				1
			Totals:	0	0	5	0	0	0	5
Wad85S94	Y	25 X 25	5 C	1		1				2
		50 X 50	10 C		1			1		2
		50 X 75	13 C		1			1		2
		50 X 100	15 C			1			1	2
			Totals:	1	2	2	0	2	1	8
Wad87S94	N	75 X 75	15 C	1						1
			Totals:	1	0	0	0	0	0	1
Wad88S94	N	50 X 50	10 C			1				1
		50 X 100	15 C	1						1
		50 X 125	18 C			1				1
		75 X 100	18 C	1						1
			Totals:	2	0	2	0	0	0	4
Wad92S94	N	50 X 50	10 C	1						1
			Totals:	1	0	0	0	0	0	1
Wad95S94	N	50 X 50	10 C	1						1
			Totals:	1	0	0	0	0	0	1
Wad96S94	N	50 X 75	13 C	1						1
			Totals:	1	0	0	0	0	0	1
Wad100S94	N	125 X 125	25 C	1						1
			Totals:	1	0	0	0	0	0	1
Wad101S94	N	100 X 100	20 C			1				1
			Totals:	0	0	1	0	0	0	1
Wad106S94	N	25 X 75	10 C			1				1
			Totals:	0	0	1	0	0	0	1
Wad109S94	N	100 X 175	27 C	1						1
		125 X 125	25 C	1						1
			Totals:	2	0	0	0	0	0	2
Wad110S94	Y	15 X 15	3 C		1					1
		25 X 25	5 C					1		1
		50 X 75	13 C	1						1
		50 X 125	18 C	1						1
		50 X 150	20 C						1	1
		75 X 75	15 C					1		1
		175 X 225	38 C	1						1
			Totals:	3	1	0	0	2	1	7

SAMPLE No.	PANNED Y/N	DIAMETER	THICKNESS	NUMBER OF GRAINS						
				RESHAPED		MODIFIED		PRISTINE		TOTAL
				T	P	T	P	T	P	
Wat201S94	N	25 X 50	8 C			1				1
		50 X 75	13 C			1				1
		100 X 100	20 C	1						1
			Totals:	1	0	2	0	0	0	3
Wat202S94	Y	50 X 75	13 C	2		1				3
		75 X 125	20 C	1						1
		100 X 100	20 C	1						1
			Totals:	4	0	1	0	0	0	5
Wat208S94	N	50 X 75	13 C	1						1
			Totals:	1	0	0	0	0	0	1
Wat215S94	N	25 X 100	13 C	1						1
			Totals:	1	0	0	0	0	0	1
Wat217S94	N	25 X 50	8 C	1						1
		50 X 75	13 C	1						1
			Totals:	2	0	0	0	0	0	2
Wat224S94	N	25 X 50	8 C	1						1
		25 X 75	10 C	1						1
		50 X 100	15 C	1						1
			Totals:	3	0	0	0	0	0	3
Wat227S94	N	25 X 25	5 C	1						1
			Totals:	1	0	0	0	0	0	1
Wat228S94	Y	75 X 100	18 C			1				1
		75 X 125	20 C	1						1
		75 X 150	22 C	2					1	3
		100 X 100	20 C				1			1
		100 X 125	22 C	1		1				2
		150 X 225	36 C	1						1
		150 X 275	40 C				1			1
		200 X 225	40 C		1					1
			Totals:	5	1	2	2	0	1	11
Wat229S94	Y	50 X 150	20 C				1			1
		125 X 150	20 C			1				1
		150 X 275	40 C				1			1
			Totals:	0	0	1	2	0	0	3
Wat230S94	N	25 X 75	10 C	1						1
		50 X 150	20 C	1						1
		75 X 125	20 C			1				1
			Totals:	2	0	1	0	0	0	3
Wat233S94	N	25 X 25	5 C	1		1				2
			Totals:	1	0	1	0	0	0	2

SAMPLE No.	PANNED Y/N	DIAMETER	THICKNESS	NUMBER OF GRAINS						
				RESHAPED		MODIFIED		PRISTINE		TOTAL
				T	P	T	P	T	P	
Wat234S94	N	50 X 100	15 C	1						1
			Totals:	1	0	0	0	0	0	1
Wat235S94	N	25 X 50	8 C			1				1
			Totals:	0	0	1	0	0	0	1
Wat238S94	N	25 X 50	8 C			1				1
		100 X 125	22 C	1						1
			Totals:	1	0	1	0	0	0	2
Wat240S94	Y	75 X 200	27 C					1		1
			Totals:	0	0	0	0	1	0	1
Wat245S94	Y	25 X 50	8 C	1						1
		25 X 75	10 C	1						1
			Totals:	2	0	0	0	0	0	2
Wat247S94	N	25 X 25	5 C	1						1
			Totals:	1	0	0	0	0	0	1
Wat253S94	N	50 X 50	10 C	1						1
			Totals:	1	0	0	0	0	0	1
Wat258S94	Y	75 X 100	18 C	1						1
		150 X 175	75 M					1		1
			Totals:	1	0	0	0	1	0	2
Wat259S94	Y	15 X 15	3 C			1				1
		25 X 25	5 C			1		2	1	4
		25 X 50	8 C					3	1	4
		50 X 50	50 M					1		1
		50 X 75	13 C	1		1				2
		50 X 75	25 M					1		1
		50 X 100	15 C		1					1
		75 X 125	20 C			1				1
		175 X 200	36 C					2		2
			Totals:	1	1	4	0	9	2	17
Wat260S94	Y	15 X 15	3 C	1		2				3
		25 X 25	5 C			1				1
		25 X 50	8 C			1				1
		50 X 50	10 C			2				2
			Totals:	1	0	6	0	0	0	7
Wat261S94	Y	25 X 25	5 C	1						1
		50 X 50	10 C	1						1
			Totals:	2	0	0	0	0	0	2
Wat272S94	N	50 X 75	13 C	2						2
		75 X 75	15 C	1						1
		75 X 125	20 C	1						1
			Totals:	4	0	0	0	0	0	4

SAMPLE No.	PANNED Y/N	DIAMETER	THICKNESS	NUMBER OF GRAINS						
				RESHAPED		MODIFIED		PRISTINE		TOTAL
				T	P	T	P	T	P	
Wat273S94	N	50 X 50	10 C	1						1
			Totals:	1	0	0	0	0	0	1
Wat275S94	Y	15 X 15	3 C			1		2		3
		25 X 25	5 C			1		1		2
		25 X 50	8 C			2				2
		50 X 75	13 C			1				1
		75 X 75	15 C						1	1
		100 X 100	20 C				1			1
			Totals:	0	0	5	1	3	1	10
Wat279S94	N	75 X 100	18 C	2						2
			Totals	2	0	0	0	0	0	2
Wat280S94	N	25 X 50	8 C	2						2
			Totals:	2	0	0	0	0	0	2
Wat281S94	N	50 X 50	10 C	1						1
			Totals:	1	0	0	0	0	0	1
Wat282S94	N	50 X 50	10 C	1						1
		50 X 75	13 C	2						2
			Totals:	3	0	0	0	0	0	3
Wat286S94	N	25 X 25	5 C			1				1
			Totals:	0	0	1	0	0	0	1
Wat291S94	N	75 X 100	18 C	1						1
			Totals:	1	0	0	0	0	0	1
Wat310S94	Y	50 X 100	15 C				1			1
			Totals:	0	0	0	1	0	0	1
Wat313S94	Y	50 X 75	13 C					1		1
		75 X 100	18 C					1		1
		75 X 125	20 C		1			1		2
		75 X 150	22 C			1				1
			Totals:	0	1	1	0	3	0	5
Wat334S94	Y	50 X 50	10 C					1		1
		50 X 75	13 C						2	2
		50 X 100	15 C					1	1	2
		50 X 125	18 C					1		1
		75 X 100	18 C						1	1
		100 X 150	25 C				1			1
			Totals:	0	0	0	1	3	4	8
Wat335S94	N	50 X 50	10 C				1			1
			Totals:	0	0	0	1	0	0	1
Wat337S94	N	50 X 75	13 C				2			2
			Totals:	0	0	0	2	0	0	2

SAMPLE No.	PANNED Y/N	DIAMETER	THICKNESS	NUMBER OF GRAINS						
				RESHAPED		MODIFIED		PRISTINE		TOTAL
				T	P	T	P	T	P	
Wat340S94	N	100 X 150	25 C				1			1
			Totals:	0	0	0	1	0	0	1
Wat341S94	Y	125 X 200	25 M	1						1
			Totals:	1	0	0	0	0	0	1
Wat346S94	N	50 X 75	13 C	1						1
			Totals:	1	0	0	0	0	0	1
Wat348S94	N	50 X 50	10 C	1						1
			Totals:	1	0	0	0	0	0	1
Wat349S94	N	100 X 175	27 C	1						1
			Totals:	1	0	0	0	0	0	1
Wat350S94	N	50 X 75	13 C			1				1
		75 X 75	15 C			1				1
		100 X 125	36 C	1						1
			Totals:	1	0	2	0	0	0	3
Wat351S94	N	100 X 50	15 C			1				1
		125 X 75	20 C	1						1
		125 X 100	22 C	1						1
			Totals:	2	0	1	0	0	0	3
Wat352S94	N	25 X 25	5 C			1				1
		50 X 25	8 C	1						1
		50 X 50	10 C			1				1
		75 X 75	15 C	1						1
			Totals:	2	0	2	0	0	0	4
Wat353S94	N	50 X 50	10 C	1						1
			Totals:	1	0	0	0	0	0	1
Waj314S94	N	50 X 75	13 C			1				1
			Totals:	0	0	1	0	0	0	1
Waj317S94	N	50 X 75	13 C			1				1
			Totals:	0	0	1	0	0	0	1
Waj319S94	N	25 X 75	10 C			1				1
		50 X 75	13 C			1				1
			Totals:	0	0	2	0	0	0	2
Waj320S94	N	25 X 50	8 C			1				1
		50 X 50	10 C	1						1
		50 X 125	18 C			1				1
			Totals:	1	0	2	0	0	0	3
Waj321S94	N	50 X 50	10 C	1						1
		50 X 75	13 C			1				1
			Totals:	1	0	1	0	0	0	2

SAMPLE No.	PANNED Y/N	DIAMETER	THICKNESS	NUMBER OF GRAINS						
				RESHAPED		MODIFIED		PRISTINE		TOTAL
				T	P	T	P	T	P	
Waj322S94	N	50 X 75	13 C			1				1
		100 X 150	25 C	1						1
			Totals:	1	0	1	0	0	0	2
Waj323S94	N	50 X 50	10 C			2				2
		50 X 75	13 C			1				1
			Totals:	0	0	3	0	0	0	3
Waj324S94	N	75 X 75	15 C	1						1
			Totals:	1	0	0	0	0	0	1
Waj325S94	Y	10 X 10	2 C	1						1
		15 X 15	3 C	1						1
		25 X 25	5 C					1		1
		75 X 100	18 C					1		1
		75 X 150	22 C			1				1
		75 X 200	27 C	1						1
			Totals:	3	0	1	0	2	0	6
Waj326S94	N	25 X 25	5 C	1						1
		75 X 75	15 C	1						1
			Totals:	2	0	0	0	0	0	2
Waj327S94	Y	15 X 15	3 C	43		###	28	10		252
		25 X 25	5 C	21		64	11	6		102
		25 X 50	8 C	8		67	6	4		85
		25 X 75	10 C			12	2	1		15
		25 X 100	13 C			1				1
		50 X 50	10 C			6	1			7
		50 X 75	13 C			5	2			7
		50 X 100	15 C			2				2
		75 X 100	18 C			2				2
		75 X 125	20 C				1			1
		75 X 150	22 C			1				1
			Totals:	72	0	###	51	21	0	475
Waj328S94	Y	15 X 15	3 C	1					1	2
		25 X 25	5 C	1						1
		25 X 50	8 C	2						2
		25 X 75	10 C					1		1
		250 X 400	58 C		1					1
			Totals:	4	1	0	0	1	1	7
Waj329S94	N	15 X 15	3 C			1				1
		50 X 50	10 C	1						1
		100 X 225	31 C	1						1
			Totals:	2	0	1	0	0	0	3
Waj330S94	N	25 X 25	5 C	1						1
			Totals:	1	0	0	0	0	0	1

SAMPLE No.	PANNED Y/N	DIAMETER	THICKNESS	NUMBER OF GRAINS						
				RESHAPED		MODIFIED		PRISTINE		TOTAL
				T	P	T	P	T	P	
Waj331S94	Y	15 X 15	3 C		3					3
		25 X 25	5 C	2						2
		50 X 75	13 C	1						1
		50 X 100	15 C	1						1
		100 X 175	27 C	2						2
			Totals:	6	3	0	0	0	0	9
Waj332S94	Y	50 X 75	13 C					1		1
			Totals:	0	0	0	0	1	0	1

CONVERSION FACTORS FOR MEASUREMENTS IN ONTARIO GEOLOGICAL SURVEY PUBLICATIONS

Conversion from SI to Imperial			Conversion from Imperial to SI		
SI Unit	*Multiplied by*	*Gives*	*Imperial Unit*	*Multiplied by*	*Gives*
			LENGTH		
1 mm	0.039 37	inches	1 inch	**25.4**	mm
1 cm	0.393 70	inches	1 inch	**2.54**	cm
1 m	3.280 84	feet	1 foot	**0.304 8**	m
1 m	0.049 709 7	chains	1 chain	20.116 8	m
1 km	0.621 371	miles (statute)	1 mile (statute)	**1.609 344**	km
			AREA		
1 cm@	0.155 0	square inches	1 square inch	**6.451 6**	cm@
1 m@	10.763 9	square feet	1 square foot	**0.092 903 04**	m@
1 km@	0.386 10	square miles	1 square mile	2.589 988	km@
1 ha	2.471 054	acres	1 acre	0.404 685 6	ha
			VOLUME		
1 cm#	0.061 02	cubic inches	1 cubic inch	**16.387 064**	cm#
1 m#	35.314 7	cubic feet	1 cubic foot	0.028 316 85	m#
1 m#	1.308 0	cubic yards	1 cubic yard	0.764 555	m#
			CAPACITY		
1 L	1.759 755	pints	1 pint	0.568 261	L
1 L	0.879 877	quarts	1 quart	1.136 522	L
1 L	0.219 969	gallons	1 gallon	**4.546 090**	L
			MASS		
1 g	0.035 273 96	ounces (avdp)	1 ounce (avdp)	28.349 523	g
1 g	0.032 150 75	ounces (troy)	1 ounce (troy)	**31.103 476 8**	g
1 kg	2.204 62	pounds (avdp)	1 pound (avdp)	**0.453 592 37**	kg
1 kg	0.001 102 3	tons (short)	1 ton (short)	**907.184 74**	kg
1 t	1.102 311	tons (short)	1 ton (short)	**0.907 184 74**	t
1 kg	0.000 984 21	tons (long)	1 ton (long)	**1016.046 908 8**	kg
1 t	0.984 206 5	tons (long)	1 ton (long)	**1.016 046 908 8**	t
			CONCENTRATION		
1 g/t	0.029 166 6	ounce (troy)/ ton (short)	1 ounce (troy)/ ton (short)	34.285 714 2	g/t
1 g/t	0.583 333 33	pennyweights/ ton (short)	1 pennyweight/ ton (short)	1.714 285 7	g/t

OTHER USEFUL CONVERSION FACTORS

	Multiplied by	
1 ounce (troy) per ton (short)	20.0	pennyweights per ton (short)
1 pennyweight per ton (short)	0.05	ounces (troy) per ton (short)

Note: Conversion factors which are in bold type are exact. The conversion factors have been taken from or have been derived from factors given in the Metric Practice Guide for the Canadian Mining and Metallurgical Industries, published by the Mining Association of Canada in co-operation with the Coal Association of Canada.

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