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Enclosure 1

OPEN FILE

CALLINA N.L.

REPORT TO BOARD OF DIRECTORS

WILSON RIVER PROJECT

EVALUATION OF DATABASE

MINES	
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VOL 1 OF 4

Prepared by -

Mrs. C. Browne/J. Richards

March 1988

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1. INTRODUCTION AND EXECUTIVE SUMMARY

1.1 Purpose of Report

This Report sets out to provide a summary of the data assembled to date on Area A of the Wilson River Exploration Licence (E.L. 24/85) in north-western Tasmania. Callina holds an 80% interest in the licence with the balance held by Mr. M. G. Creasy.

In particular, the Report sets out estimates of:

- (1) The total volume of alluvial material in Area A;
- (2) The quantities and grades of the end products which are hoped to be saleable.

These estimates are then extrapolated to include the whole of the Wilson River tenement.

1.2 Extent of the Database

The primary database consists of volumetric and assay data on the 31 bulk samples and 86 hollow core auger holes which made up the 1987 exploration programme.

The auger core samples have been mineral dressed, screened and separated into five magnetic sand fractions. The bulk samples have been beneficiated by jigging, screened and washed and magnetically separated into the same heavy mineral fractions. Some samples have been further beneficiated by various forms of concentration, viz. air-tables, Wilfley tables and high tension concentration. The elements assayed for include the precious metals - gold, platinum, palladium, osmium, iridium, ruthenium and rhodium and oxides of chrome, silicia, iron, aluminium, calcium, magnesium, titanium, vanadium and manganese. Some nickel and cobalt analysis has also been completed.

The database relates primarily to the bulk samples which were assayed extensively for both chrome and P.G.Es. The auger samples were assayed to a much lesser degree and provide a much less complete view. Some additional auger assays are currently being undertaken.

A potentially serious flaw in the analysis of samples is the absence of estimates of specific gravity in the auger data. Reasonably accurate estimates of specific gravity have been made for the bulk sampling products.

1.3 Method of Evaluation

Reserve and product estimates for the material evaluated by bulk sampling (viz. the top two metres of the deposit) have been made by assigning areas of influence to each of the bulk sample sites and then by calculating a weighted average assay for the entire area. This reserve is considered to be a probable reserve although several assumptions had to be made.

The reserve for the material below two metres depth was evaluated by auger drilling. The method of assessment here has been to compare assay data for the auger holes to assay data for the bulk samples and thus make generalizations/extrapolations about the total volume. This is considered to be close to a possible resource with confidence on grades plus or minus 20%.

Broad generalizations have then been made about the possible volumes in Areas B, C and D and therefore about the total resource in the Wilson River tenement.

1.4 Summary of Results

Area A

1. Top 2 metres

<u>Product</u>	<u>Size</u> (mm)	<u>Mass</u> (t)	<u>Cr203</u> (%)	<u>Grades</u>	
				<u>Ir</u> (ppb)	<u>PM's</u> (ppb)
H1	<0.5	15,542	27.9	237	457
	0.5-2.0	43,044	9.9		
	>2.0	40,737	3.8		
H2,3	<0.5	23,630	20.2	41	95
	0.5-2.0	43,227	7.2		
	>2.0	40,956	2.7		
Tails	<0.5	257,465	11.4	91	210
	0.5-2.0	46,605	4.1		
	>2.0	1,234	1.6		
		-----	---	---	---
		512,441	9.9	55	127
	>3.0 (est)	1,031,309	-	-	-
		-----	---	---	---
	TOTAL	1,543,750	3.3	18	42
		-----	---	---	---

- Assumes: (1) S.G. of 2.5 (Volume is 617,500 cubic metres)
 (2) Ratio of Total Precious Metals: Iridium 2.31:1
 (3) No Chrome, P.M's in oversize

- Note: (1) The effective chromite grade is 0.082 tonnes per cubic metre of alluvium
- (2) The precious metals grades are clearly sub-economic. However, the Non-Magnetic fraction of Hutch 1, <0.5mm contain an average 1.6ppm iridium (say 3.7 ppm P.M's). This product may be worth extracting separately at little loss to overall chromite reserves.

2. Below 2 metres.

Total Volume	=	1,029,250
Total Mass	=	2,573,125

3. Total Area A

Total Volume	=	1,646,750
Total Mass	=	4,116,860

At the assumed overall grade, this represents a total of 136,000 tonnes of contained Cr₂O₃. Assuming no loss in beneficiation (or that whatever loss sustained is offset by underestimation of gradess) and a product grade of 65% this gives a potential total saleable production of 209,000 tonnes of chromite.

4. Remainder of Deposit.

Area A is 25 ha in size. Average depth 6.5 metres to bedrock.

Area C is 40 ha in size. Average depth of >6.5m. Chromite values appear to be good.

Area B is 20 - 30 ha but shallow. Good chromite and P.G.E. values.

Area D is 10 - 15 ha. Unknown depth or values.

Thus, Area A probably constitutes 25% of the total available resource.

Assuming comparable grades, the total potential chromite production could be 1,000,000 tonnes.

1.5 Future Direction

The coming nine months is a critical period in the development of the Wilson River project, **heightened by the dwindling cash reserves of Callina.**

In addition to assembly of the data resulting from the 1988 exploration programme, several areas must be addressed and resolved within that nine month period. These are:

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- (1) Further assaying of auger samples for Area A to improve confidence in reserves.
- (2) A closer definition of "total" reserves for the Wilson River deposits should be made;
- (3) A detailed mineralogical investigation must be undertaken to determine the nature of the chromite mineral and its purity/impurity and processing characteristics.
- (4) Significant effort must be devoted to determining optimum beneficiation techniques. Consideration of such techniques must also have regard to likely payment terms from potential purchasers and to this end detailed discussions must be initiated locally and internationally. The Company should look closely at the appointment of a technical consultant to assist the Board in this regard.
- (5) Investigation must be made of the processing characteristics of the chromite concentrate which we would produce and in particular to the implications of those processing characteristics on the price which we will receive for the chromite concentrate. It is possible that much of this work can be done for use by prospective purchasers of the concentrate i.e. by potential furnace operators.
- (6) In the light of the above and of the cash situation, we will need to pursue negotiations with **potential joint venture partners** towards the end of this nine month period. At this stage I lean towards an end user of the product (i.e. a smelter or a steel maker) rather than a mining company as a joint venture partner.

It is also important to note here the important piece of information that can be gleaned from this evaluation is that while our initial estimates of the overall quantum of material and of contained chrome have been downgraded for Area A at least, our investigation has shown that it is possible to produce a chromite concentrate with a very high proportion of chrome oxide. The most important task then is to determine the economic significance of this aspect.

2. THE SAMPLING PROCESS

2.1 Flow Chart of the Process

Attached as Appendix 1 is schematic representation of the process by which assay data was obtained for the bulk samples. Appendix 2 outlines the method used in processing the hutch products. Appendix 3 gives a flow chart relating to the analysis of the auger core samples.

The process followed for the bulk samples was basically the following. Samples were screened through a 3mm sieve with >3mm material regarded as waste. The <3mm material then passed over a three hutch jig giving three jig products, viz. hutch 1, hutch 2,3 and the tailings. The jig products were again screened in two stages to four size fractions: <75 micron, 75 micron to 0.5mm, 0.5mm to 2mm, and >2mm. The <75 micron material was regarded as slime waste. Material in each of the three larger size fraction was then separated into five magnetic fractions.

The process for the auger core samples is similar but without the beneficiation through jig process.

The samples were assayed after the jigging, screening, and magnetic separation. At each of these points volumetric data regarding the proportion of each sample which went into each "product" was also noted.

The values of iridium, osmium, ruthenium and rhodium show quite a close correlation throughout the samples. Platinum, palladium and gold on the other hand exhibit no real correlation either between themselves or with the other precious metals. This suggests that the osmiridium metal contains iridium, osmium, ruthenium and rhodium in the ratio 100:20:1.

100 : 100 : 20 : 1

Precious Metals Assaying

Due to technical difficulties associated with assaying for osmium and to the very high cost of conducting extensive assays for all precious metals, the majority of the 1987 samples were assayed only for iridium in terms of precious metals. Grade estimates for the other precious metals are therefore made on the basis of assays from the 1986 sampling programme. These assay results give data on 52 observations for osmium and 163 observations for each of the other precious metals. Attached as Appendix 4 are scatter diagrams showing the relationship between iridium assays and those for the other precious metals. From this data, we have estimated the quantities of gold, platinum, palladium, ruthenium, rhodium and osmium which occur for each one gram of iridium in an assay. These values are listed below.

TABLE
Normalized values for Precious Metals

Iridium	(Ir)	=	1.0000 ppm
Osmium	(Os)	=	0.9784 ppm
Ruthenium	(Ru)	=	0.1902 ppm
Rhodium	(Rh)	=	0.0090 ppm
Platinum	(Pt)	=	0.0974 ppm
Palladium	(Pd)	=	nil
Gold	(Au)	=	0.0351 ppm
TOTAL PRECIOUS METALS =			2.3101 ppm

In value terms, the total precious metal content is worth approximately US\$400-500/ounce.

Detailed statistical analysis of the reliability of this form of extrapolation has not been undertaken, however the number of observations in the sample and the apparent goodness of fit of the points about lines which represent these average values, combine to suggest that the extrapolation is probably reasonably accurate in statistical terms. This does not allow for potential variations in the recoverability of each of the precious metals through assay or of their relative susceptibility to magnetic separation.

2.2 "Valuable" Products

The following are considered to be the most valuable products from the processing which has occurred to date. In other words, these products contain the highest concentrations of the valuable elements.

- (1) The hutch 1 and hutch 2,3 concentrates trap a high proportion of available chromite and the material which reports to the 3 middle magnetic fractions (i.e. Mag 1, Mag 2, Mid Mags) produce a high grade chromite concentrate. To this can be added the non magnetic fraction from the hutch 2 and hutch 3 concentrates.
- (2) The non magnetic fraction from the Hutch 1 concentrate is rich in chromite and also contains the majority of the precious metals which are present in quantities which may be economic.

The reasons behind this are quite simple. Firstly, the jigging process enables the heavy materials to be concentrated. The precious metals, being the heaviest material, are caught predominantly in hutch 1. The chromite grains, which are heavy but not as heavy, are caught in hutch 2,3 as well as hutch 1. (Notably, significantly but

low chrome values occur in tailings samples. This is presumably very fine material.) Secondly, the magnetic separation concentrates the precious metals in the low magnetic fraction and non-magnetic fraction and the chromite in the low and mid-magnetic fractions. The iron rich material is concentrated in the high-magnetic fraction.

2.3 Further Work on Products

2.3.1 Micron Research

Mr. Arnold Griffin at Micron Research has been evaluating several methods of further beneficiation of the magnetically separated concentrates. The latest method, high tension concentration, has demonstrated an ability to substantially upgrade the chromite concentration. Chromite grades above 60% and chrome to iron ratios of above 3:1 are consistently being achieved by this method.

2.3.2 Dr. Jiri Just, C.S.I.R.O.

Dr. Just has recently examined 15 samples of material ranging from low to high grade chromite using the technique of electron microprobe analysis (Appendix 5). The purpose of the analysis was to examine the chrome oxide content of chromite grains. In summary, Dr. Just's analysis shows the presence of three types of chrome bearing material, one having very high chromium content and low iron content, one carrying "normal" Cr₂O₃, and the other having very high iron content and low chromium content ("limonite"). The high chrome grains were found to average in excess of 70% Cr₂O₃ and approximately 17.5% iron oxide giving a chrome/iron ratio of 4:1. The limonite grains carried much lower chromite (average 6%) and very high iron (average 77%). Dr. Just's analysis is most encouraging and indicates that further work should now be done to investigate means of separating the chromite and limonite material. In addition, further work is necessary to determine the relative frequencies of occurrence of the three species of chromite. This is currently being undertaken.

Other matters which need to be addressed are the significance of the deficiency in oxides of magnesium, aluminium and silicon. It is generally the case that a low proportion of these oxides is associated with a high chrome recovery in ferrochrome. Secondly, the presence of significant quantities of titanium dioxide and vanadium pentoxide needs to be evaluated.

2.3.3 Platinum Group Elements

One important area requiring future investigative work is in the separation of platinum group elements from the low and non-mag hutch 1 product. At present it appears that this can be achieved in a plasma arc furnace and thus it may be possible for Callina to get some credit for the precious metal content of the concentrate, the possibility of earlier separation of the precious metals should be investigated with a view to maximizing the value of the precious metal content of the concentrates to Callina.

It is also feasible that the Hutch 1 non-magnetic product might prove to be a separate product of the project as the contained precious metals value may be higher than the contained chrome value. This particularly applies to the area around Riley Creek, i.e. Area B, where osmiridium concentrations are known to be relatively high.

2.3.4 Other Products

Another potential product requiring evaluation is the saleability of the lateritic gravel material as a separate rich iron oxide.

3. RESERVE ESTIMATES

Before proceeding to the quantitative evaluation of the data, several qualitative points should be raised:

- (1) Area A is a chromite resource and not an osmiridium resource. It is at best doubtful whether the platinum group elements are present in sufficient quantities for them to be payable in the final product.
- (2) Area B, on the other hand, may well contain sufficient osmiridium to warrant its extraction as either a by-product present in a chromite concentrate or as a specially separated material.
- (3) While chrome is present throughout the profile from surface to bedrock, the values generally increase at depth and there is some evidence of concentration at the point of contact with serpentinised bedrock. However, while the material below two metres depth contains the majority of the contained chromite in Area A we are less confident (because we have much less data) about our ability to concentrate it. The 1988 bulk sampling programme will provide further information on this aspect.
- (4) The highest chrome values tend to be associated with clays of a light orange to brown colour. These occur extensively through the western portion of Area A where the attached contour maps show values to be much higher (Appendix 6). Again the evidence is that these clays predominate in the deeper parts of the profile.
- (5) The brief inspection of the bulk samples which have recently been taken from Area C also suggest a predominance of these light orange to brown clays. The clays also appear to be of a somewhat greater depth in Area C than they are in Area A, possibly by up to 50%.
- (6) Precious metals values are generally much higher in Area B than in Area A. This coincides with information on previous mining of the area which was confined to the creek beds. Area B covers the areas adjacent to Riley Creek where there is extensive evidence of previous mining for osmiridium.
- (7) The few precious metal assays taken from the auger samples suggest that, unlike in the chromite values, the osmiridium values are highest in the top two metres.

3.1 Chromite Product from Top 2 Metres.

3.1.1 Valuation

The chemical analyses of the 31 bulk samples, taken from the top 2 metres of Area A, indicate that the Mag 1 and Mag 2 fractions of Hutch 1

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contain the highest chromite values. In the Mag 1 fraction, the values peak to 60% Cr₂O₃ at 9850N, 9800E and 62% Cr₂O₃ at 10000N, 10250E. A depression of values exists between these two points (see the contour maps in Appendix 6).

Overall, the Hutch 1 <0.5mm magnetic products were calculated to have a grade of 27.9% chromite and 237 ppb iridium in a total of 15,542 tonnes. Combining the Mag 1, Mag 2 and Mids fractions and grade can be increased to 36.9% chromite in 8,392 tonnes (see Appendix 6).

The Hutch 2 & 3 products also concentrate chromite in the <0.5mm Mag 1 and Mag 2 fractions. Although the values are slightly lower than those of Hutch 1, the peaks occur in similar areas (e.g. 56% Cr₂O₃ at 9900N, 9750E and 49.3% Cr₂O₃ at 10000N, 10250E). The Hutch 2 & 3 <0.5mm products have a total grade of 20.2% in 23,629 tonnes of material. This grade increases to 23.3% in 14,398 tonnes when only Mag 1, Mag 2 and Mids are considered.

The <0.5mm Non-Mag fraction in the Hutch 1 product concentrates iridium to a grade of 1612 ppb. The iridium analyses peak to 25,000 ppb (located at 10000N, 10250E) and 13,000 ppb (located at 10150N, 9550E). Hutch 2 & 3 does not concentrate iridium to the same extent as Hutch 1. For instance, the <0.5mm Non-Mag fraction of Hutch 2 & 3 has a grade of only 49 ppb iridium. The highest iridium value is 270 ppb in the entire Hutch 2 & 3 product.

The grade of the <0.5mm Tail product is low in comparison with the Hutch 1 and Hutch 2 & 3 products but the mass is significantly higher than both. Overall, the <0.5mm Tails grade at 11.4% Cr₂O₃ in a total mass of 257,465 tonnes. This suggests that a high proportion of the chromite is present in very fine grains. This conclusion can be quickly checked by an evaluation of the chrome content of the auger slimes (<0.075mm) fraction. By only considering the Mag 1, Mag 2 and Mids fractions, the grade increases to 14.6% in a total mass of 164,009 tonnes. Like Hutch 2 & 3, iridium was found to be negligible and having a grade of only 91 ppb in the entire <0.5mm Tail product.

Overall, the jig products had an overall grade of 9.9% in 512,441 tonnes of material.

Once the chromite grades were calculated for the bulk samples, an estimation of the total chromite product in the top 2 metres of the area could be made by incorporating the mass of the >3mm fraction. This estimate was made using the following approximations and assumptions:

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- i) 50% of the material is contained in the >3mm fraction;
- ii) the Specific Gravity is 2.5; and
- iii) the material contains no chromite.

3.1.2 Reliability of Data

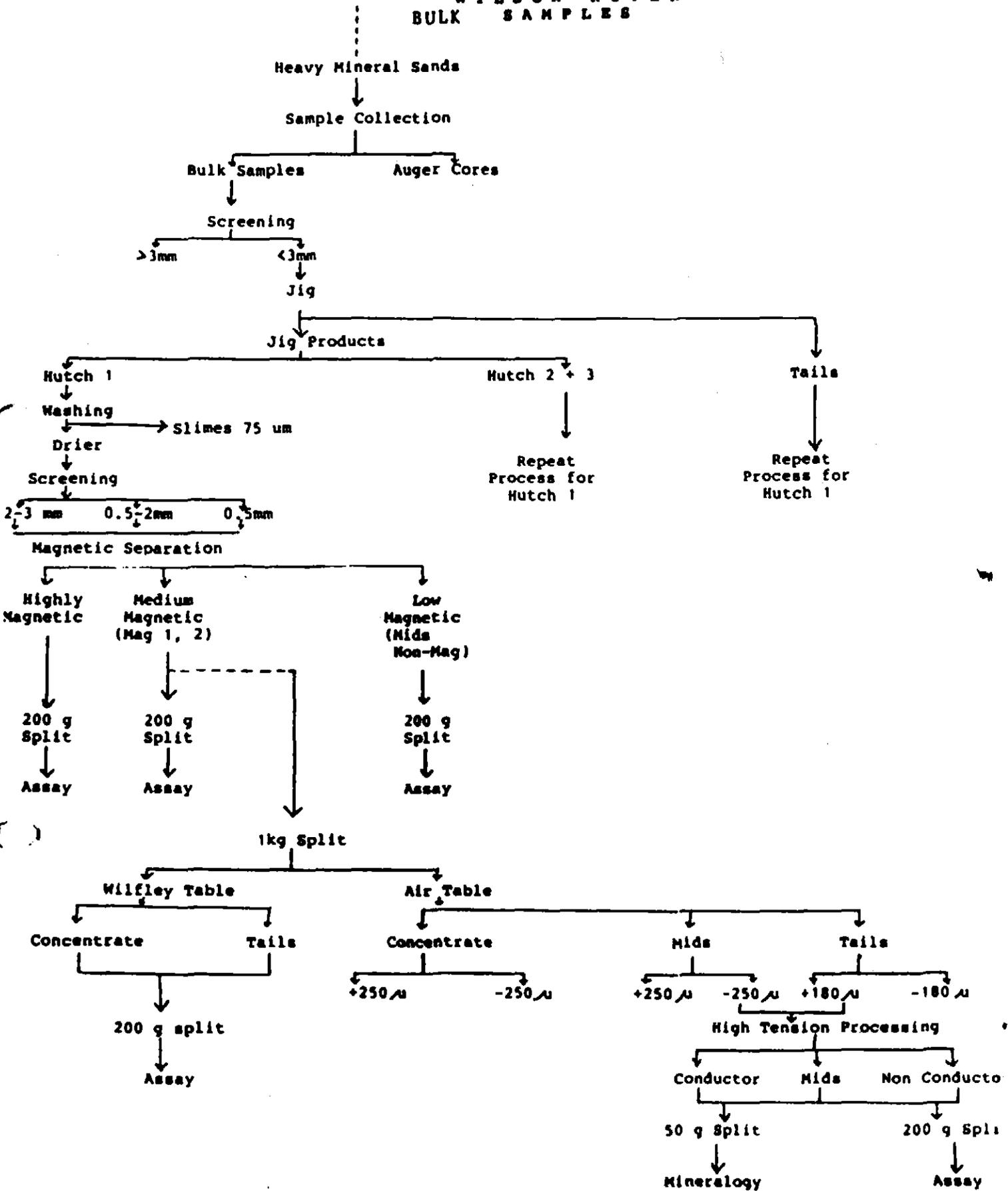
The reliability of the data was undermined due to the necessity to estimate an approximate Specific Gravity for the material. This was brought about due to the material never being measured adequately or correctly in the first instance. A Specific Gravity of 3.5 was considered to be a good approximation of the material. However, as the Specific Gravity is the basis for all calculations a certain measure of inaccuracy has been introduced.

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APPENDIX 1

FLOW SHEET

FOR WILSON RIVER BULK SAMPLES



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APPENDIX 2PROCESSING OF HUTCH PRODUCTSREPORT OFMICRON RESEARCH PTY. LTD.

As requested a total of 30 Jig No. 1 Hutch products were received at this laboratory in double plastic bags. Verbal instructions were received to process each product in turn by a process of-

1. Attritioning/desliming
2. Sizing
3. Magnetic fraction

All of these products were to be weighed, sampled by riffle splitter, to give 200 gram samples for delivering to the analysts. The balance of the products have been bagged and await delivery.

NOTES:

1. No responsibility will be accepted for the data given in this report except insofar as it applies to the samples received.
2. Perth tap water was used in all test work.
3. All products are available for delivery.

THE PRODUCTS SUPPLIED

All products supplied contained appreciable amount of water and slimes, some of which adhered to the grains. There was no No. 1 sample - Field Trials.

PROCESSING - as Flow Sheet attached.

1. Attritioning/desliming

The whole of each product supplied was agitated with additional water in a cement mixer. The liberated slimes and excess water was decanted from time to time until the amount of slimes contained was relatively low. This accumulated slimes fraction (now contained in 18 gallon plastic sinks) was allowed to settle overnight then the clear supernatant liquor was decanted to waste. The then

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thickened pulp was thoroughly agitated and sampled (by incremental dips). This sample was filtered and sampled and delivered for assay. The surplus pulp was discarded to waste. The cleaned coarse fraction was transferred to aluminium trays and oven dried.

2. Sizing

The total oven dried product was screened firstly on a laboratory sieve having square apertures of 2mm. The oversize (O/S) was collected for magnetic fractionation on the Rapid Disc Lift Magnet - this product being too coarse for fractionation on the Rotor Type magnet. The finer fraction (-2mm) was then rescreened on another laboratory sieve having square apertures (0.5mm) to give a fine fraction (-2 + 0.5) and the finest fraction (-0.5 + 0.075) fraction. Because the slimes fraction was recovered by decantation there is a possibility that the finest fraction could well contain some grains finer than 0.075mm (200 mesh). These two fractions "Fines" and "Finest" were then magnetically fractionated on the Reading Induced Roll Magnet (Reading IRM) into a number of fractions as described below.

3. Magnetic Fractionation

A. Rapid Disc Magnet (Feed +2mm)

The belt speed was determined at 33 cm/sec. and was kept constant. Gap was 7mm and constant. The first pass of the product was at zero applied amperage, the non-mags from this pass was repassed but the application of power was increased to one amperage, the final and third pass was at maximum applied amperage i.e. 2 amps. All three magnetic products and the final non-mags products were collected, weighed and sampled - all surplus products were stored in cardboard cartons now awaiting delivery. The equivalent gauss magnetic units for the above settings is shown in the attached table.

B. Reading induced Roll Magnet (IRM)

(Feed Fine and Finest Products)

The rotor type magnet, rotor speeds are shown in the accompanying table. Each sized product was passed through the magnet at varying gap, rotor speed (automatically variable as applied power increases) and applied power - each non-magnetic product. Each product was recovered, weighed, sampled and the surplus stored for future reference - not all boxes of these samples are identified.

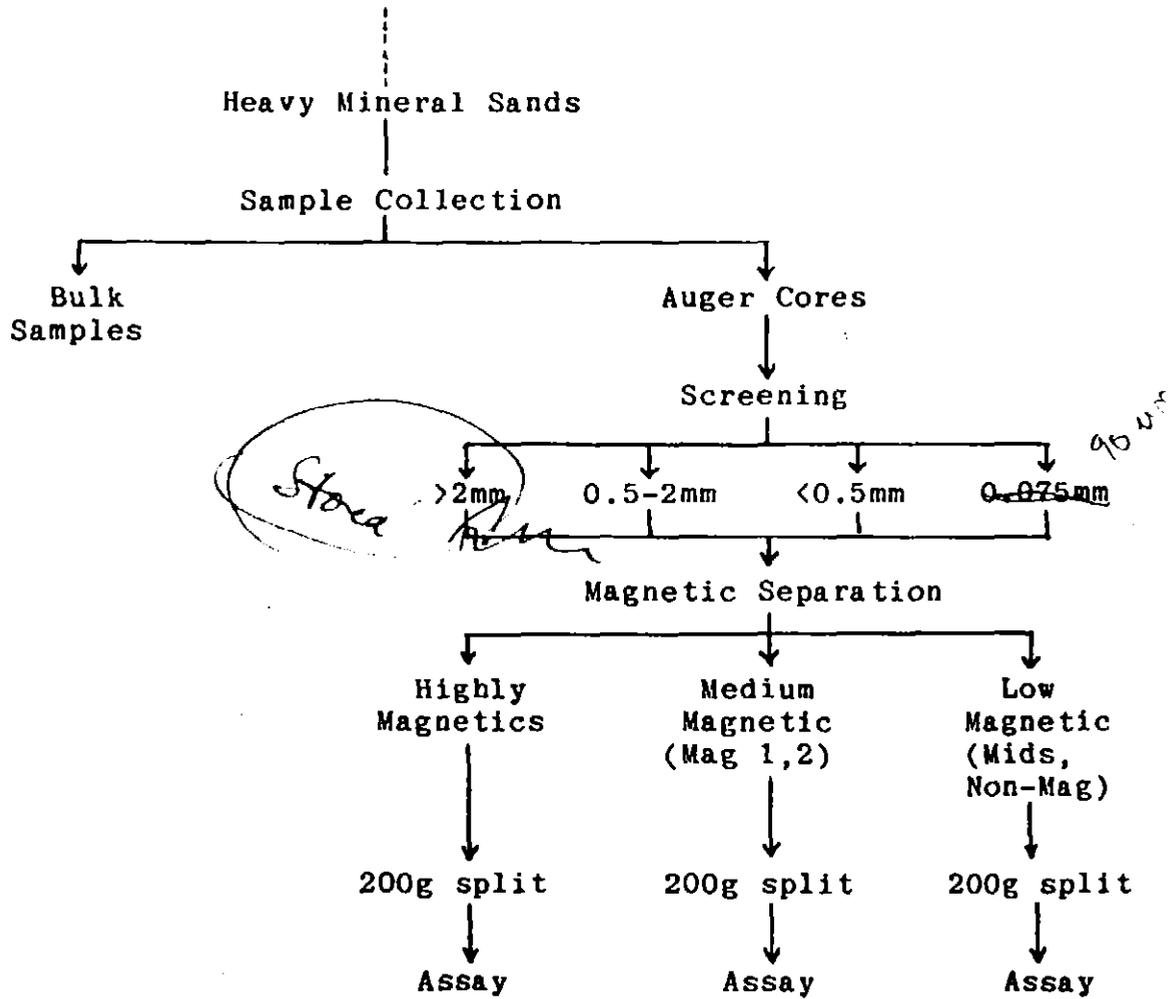
All the data from these tests are shown in the attached tables.

APPLIED POWER & MAGNETIC INTENSITY

Magnet	Feed	Product	Gap	Amps	Gauss
Disc	Coarse (+2)	Hi Mags	0.25"	0	±1000
		Mag 1	0.25	1.0	4700
		2	0.25	2.0	8900
IRM	Fine (-2 +0.5)	Hi Mags	3/16"	0	<1000
		Mags 1	1/8"	0	±1000
		2	1/8"	3	14000
		Mids	1/8"	6	19000
IRM	Finest (-0.5)	Hi Mags	3/16"	0	<1000
		Mag 1	1/8"	0	±1000
		2	1/8"	3	14000
		Mids	1/8"	6	19000

APPENDIX 3

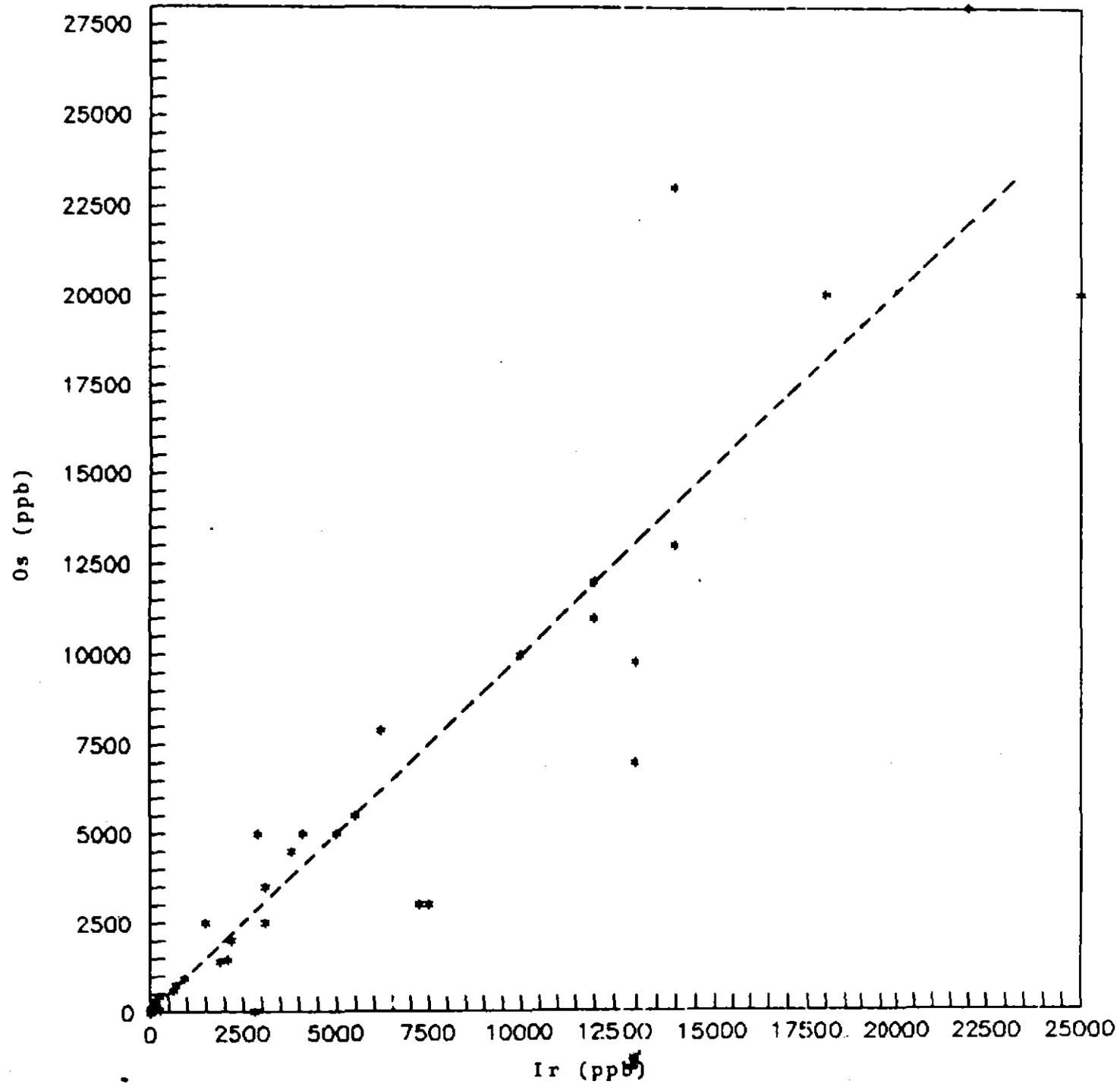
FLOW SHEET FOR WILSON RIVER AUGER SAMPLES



APPENDIX 4

1. Wilson River - Scattergram of Ir (ppb) vs Os (ppb).
2. Wilson River - Scattergram of Ir (ppb) vs Rhx100 (ppb).
3. Wilson River - Scattergram of Ir (ppb) vs Ru (ppb).
4. Wilson River - Scattergram of Ir (ppb) vs Pdx1000 (ppb).
5. Wilson River - Scattergram of Ir (ppb) vs Au (ppb).
6. Wilson River - Scattergram of Ir (ppb) vs Pt (ppb).

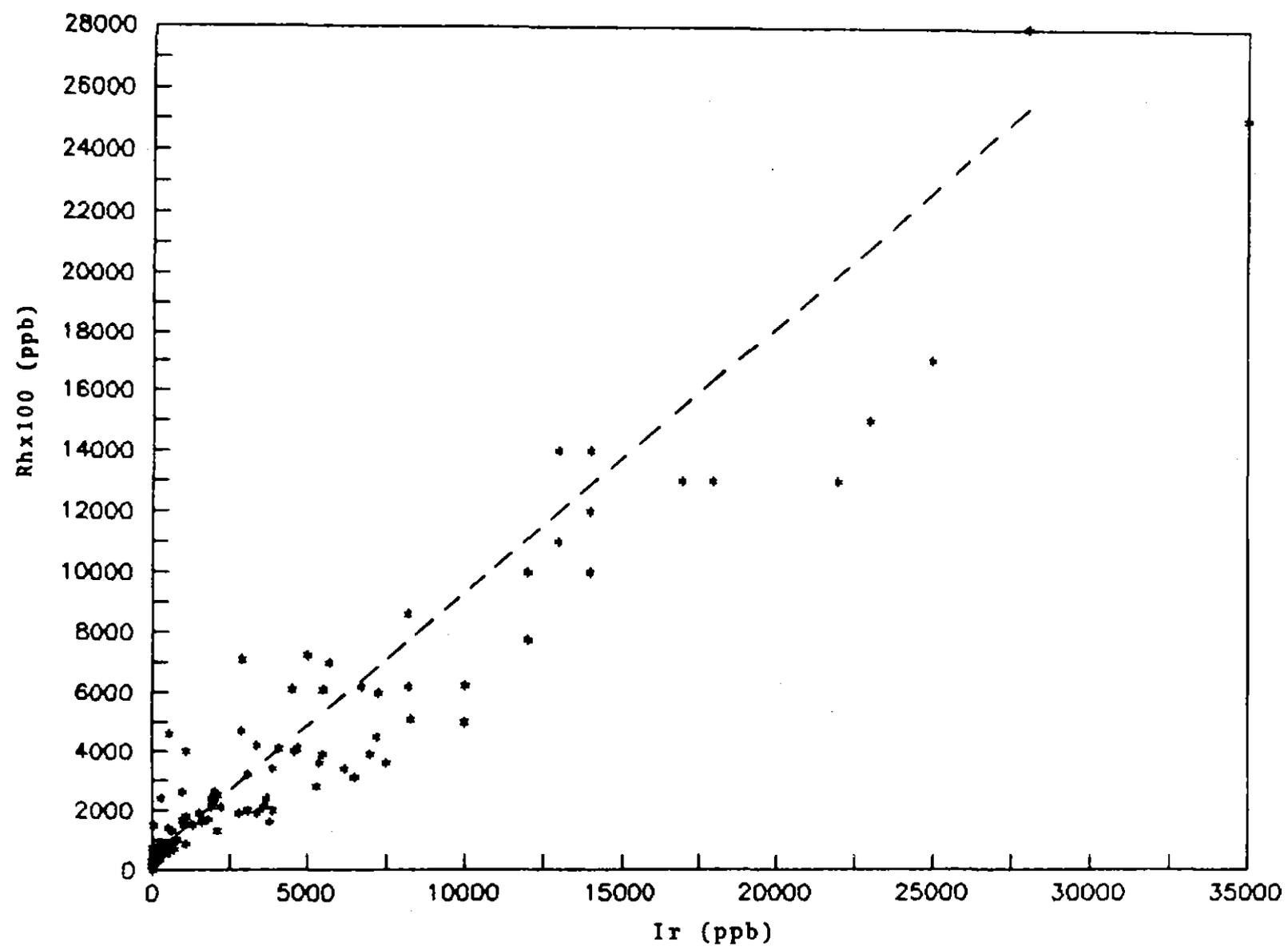
WILSON RIVER - Scattergram of Ir (ppb) vs Os (ppb)



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WILSON RIVER - Scattergram of Ir (ppb) vs Rhx100 (ppb)

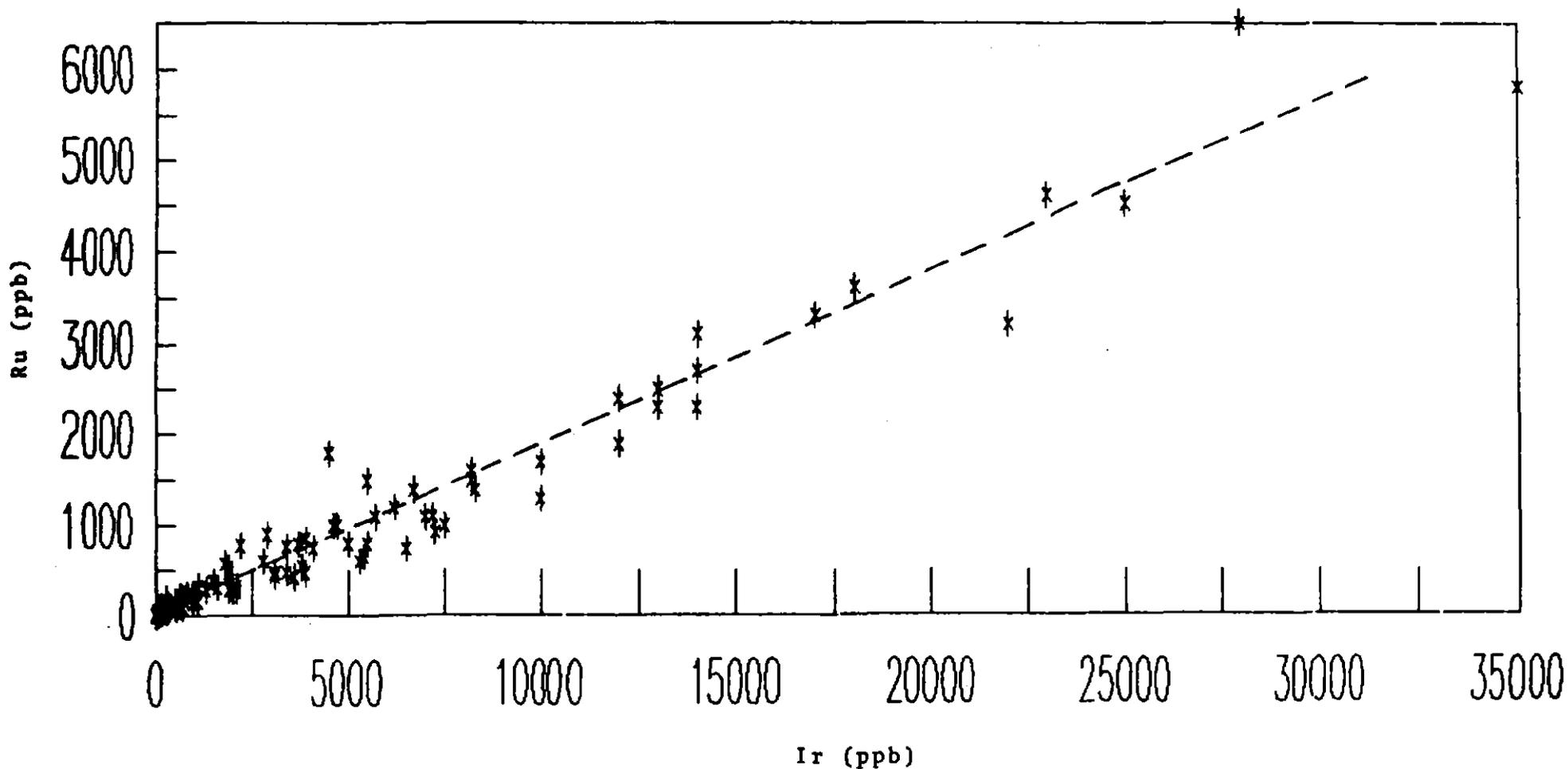


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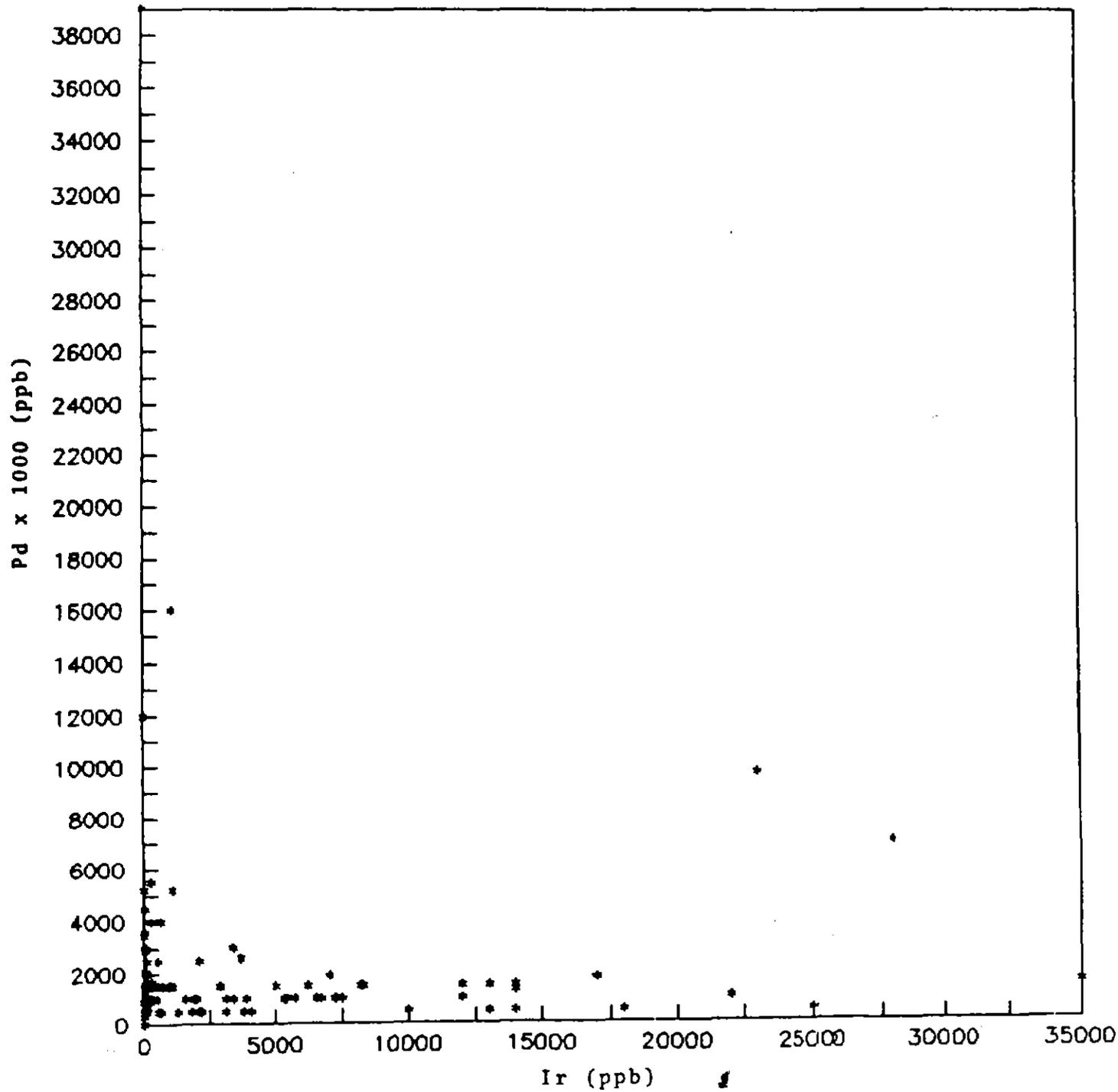
WILSON RIVER - Scattergram of Ir (ppb) vs Ru (ppb)

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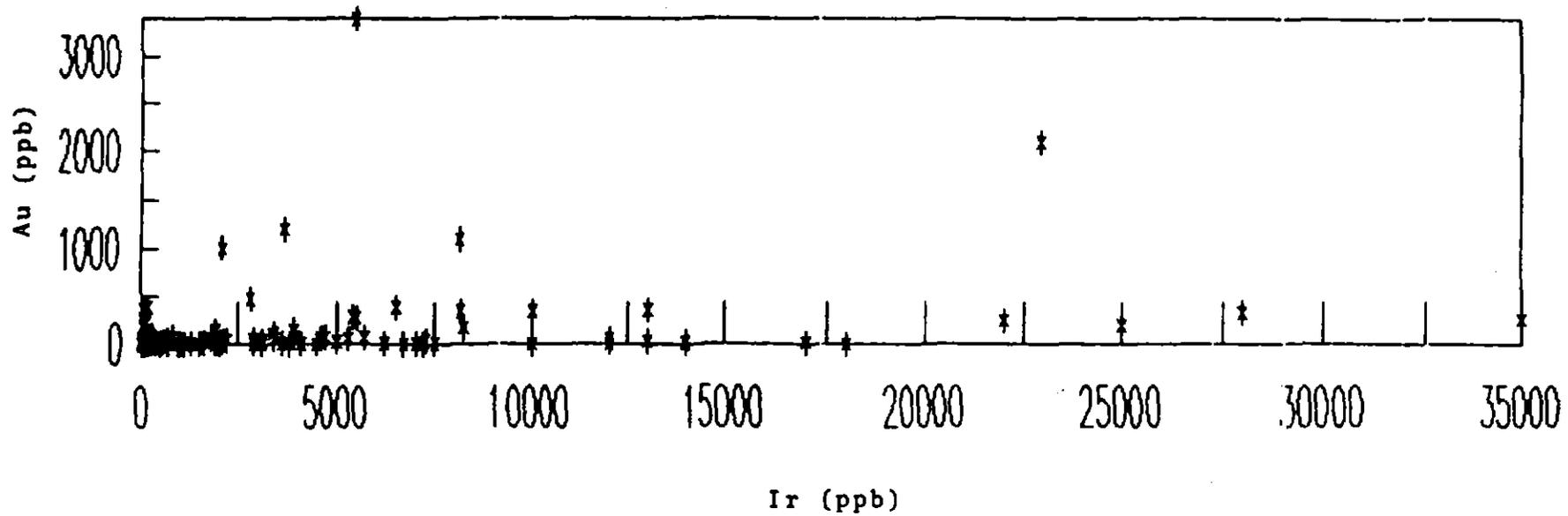
WILSON RIVER - Scattergram of Ir (ppb) vs Pdx1000 (ppb)



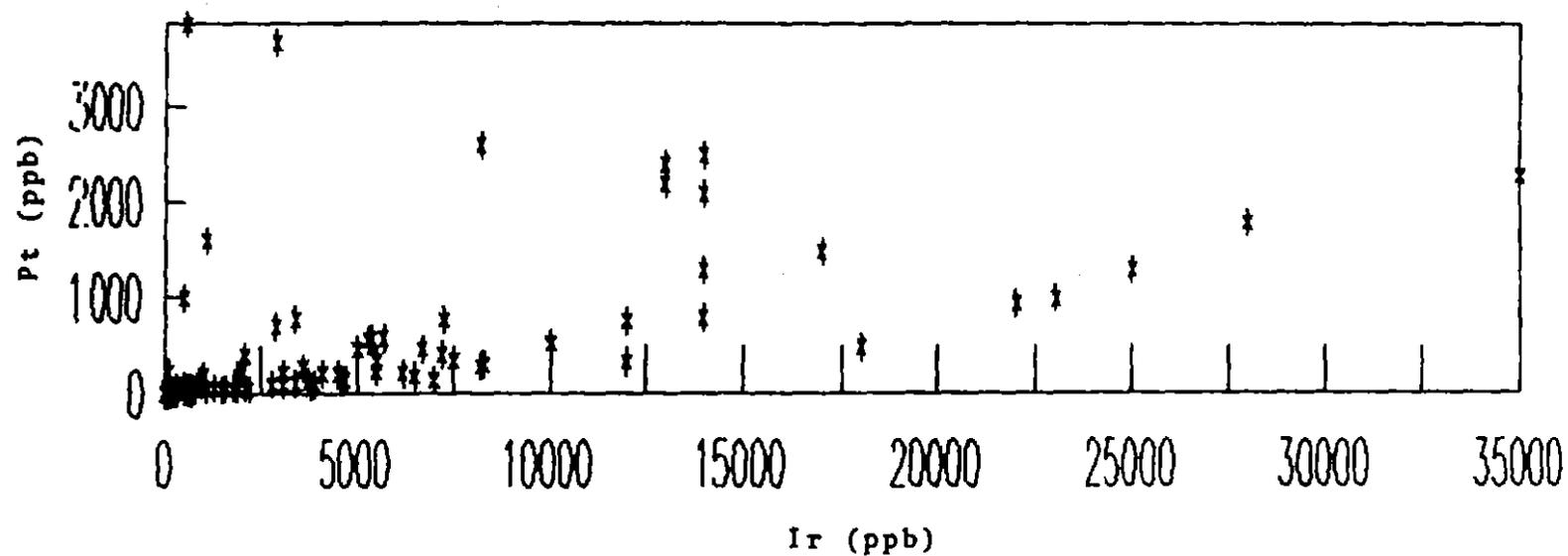
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WILSON RIVER - Scattergram of Ir (ppb) vs Au (ppb)



WILSON RIVER - Scattergram of Ir (ppb) vs Pt (ppb)



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APPENDIX 5

REPORT ON MINERALOGICAL EXAMINATION
AND ELECTRON MICROPROBE ANALYSES OF
CHROMITE SAMPLES BY DR. JIRI JUST

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REPORT
on
MINERALOGICAL EXAMINATION
and
ELECTRON MICROPROBE ANALYSES
of
CHROMITE SAMPLES
37478, 37479, 37480, 37481, 37483, 37484, 37485, 37487,
38169, 38186, 38208, JJ 2057, JJ 2058, JJ 2059

prepared for Messrs

CALLINA M. L.

at their request by

Jiri Just

Mineralogist

Perth, 12th February, 1988.

JIRI JUST & ASSOCIATES, MINERALOGICAL AND PETROLOGICAL SERVICES
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JIRI JUST & ASSOCIATES
mineralogical and petrological services

REPORT ON ELECTRON MICROPROBE ANALYSES OF CHROMITE SAMPLES
No 37480, 37481, 37483, 37487, 38169 AND 38208.

Dr. Jiri Just, Mineralogist

Perth, 11th February, 1988.

SUMMARY

1. Chromite in the investigated samples is non-stoichiometric and has an unusually high Cr_2O_3 content. 74.65% is the highest encountered value. The average of 285 analyses is 70.2%.
2. It should be possible to produce concentrates of exceptionally high grade.
3. All samples contain particles of chromium-bearing "limonite", which is actually the predominant component of some samples.
4. Presence of chromium-bearing "limonite" makes evaluation of the ore and plant products by means of chemical analysis alone unreliable to impossible.
5. Quantitative mineralogical analysis is essential for reliable plant control and evaluation of the products.

INTRODUCTION

Fifteen samples of chromite concentrates and tailings were received for mineralogical investigation. The aim of the investigation was to determine the average chemical composition of chromite in the individual samples by means of electron microprobe analysis and to identify and determine composition of the iron minerals in the samples.

The samples were numbered

37485	AT Tail -180 HT Conds
37487	AT tail -180 HT N/Conds
37484	AT Tail +180
37478	AT Cons +250
37479	AT Cons -250
37481	AT Mids -250 HT Conds
37483	AT Mids -250 HT N/Conds
37480	AT Mids +250
38169	9 H1 Mag2 -0.5
38186	21 H1 Mag1 -0.5
38208	31 H1 Mag2 -0.5
25 Tails Non-Mag	-0.5 (JJ 2057)
25 Tails Hi Mag	-0.5 (JJ 2058)
7 Tails	-0.075 (JJ 2059)

The request was later modified so that chromite was to be analysed only in samples 37487, 37481, 37483, 37480, 38169, and 38208.

METHOD

Polished mounts were prepared from all samples. All the mounts were briefly examined by means of optical microscope. The mounts then were coated with electrically conductive carbon film and analysed by means of electron probe microanalyser MAC 400S. The raw data were reduced using the "OXIDE" program of N. Ware. To determine the average composition of chromite in the individual samples 40 randomly selected chromite grains were analysed in each of the selected mounts. Several grains of iron oxides were analysed in all samples except the tailings JJ 2057, JJ 2058, and JJ 2059 which were shown to contain only negligible amount of

iron oxides (and chromite). Samples 37478, 37487, and 38186 were also examined by a "whole rock" x-ray diffraction technique.

RESULTS

The chemical composition (as indicated by electron microprobe analyses) is very unusual, to the extent that quite a lot of time has been spent on checking the working order of the instrument and on comparing the results obtained on the submitted samples with analyses of chromites of known composition obtained under the same operating condition (i.e. the samples were coated simultaneously to minimise the effect of difference in carbon film thickness, and were inserted into the probe and analysed at the same time.

The unusual feature of the majority of the analysed chromite grains is a significant departure from the stoichiometric formula of the spinel-group minerals. This consists essentially in surplus of the trivalent metals (Cr, Al, Fe^{3+} , V) and deficit in the divalent metals (Fe^{2+} , Mg, Mn, etc.). The deficit appears to be larger than the surplus which implies presence of vacancies in the structure of the mineral. The combined effect of these phenomena is that the chromium content in chromites is very high, the highest encountered value is 74.2% Cr_2O_3 .

All samples except tail samples JJ 2057, JJ 2058, and JJ 2059 contain particles of impure hydrated iron oxide which has been identified by XRD analysis as goethite, $\text{FeO}(\text{OH})$, with a lesser amount of hematite. Electron microprobe analyses indicate presence of variable amounts of Al, Si, and, which is most important, Cr. Trace amounts of Mn, Mg, Ti, and V can also be present. The mineral further referred to as "limonite". The mineral occurs as mantles around some chromite grains, where it is possibly produced by direct alteration of chromite, but it seems that the indurated "limonite" particles are derived mainly from the ferruginous cap rock. Composite particles consisting of chromite and clastic quartz cemented with the chromium-bearing "limonite" are common in most of the samples. $\text{FeO}(\text{OH})$, $\text{CrO}(\text{OH})$, and $\text{AlO}(\text{OH})$ are isostructural so substitution of iron in goethite by chromium and aluminium is quite feasible.

The samples are described in the order as per your letter.

029

Sample No. 37485

CHEMICAL COMPOSITION OF CHROMITE
derived from electron microprobe analyses

	Cr ₂ O ₃	Al ₂ O ₃	FeO	MgO	MnO	V ₂ O ₃	SiO ₂
Average:	71.19	3.92	17.48	6.93	---	--	--
Range: highest	73.73	5.91	23.05	10.13	---	0.32	--
lowest	66.66	2.41	13.86	3.05	---	--	--
Analysis with:							
highest Cr	73.73	2.77	15.76	7.72	---	--	--
lowest Cr	66.66	4.23	20.35	8.58	---	0.18	--

Seven grains of "limonite" were analysed. As this number is insufficient for calculation of a meaningful average composition only the extreme analyses are presented.

Chemical composition of chromium bearing "limonite"
(calculated to the goethite formula, normalised to 90%)

Analysis with highest and lowest Cr:

	Cr ₂ O ₃	Al ₂ O ₃	Fe ₂ O ₃	FeO	MgO	SiO ₂	MnO	V ₂ O ₃	TiO ₂
max.	6.98	7.99	72.47	---	0.54	0.56	---	0.18	0.67
min.	1.27	0.64	85.45	0.54	0.27	1.08	0.21	--	0.25

Cr₂O₃ values in the remaining analyses are (in %wt):

1.35, 1.63, 2.04, 3.60, 4.83

000

Sample No. 37487

CHEMICAL COMPOSITION OF CHROMITE
derived from 40 electron microprobe analyses

	Cr ₂ O ₃	Al ₂ O ₃	FeO	MgO	MnO	V ₂ O ₃	SiO ₂
Average:	70.28	4.25	18.02	8.11	---	--	0.2
Range: highest	73.68	8.87	23.76	10.30	2.02	0.30	0.33
lowest	63.60	2.12	13.07	2.32	n.d.	n.d.	n.d.
Analysis with:							
highest Cr	73.68	2.70	16.16	7.29	n.d.	n.d.	0.17
lowest Cr	63.60	8.87	18.85	8.41	n.d.	0.15	n.d.

The analysis with the lowest Cr represents a "normal" (i.e. stoichiometric) chromite.

001

Sample No. 37484

CHEMICAL COMPOSITION OF CHROMITE
derived from 2 electron microprobe analyses

	Cr ₂ O ₃	Al ₂ O ₃	FeO	MgO	MnO	V ₂ O ₃	SiO ₂
Analysis with:							
highest Cr	73.61	2.73	15.20	8.46	n.d.	n.d.	n.d.
lowest Cr	72.45	3.03	13.62	10.74	n.d.	n.d.	n.d.

Ten grains of "limonite" were analysed.

Chemical composition of chromium bearing "limonite"
(calculated to the goethite formula, normalised to 90%)

Average of 10 analyses; analysis with highest and lowest Cr.

	Cr ₂ O ₃	Al ₂ O ₃	Fe ₂ O ₃	FeO	MgO	SiO ₂	MnO	V ₂ O ₃	TiO ₂
Aver.	5.73	4.87	77.41	0.20	0.29	0.81	---	--	0.25
max.	11.60	8.76	68.04	0.64	n.d.	0.30	n.d.	n.d.	0.51
min.	0.91	1.79	85.67	nil	0.41	0.88	n.d.	n.d.	n.d.

The remaining Cr₂O₃ values are:

1.09, 2.70, 4.22, 4.44, 5.68, 6.89, 8.42, 11.35

XRD analysis indicates that the sample consists mostly of goethite. Quartz and chromite are present only in subordinate amounts, hematite in small amount.

602

Sample No. 37478

CHEMICAL COMPOSITION OF CHROMITE
derived from 2 electron microprobe analyses

	Cr ₂ O ₃	Al ₂ O ₃	FeO	MgO	MnO	V ₂ O ₃	SiO ₂
Analysis with:							
highest Cr	72.83	3.28	14.76	8.91	n.d.	n.d.	0.22
lowest Cr	71.65	3.64	15.24	9.28	n.d.	n.d.	0.20

Nine grains of "limonite" were analysed.

Chemical composition of chromium bearing "limonite"
(calculated to the goethite formula, normalised to 90%)

Average of 9 analyses; analysis with highest and lowest Cr.

	Cr ₂ O ₃	Al ₂ O ₃	Fe ₂ O ₃	FeO	MgO	SiO ₂	MnO	V ₂ O ₃	TiO ₂
Aver.	2.97	3.17	79.38	0.61	0.36	0.96	---	--	0.41
max.	8.48	3.02	75.76	0.29	0.49	0.65	0.23	n.d.	0.92
min.	1.12	2.03	82.28	2.17	0.24	2.16	n.d.	n.d.	n.d.

The remaining Cr₂O₃ values are:

1.92, 3.27, 4.16, 4.43, 4.71, 5.31, 5.97

XRD analysis indicates that the sample consists essentially of goethite with only small amounts of chromite and hematite.

683

Sample No. 37479

CHEMICAL COMPOSITION OF CHROMITE
derived from 2 electron microprobe analyses

	Cr ₂ O ₃	Al ₂ O ₃	FeO	MgO	MnO	V ₂ O ₃	SiO ₂
Analysis with:							
highest Cr	71.30	3.44	15.01	9.17	0.69	--	--
lowest Cr	71.07	3.62	16.75	7.85	0.47	--	--

Ten grains of "limonite" were analysed.

Chemical composition of chromium bearing "limonite"
(calculated to the goethite formula, normalised to 90%)

Average of 10 analyses; analysis with highest and lowest Cr.

	Cr ₂ O ₃	Al ₂ O ₃	Fe ₂ O ₃	FeO	MgO	SiO ₂	MnO	V ₂ O ₃	TiO ₂
Aver.	4.55	2.05	81.62	0.09	0.39	0.57	0.30	--	0.43
max.	7.29	0.73	80.41	0.23	0.18	0.46	0.25	0.17	0.28
min.	2.04	4.06	79.55	1.44	0.35	1.02	n.d.	n.d.	1.29

The remaining Cr₂O₃ values are:

3.16, 3.31, 3.73, 4.30, 4.44, 5.06, 6.08, 6.08

Sample No. 37481

CHEMICAL COMPOSITION OF CHROMITE
derived from 40 electron microprobe analyses

	Cr ₂ O ₃	Al ₂ O ₃	FeO	MgO	MnO	V ₂ O ₃	SiO ₂
Average:	70.99	3.90	17.09	7.64	---	--	--
Range: highest	74.58	7.64	20.90	9.88	3.41	0.29	0.39
lowest	64.90	1.93	13.47	4.06	n.d.	n.d.	n.d.
Analysis with:							
highest Cr	74.58	2.15	13.47	9.62	n.d.	n.d.	n.d.
lowest Cr	64.90	7.64	19.03	8.43	n.d.	n.d.	n.d.

The analysis with the lowest Cr represents a "normal" chromite

Two grains of "limonite" were analysed.

Chemical composition of chromium bearing "limonite"
(calculated to the goethite formula, normalised to 90%)

	Cr ₂ O ₃	Al ₂ O ₃	Fe ₂ O ₃	FeO	MgO	SiO ₂	MnO	V ₂ O ₃	TiO ₂
max.	14.01	3.66	71.26	0.20	0.28	0.59	n.d.	n.d.	n.d.
min.	3.52	2.16	81.71	0.93	0.29	0.61	n.d.	n.d.	0.78

Sample No. 37483

CHEMICAL COMPOSITION OF CHROMITE
derived from 41 electron microprobe analyses

	Cr ₂ O ₃	Al ₂ O ₃	FeO	MgO	MnO	V ₂ O ₃	SiO ₂
Average:	69.75	3.94	17.17	7.23	---	--	--
Range: highest	73.68	9.22	22.76	13.01	11.55	0.23	0.47
lowest	65.46	1.27	10.43	4.25	n.d.	n.d.	n.d.
Analysis with:							
highest Cr	73.68	1.27	16.63	8.01	n.d.	n.d.	0.40
lowest Cr	65.46	9.22	12.31	13.01	n.d.	n.d.	n.d.

The analysis with the lowest Cr represents a "normal" chromite.

Four grains of "limonite" were analysed. Only the analyses with the highest and the lowest Cr are presented.

Chemical composition of chromium bearing "limonite"
(calculated to the goethite formula, normalised to 90%)

	Cr ₂ O ₃	Al ₂ O ₃	Fe ₂ O ₃	FeO	MgO	SiO ₂	MnO	V ₂ O ₃	TiO ₂
max.	14.43	3.49	71.59	n.d.	0.34	0.34	n.d.	n.d.	n.d.
min.	4.25	3.32	78.78	0.13	0.37	1.78	0.37	n.d.	n.d.

The remaining Cr₂O₃ values are: 3.32, 7.73

606

Sample No. 37480

CHEMICAL COMPOSITION OF CHROMITE
derived from 40 electron microprobe analyses

	Cr ₂ O ₃	Al ₂ O ₃	FeO	MgO	MnO	V ₂ O ₃	SiO ₂
Average:	70.13	4.36	17.76	6.71	---	--	--
Range: highest	73.02	18.51	23.11	10.26	9.82	0.26	0.44
lowest	59.96	2.09	10.01	2.67	n.d.	n.d.	n.d.
Analysis with:							
highest Cr	73.02	2.09	19.64	4.76	n.d.	n.d.	0.34
lowest Cr	59.96	18.51	17.91	3.61	n.d.	n.d.	n.d.

The analysis with the lowest Cr represents a "normal" chromite.

Five grains of "limonite" were analysed. Only analyses with the highest and the lowest Cr are presented as the number of analyses is insufficient for calculation of a statistically meaningful average.

Chemical composition of chromium bearing "limonite"
(calculated to the goethite formula, normalised to 90%)

	Cr ₂ O ₃	Al ₂ O ₃	Fe ₂ O ₃	FeO	MgO	SiO ₂	MnO	V ₂ O ₃	TiO ₂
max.	11.68	7.14	68.88	0.22	0.34	0.79	n.d.	0.30	0.26
min.	2.85	8.54	77.86	n.d.	0.32	0.45	n.d.	n.d.	n.d.

The remaining Cr₂O₃ values are: 2.95, 6.56, 7.90

687

Sample No. 38169

CHEMICAL COMPOSITION OF CHROMITE
derived from 40 electron microprobe analyses

	Cr ₂ O ₃	Al ₂ O ₃	FeO	MgO	MnO	V ₂ O ₃	SiO ₂
Average:	69.41	3.99	18.07	8.30	---	--	--
Range: highest	74.65	9.88	20.84	10.02	0.42	0.23	0.57
lowest	60.28	1.00	14.42	5.64	n.d.	n.d.	n.d.
Analysis with:							
highest Cr	74.65	1.32	15.81	8.02	n.d.	n.d.	0.20
lowest Cr	60.28	9.88	19.84	10.01	n.d.	n.d.	n.d.
Average composition of:							
anomalous chromite (26 analyses)	70.50	4.00	17.43	7.88	---	--	--
normal chromite (14 analyses)	67.39	3.99	19.26	9.08	---	--	--

There are two populations of chromite in the sample, "anomalous" (non-stoichiometric) and "normal" (stoichiometric), which clearly differ in their chromium content.

Three grains of "limonite" were analysed. All three analyses are presented.

Chemical composition of chromium bearing "limonite"
(calculated to the goethite formula, normalised to 90%)

	Cr ₂ O ₃	Al ₂ O ₃	Fe ₂ O ₃	FeO	MgO	SiO ₂	MnO	V ₂ O ₃	TiO ₂
Gr.41	2.70	10.03	75.50	0.26	0.29	0.77	n.d.	n.d.	0.19
Gr.42	3.85	11.22	73.02	n.d.	0.60	0.58	n.d.	n.d.	0.68
Gr.43	3.51	6.59	77.95	0.78	n.d.	0.65	n.d.	0.16	n.d.

Sample No. 38186

CHEMICAL COMPOSITION OF CHROMITE
derived from 2 electron microprobe analyses

	Cr ₂ O ₃	Al ₂ O ₃	FeO	MgO	MnO	V ₂ O ₃	SiO ₂
Analysis with:							
highest Cr	71.99	4.14	15.13	8.75	n.d.	n.d.	n.d.
lowest Cr	71.02	3.82	15.28	9.69	n.d.	n.d.	n.d.

Nine samples of "limonite" were analysed.

Chemical composition of chromium bearing "limonite"
(calculated to the goethite formula, normalised to 90%)

Average of 9 analyses; analysis with highest and lowest Cr.

	Cr ₂ O ₃	Al ₂ O ₃	Fe ₂ O ₃	FeO	MgO	SiO ₂	MnO	V ₂ O ₃	TiO ₂
Aver.	4.26	4.58	76.86	1.52	0.32	1.77	n.d.	n.d.	0.36
max.	8.05	6.84	72.50	0.94	0.31	0.88	n.d.	n.d.	0.47
min.	2.96	6.67	73.59	1.97	0.29	2.73	n.d.	0.30	0.51

The remaining Cr₂O₃ values are:

3.30, 3.71, 3.92, 3.93, 4.00, 4.10, 4.38

XRD analysis indicate that the sample consists essentially of chromite with only a small amount of goethite and traces of hematite.

609

Sample No. 38208

CHEMICAL COMPOSITION OF CHROMITE
derived from 43 electron microprobe analyses

	Cr ₂ O ₃	Al ₂ O ₃	FeO	MgO	MnO	V ₂ O ₃	SiO ₂
Average:	69.66	4.36	17.15	8.43	---	--	--
Range: highest	73.19	9.14	20.48	11.68	n.d.	0.24	0.67
lowest	63.44	2.45	14.14	6.12	n.d.	n.d.	n.d.
Analysis with:							
highest Cr	73.19	2.83	14.97	9.01	n.d.	n.d.	n.d.
lowest Cr	63.44	9.14	18.08	8.96	n.d.	n.d.	n.d.

The analysis with the lowest Cr represents a "normal" chromite.

Five grains of "limonite" were analysed. Only the analyses with the highest and the lowest chromium content are presented.

Chemical composition of chromium bearing "limonite"
(calculated to the goethite formula, normalised to 90%)

	Cr ₂ O ₃	Al ₂ O ₃	Fe ₂ O ₃	FeO	MgO	SiO ₂	MnO	V ₂ O ₃	TiO ₂
max.	13.76	6.84	83.58	n.d.	0.61	1.38	0.38	n.d.	0.21
min.	2.71	6.17	76.04	1.47	0.60	2.55	0.32	n.d.	n.d.

The remaining Cr₂O₃ values are: 3.78, 3.81, 5.96

040

PWC

JJ 2057 (25 Tails Non-Mag -0.5)

Optical microscope examination and brief electron microprobe examination indicate that the sample consists essentially of quartz and other silicates. Chromite and chromium-bearing "limonite" are present only in trace amount. Three lines were scanned across the sample but no other minerals of interest were found.

JJ 2058 (25 Tails Hi Mag -0.5)

Optical microscope examination and brief electron microprobe examination indicate that the sample consists essentially of quartz and other silicates. Chromite and chromium-bearing "limonite" are present in trace amount. Several lines across the sample were scanned, but only one grain of a titanium oxide (rutile?) was found (apart from the above mentioned chromite and "limonite").

JJ 2059 (7 Tails -0.075)

Optical microscope and brief electron microprobe examination indicate that the sample consists essentially of quartz and a small amount of other silicates. Chromite and chromium-bearing "limonite" are again present only in small amount, but are noticeably more abundant than in the previous two samples. No other mineral of interest were found.

C41

CONCLUSIONS

It appears that there are in the submitted samples two different populations of chromite. One, only poorly represented population consists of "normal" chromite (i.e. chromite with the ratio of trivalent metals : divalent metals : oxygen in good agreement with the stoichiometric formula of the spinel-group minerals). The second, far more abundant population consists of chromites with an unusual non-stoichiometric composition characterised by surplus of trivalent metals, essentially chromium and aluminium, deficit in divalent metals, essentially iron and magnesium, and by an overall deficit of metals against the stoichiometric formula. Some grains also contain elevated amounts of manganese.

Chromium oxide content in the majority of the analysed grains is very high, in spite of the high iron content. Some grains contain over 74% wt of Cr_2O_3 . The chromium content thus often exceeds the highest content allowed by the stoichiometric formula for the given Fe : Mg ratio.

The composition of chromite implies that concentrates with an exceptionally high Cr content could be produced and perhaps sold at a premium for specific purposes.

It is possible that the non-stoichiometry lowers the stability of the structure of the mineral. This could affect the physical and chemical properties of the mineral and make it more suitable for certain purposes. For example this chromite could be more susceptible to chemical attack and thus more suitable for chemical grade material or lower the energy requirement in ferrochrome manufacturing. A detailed investigation of properties of the material is highly advisable. The results could actually affect the economic viability of the deposit.

The presence of chromium-bearing "limonite" has a profound effect on evaluation of bulk chemical analyses. Presence of two minerals which both have a very variable chemical composition and both contain as major components the same elements (in this case Cr, Al, Fe, Mg) makes the calculation of the relative amount of the mineral of interest (in this case chromite) virtually impossible. Also evaluation of beneficiation processes cannot be done solely on the basis of chemical analyses. Thus high Cr_2O_3 in tailings could indicate either poor recovery of chromite, i.e. poor plant performance, or high recovery of chromite and high Cr content in some other mineral (in this case "limonite"), i.e. good plant performance. Quantitative mineralogical analysis is essential for correct evaluation of both the ore and the products.

042

RECOMMENDATION

An investigation should be initiated to determine the distribution of the "normal" and non-stoichiometric chromite in the deposit.

The ore and the individual plant products should be tested by detailed, preferably quantitative mineralogical analysis in order to determine the distribution of chromite and chromium-bearing "limonite" in the individual products.

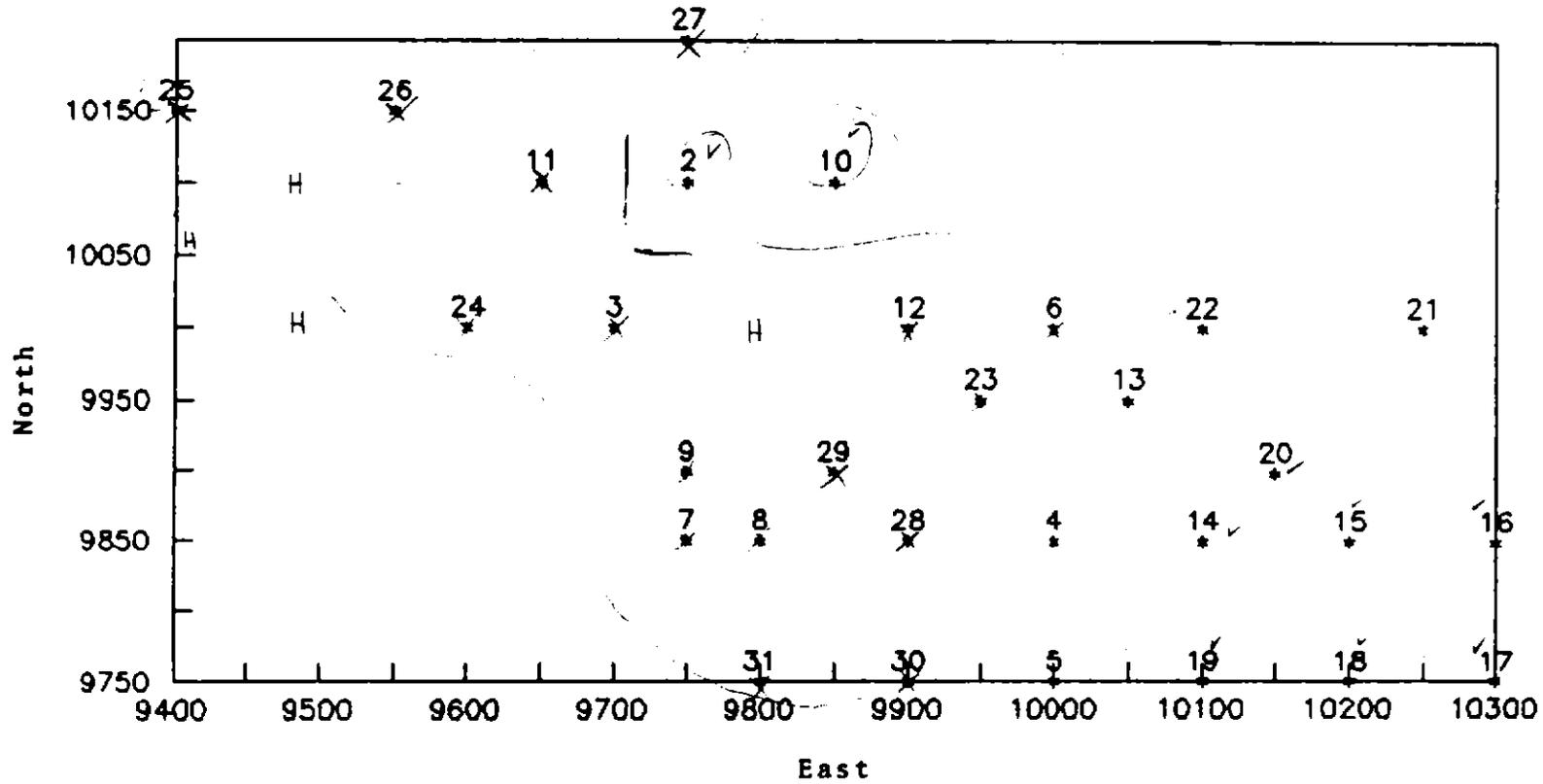
The physical and chemical properties of the non-stoichiometric chromite should be tested in view of possible specific applications of the material.

APPENDIX 6

BULK SAMPLE DATA

1. Bulk Sample Locations.
2. Contour Map of Hutch 1, Mag 1, <0.5mm, % Cr₂O₃.
3. Contour Map of Hutch 1, Mag 2, <0.5mm, % Cr₂O₃.
4. Contour Map of Hutch 1, Non-mags, <0.5mm, Ir (ppb).
5. Summary Mass and Grade Calculations for Area A.
6. Volume, Mass and Grade Calculations for the Hutch 1, <0.5mm, Magnetic Separation Products.
7. Volume, Mass and Grade Calculations for the Hutch 1, 0.5 - 2mm, Magnetic Separation Products.
8. Volume, Mass and Grade Calculations for the Hutch 1, >2mm, Magnetic Separation Products.
9. Volume, Mass and Grade Calculations for the Hutch 2 & 3, <0.5mm, Magnetic Separation Products.
10. Volume, Mass and Grade Calculations for the Hutch 2 & 3, 0.5 - 2mm, Magnetic Separation Products.
11. Volume, Mass and Grade Calculations for the Hutch 2 & 3, >2mm, Magnetic Separation Products.
12. Volume, Mass and Grade Calculations for the Tails <0.5mm, Magnetic Separation Products.
13. Volume, Mass and Grade Calculations for the Tails, 0.5 - 2mm, Magnetic Separation Products.
14. Volume, Mass and Grade Calculations for the Tails, >2mm Magnetic Separation Products.

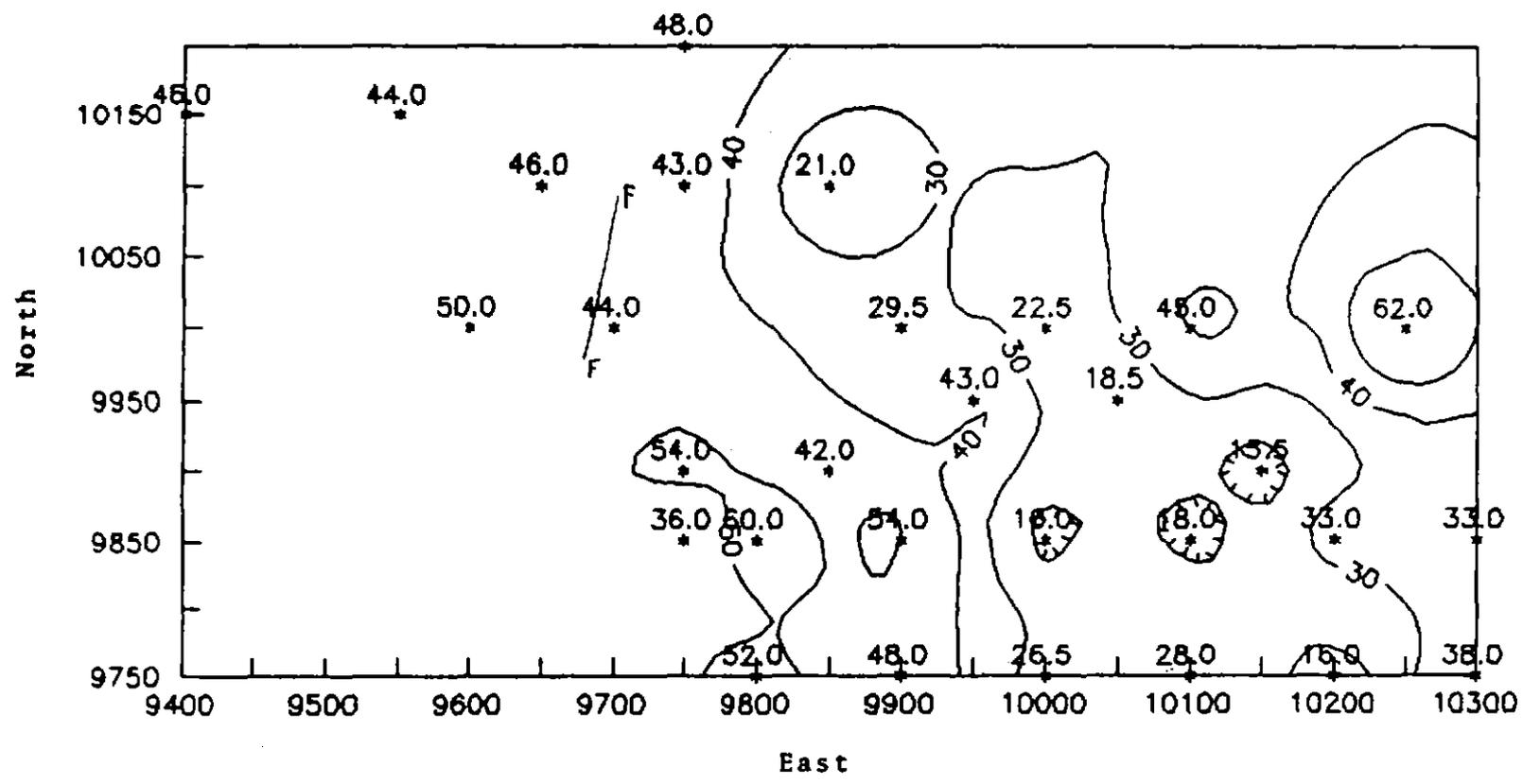
WILSON RIVER - Bulk Sample Locations



H = hardcap

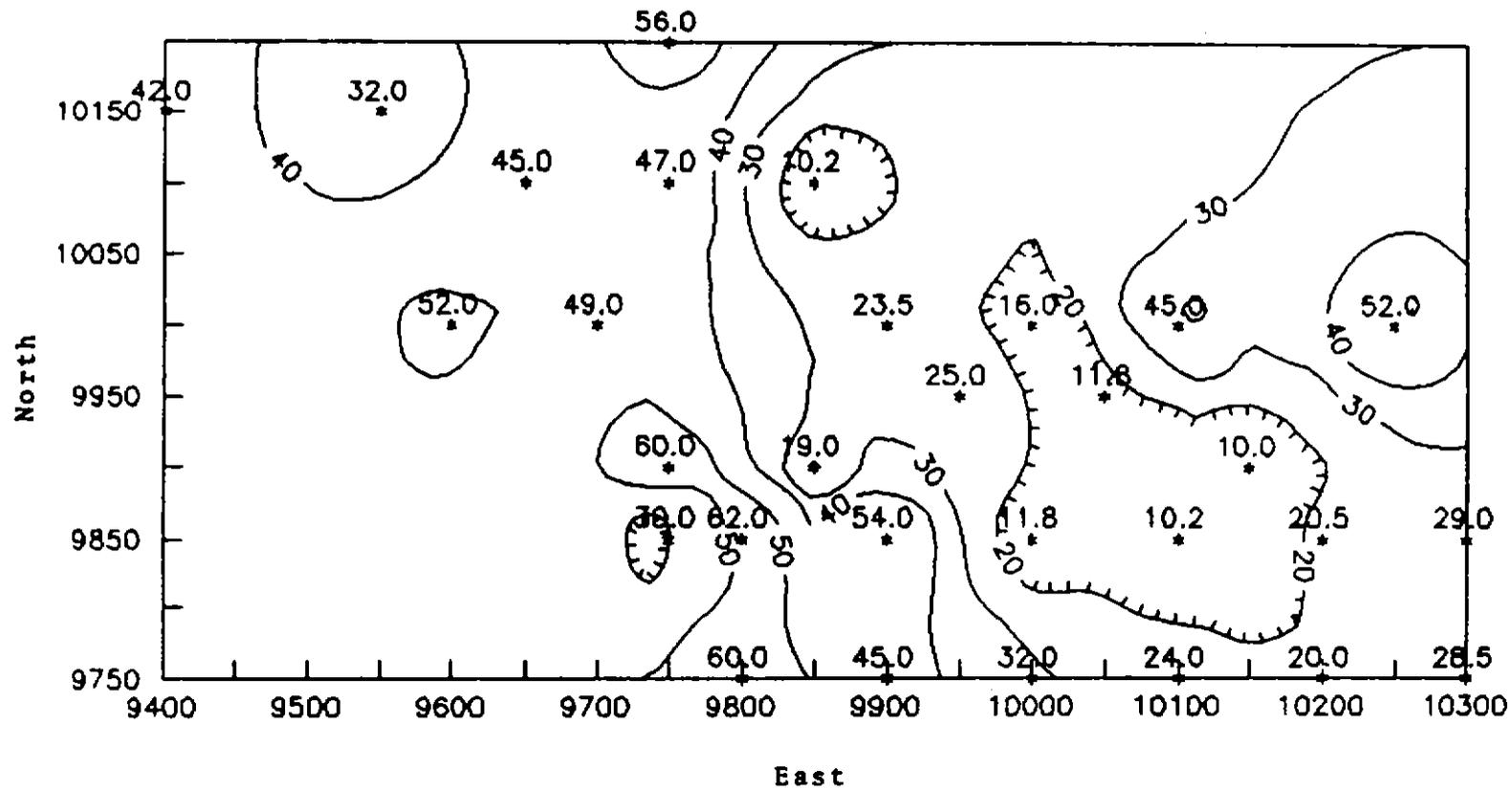
045

WILSON RIVER - Hutch 1, Mag 1, 0.5mm, \varnothing Cr203

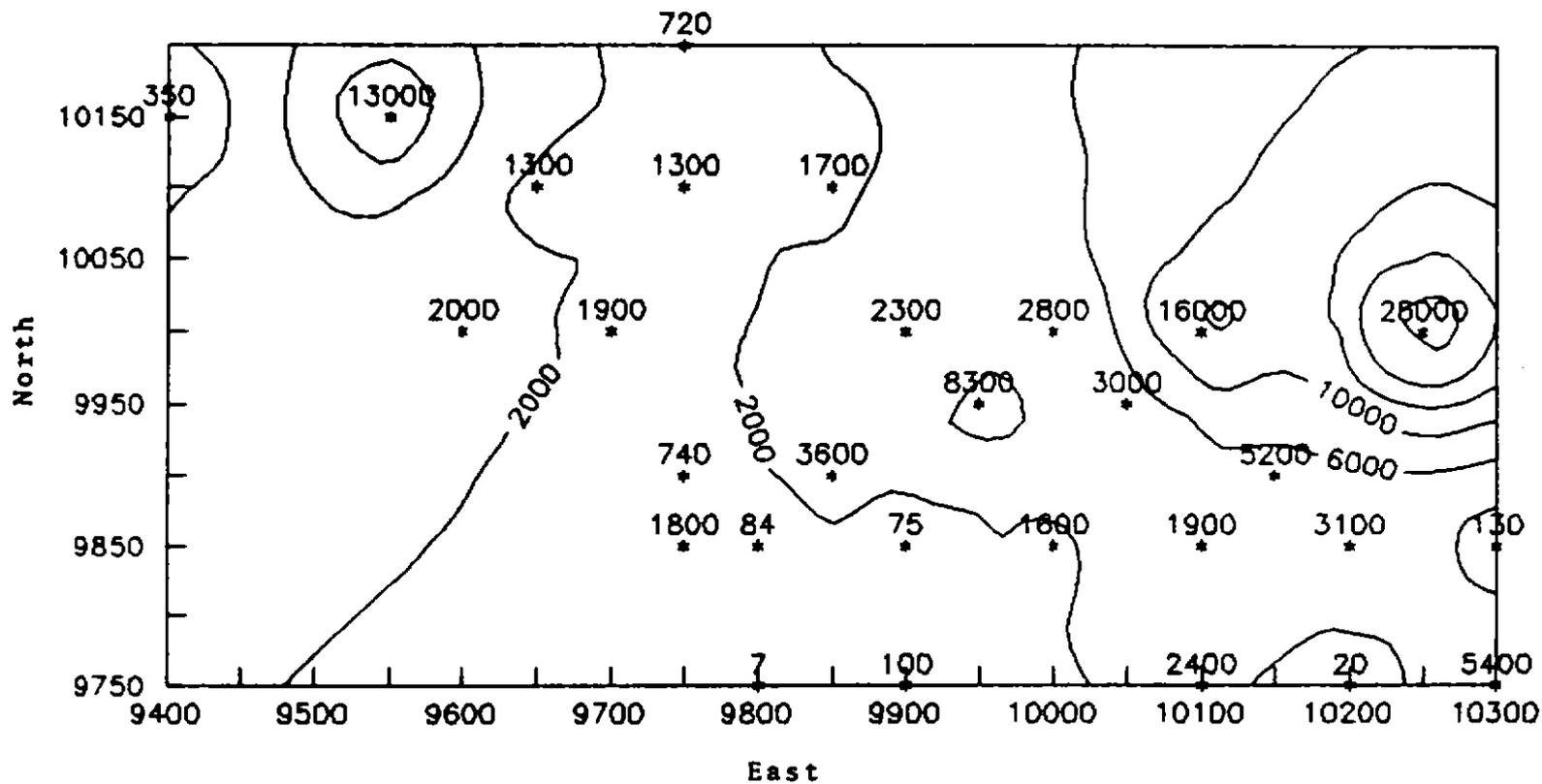


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WILSON RIVER - Hutch 1, Mag 2, 0.5mm, α Cr203

WILSON RIVER - Hutch 1, Non Mags, 0.5mm, Ir (ppb)



SUMMARY MASS AND GRADE CALCULATIONS FOR AREA A

	TOTAL MASS (t)	TOTAL Cr203 MASS (t)	AVERAGE Cr203 (%)	TOTAL IR MASS (g)	AVERAGE IR (ppb)

HUTCH 1 <0.5mm					
Subtotal for Mag 1, Mag 2 and Mids	6892.51	3277.50	36.9	481.36	54
Grand Total for all Magnetic Products	15541.93	4337.71	27.9	3676.41	237

HUTCH 1 0.5-2mm					
Subtotal for Mag 1, Mag 2 and Mids	21151.93	2735.26	12.9		
Grand Total for all Magnetic Products	43043.79	4247.50	9.9		

HUTCH 1 >2mm					
Subtotal for Mag 1, Mag 2 and Mids	19396.37	1009.95	5.2		
Grand Total for all Magnetic Products	40737.44	1542.15	3.8		

HUTCH 2+3 <0.5mm					
Subtotal for Mag 1, Mag 2 and Mids	14398.29	3356.61	23.3	638.35	44
Grand Total for all Magnetic Products	23629.96	4781.08	20.2	978.65	41

HUTCH 2+3 0.5-2mm					
Subtotal for Mag 1, Mag 2 and Mids	21060.31	1516.34	7.2		
Grand Total for all Magnetic Products	43227.13	3112.35	7.2		

HUTCH 2+3 >2mm					
Subtotal for Mag 1, Mag 2 and Mids	15661.23	422.85	2.7		
Grand Total for all Magnetic Products	40956.20	1105.82	2.7		

TAIL <0.5mm					
Subtotal for Mag 1, Mag 2 and Mids	164008.93	23915.77	14.6	14653.01	89
Grand Total for all Magnetic Products	257465.00	29456.26	11.4	23306.79	91

TAIL 0.5-2mm					
Subtotal for Mag 1, Mag 2 and Mids	17110.76	701.54	4.1		
Grand Total for all Magnetic Products	46605.37	1910.82	4.1		

TAIL >2mm					
Grand Total for all Magnetic Products	1234.50	19.75	1.6		

OVERALL MASS AND GRADE FOR AREA A					
Total for Mag 1, Mag 2, and Mids	281680.33	36935.82	13.1	15772.72	56
Grand Total for all Magnetic Products	512441.32	50513.44	9.9	27961.85	55

028

693049

VOLUME, MASS, AND GRADE CALCULATIONS FOR THE HUTCH 1, <0.5mm, MAGNETIC SEPARATION PRODUCTS

SAMPLE SITE	MAGNETIC SEPARATION	•MASS (%)	•VOLUME OF SAMPLE (cu m)	•CALC. MASS OF HUTCH 1 CONC (kg)	•CALC. VOL. TO 2m DEPTH (cu m)	•TOTAL MASS (t)	•Cr2O3 (%)	•TOTAL Cr2O3 MASS (t)	•AVERAGE Cr2O3 (%)	•IR (ppb)	•TOTAL IR MASS (g)	•AVERAGE IR (ppb)
02	HI MAG	0.22	0.13	455	22500	11.26	24.0	2.70		24	0.27	
03	HI MAG	0.35	0.05	175	25000	7.66	15.5	1.19		50	0.38	
04	HI MAG	0.53	0.20	700	20000	37.10	7.4	2.75		61	2.26	
05	HI MAG	0.63	0.10	350	20000	22.05	7.4	1.63		25	0.55	
06	HI MAG	0.48	0.07	245	25000	14.70	11.8	1.73		33	0.49	
07	HI MAG	1.35	0.07	245	11250	18.60	24.5	4.56		240	4.47	
08	HI MAG	2.62	0.05	175	11875	27.22	0.9	0.25		3	0.08	
09	HI MAG	8.36	0.07	245	16875	172.82	1.4	2.42		3.5	0.60	
10	HI MAG	4.75	0.10	350	31250	259.77	8.8	22.86		44	11.43	
11	HI MAG	2.46	0.20	700	25000	215.25	32.0	68.88		78	16.79	
12	HI MAG	9.18	0.05	175	25000	200.81	27.5	55.22		58	11.45	
13	HI MAG	3.35	0.07	245	15000	61.56	22.0	13.54		75	4.62	
14	HI MAG	1.54	0.07	245	17500	33.01	13.0	4.29		90	2.97	
15	HI MAG	0.83	0.10	350	19375	28.14	31.0	8.72		84	2.36	
16	HI MAG	4.09	0.07	245	25000	125.26	35.0	43.84		42	5.26	
17	HI MAG	1.16	0.12	420	20000	48.72	34.0	16.56		61	2.97	
18	HI MAG	4.35	0.10	350	20000	152.25	7.8	11.88		27	4.11	
19	HI MAG	2.46	0.15	525	20000	129.15	17.0	21.96		29	3.75	
20	HI MAG	0.32	0.15	525	18750	15.75	6.8	1.07		64	1.01	
21	HI MAG	1.91	0.07	245	28125	65.81	50.0	32.90		100	6.58	
22	HI MAG	0.54	0.07	245	22500	14.88	28.0	4.17		430	6.40	
23	HI MAG	0.23	0.05	175	15000	3.02	5.2	0.16		36	0.11	
24	HI MAG	4.00	0.07	245	20000	98.00	49.0	48.02		33	3.23	
25	HI MAG	0.28	0.07	245	25000	8.58	11.2	0.96		67	0.57	
26	HI MAG	1.42	0.05	175	27500	34.17	22.0	7.52		150	5.13	
27	HI MAG	7.92	0.07	245	15000	145.53	26.5	38.57		12	1.75	
28	HI MAG	4.64	0.07	245	17500	99.47	34.0	33.82		17	1.69	
29	HI MAG	0.40	0.07	245	17500	8.58	8.2	0.70		27	0.23	
30	HI MAG	43.77	0.15	525	20000	2297.93	7.2	165.45		10	22.98	
31	HI MAG	15.64	0.07	245	20000	388.08	1.8	6.99		4	1.55	
SUBTOTAL						4745.11		625.30	13.2		126.24	27

- MASS (%): The percentage mass of the Hutch 1, <0.5mm, 'HI Mag' product located at that sample site.
- VOLUME OF SAMPLE (cu m): The measured volume of the sample.
- CALCULATED MASS OF HUTCH 1 CONCENTRATES (kg) = Volume of Sample x Density of Sample.
(Note: The density for the Hutch 1 and Hutch 2+3 samples is estimated at approximately 3500kg/cu m.)
- CALCULATED VOLUME TO 2m DEPTH (cu m): Volume calculations were performed by assigning areas of influence to each of the bulk samples. Calculations were then made to a depth of 2m.

• TOTAL MASS (t) = $\frac{\text{Calculated Volume to 2m}}{\text{Sample Vol.}} \times \frac{\text{Total Mass of Hutch 1 Concentrates}}{100} \times \frac{\text{Mass (\%)}}{100} \times \frac{1 \text{ tonne}}{1000 \text{ kg}}$ (Note: Sample Vol = 2 cu m for all bulk samples)

- Cr2O3 (%): Assayed Cr2O3 value for a representative sub-sample.
- TOTAL Cr2O3 MASS (t) = Total Mass (t) x Cr2O3 (%) / 100
- AVERAGE Cr2O3 (%) = Total Cr2O3 Mass (t) / Total Mass (t) x 100%
- IR (ppb): Assayed Ir value for a representative sub-sample.
- TOTAL IR MASS (g) = Total Mass (t) x Ir / 1,000,000,000 x 1000kg/t x 1000g/kg
- AVERAGE Ir (ppb) = Total Ir (g) / Total Mass (t) x 1 tonne / 1000kg x 1kg / 1000g

020

690030

VOLUME, MASS, AND GRADE CALCULATIONS FOR THE HUTCH 1, <0.5mm, MAGNETIC SEPARATION PRODUCTS
(continued)

SAMPLE SITE	MAGNETIC SEPARATION	MASS (%)	VOLUME OF SAMPLE (cu m)	CALC. MASS OF HUTCH 1 CONCS. (kg)	CALC. VOL. TO 2m DEPTH (cu m)	TOTAL MASS (t)	Cr203 (%)	TOTAL Cr203 MASS (t)	AVERAGE Cr203 (%)	IR (ppb)	TOTAL IR MASS (g)	AVERAGE IR (ppb)
02	MAG 1	0.28	0.13	455	22500	14.33	43.0	6.16		42	0.60	
03	MAG 1	2.12	0.05	175	25000	46.38	38.0	17.62		32	1.48	
04	MAG 1	0.38	0.20	700	20000	26.60	15.5	4.12		64	1.70	
05	MAG 1	2.54	0.10	350	20000	88.90	26.5	23.56		69	6.13	
06	MAG 1	4.44	0.07	245	25000	135.98	22.5	30.59		18	2.45	
07	MAG 1	1.70	0.07	245	11250	23.43	36.0	8.43		38	0.89	
08	MAG 1	3.59	0.05	175	11875	37.90	60.0	22.38		17	0.63	
09	MAG 1	4.18	0.07	245	16875	86.41	54.0	46.66		50	4.32	
10	MAG 1	10.59	0.10	350	31250	579.14	12.0	69.50		23	13.32	
11	MAG 1	8.68	0.20	700	25000	759.50	46.0	349.37		51	38.73	
12	MAG 1	6.66	0.05	175	25000	145.69	29.5	42.98		130	18.94	
13	MAG 1	6.77	0.07	245	15000	124.40	18.5	23.01		70	8.71	
14	MAG 1	1.90	0.07	245	17500	40.73	18.0	7.33		75	3.05	
15	MAG 1	1.40	0.10	350	19375	47.47	33.0	15.66		130	6.17	
16	MAG 1	7.83	0.07	245	25000	239.79	33.0	79.13		40	9.59	
17	MAG 1	0.84	0.12	420	20000	35.28	38.0	13.41		110	3.88	
18	MAG 1	12.00	0.10	350	20000	420.00	16.0	67.20		30	12.60	
19	MAG 1	2.87	0.15	525	20000	150.68	28.0	42.19		23	3.47	
20	MAG 1	0.84	0.15	525	18750	41.34	15.5	6.41		150	6.20	
21	MAG 1	11.13	0.07	245	28125	383.46	62.0	237.75		50	19.17	
22	MAG 1	8.53	0.07	245	22500	235.11	45.0	105.80		34	7.99	
23	MAG 1	1.43	0.05	175	15000	18.77	39.0	7.32		65	1.22	
24	MAG 1	5.38	0.07	245	20000	131.81	50.0	65.91		0	0.00	
25	MAG 1	14.20	0.07	245	25000	434.88	46.0	200.04		56	24.35	
26	MAG 1	8.60	0.05	175	27500	206.94	38.0	78.64		32	6.62	
27	MAG 1	4.73	0.07	245	15000	86.91	48.0	41.72		23	2.00	
28	MAG 1	5.05	0.07	245	17500	108.26	54.0	58.46		76	8.23	
29	MAG 1	2.77	0.07	245	17500	59.38	42.0	24.94		410	24.35	
30	MAG 1	5.65	0.15	525	20000	296.63	48.0	142.38		36	10.68	
31	MAG 1	5.13	0.07	245	20000	125.69	52.0	65.36		40	5.03	
						SUBTOTAL		5131.17	1904.03	37.1	252.52	49

010

693051

VOLUME, MASS, AND GRADE CALCULATIONS FOR THE HUTCH 1, <0.5mm, MAGNETIC SEPARATION PRODUCTS
(continued)

SAMPLE SITE	MAGNETIC SEPARATION	MASS (%)	VOLUME OF SAMPLE (cu m)	CALC. MASS OF HUTCH 1 CONCS. (kg)	CALC. VOL. TO 2m DEPTH (cu m)	TOTAL MASS (t)	Cr2O3 (%)	TOTAL Cr2O3 MASS (t)	AVERAGE Cr2O3 (%)	IR (ppb)	TOTAL IR MASS (g)	AVERAGE IR (ppb)
02	NON MAG	0.45	0.13	455	22500	23.03	5.6	1.29		1300	29.94	
03	NON MAG	1.88	0.05	175	25000	41.13	6.2	2.55		1900	78.14	
04	NON MAG	1.41	0.20	700	20000	98.70	7.2	7.11		1600	157.92	
06	NON MAG	0.49	0.07	245	25000	15.01	8.4	1.26		2800	42.02	
07	NON MAG	1.14	0.07	245	11250	15.71	18.5	2.91		1800	28.28	
08	NON MAG	3.87	0.05	175	11875	40.21	58.0	22.52		84	3.38	
09	NON MAG	1.28	0.07	245	16875	26.46	33.0	8.73		740	19.58	
10	NON MAG	0.23	0.10	350	31250	12.58	1.8	0.23		1700	21.38	
11	NON MAG	6.50	0.20	700	25000	568.75	21.5	122.28		1300	739.38	
12	NON MAG	2.27	0.05	175	25000	49.66	13.5	6.70		2300	114.21	
13	NON MAG	2.37	0.07	245	15000	43.55	4.2	1.83		3000	130.65	
14	NON MAG	1.21	0.07	245	17500	25.94	3.1	0.80		1900	49.28	
15	NON MAG	0.55	0.10	350	19375	18.45	5.2	0.97		3100	57.81	
16	NON MAG	2.84	0.07	245	25000	87.59	27.3	23.91		130	11.39	
17	NON MAG	0.58	0.12	420	20000	24.36	13.5	3.29		5400	131.54	
18	NON MAG	4.32	0.10	350	20000	151.20	15.0	22.68		20	3.02	
19	NON MAG	1.19	0.15	525	20000	62.48	12.0	7.50		2400	149.94	
20	NON MAG	0.61	0.15	525	18750	30.02	3.9	1.17		5200	156.12	
21	NON MAG	0.34	0.07	245	28125	11.71	20.0	2.34		25000	292.85	
22	NON MAG	1.06	0.07	245	22500	29.22	33.0	9.64		16000	467.46	
23	NON MAG	0.28	0.05	175	15000	3.68	6.4	0.24		8300	30.50	
24	NON MAG	2.87	0.07	245	20000	70.32	40.0	28.13		2000	140.63	
25	NON MAG	9.03	0.07	245	25000	276.54	38.0	105.09		350	96.79	
26	NON MAG	0.22	0.05	175	27500	5.29	4.1	0.22		13000	68.82	
27	NON MAG	0.85	0.07	245	15000	15.62	4.7	0.73		720	11.25	
28	NON MAG	1.45	0.07	245	17500	31.08	3.0	0.93		75	2.33	
29	NON MAG	0.34	0.07	245	17500	7.29	4.8	0.35		3600	26.24	
30	NON MAG	1.46	0.15	525	20000	76.65	40.0	30.66		100	7.67	
31	NON MAG	1.71	0.07	245	20000	41.90	45.0	18.85		7	0.29	
					SUBTOTAL	1904.31		434.90	22.8		3068.81	1612
					SUBTOTAL - FOR MAG 1, MAG 2, AND MIDS	8892.51		3277.50	36.9		481.36	54
					GRAND TOTAL - FOR ALL HUTCH 1, <0.5mm, MAGNETIC PRODUCTS.	15541.93		4337.71	27.9		3676.41	237

002

693053

VOLUME, MASS, AND GRADE CALCULATIONS FOR THE HUTCH 1, 0.5-2mm, MAGNETIC SEPARATION PRODUCTS

SAMPLE SITE	MAGNETIC SEPARATION	*MASS (%)	*VOLUME OF SAMPLE (cu m)	*CALC. MASS OF HUTCH 1 CONCS. (kg)	*CALCULATED VOLUME TO 2m DEPTH (cu m)	*TOTAL MASS (t)	*Cr-203 (%)	*TOTAL Cr203 MASS (t)	*AVERAGE Cr203 (%)
02	HI MAG	21.32	0.13	455	22500	1091.32	3.2	34.92	
03	HI MAG	15.21	0.05	175	25000	332.72	4.5	14.97	
04	HI MAG	16.26	0.20	700	20000	1138.20	6.5	73.98	
05	HI MAG	19.22	0.10	350	20000	672.70	6.5	43.73	
06	HI MAG	9.68	0.07	245	25000	296.45	6.5	19.27	
07	HI MAG	3.50	0.07	245	11250	48.23	6.5	3.14	
08	HI MAG	8.14	0.05	175	11875	84.58	2.0	1.69	
09	HI MAG	10.51	0.07	245	16875	217.26	2.0	4.35	
10	HI MAG	12.25	0.10	350	31250	669.92	6.5	43.54	
11	HI MAG	6.41	0.20	700	25000	560.88	27.6	154.80	
12	HI MAG	16.82	0.05	175	25000	367.94	6.5	23.92	
13	HI MAG	11.52	0.07	245	15000	211.68	6.5	13.76	
14	HI MAG	14.55	0.07	245	17500	311.92	6.5	20.27	
15	HI MAG	7.94	0.10	350	19375	269.22	6.5	17.50	
16	HI MAG	3.37	0.07	245	25000	103.21	5.7	5.88	
17	HI MAG	12.59	0.12	420	20000	528.78	6.5	34.37	
18	HI MAG	2.35	0.10	350	20000	82.25	9.2	7.57	
19	HI MAG	9.42	0.15	525	20000	494.55	6.5	32.15	
20	HI MAG	3.79	0.15	525	18750	186.54	6.5	12.13	
21	HI MAG	13.50	0.07	245	28125	465.12	3.7	17.21	
22	HI MAG	9.29	0.07	245	22500	256.06	7.2	18.44	
23	HI MAG	6.92	0.05	175	15000	90.83	6.5	5.90	
24	HI MAG	7.35	0.07	245	20000	180.08	6.5	11.70	
25	HI MAG	2.26	0.07	245	25000	69.21	6.5	4.50	
26	HI MAG	9.75	0.05	175	27500	234.61	6.5	15.25	
27	HI MAG	15.61	0.07	245	15000	286.83	2.7	7.74	
28	HI MAG	17.44	0.07	245	17500	373.87	6.5	24.30	
29	HI MAG	16.24	0.07	245	17500	348.15	6.5	22.63	
30	HI MAG	25.97	0.15	525	20000	1363.43	3.4	46.36	
31	HI MAG	17.51	0.07	245	20000	429.00	6.5	27.88	
SUBTOTAL						11765.50		763.85	6.5

- * MASS (%): The percentage mass of the Hutch 1, 0.5-2mm, 'Hi Mag' product located at that sample site.
- * VOLUME OF SAMPLE (cu m): The measured volume of the sample.
- * CALCULATED MASS OF HUTCH 1 CONCENTRATES (kg) = Volume of Sample x Density of Sample.
(Note: The density for the Hutch 1 and Hutch 2+3 samples is estimated at approximately 3500kg/cu m.)
- * CALCULATED VOLUME TO 2m DEPTH (cu m): Volume calculations were performed by assigning areas of influence to each of the bulk samples. Calculations were then made to a depth of 2m.

$$\text{* TOTAL MASS (t)} = \frac{\text{Calculated Volume to 2m}}{\text{Sample Vol.}} \times \frac{\text{Total Mass of Hutch 1 Concentrates}}{100} \times \frac{\text{Mass (\%)}}{100} \times \frac{1 \text{ tonne}}{1000 \text{ kg}}$$

(Note: Sample Volume = 2 cu m for all bulk samples)

- * Cr203 (%): Assayed Cr203 value for a representative sub-sample.
- * TOTAL Cr203 MASS (t) = Total Mass (t) x Cr203 (%) / 100
- * AVERAGE Cr203 (%) = Total Cr203 Mass (t) / Total Mass (t) x 100%

003

699054

VOLUME, MASS, AND GRADE CALCULATIONS FOR THE HUTCH 1, 0.5-2mm, MAGNETIC SEPARATION PRODUCTS
(continued)

SAMPLE SITE	MAGNETIC SEPARATION	MASS (%)	VOLUME OF SAMPLE (cu m)	CALC. MASS OF HUTCH 1 CONCS. (kg)	CALCULATED VOLUME TO 2m DEPTH (cu m)	TOTAL MASS (t)	Cr203 (%)	TOTAL Cr203 MASS (t)	AVERAGE Cr203 (%)
02	MAG 1	8.86	0.13	455	22500	453.52	3.8	17.23	
03	MAG 1	12.72	0.05	175	25000	278.25	9.6	26.71	
04	MAG 1	6.10	0.20	700	20000	427.00	13.3	56.79	
05	MAG 1	6.51	0.10	350	20000	227.85	13.3	30.30	
06	MAG 1	4.39	0.07	245	25000	134.44	13.3	17.88	
07	MAG 1	9.99	0.07	245	11250	137.67	13.3	18.31	
08	MAG 1	8.87	0.05	175	11875	92.16	2.6	2.40	
09	MAG 1	7.79	0.07	245	16875	161.03	4.8	7.73	
10	MAG 1	8.22	0.10	350	31250	449.53	13.3	59.79	
11	MAG 1	6.41	0.20	700	25000	560.88	28.8	161.53	
12	MAG 1	6.40	0.05	175	25000	140.00	13.3	18.62	
13	MAG 1	14.45	0.07	245	15000	265.52	13.3	35.31	
14	MAG 1	9.11	0.07	245	17500	195.30	13.3	25.97	
15	MAG 1	10.45	0.10	350	19375	354.32	13.3	47.12	
16	MAG 1	12.12	0.07	245	25000	371.18	16.4	60.87	
17	MAG 1	7.59	0.12	420	20000	318.78	13.3	42.40	
18	MAG 1	3.56	0.10	350	20000	124.60	11.6	14.45	
19	MAG 1	12.54	0.15	525	20000	658.35	13.3	87.56	
20	MAG 1	4.99	0.15	525	18750	245.60	13.3	32.67	
21	MAG 1	12.02	0.07	245	28125	414.13	10.2	42.24	
22	MAG 1	11.91	0.07	245	22500	328.27	15.1	49.57	
23	MAG 1	4.43	0.05	175	15000	58.14	13.3	7.73	
24	MAG 1	9.46	0.07	245	20000	231.77	13.3	30.83	
25	MAG 1	7.50	0.07	245	25000	229.69	18.4	42.26	
26	MAG 1	8.58	0.05	175	27500	206.46	13.3	27.46	
27	MAG 1	4.35	0.07	245	15000	79.93	2.8	2.24	
28	MAG 1	7.42	0.07	245	17500	159.07	13.3	21.16	
29	MAG 1	12.40	0.07	245	17500	265.83	13.3	35.35	
30	MAG 1	3.17	0.15	525	20000	166.43	3.7	6.16	
31	MAG 1	8.80	0.07	245	20000	215.60	13.3	28.67	
					SUBTOTAL	7951.29		1057.33	13.3

004

693053

VOLUME, MASS, AND GRADE CALCULATIONS FOR THE HUTCH 1, 0.5-2mm, MAGNETIC SEPARATION PRODUCTS
(continued)

SAMPLE SITE	MAGNETIC SEPARATION	MASS (%)	VOLUME OF SAMPLE (cu m)	CALC. MASS OF HUTCH 1 CONCS. (kg)	CALCULATED VOLUME TO 2m DEPTH (cu m)	TOTAL MASS (t)	Cr2O3 (%)	TOTAL Cr2O3 MASS (t)	AVERAGE Cr2O3 (%)
02	MAG 2	3.86	0.13	455	22500	197.58	5.0	9.88	
03	MAG 2	9.49	0.05	175	25000	207.59	8.1	16.82	
04	MAG 2	2.91	0.20	700	20000	203.70	14.5	29.54	
05	MAG 2	12.04	0.10	350	20000	421.40	14.5	61.10	
06	MAG 2	8.38	0.07	245	25000	256.64	14.5	37.21	
07	MAG 2	32.69	0.07	245	11250	450.51	14.5	65.32	
08	MAG 2	5.81	0.05	175	11875	60.37	15.6	9.42	
09	MAG 2	12.09	0.07	245	16875	249.92	14.8	36.99	
10	MAG 2	9.86	0.10	350	31250	539.22	14.5	78.19	
11	MAG 2	7.48	0.20	700	25000	654.50	17.0	111.27	
12	MAG 2	4.70	0.05	175	25000	102.81	14.5	14.91	
13	MAG 2	4.46	0.07	245	15000	81.95	14.5	11.88	
14	MAG 2	3.35	0.07	245	17500	71.82	14.5	10.41	
15	MAG 2	2.02	0.10	350	19375	68.49	14.5	9.93	
16	MAG 2	15.70	0.07	245	25000	480.81	20.2	97.12	
17	MAG 2	2.64	0.12	420	20000	110.88	14.5	16.08	
18	MAG 2	8.10	0.10	350	20000	283.50	11.1	31.47	
19	MAG 2	6.89	0.15	525	20000	361.73	14.5	52.45	
20	MAG 2	7.84	0.15	525	18750	385.88	14.5	55.95	
21	MAG 2	2.92	0.07	245	28125	100.60	19.9	20.02	
22	MAG 2	21.74	0.07	245	22500	599.21	13.3	79.69	
23	MAG 2	5.54	0.05	175	15000	72.71	14.5	10.54	
24	MAG 2	4.12	0.07	245	20000	100.94	14.5	14.64	
25	MAG 2	10.20	0.07	245	25000	312.38	7.1	22.18	
26	MAG 2	13.10	0.05	175	27500	315.22	14.5	45.71	
27	MAG 2	6.60	0.07	245	15000	121.28	6.9	8.37	
28	MAG 2	7.06	0.07	245	17500	151.35	14.5	21.95	
29	MAG 2	3.98	0.07	245	17500	85.32	14.5	12.37	
30	MAG 2	2.88	0.15	525	20000	151.20	4.2	6.35	
31	MAG 2	2.28	0.07	245	20000	55.86	14.5	8.10	
07	MAG 3	0.94	0.07	245	11250	12.95	14.5	1.88	
11	MAG 3	10.00	0.20	700	25000	875.00	19.9	174.13	
					SUBTOTAL	8143.32		1181.85	14.5

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693056

VOLUME, MASS, AND GRADE CALCULATIONS FOR THE HUTCH 1, 0.5-2mm, MAGNETIC SEPARATION PRODUCTS
(continued)

SAMPLE SITE	MAGNETIC SEPARATION	MASS (%)	VOLUME OF SAMPLE (cu m)	CALC. MASS OF HUTCH 1 CONCS. (kg)	CALCULATED VOLUME TO 2m DEPTH (cu m)	TOTAL MASS (t)	Cr-203 (%)	TOTAL Cr-203 MASS (t)	AVERAGE Cr-203 (%)
02	MID	5.78	0.13	455	22500	295.86	3.9	11.54	
03	MID	14.55	0.05	175	25000	318.28	5.0	15.91	
04	MID	4.60	0.20	700	20000	322.00	9.8	31.56	
05	MID	0.67	0.10	350	20000	23.45	9.8	2.30	
06	MID	2.54	0.07	245	25000	77.79	9.8	7.62	
07	MID	2.61	0.07	245	11250	35.97	9.8	3.52	
08	MID	4.66	0.05	175	11875	48.42	14.4	6.97	
09	MID	3.15	0.07	245	14875	65.12	5.3	3.45	
10	MID	8.45	0.10	350	31250	462.11	9.8	45.29	
11	MID	4.83	0.20	700	25000	422.63	11.7	49.45	
12	MID	1.86	0.05	175	25000	40.69	9.8	3.99	
13	MID	3.62	0.07	245	15000	66.52	9.8	6.52	
14	MID	2.17	0.07	245	17500	46.52	9.8	4.56	
15	MID	2.01	0.10	350	19375	68.15	9.8	6.68	
16	MID	14.69	0.07	245	25000	449.88	20.6	92.68	
17	MID	3.25	0.12	420	20000	136.50	9.8	13.38	
18	MID	3.93	0.10	350	20000	137.55	10.8	14.86	
19	MID	10.59	0.15	525	20000	555.98	9.8	54.49	
20	MID	3.13	0.15	525	18750	154.05	9.8	15.10	
21	MID	5.61	0.07	245	28125	193.28	7.8	15.08	
22	MID	1.77	0.07	245	22500	48.79	11.1	5.42	
23	MID	3.36	0.05	175	15000	44.10	9.8	4.32	
24	MID	8.36	0.07	245	20000	204.82	9.8	20.07	
25	MID	8.10	0.07	245	25000	248.06	5.6	13.89	
26	MID	4.46	0.05	175	27500	107.32	9.8	10.52	
27	MID	5.46	0.07	245	15000	100.33	3.7	3.71	
28	MID	4.69	0.07	245	17500	100.54	9.8	9.85	
29	MID	5.76	0.07	245	17500	123.48	9.8	12.10	
30	MID	1.23	0.15	525	20000	64.58	3.1	2.00	
31	MID	3.86	0.07	245	20000	94.57	9.8	9.27	
					SUBTOTAL	5057.32		496.08	9.8

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693037

VOLUME, MASS, AND GRADE CALCULATIONS FOR THE HUTCH 1, 0.5-2mm, MAGNETIC SEPARATION PRODUCTS
(continued)

SAMPLE SITE	MAGNETIC SEPARATION	MASS (t)	VOLUME OF SAMPLE (cu m)	CALC. MASS OF HUTCH 1 CONCS. (kg)	CALCULATED VOLUME TO 2m DEPTH (cu m)	TOTAL MASS (t)	Cr2O3 (%)	TOTAL Cr2O3 MASS (t)	AVERAGE Cr2O3 (%)
02	NON MAG	9.38	0.13	455	22500	480.14	3.6	17.28	
03	NON MAG	17.90	0.05	175	25000	391.56	4.7	18.40	
04	NON MAG	15.37	0.20	700	20000	1075.90	7.4	79.62	
05	NON MAG	2.18	0.10	350	20000	76.30	7.4	5.65	
06	NON MAG	13.23	0.07	245	25000	405.17	7.4	29.98	
07	NON MAG	6.90	0.07	245	11250	95.09	7.4	7.04	
08	NON MAG	15.22	0.05	175	11875	158.15	6.3	9.96	
09	NON MAG	3.95	0.07	245	16875	81.65	3.1	2.53	
10	NON MAG	21.43	0.10	350	31250	1171.95	7.4	86.72	
11	NON MAG	18.73	0.20	700	25000	1638.88	8.4	137.67	
12	NON MAG	9.77	0.05	175	25000	213.72	7.4	15.82	
13	NON MAG	9.79	0.07	245	15000	179.89	7.4	13.31	
14	NON MAG	10.68	0.07	245	17500	228.95	7.4	16.94	
15	NON MAG	9.70	0.10	350	19375	328.89	7.4	24.34	
16	NON MAG	12.98	0.07	245	25000	397.51	16.8	66.78	
17	NON MAG	4.61	0.12	420	20000	193.62	7.4	14.33	
18	NON MAG	0.90	0.10	350	20000	31.50	8.9	2.80	
19	NON MAG	11.45	0.15	525	20000	601.13	7.4	44.48	
20	NON MAG	9.31	0.15	525	18750	458.23	7.4	33.91	
21	NON MAG	8.86	0.07	245	28125	305.25	4.5	13.74	
22	NON MAG	4.43	0.07	245	22500	122.10	5.9	7.20	
23	NON MAG	10.00	0.05	175	15000	131.25	7.4	9.71	
24	NON MAG	11.34	0.07	245	20000	277.83	7.4	20.56	
25	NON MAG	1.41	0.07	245	25000	43.18	7.4	3.20	
26	NON MAG	7.02	0.05	175	27500	168.92	7.4	12.50	
27	NON MAG	4.56	0.07	245	15000	83.79	3.3	2.77	
28	NON MAG	9.27	0.07	245	17500	198.73	7.4	14.71	
29	NON MAG	11.04	0.07	245	17500	236.67	7.4	17.51	
30	NON MAG	3.10	0.15	525	20000	162.75	3.1	5.05	
31	NON MAG	7.66	0.07	245	20000	187.67	7.4	13.89	
SUBTOTAL						10126.37		748.39	7.4
SUBTOTAL - FOR MAG 1, MAG 2, AND MIDS						***** 21151.93 *****		***** 2735.26 *****	***** 12.9 *****
GRAND TOTAL - FOR ALL HUTCH 1, 0.5-2mm, MAGNETIC PRODUCTS						***** 43043.79 *****		***** 4247.50 *****	***** 9.9 *****

007

693058

VOLUME, MASS AND GRADE CALCULATIONS FOR THE HUTCH 1, >2mm, MAGNETIC SEPARATION PRODUCTS

SAMPLE SITE	MAGNETIC SEPARATION	*MASS (%)	*VOLUME OF SAMPLE (cu m)	*CALC. MASS OF HUTCH 1 CONCS. (kg)	*CALCULATED VOLUME TO 2m DEPTH (cu m)	*TOTAL MASS (t)	*Cr203 (%)	*TOTAL Cr203 MASS (t)	*AVERAGE Cr203 (%)
02	HI MAG	22.48	0.13	455	22500	1150.70	2.7	31.07	
03	HI MAG	5.44	0.05	175	25000	119.00	2.7	3.21	
04	HI MAG	18.38	0.20	700	20000	1286.60	2.7	34.74	
05	HI MAG	19.86	0.10	350	20000	695.10	2.7	18.77	
06	HI MAG	23.99	0.07	245	25000	734.69	2.7	19.84	
07	HI MAG	7.10	0.07	245	11250	97.85	2.7	2.64	
08	HI MAG	21.48	0.05	175	11875	223.19	2.1	4.69	
09	HI MAG	21.90	0.07	245	16875	452.71	2.0	9.05	
10	HI MAG	6.51	0.10	350	31250	356.02	2.7	9.61	
11	HI MAG	1.30	0.20	700	25000	113.75	2.7	3.07	
12	HI MAG	19.28	0.05	175	25000	421.75	2.7	11.39	
13	HI MAG	16.83	0.07	245	15000	309.25	2.7	8.35	
14	HI MAG	32.52	0.07	245	17500	697.15	2.7	18.82	
15	HI MAG	27.48	0.10	350	19375	931.74	2.7	25.16	
16	HI MAG	2.41	0.07	245	25000	73.81	3.4	2.51	
17	HI MAG	29.26	0.12	420	20000	1228.92	2.7	33.18	
18	HI MAG	7.96	0.10	350	20000	278.60	3.9	10.87	
19	HI MAG	14.92	0.15	525	20000	783.30	2.7	21.15	
20	HI MAG	11.44	0.15	525	18750	563.06	2.7	15.20	
21	HI MAG	23.05	0.07	245	28125	794.14	3.1	24.62	
22	HI MAG	13.00	0.07	245	22500	358.31	2.7	9.67	
23	HI MAG	23.51	0.05	175	15000	308.57	2.7	8.33	
24	HI MAG	16.22	0.07	245	20000	397.39	2.7	10.73	
25	HI MAG	16.83	0.07	245	25000	515.42	2.7	13.92	
26	HI MAG	15.91	0.05	175	27500	382.83	2.7	10.34	
27	HI MAG	15.60	0.07	245	15000	286.65	2.6	7.45	
28	HI MAG	17.56	0.07	245	17500	376.44	2.7	10.16	
29	HI MAG	19.20	0.07	245	17500	411.60	2.7	11.11	
30	HI MAG	4.86	0.15	525	20000	255.15	2.7	6.89	
31	HI MAG	12.37	0.07	245	20000	303.07	2.3	6.97	
SUBTOTAL						14906.76		403.51	2.7

- MASS (%): The percentage mass of the Hutch 1, >2mm, 'Hi Mag' product located at that sample site.
- VOLUME OF SAMPLE (cu m): The measured volume of the sample.
- CALCULATED MASS OF HUTCH 1 CONCENTRATES (kg) = Volume of Sample x Density of Sample.
(Note: The density for the Hutch 1 and Hutch 2+3 samples is estimated at approximately 3500kg/cu m.)
- CALCULATED VOLUME TO 2m DEPTH (cu m): Volume calculations were performed by assigning areas of influence to each of the bulk samples. Calculations were then made to a depth of 2m.

$$\bullet \text{ TOTAL MASS (t)} = \frac{\text{Calculated Volume to 2m}}{\text{Sample Vol.}} \times \frac{\text{Total Mass of Hutch 1 Concentrates}}{\text{Sample Vol.}} \times \frac{\text{Mass (\%)}}{100} \times \frac{1 \text{ tonne}}{1000 \text{ kg}} \quad (\text{Note: Sample Vol} = 2 \text{ cu m for all bulk samples})$$

- Cr203 (%): Assayed Cr203 value for a representative sub-sample.
- TOTAL Cr203 MASS (t) = Total Mass (t) x Cr203 (%) / 100
- AVERAGE Cr203(%) = Total Cr203 Mass (t) / Total Mass (t) x 100%

008

693069

VOLUME, MASS AND GRADE CALCULATIONS FOR THE HUTCH 1, >2mm, MAGNETIC SEPARATION PRODUCTS
(continued)

SAMPLE SITE	MAGNETIC SEPARATION	MASS (%)	VOLUME OF SAMPLE (cu m)	CALC. MASS OF HUTCH 1 CONCS. (kg)	CALCULATED VOLUME TO 2m DEPTH (cu m)	TOTAL MASS (t)	Cr2O3 (%)	TOTAL Cr2O3 MASS (t)	AVERAGE Cr2O3 (%)
02	MAG 1	17.41	0.13	455	22500	891.17	4.8	42.78	
03	MAG 1	6.95	0.05	175	25000	152.03	4.8	7.30	
04	MAG 1	14.33	0.20	700	20000	1003.10	4.8	48.15	
05	MAG 1	9.06	0.10	350	20000	317.10	4.8	15.22	
06	MAG 1	17.03	0.07	245	25000	521.54	4.8	25.03	
07	MAG 1	9.15	0.07	245	11250	126.10	4.8	6.05	
08	MAG 1	10.03	0.05	175	11875	104.22	2.5	2.61	
09	MAG 1	7.45	0.07	245	16875	154.01	4.8	7.39	
10	MAG 1	11.75	0.10	350	31250	642.58	4.8	30.84	
11	MAG 1	3.67	0.20	700	25000	321.13	4.8	15.41	
12	MAG 1	12.50	0.05	175	25000	273.44	4.8	13.13	
13	MAG 1	17.46	0.07	245	15000	320.83	4.8	15.40	
14	MAG 1	10.29	0.07	245	17500	220.59	4.8	10.59	
15	MAG 1	21.36	0.10	350	19375	731.02	4.8	35.09	
16	MAG 1	3.43	0.07	245	25000	105.04	3.4	3.57	
17	MAG 1	25.69	0.12	420	20000	1078.98	4.8	51.79	
18	MAG 1	15.95	0.10	350	20000	558.25	8.5	47.45	
19	MAG 1	5.85	0.15	525	20000	307.13	4.8	14.74	
20	MAG 1	34.39	0.15	525	18750	1692.63	4.8	81.25	
21	MAG 1	8.46	0.07	245	28125	291.47	3.3	9.62	
22	MAG 1	5.37	0.07	245	22500	148.01	4.8	7.10	
23	MAG 1	21.39	0.05	175	15000	280.74	4.8	13.48	
24	MAG 1	4.48	0.07	245	20000	109.76	4.8	5.27	
25	MAG 1	3.38	0.07	245	25000	103.51	4.8	4.97	
26	MAG 1	15.25	0.05	175	27500	366.95	4.8	17.61	
27	MAG 1	17.61	0.07	245	15000	323.58	2.8	9.06	
28	MAG 1	13.87	0.07	245	17500	297.34	3.0	8.92	
29	MAG 1	14.65	0.07	245	17500	314.06	4.8	15.07	
30	MAG 1	3.20	0.15	525	20000	168.00	4.8	8.06	
31	MAG 1	12.76	0.07	245	20000	312.62	4.8	15.01	
					SUBTOTAL	12236.94		587.96	4.8

039

090660

VOLUME, MASS AND GRADE CALCULATIONS FOR THE HUTCH 1, >2mm, MAGNETIC SEPARATION PRODUCTS
(continued)

SAMPLE SITE	MAGNETIC SEPARATION	MASS (%)	VOLUME OF SAMPLE (cu m)	CALC. MASS OF HUTCH 1 CONCS. (kg)	CALCULATED VOLUME TO 2m DEPTH (cu m)	TOTAL MASS (t)	Cr-203 (%)	TOTAL Cr203 MASS (t)	AVERAGE Cr203 (%)
02	MAG 2	4.91	0.13	455	22500	251.33	5.9	14.83	
03	MAG 2	4.87	0.05	175	25000	106.53	5.9	6.29	
04	MAG 2	10.32	0.20	700	20000	722.40	5.9	42.62	
05	MAG 2	14.04	0.10	350	20000	491.40	5.9	28.99	
06	MAG 2	8.57	0.07	245	25000	262.46	5.9	15.48	
09	MAG 2	6.58	0.07	245	16875	136.02	2.6	3.54	
11	MAG 2	7.11	0.20	700	25000	622.13	5.9	36.71	
12	MAG 2	3.11	0.05	175	25000	68.03	5.9	4.01	
13	MAG 2	5.05	0.07	245	15000	92.79	5.9	5.47	
14	MAG 2	3.60	0.07	245	17500	77.18	5.9	4.55	
15	MAG 2	9.55	0.10	350	19375	323.80	5.9	19.10	
16	MAG 2	11.61	0.07	245	25000	355.56	9.1	32.36	
17	MAG 2	6.18	0.12	420	20000	259.56	5.9	15.31	
18	MAG 2	7.63	0.10	350	20000	267.05	7.9	21.10	
19	MAG 2	10.44	0.15	525	20000	548.10	5.9	32.34	
20	MAG 2	10.08	0.15	525	18750	496.13	5.9	29.27	
21	MAG 2	5.24	0.07	245	28125	180.53	3.7	6.68	
22	MAG 2	13.16	0.07	245	22500	362.72	5.9	21.40	
23	MAG 2	13.80	0.05	175	15000	181.13	5.9	10.69	
24	MAG 2	14.79	0.07	245	20000	362.36	5.9	21.38	
25	MAG 2	9.45	0.07	245	25000	289.41	5.9	17.07	
27	MAG 2	4.41	0.07	245	15000	81.03	3.1	2.51	
28	MAG 2	4.50	0.07	245	17500	96.47	2.8	2.70	
29	MAG 2	6.04	0.07	245	17500	129.48	5.9	7.64	
30	MAG 2	1.94	0.15	525	20000	101.85	5.9	6.01	
31	MAG 2	4.50	0.07	245	20000	110.25	2.8	3.09	
18	MID	5.25	0.10	350	20000	183.75	5.9	10.84	
					SUBTOTAL	7159.44		421.99	5.9

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693061

VOLUME, MASS AND GRADE CALCULATIONS FOR THE HUTCH 1, >2mm, MAGNETIC SEPARATION PRODUCTS
(continued)

SAMPLE SITE	MAGNETIC SEPARATION	MASS (%)	VOLUME OF SAMPLE (cu m)	CALC. MASS OF HUTCH 1 CONCS. (kg)	CALCULATED VOLUME TO 2m DEPTH (cu m)	TOTAL MASS (t)	Cr203 (%)	TOTAL Cr203 MASS (t)	AVERAGE Cr203 (%)
02	NON MAG	4.88	0.13	455	22500	249.80	2.0	5.00	
03	NON MAG	6.09	0.05	175	25000	133.22	2.0	2.66	
04	NON MAG	8.70	0.20	700	20000	609.00	2.0	12.18	
05	NON MAG	11.11	0.10	350	20000	388.85	2.0	7.78	
06	NON MAG	4.45	0.07	245	25000	136.28	2.0	2.73	
07	NON MAG	17.58	0.07	245	11250	242.27	2.0	4.85	
08	NON MAG	12.83	0.05	175	11875	133.31	2.0	2.67	
09	NON MAG	6.65	0.07	245	16875	137.47	2.0	2.75	
10	NON MAG	3.72	0.10	350	31250	203.44	2.0	4.07	
11	NON MAG	4.87	0.20	700	25000	426.13	2.0	8.52	
12	NON MAG	5.91	0.05	175	25000	129.28	2.0	2.59	
13	NON MAG	2.48	0.07	245	15000	45.57	2.0	0.91	
14	NON MAG	7.34	0.07	245	17500	157.35	2.0	3.15	
15	NON MAG	5.88	0.10	350	19375	199.37	2.0	3.99	
16	NON MAG	1.85	0.07	245	25000	56.64	2.0	1.13	
17	NON MAG	5.33	0.12	420	20000	223.84	2.0	4.48	
18	NON MAG	16.93	0.10	350	20000	592.55	2.0	11.85	
19	NON MAG	3.86	0.15	525	20000	202.65	2.0	4.05	
20	NON MAG	11.90	0.15	525	18750	585.70	2.0	11.71	
21	NON MAG	2.92	0.07	245	28125	100.60	2.0	2.01	
22	NON MAG	3.12	0.07	245	22500	86.00	2.0	1.72	
23	NON MAG	7.49	0.05	175	15000	98.31	2.0	1.97	
24	NON MAG	6.66	0.07	245	20000	163.17	2.0	3.26	
25	NON MAG	10.38	0.07	245	25000	317.89	2.0	6.36	
26	NON MAG	13.02	0.05	175	27500	313.29	2.0	6.27	
27	NON MAG	8.57	0.07	245	15000	157.47	2.0	3.15	
28	NON MAG	4.72	0.07	245	17500	101.19	2.0	2.02	
29	NON MAG	6.23	0.07	245	17500	133.56	2.0	2.67	
30	NON MAG	0.86	0.15	525	20000	45.15	2.0	0.90	
31	NON MAG	2.65	0.07	245	20000	64.93	2.0	1.30	
SUBTOTAL						6434.30		128.69	2.0
SUBTOTAL - FOR MAG 1, MAG 2, AND MIDS						19396.37		1009.95	5.2
GRAND TOTAL - FOR ALL HUTCH 1, >2mm, MAGNETIC PRODUCTS.						40737.44		1542.15	3.8

VOLUME, MASS, AND GRADE CALCULATIONS FOR THE HUTCH 2+3, <0.5mm, MAGNETIC SEPARATION PRODUCTS

SAMPLE SITE	MAGNETIC SEPARATION	*MASS (%)	*VOLUME OF SAMPLE (cu m)	*CALC MASS OF HUTCH 2+3 CONC (kg)	*CALCULATED VOLUME TO 2m DEPTH (cu m)	*TOTAL MASS (t)	*Cr203 (%)	*TOTAL Cr203 MASS (t)	*AVERAGE Cr203 (%)	*IR (ppb)	*TOTAL IR MASS (g)	*AVERAGE IR (ppb)
02	HI MAG	8.49	0.15	525	22500	501.44	24.0	120.35		31	15.54	
03	HI MAG	7.24	0.05	175	25000	138.38	31.0	49.10		74	11.72	
04	HI MAG	1.36	0.15	525	20000	71.40	6.4	4.57		34	2.43	
05	HI MAG	11.09	0.13	455	20000	504.60	8.4	42.39		20	10.09	
06	HI MAG	2.48	0.07	245	25000	75.95	18.8	14.28		120	9.11	
07	HI MAG	3.32	0.07	245	11250	45.75	18.8	8.60		32	1.46	
08	HI MAG	5.34	0.05	175	11875	55.49	5.8	3.22		16	0.89	
09	HI MAG	7.26	0.07	245	16875	150.08	4.4	6.60		5.5	0.83	
10	HI MAG	3.72	0.10	350	31250	203.44	18.8	38.25		32	6.51	
11	HI MAG	12.42	0.10	350	25000	543.38	18.8	102.15		32	17.39	
12	HI MAG	3.59	0.07	245	25000	109.94	18.8	20.67		38	4.18	
13	HI MAG	4.70	0.07	245	15000	86.36	18.0	15.55		58	5.01	
14	HI MAG	2.17	0.07	245	17500	46.52	5.8	2.70		33	1.54	
15	HI MAG	0.77	0.08	280	19375	20.89	7.1	1.48		10	0.21	
16	HI MAG	10.80	0.12	420	25000	567.00	10.2	57.83		67	37.99	
17	HI MAG	0.34	0.40	1400	20000	47.60	42.0	19.99		36	1.71	
18	HI MAG	7.56	0.13	455	20000	343.98	5.8	19.95		28	9.63	
19	HI MAG	8.38	0.20	700	20000	586.60	9.8	57.49		43	25.22	
20	HI MAG	0.83	0.20	700	18750	54.47	8.4	4.58		53	2.89	
21	HI MAG	7.13	0.07	245	28125	245.65	51.3	126.02		33	8.11	
22	HI MAG	6.47	0.07	245	22500	178.33	40.0	71.33		40	7.13	
23	HI MAG	0.79	0.07	245	15000	14.52	13.6	1.97		43	0.62	
24	HI MAG	5.53	0.03	105	20000	58.07	46.1	26.77		36	2.09	
25	HI MAG	4.18	0.07	245	25000	128.01	46.8	59.91		66	8.45	
26	HI MAG	0.67	0.07	245	27500	22.57	6.6	1.49		24	0.54	
27	HI MAG	13.63	0.05	175	15000	178.89	4.7	8.41		4	0.72	
28	HI MAG	9.00	0.05	175	17500	137.81	5.6	7.72		14	1.93	
29	HI MAG	1.76	0.07	245	17500	37.73	26.0	9.81		24	0.91	
30	HI MAG	32.34	0.07	245	20000	792.33	2.5	19.81		15	11.88	
31	HI MAG	21.80	0.07	245	20000	534.10	55.9	298.56		0	0.00	
SUBTOTAL						6501.26		1221.53	18.8		206.73	32

- * MASS (%): The percentage mass of the Hutch 2+3, <0.5mm, 'Hi Mag' product located at that sample site.
- * VOLUME OF SAMPLE (cu m): The measured volume of the sample.
- * CALCULATED MASS OF HUTCH 1 CONCENTRATES (kg) = Volume of Sample x Density of Sample.
(Note: The density for the Hutch 1 and Hutch 2+3 samples is estimated at approximately 3500kg/cu m.)
- * CALCULATED VOLUME TO 2m DEPTH (cu m): Volume calculations were performed by assigning areas of influence to each of the bulk samples. Calculations were then made to a depth of 2m.

$$\bullet \text{ TOTAL MASS (t)} = \frac{\text{Calculated Volume to 2m}}{\text{Sample Vol.}} \times \frac{\text{Total Mass of Hutch 2+3 Concentrates}}{100} \times \frac{\text{Mass (\%)}}{100} \times \frac{1 \text{ tonne}}{1000 \text{ kg}} \quad (\text{Note: Sample Vol} = 2 \text{ cu m for all bulk samples})$$

- * Cr203 (%): Assayed Cr203 value for a representative sub-sample.
- * TOTAL Cr203 MASS (t) = Total Mass (t) x Cr203 (%) / 100
- * AVERAGE Cr203 (%) = Total Cr203 Mass (t) / Total Mass (t) x 100%
- * IR (ppb): Assayed Ir value for a representative sub-sample.
- * TOTAL IR MASS (g) = Total Mass (t) x Ir / 1,000,000,000 x 1000kg/t x 1000g/kg
- * AVERAGE IR (ppb) = Total Ir (g) / Total Mass (t) x 1 tonne / 1000kg x 1kg / 1000g

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693063

VOLUME, MASS, AND GRADE CALCULATIONS FOR THE HUTCH 2+3, <0.5mm, MAGNETIC SEPARATION PRODUCTS
(continued)

SAMPLE SITE	MAGNETIC SEPARATION	MASS (%)	VOLUME OF SAMPLE (cu m)	CALC MASS OF HUTCH 2+3 CONC (kg)	CALCULATED VOLUME TO 2m DEPTH (cu m)	TOTAL MASS (t)	Cr2O3 (%)	TOTAL Cr2O3 MASS (t)	AVERAGE Cr2O3 (%)	IR (ppb)	TOTAL IR MASS (g)	AVERAGE IR (ppb)
02	MAG 1	6.77	0.15	525	22500	399.85	30.0 ✓	119.96		28	11.20	
03	MAG 1	5.08	0.05	175	25000	111.13	26.5 x	29.45		37	4.11	
04	MAG 1	3.14	0.15	525	20000	164.85	7.8 x	12.86		33	5.44	
05	MAG 1	10.61	0.13	455	20000	482.76	20.5 x	98.96		27	13.03	
06	MAG 1	7.21	0.07	245	25000	220.81	23.6 x	52.11		38	8.39	
07	MAG 1	6.91	0.07	245	11250	95.23	23.6 x	22.47		36	3.43	
08	MAG 1	10.51	0.05	175	11875	109.21	56.0 ✓	61.16		16	1.75	
09	MAG 1	5.92	0.07	245	16875	122.38	56.0 ✓	68.53		36	4.41	
10	MAG 1	8.85	0.10	350	31250	483.98	23.6 x	114.22		36	17.42	
11	MAG 1	12.16	0.10	350	25000	532.00	23.6 x	125.55		36	19.15	
12	MAG 1	4.59	0.07	245	25000	140.57	23.6 x	33.17		18	2.53	
13	MAG 1	12.39	0.07	245	15000	227.67	16.5 x	37.56		55	12.52	
14	MAG 1	8.40	0.07	245	17500	180.08	14.5 ✓	26.11		57	10.26	
15	MAG 1	2.56	0.08	280	19375	69.44	33.4 ✓	23.19		72	5.00	
16	MAG 1	10.00	0.12	420	25000	525.00	10.0 x	52.50		44	23.10	
17	MAG 1	1.41	0.40	1400	20000	197.40	8.2 x	16.19		46	9.08	
18	MAG 1	20.29	0.13	455	20000	923.20	12.0 x	110.78		34	31.39	
19	MAG 1	17.64	0.20	700	20000	1236.20	13.3 ✓	164.41		37	45.74	
20	MAG 1	1.10	0.20	700	18750	72.19	14.5 x	10.47		35	2.53	
21	MAG 1	12.88	0.07	245	28125	443.76	49.3 ✓	218.77		39	17.31	
22	MAG 1	17.35	0.07	245	22500	478.21	36.0 ✓	172.16		43	20.56	
23	MAG 1	2.33	0.07	245	15000	42.81	33.9 ✓	14.51		50	2.14	
24	MAG 1	13.38	0.03	105	20000	140.49	41.9 ✓	58.87		31	4.36	
25	MAG 1	10.46	0.07	245	25000	320.34	38.9 ✓	124.61		24	7.69	
26	MAG 1	2.90	0.07	245	27500	97.69	42.0 ✓	41.03		39	3.81	
27	MAG 1	7.94	0.05	175	15000	104.21	48.0 ✓	50.02		12	1.25	
28	MAG 1	4.33	0.05	175	17500	64.30	47.0 ✓	31.16		34	2.25	
29	MAG 1	3.39	0.07	245	17500	72.67	39.0 ✓	28.34		25	1.82	
30	MAG 1	5.40	0.07	245	20000	132.30	52.0 ✓	68.80		52	6.88	
31	MAG 1	9.58	0.07	245	20000	234.71	31.6 ✓	3.76		15	3.52	
					SUBTOTAL	8427.42		1991.69	23.6		302.07	36

693064

VOLUME, MASS, AND GRADE CALCULATIONS FOR THE HUTCH 2+3, <0.5mm, MAGNETIC SEPARATION PRODUCTS
(continued)

SAMPLE SITE	MAGNETIC SEPARATION	MASS (%)	VOLUME OF SAMPLE (cu m)	CALC MASS OF HUTCH 2+3 CONC (kg)	CALCULATED VOLUME TO 2m DEPTH (cu m)	TOTAL MASS (t)	Cr2O3 (%)	TOTAL Cr2O3 MASS (t)	AVERAGE Cr2O3 (%)	IR (ppb)	TOTAL IR MASS (g)	AVERAGE IR (ppb)
02	MAG 2	2.57	0.15	525	22500	151.79	28.0	42.50		28	4.25	
03	MAG 2	1.83	0.05	175	25000	40.03	24.5	9.81		120	4.80	
04	MAG 2	2.49	0.15	525	20000	130.73	6.0	7.84		23	3.01	
05	MAG 2	3.60	0.13	455	20000	163.80	20.0	32.76		49	8.03	
06	MAG 2	5.19	0.07	245	25000	158.94	25.7	40.85		44	6.99	
07	MAG 2	5.26	0.07	245	11250	72.49	25.7	18.63		61	4.42	
08	MAG 2	4.06	0.05	175	11875	42.19	46.0	19.41		26	1.10	
09	MAG 2	4.34	0.07	245	16875	89.72	46.0	41.27		130	11.66	
10	MAG 2	11.50	0.10	350	31250	628.91	25.7	161.63		61	38.36	
11	MAG 2	8.31	0.10	350	25000	363.56	25.7	93.44		61	22.18	
12	MAG 2	5.14	0.07	245	25000	157.41	25.7	40.46		24	3.78	
13	MAG 2	4.87	0.07	245	15000	89.49	9.8	8.77		44	3.94	
14	MAG 2	3.02	0.07	245	17500	64.74	9.2	5.96		44	2.85	
15	MAG 2	0.84	0.08	280	19375	22.79	32.1	7.31		38	0.87	
16	MAG 2	6.32	0.12	420	25000	331.80	8.2	27.21		53	17.59	
17	MAG 2	0.90	0.40	1400	20000	126.00	32.0	40.32		61	7.69	
18	MAG 2	3.43	0.13	455	20000	156.07	10.4	16.23		34	5.31	
19	MAG 2	5.29	0.20	700	20000	370.30	9.4	34.81		60	22.22	
20	MAG 2	1.15	0.20	700	18750	75.47	10.6	8.00		58	4.38	
21	MAG 2	6.02	0.07	245	28125	207.41	40.5	84.00		21	4.36	
22	MAG 2	2.05	0.07	845	22500	56.50	35.0	19.78		34	1.92	
23	MAG 2	1.94	0.07	245	15000	35.65	28.1	10.02		55	1.96	
24	MAG 2	3.95	0.03	105	20000	41.48	40.0	16.59		27	1.12	
25	MAG 2	6.33	0.07	245	25000	193.86	28.0	54.28		320	62.03	
26	MAG 2	4.47	0.07	245	27500	150.58	45.0	67.76		37	5.57	
27	MAG 2	4.39	0.05	175	15000	57.62	46.0	26.50		25	1.44	
28	MAG 2	4.30	0.05	175	17500	65.84	39.0	25.68		30	1.98	
29	MAG 2	2.48	0.07	245	17500	53.17	26.0	13.82		28	1.49	
30	MAG 2	4.53	0.07	245	20000	110.99	44.0	48.83		34	3.77	
31	MAG 2	7.28	0.07	245	20000	178.36	58.0	103.45		48	8.56	
					SUBTOTAL	4387.65		1127.91	25.7		267.61	61

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693065

VOLUME, MASS, AND GRADE CALCULATIONS FOR THE HUTCH 2+3, <0.5mm, MAGNETIC SEPARATION PRODUCTS
(continued)

SAMPLE SITE	MAGNETIC SEPARATION	MASS (%)	VOLUME OF SAMPLE (cu m)	CALC MASS OF HUTCH 2+3 CONC (kg)	CALCULATED VOLUME TO 2m DEPTH (cu m)	TOTAL MASS (t)	Cr2O3 (%)	TOTAL Cr2O3 MASS (t)	AVERAGE Cr2O3 (%)	IR (ppb)	TOTAL IR MASS (g)	AVERAGE IR (ppb)
02	MID	1.53	0.15	525	22500	90.37	16.5	14.91		32	2.89	
03	MID	1.52	0.05	175	25000	33.25	12.0	3.99		27	0.90	
04	MID	0.53	0.15	525	20000	27.83	4.1	1.14		38	1.06	
05	MID	0.81	0.13	455	20000	36.86	14.0	5.16		62	2.29	
06	MID	1.60	0.07	245	25000	49.00	15.0	7.35		45	2.21	
07	MID	3.94	0.07	245	11250	54.30	15.0	8.14		43	2.33	
08	MID	0.65	0.05	175	11875	6.75	23.0	1.55		20	0.14	
09	MID	0.52	0.07	245	16875	10.75	19.0	2.04		110	1.18	
10	MID	1.79	0.10	350	31250	97.89	15.0	14.68		43	4.21	
11	MID	3.26	0.10	350	25000	142.63	15.0	21.39		43	6.13	
12	MID	2.28	0.07	245	25000	69.83	15.0	10.47		23	1.61	
13	MID	1.51	0.07	245	15000	27.75	5.2	1.44		46	1.28	
14	MID	1.20	0.07	245	17500	25.73	5.6	1.44		68	1.75	
15	MID	1.17	0.08	280	19375	31.74	28.2	8.95		46	1.46	
16	MID	2.56	0.12	420	25000	134.40	7.4	9.95		32	4.30	
17	MID	0.15	0.40	1400	20000	21.00	14.5	3.05		110	2.31	
18	MID	3.00	0.13	455	20000	136.50	5.0	6.83		24	3.28	
19	MID	2.62	0.20	700	20000	183.40	5.3	9.72		62	11.37	
20	MID	0.69	0.20	700	18750	45.28	7.2	3.26		35	1.58	
21	MID	0.98	0.07	245	28125	45.28	7.2	3.26		35	1.58	
21	MID	0.98	0.07	845	28125	33.76	25.2	8.51		26	0.88	
22	MID	1.33	0.07	245	22500	36.66	29.0	10.63		46	1.69	
23	MID	1.11	0.07	245	15000	20.40	16.9	3.45		40	0.82	
24	MID	1.83	0.03	105	20000	19.22	27.3	5.25		46	0.88	
25	MID	1.84	0.07	245	25000	56.35	13.8	7.78		39	2.20	
26	MID	3.34	0.07	245	27500	112.52	36.0	40.51		35	3.94	
27	MID	1.32	0.05	175	15000	17.33	30.0	5.20		27	0.47	
28	MID	1.43	0.05	175	17500	21.90	25.5	5.58		84	1.84	
29	MID	0.66	0.07	245	17500	14.15	10.8	1.53		120	1.70	
31	MID	1.05	0.07	245	20000	25.73	51.0	13.12		78	2.01	
					SUBTOTAL	1583.22		237.01	15.0		68.68	43

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693066

VOLUME, MASS, AND GRADE CALCULATIONS FOR THE HUTCH 2+3, <0.5mm, MAGNETIC SEPARATION PRODUCTS
(continued)

SAMPLE SITE	MAGNETIC SEPARATION	MASS (%)	VOLUME OF SAMPLE (cu m)	CALC MASS OF HUTCH 2+3 CONC (kg)	CALCULATED VOLUME TO 2m DEPTH (cu m)	TOTAL MASS (t)	Cr2O3 (%)	TOTAL Cr2O3 MASS (t)	AVERAGE Cr2O3 (%)	IR (ppb)	TOTAL IR MASS (g)	AVERAGE IR (ppb)
02	NON MAG	2.97	0.15	525	22500	175.42	10.6	18.59		19	3.33	
03	NON MAG	2.12	0.05	175	25000	46.38	7.4	3.43		110	5.10	
04	NON MAG	0.51	0.15	525	20000	26.78	4.1	1.10		37	0.99	
05	NON MAG	1.14	0.13	455	20000	51.87	13.5	7.00		150	7.78	
06	NON MAG	2.48	0.07	245	25000	75.95	7.4	5.62		38	2.89	
07	NON MAG	11.79	0.07	245	11250	162.48	7.4	12.02		49	7.96	
08	NON MAG	1.12	0.05	175	11875	11.64	13.5	1.57		18	0.21	
09	NON MAG	0.82	0.07	245	16875	16.95	14.0	2.37		120	2.03	
10	NON MAG	2.24	0.10	350	31250	122.50	7.4	9.07		49	6.00	
11	NON MAG	4.93	0.10	350	25000	215.69	7.4	15.96		49	10.57	
12	NON MAG	2.71	0.07	245	25000	82.99	7.4	6.14		38	3.15	
13	NON MAG	1.71	0.07	245	15000	31.42	3.6	1.13		49	1.54	
14	NON MAG	1.00	0.07	245	17500	21.44	4.5	0.96		270	5.79	
15	NON MAG	1.68	0.08	280	19375	45.57	11.8	5.38		44	2.01	
16	NON MAG	2.13	0.12	420	25000	111.83	8.0	8.95		38	4.25	
17	NON MAG	0.14	0.40	1400	20000	19.60	13.0	2.55		180	3.53	
18	NON MAG	2.54	0.13	455	20000	115.57	4.9	5.64		10	1.16	
19	NON MAG	3.53	0.20	700	20000	247.10	5.3	13.10		62	15.32	
20	NON MAG	0.61	0.20	700	18750	40.03	4.4	1.76		31	1.24	
21	NON MAG	0.96	0.07	245	28125	33.08	12.9	4.27		19	0.63	
22	NON MAG	2.72	0.07	245	22500	74.97	18.0	13.49		210	15.74	
23	NON MAG	0.84	0.07	245	15000	15.44	9.5	1.47		67	1.03	
24	NON MAG	1.95	0.03	105	20000	20.48	15.6	3.19		25	0.51	
25	NON MAG	22.15	0.07	245	25000	678.34	0.4	2.71		13	8.82	
26	NON MAG	4.54	0.07	245	27500	152.94	24.0	36.71		62	9.48	
27	NON MAG	2.23	0.05	175	15000	29.27	18.5	5.41		37	1.08	
28	NON MAG	1.87	0.05	175	17500	28.63	19.5	5.58		58	1.66	
29	NON MAG	1.08	0.07	245	17500	23.15	9.0	2.08		24	0.56	
30	NON MAG	0.93	0.07	245	20000	22.79	20.0	4.56		60	1.37	
31	NON MAG	1.23	0.07	245	20000	30.14	3.6	1.08		260	7.84	
					SUBTOTAL	2730.41		202.93	7.4		133.57	49
					SUBTOTAL - FOR MAG 1, MAG 2 AND MIDS	14398.29		3356.61	23.3		638.35	44
					GRAND TOTAL - FOR ALL HUTCH 2+3, <0.5mm, MAGNETIC PRODUCTS	23629.96		4781.08	20.2		978.65	41

606

693067

VOLUME, MASS, AND GRADE CALCULATIONS FOR THE HUTCH 2+3, 0.5-2mm, MAGNETIC SEPARATION PRODUCTS

SAMPLE SITE	MAGNETIC SEPARATION	*MASS (%)	*VOLUME OF SAMPLE (cu m)	*CALC MASS OF HUTCH 2+3 CONC (kg)	*CALC VOL TO 2m DEPTH (cu m)	*TOTAL MASS (t)	*Cr203 (%)	*TOTAL Cr203 MASS (t)	*AVERAGE Cr203 (%)
02	HI MAG	15.07	0.15	525	22500	890.07	7.2	64.09	
03	HI MAG	5.29	0.05	175	25000	115.72	7.2	8.33	
04	HI MAG	14.09	0.15	525	20000	739.73	7.2	53.26	
05	HI MAG	14.29	0.13	455	20000	650.20	7.2	46.81	
06	HI MAG	5.41	0.07	245	25000	165.68	7.2	11.93	
07	HI MAG	1.32	0.07	245	11250	18.19	7.2	1.31	
08	HI MAG	14.01	0.05	175	11875	145.57	7.2	10.48	
09	HI MAG	14.83	0.07	245	16875	306.56	7.2	22.07	
10	HI MAG	6.83	0.10	350	31250	373.52	7.2	26.89	
11	HI MAG	0.49	0.10	350	25000	21.44	7.2	1.54	
12	HI MAG	11.36	0.07	245	25000	347.90	7.2	25.05	
13	HI MAG	13.73	0.07	245	15000	252.29	7.2	18.16	
14	HI MAG	17.80	0.07	245	17500	381.59	7.2	27.47	
15	HI MAG	9.17	0.08	280	19375	248.74	7.2	17.91	
16	HI MAG	2.72	0.12	420	25000	142.80	7.2	10.28	
17	HI MAG	16.43	0.40	1400	20000	2300.20	7.2	165.61	
18	HI MAG	4.94	0.13	455	20000	224.77	7.2	16.18	
19	HI MAG	6.41	0.20	700	20000	448.70	7.2	32.31	
20	HI MAG	9.64	0.20	700	18750	632.63	7.2	45.55	
21	HI MAG	11.63	0.07	245	28125	400.69	7.2	28.85	
22	HI MAG	3.92	0.07	245	22500	108.05	7.2	7.78	
23	HI MAG	8.15	0.07	245	15000	149.76	7.2	10.78	
24	HI MAG	5.66	0.03	105	20000	59.43	7.2	4.28	
25	HI MAG	1.15	0.07	245	25000	35.22	7.2	2.54	
26	HI MAG	7.32	0.07	245	27500	246.59	7.2	17.75	
27	HI MAG	5.08	0.05	175	15000	66.68	7.2	4.80	
28	HI MAG	15.10	0.05	175	17500	231.22	7.2	16.65	
29	HI MAG	13.54	0.07	245	17500	290.26	7.2	20.90	
30	HI MAG	7.93	0.07	245	20000	194.29	7.2	13.99	
31	HI MAG	11.82	0.07	245	20000	289.59	7.2	20.85	
SUBTOTAL						10478.05		754.42	7.2

- * MASS (%): The percentage mass of the Hutch 2+3, 0.5-2mm, 'Hi Mag' product located at that sample site.
- * VOLUME OF SAMPLE (cu m): The measured volume of the sample.
- * CALCULATED MASS OF HUTCH 2+3 CONCENTRATES (kg) = Volume of Sample x Density of Sample.
(Note: The density for the Hutch 1 and Hutch 2+3 samples is estimated at approximately 3500kg/cu m.)
- * CALCULATED VOLUME TO 2m DEPTH (cu m): Volume calculations were performed by assigning areas of influence to each of the bulk samples. Calculations were then made to a depth of 2m.

$$\bullet \text{ TOTAL MASS (t)} = \frac{\text{Calculated Volume to 2m}}{\text{Sample Vol.}} \times \frac{\text{Total Mass of Hutch 1 Concentrates}}{\text{Sample Vol.}} \times \frac{\text{Mass (\%)}}{100} \times \frac{1 \text{ tonne}}{1000 \text{ kg}} \quad (\text{Note: Sample Vol} = 2 \text{ cu m for all bulk samples})$$

- * Cr203 (%): Calculated by using the relative proportions of the overall Cr203 (%) as analysed and calculated for the Hutch 1 samples and Hutch 2+3 <0.5mm samples.
- * TOTAL Cr203 MASS (t) = Total Mass (t) x Cr203 (%) / 100
- * AVERAGE Cr203(%) = Total Cr203 Mass (t) / Total Mass (t) x 100%

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693068

VOLUME, MASS, AND GRADE CALCULATIONS FOR THE HUTCH 2+3, 0.5-2mm, MAGNETIC SEPARATION PRODUCTS
(continued)

SAMPLE SITE	MAGNETIC SEPARATION	MASS (%)	VOLUME OF SAMPLE (cu m)	CALC MASS OF HUTCH 2+3 CONC (kg)	CALC VOL TO 2m DEPTH (cu m)	TOTAL MASS (t)	Cr2O3 (%)	TOTAL Cr2O3 MASS (t)	AVERAGE Cr2O3 (%)
02	MAG 1	6.67	0.15	525	22500	393.95	7.2	28.36	
03	MAG 1	13.35	0.05	175	25000	292.03	7.2	21.03	
04	MAG 1	6.60	0.15	525	20000	346.50	7.2	24.95	
05	MAG 1	6.71	0.13	455	20000	305.31	7.2	21.98	
06	MAG 1	8.88	0.07	245	25000	271.95	7.2	19.58	
07	MAG 1	1.23	0.07	245	11250	16.95	7.2	1.22	
08	MAG 1	6.92	0.05	175	11875	71.90	7.2	5.18	
09	MAG 1	5.99	0.07	245	16875	123.82	7.2	8.92	
10	MAG 1	8.08	0.10	350	31250	441.88	7.2	31.82	
11	MAG 1	6.30	0.10	350	25000	275.63	7.2	19.85	
12	MAG 1	7.36	0.07	245	25000	225.40	7.2	16.23	
13	MAG 1	4.60	0.07	245	15000	84.53	7.2	6.09	
14	MAG 1	5.88	0.07	245	17500	126.05	7.2	9.08	
15	MAG 1	6.02	0.08	280	19375	163.29	7.2	11.76	
16	MAG 1	11.62	0.12	420	25000	610.05	7.2	43.92	
17	MAG 1	5.45	0.40	1400	20000	763.00	7.2	54.94	
18	MAG 1	6.09	0.13	455	20000	277.10	7.2	19.95	
19	MAG 1	8.49	0.20	700	20000	594.30	7.2	42.79	
20	MAG 1	7.43	0.20	700	18750	487.59	7.2	35.11	
21	MAG 1	4.69	0.07	245	28125	161.59	7.2	11.63	
22	MAG 1	7.05	0.07	245	22500	194.32	7.2	13.99	
23	MAG 1	4.03	0.07	245	15000	74.05	7.2	5.33	
24	MAG 1	4.77	0.03	105	20000	50.09	7.2	3.61	
25	MAG 1	3.02	0.07	245	25000	92.49	7.2	6.66	
26	MAG 1	7.71	0.07	245	27500	259.73	7.2	18.70	
27	MAG 1	5.54	0.05	175	15000	72.71	7.2	5.24	
28	MAG 1	11.49	0.05	175	17500	175.94	7.2	12.67	
29	MAG 1	5.94	0.07	245	17500	127.34	7.2	9.17	
30	MAG 1	4.54	0.07	245	20000	111.23	7.2	8.01	
31	MAG 1	4.07	0.07	245	20000	99.72	7.2	7.18	
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					SUBTOTAL	7290.41		524.91	7.2

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693069

VOLUME, MASS, AND GRADE CALCULATIONS FOR THE HUTCH 2+3, 0.5-2mm, MAGNETIC SEPARATION PRODUCTS
(continued)

SAMPLE SITE	MAGNETIC SEPARATION	MASS (%)	VOLUME OF SAMPLE (cu m)	CALC MASS OF HUTCH 2+3 CONC (kg)	CALC VOL TO 2m DEPTH (cu m)	TOTAL MASS (t)	Cr-203 (%)	TOTAL Cr-203 MASS (t)	AVERAGE Cr-203 (%)
02	MAG 2	6.36	0.15	525	22500	375.64	7.2	27.05	
03	MAG 2	12.24	0.05	175	25000	267.75	7.2	19.28	
04	MAG 2	10.78	0.15	525	20000	565.95	7.2	40.75	
05	MAG 2	2.69	0.13	455	20000	122.40	7.2	8.81	
06	MAG 2	7.04	0.07	245	25000	215.60	7.2	15.52	
07	MAG 2	5.09	0.07	245	11250	70.15	7.2	5.05	
08	MAG 2	4.30	0.05	175	11875	44.68	7.2	3.22	
09	MAG 2	2.05	0.07	245	16875	42.38	7.2	3.05	
10	MAG 2	13.04	0.10	350	31250	713.13	7.2	51.35	
11	MAG 2	4.49	0.10	350	25000	196.44	7.2	14.14	
12	MAG 2	4.25	0.07	245	25000	130.16	7.2	9.37	
13	MAG 2	4.18	0.07	245	15000	76.81	7.2	5.53	
14	MAG 2	2.85	0.07	245	17500	61.10	7.2	4.40	
15	MAG 2	8.56	0.08	280	19375	232.19	7.2	16.72	
16	MAG 2	6.58	0.12	420	25000	345.45	7.2	24.87	
17	MAG 2	3.36	0.40	1400	20000	470.40	7.2	33.87	
18	MAG 2	15.97	0.13	455	20000	726.64	7.2	52.32	
19	MAG 2	3.36	0.20	700	20000	235.20	7.2	16.93	
20	MAG 2	3.70	0.20	700	18750	242.81	7.2	17.48	
21	MAG 2	5.88	0.07	245	28125	202.58	7.2	14.59	
22	MAG 2	3.98	0.07	245	22500	109.70	7.2	7.90	
23	MAG 2	1.53	0.07	245	15000	28.11	7.2	2.02	
24	MAG 2	5.50	0.03	105	20000	57.75	7.2	4.16	
25	MAG 2	2.43	0.07	245	25000	74.42	7.2	5.36	
26	MAG 2	18.31	0.07	245	27500	616.82	7.2	44.41	
27	MAG 2	3.32	0.05	175	15000	43.58	7.2	3.14	
28	MAG 2	3.37	0.05	175	17500	51.60	7.2	3.72	
29	MAG 2	5.74	0.07	245	17500	123.05	7.2	8.86	
30	MAG 2	3.17	0.07	245	20000	77.67	7.2	5.59	
31	MAG 2	3.06	0.07	245	20000	74.97	7.2	5.40	
					SUBTOTAL	6595.09		474.85	7.2

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693090

070

VOLUME, MASS, AND GRADE CALCULATIONS FOR THE HUTCH 2+3, 0.5-2mm, MAGNETIC SEPARATION PRODUCTS
(continued)

SAMPLE SITE	MAGNETIC SEPARATION	MASS (%)	VOLUME OF SAMPLE (cu m)	CALC MASS OF HUTCH 2+3 CONC (kg)	CALC VOL TO 2m DEPTH (cu m)	TOTAL MASS (t)	Cr2O3 (%)	TOTAL Cr2O3 MASS (t)	AVERAGE Cr2O3 (%)
02	MID	10.87	0.15	525	22500	642.01	7.2	46.22	
03	MID	11.03	0.05	175	25000	241.28	7.2	17.37	
04	MID	1.40	0.15	525	20000	73.50	7.2	5.29	
05	MID	5.00	0.13	455	20000	227.50	7.2	16.38	
06	MID	3.74	0.07	245	25000	114.54	7.2	8.25	
07	MID	8.74	0.07	245	11250	120.45	7.2	8.67	
08	MID	8.31	0.05	175	11875	86.35	7.2	6.22	
09	MID	6.55	0.07	245	16875	135.40	7.2	9.75	
10	MID	9.91	0.10	350	31250	541.95	7.2	39.02	
11	MID	11.39	0.10	350	25000	498.31	7.2	35.88	
12	MID	5.37	0.07	245	25000	164.46	7.2	11.84	
13	MID	5.63	0.07	245	15000	103.45	7.2	7.45	
14	MID	6.72	0.07	245	17500	144.06	7.2	10.37	
15	MID	4.46	0.08	280	19375	120.98	7.2	8.71	
16	MID	17.82	0.12	420	25000	935.55	7.2	67.36	
17	MID	2.05	0.40	1400	20000	287.00	7.2	20.66	
18	MID	7.45	0.13	455	20000	338.98	7.2	24.41	
19	MID	10.26	0.20	700	20000	718.20	7.2	51.71	
20	MID	4.45	0.20	700	18750	292.03	7.2	21.03	
21	MID	4.87	0.07	245	28125	167.79	7.2	12.08	
22	MID	9.12	0.07	245	22500	251.37	7.2	18.10	
23	MID	5.33	0.07	245	15000	97.94	7.2	7.05	
24	MID	5.64	0.03	105	20000	59.22	7.2	4.26	
25	MID	5.19	0.07	245	25000	158.94	7.2	11.44	
26	MID	8.76	0.07	245	27500	295.10	7.2	21.25	
27	MID	3.55	0.05	175	15000	46.59	7.2	3.35	
28	MID	4.33	0.05	175	17500	66.30	7.2	4.77	
29	MID	6.46	0.07	245	17500	138.49	7.2	9.97	
30	MID	3.18	0.07	245	20000	77.91	7.2	5.61	
31	MID	1.19	0.07	245	20000	29.16	7.2	2.10	
SUBTOTAL						7174.80		516.59	7.2

693071

C-17

VOLUME, MASS, AND GRADE CALCULATIONS FOR THE HUTCH 2+3, 0.5-2mm, MAGNETIC SEPARATION PRODUCTS
(continued)

SAMPLE SITE	MAGNETIC SEPARATION	MASS (%)	VOLUME OF SAMPLE (cu m)	CALC MASS OF HUTCH 2+3 CONC (kg)	CALC VOL TO 2m DEPTH (cu m)	TOTAL MASS (t)	Cr2O3 (%)	TOTAL Cr2O3 MASS (t)	AVERAGE Cr2O3 (%)
06	NON MAG	8.84	0.07	245	25000	270.73	7.2	19.49	
02	NON MAG	15.48	0.15	525	22500	914.29	7.2	65.83	
03	NON MAG	17.04	0.05	175	25000	372.75	7.2	26.84	
04	NON MAG	9.83	0.15	525	20000	516.08	7.2	37.16	
05	NON MAG	16.39	0.13	455	20000	745.75	7.2	53.69	
07	NON MAG	12.69	0.07	245	11250	174.88	7.2	12.59	
08	NON MAG	12.48	0.05	175	11875	129.68	7.2	9.34	
09	NON MAG	12.51	0.07	245	16875	258.61	7.2	18.62	
10	NON MAG	15.89	0.10	350	31250	868.98	7.2	62.57	
11	NON MAG	15.05	0.10	350	25000	658.44	7.2	47.41	
12	NON MAG	6.54	0.07	245	25000	200.29	7.2	14.42	
13	NON MAG	11.09	0.07	245	15000	203.78	7.2	14.67	
14	NON MAG	7.37	0.07	245	17500	157.99	7.2	11.38	
15	NON MAG	8.18	0.08	280	19375	221.88	7.2	15.98	
16	NON MAG	12.79	0.12	420	25000	671.48	7.2	48.35	
17	NON MAG	8.55	0.40	1400	20000	1197.00	7.2	86.18	
18	NON MAG	6.91	0.13	455	20000	314.41	7.2	22.64	
19	NON MAG	18.19	0.20	700	20000	1273.30	7.2	91.68	
20	NON MAG	8.88	0.20	700	18750	582.75	7.2	41.96	
21	NON MAG	6.55	0.07	245	28125	225.67	7.2	16.25	
22	NON MAG	8.14	0.07	245	22500	224.36	7.2	16.15	
23	NON MAG	6.75	0.07	245	15000	124.03	7.2	8.93	
24	NON MAG	5.38	0.03	105	20000	56.49	7.2	4.07	
25	NON MAG	4.82	0.07	245	25000	147.61	7.2	10.63	
26	NON MAG	12.41	0.07	245	27500	418.06	7.2	30.10	
27	NON MAG	7.54	0.05	175	15000	98.96	7.2	7.13	
28	NON MAG	10.80	0.05	175	17500	165.38	7.2	11.91	
29	NON MAG	11.91	0.07	245	17500	255.32	7.2	18.38	
30	NON MAG	4.08	0.07	245	20000	99.96	7.2	7.20	
31	NON MAG	5.71	0.07	245	20000	139.90	7.2	10.07	
SUBTOTAL						11688.78		841.59	7.2
SUBTOTAL - MAG 1, MAG 2 AND MIDS						21060.31		1516.34	7.2
GRAND TOTAL - FOR ALL HUTCH 2+3, 0.5-2mm, MAGNETIC PRODUCTS						43227.13		3112.35	7.2

693072

VOLUME, MASS, AND GRADE CALCULATIONS FOR THE HUTCH 2+3, >2mm, MAGNETIC SEPARATION PRODUCTS

SAMPLE SITE	MAGNETIC SEPARATION	MASS (%)	VOLUME OF SAMPLE (cu m)	CALC MASS OF HUTCH 2+3 CONC (kg)	CALCULATED VOLUME TO 2m DEPTH (cu m)	TOTAL MASS (t)	Cr203 (%)	TOTAL Cr203 MASS (t)	AVERAGE Cr203 (%)
02	HI MAG	7.99	0.15	525	22500	471.91	2.7	12.74	
03	HI MAG	2.27	0.05	175	25000	49.66	2.7	1.34	
04	HI MAG	19.78	0.15	525	20000	1038.45	2.7	28.04	
05	HI MAG	9.42	0.13	455	20000	428.61	2.7	11.57	
06	HI MAG	19.82	0.07	245	25000	606.99	2.7	16.39	
07	HI MAG	11.69	0.07	245	11250	161.10	2.7	4.35	
08	HI MAG	10.87	0.05	175	11875	112.95	2.7	3.05	
09	HI MAG	16.05	0.07	245	16875	331.78	2.7	8.96	
10	HI MAG	4.55	0.10	350	31250	248.83	2.7	6.72	
11	HI MAG	1.51	0.10	350	25000	66.06	2.7	1.78	
12	HI MAG	25.19	0.07	245	25000	771.44	2.7	20.83	
13	HI MAG	16.18	0.07	245	15000	297.31	2.7	8.03	
14	HI MAG	20.11	0.07	245	17500	431.11	2.7	11.64	
15	HI MAG	17.97	0.08	280	19375	487.44	2.7	13.16	
16	HI MAG	2.37	0.12	420	25000	124.43	2.7	3.36	
17	HI MAG	28.85	0.40	1400	20000	4039.00	2.7	109.05	
18	HI MAG	4.93	0.13	455	20000	224.32	2.7	6.06	
19	HI MAG	2.21	0.20	700	20000	154.70	2.7	4.18	
20	HI MAG	13.37	0.20	700	18750	877.41	2.7	23.69	
21	HI MAG	8.44	0.07	245	28125	290.78	2.7	7.85	
22	HI MAG	10.21	0.07	245	22500	281.41	2.7	7.60	
23	HI MAG	25.18	0.07	245	15000	462.68	2.7	12.49	
24	HI MAG	11.16	0.03	105	20000	117.18	2.7	3.16	
25	HI MAG	6.79	0.07	245	25000	207.94	2.7	5.61	
26	HI MAG	7.60	0.07	245	27500	256.03	2.7	6.91	
27	HI MAG	13.43	0.05	175	15000	176.27	2.7	4.76	
28	HI MAG	10.05	0.05	175	17500	153.89	2.7	4.16	
29	HI MAG	14.94	0.07	245	17500	320.28	2.7	8.65	
30	HI MAG	15.93	0.07	245	20000	390.29	2.7	10.54	
31	HI MAG	14.40	0.07	245	20000	352.80	2.7	9.53	
SUBTOTAL						13933.03		376.19	2.7

- MASS (%): The percentage mass of the Hutch 2+3, >2mm, 'HI Mag' product located at that sample site.
- VOLUME OF SAMPLE (cu m): The measured volume of the sample.
- CALCULATED MASS OF HUTCH 2+3 CONCENTRATES (kg) = Volume of Sample x Density of Sample.
(Note: The density for the Hutch 1 and Hutch 2+3 samples is estimated at approximately 3500kg/cu m.)
- CALCULATED VOLUME TO 2m DEPTH (cu m): Volume calculations were performed by assigning areas of influence to each of the bulk samples. Calculations were then made to a depth of 2m.

$$\bullet \text{ TOTAL MASS (t)} = \frac{\text{Calculated Volume to 2m}}{\text{Sample Vol.}} \times \frac{\text{Total Mass of Hutch 1 Concentrates}}{100} \times \frac{\text{Mass (\%)}}{100} \times \frac{1 \text{ tonne}}{1000 \text{ kg}} \quad (\text{Note: Sample Vol} = 2 \text{ cu m for all bulk samples})$$

- Cr203 (%): Calculated by using the relative proportions of the overall Cr203 (%) as analysed and calculated for the Hutch 1 samples and Hutch 2+3 (<0.5mm) samples.
- TOTAL Cr203 MASS (t) = Total Mass (t) x Cr203 (%) / 100
- AVERAGE Cr203(%) = Total Cr203 Mass (t) / Total Mass (t) x 100%

070

693073

VOLUME, MASS, AND GRADE CALCULATIONS FOR THE HUTCH 2+3, >2mm, MAGNETIC SEPARATION PRODUCTS
(continued)

SAMPLE SITE	MAGNETIC SEPARATION	MASS (t)	VOLUME OF SAMPLE (cu m)	CALC MASS OF HUTCH 2+3 CONC (kg)	CALCULATED VOLUME TO 2m DEPTH (cu m)	TOTAL MASS (t)	Cr2O3 (%)	TOTAL Cr2O3 MASS (t)	AVERAGE Cr2O3 (%)
02	MAG 1	1.57	0.15	525	22500	92.73	2.7	2.50	
03	MAG 1	3.58	0.05	175	25000	78.31	2.7	2.11	
04	MAG 1	7.03	0.15	525	20000	369.08	2.7	9.97	
05	MAG 1	4.60	0.13	455	20000	209.30	2.7	5.65	
06	MAG 1	17.48	0.07	245	25000	535.33	2.7	14.45	
07	MAG 1	7.98	0.07	245	11250	109.97	2.7	2.97	
08	MAG 1	6.29	0.05	175	11875	65.36	2.7	1.76	
09	MAG 1	6.37	0.07	245	16875	131.68	2.7	3.56	
10	MAG 1	1.93	0.10	350	31250	105.55	2.7	2.85	
11	MAG 1	0.50	0.10	350	25000	21.88	2.7	0.59	
12	MAG 1	9.66	0.07	245	25000	295.84	2.7	7.99	
13	MAG 1	7.44	0.07	245	15000	136.71	2.7	3.69	
14	MAG 1	11.46	0.07	245	17500	245.67	2.7	6.63	
15	MAG 1	25.94	0.08	280	19375	703.62	2.7	19.00	
16	MAG 1	2.75	0.12	420	25000	144.38	2.7	3.90	
17	MAG 1	18.12	0.40	1400	20000	2536.80	2.7	68.49	
18	MAG 1	2.26	0.13	455	20000	102.83	2.7	2.78	
19	MAG 1	1.10	0.20	700	20000	77.00	2.7	2.08	
20	MAG 1	24.60	0.20	700	18750	1614.38	2.7	43.59	
21	MAG 1	17.67	0.07	245	28125	608.79	2.7	16.44	
22	MAG 1	10.02	0.07	245	22500	276.18	2.7	7.46	
23	MAG 1	16.01	0.07	245	15000	294.18	2.7	7.94	
24	MAG 1	12.96	0.03	105	20000	136.08	2.7	3.67	
25	MAG 1	3.29	0.07	245	25000	100.76	2.7	2.72	
26	MAG 1	4.37	0.07	245	27500	147.21	2.7	3.97	
27	MAG 1	10.05	0.05	175	15000	131.91	2.7	3.56	
28	MAG 1	6.34	0.05	175	17500	97.08	2.7	2.62	
29	MAG 1	15.49	0.07	245	17500	332.07	2.7	8.97	
30	MAG 1	7.90	0.07	245	20000	193.55	2.7	5.23	
31	MAG 1	9.31	0.07	245	20000	228.10	2.7	6.16	
					SUBTOTAL	10122.29		273.30	2.7

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693074

VOLUME, MASS, AND GRADE CALCULATIONS FOR THE HUTCH 2+3, >2mm, MAGNETIC SEPARATION PRODUCTS
(continued)

014

SAMPLE SITE	MAGNETIC SEPARATION	MASS (%)	VOLUME OF SAMPLE (cu m)	CALC MASS OF HUTCH 2+3 CONC (kg)	CALCULATED VOLUME TO 2m DEPTH (cu m)	TOTAL MASS (t)	Cr203 (%)	TOTAL Cr203 MASS (t)	AVERAGE Cr203 (%)
02	MAG 2	2.93	0.15	525	22500	173.05	2.7	4.67	
03	MAG 2	2.20	0.05	175	25000	48.13	2.7	1.30	
04	MAG 2	12.44	0.15	525	20000	653.10	2.7	17.63	
05	MAG 2	3.24	0.13	455	20000	147.42	2.7	3.98	
06	MAG 2	5.00	0.07	245	25000	153.13	2.7	4.13	
07	MAG 2	9.73	0.07	245	11250	134.09	2.7	3.62	
08	MAG 2	4.29	0.05	175	11875	44.58	2.7	1.20	
09	MAG 2	4.11	0.07	245	16875	84.96	2.7	2.29	
10	MAG 2	2.69	0.10	350	31250	147.11	2.7	3.97	
11	MAG 2	5.45	0.10	350	25000	238.44	2.7	6.44	
12	MAG 2	8.43	0.07	245	25000	258.17	2.7	6.97	
13	MAG 2	2.84	0.07	245	15000	52.19	2.7	1.41	
14	MAG 2	2.35	0.07	245	17500	50.38	2.7	1.36	
15	MAG 2	5.50	0.08	280	19375	149.19	2.7	4.03	
16	MAG 2	0.92	0.12	420	25000	48.30	2.7	1.30	
17	MAG 2	5.59	0.40	1400	20000	782.60	2.7	21.13	
18	MAG 2	6.48	0.13	455	20000	294.84	2.7	7.96	
19	MAG 2	2.30	0.20	700	20000	161.00	2.7	4.35	
20	MAG 2	9.80	0.20	700	18750	643.13	2.7	17.36	
21	MAG 2	3.78	0.07	245	28125	130.23	2.7	3.52	
22	MAG 2	3.31	0.07	245	22500	91.23	2.7	2.46	
23	MAG 2	6.17	0.07	245	15000	113.37	2.7	3.06	
24	MAG 2	6.04	0.03	105	20000	63.42	2.7	1.71	
25	MAG 2	5.30	0.07	245	25000	162.31	2.7	4.38	
26	MAG 2	7.65	0.07	245	27500	257.71	2.7	6.96	
27	MAG 2	4.11	0.05	175	15000	53.94	2.7	1.46	
28	MAG 2	5.92	0.05	175	17500	90.65	2.7	2.45	
29	MAG 2	3.95	0.07	245	17500	84.68	2.7	2.29	
30	MAG 2	6.29	0.07	245	20000	154.11	2.7	4.16	
31	MAG 2	3.00	0.07	245	20000	73.50	2.7	1.98	
					SUBTOTAL	5538.94		149.55	2.7

693075

VOLUME, MASS, AND GRADE CALCULATIONS FOR THE HUTCH 2+3, >2mm, MAGNETIC SEPARATION PRODUCTS
(continued)

SAMPLE SITE	MAGNETIC SEPARATION	MASS (%)	VOLUME OF SAMPLE (cu m)	CALC MASS OF HUTCH 2+3 CONC (kg)	CALCULATED VOLUME TO 2m DEPTH (cu m)	TOTAL MASS (t)	Cr203 (%)	TOTAL Cr203 MASS (t)	AVERAGE Cr203 (%)
02	NON MAG	10.73	0.15	525	22500	633.74	2.7	17.11	
03	NON MAG	15.21	0.05	175	25000	332.72	2.7	8.98	
04	NON MAG	10.02	0.15	525	20000	526.05	2.7	14.20	
05	NON MAG	10.39	0.13	455	20000	472.75	2.7	12.76	
06	NON MAG	4.84	0.07	245	25000	148.23	2.7	4.00	
07	NON MAG	10.32	0.07	245	11250	142.22	2.7	3.84	
08	NON MAG	10.85	0.05	175	11875	112.74	2.7	3.04	
09	NON MAG	12.67	0.07	245	16875	261.91	2.7	7.07	
10	NON MAG	8.99	0.10	350	31250	491.64	2.7	13.27	
11	NON MAG	13.75	0.10	350	25000	601.56	2.7	16.24	
12	NON MAG	3.53	0.07	245	25000	108.11	2.7	2.92	
13	NON MAG	9.13	0.07	245	15000	167.76	2.7	4.53	
14	NON MAG	9.69	0.07	245	17500	207.73	2.7	5.61	
15	NON MAG	7.16	0.08	280	19375	194.22	2.7	5.24	
16	NON MAG	10.62	0.12	420	25000	557.55	2.7	15.05	
17	NON MAG	8.68	0.40	1400	20000	1215.20	2.7	32.81	
18	NON MAG	8.14	0.13	455	20000	370.37	2.7	10.00	
19	NON MAG	10.22	0.20	700	20000	715.40	2.7	19.32	
20	NON MAG	13.74	0.20	700	18750	901.69	2.7	24.35	
21	NON MAG	8.51	0.07	245	28125	293.20	2.7	7.92	
22	NON MAG	14.32	0.07	245	22500	394.70	2.7	10.66	
23	NON MAG	19.84	0.07	245	15000	364.56	2.7	9.84	
24	NON MAG	16.23	0.03	105	20000	170.42	2.7	4.60	
25	NON MAG	23.03	0.07	245	25000	705.29	2.7	19.04	
26	NON MAG	9.96	0.07	245	27500	335.53	2.7	9.06	
27	NON MAG	17.86	0.05	175	15000	234.41	2.7	6.33	
28	NON MAG	11.66	0.05	175	17500	178.54	2.7	4.82	
29	NON MAG	12.67	0.07	245	17500	271.61	2.7	7.33	
30	NON MAG	3.78	0.07	245	20000	92.61	2.7	2.50	
31	NON MAG	6.51	0.07	245	20000	159.50	2.7	4.31	
SUBTOTAL						11361.94		306.77	2.7
SUBTOTAL - FOR MAG 1, MAG 2 AND MIDS						15661.23		422.85	2.7
GRAND TOTAL - FOR ALL HUTCH 2+3, >2mm, MAGNETIC PRODUCTS						40956.20		1105.82	2.7

675

693076

VOLUME, MASS, AND GRADE CALCULATIONS FOR THE TAILS, <0.5mm, MAGNETIC SEPARATION PRODUCTS

SAMPLE SITE	MAGNETIC SEPARATION	*MASS (%)	*VOL > 3mm (cu m)	*VOL HUTCH 2+3 (cu m)	*VOL HUTCH 1 (cu m)	*VOL TAILS (cu m)	*CALC TAIL MASS (kg)	*CALC VOL TO 2m DEPTH (cu m)	*TOTAL MASS (t)	*Cr203 (%)	*TOTAL Cr203 MASS (t)	*AVERAGE Cr203 (%)	*IR (ppb)	*TOTAL IR MASS (g)	*AVERAGE IR (ppb)
02	HI MAG	9.26	1.2	0.15	0.13	0.52	1040	22500	1083.42	10.4	112.68		59	63.92	
03	HI MAG	1.77	1.1	0.05	0.05	0.80	1600	25000	354.00	10.0	35.40		200	70.80	
04	HI MAG	6.01	1.3	0.15	0.20	0.35	700	20000	420.70	6.0	25.24		89	37.44	
05	HI MAG	8.09	0.8	0.13	0.10	0.97	1940	20000	1569.46	3.1	48.65		8	11.77	
06	HI MAG	1.75	1.3	0.07	0.07	0.56	1120	25000	245.00	7.8	19.11		320	78.40	
08	HI MAG	4.74	1.1	0.05	0.05	0.80	1600	11875	450.90	5.5	24.77		43	19.36	
10	HI MAG	0.78	0.8	0.10	0.10	1.00	2000	31250	243.75	0.0	0.00		110	26.81	
11	HI MAG	1.47	0.9	0.10	0.20	0.80	1600	25000	294.00	38.0	111.72		130	38.22	
12	HI MAG	4.32	1.4	0.07	0.05	0.48	960	25000	518.40	7.0	36.29		110	57.02	
13	HI MAG	1.52	1.3	0.07	0.07	0.56	1120	15000	1120.68	5.8	7.41		340	43.41	
14	HI MAG	1.86	1.2	0.07	0.07	0.64	1320	17500	214.83	6.0	12.89		210	45.11	
15	HI MAG	29.18	1.4	0.08	0.10	0.42	840	19375	2374.52	19.4	460.66		290	688.61	
16	HI MAG	22.24	1.0	0.12	0.07	0.81	1620	25000	4503.60	5.1	229.68		68	306.24	
18	HI MAG	5.53	0.9	0.13	0.10	0.87	1740	20000	962.22	9.4	90.45		143	137.60	
19	HI MAG	7.52	0.6	0.20	0.15	1.05	2100	20000	1579.20	9.4	148.44		143	225.83	
20	HI MAG	3.89	1.2	0.20	0.15	0.45	900	18750	328.22	10.0	32.82		200	65.64	
21	HI MAG	5.17	0.9	0.07	0.07	0.96	1920	28125	1395.90	9.4	131.21		143	199.61	
22	HI MAG	3.50	1.0	0.07	0.07	0.86	1720	22500	677.25	9.4	63.66		143	96.85	
23	HI MAG	12.24	1.2	0.07	0.05	0.68	1360	15000	1248.48	9.4	117.36		143	178.53	
24	HI MAG	21.77	1.4	0.03	0.07	0.50	1000	20000	2177.00	12.5	272.13		150	326.55	
25	HI MAG	5.70	0.0	0.07	0.07	1.86	3720	25000	2650.50	9.4	249.15		143	379.02	
26	HI MAG	8.40	1.2	0.07	0.05	0.68	1360	27500	1570.80	9.4	147.66		143	224.62	
27	HI MAG	24.54	0.8	0.05	0.07	1.08	2160	15000	3975.48	8.3	329.96		110	437.90	
28	HI MAG	20.43	1.0	0.05	0.07	0.88	1760	17500	3146.22	9.4	295.74		143	449.91	
29	HI MAG	7.28	0.9	0.07	0.07	0.96	1920	17500	1223.04	10.5	128.42		87	106.40	
30	HI MAG	21.24	1.0	0.07	0.15	0.78	1560	20000	3313.44	3.3	109.34		53	175.61	
31	HI MAG	21.55	0.5	0.07	0.07	1.36	2720	20000	5861.60	9.4	550.99		143	838.21	
SUBTOTAL									42509.01		3791.83	8.9	5328.83	125	

- * MASS (%): The percentage mass of the Tails, <0.5mm, 'Hi Mag' product located at that sample site.
- * VOLUME >3mm (cu m): The measured volume of the >3mm fraction.
- * VOLUME HUTCH 2+3 (cu m): The measured volume of the Hutch 2+3 concentrates.
- * VOLUME HUTCH 1 (cu m): The measured volume of the Hutch 1 concentrates.
- * VOLUME TAILS (cu m) = Sample Vol - Vol Hutch 2+3 - Vol Hutch 1. (Note: Sample Vol = 2 cu m for each bulk sample)
- * CALCULATED TAIL MASS (kg) = Volume of Sample x Density of Sample.
(Note: The density for the Tail samples is estimated at approximately 2000kg/cu m.)
- * CALCULATED VOLUME TO 2m DEPTH (cu m): Volume calculations were performed by assigning areas of influence to each of the bulk samples. Calculations were then made to a depth of 2m.

$$\bullet \text{ TOTAL MASS (t)} = \frac{\text{Calculated Volume to 2m}}{\text{Sample Vol.}} \times \frac{\text{Total Mass of Tails}}{100} \times \frac{\text{Mass (\%)}}{100} \times \frac{1 \text{ tonne}}{1000 \text{ kg}}$$

- * Cr203 (%): Assayed Cr203 value for a representative sub-sample.
- * TOTAL Cr203 MASS (t) = Total Mass (t) x Cr203 (%) / 100
- * AVERAGE Cr203(%) = Total Cr203 Mass (t) / Total Mass (t) x 100%
- * IR (ppb): Assayed Ir value for a representative sub-sample.
- * TOTAL IR MASS (g) = Total Mass (t) x Ir / 1,000,000,000 x 1000kg / 11 x 1000g / 1kg
- * AVERAGE Ir (ppb) = Total Ir (g) / Total Mass (t) x 1 tonne / 1000kg x 1kg / 1000g

016

693077

VOLUME, MASS, AND GRADE CALCULATIONS FOR THE TAILS, <0.5mm, MAGNETIC SEPARATION PRODUCTS
(continued)

SAMPLE SITE	MAGNETIC SEPARATION	MASS (%)	VOLUME > 3mm (cu m)	VOLUME HUTCH 2+3 (cu m)	VOLUME HUTCH 1 (cu m)	VOLUME TAILS (cu m)	CALC TAIL MASS (kg)	CALC VOL TO 2m DEPTH (cu m)	TOTAL MASS (t)	Cr203 (%)	TOTAL Cr203 MASS (t)	AVERAGE Cr203 (%)	IR (ppb)	TOTAL IR MASS (g)	AVERAGE IR (ppb)
02	MAG 1	22.89	1.2	0.15	0.13	0.52	1040	22500	2678.13	31.0	830.22		110	294.59	
03	MAG 1	40.07	1.1	0.05	0.05	0.80	1600	25000	8014.00	31.0	2484.34		74	593.04	
04	MAG 1	6.76	1.3	0.15	0.20	0.35	700	20000	473.20	12.4	58.68		51	24.13	
05	MAG 1	15.57	0.8	0.13	0.10	0.97	1940	20000	3020.58	8.6	259.77		9	27.19	
06	MAG 1	32.31	1.3	0.07	0.07	0.56	1120	25000	4523.40	13.5	610.66		150	678.51	
07	MAG 1	1.01	0.8	0.07	0.07	1.06	2120	11250	120.44	23.6	28.42		84	10.12	
08	MAG 1	25.87	1.1	0.05	0.05	0.80	1600	11875	2457.65	20.7	508.73		94	231.02	
09	MAG 1	22.75	0.9	0.07	0.07	0.96	1920	16875	3685.50	10.4	383.29		83	305.90	
10	MAG 1	21.78	0.8	0.10	0.10	1.00	2000	31250	6806.25	5.6	381.15		25	170.16	
11	MAG 1	14.88	0.9	0.10	0.20	0.80	1600	25000	2976.00	37.0	1101.12		66	196.42	
12	MAG 1	40.47	1.4	0.07	0.05	0.48	960	25000	4856.40	23.5	1141.25		130	631.33	
13	MAG 1	38.46	1.3	0.07	0.07	0.56	1120	15000	3230.64	17.5	565.36		120	387.68	
14	MAG 1	27.38	1.2	0.07	0.07	0.66	1320	17500	3162.39	11.6	366.84		97	306.75	
15	MAG 1	19.94	1.4	0.08	0.10	0.42	840	19375	1622.62	19.6	318.03		210	340.75	
16	MAG 1	14.83	1.0	0.12	0.07	0.81	1620	25000	3003.08	5.1	153.16		120	360.37	
18	MAG 1	10.19	0.9	0.13	0.10	0.87	1740	20000	1773.06	17.0	301.42		99	175.53	
19	MAG 1	13.32	0.6	0.20	0.15	1.05	2100	20000	2797.20	17.0	475.52		99	276.92	
20	MAG 1	11.75	1.2	0.20	0.15	0.45	900	18750	991.41	15.7	155.65		120	118.97	
21	MAG 1	22.39	0.9	0.07	0.07	0.96	1920	28125	6045.30	17.0	1027.70		99	598.48	
22	MAG 1	11.56	1.0	0.07	0.07	0.86	1720	22500	2236.86	17.0	380.27		99	221.45	
23	MAG 1	11.76	1.2	0.07	0.05	0.68	1360	15000	1199.52	17.0	203.92		99	118.75	
24	MAG 1	12.77	1.4	0.03	0.07	0.50	1000	20000	1277.00	19.5	249.02		83	105.99	
25	MAG 1	18.70	0.0	0.07	0.07	1.86	3720	25000	8695.50	17.0	1478.24		99	860.85	
26	MAG 1	13.52	1.2	0.07	0.05	0.68	1360	27500	2528.24	17.0	429.80		99	250.30	
27	MAG 1	11.41	0.8	0.05	0.07	1.08	2160	15000	1848.42	13.7	253.23		110	203.33	
28	MAG 1	13.52	1.0	0.05	0.07	0.88	1760	17500	2082.08	17.0	353.95		99	206.13	
29	MAG 1	25.71	0.9	0.07	0.07	0.96	1920	17500	4319.28	14.2	613.34		94	406.01	
30	MAG 1	23.06	1.0	0.07	0.15	0.78	1560	20000	3597.36	6.1	219.44		140	503.63	
31	MAG 1	20.20	0.5	0.07	0.07	1.36	2720	20000	5494.40	17.0	934.05		99	543.95	
SUBTOTAL									95515.90		16266.57	17.0		9148.24	96

017

693078

VOLUME, MASS, AND GRADE CALCULATIONS FOR THE TAILS, (<0.5mm, MAGNETIC SEPARATION PRODUCTS
(continued)

SAMPLE SITE	MAGNETIC SEPARATION	MASS (%)	VOLUME > 3mm (cu m)	VOLUME HUTCH 2+3 (cu m)	VOLUME HUTCH 1 (cu m)	VOLUME TAILS (cu m)	CALC TAIL MASS (kg)	CALC VOL TO 2m DEPTH (cu m)	TOTAL MASS (t)	Cr203 (%)	TOTAL Cr203 MASS (t)	AVERAGE Cr203 (%)	IR (ppb)	TOTAL IR MASS (g)	AVERAGE IR (ppb)
02	MAG 2	33.24	1.2	0.15	0.13	0.52	1040	22500	3889.08	28.0	1088.94		42	163.34	
04	MAG 2	6.68	1.3	0.15	0.20	0.35	700	20000	467.60	7.1	33.20		34	15.90	
05	MAG 2	20.05	0.8	0.13	0.10	0.97	1940	20000	3889.70	12.0	466.76		20	77.79	
06	MAG 2	8.27	1.3	0.07	0.07	0.56	1120	25000	1157.80	6.6	76.41		100	115.78	
07	MAG 2	8.59	0.8	0.07	0.07	1.06	2120	11250	1024.36	10.2	104.48		22	22.54	
08	MAG 2	13.60	1.1	0.05	0.05	0.80	1600	11875	1292.00	13.2	170.54		89	114.99	
09	MAG 2	9.11	0.9	0.07	0.07	0.96	1920	16875	1475.82	15.3	225.80		67	98.88	
10	MAG 2	8.29	0.8	0.10	0.10	1.00	2000	31250	2590.63	4.8	124.35		57	147.67	
11	MAG 2	9.81	0.9	0.10	0.20	0.80	1600	25000	1962.00	10.8	211.90		140	274.68	
12	MAG 2	15.50	1.4	0.07	0.05	0.48	960	25000	1860.00	19.5	362.70		72	133.92	
13	MAG 2	16.19	1.3	0.07	0.07	0.56	1120	15000	1359.96	5.8	78.88		110	149.60	
14	MAG 2	8.73	1.2	0.07	0.07	0.66	1320	17500	1008.32	5.6	56.47		86	86.72	
15	MAG 2	12.84	1.4	0.08	0.10	0.42	840	19375	1044.86	12.0	125.38		92	96.13	
16	MAG 2	4.83	1.0	0.12	0.07	0.81	1620	25000	978.08	4.3	42.06		130	127.15	
18	MAG 2	15.20	0.9	0.13	0.10	0.87	1740	20000	2644.80	10.7	282.99		79	208.94	
19	MAG 2	6.74	0.6	0.20	0.15	1.05	2100	20000	1415.40	10.7	151.45		79	111.82	
20	MAG 2	9.26	1.2	0.20	0.15	0.45	900	18750	781.31	8.2	64.07		77	60.16	
21	MAG 2	19.54	0.9	0.07	0.07	0.96	1920	28125	5275.80	10.7	564.51		79	416.79	
22	MAG 2	11.38	1.0	0.07	0.07	0.86	1720	22500	2202.03	10.7	235.62		79	173.96	
23	MAG 2	10.00	1.2	0.07	0.05	0.68	1360	15000	1020.00	10.7	109.14		79	80.58	
24	MAG 2	16.02	1.4	0.03	0.07	0.50	1000	20000	1602.00	9.7	155.39		120	192.24	
25	MAG 2	13.35	0.0	0.07	0.07	1.86	3720	25000	6207.75	10.7	664.23		79	490.41	
26	MAG 2	8.40	1.2	0.07	0.05	0.68	1360	27500	1570.80	10.7	168.08		79	124.09	
27	MAG 2	6.46	0.8	0.05	0.07	1.08	2160	15000	1046.52	9.5	99.42		71	74.30	
28	MAG 2	9.42	1.0	0.05	0.07	0.88	1760	17500	1450.68	10.7	155.22		79	114.60	
29	MAG 2	11.55	0.9	0.07	0.07	0.96	1920	17500	1940.40	9.7	188.22		68	131.95	
30	MAG 2	7.90	1.0	0.07	0.15	0.78	1560	20000	1232.40	11.8	145.42		96	118.31	
31	MAG 2	7.38	0.5	0.07	0.07	1.36	2720	20000	2007.36	10.7	214.79		79	158.58	
SUBTOTAL									54397.44		6366.43	11.7	4081.81	75	
02	MID	16.08	1.2	0.15	0.13	0.52	1040	22500	1881.36	15.0	282.20		51	95.95	
03	MID	17.73	1.1	0.05	0.05	0.80	1600	25000	3546.00	13.5	478.71		220	780.12	
04	MID	5.61	1.3	0.15	0.20	0.35	700	20000	392.70	5.7	22.38		5	1.96	
05	MID	14.07	0.8	0.13	0.10	0.97	1940	20000	2729.58	7.4	201.99		100	272.96	
07	MID	15.78	0.8	0.07	0.07	1.06	2120	11250	1881.77	0.1	1.88		8	15.05	
08	MID	5.67	1.1	0.05	0.05	0.80	1600	11875	538.65	3.2	17.24		51	27.47	
09	MID	11.75	0.9	0.07	0.07	0.96	1920	16875	1903.50	10.5	199.87		75	142.76	
12	MID	6.17	1.4	0.07	0.05	0.48	960	25000	740.40	8.0	59.23		67	49.61	
14	MID	4.17	1.2	0.07	0.07	0.66	1320	17500	481.64	4.0	19.27		77	37.09	
SUBTOTAL									14095.59		1282.77	9.1	1422.97	101	

020

693079

VOLUME, MASS, AND GRADE CALCULATIONS FOR THE TAILS, <0.5mm, MAGNETIC SEPARATION PRODUCTS
(continued)

SAMPLE SITE	MAGNETIC SEPARATION	MASS (%)	VOLUME > 3mm (cu m)	VOLUME HUTCH 2+3 (cu m)	VOLUME HUTCH 1 (cu m)	VOLUME TAILS (cu m)	CALC TAIL MASS (kg)	CALC VOL TO 2m DEPTH (cu m)	TOTAL MASS (t)	Cr203 (%)	TOTAL Cr203 MASS (t)	AVERAGE Cr203 (%)	IR (ppb)	TOTAL IR MASS (g)	AVERAGE IR (ppb)
02	NON MAG	12.53	1.2	0.15	0.13	0.52	1040	22500	1466.01	4.2	61.57		75	109.95	
03	NON MAG	17.73	1.1	0.05	0.05	0.80	1600	25000	3546.00	7.8	276.59		130	460.98	
04	NON MAG	4.86	1.3	0.15	0.20	0.35	700	20000	340.20	3.6	12.25		36	12.25	
05	NON MAG	9.22	0.8	0.13	0.10	0.97	1940	20000	1788.68	4.3	76.91		16	28.62	
06	NON MAG	14.78	1.3	0.07	0.07	0.56	1120	25000	2069.20	3.5	72.42		110	227.61	
07	NON MAG	58.79	0.8	0.07	0.07	1.06	2120	11250	7010.71	0.1	7.01		16	112.17	
08	NON MAG	7.77	1.1	0.05	0.05	0.80	1600	11875	738.15	1.1	8.12		76	56.10	
10	NON MAG	13.18	0.8	0.10	0.10	1.00	2000	31250	4118.75	4.6	189.46		31	127.68	
11	NON MAG	26.02	0.9	0.10	0.20	0.80	1600	25000	5204.00	0.3	15.61		38	197.75	
12	NON MAG	7.27	1.4	0.07	0.05	0.48	960	25000	872.40	1.9	16.58		110	95.96	
13	NON MAG	7.49	1.3	0.07	0.07	0.56	1120	15000	629.16	1.1	6.92		100	62.92	
14	NON MAG	7.55	1.2	0.07	0.07	0.66	1320	17500	872.03	2.2	19.18		150	130.80	
15	NON MAG	6.52	1.4	0.08	0.10	0.42	840	19375	530.57	4.6	24.41		78	41.38	
16	NON MAG	3.28	1.0	0.12	0.07	0.81	1620	25000	664.20	4.0	26.57		9	5.65	
18	NON MAG	4.32	0.9	0.13	0.10	0.87	1740	20000	751.68	4.2	31.57		75	56.38	
19	NON MAG	3.13	0.6	0.20	0.15	1.05	2100	20000	657.30	4.2	27.61		75	49.30	
20	NON MAG	10.50	1.2	0.20	0.15	0.45	900	18750	885.94	3.1	27.46		110	97.45	
21	NON MAG	9.19	0.9	0.07	0.07	0.96	1920	28125	2481.30	4.2	104.21		75	186.10	
22	NON MAG	6.48	1.0	0.07	0.07	0.86	1720	22500	1253.88	4.2	52.66		75	94.04	
23	NON MAG	9.53	1.2	0.07	0.05	0.68	1360	15000	972.06	4.2	40.83		75	72.90	
24	NON MAG	6.94	1.4	0.03	0.07	0.50	1000	20000	694.00	4.3	29.84		86	59.68	
25	NON MAG	16.19	0.0	0.07	0.07	1.86	3720	25000	7528.35	4.2	316.19		75	564.63	
26	NON MAG	14.72	1.2	0.07	0.05	0.68	1360	27500	2752.64	4.2	115.61		75	206.45	
27	NON MAG	3.23	0.8	0.05	0.07	1.08	2160	15000	523.26	9.8	51.28		200	104.65	
28	NON MAG	3.98	1.0	0.05	0.07	0.88	1760	17500	612.92	4.2	25.74		75	45.97	
29	NON MAG	3.48	0.9	0.07	0.07	0.96	1920	17500	584.64	4.9	28.65		53	30.99	
30	NON MAG	1.68	1.0	0.07	0.15	0.78	1560	20000	262.08	13.6	35.64		5	1.31	
31	NON MAG	4.18	0.5	0.07	0.07	1.36	2720	20000	1136.96	4.2	47.75		75	85.27	
SUBTOTAL									50947.06		1748.66	3.4	3324.94	65	
SUBTOTAL - FOR MAG 1, MAG 2 AND MIDS									164008.93		23915.77	14.58	14653.01	89	
GRAND TOTAL - FOR ALL TAILS, <0.5mm, MAGNETIC PRODUCTS.									257465.00		29456.26	11.4	23306.79	91	

619

693080

VOLUME, MASS AND GRADE CALCULATIONS FOR THE TAILS, 0.5-2mm, MAGNETIC SEPARATION PRODUCTS

SAMPLE SITE	MAGNETIC SEPARATION	*MASS (%)	*VOL >3mm (cu m)	*VOL HUTCH 2+3 (cu m)	*VOL HUTCH 1 (cu m)	*VOL TAILS (cu m)	*CALC TAIL MASS (kg)	*CALC VOL TO 2m DEPTH (cu m)	*TOTAL MASS (t)	*Cr203 (%)	*TOTAL Cr203 MASS (t)	*AVERAGE Cr203 (%)
04	HI MAG	5.04	1.3	0.15	0.20	0.35	700	20000	352.80	4.1	14.46	
06	HI MAG	1.28	1.3	0.07	0.07	0.56	1120	25000	179.20	4.1	7.35	
12	HI MAG	2.06	1.4	0.07	0.05	0.48	960	25000	247.20	4.1	10.14	
13	HI MAG	1.21	1.3	0.07	0.07	0.56	1120	15000	101.64	4.1	4.17	
14	HI MAG	2.03	1.2	0.07	0.07	0.66	1320	17500	234.47	4.1	9.61	
15	HI MAG	3.11	1.4	0.08	0.10	0.42	840	19375	253.08	4.1	10.38	
20	HI MAG	1.74	1.2	0.20	0.15	0.45	900	18750	146.81	4.1	6.02	
21	HI MAG	0.53	0.9	0.07	0.07	0.96	1920	28125	143.10	4.1	5.87	
22	HI MAG	0.70	1.0	0.07	0.07	0.86	1720	22500	135.45	4.1	5.55	
23	HI MAG	8.12	1.2	0.07	0.05	0.68	1360	15000	828.24	4.1	33.96	
28	HI MAG	0.31	1.0	0.05	0.07	0.88	1760	17500	47.74	4.1	1.96	
29	HI MAG	0.95	0.9	0.07	0.07	0.96	1920	17500	159.60	4.1	6.54	
31	HI MAG	3.42	0.5	0.07	0.07	1.36	2720	20000	930.24	4.1	38.14	
SUBTOTAL									3759.56		154.14	4.1

- * MASS (%): The percentage mass of the tails, 0.5-2mm, 'HI Mag' product located at that sample site.
- * VOLUME >3mm (cu m): The measured volume of the >3mm fraction.
- * VOLUME HUTCH 2+3 (cu m): The measured volume of the Hutch 2+3 concentrates.
- * VOLUME HUTCH 1 (cu m): The measured volume of the Hutch 1 concentrates.
- * VOLUME TAILS (cu m) = Sample Vol - Vol Hutch 2+3 - Vol Hutch 1. (Note: Sample Vol = 2 cu m for each bulk sample)
- * CALCULATED TAIL MASS (kg) = Volume of Sample x Density of Sample.
(Note: The density for the tail samples is estimated at approximately 2000kg/cu m)
- * CALCULATED VOLUME TO 2m DEPTH (cu m): Volume calculations were performed by assigning areas of influence to each of the bulk samples. Calculations were then made to a depth of 2m.

$$\text{* TOTAL MASS (t)} = \frac{\text{Calculated Volume to 2m}}{\text{Sample Vol.}} \times \text{Total Mass of Tails} \times \frac{\text{Mass (\%)}}{100} \times \frac{1 \text{ tonne}}{1000 \text{ kg}}$$

- * Cr203 (%): Calculated by using the relative proportions of the overall Cr203 (%) as analysed and calculated for the Hutch 1 samples and Tail <0.5mm samples.
- * TOTAL Cr203 MASS (t) = Total Mass (t) x Cr203 (%) / 100
- * AVERAGE Cr203(%) = Total Cr203 Mass (t) / Total Mass (t) x 100%

693081

001

VOLUME, MASS AND GRADE CALCULATIONS FOR THE TAILS, 0.5-2mm, MAGNETIC SEPARATION PRODUCTS
(continued)

SAMPLE SITE	MAGNETIC SEPARATION	MASS (%)	VOLUME >3mm (cu m)	VOLUME HUTCH 2+3 (cu m)	VOLUME HUTCH 1 (cu m)	VOLUME TAILS (cu m)	CALC TAIL MASS (kg)	CALC VOL TO 2m DEPTH (cu m)	TOTAL MASS (t)	Cr203 (%)	TOTAL Cr203 MASS (t)	AVERAGE Cr203 (%)	
04	MAG 1	3.45	1.3	0.15	0.20	0.35	700	20000	241.50	4.1	9.90		
06	MAG 1	2.56	1.3	0.07	0.07	0.56	1120	25000	358.40	4.1	14.69		
08	MAG 1	4.27	1.1	0.05	0.05	0.80	1600	11875	405.65	4.1	16.63		
09	MAG 1	4.15	0.9	0.07	0.07	0.96	1920	16875	672.30	4.1	27.56		
12	MAG 1	3.57	1.4	0.07	0.05	0.48	960	25000	428.40	4.1	17.56		
13	MAG 1	2.02	1.3	0.07	0.07	0.56	1120	15000	169.68	4.1	6.96		
14	MAG 1	13.13	1.2	0.07	0.07	0.66	1320	17500	1516.52	4.1	62.18		
15	MAG 1	1.36	1.4	0.08	0.10	0.42	840	19375	110.67	4.1	4.54		
20	MAG 1	1.99	1.2	0.20	0.15	0.45	900	18750	167.91	4.1	6.88		
21	MAG 1	0.42	0.9	0.07	0.07	0.96	1920	28125	113.40	4.1	4.65		
22	MAG 1	0.53	1.0	0.07	0.07	0.86	1720	22500	102.56	4.1	4.20		
23	MAG 1	1.76	1.2	0.07	0.05	0.68	1360	15000	179.52	4.1	7.36		
24	MAG 1	3.86	1.4	0.03	0.07	0.50	1000	20000	386.00	4.1	15.83		
28	MAG 1	0.73	1.0	0.05	0.07	0.88	1760	17500	112.42	4.1	4.61		
29	MAG 1	1.42	0.9	0.07	0.07	0.96	1920	17500	238.56	4.1	9.78		
31	MAG 1	1.79	0.5	0.07	0.07	1.36	2720	20000	486.88	4.1	19.96		
									SUBTOTAL	5690.36		233.30	4.1
04	MAG 2	11.14	1.3	0.15	0.20	0.35	700	20000	779.80	4.1	31.97		
06	MAG 2	2.74	1.3	0.07	0.07	0.56	1120	25000	383.60	4.1	15.73		
13	MAG 2	6.07	1.3	0.07	0.07	0.56	1120	15000	509.88	4.1	20.91		
15	MAG 2	3.89	1.4	0.08	0.10	0.42	840	19375	316.55	4.1	12.98		
20	MAG 2	2.56	1.2	0.20	0.15	0.45	900	18750	216.00	4.1	8.86		
21	MAG 2	2.22	0.9	0.07	0.07	0.96	1920	28125	599.40	4.1	24.58		
22	MAG 2	2.98	1.0	0.07	0.07	0.86	1720	22500	576.63	4.1	23.64		
23	MAG 2	4.59	1.2	0.07	0.05	0.68	1360	15000	468.18	4.1	19.20		
24	MAG 2	3.68	1.4	0.03	0.07	0.50	1000	20000	368.00	4.1	15.09		
28	MAG 2	3.43	1.0	0.05	0.07	0.88	1760	17500	528.22	4.1	21.66		
29	MAG 2	0.79	0.9	0.07	0.07	0.96	1920	17500	132.72	4.1	5.44		
31	MAG 2	1.30	0.5	0.07	0.07	1.36	2720	20000	353.60	4.1	14.50		
									SUBTOTAL	5232.58		214.54	4.1
06	MID	12.34	1.3	0.07	0.07	0.56	1120	25000	1727.60	4.1	70.83		
08	MID	4.35	1.1	0.05	0.05	0.80	1600	11875	413.25	4.1	16.94		
09	MID	4.09	0.9	0.07	0.07	0.96	1920	16875	662.58	4.1	27.17		
12	MID	11.93	1.4	0.07	0.05	0.48	960	25000	1431.60	4.1	58.70		
13	MID	13.87	1.3	0.07	0.07	0.56	1120	15000	1165.08	4.1	47.77		
14	MID	6.82	1.2	0.07	0.07	0.66	1320	17500	787.71	4.1	32.30		
									SUBTOTAL	6187.82		253.70	4.1

693082

VOLUME, MASS AND GRADE CALCULATIONS FOR THE TAILS, 0.5-2mm. MAGNETIC SEPARATION PRODUCTS
(continued)

SAMPLE SITE	MAGNETIC SEPARATION	MASS (%)	VOLUME >3mm (cu m)	VOLUME HUTCH 2+3 (cu m)	VOLUME HUTCH 1 (cu m)	VOLUME TAILS (cu m)	CALC TAIL MASS (kg)	CALC VOL TO 2m DEPTH (cu m)	TOTAL MASS (t)	Cr203 (%)	TOTAL Cr203 MASS (t)	AVERAGE Cr203 (%)	
04	NON MAG	6.01	1.3	0.15	0.20	0.35	700	20000	420.70	4.1	17.25		
06	NON MAG	3.67	1.3	0.07	0.07	0.56	1120	25000	513.80	4.1	21.07		
14	NON MAG	1.13	1.2	0.07	0.07	0.66	1320	17500	130.52	4.1	5.35		
15	NON MAG	17.02	1.4	0.08	0.10	0.42	840	19375	1385.00	4.1	56.79		
20	NON MAG	10.17	1.2	0.20	0.15	0.45	900	18750	858.09	4.1	35.18		
21	NON MAG	8.55	0.9	0.07	0.07	0.96	1920	28125	2308.50	4.1	94.65		
22	NON MAG	21.54	1.0	0.07	0.07	0.86	1720	22500	4167.99	4.1	170.89		
23	NON MAG	26.82	1.2	0.07	0.05	0.68	1360	15000	2735.64	4.1	112.16		
24	NON MAG	8.05	1.4	0.03	0.07	0.50	1000	20000	805.00	4.1	33.01		
28	NON MAG	4.65	1.0	0.05	0.07	0.88	1760	17500	716.10	4.1	29.36		
29	NON MAG	3.96	0.9	0.07	0.07	0.96	1920	17500	665.28	4.1	27.28		
31	NON MAG	4.78	0.5	0.07	0.07	1.36	2720	20000	1300.16	4.1	53.31		
									SUBTOTAL	16006.78		656.28	4.1
16	NOT SEP	0.17	1.0	0.12	0.07	0.81	1620	25000	34.43	4.1	1.41		
02	NOT SEP	3.27	1.2	0.15	0.13	0.52	1040	22500	382.59	4.1	15.69		
03	NOT SEP	6.38	1.1	0.05	0.05	0.80	1600	25000	1276.00	4.1	52.32		
05	NOT SEP	12.45	0.8	0.13	0.10	0.97	1940	20000	2415.30	4.1	99.03		
10	NOT SEP	5.04	0.8	0.10	0.10	1.00	2000	31250	1575.00	4.1	64.58		
11	NOT SEP	0.67	0.9	0.10	0.20	0.80	1600	25000	134.00	4.1	5.49		
17	NOT SEP	10.60	1.0	0.40	0.12	0.48	960	20000	1017.60	4.1	41.72		
18	NOT SEP	0.17	0.9	0.13	0.10	0.87	1740	20000	29.58	4.1	1.21		
19	NOT SEP	0.16	0.6	0.20	0.15	1.05	2100	20000	33.60	4.1	1.38		
25	NOT SEP	0.11	0.0	0.07	0.07	1.86	3720	25000	51.15	4.1	2.10		
26	NOT SEP	8.88	1.2	0.07	0.05	0.68	1360	27500	1660.56	4.1	68.08		
27	NOT SEP	4.41	0.8	0.05	0.07	1.08	2160	15000	714.42	4.1	29.29		
30	NOT SEP	2.59	1.0	0.07	0.15	0.78	1560	20000	404.04	4.1	16.57		
									SUBTOTAL	9728.27		398.86	4.1
									SUBTOTAL -	-----	-----	-----	-----
									FOR MAG 1,	17110.76		701.54	4.1
									MAG 2 AND MIDS	-----	-----	-----	-----
									GRAND TOTAL -	-----	-----	-----	-----
									FOR ALL TAILS,	46605.37		1910.82	4.1
									0.5-2mm,	-----	-----	-----	-----
									MAGNETIC PRODUCTS	-----	-----	-----	-----

002

693083

VOLUME, MASS AND GRADE CALCULATIONS FOR THE TAILS, >2mm, MAGNETIC SEPARATION PRODUCTS

SAMPLE SITE	MAGNETIC SEPARATION	*MASS (%)	*VOLUME > 3mm (cu m)	*VOLUME HUTCH 2+3 (cu m)	*VOLUME HUTCH 1 (cu m)	*VOLUME TAIL (cu m)	*CALC TAIL MASS (kg)	*CALC VOL TO 2m DEPTH (cu m)	*TOTAL MASS (t)	*Cr203 (%)	*TOTAL Cr203 MASS (t)	*AVERAGE Cr203 (%)
04	NOT SEP	0.88	1.3	0.15	0.20	0.35	700	20000	61.60	1.6	0.99	
06	NOT SEP	0.81	1.3	0.07	0.07	0.56	1120	25000	113.40	1.6	1.81	
07	NOT SEP	0.28	0.8	0.07	0.07	1.06	2120	11250	33.39	1.6	0.53	
08	NOT SEP	0.16	1.1	0.05	0.05	0.80	1600	11875	15.20	1.6	0.24	
09	NOT SEP	0.06	0.9	0.07	0.07	0.96	1920	16875	9.72	1.6	0.16	
12	NOT SEP	0.48	1.4	0.07	0.05	0.48	960	25000	57.60	1.6	0.92	
13	NOT SEP	0.51	1.3	0.07	0.07	0.56	1120	15000	42.84	1.6	0.69	
14	NOT SEP	0.62	1.2	0.07	0.07	0.66	1320	17500	71.61	1.6	1.15	
15	NOT SEP	0.49	1.4	0.08	0.10	0.42	840	19375	39.87	1.6	0.64	
17	NOT SEP	0.15	1.0	0.40	0.12	0.48	960	20000	14.40	1.6	0.23	
20	NOT SEP	0.50	1.2	0.20	0.15	0.45	900	18750	42.19	1.6	0.68	
21	NOT SEP	0.11	0.9	0.07	0.07	0.96	1920	28125	29.70	1.6	0.48	
22	NOT SEP	0.88	1.0	0.07	0.07	0.86	1720	22500	170.28	1.6	2.72	
23	NOT SEP	3.53	1.2	0.07	0.05	0.68	1360	15000	360.06	1.6	5.76	
24	NOT SEP	0.34	1.4	0.03	0.07	0.50	1000	20000	34.00	1.6	0.54	
26	NOT SEP	0.24	1.2	0.07	0.05	0.68	1360	27500	44.88	1.6	0.72	
28	NOT SEP	0.24	1.0	0.05	0.07	0.88	1760	17500	36.96	1.6	0.59	
29	NOT SEP	0.16	0.9	0.07	0.07	0.96	1920	17500	26.88	1.6	0.43	
31	NOT SEP	0.11	0.5	0.07	0.07	1.36	2720	20000	29.92	1.6	0.48	
GRAND TOTAL									1234.50		19.75	1.6

- * MASS (%): The percentage mass of the Tails, >2mm, 'Hi Mag' product located at that sample site.
- * VOLUME >3mm (cu m): The measured volume of the >3mm fraction.
- * VOLUME HUTCH 2+3 (cu m): The measured volume of the Hutch 2+3 concentrates.
- * VOLUME HUTCH 1 (cu m): The measured volume of the Hutch 1 concentrates.
- * VOLUME TAILS (cu m) = Sample Vol - Vol Hutch 2+3 - Vol Hutch 1. (Note: Sample Vol = 2 cu m for each bulk sample)
- * CALCULATED TAIL MASS (kg) = Volume of Sample x Density of Sample.
(Note: The density for the Tail samples is estimated at approximately 2000kg/cu m.)
- * CALCULATED VOLUME TO 2m DEPTH (cu m): Volume calculations were performed by assigning areas of influence to each of the bulk samples. Calculations were then made to a depth of 2m.

* TOTAL MASS (t) = $\frac{\text{Calculated Volume to 2m}}{\text{Sample Vol.}} \times \frac{\text{Total Mass of Tails}}{100} \times \frac{\text{Mass (\%)}}{100} \times \frac{1 \text{ tonne}}{1000 \text{ kg}}$

- * Cr203 (%): Calculated by using the relative proportions of the overall Cr203 (%) as analysed and calculated for the Hutch 1 samples and the Tail (<0.5mm samples).
- * TOTAL Cr203 MASS (t) = Total Mass (t) x Cr203 (%) / 100
- * AVERAGE Cr203(%) = Total Cr203 Mass (t) / Total Mass (t) x 100%

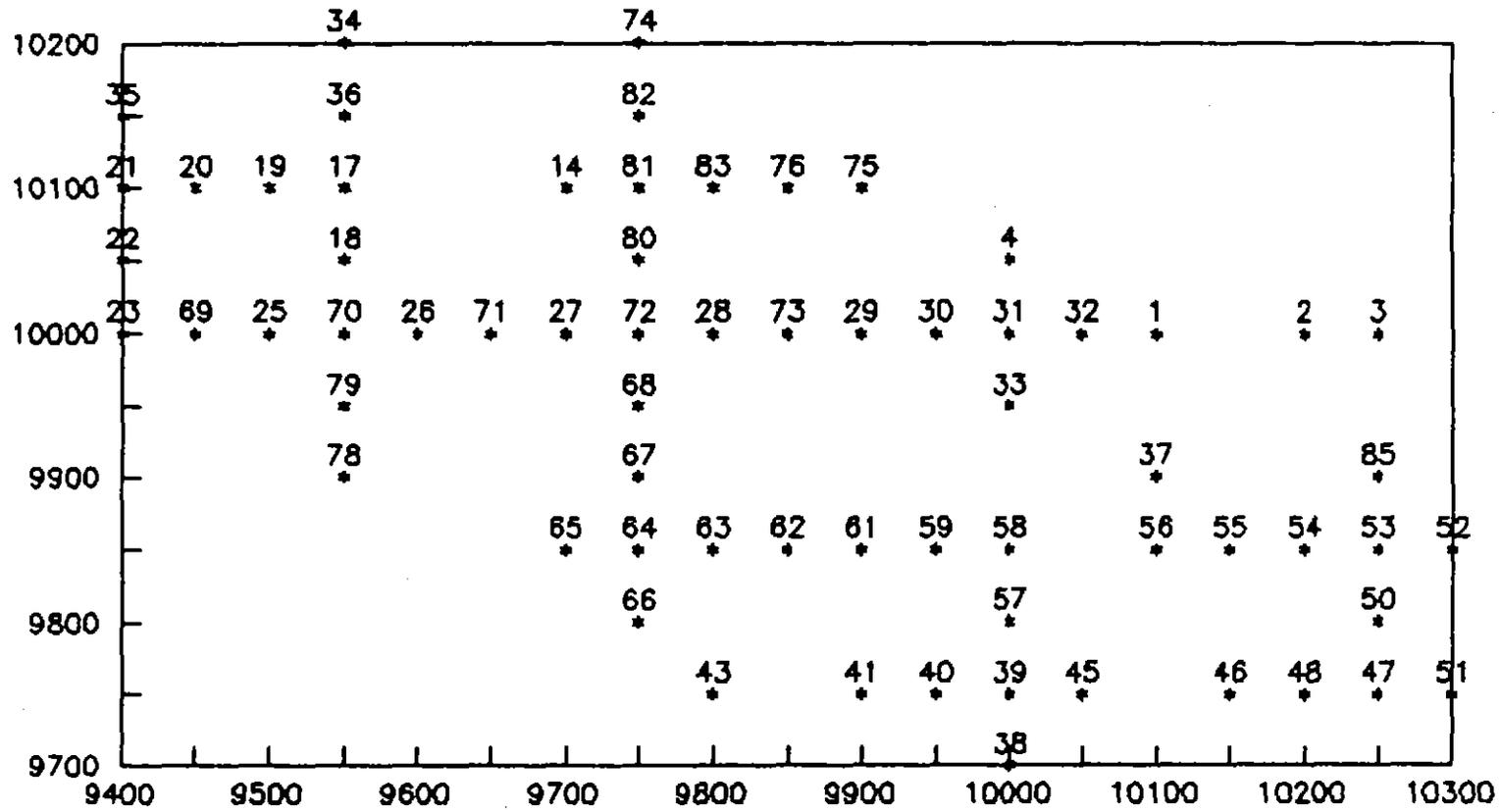
004

APPENDIX 7

AUGER SAMPLE DATA

1. Auger Sample Locations.
2. Summary Volume and Mass.
3. Volume and Mass Calculations for the Auger Core Products.

WILSON RIVER – Auger Sample Locations



036

SUMMARY VOLUME AND MASS CALCULATIONS FOR THE AUGER CORE PRODUCTS

	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (t)
<0.075mm	1,631,719	1,861,873
HI MAGS	2,838,125	506,403
MAG 1	2,870,938	492,893
MAG 2	2,767,812	306,566
MID	2,143,281	244,814
NON MAG	2,800,000	513,440
NOT SEP	1,615,469	190,856
GRAND TOTAL	=====	=====
	1,646,738	4,116,845
	=====	=====

007

VOLUME AND MASS CALCULATIONS FOR THE AUBER CORE PRODUCTS

SAMPLE SITE	SIZE (mm)	MAGNETIC SEPARATION	MASS (%)	SAMPLE TOP (m)	SAMPLE BOTTOM (m)	SAMPTOP - SAMPBOT. (m)	SURFACE AREA (sq m)	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (t)	Cr203 (%)	TOTAL Cr203 MASS (t)
01	<0.075		48.33	0.0	6.0	6.0	7500.0	45000.0	54371.25	0.0	
01	<0.075		33.32	6.0	8.0	2.0	7500.0	15000.0	12495.00	0.0	
01	<0.075		26.56	8.0	10.0	2.0	7500.0	15000.0	9960.00	0.0	
02	<0.075		14.00	0.0	4.0	4.0	6875.0	27500.0	9625.00	0.0	
03	<0.075		33.81	0.0	2.0	2.0	5625.0	11250.0	9509.06	0.0	
04	<0.075		37.88	0.0	2.0	2.0	4375.0	8750.0	8286.25	0.0	
04	<0.075		39.27	2.0	4.0	2.0	4375.0	8750.0	8590.31	0.0	
04	<0.075		51.73	4.0	6.0	2.0	4375.0	8750.0	11315.94	0.0	
04	<0.075		29.93	6.0	8.0	2.0	4375.0	8750.0	6547.19	0.0	
04	<0.075		35.18	8.0	10.0	2.0	4375.0	8750.0	7695.63	0.0	
14	<0.075		29.44	0.0	2.0	2.0	9375.0	18750.0	13800.00	0.0	
14	<0.075		21.79	2.0	4.0	2.0	9375.0	18750.0	10214.06	0.0	
17	<0.075		22.62	0.0	1.0	1.0	5000.0	5000.0	2827.50	0.0	
17	<0.075		23.17	6.0	8.0	2.0	5000.0	10000.0	5792.50	0.0	
18	<0.075		58.83	0.0	2.0	2.0	4375.0	8750.0	12869.06	0.0	
18	<0.075		61.64	2.0	4.0	2.0	4375.0	8750.0	13483.75	0.0	
18	<0.075		80.92	4.0	7.0	3.0	4375.0	13125.0	26551.88	0.0	
19	<0.075		33.92	0.0	2.0	2.0	4687.5	9375.0	7950.00	0.0	
19	<0.075		59.82	4.0	6.0	2.0	4687.5	9375.0	14020.31	0.0	
19	<0.075		72.58	8.0	10.0	2.0	4687.5	9375.0	17010.94	0.0	
20	<0.075		36.35	0.0	4.0	4.0	4687.5	18750.0	17039.06	0.0	
21	<0.075		40.91	0.0	2.0	2.0	2500.0	5000.0	5113.75	0.0	
21	<0.075		37.20	2.0	4.0	2.0	2500.0	5000.0	4650.00	0.0	
21	<0.075		71.83	6.0	8.0	2.0	2500.0	5000.0	8978.75	0.0	
21	<0.075		77.80	8.0	10.0	2.0	2500.0	5000.0	9725.00	0.0	
22	<0.075		26.83	0.0	2.0	2.0	3125.0	6250.0	4192.19	0.0	
22	<0.075		62.46	4.0	6.0	2.0	3125.0	6250.0	9759.38	0.0	
22	<0.075		85.55	6.0	8.0	2.0	3125.0	6250.0	13367.19	0.0	
23	<0.075		32.98	0.0	2.0	2.0	2500.0	5000.0	4122.50	0.0	
23	<0.075		68.90	2.0	4.0	2.0	2500.0	5000.0	8537.50	0.0	
23	<0.075		73.25	4.0	6.0	2.0	2500.0	5000.0	9156.25	0.0	
25	<0.075		34.27	0.0	2.0	2.0	4375.0	8750.0	7496.56	0.0	
25	<0.075		72.89	2.0	4.0	2.0	4375.0	8750.0	15944.69	0.0	
25	<0.075		78.62	4.0	7.0	3.0	4375.0	13125.0	25797.19	0.0	
26	<0.075		49.56	0.0	2.0	2.0	4687.5	9375.0	11615.63	0.0	
26	<0.075		61.93	2.0	4.0	2.0	4687.5	9375.0	14374.22	0.0	
26	<0.075		66.69	4.0	6.0	2.0	4687.5	9375.0	15630.47	0.0	
26	<0.075		61.97	6.0	9.0	3.0	4687.5	14062.5	21786.33	0.0	
27	<0.075		18.85	0.0	2.0	2.0	4375.0	8750.0	4123.44	0.0	
27	<0.075		69.22	2.0	5.0	3.0	4375.0	13125.0	22712.81	0.0	
28	<0.075		34.46	0.0	2.0	2.0	4687.5	9375.0	8076.56	0.0	
28	<0.075		30.00	2.0	6.0	4.0	4687.5	18750.0	14062.50	0.0	
29	<0.075		19.17	0.0	2.0	2.0	5625.0	11250.0	5391.56	0.0	
29	<0.075		29.61	2.0	4.0	2.0	5625.0	11250.0	8327.81	0.0	
29	<0.075		18.56	4.0	6.0	2.0	5625.0	11250.0	5220.00	0.0	
29	<0.075		36.57	6.0	7.0	1.0	5625.0	5625.0	5142.66	0.0	
30	<0.075		24.87	0.0	2.0	2.0	5312.5	10625.0	6606.09	0.0	
30	<0.075		22.16	2.0	4.0	2.0	5312.5	10625.0	5886.25	0.0	
30	<0.075		31.29	4.0	6.0	2.0	5312.5	10625.0	8311.41	0.0	
30	<0.075		23.06	6.0	8.0	2.0	5312.5	10625.0	6125.31	0.0	

880869

VOLUME AND MASS CALCULATIONS FOR THE AUGER CORE PRODUCTS
(continued)

SAMPLE SITE	SIZE (mm)	MAGNETIC SEPARATION	MASS (g)	SAMPLE TOP (m)	SAMPLE BOTTOM (m)	SAMP TOP - SAMP BOT (m)	SURFACE AREA (sq m)	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (g)	Cr-203 (%)	TOTAL Cr-203 MASS (g)
30	<0.075		25.49	8.0	10.0	2.0	5312.5	10625.0	6770.78	0.0	
31	<0.075		46.63	0.0	2.0	2.0	2500.0	5000.0	5828.75	0.0	
31	<0.075		48.79	2.0	4.0	2.0	2500.0	5000.0	6098.75	0.0	
31	<0.075		69.42	4.0	6.0	2.0	2500.0	5000.0	8677.50	0.0	
31	<0.075		50.38	6.0	8.0	2.0	2500.0	5000.0	6297.50	0.0	
31	<0.075		35.44	8.0	10.0	2.0	2500.0	5000.0	6930.00	0.0	
31	<0.075		65.08	10.0	12.0	2.0	2500.0	5000.0	8135.00	0.0	
32	<0.075		29.34	0.0	2.0	2.0	4375.0	8750.0	6418.13	0.0	
32	<0.075		41.23	2.0	4.0	2.0	4375.0	8750.0	9019.06	0.0	
32	<0.075		51.99	4.0	6.0	2.0	4375.0	8750.0	11372.81	0.0	
33	<0.075		47.44	0.0	2.0	2.0	5312.5	10625.0	12601.25	0.0	
33	<0.075		45.86	4.0	6.0	2.0	5312.5	10625.0	12181.56	0.0	
33	<0.075		42.04	4.0	8.0	2.0	5312.5	10625.0	11166.88	0.0	
33	<0.075		23.03	8.0	10.0	2.0	5312.5	10625.0	6117.34	0.0	
33	<0.075		27.41	10.0	12.0	2.0	5312.5	10625.0	7280.78	0.0	
33	<0.075		25.20	12.0	14.0	2.0	5312.5	10625.0	6693.75	0.0	
33	<0.075		47.36	14.0	17.0	3.0	5312.5	15937.5	18870.00	0.0	
34	<0.075		82.89	0.0	2.0	2.0	5000.0	10000.0	20722.50	0.0	
34	<0.075		70.80	2.0	4.0	2.0	5000.0	10000.0	17700.00	0.0	
35	<0.075		52.58	2.0	4.0	2.0	3750.0	7500.0	9858.75	0.0	
36	<0.075		29.81	0.0	2.0	2.0	6250.0	12500.0	9315.63	0.0	
36	<0.075		28.83	2.0	4.0	2.0	6250.0	12500.0	9009.38	0.0	
36	<0.075		90.79	4.0	6.0	2.0	6250.0	12500.0	28371.88	0.0	
37	<0.075		37.32	0.0	2.0	2.0	7812.5	15625.0	14578.13	0.0	
37	<0.075		62.57	2.0	4.0	2.0	7812.5	15625.0	24441.41	0.0	
37	<0.075		30.88	4.0	6.0	2.0	7812.5	15625.0	12062.50	0.0	
37	<0.075		22.34	6.0	8.0	2.0	7812.5	15625.0	8726.56	0.0	
38	<0.075		12.61	0.0	2.0	2.0	3437.5	6875.0	2167.34	0.0	
39	<0.075		56.58	0.0	2.0	2.0	2500.0	5000.0	7072.50	0.0	
39	<0.075		13.43	2.0	5.0	3.0	2500.0	7500.0	2518.13	0.0	
40	<0.075		66.59	0.0	3.0	3.0	4687.5	14062.5	23410.55	0.0	
41	<0.075		76.47	0.0	3.0	3.0	7500.0	22500.0	43014.38	0.0	
43	<0.075		22.20	0.0	2.0	2.0	8750.0	17500.0	9712.50	0.0	
45	<0.075		33.02	0.0	3.0	3.0	5312.5	15937.5	13156.41	0.0	
46	<0.075		68.41	0.0	2.0	2.0	5625.0	11250.0	19240.31	0.0	
47	<0.075		51.74	0.0	2.0	2.0	2500.0	5000.0	6467.50	0.0	
48	<0.075		51.86	0.0	2.0	2.0	3750.0	7500.0	9723.75	0.0	
50	<0.075		32.44	0.0	2.0	2.0	3125.0	6250.0	5068.75	0.0	
51	<0.075		43.10	0.0	4.0	4.0	3437.5	13750.0	14815.63	0.0	
52	<0.075		33.44	0.0	2.5	2.5	4375.0	10937.5	9143.75	0.0	
53	<0.075		19.96	0.0	3.0	3.0	2500.0	7500.0	3742.50	0.0	
54	<0.075		9.97	0.0	1.5	1.5	5000.0	7500.0	1869.38	0.0	
55	<0.075		19.12	0.0	2.0	2.0	5000.0	10000.0	4780.00	0.0	
56	<0.075		24.83	0.0	1.5	1.5	5625.0	8437.5	5659.45	0.0	
57	<0.075		17.94	0.0	4.5	4.5	3125.0	14062.5	6307.03	0.0	
58	<0.075		43.42	0.0	4.5	4.5	5937.5	26718.8	29003.20	0.0	
59	<0.075		39.08	0.0	2.0	2.0	6875.0	13750.0	13433.75	0.0	
61	<0.075		50.77	0.0	5.0	5.0	6875.0	34375.0	43630.47	0.0	
62	<0.075		18.00	0.0	6.0	6.0	6875.0	41250.0	18562.50	0.0	

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VOLUME AND MASS CALCULATIONS FOR THE AUGER CORE PRODUCTS
(continued)

SAMPLE SITE	SIZE (mm)	MAGNETIC SEPARATION	MASS (%)	SAMPLE TOP (m)	SAMPLE BOTTOM (m)	SAMPTOP - SAMPBOT (m)	SURFACE AREA (sq m)	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (t)	Cr-203 (%)	TOTAL Cr-203 MASS (t)
63	<0.075		71.66	0.0	6.0	6.0	4687.5	28125.0	50385.94	0.0	
64	<0.075		35.27	0.0	6.0	6.0	2500.0	15000.0	13226.25	0.0	
65	<0.075		61.85	0.0	6.0	6.0	4375.0	26250.0	40589.06	0.0	
66	<0.075		8.00	0.0	2.0	2.0	5625.0	11250.0	2250.00	0.0	
67	<0.075		60.26	0.0	2.0	2.0	4687.5	9375.0	14123.44	0.0	
68	<0.075		45.29	0.0	1.0	1.0	4687.5	4687.5	5307.42	0.0	
69	<0.075		78.81	0.0	7.0	7.0	4687.5	32812.5	64648.83	0.0	
70	<0.075		57.36	0.0	9.0	9.0	2500.0	22500.0	32265.00	0.0	
71	<0.075		46.75	0.0	9.0	9.0	5000.0	45000.0	52593.75	0.0	
73	<0.075		41.31	0.0	7.5	7.5	5625.0	42187.5	43569.14	0.0	
74	<0.075		47.62	0.0	4.0	4.0	5000.0	20000.0	23810.00	0.0	
75	<0.075		70.26	0.0	4.5	4.5	7500.0	33750.0	59281.88	0.0	
76	<0.075		81.43	0.0	4.0	4.0	5000.0	20000.0	40715.00	0.0	
78	<0.075		73.40	0.0	4.0	4.0	7500.0	30000.0	55050.00	0.0	
79	<0.075		76.45	0.0	3.0	3.0	4375.0	13125.0	25085.16	0.0	
80	<0.075		47.02	0.0	8.0	8.0	3750.0	30000.0	35265.00	0.0	
81	<0.075		30.39	0.0	2.0	2.0	2500.0	5000.0	3798.75	0.0	
81	<0.075		28.20	2.0	4.0	2.0	2500.0	5000.0	3525.00	0.0	
81	<0.075		67.37	4.0	7.0	3.0	2500.0	7500.0	12631.88	0.0	
82	<0.075		29.22	0.0	2.0	2.0	4375.0	8750.0	6391.88	0.0	
82	<0.075		58.45	2.0	4.0	2.0	4375.0	8750.0	12785.94	0.0	
82	<0.075		56.30	4.0	6.0	2.0	4375.0	8750.0	12315.63	0.0	
82	<0.075		41.88	6.0	8.0	2.0	4375.0	8750.0	9161.25	0.0	
83	<0.075		6.67	0.0	2.0	2.0	4375.0	8750.0	1459.06	0.0	
83	<0.075		52.44	2.0	4.0	2.0	4375.0	8750.0	11471.25	0.0	
83	<0.075		60.84	4.0	6.0	2.0	4375.0	8750.0	13306.75	0.0	
85	<0.075		53.10	0.0	2.0	2.0	6875.0	13750.0	18253.13	0.0	
85	<0.075		28.00	2.0	4.0	2.0	6875.0	13750.0	9625.00	0.0	
85	<0.075		61.22	4.0	6.0	2.0	6875.0	13750.0	21044.38	0.0	
SUBTOTAL								1631718.8	1861872.73		

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VOLUME AND MASS CALCULATIONS FOR THE AUGER CORE PRODUCTS
(continued)

SAMPLE SITE	SIZE (mm)	MAGNETIC SEPARATION	MASS (%)	SAMPLE TOP (m)	SAMPLE BOTTOM (m)	SAMP TOP - SAMP BOT (m)	SURFACE AREA (sq m)	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (t)	Cr-203 (%)	TOTAL Cr-203 MASS (t)
01	0.5-2	HI MAG	8.97	0.0	6.0	6.0	7500.0	45000.0	10091.25	0.0	
01	0.5-2	HI MAG	10.37	6.0	8.0	2.0	7500.0	15000.0	3888.75	0.0	
01	0.5-2	HI MAG	7.22	8.0	10.0	2.0	7500.0	15000.0	2707.50	0.0	
02	0.5-2	HI MAG	3.90	0.0	4.0	4.0	6875.0	27500.0	2681.25	0.0	
03	0.5-2	HI MAG	11.29	0.0	2.0	2.0	5625.0	11250.0	3175.31	0.0	
04	0.5-2	HI MAG	0.62	0.0	2.0	2.0	4375.0	8750.0	135.63	0.0	
04	0.5-2	HI MAG	6.03	2.0	4.0	2.0	4375.0	8750.0	1319.06	0.0	
04	0.5-2	HI MAG	1.09	4.0	6.0	2.0	4375.0	8750.0	238.44	0.0	
04	0.5-2	HI MAG	17.56	6.0	8.0	2.0	4375.0	8750.0	3841.25	0.0	
04	0.5-2	HI MAG	2.36	8.0	10.0	2.0	4375.0	8750.0	516.25	0.0	
14	0.5-2	HI MAG	1.04	0.0	2.0	2.0	9375.0	18750.0	487.50	0.0	
17	0.5-2	HI MAG	3.53	0.0	1.0	1.0	5000.0	5000.0	441.25	0.0	
17	0.5-2	HI MAG	1.53	6.0	8.0	2.0	5000.0	10000.0	382.50	0.0	
18	0.5-2	HI MAG	0.02	2.0	4.0	2.0	4375.0	8750.0	4.38	0.0	
18	0.5-2	HI MAG	0.02	4.0	7.0	3.0	4375.0	13125.0	6.56	0.0	
21	0.5-2	HI MAG	2.26	0.0	2.0	2.0	2500.0	5000.0	282.50	0.0	
21	0.5-2	HI MAG	0.28	2.0	4.0	2.0	2500.0	5000.0	35.00	0.0	
22	0.5-2	HI MAG	1.94	0.0	2.0	2.0	3125.0	6250.0	303.13	0.0	
23	0.5-2	HI MAG	1.72	0.0	2.0	2.0	2500.0	5000.0	215.00	0.0	
23	0.5-2	HI MAG	0.25	2.0	4.0	2.0	2500.0	5000.0	31.25	0.0	
25	0.5-2	HI MAG	2.93	0.0	2.0	2.0	4375.0	8750.0	640.94	0.0	
26	0.5-2	HI MAG	3.68	0.0	2.0	2.0	4687.5	9375.0	862.50	0.0	
28	0.5-2	HI MAG	7.71	0.0	2.0	2.0	4687.5	9375.0	1807.03	0.0	
28	0.5-2	HI MAG	6.47	2.0	6.0	4.0	4687.5	18750.0	3032.81	0.0	
29	0.5-2	HI MAG	9.05	0.0	2.0	2.0	5625.0	11250.0	2545.31	0.0	
29	0.5-2	HI MAG	7.10	2.0	4.0	2.0	5625.0	11250.0	1996.88	0.0	
29	0.5-2	HI MAG	0.32	4.0	6.0	2.0	5625.0	11250.0	90.00	0.0	
30	0.5-2	HI MAG	2.61	0.0	2.0	2.0	5312.5	10625.0	693.28	0.0	
30	0.5-2	HI MAG	0.40	2.0	4.0	2.0	5312.5	10625.0	106.25	0.0	
30	0.5-2	HI MAG	9.12	4.0	6.0	2.0	5312.5	10625.0	2422.50	0.0	
30	0.5-2	HI MAG	0.15	6.0	8.0	2.0	5312.5	10625.0	39.84	0.0	
30	0.5-2	HI MAG	0.20	8.0	10.0	2.0	5312.5	10625.0	53.13	0.0	
31	0.5-2	HI MAG	6.69	2.0	4.0	2.0	2500.0	5000.0	836.25	0.0	
31	0.5-2	HI MAG	0.47	6.0	8.0	2.0	2500.0	5000.0	58.75	0.0	
31	0.5-2	HI MAG	0.12	8.0	10.0	2.0	2500.0	5000.0	15.00	0.0	
31	0.5-2	HI MAG	0.08	10.0	12.0	2.0	2500.0	5000.0	10.00	0.0	
32	0.5-2	HI MAG	13.15	0.0	2.0	2.0	4375.0	8750.0	2876.56	0.0	
32	0.5-2	HI MAG	3.37	2.0	4.0	2.0	4375.0	8750.0	737.19	0.0	
32	0.5-2	HI MAG	0.26	4.0	6.0	2.0	4375.0	8750.0	56.88	0.0	
33	0.5-2	HI MAG	9.67	0.0	2.0	2.0	5312.5	10625.0	2568.59	0.0	
33	0.5-2	HI MAG	0.22	4.0	6.0	2.0	5312.5	10625.0	58.44	0.0	
33	0.5-2	HI MAG	0.21	8.0	10.0	2.0	5312.5	10625.0	55.78	0.0	
33	0.5-2	HI MAG	0.13	10.0	12.0	2.0	5312.5	10625.0	34.53	0.0	
33	0.5-2	HI MAG	0.41	12.0	14.0	2.0	5312.5	10625.0	108.91	0.0	
34	0.5-2	HI MAG	0.33	0.0	2.0	2.0	5000.0	10000.0	82.50	0.0	
34	0.5-2	HI MAG	0.12	2.0	4.0	2.0	5000.0	10000.0	30.00	0.0	
35	0.5-2	HI MAG	0.45	2.0	4.0	2.0	3750.0	7500.0	84.38	0.0	
36	0.5-2	HI MAG	3.58	0.0	2.0	2.0	6250.0	12500.0	1118.75	0.0	
36	0.5-2	HI MAG	3.22	2.0	4.0	2.0	6250.0	12500.0	1006.25	0.0	

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VOLUME AND MASS CALCULATIONS FOR THE AUGER CORE PRODUCTS
(continued)

SAMPLE SITE	SIZE (mm)	MAGNETIC SEPARATION	MASS (%)	SAMPLE TOP (m)	SAMPLE BOTTOM (m)	SAMPTOP - SAMPBOT (m)	SURFACE AREA (sq m)	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (t)	Cr-203 (%)	TOTAL Cr-203 MASS (t)
37	0.5-2	HI MAG	2.40	0.0	2.0	2.0	7812.5	15625.0	937.50	0.0	
37	0.5-2	HI MAG	0.21	2.0	4.0	2.0	7812.5	15625.0	82.03	0.0	
37	0.5-2	HI MAG	0.70	4.0	6.0	2.0	7812.5	15625.0	273.44	0.0	
37	0.5-2	HI MAG	0.34	6.0	8.0	2.0	7812.5	15625.0	132.81	0.0	
38	0.5-2	HI MAG	25.82	0.0	2.0	2.0	3437.5	6875.0	4437.81	0.0	
39	0.5-2	HI MAG	8.82	0.0	2.0	2.0	2500.0	5000.0	1102.50	0.0	
39	0.5-2	HI MAG	31.64	2.0	5.0	3.0	2500.0	7500.0	5932.50	0.0	
41	0.5-2	HI MAG	5.06	0.0	3.0	3.0	7500.0	22500.0	2846.25	0.0	
45	0.5-2	HI MAG	11.26	0.0	3.0	3.0	5312.5	15937.5	4486.41	0.0	
46	0.5-2	HI MAG	2.33	0.0	2.0	2.0	5625.0	11250.0	655.31	0.0	
47	0.5-2	HI MAG	11.21	0.0	2.0	2.0	2500.0	5000.0	1401.25	0.0	
48	0.5-2	HI MAG	7.47	0.0	2.0	2.0	3750.0	7500.0	1400.63	0.0	
50	0.5-2	HI MAG	13.00	0.0	2.0	2.0	3125.0	6250.0	2031.25	0.0	
51	0.5-2	HI MAG	8.82	0.0	4.0	4.0	3437.5	13750.0	3031.88	0.0	
52	0.5-2	HI MAG	19.30	0.0	2.5	2.5	4375.0	10937.5	5277.34	0.0	
53	0.5-2	HI MAG	14.04	0.0	3.0	3.0	2500.0	7500.0	2632.50	0.0	
54	0.5-2	HI MAG	19.03	0.0	1.5	1.5	5000.0	7500.0	3568.13	0.0	
55	0.5-2	HI MAG	8.74	0.0	2.0	2.0	5000.0	10000.0	2185.00	0.0	
56	0.5-2	HI MAG	5.04	0.0	1.5	1.5	5625.0	8437.5	1063.13	0.0	
57	0.5-2	HI MAG	18.89	0.0	4.5	4.5	3125.0	14062.5	6641.02	0.0	
58	0.5-2	HI MAG	6.47	0.0	4.5	4.5	5937.5	26718.8	4321.76	0.0	
59	0.5-2	HI MAG	19.13	0.0	2.0	2.0	6875.0	13750.0	6575.94	0.0	
61	0.5-2	HI MAG	7.09	0.0	5.0	5.0	6875.0	34375.0	6092.97	0.0	
62	0.5-2	HI MAG	28.22	0.0	6.0	6.0	6875.0	41250.0	29101.88	0.0	
63	0.5-2	HI MAG	1.69	0.0	6.0	6.0	4687.5	28125.0	1188.28	0.0	
64	0.5-2	HI MAG	13.90	0.0	6.0	6.0	2500.0	15000.0	5212.50	0.0	
66	0.5-2	HI MAG	12.94	0.0	2.0	2.0	5625.0	11250.0	3639.38	0.0	
67	0.5-2	HI MAG	3.53	0.0	2.0	2.0	4687.5	9375.0	827.34	0.0	
68	0.5-2	HI MAG	10.57	0.0	1.0	1.0	4687.5	4687.5	1238.67	0.0	
69	0.5-2	HI MAG	0.19	0.0	7.0	7.0	4687.5	32812.5	155.86	0.0	
71	0.5-2	HI MAG	1.68	0.0	9.0	9.0	5000.0	45000.0	1890.00	0.0	
73	0.5-2	HI MAG	22.87	0.0	7.5	7.5	5625.0	42187.5	24120.70	0.0	
74	0.5-2	HI MAG	15.76	0.0	4.0	4.0	5000.0	20000.0	7880.00	0.0	
80	0.5-2	HI MAG	6.78	0.0	8.0	8.0	3750.0	30000.0	5085.00	0.0	
81	0.5-2	HI MAG	0.55	0.0	2.0	2.0	2500.0	5000.0	68.75	0.0	
81	0.5-2	HI MAG	3.22	2.0	4.0	2.0	2500.0	5000.0	402.50	0.0	
81	0.5-2	HI MAG	6.23	4.0	7.0	3.0	2500.0	7500.0	1168.13	0.0	
82	0.5-2	HI MAG	15.61	0.0	2.0	2.0	4375.0	8750.0	3414.69	0.0	
82	0.5-2	HI MAG	3.73	2.0	4.0	2.0	4375.0	8750.0	815.94	0.0	
82	0.5-2	HI MAG	4.26	4.0	6.0	2.0	4375.0	8750.0	931.88	0.0	
82	0.5-2	HI MAG	10.19	6.0	8.0	2.0	4375.0	8750.0	2229.06	0.0	
83	0.5-2	HI MAG	31.53	0.0	2.0	2.0	4375.0	8750.0	6897.19	0.0	
83	0.5-2	HI MAG	6.94	2.0	4.0	2.0	4375.0	8750.0	1518.13	0.0	
83	0.5-2	HI MAG	11.26	4.0	6.0	2.0	4375.0	8750.0	2463.13	0.0	
85	0.5-2	HI MAG	5.24	0.0	2.0	2.0	6875.0	13750.0	1801.25	0.0	
85	0.5-2	HI MAG	3.09	2.0	4.0	2.0	6875.0	13750.0	1062.19	0.0	
85	0.5-2	HI MAG	1.25	4.0	6.0	2.0	6875.0	13750.0	429.69	0.0	

VOLUME AND MASS CALCULATIONS FOR THE AUER CORE PRODUCTS
(con. (inued))

SAMPLE SITE	SIZE (mm)	MAGNETIC SEPARATION	MASS (x)	SAMPLE TOP (m)	SAMPLE BOTTOM (m)	SAMPTOP - SAMFBOT (m)	SURFACE AREA (sq m)	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (t)	Cr203 (%)	TOTAL Cr203 MASS (t)
19	<0.25	HI MAG	0.17	4.0	6.0	2.0	4687.5	9375.0	39.84	0.0	
01	<0.5	HI MAG	14.32	0.0	6.0	6.0	7500.0	45000.0	16110.00	0.0	
01	<0.5	HI MAG	19.26	6.0	8.0	2.0	7500.0	15000.0	7222.50	0.0	
01	<0.5	HI MAG	10.50	8.0	10.0	2.0	7500.0	15000.0	3937.50	0.0	
02	<0.5	HI MAG	12.10	0.0	4.0	4.0	6875.0	27500.0	8318.75	0.0	
03	<0.5	HI MAG	1.81	0.0	2.0	2.0	5625.0	11250.0	509.06	0.0	
04	<0.5	HI MAG	1.86	0.0	2.0	2.0	4375.0	8750.0	406.88	0.0	
04	<0.5	HI MAG	7.86	2.0	4.0	2.0	4375.0	8750.0	1719.38	0.0	
04	<0.5	HI MAG	6.09	4.0	6.0	2.0	4375.0	8750.0	1332.19	0.0	
04	<0.5	HI MAG	31.56	6.0	8.0	2.0	4375.0	8750.0	6903.75	0.0	
04	<0.5	HI MAG	13.09	8.0	10.0	2.0	4375.0	8750.0	2863.44	6.6	188.99
14	<0.5	HI MAG	9.50	0.0	2.0	2.0	9375.0	18750.0	4453.13	28.0	1246.88
14	<0.5	HI MAG	3.18	2.0	4.0	2.0	9375.0	18750.0	1490.63	1.5	22.36
17	<0.5	HI MAG	6.62	0.0	1.0	1.0	5000.0	5000.0	827.50	0.0	
17	<0.5	HI MAG	4.21	6.0	8.0	2.0	5000.0	10000.0	1052.50	7.8	82.10
18	<0.5	HI MAG	1.14	0.0	2.0	2.0	4375.0	8750.0	249.38	14.0	34.91
18	<0.5	HI MAG	4.07	2.0	4.0	2.0	4375.0	8750.0	890.31	0.8	7.12
18	<0.5	HI MAG	0.13	4.0	7.0	3.0	4375.0	13125.0	42.66	0.0	
19	<0.5	HI MAG	1.90	0.0	2.0	2.0	4687.5	9375.0	445.31	6.6	29.39
19	<0.5	HI MAG	0.20	8.0	10.0	2.0	4687.5	9375.0	46.88	0.0	
20	<0.5	HI MAG	0.55	0.0	4.0	4.0	4687.5	18750.0	257.81	5.4	13.92
21	<0.5	HI MAG	2.87	0.0	2.0	2.0	2500.0	5000.0	358.75	0.0	
21	<0.5	HI MAG	9.35	2.0	4.0	2.0	2500.0	5000.0	1168.75	0.0	
21	<0.5	HI MAG	4.51	6.0	8.0	2.0	2500.0	5000.0	563.75	0.0	
21	<0.5	HI MAG	3.46	8.0	10.0	2.0	2500.0	5000.0	432.50	0.0	
22	<0.5	HI MAG	8.96	0.0	2.0	2.0	3125.0	6250.0	1400.00	12.0	168.00
22	<0.5	HI MAG	20.64	4.0	6.0	2.0	3125.0	6250.0	3225.00	0.0	
22	<0.5	HI MAG	0.18	6.0	8.0	2.0	3125.0	6250.0	28.13	0.0	
23	<0.5	HI MAG	1.63	0.0	2.0	2.0	2500.0	5000.0	203.75	0.0	
23	<0.5	HI MAG	2.75	2.0	4.0	2.0	2500.0	5000.0	343.75	0.0	
23	<0.5	HI MAG	0.84	4.0	6.0	2.0	2500.0	5000.0	105.00	0.0	
25	<0.5	HI MAG	2.62	0.0	2.0	2.0	4375.0	8750.0	573.13	10.4	59.61
25	<0.5	HI MAG	1.16	2.0	4.0	2.0	4375.0	8750.0	253.75	0.0	
25	<0.5	HI MAG	8.00	4.0	7.0	3.0	4375.0	13125.0	2625.00	0.0	
26	<0.5	HI MAG	3.43	0.0	2.0	2.0	4687.5	9375.0	803.91	6.8	54.67
26	<0.5	HI MAG	6.47	2.0	4.0	2.0	4687.5	9375.0	1516.41	0.0	
26	<0.5	HI MAG	4.45	4.0	6.0	2.0	4687.5	9375.0	1042.97	0.0	
26	<0.5	HI MAG	8.23	6.0	9.0	3.0	4687.5	14062.5	2893.36	0.0	
27	<0.5	HI MAG	2.02	0.0	2.0	2.0	4375.0	8750.0	441.88	3.8	16.79
27	<0.5	HI MAG	12.83	2.0	5.0	3.0	4375.0	13125.0	4209.84	4.9	206.28
28	<0.5	HI MAG	4.49	0.0	2.0	2.0	4687.5	9375.0	1052.34	6.2	65.25
28	<0.5	HI MAG	11.22	2.0	6.0	4.0	4687.5	18750.0	5259.38	6.4	336.60
29	<0.5	HI MAG	7.49	0.0	2.0	2.0	5625.0	11250.0	2106.56	0.0	
29	<0.5	HI MAG	6.62	2.0	4.0	2.0	5625.0	11250.0	1861.88	0.0	
29	<0.5	HI MAG	2.92	4.0	6.0	2.0	5625.0	11250.0	821.25	0.0	
29	<0.5	HI MAG	15.10	6.0	7.0	1.0	5625.0	5625.0	2123.44	1.3	27.60
30	<0.5	HI MAG	0.87	0.0	2.0	2.0	5312.5	10625.0	231.09	0.0	
30	<0.5	HI MAG	4.28	2.0	4.0	2.0	5312.5	10625.0	1136.88	0.0	
30	<0.5	HI MAG	17.88	4.0	6.0	2.0	5312.5	10625.0	4749.38	0.0	

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VOLUME AND MASS CALCULATIONS FOR THE AUGER CORE PRODUCTS
(continued)

SAMPLE SITE	SIZE (mm)	MAGNETIC SEPARATION	MASS (%)	SAMPLE TOP (m)	SAMPLE BOTTOM (m)	SAMPTOP - SAMPBOT (m)	SURFACE AREA (sq m)	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (t)	Cr203 (%)	TOTAL Cr203 MASS (t)
30	<0.5	HI MAG	0.32	6.0	8.0	2.0	5312.5	10625.0	85.00	0.0	
30	<0.5	HI MAG	5.27	8.0	10.0	2.0	5312.5	10625.0	1399.84	0.0	
31	<0.5	HI MAG	1.04	0.0	2.0	2.0	2500.0	5000.0	130.00	0.0	
31	<0.5	HI MAG	6.55	2.0	4.0	2.0	2500.0	5000.0	818.75	5.2	42.58
31	<0.5	HI MAG	0.38	4.0	6.0	2.0	2500.0	5000.0	47.50	0.0	
31	<0.5	HI MAG	8.25	6.0	8.0	2.0	2500.0	5000.0	1031.25	0.0	
31	<0.5	HI MAG	1.50	8.0	10.0	2.0	2500.0	5000.0	187.50	0.0	
31	<0.5	HI MAG	0.49	10.0	12.0	2.0	2500.0	5000.0	61.25	0.0	
32	<0.5	HI MAG	5.08	0.0	2.0	2.0	4375.0	8750.0	1111.25	0.0	
32	<0.5	HI MAG	6.51	2.0	4.0	2.0	4375.0	8750.0	1424.06	0.0	
32	<0.5	HI MAG	1.02	4.0	6.0	2.0	4375.0	8750.0	223.13	0.0	
33	<0.5	HI MAG	2.61	0.0	2.0	2.0	5312.5	10625.0	693.28	5.0	34.66
33	<0.5	HI MAG	2.78	4.0	6.0	2.0	5312.5	10625.0	738.44	0.0	
33	<0.5	HI MAG	3.21	6.0	8.0	2.0	5312.5	10625.0	852.66	4.7	40.07
33	<0.5	HI MAG	4.23	8.0	10.0	2.0	5312.5	10625.0	1123.59	0.0	
33	<0.5	HI MAG	2.54	10.0	12.0	2.0	5312.5	10625.0	674.69	0.0	
33	<0.5	HI MAG	7.53	12.0	14.0	2.0	5312.5	10625.0	2000.16	0.0	
33	<0.5	HI MAG	5.55	14.0	17.0	3.0	5312.5	15937.5	2211.33	0.0	
34	<0.5	HI MAG	0.94	0.0	2.0	2.0	5000.0	10000.0	235.00	0.0	
34	<0.5	HI MAG	0.54	2.0	4.0	2.0	5000.0	10000.0	135.00	0.0	
35	<0.5	HI MAG	3.76	2.0	4.0	2.0	3750.0	7500.0	705.00	0.0	
36	<0.5	HI MAG	3.16	0.0	2.0	2.0	6250.0	12500.0	987.50	0.0	
36	<0.5	HI MAG	5.11	2.0	4.0	2.0	6250.0	12500.0	1596.88	0.0	
36	<0.5	HI MAG	3.33	4.0	6.0	2.0	6250.0	12500.0	1040.63	0.0	
37	<0.5	HI MAG	1.67	0.0	2.0	2.0	7812.5	15625.0	652.34	0.0	
37	<0.5	HI MAG	0.40	2.0	4.0	2.0	7812.5	15625.0	156.25	7.6	11.88
37	<0.5	HI MAG	28.23	4.0	6.0	2.0	7812.5	15625.0	11027.34	10.4	1146.84
37	<0.5	HI MAG	9.61	6.0	8.0	2.0	7812.5	15625.0	3753.91	0.0	
38	<0.5	HI MAG	21.42	0.0	2.0	2.0	3437.5	6875.0	3681.56	5.0	184.08
39	<0.5	HI MAG	7.16	0.0	2.0	2.0	2500.0	5000.0	895.00	2.9	25.96
39	<0.5	HI MAG	32.48	2.0	5.0	3.0	2500.0	7500.0	6090.00	5.0	304.50
40	<0.5	HI MAG	0.03	0.0	3.0	3.0	4687.5	14062.5	10.55	5.6	0.59
41	<0.5	HI MAG	4.21	0.0	3.0	3.0	7500.0	22500.0	2368.13	4.4	104.20
43	<0.5	HI MAG	8.94	0.0	2.0	2.0	8750.0	17500.0	3911.25	2.0	78.23
45	<0.5	HI MAG	5.01	0.0	3.0	3.0	5312.5	15937.5	1996.17	0.0	
46	<0.5	HI MAG	2.87	0.0	2.0	2.0	5625.0	11250.0	807.19	0.0	
47	<0.5	HI MAG	15.37	0.0	2.0	2.0	2500.0	5000.0	1921.25	0.0	
48	<0.5	HI MAG	7.97	0.0	2.0	2.0	3750.0	7500.0	1494.38	0.0	
50	<0.5	HI MAG	2.66	0.0	2.0	2.0	3125.0	6250.0	415.63	26.5	110.14
51	<0.5	HI MAG	1.89	0.0	4.0	4.0	3437.5	13750.0	649.69	0.0	
52	<0.5	HI MAG	4.38	0.0	2.5	2.5	4375.0	10937.5	1197.66	0.0	
53	<0.5	HI MAG	7.30	0.0	3.0	3.0	2500.0	7500.0	1368.75	0.0	
54	<0.5	HI MAG	4.38	0.0	1.5	1.5	5000.0	7500.0	821.25	0.0	
55	<0.5	HI MAG	6.18	0.0	2.0	2.0	5000.0	10000.0	1545.00	0.0	
56	<0.5	HI MAG	8.44	0.0	1.5	1.5	5625.0	8437.5	1780.31	6.0	106.82
57	<0.5	HI MAG	20.31	0.0	4.5	4.5	3125.0	14062.5	7140.23	4.9	349.87
58	<0.5	HI MAG	7.58	0.0	4.5	4.5	5937.5	26718.8	5063.20	0.0	
59	<0.5	HI MAG	11.90	0.0	2.0	2.0	6875.0	13750.0	4090.63	0.0	
61	<0.5	HI MAG	4.24	0.0	5.0	5.0	6875.0	34375.0	3643.75	0.0	

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VOLUME AND MASS CALCULATIONS FOR THE ALGER CORE PRODUCTS
(continued)

SAMPLE SITE	SIZE (mm)	MAGNETIC SEPARATION	MASS (%)	SAMPLE TOP (m)	SAMPLE BOTTOM (m)	SAMPTOP - SAMPBOT (m)	SURFACE AREA (sq m)	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (t)	Cr203 (%)	TOTAL Cr203 MASS (t)	
62	<0.5	HI MAG	22.86	0.0	6.0	6.0	6875.0	41250.0	23574.38	0.0		
63	<0.5	HI MAG	8.23	0.0	6.0	6.0	4687.5	28125.0	5786.72	0.0		
64	<0.5	HI MAG	12.87	0.0	6.0	6.0	2500.0	15000.0	4826.25	0.0		
65	<0.5	HI MAG	0.78	0.0	6.0	6.0	4375.0	26250.0	511.88	0.0		
66	<0.5	HI MAG	3.12	0.0	2.0	2.0	5625.0	11250.0	877.50	9.0	78.98	
67	<0.5	HI MAG	2.00	0.0	2.0	2.0	4687.5	9375.0	468.75	0.0		
68	<0.5	HI MAG	12.57	0.0	1.0	1.0	4687.5	4687.5	1473.05	5.8	85.44	
69	<0.5	HI MAG	3.14	0.0	7.0	7.0	32812.5	32812.5	2575.78	0.0		
70	<0.5	HI MAG	0.21	0.0	9.0	9.0	2500.0	22500.0	118.13	0.0		
71	<0.5	HI MAG	4.14	0.0	9.0	9.0	5000.0	45000.0	4657.50	17.0	791.78	
72	<0.5	HI MAG	15.03	0.0	6.0	6.0	2500.0	15000.0	5636.25	2.3	129.63	
73	<0.5	HI MAG	6.99	0.0	7.5	7.5	5625.0	42187.5	7372.27	0.0		
74	<0.5	HI MAG	10.64	0.0	4.0	4.0	5000.0	20000.0	5320.00	0.0		
75	<0.5	HI MAG	5.22	0.0	4.5	4.5	7500.0	33750.0	4404.38	4.5	198.20	
76	<0.5	HI MAG	0.11	0.0	4.0	4.0	5000.0	20000.0	55.00	0.0		
79	<0.5	HI MAG	0.18	0.0	3.0	3.0	4375.0	13125.0	59.06	0.0		
80	<0.5	HI MAG	6.35	0.0	8.0	8.0	3750.0	30000.0	4762.50	0.0		
81	<0.5	HI MAG	6.84	0.0	2.0	2.0	2500.0	5000.0	855.00	0.0		
81	<0.5	HI MAG	4.10	2.0	4.0	2.0	2500.0	5000.0	512.50	0.0		
81	<0.5	HI MAG	2.53	4.0	7.0	3.0	2500.0	7500.0	474.38	0.0		
82	<0.5	HI MAG	6.84	0.0	2.0	2.0	4375.0	8750.0	1496.25	0.0		
82	<0.5	HI MAG	11.49	2.0	4.0	2.0	4375.0	8750.0	2513.44	0.0		
82	<0.5	HI MAG	13.08	4.0	6.0	2.0	4375.0	8750.0	2861.25	3.1	88.70	
82	<0.5	HI MAG	9.56	6.0	8.0	2.0	4375.0	8750.0	2091.25	0.0		
83	<0.5	HI MAG	5.33	0.0	2.0	2.0	4375.0	8750.0	1165.94	0.0		
83	<0.5	HI MAG	5.12	2.0	4.0	2.0	4375.0	8750.0	1120.00	0.0		
83	<0.5	HI MAG	7.33	4.0	6.0	2.0	4375.0	8750.0	1603.44	0.0		
85	<0.5	HI MAG	6.49	0.0	2.0	2.0	6875.0	13750.0	2230.94	12.5	278.87	
85	<0.5	HI MAG	7.64	2.0	4.0	2.0	6875.0	13750.0	2626.25	0.0		
85	<0.5	HI MAG	6.58	4.0	6.0	2.0	6875.0	13750.0	2261.88	0.0		
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								SUBTOTAL	2638125.0	506402.54		

693095

VOLUME AND MASS CALCULATIONS FOR THE AUGER CORE PRODUCTS
(continued)

SAMPLE SITE	SIZE (mm)	MAGNETIC SEPARATION	MASS (%)	SAMPLE TOP (m)	SAMPLE BOTTOM (m)	SAMPTOP - SAMPBOT (m)	SURFACE AREA (sq m)	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (t)	Cr203 (%)	TOTAL Cr203 MASS (t)
01	0.5-2	MAG 1	17.40	0.0	6.0	6.0	7500.0	45000.0	19575.00	0.0	
01	0.5-2	MAG 1	21.21	6.0	8.0	2.0	7500.0	15000.0	7953.75	0.0	
01	0.5-2	MAG 1	24.67	8.0	10.0	2.0	7500.0	15000.0	9251.25	0.0	
02	0.5-2	MAG 1	10.30	0.0	4.0	4.0	6875.0	27500.0	7081.25	0.0	
03	0.5-2	MAG 1	1.61	0.0	2.0	2.0	5625.0	11250.0	452.81	0.0	
04	0.5-2	MAG 1	1.71	0.0	2.0	2.0	4375.0	8750.0	374.06	0.0	
04	0.5-2	MAG 1	5.54	2.0	4.0	2.0	4375.0	8750.0	1211.88	0.0	
04	0.5-2	MAG 1	3.18	4.0	6.0	2.0	4375.0	8750.0	695.63	0.0	
04	0.5-2	MAG 1	11.59	6.0	8.0	2.0	4375.0	8750.0	2535.31	0.0	
04	0.5-2	MAG 1	2.00	8.0	10.0	2.0	4375.0	8750.0	437.50	0.0	
14	0.5-2	MAG 1	7.41	0.0	2.0	2.0	9375.0	18750.0	3473.44	0.0	
17	0.5-2	MAG 1	2.00	0.0	1.0	1.0	5000.0	5000.0	250.00	0.0	
17	0.5-2	MAG 1	3.22	6.0	8.0	2.0	5000.0	10000.0	805.00	0.0	
18	0.5-2	MAG 1	0.02	2.0	4.0	2.0	4375.0	8750.0	4.38	0.0	
18	0.5-2	MAG 1	0.10	4.0	7.0	3.0	4375.0	13125.0	32.81	0.0	
21	0.5-2	MAG 1	1.55	0.0	2.0	2.0	2500.0	5000.0	193.75	0.0	
21	0.5-2	MAG 1	0.31	2.0	4.0	2.0	2500.0	5000.0	38.75	0.0	
22	0.5-2	MAG 1	6.80	0.0	2.0	2.0	3125.0	6250.0	1062.50	0.0	
23	0.5-2	MAG 1	3.31	0.0	2.0	2.0	2500.0	5000.0	413.75	0.0	
23	0.5-2	MAG 1	0.23	2.0	4.0	2.0	2500.0	5000.0	28.75	0.0	
25	0.5-2	MAG 1	1.96	0.0	2.0	2.0	4375.0	8750.0	428.75	0.0	
26	0.5-2	MAG 1	2.28	0.0	2.0	2.0	4687.5	9375.0	534.38	0.0	
28	0.5-2	MAG 1	6.41	0.0	2.0	2.0	4687.5	9375.0	1502.34	0.0	
28	0.5-2	MAG 1	4.16	2.0	6.0	4.0	4687.5	18750.0	1950.00	0.0	
29	0.5-2	MAG 1	15.17	0.0	2.0	2.0	5625.0	11250.0	4266.56	0.0	
29	0.5-2	MAG 1	10.65	2.0	4.0	2.0	5625.0	11250.0	2995.31	0.0	
29	0.5-2	MAG 1	0.68	4.0	6.0	2.0	5625.0	11250.0	191.25	0.0	
30	0.5-2	MAG 1	1.16	0.0	2.0	2.0	5312.5	10625.0	308.13	0.0	
30	0.5-2	MAG 1	1.64	2.0	4.0	2.0	5312.5	10625.0	435.63	0.0	
30	0.5-2	MAG 1	19.68	4.0	6.0	2.0	5312.5	10625.0	5227.50	0.0	
30	0.5-2	MAG 1	0.50	6.0	8.0	2.0	5312.5	10625.0	132.81	0.0	
30	0.5-2	MAG 1	0.51	8.0	10.0	2.0	5312.5	10625.0	135.47	0.0	
31	0.5-2	MAG 1	2.28	2.0	4.0	2.0	2500.0	5000.0	285.00	0.0	
31	0.5-2	MAG 1	2.00	6.0	8.0	2.0	2500.0	5000.0	250.00	0.0	
31	0.5-2	MAG 1	3.94	8.0	10.0	2.0	2500.0	5000.0	492.50	0.0	
31	0.5-2	MAG 1	0.51	10.0	12.0	2.0	2500.0	5000.0	63.75	0.0	
32	0.5-2	MAG 1	3.48	0.0	2.0	2.0	4375.0	8750.0	761.25	0.0	
32	0.5-2	MAG 1	1.91	2.0	4.0	2.0	4375.0	8750.0	417.81	0.0	
32	0.5-2	MAG 1	4.42	4.0	6.0	2.0	4375.0	8750.0	966.88	0.0	
33	0.5-2	MAG 1	5.11	0.0	2.0	2.0	5312.5	10625.0	1357.34	0.0	
33	0.5-2	MAG 1	2.76	4.0	6.0	2.0	5312.5	10625.0	733.13	0.0	
33	0.5-2	MAG 1	2.31	8.0	10.0	2.0	5312.5	10625.0	613.59	0.0	
33	0.5-2	MAG 1	1.61	10.0	12.0	2.0	5312.5	10625.0	427.66	0.0	
33	0.5-2	MAG 1	3.71	12.0	14.0	2.0	5312.5	10625.0	985.47	0.0	
33	0.5-2	MAG 1	1.00	14.0	17.0	3.0	5312.5	15937.5	398.44	0.0	
34	0.5-2	MAG 1	0.44	0.0	2.0	2.0	5000.0	10000.0	110.00	0.0	
34	0.5-2	MAG 1	0.34	2.0	4.0	2.0	5000.0	10000.0	85.00	0.0	
35	0.5-2	MAG 1	1.97	2.0	4.0	2.0	3750.0	7500.0	369.38	0.0	
36	0.5-2	MAG 1	1.81	0.0	2.0	2.0	6250.0	12500.0	565.63	0.0	

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693096

VOLUME AND MASS CALCULATIONS FOR THE AUGER CORE PRODUCTS
(continued)

SAMPLE SITE	SIZE (mm)	MAGNETIC SEPARATION	MASS (%)	SAMPLE TOP (m)	SAMPLE BOTTOM (m)	SAMPTOP - SAMPTOT (m)	SURFACE AREA (sq m)	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (t)	Cr203 (%)	TOTAL Cr203 MASS (t)
36	0.5-2	MAG 1	1.24	2.0	4.0	2.0	6250.0	12500.0	387.50	0.0	
37	0.5-2	MAG 1	1.10	0.0	2.0	2.0	7812.5	15625.0	429.69	0.0	
37	0.5-2	MAG 1	2.07	2.0	4.0	2.0	7812.5	15625.0	808.59	0.0	
37	0.5-2	MAG 1	2.78	4.0	6.0	2.0	7812.5	15625.0	1085.94	0.0	
37	0.5-2	MAG 1	2.33	6.0	8.0	2.0	7812.5	15625.0	910.16	0.0	
38	0.5-2	MAG 1	15.77	0.0	2.0	2.0	3437.5	6875.0	2710.47	0.0	
39	0.5-2	MAG 1	3.26	0.0	2.0	2.0	2500.0	5000.0	407.50	0.0	
39	0.5-2	MAG 1	4.03	2.0	5.0	3.0	2500.0	7500.0	755.63	0.0	
41	0.5-2	MAG 1	1.36	0.0	3.0	3.0	7500.0	22500.0	765.00	0.0	
45	0.5-2	MAG 1	15.24	0.0	3.0	3.0	5312.5	15937.5	6072.19	0.0	
46	0.5-2	MAG 1	7.91	0.0	2.0	2.0	5625.0	11250.0	2224.69	0.0	
47	0.5-2	MAG 1	3.26	0.0	2.0	2.0	2500.0	5000.0	407.50	0.0	
48	0.5-2	MAG 1	4.64	0.0	2.0	2.0	3750.0	7500.0	870.00	0.0	
50	0.5-2	MAG 1	2.46	0.0	2.0	2.0	3125.0	6250.0	384.38	0.0	
51	0.5-2	MAG 1	19.84	0.0	4.0	4.0	3437.5	13750.0	6820.00	0.0	
52	0.5-2	MAG 1	4.77	0.0	2.5	2.5	4375.0	10937.5	1304.30	0.0	
53	0.5-2	MAG 1	6.19	0.0	3.0	3.0	2500.0	7500.0	1160.63	0.0	
54	0.5-2	MAG 1	9.24	0.0	1.5	1.5	5000.0	7500.0	1732.50	0.0	
55	0.5-2	MAG 1	3.00	0.0	2.0	2.0	5000.0	10000.0	750.00	0.0	
56	0.5-2	MAG 1	7.29	0.0	1.5	1.5	5625.0	8437.5	1537.73	0.0	
57	0.5-2	MAG 1	8.88	0.0	4.5	4.5	3125.0	14062.5	3121.88	0.0	
58	0.5-2	MAG 1	13.62	0.0	4.5	4.5	5937.5	26718.8	9097.73	0.0	
59	0.5-2	MAG 1	7.82	0.0	2.0	2.0	6875.0	13750.0	2688.13	0.0	
61	0.5-2	MAG 1	2.23	0.0	5.0	5.0	6875.0	34375.0	1916.41	0.0	
62	0.5-2	MAG 1	9.57	0.0	6.0	6.0	6875.0	41250.0	9869.06	0.0	
63	0.5-2	MAG 1	0.77	0.0	6.0	6.0	4687.5	28125.0	541.41	0.0	
64	0.5-2	MAG 1	5.48	0.0	6.0	6.0	2500.0	15000.0	2055.00	0.0	
66	0.5-2	MAG 1	5.59	0.0	2.0	2.0	5625.0	11250.0	1572.19	0.0	
67	0.5-2	MAG 1	1.11	0.0	2.0	2.0	4687.5	9375.0	260.16	0.0	
68	0.5-2	MAG 1	4.29	0.0	1.0	1.0	4687.5	4687.5	502.73	0.0	
69	0.5-2	MAG 1	0.08	0.0	7.0	7.0	4687.5	32812.5	65.63	0.0	
71	0.5-2	MAG 1	1.00	0.0	9.0	9.0	5000.0	45000.0	1125.00	0.0	
73	0.5-2	MAG 1	8.86	0.0	7.5	7.5	5625.0	42187.5	9344.53	0.0	
74	0.5-2	MAG 1	3.53	0.0	4.0	4.0	5000.0	20000.0	1765.00	0.0	
80	0.5-2	MAG 1	10.39	0.0	8.0	8.0	3750.0	30000.0	7792.50	0.0	
81	0.5-2	MAG 1	1.23	0.0	2.0	2.0	2500.0	5000.0	153.75	0.0	
81	0.5-2	MAG 1	4.59	2.0	4.0	2.0	2500.0	5000.0	573.75	0.0	
81	0.5-2	MAG 1	4.63	4.0	7.0	3.0	2500.0	7500.0	868.13	0.0	
82	0.5-2	MAG 1	3.59	0.0	2.0	2.0	4375.0	8750.0	785.31	0.0	
82	0.5-2	MAG 1	4.04	2.0	4.0	2.0	4375.0	8750.0	883.75	0.0	
82	0.5-2	MAG 1	10.25	4.0	6.0	2.0	4375.0	8750.0	2242.19	0.0	
82	0.5-2	MAG 1	11.25	6.0	8.0	2.0	4375.0	8750.0	2460.94	0.0	
83	0.5-2	MAG 1	7.33	0.0	2.0	2.0	4375.0	8750.0	1603.44	0.0	
83	0.5-2	MAG 1	9.31	2.0	4.0	2.0	4375.0	8750.0	2036.56	0.0	
83	0.5-2	MAG 1	4.21	4.0	6.0	2.0	4375.0	8750.0	920.94	0.0	
85	0.5-2	MAG 1	1.75	0.0	2.0	2.0	6875.0	13750.0	601.56	0.0	
85	0.5-2	MAG 1	1.18	2.0	4.0	2.0	6875.0	13750.0	405.63	0.0	
85	0.5-2	MAG 1	2.42	4.0	6.0	2.0	6875.0	13750.0	831.88	0.0	
78	<0.15	MAG 1	1.00	0.0	4.0	4.0	7500.0	30000.0	750.00	0.0	

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693097

VOLUME AND MASS CALCULATIONS FOR THE AUGER CORE PRODUCTS
(continued)

SAMPLE SITE	SIZE (cm)	MAGNETIC SEPARATION	MASS (%)	SAMPLE TOP (m)	SAMPLE BOTTOM (m)	SAMPTOP - SAMPBOT (m)	SURFACE AREA (sq m)	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (t)	Cr203 (%)	TOTAL Cr203 MASS (t)
19	<0.25	MAG 1	5.43	4.0	6.0	2.0	4687.5	9375.0	1272.66	0.0	
01	<0.5	MAG 1	4.28	0.0	6.0	6.0	7500.0	45000.0	4815.00	0.0	
01	<0.5	MAG 1	8.05	6.0	8.0	2.0	7500.0	15000.0	3018.75	0.0	
01	<0.5	MAG 1	20.33	8.0	10.0	2.0	7500.0	15000.0	7623.75	0.0	
02	<0.5	MAG 1	11.90	0.0	4.0	4.0	6875.0	27500.0	8181.25	0.0	
03	<0.5	MAG 1	9.45	0.0	2.0	2.0	5625.0	11250.0	2657.81	0.0	
04	<0.5	MAG 1	11.40	0.0	2.0	2.0	4375.0	8750.0	2493.75	0.0	
04	<0.5	MAG 1	11.03	2.0	4.0	2.0	4375.0	8750.0	2412.81	0.0	
04	<0.5	MAG 1	7.55	4.0	6.0	2.0	4375.0	8750.0	1651.56	0.0	
04	<0.5	MAG 1	4.52	6.0	8.0	2.0	4375.0	8750.0	988.75	0.0	
04	<0.5	MAG 1	15.73	8.0	10.0	2.0	4375.0	8750.0	3440.94	9.8	337.21
14	<0.5	MAG 1	11.80	0.0	2.0	2.0	9375.0	18750.0	5531.25	26.0	1438.13
14	<0.5	MAG 1	12.81	2.0	4.0	2.0	9375.0	18750.0	6004.69	4.6	276.22
17	<0.5	MAG 1	13.41	0.0	1.0	1.0	5000.0	5000.0	1676.25	0.0	
17	<0.5	MAG 1	13.36	6.0	8.0	2.0	5000.0	10000.0	3340.00	14.0	467.60
18	<0.5	MAG 1	5.93	0.0	2.0	2.0	4375.0	8750.0	1297.19	22.5	291.87
18	<0.5	MAG 1	14.29	2.0	4.0	2.0	4375.0	8750.0	3125.94	0.5	15.63
18	<0.5	MAG 1	3.33	4.0	7.0	3.0	4375.0	13125.0	1092.66	0.0	
19	<0.5	MAG 1	6.80	0.0	2.0	2.0	4687.5	9375.0	1593.75	19.0	302.81
19	<0.5	MAG 1	3.25	8.0	10.0	2.0	4687.5	9375.0	761.72	0.4	3.05
20	<0.5	MAG 1	7.71	0.0	4.0	4.0	4687.5	18750.0	3614.06	19.0	686.67
21	<0.5	MAG 1	11.45	0.0	2.0	2.0	2500.0	5000.0	1431.25	0.0	
21	<0.5	MAG 1	14.11	2.0	4.0	2.0	2500.0	5000.0	1763.75	0.0	
21	<0.5	MAG 1	1.90	6.0	8.0	2.0	2500.0	5000.0	237.50	0.0	
21	<0.5	MAG 1	1.02	8.0	10.0	2.0	2500.0	5000.0	127.50	0.0	
22	<0.5	MAG 1	8.25	0.0	2.0	2.0	3125.0	6250.0	1289.06	11.8	152.11
22	<0.5	MAG 1	1.27	4.0	6.0	2.0	3125.0	6250.0	198.44	0.0	
22	<0.5	MAG 1	0.30	6.0	8.0	2.0	3125.0	6250.0	46.88	0.0	
23	<0.5	MAG 1	11.32	0.0	2.0	2.0	2500.0	5000.0	1440.00	0.0	
23	<0.5	MAG 1	3.08	2.0	4.0	2.0	2500.0	5000.0	385.00	0.0	
23	<0.5	MAG 1	1.86	4.0	6.0	2.0	2500.0	5000.0	232.50	0.0	
25	<0.5	MAG 1	17.44	0.0	2.0	2.0	4375.0	8750.0	3815.00	1.2	45.78
25	<0.5	MAG 1	1.67	2.0	4.0	2.0	4375.0	8750.0	365.31	0.0	
25	<0.5	MAG 1	4.01	4.0	7.0	3.0	4375.0	13125.0	1315.78	0.0	
26	<0.5	MAG 1	13.35	0.0	2.0	2.0	4687.5	9375.0	3128.91	14.5	453.69
26	<0.5	MAG 1	5.27	2.0	4.0	2.0	4687.5	9375.0	1235.16	0.0	
26	<0.5	MAG 1	4.71	4.0	6.0	2.0	4687.5	9375.0	1103.91	0.0	
26	<0.5	MAG 1	6.71	6.0	9.0	3.0	4687.5	14062.5	2358.98	0.0	
27	<0.5	MAG 1	7.72	0.0	2.0	2.0	4375.0	8750.0	1688.75	28.5	481.29
28	<0.5	MAG 1	13.07	0.0	2.0	2.0	4687.5	9375.0	3063.28	8.6	263.44
28	<0.5	MAG 1	10.86	2.0	6.0	4.0	4687.5	18750.0	5090.63	5.0	254.53
29	<0.5	MAG 1	15.05	0.0	2.0	2.0	5625.0	11250.0	4232.81	0.0	
29	<0.5	MAG 1	13.84	2.0	4.0	2.0	5625.0	11250.0	3892.50	0.0	
29	<0.5	MAG 1	10.92	4.0	6.0	2.0	5625.0	11250.0	3071.25	0.0	
29	<0.5	MAG 1	11.66	6.0	7.0	1.0	5625.0	5625.0	1639.69	1.7	27.87
30	<0.5	MAG 1	8.74	0.0	2.0	2.0	5312.5	10625.0	2321.56	0.0	
30	<0.5	MAG 1	9.76	2.0	4.0	2.0	5312.5	10625.0	2592.50	0.0	
30	<0.5	MAG 1	6.00	4.0	6.0	2.0	5312.5	10625.0	1593.75	0.0	
30	<0.5	MAG 1	12.79	6.0	8.0	2.0	5312.5	10625.0	3397.34	0.0	

607

693098

VOLUME AND MASS CALCULATIONS FOR THE AUGER CORE PRODUCTS
(continued)

SAMPLE SITE	SIZE (mm)	MAGNETIC SEPARATION	MASS (%)	SAMPLE TOP (m)	SAMPLE BOTTOM (m)	SAMPTOP - SAMPBOT (m)	SURFACE AREA (sq m)	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (t)	Cr203 (%)	TOTAL Cr203 MASS (t)
30	<0.5	MAG 1	9.90	8.0	10.0	2.0	5312.5	10625.0	2629.69	0.0	
31	<0.5	MAG 1	6.45	0.0	2.0	2.0	2500.0	5000.0	806.25	6.8	54.83
31	<0.5	MAG 1	6.10	2.0	4.0	2.0	2500.0	5000.0	762.50	4.7	35.84
31	<0.5	MAG 1	6.53	4.0	6.0	2.0	2500.0	5000.0	816.25	4.6	37.55
31	<0.5	MAG 1	8.34	6.0	8.0	2.0	2500.0	5000.0	1042.50	0.0	
31	<0.5	MAG 1	5.28	8.0	10.0	2.0	2500.0	5000.0	660.00	0.0	
31	<0.5	MAG 1	1.89	10.0	12.0	2.0	2500.0	5000.0	236.25	0.0	
32	<0.5	MAG 1	10.19	0.0	2.0	2.0	4375.0	8750.0	2229.06	0.0	
32	<0.5	MAG 1	13.74	2.0	4.0	2.0	4375.0	8750.0	3005.63	0.0	
32	<0.5	MAG 1	7.79	4.0	6.0	2.0	4375.0	8750.0	1704.06	0.0	
33	<0.5	MAG 1	4.89	0.0	2.0	2.0	5312.5	10625.0	1298.91	8.0	103.91
33	<0.5	MAG 1	7.37	4.0	6.0	2.0	5312.5	10625.0	1957.66	0.0	
33	<0.5	MAG 1	6.42	6.0	8.0	2.0	5312.5	10625.0	1705.31	24.5	417.80
33	<0.5	MAG 1	15.26	8.0	10.0	2.0	5312.5	10625.0	4053.44	0.0	
33	<0.5	MAG 1	15.46	10.0	12.0	2.0	5312.5	10625.0	4106.56	0.0	
33	<0.5	MAG 1	19.04	12.0	14.0	2.0	5312.5	10625.0	5057.50	0.0	
33	<0.5	MAG 1	17.36	14.0	17.0	3.0	5312.5	15937.5	6916.88	0.0	
34	<0.5	MAG 1	3.56	0.0	2.0	2.0	5000.0	10000.0	890.00	0.0	
34	<0.5	MAG 1	2.34	2.0	4.0	2.0	5000.0	10000.0	585.00	0.0	
35	<0.5	MAG 1	7.21	2.0	4.0	2.0	3750.0	7500.0	1351.88	0.0	
36	<0.5	MAG 1	11.10	0.0	2.0	2.0	6250.0	12500.0	3468.75	0.0	
36	<0.5	MAG 1	9.22	2.0	4.0	2.0	6250.0	12500.0	2881.25	0.0	
36	<0.5	MAG 1	1.45	4.0	6.0	2.0	6250.0	12500.0	453.13	0.0	
37	<0.5	MAG 1	12.71	0.0	2.0	2.0	7812.5	15625.0	4964.84	0.0	
37	<0.5	MAG 1	8.45	2.0	4.0	2.0	7812.5	15625.0	3300.78	9.2	303.67
37	<0.5	MAG 1	3.07	4.0	6.0	2.0	7812.5	15625.0	1199.22	7.2	86.34
37	<0.5	MAG 1	7.17	6.0	8.0	2.0	7812.5	15625.0	2800.78	0.0	
38	<0.5	MAG 1	5.65	0.0	2.0	2.0	3437.5	6875.0	971.09	14.5	140.81
39	<0.5	MAG 1	5.64	0.0	2.0	2.0	2500.0	5000.0	705.00	11.4	80.37
39	<0.5	MAG 1	11.67	2.0	5.0	3.0	2500.0	7500.0	2188.13	13.0	284.46
40	<0.5	MAG 1	6.23	0.0	3.0	3.0	4687.5	14062.5	2190.23	6.2	135.79
41	<0.5	MAG 1	1.68	0.0	3.0	3.0	7500.0	22500.0	945.00	37.0	349.65
43	<0.5	MAG 1	15.45	0.0	2.0	2.0	8750.0	17500.0	6759.38	25.5	1723.64
45	<0.5	MAG 1	6.45	0.0	3.0	3.0	5312.5	15937.5	2569.92	0.0	
46	<0.5	MAG 1	3.42	0.0	2.0	2.0	5625.0	11250.0	961.88	0.0	
47	<0.5	MAG 1	3.95	0.0	2.0	2.0	2500.0	5000.0	493.75	0.0	
48	<0.5	MAG 1	4.47	0.0	2.0	2.0	3750.0	7500.0	838.13	0.0	
50	<0.5	MAG 1	6.66	0.0	2.0	2.0	3125.0	6250.0	1040.63	26.0	270.56
51	<0.5	MAG 1	4.06	0.0	4.0	4.0	3437.5	13750.0	1395.63	0.0	
52	<0.5	MAG 1	5.37	0.0	2.5	2.5	4375.0	10937.5	1468.36	0.0	
53	<0.5	MAG 1	9.44	0.0	3.0	3.0	2500.0	7500.0	1770.00	0.0	
54	<0.5	MAG 1	6.97	0.0	1.5	1.5	5000.0	7500.0	1306.88	0.0	
55	<0.5	MAG 1	12.94	0.0	2.0	2.0	5000.0	10000.0	3235.00	0.0	
56	<0.5	MAG 1	12.11	0.0	1.5	1.5	5625.0	8437.5	2554.45	7.2	183.92
57	<0.5	MAG 1	7.63	0.0	4.5	4.5	3125.0	14062.5	2682.42	7.4	198.50
58	<0.5	MAG 1	5.96	0.0	4.5	4.5	5937.5	26718.8	3981.09	0.0	
59	<0.5	MAG 1	2.46	0.0	2.0	2.0	6875.0	13750.0	845.63	0.0	
61	<0.5	MAG 1	5.38	0.0	5.0	5.0	6875.0	34375.0	4623.44	0.0	
62	<0.5	MAG 1	6.77	0.0	6.0	6.0	6875.0	41250.0	6981.56	0.0	

693099

VOLUME AND MASS CALCULATIONS FOR THE AUGER CORE PRODUCTS
(continued)

SAMPLE SITE	SIZE (mm)	MAGNETIC SEPARATION	MASS (%)	SAMPLE TOP (m)	SAMPLE BOTTOM (m)	SAMPTOP - SAMPBOT (m)	SURFACE AREA (sq m)	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (t)	Cr-203 (%)	TOTAL Cr-203 MASS (t)	
63	<0.5	MAG 1	9.22	0.0	6.0	6.0	4687.5	28125.0	6482.81	0.0		
64	<0.5	MAG 1	6.49	0.0	6.0	6.0	2500.0	15000.0	2433.75	0.0		
65	<0.5	MAG 1	3.88	0.0	6.0	6.0	4375.0	26250.0	2546.25	14.5	369.21	
66	<0.5	MAG 1	9.82	0.0	2.0	2.0	5625.0	11250.0	2761.88	31.0	856.18	
67	<0.5	MAG 1	4.21	0.0	2.0	2.0	4687.5	9375.0	986.72	0.0		
68	<0.5	MAG 1	4.86	0.0	1.0	1.0	4687.5	4687.5	569.53	16.0	91.13	
69	<0.5	MAG 1	2.32	0.0	7.0	7.0	4687.5	32812.5	1903.13	0.0		
70	<0.5	MAG 1	3.71	0.0	9.0	9.0	2500.0	22500.0	2086.88	12.5	260.86	
71	<0.5	MAG 1	7.89	0.0	9.0	9.0	5000.0	45000.0	8876.25	17.5	1553.34	
72	<0.5	MAG 1	7.73	0.0	6.0	6.0	2500.0	15000.0	2898.75	8.2	237.70	
73	<0.5	MAG 1	2.50	0.0	7.5	7.5	5625.0	42187.5	2636.72	0.0		
74	<0.5	MAG 1	8.20	0.0	4.0	4.0	5000.0	20000.0	4100.00	0.0		
75	<0.5	MAG 1	5.48	0.0	4.5	4.5	7500.0	33750.0	4623.75	8.6	397.64	
76	<0.5	MAG 1	2.87	0.0	4.0	4.0	5000.0	20000.0	1435.00	8.8	126.28	
79	<0.5	MAG 1	3.73	0.0	3.0	3.0	4375.0	13125.0	1223.91	11.6	141.97	
80	<0.5	MAG 1	5.86	0.0	8.0	8.0	3750.0	30000.0	4395.00	0.0		
81	<0.5	MAG 1	17.45	0.0	2.0	2.0	2500.0	5000.0	2181.25	0.0		
81	<0.5	MAG 1	10.17	2.0	4.0	2.0	2500.0	5000.0	1271.25	0.0		
81	<0.5	MAG 1	8.47	4.0	7.0	3.0	2500.0	7500.0	1588.13	0.0		
82	<0.5	MAG 1	8.60	0.0	2.0	2.0	4375.0	8750.0	1881.25	0.0		
82	<0.5	MAG 1	10.78	2.0	4.0	2.0	4375.0	8750.0	2358.13	0.0		
82	<0.5	MAG 1	10.75	4.0	6.0	2.0	4375.0	8750.0	2351.56	8.6	202.23	
82	<0.5	MAG 1	17.06	6.0	8.0	2.0	4375.0	8750.0	3731.88	0.0		
83	<0.5	MAG 1	4.27	0.0	2.0	2.0	4375.0	8750.0	934.06	0.0		
83	<0.5	MAG 1	7.19	2.0	4.0	2.0	4375.0	8750.0	1572.81	0.0		
83	<0.5	MAG 1	3.98	4.0	6.0	2.0	4375.0	8750.0	870.63	0.0		
85	<0.5	MAG 1	6.10	0.0	2.0	2.0	6875.0	13750.0	2096.88	8.2	171.94	
85	<0.5	MAG 1	20.64	2.0	4.0	2.0	6875.0	13750.0	7095.00	0.0		
85	<0.5	MAG 1	7.95	4.0	6.0	2.0	6875.0	13750.0	2732.81	0.0		
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								SUBTOTAL	2870937.5	492893.13		

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693100

VOLUME AND MASS CALCULATIONS FOR THE AUGER CORE PRODUCTS
(continued)

SAMPLE SITE	SIZE (mm)	MAGNETIC SEPARATION	MASS (%)	SAMPLE TOP (m)	SAMPLE BOTTOM (m)	SAMPTOP - SAMPBOT (m)	SURFACE AREA (sq m)	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (t)	Cr203 (%)	TOTAL Cr203 MASS (t)
01	0.5-2	MAG 2	1.90	0.0	6.0	6.0	7500.0	45000.0	2137.50	0.0	
01	0.5-2	MAG 2	1.89	6.0	8.0	2.0	7500.0	15000.0	708.75	0.0	
01	0.5-2	MAG 2	3.56	8.0	10.0	2.0	7500.0	15000.0	1335.00	0.0	
02	0.5-2	MAG 2	10.40	0.0	4.0	4.0	6875.0	27500.0	7150.00	0.0	
03	0.5-2	MAG 2	2.68	0.0	2.0	2.0	5625.0	11250.0	753.75	0.0	
04	0.5-2	MAG 2	8.81	0.0	2.0	2.0	4375.0	8750.0	1927.19	0.0	
04	0.5-2	MAG 2	5.51	2.0	4.0	2.0	4375.0	8750.0	1205.31	0.0	
04	0.5-2	MAG 2	5.36	4.0	6.0	2.0	4375.0	8750.0	1172.50	0.0	
04	0.5-2	MAG 2	1.56	6.0	8.0	2.0	4375.0	8750.0	341.25	0.0	
04	0.5-2	MAG 2	4.45	8.0	10.0	2.0	4375.0	8750.0	973.44	0.0	
14	0.5-2	MAG 2	3.83	0.0	2.0	2.0	9375.0	18750.0	1795.31	0.0	
17	0.5-2	MAG 2	5.41	0.0	1.0	1.0	5000.0	5000.0	676.25	0.0	
17	0.5-2	MAG 2	7.51	6.0	8.0	2.0	5000.0	10000.0	1877.50	0.0	
18	0.5-2	MAG 2	0.42	2.0	4.0	2.0	4375.0	8750.0	91.88	0.0	
18	0.5-2	MAG 2	0.16	4.0	7.0	3.0	4375.0	13125.0	52.50	0.0	
21	0.5-2	MAG 2	3.69	0.0	2.0	2.0	2500.0	5000.0	461.25	0.0	
21	0.5-2	MAG 2	1.93	2.0	4.0	2.0	2500.0	5000.0	241.25	0.0	
22	0.5-2	MAG 2	6.47	0.0	2.0	2.0	3125.0	6250.0	1010.94	0.0	
23	0.5-2	MAG 2	10.06	0.0	2.0	2.0	2500.0	5000.0	1257.50	0.0	
23	0.5-2	MAG 2	1.52	2.0	4.0	2.0	2500.0	5000.0	190.00	0.0	
25	0.5-2	MAG 2	3.84	0.0	2.0	2.0	4375.0	8750.0	840.00	0.0	
26	0.5-2	MAG 2	7.36	0.0	2.0	2.0	4687.5	9375.0	1725.00	0.0	
28	0.5-2	MAG 2	5.04	0.0	2.0	2.0	4687.5	9375.0	1181.25	0.0	
28	0.5-2	MAG 2	4.39	2.0	6.0	4.0	4687.5	18750.0	2057.81	0.0	
29	0.5-2	MAG 2	4.98	0.0	2.0	2.0	5625.0	11250.0	1400.63	0.0	
29	0.5-2	MAG 2	4.22	2.0	4.0	2.0	5625.0	11250.0	1186.88	0.0	
29	0.5-2	MAG 2	11.20	4.0	6.0	2.0	5625.0	11250.0	3150.00	0.0	
30	0.5-2	MAG 2	8.23	0.0	2.0	2.0	5312.5	10625.0	2186.09	0.0	
30	0.5-2	MAG 2	8.80	2.0	4.0	2.0	5312.5	10625.0	2337.50	0.0	
30	0.5-2	MAG 2	4.44	4.0	6.0	2.0	5312.5	10625.0	1179.38	0.0	
30	0.5-2	MAG 2	4.68	6.0	8.0	2.0	5312.5	10625.0	1243.13	0.0	
30	0.5-2	MAG 2	11.85	8.0	10.0	2.0	5312.5	10625.0	3147.66	0.0	
31	0.5-2	MAG 2	4.41	2.0	4.0	2.0	2500.0	5000.0	551.25	0.0	
31	0.5-2	MAG 2	6.94	6.0	8.0	2.0	2500.0	5000.0	867.50	0.0	
31	0.5-2	MAG 2	5.34	8.0	10.0	2.0	2500.0	5000.0	667.50	0.0	
31	0.5-2	MAG 2	1.61	10.0	12.0	2.0	2500.0	5000.0	201.25	0.0	
32	0.5-2	MAG 2	5.76	0.0	2.0	2.0	4375.0	8750.0	1260.00	0.0	
32	0.5-2	MAG 2	4.26	2.0	4.0	2.0	4375.0	8750.0	931.88	0.0	
32	0.5-2	MAG 2	3.37	4.0	6.0	2.0	4375.0	8750.0	737.19	0.0	
33	0.5-2	MAG 2	3.96	0.0	2.0	2.0	5312.5	10625.0	1051.88	0.0	
33	0.5-2	MAG 2	3.10	4.0	6.0	2.0	5312.5	10625.0	823.44	0.0	
33	0.5-2	MAG 2	10.62	8.0	10.0	2.0	5312.5	10625.0	2820.94	0.0	
33	0.5-2	MAG 2	10.72	10.0	12.0	2.0	5312.5	10625.0	2847.50	0.0	
33	0.5-2	MAG 2	11.76	12.0	14.0	2.0	5312.5	10625.0	3123.75	0.0	
33	0.5-2	MAG 2	5.64	14.0	17.0	3.0	5312.5	15937.5	2247.19	0.0	
34	0.5-2	MAG 2	0.28	0.0	2.0	2.0	5000.0	10000.0	70.00	0.0	
34	0.5-2	MAG 2	0.51	2.0	4.0	2.0	5000.0	10000.0	127.50	0.0	
35	0.5-2	MAG 2	1.97	2.0	4.0	2.0	3750.0	7500.0	369.38	0.0	
36	0.5-2	MAG 2	5.29	0.0	2.0	2.0	6250.0	12500.0	1653.13	0.0	

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693101

VOLUME AND MASS CALCULATIONS FOR THE AUGER CORE PRODUCTS
(continued)

SAMPLE SITE	SIZE (mm)	MAGNETIC SEPARATION	MASS (%)	SAMPLE TOP (m)	SAMPLE BOTTOM (m)	SAMPLETOP - SAMPLEBOT (m)	SURFACE AREA (sq m)	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (t)	Cr-203 (%)	TOTAL Cr-203 MASS (t)
36	0.5-2	MAG 2	4.70	2.0	4.0	2.0	6250.0	12500.0	1468.75	0.0	
37	0.5-2	MAG 2	3.89	0.0	2.0	2.0	7812.5	15625.0	1519.53	0.0	
37	0.5-2	MAG 2	7.79	2.0	4.0	2.0	7812.5	15625.0	3042.97	0.0	
37	0.5-2	MAG 2	3.15	4.0	6.0	2.0	7812.5	15625.0	1230.47	0.0	
37	0.5-2	MAG 2	9.13	6.0	8.0	2.0	7812.5	15625.0	3566.41	0.0	
38	0.5-2	MAG 2	5.07	0.0	2.0	2.0	3437.5	6875.0	871.41	0.0	
39	0.5-2	MAG 2	3.38	0.0	2.0	2.0	2500.0	5000.0	422.50	0.0	
39	0.5-2	MAG 2	1.95	2.0	5.0	3.0	2500.0	7500.0	365.63	0.0	
41	0.5-2	MAG 2	1.77	0.0	3.0	3.0	7500.0	22500.0	995.63	0.0	
45	0.5-2	MAG 2	5.96	0.0	3.0	3.0	5312.5	15937.5	2374.69	0.0	
46	0.5-2	MAG 2	2.78	0.0	2.0	2.0	5625.0	11250.0	781.88	0.0	
47	0.5-2	MAG 2	2.47	0.0	2.0	2.0	2500.0	5000.0	308.75	0.0	
48	0.5-2	MAG 2	7.81	0.0	2.0	2.0	3750.0	7500.0	1464.38	0.0	
50	0.5-2	MAG 2	3.80	0.0	2.0	2.0	3125.0	6250.0	593.75	0.0	
51	0.5-2	MAG 2	4.02	0.0	4.0	4.0	3437.5	13750.0	1381.88	0.0	
52	0.5-2	MAG 2	3.88	0.0	2.5	2.5	4375.0	10937.5	1060.94	0.0	
53	0.5-2	MAG 2	3.70	0.0	3.0	3.0	2500.0	7500.0	693.75	0.0	
54	0.5-2	MAG 2	3.21	0.0	1.5	1.5	5000.0	7500.0	601.88	0.0	
55	0.5-2	MAG 2	4.76	0.0	2.0	2.0	5000.0	10000.0	1190.00	0.0	
56	0.5-2	MAG 2	4.25	0.0	1.5	1.5	5625.0	8437.5	896.48	0.0	
57	0.5-2	MAG 2	4.58	0.0	4.5	4.5	3125.0	14062.5	1610.16	0.0	
58	0.5-2	MAG 2	3.05	0.0	4.5	4.5	5937.5	26718.8	2037.30	0.0	
59	0.5-2	MAG 2	1.51	0.0	2.0	2.0	6875.0	13750.0	519.06	0.0	
61	0.5-2	MAG 2	4.71	0.0	5.0	5.0	6875.0	34375.0	4047.66	0.0	
62	0.5-2	MAG 2	2.14	0.0	6.0	6.0	6875.0	41250.0	2206.88	0.0	
63	0.5-2	MAG 2	0.75	0.0	6.0	6.0	4687.5	28125.0	527.34	0.0	
64	0.5-2	MAG 2	5.58	0.0	6.0	6.0	2500.0	15000.0	2092.50	0.0	
66	0.5-2	MAG 2	6.29	0.0	2.0	2.0	5625.0	11250.0	1769.06	0.0	
67	0.5-2	MAG 2	1.68	0.0	2.0	2.0	4687.5	9375.0	393.75	0.0	
68	0.5-2	MAG 2	3.57	0.0	1.0	1.0	4687.5	4687.5	418.36	0.0	
69	0.5-2	MAG 2	0.70	0.0	7.0	7.0	4687.5	32812.5	574.22	0.0	
71	0.5-2	MAG 2	4.64	0.0	9.0	9.0	5000.0	45000.0	5220.00	0.0	
73	0.5-2	MAG 2	2.38	0.0	7.5	7.5	5625.0	42187.5	2510.16	0.0	
74	0.5-2	MAG 2	2.15	0.0	4.0	4.0	5000.0	20000.0	1075.00	0.0	
80	0.5-2	MAG 2	4.26	0.0	8.0	8.0	3750.0	30000.0	3195.00	0.0	
81	0.5-2	MAG 2	5.52	0.0	2.0	2.0	2500.0	5000.0	690.00	0.0	
81	0.5-2	MAG 2	4.22	2.0	4.0	2.0	2500.0	5000.0	527.50	0.0	
81	0.5-2	MAG 2	2.57	4.0	7.0	3.0	2500.0	7500.0	481.88	0.0	
82	0.5-2	MAG 2	5.84	0.0	2.0	2.0	4375.0	8750.0	1277.50	0.0	
82	0.5-2	MAG 2	1.24	2.0	4.0	2.0	4375.0	8750.0	271.25	0.0	
82	0.5-2	MAG 2	1.82	4.0	6.0	2.0	4375.0	8750.0	398.13	0.0	
82	0.5-2	MAG 2	3.06	6.0	8.0	2.0	4375.0	8750.0	669.38	0.0	
83	0.5-2	MAG 2	7.73	0.0	2.0	2.0	4375.0	8750.0	1690.94	0.0	
83	0.5-2	MAG 2	3.37	2.0	4.0	2.0	4375.0	8750.0	737.19	0.0	
83	0.5-2	MAG 2	1.70	4.0	6.0	2.0	4375.0	8750.0	371.88	0.0	
85	0.5-2	MAG 2	3.90	0.0	2.0	2.0	6875.0	13750.0	1340.63	0.0	
85	0.5-2	MAG 2	7.18	2.0	4.0	2.0	6875.0	13750.0	2468.13	0.0	
85	0.5-2	MAG 2	1.95	4.0	6.0	2.0	6875.0	13750.0	670.31	0.0	
78	<0.15	MAG 2	1.67	0.0	4.0	4.0	7500.0	30000.0	1252.50	0.0	

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VOLUME AND MASS CALCULATIONS FOR THE AUGER CORE PRODUCTS
(continued)

SAMPLE SITE	SIZE (mm)	MAGNETIC SEPARATION	MASS (g)	SAMPLE TOP (m)	SAMPLE BOTTOM (m)	SAMPTOP - SAMPBOT (m)	SURFACE AREA (sq m)	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (t)	Cr203 (t)	TOTAL Cr203 MASS (t)
19	<0.25	MAG 2	4.42	4.0	6.0	2.0	4667.5	9375.0	1035.94	0.0	
01	<0.5	MAG 2	2.32	6.0	8.0	2.0	7500.0	15000.0	870.00	0.0	
02	<0.5	MAG 2	8.00	0.0	4.0	4.0	6875.0	27500.0	5500.00	0.0	
03	<0.5	MAG 2	8.16	0.0	2.0	2.0	5625.0	11250.0	2295.00	0.0	
04	<0.5	MAG 2	6.71	0.0	2.0	2.0	4375.0	8750.0	1467.81	0.0	
04	<0.5	MAG 2	3.68	2.0	4.0	2.0	4375.0	8750.0	805.00	0.0	
04	<0.5	MAG 2	5.73	4.0	6.0	2.0	4375.0	8750.0	1253.44	0.0	
04	<0.5	MAG 2	8.27	8.0	10.0	2.0	4375.0	8750.0	1809.06	10.4	188.14
14	<0.5	MAG 2	4.20	0.0	2.0	2.0	9375.0	18750.0	1968.75	21.5	423.28
14	<0.5	MAG 2	9.72	2.0	4.0	2.0	9375.0	18750.0	4556.25	9.8	446.51
17	<0.5	MAG 2	8.78	0.0	1.0	1.0	5000.0	5000.0	1097.50	0.0	
17	<0.5	MAG 2	10.24	6.0	8.0	2.0	5000.0	10000.0	2560.00	13.0	332.80
18	<0.5	MAG 2	3.62	0.0	2.0	2.0	4375.0	8750.0	791.88	14.0	110.86
18	<0.5	MAG 2	2.93	2.0	4.0	2.0	4375.0	8750.0	640.94	0.4	2.56
18	<0.5	MAG 2	1.75	4.0	7.0	3.0	4375.0	13125.0	574.22	0.0	
19	<0.5	MAG 2	7.78	0.0	2.0	2.0	4667.5	9375.0	1823.44	18.5	337.34
19	<0.5	MAG 2	4.67	8.0	10.0	2.0	4667.5	9375.0	1094.53	0.1	1.09
20	<0.5	MAG 2	7.65	0.0	4.0	4.0	4667.5	18750.0	3585.94	15.5	555.82
21	<0.5	MAG 2	9.64	0.0	2.0	2.0	2500.0	5000.0	1205.00	0.0	
21	<0.5	MAG 2	6.72	2.0	4.0	2.0	2500.0	5000.0	840.00	0.0	
21	<0.5	MAG 2	1.53	6.0	8.0	2.0	2500.0	5000.0	191.25	0.0	
21	<0.5	MAG 2	1.72	8.0	10.0	2.0	2500.0	5000.0	215.00	0.0	
22	<0.5	MAG 2	9.54	0.0	2.0	2.0	3125.0	6250.0	1490.63	10.6	158.01
22	<0.5	MAG 2	1.13	4.0	6.0	2.0	3125.0	6250.0	176.56	0.0	
22	<0.5	MAG 2	0.50	6.0	8.0	2.0	3125.0	6250.0	78.13	0.0	
23	<0.5	MAG 2	10.04	0.0	2.0	2.0	2500.0	5000.0	1255.00	0.0	
23	<0.5	MAG 2	1.46	2.0	4.0	2.0	2500.0	5000.0	182.50	0.0	
23	<0.5	MAG 2	1.41	4.0	6.0	2.0	2500.0	5000.0	176.25	0.0	
23	<0.5	MAG 2	7.18	0.0	2.0	2.0	4375.0	8750.0	1570.63	1.7	26.70
25	<0.5	MAG 2	0.67	2.0	4.0	2.0	4375.0	8750.0	146.56	0.0	
25	<0.5	MAG 2	0.64	4.0	7.0	3.0	4375.0	13125.0	210.00	0.0	
26	<0.5	MAG 2	2.45	0.0	2.0	2.0	4667.5	9375.0	574.22	15.0	86.13
26	<0.5	MAG 2	3.73	2.0	4.0	2.0	4667.5	9375.0	874.22	0.0	
26	<0.5	MAG 2	2.79	4.0	6.0	2.0	4667.5	9375.0	653.91	0.0	
26	<0.5	MAG 2	2.15	6.0	9.0	3.0	4667.5	14062.5	755.86	0.0	
27	<0.5	MAG 2	17.97	0.0	2.0	2.0	4375.0	8750.0	3930.94	20.0	786.19
27	<0.5	MAG 2	4.77	2.0	5.0	3.0	4375.0	13125.0	1565.16	21.5	336.51
28	<0.5	MAG 2	1.68	0.0	2.0	2.0	4667.5	9375.0	393.75	4.4	17.33
28	<0.5	MAG 2	5.25	2.0	6.0	4.0	4667.5	18750.0	2460.94	6.2	152.58
29	<0.5	MAG 2	3.34	0.0	2.0	2.0	5625.0	11250.0	939.38	0.0	
29	<0.5	MAG 2	4.77	2.0	4.0	2.0	5625.0	11250.0	1341.56	0.0	
29	<0.5	MAG 2	8.88	4.0	6.0	2.0	5625.0	11250.0	2497.50	0.0	
29	<0.5	MAG 2	11.79	6.0	7.0	1.0	5625.0	5625.0	1657.97	8.6	142.59
30	<0.5	MAG 2	9.35	0.0	2.0	2.0	5312.5	10625.0	2483.59	0.0	
30	<0.5	MAG 2	9.72	2.0	4.0	2.0	5312.5	10625.0	2581.88	0.0	
30	<0.5	MAG 2	3.09	4.0	6.0	2.0	5312.5	10625.0	820.78	0.0	
30	<0.5	MAG 2	13.85	6.0	8.0	2.0	5312.5	10625.0	3678.91	0.0	
31	<0.5	MAG 2	3.66	8.0	10.0	2.0	5312.5	10625.0	972.19	0.0	
31	<0.5	MAG 2	7.56	0.0	2.0	2.0	2500.0	5000.0	945.00	62.0	585.90

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VOLUME AND MASS CALCULATIONS FOR THE AUBER CORE PRODUCTS
(continued)

SAMPLE SITE	SIZE (mm)	MAGNETIC SEPARATION	MASS (g)	SAMPLE TOP (m)	SAMPLE BOTTOM (m)	SAMPTOP - SAMPBOT (m)	SURFACE AREA (sq m)	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (t)	Cr-203 (%)	TOTAL Cr-203 MASS (t)
31	<0.5	MAG 2	6.69	2.0	4.0	2.0	2500.0	5000.0	636.25	5.2	43.49
31	<0.5	MAG 2	4.67	4.0	6.0	2.0	2500.0	5000.0	583.75	3.8	22.18
31	<0.5	MAG 2	4.16	6.0	8.0	2.0	2500.0	5000.0	520.00	0.0	
31	<0.5	MAG 2	3.16	8.0	10.0	2.0	2500.0	5000.0	395.00	0.0	
31	<0.5	MAG 2	4.30	10.0	12.0	2.0	2500.0	5000.0	537.50	0.0	
32	<0.5	MAG 2	5.87	0.0	2.0	2.0	4375.0	8750.0	1284.06	0.0	
32	<0.5	MAG 2	5.74	2.0	4.0	2.0	4375.0	8750.0	1255.63	0.0	
32	<0.5	MAG 2	7.88	4.0	6.0	2.0	4375.0	8750.0	1723.75	0.0	
33	<0.5	MAG 2	3.63	0.0	2.0	2.0	5312.5	10625.0	964.22	6.8	65.57
33	<0.5	MAG 2	3.55	4.0	6.0	2.0	5312.5	10625.0	942.97	0.0	
33	<0.5	MAG 2	8.62	6.0	8.0	2.0	5312.5	10625.0	2289.69	29.5	675.46
33	<0.5	MAG 2	10.03	8.0	10.0	2.0	5312.5	10625.0	2664.22	0.0	
33	<0.5	MAG 2	10.22	10.0	12.0	2.0	5312.5	10625.0	2714.69	0.0	
33	<0.5	MAG 2	3.71	12.0	14.0	2.0	5312.5	10625.0	985.47	0.0	
33	<0.5	MAG 2	4.18	14.0	17.0	3.0	5312.5	15937.5	1665.47	0.0	
34	<0.5	MAG 2	1.17	0.0	2.0	2.0	5000.0	10000.0	292.50	0.0	
34	<0.5	MAG 2	0.93	2.0	4.0	2.0	5000.0	10000.0	232.50	0.0	
35	<0.5	MAG 2	3.24	2.0	4.0	2.0	3750.0	7500.0	607.50	0.0	
36	<0.5	MAG 2	8.00	0.0	2.0	2.0	6250.0	12500.0	2500.00	0.0	
36	<0.5	MAG 2	7.93	2.0	4.0	2.0	6250.0	12500.0	2478.13	0.0	
36	<0.5	MAG 2	0.51	4.0	6.0	2.0	6250.0	12500.0	159.38	0.0	
37	<0.5	MAG 2	8.63	0.0	2.0	2.0	7812.5	15625.0	3371.09	0.0	
37	<0.5	MAG 2	2.20	2.0	4.0	2.0	7812.5	15625.0	859.38	8.4	72.19
37	<0.5	MAG 2	3.41	4.0	6.0	2.0	7812.5	15625.0	1332.03	6.2	82.59
37	<0.5	MAG 2	9.39	6.0	8.0	2.0	7812.5	15625.0	3667.97	0.0	
38	<0.5	MAG 2	2.08	0.0	2.0	2.0	3437.5	6875.0	357.50	19.5	69.71
39	<0.5	MAG 2	3.06	0.0	2.0	2.0	2500.0	5000.0	382.50	16.0	61.20
39	<0.5	MAG 2	0.90	2.0	5.0	3.0	2500.0	7500.0	168.75	11.2	18.90
45	<0.5	MAG 2	3.09	0.0	3.0	3.0	5312.5	15937.5	1231.17	0.0	
46	<0.5	MAG 2	2.26	0.0	2.0	2.0	5625.0	11250.0	635.63	0.0	
47	<0.5	MAG 2	2.84	0.0	2.0	2.0	2500.0	5000.0	355.00	0.0	
48	<0.5	MAG 2	3.78	0.0	2.0	2.0	3750.0	7500.0	708.75	0.0	
50	<0.5	MAG 2	4.04	0.0	2.0	2.0	3125.0	6250.0	631.25	20.0	126.25
51	<0.5	MAG 2	2.22	0.0	4.0	4.0	3437.5	13750.0	763.13	0.0	
52	<0.5	MAG 2	3.34	0.0	2.5	2.5	4375.0	10937.5	913.28	0.0	
53	<0.5	MAG 2	3.89	0.0	3.0	3.0	2500.0	7500.0	729.38	0.0	
54	<0.5	MAG 2	4.34	0.0	1.5	1.5	5000.0	7500.0	813.75	0.0	
55	<0.5	MAG 2	9.56	0.0	2.0	2.0	5000.0	10000.0	2390.00	0.0	
56	<0.5	MAG 2	9.15	0.0	1.5	1.5	5625.0	8437.5	1930.08	5.4	104.22
57	<0.5	MAG 2	3.14	0.0	4.5	4.5	3125.0	14062.5	1103.91	7.8	86.10
58	<0.5	MAG 2	2.21	0.0	4.5	4.5	5937.5	26718.8	1476.21	0.0	
59	<0.5	MAG 2	2.54	0.0	2.0	2.0	6875.0	13750.0	873.13	0.0	
61	<0.5	MAG 2	5.47	0.0	5.0	5.0	6875.0	34375.0	4700.78	0.0	
62	<0.5	MAG 2	1.46	0.0	6.0	6.0	6875.0	41250.0	1505.63	0.0	
63	<0.5	MAG 2	2.75	0.0	6.0	6.0	4687.5	28125.0	1933.59	0.0	
64	<0.5	MAG 2	3.34	0.0	6.0	6.0	2500.0	15000.0	1252.50	0.0	
65	<0.5	MAG 2	5.23	0.0	6.0	6.0	4375.0	26250.0	3432.19	14.0	480.51
66	<0.5	MAG 2	6.06	0.0	2.0	2.0	5625.0	11250.0	1704.38	22.0	374.96
67	<0.5	MAG 2	3.53	0.0	2.0	2.0	4687.5	9375.0	827.34	0.0	

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VOLUME AND MASS CALCULATIONS FOR THE AUGER CORE PRODUCTS
(continued)

SAMPLE SITE	SIZE (mm)	MAGNETIC SEPARATION	MASS (%)	SAMPLE TOP (m)	SAMPLE BOTTOM (m)	SAMP TOP - SAMP BOT (m)	SURFACE AREA (sq m)	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (l)	Cr203 (%)	TOTAL Cr203 MASS (l)
69	<0.5	MAG 2	1.97	0.0	7.0	7.0	4687.5	32812.5	1616.02	0.0	
70	<0.5	MAG 2	2.31	0.0	9.0	9.0	2500.0	22500.0	1299.38	0.6	7.80
71	<0.5	MAG 2	5.08	0.0	9.0	9.0	5000.0	45000.0	5715.00	16.5	942.98
72	<0.5	MAG 2	4.61	0.0	6.0	6.0	2500.0	15000.0	1728.75	0.0	
73	<0.5	MAG 2	1.54	0.0	7.5	7.5	5625.0	42187.5	1624.22	0.0	
74	<0.5	MAG 2	2.53	0.0	4.0	4.0	5000.0	20000.0	1265.00	0.0	
75	<0.5	MAG 2	6.66	0.0	4.5	4.5	7500.0	33750.0	5619.38	12.5	702.42
76	<0.5	MAG 2	3.70	0.0	4.0	4.0	5000.0	20000.0	1850.00	9.2	170.20
79	<0.5	MAG 2	3.95	0.0	3.0	3.0	4375.0	13125.0	1296.09	8.6	111.46
80	<0.5	MAG 2	4.02	0.0	8.0	8.0	3750.0	30000.0	3015.00	0.0	
81	<0.5	MAG 2	7.10	0.0	2.0	2.0	2500.0	5000.0	887.50	0.0	
81	<0.5	MAG 2	14.00	2.0	4.0	2.0	2500.0	5000.0	1750.00	0.0	
81	<0.5	MAG 2	3.00	4.0	7.0	3.0	2500.0	7500.0	562.50	0.0	
82	<0.5	MAG 2	2.61	2.0	4.0	2.0	4375.0	8750.0	570.94	0.0	
82	<0.5	MAG 2	2.11	4.0	6.0	2.0	4375.0	8750.0	461.56	24.5	113.08
82	<0.5	MAG 2	2.44	6.0	8.0	2.0	4375.0	8750.0	533.75	0.0	
83	<0.5	MAG 2	2.09	4.0	6.0	2.0	4375.0	8750.0	457.19	0.0	
85	<0.5	MAG 2	4.60	0.0	2.0	2.0	6875.0	13750.0	1581.25	6.2	98.04
85	<0.5	MAG 2	5.64	2.0	4.0	2.0	6875.0	13750.0	1938.75	0.0	
85	<0.5	MAG 2	3.29	4.0	6.0	2.0	6875.0	13750.0	1130.94	0.0	
70	<0.5	MAG 3	1.96	0.0	9.0	9.0	2500.0	22500.0	1102.50	0.0	
72	<0.5	MAG 3	2.83	0.0	6.0	6.0	2500.0	15000.0	1061.25	1.3	13.80
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							SUBTOTAL	2767812.5	306565.70		

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693103

VOLUME AND MASS CALCULATIONS FOR THE AUGER CORE PRODUCTS
(continued)

SAMPLE SITE	SIZE (mm)	MAGNETIC SEPARATION	MASS (%)	SAMPLE TOP (m)	SAMPLE BOTTOM (m)	SAMP TOP - SAMP BOT (m)	SURFACE AREA (sq m)	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (t)	Cr-203 (%)	TOTAL Cr-203 MASS (t)
78	0.15-0.5	MID	6.39	0.0	4.0	4.0	7500.0	30000.0	4792.50	0.0	
72	0.25-0.5	MID	5.14	0.0	6.0	6.0	2500.0	15000.0	1927.50	0.0	
02	0.5-2	MID	7.80	0.0	4.0	4.0	6875.0	27500.0	5362.50	0.0	
03	0.5-2	MID	3.10	0.0	2.0	2.0	5625.0	11250.0	871.88	0.0	
04	0.5-2	MID	16.17	0.0	2.0	2.0	4375.0	8750.0	3537.19	0.0	
04	0.5-2	MID	9.73	2.0	4.0	2.0	4375.0	8750.0	2128.44	0.0	
04	0.5-2	MID	4.09	4.0	6.0	2.0	4375.0	8750.0	894.69	0.0	
04	0.5-2	MID	6.82	8.0	10.0	2.0	4375.0	8750.0	1491.88	0.0	
14	0.5-2	MID	13.11	0.0	2.0	2.0	9375.0	18750.0	6145.31	0.0	
17	0.5-2	MID	13.06	0.0	1.0	1.0	5000.0	5000.0	1632.50	0.0	
17	0.5-2	MID	9.20	6.0	8.0	2.0	5000.0	10000.0	2300.00	0.0	
18	0.5-2	MID	2.93	2.0	4.0	2.0	4375.0	8750.0	640.94	0.0	
18	0.5-2	MID	1.28	4.0	7.0	3.0	4375.0	13125.0	420.00	0.0	
21	0.5-2	MID	8.54	0.0	2.0	2.0	2500.0	5000.0	1067.50	0.0	
21	0.5-2	MID	5.13	2.0	4.0	2.0	2500.0	5000.0	641.25	0.0	
22	0.5-2	MID	10.92	0.0	2.0	2.0	3125.0	6250.0	1706.25	0.0	
23	0.5-2	MID	10.78	0.0	2.0	2.0	2500.0	5000.0	1347.50	0.0	
23	0.5-2	MID	2.36	2.0	4.0	2.0	2500.0	5000.0	295.00	0.0	
25	0.5-2	MID	5.29	0.0	2.0	2.0	4375.0	8750.0	1157.19	0.0	
26	0.5-2	MID	3.74	0.0	2.0	2.0	4687.5	9375.0	876.56	0.0	
28	0.5-2	MID	9.54	0.0	2.0	2.0	4687.5	9375.0	2235.94	0.0	
28	0.5-2	MID	6.82	2.0	6.0	4.0	4687.5	18750.0	3196.88	0.0	
29	0.5-2	MID	4.49	0.0	2.0	2.0	5625.0	11250.0	1262.81	0.0	
29	0.5-2	MID	4.18	2.0	4.0	2.0	5625.0	11250.0	1175.63	0.0	
29	0.5-2	MID	14.68	4.0	6.0	2.0	5625.0	11250.0	4128.75	0.0	
30	0.5-2	MID	16.65	0.0	2.0	2.0	5312.5	10625.0	4422.66	0.0	
30	0.5-2	MID	15.76	2.0	4.0	2.0	5312.5	10625.0	4186.25	0.0	
30	0.5-2	MID	2.74	4.0	6.0	2.0	5312.5	10625.0	727.81	0.0	
30	0.5-2	MID	13.09	6.0	8.0	2.0	5312.5	10625.0	3477.03	0.0	
30	0.5-2	MID	12.22	8.0	10.0	2.0	5312.5	10625.0	3245.94	0.0	
31	0.5-2	MID	4.62	2.0	4.0	2.0	2500.0	5000.0	577.50	0.0	
31	0.5-2	MID	8.38	6.0	8.0	2.0	2500.0	5000.0	1047.50	0.0	
31	0.5-2	MID	9.77	8.0	10.0	2.0	2500.0	5000.0	1221.25	0.0	
31	0.5-2	MID	9.02	10.0	12.0	2.0	2500.0	5000.0	1127.50	0.0	
32	0.5-2	MID	8.65	0.0	2.0	2.0	4375.0	8750.0	1892.19	0.0	
32	0.5-2	MID	7.83	2.0	4.0	2.0	4375.0	8750.0	1712.81	0.0	
32	0.5-2	MID	5.99	4.0	6.0	2.0	4375.0	8750.0	1310.31	0.0	
33	0.5-2	MID	4.39	0.0	2.0	2.0	5312.5	10625.0	1166.09	0.0	
33	0.5-2	MID	7.78	4.0	6.0	2.0	5312.5	10625.0	2066.56	0.0	
33	0.5-2	MID	11.49	8.0	10.0	2.0	5312.5	10625.0	3052.03	0.0	
33	0.5-2	MID	14.96	10.0	12.0	2.0	5312.5	10625.0	3973.75	0.0	
33	0.5-2	MID	11.84	12.0	14.0	2.0	5312.5	10625.0	3145.00	0.0	
34	0.5-2	MID	2.27	2.0	4.0	2.0	5000.0	10000.0	567.50	0.0	
35	0.5-2	MID	7.42	2.0	4.0	2.0	3750.0	7500.0	1391.25	0.0	
36	0.5-2	MID	6.26	0.0	2.0	2.0	6250.0	12500.0	1956.25	0.0	
36	0.5-2	MID	9.59	2.0	4.0	2.0	6250.0	12500.0	2996.88	0.0	
37	0.5-2	MID	11.21	0.0	2.0	2.0	7812.5	15625.0	4378.91	0.0	
37	0.5-2	MID	1.94	2.0	4.0	2.0	7812.5	15625.0	757.81	0.0	
37	0.5-2	MID	13.19	4.0	6.0	2.0	7812.5	15625.0	5152.34	0.0	

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VOLUME AND MASS CALCULATIONS FOR THE AUGER CORE PRODUCTS
(continued)

SAMPLE SITE	SIZE (mm)	MAGNETIC SEPARATION	MASS (g)	SAMPLE TOP (m)	SAMPLE BOTTOM (m)	SAMPTOP - SAMPBOT (m)	SURFACE AREA (sq m)	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (t)	Cr203 (%)	TOTAL Cr203 MASS (t)
37	0.5-2	MID	14.31	6.0	8.0	2.0	7812.5	15625.0	5589.84	0.0	
38	0.5-2	MID	2.91	0.0	2.0	2.0	3437.5	6875.0	500.16	0.0	
39	0.5-2	MID	3.06	0.0	2.0	2.0	2500.0	5000.0	382.50	0.0	
39	0.5-2	MID	0.86	2.0	5.0	3.0	2500.0	7500.0	161.25	0.0	
41	0.5-2	MID	2.20	0.0	3.0	3.0	7500.0	22500.0	1237.50	0.0	
45	0.5-2	MID	4.51	0.0	3.0	3.0	5312.5	15937.5	1796.95	0.0	
46	0.5-2	MID	2.32	0.0	2.0	2.0	5625.0	11250.0	652.50	0.0	
48	0.5-2	MID	3.48	0.0	2.0	2.0	3750.0	7500.0	652.50	0.0	
50	0.5-2	MID	7.10	0.0	2.0	2.0	3125.0	6250.0	1109.38	0.0	
51	0.5-2	MID	2.37	0.0	4.0	4.0	3437.5	13750.0	814.69	0.0	
52	0.5-2	MID	5.98	0.0	2.5	2.5	4375.0	10937.5	1635.16	0.0	
53	0.5-2	MID	4.78	0.0	3.0	3.0	2500.0	7500.0	896.25	0.0	
54	0.5-2	MID	6.14	0.0	1.5	1.5	5000.0	7500.0	1151.25	0.0	
55	0.5-2	MID	11.09	0.0	2.0	2.0	5000.0	10000.0	2772.50	0.0	
56	0.5-2	MID	9.13	0.0	1.5	1.5	5625.0	8437.5	1925.86	0.0	
57	0.5-2	MID	4.98	0.0	4.5	4.5	3125.0	14062.5	1750.78	0.0	
58	0.5-2	MID	3.26	0.0	4.5	4.5	5937.5	26718.8	2177.58	0.0	
59	0.5-2	MID	2.23	0.0	2.0	2.0	6875.0	13750.0	766.56	0.0	
61	0.5-2	MID	4.38	0.0	5.0	5.0	6875.0	34375.0	3764.06	0.0	
62	0.5-2	MID	2.90	0.0	6.0	6.0	6875.0	41250.0	2990.63	0.0	
63	0.5-2	MID	0.91	0.0	6.0	6.0	4687.5	28125.0	639.84	0.0	
64	0.5-2	MID	3.23	0.0	6.0	6.0	2500.0	15000.0	1211.25	0.0	
66	0.5-2	MID	8.53	0.0	2.0	2.0	5625.0	11250.0	2399.06	0.0	
67	0.5-2	MID	1.89	0.0	2.0	2.0	4687.5	9375.0	442.97	0.0	
69	0.5-2	MID	1.63	0.0	7.0	7.0	4687.5	32812.5	1337.11	0.0	
71	0.5-2	MID	7.32	0.0	9.0	9.0	5000.0	45000.0	8235.00	0.0	
73	0.5-2	MID	1.46	0.0	7.5	7.5	5625.0	42187.5	1539.84	0.0	
74	0.5-2	MID	2.24	0.0	4.0	4.0	5000.0	20000.0	1120.00	0.0	
80	0.5-2	MID	3.25	0.0	8.0	8.0	3750.0	30000.0	2437.50	0.0	
81	0.5-2	MID	8.65	0.0	2.0	2.0	2500.0	5000.0	1081.25	0.0	
81	0.5-2	MID	6.10	2.0	4.0	2.0	2500.0	5000.0	762.50	0.0	
81	0.5-2	MID	1.33	4.0	7.0	3.0	2500.0	7500.0	249.38	0.0	
82	0.5-2	MID	6.18	0.0	2.0	2.0	4375.0	8750.0	1351.88	0.0	
82	0.5-2	MID	1.57	2.0	4.0	2.0	4375.0	8750.0	343.44	0.0	
83	0.5-2	MID	9.13	0.0	2.0	2.0	4375.0	8750.0	1997.19	0.0	
83	0.5-2	MID	1.30	4.0	6.0	2.0	4375.0	8750.0	284.38	0.0	
85	0.5-2	MID	4.85	0.0	2.0	2.0	6875.0	13750.0	1667.19	0.0	
85	0.5-2	MID	9.55	2.0	4.0	2.0	6875.0	13750.0	3282.81	0.0	
85	0.5-2	MID	6.83	4.0	6.0	2.0	6875.0	13750.0	2347.81	0.0	
78	<0.15	MID	1.21	0.0	4.0	4.0	7500.0	30000.0	907.50	0.0	
19	<0.25	MID	3.57	4.0	6.0	2.0	4687.5	9375.0	836.72	0.0	
03	<0.5	MID	2.26	0.0	2.0	2.0	5625.0	11250.0	635.63	0.0	
04	<0.5	MID	0.69	0.0	2.0	2.0	4375.0	8750.0	150.94	0.0	
04	<0.5	MID	1.78	2.0	4.0	2.0	4375.0	8750.0	389.38	0.0	
14	<0.5	MID	1.28	0.0	2.0	2.0	9375.0	18750.0	600.00	6.4	38.40
14	<0.5	MID	5.57	2.0	4.0	2.0	9375.0	18750.0	2610.94	8.8	229.76
17	<0.5	MID	2.50	0.0	1.0	1.0	5000.0	5000.0	312.50	0.0	
17	<0.5	MID	1.53	6.0	8.0	2.0	5000.0	10000.0	382.50	9.0	34.43
18	<0.5	MID	1.04	0.0	2.0	2.0	4375.0	8750.0	227.50	2.3	5.23

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VOLUME AND MASS CALCULATIONS FOR THE AUGER CORE PRODUCTS
(continued)

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SAMPLE SITE	SIZE (mm)	MAGNETIC SEPARATION	MASS (g)	SAMPLE TOP (m)	SAMPLE BOTTOM (m)	SAMPTOP - SAMPBOT (m)	SURFACE AREA (sq m)	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (g)	Cr203 (%)	TOTAL Cr203 MASS (g)
18	<0.5	MID	4.39	2.0	4.0	2.0	4375.0	8750.0	960.31	0.3	2.88
18	<0.5	MID	2.49	4.0	7.0	3.0	4375.0	13125.0	817.03	0.0	
19	<0.5	MID	3.23	0.0	2.0	2.0	4687.5	9375.0	757.03	15.0	113.55
19	<0.5	MID	4.63	8.0	10.0	2.0	4687.5	9375.0	1085.16	0.1	1.09
20	<0.5	MID	3.33	0.0	4.0	4.0	4687.5	18750.0	1560.94	12.5	195.12
21	<0.5	MID	1.99	0.0	2.0	2.0	2500.0	5000.0	248.75	0.0	
21	<0.5	MID	5.54	2.0	4.0	2.0	2500.0	5000.0	692.50	0.0	
21	<0.5	MID	7.58	6.0	8.0	2.0	2500.0	5000.0	947.50	0.0	
21	<0.5	MID	3.26	8.0	10.0	2.0	2500.0	5000.0	407.50	0.0	
22	<0.5	MID	2.46	0.0	2.0	2.0	3125.0	6250.0	384.38	5.0	19.22
22	<0.5	MID	4.73	4.0	6.0	2.0	3125.0	6250.0	739.06	0.0	
22	<0.5	MID	5.34	6.0	8.0	2.0	3125.0	6250.0	834.38	0.0	
23	<0.5	MID	1.52	0.0	2.0	2.0	2500.0	5000.0	190.00	0.0	
23	<0.5	MID	1.62	2.0	4.0	2.0	2500.0	5000.0	202.50	0.0	
23	<0.5	MID	9.90	4.0	6.0	2.0	2500.0	5000.0	1237.50	0.0	
25	<0.5	MID	3.89	0.0	2.0	2.0	4375.0	8750.0	850.94	6.6	56.16
25	<0.5	MID	14.33	2.0	4.0	2.0	4375.0	8750.0	3134.69	0.0	
25	<0.5	MID	1.85	4.0	7.0	3.0	4375.0	13125.0	607.03	0.0	
26	<0.5	MID	1.11	0.0	2.0	2.0	4687.5	9375.0	260.16	6.8	17.69
26	<0.5	MID	9.33	2.0	4.0	2.0	4687.5	9375.0	2186.72	0.0	
26	<0.5	MID	6.43	4.0	6.0	2.0	4687.5	9375.0	1507.03	0.0	
26	<0.5	MID	7.57	6.0	9.0	3.0	4687.5	14062.5	2661.33	0.0	
27	<0.5	MID	1.81	2.0	5.0	3.0	4375.0	13125.0	593.91	2.3	13.66
28	<0.5	MID	2.08	2.0	6.0	4.0	4687.5	18750.0	975.00	7.0	68.25
29	<0.5	MID	2.04	4.0	6.0	2.0	5625.0	11250.0	573.75	0.0	
29	<0.5	MID	1.70	6.0	7.0	1.0	5625.0	5625.0	239.06	10.0	23.91
30	<0.5	MID	2.16	0.0	2.0	2.0	5312.5	10625.0	573.75	0.0	
30	<0.5	MID	1.64	2.0	4.0	2.0	5312.5	10625.0	435.63	0.0	
30	<0.5	MID	2.41	6.0	8.0	2.0	5312.5	10625.0	640.16	0.0	
30	<0.5	MID	14.98	8.0	10.0	2.0	5312.5	10625.0	3979.06	0.0	
31	<0.5	MID	8.61	0.0	2.0	2.0	2500.0	5000.0	1076.25	5.2	55.97
31	<0.5	MID	3.07	4.0	6.0	2.0	2500.0	5000.0	383.75	3.6	13.82
31	<0.5	MID	1.36	8.0	10.0	2.0	2500.0	5000.0	170.00	0.0	
31	<0.5	MID	1.41	10.0	12.0	2.0	2500.0	5000.0	176.25	0.0	
32	<0.5	MID	1.06	0.0	2.0	2.0	4375.0	8750.0	231.88	0.0	
32	<0.5	MID	2.43	2.0	4.0	2.0	4375.0	8750.0	531.56	0.0	
32	<0.5	MID	2.06	4.0	6.0	2.0	4375.0	8750.0	450.63	0.0	
33	<0.5	MID	3.94	4.0	6.0	2.0	5312.5	10625.0	1046.56	0.0	
33	<0.5	MID	5.21	6.0	8.0	2.0	5312.5	10625.0	1383.91	15.0	207.59
33	<0.5	MID	1.00	12.0	14.0	2.0	5312.5	10625.0	265.63	0.0	
34	<0.5	MID	1.41	2.0	4.0	2.0	5000.0	10000.0	352.50	0.0	
35	<0.5	MID	1.06	2.0	4.0	2.0	3750.0	7500.0	198.75	0.0	
36	<0.5	MID	2.32	0.0	2.0	2.0	6250.0	12500.0	725.00	0.0	
36	<0.5	MID	4.41	2.0	4.0	2.0	6250.0	12500.0	1378.13	0.0	
37	<0.5	MID	2.62	0.0	2.0	2.0	7812.5	15625.0	1023.44	0.0	
37	<0.5	MID	3.21	2.0	4.0	2.0	7812.5	15625.0	1253.91	6.6	82.76
37	<0.5	MID	2.24	4.0	6.0	2.0	7812.5	15625.0	875.00	5.4	47.25
37	<0.5	MID	1.43	6.0	8.0	2.0	7812.5	15625.0	558.59	0.0	
40	<0.5	MID	6.59	0.0	3.0	3.0	4687.5	14062.5	2316.80	0.0	

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VOLUME AND MASS CALCULATIONS FOR THE AUGER CORE PRODUCTS
(continued)

SAMPLE SITE	SIZE (mm)	MAGNETIC SEPARATION	MASS (%)	SAMPLE TOP (m)	SAMPLE BOTTOM (m)	SAMP TOP - SAMP BOT (m)	SURFACE AREA (sq m)	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (t)	Cr203 (%)	TOTAL Cr203 MASS (t)
43	<0.5	MID	12.44	0.0	2.0	2.0	8750.0	17500.0	5442.50	17.0	925.23
45	<0.5	MID	0.61	0.0	3.0	3.0	5312.5	15937.5	243.05	0.0	
48	<0.5	MID	0.98	0.0	2.0	2.0	3750.0	7500.0	183.75	0.0	
50	<0.5	MID	0.90	0.0	2.0	2.0	3125.0	6250.0	140.63	6.4	9.00
52	<0.5	MID	0.81	0.0	2.5	2.5	4375.0	10937.5	221.48	0.0	
55	<0.5	MID	2.65	0.0	2.0	2.0	5000.0	10000.0	662.50	0.0	
56	<0.5	MID	1.59	0.0	1.5	1.5	5625.0	8437.5	335.39	3.3	11.07
57	<0.5	MID	0.68	0.0	4.5	4.5	3125.0	14062.5	239.06	5.8	13.87
61	<0.5	MID	0.70	0.0	5.0	5.0	6875.0	34375.0	601.56	0.0	
63	<0.5	MID	1.17	0.0	6.0	6.0	4687.5	28125.0	822.66	0.0	
64	<0.5	MID	0.58	0.0	6.0	6.0	2500.0	15000.0	217.50	0.0	
69	<0.5	MID	1.90	0.0	7.0	7.0	4687.5	32812.5	1558.59	0.0	
70	<0.5	MID	2.45	0.0	9.0	9.0	2500.0	22500.0	1378.13	0.0	
71	<0.5	MID	1.77	0.0	9.0	9.0	5000.0	45000.0	1991.25	7.2	143.37
75	<0.5	MID	3.37	0.0	4.5	4.5	7500.0	33750.0	2843.44	11.4	324.15
76	<0.5	MID	1.38	0.0	4.0	4.0	5000.0	20000.0	690.00	9.0	62.10
79	<0.5	MID	5.09	0.0	3.0	3.0	4375.0	13125.0	1670.16	0.6	10.02
80	<0.5	MID	0.62	0.0	8.0	8.0	3750.0	30000.0	465.00	0.0	
81	<0.5	MID	2.71	0.0	2.0	2.0	2500.0	5000.0	338.75	0.0	
81	<0.5	MID	2.85	2.0	4.0	2.0	2500.0	5000.0	356.25	0.0	
85	<0.5	MID	0.70	0.0	2.0	2.0	6875.0	13750.0	240.63	3.9	9.38
85	<0.5	MID	0.55	4.0	6.0	2.0	6875.0	13750.0	189.06	0.0	
SUBTOTAL								2143281.25	244814.14		

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VOLUME AND MASS CALCULATIONS FOR THE AUGER CORE PRODUCTS
(continued)

SAMPLE SITE	SIZE (mm)	MAGNETIC SEPARATION	MASS (%)	SAMPLE TOP (m)	SAMPLE BOTTOM (m)	SAMPTOP - SAMFBOT (m)	SURFACE AREA (sq m)	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (t)	Cr-203 (x)	TOTAL Cr-203 MASS (t)
78	0.15-0.5	NON MAG	14.31	0.0	4.0	4.0	7500.0	30000.0	10732.50	0.0	
01	0.5-2	NON MAG	1.40	0.0	6.0	6.0	7500.0	45000.0	1575.00	0.0	
01	0.5-2	NON MAG	1.16	6.0	8.0	2.0	7500.0	15000.0	435.00	0.0	
01	0.5-2	NON MAG	1.39	8.0	10.0	2.0	7500.0	15000.0	521.25	0.0	
02	0.5-2	NON MAG	18.80	0.0	4.0	4.0	6875.0	27500.0	12925.00	0.0	
03	0.5-2	NON MAG	18.29	0.0	2.0	2.0	5625.0	11250.0	5144.06	0.0	
04	0.5-2	NON MAG	13.14	0.0	2.0	2.0	4375.0	8750.0	2874.38	0.0	
04	0.5-2	NON MAG	7.70	2.0	4.0	2.0	4375.0	8750.0	1684.38	0.0	
04	0.5-2	NON MAG	13.55	4.0	6.0	2.0	4375.0	8750.0	2964.06	0.0	
04	0.5-2	NON MAG	1.00	6.0	8.0	2.0	4375.0	8750.0	218.75	0.0	
04	0.5-2	NON MAG	11.18	8.0	10.0	2.0	4375.0	8750.0	2445.63	0.0	
14	0.5-2	NON MAG	14.85	0.0	2.0	2.0	9375.0	18750.0	6960.94	0.0	
17	0.5-2	NON MAG	19.19	0.0	1.0	1.0	5000.0	5000.0	2398.75	0.0	
17	0.5-2	NON MAG	22.62	6.0	8.0	2.0	5000.0	10000.0	5655.00	0.0	
18	0.5-2	NON MAG	4.51	2.0	4.0	2.0	4375.0	8750.0	986.56	0.0	
18	0.5-2	NON MAG	5.93	4.0	7.0	3.0	4375.0	13125.0	1945.78	0.0	
21	0.5-2	NON MAG	11.97	0.0	2.0	2.0	2500.0	5000.0	1496.25	0.0	
21	0.5-2	NON MAG	9.02	2.0	4.0	2.0	2500.0	5000.0	1127.50	0.0	
22	0.5-2	NON MAG	14.13	0.0	2.0	2.0	3125.0	6250.0	2207.81	0.0	
23	0.5-2	NON MAG	13.20	0.0	2.0	2.0	2500.0	5000.0	1650.00	0.0	
23	0.5-2	NON MAG	5.69	2.0	4.0	2.0	2500.0	5000.0	711.25	0.0	
25	0.5-2	NON MAG	16.69	0.0	2.0	2.0	4375.0	8750.0	3650.94	0.0	
26	0.5-2	NON MAG	7.36	0.0	2.0	2.0	4687.5	9375.0	1725.00	0.0	
28	0.5-2	NON MAG	9.19	0.0	2.0	2.0	4687.5	9375.0	2153.91	0.0	
28	0.5-2	NON MAG	16.31	2.0	6.0	4.0	4687.5	18750.0	7645.31	0.0	
29	0.5-2	NON MAG	16.00	0.0	2.0	2.0	5625.0	11250.0	4500.00	0.0	
29	0.5-2	NON MAG	15.54	2.0	4.0	2.0	5625.0	11250.0	4370.63	0.0	
29	0.5-2	NON MAG	26.48	4.0	6.0	2.0	5625.0	11250.0	7447.50	0.0	
30	0.5-2	NON MAG	21.52	0.0	2.0	2.0	5312.5	10625.0	5716.25	0.0	
30	0.5-2	NON MAG	24.68	2.0	4.0	2.0	5312.5	10625.0	6555.63	0.0	
30	0.5-2	NON MAG	4.88	4.0	6.0	2.0	5312.5	10625.0	1296.25	0.0	
30	0.5-2	NON MAG	25.32	6.0	8.0	2.0	5312.5	10625.0	6725.63	0.0	
30	0.5-2	NON MAG	14.80	8.0	10.0	2.0	5312.5	10625.0	3931.25	0.0	
31	0.5-2	NON MAG	11.31	2.0	4.0	2.0	2500.0	5000.0	1413.75	0.0	
31	0.5-2	NON MAG	10.41	6.0	8.0	2.0	2500.0	5000.0	1301.25	0.0	
31	0.5-2	NON MAG	12.75	8.0	10.0	2.0	2500.0	5000.0	1593.75	0.0	
31	0.5-2	NON MAG	15.00	10.0	12.0	2.0	2500.0	5000.0	1875.00	0.0	
32	0.5-2	NON MAG	12.15	0.0	2.0	2.0	4375.0	8750.0	2657.81	0.0	
32	0.5-2	NON MAG	9.51	2.0	4.0	2.0	4375.0	8750.0	2080.31	0.0	
32	0.5-2	NON MAG	13.17	4.0	6.0	2.0	4375.0	8750.0	2880.94	0.0	
33	0.5-2	NON MAG	12.67	0.0	2.0	2.0	5312.5	10625.0	3365.47	0.0	
33	0.5-2	NON MAG	20.02	4.0	6.0	2.0	5312.5	10625.0	5317.81	0.0	
33	0.5-2	NON MAG	19.08	8.0	10.0	2.0	5312.5	10625.0	5068.13	0.0	
33	0.5-2	NON MAG	13.37	10.0	12.0	2.0	5312.5	10625.0	3551.41	0.0	
33	0.5-2	NON MAG	14.59	12.0	14.0	2.0	5312.5	10625.0	3875.47	0.0	
33	0.5-2	NON MAG	12.36	14.0	17.0	3.0	5312.5	15937.5	4924.69	0.0	
34	0.5-2	NON MAG	4.00	0.0	2.0	2.0	5000.0	10000.0	1000.00	0.0	
34	0.5-2	NON MAG	16.05	2.0	4.0	2.0	5000.0	10000.0	4012.50	0.0	
35	0.5-2	NON MAG	16.42	2.0	4.0	2.0	3750.0	7500.0	3078.75	0.0	

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VOLUME AND MASS CALCULATIONS FOR THE AUGER CORE PRODUCTS
(continued)

SAMPLE SITE	SIZE (mm)	MAGNETIC SEPARATION	MASS (g)	SAMPLE TOP (m)	SAMPLE BOTTOM (m)	SAMP TOP - SAMP BOT (m)	SURFACE AREA (sq m)	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (t)	Cr203 (%)	TOTAL Cr203 MASS (t)
36	0.5-2	NON MAG	24.45	0.0	2.0	2.0	6250.0	12500.0	7640.63	0.0	
36	0.5-2	NON MAG	19.74	2.0	4.0	2.0	6250.0	12500.0	6168.75	0.0	
37	0.5-2	NON MAG	14.25	0.0	2.0	2.0	7812.5	15625.0	5566.41	0.0	
37	0.5-2	NON MAG	5.15	2.0	4.0	2.0	7812.5	15625.0	2011.72	0.0	
37	0.5-2	NON MAG	11.37	4.0	6.0	2.0	7812.5	15625.0	4441.41	0.0	
37	0.5-2	NON MAG	21.40	6.0	8.0	2.0	7812.5	15625.0	8359.38	0.0	
38	0.5-2	NON MAG	6.45	0.0	2.0	2.0	3437.5	6875.0	1108.59	0.0	
39	0.5-2	NON MAG	7.22	0.0	2.0	2.0	2500.0	5000.0	902.50	0.0	
39	0.5-2	NON MAG	2.16	2.0	5.0	3.0	2500.0	7500.0	405.00	0.0	
41	0.5-2	NON MAG	3.35	0.0	3.0	3.0	7500.0	22500.0	1884.38	0.0	
45	0.5-2	NON MAG	12.18	0.0	3.0	3.0	5312.5	15937.5	4852.97	0.0	
46	0.5-2	NON MAG	5.87	0.0	2.0	2.0	5625.0	11250.0	1650.94	0.0	
47	0.5-2	NON MAG	5.11	0.0	2.0	2.0	2500.0	5000.0	638.75	0.0	
48	0.5-2	NON MAG	5.90	0.0	2.0	2.0	3750.0	7500.0	1106.25	0.0	
50	0.5-2	NON MAG	23.16	0.0	2.0	2.0	3125.0	6250.0	3618.75	0.0	
51	0.5-2	NON MAG	8.98	0.0	4.0	4.0	3437.5	13750.0	3086.88	0.0	
52	0.5-2	NON MAG	15.55	0.0	2.5	2.5	4375.0	10937.5	4251.95	0.0	
53	0.5-2	NON MAG	24.07	0.0	3.0	3.0	2500.0	7500.0	4513.13	0.0	
54	0.5-2	NON MAG	28.17	0.0	1.5	1.5	5000.0	7500.0	5281.88	0.0	
55	0.5-2	NON MAG	17.76	0.0	2.0	2.0	5000.0	10000.0	4440.00	0.0	
56	0.5-2	NON MAG	13.73	0.0	1.5	1.5	5625.0	8437.5	2896.17	0.0	
57	0.5-2	NON MAG	10.37	0.0	4.5	4.5	3125.0	14062.5	3645.70	0.0	
58	0.5-2	NON MAG	12.75	0.0	4.5	4.5	5937.5	26718.8	8516.60	0.0	
59	0.5-2	NON MAG	11.00	0.0	2.0	2.0	6875.0	13750.0	3781.25	0.0	
61	0.5-2	NON MAG	12.61	0.0	5.0	5.0	6875.0	34375.0	10836.72	0.0	
62	0.5-2	NON MAG	6.16	0.0	6.0	6.0	6875.0	41250.0	6352.50	0.0	
63	0.5-2	NON MAG	1.48	0.0	6.0	6.0	4687.5	28125.0	1040.63	0.0	
64	0.5-2	NON MAG	10.14	0.0	6.0	6.0	2500.0	15000.0	3802.50	0.0	
66	0.5-2	NON MAG	28.00	0.0	2.0	2.0	5625.0	11250.0	7875.00	0.0	
67	0.5-2	NON MAG	13.74	0.0	2.0	2.0	4687.5	9375.0	3220.31	0.0	
68	0.5-2	NON MAG	13.14	0.0	1.0	1.0	4687.5	4687.5	1539.84	0.0	
69	0.5-2	NON MAG	2.12	0.0	7.0	7.0	4687.5	32812.5	1739.06	0.0	
71	0.5-2	NON MAG	16.70	0.0	9.0	9.0	5000.0	45000.0	18787.50	0.0	
73	0.5-2	NON MAG	8.82	0.0	7.5	7.5	5625.0	42187.5	9302.34	0.0	
74	0.5-2	NON MAG	5.95	0.0	4.0	4.0	5000.0	20000.0	2975.00	0.0	
80	0.5-2	NON MAG	9.88	0.0	8.0	8.0	3750.0	30000.0	7410.00	0.0	
81	0.5-2	NON MAG	14.97	0.0	2.0	2.0	2500.0	5000.0	1871.25	0.0	
81	0.5-2	NON MAG	18.07	2.0	4.0	2.0	2500.0	5000.0	2258.75	0.0	
81	0.5-2	NON MAG	2.77	4.0	7.0	3.0	2500.0	7500.0	519.38	0.0	
82	0.5-2	NON MAG	15.36	0.0	2.0	2.0	4375.0	8750.0	3360.00	0.0	
82	0.5-2	NON MAG	4.37	2.0	4.0	2.0	4375.0	8750.0	955.94	0.0	
82	0.5-2	NON MAG	0.77	4.0	6.0	2.0	4375.0	8750.0	168.44	0.0	
82	0.5-2	NON MAG	2.75	6.0	8.0	2.0	4375.0	8750.0	601.56	0.0	
83	0.5-2	NON MAG	20.80	0.0	2.0	2.0	4375.0	8750.0	4550.00	0.0	
83	0.5-2	NON MAG	9.81	2.0	4.0	2.0	4375.0	8750.0	2145.94	0.0	
83	0.5-2	NON MAG	5.40	4.0	6.0	2.0	4375.0	8750.0	1181.25	0.0	
85	0.5-2	NON MAG	11.90	0.0	2.0	2.0	6875.0	13750.0	4090.63	0.0	
85	0.5-2	NON MAG	12.27	2.0	4.0	2.0	6875.0	13750.0	4217.81	0.0	
85	0.5-2	NON MAG	7.57	4.0	6.0	2.0	6875.0	13750.0	2602.19	0.0	

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VOLUME AND MASS CALCULATIONS FOR THE AUGER CORE PRODUCTS
(continued)

SAMPLE SITE	SIZE (mm)	MAGNETIC SEPARATION	MASS (g)	SAMPLE TOP (m)	SAMPLE BOTTOM (m)	SAMPTOP - SAMPBOT (m)	SURFACE AREA (sq m)	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (t)	Cr-203 (%)	TOTAL Cr-203 MASS (t)
19	<0.25	NON MAG	17.31	4.0	6.0	2.0	4687.5	9375.0	4057.03	0.0	
72	<0.25	NON MAG	46.24	0.0	6.0	6.0	2500.0	15000.0	17340.00	0.0	
01	<0.5	NON MAG	2.10	0.0	6.0	6.0	7500.0	45000.0	2362.50	18.8	444.15
01	<0.5	NON MAG	1.32	6.0	8.0	2.0	7500.0	15000.0	495.00	1.2	5.94
01	<0.5	NON MAG	2.61	8.0	10.0	2.0	7500.0	15000.0	978.75	1.6	15.66
02	<0.5	NON MAG	2.50	0.0	4.0	4.0	6875.0	27500.0	1718.75	3.2	55.00
03	<0.5	NON MAG	3.35	0.0	2.0	2.0	5625.0	11250.0	942.19	3.1	29.21
04	<0.5	NON MAG	0.57	0.0	2.0	2.0	4375.0	8750.0	124.69	5.6	6.98
04	<0.5	NON MAG	0.86	2.0	4.0	2.0	4375.0	8750.0	188.13	6.7	12.60
04	<0.5	NON MAG	1.64	4.0	6.0	2.0	4375.0	8750.0	358.75	8.9	31.93
04	<0.5	NON MAG	1.67	6.0	8.0	2.0	4375.0	8750.0	365.31	4.9	17.90
04	<0.5	NON MAG	0.91	8.0	10.0	2.0	4375.0	8750.0	199.06	7.1	14.13
14	<0.5	NON MAG	1.89	0.0	2.0	2.0	9375.0	18750.0	885.94	5.0	44.30
14	<0.5	NON MAG	9.89	2.0	4.0	2.0	9375.0	18750.0	4635.94	2.8	129.81
17	<0.5	NON MAG	1.28	0.0	1.0	1.0	5000.0	5000.0	160.00	3.6	5.76
17	<0.5	NON MAG	1.59	6.0	8.0	2.0	5000.0	10000.0	397.50	9.6	38.16
18	<0.5	NON MAG	12.90	0.0	2.0	2.0	4375.0	8750.0	2821.88	0.7	19.75
18	<0.5	NON MAG	4.78	2.0	4.0	2.0	4375.0	8750.0	1045.63	1.1	11.50
18	<0.5	NON MAG	3.89	4.0	7.0	3.0	4375.0	13125.0	1276.41	-0.1	
19	<0.5	NON MAG	13.49	0.0	2.0	2.0	4687.5	9375.0	3161.72	10.8	341.47
19	<0.5	NON MAG	6.19	8.0	10.0	2.0	4687.5	9375.0	1450.78	0.1	1.45
20	<0.5	NON MAG	5.98	0.0	4.0	4.0	4687.5	18750.0	2803.13	8.2	229.86
21	<0.5	NON MAG	2.40	0.0	2.0	2.0	2500.0	5000.0	300.00	5.3	15.90
21	<0.5	NON MAG	9.87	2.0	4.0	2.0	2500.0	5000.0	1233.75	0.2	2.47
21	<0.5	NON MAG	11.92	6.0	8.0	2.0	2500.0	5000.0	1490.00	0.0	
21	<0.5	NON MAG	12.15	8.0	10.0	2.0	2500.0	5000.0	1518.75	-0.1	
22	<0.5	NON MAG	1.89	0.0	2.0	2.0	3125.0	6250.0	295.31	6.2	18.31
22	<0.5	NON MAG	9.27	4.0	6.0	2.0	3125.0	6250.0	1448.44	-0.1	
22	<0.5	NON MAG	8.10	6.0	8.0	2.0	3125.0	6250.0	1265.63	-0.1	
23	<0.5	NON MAG	2.50	0.0	2.0	2.0	2500.0	5000.0	312.50	5.8	18.13
23	<0.5	NON MAG	12.52	2.0	4.0	2.0	2500.0	5000.0	1565.00	0.1	1.57
23	<0.5	NON MAG	12.52	4.0	6.0	2.0	2500.0	5000.0	1565.00	-0.1	
25	<0.5	NON MAG	3.09	0.0	2.0	2.0	4375.0	8750.0	675.94	1.0	6.76
25	<0.5	NON MAG	8.22	2.0	4.0	2.0	4375.0	8750.0	1798.13	-0.1	
25	<0.5	NON MAG	6.54	4.0	7.0	3.0	4375.0	13125.0	2145.94	-0.1	
26	<0.5	NON MAG	4.17	0.0	2.0	2.0	4687.5	9375.0	977.34	9.4	91.87
26	<0.5	NON MAG	6.53	2.0	4.0	2.0	4687.5	9375.0	1530.47	0.4	6.12
26	<0.5	NON MAG	14.07	4.0	6.0	2.0	4687.5	9375.0	3297.66	0.2	6.60
26	<0.5	NON MAG	12.79	6.0	9.0	3.0	4687.5	14062.5	4496.48	-0.1	
27	<0.5	NON MAG	7.27	0.0	2.0	2.0	4375.0	8750.0	1590.31	5.4	85.88
28	<0.5	NON MAG	4.61	0.0	2.0	2.0	4687.5	9375.0	1080.47	8.4	90.76
28	<0.5	NON MAG	2.08	2.0	6.0	4.0	4687.5	18750.0	975.00	12.5	121.88
29	<0.5	NON MAG	1.61	0.0	2.0	2.0	5625.0	11250.0	452.81	4.9	22.19
29	<0.5	NON MAG	1.97	2.0	4.0	2.0	5625.0	11250.0	554.06	7.7	42.66
29	<0.5	NON MAG	1.84	4.0	6.0	2.0	5625.0	11250.0	517.50	5.9	30.53
30	<0.5	NON MAG	2.23	0.0	2.0	2.0	5312.5	10625.0	592.34	4.0	23.69
30	<0.5	NON MAG	0.76	2.0	4.0	2.0	5312.5	10625.0	201.88	9.7	19.58
30	<0.5	NON MAG	0.88	4.0	6.0	2.0	5312.5	10625.0	233.75	13.8	32.26
30	<0.5	NON MAG	3.00	6.0	8.0	2.0	5312.5	10625.0	796.88	6.2	49.41

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VOLUME AND MASS CALCULATIONS FOR THE AUGER CORE PRODUCTS
(continued)

SAMPLE SITE	SIZE (mm)	MAGNETIC SEPARATION	MASS (%)	SAMPLE TOP (m)	SAMPLE BOTTOM (m)	SAMPTOP - SAMPBOT (m)	SURFACE AREA (sq m)	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (t)	Cr203 (%)	TOTAL Cr203 MASS (t)
30	<0.5	NON MAG	0.78	8.0	10.0	2.0	5312.5	10625.0	207.19	3.6	7.46
31	<0.5	NON MAG	1.52	2.0	4.0	2.0	2500.0	5000.0	190.00	3.6	6.84
31	<0.5	NON MAG	0.56	6.0	8.0	2.0	2500.0	5000.0	70.00	0.0	
31	<0.5	NON MAG	1.17	8.0	10.0	2.0	2500.0	5000.0	146.25	5.3	7.75
31	<0.5	NON MAG	0.54	10.0	12.0	2.0	2500.0	5000.0	67.50	0.0	
32	<0.5	NON MAG	1.65	0.0	2.0	2.0	4375.0	8750.0	360.94	4.1	14.80
32	<0.5	NON MAG	2.34	2.0	4.0	2.0	4375.0	8750.0	511.88	2.7	13.82
32	<0.5	NON MAG	1.95	4.0	6.0	2.0	4375.0	8750.0	426.56	13.2	56.31
33	<0.5	NON MAG	2.63	0.0	2.0	2.0	5312.5	10625.0	698.59	4.1	28.64
33	<0.5	NON MAG	2.20	4.0	6.0	2.0	5312.5	10625.0	584.38	5.6	32.73
33	<0.5	NON MAG	2.62	8.0	10.0	2.0	5312.5	10625.0	695.94	4.3	29.93
33	<0.5	NON MAG	1.87	10.0	12.0	2.0	5312.5	10625.0	496.72	4.2	20.86
33	<0.5	NON MAG	0.55	12.0	14.0	2.0	5312.5	10625.0	146.09	3.9	5.70
33	<0.5	NON MAG	5.82	14.0	17.0	3.0	5312.5	15937.5	2318.91	5.2	120.58
34	<0.5	NON MAG	6.28	0.0	2.0	2.0	5000.0	10000.0	1570.00	0.1	1.57
34	<0.5	NON MAG	4.37	2.0	4.0	2.0	5000.0	10000.0	1092.50	-0.1	
35	<0.5	NON MAG	3.15	2.0	4.0	2.0	3750.0	7500.0	590.63	2.1	12.40
36	<0.5	NON MAG	2.06	0.0	2.0	2.0	6250.0	12500.0	643.75	6.8	43.78
36	<0.5	NON MAG	3.65	2.0	4.0	2.0	6250.0	12500.0	1140.63	5.3	60.45
36	<0.5	NON MAG	3.34	4.0	6.0	2.0	6250.0	12500.0	1043.75	0.2	2.09
37	<0.5	NON MAG	1.97	0.0	2.0	2.0	7812.5	15625.0	769.53	4.2	32.32
37	<0.5	NON MAG	5.89	2.0	4.0	2.0	7812.5	15625.0	2300.78	5.8	133.45
37	<0.5	NON MAG	0.43	4.0	6.0	2.0	7812.5	15625.0	167.97	3.8	6.38
37	<0.5	NON MAG	2.37	6.0	8.0	2.0	7812.5	15625.0	925.78	0.0	
38	<0.5	NON MAG	0.70	0.0	2.0	2.0	3437.5	6875.0	120.31	8.8	10.59
39	<0.5	NON MAG	0.82	0.0	2.0	2.0	2500.0	5000.0	102.50	13.0	13.33
39	<0.5	NON MAG	0.47	2.0	3.0	3.0	2500.0	7500.0	88.13	6.0	5.29
41	<0.5	NON MAG	1.69	0.0	3.0	3.0	7500.0	22500.0	950.63	25.0	237.66
45	<0.5	NON MAG	0.65	0.0	3.0	3.0	5312.5	15937.5	258.98	7.3	18.91
46	<0.5	NON MAG	1.05	0.0	2.0	2.0	5625.0	11250.0	295.31	7.4	21.85
47	<0.5	NON MAG	1.37	0.0	2.0	2.0	2500.0	5000.0	171.25	10.4	17.81
48	<0.5	NON MAG	1.17	0.0	2.0	2.0	3750.0	7500.0	219.38	14.3	31.37
50	<0.5	NON MAG	1.04	0.0	2.0	2.0	3125.0	6250.0	162.50	6.8	11.05
51	<0.5	NON MAG	1.24	0.0	4.0	4.0	3437.5	13750.0	426.25	13.0	55.41
52	<0.5	NON MAG	0.87	0.0	2.5	2.5	4375.0	10937.5	237.89	6.3	14.99
53	<0.5	NON MAG	1.96	0.0	3.0	3.0	2500.0	7500.0	367.50	3.4	12.50
54	<0.5	NON MAG	1.86	0.0	1.5	1.5	5000.0	7500.0	348.75	4.3	15.00
55	<0.5	NON MAG	1.21	0.0	2.0	2.0	5000.0	10000.0	302.50	2.0	6.05
56	<0.5	NON MAG	1.70	0.0	1.5	1.5	5625.0	8437.5	358.59	3.4	12.19
57	<0.5	NON MAG	0.93	0.0	4.5	4.5	3125.0	14062.5	326.95	5.6	18.31
58	<0.5	NON MAG	0.66	0.0	4.5	4.5	5937.5	26718.8	440.86	5.4	23.81
59	<0.5	NON MAG	1.15	0.0	2.0	2.0	6875.0	13750.0	395.31	6.1	24.11
61	<0.5	NON MAG	1.36	0.0	5.0	5.0	6875.0	34375.0	1168.75	9.2	107.53
62	<0.5	NON MAG	0.48	0.0	6.0	6.0	6875.0	41250.0	495.00	11.6	57.42
63	<0.5	NON MAG	1.28	0.0	6.0	6.0	4687.5	28125.0	900.00	15.6	140.40
64	<0.5	NON MAG	1.23	0.0	6.0	6.0	2500.0	15000.0	461.25	9.1	41.97
65	<0.5	NON MAG	4.35	0.0	6.0	6.0	4375.0	26250.0	2854.69	0.0	
66	<0.5	NON MAG	5.88	0.0	2.0	2.0	5625.0	11250.0	1653.75	3.8	62.84
67	<0.5	NON MAG	6.42	0.0	2.0	2.0	4687.5	9375.0	1504.69	1.6	24.08

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690113

VOLUME AND MASS CALCULATIONS FOR THE AUGER CORE PRODUCTS
(continued)

SAMPLE SITE	SIZE (mm)	MAGNETIC SEPARATION	MASS (%)	SAMPLE TOP (m)	SAMPLE BOTTOM (m)	SAMP TOP - SAMP BOT (m)	SURFACE AREA (sq m)	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (t)	Cr2O3 (%)	TOTAL Cr2O3 MASS (t)
68	<0.5	NON MAG	3.71	0.0	1.0	1.0	4687.5	4687.5	434.77	12.5	54.35
69	<0.5	NON MAG	7.08	0.0	7.0	7.0	4687.5	32812.5	5807.81	0.7	40.65
70	<0.5	NON MAG	28.32	0.0	9.0	9.0	2500.0	22500.0	15930.00	11.4	1816.02
71	<0.5	NON MAG	2.26	0.0	9.0	9.0	5000.0	45000.0	2542.50	5.2	132.21
73	<0.5	NON MAG	1.17	0.0	7.5	7.5	5625.0	42187.5	1233.98	6.6	81.44
74	<0.5	NON MAG	0.95	0.0	4.0	4.0	5000.0	20000.0	475.00	15.0	71.25
75	<0.5	NON MAG	3.03	0.0	4.5	4.5	7500.0	33750.0	2556.56	8.8	224.98
76	<0.5	NON MAG	0.98	0.0	4.0	4.0	5000.0	20000.0	490.00	6.4	31.36
80	<0.5	NON MAG	0.81	0.0	8.0	8.0	3750.0	30000.0	607.50	5.4	32.81
81	<0.5	NON MAG	3.68	0.0	2.0	2.0	2500.0	5000.0	460.00	3.3	15.18
81	<0.5	NON MAG	3.00	2.0	4.0	2.0	2500.0	5000.0	375.00	4.3	16.13
81	<0.5	NON MAG	0.90	4.0	7.0	3.0	2500.0	7500.0	168.75	8.4	14.18
82	<0.5	NON MAG	5.18	0.0	2.0	2.0	4375.0	8750.0	1133.13	8.9	100.85
82	<0.5	NON MAG	1.41	2.0	4.0	2.0	4375.0	8750.0	308.44	10.4	32.08
82	<0.5	NON MAG	0.48	4.0	6.0	2.0	4375.0	8750.0	105.00	25.0	26.25
82	<0.5	NON MAG	1.31	6.0	8.0	2.0	4375.0	8750.0	286.56	0.0	
83	<0.5	NON MAG	3.53	0.0	2.0	2.0	4375.0	8750.0	772.19	7.9	61.00
83	<0.5	NON MAG	3.75	2.0	4.0	2.0	4375.0	8750.0	820.31	20.6	168.98
83	<0.5	NON MAG	0.58	4.0	6.0	2.0	4375.0	8750.0	126.88	17.2	21.82
85	<0.5	NON MAG	0.70	0.0	2.0	2.0	6875.0	13750.0	240.63	3.7	8.90
85	<0.5	NON MAG	4.18	2.0	4.0	2.0	6875.0	13750.0	1436.88	4.6	66.10
85	<0.5	NON MAG	0.35	4.0	6.0	2.0	6875.0	13750.0	120.31	13.4	16.1
SUBTOTAL								2800000.0	513440.20		

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692114

VOLUME AND MASS CALCULATIONS FOR THE AUGER CORE PRODUCTS
(continued)

SAMPLE SITE	SIZE (mm)	MAGNETIC SEPARATION	MASS (%)	SAMPLE TOP (m)	SAMPLE BOTTOM (m)	SAMPTOP - SAMBPOT (m)	SURFACE AREA (sq m)	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (t)	Cr-203 (%)	TOTAL Cr-203 MASS (t)
19	0.25-0.5	NOT SEP	2.72	4.0	6.0	2.0	4687.5	9375.0	637.50	0.0	
26	0.5-2	NOT SEP	6.93	2.0	4.0	2.0	4687.5	9375.0	1624.22	0.0	
14	>0.5	NOT SEP	37.05	2.0	4.0	2.0	9375.0	18750.0	17367.19	0.0	
18	>0.5	NOT SEP	16.54	0.0	2.0	2.0	4375.0	8750.0	3618.13	0.0	
19	>0.5	NOT SEP	32.88	0.0	2.0	2.0	4687.5	9375.0	7706.25	0.0	
19	>0.5	NOT SEP	6.57	4.0	6.0	2.0	4687.5	9375.0	1539.84	0.0	
19	>0.5	NOT SEP	8.48	8.0	10.0	2.0	4687.5	9375.0	1987.50	0.0	
20	>0.5	NOT SEP	38.43	0.0	4.0	4.0	4687.5	18750.0	18014.06	0.0	
21	>0.5	NOT SEP	0.75	6.0	8.0	2.0	2500.0	5000.0	93.75	0.0	
21	>0.5	NOT SEP	0.59	8.0	10.0	2.0	2500.0	5000.0	73.75	0.0	
22	>0.5	NOT SEP	0.50	4.0	6.0	2.0	3125.0	6250.0	78.13	0.0	
22	>0.5	NOT SEP	0.03	6.0	8.0	2.0	3125.0	6250.0	4.69	0.0	
23	>0.5	NOT SEP	0.21	4.0	6.0	2.0	2500.0	5000.0	26.25	0.0	
25	>0.5	NOT SEP	1.07	2.0	4.0	2.0	4375.0	8750.0	234.06	0.0	
25	>0.5	NOT SEP	0.33	4.0	7.0	3.0	4375.0	13125.0	108.28	0.0	
26	>0.5	NOT SEP	0.86	4.0	6.0	2.0	4687.5	9375.0	201.56	0.0	
26	>0.5	NOT SEP	0.58	6.0	9.0	3.0	4687.5	14062.5	203.91	0.0	
27	>0.5	NOT SEP	46.18	0.0	2.0	2.0	4375.0	8750.0	10101.88	0.0	
27	>0.5	NOT SEP	11.36	2.0	5.0	3.0	4375.0	13125.0	3727.50	0.0	
29	>0.5	NOT SEP	23.18	6.0	7.0	1.0	5625.0	5625.0	3259.69	0.0	
31	>0.5	NOT SEP	29.70	0.0	2.0	2.0	2500.0	5000.0	3712.50	0.0	
31	>0.5	NOT SEP	15.93	4.0	6.0	2.0	2500.0	5000.0	1991.25	0.0	
33	>0.5	NOT SEP	34.50	6.0	8.0	2.0	5312.5	10625.0	9164.06	0.0	
36	>0.5	NOT SEP	0.57	4.0	6.0	2.0	6250.0	12500.0	178.13	0.0	
40	>0.5	NOT SEP	20.56	0.0	3.0	3.0	4687.5	14062.5	7228.13	0.0	
43	>0.5	NOT SEP	40.98	0.0	2.0	2.0	8750.0	17500.0	17928.75	0.0	
65	>0.5	NOT SEP	23.91	0.0	6.0	6.0	4375.0	26250.0	15690.94	0.0	
70	>0.5	NOT SEP	3.69	0.0	9.0	9.0	2500.0	22500.0	2075.63	0.0	
72	>0.5	NOT SEP	18.42	0.0	6.0	6.0	2500.0	15000.0	6907.50	0.0	
75	>0.5	NOT SEP	5.98	0.0	4.5	4.5	7500.0	33750.0	5045.63	0.0	
76	>0.5	NOT SEP	9.53	0.0	4.0	4.0	5000.0	20000.0	4765.00	0.0	
78	>0.5	NOT SEP	2.03	0.0	4.0	4.0	7500.0	30000.0	1522.50	0.0	
79	>0.5	NOT SEP	10.60	0.0	3.0	3.0	4375.0	13125.0	3478.13	0.0	
01	>2	NOT SEP	1.30	0.0	6.0	6.0	7500.0	45000.0	1462.50	0.0	
01	>2	NOT SEP	1.11	6.0	8.0	2.0	7500.0	15000.0	416.25	0.0	
01	>2	NOT SEP	3.17	8.0	10.0	2.0	7500.0	15000.0	1188.75	0.0	
02	>2	NOT SEP	0.30	0.0	4.0	4.0	6875.0	27500.0	206.25	0.0	
03	>2	NOT SEP	4.19	0.0	2.0	2.0	5625.0	11250.0	1178.44	0.0	
04	>2	NOT SEP	0.43	0.0	2.0	2.0	4375.0	8750.0	94.06	0.0	
04	>2	NOT SEP	1.00	2.0	4.0	2.0	4375.0	8750.0	218.75	0.0	
04	>2	NOT SEP	0.63	6.0	8.0	2.0	4375.0	8750.0	137.81	0.0	
14	>2	NOT SEP	1.65	0.0	2.0	2.0	9375.0	18750.0	773.44	0.0	
17	>2	NOT SEP	1.59	0.0	1.0	1.0	5000.0	5000.0	198.75	0.0	
17	>2	NOT SEP	1.79	6.0	8.0	2.0	5000.0	10000.0	447.50	0.0	
21	>2	NOT SEP	2.72	0.0	2.0	2.0	2500.0	5000.0	340.00	0.0	
21	>2	NOT SEP	0.54	2.0	4.0	2.0	2500.0	5000.0	67.50	0.0	
22	>2	NOT SEP	1.80	0.0	2.0	2.0	3125.0	6250.0	281.25	0.0	
23	>2	NOT SEP	0.74	0.0	2.0	2.0	2500.0	5000.0	92.50	0.0	
23	>2	NOT SEP	0.21	2.0	4.0	2.0	2500.0	5000.0	26.25	0.0	

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693115

VOLUME AND MASS CALCULATIONS FOR THE AUGER CORE PRODUCTS
(continued)

SAMPLE SITE	SIZE (mm)	MAGNETIC SEPARATION	MASS (%)	SAMPLE TOP (m)	SAMPLE BOTTOM (m)	SAMPTOP - SAMPTOT (m)	SURFACE AREA (sq m)	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (t)	Cr-203 (%)	TOTAL Cr-203 MASS (t)
25	>2	NOT SEP	0.80	0.0	2.0	2.0	4375.0	8750.0	175.00	0.0	
26	>2	NOT SEP	1.50	0.0	2.0	2.0	4687.5	9375.0	351.56	0.0	
26	>2	NOT SEP	0.40	2.0	4.0	2.0	4687.5	9375.0	93.75	0.0	
28	>2	NOT SEP	3.80	0.0	2.0	2.0	4687.5	9375.0	890.63	0.0	
28	>2	NOT SEP	0.35	2.0	6.0	4.0	4687.5	18750.0	164.06	0.0	
29	>2	NOT SEP	3.66	0.0	2.0	2.0	5625.0	11250.0	1029.38	0.0	
29	>2	NOT SEP	1.50	2.0	4.0	2.0	5625.0	11250.0	421.88	0.0	
29	>2	NOT SEP	1.48	4.0	6.0	2.0	5625.0	11250.0	416.25	0.0	
30	>2	NOT SEP	1.41	0.0	2.0	2.0	5312.5	10625.0	427.66	0.0	
30	>2	NOT SEP	0.40	2.0	4.0	2.0	5312.5	10625.0	106.25	0.0	
30	>2	NOT SEP	0.82	6.0	8.0	2.0	5312.5	10625.0	217.81	0.0	
30	>2	NOT SEP	0.34	8.0	10.0	2.0	5312.5	10625.0	90.31	0.0	
31	>2	NOT SEP	1.03	2.0	4.0	2.0	2500.0	5000.0	128.75	0.0	
31	>2	NOT SEP	0.12	6.0	8.0	2.0	2500.0	5000.0	15.00	0.0	
31	>2	NOT SEP	0.17	8.0	10.0	2.0	2500.0	5000.0	21.25	0.0	
31	>2	NOT SEP	0.08	10.0	12.0	2.0	2500.0	5000.0	10.00	0.0	
32	>2	NOT SEP	3.63	0.0	2.0	2.0	4375.0	8750.0	794.06	0.0	
32	>2	NOT SEP	1.11	2.0	4.0	2.0	4375.0	8750.0	242.81	0.0	
32	>2	NOT SEP	0.09	4.0	6.0	2.0	4375.0	8750.0	19.69	0.0	
33	>2	NOT SEP	3.00	0.0	2.0	2.0	5312.5	10625.0	796.88	0.0	
33	>2	NOT SEP	0.41	4.0	6.0	2.0	5312.5	10625.0	108.91	0.0	
33	>2	NOT SEP	1.15	8.0	10.0	2.0	5312.5	10625.0	305.47	0.0	
33	>2	NOT SEP	1.72	10.0	12.0	2.0	5312.5	10625.0	456.88	0.0	
33	>2	NOT SEP	0.65	12.0	14.0	2.0	5312.5	10625.0	172.66	0.0	
33	>2	NOT SEP	0.73	14.0	17.0	3.0	5312.5	15937.5	290.86	0.0	
34	>2	NOT SEP	0.11	0.0	2.0	2.0	5000.0	10000.0	27.50	0.0	
34	>2	NOT SEP	0.32	2.0	4.0	2.0	5000.0	10000.0	80.00	0.0	
35	>2	NOT SEP	0.76	2.0	4.0	2.0	3750.0	7500.0	142.50	0.0	
36	>2	NOT SEP	2.16	0.0	2.0	2.0	6250.0	12500.0	675.00	0.0	
36	>2	NOT SEP	2.37	2.0	4.0	2.0	6250.0	12500.0	740.63	0.0	
37	>2	NOT SEP	2.24	0.0	2.0	2.0	7812.5	15625.0	875.00	0.0	
37	>2	NOT SEP	0.15	2.0	4.0	2.0	7812.5	15625.0	58.59	0.0	
37	>2	NOT SEP	0.56	4.0	6.0	2.0	7812.5	15625.0	218.75	0.0	
37	>2	NOT SEP	0.19	6.0	8.0	2.0	7812.5	15625.0	74.22	0.0	
38	>2	NOT SEP	1.51	0.0	2.0	2.0	3437.5	6875.0	259.53	0.0	
39	>2	NOT SEP	1.00	0.0	2.0	2.0	2500.0	5000.0	125.00	0.0	
39	>2	NOT SEP	0.41	2.0	5.0	3.0	2500.0	7500.0	76.88	0.0	
41	>2	NOT SEP	2.20	0.0	3.0	3.0	7500.0	22500.0	1237.50	0.0	
45	>2	NOT SEP	2.02	0.0	3.0	3.0	5312.5	15937.5	804.84	0.0	
46	>2	NOT SEP	0.77	0.0	2.0	2.0	5625.0	11250.0	216.56	0.0	
47	>2	NOT SEP	2.68	0.0	2.0	2.0	2500.0	5000.0	335.00	0.0	
48	>2	NOT SEP	0.48	0.0	2.0	2.0	3750.0	7500.0	90.00	0.0	
50	>2	NOT SEP	2.74	0.0	2.0	2.0	3125.0	6250.0	428.13	0.0	
51	>2	NOT SEP	3.46	0.0	4.0	4.0	3437.5	13750.0	1189.38	0.0	
52	>2	NOT SEP	2.31	0.0	2.5	2.5	4375.0	10937.5	631.84	0.0	
53	>2	NOT SEP	4.67	0.0	3.0	3.0	2500.0	7500.0	875.63	0.0	
54	>2	NOT SEP	6.69	0.0	1.5	1.5	5000.0	7500.0	1254.38	0.0	
55	>2	NOT SEP	3.00	0.0	2.0	2.0	5000.0	10000.0	750.00	0.0	
56	>2	NOT SEP	0.74	0.0	1.5	1.5	5625.0	8437.5	156.09	0.0	

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693116

VOLUME AND MASS CALCULATIONS FOR THE AUGER CORE PRODUCTS
(continued)

SAMPLE SITE	SIZE (mm)	MAGNETIC SEPARATION	MASS (%)	SAMPLE TOP (m)	SAMPLE BOTTOM (m)	SAMPTOP - SAMPBOT (m)	SURFACE AREA (sq m)	CALCULATED VOLUME AT SAMPLE SITE (cu m)	TOTAL MASS (t)	Cr203 (%)	TOTAL Cr203 MASS (t)
57	>2	NOT SEP	1.65	0.0	4.5	4.5	3125.0	14062.5	580.08	0.0	
58	>2	NOT SEP	1.01	0.0	4.5	4.5	5937.5	26718.8	674.65	0.0	
59	>2	NOT SEP	1.18	0.0	2.0	2.0	6875.0	13750.0	405.63	0.0	
61	>2	NOT SEP	1.06	0.0	5.0	5.0	6875.0	34375.0	910.94	0.0	
62	>2	NOT SEP	1.45	0.0	6.0	6.0	6875.0	41250.0	1495.31	0.0	
63	>2	NOT SEP	0.09	0.0	6.0	6.0	4687.5	28125.0	63.28	0.0	
64	>2	NOT SEP	1.89	0.0	6.0	6.0	2500.0	15000.0	708.75	0.0	
66	>2	NOT SEP	5.76	0.0	2.0	2.0	5625.0	11250.0	1620.00	0.0	
67	>2	NOT SEP	1.63	0.0	2.0	2.0	4687.5	9375.0	382.03	0.0	
68	>2	NOT SEP	2.00	0.0	1.0	1.0	4687.5	4687.5	234.38	0.0	
69	>2	NOT SEP	0.07	0.0	7.0	7.0	4687.5	32812.5	57.42	0.0	
71	>2	NOT SEP	0.77	0.0	9.0	9.0	5000.0	45000.0	866.25	0.0	
73	>2	NOT SEP	2.11	0.0	7.5	7.5	5625.0	42187.5	2225.39	0.0	
74	>2	NOT SEP	0.45	0.0	4.0	4.0	5000.0	20000.0	225.00	0.0	
80	>2	NOT SEP	0.75	0.0	8.0	8.0	3750.0	30000.0	562.50	0.0	
81	>2	NOT SEP	0.94	0.0	2.0	2.0	2500.0	5000.0	117.50	0.0	
81	>2	NOT SEP	1.49	2.0	4.0	2.0	2500.0	5000.0	186.25	0.0	
81	>2	NOT SEP	0.20	4.0	7.0	3.0	2500.0	7500.0	37.50	0.0	
82	>2	NOT SEP	3.59	0.0	2.0	2.0	4375.0	8750.0	785.31	0.0	
82	>2	NOT SEP	0.31	2.0	4.0	2.0	4375.0	8750.0	67.81	0.0	
82	>2	NOT SEP	0.18	4.0	6.0	2.0	4375.0	8750.0	39.38	0.0	
82	>2	NOT SEP	0.50	6.0	8.0	2.0	4375.0	8750.0	109.38	0.0	
83	>2	NOT SEP	3.67	0.0	2.0	2.0	4375.0	8750.0	802.81	0.0	
83	>2	NOT SEP	2.06	2.0	4.0	2.0	4375.0	8750.0	450.63	0.0	
83	>2	NOT SEP	1.33	4.0	6.0	2.0	4375.0	8750.0	290.94	0.0	
85	>2	NOT SEP	0.67	0.0	2.0	2.0	6875.0	13750.0	230.31	0.0	
85	>2	NOT SEP	0.64	2.0	4.0	2.0	6875.0	13750.0	220.00	0.0	
85	>2	NOT SEP	0.03	4.0	6.0	2.0	6875.0	13750.0	10.31	0.0	
SUBTOTAL								1,615,468.8	190,856.45		
GRAND TOTAL - FOR ALL AUGER PRODUCTS								1,646,738	4,116,845		

- MASS (%): The percentage mass of the >2mm, 'Not Sep' product located at that sample site.
- SAMPLE TOP (m): The top level of the sample interval.
- SAMPLE BOTTOM (m): The bottom level of the sample interval.
- SAMPTOP - SAMPBOT (m): The depth of the sample interval.
- SURFACE AREA (sq m): The surface area calculated for that sample site by assigning areas of influence to each of the auger samples
- CALCULATED VOLUME AT SAMPLE SITE (cu m) = (Samptop - Sampbol) x Surface Area

$$\text{TOTAL MASS (t)} = \frac{\text{Mass (\%)} \times \text{Calculated Volume at Sample Site} \times \text{S.G. (2500kg/cu.m)}}{100} \times \frac{1 \text{ tonne}}{1000 \text{ kg}}$$

- Cr203 (%): Assayed Cr203 value for a representative sub-sample
- TOTAL Cr203 MASS (t) = Total Mass (t) x Cr203%/100

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693117

WILSON RIVER CHROMITE

General Summary

The techniques used to evaluate Area A at Wilson River included jiggling of bulk samples and auger drilling. Processing of these samples via screening and magnetic separation allowed evaluation of platinoids but has not defined the chromite grades of the ore or chromite product quality.

Recent mineragraphic studies have shown that the chromite is high in chromic oxide (Cr_2O_3 content of concentrates should be around 60%). Because of its fine particle size, low magnesia, silica and alumina content the material is very well suited for chrome chemicals manufacture.

Chromite in Area A is liberated (but with some surface coatings) in the size range 45 to 500 micron (0.5 mm). Above this size the chromite is locked with iron oxides (limonite - goethite). Above 2 mm size the gravity concentrate contains virtually no chromite and is predominantly chrome bearing limonite - goethite.

Because of its fine size the best approach to concentrating the chromite is to use spirals, Reichert cones or similar gravity equipment but jigs perform poorly on mineral of this fine size and density.

Current data suggests that area A could support a 25,000 tpa chromite operation for four years and that the grade is of the order of 4% recoverable chromite. Samples from the drilling (in storage at Maddington) should be used to define the final chromite product quality and ore grade (as "recoverable" chromite).

Based on its chrome content the chromite product should be valued around \$200 per tonne while an overall range of \$150 - \$400 has been predicted depending on final quality and end user application.

A schematic ore treatment circuit developed from current data and rough costs established for a 25,000 tpa chromite production rate shows that processing costs are very dependent on the recoverable chromite grades of the ore.

At 2.0% recoverable chromite grades the direct operating cost is of the order of \$180 per tonne of product (at 25,000 tpa production rate.)

At 4% grade this reduces to \$120 per tonne.

Capital charges are likely to run around \$65 - \$70 per annual tonne for a 3 year payback. Hence the project is only viable at around 4% recoverable chromite grade. Credits from platinoids will be low.

Area C samples are now to hand and these require geological logging and processing to establish chromite quality, ore grade, and tonnage. Initial indications from the first sample processed show chromite grades around 6% recoverable.

It is recommended that the auger samples and selected jig products be further examined and that budget allowances for Area A and C be set at \$20,000 and \$40,000 respectively. This work should be completed inside 8 weeks from commencement and would define the product quality and recoverable chromite grades for these areas. The potential for flotation of fine chromite will also be examined.

693120

Additional field work is required (by a senior geologist and assistant) to define the potential of associated leases adjacent to Wilson River. This work requires a budget allocation of \$30,000 for the initial geological survey including preliminary sampling. The total lapsed time for these surveys is 12 weeks and is dependent on favourable weather within that period. The above figures include supervision via this office.



R F Blanks

Consulting Metallurgist

28th June 1988

693122

Enclosures 3

Attachment 2

Dr R Blanks,
Metskill,
203 The Esplanade,
Mt Pleasant,
WA

16-6-88

1000 0 07 435

Preparation of 29 polished sections of
magnetic chromite products and
and analysis of chromite occurrence.

R Townend.

MINES	
File Ref.	EL24/85
	- 6 JAN 1989
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Action Officer	Initials
LETTER	
4 - 1 - '89	
REFERS	
Resubmit to	Date

89-2903
Vol 3 of 4

OPEN FILE

Introduction

Polished sections were made of all samples. These were mostly composed of chromite and limonite goethite, with some non opaque gangue in the non magnetics. Point counting was undertaken of each briquette, with about 320 points. The results are volume %.

Results

The results are presented in the Table

Table of Point Counts, Vol%

<i>?We</i>	LIMONITE	CHROMITE	CHROMITE/LIM.	GANGUE
21B				
-0.5H.MGS.	27.1	72.9		
-0.5MAGS.1	32.3	67.3	0.3	
-0.5MAGS.2	35.7	62.0	1.9	
-0.5MIDS	61.3	38.7		
-0.5N/MAGS.	52.0	17.3		30.7
-2. H.MAGS.	96.1	3.9		
-2.MAGS.1	84.1	14.6	1.2	
-2.MAGS.2 *	77.7	20.5	0.9	
-2.MIDS	90.6	8.1	1.1	
-2.N/MAGS.	98.7	0.4	0.9	
+2.H.MAGS.	99.6	0.4		
+2.MAGS.1	98.3	1.7		
+2.MAGS.2	97.7	2.3		
+2.N/MAGS.	99.6	0.6		
22B				
-0.5H.MAGS	59.5	38.7	1.2	0.6
-0.5MAGS.1	54.1	42.8	3.1	
-0.5MAGS.2	57.6	41.7	0.7	
-0.5MIDS.	69.6	29.6	0.8	
-0.5N/MAGS	57.4	18.3		24.3
-2.H.MAGS	97.5	1.6	0.9	
-2.MAGS.1	79.3	19.3	1.4	
-2.MAGS.2	73.1	23.3	3.6	
-2.MIDS	91.8	8.2		
-2.N/MAGS.	91.1	7.0	1.9	
+2.HMAGS.	97.3	2.7		
+2.MAGS.1	99.7	0.3		
+2.MAGS.2	96.2	2.8	1.0	
+2.N/MAGS.	99.1	0.9		
22				
-0.5MAGS.2	46.8	52.2	1.0	

* also chromite lined by limonite 0.6%.

Comment.

These results show that the bulk of the chromite present is discrete from the main gangue limonite goethite. The chromite optically appears to show little variation in composition within grains. This was confirmed by SEM on sample 21B specifically for the -0.5mm sizes, where more than 20 chromites within each sample were scanned. There also appeared to be little significant difference in composition between magnetic fractions.

The association with limonite goethite usually was where small angular inclusions of chromite were within a dominant iron oxide host, notably in the coarser fractions. Examples are given in the photomicrographs. Dominant chromite with minor limonite rims was rare, as was veining by secondary limonite.

There is variation in the nature of the limonite goethite but this has not been quantified.

PHOTO 1 218 2MM N/MAGS CHROMITE IN COARSE LIMONITE
NIC UNCL. FIELD WIDTH 0.54MM

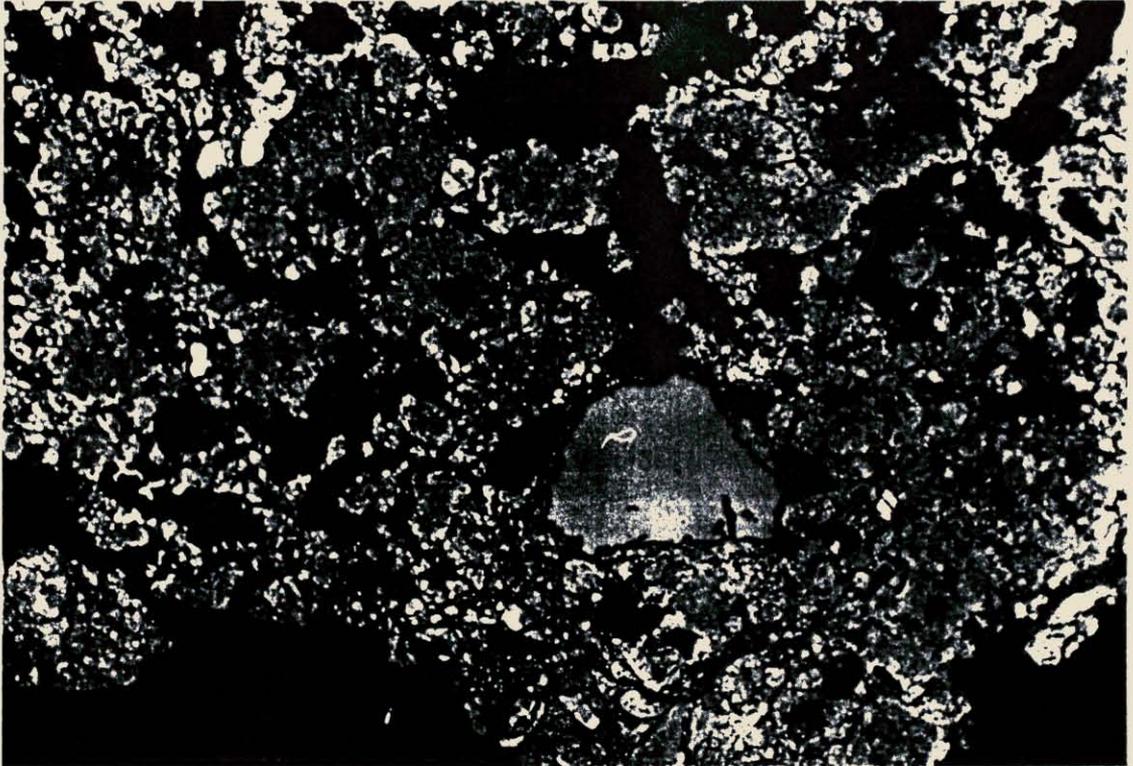


PHOTO 2 218 1.2MM MAG 2. CHROMITES NEAR MARGIN OF COARSE GOLDFITE.
NIC UNCL. FIELD WIDTH 0.54MM

PHOTO 3 22B +2MM PARTLY REPLACED CHROMITE IN GOETHITE.
NIC UNC. FIELD WIDTH 0.54MM

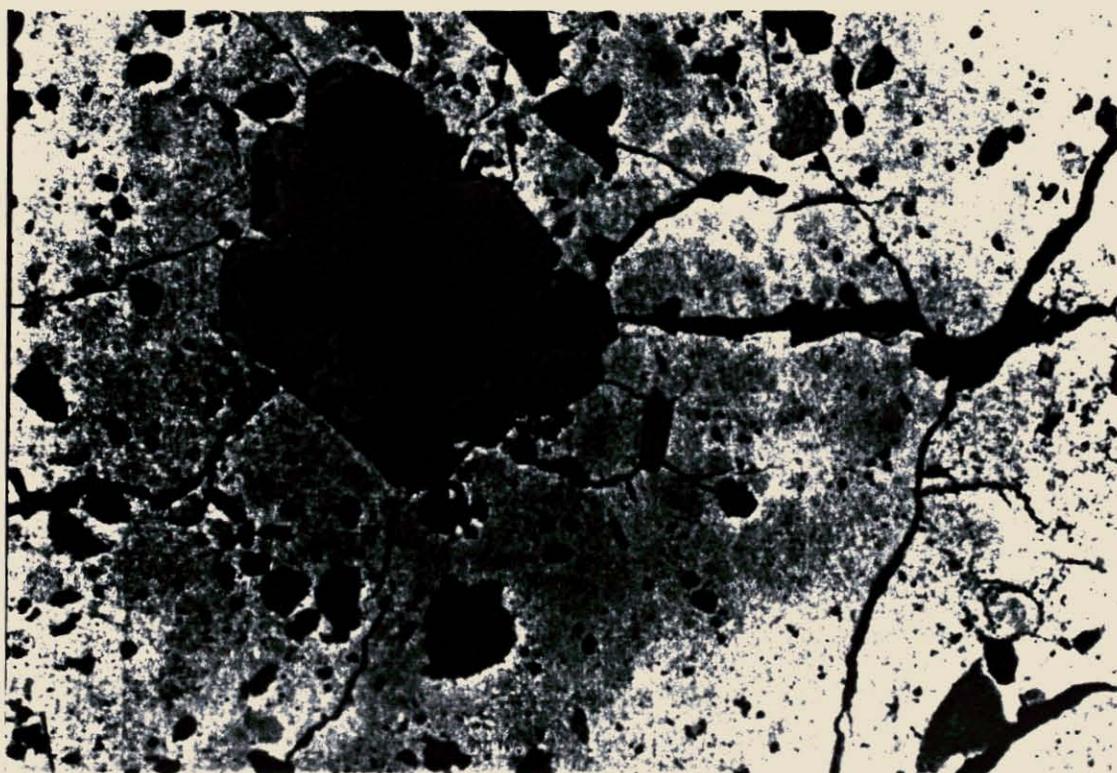


PHOTO 4 22B +2MM N/MAG. COARSE AND FINE CHROMITE IN GOETHITE.
NIC UNC. FIELD WIDTH 0.54MM

PHOTO 5.22B 2MM MAG 1. PARTLY ALTERED CHROMITE PLUS CLAY FILM.
NIC. UNC. FIELD WIDTH 0.54MM.



PHOTO 6.22B 2MM MAG 2. CHROMITE PARTLY REPLACED BY GRAPHITE.
NIC. UNC. FIELD WIDTH 0.54MM.

PHOTO 7 22B B -2MM N/MAG ZONED CHROMITE, NII UNC. FIELD WIDTH 0.54MM

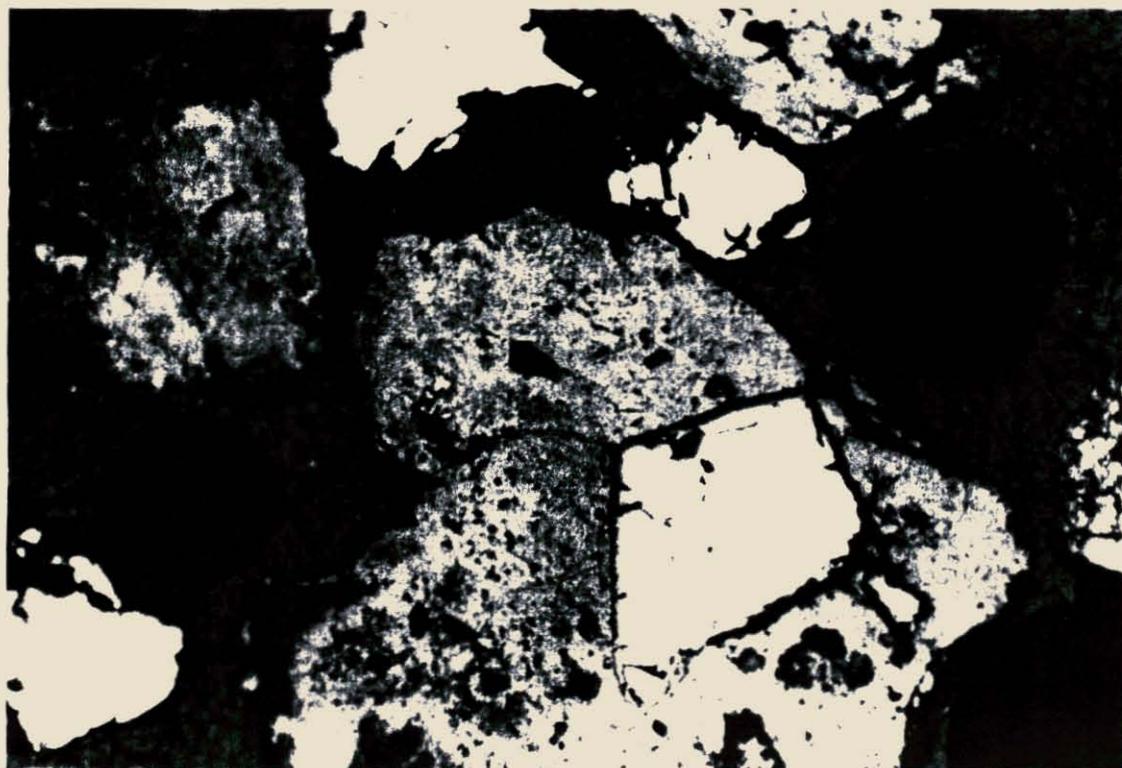


PHOTO 8 22B -0.5MM MAG 1 FREE CHROMITE, CHROMITE IN LIMONITE, FREE LIMONITE. NII UNC. FIELD WIDTH 1MM.

PHOTO 9 22B 2MM MAG 1. CHROMITE FRAGMENTS IN COARSE GOETHITE.
NIC UNC. FIELD WIDTH 1MM.

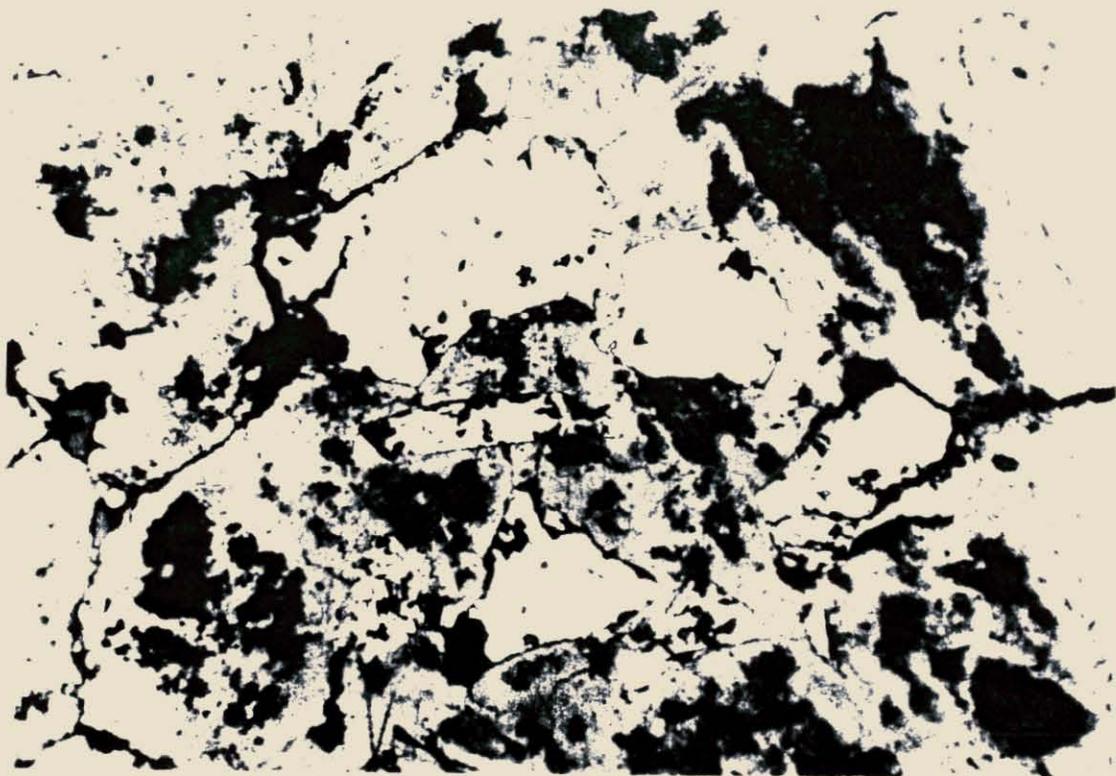


PHOTO 10 22B 2MM MIDS. CHROMITE WITH LIMONITE FORMED ALONG
FRACTURES. NIC UNC. FIELD WIDTH 1MM

Enclosure 4
Attachment 3

693131

OPEN FILE

TECHNICAL REPORT

WILSON RIVER. N.W. TASMANIA
1986

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VOL 4 OF 4

FIRST FLOOR, 100 MILL POINT ROAD
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REPORT ON TASMANIAN PROSPECT

1. INTRODUCTION

During the period covered in this Report, the Company's major exploration activity focused on its Tasmanian platinum group element (P.G.E.) prospects at the WILSON RIVER north of ROSEBERY. Callina N.L. has an 80% interest in E.L. 24/85. The licence is 22 square km. in area and includes deposits formerly worked for alluvial gold and osmiridium. This report relates only to the Company's activity on that prospect.

2. GEOLOGY

Geological interest centres on an ultramafic intrusive complex of dunite-harzburgite which occurs topographically as a long, north-south trending ridge ("Serpentinite Ridge"). Records indicate that coarse and fine grained osmiridium and gold were formerly mined from shallow adits excavated in fault related shear zones at several locations within the lease. However, most former mining activity centred on an extensive surficial detrital unit which is best preserved on west facing slopes of SERPENTINITE RIDGE. A series of sub-parallel, west flowing creeks, have incised into this detrital unit and alluvial workings occur mainly along them.

The detrital unit appears to have originated as a deep soil cover developed over the ultramafics. This soil was subsequently lateritised, eroded from the ridge crest and redeposited along the lower flanks. An area of lateritic hardcap is preserved in the catchment of RILEY'S CREEK, and an extensive cover of pisolitic gravel occurs on the ridge's western flanks. An area of approximately 3 kilometres square of laterite covered slopes was selected for preliminary bulk sampling because of its accessibility and because extensive alluvial workings occurred along RILEY'S and LIPPY JANE CREEKS.

3. SAMPLING & ASSAY PROCEDURES

Nine costeans were dug using an excavator (capacity: 1 cubic metre, reach: 6 metres). Sites were selected to test both creek-beds and slope materials. Where possible samples of approximately 0.5 cubic metres were taken at one metre vertical intervals. In creek-beds depth to weathered bedrock was found to vary from 2 to more than 5 metres. On

2.

slope sites bedrock was not reached using the excavator but subsequent tests using a power auger and portable percussion drill showed that depths ranged from 7.5 metres on the lower slopes, to 14.5 metres at the top of the spur dividing LIPPY JANE and RILEY'S CREEKS. Surface hardcap and loose pisolitic gravel range in depth from 0.75 to 2.0 metres.

A mobile (wet gravity) concentrator was used to process bulk samples on site.

Some difficulty was experienced in dispersing sandy clays which tended to "ball" in the trommel. Also coarse grained osmiridium has a tendency to hang in the plant causing contamination of subsequent samples. Only a minor proportion of the available chromite was extracted during bulk sampling as the small sampling jig was adjusted principally to extract gold and osmiridium metal. The total heavy mineral fraction (greater than 3.9 s.g.) is estimated to have varied from 10% to 20% of bulk materials. In lateritic gravels this proportion of H.M.F. is probably higher and crushing of oversize would increase the proportion of fines recovered. Thirty-six heavy mineral concentrates, each weighing about 5 kgs., were returned to Perth for analysis.

All visible gold and osmiridium metal was removed from concentrates by careful hand panning.

The heavy mineral concentrates were then agitated and washed through a 75 micron sieve. Fines so produced were dried prior to weighing and prepared for mineralogical and chemical analysis. Dried and deslimed concentrates were split at 500 microns producing coarse and fine sand size fractions. These were magnetically separated into high, medium and low magnetic products.

Size and magnetic products were sub-sampled (200 gms.) and analysed for platinum group elements (Pt, Pd, Rh, Ru, Os, Ir), gold and silver. Thirty of these sub-samples were also submitted for assay of chrome-iron ratios. Mineralogical examination of rock samples and composite concentrates of heavy minerals was undertaken by means of optical and scanning electron microscopes.

RESULTS

1. Colloidal gold particles (approximately 2 x 2 microns) were abundant in all slime fractions (less than 75 microns) optically examined. The largest particle observed under the scanning electron microscope was 6 x 5 microns. Particles of this size would not be visible to the naked eye and concentration by jiggling is not likely to have occurred.

Gold assays of 30 slime fractions washed from

3.

concentrates range from a low of 0.03 ppm to a high of 9.63 ppm with an average of 1.08 ppm.

2. The quantity of osmiridium metal recovered from bulk samples ranged from trace amounts to 0.42 gms per cubic metre. Samples taken in alluvial workings at RILEY'S CREEK contained the most metal including grains up to 2mm x 2mm in size. More significant perhaps were values up to 0.22 gms per cubic metre recovered from the extensive detrital unit, upslope of creek workings.
3. Chrome/iron ratios indicate consistently high chrome values in the bulk of chromite present (mean value = 57.16% of 12 moderately magnetic fractions). Composition of chromite determined by electron microprobe analysis of 40 randomly selected grains in the fine sand size, moderately magnetic product, averaged 69.70% Cr₂O₃. The moderately magnetic product constitutes 47.8% of the total heavy mineral fraction sampled.
4. The low magnetic product represents 25% of the heavy mineral concentrates sampled. While high P.G.E. values occur sporadically in the medium magnetic product, such values are consistently high in the low magnetic product, especially in the finer sand fractions (-500µm).

Iridium values range from a mean of 2.85 ppm (6 samples: range 1.30 ppm to 5.70 ppm) at LIPPY JANE Site 1, to a mean of 5.28 ppm (7 samples: range 1.60 ppm to 13.0 ppm) at LIPPY JANE Site 2. At LIPPY JANE Site 3, where depth of profile was tested to 7.5 metres, iridium recorded a mean of 10.75 ppm (8 samples: range 1.00 ppm to 35.0 ppm). Iridium values at the RILEY'S CREEK sites (1.2 km south) are higher with a mean of 14.05 ppm (10 samples: range 3.1 ppm to 28.0 ppm). Sixteen comparative assays of Iridium : Osmium indicate that these metals occur within the chromite approximately in a one to one ratio. Ruthenium values in the low magnetics ranged from a mean of 1.17 ppm in the 21 LIPPY JANE samples to an average of 2.62 ppm in the 10 RILEY'S CREEK samples. Similarly, platinum averages ranged from 0.45 ppm to 1.07 ppm.

Total platinoids contained in the low magnetic product range therefore from approximately 7.5 ppm in the LIPPY JANE samples to 32 ppm in the samples from RILEY'S CREEK.

Probe analysis has indicated that iridium/osmium values are related to discrete inclusions of these metals within chromite grains. This is important, since it implies that release may be achieved by grinding.

4.

One concentrate sample returned iridium values of 7.00%, ruthenium 1.4% and platinum values of 2.7 ppm. In view of the unusually high values obtained in this sample it has been omitted from calculations of averages. Chromites which occur in this area are known to occasionally release abundant osmiridium after grinding.

DISCUSSION

1. The areal extent and thickness of the chromite, osmiridium and gold bearing materials, indicate the possibility of a major resource. The lateritised detrital unit is known to occur over an area of at least 3 km square. Its depth at sites tested ranged from 2 to 14 metres.
2. Concentrates from lateritised and clay-sand components returned high chrome, iridium, osmium, values with lesser ruthenium and platinum values. The high grade chromites and P.G.E. bearing low magnetic products are easily concentrated and separated as shown by testing.
3. Abundant colloidal (i.e. clay-size) gold particles have been observed in slime fractions of samples collected from sites over one kilometre apart. The average assay value of this fraction was 1.08 ppm, which may be significant considering the volume of clays present in the bulk material.
4. The high P.G.E. values in low magnetic chromites at RILEY'S CREEK raises the issue of "hard rock" exploration. It is clearly desirable that some drilling of shear-zone targets be budgeted for in 1986-87.

PROPOSED EXPLORATION 1986-87

The Directors believe that results of the preliminary programme are very encouraging. They have determined that Callina will spend the necessary funds to conduct a systemic sampling programme at RILEY'S CREEK during the coming field season. As part of this programme a wet gravity plant will be installed with a view to producing bulk concentrates for further evaluative tests.

The Board believe that the Company's main objective is to prove an alluvial reserve and endeavour to achieve an early cash flow. Where the sampling programme indicates likely hard-rock targets provision will be made for drilling.

Proposed Works Programme (1987).

STAGE 1

It is proposed to establish a primary grid with a four kilometer baseline on a bearing of 310 degrees. This would enable easy access to all parts of the EL. Three 1800m long lines would be cut perpendicular to this baseline. They would be spaced 250m apart and centred on the ridge between Three Mile Creek and Riley Creek (Figure 1.)

These lines would be sampled by auger drilling at 50m intervals for areas close to the base line, and at 100m intervals towards the end of the gridlines. A bulk sampling of surface materials would utilise the same grid co-ordinates.

STAGE 2

If the results from stage 1 of the drill programme are encouraging two extra lines, one either side of baseline will be cut. These will be 2km long and located towards the southern end of the baseline. Additional lines perpendicular to the baseline will be cut to cover the area between Riley Creek and Trinder Creek. (Figure 2.)

Further sampling would be as for stage 1.

SAMPLING

A tractor mounted Edson Series 2000 A Drill Rig has been purchased and fitted with an Edson Series 120mm I.D. reduction box to handle a 100mm hollow core auger. (Figure 3) The auger holes will be drilled to the bedrock, an estimated maximum depth of 20m. The core will be removed, placed in trays and labelled, ready for processing in the field laboratory.

Bulk sampling is also to be done in the field. A mobile, wet gravity separator will be on site to process approximately 20 cubic meters of lateritic material from several sites. This unit has three jigs and is larger than the one used previously. It should remove nearly all of the high specific gravity material. This bulk concentrate will give an indication of the total percentage of heavy minerals in the deposit. Concentrates will be placed in drums and shipped for analysis.

FIELD LABORATORY

It is proposed to set up a laboratory at the camp to:-

- i determine percentage weight of water in the bulk sample.
- ii determine percentage weight of size fractions (half phi intervals)
- iii separate sample in to three fractions of varying magnetic properties.

The equipment purchased for the laboratory includes:-

- a wet drum magnetic separator
- a sieve shaker and nest of sieves
- an electronic balance, 6kg capacity, 1g accuracy.
- a mechanical balance, 20kg capacity
- a hammer mill
- a mixer to slurry the sample
- a filtration unit for fine particle removal

See figure 4 for proposed lay out.

SAMPLE SIZE

Proposed sample of core every 2m.

$$\begin{aligned}
 \text{Volume of core sample} &= (\text{diameter}/2)^2 \times \text{length} \\
 &= 0.1/2 \times 22/7 \times 2 \\
 &= 0.015\text{m}^3
 \end{aligned}$$

$$\begin{aligned}
 \text{Estimates S.G. of sample} &= 2 \\
 \text{therefore mass of sample} &= 2 \times 0.015 \\
 &= 0.03 \text{ tonnes} \\
 &= 30\text{kg}
 \end{aligned}$$

Approximately one third of this sample will be used.

i Percentage Weight of Water Determination

A bulk sample will be weighed on the mechanical scale and then dried overnight. The sample is weighed again and the weight of water in the sample determined. The sample can then be dispersed and textural analysis carried out.

ii Percentage weight of size fractions

Representative samples of the dried sand fraction from selected sites are to be sieved and size distribution recorded. Size fractions are to be sub-sampled for P.G.E. analysis

iii Magnetic Separation

Sections of core are to be placed in a mixer and slurried. This slurry is passed through a series of coarse sieves, the finest of which is 2mm. The slurry is fed into the magnetic separator for the first pass with no current applied to the magnet. This removes the highly magnetic particles. The tailings are fed back into the holding tank and recycled until no more highly magnetic particles are removed.

The slurry is passed again through the magnetic separator, this time with a current applied to the magnet. This removes the moderately magnetic material. The discharge is recycled until no more medium magnetics are removed.

The low magnetic slurry is then passed through a fine sieve and filter to remove the solids.

All three magnetic fractions are then dried and weighed. Sub-samples are to be taken from each fraction for P.G.E. analysis.

STAGE 1 - DRILL SAMPLE SITES, WILSON RIVER, TASMANIA

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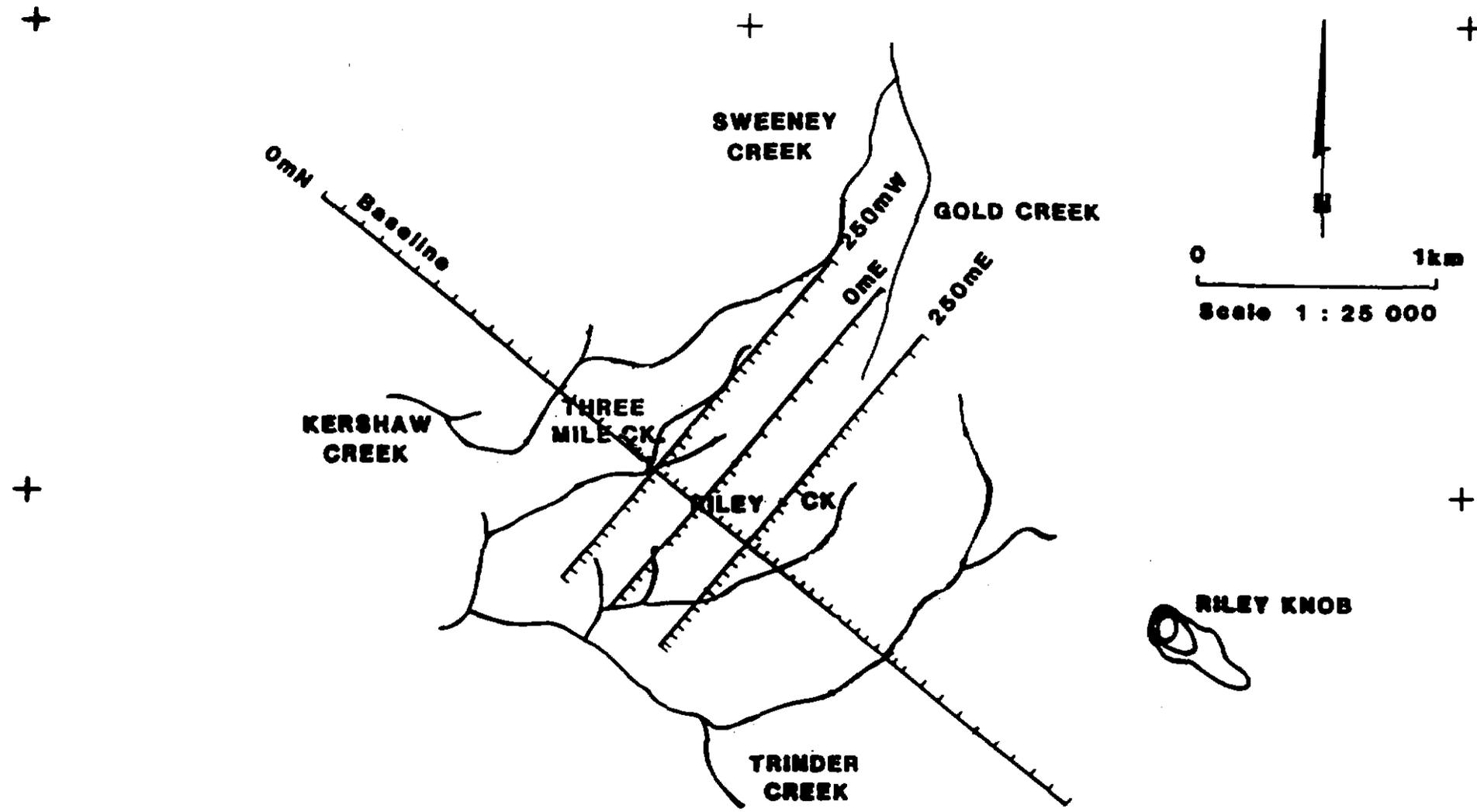


Figure 1

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STAGE 2 - DRILL SAMPLE SITES, WILSON RIVER, TASMANIA

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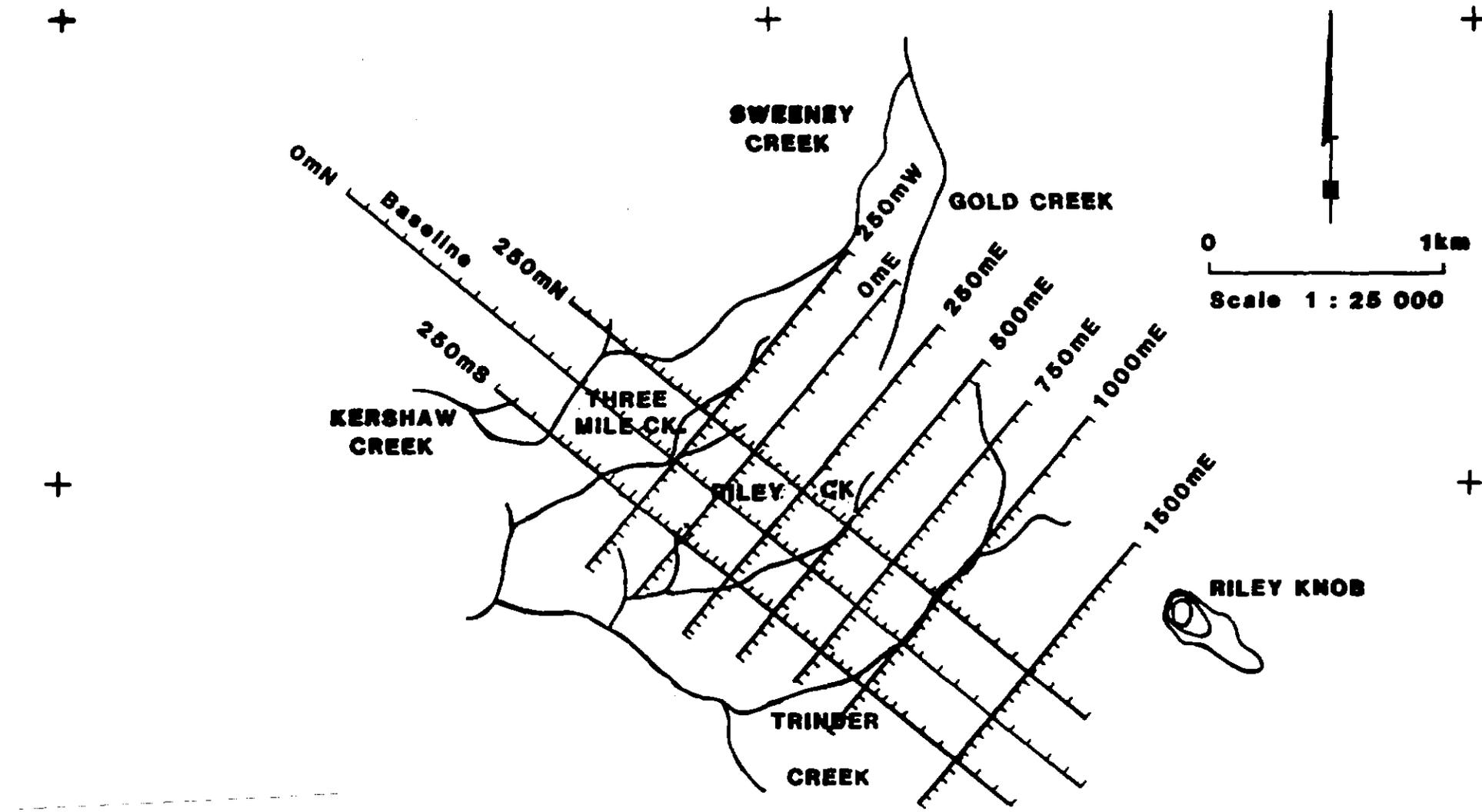


Figure 2

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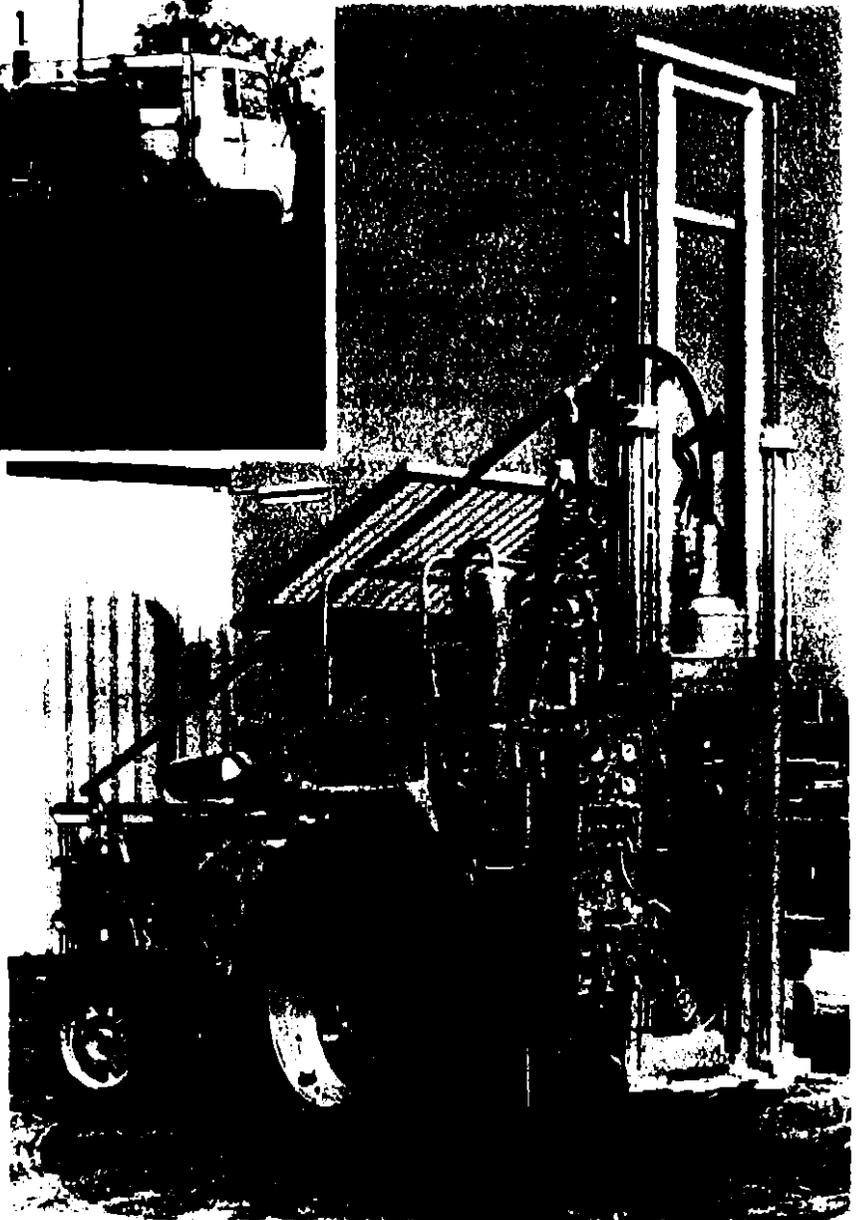
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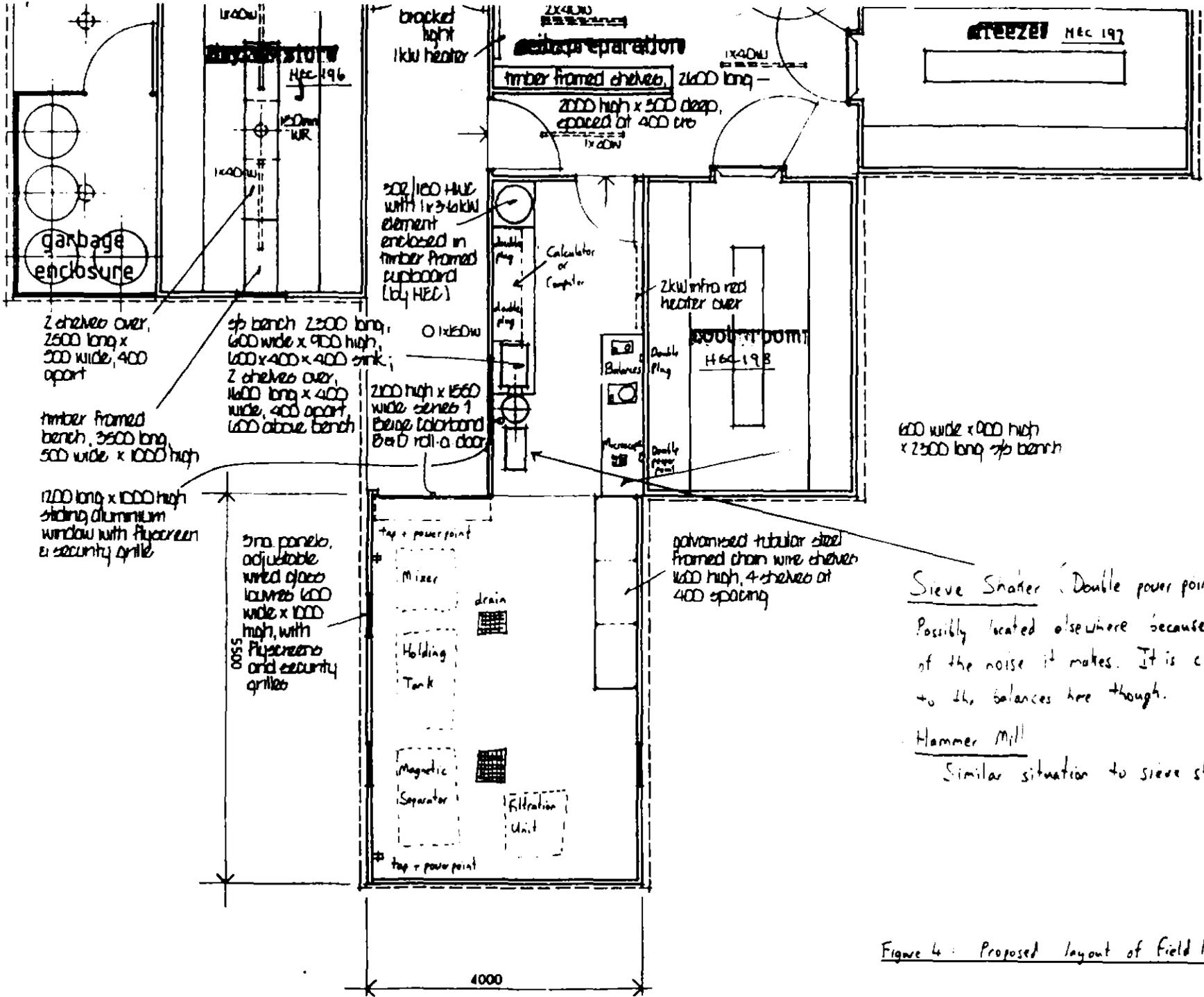
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4875
23425
25775



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693142

Sieve Shaker (Double power point)
Possibly located elsewhere because of the noise it makes. It is close to the balances here though.
Hammer Mill
Similar situation to sieve shaker.

This drawing supersedes the layout on drawing no. A1-2

This drawing conforms to requirements

Figure 4: Proposed layout of field laboratory

A P P E N D I X 1(Sampling)

Coastal Locations

Coastal Geology

Sample Location

Drillhole Locations

EL Location

The Costeans at Lippy Jane/Riley Creek.

See SAMPLING & ASSAY PROCEDURES at the front of the report. The costeans were dug in a clayey sand with a relatively high proportion of heavy minerals. The top 1m of each hole was generally lateritic gravel although hard cap does occur. See DWG.2 for the general cross-section of a costean.

Costean locations and sample numbers taken at each site are shown on DWG 4.

The AMG co-ordinates for the sites are listed below.

<u>SITE</u>		<u>NORTHING</u>	<u>EASTING</u>	<u>SAMPLES</u>
Lippy Jane	1	5 377 025	367 680	WC 1-8
	2	5 377 035	367 635	WC 9-15
	3	5 377 095	367 660	WC 16-23
Riley Creek	1	5 376 840	368 340	RC 1-3
	2	5 376 815	368 315	RC 4
	3	5 376 980	368 420	RC 5-6
	4	5 376 980	368 395	RC 7-8
	5	5 376 980	368 370	RC 9-11
	6	5 377 060	368 370	RC 12

Individual sample descriptions were not recorded as all samples were similar. A red colour clayey sand with an estimated 10-20% of heavy minerals, mostly magnetite and chromite.

Sample details. location see Drawing 1.

Lippy Jane 1.

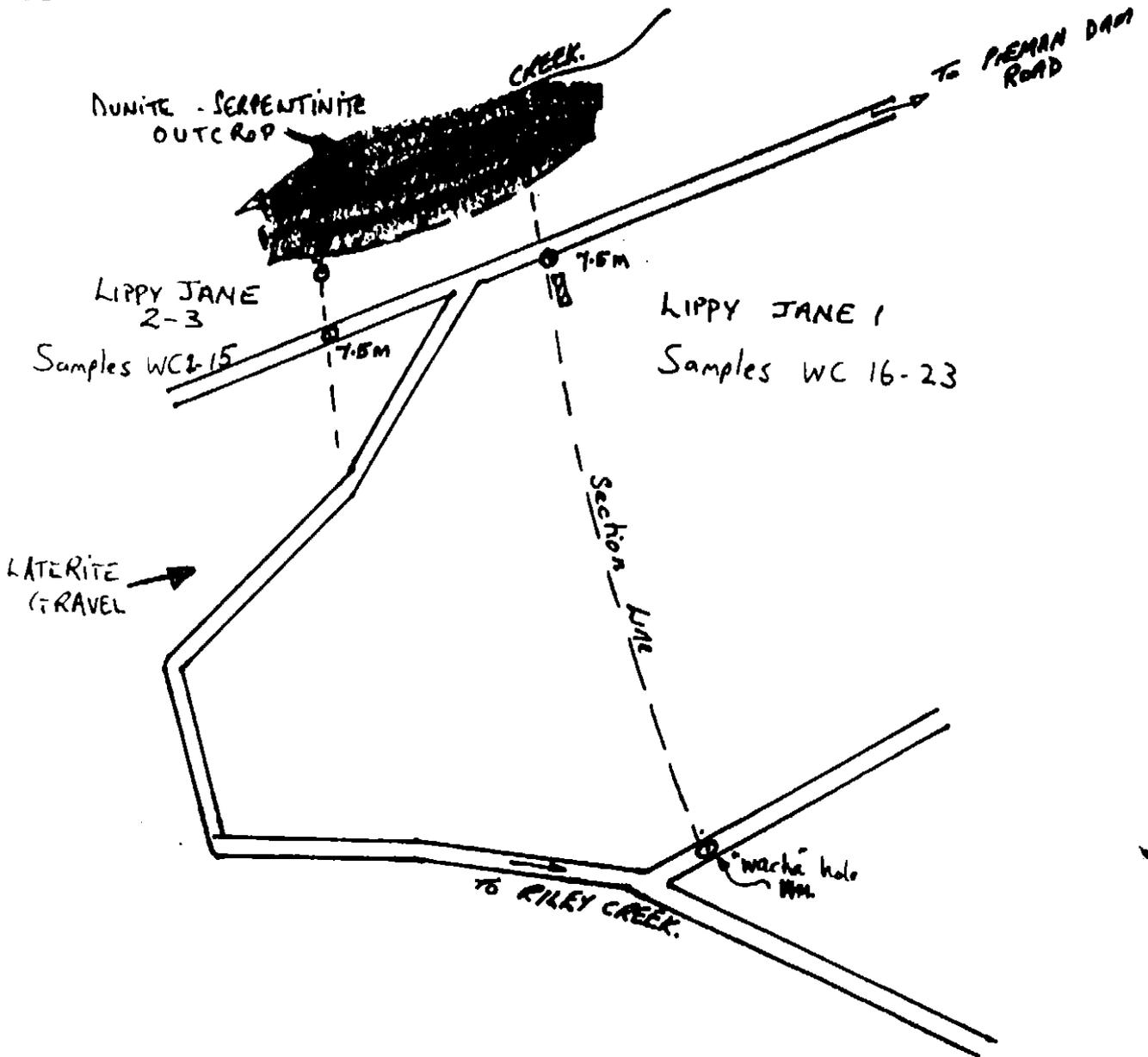
- a) Auger: two holes 1m apart, only one washed and despatched for assay.
0 - 1.5m lateritic gravel.
1.5 - 8.6m clay with laterite fragments.
8.6m serpentinized dunite.
- b) Diamond drill non coring bit - washed and despatched for assay
0 - 1.5m lateritic gravel.
1.5 - 8.5m clay with laterite fragments.
8.5m serpentinized dunite.

Lippy Jane 2.

- Auger: two holes 1m apart, only one washed and despatched for assay.
0-1.5m lateritic gravel.
1.5-7.6m clay with laterite fragments.
7.6m serpentinized dunite.

Lippy Jane 3.

- a) Auger: sample washed despatched for assay.
0-1.2m laterite gravel.
1.2m-7.3 clay with laterite fragments.
7.3 serpentinized dunite.
- b) Non coring bit - sample washed despatched for assay.
1.2m - 7.5m clay with laterite fragments.

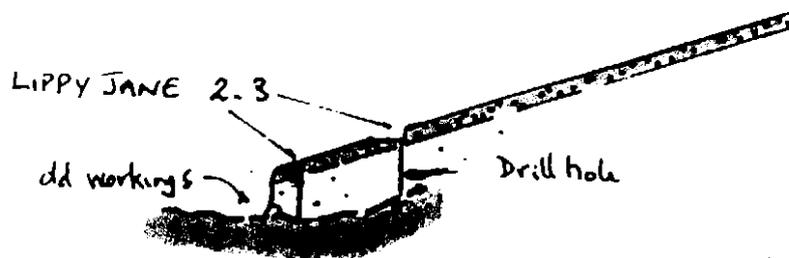
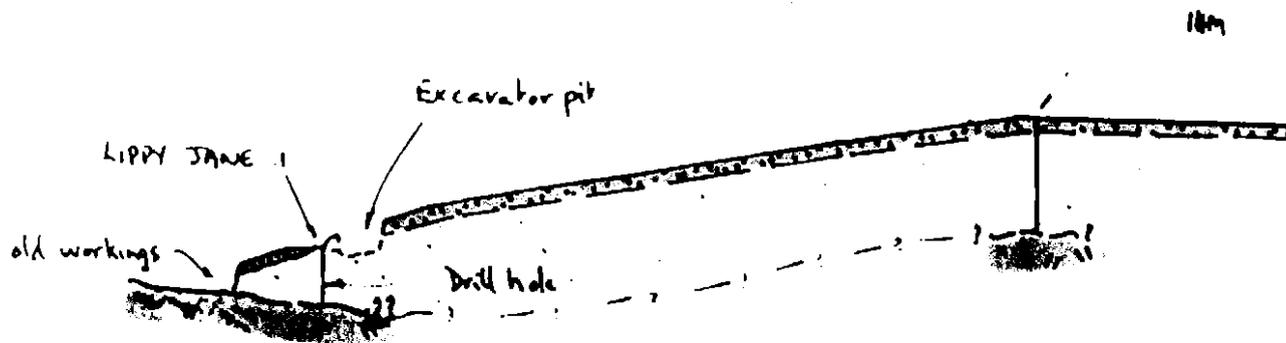


DWG. 1 PLAN of LIPPY JANE AREA
SCALE 1:1000

5 cm



-  Excavator sample pit
-  Drill hole sample.



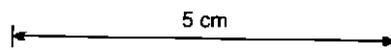
DWG. 2

SECTIONS LIPPY JANE AREA

SCALE 1:1,000

Section line 170' magnetic

- Lateritic gravel
- ⋯ Clay & laterite fragments
- ⊙ Dunite - Serpentinite



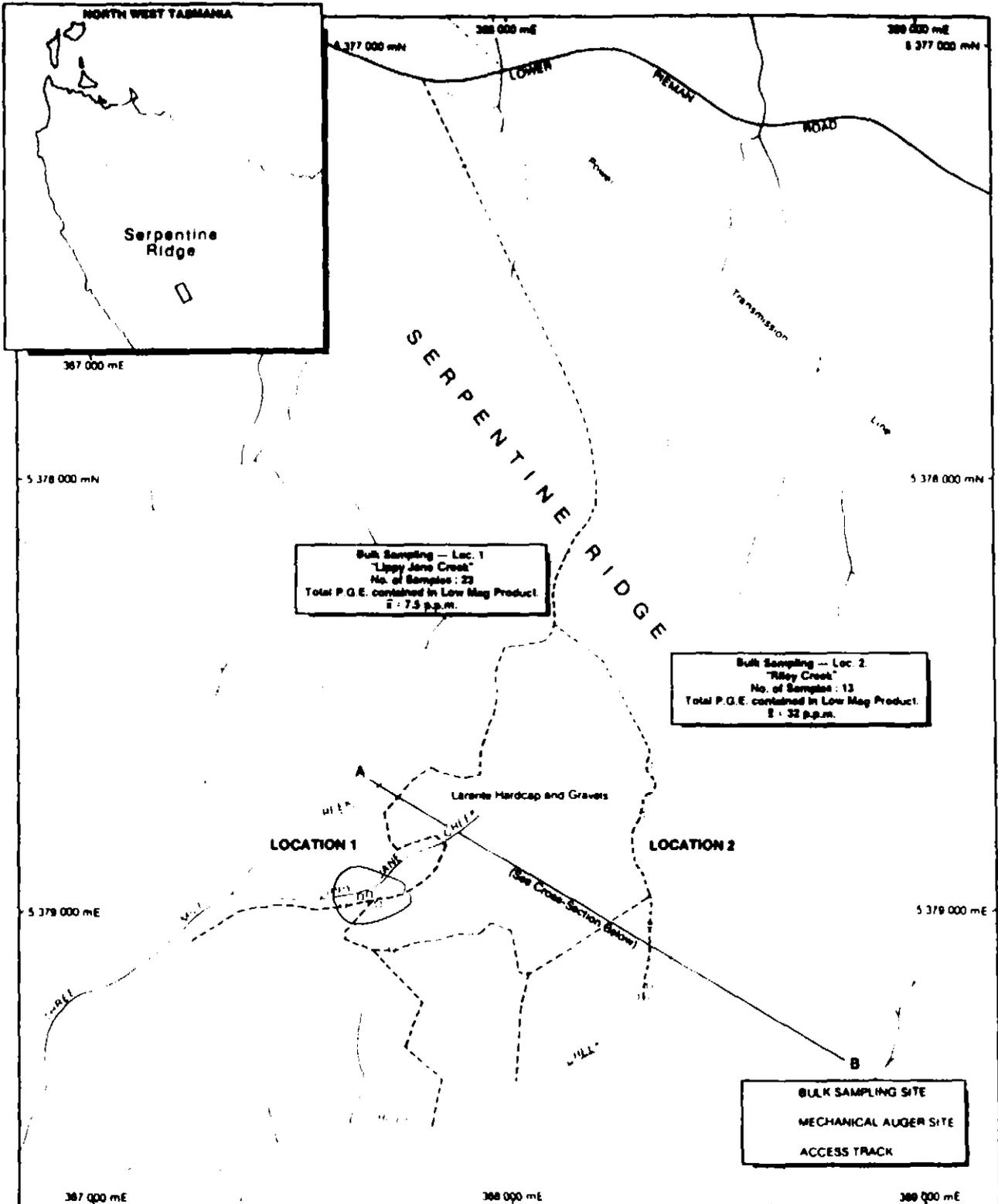


Figure 1

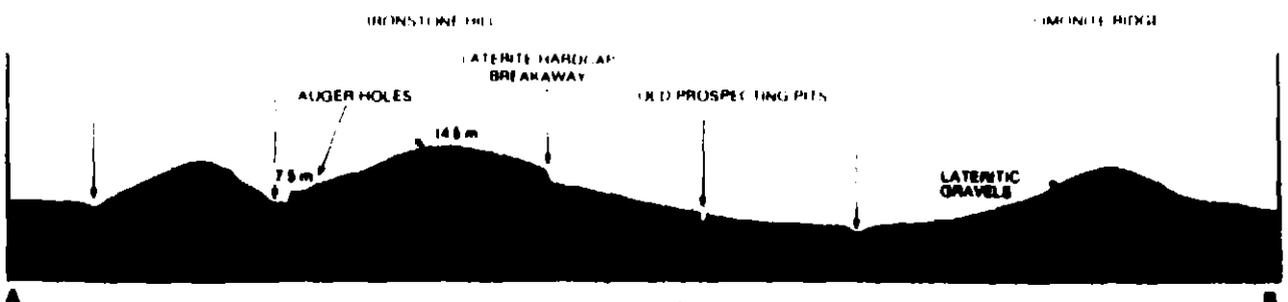
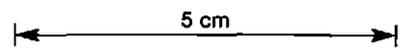


Figure 2



Scale 1:5000



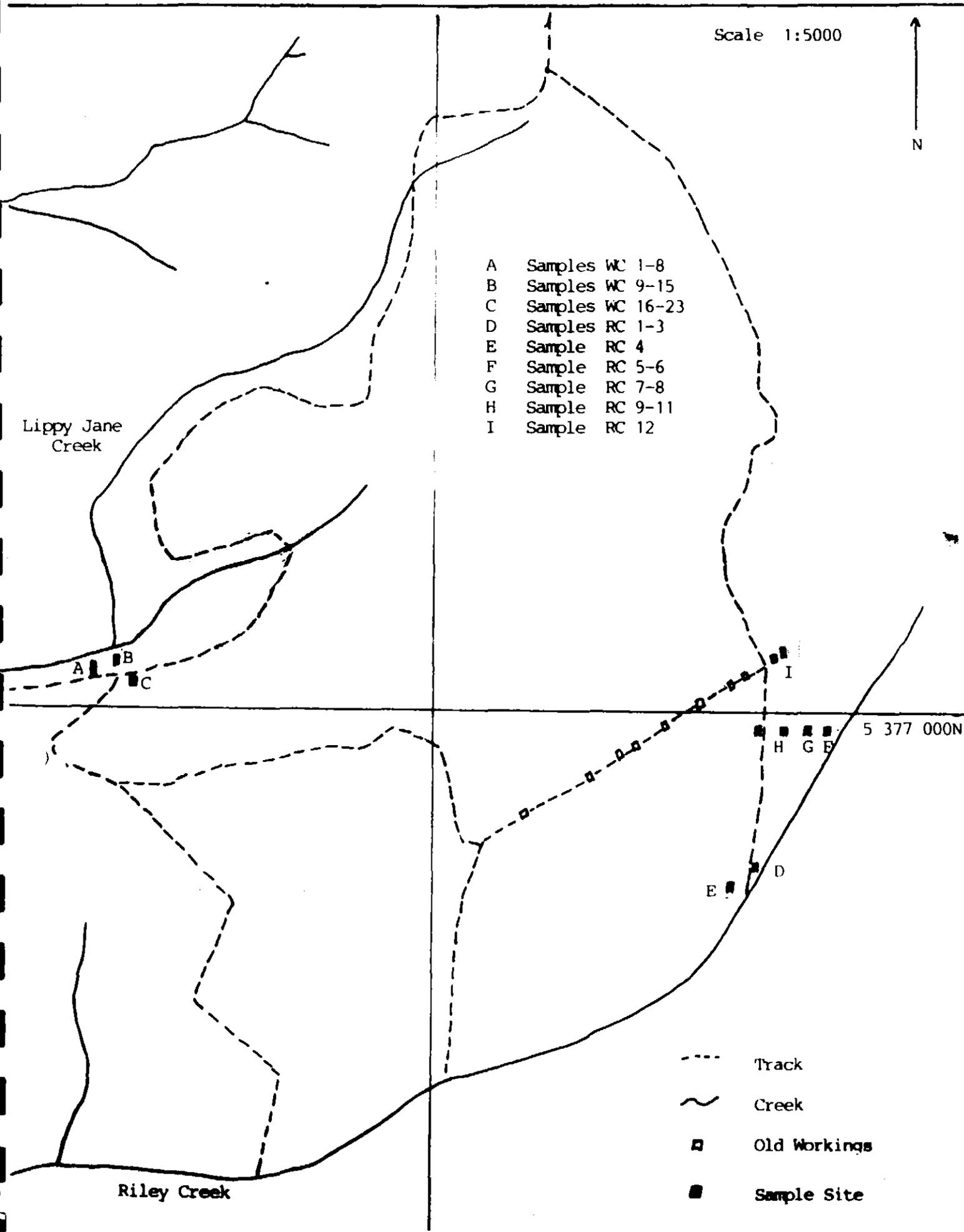
- A Samples WC 1-8
- B Samples WC 9-15
- C Samples WC 16-23
- D Samples RC 1-3
- E Sample RC 4
- F Sample RC 5-6
- G Sample RC 7-8
- H Sample RC 9-11
- I Sample RC 12

Lippy Jane Creek

5 377 000N

Riley Creek

- Track
- Creek
- Old Workings
- Sample Site



A P P E N D I X 2(Analytical Results)

Bulk Sample Reduction

Mineralogical Examination

Weight Percent Magnetic Fractions

Au & PGE Analysis Results

Cr & Fe Analysis Results

BULK SAMPLE REDUCTION

No quantitative data concerning the reduction of bulk samples to heavy mineral concentrates is available. A 500kg sample was processed by a mobile (wet gravity) concentrator on site. As the small jig (70cm x 30cm) was adjusted principally to extract gold and osmiridium, the majority of the heavy minerals were discharged with the tailings. Approximately 20kg of heavy mineral sand was retained by the jig from each bulk sample and a 5kg sub-sample was returned to Perth for analysis. Heavy minerals were easily visible in the tailings and it is estimated by visual inspection that the bulk sample contained 10-20% heavy minerals (SG>3.9).

ANALYTICAL RESULTS

The following pages contain

- i the gold assays of the slime fractions
- ii the P.G.E. analysis of the low magnetic fractions taken from the costeans at Lippy Jane and Riley Creek.
- iii a report on the probe results of 40 selected chromite grains
- iv the chrome/iron ratios of 30 sub samples
- v a mineralogical report on rock samples, heavy mineral concentrates and pan concentrates.
- vi the data set of all samples analysed for gold, silver and P.G.E.'s

REPORT
on
MINERALOGICAL EXAMINATION
of rock samples (JJ 1911, JJ 1912),
composite concentrate of heavy minerals (JJ 1910), and
pan concentrates (RC 1, RC 4, RC 7, WC 4, WC 7)
from Tasmania

prepared for Messrs.

CALLINA N. L.

at their request by

Dr. Jiri Just

Mineralogist

Perth 17th September, 1986

Dr. Jiri Just, Mineralogist, Petrologist,
30 Kay Street, Scarborough, W.A. 6019

REPORT ON MINERALOGICAL EXAMINATION OF ROCK SAMPLES (JJ 1911, JJ 1912), COMPOSITE HEAVY MINERAL CONCENTRATE (JJ 1910), AND PAN CONCENTRATES (RC 1, RC 4, RC 7, WC 4, WC 7) FROM TASMANIA.

SUMMARY

1. Two rock samples, 10 sized and magnetically separated fractions of composite heavy mineral concentrate, and 5 pan concentrates were investigated for presence of platinum group elements minerals (PGM) by means of optical microscopes and scanning electron microscope equipped with x-ray energy dispersion spectrometer.

2. One grain of **auricupride**, Cu_3Au , and one grain of **iridosmine** were found in the examined portion of the sample of serpentinised dunite. The sample contains also chromite, magnetite, awaruite, native nickel and native zinc (?). No gold or PGM were found in the sample of serpentinised harzburgite. X

3. One grain of **iridosmine** has been found as inclusion in chromite in the moderately magnetic 250 μm - 2 mm fraction of the composite concentrate.

4. Numerous small particles of free **gold** have been found in the slimes sample derived from the composite concentrate, one particle has been found also in the -38 μm fraction.

5. **Composition of chromite** has been determined by electron microprobe analysis of 40 randomly selected grains in the moderately magnetic 250 μm - 2 mm fraction of the composite concentrate (% wt):

	Average	Range: min.	max.
Cr_2O_3	69.70	66.70	72.21
FeO	16.58	13.30	21.16
MgO	8.42	4.63	11.12
Al_2O_3	4.41	2.58	8.17
V_2O_3	0.13	n.d.	0.31
MnO	0.66	n.d.	2.01

6. **Weights of PGM and gold** in pan concentrates (mg):

	PGM	Gold
RC 1	0.2	0.4
RC 4	96.3	0.5
RC 7	41.6	
WC 4	1.4	<0.1
WC 7	10.8	

METHOD

The samples were investigated by means of stereomicroscope, reflected light microscope, scanning electron microscope equipped with x-ray energy dispersion spectrometer (GeoSEM), and electron probe microanalyser (electron microprobe).

Rock samples.

Several fragments of each sample were cut into small slabs and suitable natural fracture surfaces or smoothly ground surfaces investigated with GeoSEM. Large portion of each sample has been crushed and panned by Mr. Creasy. The concentrates have been then mounted on Perspex slides and also investigated with the GeoSEM. Recovery of heavy minerals from hard rocks by crushing and panning, which has been popular for a long time especially in the USSR, has the advantage over slabbing in large volume of processed rock and so minerals occurring even in very small amounts can be detected. The disadvantage is possibility of significant losses during panning and loss of paragenetical information.

Composite concentrate.

The sized and magnetically separated fractions of the composite concentrate of heavy minerals, except the + 2 mm fraction and slimes, have been mixed with Araldite and cast into 30 mm diameter blocks. The 90 - 38 um fraction was first separated with a hand magnet into a strongly magnetic and less magnetic fraction. The slime cake was impregnated with Araldite and a polished section has been prepared in the usual manner. All polished sections were scanned with the GeoSEM in such a way as to ensure complete coverage of the whole section and detection of any outcropping PGM particle larger than 5 um. It is expected that every particle larger than 2 um has been found. GeoSEM investigation was in some cases preceded by observation in reflected light in order to get information on the general character of the sample and character of introduced artefacts (metal shavings from machinery, etc.).

40 randomly selected grains of chromite in the polished section of sample JJ 1910/2B (i.e. 2 mm - 250 um moderately magnetic fraction) have been analysed with electron microprobe.

Pan concentrates.

All manageable grains of recognisable PGM have been hand-picked and their total weight in each sample determined. The results are in some cases only approximate as it proved impossible to recover all very small grains or to remove all adhering foreign material.

RESULTS**Rock samples.****JJ 1911, serpentinised dunite (?).**

GeoSEM and reflected light microscope investigation of slabs indicated magnetite, chromite, and awaruite (a Ni-Fe alloy) as the major ore minerals and presence of trace amounts of native nickel, galena (?), acanthite (Ag_2S), covellite and possibly native zinc (one minute grain completely enclosed in chromite). One grain of a Cu - Au - Ag mineral, most probably argentian auricupride, Cu_3Au , 6 x 15 um in size, has been found in a very thin veinlet of fibrous magnetite. Auricupride, which is a rather rare mineral, is known only from gold deposits in ultramafic rocks.

One free grain of iridosmine, 25 x 20 um, has been found in the concentrate panned from the crushed material.

JJ 1912, serpentinised harzburgite (?).

GeoSEM investigation of slabs indicated chromite as the most abundant ore mineral, followed by magnetite. Some fracture surfaces have coating of a Fe - Mn oxide. Investigation of panned concentrate indicated even greater preponderance of chromite. Cassiterite and sphalerite are very rare. One roundish grain, about 10 um in diameter, with composition $Ag > Au \gg Cu = Zn$ has been found on the Perspex slide outside the adhesive tape used for mounting the grains. While this is not a proof in itself, this and the composition of the grain suggests contamination from jewelry (for this reason I do not wear any jewelry myself but contamination at this size scale is global). No PGM have been found.

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JJ 1910, composite concentrate of heavy minerals.

As all the samples are very much the same only unusual features have been described.

JJ 1910/1, +2 mm.

The sample has been investigated only visually.

JJ 1910/2A, 2 mm - 250 um, strongly magnetic.

Magnetite, maghemite, hematite after magnetite (all these minerals contain an appreciable amount of Cr and are indistinguishable in the GeoSEM), chromite. One grain of xenotime has been found enclosed in "magnetite".

JJ 1910/2B, 2 mm - 250 um, moderately magnetic.

Chromite, magnetite and its oxidation products, rare xenotime, zircon. One grain of iridosmine (Os > Ir > Ru, tr. Pt), approx. 30 x 30 um in size, has been found completely enclosed in chromite.

40 randomly selected grains of chromite have been analysed with electron microprobe. Average and range of the compositions is given below. Frequency plots of the individual analyses (separately for each element) appears to be unimodal what suggests that there is only one population of chromite in the sample and the composite sample seems to be a good representation of the individual samples that have been composited. Large number (> 100) would be required for confirmation.

Chromite composition:

	Average	Range: min.	max.
Cr ₂ O ₃	69.70	66.70	72.21
FeO	16.58	13.30	21.16
MgO	8.42	4.63	11.12
Al ₂ O ₃	4.41	2.58	8.17
V ₂ O ₃	0.13	n.d.	0.31
MnO	0.66	n.d.	2.01

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JJ 1910/2C, 2 mm - 250 um, weakly to non-magnetic.

Chromite, hematite, goethite, and possibly other products of oxidation of magnetite.

JJ 1910/3A, 250 - 90 um, strongly magnetic.

Chromian magnetite and its oxidation products, chromite. Surface contaminated with zinc chloride, lead bromide, Hg - Te - Zn compound, metallic nickel. Lead bromide contamination occurs in all samples (lead bromide from car exhausts is ubiquitous in the atmosphere).

JJ 1910/3B, 250 - 90 um, moderately magnetic.

Chromite, oxidation products of chromian magnetite.

JJ 1910/3C, weakly magnetic to non-magnetic.

Chromite, oxidation products of chromian magnetite, trace amounts of zircon, cassiterite, monazite. Chromite has been found also as inclusion in zircon.

JJ 1910/4A, 90 - 38 um, strongly magnetic (hand magnet).

Chromian magnetite, chromite, traces of monazite. Pb-Bi-Se and Bi-Pb-Se-S?-Cu phases are most likely contamination.

JJ 1910/4B, hand magnet non-magnetic.

Chromite, oxidation products of chromian magnetite, traces of cassiterite, zircon, thorian monazite.

JJ 1910/5, -38 um, not separated magnetically.

Chromian magnetite and its oxidation products, chromite, traces of pyrite, covellite, zircon, monazite, gold, sphalerite, arsenopyrite, and barite. Barite could be part of the sample, sphalerite and arsenopyrite are most likely contaminants. Brass, copper, and nickel shavings and globules of solder are certainly extraneous. Only one but relatively large (55 x 20 um) particle of free gold has been found.

JJ 1910/6, slimes.

Six fragments of dry filter cake have been impregnated with Araldite and made into a polished section. The well impregnated parts took good polish but only some grains were polished in the poorly impregnated parts.

Non-opaque minerals, chromite, chromian magnetite and its oxidation products represent the bulk of the material. Particles of **free gold** are relatively abundant suggesting that the Au content of the sample must be in tens of ppm (g/t). Numerous grains of sulphides Cu, Bi, Fe, and Se bring out the question of possibility of cross-contamination from samples previously processed by the laboratory.

The gold particles are mostly about 2 x 2 um in size, the largest found being 6 x 5 um. 14 particles were measured before recording was given up because of thoughts about contamination. Discussion with Mr. Creasy has since indicated that the gold is really part of the sample and the sample will be studied in more detail at a later date.

Pan concentrates.

Sample	weight (mg)	
	PGM	Au
RC 1	0.2	0.4
RC 4	96.5*	0.5
RC 7	41.6*	
WC 4	1.4	<0.1
WC 7	10.8*	

* indicates presence in/on PGM or gold of limonite and other minerals which could not be removed by treatment with sodium citrate followed by hot hydrochloric acid.

It was not possible to collect all of the smallest particles by repeated panning in a Petri dish and removing the particles by hand. The idea that the amount of PGM/PGE present either as inclusions in chromite or in the crystal lattice of chromite or other common minerals could be determined by hand-picking the PGM and assaying the rest of the sample therefore seems to be unworkable. It appears that there will always remain enough minute, microscopically unidentifiable PGM to make such analysis completely unreliable. Methods for two-stage selective decomposition should be investigated. The selected method would

ideally work like this: free PGM would be selectively quantitatively dissolved and PGE determined, then the rest of the sample would be quantitatively decomposed (probably by fusion, chromite is a very refractory mineral) and PGE again determined. The two figures would then represent the amount of PGE readily available for recovery and the amount of PGE that possibly could not be recovered or at high cost.

CONCLUSIONS

1. One grain of argentian **auricupride** has been found in thin magnetite veinlet in a slab cut from the sample of serpentinised dunite. One grain of **iridosmine** has been found in pan concentrate from crushed material. Other minerals present: abundant chromite, chromian magnetite, frequent awaruite, rare native nickel, covellite, possibly native zinc. Of these only magnetite and chromite were recovered into the pan concentrate. Only chromite and magnetite were found in the serpentinised harzburgite. However the area of the surfaces examined with the GeoSEM is statistically insufficient to give valid proof of absence of gold or PGM.

2. One grain of ruthenian **iridosmine**, approx. 30 x 30 um in size, has been found completely enclosed in chromite in the moderately magnetic 250 um - 2 mm size fraction of the composite concentrate.

3. Numerous small (mostly about 2 x 2 um) particles of **free gold** have been found in the slimes filter cake, one 55 x 20 um particle in the -38 fraction of the composite concentrate.

4. Electron microprobe analysis of 40 randomly selected grains in the moderately magnetic 250 um - 2 mm size fraction of the composite concentrate gave the following results (% wt.):

	Average	Range: min.	max.
Cr ₂ O ₃	69.70	66.70	72.21
FeO	16.58	13.30	21.16
MgO	8.42	4.63	11.12
Al ₂ O ₃	4.41	2.58	8.17
V ₂ O ₃	0.13	n.d.	0.31
MnO	0.66	n.d.	2.01

Frequency distribution plots for individual elements appear to be unimodal what suggests that there is only one population of chromite in the sample and that the composite sample seems to be

a good representation of the composited samples.

5. Manageable particles of gold and PGM were hand-picked from the pan concentrates and their total weight in each sample determined. For results see text. It proved practically impossible to collect all of the very small particles. The amount of PGM/PGE present either as inclusions in chromite or in the crystal lattice of the rock-forming minerals cannot be therefore determined by simply removing the visible PGM by hand and analyse the rest of the sample. Selective decomposition has to be applied.

SAMPLE NUMBER	Au ppb	Pt ppb	Pd ppb	Rh ppb	Ru ppb	Ir ppb
COMP - 2000+250 HIGH	8	5.3	3.5	4.8	26	24
COMP - 2000+250 MED	14	5.2	1.1	3.5	42	39
COMP - 2000+250 NON	11	2.5M	1.3	120	2.3M	14M
COMP - 250+290 HIGH	13	8.9	1.0	2.4	27	51
COMP - 250+ 90 MED	23	5.1	1.5	3.0	30	45
RC 1 - 2000+250 HIGH	8	4.8	0.9	3.7	42	54
RC 1 - 2000+250 MED	7	6.5	3.6	5.4	50	57
RC 1 - 2000+250 NON	11	4.7	1.6	4.0	49	65
RC 1 - 250+ 90 HIGH	17	6.4	5.2	7.4	27	17
RC 1 - 250+ 90 MED	5	3.5	0.7	3.4	43	34
RC 4 - 2000+250 HIGH	15	3.9	1.3	3.2	32	31
RC 4 - 2000+250 MED	16	5.7	2.9	5.6	49	48
RC 4 - 2000+250 NON	11	150	1.9	39	1.1M	7.0M
RC 4 - 250+ 90 HIGH	22	4.6	0.9	2.8	31	20
RC 4 - 250+ 90 MED	13	40	5.2	18	330	1.1M
RC 7 - 2000+250 HIGH	2	0.3	(0.1)	1.2	17	7.1
RC 7 - 2000+250 MED	1.2M	130	2.6	24	800	3.7M
RC 7 - 2000+250 NON	17	1.5M	1.8	130	3.3M	17M
RC 7 - 250+ 90 HIGH	63	12	(0.1)	1.8	26	32
RC 7 - 250+ 90 MED	370	5.8	2.1	4.6	46	41
WC 4 - 2000+250 MED	9	8.2	1.0	4.0	48	51
WC 4 - 2000+250 NON	8	5.2	0.9	4.3	47	42
WC 4 - 250+ 90 HIGH	190	3.9	1.4	2.6	27	29
WC 4 - 250+ 90 MED	52	20	1.7	4.9	56	290
WC 4 - 250+ 90 NON	2.1M	1.0M	9.7	150	4.6M	23M
WC 7 - 2000+250 HIGH	77	3.7	0.3	3.0	29	21
WC 7 - 2000+250 MED	27	4.6	0.6	3.8	41	34
WC 7 - 2000+250 NON	12	8.4	0.7	5.2	80	160
WC 7 - 250+ 90 HIGH	80	43	(0.1)	10	240	800
WC 7 - 250+ 90 MED	5	5.2	2.9	4.6	39	45

THE LETTER 'M' AFTER A RESULT IMPLIES PARTS PER MILLION.
 A '(' IN FRONT OF A RESULT IMPLIES LESS THAN.

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690163

SAMPLE NUMBER	Cr2O3 %	SiO2 %	Fe2O3 %	TiO2 %	Al2O3 %	CaO %	MgO %	B ppm	S %	Sb ppm
COMP -2000+250 HIGH	21.8	0.9	69.5	0.04	1.77	(0.01)	2.76	(100)	0.34	(1
COMP -2000+250 MED	50.6	0.5	37.2	0.07	3.37	(0.01)	5.69	(100)	0.20	(2
COMP -2000+250 NON	46.4	0.7	44.0	0.07	3.10	(0.01)	4.89	(100)	0.20	(1
COMP - 250+ 90 HIGH	27.4	0.9	67.0	0.04	1.30	0.03	2.96	(100)	0.32	(10
COMP - 250+ 90 MED	60.2	0.5	31.7	0.06	2.67	(0.01)	5.90	(100)	0.18	(1
RC 1 -2000+250 HIGH	24.2	1.1	72.4	0.06	1.92	(0.01)	2.86	(100)	0.34	(1
RC 1 -2000+250 MED	58.6	0.7	33.6	0.04	3.46	(0.01)	6.47	(100)	0.16	(1
RC 1 -2000+250 NON	52.3	1.0	39.7	0.07	3.38	(0.01)	6.12	(100)	0.18	(1
RC 1 - 250+ 90 HIGH	43.2	1.1	53.9	0.07	3.04	(0.01)	4.74	(100)	0.27	(1
RC 1 - 250+ 90 MED	58.9	0.6	30.3	(0.01)	3.56	0.01	6.17	(100)	0.29	(1
RC 4 -2000+250 HIGH	18.0	1.1	79.4	0.06	1.93	(0.01)	2.46	(100)	0.31	(1
RC 4 -2000+250 MED	60.3	0.5	31.6	0.06	3.37	(0.01)	6.87	(100)	0.17	(1
RC 4 -2000+250 NON	57.8	0.7	36.4	0.06	3.29	(0.01)	6.43	(100)	0.18	(4
RC 4 - 250+ 90 HIGH	23.0	1.0	77.5	0.07	2.07	(0.01)	2.57	(100)	0.31	(1
RC 4 - 250+ 90 MED	69.6	0.5	27.8	0.04	3.58	0.06	7.28	(100)	0.14	(1
RC 7 -2000+250 HIGH	31.5	0.7	66.3	0.02	2.20	(0.01)	3.52	(100)	0.34	(1
RC 7 -2000+250 MED	57.8	0.5	34.4	0.05	3.38	(0.01)	6.83	(100)	0.14	(1
RC 7 -2000+250 NON	52.8	0.6	41.7	0.07	3.32	0.15	5.98	(100)	0.21	(1
RC 7 - 250+ 90 HIGH	23.1	0.9	75.3	(0.01)	1.87	(0.01)	2.58	(100)	0.41	(1
RC 7 - 250+ 90 MED	56.7	1.0	35.9	0.06	3.71	(0.01)	5.79	(100)	0.17	(1
WC 4 -2000+250 MED	49.6	0.3	42.2	0.07	3.57	(0.01)	4.54	(100)	0.23	(1
WC 4 -2000+250 NON	46.0	0.5	45.9	0.09	3.42	0.04	4.17	(100)	0.21	(1
WC 4 - 250+ 90 HIGH	64.4	0.4	31.8	0.08	3.93	0.04	5.19	(100)	0.20	(1
WC 4 - 250+ 90 MED	62.1	0.2	30.0	0.08	3.51	0.07	5.10	(100)	0.13	(1
WC 4 - 250+ 90 NON	I/S	I/S	I/S	I/S	I/S	I/S	I/S	I/S	I/S	I/S
WC 7 -2000+250 HIGH	7.47	0.9	92.2	0.18	1.70	(0.01)	0.45	(100)	0.42	(1
WC 7 -2000+250 MED	44.5	0.3	47.5	0.08	3.32	0.07	3.83	(100)	0.21	(1
WC 7 -2000+250 NON	36.0	0.6	55.6	0.09	3.02	0.10	3.30	(100)	0.31	(1
WC 7 - 250+ 90 HIGH	47.7	0.3	45.1	0.10	3.24	0.19	3.65	(100)	0.23	(1
WC 7 - 250+ 90 MED	57.1	0.3	36.2	0.06	3.42	0.09	4.81	(100)	0.18	(1

A "(" IN FRONT OF A RESULT IMPLIES LESS THAN I/S-INSUFFICIENT SAMPLE FOR THAT PARTICULAR DETERMINATION

693164

LIPPY JANE SITE 1
 Costean upslope of Creek: depth 3 metres)

WC	SLIMES:<75um Au (ppm)	Size um	CHROMITE (LOW MAGNETICS) Contained P.G.E./Au (ppb)					Low magnetics in total H.M.F. (%)
			Ir	Os	Ru	Pt	Au	
01 Laterite	1.20	(+500)	7500	3000	1000	350	12	37.64
		(-500)	2100	1450	320	62.5	580	
02	0.37	(+500)	560	ND*	120	36	30	46.62
		(-500)	5700	ND	1100	580	72	
03	0.4	(+500)	40	125	46	0.5	8	35.2
		(-500)	2200	2000	775	47	210	
04		(-2000+250)	42	ND	47	5.2	6	ND
	ND	(-250+90)	23000	ND	4600	1000	2100	
05	(1.77) ch(1.70,1.85)	(+500)	38	ND	35	3.5	4	32.11
		(-500)	1300	ND	290	64	14	
06	(2.48) ch(1.50,2.65,3.3)	(+500)	33	ND	24	4	26	32.43
		(-500)	1900	ND	480	46	140	
07		(-2000+250)	160	ND	80	3.4	12	ND
	ND	(-250+90)	ND	ND	ND	ND	ND	
08	(3.3) (3.60,2.30,4.00)	(+500)	1100	ND	310	1600	4	41.97
		(-500)	3900	ND	850	100	150	
Mean value:	1.58	(+500)	2850					
Sta. Dev :	1.16							
Variance :	1.36	(-500)	1644					*ND: Not done

MC	SLIMES: <75um Au(ppm)	Size um	CHROMITE (LOW MAGNETICS)					Low magnetics in total H.M.F. (Z)
			Ir	Os	Ru	Pt	Au	
09	1.35 (1.35)	(+500)	180	ND	57	17	10	33.67
		(-500)	2900	ND	900	3700	60	
10	(1.0) 0.75 (1.25)	(+500)	33	ND	24	5	16	29.51
		(-500)	1600	ND	310	58	20	
11	(1.12) 1.20 (1.04)	(+500)	360	ND	93	38	14	33.05
		(-500)	2100	ND	270	400	26	
12	0.12	(+500)	1900	1400	290	190	6	30.06
		(-500)	13000	7000	2500	2200	350	
13	0.1	(+500)	40	ND	32	6	2	16.29
		(-500)	5500	ND	1500	350	280	
14	0.41	(+500)	1800	ND	580	72	60	23.6
		(-500)	6500	ND	740	190	390	
15	(0.56) 0.50 (0.62)	(+500)	32	ND	26	13	14	18.1
		(-500)	5400	ND	660	580	290	

WC	SLIMES:<75um Au(ppm)	Size um	CHROMITE (LOW MAGNETICS) Contained P.G.E./Au (ppb)					Au	Low magnetics in total H.M.F. (Z)
			Ir	Os	Ru	Pt			
16	0.37	(+500)	74	ND	22	5	54	15.08	
		(-500)	8200	ND	1500	2600	350		
17	0.16	(+500)	75	132	48	3.5	26	30.22	
		(-500)	10000	10000	1700	520	350 (420)		
18	0.14	(+500)	3100	3500	440	220	6	21.59	
		(-500)	2800	3.5	600	92.5	30 (480)		
19	(1.24)	(+500)	3600	ND	430	280	10	20.52	
	0.68 (1.80)	(-500)	8300	ND	1400	310	180		
20	(9.63)	(+500)	270	ND	74	14	100	18.18	
	4.80 (9.60,14.5)	(-500)	6700	ND	1400	470	4		
21	(0.64)	(+500)	56	ND	28	5	8	24.48	
	0.74 (0.54)	(-500)	1000	ND	230	200	4		
22	(0.73)	(+500)	3400	ND	770	780	120	26.18	
	0.76 (0.70)	(-500)	14000	ND	2700	1300	22		
23	ND	(+500)	7200	ND	1100	410	4	21.47	
		(-500)	35000	ND	5800	2300	270		

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 RILEY'S CREEK SITE 4
 (Coastal near SPRING, depth 3 metres)

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RC	SLINES: <75um Au (ppm)	Size um	CHROMITE (LOW MAGNETICS) Contained P.G.E./Au (ppb)					Low magnetics in total H.M.F. (%)
			Ir	Os	Ru	Pt	Au	
01		(-2000+250)	65	ND	49	5	11	ND
02	(0.43)	(+500)	490	ND	110	100	4	21.03
	0.66 (0.19)	(-500)	4700	ND	1000	150	78	
03	0.03	(+500)	10000	10000	1300	530	4	25.98
		(-500)	12000	11000	1900	340	60 (20)	

RILEY'S CREEK SITE 5
 (Coastal 50 metres west of S4, depth 1 metre in former workings)

04		(-2000+500)	7000	ND	1100	150	11	ND
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RILEY'S CREEK SITE 6
 (Coastal across workings 100m north of S4, depth 1.5m)

05	(3.00)	(+500)	39	ND	38	3	2	17.88
	2.80 (3.20)	(-500)	8200	ND	1600	290	1100	
06	0.22	(+500)	7250	3000	925	775	42	17.75
		(-500)	22000	28000	3200	950	340 (250)	

RILEY'S CREEK SITE 7

(Coastal across workings 25 metres west of S6, depth 2 metres)

RC	SLIMES: <75µm Au(ppm)	Size µm	CHROMITE (LOW MAGNETICS)					Au	Low magnetics in total H.M.F. (%)
			Ir	Os	Ru	Pt	Au		
07	ND	(-2000+250)	17000	ND	3300	1500		17	ND
08	0.34	(+500)	3400	ND	480	110		62	16.87
		(-500)	28000	ND	6500	1800		330	

RILEY'S CREEK SITE 8

(Coastal across workings 25 metres west of S7, depth of 2 metres)

09	(0.09)	(+500)	650	580	120	85		10	21
		(-500)	25000	20000	4500	1300	250 (200)		
10	0.03	(+500)	950	925	210	95		2	15.84
		(-500)	5500	5500	800	240	3400 (300)		
11	0.13	(+500)	1500	2500	380	54		6	14
		(-500)	18000	20000	3600	500		70	

RILEY'S CREEK SITE 9

(Coastal across workings 75 metres north of S8 depth 3 metres)

12	0.1	(+500)	3800	4500	540	65		4	14.58
		(-500)	3100	2500	480	100		44	
13	(1.06) 0.58(1.55)	(+500)	2.10%	ND	3400	1800		20	4.85
		(-500)	7.00%	ND	1.40%	2700		670	

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TABLE RC SERIESMagnetic and slimes products in grammes

Mark	Size	H/Mags	M/Mags	L/Mags	Slimes
RC2	+500	475	544	495	
	-500	539	1240	250	154
RC3	+500	564	632	605	
	-500	494	1096	373	110
RC5	+500	950	727	465	
	-500	470	814	180	147
RC6	+500	1340	489	522	
	-500	776	646	180	134
RC8	+500	845	749	542	
	-500	780	1024	148	188
RC9	+500	709	533	711	
	-500	918	1191	180	170
RC10	+500	792	653	530	
	-500	1012	1250	168	180
RC11	+500	922	681	435	
	-500	1160	860	154	274
RC12	+500	1062	598	315	
	-500	1355	774	332	-
RC13	+500	1387	205	126	
	-500	1747	382	64	122



TABLE WC SERIESMagnetic & slimes products in grammes

Mark	Size	H/Mags	M/Mags	L/Mags	Slimes	Mark	Size	H/Mags	M/Mags	L/Mags	Slit
WC1	+500	360	270	698		WC20	+500	392	814	617	
	-500	103	452	192	18		-500	526	1754	158	133
WC2	+500	171	334	670		WC21	+500	464	596	574	
	-500	50	773	490	146		-500	710	1440	467	130
WC3	+500	38	352	721		WC22	+500	536	970	1185	
	-500	27	2057	623	43		-500	586	2424	417	58
WC5	+500	30	1023	1127		WC23	+500	642	1485	1147	
	-500	21	2523	575	81		-500	660	2688	350	
WC6	+500	40	1216	1327							
	-500	70	2834	670	115						
WC8	+500	81	796	1607							
	-500	96	1947	505	101						
WC9	+500	168	556	793							
	-500	73	1628	438	87						
WC10	+500	75	560	806							
	-500	60	2353	470	61						
WC11	+500	144	804	786							
	-500	126	1522	496	97						
WC12	+500	212	771	1046							
	-500	261	2180	426	78						
WC13	+500	593	799	532							
	-500	544	1542	145	186						
WC14	+500	493	415	394							
	-500	410	630	208	167						
WC15	+500	821	345	445							
	-500	710	645	114	284						
WC16	+500	883	680	524							
	-500	864	995	132	197						
WC17	+500	353	500	667							
	-500	440	1582	578	85						
WC18	+500	368	835	924							
	-500	706	3433	547	57						
WC19	+500	762	1486	1090							
	-500	807	2566	361	105						

LABORATORY REPORT

1000 GARDNER STREET, PERTH, WESTERN AUSTRALIA P.O. BOX 144 GARDNER, W.A. 6050
 TELEPHONE (09) 425 5551 FAX (09) 425 5545 TELETYPE (09) 425 5546
 GEOLOGICAL SURVEY OF AUSTRALIA DEPARTMENT OF MINERAL RESOURCES
 141 DUNCAN STREET, KALBARNEY, W.A. 6430
 TELEPHONE (08) 937 4057

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JOB INFORMATION

JOB CODE 218.0/861851
 NO. SAMPLES 25
 ELEMENTS 25
 CLIENT OZM
 DATE RECEIVED 11/05/86
 DATE COMPLETED 12/05/86

LEGEND

ND = LESS THAN DETECTION LIMIT
 N/L = SAMPLE NOT RECEIVED
 * = RESULTS CHECKED
 () = RESULTS STILL TO COME
 () = INSUFFICIENT SAMPLE FOR ANALYSIS

COMMENTS : ATTENTION TO THE FOLLOWING
 COMMENTS : REMINDED THAT THE RESULTS HAS BEEN RECEIVED FOR THE ANALYSIS OF PROMETHEUM

SAMPLE INFORMATION

ELEMENTS	Zn	Cd	Au	Au-Rp1	Au-Rp2	As	Ag	Sb	Bi	Cu	Pb	Ni	Mo	Cr	Mn
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION	1	1	0.01	0.01	0.01	1	0.1	1	1	1	1	1	2	0.01	1
METHOD	C/AAS	C/AAS	B/AAS	B/AAS	B/AAS	B/AAS	B/AAS	B/AAS	B/AAS	B/AAS	B/AAS	B/AAS	B/AAS	B/AAS	ICP-OES

SAMPLE NUMBERS

1	1:RC-02-500 HIGHMAG	600	10	0.20	0.00	0.20	1	1	1	1	1	2770	1	14.50	1
2	1:RC-02-500 HIGHMAG	640	40	0.01			1	1	1	1	2	3000	1	17.00	1
3	1:RC-05-500 HIGHMAG	600	44	1			1	1	2	4	1	2000	1	19.00	1
4	1:RC-06-500 HIGHMAG	700	60	0.01			1	1	1	21	1	2500	2	24.50	1
5	1:RC-09-500 HIGHMAG	720	66	0.04			1	1	1	12	1	3100	2	15.00	1
6	1:RC-09-500 HIGHMAG	600	70	0.66	0.05		1	1	1	145	3	3700	2	16.50	1
7	1:RC-10-500 HIGHMAG	640	74	0.01			1	1	2	1	2	3700	2	15.00	1
8	1:RC-11-500 HIGHMAG	700	70	1			1	1	1	74	2	5000	2	15.50	1
9	1:RC-12-500 HIGHMAG	600	60	0.01			1	1	1	7	1	4000	2	16.00	1
10	1:RC-15-500 HIGHMAG	600	60	0.01			1	1	1	20	2	3000	2	15.50	1
11	1:RC-02-500 HIGHMAG	600	60	0.10			1	1	1	7	10	600	6	0.00	1
12	1:RC-02-500 HIGHMAG	720	70	0.10			1	1	1	10	10	600	4	0.10	1
13	1:RC-03-500 HIGHMAG	700	70	1.15	0.00	0.10	1	1	1	10	20	500	10	0.20	1
14	1:RC-05-500 HIGHMAG	600	70	1			1	1	1	10	10	1000	10	10.00	1
15	1:RC-06-500 HIGHMAG	700	60	0.00	0.05		1	0.2	1	1	16	800	4	0.00	1
16	1:RC-09-500 HIGHMAG	720	60	0.00	0.00	0.00	1	0.1	1	1	9	1000	4	10.00	1
17	1:RC-09-500 HIGHMAG	700	60	0.00			1	1	1	1	12	1700	4	9.00	1
18	1:RC-10-500 HIGHMAG	700	60	0.00	0.00		1	1	1	1	17	1000	4	10.50	1
19	1:RC-11-500 HIGHMAG	600	60	0.11			1	1	1	1	13	2100	2	10.50	1
20	1:RC-12-500 HIGHMAG	600	60	0.40	0.04		1	1	2	1	7	2000	2	10.50	1
21	1:RC-13-500 HIGHMAG	600	60	0.04			1	1	1	1	4	1000	1	14.50	1
22	1:RC-14-500 HIGHMAG	600	60	0.05			1	0.2	4	1	4	1000	1	16.00	1
23	1:RC-15-500 HIGHMAG	470	60	1			1	1	1	1	3	1700	2	14.50	1
24	1:RC-16-500 HIGHMAG	470	60	1			1	1	1	1	3	1000	2	15.00	1
25	1:RC-17-500 HIGHMAG	500	47	0.10			1	1	1	4	3	1000	2	15.00	1

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ELEMENTS	Zn	Zn	Au	Au-Rp1	Au-Rp2	As	Ag	Sb	Bi	Cu	Pb	Ni	Mo	Cr	V
26 1:MC-18-500 HIGHMAG	620	62	0.04			1	1	1	1	9	0	1350	1	16.50	1
27 1:MC-19-500 HIGHMAG	500	74	0.06			1	1	1	1	6	4	1700	2	14.00	1
28 1:MC-20-500 HIGHMAG	640	68	1			1	1	1	1	2	6	1650	2	16.50	1
29 1:MC-21-500 HIGHMAG	720	82	0.02			1	1	1	1	6	5	1500	2	20.00	1
30 1:MC-22-500 HIGHMAG	600	56	0.01			1	0.1	1	1	4	4	1900	2	15.50	1
31 1:MC-23-500 HIGHMAG	620	50	1			1	1	2	1	0	4	1700	1	14.50	1
32 2:RC-02-500 HIGHMAG	460	74	0.02			1	1	1	1	4	3	2500	2	14.50	1
33 2:RC-03-500 HIGHMAG	600	46	0.01			1	1	1	1	5	3	2100	2	17.50	1
34 2:RC-05-500 HIGHMAG	470	35	0.02			1	1	2	1	8	2	2150	2	18.00	1
35 2:RC-06-500 HIGHMAG	700	58	1			1	1	1	1	6	1	2650	6	26.50	1
36 2:RC-08-500 HIGHMAG	600	112	1			1	1	3	1	11	1	3600	4	19.00	1
37 2:RC-09-500 HIGHMAG	600	36	1			1	1	1	1	6	1	2100	4	22.00	1
38 2:RC-10-500 HIGHMAG	700	66	1			1	1	1	1	6	1	1750	4	21.00	1
39 2:RC-11-500 HIGHMAG	820	36	1			1	1	1	1	6	1	2200	4	24.50	1
40 2:RC-12-500 HIGHMAG	700	60	0.02			1	1	1	1	9	1	2450	2	27.00	1
41 2:RC-13-500 HIGHMAG	740	36	0.02			1	1	1	1	7	1	2450	2	20.50	1
42 2:MC-01-500 HIGHMAG	160	46	0.02			1	1	1	1	5	3	400	4	2.20	2
43 2:MC-02-500 HIGHMAG	140	58	1			1	1	1	1	5	4	500	4	2.45	2
44 2:MC-03-500 HIGHMAG	100	135	0.06			1	1	1	1	10	12	700	8	3.40	2
45 2:MC-05-500 HIGHMAG	205	86	1			1	1	1	1	20	33	920	20	3.80	2
46 2:MC-06-500 HIGHMAG	205	74	1			1	1	1	1	9	20	1120	8	3.60	1
47 2:MC-08-500 HIGHMAG	250	68	0.05			1	1	1	1	5	9	1100	4	4.40	1
48 2:MC-09-500 HIGHMAG	180	60	1			1	1	1	1	4	7	920	4	3.50	1
49 2:MC-10-500 HIGHMAG	235	66	0.01			1	1	1	1	4	15	1250	6	6.70	1
50 2:MC-11-500 HIGHMAG	540	70	0.01			1	1	1	1	3	10	1450	4	14.50	1
51 2:MC-12-500 HIGHMAG	600	02	1			1	1	1	1	3	8	1550	2	15.50	1
52 2:MC-13-500 HIGHMAG	640	56	0.01			1	1	1	1	2	4	1600	2	16.50	1
53 2:MC-14-500 HIGHMAG	600	54	0.02			1	1	1	1	4	4	1550	2	18.00	1
54 2:MC-15-500 HIGHMAG	430	56	1			1	1	1	1	9	2	1400	4	14.50	1
55 2:MC-16-500 HIGHMAG	430	64	0.02			1	1	1	1	5	3	1600	4	13.50	1
56 2:MC-17-500 HIGHMAG	280	56	1			1	1	3	1	4	3	1040	2	8.60	1
57 2:MC-18-500 HIGHMAG	500	60	0.07			1	1	1	1	7	6	1000	4	18.00	1
58 2:MC-19-500 HIGHMAG	400	56	0.01			1	1	2	1	3	6	1300	4	16.00	1
59 2:MC-20-500 HIGHMAG	500	66	0.01			1	1	1	1	2	6	1100	2	17.00	1
60 2:MC-21-500 HIGHMAG	600	66	0.08			1	1	1	1	3	5	1020	1	20.00	1
61 2:MC-22-500 HIGHMAG	470	64	1			1	1	1	1	3	5	1200	4	17.00	1
62 2:MC-23-500 HIGHMAG	560	62	0.01			1	1	1	1	6	5	1140	2	17.00	1
63 3:RC-02:SLINES	410	145	0.06	0.19		1	1	2	1	27	17	5400	2	5.00	1
64 3:RC-03:SLINES	440	215	0.03			1	1	1	1	31	21	6600	1	4.40	1
65 3:RC-05:SLINES	410	235	2.00	3.20		1	1	1	1	40	21	6000	1	3.20	1
66 3:RC-06:SLINES	300	215	0.22			1	1	1	1	40	27	8400	2	3.10	1
67 3:RC-08:SLINES	300	215	0.34			1	1	1	1	29	11	6600	2	3.40	1
68 3:RC-09:SLINES	450	265	0.09			1	1	1	1	27	15	5800	4	3.20	1
69 3:RC-10:SLINES	430	225	0.03			1	1	1	1	33	10	5400	2	2.40	1
70 3:RC-11:SLINES	440	230	0.13			1	1	1	1	37	8	7200	2	4.00	1

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Sample

ELEMENTS	Zn	Zn	Au	Au-Rp1	Au-Rp2	As	Ag	Sb	Bi	Cu	Pb	Bi	Mo	Cr	W
71 3:MC-1:SLIMES	450	205	0.10			1	1	1	1	32	12	7000	2	4.00	1
72 3:MC-13:SLIMES	450	150	0.50	1.55		1	1	1	1	41	26	4000	2	2.70	2
73 3:MC-01:SLIMES	175	170	1.20	1.20		1	1.3	1	1	86	92	1250	26	17.5	2
74 3:MC-02:SLIMES	760	104	0.37			1	1	1	1	90	22	2150	2	12.50	1
75 3:MC-03:SLIMES	1250	100	0.40			1	1	1	1	42	16	700	8	17.50	2
76 3:MC-05:SLIMES	1650	96	1.70	1.05		1	0.2	1	1	34	24	720	1	20.00	2
77 3:MC-06:SLIMES	1450	86	1.50	2.65	3.30	1	1	1	1	33	21	900	2	20.00	1
78 3:MC-08:SLIMES	1550	120	3.60	2.30	4.00	1	0.5	1	1	50	23	1400	4	20.50	1
79 3:MC-09:SLIMES	1200	90	1.35	1.35		1	1	1	1	40	23	1250	4	19.00	1
80 3:MC-10:SLIMES	1650	155	0.72	1.25		1	1	1	1	47	22	2000	2	19.00	1
81 3:MC-11:SLIMES	1100	120	1.20	1.04		1	1	1	1	47	21	2350	4	12.50	1
82 3:MC-12:SLIMES	800	120	0.12			1	1	1	1	40	22	2600	2	0.40	1
83 3:MC-13:SLIMES	410	100	0.10			1	1	1	1	27	12	2750	1	6.40	1
84 3:MC-14:SLIMES	360	110	0.41			1	1	1	1	22	15	2600	1	4.10	1
85 3:MC-15:SLIMES	300	84	0.50	0.62		1	1	1	1	15	8	2350	2	3.00	1
86 3:MC-16:SLIMES	310	92	0.37			1	1	1	1	22	12	2100	2	4.30	1
87 3:MC-17:SLIMES	300	100	0.16			1	1	1	1	35	25	2000	4	5.60	1
88 3:MC-18:SLIMES	400	112	0.14			1	1	1	1	72	42	2150	4	0.20	1
89 3:MC-19:SLIMES	600	104	0.60	1.00		1	1	1	1	40	22	2350	2	0.60	1
90 3:MC-20:SLIMES	600	96	4.00	9.60	14.50	1	0.5	1	1	29	24	2000	2	0.40	1
91 3:MC-21:SLIMES	440	100	0.74	0.54		1	0.1	1	1	29	25	2550	4	7.40	1
92 3:MC-22:SLIMES	860	80	0.70	0.70		1	0.1	1	1	28	15	1950	2	15.50	1
93 Ch.000113:MC-02-500 HIGH	620	56	0.07			1	1	1	1	4	4	2750	1	15.50	1
94 Ch.002811:MC-16-500 HIGH	600	50	0.02			1	1	1	1	6	8	1350	1	10.00	1
95 Ch.005112:MC-12-500 HIGH	620	60	0.01			1	1	1	1	3	8	1450	2	16.50	1
96 Ch.007613:MC-05:SLIMES	1550	100	1.10			1	0.2	1	1	36	26	700	1	25.50	2
97 STD 1:6519	230	420	0.13			105	4.9	12	2400	610	300	40	8	0.60	
98 STD 2:W50															60

PLEASE NOTE: COARSE REJECTS AND PULPS WILL BE STORED FOR 60 DAYS WITHOUT CHARGE. AFTER THIS PERIOD ALL COARSE REJECTS WILL BE DISCARDED AND PULPS STORED AT A RATE OF \$25/cubic metre/month FOR A MAXIMUM OF 12 MONTHS, UNLESS OTHERWISE ADVISED IN WRITING

GENALYSIS LABORATORY SERVICES PTY. LTD.

LABORATORY REPORT

2 DAVISON ST. MADDINGTON, W.A. 6109. P.O. BOX 144 BOSNELLS W.A. 6110
 TELEPHONE (09) 459 2272, 459 4343. TELEX 019 96166

KALGOORLIE SAMPLE PREPARATION DIVISION 241 DUGAN ST. KALGOORLIE W.A. 6430
 F.O. BOX 388 KALGOORLIE W.A. 6430 TELEPHONE (090) 21 6057

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JOB INFORMATION

JOB CODE : 218.0/861729
 NO. SAMPLES : 53
 ELEMENTS : 7
 CLIENT O/N : VERBAL
 DATE RECEIVED : 20/08/1986
 DATE COMPLETED : 16/09/1986

LEGEND

X = LESS THAN STATED DETECTION LIMIT
 N/L = SAMPLE NOT LOCATED
 * = RESULT HAS BEEN CHECKED
 () = RESULT STILL TO COME
 I/S = INSUFFICIENT SAMPLE FOR ANALYSIS

COMMENTS : ATTENTION : L. KILLIGREW....
 COMMENTS : HEVMIN....

SAMPLE INFORMATION

ELEMENTS	Au	Pt	Pd	Rh	Ru	Ir	Ag
UNITS	ppb	ppb	ppb	ppb	ppb	ppb	ppm
DETECTION	2	0.5	0.5	0.5	0.5	0.5	1
METHOD	B2/AAS	B2/AAS	B2/AAS	B2/AAS	B2/AAS	B2/AAS	C/AAS

SAMPLE NUMBERS

1	1:RC-08-500	LOWMAGS	330	1800.0	7.0	280.0	6500.0	28000	X
2	1:WC-02-500	LOWMAGS	72	580.0	1.0	70.0	1100.0	5700.0	X
3	1:WC-06-500	LOWMAGS	140	46.0	1.0	21.0	480.0	1900.0	X
4	1:WC-11-500	LOWMAGS	26	400.0	2.5	25.0	270.0	2100.0	X
5	1:WC-14-500	LOWMAGS	390	190.0	1.0	31.0	740.0	6500.0	X

6	1:WC-15-500	LOWMAGS	290	580.0	1.0	36.0	660.0	5400.0	X
7	1:WC-16-500	LOWMAGS	350	2600.0	1.5	86.0	1500.0	8200.0	X
8	1:WC-19-500	LOWMAGS	180	310.0	1.5	51.0	1400.0	8300.0	X
9	1:WC-20-500	LOWMAGS	4	470.0	1.0	62.0	1400.0	6700.0	X
10	1:WC-21-500	LOWMAGS	4	200.0	1.5	15.0	230.0	1000.0	X

11	1:WC-22-500	LOWMAGS	22	1300.0	1.5	140.0	2700.0	14000	X
12	1:WC-23-500	LOWMAGS	270	2300.0	1.5	250.0	5800.0	35000	X
13	2:RC-08-500	MEDMAGS	56	30.0	4.0	13.0	230.0	650.0	X
14	2:WC-02-500	MEDMAGS	64	7.0	1.0	3.0	34.0	110.0	X
15	2:WC-06-500	MEDMAGS	12	3.0	X	2.0	28.0	44.0	X

16	2:WC-11-500	MEDMAGS	4	250.0	1.0	26.0	280.0	2000.0	X
17	2:WC-14-500	MEDMAGS	24	4.5	3.0	3.5	34.0	46.0	X
18	2:WC-15-500	MEDMAGS	220	6.5	1.5	4.0	43.0	61.0	X
19	2:WC-16-500	MEDMAGS	86	9.0	2.0	5.5	65.0	100.0	X
20	2:WC-19-500	MEDMAGS	18	5.5	1.0	3.5	38.0	52.0	X

21	2:WC-20-500	MEDMAGS	110	18.0	2.5	6.0	61.0	91.0	X
22	2:WC-21-500	MEDMAGS	24	3900.0	2.5	46.0	85.0	540.0	X
23	2:WC-22-500	MEDMAGS	2	8.0	1.0	4.0	41.0	59.0	X
24	2:WC-23-500	MEDMAGS	66	17.0	1.0	3.5	50.0	280.0	X
25	3:RC-08+500	LOWMAGS	62	110.0	3.0	19.0	480.0	3400.0	X

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ELEMENTS			Au	Pt	Pd	Rh	Ru	Ir	Ag
26	3:WC-02+500	LOWMAGS	30	38.0	0.5	6.0	120.0	560.0	X
27	3:WC-06+500	LOWMAGS	26	4.0	1.5	2.5	24.0	33.0	X
28	3:WC-11+500	LOWMAGS	14	38.0	1.0	8.0	93.0	360.0	X
29	3:WC-14+500	LOWMAGS	60	72.0	0.5	17.0	580.0	1800.0	X
30	3:WC-15+500	LOWMAGS	14	13.0	1.0	3.0	26.0	32.0	X

31	3:WC-16+500	LOWMAGS	54	5.0	X	2.0	22.0	74.0	X
32	3:WC-19+500	LOWMAGS	10	280.0	X	21.0	430.0	3600.0	X
33	3:WC-20+500	LOWMAGS	100	14.0	1.5	5.5	74.0	270.0	X
34	3:WC-21+500	LOWMAGS	8	5.0	X	2.5	28.0	56.0	X
35	3:WC-22+500	LOWMAGS	120	780.0	1.0	42.0	770.0	3400.0	X

36	3:WC-23+500	LOWMAGS	4	410.0	1.0	45.0	1100.0	7200.0	X
37	4:RC-08+500	MEDMAGS	6	6.5	0.5	4.0	39.0	88.0	X
38	4:WC-02+500	MEDMAGS	4	16.0	X	3.0	26.0	38.0	X
39	4:WC-06+500	MEDMAGS	4	150.0	X	17.0	150.0	970.0	X
40	4:WC-11+500	MEDMAGS	6	14.0	1.0	3.0	23.0	29.0	X

41	4:WC-14+500	MEDMAGS	4	15.0	0.5	3.0	26.0	28.0	X
42	4:WC-15+500	MEDMAGS	8	16.0	0.5	3.5	30.0	36.0	X
43	4:WC-16+500	MEDMAGS	6	16.0	1.5	3.0	28.0	31.0	X
44	4:WC-19+500	MEDMAGS	4	42.0	1.5	8.5	160.0	1100.0	X
45	4:WC-20+500	MEDMAGS	X	6.5	X	2.5	28.0	65.0	X

46	4:WC-21+500	MEDMAGS	6	1000.0	1.5	14.0	120.0	500.0	X
47	4:WC-22+500	MEDMAGS	60	560.0	1.0	28.0	600.0	5300.0	X
48	4:WC-23+500	MEDMAGS	36	20.0	1.5	6.0	54.0	180.0	X
49	Ch. 0002 (1:WC-02-500 LOWM)		68	100.0	1.0	20.0	470.0	3900.0	X
50	Ch. 0026 (3:WC-02+500 LOWM)		22	10.0	1.5	3.0	42.0	180.0	X

51	STD 1:M3								14
52	STD 2:099			200.0	160.0				
53	STD 3:MR1		210						

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GENALYSIS LABORATORY SERVICES PTY. LTD.

LABORATORY REPORT

2 DAVISON ST. MADDINGTON, W.A. 5109. TEL: (08) 9434 1111. FAX: (08) 9434 1112.
 TELEPHONE: (08) 9434 1111. TELETYPE: (08) 9434 1111. TELEFAX: (08) 9434 1112.

CALCROSS LTD. SAMPLE PREPARATION DIVISION. 241 IRIBAN ST. CALCROSS W.A. 5109.
 TELEPHONE: (08) 9434 1111. TELEFAX: (08) 9434 1112.

JOB INFORMATION

JOB NO: 218.0/861728
 NO. SAMPLES: 25
 ELEMENTS: 7
 CLIENT: VERBAL
 DATE RECEIVED: 19/03/86
 DATE REPORTED: 01/04/86

LEGEND

- X = LESS THAN DETECTION LIMIT
- N = SAMPLE NOT RECEIVED
- *
- RESULTS UNOBTAINABLE
- RESULTS STILL TO BE OBTAINED
- INSUFFICIENT SAMPLE FOR ANALYSIS

COMMENT: REAGENT FOR 11. FIELDGROW...
 COMMENT: REAGENT FOR 11.

SAMPLE INFORMATION

ELEMENT	Ag	Au	Pt	Pd	Rh	Ru	Ir
UNITS	ppb						
DETECTABLE	1	0.5	0.5	0.5	0.1	0.5	0.1
METHOD	17/AAS	B2/AAS	B2/AAS	B2/AAS	B2/AAS	B2/AAS	B2/AAS

SAMPLE NUMBERS

1	1:RC-01-500	LOWMAGS	X	78	150.0	X	41.0	1000.0	4700.0
2	1:RC-05-500	LOWMAGS	X	1100	290.0	1.5	62.0	1600.0	8200.0
3	1:RC-13-500	LOWMAGS	X	670	2700.0	1.0	540.0	1.40%	7.00%
4	1:WC-05-500	LOWMAGS	X	14	64.0	0.5	15.0	290.0	1300.0
5	1:WC-08-500	LOWMAGS	X	150	100.0	X	34.0	850.0	1900.0
6	1:WC-09-500	LOWMAGS	X	50	1700.0	1.0	71.0	900.0	2900.0
7	1:WC-10-500	LOWMAGS	X	20	58.0	1.0	16.0	310.0	1600.0
8	1:WC-13-500	LOWMAGS	X	280	350.0	X	61.0	1500.0	5500.0
9	2:RC-02-500	MEDMAGS	X	28	20.0	1.5	7.5	130.0	320.0
10	2:RC-05-500	MEDMAGS	X	10	7500.0	1.0	4.0	49.0	81.0
11	2:RC-13-500	MEDMAGS	X	60	85.0	X	23.0	530.0	1900.0
12	2:WC-05-500	MEDMAGS	X	8	62.0	X	4.0	40.0	54.0
13	2:WC-08-500	MEDMAGS	X	16	40.0	X	5.0	52.0	64.0
14	2:WC-09-500	MEDMAGS	X	15	30.0	1.0	8.5	170.0	500.0
15	2:WC-10-500	MEDMAGS	X	0	5.0	1.5	3.5	40.0	110.0
16	2:WC-13-500	MEDMAGS	X	40	6.0	X	4.0	42.0	40.0
17	3:RC-02+500	LOWMAGS	X	4	100.0	X	5.5	110.0	490.0
18	3:RC-05+500	LOWMAGS	X	2	3.0	X	4.0	38.0	39.0
19	3:RC-13+500	LOWMAGS	X	20	1800.0	X	170.0	3400.0	2.10%
20	3:WC-05+500	LOWMAGS	X	4	3.5	X	3.5	35.0	38.0
21	3:WC-08+500	LOWMAGS	X	4	1600.0	16.0	40.0	310.0	1100.0
22	3:WC-09+500	LOWMAGS	X	10	17.0	X	4.0	57.0	180.0
23	3:WC-10+500	LOWMAGS	X	16	5.0	1.0	3.5	24.0	35.0
24	3:WC-13+500	LOWMAGS	X	7	6.0	X	5.5	32.0	40.0

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ELEMENT		Ag	Au	Pt	Pd	Rh	Ru	Ir
26	4:1W 0.10000 MEDMAGN	X		5.0	0.0	3.0	4.0	10.0
27	4:1R 0.10000 MEDMAGN	X		210.0	X	61.0	1000.0	4500.0
28	3:1W 0.10000 MEDMAGN	X		4.0	X	15.0	20.0	45.0
29	4:1W 0.05000 MEDMAGN	X		9.5	X	4.0	40.0	30.0
30	4:1W 0.10000 MEDMAGN	X		14.0	0.0	5.0	20.0	0.0
31	4:1W 0.10000 MEDMAGN	X	14	17.0	X	4.0	5.0	21.0
32	4:1W 0.10000 MEDMAGN	X	16	13.0	X	4.0	10.0	30.0
33	CH. 00000000000000000000	X		150.0	X	40.0	1000.0	1600.0
34	CH. 00000000000000000000	X	18	5.0	0.5	3.5	10.0	40.0
35	010 0.01		20					

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PLEASE NOTE: COINAGE, MEDALS AND BUZZERS WILL BE STORED FREE OF CHARGE FOR 90 DAYS WITHOUT CHARGE. ITEMS NOT RETURNED TO THE ISSUING AGENCY WILL BE DISCARDED. THIS POLICY APPLIES TO ALL ITEMS OF THE FOLLOWING CATEGORIES: MEDALS, BUZZERS, COINAGE, AND BUZZERS. FOR A MAXIMUM OF 12 MONTHS. ITEMS NOT RETURNED TO THE ISSUING AGENCY WILL BE DISCARDED.

693178

GENALYSIS LABORATORY SERVICES PTY. LTD.
LABORATORY REPORT

2 DAVISON ST. MADDINGTON, W.A. 6109. P.O. BOX 144 GOSNELLS W.A. 6110
TELEPHONE (09) 459 2272, 459 4345 TELEX GLS 96166

KALGOORLIE SAMPLE PREPARATION DIVISION 241 DUGAN ST. KALGOORLIE W.A. 6410
P.O. BOX 388 KALGOORLIE W.A. 6430 TELEPHONE (090) 21 6057

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JOB INFORMATION

JOB CODE : 218.0/861681
NO. SAMPLES : 47
ELEMENTS : 9
CLIENT O/N : VERBAL
DATE RECEIVED : 15/08/1986
DATE COMPLETED : 03/09/1986

LEGEND

X = LESS THAN STATED DETECTION LIMIT
NYL = SAMPLE NOT LOCATED
* = RESULT HAS BEEN CHECKED
() = RESULT STILL TO COME
1/S = INSUFFICIENT SAMPLE FOR ANALYSIS

COMMENTS : ATTENTION : L. KILLIGREW....
COMMENTS : HEVMIN....

SAMPLE INFORMATION

ELEMENTS		Au	Ag	Pt	Pd	Rh	Ru	Ir	Os	Au
UNITS		ppm	ppm	ppb						
DETECTION		0.01	0.1	0.5	0.5	0.5	0.5	0.5	0.5	2
METHOD		B/AAS	B/AAS	B2/AAS						
SAMPLE NUMBERS										
1	1:RC-03:-500 LOWMAG	0.02	X	340.0	1.5	77.5	1900.0	12000	11000	60
2	1:RC-06:-500 LOWMAG	0.34	X	950.0	1.0	130.0	3200.0	22000	28000	250
3	1:RC-09:-500 LOWMAG	0.25	X	1300.0	0.5	170.0	4500.0	25000	20000	200
4	1:RC-10:-500 LOWMAG	0.30	X	240.0	X	39.0	800.0	5500.0	5500	3400
5	1:RC-11:-500 LOWMAG	0.07	X	500.0	0.5	130.0	3600.0	18000	20000	2
6	1:RC-12:-500 LOWMAG	X	X	100.0	0.5	20.0	480.0	3100.0	2500	44
7	1:WC-01:-500 LOWMAG	0.58	X	62.5	0.5	13.0	320.0	2100.0	1450.0	1000
8	1:WC-03:-500 LOWMAG	0.21	X	47.0	0.5	21.0	775.0	2200.0	2000	46
9	1:WC-12:-500 LOWMAG	0.35	X	2200.0	1.5	140.0	2500.0	13000	7000	360
10	1:WC-17:-500 LOWMAG	0.42	X	520.0	0.5	62.5	1700.0	10000	10000	350
11	1:WC-18:-500 LOWMAG	0.03	X	92.5	X	19.0	600.0	2800.0	3.5	480
12	2:RC-03:-500 MEDMAG	X	X	6.0	3.0	5.0	52.0	120.0	180.0	12
13	2:RC-06:-500 MEDMAG	X	X	75.0	5.5	24.0	97.5	280.0	430.0	36
14	2:RC-09:-500 MEDMAG	0.03	X	3.5	4.5	4.0	42.0	56.0	80.0	100
15	2:RC-10:-500 MEDMAG	X	X	9.0	1.0	5.0	50.0	57.0	92.5	36
16	2:RC-11:-500 MEDMAG	X	X	7.0	1.5	4.0	47.0	170.0	250.0	68
17	2:RC-12:-500 MEDMAG	X	X	10.0	1.0	6.0	70.0	140.0	280.0	390
18	2:WC-01:-500 MEDMAG	0.04	X	13.0	0.5	2.5	28.0	29.0	43.0	56
19	2:WC-03:-500 MEDMAG	0.08	X	27.0	4.0	9.0	190.0	270.0	65.0	12
20	2:WC-12:-500 MEDMAG	0.03	X	700.0	1.5	47.0	900.0	2900.0	5000	14
21	2:WC-17:-500 MEDMAG	0.29	X	3.0	0.5	2.0	44.0	110.0	140.0	228
22	2:WC-18:-500 MEDMAG	X	X	12.0	39.0	2.5	23.0	27.0	46.0	24
23	3:RC-03:+500 LOWMAG	X	X	530.0	0.5	50.0	1300.0	10000	10000	4
24	3:RC-06:+500 LOWMAG	0.06	X	775.0	1.0	60.0	925.0	7250.0	3000	42
25	3:RC-09:+500 LOWMAG	Y	Y	85.0	0.5	9.0	120.0	650.0	580.0	10

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ELEMENTS		Au	Ag	Pt	Pd	Rh	Ru	Ir	Os	Au
26	3: RC-10: +500 LOWMAG	X	X	95.0	1.5	26.0	210.0	950.0	925.0	2
27	3: RC-11: +500 LOWMAG	X	X	54.0	X	19.0	380.0	1500.0	2500	6
28	3: RC-12: +500 LOWMAG	X	X	65.0	0.5	16.0	540.0	3800.0	4500	4
29	3: WC-01: +500 LOWMAG	X	X	350.0	1.0	36.0	1000.0	7500.0	3000	12
30	3: WC-07: +500 LOWMAG	X	X	0.5	1.5	3.5	46.0	40.0	125.0	8
31	3: WC-12: +500 LOWMAG	X	X	190.0	1.0	24.0	290.0	1900.0	1400.0	6
32	3: WC-17: +500 LOWMAG	X	X	3.5	1.0	4.0	48.0	75.0	132.5	26
33	3: WC-18: +500 LOWMAG	X	X	220.0	1.0	32.0	440.0	3100.0	3500	6
34	4: RC-03: +500 MEDMAG	X	X	235.0	1.0	7.0	72.5	90.0	250.0	16
35	4: RC-06: +500 MEDMAG	X	X	460.0	1.5	72.5	800.0	5000.0	5000	28
36	4: RC-09: +500 MEDMAG	X	X	0.5	0.5	6.5	65.0	60.0	115.0	6
37	4: RC-10: +500 MEDMAG	X	X	36.0	1.0	7.0	92.5	110.0	200.0	10
38	4: RC-11: +500 MEDMAG	X	X	0.5	1.0	5.5	65.0	46.0	125.0	4
39	4: RC-12: +500 MEDMAG	X	X	2.0	1.0	5.5	57.0	52.0	95.0	14
40	4: WC-01: +500 MEDMAG	0.05	X	0.5	X	3.0	37.0	13.0	40.0	38
41	4: WC-03: +500 MEDMAG	X	X	0.5	1.0	5.5	56.0	33.0	62.5	4
42	4: WC-12: +500 MEDMAG	0.14	X	0.5	X	4.5	46.0	20.0	53.0	4
43	4: WC-17: +500 MEDMAG	X	X	0.5	1.0	4.5	48.0	23.0	53.0	60
44	4: WC-18: +500 MEDMAG	X	X	0.5	12.0	5.0	50.0	35.0	70.0	6
45	Ch. 0001 (1: RC-03: -500 LOW)	0.04	X	800.0	0.5	120.0	3100.0	14000	23000	10
46	Ch. 0026 (3: RC-10: +500 LOW)	X	X	210.0	0.5	41.0	750.0	4100.0	5000	8
47	STD 1: 6921	0.37	X							

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GENALYSIS LABORATORY SERVICES PTY. LTD.
LABORATORY REPORT

2 DAVISON ST. MADDINGTON, W.A. 6109. P.O. BOX 144 GOSNELLS W.A. 6110
 TELEPHONE (09) 459 2272, 459 4341 TELEEX GLS 96166

KALGOORLIE SAMPLE PREPARATION DIVISION 241 DUGAN ST. KALGOORLIE W.A. 6430
 P.O. BOX 388 KALGOORLIE W.A. 6430 TELEPHONE (090) 21 6057

100

JOB INFORMATION

JOB CODE : 218.0/B61650
 NO. SAMPLES : 15
 ELEMENTS : 7
 CLIENT O/N : VERBAL
 DATE RECEIVED : 11/08/1986
 DATE COMPLETED : 08/09/1986

LEGEND

X' = LESS THAN STATED DETECTION LIMIT
 N/L = SAMPLE NOT LOCATED
 * = RESULT HAS BEEN CHECKED
 () = RESULT STILL TO COME
 (S) = INSUFFICIENT SAMPLE FOR ANALYSIS

COMMENTS : ATTENTION : I. BILLIGREN....
 COMMENTS : EXPULP....

SAMPLE INFORMATION

ELEMENTS	Au	Pt	Pd	Rh	Ru	Ir	Os
UNITS	ppb	ppb	ppb	ppb	ppb	ppb	ppb
DETECTION	2	0.5	0.5	0.5	0.5	0.5	0.5
METHOD	FIRE	B2/AAS	B2/AAS	B2/AAS	B2/AAS	B2/AAS	B2/AAS
SAMPLE NUMBERS							
1 WR-1	8	220.0	1.5	34.0	1200.0	6200.0	7900.0
2 WR-1-DUP	20	88.0	X	38.0	950.0	4500.0	5000.0
3 WR-2	6	760.0	1.0	100.0	2400.0	12000	12000
4 WR-2-DUP	30	500.0	7.5	130.0	2600.0	12000	12000
5 WR-2	34	2400.0	0.5	110.0	2300.0	13000	9800.0

6 WR-3-DUP	10	2900.0	0.5	310.0	8200.0	42000	36000
7 WR-4	8	7.0	1.0	2.5	31.0	54.0	45.0
8 WR-4-DUP	4	X	X	3.5	34.0	32.0	30.0
9 WR-5	6	17.0	1.5	7.0	98.0	700.0	740.0
10 WR-5-DUP	4	37.0	1.5	19.0	370.0	1200.0	1500.0

11 WR-6	34	2100.0	0.5	100.0	2700.0	14000	13000
12 WR-6-DUP	20	230.0	0.5	110.0	3000.0	13000	12000
13 Ch. 0001 (WR-1)							
14 STD 1:MR1	210						
15 STD 2:099		190.0	160.0				

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GENALYSIS LABORATORY SERVICES PTY. LTD.
LABORATORY REPORT

2 DAVIDSON ST. MADDINGTON, W.A. 6109. P.O. BOX 144 GOSNELLS W.A. 6110
 TELEPHONE (09) 459 2272, 459 4341. TELEX GLS 96166

KALGOORLIE SAMPLE PREPARATION DIVISION 24 DUGAN ST. KALGOORLIE W.A. 6430
 P.O. BOX 388 KALGOORLIE W.A. 6430 TELEPHONE (090) 21 6057

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JOB INFORMATION

JOB CODE : 218.0/861650
 NO. SAMPLES : 15
 ELEMENTS : 7
 CLIENT D/N : VERBAL
 DATE RECEIVED : 11/08/1986
 DATE COMPLETED : 08/09/1986

LEGEND

X : LESS THAN STATED DETECTION LIMIT
 N/L : SAMPLE NOT LOCATED
 * : RESULT HAS BEEN CHECKED
 () : RESULT STILL TO COME
 I/S : INSUFFICIENT SAMPLE FOR ANALYSIS

COMMENTS : ATTENTION : L. HILLIGREN....
 COMMENTS : EXPULP....

SAMPLE INFORMATION

ELEMENTS	Au	Pt	Pd	Rh	Ru	Ir	Os
UNITS	ppb	ppb	ppb	ppb	ppb	ppb	ppb
DETECTION	2	0.5	0.5	0.5	0.5	0.5	0.5
METHOD	FIRE	B2/AAS	B2/AAS	B2/AAS	B2/AAS	B2/AAS	B2/AAS
SAMPLE NUMBERS							
1 WR-1	8	220.0	1.5	34.0	1200.0	6200.0	7900.0
2 WR-1-DUP	20	88.0	X	38.0	950.0	4500.0	5000.0
3 WR-2	6	760.0	1.0	100.0	2400.0	12000	12000
4 WR-2-DUP	30	500.0	7.5	130.0	2600.0	12000	12000
5 WR-3	34	2400.0	0.5	110.0	2300.0	13000	9800.0
6 WR-3-DUP	10	2900.0	0.5	310.0	8200.0	42000	36000
7 WR-4	8	7.0	1.0	2.5	31.0	54.0	45.0
8 WR-4-DUP	4	X	X	3.5	34.0	32.0	30.0
9 WR-5	6	17.0	1.5	7.0	98.0	700.0	740.0
10 WR-5-DUP	4	37.0	1.5	19.0	370.0	1200.0	1500.0
11 WR-6	34	2100.0	0.5	100.0	2700.0	14000	13000
12 WR-6-DUP	20	230.0	0.5	110.0	3000.0	13000	12000
13 Ch. 0001 (WR-1)							
14 STD 1:MR1	210						
15 STD 2:099		190.0	160.0				

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