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TASMANIA MINES LIMITED

EXPLORATION LICENCE 17/68

ANNUAL REPORT

NOVEMBER 4TH 1985 -
NOVEMBER 3RD 1986

# TASMANIA MINES LIMITED

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## NOVEMBER 4TH 1985 TO NOVEMBER 3RD 1986

C.H. WHITEHEAD

for and on behalf of
TASMANIA MINES LIMITED

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# EXPLORATION LICENCE 17/68 - TASMANIA MINES LIMITED

## ANNUAL REPORT
## PERIOD 4TH NOVEMBER, 1985 TO 3RD NOVEMBER, 1986

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# E.L. 17/68 ANNUAL REPORT 1985-1986
# PERIOD 4TH NOVEMBER, 1985 TO 3RD NOVEMBER, 1986

## 1. INTRODUCTION AND SUMMARY

The following report provides details of the nature and results of exploration work, undertaken and completed within Exploration Licence 17/68 during the 12 months period ending November 3rd, 1986.

Exploration work has been continuous since mid November 1985, with activities designed at completing an overall evaluation of the mineral potential within the licence area. Particular emphasis was placed upon investigating the potential of tungsten, magnetite and wollastonite.

Work programmes were primarily two fold in nature, namely, surface exploration surveys or drilling programmes. Plan No.1/86 shows the specific location of the areas, prospects and regions worked during the period in question.

A total exploration expenditure of $154,503 was incurred during the 12 months ending June 30th, 1986, and a further $50,794 to the period ending 22nd October, 1986.

In summary, the results of exploration have been extremely encouraging - the most significant being:-

- identifying a new area of tungsten mineralisation by exploratory drilling. The area in question occurs along the eastern limb of the Kara synform structure between the previously recognised skarn zones of Location L.5 and the Eastern Ridge.

- two of the three surface or near surface magnetite skarns (Kara South and Eastern Ridge) have with evaluation drilling resulted in additional reserves of scheelite bearing ore which could be extracted by open-pit mining methods.

- a new magnetite skarn zone was identified and examined by diamond drilling at the Kara No.2 Main Skarn Zone.

- surface exploration surveys, both of a localised and regional nature, were completed as planned. Work at both Location L.1, and in the region between Location L.5 and Eastern Ridge, was of sufficient promise to justify recommending additional work in the form of drilling.

Work completed during the present year assisted the evaluation of areas of good economic potential to qualify for conversion to mineral leases. Additionally six mineral leases peripheral to the existing Consolidated Lease 105M/77, and encompassing 469 hectares, have now been demarcated, and will in the immediate future be the subject of M.L. application.

## 2. NATURE OF WORK

During the current term of E.L. 17/68, exploration investigations were initiated in mid December, 1985. Although investigations primarily revolved around an assessment of tungsten potential, additional work has also been directed at further evaluating the possible economic potential of known magnetite and wollastonite deposits within the E.L. area.

The nature of the tungsten exploration work has been as follows:-

- Surface exploration activities, either of a localised or regional nature. Three locations and two regions were investigated. The type of work completed included a combination of geological mapping, geochemical (soil, rock, pan concentrate) and ground magnetic surveys, with the intention of reaching a stage to evaluate the need for possible subsurface (drilling) activities.

- Drilling Programmes:

Either:
- Exploratory Drilling, the objective being to investigate the tungsten potential of partially delineated or suspected zones of magnetite skarn buried beneath Tertiary cover.

- Evaluation Drilling, to be undertaken at known near surface scheelite bearing skarn zones to evaluate their tonnage/grade qualifications, and possible open pit mining potential.

The above surface exploration work was completed on a contract basis, hiring two exploration field crews and supervising geologist. Drilling programmes were completed by utlising the Tasmania Mines Limited Joy Sullivan diamond drill rig and crew, again supervised by a contract geologist.

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## 3. SURFACE EXPLORATION WORK
## 3A - LOCALISED SURVEYS

### 3A.1 - Kara No.2 Main Skarn

During the current term, an overall exploration appraisal of the Kara No.2 Main Skarn Zone, together with its bordering granite/greisenous contacts, has been completed.

Primary objectives were:-

- to evaluate the potential of the skarn as a possible source of high grade unoxidised magnetite material.

- an investigation of the tin content of the skarn zone.

- an assessment of the possible tin and/or tungsten potential of greisenous zones in the N.W. sections of the area.

Work completed consisted of:-

- a review of all previous field data, reports, plans etc.
  ie. Department of Mines, Anzeco, McIntyre Mines, Tasminex N.L. and Savage River.

- establishing a field grid system over an area encompassing the Kara No. 2 Skarn Zone and its surrounding environs. This area was approximately 1,100m by 250m in size, with a base line established in a south direction, and E - W transverse lines spaced at 50 metre intervals.

- delineating the skarn zone.

- completing a detailed ground magnetic survey, readings being taken at 5m intervals along all E - W traverse lines.

- geochemical pan concentrate sampling of the regions drainage in and around the N, N.E and N.W sections of the main skarn.

- soil sampling the western contact of the granite/skarn and greisenous zones.

- trenching and systematic sampling along the western margin of the skarns. (Traverse Lines 4S, 4N and 10N)

- diamond drilling in the south - central sections of the skarn - two holes DDH 505 and 506 of 72.40 and 82.30 metres respectively.

Results of exploration work:

i) The results of previously completed (1964) Mines Department ground magnetic surveys at Kara No. 2 (please refer to Plan No.2A/86) indicated the presence of a number (6) of magnetic anomalies. The current magnetic survey, completed systemati-

cally and in more detail, showed significant differences to the Mines Department interpretations and format of magnetic 'highs' (see Plan 2B/86). More significantly, a new strongly developed magnetic 'high' was delineated to the south of the area covered by the Mines Department survey.

This 'high' encompasses an area of approximately 200 x 150m size, and was covered by a swampy, button grass plain. As will be shown in Section 4B.1 of this report, the area has subsequently been investigated by two diamond drill holes, DDH's 505 and 506, which proved the presence of underlying high grade magnetite skarn. Subsequent assays showed a lack of any associated tin, tungsten or base-metal mineralisation or anomalism. (see Appendix No.1 - drill logs/assay sheets DDH's 505/506).

ii) Pan concentrate sampling in and around the Kara No. 2 skarn showed the presence of anomalous tin values in three areas, namely, (please refer to Plan 2C/86 and Appendix No. 2C).

- along the WNW margin of the granite skarn,

- along the western margin of the recently delineated ground magnetic high in the south-central section of the skarn,

- within an alluvial area NE of Kara No. 2, this area was subjected to more follow-up pan concentrate sampling, which showed it to be too small and of too shallow a nature to be worth further consideration.

iii) Trench sampling of the western margin (Plan No.2A/86) of the skarn immediately bordering (10-12m) the granite, revealed a narrow (3-5m) zone of skarn with anomalous associated tin content (maximum value 8,000ppm Sn). Please refer to Appendix No.2A. Only low to negative tungsten anomalism (Appendix No.2B) was found to be present within the overall magnetite skarn zone. Low order scheelite counts (ultra-violet lamping) were only observable in the extreme margins of the granite bordering the skarn (western contact).

### 3A.2. Horizontal Creek Area

This area is located east of Bobs Bonanza skarn, and open pit mine area, and extends as far north as the Eastern Ridge grid.

The total area covered by surface exploration grid surveys, approximates 1,100m by 450m size - please refer to Plan No. 3A/86.

The objectives of the investigations were to:-

- investigate in more detail the unexplained source of scheelite grain counts from the previous reconnaissance pan concentrate sampling of the Horizontal Creek drainage.

- assess the possible potential of two narrow skarn zones identified in the southern sections of the area.

- investigate the possibility of northerly strike extensions of these skarn zones.

Exploration work completed in the area included:-
(Please refer to Plan No.3A/86)

- cutting E - W traverse lines across the entire area. These lines were spaced at 50 metre intervals.

- completing a ground magnetic survey (readings at 5 metre intervals) and geological observations over the gridded area.

- complete a detailed pan concentrate sampling programme of all available drainage patterns.

- undertake U.V. lamping of the Horizontal Creek drainage channel.

- finalise a topographical survey, and tie in with previous Eastern Ridge and Bobs Bonanza base topographical plans.

- complete shallow diamond drilling - five holes, DDH 500 to DDH 504, total drilled metres - 116.50m (please refer to Plan 3B/86 and 3C/86).

Results of Investigations

Overall results of work in the area could be classified as disappointing.

Scheelite dispersed in the Horizontal Creek drainage (Appendix No.3A) now appears to be shed from the granite eastern contact which follows the main N - S creek of the area. However, subsequent U.V. lamping failed to confirm the presence of scheelite in any exposed granite exposures.

The isolated skarn zones to the south of the area showed no associated tin or tungsten anomalism, nor did they show any strike extension to the north.

Diamond drilling (DDH 500 to 504) provided more accurate information (see plan 3B/86) re the extent and nature of the eastern contact of Bobs Bonanza skarn zone. The bordering granite appeared more discordant in nature than previously anticipated, and the extent and quality of the magnetite material in the skarn was disappointing.

In conclusion, the area is evaluated as having little additional economic potential, and the location is one which could be considered as a potential overburden/waste dump site for the nearby Kara No.1 mine operation.

### 3A.3 Location L.1

This is a partially exposed magnetite skarn zone located in the extreme N.E. corner of the E.L. licence area bordering the main Housetop granite intrusive (Plan No.1/86).

The prime objective of surface exploration work was to reach a 'decision stage' as to whether the skarn was considered to have mineralised potential, and if subsurface drilling would be justified at any later date.

Surface work completed included the following:-

a) Grid establishment, N - S traverse lines established at 25m intervals.

b) Sytematic geochemical soil sampling at 10m intervals along the above traverse lines (Plan 4A/86) with the subsequent Sn, WO3, Mo and Pb analysis of these samples.

c) Follow-up additional 5m spaced geochemical soil sampling of an anomalous Sn zone delineated during the above initial geochemical work.

d) Completing a grid ground magnetic survey of the skarn zone area, readings taken at 5m stations (Plan No.4F/86).

e) Pan concentrate sampling of the skarn drainage and general random panning of skarn eluvial material.

f) Shallow reconnaissance percussion drilling (maximum depth 21m) across the south-central section of the skarn. 10 holes were completed, total meterage 81m, and 27 drill samples were analysed for WO3, Sn, Mo and Pb (see Appendix No. 4A).

The results of the work proved encouraging.

Work provided a demarcation of the extent of the skarn, and its spatial relationship with the northerly exposed granite intrusive was more accurately determined.

Systematic soil sampling revealed favourable values, up to 170ppm W, 1120ppm Sn, 165ppm Mo and 175ppm Pb.

Please refer to Plans 4B/86, 4C/86, 4D/86 and 4E/86 and Appendix No.4B for assay results for WO3, Sn, Pb and Mo respectively.

The density of sampling has been such as to provide reliable interpretations of geochemical anomaly trends and to justify subsurface investigations during the forthcoming year.

## 3B - REGIONAL SURVEYS

### 3B.1 - Location L.5 to Eastern Ridge

This prospective region extends for a strike distance of 1.4 kms between the two above mentioned skarn deposits. The region is entirely covered by Tertiary sequences, but regional geological interpretations would indicate it to coincide with the eastern limb of the Kara synform structure affecting buried metamorphic Ordovician sequences. Initial reconnaissance ground magnetic surveys showed a subtle expression of buried N - S striking magnetite skarn zones within these buried Ordovician sequences. (Plan No. 5A/86)

Exploration work carried out during the current period involved grid establishment and detailed ground magnetic surveys/topographical surveys at seven potential drill target areas along strike within the above region. This work was completed to provide a better definition/interpretation of subsurface geology, plus optimise specific locations and attitudes of drill sites and targets of buried magnetite skarn.

Seven such potential drill target areas were investigated, namely at 6600N, 6700N, 7070N, 7100N, 7250N, 7300N and 7550N. (refer Appendix 5A to 5D). According to magnetic survey interpretations, it was anticipated that at these locations, the depth of the Tertiary basalt/sediment cover would vary from between 45m and 80m thickness. The general attitude of the Ordovician sequences was interpreted as dipping west at an angle between 55 degrees and 70 degrees.

As a result of the above work/interpretations, exploratory diamond drilling was subsequently initiated at three of the above seven mentioned locations - please refer to Section 4B.2 of this report. Each proved successful in defining magnetite skarn zones, two of which contained associated tungsten mineralisation of ore grade quality.

### 3B.2 Valentines Region

Regional reconnaissance surveys were conducted and finalised over the S.S.W trenching zone of Ordovician sequences (Moina Sandstone and Transition Series) extending from the Kara South prospect to the southern border of the E.L. area.

Previous work in the area had included air photo and aeromagnetic data interpretations, and it had been decided to follow up this work with reconnaissance and detailed ground magnetic surveys, supplementing geological observations and pan concentrate geochemical sampling.

Both mapping and magnetic surveys outlined and better defined the Ordovician Transitional Series in the region, and although these were shown, where exposed, to be slightly metamorphised and altered, no associated tungsten anomalism was apparent or detected either by night U.V. lamping or the pan concentrate sampling programme - please refer to Plan 6A/86, and Appendix 6.

No further work was recommended in this area.

## 4. DRILLING PROGRAMMES

Two programmes of drilling were completed within E.L. 17/68, namely EXPLORATION (diamond drilling) and EVALUATION DRILLING (core and air track drilling).

Drill statistics for the 12 month period are summarised in Table No. 1.

### 4A. EVALUATION DRILLING

This type of drilling was completed at three locations, namely Kara South, Eastern Ridge and Bobs Bonanza. The objective was to investigate and block out tonnages of scheelite bearing ore (X, Y or F ore types) of potential open pit mining extraction.

Before drilling, it was believed that each of the above deposits could have potential for additional reserves in the order of 20,000 to 45,000 tonnes of open pit ore material. Better definition of continuity of WO3 grades within the ore lenses was a main priority of investigation.

Each of the above skarn deposits are within close proximity (minus 1.2km distance) of the new Kara No.1 processing plant.

This evaluation drilling was undertaken by remobilisation of the Tasmania Mines N.L. Joy Sullivan diamond drill rig utilising an in-house drill crew. Diamond drilling was supplemented when and if required by the utilisation of air track drills operating at the Kara No.1 mine operation.

#### 4A.1 Kara South

Objective:
To investigate by drilling the tonnage/grade potential of known surface mineralisation along the eastern flank of the Kara South deposit. The main objective of drilling was to define the extent of down dip mineralisation from surface exposures and investigation of grade variability/continuity within the ore lens.

Nature of Work:
- 78 shallow air track drill holes with a total drilled meterage

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of 593.50 metres were drilled. The holes, in general, were at 5m intervals along drill lines spaced at 15m intervals.

- Drill samples were collected at either 1.5 or 3.0m intervals.

- Total number of samples was 228, all samples being lithologically logged and assayed for WO3.

- The area was geologically mapped and a reconnaissance ungridded ground magnetic survey ran over the area in question.

- All above results were utilised in conjunction with past surface exploration observations and diamond drill programmes. (McIntyre Mines).

Ore Block Evaluation:
- Mineralised ore lenses were blocked out (cut off grade 0.2% WO3) and plotted on bench plans at 2.5m intervals, and shown on drill sections.

- Ore volumes were planimetered, and tonnage/grade calculations were made on a level x level basis, and subdivided into five separate ore blocks.
- Two separate zones of mineralisation were delineated, namely Zone A from 4285N - 4570N, and Zone B at 4410N.

- Zone A varies in width from 4.5 - 14.0m, strikes at 345 degrees and dips west at 55 - 65 degrees. Enclosing rocks are grey siltstone/quartzites (east) and sandstone (west) with the host horizon being a garnet - diopside - magnetite skarn. Magnetite content was low order (5 - 25%).

Results of Work:
Please refer to Plan No.7A and Appendix No. 7A for a full report on results of work. In summary:-

- A total of 59,039 tonnes of Y ore grading 0.437% WO3 have been calculated.

This was subdivided as follows:
- 23,463 tonnes of indicated Y ore @ 0.394% WO3
- 35,576 tonnes of measured Y ore @ 0.465% WO3

- Zone A consisted of 42,802 tonnes @ 0.461% WO3
- Zone B consisted of 16,237 tonnes @ 0.373% WO3

- On a level x level basis, Zone A mineralisation showed consistent tonnages with a slight decrease of grade with depth.

522.5 Level - 5,816 tonnes @ 0.488% WO3
520.0 Level - 11,926 tonnes @ 0.393% WO3
517.5 Level - 11,858 tonnes @ 0.561% WO3
515.0 Level - 11,874 tonnes @ 0.396% WO3
512.5 Level - 12,567 tonnes @ 0.371% WO3

Mining Aspects:
- Above tonnages would definitely be classified of open pit mining extraction.
- The maximum mining depth from surface would be 12.5m.
- The waste ore:strip ratio is approximately 0.5:1.0.

Further Possible Investigations:
- Upgrade Zone A indicated reserves to a measured category by additional infill air track drilling.
- Investigate the strike extensions of the identified Zone B mineralisation.

## 4A.2 Eastern Ridge

Evaluation drilling at this location primarily involved an examination/evaluation of the "Upper Skarn Unit" south of the East Kara Creek between Section Lines 6210N and 6293N (ie. a 83 metre strike length).

Both diamond drilling (DDH 507) and air track drilling (ER/PP/25 to ER/PP/32) was undertaken (see Plan No.8/86), and during the study, drill results were supplemented by mapping and/or trench sampling.

The results of the drilling are appended with this report (Appendix No.8A).

As a result of this work, it was evaluated that between Levels 475.0 and 492.5, a total of 43,376 tonnes of X and Y ore grading 0.449% WO3 would be readily available by low stripping ratio open pit mining.

At this stage, these reserves would be classified as INDICATED, and would be divisible into 32,393 tonnes of partially weathered ore (Y) and 10,983 tonnes of weathered (X) material.

In addition, and over the same investigated strike length, supplementary geological reserves. classified as INFERRED (39,339 tonnes) and POSSIBLE (57,120 tonnes) could also be available. However it is unlikely that they could be extracted by open pit mining methods of a low strip ratio.

The report summarising this work, namely -
"E.L. 17/68 - Evaluation Drilling - Eastern Ridge
Exploration Work, January - June 1986"
is appended with this report (Appendix No.8A).

### 4A.3 Bobs Bonanza

Core and air track drilling was completed at this location with two objectives in mind:

Eastern Skarn Zone

Shallow core drilling was completed to investigate the possible potential of low grade scheelite mineralisation, and/or high grade open pit magnetite ore reserves within the more easterly skarn zone.

Five diamond drill holes, DDH's 500 to 504, with a total drilled meterage of 116.40m, were drilled between 5670N and 5850N. Results showed (see lithological, assays logs - Appendix 3B) that the western contact of the Horizontal Creek granite body was more discordant, and nearer surface than previously interpretated, and thereby limiting potential magnetite reserves to the zone north of 5800N. South of that coordinate, the area would be regarded as a potential overburden/waste dump site.

The area south of 5670N towards the main Kara access road and new mill site was trenched and air track drilled in a reconnaissance/random fashion. Extensive weathering of the zone downgraded the skarns' potential as a source of magnetite. This area could now be utilised as a stockpile site for the Kara No.1 treatment plant.

'Mined' Skarn Zone

Air track drilling was undertaken at the southern limits of the Bobs Bonanza 'mined area'.

A total of 36 holes totalling 321 metres were completed.

Drill sites are shown on Plan No.3B/86, and drill assay records given in Appendix No.3B.

The drilling and subsequent assays showed that no down dip or strike extensions of any mineable widths of ore were apparent. No further exploration or mine geological work is proposed for this area.

## 4B - EXPLORATORY DRILLING

Exploratory drilling had been planned in the E.L. area over previously recognised surface or delineated subsurface targets of magnetite skarn which as yet remained to be tested, either for their associated tungsten, magnetite and/or other mineral potential.

Two such locations/areas were investigated by diamond drilling during the current year.

## 4B.1 - Kara No.2 Main Skarn Zone

Diamond drill holes DDH's 505 and 506 of 72.40m and 82.30m respectively, were completed over the recently delineated magnetic high anomaly located during surface exploration surveys in the south-central sections of the "Main Skarn Zones".

Drilling was undertaken on grid section line No.7S, (see Plans 2A/86 and 2B/86), the drill pad being located on swampy ground in the central portion of a button grass plain (refer Plan No.2B/86).

The holes showed a strong development of magnetite diopside skarn forming part of a shallow (50 - 60m depth) saucer shaped body resting upon the main mass of the Devonian Housetop Granite. The skarn was completely weathered to a soft massive clay, to a depth of 30m. Geochemical assays of the intersected skarn showed no significant metal anomalism.

## 4B.2 - Location L.5 to Eastern Ridge

Detailed ground magnetic surveys in the above region had accurately delineated the trend of the Ordovician Transitional Series (potential host for magnetite skarn development) buried beneath Tertiary cover (refer to preceding Section 3B.1). The surveys were also orientated in order to optimise interpretations of subsurface pre-Tertiary geological attitudes, specific drill targets and drill site geometry.

Four exploratory diamond drill holes (DDH's 508, 509, 510 and 511) were drilled (total metres drilled, 438.90m) at three of the above seven sites investigated by detailed magnetics.

DDH's 508 and 509 were collared at the drill target on Section Line 7070N.

Drill objectives were primarily threefold:-

- to prove interpretations of geology, namely, an estimated 70 to

80m cover of Tertiary basalt and sediments overlying the Ordovician Series, and in particular, the Transition Series interpreted to dip west at 55 - 70 degrees.

- to prove the Transition Series contained magnetite skarn zones, estimated to be of narrow width (5 - 10m) and of average magnetite content (30 - 40% Fe).

- to investigate possible tungsten mineralisation associated with the magnetite skarn zones.

DDH 508, of 85.90m depth 70 degrees E inclination, proved the correct interpretation of pre-Tertiary geology, and the presence of the Ordovician Transitional Series, but however, only a very poor development of magnetite skarn. Subsequently, 'specks' of scheelite were identified in partially weathered diopside skarns.

DDH 509, was collared at the same drill site location but angled more steeply (85 degrees E) to investigate the favourable host horizon at a lower depth along the border of the neighbouring granite intrusive body. E.O.H. was at 95.00m.

The results were encouraging in that the hole intersected magnetite skarn between a drill depth of 81.40m and 86.50m, and more significantly contained associated high grade scheelite mineralisation, namely:-

DDH 509 - 81.40m to 84.50m, 3.10m @ 1.10% WO3
84.50m to 86.50m, 2.00m @ 0.415% WO3

An additional drill target along the same subsurface trend in the region was investigated at 7280N, ie. 210 metres due north along strike from the above drill holes.

Drill objectives were again identical and results of DDH 510 were likewise successful. Intersected Ordovician sequences consisting of marble and skarns buried beneath approximately 100m of Tertiary basalt and sediments were shown to contain well developed magnetite and associated scheelite mineralisation. Assays of this material were as follows:-

DDH 510 - 137.50 to 139.50m, 2.0m @ 0.21% WO3
139.50 to 141.00m, 1.5m @ 0.44% WO3
141.00 to 143.50m, 2.5m @ 0.66% WO3

A third drill target in the region was sited at 6740N, north of the Eastern Ridge deposit. This attained a depth of 113.50m. intersecting magnetite skarn between 99.50m and 107.35m. Associated tungsten mineralisation was restricted to a maximum value of 1240ppm WO3 between 99.50m and 100.50m. The total depth of Tertiary material at this location was 87.70m.

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TABLE NO. 1

E.L. 17/68 - DRILLING STATISTICS 1985/86

A. DIAMOND DRILLING:

| Hole No. | Location | Depth Drilled (m) |
|---|---|---|
| DDH 500 | Bobs Bonanza - E.Skarn | 23.10 |
| 501 | " " " | 22.80 |
| 502 | " " " | 29.00 |
| 503 | " " " | 11.30 |
| 504 | " " " | 30.20 |
| DDH 505 | Kara No.2 Main Skarn | 72.40 |
| 506 | " " " | 82.30 |
| DDH 507 | Eastern Ridge | 78.70 |
| DDH 508 | L.5 to Eastern Ridge | 85.90 |
| 509 | " " " | 95.00 |
| 510 | " " " | 150.00 |
| 511 | " " " | 108.00 |
| TOTAL METRES | | 788.70 |

B. AIR TRACK DRILLING:

| | No. of Holes | Metres Drilled |
|---|---|---|
| Location L.1 | 10 | 81 |
| Eastern Ridge | 7 | 102 |
| Kara South | 78 | 593.50 |
| Bobs Bonanza | 36 | 321 |
| TOTAL | 131 | 1.097.5m |

## 5. ADDITIONAL INVESTIGATIONS

### 5A - WOLLASTONITE STUDIES

An initial assessment of known wollastonite occurrences at the LIMESTONE CREEK AREA, in the central sections of E.L. 17/68 was completed by ZETETIC - consulting economic geologists - during the period October/November 1985.

The work completed was preliminary (literature review, reconnaissance surveys/sampling), but recommendations were made that a more detailed appraisal (drilling) of the deposit was justified to assess the deposits economic viability (refer Appendix No.9A).

However, prior to this recommended drilling, it was decided to complete more thorough surface exploration work in the area. This would include geological mapping, structural interpretation and thorough sampling of all calc-silicate exposures. Although this work was initiated (mapping) in February 1986, it had to be terminated prematurely due to other priority work and lack of manpower. A reactivation of the work is planned for the 1986/87 field season.

Specific drill core samples of miscellaneous calc-silicate rock suites from various drilled skarn locations in E.L. 17/68, especially from the Location L.5 and the Kara North Magnetite Anomaly have been submitted for mineralogical and petrological examinations - the results of this work are summarised in Appendix 9B.

### 5B - MAGNETITE INVESTIGATIONS

These have been two fold:-

a) The completion of a preliminary "first phase" review and evaluation of the potential magnetite resources of the Kara (E.L. 17/68) properties. Special emphasis was placed upon assessing whether these resources would be of sufficient magnitude and quality to provide an immediate or future economic source of supply of magnetite for use as either blast furnace metallurgical iron, heavy medium magnetite (for use in the coal washery industry) or utilisation in the cement industry.

An in-house report summarising this review was completed in November, 1985, and this is included as Appendix 10.A.

b) The suitability of magnetite from various E.L. skarn zones at Kara for use as a dense heavy medium in coal preparation has been studied.

The delineation of reserves of high grade magnetite zones at potential open pit deposits of skarn on the Kara Properities has been attempted, and from these deposits, seven samples were prepared and collected for detailed laboratory test work at the Australian Coal Industry Research Laboratories, Maitland, New South Wales.

Four of these samples are considered representative of magnetite zones at the Kara No.1 deposit (Section Lines 5780N, 5820N, 5860N and 5900N), and the remaining samples were representative of the Companion Skarn zone, the Kara North Magnetite Anomaly and the Bobs Bonanza Eastern Skarn Zone.

All seven bulk samples received favourable results. These are summarised in Appendix 10.B.

022

830023

6. GENERAL

- On 29th September, 1986 an application was made by Tasmania Mines Limited for the renewal of E.L. 17/68 for a further period of 12 months. In support of this application, details of "Proposed Work Programme and Estimated Expenditures for the Period - 4th November, 1986 to 3rd November, 1987" were submitted to the Department of Mines. A copy of this report is attached as Appendix 11.

- Consolidated Mineral Lease 26M/64, formerly held by A. & D. Pearson over the Kara No. 2 Main Skarn deposit was surrendered in May, 1985. On 15th January, 1986 the surrendered area was pegged by Tasmania Mines N.L., and application made for the 90 acre parcel of land in question to be incorporated within E.L. 17/68.

- Steps are being made to convert portions of E.L. 17/68 to mineral lease tenency. Six such mineral leases are planned, covering 469 hectares, and these would encompass known tungsten resources/deposits at Kara North, Kara South, Eastern Ridge extensions and Location L.5. The proposed mineral leases surround the existing Consolidated Mineral Lease C.L.105M/77.

## 7. GENERAL EXPLORATION

Actual exploration expenditures incurred by Tasmania Mines N.L. for the twelve month period ending 30th June, 1986 amounts to $154,503.90. Additional expenditures for the 12 weeks period to 22nd October, 1986 totalled $50,794.

Table No.2 below itemises details of these exploration expenditures. This total does not include mine geological expenditures incurred at the Kara No.1 mine operation.

Table No.2 - E.L. 17/68 Exploration Expenditures (1985/86)

| Period: | 12 Months Ending 30/6/86 $ | 12 Weeks Ending 22/10/86 $ | Totals $ |
|---|---|---|---|
| General Exploration | 49,396 | 1,630 | 51,026 |
| Geology | 38,231 | 600 | 38,831 |
| Geochemistry | 3,817 | 22 | 3,839 |
| Geophysics | 11,285 | NIL | 11,285 |
| Labour | NIL | 21,098 | 21,098 |
| Diamond Drilling | 34,567 | 17,574 | 52,141 |
| Percussion Drilling | 5,258 | (740) | 4,518 |
| Drafting | 63 | 184 | 247 |
| Surveying | 809 | 2,090 | 2,899 |
| Assays | 2,258 | 1,169 | 3,427 |
| Research | 689 | NIL | 689 |
| Transportation | 5,743 | 1,471 | 7,214 |
| Reporting/ Administration | 1,528 | 1,600 | 3,128 |
| Tenure | 200 | 3,595 | 3,795 |
| Magnetite | 560 | 286 | 846 |
| Wollastonite | 100 | 215 | 315 |
| TOTAL | $154,504 | $50,794 | $205,298 |

C.H. Whitehead

025

830025

TASMANIA MINES LIMITED

EXPLORATION LICENCE 17/68

# ANNUAL REPORT 1985/86

## APPENDICES

026

# EXPLORATION LICENCE 17/68 - TASMANIA MINES LIMITED
# ANNUAL REPORT - 4TH NOVEMBER, 1985 TO 3RD NOVEMBER, 1986

## LIST OF APPENDICES (In separate volume)

E.L. 17/68 ANNUAL REPORT 1985/86

# APPENDIX NO. 1
# DIAMOND DRILLING DATA

DDH 500 TO DDH 511 - DRILL LOGS
ASSAY SHEETS
RECOVERY SHEETS

028

830028

SCALE 1: 200

LENGTH 23.10m NORTHING 5927.4 SCALE

AZIMUTH 90° EASTING 7733.3

DIP AT COLLAR -85°G ELEVATION 548.7 HOLE No DDH 500 PAGE 1 OF 1

LOCATION BOBS. BONANZA. PROJECT KARA.

| % CORE RECOVERY | CORE SPLIT | FEATURE | FRACTURING | BEDDING | GEOLOGY | MINERAL | MINERALISATION | GEOLOGY |
|---|---|---|---|---|---|---|---|---|
| NC | CASED | | | | NC. | | 0.00 - 3.60 | NO CORE - CASING. |
| | 45.8 | | | | $Q_N$ | | 3.50 - 5.30 | SANDSTONE - EXTREMELY WEATHERED (K) REDDISH BROWN - MOTTLED, SOFT, FRIABLE |
| | 82.0 | | | | | | | |
| | 83.75 | | | | | | | |
| | 78.57 | | | | $Q_Y$ | | 5.30 - 12.50 | SANDSTONE, SKARNIFIED, ALTERED Reddish brown - only a little iron. BLOCKY / JOINTED |
| | 100 | | | | | | | |
| | 91.50 | | | | | | | |
| | 52.50 | | | | | | | |
| | 100 | | | | | | | |
| | 100 | | | | $T_m$ 45 | | 12.50 - 18.60 | MAGNETITE SKARN. MAG CONTENT ESTIMATED - 45% FRESH, HOMOGENEOUS, DISSEMINATED MAGNETITE EPIDOTE / AMPHIBOLE - GREENISH LITTLE PYRITE. |
| | 94.74 | | | | | | | |
| | 66.32 | | | | Qe | | 18.60 - 20.15 | QUARTZITE. LIGHT GREY, UNOXIDISED |
| | 100 | | | | G. | | 20.15 - 23.10m | GRANITE FRESH. |

E.O.H. 23.10m.

ANGLE READ

ANGLE CORRECTED

AZIMUTH

DEPTH

SURVEY P.D.A.

CONTRACTOR TIMBERLAND MINES LTD (CANYON WICK) No

DATE

029

BOBS BONANZA DDH 500

| From | To | Width | Recovery ft/lbs | Recovery % | Sample | Assays ppm. Ag | Cu | Pb | Zn | Au | Mo | Bi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12.50 | 13.00 | 0.50 | | | D500/1 | <1 | 115 | 65 | 250 | <0.005 | 10 | <4 |
| 13.00 | 14.00 | 1.00 | | | D500/2 | <1 | 210 | 20 | 290 | <0.005 | 8 | 10 |
| 14.00 | 15.00 | 1.00 | | | D500/3 | <1 | 350 | 15 | 240 | <0.005 | 8 | 23 |
| 15.00 | 16.00 | 1.00 | | | D500/4 | <1 | 180 | 10 | 290 | <0.005 | 8 | <4 |
| 16.00 | 17.00 | 1.00 | | | D500/5 | <1 | 460 | 10 | 370 | <0.005 | 4 | 10 |
| 17.00 | 18.00 | 1.00 | | | D500/6 | <1 | 850 | 5 | 250 | <0.005 | 6 | 10 |
| 18.00 | 18.60. | 0.60. | | | D500/7. | <1. | 15. | <5. | 240. | <0.005 | 4 | <4. |

| | | ppm. Sn | ppm $WO_3$. |
|---|---|---|---|
| | D500/1 | 100 | 50 |
| | D500/2 | 90 | 15 |
| | D500/3 | 100 | 40 |
| | D500/4 | 90 | <10 |
| | D500/5 | 110 | <10 |
| | D500/6 | 90 | 45 |
| | D500/7 | 110 | 30. |

8300029

Length 28.16m. Contractor TASMANIA MINES LTD.
Bearing 90°. Core NQ Stored KARA. MINE.
Dip 85°E. Casing NQ.
Collar Logged by Date
Depth Location
Steel
Claim/Lease Started Finished
Claim/Lease Started Finished

Hole No. DDH 500
Project KARA
Claim BOBS BONANZA
Page # of #

030

EXPLORATION DEPARTMENT

# RECOVERY SHEET

HOLE No. 500 | PAGE 1 OF 111.

CORE RECOVERY (CR) > 90% EXCEPT AS NOTED

| FROM | TO | INT | REC | COMMENTS | FROM | TO | INT. | REC. | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| 0·00 | 4·60 | 4·60 | NIL | CASED. | | | | | |
| 4·60 | 5·00 | 0·40 | 0·18 | 45·0% | | | | | |
| 5·00 | 5·50 | 0·50 | 0·41 | 82·00% | | | | | |
| 5·50 | 6·30 | 0·80 | 0·67 | 83·75% | | | | | |
| 6·30 | 7·70 | 1·40 | 1·10 | 78·57% | | | | | |
| 7·70 | 8·90 | 1·20 | 1·20 | 100·0% | | | | | |
| 8·90 | 10·90 | 2·00 | 1·83 | 91·50% | | | | | |
| 10·90 | 12·50 | 1·60 | 0·84 | 52·50% | | | | | |
| 12·50 | 13·30 | 0·80 | 0·80 | 100·00% | | | | | |
| 13·30 | 16·30 | 3·00 | 3·00 | 100·00% | | | | | |
| 16·30 | 18·20 | 1·90 | 1·80 | 94·74% | | | | | |
| 18·20 | 20·10 | 1·90 | 1·26 | 66·32% | | | | | |
| 20·10 | 23·10 | 3·00 | 3·00 | 100·00% | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| E·O·H | 23·10 | | | | | | | | |

830030

830031

SCALE 1:200

LENGTH 22.80 NORTHING 6787.3
AZIMUTH 90° EASTING 7744.3
DIP AT COLLAR 85°E ELEVATION 548.2
LOCATION BOGS BONANZA
PROJECT KARA
HOLE No 501 PAGE 1 OF 1

| % CORE RECOVERY | CORE SPLIT | FEATURE | FRACTURING | BEDDING | GEOLOGY | MINERAL | MINERALISATION | GEOLOGY |
|---|---|---|---|---|---|---|---|---|
| N.C. 5.00 | CASED | | | | N.C. | | 0.00 - 8.30 | CASED AND NO CORE RECOVERY |
| NIL 8.30 | NC | | | | | | 8.30 | |
| 9.50 | 8.33 | | | | Q | | 8.30 - 11.80. | SANDSTONE/QUARTZITE BLOCK. WEATHERED |
| 11.00 | 72.0 | | | | | | | |
| 14.00 | 100 | | | | G | | 11.80 - 15.40 | GRANITE FINE GRAINED |
| 16.80 | 100 | | | | | | | |
| 19.80 | 100 | | | | G | | 15.40 - 22.80 | GRANITE PINK, HOMOGENEOUS, MEDIUM TEXTURE |
| 22.80 | 100 | | | | | | | |

E.O.H. 22.80m

NO SAMPLES, FOR ASSAY

ANGLE READ
ANGLE CORRECTED
AZIMUTH
DEPTH

SURVEY P.D.A.

CONTRACTOR FOR LAND CORE DRILLING PTY. LTD. NX

DATE

EXPLORATION DEPARTMENT

# RECOVERY SHEET

HOLE No. 501 | PAGE 1 OF 1

CORE RECOVERY (CR) @ 98% EXCEPT AS NOTED

| FROM | TO | INT. | REC | COMMENTS | FROM | TO | INT. | REC. | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 5.00 | 5.00 | N/C | CASED | | | | | |
| 5.00 | 8.30 | 3.30 | N/C | N/C. | | | | | |
| 8.30 | 9.50 | 1.20 | 0.10 | 8.33% | | | | | |
| 9.50 | 11.00 | 1.50 | 1.08 | 72% | | | | | |
| 11.00 | 14.00 | 3.00 | 3.00 | 100%. | | | | | |
| 14.00 | 16.80 | 2.80 | 2.80 | 100%. | | | | | |
| 16.80 | 19.80 | 3.00 | 3.00 | 100%. | | | | | |
| 19.80 | 22.80 | 3.00 | 3.00 | 100%. | | | | | |
| E.O.H. | 22.80m. | | | | | | | | |

830032

SCALE 1:200

LENGTH 29.00 NORTHING 5278.7

AZIMUTH 90 EASTING 7578

DIP AT COLLAR 85°E ELEVATION 550.1.

HOLE No 502 PAGE 1 OF 1.

LOCATION BOBS BONANZA. PROJECT KARA.

8300033

| % CORE RECOVERY | CORE SPLIT | FEATURE | FRACTURING | BEDDING | GEOLOGY | MINERAL | MINERALISATION | GEOLOGY |
|---|---|---|---|---|---|---|---|---|
| CASED | NC | | | | NC | | 0.00 - 4.50 | NO CORE / CASED. |
| | | 100 | | | S | | 4.50 - 6.00 | SANDSTONES → WHITE/FAWN, MASS, HOMOGENEOUS FINE GRAINED |
| | | 100 | | | | | 6.00 - 7.50 | → KAOLINITIC SANDSTONE, MEDIUM TEXTURE |
| | | 100 | | | | | 7.50 - 9.00 | → MASSIVE, HOMOGENEOUS SST, WHITE FAWN |
| | | 98 | | | | | | |
| | | 100 | | | | | | |
| | | 90 | | | | | | |
| | | 100 | | | Q | | 9.00 - 12.20 | QUARTZITE FAWNISH - ORANGE JOINTED |
| | | 88.9 | | | | | | |
| | | 100 | | | | | | |
| | | 100 | | | S | | 12.20 - 14.50 | SANDSTONE BLOCKY DISJOINTED SANDSTONE. |
| | | 65.4 | | | M | | 14.50 - 16.30 | MUDSTONE, SOFT ALTERED |
| | | | | | I | | | |
| | | NIL | | | NC | | 16.50 - 21.10 | MAGNETITE SANDS. CORE LOSS |
| | | | | Q | | | | QUARTZITE. HARD. SILICIFIED, LIGHT GREY/WHITE |
| | | 91 | | | NC | | 21.20 - 24.60 | CORE LOSS |
| | | NR | | | | | | QUARTZITE. SILICIFIED |
| | | 90 | | | Tm 25 | | 24.67 - 26.60 | SKARN - MAGNETITE 25% MASSIVE, BANDED, LITTLE AMPHIBOLE |
| | | 100 | | | Q | | 26.60 - 27.30 | QUARTZITE - GRAY |
| | | | | | G | | 27.30 - 29.00 | GRANITE, FINE, MEDIUM/COARSE GRAINED |

E.O.H. 1960m.

NO SAMPLES FOR ASSAY.

ANGLE READ

ANGLE CORRECTED

AZIMUTH

DEPTH

SURVEY P.D.A.

CONTRACTOR DRILLING

DATE

EXPLORATION DEPARTMENT

# 034 RECOVERY SHEET

HOLE No. 502. PAGE 1 OF 1.

CORE RECOVERY (CR) > 98% EXCEPT AS NOTED BOBS.

| FROM | TO | INT | REC | COMMENTS | FROM | TO | INT. | REC. | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| 0·00 | 4·50 | 4·50 | | Cased. | | | | | |
| 4·50 | 5·50 | 1·00 | 1·00 | 100% | | | | | |
| 5·50 | 6·50 | 1·00 | 1·00 | 100% | | | | | |
| 6·50 | 7·80 | 1·30 | 1·30 | 100% | | | | | |
| 7·80 | 8·80 | 1·00 | 0·98 | 98% | | | | | |
| 8·80 | 9·00 | 0·20 | 0·20 | 100%. | | | | | |
| 9·00 | 9·80 | 0·80 | 0·72 | 90% | | | | | |
| 9·80 | 10·30 | 0·50 | 0·50 | 100%. | | | | | |
| 10·30 | 11·20 | 0·90. | 0·80 | 88·9%. | | | | | |
| 11·20 | 12·50 | 1·30 | 1·36 | 100% | | | | | |
| 12·50 | 14·30 | 1·80 | 1·80 | 100%. | | | | | |
| 14·30 | 16·50. | 2·20 | 1·45 | 65·91 | | | | | |
| 16·50 | 21·10 | 4·60. | N/c. | NIL | | | | | |
| 21·10 | 21·20 | 1·10 | 0·10. | 9·1% | | | | | |
| 21·20 | 24·60 | 3·40. | N/c. | NIL. | | | | | |
| 24·60 | 25·50 | 0·90. | 0·90 | 100% | | | | | |
| 25·50 | 26·70 | 1·20. | 1·19 | 99%. | | | | | |
| 26·70 | 29·00 | 2·30. | 2·30. | 100%. | | | | | |
| | | | | | | | | | |
| E.O.H. | 29·00 | | | | | | | | |

830034

830035

LENGTH 11.30m NORTHING 6001.1
AZIMUTH 270° EASTING 7193.5
DIP AT COLLAR VERT. ELEVATION 552.3.
LOCATION BOBS BONANZA. PROJECT KARA.
HOLE No 503 PAGE 1 OF 1 1

| SCALE 1:50 | % CORE RECOVERY | CORE SPLIT | FRACTURE | FRACTURING | BEDDING | GEOLOGY | MINERAL | MINERALISATION | GEOLOGY |
|---|---|---|---|---|---|---|---|---|---|
| CASED | N.C. | | | | | NC | | 0.00 - 4.00 | NO CORE/CASED. |
| 4.60 | | | | | | | | | |
| 5.20 | | | 75 | | | Ss | | 4.00 - 5.20 | SANDSTONE Fe STAINED / WEATHERED |
| 6.20 | | | 100 | | | Si | | 5.20 - 6.60 | SILTSTONE MASSIVE, FAWN COLOURED |
| 7.20 | | | 100 | | | | | | |
| 8.20 | | | 100 | | | | | 6.60 - 9.20 | GRANITE COARSE, WEATHERED |
| 8.30 | | | 100 | | | Gr. | | | |
| | | | 83 | | | | | 9.20 - 11.30. | GRANITE, MASSIVE, PINK HOMOGENOUS. |
| 11.30 | | | | | | | | | |

E.O.H. 11.30m

NO SAMPLES FOR ASSAY.

ANGLE READ
ANGLE CORRECTED
AZIMUTH
DEPTH

SURVEY P.D.A.

CONTRACTOR [illegible] DRILLING

# RECOVERY SHEET

EXPLORATION DEPARTMENT

HOLE No. 303 PAGE 1 OF 1

CORE RECOVERY (CR) % UNLESS EXCEPT AS NOTED

| FROM | TO | INT. | REC | COMMENTS | FROM | TO | INT. | REC. | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 4.60 | 4.60 | NIL | - CASED. | | | | | |
| 4.60 | 5.20 | 0.60 | 0.45 | 75%. | | | | | |
| 5.20 | 6.20 | 1.00 | 1.00 | 100% | | | | | |
| 6.20 | 7.20 | 1.00 | 1.00 | 100% | | | | | |
| 7.20 | 8.20 | 1.00 | 1.00 | 100% | | | | | |
| 8.20 | 8.30 | 0.10 | 0.10 | 100% | | | | | |
| 8.30 | 11.30 | 3.00 | 2.80 | 93.3% | | | | | |

830036

830037

LENGTH 30.30 NORTHING 55.7 SCALE 1:200

AZIMUTH 90° EASTING 7723.2

DIP AT COLLAR 85°E ELEVATION 648.9 HOLE No 50K PAGE 1 OF 1

LOCATION BOBS BONANZA. PROJECT KARA.

| % CORE RECOVERY | CORE SPLIT | FEATURE | FRACTURING | BEDDING | GEOLOGY | MINERAL | MINERALISATION | GEOLOGY |
|---|---|---|---|---|---|---|---|---|
| Cased 4.00 | NC | | | | NC. | | NC. 0.00 - 4.00. | NO CORE/CASED. |
| 4.50 | | 86.6 | | | | | | |
| | | 72.8 | | | TD | | | TERTIARY BASALT. MASSIVE, MEDIUM TEXTURE DARK GREY |
| 6.60 | | | | | | | 4.00 - 9.30. | |
| 7.30 | | 100 | | | | | | |
| 8.30 | | 93 | | | | | | |
| | | 81.67 | | | | | | TERTIARY. VOLCANIC TUFFACEOUS MATERIAL WEATHERED LIGHT BROWN. GRADATIONAL. |
| 11.30 | | | | | | | | |
| 12.50 | | 66.67 | | | TV | | 9.30 - 16.50. | |
| | | 86.20 | | | | | | |
| 15.40 | | | | | | | | |
| | | 92.30 | | | | | | TERTIARY CLAYS/TUFFS |
| 18.00 | | | | | | | | |
| 19.00 | | 43.00 | | | TS | | 16.50 - 22.80. | |
| | | 100 | | | | | | |
| 21.80 | | | | | | | | |
| 22.80 | | 65.0 | | | | | | |
| 24.80 | | 100 | | | TMX | | 22.80 - 25.50. | SKARN WEATHERED, MAGNETITE. POOR CORE RECOVER. |
| 25.50 | | 152.0 | | | | | | |
| | | 6.0 | | | TMX | | 25.50 - 28.30. | MAGNETITE SKARN MAGNETITE 25-40% PARTIALLY WEATHERED (P) |
| 28.00 | | | | | | | | |
| 29.20 | | 83.3 | | | QS | | 28.30 - 29.30. | SANDSTONE/QUARTZITE - GRN. |
| 30.20 | | 100 | | | G | | 29.30 - 30.20. | FRESH GRANITE, PINK, MASSIVE |

E.O.H. 30.20m.

NO SAMPLES FOR ASSAY.

ANGLE READ

ANGLE CORRECTED

AZIMUTH

DEPTH

SURVEY PDA.

CONTRACTOR CORE GAINS NQ

DATE

EXPLORATION DEPARTMENT

# RECOVERY SHEET

038

HOLE No. 504 PAGE 1 OF 1

CORE RECOVERY (CR) 100% EXCEPT AS NOTED

| FROM | TO | INT | REC | COMMENTS | FROM | TO | INT. | REC. | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 4.00 | 4.00 | N/R | CASED. | | | | | |
| 4.00 | 4.50 | 0.50 | 0.43 | 86.0%. | | | | | |
| 4.50 | 6.60 | 2.10 | 1.53 | 72.86%. | | | | | |
| 6.60 | 7.30 | 0.70 | 0.70 | 100.0%. | | | | | |
| 7.30 | 8.30 | 1.00 | 0.95 | 95.0%. | | | | | |
| 8.30 | 11.30 | 3.00 | 2.45 | 81.67%. | | | | | |
| 11.30 | 12.50 | 1.20 | 0.80 | 66.67%. | | | | | |
| 12.50 | 15.40 | 2.90 | 2.50 | 86.20%. | | | | | |
| 15.40 | 18.00 | 2.60 | 2.40 | 92.30%. | | | | | |
| 18.00 | 19.00 | 1.00 | 0.43 | 43.00%. | | | | | |
| 19.00 | 21.80 | 2.80 | 2.80 | 100.0%. | | | | | |
| 21.80 | 22.80 | 1.00 | 0.65 | 65.0%. | | | | | |
| 22.80 | 23.00 | 0.20 | 0.20 | 100.00%. | | | | | |
| 23.00 | 25.50 | 2.50 | 0.20 | 13.33%. | | | | | |
| 25.50 | 28.00 | 2.50 | 0.15 | 6.0%. | | | | | |
| 28.00 | 29.20 | 1.20 | 1.00 | 83.33%. | | | | | |
| 29.20 | 30.20 | 1.00 | 1.00 | 100%. | | | | | |
| | | | | | | | | | |
| E.O.H. | 30.20 | | | | | | | | |

830038

D505

8300039

SCALE 1:200

LENGTH 72.40m NORTHING 75
AZIMUTH 90° EASTING 450E
DIP AT COLLAR 85° ELEVATION —
HOLE No 0505 PAGE 1 OF 1/2
LOCATION KARA N°2. MAIN SKARN. PROJECT KARA

| % CORE RECOVERY | CORE SPLIT | FEATURE | FRACTURING | BEDDING | GEOLOGY | MINERAL | MINERALISATION | GEOLOGY |
|---|---|---|---|---|---|---|---|---|
| | | | | | NC | | 0.00 – 20.50m | NO CORE - ROCK DRILLED. |
| | | | | | TQ | | 20.50 – 27.20 | QUARTZOSE ROCK. SLIGHTLY STAINED, RUBBLY FRACTURED. 26.40m – 27.20 – Fe ZONE (MANY STAINING ALONG JOINTS). |
| | | | | | | | 27.20 – 29.20 | SOFT GREENISH DIOPSIDE ALTERED ARENACEOUS ROCK. MAINLY COARSE SLURRY MATERIAL – GREENISH FAWN. |
| | | | | | FCa | | 29.20 – 32.20. | CALCAREOUS SANDSTONE. DIRTY WHITE/FAWN. SOFT, HOMOGENEOUS. |
| | | | | | TQ | | 32.20 – 34.30 | QUARTZOSE – EPIDOTE RICH. SOFT, CRUMBLY, GREENISH. |
| | | | | | | | 34.30 – 34.80 | AS ABOVE – Cu STAINED |
| | | | | | | | 34.80 – 35.60 | N.C. |
| | | | | | | | 35.60 – 36.00 | AS ABOVE — Fe STAINED |
| | | | | | | | 36.00 – 44.70m | GARNET, DIOPSIDE EPIDOTE SKARN. MASSIVE, GREENISH YELLOW. MEDIUM/COARSELY CRYSTALLINE. |
| | | | | | TQ | | 44.70 – 142.70m | AS ABOVE — MOD. Fe STAINING |
| | | | | | | | 142.70 – 146.50m | UNKNOWN GRADE. CALCAREOUS ARENACEOUS Hornfels. Fine Grained. |

ANGLE READ
ANGLE CORRECTED
AZIMUTH
DEPTH
SURVEY

040

D.505

830040

SCALE 1: 200.

| % CORE RECOVERY | CORE SPLIT | FEATURE | FRACTURING | BEDDING | GEOLOGY | MINERAL |
|---|---|---|---|---|---|---|
| | | | | | Tea | |
| | | | | | Tm 70 | |
| | | | | | Tm 4065 | |
| | | | | | Tm 2025 | |
| | | | | | Q | |
| | | | | | Gr | |

LENGTH 72.40m NORTHING 73
AZIMUTH — EASTING 45E.
DIP AT COLLAR 90° ELEVATION —
LOCATION KARA N°2 MAIN SKARN. PROJECT KARA.
HOLE No D505 PAGE 2 OF 2/2

| MINERALISATION | GEOLOGY |
|---|---|
| 47.95 - 53.75 | AMPHIBOLE RICH, DIOPSIDE SKARN. HARD FRESH, DARK GREEN COLOUR. BRITTLE, FINE GRAINED, GLASSY Fe MAGNETITE @ 50:50, LITTLE HEMATITE |
| 53.75 - 62.00 | MAGNETITE BLEBS INCREASE FROM 52.90m. MAGNETITE SKARN. HARD FRESH. MASSIVE Fe - 60-70% Fe. ALSO BANDED AMPHIBOLE SKARN. MEDIUM GRAINED TEXTURE. GOOD MAGNETITE ORE. |
| 62.00 - 69.40 | MAGNETITE SKARN. LESS MAGNETITE, MORE AMPHIBOLE + EPIDOTE. VARIABLE MAGNETITE - 40-65% Fe. SULPHIDES @ 63-64m. |
| 69.40 - 71.30 | AMPHIBOLE RICH Fe SKARN |
| ~~71.30 - 71.80~~ | ↗ QUARTZITE, GREYISH GREEN, FINE |
| 71.80 - 72.40 | GRANITE - FRACTURED JOINTED |

E.O.H = 72.40m.

ANGLE READ
ANGLE CORRECTED
AZIMUTH
DEPTH
SURVEY
CONTRACTOR (DRILLING)
DATE

041 KARA N° 2 - MAIN SKARN

DDH 506

8300041

| From | To | Width | Recovery ft./lbs. | Recovery % | Sample | Assays Cu | Pb | Zn | Bi | Ag | Mo | $WO_3$ | Sn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20.50 | 22.30 | 1.80 | | | D505/1 | 155 | 8 | 345 | <10 | <1 | 6 | 35 | 44 |
| 22.30 | 25.30 | 3.00 | | | D505/2 | 280 | 36 | 1460 | <10 | <1 | 10 | 15 | 78 |
| 25.80 | 27.20 | 1.40 | | | D505/3 | 150 | 34 | 1340 | <10 | <1 | 15 | 20 | 44 |
| 27.20 | 29.60 | 2.40 | | | D505/4 | 110 | 66 | 1160 | <10 | <1 | 12 | 40 | 24 |
| 29.60 | 32.30 | 2.60 | | | D505/5 | 13 | 630 | 990 | 30 | 6 | 2 | 65 | <4 |
| 32.20 | 33.60 | 1.40 | | | D505/6 | 3 | 30 | 340 | <10 | <1 | 3 | <10 | 42 |
| 35.60 | 38.00 | 2.40 | | | D505/7 | 5 | 30 | 320 | <10 | <1 | 5 | <10 | 425 |
| 38.00 | 39.50 | 1.50 | | | D505/8 | 8 | 46 | 215 | <10 | <1 | 1 | 30 | 720 |
| 39.50 | 40.80 | 1.30 | | | D505/9 | 5 | 98 | 175 | <10 | 1 | 2 | <10 | 770 |
| 40.80 | 42.20 | 1.40 | | | D505/10 | 7 | 18 | 125 | 20 | <1 | 3 | 30 | 530 |
| 42.20 | 43.00 | 0.80 | | | D505/11 | 4 | 185 | 375 | <10 | 1 | <1 | 20 | 485 |
| 43.00 | 44.10 | 1.10 | | | D505/12 | 4 | 125 | 415 | <10 | 1 | 1 | 65 | 550 |
| 44.10 | 45.50 | 1.40 | | | D505/13 | 4 | 34 | 385 | <10 | <1 | 1 | 50 | 510 |
| 45.50 | 46.90 | 1.40 | | | D505/14 | 3 | 16 | 150 | <10 | <1 | <1 | 10 | 720 |
| 46.90 | 47.90 | 1.00 | | | D505/15 | 3 | 8 | 135 | <10 | <1 | <1 | 40 | 1000 |
| 47.90 | 48.90 | 1.00 | | | D505/16 | 3 | 8 | 155 | 10 | <1 | 1 | 15 | 500 |
| 48.90 | 49.90 | 1.00 | | | D505/17 | 9 | 62 | 160 | 30 | <1 | 1 | 20 | 365 |
| 49.90 | 50.90 | 1.00 | | | D505/18 | 4 | 10 | 130 | 55 | <1 | <1 | 25 | 550 |
| 50.90 | 51.90 | 1.00 | | | D505/19 | 9 | 16 | 140 | 120 | <1 | 1 | <10 | 175 |
| 51.90 | 52.90 | 1.00 | | | D505/20 | 6 | <5 | 150 | 60 | <1 | 2 | 35 | 650 |
| 52.90 | 53.90 | 1.00 | | | D505/21 | 4 | <5 | 150 | 50 | <1 | 2 | <10 | 185 |
| 53.90 | 54.90 | 1.00 | | | D505/22 | 2 | <5 | 135 | 20 | <1 | 5 | 20 | 470 |
| 54.90 | 55.90 | 1.00 | | | D505/23 | 7 | 12 | 135 | 140 | <1 | 6 | 30 | 375 |
| 55.90 | 56.90 | 1.00 | | | D505/24 | 6 | <5 | 155 | 25 | <1 | 7 | <10 | 310 |
| 56.90 | 57.90 | 1.00 | | | D505/25 | 7 | <5 | 165 | 20 | <1 | 19 | 25 | 435 |
| 57.90 | 58.90 | 1.00 | | | D505/26 | 9 | <5 | 160 | 60 | <1 | 56 | 25 | 235 |
| 58.90 | 59.90 | 1.00 | | | D505/27 | 8 | 10 | 240 | 160 | <1 | 21 | 55 | 345 |
| 59.90 | 60.90 | 1.00 | | | D505/28 | 4 | <5 | 200 | <10 | <1 | 7 | 50 | 470 |
| 60.90 | 61.90 | 1.00 | | | D505/29 | 4 | <5 | 160 | <10 | <1 | 5 | 20 | 340 |
| 61.90 | 62.90 | 1.00 | | | D505/30 | 7 | <5 | 170 | <10 | <1 | 6 | <10 | 310 |
| 62.90 | 63.90 | 1.00 | | | D505/31 | 5 | <5 | 200 | <10 | <1 | 6 | 15 | 350 |
| 63.90 | 64.90 | 1.00 | | | D505/32 | 8 | 6 | 140 | 25 | <1 | 16 | 35 | 295 |

Length: _____ Contractor: _____

Bearing: _____ Core: _____ Stored: _____

Dip: _____ Casing: _____

Lat: _____ Logged by: _____ Date: _____

Dep: _____ Location: _____

Elev: _____

Ore Bx Thickness: _____ Started: _____ Finished: _____

Barren Thickness: _____ Started: _____ Finished: _____

Hole No: DDH 505.

Project: KARA.

Claim: KARA. N°2.

Page: 1 of 2.

ANDEL REPORT AC 3674/86.

042

KARA. N°2 - MAIN SKARN

DDH 505

| From | To | Width | Recovery ft/lbs. | Recovery % | Sample | Assays Cu. | Pb | Zn | Bi | Ag | Mo | $WO_3$ | Sn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 64.90 | 65.90 | 1.00 | | | D.505/33 | 5 | 10 | 160 | 20 | <1 | 11 | 40 | 353 |
| 65.90 | 66.90 | 1.00 | | | D505/34 | 14 | 18 | 180 | 150 | <1 | 14 | 60 | 460 |
| 66.90 | 67.90 | 1.00 | | | D505/35 | 6 | <5 | 205 | <10 | <1 | 25 | 50 | 235 |
| 67.90 | 68.90 | 1.00. | | | D505/36 | 9 | 8 | 180 | <10 | <1 | 15 | 90 | 230 |
| 68.90 | 69.90 | 1.00 | | | D505/37 | 3 | 10 | 195 | <10 | <1 | 8 | 65 | 240 |
| 69.90 | 71.10 | 1.20 | | | D505/38 | 38 | 22 | 160 | <10 | <1 | 3 | 15 | 25 |

830042

Length _____ Contractor _____

Bearing _____ Core _____ Stored _____

Dip _____ Casing _____

Lat. _____ Logged by _____ Date _____

Dep. _____ Location _____

Elev. _____

O.B. Thickness _____ Started _____ Finished _____

B.R. Thickness _____ Started _____ Finished _____

Holes Nos. DDH 505

Project KARA.

Claims KARA. N°2.

Page 2 of 2

ANNUAL REPORT AC 36 Pg 55

MINORE MINES (AUST) PTY LTD
EXPLORATION DEPARTMENT

043

# RECOVERY SHEET

HOLE No. 505 | PAGE 1 OF 1

CORE RECOVERY (CR) ≥ 98% EXCEPT AS NOTED

KARA. N°2. MAIN SKARN

8300043

| FROM | TO | INT | REC | COMMENTS | FROM | TO | INT. | REC. | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 19.70 | 19.70 | — | ROLLER BIT. | | | | | |
| 19.70 | 20.50 | 0.80. | 0.08 | 10% | | | | | |
| 20.50 | 22.30 | 1.80 | 0.92 | 51.1% | | | | | |
| 22.30 | 25.30 | 3.00 | 0.25 | 8.3% | | | | | |
| 25.30 | 25.80 | 0.50 | NIL | — | | | | | |
| 25.80 | 26.40 | 0.60 | 0.17 | 28.33% | | | | | |
| 26.40 | 27.20 | 0.80 | 0.42 | 52.5% | | | | | |
| 27.20 | 29.20 | 2.00. | 0.22 | 11% | | | | | |
| 29.20 | 31.80 | 2.60. | 0.36. | 13.85% | | | | | |
| 31.80 | 32.20 | 0.40 | 0.38 | 95% | | | | | |
| 32.20 | 33.60 | 1.40 | 1.40. | 100% | | | | | |
| 33.60 | 34.30 | 0.70. | NIL | — | | | | | |
| 34.30 | 34.80 | 0.50. | 0.19. | 38% | | | | | |
| 34.80 | 35.60 | 0.80. | NIL | — | | | | | |
| 35.60 | 36.00 | 0.40 | 0.40 | 100%. | | | | | |
| 36.00 | 36.50 | 0.50. | 0.13 | 26% | | | | | |
| 36.50 | 39.50 | 3.00. | 2.28 | 76% | | | | | |
| 39.50 | 42.20 | 2.70. | 2.30 | 85.19. | | | | | |
| 42.20 | 44.10 | 1.90. | 1.90 | 100 | | | | | |
| 44.10 | 46.90 | 2.80. | 2.80 | 100. | | | | | |
| 46.90 | 49.90 | 3.00 | 3.00 | 100 | | | | | |
| 49.90 | 52.90 | 3.00 | 3.00 | 100 | | | | | |
| 52.90 | 55.90 | 3.00 | 3.00 | 100 | | | | | |
| 55.90 | 58.90 | 3.00 | 3.00 | 100 | | | | | |
| 58.90 | 61.90 | 3.00 | 3.00 | 100 | | | | | |
| 61.90 | 64.90 | 3.00 | 3.00 | 100 | | | | | |
| 64.90 | 67.90 | 3.00 | 3.00 | 100 | | | | | |
| 67.90 | 70.90 | 3.00 | 3.00 | 100 | | | | | |
| 70.90 | 72.40. | 1.50 | 1.60. | 100. | | | | | |
| | | | | | | | | | |
| EOH. | 72.40. | | | | | | | | |

044

830044

SCALE 1:

| % CORE RECOVERY | CORE SPLIT | FEATURE | | FRACTURING | BEDDING | GEOLOGY | MINERAL |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

LENGTH 82.30m NORTHING LINE 75 SCALE

AZIMUTH 98° EASTING 450 E

DIP AT COLLAR -50° ELEVATION

HOLE No D596. PAGE 1/0 1/2

LOCATION KARA. N°2 - MAIN SKARN. PROJECT KARA.

MINERALISATION GEOLOGY

ANGLE READ

ANGLE CORRECT

AZIMUT

DEPT

SURVEY P.D.A

CONTRACTOR BOYLES BROS. DIAMOND DRILLING (P.N.G.) LTD

DATE

Summary Lithological Log.

0.00 - 36.50m (36.50m) — Rotter bit drilled.
No core
Soft weathered epidote rich skarn.

36.50m - 37.50m (1.00m) — Epidote Skarn (Y) — Land Baked, massive, little iron.

37.50m - 37.90m (0.40m) No core.

37.90m - 42.60m (4.70m) Magnetite skarn - weathered Baked
Poor core recovery

42.60m - 47.50m (4.90m) Epidote magnetite skarn,
Banded greenish grey.
Magnetite (20%) banded.

47.50 - 51.85m (4.35m) Epidote garnet skarn.
Light (wt). Medium texture
No iron / magnetite.

51.85m - 54.10m (2.25m) Magnetite, garnet, diopside skarn.
Massive, homogeneous.

54.10 - 61.70m (7.60m). Garnet skarn.
Medium textured, Banded
homogeneous, medium brown coloured.

61.70m - 62.45m (0.75m) Epidote diopside skarn.

62.45m - 64.65m (2.20m) Spurlerite, magnetite, epidote
diopside skarn (iron 20%).

64.65 - 66.80m (1.86m) Magnetite skarn, Brownish,
slightly weathered.
Magnetite 10%

66.50 - 71.30m (4.80m) As previous run, but
magnetite 20-30% content.

71.30m - 78.00 (6.70m) Magnetite Skarn -

045

830045

SCALE 1:1

| % CORE RECOVERY | CORE SPLIT | FEATURE | | FRACTURING | BEDDING | GEOLOGY | MINERAL |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

LENGTH 82.30 NORTHING 2NE. 75
AZIMUTH 90° EASTING 450E
DIP AT COLLAR -60° ELEVATION
LOCATION KARA. N°2 - MAIN SKARN

HOLE No D506 PAGE 2 OF 2/2
PROJECT KARA.

| MINERALISATION | GEOLOGY |
|---|---|
| 73.00 - 76.00m | Magnetite skarn. Magnetite content 65%. Fresh - massive. |
| 76.00 - 81.60m | Altered, skarnified dubble rich skarn. Transitional Zone. |
| 81.60 - 82.30m | Granite. Porphyritic, coarse grained, fresh |
| 82.30m E.O.H. | |

ANGLE READ
ANGLE CORRECTED
AZIMUTH
DEPTH

SURVEY PDA.

CONTRACTOR BOLIDEN CONTRACT MINING (SWEDEN) AB RIG No.

DATE

KARA No 2 - SKARN D 506.

| From | To | Width | Recovery Eff/lbs. | Recovery % | Sample | Assays WO3 | Pb | Sn | Cu | Recovery | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 52.0 | 53.0 | 1.0 | | | D506/1 | 45 | 220 | 52 | 72 | | | | |
| 53.0 | 54.0 | 1.0 | | | D506/2 | 15 | 200 | 370 | 82 | | | | |
| 54.0 | 55.0 | 1.0 | | | D506/3 | 20 | 160 | 355 | 34 | | | | |
| 55.0 | 56.0 | 1.0 | | | D506/4 | 35 | 530 | 440 | 475 | | | | |
| 56.0 | 57.0 | 1.0 | | | D506/5 | 25 | 165 | 455 | 92 | | | | |
| 57.0 | 58.0 | 1.0 | | | D506/6 | 25 | 205 | 730 | 44 | | | | |
| 58.0 | 59.0 | 1.0 | | | D506/7 | <10 | 110 | 780 | 10 | | | | |
| 59.0 | 60.0 | 1.0 | | | D506/8 | 15 | 84 | 710 | 10 | | | | |
| 60.0 | 61.0 | 1.0 | | | D506/9 | 10 | 88 | 730 | 4 | | | | |
| 61.0 | 62.0 | 1.0 | | | D506/10 | <10 | 22 | 195 | 24 | | | | |
| 62.0 | 63.0 | 1.0 | | | D506/11 | 25 | 14 | 175 | 34 | | | | |
| 63.0 | 64.0 | 1.0 | | | D506/12 | 40 | 50 | 160 | 18 | | | | |
| 64.0 | 65.0 | 1.0 | | | D506/13 | 10 | 46 | 445 | 34 | | | | |
| 65.0 | 66.0 | 1.0 | | | D506/14 | <10 | 36 | 240 | 18 | | | | |
| 66.0 | 67.0 | 1.0 | | | D506/15 | 35 | 120 | 730 | <4 | | | | |
| 67.0 | 68.0 | 1.0 | | | D506/16 | 30 | 62 | 710 | 6 | | | | |
| 68.0 | 69.0 | 1.0 | | | D506/17 | 20 | 34 | 82 | <4 | | | | |
| 69.0 | 70.0 | 1.0 | | | D506/18 | 40 | 56 | 435 | 8 | | | | |
| 70.0 | 71.0 | 1.0 | | | D506/19 | 35 | 94 | 720 | 4 | | | | |
| 71.0 | 72.0 | 1.0 | | | D506/20 | 50 | 60 | 480 | <4 | | | | |
| 72.0 | 73.0 | 1.0 | | | D506/21 | 40 | 42 | 165 | <4 | | | | |
| 73.0 | 74.0 | 1.0 | | | D506/22 | 20 | 28 | 190 | <4 | | | | |
| 74.0 | 75.0 | 1.0 | | | D506/23 | <10 | 40 | 300 | <4 | | | | |
| 75.0 | 76.0 | 1.0 | | | D506/24 | <10 | 18 | 235 | <4 | | | | |

Length: 82.30 Contractor: TASMANIA MINES LTD.
Bearing: Core: NQ Stored: KARA
Dip: Casing: NQ
Lat: Logged by: Date:
Dep: Location:
Elev:
O/B Thickness: Started: Finished:
B/R Thickness: Started: Finished:

Hole No: D506
Project: KARA
Claim: KARA No 2
Page: 1 of 1

830046

MONTCLERC MINES (1987) LTD
EXPLORATION DEPARTMENT

047

# RECOVERY SHEET

HOLE No. 506 | PAGE 1 OF 1 1

CORE RECOVERY (CR) ≥ 90% EXCEPT AS NOTED

KARA N°2 - MAIN SKARN

| FROM | TO | INT | REC | COMMENTS | FROM | TO | INT. | REC. | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| 0 00 | 34.50 | 34.50 | — | ROLLER BIT | | | | | |
| 34.50 | 37 50 | 3.00 | 0.56 | 18.66 | | | | | |
| 37.50 | 37.90 | 0.40 | 0 05 | 12.5% | | | | | |
| 37.40 | 42.60 | 4.70 | 052 | 11.06% | | | | | |
| 42.60 | 45.40 | 2.80 | 063 | 22.50% | | | | | |
| 45.40 | 49 30 | 3.90 | 0.84 | 21.54% | | | | | |
| 49.30 | 51.70 | 2.40 | 1.72 | 16.96% | | | | | |
| 51.70 | 53.00 | 130 | 133 | 100% | | | | | |
| 53.00 | 56.00 | 3.00 | 2.62 | 87.33% | | | | | |
| 56 00 | 59.00 | 3.00 | 3.55 | 100% | | | | | |
| 59.00 | 62.00 | 3.00 | 306 | 100% | | | | | |
| 62.00 | 65.00 | 3.00 | 3.06 | 100% | | | | | |
| 65.00 | 68.00 | 3.00 | 2.84 | 94.66 | | | | | |
| 68.00 | 71.00 | 3.00 | 300 | 100% | | | | | |
| 71.00 | 73.00 | 2.00 | 2.00 | 100% | | | | | |
| 73.00 | 76.00 | 3.00 | 3.00 | 100% | | | | | |
| 76 00 | 78.70 | 2.70 | 2.70 | 100% | | | | | |
| 78.70 | 79.60 | 0.90 | 0.90 | 100% | | | | | |
| 79.60 | 82.20 | 2.70 | 1.78 | 65.92 | | | | | |
| | E.OH. | | 82.30 | m. | | | | | |

830047

048

SCALE 1" = 100'

LENGTH 78.70m. NORTHING 6426246.0
AZIMUTH 276° EASTING 397679.6
DIP AT COLLAR 55° ELEVATION 493.9
LOCATION EASTERN RIDGE.

EXPLORATION DEPARTMENT
HOLE No DDH. 507 PAGE 1 OF 1/4
PROJECT EASTERN RIDGE.

8300048

| % CORE RECOVERY | CORE SPLIT | FEATURE | | FRACTURING | BEDDING | GEOLOGY | MINERAL |
|---|---|---|---|---|---|---|---|
| NC. | | 1.50 | 400 | | | | |
| | | 1.50 | 460 | | | | |
| | | 1.0 | 150 | | | W Tw | |
| | | 1.0 | 310 | | | | |
| | | 1.0 | 75 | | | | |
| | | 1.0 | 360 | | | | |
| | | 1.0 | 330 | | | | |
| | | 1.0 | 500 | | | X Tw. | |
| | | 1.0 | 470 | | | | |
| | | 1.0 | 340 | | | | |
| | | 1.0 | 70 | | | Tgl | |
| | | 1.0 | 610 | | | Tw | |
| | | 1.0 | 200 | | | | |
| | | 1.0 | 360 | | | | |
| | | 1.0 | 110 | | | Tgl | |
| | | 1.0 | 0 | | | | |
| | | 0.80 | 1200 | | | | |
| | | 3m | | | | Qtz | |

MINERALISATION
LEVELS OF OXIDATION.

"W" OXIDATION.
0.00 - 11.35m

"X" OXIDATION
11.35 - 15.10m

"Y" OXIDATION
15.10 - 30.35m.

"F" OXIDATION + 30.35m.

GEOLOGY

0.00 - 6.00 - NO CORE.
ROLLER BIT. PENETRATION.
SLUDGE - CLAYS REPRESENTING WEATHERED SKARNS.

5.00m — 5.00m

SKARN. "W" SKARN.
ORANGE BROWN CLAYS.
LIMONITIC SKARN.

7.60m

DARK BROWN LIMONITIC CLAY
(REPRESENTING SKARN)

10.00m

11.35m

SKARN. "X" SKARN
MASSIVE, HOMOGENEOUS
MOTTLED COLOURATION.
PROBABLY NON MINERALISED
POOR Fe CONTENT BUT
MAGNETITE INCREASING WITH DEPTH.

15.00m — 14.86m

SKARN - GARNET DIOPSIDE.
MASSIVE - IRON CONTENT
APPROX 5-10%.
HARD UNOXIDISED - WHITISH GREY

16.25m

SKARN.
WEATHERED MOTTLED SKARN.
LIMONITIC - GOETHITE MATERIAL.

18.46m

GARNET/DIOPSIDE SKARN.
(LITTLE EPIDOTE)
COARSE TEXTURE.
GREY.
Y TO F MATERIAL.

20.00m.

28.15m

ARENACEOUS UNIT.
BROWN ORANGE SANDSTONE/QUARTZITE.
BLOCKY/MEDIUM TEXTURED

ANGLE READ
ANGLE CORRECTED
AZIMUTH
DEPTH
SURVEY

CONTRACTOR ZRS MINES N.L. R. McCORMACK
CORE NQ N.V.
CASING

LOGGED BY C.A.W. DATE
STARTED
FINISHED

049

830049

SCALE 1:100

LENGTH 78.70m NORTHING 6442446.0 EXPLORATION DEPARTMENT

AZIMUTH 275° EASTING 397679.6

DIP AT COLLAR 56° ELEVATION 493.9. HOLE No 507 PAGE 1 OF 2 / 4.

LOCATION EASTERN RIDGE. PROJECT KARA. E.L. 17/65.

| % CORE RECOVERY | CORE SPLIT | FEATURE | | FRACTURING | BEDDING | GEOLOGY | MINERAL | MINERALISATION | GEOLOGY |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | AGMATOIDUS UNIT CONTINUED. |
| | | | | | | Sp | | | SOFT EPIDOTITIC @ 26.50m. |
| | | | | | | | | 28.10m | |
| | | | | | | Tu | | | SKARN. TRANSITION ZONE AGMATOIDUS UNIT TO SKARN. |
| | | 1.0 | 1280 | | | | | 29.30m | |
| | | 1.0 | 160 | | | Tgd | | 30m | GARNET DIOPSIDE SKARN FRESH. GREYISH MAGNETITE CONTENT < 15%. WHERE PRESENT IS COARSE GRAINED. |
| | | 1.0 | 460 | | | | | | |
| | | 1.0 | 1170 | | | Tm 50-60 | | 32.30m | MAGNETITE SKARN. MASSIVE - MAG CONTENT 60-65% EPIDOTE 15% CONTENT. |
| | | 1.0 | 3020 | | | | | 33.75m | |
| | | 1.0 | 370 | | | Tgd | | | GARNET DIOPSIDE SKARN. |
| | | 1.0 | 2860 | | | | | 34.85m 35m 35.60m | |
| | | 1.0 | 2060 | | | Tm 30 | | | MAGNETITE SKARN. MASSIVE HEMATOGENOUS FINE GRAINED BANDS-UNITS. EPIDOTE MORE CAPITOM AT DEPTH. |
| | | 1.0 | 1170 | | | | | | |
| | | 1.0 | 300 | | | | | | |
| | | 1.0 | 310 | | | | | 39.60m | |
| | | 1.0 | 820 | | | Tgd | | 40m | STRUCTURALLY DISTURBED ZONE. 39.60 - 39.95 - EXTREMELY WEATHERED. GARNET/DIOPSIDE SKARN. |
| | | 1.0 | 360 | | | | | | |
| | | | | | | | | 42.00m | |
| | | | | | | NC. | | | CORE LOSS |
| | | | | | | | | 43.60m | |
| | | | | | | | | | SKARN - BARREN WEATHERED GREENISH-YELLOW SKARN. |
| | | | | | | | | 45m | |
| | | | | | | X Tu | | | |
| | | | | | | | | 47.50m | EPIDOTE SKARN - TRANSITIONAL GREEN - MASSIVE. |
| | | | | | | Te | | 48.00m | AGMATOIDUS UNIT. |
| | | | | | | Qz | | | QUARTZITE/SANDSTONE. FRESH. |
| | | | | | | | | 50m | |

ANGLE READ

ANGLE CORRECTED

AZIMUTH

DEPTH

SURVEY

CONTRACTOR TASMANIA ANNET. N.L. CORE N.Q. CASING N.W.

LOGGED BY GWW. DATE

STARTED FINISHED

050

830050

SCALE 1: 100.

LENGTH 78·70m. NORTHING 6426246·0 EXPLORATION DEPARTMENT

AZIMUTH 275° EASTING 397679·6

DIP AT COLLAR 55° ELEVATION 493·9. HOLE No 607 PAGE 1 OF 2 1/4

LOCATION EASTERN RIDGE. PROJECT KARA - E.L. 17/6E.

| % CORE RECOVERY | CORE SPLIT | FEATURE | | FRACTURING | BEDDING | GEOLOGY | MINERAL | MINERALISATION | GEOLOGY |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Q | | | QUARTZITE / SANDSTONE CONTINUED. WHITE GREYISH SANDSTONE FINE/MEDIUM TEXTURED VUGGY ZONES IN PATCHES WITH A LITTLE EPIDOTE. |
| | | 1·0 | Nyo. | | | | | | TRANSITIONAL TO SKARN. |
| | | 1·0 | 3380 | | | | | | 58·60m SKARN. EPIDOTE SKARN. MASSIVE FINE GRAINED HOMOGENEOUS. MINOR MAGNETITE BLEBS 1%. UNOXIDISED |
| | | 1·0 | 5N | | | | | | |
| | | 1·0 | 220 | | | Te. | | | |
| | | 1·0 | 22A | | | | | | |
| | | 1·0 | 55 | | | | | | |
| | | 1·0 | 25 | | | | | | |
| | | 1·0 | 25A | | | | | | 66·15m SKARN MAGNETITE SKARN BANDED MASSIVE HOMOGENEOUS EPIDOTE RICH. |
| | | 1·0 | 20A | | | Tm | | | |
| | | 0·70 | 27A | | | 28 | | | 69·30m QUARTZITE UNIT. FINE GRAINED, LIGHT GREY EPIDOTISED ALONG FRACTURES + JOINTS HARD, HOMOGENEOUS. |
| | | | 220 | | | Q | | | |

ANGLE READ

ANGLE CORRECTED

AZIMUTH

DEPTH

SURVEY

CONTRACTOR TASMANIA MINES N.L. - P. ST GOODWIN.

CORE NIL CASING NIL

LOGGED BY CHW DATE

STARTED FINISHED

951

830051

SCALE 1:100

LENGTH 78·70m NORTHING 5176246·0 EXPLORATION DEPARTMENT

AZIMUTH 275° EASTING 3776796

DIP AT COLLAR 55° ELEVATION 493·9 HOLE No 507 PAGE / OF 4/4

LOCATION EASTERN RIDGE. PROJECT KARA - E.L. 17/65

| % CORE RECOVERY | CORE SPLIT | FEATURE | | FRACTURING | BEDDING | GEOLOGY | MINERAL |
|---|---|---|---|---|---|---|---|
| | | | | | | Q | |
| | | | | | | Gr | |

MINERALISATION

76·40m

78·70m

GEOLOGY

QUARTZITE (CONTINUED).

GRANITE -

PINK, MEDIUM GRAINED TEXTURE.

HYPIDIOMORPHIC

E.O.H. 78·70m.

ANGLE READ

ANGLE CORRECTED

AZIMUTH

DEPTH

SURVEY

CONTRACTOR

CORE CASING

LOGGED BY DATE

STARTED FINISHED

EASTERN ROUTE

| FROM | TO | INT | REC | COMMENTS |
|---|---|---|---|---|
| 0-00 | 5-00 | 5-00 | NIL | CASED. |
| | | | | |
| 5-00 | 8-00 | 3-00 | 1.51 | 50.3% |
| 8-00 | 11-00 | 3-00 | 3-00 | 100 |
| 11-00 | 14-00 | 3-00 | 3-00 | 100 |
| 14-00 | 15-70 | 1-70 | 1-70 | 100 |
| 15-70 | 17-00 | 1-30 | 1-30 | 100. |
| 17-00 | 19-00 | 2-00 | 2-00 | 100 |
| 19-00 | 19-70 | 0-70 | 0-70 | 100 |
| 19-70 | 20-20 | 0-50 | 0-50 | 100 |
| 20-20 | 22-90 | 2-70 | 2-70 | 100 |
| 22-90 | 24-50 | 1-60 | 1-60 | 100 |
| 24-50 | 26-50 | 2-00 | 2-00 | 100 |
| 26-50 | 26-00 | 0-50 | 0-50 | 100% |
| 26-00 | 27-30 | 1-30 | 1-30 | 100 |
| 27-30 | 28-00 | 0-70 | 0-70 | 100 |
| 28-00 | 28-50 | 0-50 | 0-50 | 100 |
| 28-50 | 30-30 | 1-80 | 1-64 | 91.1% |
| 30-30 | 32-00 | 1-70 | 1-70 | 100 |
| 32-00 | 35-00 | 3-00 | 2.25 | 75% |
| 35-00 | 37-60 | 2-60 | 2-60 | 100% |
| 37-60 | 40-60 | 3-00 | 3-00 | 100% |
| 40-60 | 42-00 | 1-40 | 1-34 | 95.7% |
| 42-00 | 43-60 | 1-60 | 1-60 | 100% |
| 43-60 | 44-30 | 0-70 | 0-44 | 62.85% |
| 44-30 | 44-70 | 0-40 | 0-40 | 100% |
| 44-70 | 44-90 | NIL | — | 0% |
| 44-90 | 46-60 | 1-70 | 0-75 | 44.1. |
| 46-60 | 46-70 | 0-10 | 0-10 | 100% |
| 46-70 | 47-00 | 0-30 | 0-25 | 83.3% |
| 47-00 | 48-40 | 1-40 | 1-40 | 100% |
| 48-40 | 51-40 | 3-00 | 3-00 | 100% |
| 51-40 | 52-90 | 1-50 | 1-50 | 100 |
| 52-90 | 54-00 | 1-10 | 0-32 | 29.09 |
| 54-00 | 55-40 | 1-40 | 1-40 | 100% |
| 55-40 | 57-50 | 2-10 | 2-10 | 100% |

| FROM | TO | INT. | REC. | COMMENTS |
|---|---|---|---|---|
| 57-50 | 58-00 | 1-50 | 1-50 | 100% |
| 58-00 | 62-00 | 3-00 | 2-83 | 94% |
| 62-00 | 65-00 | 3-00 | 3-00 | 100% |
| 65-00 | 68-00 | 3-00 | 3-00 | 100% |
| 68-00 | 69-70 | 1-70 | 1-70 | 100% |
| 69-70 | 70-90 | 1-20 | 1-10 | 91.66 |
| 70-90 | 71-90 | 1-00 | 1-00 | 100% |
| 71-90 | 74-00 | 2-10 | 2-10 | 100% |
| 74-00 | 76-00 | 2-00 | 2-00 | 100% |
| 76-00 | 77-00 | 1-00 | 1-00 | 100% |
| 77-00 | 78-70 | 1-70 | 1-04 | 61.1% |

830052

053

# ASSAY RECORD SHEET

(EASTERN RIDGE)

830053

| SAMPLE Nº. | FROM (m) | TO (m) | INTERVAL (m) | ppm $WO_3$. (CODE X1) |
|---|---|---|---|---|
| D507/ 1 | 5·00 | 6·50 | 1·50 | 400 |
| 2 | 6·50 | 8·00 | 1·50 | 460 |
| 3 | 8·00 | 9·00 | 1·00 | 1660 |
| 4 | 9·00 | 10·00 | 1·00 | 810 |
| 5 | 10·00 | 11·00 | 1·00 | 75 |
| 6 | 11·00 | 12·00 | 1·00 | 860 |
| 7 | 12·00 | 13·00 | 1·00 | 330 |
| 8 | 13·00 | 14·00 | 1·00 | 500 |
| 9 | 14·00 | 15·00 | 1·00 | 480 |
| 10 | 15·00 | 16·00 | 1·00 | 340 |
| 11 | 16·00 | 17·00 | 1·00 | 90 |
| 12 | 17·00 | 18·00 | 1·00 | 690 |
| 13 | 18·00 | 19·00 | 1·00 | 200 |
| 14 | 19·00 | 20·00 | 1·00 | 360 |
| 15 | 20·00 | 21·00 | 1·00 | 110 |
| 16 | 21·00 | 22·00 | 1·00 | 50 |
| 17 | 22·00 | 22·80 | 0·80 | 1200 |
| 18 | 22·80 | 23·50 | 0·70 | 250 |
| 19 | 29·00 | 30·00 | 1·00 | 1280 |
| 20 | 30·00 | 31·00 | 1·00 | 160 |
| 21 | 31·00 | 32·00 | 1·00 | 460 |
| 22 | 32·00 | 33·00 | 1·00 | 1840 |
| 23 | 33·00 | 34·00 | 1·00 | 3020 |
| 24 | 34·00 | 35·00 | 1·00 | 390 |
| 25 | 35·00 | 36·00 | 1·00 | 2860 |
| 26 | 36·00 | 37·00 | 1·00 | 2060 |
| 27 | 37·00 | 38·00 | 1·00 | 1120 |
| 28 | 38·00 | 39·00 | 1·00 | 300 |
| 29 | 39·00 | 40·00 | 1·00 | 310 |
| 30 | 40·00 | 41·00 | 1·00 | 820 |
| 31 | 41·00 | 42·00 | 1·00 | 360 |
| 32 | 58·50 | 59·50 | 1·00 | 1440 |

CONTINUED OVERLEAF

AMDEL AR/4960/86.

(EASTERN RIDGE).

054 ASSAY RECORD SHEET.

830054

| SAMPLE. N°. | FROM (m) | TO (m) | INTERVAL. (m) | ppm $WO_3$ (CODE X1) |
|---|---|---|---|---|
| D507/83 | 59.50 | 60.50 | 1.00 | 3380 |
| 34 | 60.50 | 61.50 | 1.00 | 610 |
| 35 | 61.50 | 62.60 | 1.00 | 220 |
| 36 | 62.50 | 63.50 | 1.00 | 220 |
| 37 | 63.50 | 64.50 | 1.00 | 35 |
| 38 | 64.50 | 65.50 | 1.00 | 25 |
| 39 | 65.50 | 66.50 | 1.00 | 250 |
| 40 | 66.50 | 67.50 | 1.00 | 200 |
| 41 | 67.50 | 68.00 | 0.50 | 270 |
| 42 | 68.00 | 68.70 | 0.70 | 220. |

AMDEL AC. 4950/86.

055

830055

SCALE 1:200

| % CORE RECOVERY | CORE SPLIT | FEATURE | | FRACTURING | BEDDING | GEOLOGY | MINERAL |
|---|---|---|---|---|---|---|---|

LENGTH 86.90 NORTHING 7052.5N
AZIMUTH 90° EASTING 7837E
DIP AT COLLAR 70° ELEVATION 482.6
HOLE No D.608 PAGE 1 OF 1/2.
LOCATION LOCATION L5 TO EASTERN RIDGE. PROJECT KARA.

| MINERALISATION | GEOLOGY |
|---|---|
| 0.00 - 10.50m) (10.50m) | NO CORE - ROLLER BIT, WEATHERED BASALT. |
| 10.50 | |
| 10.50 - 21.43m (10.93m) | MASSIVE, HOMOGENEOUS, UNJOINTED DARK GREY BASALT. |
| 21.43 | |
| 21.43 - 30.50m (9.07) | Vesicular BASALT with CALCITE. Dark grey - aphanitic. Soft and Line cut — 26.80-27.20m. |
| 30.50 | |
| 30.50m - 40.45m (9.95m). | Vesicular olivine basalt with calcite. Prevalent calcite content 21.50 - 36.00m. |
| 40.25 | |
| 40.55 40.25 - 41.55 | → Broken rubbly quartzite (Jartou |
| 41.10 40.55 - 41.10 (0.55) | → Fine light grey/white calcareous sandstone and quartzite |
| 41.10 - 45.16) (4.06) | → White/fawn quartzite/sandstone Blocky, soft, fractured. |
| 45.15 | |
| 45.15 - 46.55 (1.40) | → Medium grey coloured Limey Sand |
| 46.55 | CONTACT TOP? / ORDOVICIAN — 46.55m |
| 46.60 46.60 - [illegible] | HORIZ — white [illegible] |

ANGLE READ
ANGLE CORRECTE
AZIMUTH
DEPTH
SURVEY P.O.D
CONTRACTOR BOYLES
DATE

056

830056

SCALE 1:200

| % CORE RECOVERY | CORE SPLIT | FEATURE | FRACTURING | BEDDING | GEOLOGY | MINERAL |
|---|---|---|---|---|---|---|

LENGTH 85.90 NORTHING
AZIMUTH 90° EASTING
DIP AT COLLAR 70° ELEVATION
LOCATION LOCATION LS TO E. RIDGE

HOLE No D508 PAGE 2/2
PROJECT KARA

| MINERALISATION | GEOLOGY |
|---|---|
| 51.30m | Transition zone skarnified Blocky/altered. Core Loss 51.30–51.80m. |
| 51.80–59.20m (7.40m) | ORDOVICIAN SEDIMENTS Soft, weathered, altered, barren, slightly skarnified calcareous sandstones. |
| 59.20m | |
| 59.20–62.90 (3.70m) | Siliceous Fe-diopside skarn. Partially weathered Magnetite – patchy blebs. Gradational contact – Scheelite specks. |
| 62.90m | |
| 62.90–68.50 (5.60m) | Slightly altered (skarnified) calcareous sandstone unit. |
| 68.50m | |
| 68.50–70.10m (1.60m) | Skarnified, silicified diopside skarn. Quartz stringers carry scheelite specks. |
| 70.10m | |
| 70.10–74.40 (4.30m) | Sandstone Unit Still partially weathered (Y) Very calcareous, blocky. |
| 74.40 | |
| 74.40–76.00 (1.60) | Accumulated sediments, granulized, soft, fine grained. |
| 76.00 | |
| 76.00–85.90m (9.90m) | Granite, pink, aplite rich. |
| 85.90 | |

E.O.H. 85.90m

830057 D 508.

| From | To | Width | Recovery ft./lbs. | Recovery % | Sample | Assays WO3 | Sn. | Bi | Pb |
|---|---|---|---|---|---|---|---|---|---|
| 58.30 | 59.30 | 1.00 | | | D508/1 | 2980 | 68 | 44 | 1400 |
| 59.30 | 61.30 | 2.00 | | | D508/2 | 1540 | 480 | 215 | 1720 |
| 61.30 | 62.30 | 1.00 | | | D508/3 | 1060 | 510 | 390 | 2320 |
| 62.30 | 63.30 | 1.00 | | | D508/4 | 440 | 620 | 810 | 1180 |
| 63.30 | 64.30 | 1.00 | | | D508/5 | 150 | 1080 | 1200 | 345 |
| 64.30 | 65.30 | 1.00 | | | D508/6 | 350 | 390 | 590 | 550 |
| 67.30 | 68.30 | 1.00 | | | D508/7 | 170 | 165 | 860 | 530 |
| 68.30 | 69.30 | 1.00 | | | D508/8 | 440 | 220 | 730 | 860 |
| 69.30 | 70.30 | 1.00 | | | D508/9 | 110 | 15 | 155 | 165 |
| 70.30 | 71.30 | 1.00 | | | D508/10 | 70 | 14 | 60 | 22 |

Length: _____ Contractor: _____

Bearing: _____ Core: _____ Stored: _____

Dip: _____ Casing: _____

Lat: _____ Logged by: _____ Date: _____

Dep: _____ Location: _____

Elev: _____

Hole No: D508

Project: KARA

Claim: LG → E. RIDGE

Oil Bit Thickness: _____ Started: _____ Finished: _____

Bit Rig Thickness: _____ Started: _____ Finished: _____

Page 1 of 1

MT. ISA MINES LIMITED
EXPLORATION DEPARTMENT

058

# RECOVERY SHEET

830058

HOLE No. 508 | PAGE 1 OF 1/1

CORE RECOVERY (CR) > 90% EXCEPT AS NOTED

| FROM | TO | INT | REC | COMMENTS | FROM | TO | INT. | REC. | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| 0·00 | 10·50 | 10·50 | – | CASED to 0·50 | | | | | |
| | | | | Roller Bit drilled | | | | | |
| | | | | to 10·50m. | | | | | |
| 10·50 | 13·50 | 3·00 | 2·63 | # 94·33 | | | | | |
| 13·50 | 16·50 | 3·00 | 3·00 | 100 | | | | | |
| 16·50 | 19·50 | 3·00 | 3·00 | 100 | | | | | |
| 19·50 | 21·40 | 1·90 | 1·90 | 100 | | | | | |
| 21·40 | 23·50 | 2·10 | 2·10 | 100 | | | | | |
| 23·50 | 26·50 | 3·00 | 3·00 | 100 | | | | | |
| 26·50 | 29·50 | 3·00 | 3·00 | 100 | | | | | |
| 29·50 | 31·50 | 2·00 | 2·00 | 100 | | | | | |
| 31·50 | 34·50 | 3·00 | 3·00 | 100 | | | | | |
| 34·50 | 36·50 | 2·00 | 2·00 | 100 | | | | | |
| 36·50 | 38·50 | 2·00 | 2·00 | 100 | | | | | |
| 38·50 | 41·50 | 3·00 | 3·00 | 100 | | | | | |
| 41·50 | 42·70 | 1·20 | 1·32 | 100 | | | | | |
| 42·70 | 44·50 | 1·80 | 1·80 | 100 | | | | | |
| 44·50 | 47·30 | 2·80 | 2·80 | 100 | | | | | |
| 47·30 | 48·30 | 1·00 | 1·00 | 100 | | | | | |
| 48·30 | 50·50 | 2·20 | 2·00 | 90·91 | | | | | |
| 50·50 | 53·50 | 3·00 | 1·20 | 40. | | | | | |
| 53·50 | 56·00 | 2·50 | 1·75 | 70% | | | | | |
| 56·00 | 56·50 | 0·50 | 0·50 | 100 | | | | | |
| 56·50 | 57·20 | 0·70 | 0·70 | 100 | | | | | |
| 57·20 | 59·20 | 2·00 | 2·00 | 100 | | | | | |
| 59·20 | 61·00 | 1·80 | 1·26 | 69·44. | | | | | |
| 61·00 | 62·00 | 1·00 | 100 | 100 | | | | | |
| 62·00 | 65·00 | 3·00 | 260 | 86·66 | | | | | |
| 65·00 | 67·20 | 2·20 | 0·54 | 24·54 | | | | | |
| 67·20 | 68·80 | 1·60 | 1·42 | 88·75 | | | | | |
| 68·80 | 71·00 | 1·20 | 1·20 | 100 | | | | | |
| 71·00 | 73·00 | 2·00 | 1·86 | 93 | | | | | |
| 73·00 | 76·00 | 3·00 | 3·00 | 100 | | | | | |
| 76·00 | 79·00 | 3·00 | 3·00 | 100 | | | | | |
| 79·00 | 82·00 | 3·00 | 3·00 | 100 | | | | | |
| 82·00 | 85·00 | 3·00 | 3·00 | 100 | | | | | |
| 85·00 | 85·90 | 0·90 | 0·90 | 100 | | | | | |
| 85·90 | E.OH. | | | | | | | | |

059

830059

SCALE 1:

| % CORE RECOVERY | CORE SPLIT | FEATURE | | FRACTURING | BEDDING | GEOLOGY | MINERAL |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

LENGTH 95.00 NORTHING 7937.9E
AZIMUTH 90° EASTING 7852.5N
DIP AT COLLAR 85° ELEVATION 4626 HOLE No D 509 PAGE 1 OF 1 1
LOCATION LOCATION L5 TO EASTERN RIDGE PROJECT KARA

MINERALISATION GEOLOGY

ANGLE READ
ANGLE CORRECTED
AZIMUTH
DEPTH

SURVEY P.D.B

CONTRACTOR Diamond Core Drilling Ltd (C.Y. Cormack) No 165
CORE SIZE
CASING
DATE
LOGGED BY
CHECKED

Summary Lithological Log.

Tertiary Sequence:-

0.00 - 49.10 (49.10m) - Basalt.

49.10 - 49.53 (0.43m) - Conglomerate baked altered zone

Ordovician Sequence.

49.53 - 52.00 (2.47) - Quartz sand.

52.00 - 64.00 (12.00) - Massive greyish white calcitic marbles.

64.00 - 64.52 (0.52) - Soft calcitic material.

64.52 - 67.90 (3.38) - Calcitic marbles.

67.90 - 70.70 (0.80) - Sheared (diopside-epidote) sandstones and quartzites.
(69.18 - 69.41m) - calcite bearing

70.70 - 71.55 (0.85) -

71.55 - 72.80. (1.25) - Soft, rubbly, calcitic, altered (epidote) fractured marbles

72.80 - 73.95 (1.16) - Slightly more clay sheared marble.

73.95 - 74.97 (1.02) - Diopside epidote skarn
Calcite bearing from (73.95 - 74.80m)

74.97 - 78.58. (3.61) - white calcitic marble.

78.58 - 81.80 (3.22) - Epidote diopside skarn (recrystallized).

81.80 - 87.20 (5.40) - Magnetite skarn

87.20 - 89.65 (2.45) - Dark grey, soft altered sandstone

89.65 - 92.60 (2.95) - Green pyroxene skarn

060

830060 D509.

| From | To | Width | Recovery ft/lbs. | Recovery % | Sample | Assays $WO_3$ | Pb | Mo | Bi | Sn. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | D509/1 | 75 | 84 | 6 | 44 | 425 | | | |
| | | | | | D509/2 | 70 | 165 | <4 | 56 | 315 | | | |
| 81.40 | 82.00 | 0.60 | | | D509/3 | 2900 | 780 | 50 | 130 | 750 | | | |
| 82.00 | 82.50 | 0.50 | | | D509/4 | 1.35% | 175 | 370 | 4 | 220 | | | |
| 82.50 | 83.00 | 0.50 | | | D509/5 | 4440 | 200 | 115 | 22 | 1520 | | | |
| 83.00 | 83.50 | 0.50 | | | D509/6 | 1.15% | 185 | 310 | 80 | 1280 | | | |
| 83.50 | 84.00 | 0.50 | | | D509/7 | 1.73% | 580 | 730 | 1780 | 1240 | | | |
| 84.00 | 84.50 | 0.50 | | | D509/8 | 1.24% | 500 | 400 | 1220 | 1740 | | | |
| 84.50 | 85.00 | 0.50 | | | D509/9 | 8080 | 86 | 86 | 315 | 430 | | | |
| 85.00 | 85.50 | 0.50 | | | D509/10 | 350 | 58 | 18 | 410 | 610 | | | |
| 85.50 | 86.00 | 0.50 | | | D509/11 | 7400 | 105 | 180 | 355 | 860 | | | |
| 86.00 | 86.50 | 0.50 | | | D509/12 | 5700 | 140 | 96 | 405 | 485 | | | |
| | | | | | D509/13 | 160 | 630 | 10 | 590 | 2620 | | | |
| | | | | | D509/14 | 190 | 1340 | 4 | 165 | 1100 | | | |
| 81.40 | 84.50 | 3.10 | | | | 1.10% | | | | | | | |
| 84.50 | 86.50 | 2.00 | | | | 0.45% | | | | | | | |
| | | | | | | | | | AMOEL | AC | 5758/86 | | |

Length _____ Contractor _____

Bearing _____ Core _____ Stored _____

Dip _____ Casing _____

Lat. _____ Logged by _____ Date _____

Dep. _____ Location _____

Elev. _____

O.B. Thickness _____ Started _____ Finished _____

B.R. Thickness _____ Started _____ Finished _____

Hole No. DDH. 509

Project KARA

Claim Loc. L5 → E. RIDGE.

Page ____ of ____

061

830061 D.509

| From | To | Width | Recovery ft/lbs. | Recovery % | Sample | Assays $WO_3$ | | Mo | Pb | Bi | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 65.00 | 65.95 | 0.95 | | | D509/15 | 35 | | 4 | 10 | 6. | | | |
| 65.95 | 67.00 | 1.05 | | | D509/16 | 55 | | 4 | 12 | <4 | | | |
| 67.00 | 68.05 | 1.05 | | | D509/17 | 20 | | <4 | 50 | 16 | | | |
| 68.05 | 68.85 | 0.80 | | | D509/18 | 85 | | <4 | 490 | 26 | | | |
| 68.85 | 69.80 | 0.95 | | | D509/19 | 220 | | 4 | 230 | 12 | | | |
| 69.80 | 70.70 | 0.90 | | | D509/20 | 45 | | <4 | 140 | <4 | | | |
| 70.70 | 71.70 | 1.00 | | | D509/21 | 25 | | <4 | 16 | 6 | | | |
| 71.70 | 72.70 | 1.00 | | | D509/22 | 40 | | <4 | 270 | 14. | | | |
| 72.70 | 73.60 | 0.90 | | | D509/23 | 10 | | <4 | 190 | 10 | | | |
| 73.60 | 74.05 | 0.45 | | | D509/24 | 15 | | <4 | 16 | 14 | | | |
| 74.05 | 74.90 | 0.85 | | | D509/25 | 4680 | | 190. | 155 | 28 | | | |
| 74.90 | 76.00 | 1.10 | | | D509/26 | <10 | | 4 | <4 | 10 | | | |
| 76.00 | 77.20 | 1.20 | | | D509/27 | 20 | | <4 | <4 | 10 | | | |
| 77.20 | 78.20 | 1.00 | | | D509/28 | 10 | | <4 | <4 | <4 | | | |
| 78.20 | 79.20. | 1.00. | | | D509/29 | 140 | | 4 | 4 | <4. | | | |

Length _____ Contractor _____

Bearing _____ Core _____ Stored _____

Dip _____ Casing _____

Lat. _____ Logged by _____ Date _____

Dep. _____ Location _____

Elev. _____

O.B. Thickness _____ Started _____ Finished _____

B.R. Thickness _____ Started _____ Finished _____

Hole No. D.509

Project KARA.

Claim LOC. L6 → E. RIDGE.

Page ____ of ____

MESTERN MINES (AUST) PTY LTD
EXPLORATION DEPARTMENT

830062

062 RECOVERY SHEET

HOLE No. 509 | PAGE 1 OF 1 1

CORE RECOVERY (CR) > 90% EXCEPT AS NOTED

| FROM | TO | INT | REC | COMMENTS | FROM | TO | INT. | REC. | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| 0·00 | 3·00 | 3·00 | N/C | CASED | 88·80 | 89·60 | 0·80 | 0·49 | 61·25% |
| | | | | | 89·60 | 92·00 | 2·40 | 2·40 | 100% |
| 3·00 | 10·00 | 7·00 | N/C | ROLLERBIT DRILLED | 92·00 | 95·00 | 3·00 | 3·00 | 100% |
| 10·00 | 13·00 | 3·00 | 2·87 | 95·66% | | 95·00 | E.O.H. | | |
| 13·00 | 16·00 | 3·00 | 3·00 | 100% | | | | | |
| 16·00 | 17·50 | 1·50 | 1·40 | 93·33% | | | | | |
| 17·50 | 21·50 | 4·00 | 3·98 | 99·5% | | | | | |
| 21·50 | 24·50 | 3·00 | 3·00 | 100% | | | | | |
| 24·50 | 27·00 | 2·50 | 2·50 | 100% | | | | | |
| 27·00 | 29·50 | 2·50 | 2·50 | 100% | | | | | |
| 29·50 | 32·50 | 3·00 | 3·00 | 100% | | | | | |
| 32·50 | 34·30 | 1·80 | 1·56 | 86·66% | | | | | |
| 34·30 | 36·50 | 2·20 | 2·20 | 100% | | | | | |
| 36·50 | 39·50 | 3·00 | 3·00 | 100% | | | | | |
| 39·50 | 42·50 | 3·00 | 3·00 | 100% | | | | | |
| 42·50 | 45·30 | 2·80 | 2·80 | 100% | | | | | |
| 45·30 | 48·20 | 2·90 | 2·90 | 100% | | | | | |
| 48·20 | 51·00 | 2·80 | 2·80 | 100% | | | | | |
| 51·00 | 54·00 | 3·00 | 3·00 | 100% | | | | | |
| 54·00 | 57·00 | 3·00 | 3·00 | 100% | | | | | |
| 57·00 | 60·00 | 3·00 | 3·00 | 100% | | | | | |
| 60·00 | 63·00 | 3·00 | 3·00 | 100% | | | | | |
| 63·00 | 63·50 | 0·50 | 0·50 | 100% | | | | | |
| 63·50 | 64·00 | 0·50 | 0·50 | 100% | | | | | |
| 64·00 | 67·00 | 3·00 | 3·00 | 100% | | | | | |
| 67·00 | 68·70 | 1·70 | 1·70 | 100% | | | | | |
| 68·70 | 71·70 | 3·00 | 3·00 | 100% | | | | | |
| 71·70 | 73·80 | 2·10 | 2·10 | 100% | | | | | |
| 73·80 | 74·90 | 1·10 | 1·10 | 100% | | | | | |
| 74·90 | 77·20 | 2·30 | 2·10 | 91·30% | | | | | |
| 77·20 | 79·00 | 1·80 | 1·80 | 100% | | | | | |
| 79·00 | 80·50 | 1·50 | 1·50 | 100% | | | | | |
| 80·50 | 81·60 | 1·10 | 1·10 | 100% | | | | | |
| 81·60 | 83·50 | 1·90 | 1·67 | 87·89% | | | | | |
| 83·50 | 86·50 | 3·00 | 3·00 | 100% | | | | | |
| 86·50 | 87·70 | 1·20 | 1·20 | 100% | | | | | |
| 87·70 | 88·20 | 0·50 | 0·40 | 80% | | | | | |
| 88·20 | 88·80 | 0·60 | 0·60 | 100% | | | | | |

063

830063

SCALE 1:

| % CORE RECOVERY | CORE SPLIT | FEATURE | | FRACTURING | BEDDING | GEOLOGY | MINERAL |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

LENGTH 150·00m NORTHING 7284·1N

AZIMUTH 90° EASTING 7787·9E

DIP AT COLLAR 70° ELEVATION 476·7

HOLE No D.510 PAGE 1 OF 1/1

LOCATION LOCATION 1.5 TO EASTERN RIDGE. PROJECT KARA.

MINERALISATION GEOLOGY

ANGLE READ

ANGLE CORRECTED

AZIMUTH

DEPTH

SURVEY P.D.A.

CONTRACTOR Kennecott Explorations (Aust) Ltd (C.R.A. Group)

CORE

CASING

DATE

LOGGED BY

## Summary Lithological Log.

### TERTIARY SEQUENCES

0·00 - 71·80m (71·80m) - Basalt.

71·80 - 80·10m (8·30m) - Silicified conglomerate - basalt units

80·10 - 81·40m (1·30m) - Soft mudstones.

81·40 - 83·40m (2·00m) - (Tertiary) Sands

83·40 - 86·00m (2·60m) - Conglomerates (unaltered)

86·00 - 95·50m (9·50m) - Silicified conglomerate - basalt units

95·50 - 100·65 (5·15m) - Tertiary basalt.

### ORDOVICIAN SEQUENCES

100·65 - 118·00 (17·35) - Sandstones, calcareous sandstones, soft, blocky.

118·00 - 122·90 (4·90) - Massive, white sandstone.

122·90 - 124·95 (2·05) - Magnetite skarn (F) - Low order sulphide content.

124·95 - 127·15 (2·20) - Hematitic skarn.

127·15 - 131·10 (3·95) - Hematite, quartz, magnetite, skarn.

131·10 - 134·14 (3·04) - Epidote skarn.

134·14 - 136·00 (1·86) - Magnetite skarn.

136·00 - 143·30 (7·30) - Scheelite bearing magnetite skarn.

143·30 - 145·00 (1·70) - Grey, quartzite sandstone.

145·00 - 150·00 (5·00) - Granite (porphyritic - altered).

E.O.H. 150·00m.

85-064 LS → E. RIDGE DDH-510

| From | To | Width | Recovery ft/lbs | Recovery % | Sample | Assays $WO_3$ | Sn | Pb | Zn | Mo | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 135.93 | 136.50 | 0.57 | | | DS10/1 | 80 | 670 | 88 | 305 | 14 | | | |
| 136.50 | 137.00 | 0.50 | | | DS10/2 | 160 | 840 | 115 | 365 | 8 | | | |
| 137.00 | 137.50 | 0.50 | | | DS10/3 | 420 | 510 | 78 | 190 | 20 | | | |
| 137.50 | 138.00 | 0.50 | | | DS10/4 | 1780 | 620 | 70 | 415 | 64 | | | |
| 138.00 | 138.50 | 0.50 | | | DS10/5 | 2560 | 820 | 115 | 480 | 48 | | | |
| 138.50 | 139.00 | 0.50 | | | DS10/6 | 2520 | 990 | 120 | 54 | 36 | | | |
| 139.00 | 139.50 | 0.50 | | | DS10/7 | 1340 | 830 | 105 | 260 | 38 | | | |
| 139.50 | 140.00 | 0.50 | | | DS10/8 | 2240 | 910 | 94 | 1260 | 14 | | | |
| 140.00 | 140.50 | 0.50 | | | DS10/9 | 910 | 900 | 94 | 640 | 8 | | | |
| 140.50 | 141.00 | 0.50 | | | DS10/10 | 1.02% | 2920 | 355 | 475 | 115 | | | |
| 141.00 | 141.50 | 0.50 | | | DS10/11 | 1.29% | 2200 | 270 | 1180 | 150 | | | |
| 141.50 | 142.00 | 0.50 | | | DS10/12 | 3800 | 1320 | 160 | 630 | 44 | | | |
| 142.00 | 142.50 | 0.50 | | | DS10/13 | 6100 | 3180 | 390 | 325 | 64 | | | |
| 142.50 | 143.00 | 0.50 | | | DS10/14 | 4160 | 3060 | 415 | 165 | 42 | | | |
| 143.00 | 143.50 | 0.50. | | | DS10/15 | 6050. | 235. | 215. | 570. | 68. | | | |
| | | | | | | | | | | | | | |
| 123.00 | 124.00 | 1.00 | | | DS10/16 | 760 | 250 | 1020 | 46 | 12 | | | |
| 124.00 | 125.00 | 1.00 | | | DS10/17 | 120 | 2260 | 1200 | 530 | 8 | | | |
| 125.00 | 126.00 | 1.00 | | | DS10/18 | 300 | 2360 | 920 | 450 | 8 | | | |
| 126.00 | 127.00 | 1.00 | | | DS10/19 | 250 | 1540 | 590 | 230 | 4 | | | |
| 127.00 | 128.00 | 1.00 | | | DS10/20 | 150 | 245 | 460 | 110 | <4 | | | |
| 128.00 | 129.00 | 1.00 | | | DS10/21 | 100 | 155 | 3060 | 36 | <4 | | | |
| 129.00 | 130.00 | 1.00 | | | DS10/22 | <10 | 250 | 62 | 16 | <4 | | | |
| 130.00 | 131.00 | 1.00 | | | DS10/23 | 25 | 130 | 42 | 8 | <4 | | | |
| 131.00 | 132.00 | 1.00 | | | DS10/24 | 10 | 345 | 105 | 14 | <4 | | | |
| 132.00 | 133.00 | 1.00 | | | DS10/25 | <10 | 120 | 175 | 6 | 10 | | | |
| 133.00 | 134.00 | 1.00 | | | DS10/26 | 100 | 130 | 810 | 125 | 42 | | | |
| 134.00 | 135.00 | 1.00 | | | DS10/27 | 200 | 465 | 175 | 72 | 30 | | | |
| 135.00 | 135.93 | 0.93 | | | DS10/28 | 160 | 920 | 130 | 100 | 4 | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

Length 150.00m Contractor TAS MINES LTD.

Bearing Core NQ Stored KARA.

Dip Casing NQ

Lat. Logged by Date

Dep. Location

Elev.

O.B. Thickness Started Finished

B.R. Thickness Started Finished

Hole No. DDH-510

Project KARA

Claim LS → E. RIDGE

Page 1 of 1

065 RECOVERY SHEET

MOUNT ISA MINES LIMITED
EXPLORATION DEPARTMENT

HOLE No. 510. PAGE 1 OF 1 1

CORE RECOVERY (CR) & 90% EXCEPT AS NOTED

L 5 TO E. RIDGE.

| FROM | TO | INT | REC | COMMENTS | FROM | TO | INT. | REC. | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 17.50 | 17.50 | NIL | ROLLER BIT. | 112.00 | 113.50 | 1.50 | 1.50 | 100% |
| | | | | | 113.50 | 114.30 | 0.90 | 0.80 | 88.89% |
| 17.50 | 20.50 | 3.00 | 3.00 | 100% | 114.30 | 115.50 | 1.10 | 3.20 | 100.00 |
| 20.50 | 22.00 | 1.50 | 1.50 | 100% | 115.40 | 117.50 | 2.10 | | |
| 22.00 | 25.00 | 3.00 | 2.95 | 98.3% | 117.50 | 119.00 | 1.50 | 1.35 | 90% |
| 25.00 | 26.30 | 1.30 | 1.30 | 100%. | 119.00 | 121.00 | 2.00 | 2.00 | 100% |
| 26.30 | 29.00 | 2.70 | 2.64 | 97.7%. | 121.00 | 123.00 | 2.00 | 2.00 | 100% |
| 29.00 | 32.00 | 3.00 | 3.00 | 100% | 123.00 | 125.50 | 2.50 | 2.32 | 92.8% |
| 32.00 | 35.00 | 3.00 | 3.00 | 100% | 125.50 | 127.00 | 1.50 | 1.12 | 74.66% |
| 35.00 | 38.00 | 3.00 | 3.00 | 100%. | 127.00 | 128.00 | 1.00 | 1.00 | 100% |
| 38.00 | 41.00 | 3.00 | 3.00 | 100%. | 128.00 | 130.0 | 2.00 | 2.00 | 100% |
| 41.00 | 44.00 | 3.00 | 3.00 | 100% | 130.00 | 132.50 | 2.50 | 2.50 | 100% |
| 44.00 | 47.00 | 3.00 | 3.00 | 100%. | 132.50 | 134.50 | 2.00 | 2.00 | 100% |
| 47.00 | 50.00 | 3.00 | 3.00 | 100%. | 134.50 | 136.00 | 1.50 | 1.50 | 100% |
| 50.00 | 53.00 | 3.00 | 3.00 | 100%. | 136.00 | 137.50 | 1.50 | 1.50 | 100% |
| 53.00 | 56.00 | 3.00 | 3.00 | 100% | 137.50 | 140.50 | 3.00 | 3.00 | 100% |
| 56.00 | 58.00 | 2.00 | 2.00 | 100% | 140.50 | 143.50 | 3.00 | 3.00 | 100% |
| 58.00 | 61.00 | 3.00 | 2.95 | 98.33%. | 143.50 | 143.60 | 0.10 | 0.10 | 100% |
| 61.00 | 64.00 | 3.00 | 3.00 | 100% | 143.60 | 145.00 | 1.40 | 1.40 | 100% |
| 64.00 | 67.00 | 3.00 | 3.00 | 100% | 145.00 | 148.00 | 3.00 | 3.00 | 100% |
| 67.00 | 70.00 | 3.00 | 3.00 | 100% | 148.00 | 150.00 | 2.00 | 2.00 | 100%. |
| 70.00 | 73.00 | 3.00 | 3.00 | 100% | | | | | |
| 73.00 | 76.00 | 3.00 | 2.78 | 92.66% | | 150.00 | E.O.H. | | |
| 76.00 | 79.00 | 3.00 | 2.85 | 95.00%. | | | | | |
| 79.00 | 82.00 | 3.00 | 3.00 | 100% | | | | | |
| 82.00 | 82.50 | 0.50 | 0.50 | 100% | | | | | |
| 82.50 | 85.00 | 2.50 | 2.50 | 100% | | | | | |
| 85.00 | 86.00 | 1.00 | 0.10 | 10% | | | | | |
| 86.00 | 89.00 | 3.00 | 3.00 | 100% | | | | | |
| 89.00 | 91.00 | 2.00 | 1.94 | 97% | | | | | |
| 91.00 | 93.50 | 2.50 | 2.43 | 97.2%. | | | | | |
| 93.50 | 93.80 | 0.30 | 0.30 | 100%. | | | | | |
| 93.80 | 96.80 | 3.00 | 3.00 | 100% | | | | | |
| 96.80 | 99.50 | 2.70 | 2.65 | 98.14%. | | | | | |
| 99.50 | 102.50 | 3.00 | 3.00 | 100%. | | | | | |
| 102.50 | 103.00 | 0.50 | 0.30 | 60% | | | | | |
| 103.00 | 104.80 | 1.80 | 1.80 | 100% | | | | | |
| 104.80. | 107.00 | 2.20 | 2.20 | 100% | | | | | |
| 107.00 | 109.00 | 2.00 | 1.39 | 69.5% | | | | | |
| 109.00 | 112.00 | 3.00 | 3.00 | 100%. | | | | | |

830066

SCALE 1:

| % CORE RECOVERY | CORE SPLIT | FEATURE | | FRACTURING | BEDDING | GEOLOGY | MINERAL |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

LENGTH 113.50m NORTHING 6734.7N

AZIMUTH 90° EASTING 7787.4E

DIP AT COLLAR 80° ELEVATION 67

HOLE No. D811 PAGE 1 OF 1/2

LOCATION EASTERN RIDE (NORTH EXTENSION) PROJECT

| MINERALISATION | GEOLOGY |
|---|---|
| 0.00 - 17.30m | NO CORE – Roller Bit. |
| | TERTIARY SEQUENCES |
| 17.30 to 23.00m (5.70m) | MASSIVE BASALT, BLUISH MEDIUM TEXTURE. |
| 23.00 to 25.40m (2.40m) | WEATHERED TUFFACEOUS MATERIAL. |
| 25.40 to 28.80 (3.40m) | ANEDESITIC BASALT (OLIVINE) |
| 28.80 to 51.50m (22.70m) | GREY, FINE GRAINED MASSIVE, HOMOGENEOUS BASALT. |
| 51.50m to 56.65m | HEMATITIC RICH AGGLOMERATE. |
| 56.65 to 67.25m | DARK AGGLOMERATES / TUFFS. |
| 67.25m to 71.80m | BROWN (LIGHT) AGGLOMERATES |
| 71.80m - 74.60m | VOLCANIC AGGLOMERATE. |
| 74.60m - 85.60m | REDDISH/CREAM SILTSTONE/QUARTZITE. |
| 85.60m - 86.30m | TERTIARY CONGLOMERATE. |
| 86.30 - 87.70 (1.40m) | BASAL TERTIARY CONG/GRANITOID. |
| | ARCHAEAN SEQUENCES. |
| 87.70 - 99.50m. | Amphibolites Sequence. Quartzite / Sandstones. Massive, homogenous, light brown. Slightly epidotised – chloritised. Little iron staining on fractures / joints. |
| 99.50 - 107.35m | Magnetite Shear Zone. (Lower Zone). Brecciated Zone. Magnetite (crystals average 30-35%) with garnet, hematite, quartz. Medium texture. |

ANGLE READ

ANGLE CORRECTED

AZIMUTH

DEPTH

SURVEY

CONTRACTOR

DATE

LOGGED BY

830067

067

SCALE 1:

LENGTH 113·50m. NORTHING 6734·7N

AZIMUTH 90° EASTING 7787·4E

DIP AT COLLAR 80° ELEVATION —

HOLE No D·511. PAGE 1 OF 2/2.

LOCATION EASTERN RIDGE - N. EXTENSION. PROJECT

| % CORE RECOVERY | CORE SPLIT | FEATURE | FRACTURING | BEDDING | GEOLOGY | MINERAL | MINERALISATION | GEOLOGY |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Quartzose Syenite. |
| | | | | | | | 107·35 - 108·30m. | Epidotised Leucocrased. |
| | | | | | | | 108·30 - 113·50m | Granite. Pink Leucocratic, medium Coarse and massive. |
| | | | | | | | E.O.H - 113·50m | |
| | | | | | Tb/Ts | | | Tertiary basalt/sediments 0·00 - 87·70m (87·70m) |
| | | | | | | | | Archaean. |
| | | | | | | | | Arenaceous Unit 87·70m - 99·50m. (11·80m) |
| | | | | | | | | Lower Magnetite Chem 99·50m - 107·35m (7·85) |
| | | | | | | | | Ae - 107·35m 108·30m (0·95) |
| | | | | | | | | Granite - 108·30m - 113·50m (5·20m). |

ANGLE READ

ANGLE CORRECTED

AZIMUTH

DEPTH

SURVEY PDO.

CONTRACTOR Longyear (NZ) Ltd. Canterbury

CORE SIZE NQ CASING NQ

DATE

COMPANY Australian Consolidated Minerals

063

830068 D.511.

| From | To | Width | Recovery ft/lbs | Recovery % | Sample | Assays | $WO_3$ | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 98.50 | 99.75 | 1.25 | | | D511/1 | | 1240 | | | | | | |
| 99.75 | 101.00 | 1.25 | | | D511/2 | | 70 | | | | | | |
| 101.00 | 102.25 | 1.25 | | | D511/3 | | 30 | | | | | | |
| 102.25 | 103.50 | 1.25 | | | D511/4 | | 30 | | | | | | |
| 103.50 | 104.75 | 1.25 | | | D511/5 | | 60 | | | | | | |
| 104.75 | 106.00 | 1.25 | | | D511/6 | | 85 | | | | | | |
| 106.00 | 107.35 | 1.35 | | | D511/7 | | 85 | | | | | | |
| 107.35 | 107.70 | 0.35 | | | D511/8 | | 70 | | | | | | |

Length _____ Contractor _____

Bearing _____ Core _____ Sized _____

Dip _____ Casing _____

Lat. _____ Logged by _____ Date _____

Dep. _____ Location _____ Hole No. _____

Elev. _____ Project _____

O.B. Thickness _____ Started _____ Finished _____ Claims _____

B.R. Thickness _____ Started _____ Finished _____ Page _____ of _____

069

# RECOVERY SHEET

830069

[illegible] MINES (AUST) PTY LTD
EXPLORATION DEPARTMENT

HOLE No. 511 | PAGE 1 OF 111

CORE RECOVERY (REC) > 98% EXCEPT AS NOTED

| FROM | TO | INT | REC | COMMENTS | FROM | TO | INT. | REC. | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 3.00 | 3.00 | N/L | CASED TO 3.0m. | 81.00 | 82.40 | 1.40 | 1.40 | 100% |
| 3.00 | 19.00 | 16.00 | N/L | ROLLER BIT DRILLED | 82.40 | 82.60 | 0.20 | 0.20 | 100% |
| | | | | | 82.60 | 82.90 | 0.30 | 0.15 | 50% |
| 19.00 | 20.50 | 1.50 | 1.50 | 100% | 82.90 | 85.50 | 2.60 | 1.87 | 71.92% |
| 20.50 | 21.50 | 1.00 | 1.00 | 100% | 85.50 | 87.50 | 2.00 | 1.81 | |
| 21.50 | 22.40 | 0.90 | 0.32 | 35.5% | 87.50 | 87.60 | 0.10 | 0.10 | 100% |
| 22.40 | 22.90 | 0.50 | 0.28 | 56% | 87.60 | 89.00 | 1.40 | 1.40 | 100% |
| 22.90 | 23.40 | 0.50 | 0.42 | 84% | 89.00 | 89.40 | 0.40 | 0.40 | 100% |
| 23.40 | 25.40 | 2.00 | 2.00 | 100% | 89.40 | 92.40 | 3.00 | 2.76 | |
| 25.40 | 25.70 | 0.30 | 0.30 | 100% | 92.40 | 95.00 | 2.60 | 1.62 | |
| 25.70 | 26.00 | 0.30 | 0.30 | 100% | 95.00 | 98.00 | 3.00 | 3.00 | 100% |
| 26.00 | 26.70 | 0.70 | 0.48 | 68.57% | 98.00 | 101.00 | 3.00 | 3.00 | 100% |
| 26.70 | 28.40 | 1.70 | 1.70 | 100% | 101.00 | 104.00 | 3.00 | 2.98 | |
| 28.40 | 30.70 | 2.30 | 2.30 | 100% | 104.00 | 104.30 | 0.30 | 0.30 | 100% |
| 30.70 | 33.30 | 2.60 | 2.60 | 100% | 104.30 | 107.00 | 2.70 | 2.65 | |
| 33.30 | 35.30 | 2.00 | 2.00 | 100% | 107.00 | 108.50 | 1.50 | 1.50 | 100% |
| 35.30 | 38.30 | 3.00 | 3.00 | 100% | 108.50 | 109.00 | 0.50 | 0.50 | 100% |
| 38.30 | 41.30 | 3.00 | 3.00 | 100% | 109.00 | 111.00 | 2.00 | 1.73 | |
| 41.30 | 44.30 | 3.00 | 3.00 | 100% | 111.00 | 113.50 | 2.50 | 2.50 | 100% |
| 44.30 | 45.80 | 1.50 | 1.50 | 100% | | | | | |
| 45.80 | 48.80 | 3.00 | 3.00 | 100% | | | | | |
| 48.80 | 51.30 | 2.50 | 2.50 | 100% | | | | E.O.H. | 113.50m. |
| 51.30 | 53.30 | 2.00 | 2.00 | 100% | | | | | |
| 53.30 | 56.30 | 3.00 | 3.00 | 100% | | | | | |
| 56.30 | 59.30 | 3.00 | 3.00 | 100% | | | | | |
| 59.30 | 62.30 | 3.00 | 3.00 | 100% | | | | | |
| 62.30 | 65.30 | 3.00 | 3.00 | 100% | | | | | |
| 65.30 | 68.30 | 3.00 | 3.00 | 100% | | | | | |
| 68.30 | 71.30 | 3.00 | 3.00 | 100% | | | | | |
| 71.30 | 74.30 | 3.00 | 3.00 | 100% | | | | | |
| 74.30 | 76.30 | 2.00 | 2.00 | 100% | | | | | |
| 76.30 | 77.00 | 0.70 | 0.70 | 100% | | | | | |
| 77.00 | 79.40 | 2.40 | 1.28 | 53.3 | | | | | |
| 79.40 | 81.00 | 1.60 | 1.55 | 96.88 | | | | | |

070

830070

E.L. 17/68 ANNUAL REPORT 1985/86

APPENDIX NO. 2 KARA NO. 2 MAIN SKARN

NO. 2A TRENCH SAMPLES - ASSAY RESULTS
NO. 2B SOIL SAMPLES - ASSAY RESULTS
NO. 2C PAN CONCENTRATE - ASSAY RESULTS

071

830071

APPENDIX NO.2A

KARA NO. 2 - MAIN SKARN ZONE - TRENCH SAMPLE ASSAY RESULTS

| Sample No. | Assay (ppm) | |
|---|---|---|
| | WO3 | Sn |
| K2/4N/1 | 55 | 14 |
| K2/4N/2 | 35 | 16 |
| K2/4N/3 | 25 | 18 |
| K2/4N/4 | 30 | 34 |
| K2/4N/5 | 30 | 14 |
| K2/4N/6 | 45 | 18 |
| K2/4N/7 | 25 | 18 |
| K2/4N/8 | 35 | 305 |
| K2/4N/9 | 220 | 2380 |
| K2/4N/10 | 200 | 1900 |
| K2/4N/11 | 100 | 1040 |
| K2/4N/12 | 25 | 1460 |
| K2/4N/13 | 120 | 2800 |
| K2/4N/14 | 80 | 8400 |
| K2/4N/15 | 95 | 3880 |
| K2/4N/16 | 100 | 2280 |

TRENCH - K2/42 AMDEL REPORT - AC 3501/86

| | | |
|---|---|---|
| K2/10N/1 | 60 | 1060 |
| K2/10N/2 | 25 | 295 |
| K2/10N/3 | 100 | 125 |
| K2/10N/4 | 15 | 42 |
| K2/10N/5 | 25 | 20 |

TRENCH - K2/10N AMDEL REPORT - AC 3501/86

072

830072

APPENDIX NO. 2A

KARA NO. 2 - MAIN SKARN ZONE - TRENCH SAMPLE ASSAY RESULTS

| Sample No. | Assay (ppm) WO3 | Sn |
|---|---|---|
| K2/4N/1 | 55 | 14 |
| K2/4N/2 | 35 | 16 |
| K2/4N/3 | 25 | 18 |
| K2/4N/4 | 30 | 34 |
| K2/4N/5 | 30 | 14 |
| K2/4N/6 | 45 | 18 |
| K2/4N/7 | 25 | 18 |
| K2/4N/8 | 35 | 305 |
| K2/4N/9 | 220 | 2380 |
| K2/4N/10 | 200 | 1900 |
| K2/4N/11 | 100 | 1040 |
| K2/4N/12 | 25 | 1460 |
| K2/4N/13 | 120 | 2800 |
| K2/4N/14 | 80 | 8400 |
| K2/4N/15 | 95 | 3880 |
| K2/4N/16 | 100 | 2280 |

TRENCH - K2/42 AMDEL REPORT - AC 3501/86

| | | |
|---|---|---|
| K2/10N/1 | 60 | 1060 |
| K2/10N/2 | 25 | 295 |
| K2/10N/3 | 100 | 125 |
| K2/10N/4 | 15 | 42 |
| K2/10N/5 | 25 | 20 |

TRENCH - K2/10N AMDEL REPORT - AC 3501/86

073

830073

APPENDIX NO. 2A

KARA NO. 2 - MAIN SKARN ZONE - TRENCH SAMPLE ASSAY RESULTS

| Sample No. | Assay (ppm) WO3 | Sn |
|---|---|---|
| K2/4N/1 | 55 | 14 |
| K2/4N/2 | 35 | 16 |
| K2/4N/3 | 25 | 18 |
| K2/4N/4 | 30 | 34 |
| K2/4N/5 | 30 | 14 |
| K2/4N/6 | 45 | 18 |
| K2/4N/7 | 25 | 18 |
| K2/4N/8 | 35 | 305 |
| K2/4N/9 | 220 | 2380 |
| K2/4N/10 | 200 | 1900 |
| K2/4N/11 | 100 | 1040 |
| K2/4N/12 | 25 | 1460 |
| K2/4N/13 | 120 | 2800 |
| K2/4N/14 | 80 | 8400 |
| K2/4N/15 | 95 | 3880 |
| K2/4N/16 | 100 | 2280 |

TRENCH - K2/42 AMDEL REPORT - AC 3501/86

| | | |
|---|---|---|
| K2/10N/1 | 60 | 1060 |
| K2/10N/2 | 25 | 295 |
| K2/10N/3 | 100 | 125 |
| K2/10N/4 | 15 | 42 |
| K2/10N/5 | ← 25 | 20 |

TRENCH - K2/10N AMDEL REPORT - AC 3501/86

074

KARA NO.2 - MAIN SKARN ZONE - TRENCH SAMPLE ASSAY RESULTS

| Sample No. | Assay (ppm) WO3 | Sn |
|---|---|---|
| K2/4S/1 | 150 | 435 |
| K2/4S/2 | 85 | 460 |
| K2/4S/3 | 210 | 970 |
| K2/4S/4 | 160 | 1000 |
| K2/4S/5 | 90 | 720 |
| K2/4S/6 | 120 | 670 |
| K2/4S/7 | 100 | 1220 |
| K2/4S/8 | 160 | 850 |
| K2/4S/9 | 140 | 445 |
| K2/4S/10 | 140 | 325 |
| K2/4S/11 | 130 | 320 |
| K2/4S/12 | 120 | 225 |
| K2/4S/13 | 120 | 124 |
| K2/4S/14 | 240 | 130 |
| K2/4S/15 | 530 | 245 |
| K2/4S/16 | 40 | 175 |
| K2/4S/17 | 160 | 155 |
| K2/4S/18 | 65 | 86 |
| K2/4S/19 | 70 | 98 |
| K2/4S/20 | 120 | 760 |
| K2/4S/21 | 650 | 1860 |
| K2/4S/22 | 260 | 2060 |
| K2/4S/23 | 80 | 2400 |
| K2/4S/24 | 110 | 1700 |
| K2/4S/25 | 70 | 2100 |
| K2/4S/26 | 25 | 64 |
| K2/4S/27 | 25 | 305 |
| K2/4S/28 | 45 | 640 |

TRENCH NO. K2/4S

AMDEL REPORT NO. AC 3501/86

075

830075

APPENDIX NO. 2B

KARA NO.2 - MAIN SKARN ZONE- SOIL SAMPLES- ASSAY RESULTS

| Sample No. | Sn.ppm |
|---|---|
| K2/0/1S | 740 |
| K2/0/2S | 550 |
| K2/0/3S | 1020 |
| K2/0/4S | 1620 |
| K2/0/5S | 1080 |
| K2/0/6S | 1080 |
| K2/1S/1S | 1060 |
| K2/1S/2S | 670 |
| K2/1S/3S | 640 |
| K2/1S/4S | 1840 |
| K2/1S/5S | 1640 |
| K2/1S/6S | 1980 |
| K2/2S/1S | 445 |
| K2/2S/2S | 930 |
| K2/2S/3S | 74 |
| K2/2S/4S | 870 |
| K2/2S/5S | 510 |
| K2/2S/6S | 690 |
| K2/3S/1S | 620 |
| K2/3S/2S | 1060 |
| K2/3S/3S | 1480 |
| K2/3S/4S | 1700 |
| K2/3S/5S | 320 |
| K2/3S/6S | 570 |
| K2/5S/1S | 255 |
| K2/5S/2S | 1460 |
| K2/5S/3S | 365 |
| K2/5S/4S | 2080 |
| K2/5S/5S | 1100 |
| K2/5S/6S | 1580 |

AMDEL REPORT AC 4036/86

076

APPENDIX NO. 2B
(continued)

KARA NO. 2 - MAIN SKARN ZONE - SOIL SAMPLES - ASSAY RESULTS

| Sample No. | Sn, ppm |
|---|---|
| K2/1N/1S | 60 |
| K2/1N/2S | 390 |
| K2/1N/3S | 1500 |
| K2/1N/4S | 2360 |
| K2/1N/5S | 1080 |
| K2/1N/6S | 1220 |
| K2/2N/1S | 910 |
| K2/2N/2S | 2100 |
| K2/2N/3S | 2560 |
| K2/2N/4S | 3120 |
| K2/2N/5S | 3740 |
| K2/2N/6S | 2920 |
| K2/3N/1S | 900 |
| K2/3N/2S | 1780 |
| K2/3N/3S | 2640 |
| K2/3N/4S | 2900 |
| K2/3N/5S | 3560 |
| K2/3N/6S | 3200 |
| K2/5N/1S | 56 |
| K2/5N/2S | 180 |
| K2/5N/3S | 1160 |
| K2/5N/4S | 1200 |
| K2/5N/5S | 5150 |
| K2/5N/6S | 1700 |
| K2/6N/1S | 350 |
| K2/6N/2S | 800 |
| K2/6N/3S | 1280 |
| K2/6N/4S | 1280 |
| K2/6N/5S | 930 |
| K2/6N/6S | 410 |
| K2/7N/1S | 285 |
| K2/7N/2S | 430 |
| K2/7N/3S | 390 |
| K2/7N/4S | 540 |
| K2/7N/5S | 690 |
| K2/7N/6S | 570 |

077

830077

APPENDIX NO. 2C

KARA NO. 2 - MAIN SKARN ZONE - PAN CONCENTRATE SAMPLE RESULTS

| Sample No. | Assay (ppm)(%) WO3 | Sn |
|---|---|---|
| K2/1 | 60 | 720 |
| K2/2 | 170 | 1.55% |
| K2/3 | 310 | 3.14% |
| K2/4 | 75 | 58 |
| K2/5 | 120 | 1.97% |
| K2/6 | 100 | 1.12% |
| K2/7 | 55 | 2460 |
| K2/8 | 25 | 990 |
| K2/9 | 10 | 180 |
| K2/10 | <10 | 495 |
| K2/11 | <10 | 350 |
| K2/12 | 30 | 590 |
| K2/13 | <10 | 580 |
| K2/14 | 10 | 160 |
| K2/15 | 15 | 56 |
| K2/16 | 10 | 18 |
| K2/17 | 25 | 145 |
| K2/18 | 25 | 52 |
| K2/19 | 25 | 38 |
| K2/20 | 15 | 205 |
| K2/21 | 10 | <4 |
| K2/22 | 35 | 135 |
| K2/23 | 60 | 255 |
| K2/24 | 60 | 2420 |
| K2/25 | 55 | 425 |
| K2/26 | 330 | 7700 |
| K2/27 | 350 | 1.40% |
| K2/28 | 100 | 870 |
| K2/29 | <10 | 28 |
| K2/30 | 15 | 160 |
| K2/31 | 390 | 2760 |
| K2/32 | 430 | 3.24% |
| K2/33 | <10 | 110 |
| K2/34 | 470 | 2.19% |
| K2/35 | 460 | 1.22% |
| K2/36 | 1620 | 6250 |
| K2/37 | 130 | 980 |

REF. AMDEL REPORT AC 2973/86

078

830078

E.L. 17/68 ANNUAL REPORT 1985/86

APPENDIX NO. 3
HORIZONTAL CREEK/BOB'S BONANZA

NO. 3A HORIZONTAL CREEK PAN CONCENTRATE SAMPLES - ASSAY RESULTS
NO. 3B BOB'S BONANZA - AIR TRACK DRILL RESULTS

079

830079

APPENDIX NO. 3A

## HORIZONTAL CREEK - PAN CONCENTRATE SAMPLES - ASSAY RESULTS

| Sample No. | WO3 | Sn(ppm) |
|---|---|---|
| HC1 | 1960 | 620 |
| HC2 | 630 | 470 |
| HC3 | 160 | 72 |
| HC4 | 60 | 50 |
| HC5 | 50 | 46 |
| HC6 | 50 | 54 |
| HC7 | 40 | 460 |
| HC8 | 25 | 38 |
| HC9 | 920 | 1440 |
| HC10 | 55 | 38 |
| HC11 | 45 | 18 |
| HC12 | 35 | 18 |
| HC13 | 55 | 145 |
| HC14 | 110 | 530 |
| HC15 | 110 | 210 |
| HC16 | 40 | 265 |
| HC17 | 10 | 34 |
| HC18 | 25 | 94 |
| HC19 | 230 | 240 |
| HC20 | 35 | 325 |
| HC21 | 250 | 390 |
| HC22 | 95 | 1020 |
| HC23 | 45 | 98 |
| HC24 | 35 | 195 |
| HC25 | 90 | 810 |
| HC26 | 40 | 125 |
| HC27 | 65 | 230 |
| HC28 | 40 | 50 |
| HC29 | 75 | 30 |
| HC30 | 190 | 60 |
| HC31 | 550 | 860 |
| HC32 | 90 | 35 |

REF. AMDEL REPORT NO. AC 3199/86

080

830080

APPENDIX NO.3B

# BOB'S BONANZA - AIR TRACK DRILLING - ASSAY RECORDS
## HOLES NO.s BB/AT/1 TO BB/AT/38

| Assay Certificate | Hole Nos. | No. of Holes | Metres Drilled | No. of Samples |
|---|---|---|---|---|
| AC.5704/86 | BB/AT/1 - BB/AT/9 | 9 | 78 | 26 |
| AC.5778/86 | BB/AT/10 - BB/AT/16 | 7 | 63 | 21 |
| AC.5797/86 | BB/AT/17 - BB/AT/24 | 8 | 99 | 33 |
| AC.5809/86 | BB/AT/25 - BB/AT/30 | 6 | 39 | 13 |
| AC.4/87 | BB/AT/31/-/BB/AT/36 | 6 | 42 | 14 |
| | | 36 | 321 | 107 |

HOLE N° BB/AT/1.

081

830081

KARA TUNGSTEN PROJECT.

NORTHING 5714·6 LENGTH. 90m LOCATION.

EASTING. 7693·3 AZIMUTH. BOBS BONANZA.

ELEVATION. 543·6 DIP. 90°

SURVEYED P.D.A SURVEY DATE. DRILL DATE.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | ASSAY. (ppm) $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT. |
|---|---|---|---|---|---|---|---|---|
| BB/AT/1 | 0·0 | 3·0. | 220 | | | | | |
| " | 3·0 | 6·0 | 790 | | | | | |
| " | 6·0 | 90 | 230. | | | | | |

ANGEL - AC. 5704/86.

| | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES. |
|---|---|---|---|---|
| AVERAGE GRADES. | | | | |

BB/A·T/1.
HOLE N°

082

830082

HOLE N° BB/AT/2.

KARA TUNGSTEN PROJECT.

NORTHING 5712.6 LENGTH. 15.0m. LOCATION.

EASTING. 7693 AZIMUTH. BOBS BONANZA.

ELEVATION. 542.6 DIP. 90°

SURVEYED. P.D.A SURVEY DATE. DRILL DATE.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | ASSAY. (ppm) $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT |
|---|---|---|---|---|---|---|---|---|
| BB/AT/2 | 0.0 | 3.0 | 370 | | | | | |
| " | 3.0 | 6.0 | 280 | | | | | |
| " | 6.0 | 9.0 | 130 | | | | | |
| " | 9.0 | 12.0 | 65 | | | | | |
| " | 12.0 | 15.0. | 170 | | | | | |

| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED | AVERAGE GRADES. |
|---|---|---|---|---|
| | | | | |

BB/AT/2.
HOLE N°

HOLE N° BB/AT/3.

830083

083

KARA TUNGSTEN PROJECT

NORTHING 5708·6 LENGTH. 15·0m LOCATION.

EASTING. 7701·4 AZIMUTH. BOBS BONANZA.

ELEVATION. 541·5 DIP. 90°

SURVEYED. P.D.A. SURVEY DATE. DRILL DATE.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | ASSAY (ppm) $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT |
|---|---|---|---|---|---|---|---|---|
| BB/AT/3. | 0·0 | 3·0 | 1400 | | | | | |
| | 3·0 | 6·0 | 860 | | | | | |
| " | 6·0 | 9·0 | 260 | | | | | |
| " | 9·0 | 12·0 | 70 | | | | | |
| | 12·0 | 15·0 | 220 | | | | | |
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AMDEL - AC. 5764/86.

| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES. |
|---|---|---|---|---|
| | | | | |

BB/AT/3

HOLE N° BB/AT/4

830084

084

KARA TUNGSTEN PROJECT.

NORTHING 5704·8 LENGTH. 3·0m LOCATION.

EASTING. 7704·1 AZIMUTH. BOB'S BONANZA.

ELEVATION. 5H·3 DIP. 90°

SURVEYED. P.D.A. SURVEY DATE. DRILL DATE.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | DEPTH DRILLED TO (m) | ASSAY (ppm) AMDEL – AC. 5704/86. $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT. |
|---|---|---|---|---|---|---|---|---|
| BB/AT/4 | 0·0 | 3·0 | 910 | | | | | |
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| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES. |
|---|---|---|---|---|
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BB/AT/4.

HOLE N°

HOLE N° BB/AT/5

830085

085

KARA TUNGSTEN PROJECT

NORTHING 5703·4 LENGTH. 6·0m LOCATION.

EASTING. 7709·2 AZIMUTH. BOBS BONANZA.

ELEVATION. 544·7 DIP. 90°

SURVEYED. P.D.N. SURVEY DATE. DRILL DATE.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | DEPTH DRILLED TO (m) | ASSAY. (ppm) $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT. |
|---|---|---|---|---|---|---|---|---|
| BB/AT/5 | 0·0 | 3·0 | 1480 | | | | | |
| " | 3·0 | 6·0 | 1180. | | | | | |
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ANDEL - AC. 5764/86.

| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES. | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

BB/AT/5

830086

BB/AT/6.

086

KARA TUNGSTEN PROJECT

NORTHING 5705·6 LENGTH 6·0m. LOCATION.

EASTING. 7710·5 AZIMUTH. BABS BONANZA.

ELEVATION. 544·7. DIP. 90°

SURVEYED P.O.A. SURVEY DATE. DRILL DATE.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | ASSAY. (ppm). ANDEL - AC. 5704/86. $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT |
|---|---|---|---|---|---|---|---|---|
| BB/AT/6 | 0·0 | 3·0 | 1020 | | | | | |
| | 3·0 | 6·0 | 2800 | | | | | |
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| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES. |
|---|---|---|---|---|
| | | | | |

BB/AT/6

HOLE No BB/AT/7

830087

087

KARA TUNGSTEN PROJECT

NORTHING 5709.0 LENGTH. 6.0m. LOCATION.

EASTING. 7707.9 AZIMUTH. BOBS BONANZA.

ELEVATION. 541.6 DIP. 90°

SURVEYED. P.D.A. SURVEY DATE. DRILL DATE.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | DEPTH DRILLED TO (m) | ASSAY. (ppm) $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTR |
|---|---|---|---|---|---|---|---|---|
| BB/AT/7 | 0.0 | 3.0 | 3700 | | | | | |
| " | 3.0 | 6.0 | 2640. | | | | | |
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ANDEL - AC 5704/86

| | FROM (m) | TO (m) | METRES DRILLED | AVERAGE GRADES | | | | |
|---|---|---|---|---|---|---|---|---|
| AVERAGE GRADES. | | | | | | | | |

BB/AT/7.

HULL IV

830088

BB/AT/8.

088

KARA TUNGSTEN PROJECT.

NORTHING 5712-5 LENGTH 12·0m LOCATION.

EASTING 7705·0 AZIMUTH BABS BONANZA.

ELEVATION 5411·7 DIP 90°

SURVEYED P.O.A. SURVEY DATE DRILL DATE.

| SAMPLE NUMBER. | DEPTH DRILLED | | ASSAY. (ppm) ANDEL – AC. 5704/86. | | | | | |
|---|---|---|---|---|---|---|---|---|
| | FROM (m) | TO (m) | $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT. |
| BB/AT/8 | 0·0 | 3·0 | 680 | | | | | |
| " | 3·0 | 6·0 | 360 | | | | | |
| " | 6·0 | 9·0 | 180 | | | | | |
| " | 9·0 | 12·0 | 130 | | | | | |

| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES. |
|---|---|---|---|---|
| | | | | |

BB/AT/8

089

830089

HOLE N° BB/AT/9

KARA TUNGSTEN PROJECT

NORTHING 5716.1. LENGTH. 6.0m LOCATION.

EASTING. 7701.3. AZIMUTH. BOBS BONANZA.

ELEVATION. 5141.2 DIP. 90°.

SURVEYED P.O.A. SURVEY DATE. DRILL DATE.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | DEPTH DRILLED TO (m) | ASSAY (ppm) $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT |
|---|---|---|---|---|---|---|---|---|
| BB/AT/9 | 0.0 | 3.0 | 3580 | | | | | |
| | 3.0 | 6.0 | 210 | | | | | |

ANDEL – AC 5784/86.

| | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES. |
|---|---|---|---|---|
| AVERAGE GRADES. | | | | |

BB/AT/9

090

830090

HOLE No. BB/AT/10.

KARA TUNGSTEN PROJECT.

NORTHING 5711·1 LENGTH. 12·0m LOCATION.

EASTING. 7609·4 AZIMUTH. BOBS BONANZA.

ELEVATION. 544·0 DIP. 90°

SURVEYED P.O.A. SURVEY DATE. DRILL DATE.

ANGEL - AC. 5776/86.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | DEPTH DRILLED TO (m) | ASSAY. (ppm) $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT. |
|---|---|---|---|---|---|---|---|---|
| BB/AT/10 | 0·0 | 3·0 | 260 | | | | | |
| " | 3·0 | 6·0 | 150 | | | | | |
| " | 6·0 | 9·0 | 45 | | | | | |
| " | 9·0 | 12·0 | 120 | | | | | |

| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED | AVERAGE GRADES. |
|---|---|---|---|---|
| | | | | |

BB/AT/10

091

830091

BB/AT/11.

KARA TUNGSTEN PROJECT

NORTHING 5707·0 LENGTH. 9·0m LOCATION.

EASTING. 7694·7 AZIMUTH. BOBS BONANZA.

ELEVATION. 5442 DIP. 90°

SURVEYED P.D.A. SURVEY DATE. DRILL DATE.

ANDEL - AC. 5776/86.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | DEPTH DRILLED TO (m) | ASSAY. (ppm) $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT |
|---|---|---|---|---|---|---|---|---|
| BB/AT/11. | 0·0 | 3·0 | 150 | | | | | |
| " | 3·0 | 6·0 | 400 | | | | | |
| " | 6·0 | 9·0 | 270 | | | | | |

| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES. |
|---|---|---|---|---|
| | | | | |

BB/AT/11.

092

HOLE N° 830092 BB/AT/12

KARA TUNGSTEN PROJECT

NORTHING 6703.1 LENGTH. 9.0m LOCATION.

EASTING. 7697.6 AZIMUTH. BOBS BONANZA.

ELEVATION. 544.2 DIP. 90°

SURVEYED P.D.A. SURVEY DATE. DRILL DATE.

ANGEL -- AC. 5/7/86.

| SAMPLE NUMBER. | DEPTH DRILLED FROM. (m) | TO (m) | ASSAY. (ppm) $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT |
|---|---|---|---|---|---|---|---|---|
| BB/AT/12 | 0·0 | 3·0 | 1040 | | | | | |
| | 3·0 | 6·0 | 440 | | | | | |
| | 6·0 | 9·0. | 110 | | | | | |

| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES. |
|---|---|---|---|---|
| | | | | |

BB/AT/12

093

HOLE N°

830093

BB/AT/13.

KARA TUNGSTEN PROJECT.

NORTHING 5698-8 LENGTH. 6-0m. LOCATION.

EASTING. 7700-5 AZIMUTH. BOBS BONANZA

ELEVATION. 544-0 DIP. 90°

SURVEYED P.O.A. SURVEY DATE. DRILL DATE.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | ASSAY (ppm) ANDEL – AC. 577E/86. $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT |
|---|---|---|---|---|---|---|---|---|
| BB/AT/13 | 0-0 | 3-0 | 370 | | | | | |
| | 3-0 | 6-0 | 460. | | | | | |

| | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES. |
|---|---|---|---|---|
| AVERAGE GRADES. | | | | |

BB/AT/13

094

830094

HOLE N

BB/AT/14

LARA TUNGSTEN PROJECT

NORTHING 6694·9 LENGTH. 3·0m LOCATION.

EASTING. 7703.4. AZIMUTH.

BABS BONANZA.

ELEVATION. 544·5 DIP. 90°

SURVEYED P.D.A SURVEY DATE. DRILL DATE.

ANDEX — AC. 5778/86.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | ASSAY (ppm) $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT |
|---|---|---|---|---|---|---|---|---|
| BB/AT/14 | 0·0 | 3·0 | 980 | | | | | |
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| | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES |
|---|---|---|---|---|
| AVERAGE GRADES. | | | | |

BB/AT/14...

095

830095

BB/AT/15

KARA TUNGSTEN PROJECT

NORTHING 5691·7 LENGTH. 9·0m LOCATION.

EASTING. 7705·7 AZIMUTH.

BOBS BONANZA.

ELEVATION. 5448 DIP. 90°

SURVEYED P.D.A SURVEY DATE. DRILL DATE.

AMDEL - AC. 5778/86.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | ASSAY (ppm) $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT |
|---|---|---|---|---|---|---|---|---|
| BB/AT/15 | 0·0 | 3·0 | 930 | | | | | |
| | 3·0 | 6·0 | 790 | | | | | |
| | 6·0 | 9·0 | 500. | | | | | |

| | FROM (m) | TO (m) | METRES DRILLED | AVERAGE GRADES. |
|---|---|---|---|---|
| AVERAGE GRADES. | | | | |

BB/AT/15

096

HOLE N°

830096

BB/AT/16.

KARA TUNGSTEN PROJECT

NORTHING 5707·6 LENGTH. 15·0m LOCATION.

EASTING. 7685·5 AZIMUTH.

BOBS BONANZA.

ELEVATION. 945·7 DIP. 90°

SURVEYED P.D.A. SURVEY DATE. DRILL DATE.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | ASSAY. (ppm) $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT |
|---|---|---|---|---|---|---|---|---|
| BB/AT/16 | 0·0 | 3·0 | 1400 | | | | | |
| | 3·0 | 6·0 | 510 | | | | | |
| | 6·0 | 9·0 | 590 | | | | | |
| | 9·0 | 12·0 | 200 | | | | | |
| | 12·0 | 15·0 | 70 | | | | | |

| | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES. |
|---|---|---|---|---|
| AVERAGE GRADES. | | | | |

BB/AT/16

HOLE 17

097

830097

BB/AT/17.

KARA TUNGSTEN PROJECT

NORTHING 5703.6 LENGTH. 6.0m LOCATION.

EASTING. 7688.6 AZIMUTH. BOBS BONANZA

ELEVATION. 546.0. DIP. 90°

SURVEYED P.D.A. SURVEY DATE. DRILL DATE.

ANGEL - AC. 5797/86.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | ASSAY. (ppm) $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT |
|---|---|---|---|---|---|---|---|---|
| BB/AT/17 | 0.0 | 3.0 | 1080 | | | | | |
| " | 3.0 | 6.0 | 420 | | | | | |

| | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES. |
|---|---|---|---|---|
| AVERAGE GRADES. | | | | |

BB/AT/17

098

830098

HOLE N

BB/AT/1E.

KARA TUNGSTEN PROJECT

NORTHING 5699.7 LENGTH. 6.0m. LOCATION.

EASTING. 7691.4 AZIMUTH. BABS. BONANZA.

ELEVATION. 546.3. DIP. 90°

SURVEYED P.O.A. SURVEY DATE. DRILL DATE.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | ASSAY (ppm) $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT |
|---|---|---|---|---|---|---|---|---|
| BB/AT/1E | 0·0 | 3·0 | 520 | | | | | |
| " | 3·0 | 6·0 | 440 | | | | | |
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AMDEL – AC. 5797/86.

| | FROM (m) | TO (m) | METRES DRILLED | AVERAGE GRADES | | | | |
|---|---|---|---|---|---|---|---|---|
| AVERAGE GRADES. | | | | | | | | |

BB/AT/1E

099

830099

28/AT/19

KARA TUNGSTEN PROJECT

NORTHING 5695·4 LENGTH. 30·0m LOCATION.

EASTING. 7693·9 AZIMUTH. BOBS BONANZA.

ELEVATION. 546·6 DIP. 90°

SURVEYED P.D.A. SURVEY DATE. DRILL DATE.

ANGEL - AC. 5797/86.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | ASSAY (ppm) $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT |
|---|---|---|---|---|---|---|---|---|
| BB/AT/19 | 0·0 | 3·0 | 470 | | | | | |
| | 3·0 | 6·0 | 600 | | | | | |
| | 6·0 | 9·0 | 320 | | | | | |
| | 9·0 | 12·0 | 170 | | | | | |
| | 12·0 | 15·0 | 45 | | | | | |
| | 15·0 | 18·0 | <10 | | | | | |
| | 18·0 | 21·0 | 90 | | | | | |
| | 21·0 | 24·0 | 70 | | | | | |
| | 24·0 | 27·0 | 35 | | | | | |
| | 27·0 | 30·0 | 90 | | | | | |

| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED | AVERAGE GRADES |
|---|---|---|---|---|
| | | | | |

BB/AT/19

HOLE N.

830100 BB/AT/20

100

KARA TUNGSTEN PROJECT

NORTHING 5690·9 LENGTH. 12·0m. LOCATION.

EASTING. 7695·8 AZIMUTH. 1388 BONANZA.

ELEVATION. 5470 DIP. 90°

SURVEYED P.O.A. SURVEY DATE. DRILL DATE.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | ASSAY. (ppm) $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT |
|---|---|---|---|---|---|---|---|---|
| BB/AT/20 | 0·0 | 3·0 | 470 | | | | | |
| | 3·0 | 6·0 | 130 | | | | | |
| | 6·0 | 9·0 | 150 | | | | | |
| | 9·0 | 12·0 | 260. | | | | | |

| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES. |
|---|---|---|---|---|
| | | | | |

BB/AT/20

HOLE N°

830101

BB/AT/21

101

KARA TUNGSTEN PROJECT

NORTHING 5686·4 LENGTH. 15·0m LOCATION.

EASTING. 7696·8 AZIMUTH. BOBS BONANZA.

ELEVATION. 3472 DIP. 90°

SURVEYED P.O.A. SURVEY DATE. DRILL DATE.

ANDEL - AC. 5797/86.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | ASSAY. (ppm) $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT |
|---|---|---|---|---|---|---|---|---|
| BB/AT/21 | 0·0 | 3·0 | 1,200 | | | | | |
| | 3·0 | 6·0 | 390 | | | | | |
| | 6·0 | 9·0 | 250 | | | | | |
| | 9·0 | 12·0 | 200 | | | | | |
| | 12·0 | 15·0 | 140 | | | | | |

| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES. |
|---|---|---|---|---|
| | | | | |

BB/AT/21

HOLE N°

830102

BB/AT/22

102

KARA TUNGSTEN PROJECT

NORTHING 6681·9 LENGTH 9·0m LOCATION.

EASTING 7700·1 AZIMUTH BOBS BONANZA.

ELEVATION 547·2 DIP 90°

SURVEYED P.O.A. SURVEY DATE DRILL DATE

ANGEL - AC. 6797/86.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | ASSAY (ppm) $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT |
|---|---|---|---|---|---|---|---|---|
| BB/AT/22 | 0·0 | 3·0 | 110 | | | | | |
| | 3·0 | 6·0 | 90 | | | | | |
| | 6·0 | 9·0. | 100 | | | | | |

| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES. |
|---|---|---|---|---|
| | | | | |

BB/AT/22

103

830103

HOLE N.

BB/AT/23.

KARA TUNGSTEN PROJECT

NORTHING 6677·4 LENGTH 9·0m LOCATION.

EASTING 7698·4 AZIMUTH BOBS BONANZA.

ELEVATION 5475 DIP 90°

SURVEYED P.O.A. SURVEY DATE. DRILL DATE.

ANDEL - AC. 5.7.1/86.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | ASSAY (ppm) $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT |
|---|---|---|---|---|---|---|---|---|
| BB/AT/23 | 0·0 | 3·0 | 990 | | | | | |
| " | 3·0 | 6·0 | 650 | | | | | |
| " | 6·0 | 9·0 | 640 | | | | | |

| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES. |
|---|---|---|---|---|
| | | | | |

BB/AT/23.

104

830104

HOLE N.

BB/AT/24

KARA TUNGSTEN PROJECT

NORTHING 5664.1 LENGTH. 12.0m LOCATION.

EASTING. 7704.1 AZIMUTH. BOBS BONANZA.

ELEVATION 547.6 DIP. 90°

SURVEYED P.D.N SURVEY DATE. DRILL DATE.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | ASSAY. (ppm) $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT |
|---|---|---|---|---|---|---|---|---|
| BB/AT/24 | 0.0 | 3.0 | 1580 | | | | | |
| " | 3.0 | 6.0 | 1600 | | | | | |
| " | 6.0 | 9.0 | 1680 | | | | | |
| " | 9.0 | 12.0 | 390 | | | | | |

| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES. |
|---|---|---|---|---|
| | | | | |

BB/AT/24

105

HOLE N°

830105

BB/AT/25

KARA TUNGSTEN PROJECT

NORTHING 5668·9 LENGTH. 9·0m LOCATION.

EASTING. 7708·2 AZIMUTH.

BOBS BONANZA.

ELEVATION. 547·3 DIP. 90°

SURVEYED P.D.A. SURVEY DATE. DRILL DATE.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m). | DEPTH DRILLED TO (m) | ASSAY. (ppm) $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT |
|---|---|---|---|---|---|---|---|---|
| BB/AT/25 | 0·0 | 3·0 | 400 | | | | | |
| | 3·0 | 6·0 | 430 | | | | | |
| | 6·0 | 9·0 | 450 | | | | | |

ANGEL - AC. 5809/86.

| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES |
|---|---|---|---|---|
| | | | | |

BB/AT/26

106

830106

HOLE No. BB/AT/26

KARA TUNGSTEN PROJECT

NORTHING 6672.1 LENGTH. 3.0m LOCATION.

EASTING. 7712.0 AZIMUTH. BOBS BONANZA.

ELEVATION. 546.9 DIP. 90°

SURVEYED P.O.A. SURVEY DATE DRILL DATE

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | DEPTH DRILLED TO (m) | ASSAY. (ppm) $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT. |
|---|---|---|---|---|---|---|---|---|
| BB/AT/26 | 0.0 | 3.0 | 1000 | | | | | |

AMDEL - AC. 9809/86.

| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES. |
|---|---|---|---|---|
| | | | | |

BB/AT/26

107

HOLE N

830107

BB/AT/27

KARA TUNGSTEN PROJECT

NORTHING 6675·3 LENGTH. 6·0m LOCATION.

EASTING. 7715·2 AZIMUTH. 3085- BONANZA.

ELEVATION 3466. DIP. 90°

SURVEYED P.D.A. SURVEY DATE. DRILL DATE

ANDEL - AC. 5809/86.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | ASSAY. (ppm) $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT |
|---|---|---|---|---|---|---|---|---|
| BB/AT/27 | 0·0 | 3·0 | 680 | | | | | |
| | 3·0 | 6·0 | 1620 | | | | | |

| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES. |
|---|---|---|---|---|
| | | | | |

BB/AT/27.

108

HOLE N°

830108

BB/AT/28

KARA TUNGSTEN PROJECT

NORTHING 5678·0 LENGTH. 3·0m. LOCATION.

EASTING. 7719·1 AZIMUTH. BOBS BONANZA.

ELEVATION. 546·2 DIP. 90°

SURVEYED P.P.A. SURVEY DATE. DRILL DATE.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | DEPTH DRILLED TO (m) | ASSAY. (ppm) $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT |
|---|---|---|---|---|---|---|---|---|
| BB/AT/28 | 0·0 | 3·0 | 710. | | | | | |
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ANGEL - AC. 5809/86

| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED | AVERAGE GRADES. |
|---|---|---|---|---|
| | | | | |

BB/AT/28

109

830109

HOLE N° BB/AT/29

KARA TUNGSTEN PROJECT

NORTHING 5682·4 LENGTH. 9·0m LOCATION.

EASTING. 7722·1. AZIMUTH. BOBS BONANZA.

ELEVATION. 545·3 DIP. 90°

SURVEYED P.D.A. SURVEY DATE. DRILL DATE.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | ASSAY (ppm) $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT |
|---|---|---|---|---|---|---|---|---|
| BB/AT/29. | 0·0 | 3·0 | 400 | | | | | |
| | 3·0 | 6·0 | 550 | | | | | |
| | 6·0 | 9·0 | 550 | | | | | |

ANGEL - AC. 5809/86.

| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES. |
|---|---|---|---|---|
| | | | | |

BB/AT/29

HOLE N

830110

BB/AT/30

110

KARA TUNGSTEN PROJECT

NORTHING 5665S  LENGTH. 9.0m  LOCATION.

EASTING. 7723.1'  AZIMUTH.  BOSS BONANZA

ELEVATION. 544.1.  DIP. 90°

SURVEYED P.D.A.  SURVEY DATE.  DRILL DATE.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | ASSAY. (ppm) $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT |
|---|---|---|---|---|---|---|---|---|
| BB/AT/30 | 0·0 | 3·0 | 970 | | | | | |
| " | 3·0 | 6·0 | 1380 | | | | | |
| " | 6·0 | 9·0 | 340 | | | | | |

ANDEL – AC. 5809/86.

| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES. |
|---|---|---|---|---|
| | | | | |

BB/AT/30.

111

830111

BB/AT/31.

KARA TUNGSTEN PROJECT

NORTHING _____ LENGTH. 9m LOCATION.

EASTING. _____ AZIMUTH. _____ BABS. BONANZA.

ELEVATION. _____ DIP. 90°

SURVEYED SURVEY DATE DRILL DATE.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | ASSAY. (ppm) $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT |
|---|---|---|---|---|---|---|---|---|
| BB/AT/31 | 0·0 | 3·0 | 240 | | | | | |
| | 3·0 | 6·0 | 90 | | | | | |
| | 6·0 | 9·0 | 30 | | | | | |

ANDEL - AC. 4/87

| AVERAGE GRADES. | FROM (m) | TO. (m) | METRES DRILLED. | AVERAGE GRADES |
|---|---|---|---|---|
| | | | | |

BB/AT/31.

112

830112

SCHULE IV

BB/AT/32

KARA TUNGSTEN PROJECT

NORTHING _____ LENGTH. 3m. LOCATION.

EASTING. _____ AZIMUTH _____ BOBS BONANZA.

ELEVATION. _____ DIP. 90°

SURVEYED SURVEY DATE. DRILL DATE.

| SAMPLE NUMBER. | DEPTH DRILLED | | ASSAY. (ppm) ANGEL - AC. 11/87. | | | | | |
|---|---|---|---|---|---|---|---|---|
| | FROM (m) | TO (m) | $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT |
| BB/AT/32 | 0 0 | 3.0 | | | | | | |
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| | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES. | | | | |
|---|---|---|---|---|---|---|---|---|
| AVERAGE GRADES. | | | | | | | | |

BB/AT/32

HOLE N. _____

830113

BB/A1/33

113

KARA TUNGSTEN PROJECT

NORTHING _____ LENGTH. 6·0m LOCATION.

EASTING. _____ AZIMUTH. _____ BOBS BONANZA.

ELEVATION. _____ DIP. 90°

SURVEYED. SURVEY DATE. P.O.A. DRILL DATE.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | DEPTH DRILLED TO (m) | ASSAY. (ppm) $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT. |
|---|---|---|---|---|---|---|---|---|
| BB/A/33 | 0·0 | 3·0 | 210 | | | | | |
| " | 3·0 | 6·0 | 250 | | | | | |
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| | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES | | | | |
|---|---|---|---|---|---|---|---|---|
| AVERAGE GRADES. | | | | | | | | |

BB/A1/33

HULL AR

114

830114

BB/AT/34

KARA TUNGSTEN PROJECT

NORTHING _____ LENGTH. 12.0m. LOCATION.

EASTING. _____ AZIMUTH. _____ BOBS BONANZA.

ELEVATION. _____ DIP. 90°

SURVEYED SURVEY DATE. DRILL DATE. /

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | ASSAY. (ppm) $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT |
|---|---|---|---|---|---|---|---|---|
| BB/AT/34 | 0.0 | 3.0 | 50 | | | | | |
| " | 3.0 | 6.0 | 35 | | | | | |
| " | 6.0 | 9.0 | 30 | | | | | |
| " | 9.0 | 12.0 | 65. | | | | | |

ANGEL - AC. 11/87.

| | FROM (m) | TO (m) | METRES DRILLED | AVERAGE GRADES | | | | |
|---|---|---|---|---|---|---|---|---|
| AVERAGE GRADES. | | | | | | | | |

BB/AT/34.

115

830115

BB/AT/35

KARA TUNGSTEN PROJECT

NORTHING _____ LENGTH. 30 LOCATION.

EASTING. _____ AZIMUTH. _____

ELEVATION. _____ DIP. 90°. 1308S BONANZA.

SURVEYED. SURVEY DATE. DRILL DATE.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | DEPTH DRILLED TO (m) | ASSAY. (ppm) $WO_3$ | Sn | Pb | Mo | COLOUR. | MAG CONTENT |
|---|---|---|---|---|---|---|---|---|
| BB/AT/35 | 0·0 | 3·0 | 640 | | | | | |
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ANDEL - AC. 4/87.

| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES |
|---|---|---|---|---|
| | | | | |

BB/AT/35

HOLE No

6

830116

BB/AT/36

KARA TUNGSTEN PROJECT

NORTHING _____ LENGTH. 9.0m. LOCATION.

EASTING. _____ AZIMUTH. _____ BOBS BONANZA.

ELEVATION. _____ DIP. _____

SURVEYED SURVEY DATE. DRILL DATE.

| SAMPLE NUMBER. | DEPTH DRILLED | | ASSAY (ppm) ANDEL - AC. ALS T. | | | | | |
|---|---|---|---|---|---|---|---|---|
| | FROM (m) | TO (m) | $WO_3$ | Sn. | Pb | Mo | COLOUR. | MAG CONTENT |
| BB/AT/36 | 0.0 | 3.0 | 55 | | | | | |
| " | 3.0 | 6.0 | <10 | | | | | |
| " | 6.0 | 9.0 | 20. | | | | | |

| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES. |
|---|---|---|---|---|
| | | | | |

BB/AT/36.

E.L. 17/68 ANNUAL REPORT 1985/86

APPENDIX NO. 4
LOCATION L.1.

NO.4A - AIR TRACK DRILL HOLES - ASSAY SHEETS
NO.4B - SOIL SAMPLES - ASSAY SHEETS

118

830118

APPENDIX NO.4A

LOCATION L.1.
AIRTRACK DRILL HOLES - ASSAY RECORDS

| Hole No.s | Metres | No. of Samples |
|---|---|---|
| L1/D1 to L1/D10 | 81m | 27 |

119

830119 HOLE. N° L1/D.1.

TASMANIA MINES N.L. KARA TUNGSTEN PROJECT.

NORTHING PEG. 194. LENGTH. 15·0m. LOCATION. L.1.

EASTING. AZIMUTH.

ELEVATION. DIP. VERTICAL.

SURVEYED. SURVEY DATE. DRILL DATE. MAR. 4. 1986.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | | ASSAY. (ppm) AMDEL - AC. WO3. | Sn | Mo | Pb. | |
|---|---|---|---|---|---|---|---|---|
| L.1./D1/1 | 0 | 3 | | 40 | 630 | 22 | 74 | |
| L.1./D.1./2 | 3 | 6 | | 120 | 600 | 26 | 72 | |
| L.1./D.1/3 | 6 | 9 | | 110 | 380 | 275 | 36 | |
| L.1/D.1./4 | 9 | 12 | | 80 | 155 | 48 | 12 | |
| L.1./D1/5. | 12 | 15. | | 15 | 315 | 12 | 34. | |
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| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED | AVERAGE GRADES | | | | |
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830120

HOLE N° L.1

120

TASMANIA MINES. N.L. — KARA TUNGSTEN PROJECT.

NORTHING PEG. 190. LENGTH. 15.0m. LOCATION.

EASTING. ____ AZIMUTH. ____ LOCATION. L.1.

ELEVATION. ____ DIP. VERTICAL.

SURVEYED. SURVEY DATE. DRILL DATE. MARCH. 6. 1986.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | | ASSAY. (ppm) AMDEL - AC. $WO_3$. | Sn | Mo | Pb. | |
|---|---|---|---|---|---|---|---|---|
| L1.D2./1 | 0 | 3 | | 95 | 415 | 18 | 72 | |
| L1/D2/2 | 3 | 6 | | 140 | 380 | 20 | 74 | |
| L1/D2/3 | 6 | 9 | | 75 | 275 | 80 | 120. | |
| L1/D2/4 | 9 | 12 | | 35 | 40 | 16 | 28 | |
| L1/D2/5. | 12 | 15 | | 15 | 12 | 6 | 10 | |
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| | FROM (m) | TO (m) | METRES DRILLED | AVERAGE GRADES | | | | |
|---|---|---|---|---|---|---|---|---|
| AVERAGE GRADES. | | | | | | | | |

121

HOLE. N° LI/03.

830121

KARA TUNGSTEN PROJECT.

NORTHING PEG. 186. LENGTH. 12.0 METRES. LOCATION.

EASTING. AZIMUTH. LOCATION. L.I.

ELEVATION. DIP.

SURVEYED. SURVEY DATE. DRILL DATE. MARCH 6. 1986.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | | ASSAY. (ppm) AMDEL - AC. $WO_3$. | Sn | Mo | Pb. | |
|---|---|---|---|---|---|---|---|---|
| LI/03/1 | 0 | 3 | | 40 | 640 | 18 | 72 | |
| LI/03/2 | 3 | 6 | | 55 | 690 | 14 | 86 | |
| LI/03/3. | 6 | 9 | | 100 | 450 | 22 | 60 | |
| LI/03/4 | 9 | 12. | | 80 | 475 | 12 | 80 | |

| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES. | | | | |
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122

HOLE No. LI/04

830122

TASMANIA MINES N.L. KARA TUNGSTEN PROJECT

NORTHING MOWAY. 190-194. LENGTH. 21.0m. LOCATION.

EASTING. AZIMUTH. LOCATION. L.I.

ELEVATION. DIP.

SURVEYED. SURVEY DATE. DRILL DATE. MARCH 6. 1986.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | | ASSAY. (ppm) AMDEL - AC. WO3 | Sn | Mo | Pb. | |
|---|---|---|---|---|---|---|---|---|
| LI/04/1 | 0 | 3 | | 1460 | 610 | 26 | 155 | |
| LI/04/2 | 3 | 6 | | 190 | 465 | 24 | 50 | |
| LI/04/3 | 6 | 9 | | 140 | 450 | 12 | 56 | |
| LI/04/4 | 9 | 12 | | 40 | 135 | 18 | 38 | |
| LI/04/5 | 12 | 15 | | 70 | 150 | 20 | 20 | |
| LI/04/6 | 15 | 18 | | 35 | 36 | 14 | 8 | |
| LI/04/7. | 18. | 21. | | 85 | 26 | 30 | 38 | |
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| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED | AVERAGE GRADES. | | | | |
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HOLE N° L1/D5

830123

123

TASMANIA MINES N.L. — KARA TUNGSTEN PROJECT.

NORTHING Pg. 182. LENGTH. 3.0m. LOCATION.

EASTING. AZIMUTH. LOCATION. L.1

ELEVATION. DIP.

SURVEYED. SURVEY DATE. DRILL DATE MARCH 7. 1986.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | | ASSAY. (ppm) ANDEL - AC. $WO_3$. | Sn | Mo | Pb | |
|---|---|---|---|---|---|---|---|---|
| L1/D5/1 | 0 | 3 | | 55 | 24 | 4 | 8 | |
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| | FROM (m) | TO (m) | METRES DRILLED | AVERAGE GRADES | | | | |
|---|---|---|---|---|---|---|---|---|
| AVERAGE GRADES. | | | | | | | | |

HOLE. N° L1/D6.

830124

124

TASMANIA MINES N.L. — KARA TUNGSTEN PROJECT.

NORTHING Peg. 18. LENGTH. 3·0m LOCATION.

EASTING. _____ AZIMUTH. _____ LOCATION L.1

ELEVATION. _____ DIP. _____

SURVEYED. SURVEY DATE. DRILL DATE. MARCH 7 1986

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | DEPTH DRILLED TO (m) | | ASSAY. (ppm) ANDEL – AC. WO3. | Sn | Mo | Pb. | |
|---|---|---|---|---|---|---|---|---|
| L1/D6/1 | 0 | 3. | | <10 | 18 | 6 | 20 | |
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| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED | AVERAGE GRADES. | | | | |
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HOLE N° LI/07.

830125

125

TASMANIA MINES N.L. KARA TUNGSTEN PROJECT.

NORTHING PEG. 174 LENGTH. 3.0m. LOCATION.

EASTING. AZIMUTH. LOCATION. L.I.

ELEVATION. DIP.

SURVEYED. SURVEY DATE. DRILL DATE. MARCH 7. 1986.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | | ASSAY. (ppm) ANDEL - AC. $WO_3$. | Sn | Mo | Pb. | |
|---|---|---|---|---|---|---|---|---|
| LI/07/1 | 0 | 3. | | 30 | <4 | 6 | 14. | |
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| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES. | | | | |
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HOLE N° L1/08

126

830126

KARA TUNGSTEN PROJECT

NORTHING PEG 170. LENGTH. 30m LOCATION.

EASTING. AZIMUTH. LOCATION L.1

ELEVATION. DIP.

SURVEYED SURVEY DATE. DRILL DATE. MARCH 7, 1986.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | | ASSAY. (ppm) $WO_3$. | Sn | Mo | Pb. | ANDEL – AC. |
|---|---|---|---|---|---|---|---|---|
| L1/08/1 | 0 | 3 | | 35 | <4 | <4 | 6. | |
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| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED | AVERAGE GRADES. | | | | |
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HOLE. N° L1/09

127

830127

TASMANIA MINES N.L. — KARA TUNGSTEN PROJECT.

NORTHING PEG. 166. LENGTH. _____ LOCATION.

EASTING. _____ AZIMUTH. _____ LOCATION L.1.

ELEVATION. _____ DIP. _____

SURVEYED. SURVEY DATE. DRILL DATE. MARCH 7 1986.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | | ASSAY. (ppm) · AMDEL – AC. $WO_3$. | Sn | Mo | Pb | |
|---|---|---|---|---|---|---|---|---|
| L1/09/1 | 0 | 3 | | <10 | <4 | <4 | 18 | |
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| | FROM (m) | TO (m) | METRES DRILLED | AVERAGE GRADES. | | | | |
|---|---|---|---|---|---|---|---|---|
| AVERAGE GRADES. | | | | | | | | |

128

HOLE. N° L1/0.10.

830128

KARA TUNGSTEN PROJECT.

NORTHING PEG. 162 LENGTH. LOCATION.

EASTING. AZIMUTH. LOCATION L.1.

ELEVATION. DIP.

SURVEYED. SURVEY DATE. DRILL DATE. MAR. 7. 1986.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | | ASSAY. (ppm) ANDEL - AC. $WO_3$. | Cu | Mo | Pb. | |
|---|---|---|---|---|---|---|---|---|
| L1/0.10/1 | 0 | 3. | | 25 | 6 | 4 | 12. | |
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| | FROM (m) | TO (m) | METRES DRILLED | AVERAGE GRADES. | | | | |
|---|---|---|---|---|---|---|---|---|
| AVERAGE GRADES. | | | | | | | | |

APPENDIX NO. 4B

LOCATION L.1.
SOIL SAMPLES - ASSAY RESULTS

130 amdel 830130

Analysis code X3 Report AC 3785/86 Page X1

NATA Certificate Results in ppm

| Sample | WO3 | Sn | Mo | Pb |
|---|---|---|---|---|
| 198 | 15 | 390 | 14 | 56 |
| 202 | 45 | 375 | 24 | 84 |
| 206 | 65 | 450 | 105 | 62 |
| 334 | 35 | 275 | 14 | 42 |
| 336 | 15 | 125 | 8 | 30 |
| 338 | <10 | 26 | 6 | 26 |
| 340 | 30 | 8 | <4 | 20 |
| 342 | 15 | 6 | 4 | 18 |
| 344 | 25 | <4 | 4 | 34 |
| 346 | <10 | 10 | 4 | 66 |
| 348 | 10 | <4 | <4 | 28 |
| 350 | <10 | 4 | 4 | 86 |
| 352 | 25 | 8 | 4 | 14 |
| 369 | <10 | 380 | 18 | 66 |
| 371 | 35 | 520 | 22 | 94 |
| 373 | 30 | 970 | 16 | 115 |
| 375 | <10 | 510 | 20 | 66 |
| 377 | <10 | 490 | 10 | 46 |
| 378 | <10 | 520 | 14 | 105 |
| 380 | 45 | 385 | 16 | 62 |
| 382 | 20 | 510 | 20 | 175 |
| 384 | 25 | 230 | 14 | 76 |
| 386 | 25 | 130 | 12 | 40 |
| 388 | 30 | 120 | 10 | 34 |
| 390 | 15 | 500 | 22 | 58 |
| 392 | <10 | 250 | 18 | 64 |
| 394 | 30 | 215 | 14 | 44 |
| 396 | <10 | 24 | 4 | 28 |
| 398 | <10 | 6 | 6 | 44 |
| 400 | 20 | 10 | <4 | 28 |
| 402 | 30 | <4 | <4 | 18 |
| 404 | 10 | 14 | <4 | 30 |
| 406 | 15 | 10 | <4 | 18 |
| 408 | <10 | 10 | <4 | 70 |
| 410 | 30 | 6 | 4 | 30 |
| 426 | 30 | 500 | 22 | 94 |
| 428 | 35 | 325 | 16 | 76 |
| 430 | 25 | 485 | 20 | 100 |
| 432 | 35 | 335 | 32 | 76 |
| 434 | 10 | 315 | 20 | 50 |
| Detn limit | (10) | (4) | (4) | (4) |

LOCATION L.1.

SOIL SAMPLES.

131 amdel 830131

Analysis code X3 Report AC 3785/86 Page X2

NATA Certificate Results in ppm

| Sample | WO3 | Sn | Mo | Pb |
|---|---|---|---|---|
| 436 | <10 | 52 | 8 | 58 |
| 438 | 10 | 140 | 18 | 52 |
| 440 | 55 | 265 | 18 | 68 |
| 442 | 20 | 120 | 16 | 36 |
| 444 | 25 | 88 | 16 | 36 |
| 446 | 25 | 415 | 28 | 110 |
| 448 | 30 | 455 | 14 | 48 |
| 450 | 40 | 340 | 14 | 76 |
| 452 | 30 | 46 | 4 | 16 |
| 454 | <10 | 18 | 4 | 58 |
| 456 | 10 | 4 | <4 | 18 |
| 458 | <10 | 46 | 4 | 24 |
| 460 | 10 | 16 | <4 | 50 |
| 462 | 15 | 12 | 4 | 30 |
| 464 | 10 | <4 | <4 | 32 |
| 476 | 45 | 550 | 24 | 120 |
| 478 | 110 | 550 | 60 | 78 |
| 480 | 80 | 530 | 32 | 94 |
| 482 | 30 | 420 | 24 | 160 |
| 484 | <10 | 270 | 16 | 56 |
| 486 | 25 | 125 | 14 | 72 |
| 488 | <10 | 260 | 22 | 34 |
| 490 | 15 | 245 | 16 | 58 |
| 492 | 10 | 335 | 20 | 48 |
| 494 | 30 | 255 | 12 | 92 |
| 496 | <10 | 345 | 12 | 66 |
| 498 | 20 | 310 | 16 | 56 |
| 500 | 15 | 305 | 20 | 82 |
| 502 | 10 | 355 | <4 | 68 |
| 504 | <10 | 22 | 4 | 24 |
| 506 | <10 | 16 | <4 | 28 |
| 508 | 25 | 12 | 4 | 20 |
| 510 | 50 | 18 | 8 | 10 |
| 512 | 20 | 42 | 4 | 16 |
| 514 | 20 | 32 | 4 | 12 |
| 523 | 20 | 530 | 24 | 64 |
| 525 | 70 | 610 | 18 | 56 |
| 527 | 75 | 490 | 34 | 56 |
| 529 | 35 | 475 | 155 | 70 |
| 531 | 40 | 290 | 30 | 130 |
| Detn limit | (10) | (4) | (4) | (4) |

LOCATION L.1

SOIL SAMPLES

amdel

830132

Analysis code X3 Report AC 3785/86 Page X3

NATA Certificate Results in ppm

| Sample | WO3 | Sn | Mo | Pb |
|---|---|---|---|---|
| 533 | 20 | 150 | 14 | 36 |
| 535 | <10 | 280 | 16 | 50 |
| 537 | 50 | 230 | 14 | 40 |
| 539 | 20 | 110 | 16 | 32 |
| 543 | <10 | 385 | 12 | 68 |
| 545 | 10 | 550 | 46 | 62 |
| 547 | 65 | 495 | 8 | 36 |
| 549 | 15 | 165 | 8 | 46 |
| 551 | 30 | 20 | 4 | 34 |
| 553 | 25 | 14 | 4 | 28 |
| 555 | 25 | 14 | 4 | 30 |
| 557 | 20 | <4 | <4 | 26 |
| 559 | 30 | 18 | 6 | 26 |
| 562 | <10 | 435 | 28 | 60 |
| 564 | 40 | 540 | 16 | 94 |
| 566 | 45 | 510 | 32 | 38 |
| 568 | 85 | 570 | 140 | 50 |
| 570 | 55 | 380 | 74 | 62 |
| 572 | 30 | 315 | 26 | 44 |
| 574 | 15 | 170 | 14 | 26 |
| 576 | <10 | 145 | 16 | 22 |
| 578 | 30 | 170 | 16 | 32 |
| 582 | 45 | 430 | 125 | 60 |
| 584 | 15 | 405 | 84 | 50 |
| 586 | 50 | 22 | 14 | 110 |
| 588 | 20 | 16 | 4 | 18 |
| 590 | 35 | <4 | <4 | 36 |
| 592 | 30 | 12 | <4 | 28 |
| 594 | 25 | 4 | <4 | 28 |
| 596 | 25 | 4 | <4 | 32 |
| 598 | 35 | 12 | <4 | 22 |
| 600 | <10 | 430 | 42 | 38 |
| 602 | 45 | 550 | 28 | 74 |
| 604 | 45 | 600 | 20 | 52 |
| 606 | 95 | 610 | 46 | 105 |
| 608 | 55 | 530 | 135 | 100 |
| 610 | 60 | 295 | 46 | 54 |
| 612 | 15 | 130 | 34 | 22 |
| 614 | 10 | 120 | 18 | 24 |
| 616 | 30 | 62 | 14 | 14 |
| 618 | 30 | 32 | 12 | 8 |
| Detn limit | (10) | (4) | (4) | (4) |

LOCATION - L1.

SOIL SAMPLES.

133

amdel

830133

Analysis code X3 | Report AC 4036/86 | Page X1

NATA Certificate | Results in ppm

| Sample | Sn |
|---|---|
| L1/210 | 490 |
| L1/214 | 355 |
| L1/218 | 8 |
| L1/230 | 6 |
| L1/232 | 4 |
| L1/234 | <4 |
| L1/236 | <4 |
| L1/238 | 4 |
| L1/256 | 4 |
| L1/258 | 4 |
| L1/260 | 8 |
| L1/262 | 58 |
| L1/264 | 250 |
| L1/266 | 175 |
| L1/268 | 320 |
| L1/270 | 98 |
| L1/272 | 54 |
| L1/275 | 10 |
| L1/277 | <4 |
| L1/279 | 8 |
| L1/311 | 40 |
| L1/313 | 105 |
| L1/315 | 160 |
| L1/317 | 155 |
| L1/319 | 280 |
| L1/321 | 690 |
| L1/323 | 275 |
| L1/325 | 195 |
| L1/327 | 215 |
| L1/370 | 530 |
| L1/372 | 530 |
| L1/373 | 700 |
| L1/374 | 610 |
| L1/375 | 415 |
| L1/376 | 420 |
| L1/389 | 530 |
| L1/391 | 370 |
| L1/393 | 205 |
| L1/395 | 260 |
| L1/397 | 14 |
| Detn Limit | (4) |

LOCATION L.1.

SOIL SAMPLES.

134 amdel

830134

Analysis code X3 Report AC 4036/86 Page X2

NATA Certificate Results in ppm

| Sample | Sn |
|---|---|
| L1/425 | 590 |
| L1/427 | 425 |
| L1/429 | 335 |
| L1/431 | 380 |
| L1/433 | 345 |
| L1/445 | 390 |
| L1/447 | 295 |
| L1/449 | 445 |
| L1/451 | 475 |
| L1/453 | 30 |
| L1/645 | 440 |
| L1/647 | 300 |
| L1/649 | 8 |
| L1/651 | 8 |
| L1/698 | 350 |
| L1/700 | 10 |
| L1/702 | 12 |
| L1/704 | 16 |
| L1/373/P | 335 |
| L1/374/P | 285 |
| L1/375/P | 285 |
| L1/697 | 360 |
| L1/695 | 520 |
| L1/693 | 470 |
| L1/691 | 415 |
| L1/689 | 425 |
| L1/687 | 530 |
| L1/685 | 1120 |
| L1/683 | 290 |
| L1/681 | 235 |
| L1/679 | 92 |
| L1/710 | 10 |
| L1/712 | 12 |
| L1/715 | 710 |
| L1/717 | 385 |
| L1/719 | 380 |
| L1/721 | 375 |
| L1/723 | 310 |
| L1/725 | 260 |
| L1/727 | 365 |
| Detn limit | (4) |

LOCATION L.1.

SOIL SAMPLES

135 amdel 830135 Rd No 26/86

Analysis code X3 Report AC 4036/86 Page X1

NATA Certificate Results in ppm

| Sample | WO3 | Mo | Pb |
|---|---|---|---|
| L1 256 | 10 | 6 | 22 |
| L1 258 | <10 | 6 | 14 |
| L1 260 | 20 | 4 | 6 |
| L1 262 | Insufficient Sample | | |
| L1 264 | 45 | 30 | 56 |
| L1 266 | 20 | 12 | 30 |
| L1 268 | 25 | 12 | 64 |
| L1 270 | 10 | 12 | 48 |
| L1 272 | 15 | 6 | 40 |
| L1 317 | 30 | 8 | 32 |
| L1 319 | <10 | 16 | 76 |
| L1 321 | 60 | 20 | 135 |
| L1 323 | 20 | 14 | 70 |
| L1 325 | <10 | 18 | 46 |
| L1 327 | 25 | 12 | 50 |
| L1 645 | 40 | 105 | 70 |
| L1 647 | 35 | 74 | 64 |
| L1 649 | 15 | 6 | 32 |
| L1 651 | 30 | <4 | 34 |
| L1 679 | <10 | 30 | 28 |
| L1 681 | 30 | 66 | 54 |
| L1 683 | 50 | 150 | 56 |
| L1 685 | 60 | 130 | 145 |
| L1 687 | 25 | 36 | 88 |
| L1 689 | 15 | 42 | 54 |
| L1 691 | 30 | 66 | 68 |
| L1 693 | 45 | 60 | 90 |
| L1 695 | 30 | 32 | 68 |
| L1 697 | 50 | 80 | 66 |
| L1 698 | 35 | 86 | 44 |
| L1 700 | 25 | 8 | 50 |
| L1 702 | 25 | 4 | 34 |
| L1 704 | 35 | <4 | 54 |
| L1 715 | 140 | 50 | 86 |
| L1 717 | 60 | 64 | 72 |
| L1 719 | 170 | 50 | 78 |
| L1 721 | 50 | 50 | 60 |
| L1 723 | 35 | 36 | 84 |
| L1 725 | 45 | 98 | 100 |
| L1 727 | 30 | 68 | 88 |
| L1 729 | 25 | 165 | 105 |
| L1 731 | 40 | 165 | 92 |
| Detn Limit | (10) | (4) | (4) |

LOCATION: L1.

SOIL SAMPLES

E.L. 17/68 ANNUAL REPORT 1985/86

APPENDIX NO. 5

LOCATION L.5 TO EASTERN RIDGE
GROUND MAGNETIC SURVEY RESULTS

| | | |
|---|---|---|
| NO.5A | SECTION | LINE 6600N |
| NO.5B | SECTION | LINE 7070N |
| NO.5C | SECTION | LINE 7250N/7300N |
| NO.5D | SECTION | LINE 7550N |

830137

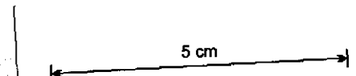
APPENDIX 5.A

LOCATION L5/EAST RIDGE

DETAILED GROUND MAGNETIC SURVEY READINGS.

SECTION LINE 6600N.

SCALE 1:1000.

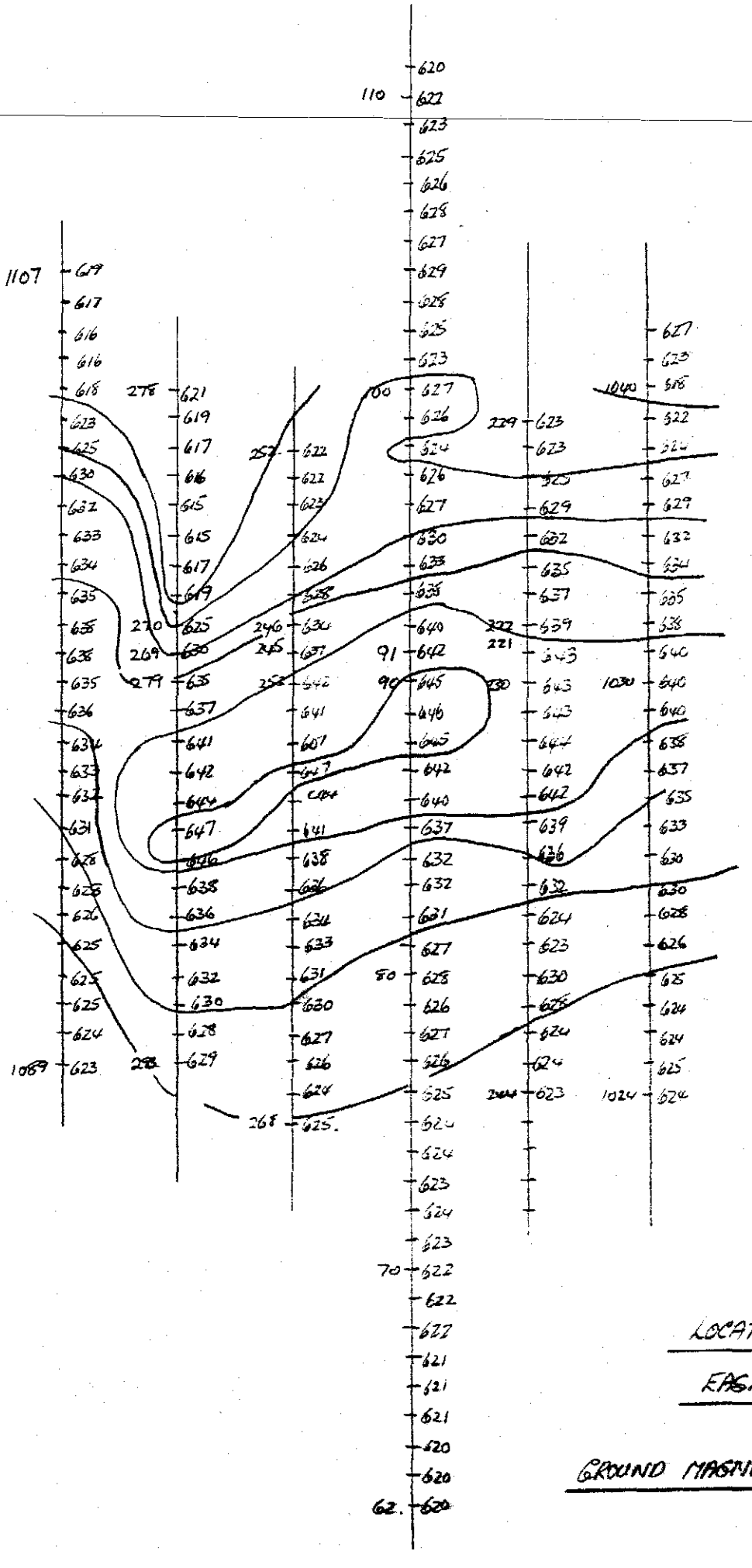


APPENDIX N° 5B

138

SECTION LINE 7070N.

830138



LOCATION L6 TO

EASTERN RIDGE

GROUND MAGNETIC SURVEY RESULTS

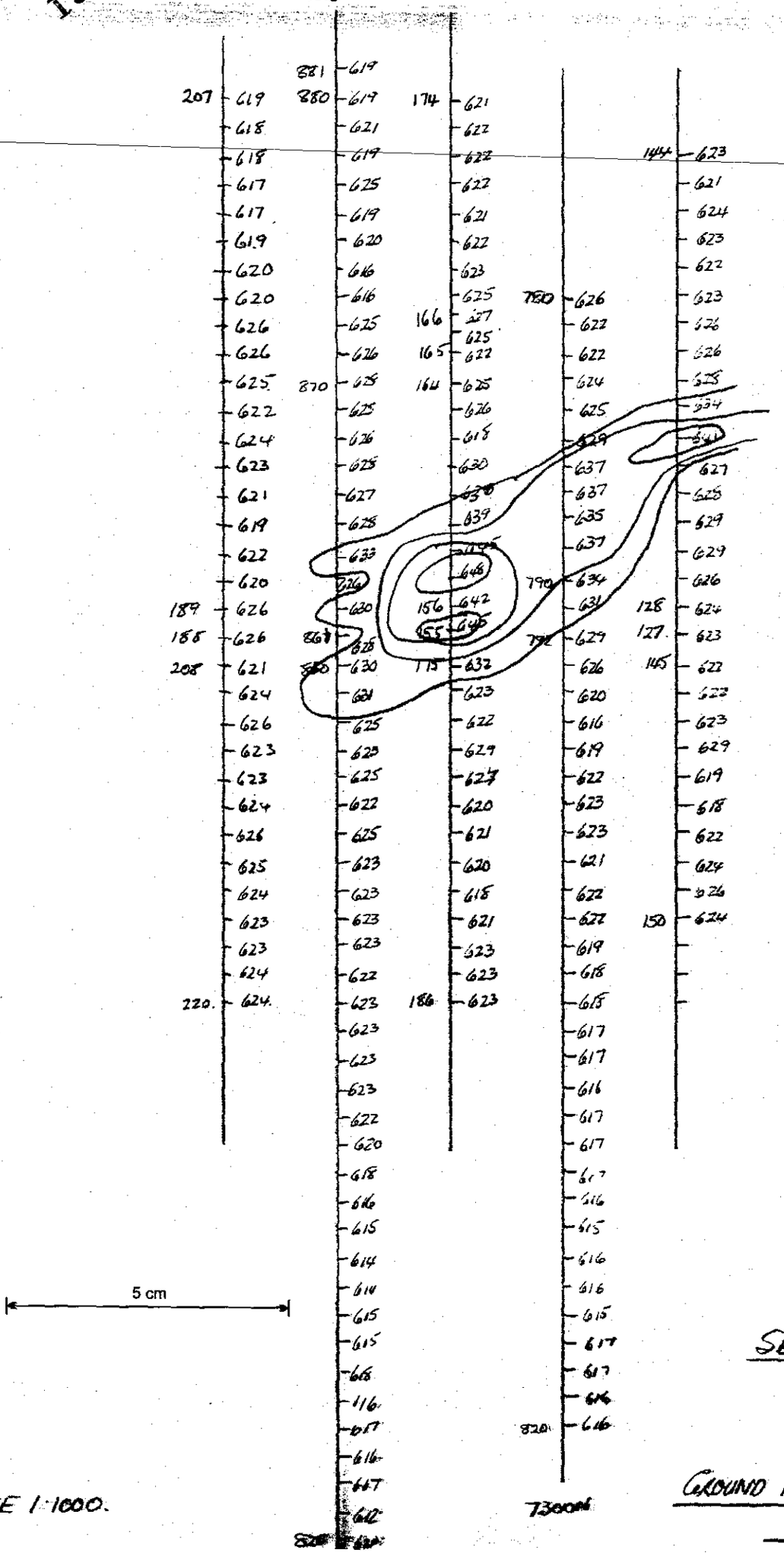
APPENDIX 5C

LOCATION L5 TO

EASTERN RIDGE

139

830139




SECTION LINE

7250N / 7300N

SCALE 1:1000.

GROUND MAGNETIC SURVEY

READINGS

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APPENDIX Nº. 5D.

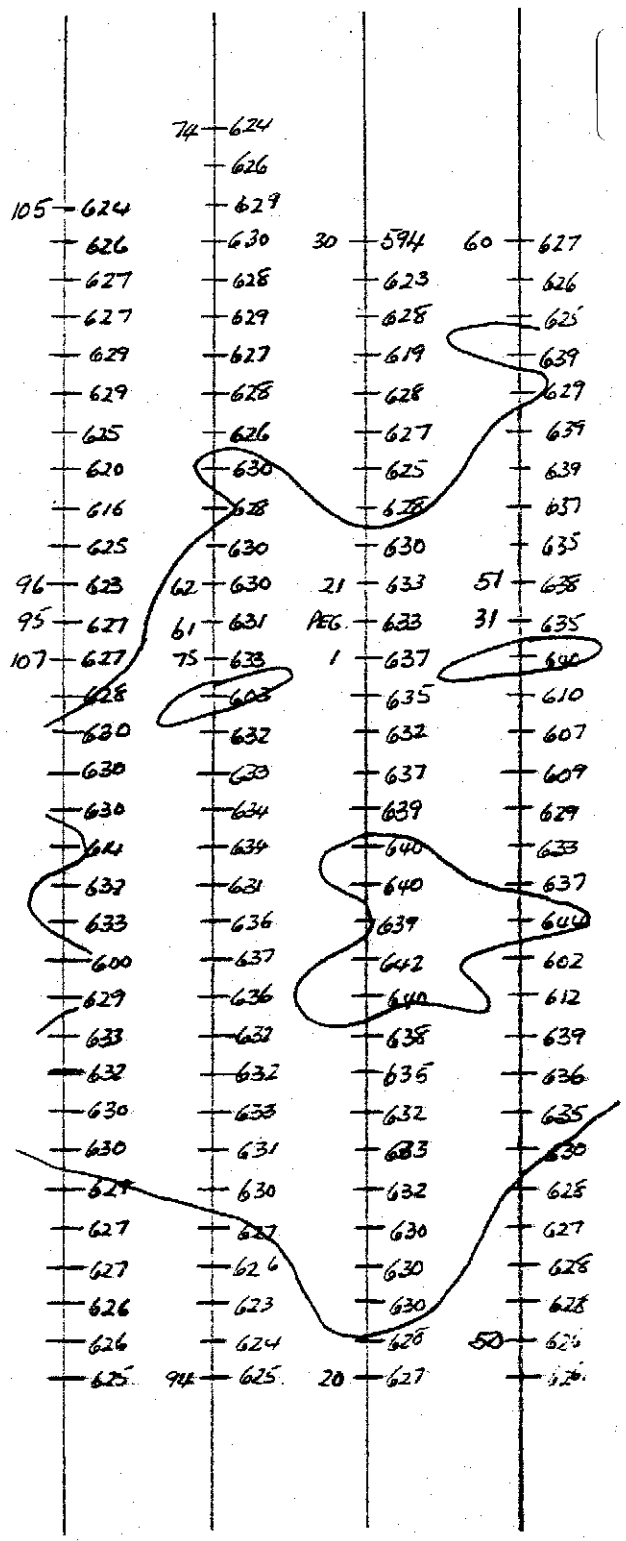
830140

SECTION LINE. 7550N

LOCATION 26

TO EASTERN RIDGE

SCALE 1:1000.




5 cm

GROUND MAGNETIC SURVEY

READINGS.

SCALE 1:1000.

E.L. 17/68 ANNUAL REPORT 1985/86

# APPENDIX NO. 6

# VALENTINES REGION

APPENDIX NO.6

## VALENTINES REGION
## PAN CONCENTRATE SAMPLES - ASSAY RESULTS

| Sample No. | Assay Value (ppm) WO3 | Sn |
|---|---|---|
| VP1 | 20 | <4 |
| VP2 | 10 | 12 |
| VP3 | <10 | 14 |
| VP4 | 20 | 32 |
| VP5 | 30 | 125 |
| VP6 | 40 | 44 |
| VP7 | <10 | 14 |
| VP8 | 15 | 6 |
| VP9 | <10 | 6 |
| VP10 | <10 | 8 |
| VP11 | 10 | 10 |
| VP12 | <10 | 8 |
| VP13 | <10 | 6 |
| VP14 | 10 | 12 |
| VP15 | <10 | 10 |
| VP16 | <10 | 6 |
| VP17 | <10 | 18 |
| VP19 | <10 | 34 |
| VP20 | <10 | 10 |
| VP21 | <10 | <4 |
| VP22 | 10 | 10 |
| VP23 | <10 | 8 |

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APPENDIX NO. 7

KARA SOUTH (EVALUATION DRILLING)

NO.7A REPORT
NO.7B DRILL HOLE LOGS
NO.7C DRILL SECTIONS/PLAN

APPENDIX NO. 7A

# KARA SOUTH - EVALUATION DRILLING REPORT

830145

TASMANIA MINES N.L. - EXPLORATION LICENCE NO. 17/68

# "EVALUATION DRILLING" - KARA SOUTH

## EXPLORATION WORK - JAN.-JUNE, 1986.

CLIFF WHITEHEAD

JUNE, 1986.

EVALUATION DRILLING - KARA SOUTH

TABLE OF CONTENTS



PLAN: (BACK POCKET)

PLAN NO. 12/86 - KARA SOUTH, SCALE 1:500

EVALUATION DRILLING - KARA SOUTH

1. INTRODUCTION - SUMMARY:

As part of the six month exploration programme(Jan- June, 1986) within E.L. 17/68, "evaluation drilling" has been completed at the Kara South skarn deposit.

Drilling was of such a nature as to investigate and evaluate possible additional reserves of scheelite bearing ore(X, Y, or F ore types), which would be of an open-pit extractive nature and within easy proximity to the Kara No. 1 mill site.

A total of 78 shallow(air-track) holes were drilled with a total meterage of 593.50 metres.

As a result of the investigation 59,039 tonnes of partially weathered scheelite bearing ore grading 0.437%WO3 have been evaluated.

These geological reserves are subdivided into indicated reserves, 23,463 tonnes @ 0.394%WO3, and ones of a measured category, 35,576 tonnes @ 0.465%WO3. Both reserve categories are of open pit mining extraction, which with careful selective mining would have a low overburden strip ratio , $>1$.

By further evaluation drilling along strike of the above reserves, additional reserves could be further blocked out at this prospect.

## 2. PREAMBLE.

The Kara South prospect is a well known surface exposed skarn deposit located some 1.15km SSE of the Kara No. 1 deposit.

The initial work was originally completed by ANZECO in 1972, who by trenching /sampling outlined and investigated the main portion of the skarn. Significantly, little or no tungsten mineralisation or strong anomalism was found associated with this main section of the skarn.

Exploratory work by McIntyre Mines in 1980 revealed extensions of the main skarn along the eastern flank of the prospect. Surface exploration work- mapping, reconnaissance ground magnetics, trenching and sampling, revealed a surface exposed high grade zone of scheelite mineralisation(1%WO3) over widths of 3 to 10 metres and a strike distance of approx. 70 metres.

A subsequent programme of exploratory diamond drilling, primarily initiated to investigate the down dip subsurface nature of the zone, completely downgraded the overall potential of the mineralisation. Down dip(30m) mineralisation was found to rapidly decrease with depth both in WO3 grade content and width.

Nevertheless it was still considered that between 10,000 - 40,000 tonnes of possible ore grade material of easy open pit extraction was attainable along the east flank of Kara South. The current "evaluation drilling" programme was designed to evaluate such possible tonnage potential.

## 3. CURRENT PROGRAMME.

The area specifically investigated during the current programme is outlined on the accompanying Plan No. 12/86, Scale 1:500. It is bounded by co-ordinates 4285N and 4510N, i.e. over a total strike distance of 225 metres.

Old trenches were re-opened, and the geology/lithology of the mineralised zones and trenches were mapped. Reconnaissance ground magnetic surveys were run to enhance skarn extensions in

areas covered by surface rubble/thick vegetation.

Air track drilling was preferred to additional diamond drilling because of superior mobility and more rapid execution. However near surface levels of the water table completely prohibited drilling and accurate sampling below 15 metre depths.

The actual area covered by drilling extended over 140m strike length, between 4290N and 4430N. A total of 78 holes were completed, with a total drilled meterage of 5935Ometres. Drill spacing along to the surface exposed zone and along its western contact was at 5 metre spacings along 10 metre drill lines or trenches.

The holes were sampled at either 1.5metre of 3.Ometre intervals. All samples were oven dried and riffle split into two equal fractions, one being submitted for XRF WO3 analysis, and one for lithological logging and U.V. WO3 grade estimates(see record sheets KS/RS/6A to 6J).

All holes drilled, trenches and the area investigated, have been resurveyed in detail(please refer to Plan No. 12/86).

4. MINERALISED ZONES/GEOLOGY.

Two distinct zones of mineralisation are now apparent within the area under investigation.

"Zone A" mineralisation is that delineated over a total strike distance of 285metres along the eastern margin of the prospect between Sections 4285N and 4570N. Scheelite, primarily of a coarse nature, is assocated with a garnet- dripside skarn facies with a low magnetite(approx. 20%) content. The zone strikes N.N.W(345$^{o}$ bearing) and dips 55$^{o}$ - 65$^{o}$ to the west. As shown on Figure No. KS/1A, the mineralised zone varies in width at surface between 4.5m and 15m. It is enclosed by grey siltstones/ quartzites along its eastern margin, and by yellow brown sandstones along its western hanging wall contact.

"Zone B" mineralisation is only outlined along drill section line F at 4425N. It is slightly wider than Zone A, and at 4425N has a proven down dip extension of 25 metres. To the north it is believed the potential of the zone will be diminished by a rising granite contact. Any southern extensions are at this stage of unknown potenial.

5. RESULTS OF WORK:

Zone A:

The ore zone has been blocked out over 140m strike length between 4290N and 4430N.

Reserve outlines are shown on sectional figures KS/2A to KS/2E, and blocked out on a 2.5metre level basis from the surface exposures(approx. 522 - 526 R.L.) to a R.L. of 512.5.

The ore zone has been separately demarcated on bench plans, again plotted at 2.5m intervals and divided along strike into five separate ore blocks(refer Figures KS/1A to KS/1F). Volume reserve figures(and subsequent tonnages) were measured by planemeter on a bench and block level basis.

South of 4400N, the concentration of drilling results permitted Zone A mineralised reserves to be classified as measured geological reserves. North of 4400N, reserves are categorised as indicated.

Zone B:

Mineralisation associated with this zone was calculated as for Zone A, but again was only quantified as indicated geological reserves.

Full tonnage figures are tabulated in Tables KS/1 and KS/2.

In summary, evaluated tonnages are as follows:-

| | Measured | | Indicated | | Total | |
|---|---|---|---|---|---|---|
| | tonnes | % $WO_3$ | tonnes | % $WO_3$ | tonnes | % $WO_3$ |
| Zone A - | 35,576 | 0.465 | 7,226 | 0.440 | 42,802 | 0.461 |
| Zone B - | - | - | 16,237 | 0.373 | 16,237 | 0.373 |
| TOTALS | 35,576 | 0.465 | 23,463 | 0.394 | 59,039 | 0.437 |

All ore is classified as partially weathered Y ore type.

On a level basis, Zone A mineralisation shows consistent tonnages with a slight decrease in grade with depth.

| | Tonnes | % $WO_3$ |
|---|---|---|
| 522.5 Level | 5,816 | 0.488 |
| 520.0 Level | 11,926 | 0.393 |
| 517.5 Level | 11,858 | 0.561 |
| 515.0 Level | 11,874 | 0.396 |
| 512.5 Level | 12,567 | 0.371 |

Mining Considerations:

Mining of the above delineated reserves would definitely be of an open pit nature, admittedly on a small scale. Total depth of evaluated reserves is only 12.5 metres, but heavy water concentrations could be a mining problem below 515RL.

With careful selective mining, overburden extraction could be kept to a minimum, and only required along the western hanging wall contact(see Figures KS/2A to KS/2F).

Waste volumes have not been calculated, but it is estimated the ore:waste stripping ratio would be in the order of 1:0.5.

The reserves belonging to Kara South are currently located outside the confines of Consolidated Mining Lease CL105M/77.

6. Future Actions:

Zone B mineralisation, in particular its delineation along a southerly direction is required. This could be implemented by a systematic grid ground magnetic survey and follow up air track drilling.

Likewise Zone A indicated reserves could easily be upgraded to the measured category with additional but limited drilling.

Kara South should be included in future mineral lease applications.

C. H. WHITEHEAD,
June, 1986

EVALUATION DRILLING - KARA SOUTH

TABLES:

| | | |
|---|---|---|
| TABLE NO. KS/1 | - | GEOLOGICAL RESERVE SUMMARY |
| TABLE NO. KS/2 | - | ZONE A - TONNAGE / GRADE SUMMARY |

FIGURES:

| | | |
|---|---|---|
| FIG. NO. KS/1A | - | BENCH LEVEL, SURFACE, SCALE 1:500 |
| KS/1B | - | " " BENCH,522.5L, SCALE 1:500 |
| KS/1C | - | " " BENCH,520.1, SCALE 1:500 |
| KS/1D | - | " " BENCH,517.5L, SCALE 1:500 |
| KS/1E | - | " " BENCH, 515L, SCALE 1:500 |
| KS/1F | - | " " BENCH, 512.5L, SCALE 1:500 |
| KS/2A | - | SECTION NO. A, SCALE 1:250 |
| KS/2B | - | " NO. B, " " |
| KS/2C | - | " NO. C, " " |
| KS/2D | - | " NO. D, " " |
| KS/2E | - | " NO. E, " " |
| KS/2F | - | " NO. F, " " |

RECORD SHEETS:

| | | |
|---|---|---|
| KS/RS/1A + 1B | - | ZONE A, TONNAGE/VOLUME CALCULATIONS |
| KS/RS/2 | - | ZONE A, PLANIMETRED AREAS |
| KS/RS/3 | - | ZONE B MINERALISATION, TONNAGE CALCULATIONS |
| KS/RS/4 | - | ZONE B GRADE CALCULATIONS |
| KS/RS/5A to 5E | - | ZONE A, GRADE CALCULATIONS |
| KS/RS/6A to 6J | - | DRILL SAMPLE LOGS |
| KS/RS/7 | - | DRILL HOLE ASSAY RECORDS |
| KS/RS/8A to 8I | - | DRILL ASSAY CERTIFICATES |
| KS/RS/9 | - | SURVEY DATA |

APPENDIX NO.7B

# KARA SOUTH - EVALUATION DRILLING
# DRILL HOLE LOGS

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KS/R.S./T.

830155

KARA SOUTH.

DRILL HOLE ASSAY RECORDS.

| SAMPLE N°. FROM | SAMPLE N°. TO. | N° OF HOLES. | N° OF SAMPLES. | METREAGE. | AMDEL ASSAY CERTIFICATE N°. |
|---|---|---|---|---|---|
| KS/AT/1 | KS/AT/7 | 7 | 33 | 76.5 | AC 5506/86. |
| KS/AT/8+9 12-19 | KS/AT/19 | 10 | 24 | 72 | AC 5526/86. |
| KS/AT/20 - | KS/AT/26 | 7 | 24 | 72 | AC. 5544/86. |
| KS/AT/27. 10 | KS/AT/33 11 | 9 | 24 | 72 | AC 5570/86. |
| KS/AT/34 | KS/AT/43 | 10 | 29 | 87 | AC. 5688/86. |
| KS/AT/44 | KS/AT/52 | 9 | 32 | 96 | AC. 5606/86. |
| KS/AT/53 | KS/AT/60 | 8 | 24 | 72 | AC. 5653/86. |
| KS/AT/61 | KS/AT/71 | 11. | 18 | 54 | AC. 5649/86. |
| KS/AT/72 | KS/AT/78 | 7 | 20 | 60 | AC. 5669/86. |
| | | 78 | 228 | 593.50. | |

156 KARA SOUTH - DRILL SAMPLE LOG. KS/RS/6A.

| SAMPLE NUMBER. | DEPTH (m) | $WO_3$ (ppm) XRF ASSAY. | SAMPLE COLOUR. | NORTH COORDINATE. | EAST COORDINATE. | R.L. |
|---|---|---|---|---|---|---|
| KS/AT/1/1.5 | 0.0 - 1.5 | 4700 | MEDIUM BROWN X. | 4296.8 | 7761.5 | 522.4. |
| 1/3.0 | 1.5 - 3.0 | 2600 | MEDIUM BROWN X | | | |
| 1/4.5 | 3.0 - 4.5 | 680 | BROWN | | | |
| 1/6.0 | 4.5 - 6.0. | 740. | BROWN. | | | |
| KS/AT/2/1.5. | 0.0 - 1.5 | 1220 | MED BROWN L.WT. | 4302.7 | 7757.8 | 522.6. |
| 2/3.0 | 1.5 - 3.0 | 570 | DARK BROWN. | | | |
| 2/4.5 | 3.0 - 4.5 | 55 | LIGHT GREY. SST. | | | |
| KS/AT/3/1.5 | 0.0 - 1.5 | 1020 | MEDIUM BROWN. L.WT. | 4312.9 | 7750.6. | 522.8. |
| 3/3.0 | 1.5 - 3.0 | 540 | AS ABOVE. | | | |
| 3/4.5 | 3.0 - 4.5 | 600 | LIGHT GREY SANDY. | | | |
| 3/6.0 | 4.5 - 6.0. | 860. | BROWN T. | | | |
| KS/AT/4/1.5 | 0.0 - 1.5 | 9650 | MED BROWN | 4317.5 | 7750.9 | 523.2. |
| 4/3.0 | 1.5 - 3.0 | 3940 | ORANGE BROWN | | | |
| 4/4.5 | 3.0 - 4.5 | 380 | ORANGE BROWN | | | |
| 4/6.0 | 4.5 - 6.0. | 1640. | MED BROWN. | | | |
| KS/AT/5/1 | 0 - 3. | 760 | DARK BROWN | 4320.7 | 7751.3 | 523.7. |
| 5/2 | 3 - 6 | 260 | MOTTLED BR. | | | |
| 5/3 | 6 - 9 | 120 | LIGHT GREY (SANDY) | | | |
| 5/4 | 9 - 12 | 20 | FAWN | | | |
| 5/5 | 12 - 15 | 15. | FAWN | | | |
| 5/6 | 15 - 18 | 25 | FAWN (SANDY) | | | |
| 5/7. | 18 - 21. | 35 | FAWN (SANDY). | | | |
| KS/AT/6/1 | 0 - 3 | 300 | MOTTLED BROWN. | 4324.6 | 7761.4 | 523.9. |
| 6/2 | 3 - 6 | 160 | MED FAWN. | | | |
| 6/3 (cont) | 6 - 9 | 30. | FAWN (SST). | | | |

# KARA SOUTH - DRILL SAMPLE LOG.

KS/RS/6B.

157

| SAMPLE NUMBER. | DEPTH (m) | $WO_3$ (ppm) XRF ASSAY. | SAMPLE COLOUR. | NORTH COORDINATE. | EAST COORDINATE. | R.L. |
|---|---|---|---|---|---|---|
| KS/AT/6/4 | 9-12. | 15 | MED. FAWN (SAND) | | | |
| KS/AT/7/1 | 0-3 | 4660 | BROWN | 4310·4 | 7755·1 | 522·9. |
| 7/2 | 3-6 | 180 | LIGHT GREY SAND | | | |
| 7/3 | 6-9 | 30 | LIGHT GREY SAND | | | |
| 7/4 | 9-12 | 30 | FAWN SAND | | | |
| 7/5 | 12-15 | 10 | FAWN. | | | |
| 7/6. | 15-18. | 110. | BROWN-FAWN. | | | |
| KS/AT/8/1 | 0-3 | 1560 | DARK BROWN. | 4306·8 | 7757·5 | 522·8. |
| KS/AT/9/1 | 0-3 | 2600 | DARK BROWN | 4304·2 | 7754·7 | 522·3. |
| 9/2 | 3-6 | 750 | MED BROWN. | | | |
| 9/3. | 6-9. | 640. | FAWN-MED. | | | |
| KS/AT/10/1 | 0-3 | 1260 | DARK BROWN T. | 4300·5 | 7756·8 | 522·1 |
| 10/2 | 3-6. | 370. | MED. BROWN T. | | | |
| KS/AT/11/1 | 0-3 | 2080 | MED BROWN | 4295·5 | 7759·6 | 522·1. |
| 11/2 | 3-6. | 970 | MED. BROWN. | | | |
| KS/AT/12/1 | 0-3 | 1220 | MED. BROWN | 4302·4 | 7750·5. | 522·0 |
| 12/2. | 3-6. | 4060. | ORANGE BROWN. | | | |
| KS/AT/13/1 | 0-3 | 870 | MED BROWN | | | |
| 13/2 | 3-6 | 670 | ORANGE BROWN | | | |
| KS/AT/14/1 | 0-3 | 1100 | MED BROWN | 4306·3 | 7748·3 | 522·2 |
| 14/2 | 3-6 | 520. | MED BROWN | | | |
| KS/AT/15/1. | 0-3 | 1320 | DARK BROWN | 4308·0 | 7752·0 | 522·5. |
| 16/2 | 3-6. | 4700. | FAWN BROWN T. | | | |
| KS/AT/16/1 | 0-3 | 860 | BROWN FAWN T. X | 4310·1 | 7746·8 | 522·3. |
| 16/2 | 3-6 | 730 | BROWN. | | | |

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# KARA SOUTH — DRILL SAMPLE LOG

KS/RS/6C.

| SAMPLE NUMBER. | DEPTH (m) | $WO_3$ (ppm) XRF ASSAY. | SAMPLE COLOUR. | NORTH COORDINATE. | EAST COORDINATE. | R.L. |
|---|---|---|---|---|---|---|
| KS/AT/16/3 | 6 - 9 | 450 | ORANGE - BROWN | | | |
| KS/AT/17/1 | 0 - 3 | 400 | ORANGE - BR. T. | 4314·9 | 7743·0. | 522·3. |
| 17/2 | 3 - 6 | 220 | AS ABOVE. | | | |
| 17/3 | 6 - 9. | 270. | DIOP T. | | | |
| KS/AT/18/1 | 0 - 3 | 490 | LIGHT BROWN T. | 4316·6. | 7747·2 | 522·8 |
| 18/2 | 3 - 6 | 380 | AS ABOVE. | | | |
| 18/3 | 6 - 9. | 450. | MED. BROWN. | | | |
| KS/AT/19/1 | 0 - 3 | 4800 | MED BROWN | 4323·1 | 7737·4 | 622·1. |
| 19/2 | 3 - 6 | 2640 | LIGHT. BROWN | | | |
| 19/3. | 6 - 9. | 2020. | BROWN | | | |
| KS/AT/20/1. | 0 - 3 | 2600 | BROWN T. | 4324·9 | 7740·5 | 522·4. |
| 20/2 | 3 - 6. | 4740. | MED. BROWN T. | | | |
| KS/AT/21/1. | 0 - 3 | 1600 | MED. BR T. | 4328·5 | 7740·3. | 522·5. |
| 21/2 | 3 - 6 | 1160 | DARK BR. LIGHT. T. | | | |
| 21/3 | 6 - 9. | 270. | DARK BR. H. T. | | | |
| KS/AT/22/1. | 0 - 3 | 1180 | MED. BROWN T. | 4328·7 | 7744·8 | 522·6. |
| 22/2 | 3 - 6. | 1620. | BROWN T. | | | |
| KS/AT/23/1 | 0 - 3 | 850 | MED BROWN T. | 4329·0 | 7749·0 | 522·7. |
| 23/2 | 3 - 6 | 86 | FAWN YELLOW SST. | | | |
| 23/3 | 6 - 9 | 35 | FINE SST. YELLOW | | | |
| 23/4 | 9 - 12 | 60 | AS ABOVE. | | | |
| 23/5. | 12 - 15 | 60. | GREENISH - YELLOW SAND. | | | |
| KS/AT/24/1. | 0 - 3 | 85 | YELLOW SAND. | 4327·2. | 7736·4 | 522·4. |
| 24/2 | 3 - 6 | 500 | BROWN SAND | | | |
| 24/3 | 6 - 9 | 640. | BROWN T. | | | |

KARA SOUTH — DRILL SAMPLE LOG. KS/RS/GD.

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| SAMPLE NUMBER. | DEPTH (m) | $WO_3$ (ppm) XRF ASSAY. | SAMPLE COLOUR. | NORTH COORDINATE. | EAST COORDINATE. | R.L. |
|---|---|---|---|---|---|---|
| KS/AT/25/1. | 0 - 3 | 160 | YELLOW. | 4330·3 | 7730·8 | 522·3 |
| 25/2 | 3 - 6 | 1260 | BROWN T. | | | |
| 25/3. | 6 - 9. | 4240. | MED. BROWN X. T. | | | |
| KS/AT/26/1. | 0 - 3 | 180 | BROWN GR. | 4331·5 | 7724·9 | 521·5. |
| 26/2 | 3 - 6 | 600 | AS ABOVE. | | | |
| 26/3 | 6 - 9 | 230 | GREY. | | | |
| 26/4 | 9 - 12 | 95 | FAWN GREY. | | | |
| 26/5 | 12 - 15 | 290 | AS ABOVE. | | | |
| 26/6. | 15 - 18. | 260. | AS. ABOVE. | | | |
| KS/AT/27/1. | 0 - 3 | 910 | MED. BROWN LT. | 4331·1 | 7721·0 | 520·6 |
| KS/AT/28/1. | 0 - 3 | 2040 | FAWN BROWN T. | 4320·6 | 7743·8 | 522·2. |
| KS/AT/29/1 | 0 - 3 | 380 | FAWN BROWN. | 4336·2 | 7731·9 | 522·5. |
| 29/2 | 3 - 6 | 2880 | BROWN GREY. | | | |
| 29/3 | 6 - 9. | 4280. | DARK BROWN. | | | |
| KS/AT/30/1. | 0 - 3 | 290 | FAWN. | 4340·5 | 7730·1. | 522·6. |
| 30/2 | 3 - 6 | 540 | FAWN BR. | | | |
| 30/3 | 6 - 9. | 1200. | MED BROWN | | | |
| KS/AT/31/1. | 0 - 3. | 930 | FAWN | 4343·5 | 7781·6. | 522·4. |
| 31/2 | 3 - 6 | 670 | FAWN BROWN. | | | |
| 31/3 | 6 - 9. | 3720. | BROWNISH ORANGE. | | | |
| KS/AT/32/1. | 0 - 3 | 1·44% | MED BROWN. T | 4342·5 | 7736·1. | 522·8 |
| 32/2 | 3 - 6 | 2480 | MED BROWN COARSE HEAVY. T | | | |
| 32/3 | 6 - 9 | 2140. | MED BROWN T. | | | |
| KS/AT/33/1. | 0 - 3 | 1220 | DARK BROWN T. | 4340·4 | 7741·0 | 523·0. |
| 33/2 | 3 - 6. | 180 | FAWN BROWN T. | | | |

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160 KARA SOUTH — DRILL SAMPLE LOG. KS/RS16E.

| SAMPLE NUMBER. | DEPTH (m) | $WO_3$ (ppm) XRF ASSAY. | SAMPLE COLOUR. | NORTH COORDINATE. | EAST COORDINATE. | R.L. |
|---|---|---|---|---|---|---|
| KS/AT/33/3 | 6-9 | 60 | LIGHT FAWN. | | | |
| 33/4 | 9-12 | 190 | LIGHT FAWN | | | |
| 33/5 | 12-15 | 80 | LIGHT. FAWN. | | | |
| 33/6. | 15-18. | 190. | LIGHT FAWN. SST | | | |
| KS/AT/34/1. | 0-3 | 200 | MED. BROWN. | 4387.6 | 7745.2 | 523.3. |
| 34/2. | 3-6. | 2100. | GREY. FAWN. | | | |
| KS/AT/35/1 | 0-3 | 440 | FAWN GREY. | 4384.7 | 7749.2 | 523.6. |
| 35/2 | 3-6. | 130. | LIGHT. GREY. | | | |
| KS/AT/36/1. | 0-3 | 50 | FAWN YELLOW. | 4344.9 | 7726.9 | 521.7. |
| 36/2 | 3-6 | 130 | FAWN/ LIGHT GREY. | | | |
| 36/3 | 6-9 | 270 | AS ABOVE | | | |
| 36/4. | 9-12. | 670. | GREY. COARSE. | | | |
| KS/AT/37/1 | 0-3. | 40 | FAWN BROWN | 4349.0 | 7721.8 | 521.3. |
| 37/2 | 3-6 | 100 | AS. ABOVE. | | | |
| 37/3 | 6-9 | 120 | GREY. | | | |
| 37/4 | 9-12 | 75 | FINE-GREY | | | |
| 37/5 | 12-15. | 380. | GREYISH FAWN. | / | | |
| KS/AT/38/1. | 0-3 | 45 | MED. BROWN. | 4353.7 | 7721.8 | 521.7. |
| KS/AT/39/1 | 0-3 | 130 | YELLOW BROWN. | 4354.4 | 7726.7 | 522.6. |
| 39/2 | 3-6. | 76 | AS ABOVE. | | | |
| KS/AT/40/1 | 0-3 | 1300 | MED. BROWN. | 4356.8 | 7731.7 | 523.6. |
| 40/2 | 3-6 | 2.87% | MED. BROWN. | | | |
| 40/3. | 6-9. | 5300. | DARK BROWN HEAVY. | | | |
| KS/AT/41/1 | 0-3. | 9600 | BROWN GREY. | 4359.0 | 7735.6 | 524.3. |
| 41/2 CON. | 3-6 | 1580 | GREY-FAWN | | | |

8-30160

KERR SOUTH — DRILL SAMPLE LOG — KS/RS/GF

161

| SAMPLE NUMBER. | DEPTH (m) | $WO_3$ (ppm) XRF ASSAY. | SAMPLE COLOUR. | NORTH COORDINATE. | EAST COORDINATE. | R.L. |
|---|---|---|---|---|---|---|
| KS/AT/41/3 | 6-9 | 260 | GREY FAWN | | | |
| KS/AT/42/1 | 0-3 | 95 | FAWN | 4361.9 | 7739.7 | 525.0. |
| 42/2 | 3-6. | 40. | FAWN. | | | |
| 42/3 | 6-9. | 65 | LIGHT-BROWN. | | | |
| KS/AT/43/1 | 0-3 | 20 | FAWN. | 4364.5 | 7743.8 | 525.9. |
| 43/2 | 3-6 | 30 | YELLOW-FAWN. | | | |
| 43/3 | 6-9 | 30 | FAWN-YELLOW. | | | |
| 43/4. | 9-12 | 120. | AS ABOVE. | | | |
| KS/AT/44/1. | 0-3 | 35 | FAWN | 4366.9 | 7747.8 | 526.7 |
| 44/2 | 3-6 | 45 | FAWN. | | | |
| 44/3 | 6-9 | 30. | FAWN. | | | |
| KS/AT/45/1 | 0-3 | 180 | LGT. FAWN. | 4358.5 | 7720.2 | 521.8. |
| 45/2 | 3-6 | 200 | BROWN | | | |
| 45/3 | 6-9 | 160 | GREY-BROWN. | | | |
| 45/4 | 9-12 | 90 | GREY FAWN | | | |
| 45/5. | 12-15 | 260. | AS ABOVE. | | | |
| KS/AT/46/1 | 0-3 | 120 | FAWN BROWN. | 4362.9 | 7721.2 | 521.7 |
| 46/2. | 3-6 | 130 | GREYISH YELLOW | | | |
| KS/AT/47/1 | 0-3 | 95 | FAWN GREY | 4367.4 | 7722.0 | 521.9. |
| 47/2 | 3-6 | 200 | GREY FAWN. | | | |
| 47/3 | 6-9 | 190 | BROWN FAWN | | | |
| 47/4 | 9-12 | 2600 | GREY BROWN | | | |
| 47/5 | 12-15 | 11400. | AS ABOVE. | | | |
| KS/AT/48/1 | 0-3 | 210 | MED. GREY | 4372.4 | 7723.0 | 522.3. |
| 48/2 cont | 3-6. | 290. | FAWN BROWN | | | |

830161

# KARA SOUTH — DRILL SAMPLE LOG.

KS/RS/66

| SAMPLE NUMBER. | DEPTH (m) | $WO_3$ (ppm) XRF ASSAY. | SAMPLE COLOUR. | NORTH COORDINATE. | EAST COORDINATE. | R.L. |
|---|---|---|---|---|---|---|
| KS/AT/48/3. | 6 - 9 | 280 | FAWN BROWN | | | |
| 48/4 | 9 - 12. | 4560 | MED BROWN. | | | |
| KS/AT/49/1. | 0 - 3 | 190 | LIGHT BROWN. | 4376·9 | 7723·6 | 522·7. |
| 49/2 | 3 - 6 | 690 | AS ABOVE | | | |
| 49/3. | 6 - 9 | 2180. | AS ABOVE. | | | |
| KS/AT/50/1 | 0 - 3 | 4780 | BROWN GREY. | 4382·8 | 7726·9 | 523·2. |
| | 3 - 6 | 6450 | DARK BROWN. | | | |
| | 6 - 9. | 1·03%. | DARK BROWN. GRT. | | | |
| KS/AT/51/1. | 0 - 3. | 2660 | BROWN T. | 4381·0 | 7731·7. | 524·2. |
| | 3 - 6 | 890. | BROWN T. | | | |
| KS/AT/52/1. | 0 - 3 | 4840 | FAWN YELLOW. | 4377·4 | 7735·2 | 525·1. |
| 52/2 | 3 - 6 | 200 | AS. ABOVE. | | | |
| 52/3 | 6 - 9 | 150 | DARK BROWN. | | | |
| 52/4 | 9 - 12 | 35 | LIGHT FAWN. | | | |
| 52/5. | 12 - 15 | 85. | LIGHT FAWN. | | | |
| KS/AT/53/1. | 0 - 3 | 950 | FAWN YELLOW. | 4374·7. | 7739·5 | 526·0. |
| 53/2 | 3 - 6 | 350 | YELLOW. | | | |
| 53/3 | 6 - 9 | 240 | YELLOW GREY. | | | |
| 53/4 | 9 - 12. | 110. | GREY. | | | |
| KS/AT/54/1. | 0 - 3. | 170 | FAWN YELLOW | 4372·4 | 7743·5 | 526·6. |
| 54/2 | 3 - 6 | 90 | YELLOW | | | |
| 54/3 | 6 - 9 | 90 | YELLOW GREY | | | |
| 54/4. | 9 - 12. | 45. | GREY. | | | |
| KS/AT/55/1. | 0 - 3 | 220 | GREY - FAWN | 4428·5 | 7713·4 | 524·7. |
| 55/2 | 3 - 6. | 160 | GREY - FAWN | | | |

(CONT)

KALUMBURU SOUTH — DRILL SAMPLE LOG — KS/RS/64.

163

| SAMPLE NUMBER. | DEPTH (m) | $WO_3$ (PPM) XRF ASSAY. | SAMPLE COLOUR. | NORTH COORDINATE. | EAST COORDINATE. | R.L. |
|---|---|---|---|---|---|---|
| KS/AT/55/3 | 6 - 9 | 220 | GREY - FAWN | | | |
| 55/4 | 9 - 12 | 290. | GREY - FAWN. | | | |
| KS/AT/56/1 | 0 - 3 | 1300 | MED BROWN | 4421.5 | 7708.5 | 524.6. |
| 56/2 | 3 - 6. | 600. | MED BROWN. | | | |
| KS/AT/57/1. | 0 - 3 | 2720 | MED BROWN | 4422.3 | 7703.6 ~~7698.5~~ | 524.8. |
| 57/2. | 3 - 6. | 2700 | DARK BROWN. | | | |
| KS/AT/58/1 | 0 - 3 | 1440 | MED BROWN | 4423.3. | 7698.6 | 524.5. |
| 58/2 | 3 - 6 | 2900 | MED BROWN. | | | |
| 58/3 | 6 - 9 | 8140 | DARK BROWN | | | |
| 58/4 | 9 - 12. | 3380. | DARK BROWN. | | | |
| KS/AT/59/1 | 0 - 3 | 880 | MED BROWN | 4424.5 | 7694.2 | 524.9. |
| KS/AT/60/1 | 0 - 3 | 760 | MED BROWN | 4425.2. | 7688.2 | 524.3. |
| 60/2 | 3 - 6 | 610 | DARK BROWN. | | | |
| 60/3 | 6 - 9 | 1820. | DARK BROWN. | | | |
| KS/AT/61/1. | 0 - 3 | 840. | RED. BROWN. | 4426.8 | 7684.1. | 524.3 |
| KS/AT/62/1 | 0 - 3 | 3540. | MED. BROWN. | 4428.9 | 7698.7 | 525.1. |
| KS/AT/63/1 | 0 - 3 | 2660 | ORANGE BROWN | 4429.8 | 7693.6 | 525.2 |
| 63/2 | 3 - 6 | 710 | DARK BROWN. | | | |
| KS/AT/64/1. | 0 - 3 | 850 | DARK BROWN | 4430.6 | 7688.8 | 525.2. |
| KS/AT/65/1 | 0 - 3 | 800 | DARK BROWN | 4430.9 | 7683.9 | 524.9. |
| KS/AT/66/1 | 0 - 3 | 730 | DARK BROWN | | | |
| 66/2 | 3 - 6 | 620 | DARK BROWN | | | |
| KS/AT/67/1 | 0 - 3 | 640 | DARK BROWN | | | |
| 67/2 | 3 - 6 | 650 | DARK BROWN | | | |
| | | | | | | |

830163

KARA SOUTH - DRILL SAMPLE LOG. KG/RS/GL

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| SAMPLE NUMBER. | DEPTH (m) | $WO_3$ (ppm) XRF ASSAY. | SAMPLE COLOUR. | NORTH COORDINATE. | EAST COORDINATE. | R.L. |
|---|---|---|---|---|---|---|
| KS/AT/68/1 | 0-3 | 250. | BROWNISH GREY. | 4404.3 | 7579.7 | 518.0. |
| 68/2 | 3-6 | 100. | LIGHT GREY. | | | |
| KS/AT/69/1 | 0-3. | 75 | MED GREY. | 4403.5 | 7568.6 | 517.7. |
| 69/2 | 3-6. | 30 | LIGHT GREY. | | | |
| KS/AT/70/1. | 0-3 | 50 | MED GREY | 4404.7 | 7560.1 | 517.3. |
| 70/2. | 3-6. | 55. | LIGHT GREY. | | | |
| KS/AT/71/1 | 0-3 | 55 | MED BROWN | | | |
| 71/2 | 3-6 | 60. | MED. GREY. | | | |
| KS/AT/72/1 | 0-3 | 100 | MED BROWN. | | | |
| 72/2 | 3-6. | 85. | LIGHT. GREY. | | | |
| KS/AT/73/1 | 0-3 | 540 | MED-BROWN. | | | |
| 73/2 | 3-6 | 50. | DARK GREY. | | | |
| KS/AT/74/1 | 0-3 | 95 | MED. BROWN. | | | |
| 74/2 | 3-6 | 100 | MED GREY. | | | |
| 74/3 | 6-9 | 95 | GREEN-GREY. | | | |
| 74/4. | 9-12. | 65. | GREY. | | | |
| KS/AT/75/1 | 0-3 | 160 | MED BROWN. | | | |
| 75/2 | 3-6 | 65 | GREENISH BROWN | | | |
| 75/3 | 6-9 | 520 | GREYISH | | | |
| 75/4 | 9-12 | 270 | PINK GREY GR? | | | |
| 75/5. | 12-15 | 110 | PINK GREY. | | | |
| KS/AT/76/1 | 0-3 | 60 | LIGHT BROWN | | | |
| 76/2 | 3-6. | 100 | GREENISH. | | | |
| 76/3 | 6-9 | 380 | MOTTLED GREY. | | | |
| 76/4 | 9-12 | 75. | PINK GREY GR. | | | |

830164

KARA SOUTH — DRILL SAMPLE LOG — KS/RS/GF

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| SAMPLE NUMBER. | DEPTH (m) | $WO_3$ (ppm) XRF ASSAY. | SAMPLE COLOUR. | NORTH COORDINATE. | EAST COORDINATE. | R.L. |
|---|---|---|---|---|---|---|
| KS./AT/77/1 | 0 - 3 | 220 | MED BROWN GREY. | | | |
| 77/2 | 3 - 6. | 100. | MED. BROWN GREY. | | | |
| KS/AT/78/1 | 0 -3 | 55. | MED BROWN. | | | |

830165

APPENDIX NO.7C

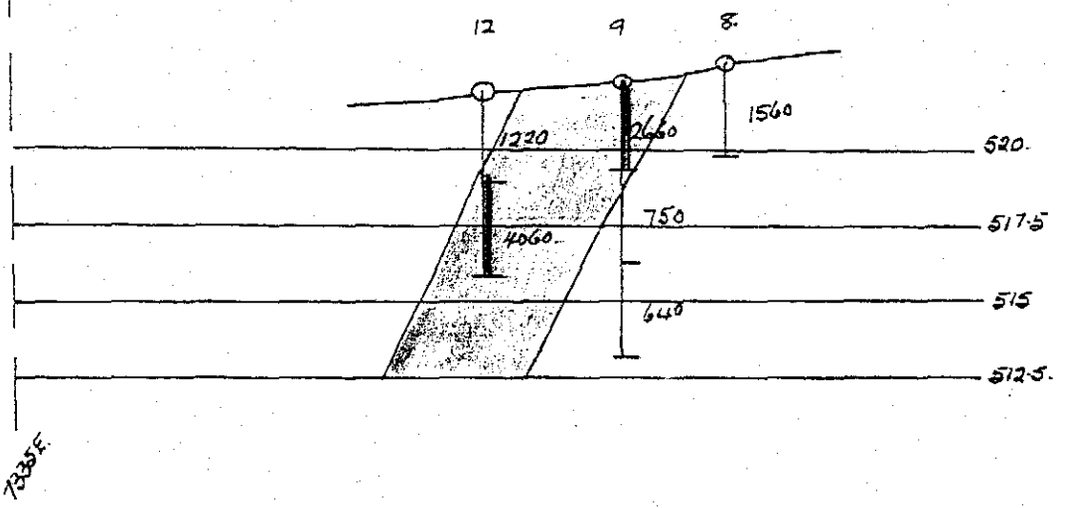
KARA SOUTH - EVALUATION DRILLING

DRILL SECTIONS A TO E ± PLAN

830167

FIGURE N° KS/2A

KARA SOUTH. SECTION N° A.



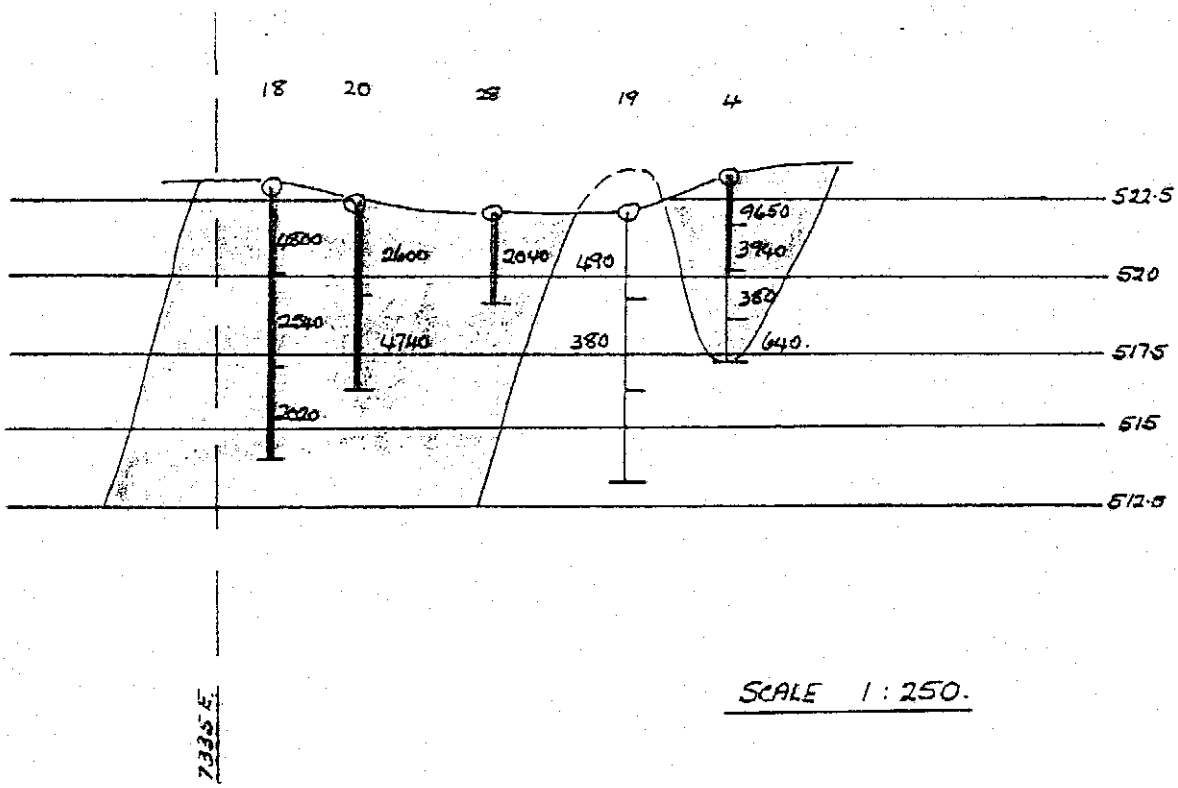

SCALE 1:250.

5 cm

168

830168 FIGURE N° KS/2B

KARA SOUTH. SECTION N° B.




SCALE 1 : 250.

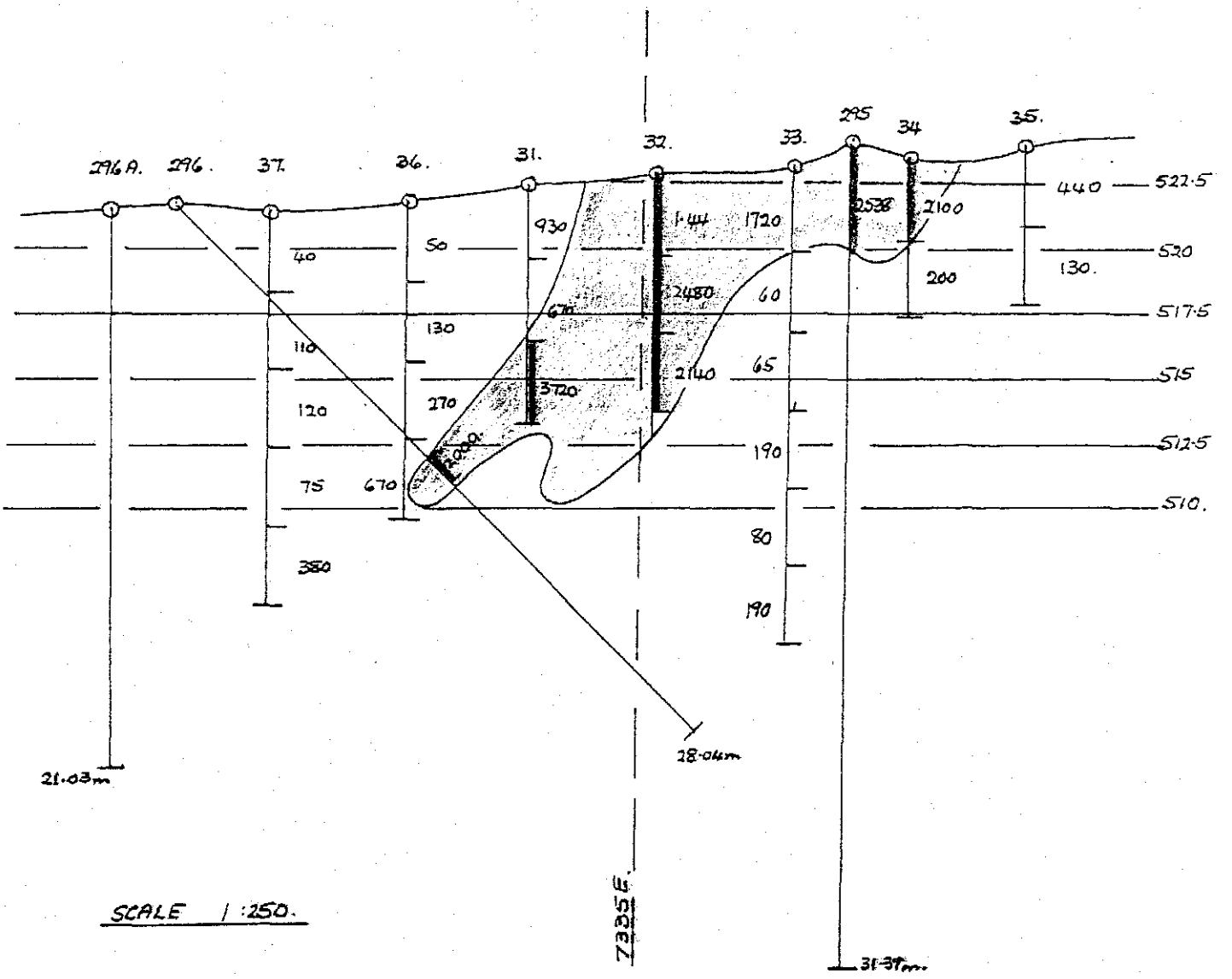
5 cm

169

830169

KARA. SOUTH.

SECTION N° C.




SCALE 1 :250.

5 cm

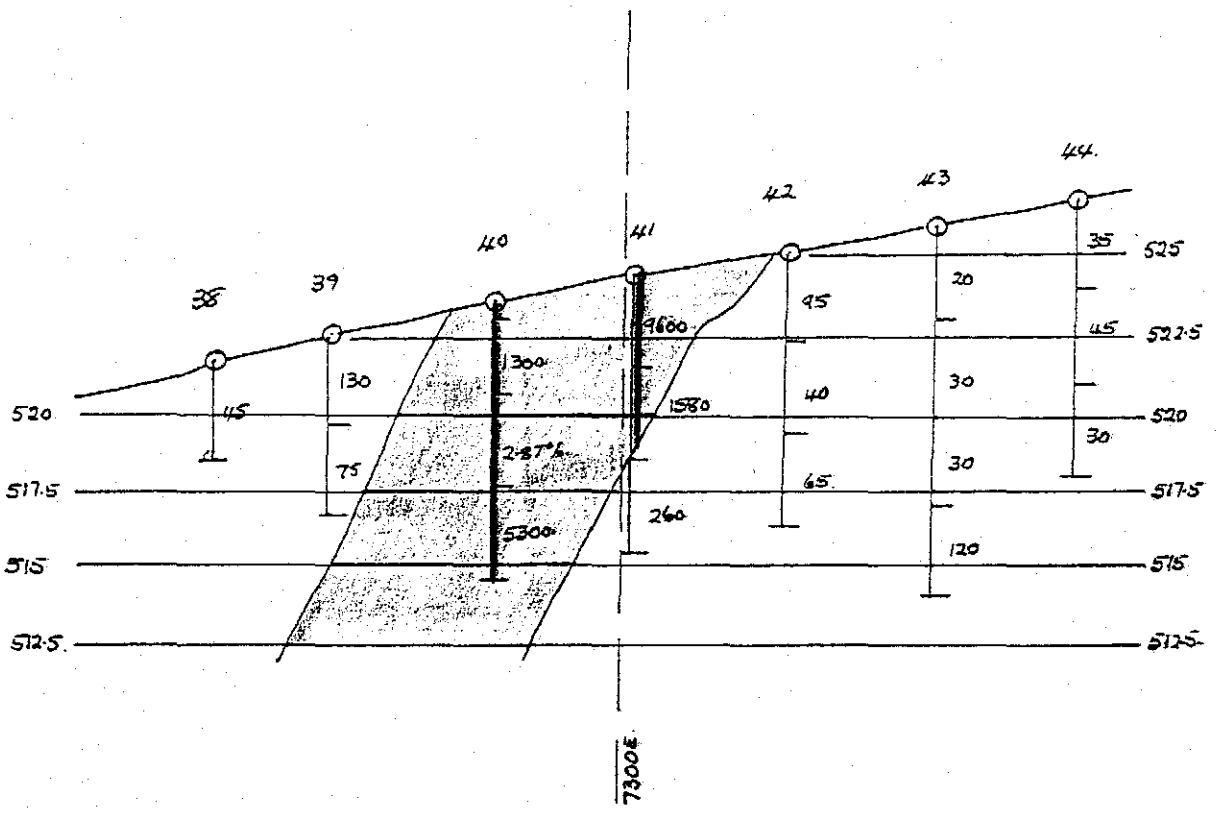
170

830170

FIGURE N° KS/2D.

KARA SOUTH.

SECTION. N° D.




SCALE 1:250.

5 cm

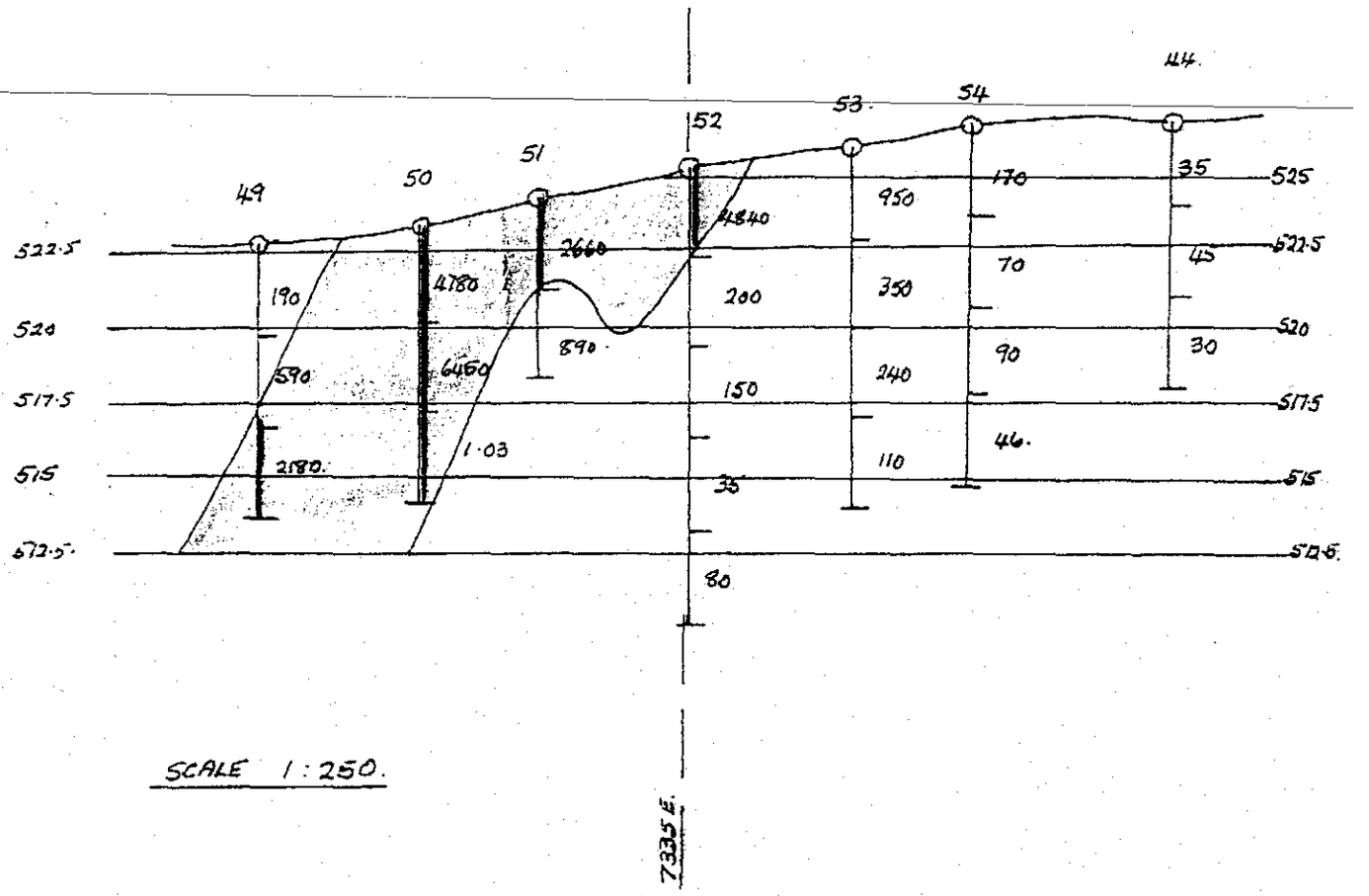
171

830171

FIGURE. N° KS/2E.

KARA SOUTH

SECTION. N°. E.



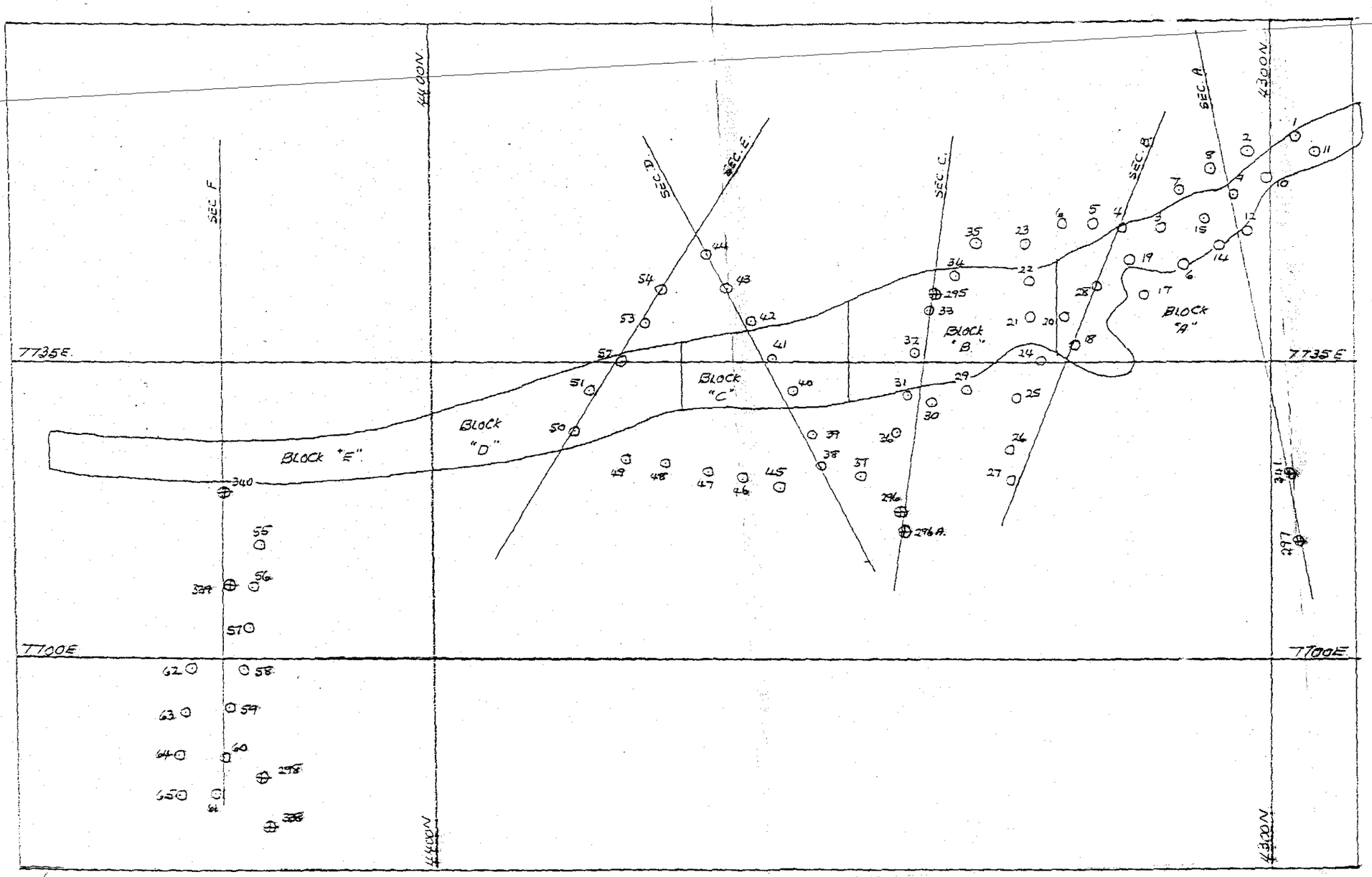

SCALE 1:250.

7335 E.

5 cm

830172

EL 17/68 KARA SOUTH. BENCH LEVEL = SURFACE.




GEOLOGICAL RESERVES (ZONE A).

| BLOCK | LEVELS. | TONNES | % $WO_3$ |
|---|---|---|---|
| A | 512.5 - 522.5L. | 8741 | 0.3141 |
| B | 512.5 - 522.5L. | 10215 | 0.3104. |
| C | 512.5 - 522.5L. | 7273 | 0.3229 |
| D | 512.5 - 522.5L. | 4315 | 0.4977. |
| E | 512.5 - 522.5L. | 7226 | 0.4400. |
| | | 45732 | 0.4618% |

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APPENDIX NO. 8

EASTERN RIDGE (EVALUATION DRILLING)

NO.8A REPORT
NO.8B DRILL HOLE LOGS

APPENDIX NO. 8A

# EASTERN RIDGE - EVALUATION DRILLING

# REPORT

"EVAULATION DRILLING" - EASTERN RIDGE DEPOSIT

INTRODUCTION AND SUMMARY

1. PREAMBLE

2. AREA INVESTIGATED

3. NATURE OF WORK

4. GEOLOGY

5. MINERALISATION:
   - A) Type
   - B) Grades
   - (C) Weathering / Oxidation

6. RESERVE EVALUATION

7. RESULTS OF EVAULATION

# " EVALUATION DRILLING " - EASTERN RIDGE DEPOSIT

## INTRODUCTION AND SUMMARY:

The potential of the Eastern Ridge Skarns as a possible source of scheelite bearing reserves of an open pit mining disposition has been investigated(January - June, 1986 Exploration Programme).

This essentially involved an investigation of the "Upper Skarn Unit", south of East Kara Creek between Section Lines 6210N and 6293N (i.e. 83 metres strike length). "Evaluation drilling"in the form of both diamond and percussion drilling has been completed and during the overall study, the drill results were supplemented by mapping and/or trench observations and sampling.

As a result of this work, it is evaluated that between Levels 475.0 and 492.5L, a total of 43,476 tonnes of X and Y ore grading 0.449% $WO_3$ would be readily available by low stripping ratio open pit mining. At this stage, these reserves would be classified as INDICATED, and would be divisible into 32,393 tonnes of partially weathered ore(Y) and 10,983 tonnes of weathered (X) material.

In addition, over the same investigated strike length, supplementary geological reserves classified as inferred(39,339 tonnes) and possible (57,120 tonnes) could also be available, but it is likely these could only be extracted by underground methods.

1. PREAMBLE:

The Eastern Ridge deposit is located along the east limb of the Kara synform structure some 750 metres N.E. of the Kara No. 1 mine area. It has good road access to the new treatment plant.

In the past, the deposit has been investigated by drilling (ANZECO and McIntyre Mines - 16 holes, 2257 metres) over a total strike distance of 260 metres (6240N to 6500N).

Tungsten mineralisation is associated with two separate, stratigraphically controlled, skarn horizons which are situated a short and constant distance from a granite content of apparent conformable disposition.

Except for a "man-made" window at, and immediately south of East Kara Creek, the entire Eastern Ridge deposit is covered by a variable(maximum thickness 70m) cover of Tertiary basalts and sediments.

In the past, mineralisation has generally been classified as of a discontinuous nature, of variable grade (minus 0.80%$WO_3$), confined to narrow widths and of steeply dipping attitudes. As such, the largest proportion of the deposit if eventually evaluated to be economically viable would be one of probable underground extraction.

However, the current investigation, and evaluation drilling programme, essentially revolves around assessing the availability of potential near surface reserves which could be economically mined by open pit methods.

2. AREA INVESTIGATED:

The specific area investigated lies immediately south of East Kara Creek from 6293N to 6210N, i.e. a N - S strike distance of 83 metres.

The skarn sequences examined belong entirely to the Ordovician "Upper Skarn Unit" and in this particular area extends from 475R.L. at creek level up to the 505R.L.

Pre-tertiary sequences have been exposed either as a result of past Tasminex N.L. mining (1979) or exploration trenching.

3. NATURE OF WORK:

Drilling during the current programme has consisted of a combination of both diamond drilling (DDH507) and air - track drilling (ER/PP/25 to ER/PP/32 - of which the drill logs and assay results are appended with this report.

These results, together with past drill data, and recent geologic observations and trench sampling, formed the basis for an evaluation and classification of potential ore reserves in the area.

All new on-ground observations have been resurveyed and plans and new interpretative sections have been compiled at the scale of 1:250.

4. GEOLOGY:

The "Upper Skarn Unit" is a magnetite amphibole skarn varying between 13 and 23 metres thick, and is generally divisible from the undifferentiated (and un-mineralised) skarn because of its higher magnetite content. Its contact with the underlying arenaceous unit(approx. 8 - 22m thick) is fairly well defined, but often shows a 2 to 3 metre gradational phase which on occasions can be tungsteniferous.

The skarn, and enclosing sequences strike almost north-south and dip fairly steeply to the west at angles between $55^{0}$ - $70^{0}$.

5. MINERALISATION:

5A. Type:

Scheelite mineralisation shows a preference and association with a magnetite-garnet facies, with the magnetite forming approx. 20 - 40% of the total rock volume.

5A continued.

Where magnetite predominates, scheelite(moly rich) is generally fine grained and disseminated. Where the garnet content increases, coarse grained scheelite mineralisation is common.

Mineralisation originally appeared to be confined to isolated lenses or pods occurring at variable levels in the Upper Skarn Unit. However, as a result of the latest drilling of a more closespaced nature, the mineralised lenses, although to some extent do continue to pinch and swell and interfinger with barren horizons, overall they do not appear as discontinuous as originally imagined. This consistency prevails both along strike and down dip.

As a whole, two individual(and occasionally three) lenses of mineralisation (plus 0.2%$WO_3$) can be identified within the 20m skarn unit immediately overlying the upper sandstone horizon - please refer to the attached plan.

5B. Grades:

Within the particular strike distance examined, grades exposed on surface would be classified as slightly higher than those intersected at depth by drilling.

The main "mine"faces and exploration trenches, bulk sampled at 1 metre intervals show the following widths of mineralisation and grades.

| | |
|---|---|
| 475 – 485 Level: - | Upper lens, 3.5m true width @ 0.819%$WO_3$ |
| | Lower lens, 8.2m true width @ 0.840%$WO_3$ |
| 494 - 499 Level: | 11.0m lens @ 0.523%$WO_3$ |
| 506 Trench: | 13.0m lens @ 0.433%$WO_3$ |

The bulk average assay of "ore -grade" material from surface (maximum 492.5 Level) down to a subsurface level of 475.0 averaged 0.449%$WO_3$.

5C. Oxidation/Weathering:

As shown from current surface exposures and drill core, the Kara type oxidation levels are at Eastern Ridge, not clear cut but variable. Quite often blocks of unoxidised fresh material 'float' amongst weathered sequences.

The existing 475Level immediately south of East Kara Creek appears to be fresh (F) material, but to the south the F/Y contact could plunge to lower levels.

Of the material (ore) classified as of open-pit mining potential, all that excluding plus 487.5R.L. material is nominated to be partially weathered.

6. RESERVE EVALUATION:

The current study provides a greater level of confidence regarding ore continuity.

Potential ore reserves have been blocked out as shown on the four drill sections across the deposit.

A cut-off grade of 0.20%$WO_3$ was utilised, and a minimum true ore width of 2 metres. The potential ore was classified as either partially weathered (Y) or oxidised (X) material.

Ore reserves of open pit potential were those down to 475 Level and due to drill result spacing, the reserves would be classified as INDICATED.

From the four drill sections, reserves have been calculated on a 2.5metre level basis. As will be shown narrow (1.0 to 3.0m) horizons of interfingering barren skarn separating ore lenses were generally incorporated into reserves at zero grade.

## 7. RESULTS OF EVALUATION:

The results of ore reserve tonnage/grade calculations are summarised by Tables ER/1 to ER/6(attached).

Total INDICATED GEOLOGICAL ORE RESERVES of open mine potential can be summarised as follows:

| | | |
|---|---|---|
| (Y) partially weathered ore | = | 32,393 tonnes |
| (X) oxidised material | = | 10,983 tonnes |
| TOTAL | = | 43,386 tonnes @ 0.449%$WO_3$ |

Extensions to the above ore zone could exist for an additional 35 metres along strike in a southerly direction - further south than 6185N, it is felt that a transgressive Tertiary basalt valley would inhibit the possibility of additional near surface tungsten lenses.

As shown on the drill sectional plans, additional reserves of fresh ore of an"inferred" and "possible" classification exist down dip from the indicated reserves between 6210N and 6293N. Although these reserves are of possible underground extraction, the tonnages available have been calculated as follows:

| | | |
|---|---|---|
| Inferred Reserves | - | 39,339 tonnes |
| Possible Reserves | - | 57,120 tonnes |

At this stage the above open pit reserves are classified as indicated because of the current spatial distribution of drill data. To upgrade the reserves to a "measured" reserve classification, additional air track drilling would be required. This would necessitate removal of stockpiled material and collapsed mine faces/rubble.

As indicated, the reserves could be mined by small scale open pit mining methods with a low order( 1.0) stripping ratio. Other factors in favour of the reserves are closeness to the Kara No. 1 mill, and existence within CL105M/77.

# EASTERN RIDGE - EVALUATION DRILLING

## DRILL HOLE LOGS

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830183

HOLE N° ER/PP/26

KARA TUNGSTEN PROJECT.

NORTHING 5426271.6. LENGTH. 18.0m LOCATION.

EASTING. 397696.1 AZIMUTH. —

EASTERN RIDGE.

ELEVATION. 4772. DIP. VERTICAL

SURVEYED P.D.A. SURVEY DATE. DRILL DATE. MAR. 12 1986.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | | ASSAY (ppm) AMDEL - AC. 3738/86. $WO_3$. | | | | |
|---|---|---|---|---|---|---|---|---|
| ER/PP/26/1 | 0.0 | 3.0 | | 1400 | | | | |
| ER/PP/26/2 | 3.0 | 6.0 | | 230. | | | | |
| ER/PP/26/3 | 6.0 | 9.0 | | 280 | | | | |
| ER/PP/26/4 | 9.0 | 12.0 | | 460 | | | | |
| ER/PP/26/5 | 12.0 | 15.0 | | 290 | | | | |
| ER/PP/26/6. | 15.0 | 18.0 | | 1060. | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES. | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

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830184

HOLE No. ER/PP/27

KARA TUNGSTEN PROJECT

NORTHING 5426272·0 LENGTH. 7 Cm LOCATION.

EASTING. 377691·4 AZIMUTH. EASTERN RIDGE

ELEVATION. 477·6 DIP. VERTICAL.

SURVEYED PDA. SURVEY DATE. DRILL DATE. MARCH 12 1986

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | ASSAY. (ppm) | $WO_3$. | ANDEL - AC. 3956/86 | | | |
|---|---|---|---|---|---|---|---|---|
| ER/PP/27/1 | 0·0 | 3·0 | | 640 | | | | |
| ER/PP/27/2 | 3·0 | 6·0 | | 220 | | | | |
| ER/PP/27/3 | 6·0 | 9·0. | | 190. | | | | |
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| | FROM (m) | TO (m) | METRES DRILLED | AVERAGE GRADES. | | | | |
|---|---|---|---|---|---|---|---|---|
| AVERAGE GRADES. | | | | | | | | |

HOLE. N° ER/PP/2E

830185

185

KARA TUNGSTEN PROJECT.

NORTHING 5426272-4 LENGTH. 24·0m LOCATION.

EASTING. 397690·4. AZIMUTH.

ELEVATION. 4776 DIP. VERTICAL. EASTERN RIDGE.

SURVEYED. PDA SURVEY DATE. DRILL DATE. MARCH 13. 1986.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | | ASSAY. (ppm) $WO_3$. | AMDEL – AC: 3938/86. | | | |
|---|---|---|---|---|---|---|---|---|
| ER/PP/2E/1 | 0·00 | 3·00 | | 440 | | | | |
| ER/PP/2E/2 | 3·00 | 6·00 | | 180. | | | | |
| ER/PP/2E/3 | 6·00 | 9·00 | | 340 | | | | |
| ER/PP/2E/4 | 9·00 | 12·00 | | 200 | | | | |
| ER/PP/2E/5 | 12·00 | 15·00 | | 210 | | | | |
| ER/PP/2E/6 | 15·00 | 18·00 | | 310 | | | | |
| ER/PP/2E/7 | 18·00 | 21·00 | | 1560 | | | | |
| ER/PP/2E/8 | 21·00 | 24·00 | | 810. | | | | |

| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES. |
|---|---|---|---|---|
| | | | | |

HOLE N° ER/PP/29

830186

186

KARA TUNGSTEN PROJECT

NORTHING 5426236·7 LENGTH. 15·0m. LOCATION.

EASTING. 397718·2 AZIMUTH. EASTERN RIDGE.

ELEVATION. 495·3 DIP. VERTICAL.

SURVEYED. PDA. SURVEY DATE. DRILL DATE. MAR. 13. 1986.

ANDEL - AC. 3936/86

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | ASSAY (ppm) | $WO_3$. |
|---|---|---|---|---|
| ER/PP/29/1 | 0·0 | 3·0 | | 1·09% |
| ER/PP/29/2 | 3·0 | 6·0 | | 6700 |
| ER/PP/29/3 | 6·0 | 9·0 | | 0050 |
| ER/PP/29/4. | 9·0. | 12·0 | | 1600 |
| ER/PP/29/5. | 12·0 | 15·0 | | 3160. |

| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES. $WO_3$. |
|---|---|---|---|---|
| | 0·0 TO | 15·00 | 15·00 | 0·56% |

187

830187

HOLE N° ER/PP/30

KARA TUNGSTEN PROJECT

NORTHING 5426233.4 LENGTH. 12.0m LOCATION.

EASTING. 397708.9 AZIMUTH. - EASTERN RIDGE.

ELEVATION. 494.0 DIP. VERTICAL.

SURVEYED P.O.A. SURVEY DATE DRILL DATE. MARCH 14 1986

AMDEL - AC. 3938/86.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | ASSAY (ppm) | $WO_3$. | | | | |
|---|---|---|---|---|---|---|---|---|
| ER/PP/30/1 | 0.0 | 3.0 | | 1480 | | | | |
| ER/PP/30/2 | 3.0 | 6.0 | | 320 | | | | |
| ER/PP/30/3 | 6.0 | 9.0 | | 1260 | | | | |
| ER/PP/30/4 | 9.0 | 12.0 | | 600 | | | | |

| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED. | AVERAGE GRADES. | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

MULE. IV ER/PP/31

830188

188

KARA TUNGSTEN PROJECT

NORTHING 5426231·3 LENGTH. 9·0m LOCATION.

EASTING. 397698·9 AZIMUTH. — EASTERN RIDGE.

ELEVATION. 493·9 DIP. VERTICAL

SURVEYED PDA. SURVEY DATE. DRILL DATE. MARCH 14.1986.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | ASSAY. (ppm) WO3. | ARIDEL – AC. 8988/86. |
|---|---|---|---|---|
| ER/PP/31/1 | 0·0 | 3·0 | 180 | |
| ER/PP/31/2 | 3·0 | 6·0 | 160 | |
| ER/PP/31/3 | 6·0 | 9·0 | 340 | |

| AVERAGE GRADES. | FROM (m) | TO (m) | METRES DRILLED | AVERAGE GRADES. |
|---|---|---|---|---|
| | | | | |

HOLE N° ER/PP/32

830189

189

KARA TUNGSTEN PROJECT

NORTHING 5426231.3 LENGTH. 12.0m LOCATION.

EASTING. 397689.1 AZIMUTH. -

ELEVATION. 493.6 DIP. VERTICAL

SURVEYED PDA. SURVEY DATE DRILL DATE. MARCH 14 1986.

| SAMPLE NUMBER. | DEPTH DRILLED FROM (m) | TO (m) | ASSAY. (ppm) | | | | | ANDEL - AC. 3938/86 |
|---|---|---|---|---|---|---|---|---|
| | | | | $WO_3$. | | | | |
| ER/PP/32/1 | 0·0 | 3·0 | | 720 | | | | |
| ER/PP/32/2 | 3·0 | 6·0 | | 220 | | | | |
| ER/PP/32/3 | 6·0 | 9·0 | | 430 | | | | |
| ER/PP/32/4 | 9·0 | 12·0 | | 2720. | | | | |
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| | FROM (m) | TO (m) | METRES DRILLED | AVERAGE GRADES. | | | | |
|---|---|---|---|---|---|---|---|---|
| AVERAGE GRADES. | | | | | | | | |

E.L. 17/68 ANNUAL REPORT 1985/86

# APPENDIX NO. 9

## LIMESTONE CREEK/WOLLASTONITE INVESTIGATIONS

NO. 9A REPORT - ZETETIC (NOV. 1985)
NO. 9B MINERALOGICAL/CHEMICAL ANALYSES

APPENDIX NO.9A

# LIMESTONE CREEK/WOLLASTONITE INVESTIGATIONS

## "A PRELIMINARY REPORT ON THE WOLLASTONITE CREEK AREA"
## ZETETIC - NOVEMBER 1985

# A PRELIMINARY REPORT ON THE

# WOLLASTONITE CREEK AREA (EL 17/68)

# FOR TASMINEX N.L.

By: ZETETIC
Consulting Economic Geologists
November, 1985

CONTENTS

## 1. INTRODUCTION

On 18th September, 1985, ZETETIC was commissioned by Mr. R. Boland, Director of Tasminex N.L., to undertake a brief preliminary assessment of known wollastonite occurrences at Wollastonite Creek, near Hampshire, within EL 17/68. Terms of reference were to produce a geological map of the area and to formulate an ongoing exploration programme if this was considered worthwhile.

The work completed and the information gleaned therefrom is described in this document.

In brief, it is evident that the Wollastonite Creek mineralisation is worthy of more detailed appraisal and a work programme has therefore been proposed with an immediate objective of determining the likelihood of wollastonite occurring in economically viable amounts and grades. However, it is emphasised that as with most commercial minerals, a market for the product must be reasonably assured prior to large exploration expenditure.

## 2. LOCATION

The wollastonite occurrences under consideration are situated within the lower reaches of Wollastonite Creek, a tributary of the Emu River, on its eastern bank approximately 1 kilometre south of the Hampshire - Upper Natone road and about 3 kilometres south-east of Hampshire. The area lies within EL 17/68 of Tasminex N.L. (see Figure 1).

Access to the area is from the Hampshire - Upper Natone road, via an unsealed Forestry road (Cameron's Road) to informal tracks as shown on Figure 7.

The prospect is located mainly within a stand of euclayptus saplings surrounded by pine plantations and small areas of native bush or farmland (see Figure 2). The area forms part of an active forestry project managed by Associated Forest Holdings.

## 3. PREVIOUS WORK

Reid in 1924, showed on his geological map large areas of limestone around the headwaters of Limestone Creek (now called Wollastonite Creek). Thomas and Henderson, in 1943, investigated this area for the possible production of wollastonite. Hughes, in 1950 and 1957, took some samples from Limestone Creek, but the most useful work was done by M.J. Longman, in 1960, at the request of Mr. A. Pearson of Ulverstone.

Hughes (1957) stated that, "Over much of the area limestone is not apparent, but an outcrop on the eastern bank of Limestone Creek, 60 chains south of the Natone Road bridge, shows a thinly bedded series of rocks in which may be seen five bands of limestone varying in thickness from three inches to three feet, contained in beds of hornfels and calc-silicate rocks. These beds strike at 160° and dip to the south-west at 15°. The thickness of the outcrop exposed is 25 feet. An analysis of the limestone taken from the various bands showed:-

| | % |
|---|---|
| Acid Insoluble | 8.4 |
| CaO | 51.0 |
| MgO | 0.4 |
| Ignition Loss | 38.0 |
| $Fe_2O_3 + Al_2O_3 + TiO_2$ | 1.6 |

"The siliceous portion of the outcrop showed:-

| | % |
|---|---|
| Acid Insoluble | 68.0 |
| CaO | 21.6 |
| MgO | 0.6 |
| Ignition Loss | 2.6 |
| $Fe_2O_3 + Al_2O_3 + TiO_2$ | 6.7 |

"This second analysis is of a representative sample taken across the silicate and calc-silicate beds and shows that the minerals are in the following proportions:-

| | |
|---|---|
| Calcium Carbonate ($CaCO_3$) | 6 |
| Wollastonite ($CaSiO_3$) | 38 |
| Silica ($SiO_2$) | 48 . . . . . " |

Longman (1961) undertook the most comprehensive assessment, to date, of this area. He carried out a detailed sampling programme (see table on Figure 4 for results of most relevance), geological mapping and some thin-section work.

In thin-section, Hughes noted the following minerals:-

Quartz
Wollastonite
Calcite
Pyrrhotite
Plagioclase
Diopside

Quartz and wollastonite tended to be dominant, forming 80 per cent of the rock in some cases. Hughes estimated the proportion of pyrrhotite to be between 5 and 10 per cent with the quantity of plagioclase, calcite and diopside usually being less than 5 per cent.

Hughes calculated that the average grade of the deposit was 30.3%, upgradable to 37.2% by rejecting the chert and dolomite bands, and that the amount available was approximately $1 \times 10^6$ tons.

Unfortunately, Hughes gave no basis for calculating this tonnage and did not explain the analytical results. Further, his 'isolated outcrops' samples were not shown on a plan and it was not mentioned whether his zero sampling level was at the bottom or top, stratigraphically, of the outcrops. It is presumed zero was the highest point of the outcrop sequence. It is also presumed that the grades quoted by Hughes are percentages of the total rock rather than a percentage of the acid insoluble fraction. Recent attempts to discover his methods of analysis from the Department of Mines, Hobart, have not met with success.

Taking Hughes' results at face value, it is apparent that wollastonite grades exist at the lower end of the economic spectrum but can be readily upgraded by rejecting the lower grade chert bands, distinguished by a darker colour. This may have important economic consequences.

Since 1960/61, there appears to have been no detailed work carried out in the Wollastonite Creek area by either companies or government agencies.

## 4. WORK COMPLETED, 1985

Investigations at Wollastonite Creek were carried out during the period 4/10/85 to 30/10/85.

Work completed in the field was as follows:-

1. Regional mapping allied to aerial photographic interpretation set the Wollastonite Creek area in its geological context;

2. Detailed geological mapping of the Wollastonite Creek area;

3. Tape, compass and inclinometer traversing of forestry tracks in the area of wollastonite mineralisation;

4. Tape and compass traversing of part of Wollastonite Creek.

This report, and accompanying plans and sections are the result of the above work.

## 5. GEOLOGY OF THE WOLLASTONITE CREEK AREA

The regional geology of EL 17/68 has already been adequately described in numerous previous Tasminex reports; however, the geology of the area surrounding Wollastonite Creek has been remapped and updated and is shown in Figure 3. In broad terms,

Ordovician age rocks were intruded by Devonian granites and, today, form inliers within the extensive Tertiary Basalt capping. The extensive limestones shown on some geological maps of the area do not exist rather the Gordon Limestone Transition Series is composed of a mixed sequence of fine quartzites (often described as cherts and often pyrrhotitic), hornfels, thin beds and lenses of limestone, occasional dolomites and calc-silicate rocks containing wollastonite. Before metamorphism this Transition Series was composed predominantly of sandstones and calcareous sandstones with intermittant minor limestones and formed a gradational sequence between the dominantly arenaceous Moina Sandstone and the dominantly calcareous Gordon Limestone sensu stricto.

The stratigraphy of the region may be summarised as follows:-

| | | |
|---|---|---|
| Tertiary | | Basalt flows |
| Devonian | | Granite intrusives |
| Silurian | Eldon Group | Sandstones, quartzites |
| Ordovician | Gordon Limestone | Essentially limestones with minor calcareous sandstones |
| | Transition Series | Calcareous sandstones, sandstones, siltstones minor limestones. Where metamorphosed, quartzites, calc-silica hornfels |
| | Moina Sandstone | Sandstones, quartzites siltstones, shales, slates and minor conglomerates |
| | Owen/Roland Conglomerate | Conglomerates and quar sandstones |

– Unconformity –

| | | |
|---|---|---|
| Cambrian | Undifferentiated | Greywackes, slates quartzites, acidic lavas, etc. |

Structurally, the most important feature for locating new shallow wollastonite deposits is the postulated Wollastonite Creek syncline shown on Figure 3 and schematically on Figure 5. It appears to be asymmetric with the western limb having generally steeper dips.

Faulting has not been proved but is suspected: Longman (1961) has noted post-Tertiary faulting on a NE-SW trend adjacent to Wollastonite Creek, but recent mapping did not confirm this. Further, there may be some structural control in a NNW-SSE direction as suggested by the drainage pattern of Wollastonite Creek itself.

The detailed geology of the known wollastonite deposits is shown on Figure 4. This plan is largely self-explanatory but a number of points are worth emphasising:-

- reconnaissance geological traversing along forestry tracks to the west of Wollastonite Creek did not reveal any outcrops except in the extreme south of the area mapped where the target rocks of the Transition Series were observed underlying the Tertiary Basalt capping.

- in the vicinity of outcrop 3 (three) there is a distinct swing in strike to the NE. The reasons for this are not known- it may be caused by a flexure on the eastern limb of the postulated Wollastonite Creek syncline or be a product of block faulting.

- the outcrops in Wollastonite Creek, either side of the granite boulder, are extremely weathered and unusually 'puggy' for this area; most other outcrops are hard, indurated and 'fresh' looking.

- the sub-basaltic boundary of the Transition Series metasediments as shown in Figure 4. may be further east. Its precise location depends on the thickness of the basalt and the relative erosional level of the pre-basalt topography. This should be tested by drilling as proposed in Section 6 of this report.

- distribution of mineralisation will be governed by the parameters of the chemistry of the original rock type and temperature of subsequent metamorphism; where these are in balance, wollastonite will be formed. This is illustrated schematically in Figures 5 and 6.

## 6. PROPOSED FUTURE WORK

An exploration work programme is proposed as follows:

Stage 1 Establish by bulk-sampling whether commercial end-user requirements can be met (i.e. suitability) ascertain whether a realistic potential market exists for the mined product (i.e. need) confirm a value/grade equation (i.e. profitability). It is understood that Tasminex is currently making investigations to these ends. Further, it should be checked that the area is not covered by a 'private minerals' title and that the forestry company is amenable to fair compensation for a proposed mining operation within their plantation area.

Stage 2 Assuming the requirements of Stage 1 are successfully met, Tasminex should test the deposit by reconnaissance 'fence-line' percussion drilling of known surface mineralised areas (i.e. outcrop areas 1/2 and 4). This will establish the parameters of width, vertical extent and grade over a crucial area and it is proposed that 11 (eleven) vertical percussion holes are drilled at 40 m intervals on lines 240 m apart (see Figure 4). The depth of these holes will be controlled by depth to granite, depth of overburden and the vertical extent of the mineralisation; as a guide a relative level of 25 m beneath Wollastonite Creek should be used. For budget purposes, 450-500 m of drilling should be considered, at an approximate cost of $17,500. The objective of this drilling is to demonstrate 1 x $10^6$ tonnes of wollastonite bearing rock. This can be achieved using the following indicative parameters:-

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- assume strike length of 350 m (line 240N to outcrop area 2);

- assume deposit width of 120 m (that given if wollastonite is intersected in three adjacent holes on both lines);

- assume thickness of deposit is 10 m;

- assume SG of 2.5.

Failure to realise these parameters may give reason to review the project at this stage, but success would lead to further percussion drilling.

Stage 3 Further reconnaissance drilling is proposed aimed at achieving the following:-

- Extending the known mineralisation along strike to the south-east from outcrop area 2; two fence-lines of percussion drilling are proposed (lines 240s and 480s, see Figure 4) with hole-spacings of 40 m. The number of holes on each line and their depths will be determined by the results of Stage 2 drilling. For budgetary purposes, a further 500 m of drilling should be assumed. Successful intersections on these two proposed southern lines, and using the same criteria as above, would increase the potential tonnage by a further $1 \times 10^6$ tonnes.

Stage 4 Encouragement leads to infill drilling, metallurgical testwork and diamond drilling for geological control.

## 7. CONCLUSIONS

Work at Wollastonite Creek has reached only a very early stage; however, it is apparent that further expenditure is warran-

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ted. A genuine exploration target exists and providing commercial end-user criteria are met and a market can be established, reconnaissance percussion drilling must be carried out. It is stressed that no expenditure should be contemplated unless there is a reasonable assurance that a market for the product exists.

At the current stage, there is an expectation of mineralisation grading 30-40% wollastonite and in the order of 1-2 x $10^6$ tonnes. By comparison to overseas commercial wollastonite deposits, the grade at Wollastonite Creek seems to be lower than desirable. However, if the deposit can be cost-effectively upgraded by either selective mining or by processing techniques and commercial quality can be attained without prohibitive cost-penalties, then economic viability may still be achieved.

Given the extent of the so-called Transition Series of the Gordon Limestone, in proximity to the Devonian Granite, it would not be surprising if the wollastonite forming environment existed elsewhere in EL 17/68.

M.P. Everett
R.W.L. Shaw
for ZETETIC

REFERENCES

1. M.J. Longman, Wollastonite at Limestone Creek near Hampshire, Tasmanian Department of Mines, Technical Reports, No. 6, 1961.

2. Deer, Howie and Zussman, An Introduction to the Rock Forming Minerals, Longmans, 1967.

3. E.S. Dana, A Textbook of Mineralogy, Wiley, 1966.

4. Sterling Gleason, Ultraviolet Guide to Minerals, Ultra-Violet Products, Inc., San Gabriel, California, 1972.

5. T.D. Hughes, Limestones in Tasmania, Tasmanian Department of Mines, Geological Survey, Mineral Resources, No. 10, 1967.

6. R.W. Andrews, Wollastonite, Institute of Geological Sciences, Mineral Resources Division, H.M.S.O., London, 1970.

7. D.S. Mills, The St. Valentines Peak Granite-Metasediment Contact Zone, B.Sc. (Hons.) Thesis, University of Tasmania, 1971.

APPENDIX NO. 9B

# WOLLASTONITE INVESTIGATIONS

## MINERALOGICAL REPORTS/CHEMICAL ANALYSES

EXPLORATION LICENCE 17/68

830205

FEBRUARY 1986

# WOLLASTONITE / CALC SILICATE ROCK SAMPLES

## SAMPLE N° W.C.1.

LOCATION. — KARA NORTH MAGNETITE ANOMALY.

ROCK TYPE — DRILL CORE.

DDH. N°. — DDH 343 , DEPTH 165.00m.

CMS REPORT 86/2/11 — MINERALOGY — CALCITE MARBLE.

WC 1 (T.S. 55486) Calcite stain test positive.
This is calcite marble, containing small amounts of contact-metamorphic silicates and fine pyrrhotite. The original rock was a faintly bedded impure limestone.

The rock consists of at least 98 % of well-crystallized, interlocking calcite patches; there are scattered small (mostly < 0.1 mm) flakes of talc, grains of diopside and colourless grossularite garnet, as thin streaks or stringers and occasional larger clusters, probably representing thin detrital quartz/clay laminations in the original roc

## CHEMICAL ANALYSIS.

(AMDEL - SPT 93/86)

| | | |
|---|---|---|
| $SiO_2$ | — | 3·30 |
| $TiO_2$ | — | < 0·01 |
| $Al_2O_3$ | — | 0·26 |
| $Fe_2O_3$ | — | 0·47 |
| MnO | — | 0·02 |
| MgO | — | 0·96 |
| CaO | — | 52·8 |
| $Na_2O$ | — | <0·01 |
| $K_2O$ | — | <0·05 |
| $P_2O_5$ | — | <0·01 |
| [illegible] | | |

206 EXPLORATION LICENCE 1766 830206 FEBRUARY 1986

# WOLLASTONITE / CALC SILICATE ROCK SAMPLES.

## SAMPLE N° W.C. 2.

LOCATION — KARA NORTH MAGNETITE ANOMALY.

ROCK TYPE. — DRILL CORE.

DDH N°. — DDH. 343. DEPTH. 157.34m.

C.M.S. REPORT 86/2/11 — MINERALOGY - CALCITE MARBLE.

WC 2 (T.S. 55487) Calcite stain test positive.
This is a talcose calcite marble with relatively conspicuous but fine pyrrhotite.

The rock consists dominantly (> 98 %) of interlocking crystals of calcite, with scattered small embedded talc flakes; there are more distinct, thin, deformed and folded bands consisting of fine talc intergrown with finely granular calcite and pyrrhotite. These represent original pyritic, argillaceous laminations in which the pyrite was very probably syngenetic. Since no other silicates were detected, the metamorphic grade of this rock appears to be lower than in WC 1.

## CHEMICAL ANALYSIS.

(AMDEL - SPT 93/86)

| | | |
|---|---|---|
| $SiO_2$ | - | 2.56 |
| $TiO_2$ | - | <0.01. |
| $Al_2O_3$ | - | 0.28 |
| $Fe_2O_3$ | - | 0.50 |
| $MnO$ | - | 0.03 |
| $MgO$ | - | 1.70 |
| $CaO$ | - | 52.0 |
| $Na_2O$ | - | <0.01 |
| $K_2O$ | - | <0.05 |
| $P_2O_5$ | - | <0.01 |
| LOI | - | 44.3. |

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# WOLLASTONITE / CALC SILICATE ROCK SAMPLES

## SAMPLE N° W.C. 3.

LOCATION. — LOCATION L.5.

ROCK TYPE — DRILL CORE.

DOH. N°. — DOH. 329, DEPTH 54.10m.

C.M.S. REPORT 86/2/11 — WOLLASTONITE 50%.

WC 3 (T.S. 55488) Calcite stain test positive in patches. This is best termed a calc-silicate rock, and probably represents a calcareous sandstone or siltstone with more calcareous lenses and bands.

The main silicates present are wollastonite, grossularite and vesuvianite, with minor diopside; both vesuvianite and grossularite have a dull greasy-yellow appearance in hand specimen, and the wollastonite is white. Vesuvianite tends to form relatively large poikiloblastic crystals (up to 5 mm in size), grossularite occurs as irregular, shapeless masses, and wollastonite forms masses of small matted/interlocking prismatic crystals.

Finely granular diopside and calcite particles are interspersed and embedded in the other minerals; in addition, calcite forms more substantial granular masses with minor silicates. Wollastonite comprises about 50 % of the rock.

## CHEMICAL ANALYSIS

(AMDEL SCT 98/86)

| | | | |
|---|---|---|---|
| $SiO_2$ | 33.6 | $CaO$ | 45.4 |
| $TiO_2$ | 0.14 | $Na_2O$ | < 0.01 |
| $Al_2O_3$ | 2.48 | $K_2O$ | < 0.05 |
| $Fe_2O_3$ | 1.29 | $P_2O_5$ | 0.28 |
| $MnO$ | 0.09 | LOI | 13.4 |
| $MgO$ | 1.55 | | |

EXPLORATION LICENCE 17/68

830208

FEBRUARY 1986.

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# WOLLASTONITE / CALC SILICATE ROCK SAMPLES.

## SAMPLE N° W.C. 4.

LOCATION — LOCATION L.5.

ROCK TYPE — DRILL CORE.

DDH. N° — DDH 334 DEPTH 81.10 m.

C.M.S. REPORT 86/2/11 — WOLLASTONITE 60%.

WC 4 T.S. 59489) Calcite stain test negative.
This is a calc-silicate rock, more specifically a wollastonite-diopsi rock; carbonate is absent.

The rock is composed of about 60 % wollastonite, 20 % diopside, and 20 % quartz and plagioclase. The wollastonite generally occurs as sheaves of prismatic to acicular crystals, full of inclusions of mic. granular diopside, ranging from < 10 μ to 250 μ across; individual wollastonite crystals are up to 3 mm in length, but generally smaller. Small grains (averaging 100 μ) of quartz and labradorite are scattered throughout the rock.

Distributions and grainsizes of the minerals, particularly wollastonit are variable; in places, wollastonite forms patches of matted crystals up to several millimetres across, essentially free of inclusions of other minerals.

It is not known whether diopside would be regarded as deleterious in a wollastonite product; there seems no mineralogical reason why it should not be acceptable, and this particular rock may well meet the required specifications. Copies of articles in "Industrial Minerals" (July 1975, August 1981) have previously been supplied to Mr. Toohy and should be available at the Tasmania Mines office.

## CHEMICAL ANALYSIS.

AMDEL SPT 93/86.

| | | | |
|---|---|---|---|
| $SiO_2$ | 58.1 | $CaO$ | 31.5 |
| $TiO_2$ | 0.16 | $Na_2O$ | 0.04 |
| $Al_2O_3$ | 1.80 | $K_2O$ | 1.25 |
| $Fe_2O_3$ | 1.00 | $P_2O_5$ | 0.09 |
| $MnO$ | 0.06 | LOI | 0.40 |
| $MgO$ | 4.92 | | |

EXPLORATION LICENCE 17/86 — 830209 — FEBRUARY 1986

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WOLLASTONITE / CALC SILICATE ROCK SAMPLES.

## SAMPLE N° W.C.5.

LOCATION — LIMESTONE CREEK.

ROCK TYPE — GRAB SAMPLE - OUTCROP W.2. (C.H. WHITEHEAD)

C.M.S. REPORT 86/2/11 - WOLLASTONITE 65-70%.

WC 5 (T.S. 55490) Calcite stain test negative.
This is a wollastonite-diopside rock, with small amounts of other minerals, including pyrrhotite.

The major component is wollastonite, comprising 65-70 % of the rock, as small matted prismatic crystals and occasional larger subradiating masses; some crystals are up to 1-2 mm long, but most are in the 0.1 - 0.3 mm range. Small aggregates of microgranular diopside are embedded in the wollastonite matrix; individual diopside grains range from 10-100 μ, and aggregates are mostly around 100-300 μ. Other minerals, present in amounts below 1 %, include granular sphene, pyrrhotite, and ultrafine carbonate (< 20 μ grains). The pyrrhotite occurs as scattered grains 10-200 μ across, mostly around 100 μ, and occasionally in veinlets (< 300 μ wide) with wollastonite and carbonate.

### CHEMICAL ANALYSIS

AMDEL SPT 93/86.

| | | | |
|---|---|---|---|
| $SiO_2$ | 50.5 | CaO | 40.1 |
| $TiO_2$ | 0.23 | $Na_2O$ | < 0.01 |
| $Al_2O_3$ | 1.47 | $K_2O$ | < 0.05 |
| $Fe_2O_3$ | 1.38 | $P_2O_5$ | 0.22 |
| MnO | 0.02 | LOI | 0.34 |
| MgO | 4.05 | | |

EXPLORATION LICENCE 17/68 — 830210 — FEBRUARY 1986

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# WOLLASTONITE / CALC SILICATE ROCK SAMPLES

## SAMPLE N°. W.C. 6.

LOCATION. – LIMESTONE CREEK.

ROCK TYPE – GRAB SAMPLE (N. MOONY) – OUTCROP W.2.

C.M.S. REPORT. 86/2/11 – WOLLASTONITE 70%.

WC 6 (T.S. 55491) Calcite stain test positive in parts. This calc-silicate rock consists dominantly of wollastonite and diopside, with lenses of calcite and scattered pyrrhotite.

Small matted wollastonite crystals and larger subradiating masses form the matrix for small aggregates of microgranular diopside, very similar to WC 5; the wollastonite is generally coarser (0.5 to 1 mm crystals are common) and diopside is less dispersed, being more confined to aggregates. Calcite lenses evidently comprise only a min proportion of the rock (< 10 %). Wollastonite is about 70 %, diopside 25–30 %, and there are traces of pyrrhotite and sphene – bo of these are scattered through the rock and cause the grey colour; pyrrhotite also occurs in concentrations adjacent to calcite lenses.

The photomicrograph (magnification = 30x) shows typical diopside aggregates in a general matrix of wollastonite, with small dark grai of sphene and pyrrhotite.

## CHEMICAL ANALYSIS.

AMDEL. SPT. 93/86

| | | | |
|---|---|---|---|
| $SiO_2$ | 52.1 | CaO | 39.8 |
| $TiO_2$ | 0.26 | $Na_2O$ | <0.01 |
| $Al_2O_3$ | 1.38 | $K_2O$ | <0.05 |
| $Fe_2O_3$ | 1.10 | $P_2O_5$ | 0.29 |
| MnO | 0.02 | LOI | 0.44 |
| MgO | 4.48 | | |

EXPLORATION LICENCE 17/68 — 830211 — FEBRUARY. 1986

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# WOLLASTONITE / CALC SILICATE ROCK SAMPLES.

## SAMPLE N° W.C. 7.

LOCATION — KARA NORTH MAGNETITE ANOMALY.

ROCK TYPE — DRILL CORE.

DDH. N°. — D. 288A - DEPTH 26.30m.

C.M.S. REPORT - 86/2/11 - CALCITE MARBLE.

WC 7 (T.S. 55492) Calcite stain test positive.
This is a weakly diopsidic and talcose calcite-marble with conspicuous pyrrhotite.

The rock consists of > 95 % coarse interlocking plates of calcite; there are small clusters of microgranular diopside throughout, with parallel alignment which probably reflects original bedding. Bands of diopside and fine talc occur, with associated cloudy sphene. Pyrrhotite also tends to be concentrated in bands, as grains up to 300 μ in size, but is present elsewhere in the rock as well. Individual talc flakes and diopside grains seldom exceed 50 μ in size, though aggregates are larger.

## CHEMICAL ANALYSIS.

AMDEL. SPT. 93/86.

| | | | |
|---|---|---|---|
| $SiO_2$ | - 6.85 | $CaO$ | - 48.6 |
| $TiO_2$ | - 0.04 | $Na_2O$ | - < 0.01 |
| $Al_2O_3$ | - 1.26 | $K_2O$ | - 0.68 |
| $Fe_2O_3$ | - 0.74 | $P_2O_5$ | - < 0.01 |
| $MnO$ | - 0.02 | LOI | - 36.8 |
| $MgO$ | - 1.50 | | |

EXPLORATION LICENCE 17/68 — 830212 — FEBRUARY 1986

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# WOLLASTONITE / CALC SILICATE ROCK SAMPLES

## SAMPLE N° W.C. 8.

LOCATION — KARA NORTH MAGNETITE ANOMALY

ROCK TYPE — DRILL CORE.

DDH. N°. — DDH 289, DEPTH. 74.6m.

C.M.S. REPORT — 86/2/11. DIOPSIDE - CALCITE MARBLE.

W.C. 8 (T.S. 55493) Calcite stain test positive.
This is essentially a diopside-calcite-marble, with traces of carbonaceous matter and pyrrhotite.

Calcite is the major component, as coarse and fine interlocking crystals forming mammazard patches. Diopside occurs as poikiloblastic and granular crystals up to 1 mm across, and as distinctive aggregates of radiating needles; the diopside tends to occur in bands and lenses, and some is pigmented with carbonaceous matter.

## CHEMICAL ANALYSIS.

AMDEL SPT. 93/86.

| | | | |
|---|---|---|---|
| $SiO_2$ | 27.4 | $CaO$ | 39.4 |
| $TiO_2$ | 0.05 | $Na_2O$ | < 0.01 |
| $Al_2O_3$ | 0.76 | $K_2O$ | < 0.05 |
| $Fe_2O_3$ | 0.45 | $P_2O_5$ | < 0.01 |
| $MnO$ | 0.03 | LOI | 21.3 |
| $MgO$ | 9.05 | | |

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APPENDIX NO.10A

MAGNETITE STUDIES - E.L.17/68

NO.10A "PRELIMINARY REVIEW OF THE POTENTIAL MAGNETITE RESOURCES - KARA PROPERTIES" - NOVEMBER 26, 1985

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E.L. 17/68 ANNUAL REPORT 1985/86

APPENDIX NO. 10

MAGNETITE STUDIES E.L.17/68

NO.10A REPORT - POTENTIAL MAGNETITE RESOURCES, E.L.17/68
NO.10B ACIRL REPORT, 09/1444

# PRELIMINARY REVIEW

# OF THE

# POTENTIAL MAGNETITE RESOURCES

# KARA PROPERTIES - E. L. 17/68 - TASMINEX N. L.

C. E. WHITEHEAD,
P.O. BOX 177,
BURNIE, TASMANIA 7320.

NOVEMBER 26th 1985.

# REVIEW OF THE POTENTIAL MAGNETITE RESOURCES OF THE TASMINEX N.L. "KARA PROPERTIES" - TASMANIA

This report summarises the results of a preliminary "first pass" review and evaluation of the POTENTIAL MAGNETITE RESOURCES on the Kara Properties, with emphasis placed on whether these resources are of sufficient magnitude and quality to provide both an immediate and a future economic source of supply of marketable magnetite iron.

This review was recently requested - November 8th 1985 by Mr. N. Mooney, Operations Manager, Tasminex N.L.

# REVIEW OF THE POTENTIAL MAGNETITE RESOURCES

## KARA PROPERTIES - E.L. 17/68 - TASMINEX N.L.

### TABLE OF CONTENTS

## 1. SCOPE OF WORK

The prime objective of the study is aimed at reviewing and evaluating the potential of the Kara Properties with respect to providing a possible future source of supply of marketable magnetite.

It was indicated that the magnetite product would be required at an annual production rate of approximately one million tonnes, and although no detail grade specifications were provided, a maximum Fe content of 65% was specified. It is assumed the magnetite product would be required for utilisation in the iron:steel industry, but the possibility of magnetite being available for use in the more lucrative coal washery industry (as a dense heavy medium) is not ignored during the review.

A supply of plus 65% Fe magnetite could realistically be supplied from the 'stockpile' of magnetite tailings currently available at the Kara No. 1 scheelite mine operation, and during the immediate future, additional tonnages of similar magnetite would likewise be produced on a 'bi-product' basis at the mine. With planning, the two above mentioned supplies could satisfy the initial and immediate market requirements until such time that a larger scale source of readily available magnetite can be sought and established from one or more of the other known or suspected magnetite skarns within the Kara Properties.

The main objective of the current study is therefore primarily to review and evaluate the potential of the E.L. 17/68 known deposits of magnetite skarn.

Although the study should be regarded as preliminary, or "first pass" in nature, it aimed at systematically reviewing, classifying and assessing the individual and relative merits of each skarn deposit. Where possible, this basically included:-

- An assessment of the size (tonnage) or potential of the deposit.
- The geological disposition of the deposit.
- An initial assessment of the overall Fe grade estimate and any grade variability within the deposit.

- The degree and variability of oxidation.
- The basis, and degree of accuracy for the above assessments.
- Whether the deposit would be of open-pit or underground mine potential.
- The pressence of any associated mineralisation (tungsten).
- The location and accessibility of the deposit.

On the basis of the above review of the data, a serious attempt was made to classify magnetite material from the various skarn zones into one of three categories, namely magnetite reserves, resources or potential.

In view of the established mining infrastructure and the abundance of geological data available, the Kara No. 1 magnetite skarn was studied separately and in greater detail than other skarns.

## 2. REVIEW AND CLASSIFICATION OF E.L. 17/68 MAGNETITE SKARNS

During the course of the past Tasminex N.L. joint venture tungsten exploration programmes (1972 - 1985), a large number of magnetite skarn deposits have been identified within the 75sq. km. area embraced by E.L. 17/68.

Generally these magnetite bodies have received close attention and been the subject of detailed examinations both of a surface and subsurface nature, primarily to investigate the potential of associated tungsten mineralisation. From geological and also airborn ground geophysical interpretations, it has also been attempted to identify bodies or zones of magnetite skarn not exposed on surface, but buried beneath younger formations (in particular Tertiary Basalt cover).

On the basis of "exposure", the magnetite skarns of E.L. 17/68 could be classified into four types, namely:-

- i) Surface exposed magnetite skarns; eg. Kara No. 1, Kara South, Kara No. 2 Main Skarn.
- ii) Near surface magnetite skarns, exposed or identified by surface exploration activities (costeaning etc); eg. Kara North 266 Zone, Eastern Ridge.
- iii) Subsurface buried magnetite skarns, tentatively identified by geological/geophysical interpretation, and subsequently proved by drilling, eg. Location L.5, Kara North Magnetite Anomaly.
- iv) Potential trends and zones of suspected magnetite skarn buried beneath Tertiary Basalt cover; eg. magnetic zone between E. Ridge and Location L. 5.

Obviously the first two above categories of magnetite skarn justified priority consideration during the current study.

Table No. 1 overleaf lists all known occurrences or deposits of magnetite skarn which have been recognised in the E.L. area, and then classifies them according to the above categories.

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# MAGNETITE SKARNS - E.L. 17/68 - CLASSIFICATION.

## STATUS AND EXPLORATION CLASSIFICATION.

TABLE. N°1.

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| SKARN. | BASIC CLASSIFICATION | | | PAST EXPLORATION ACTIVITIES. | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | SURFACE EXPOSED | NEAR-SURFACE | SUB SURFACE | DEGREE | | | NATURE | | | |
| | | | | STRONG | MODERATE | WEAK. | SURFACE WORK. | GROUND MAGNETICS. | DETAILED DRILLING. | STRAG. DRILLING |
| KARA N° 1. | X | | | X | | | X | | X | |
| WEST. LIMB. | | X | | | X | | X | | X | |
| COMPANION SKARN. | | X | | | X | | | X | | X |
| KARA. N. 266 ZONE. | | X | | X | | | X | X | X | |
| KAI N. MAG. ANOMALY | | | X | | X | | | X | | X |
| LOCATION. L.13. | | X | | | X | | X | X | | |
| HAMPSHIRE MAGNETITE. | | X | | | X | | X | X | | |
| KARA SOUTH. | X | | | X | | | X | X | | X |
| LOHREY'S PITS. | | X | | | X | | X | X | | X |
| BOBS BONANZA. | X | | | X | | | X | X | | X |
| EASTERN RIDGE. | | X | | X | | | X | X | X | |
| LOCATION L.6. | | | X | | X | | | X | X | |
| LOCATION L.4. | | X | | | | X | X | X | | |
| HAMPSHIRE SILVER MINE. | | | X | | | X | X | X | | |
| LOCATION. L.1. | X | | | | | X | X | X | | |
| SUTTONS SKARN. | | X. | | | | X | | X | | |
| KARA. 2 - MAIN ZONE. | X | | | | X | | X | X | | X |
| KARA. 2. EAST ZONE. | | X | | | | X | | | | |
| KARA. 2. SOUTH ZONE. | X | | | | | X | | | | |

The table also attempts to indicate both the degree (strong, weak, etc.) and nature/type of exploration work or investigations completed at each deposit.

The current study is not the appropiate time to dwell upon the favourable or potential geological (stratigraphical/lithologicall) host horizons for the development of magnetite skarn - nor in fact theories on magnetite ore genesis - but the skarn bodies themselves show a wide range of mineralogical facies and variability in actual magnetite content, and textural/structural characteristics.

Two specific mineralogical facies predominate, namely a magnetite-amphibole facies, and a garnet-diopside-magnetite facies, the former being the more common along the west limb of the Kara synclinorium (eg. Kara No. 1, West Limb, Companion Skarn, Kara North, Location L.13), and both facies apparent along the eastern limb of the structure (eg. Bobs Bonanza, E. Ridge, Location L.5). In the magnetite-amphibole facies, an estimate of the % magnetite content of the total rock would be in the order of 30 to 70%, and between 10 - 40% in the garnet-diopside facies. Textural characteristics range from fine grained, thinly banded, to coarsely crystalline, massive magnetite types.

The degree of oxidation plays an important role in the assessment of the Kara magnetites. Weathering is generally extensive, but not consistent from skarn to skarn. The magnetite rapidly breaks down to hematite, goethite and limonite. At the Kara No. 1 skarn deposit, fresh magnetite skarn occurs at a distance of 20 to 25 metres below the original surface profile. Beneath old Tertiary valleys infilled with unconsolidated sediments, oxidation of underlying rocks can be very extensive.

Table No. 2 overleaf attempts to classify the E.L. magnetite skarns according to an estimate of magnetite potential, this potential being registered according to both the magnitude (tonnage-wise) of the occurrence and the actual degree of magnetite development in the deposit. The table also shows the degree of any associated tungsten content and/or tin affinities (this is generally in the form of silicates rather than cassiterite).

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TABLE. N°2.

830223

MAGNETITE SKARNS. – E.L. 17/68.

STATUS OF MAGNETITE AND "OTHER MINERAL" POTENTIAL.

| SKARN LOCATION. | MAGNETITE POTENTIAL. | | | $WO_3$ CONTENT | | | Sn CONTENT. | |
|---|---|---|---|---|---|---|---|---|
| | STRONG | MODERATE | WEAK. | MINERAL. | ANOMALISM | NOT KNOWN | ANOMALISM | NOT KNOWN. |
| KARA. N° 1. | X | | | X | | | X | |
| WEST LIMB. | X | | | X | | | X | |
| COMPANION SKARN. | X | | | | | X | | X |
| K "A.N. 266 ZONE. | | X | | X | | | X | |
| KARA. N. MAG ANOM. | X | | | | X | | X | |
| LOCATION L. 13. | | X | | | X | | | X |
| HAMPSHIRE MAGNETITE. | X | | | | X | | | X |
| KARA SOUTH. | X | | | X | | | | |
| LOHREYS PITS. | | | X | | X | | | |
| BOBS BONANZA. | | X | | X | | | | |
| EASTERN RIDGE. | X | | | X | | | X | |
| LOCATION. L.5. | | X | | X | | | | X |
| LOCATION. L.4. | | | X | | | X | | X |
| HAMPSHIRE Ag MINE. | | | X | | | X | | X |
| LOCATION. L.1. | X | | | | | X | | X |
| SUTTONS SKARN. | | | X | | | X | | X |
| KARA. N° 2 - MAIN. | X | | | | | X | X | |
| KARA. N°2 - EAST. | | | X | | | X | | X |
| KARA. N°2 - SOUTH. | X. | | | | | X | | X. |

At this stage of the study, it is worth establishing the fact that past exploration work and investigations on the E.L. magnetite skarn bodies, have not been specifically orientated towards an evaluation of their magnetite potential. Indeed actual total Fe assays of drill core on the Kara Properties appear to be restricted to one drill hole DDH 146 - Anzeco, Kara North Magnetite Anomaly - and, all drill log records of magnetite content are visual estimates by various geologists.

In assessing the potential supply of magnetite from various skarn zones in the E.L., it is believed the available magnetite material is at this stage best classified according to one of three categories, namely magnetite reserves, resources or potential. This categorisation is basically dependent upon the degree and and thoroughness of past exploration/drilling studies, more specifically as follows:-

- Magnetite Reserves - accurately measurable at skarn zones which have been the subject of detailed examinations of both a surface and subsurface nature. Eg. Kara No. 1.
- Magnetite Resources- calculated at deposits which have been thoroughly examined on surface, but only partially investigated by drilling. Eg. West Limb, E. Ridge, Location L. 5.
- Magnetite Potential - assessed at skarn areas where surface geological interpretations have been made, but no drilling, or sparse drilling, completed. Eg. Location L.1.

Table No. 3 overleaf classifies all E.L. 17/68 skarns according to the availability of the three above categories. The table also itemises whether the skarn deposits are of possible open-pit or underground mining potential.

In reviewing each of the known E.L. skarns as a potential supplier of magnetite at the required rate and grade, the following main characteristics would preferentially have to be satisfied:-

- Sufficient tonnage potential
- Strong development of high grade mineralisation, only minimun degree of oxidation.
- Sufficient ore lens thickness; flat lying disposition, shallow or near-surface in order to permit open-pit mining, and preferentially with a low overburden stripping ratio.
- Associated tungsten mineralisation.
- Location and good access.

On consideration of the above factors, an initial appraisal of the twenty known E.L. magnetite skarns listed in Tables 1 to 3, would immediately single out the following magnetite zones (not necessarily in order of priority):-

- Kara No. 1
- Kara No. 2 Skarns
- Kara South
- Location L. 1
- West Limb
- Companion Skarn
- Hampshire Magnetite Skarn

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TABLE N° 3.

830226

# MAGNETITE SKARNS - E.L. 17/68.

| SKARN LOCATION. | MAGNETITE CLASSIFICATION. | | | MINING METHOD POTENTIAL. | | |
|---|---|---|---|---|---|---|
| | MAGNETITE RESERVES | MAGNETITE RESOURCES | MAGNETITE POTENTIAL. | O/P. | UNDG. | BOTH. |
| KARA. N° 1. | X | | | X | | |
| WEST LIMB. | | X | | X | X | X |
| COMPANION SKARN. | | | X | | | X |
| KARA. N. 266 ZONE. | X | | | X | | |
| KARA. N. MAG. ANOM. | | X | | | X | |
| LOCATION. L.13. | | | | | | X |
| HAMPSHIRE MAGNETITE. | | | X | | | X |
| KARA SOUTH. | | | X | X | | |
| LOHREYS PITS. | | | | | | X |
| BOBS BONANZA. | | | X | | | X |
| EASTERN RIDGE. | | X | | | | X |
| LOCATION L.6. | | X | | | X | |
| LOCATION L.4. | | | | | X | |
| HAMPSHIRE Ag MINE. | | | | | X | |
| LOCATION. L.1. | | | X | X | | |
| SUTTONS SKARN. | | | | | | |
| KARA. N°2 - MAIN ZONE. | | | X | X | | |
| KARA. N°2 - EAST. | | | X | X | | |
| KARA. N°2 - SOUTH. | | | X. | X. | | |

## 3. KARA NO. 1 MAGNETITE SKARN DEPOSIT

In assessing the Kara No. 1 skarn as a potential supplier of magnetite concentrates, there are a number of factors in favour of the deposit, some of these are:-

- The examination and investigation of the deposit has been thorough, and well documented, and included detailed geological, drilling, engineering, metallurgical and economic studies. Sufficient data is readily available, certainly for a three dimensional tonnage estimate of available magnetite reserves.

- These tonnages are attractive in quantities available.

- The magnetite - amphibole skarn facies is very well developed at Kara No. 1.

- The deposit is affected by deep oxidation, but the degree of weathering is regular, and the various ore zones (W, X, Y and F types) can easily be categorised.

- The fresh (F) and partially weathered (Y) reserves show a high grade magnetite content.

- The deposits disposition (saucer-shaped synform), the thickness of the ore horizon, and its shallow near-surface nature make the deposit a near ideal open-pit mine operation.

- The mining/milling infrastructure, plus accessability is already established.

For providing potential sources of magnetite, the Kara No. 1 deposit can be assessed from a number of prospective angles, and supplies could be made from the following:-

- The established magnetite tailings stockpile.

- As a bi-product from scheelite bearing magnetite rich skarn currently being treated as ore at the present operation (this material is documented as mineable reserve, namely 163 and 164 rock types.)

- From non-scheelite bearing magnetite rich skarn, again currently being mined at the present operation, but treated as overburden and dumped as waste. (Again classified as a mineable reserve, 173 and 174 rock types).

- From known reserves of magnetite rich skarn delineated at the Kara No. 1 deposit, but generally bordering or outside the proposed open-pit mine for the scheelite operation (classified as geological reserves).

- From partially drilled reserves of magnetite skarn on the margins and geological extensions of the Kara No. 1 deposit, manely the West Limb skarn (classified as geological resources).

All these above potential sources are discussed in more detail later in the report. It should be mentioned that in the current evaluation of the Kara No. 1 deposit (and that of Kara North), the Pincock, Allen and Holt Inc. (October 1983) nomenclature of ore/rock types has been used, and in assessing material suitable as a potential supply of magnetite concentrate, only the fresh and partially weathered magnetite-rich skarn rock types are considered. These are:-

- 163 and 164 - scheelite bearing Y and F (respectively) + 30% Fe magnetite skarn.
- 173 and 174 - non scheelite bearing Y and F, + 30% Fe, magnetite skarn.

Ore types, 161 and 162, because of their degree of oxidation and contamination with hematite, etc. have not been considered suitable.

## 4. MAGNETITE BI - PRODUCT - TUNGSTEN OPERATIONS

The Kara No. 1 scheelite mine (and that similarly proposed for Kara North) provides both an instant and immediate future limited supply of high grade magnetite concentrates.

### A - Magnetite Tailings Stockpile

An instant supply of magnetite material is readily available from the Kara No. 1 stockpile of magnetite tailings — collected from the treatment of ore mined at the deposit since 1978.

An accurate evaluation of current stocks, and potential grades of this stockpiled material, has not been attempted during this study - this being regarded as a surveying/engineering exercise to be supplemented by both systematic auger and bulk sampling.

A guesstimate of current stocks (using a broad equation, involving past years milled production, magnetic estimates of feed, estimates of recovery, and reduction loss of stockpile through magnetite sales and normal run off) would be in the order of approx. 400,000 to 450,000 tonnes.

Unfortunately, there have been occassions in the past, where the magnetite material has been admixed with non-magnetic tailings and/or other material, and this would have to be taken into account during future assessments. In addition, it should be remembered, a large proportion of the mill feed in the early operating years (1978-81) was of weathered X ore type material.

### B - Kara No. 1 - Magnetic Skarn, Mineable Reserves

Additional magnetite concentrates, as a bi-product, will of course be obtained from the current and future tungsten operation at Kara No. 1.

Accurate production figures can be established on annual basis from the proposed mine design, mill/mine production schedules and mill recovery factors currently being designed for Tasminex N.L. by J. Askew Associates.

Until such data is available, tonnage and grade figures for Kara No. 1 have been used from the Pincock, Allen & Holt data base, as established in Tucson, October 1983.

At Kara No. 1, the mineable reserves of scheelite bearing F and Y magnetite rich (+30% Fe) skarn to be mined and milled as ore are calculated as follows:-

| | | Tonnes | Mag. Content Estimate |
|---|---|---|---|
| 163 rock type - partially weathered scheelite bearing magnetite rich skarn | = | 173,303 @ | 57.6%Fe |
| 164 rock type - fresh scheelite bearing magnetite rich skarn | = | 427,778 @ | 67.7%Fe |
| Total Ore | = | 603,081 @ | 64.6%Fe |

However, these reserves could be supplemented by additional tonnages of both F and Y scheelite bearing and non-scheelite bearing magnetite rich skarn which are also to be mined within the proposed pit, but classified as overburden/waste. Tonnages of this material are as follows:-

| | Tonnes |
|---|---|
| 163 and 164 ore mined as overburden | 7996 |
| 173 and 174 rock types (F + Y non scheelite bearing magnetite rich skarn) | 377,059 |
| Total Waste | 385,055 |

Therefore, at Kara No. 1, the total magnetite rich skarn to be mined as either ore or overburden in the proposed scheelite mine operation would total 988,136 tonnes (mineable reserves).

On a year x year production basis, Table No. 4 overleaf tabulates specific tonnage rates of magnetite skarn as proposed in the original P.A. & H. mine design.

TABLE. N°4.

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# KARA N°1 - MINEABLE RESERVES.

(BASED ON PAH FIGURES – OCTOBER. 1983)

## MAGNETITE SKARN

| >30% Fe. ROCK TYPE. | | YEAR 0 TONNES | YEAR 1. TONNES | YEAR 2. TONNES | YEAR 3. TONNES | YEAR 4 TONNES | YEAR 5. TONNES | YEAR 6. TONNES | TOTAL. TONNES. |
|---|---|---|---|---|---|---|---|---|---|
| 163 (ORE) | - | 28,065 | 46,815 | 43,949 | 25,364 | 12,370 | 18,240 | – | = 174,803 |
| 164 (ORE) | - | 8,041 | 58,073 | 49,594 | 77,556 | 79473 | 97,162 | 57,879 | = 427,778 |
| 163 (WASTE) | - | 240 | – | 4790 | 120 | 480 | 240 | – | = 5,870 |
| 164 (WASTE) | - | – | 777 | 52 | 259 | 1038 | – | – | = 2,126 |
| 173+174 | - | 1485. | 15,153 | 36,488. | 147,002 | 50,255 | 106,451 | 21,265 | = 377,059. |
| | | 37,801 | 120,818 | 133,873 | 250,301 | 143,616 | 922,093 | 79,134 | = 987,636. |

## "OTHER MATERIAL."

### OTHER SCHEELITE ORE.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 63 | - | 8400 | 14490 | 22624 | 22354 | 15701 | 5408 | – | = 88877 |
| 64 | - | 1992 | 11164 | 16888 | 4572 | 22200 | 9116 | – | = 65932. |
| | | 10,392 | 25654 | 39,412 | 26,926 | 37,901 | 14,524 | NIL | = 154,809. |

### OTHER TUNGSTEN MATERIAL.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 161 | - | 44626 | 6071 | 4875 | 126 | – | – | – | = 55697 |
| 162 | - | 48020 | 65975 | 7309 | 2438 | 3783 | – | – | = 127,625. |
| 61 | - | 36993 | 17,246 | 21382. | 3111 | 844 | – | – | = 79,575 |
| 62 | - | 16496 | 19466 | 13536 | 3713 | 7613 | – | – | = 60,824. |
| | | 146,136 | 108,757 | 47,102 | 9287 | 12,240 | NIL | NIL. | = 323,621. |

### WASTE.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 171-172 | - | 369 | 13,963 | 23330 | 663 | 13454 | – | – | = 51,379 |
| 73 ETC | - | NIL | 46639 | 49868 | 80886 | 91,296 | 44637 | 743 | = 313,969 |
| 72 ETC. | - | 4630 | 138,868 | 206860 | 133170 | 208,151 | – | – | = 684,669. |

It will be noticed that a total of 1,705,823 tonnes of waste material has to be removed at Kara No. 1, ie. a 1.72 S/R in relation to produced magnetite rich skarn (ore and overburden).

C. Kara North - Magnetite Skarn - Mineable Reserves

A similar exercise has been undertaken for the Kara North 266 Zone proposed open pit (P.A. & H. Oct. 1983), between 6925N and 7325N.

The mineable reserves of magnetite rich skarn to be mined as both ore and waste at Kara North are as follows:-

| | Tonnes | % Fe est. |
|---|---|---|
| - Tungsten bearing magnetite rich ore - | | |
| - 164 - fresh magnetite skarn | 170,762 | 59.0 |
| - 163 - partially weathered magnetite skarn | 1,485 | 38.7 |
| Total | 172,247 | 58.82% |
| - Magnetite skarn - mined as overburden | | |
| - 163 + 164 | - | - |
| - 173 + 174 | 154,208 | - |
| Total | 154,208 | - |

Total F & Y magnetite skarn mineable reserves = 326,455 tonnes

Table No. 5 summarises the annual production rates of various magnetite skarn rock types for the Kara North open pit mine as proposed by P.A. & H. (Oct. 1983).

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TABLE N° 5.

830233

# KARA NORTH - MINEABLE RESERVES

(BASED ON PAH FIGURES - OCTOBER 1983)

| MAGNETITE SKARN >30% Fe. ROCK TYPE. | | YEAR 0 (TONNES) | YEAR 1. (TONNES) | YEAR 2. (TONNES) | | TOTAL. (TONNES) |
|---|---|---|---|---|---|---|
| 163 (ORE) | - | 720 | 765 | NIL | = | 1485 |
| 164 (ORE) | - | 2075 | 95149 | 73,538 | = | 170,762 |
| 163 (WASTE) | - | NIL | NIL | NIL | = | NIL |
| 164 (WASTE) | - | NIL | NIL | NIL | = | NIL. |
| 173+174. | - | 17295. | 93,772. | 43141 | = | 154,208. |
| | | 20,090 | 189,686 | 116679 | = | 326,455. |

## "OTHER MATERIAL"

| OTHER SCHEELITE ORE. | | | | | | |
|---|---|---|---|---|---|---|
| 63. | - | 25371 | 18112 | 0 | = | 43483 |
| 64. | - | 940 | 36716 | 13,702 | = | 51,358. |
| | | 26,311 | 64,828 | 13,702 | = | 94,841. |
| OTHER TUNGSTEN MATERIAL. | | | | | | |
| 161 | - | NIL | NIL | NIL | = | NIL. |
| 162. | - | 150 | NIL | NIL | = | 150 |
| 61 | - | NIL | NIL | NIL | = | NIL |
| 62 | - | 12569 | 5906 | NIL | = | 18475 |
| | | 12,719 | 5906 | NIL | = | 18625. |
| WASTE. | | | | | | |
| 171-172 | - | 3940 | 3764 | NIL | = | 7694 |
| 73 ETC | - | 113,539 | 344355 | 69,164 | = | 527048 |
| 72 ETC | - | 883,533 | 505,837 | NIL | = | 1389370. |
| | | 1,001,012 | 853,946 | 69164 | = | 1,924,112. |

## 5. MAGNETITE SKARNS - GEOLOGICAL RESERVES

As briefly mentioned in Section 2 of the report, it has been attempted to classify the E.L. magnetite skarn zones and their contained magnetite material into one of three categories, namely geological reserves, geological resources and geological potential. Geologic reserves of magnetite rich skarn are those which can accurately be drafted on a three dimensional basis from an abundance of detailed surface and subsurface data.

It is believed such geological reserves are available at two locations on the Kara Properties, namely Kara No. 1 and Kara North 266 Zone. Each deposit is considered separately.

### A. Kara No. 1 Skarn

At the Kara No. 1 magnetite deposit - more specifically embraced by coordinates -

5600N to 5980N and
7250E to 7500E,

the geological reserves of fresh and partially weathered magnetite (+30%Fe) skarn (both scheelite and non scheelite varieties) as computed in the P.A. & H ore model for Kara No. 1, amount to:-

| ROCK TYPES | AS ORE | | AS WASTE | TOTAL |
|---|---|---|---|---|
| | TONNES | %Fe | TONNES | TONNES |
| 163 - Y Magnetite skarn | 232,975 | 56.5 | 9340 | 242,315 |
| 164 - F " " | 604,959 | 67.0 | 12716 | 617,675 |
| 173-174 - Y & F Mag." | 8,297 | 51.8 | 2,491,744 | 2,500,041 |

Total Geological Reserves = 3,360,031 Tonnes

### B. Kara No. 1 Eastern Section

The above geological reserve figures include large tonnages of available magnetite rich skarn, that are present at the Kara No. 1 deposit outside the confines of the proposed scheelite open-pit parameter.

One exercise has been completed, studying the possibility of acquiring easily mined (ie. without excessive additional stripping) reserves of magnetite rich skarn adjacent to those $WO_3$ reserves mined or proposed to be mined in the open pit tungsten mine.

One such area considered was the Eastern Section of Kara No. 1 - an area of the deposit from which Tasminex N.L. have mined the greatest portion of scheelite bearing reserves during the 1977 - 1983/84 period. This area is approx. 180 metres by 150 metres in size embraced by coordinates 7370E to 7520E and 5820N to 6000N.

This area was chosen for study not only because it has easily extractable reserves of barren $WO_3$ magnetite rich skarn, which are sandwiched between the tungsten bearing skarn (now largely mined out) and the underlying granite, but because it was believed the area contained a few remnant lenses of tungsten bearing material, "left-over" from mining operations to date. These latter lenses, due to excessive stripping, would probably be uneconomic to mine solely for their tungsten content.

The exercise in question included the following calculations:-

i) Calculation of the available + 30% magnetite skarn which will be mined as ore and waste within the proposed tungsten mine design affecting this Eastern Area. (The J. Askew Mine Design was used).

ii) Calculation of the +30% Fe magnetite skarn available outside the perimeter of the proposed pit design.

iii) Calculate the possible tonnages and grades of scheelite bearing lenses contained within the magnetite skarn outside the proposed pit.

Table No. 6 and 7 show the results of these calculations and figures 1 to 5 "block-out" the various reserves on the five drill section lines 5820N, 5860N, 5900N, 5940N and 5980N.

As indicated on Table 6, a total tonnage of 267,600 tonnes of F & Y magnetite rich skarn will be mined (either as ore or waste) within the confines of the proposed $WO_3$ pit design. (Coloured orange on drill sections figs. 1 to 5).

An additional 644,920 tonnes of similar magnetite rich skarn are calculated to be available outside the $WO_3$ pit perimeters (coloured red on the drill sections, figures 1 to 5).

TABLE. N° 6.



## KARA. N° 1. DEPOSIT — EASTERN SECTION. (7370E - 7520E).

## GEOLOGICAL RESERVES OF F+Y MAGNETITE SKARN +30% Fe. ROCK TYPES 163, 164, 173 + 174.

### A. INSIDE PROPOSED TUNGSTEN OPEN PIT.

| LEVEL. | 5820N TO 5860N TONNES | 5860N TO 5900N TONNES | 5900N TO 5940N. TONNES | 5940N TO 5980N TONNES | 5980N TO 6000N TONNES | TOTAL. TONNES. |
|---|---|---|---|---|---|---|
| 490 = | 3040 | NIL | NIL | NIL | NIL | = 3040. |
| 485 = | 10400 | NIL | NIL | NIL | NIL | = 10400. |
| 480 = | 5920 | 2400 | NIL. | NIL | NIL. | = 8320. |
| 475 = | 17440 | 29,440 | 12,000 | 480 | 240 | = 59,600. |
| 470 = | 6400 | 31,680 | 42080 | 26440 | 4820 | = 109,920. |
| 465 = | NIL | 22,720 | 30,080 | 16480 | 4800 | = 73,880. |
| 460 = | NIL. | NIL | NIL | 1600 | 840 | = 2440. |
| TOTALS = | 43,200 | 86,240 | 84,160 | 44,000 | 10,000 | = 267,600. |

### B. OUTSIDE PROPOSED TUNGSTEN OPEN PIT.

| | | | | | | |
|---|---|---|---|---|---|---|
| 505 = | 960 | NIL | NIL | NIL | NIL | = 960. |
| 500 = | 8800 | NIL | NIL | NIL | NIL | = 8800. |
| 495 = | 10720 | 320 | 320 | NIL | NIL | = 11360. |
| 490 = | 12820 | 5600 | 5600 | NIL | NIL | = 28520. |
| 485 = | 14400 | 7520 | 10880 | 3200 | NIL | = 36,000. |
| 480 = | 32000 | 8800 | 15680 | 6880 | NIL | = 63,360. |
| 475 = | 16960 | 16660 | 21280 | 13280 | 840 | = 69040 |
| 470 = | 11200 | 24320 | 30400 | 20160 | 2880 | = 88960. |
| 465 = | 2240 | 21120 | 44160 | 47040 | 10880 | = 125,440. |
| 460 = | NIL | 1120 | 13600 | 56800 | 22200 | = 93,720. |
| 455 = | NIL | NIL | 14080 | 50880 | 18400 | = 83,360 |
| 450 = | NIL | NIL | 4000 | 20320 | 8160 | = 32,480 |
| 445 = | NIL | NIL | NIL | 5920 | 3000 | = 8920 |
| | 109,600 | 84,480 | 160,000 | 224,480 | 66,360 | = 644,920. |

OVERALL TOTAL = 912,520 TONNES.

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Therefore in the entire area studied, between 5820N and 6000N, a total912520 tonnes of magnetite rich skarn are available.

Table No. 7 indicates that the magnetite skarn outside the open-pit would include an estimated 59,800 tonnes of tungsten lenses averaging 0.40% $WO_3$.

The above exercise should only be regarded as preliminary, but it is useful in exemplifying that additional reserves of magnetite skarn are readily available outside the proposed tungsten operation, and that their extraction probably requires only a limited amount of overburden removal and without unduly altering the overall tungsten pit design (N.B. the latter has not been calculated in the present exercise). The exercise is doubly rewarding in proving that the overall economic potential of these magnetite skarn tonnages is increased enormously because of their contained tungsten values.

It is believed the exercise should be evaluated more fully, and preparatory to possible bulk-sample testwork, backed up by a thorough examination of drill log and available drill core samples of the area in question.

In addition, similar studies in other sections of the Kara No. 1 deposit peripheral to the proposed $WO_3$ open pit, may reveal similar and additional prospective geological reserves.

C. Kara North 266 Zone

Sufficient drill data and surface examinations are available to calculate the geological reserves of this deposit between the north coordinates 6925N and 7325N.

The Kara N ore model as designed by P.A. & H. (Oct. 1983) shows the following reserves of magnetite rich skarn, both of scheelite bearing and $WO_3$ barren varieties:-

TABLE N° 7.

830238

# KARA. N°1. — EASTERN SECTION.
## (7370E - 7820E)

## FtY. TUNGSTEN RESERVES - OUTSIDE TUNGSTEN OPEN PIT.

| | | 5980N | | 5940N | | 5900N | | 5860N | | 5820N | | TOTAL. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | T. | $WO_3$ | T. | $WO_3$ | T | $WO_3$ | T. | $WO_3$ | T. | $WO_3$ | |
| 490 | = | | | | | 2000 | 0.980 | | | 6000 | 0.565. | 8000 |
| 485 | = | | | | | 10000 | 0.632. | | | 10000 | 0.315. | 20,000 |
| 480 | = | | | | | 8000 | 0.425 | | | | | 8,000 |
| 475 | = | | | | | 6000 | 0.425 | | | | | 6,000 |
| 470 | = | | | | | 4000 | 0.386. | 14000 | 0.457. | | | 18,000 |
| 465 | = | | | 4000 | 0.472. | 8000 | 0.552. | | | | | 12,000 |
| 460 | = | 6000 | 0.261 | | | | | | | | | 6,000 |
| 455 | = | 1600 | 0.341 | | | | | | | | | 1600. |
| TOTALS | = | 22000 @ | 0.324 | 4000 @ | 0.472. | 36,000 @ | 0.531. | 14,000 @ | 0.457. | 16000 @ | 0.485 | 59,800@ 0.480. |

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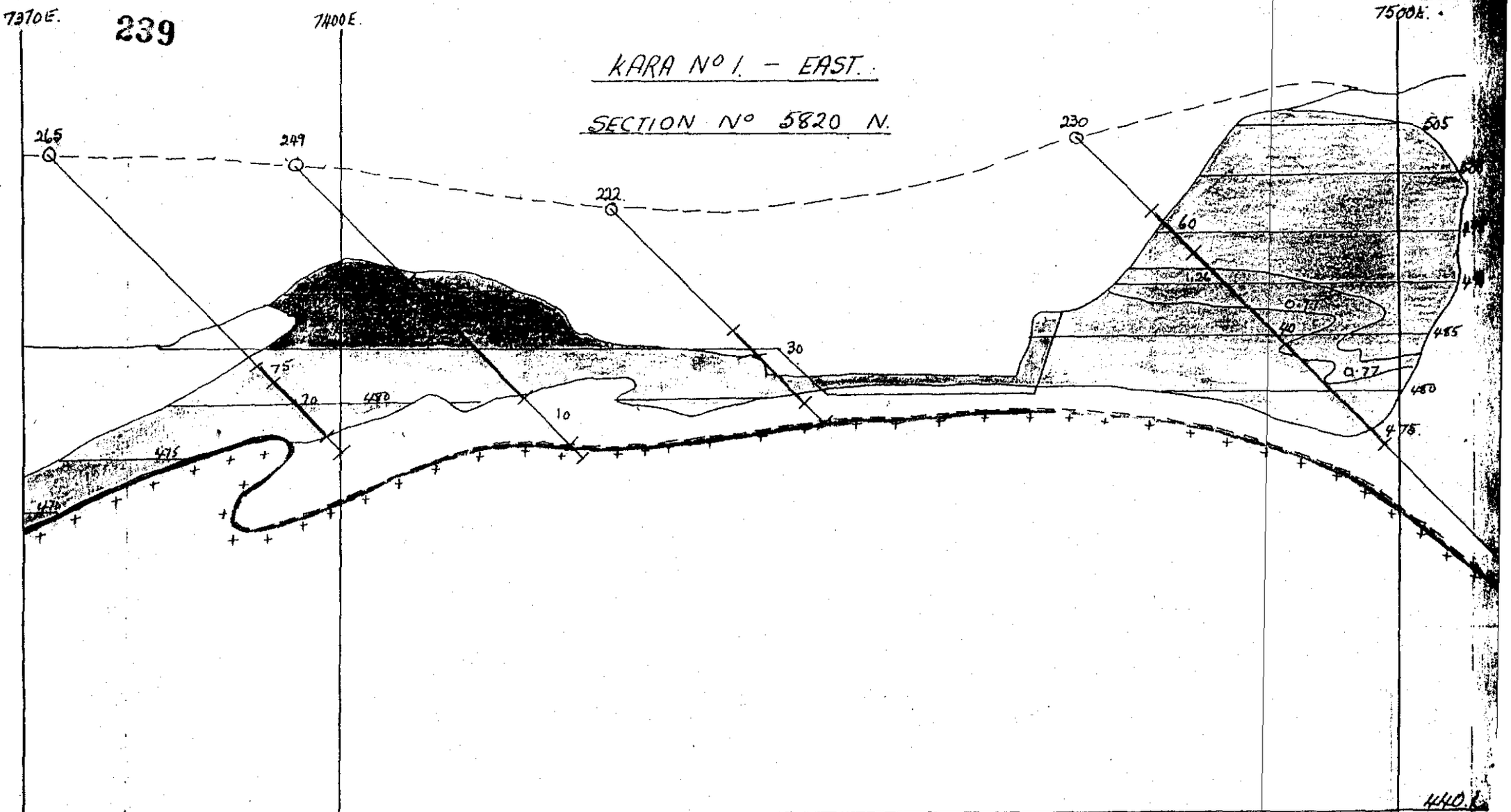
# KARA N° 1 - EAST.

## SECTION N° 5820 N.




= MAGNETITE SKARN >30% Fe INSIDE MINE PIT.

= MAGNETITE SKARN. >30% Fe OUTSIDE MINE PIT.

= $WO_3$ ORE LENS + GRADE. (OUTSIDE PIT)

60 = DDH WITH EST. MAG. CONTENT

= ORIGINAL TOPO PROFILE.

= CURRENT PROFILE.

= FINAL MIN. PROFILL.

= GRANITE CONTACT.

830239

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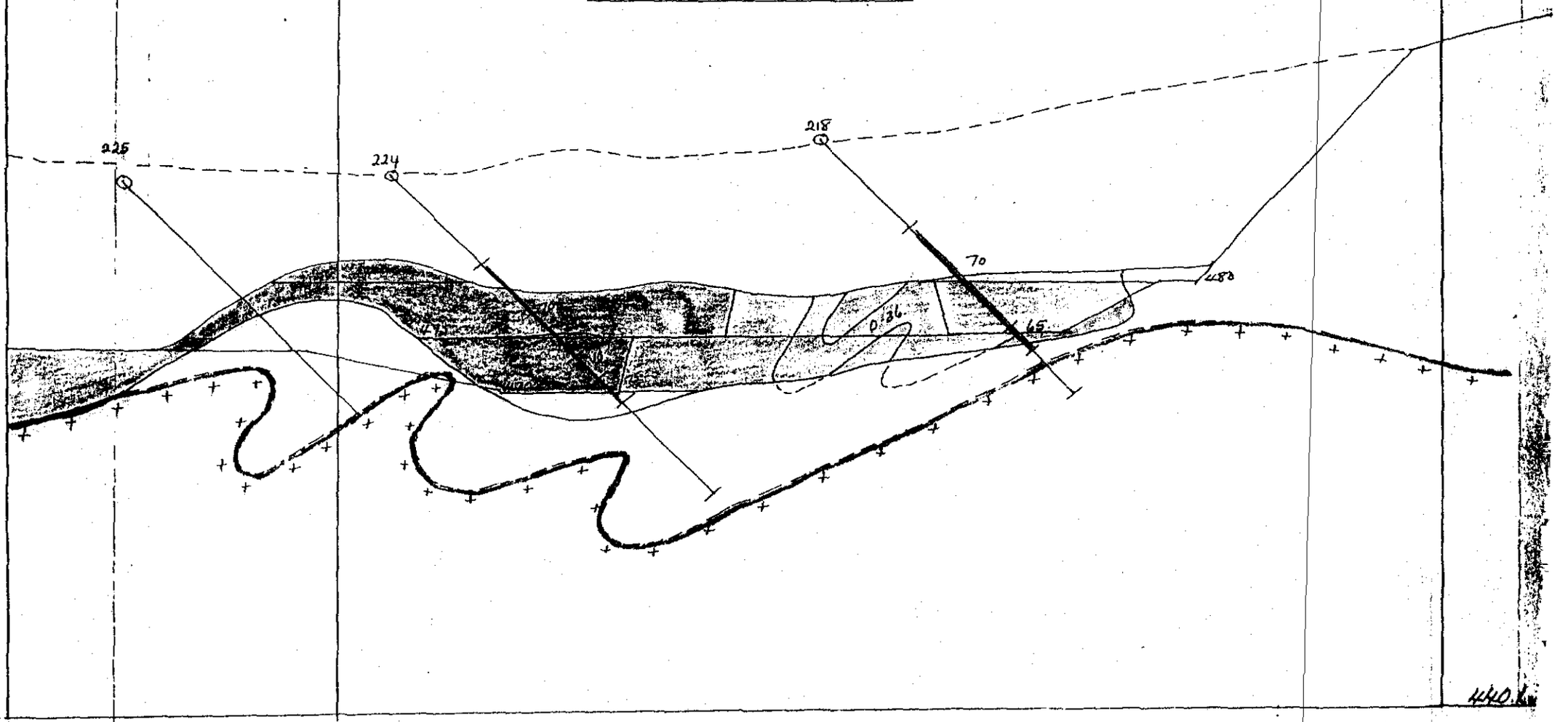
7370E.

7400E

7500E.

# KARA Nº 1. – EAST.

## SECTION Nº 6860 N.




= MAGNETITE SKARN >30% Fe INSIDE MINE PIT.

= MAGNETITE SKARN. >30% Fe OUTSIDE MINE PIT.

= $WO_3$ ORE LENS + GRADE. (OUTSIDE PIT)

60 = DDH WITH EST. MAG. CONTENT

= ORIGINAL TOPO PROFILE.

= CURRENT PROFILE.

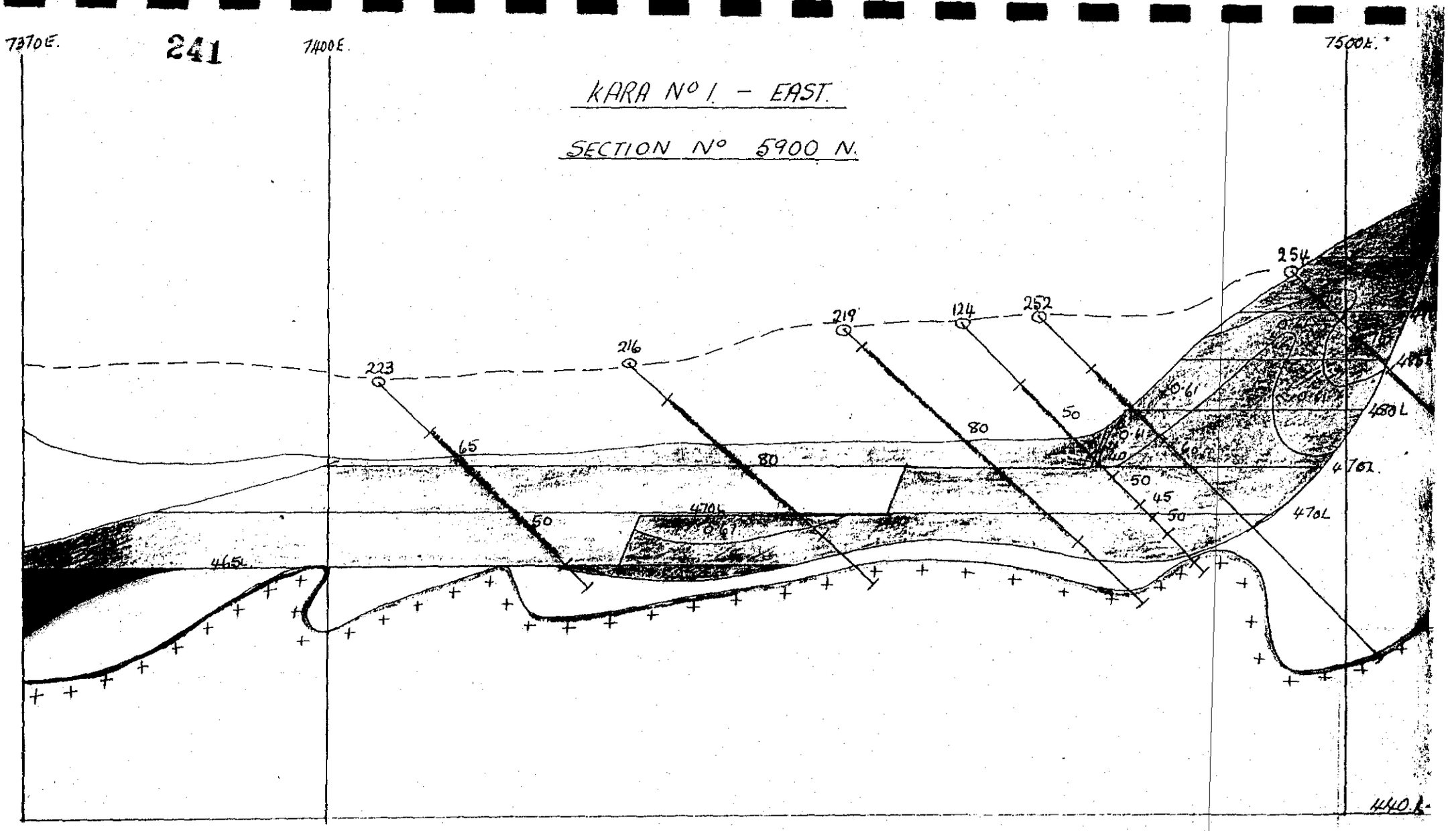
= FINAL MINE PROFILE.

= GRANITE CONTACT.

830240

# KARA N° 1 - EAST.

## SECTION N° 5900 N.




= MAGNETITE SKARN >30% Fe INSIDE MINE PIT.

= MAGNETITE SKARN. >30% Fe OUTSIDE MINE PIT.

= IVO3 ORE LENS+GRADE. (OUTSIDE PIT)

60 = DDH WITH EST. MAG CONTENT

= ORIGINAL TOPO PROFILE.

= CURRENT PROFILE.

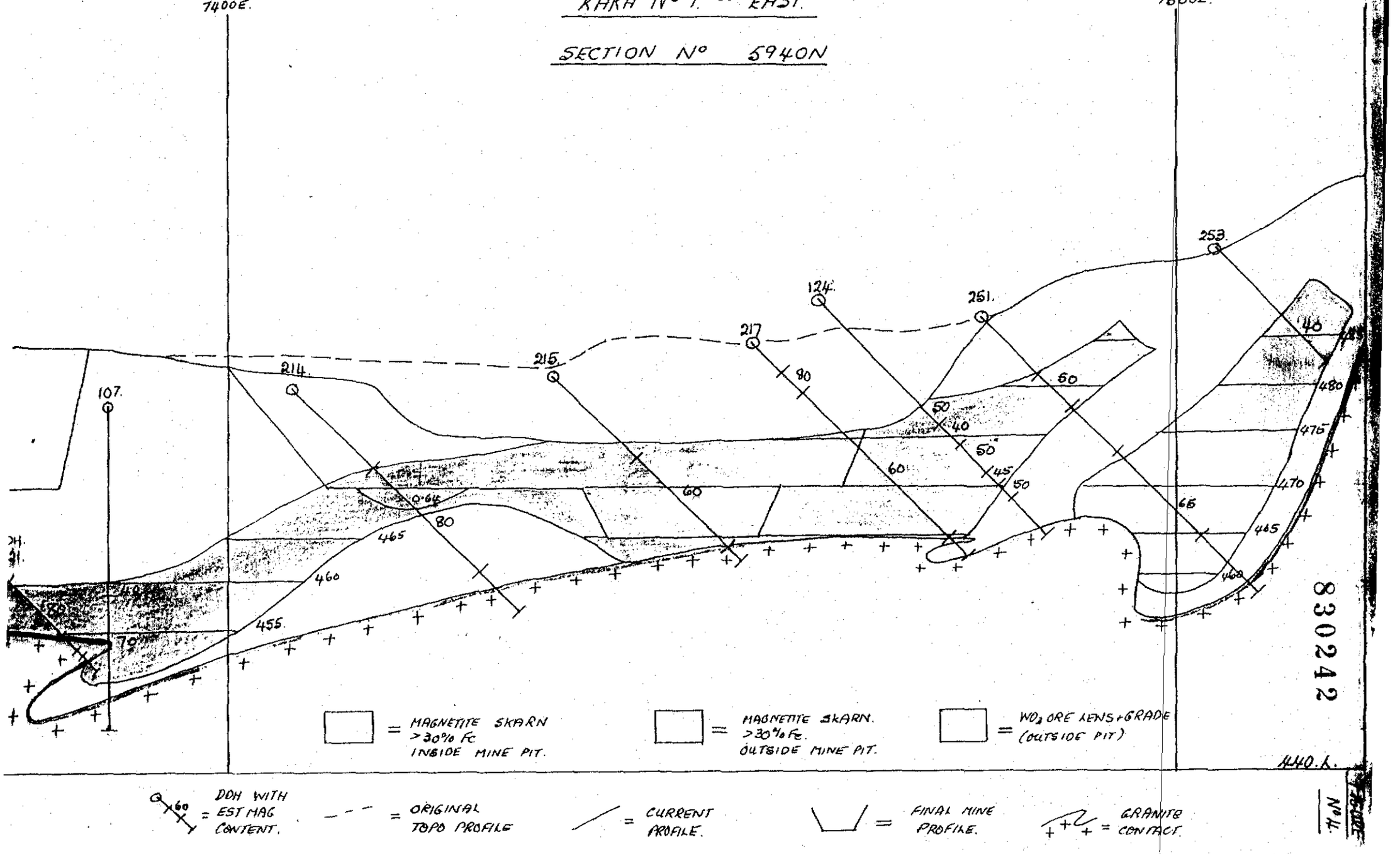
= FINAL MIN. PROFILL.

= GRANITE CONTACT.

FIGURE N° 3

# KARA Nº 1. – EAST.

## SECTION Nº 5940N



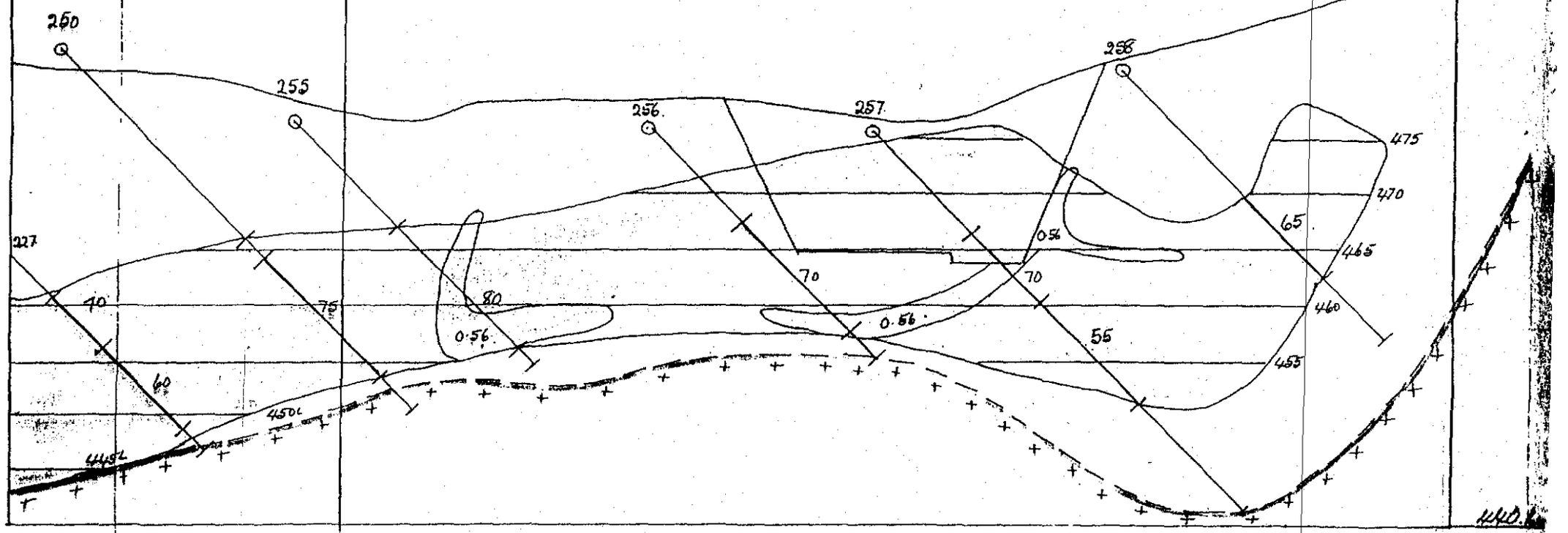

8302242

FIGURE No 11

7370E. 7400E. 7500E.

# KARA N° 1. – EAST.

## SECTION N° 5980 N.




= MAGNETITE SKARN >30% Fe INSIDE MINE PIT.

= MAGNETITE SKARN. >30% Fe OUTSIDE MINE PIT.

= IVO₃ ORE LENS+GRADE. (OUTSIDE PIT)

60 = DDH WITH EST. MAG. CONTENT

= ORIGINAL TOPO PROFILE.

= CURRENT PROFILE.

= FINAL MINE PROFILE.

= GRANITE CONTACT.

| ROCK TYPE | ORE | | WASTE | TOTAL |
|---|---|---|---|---|
| | Tonnes | %Fe Est. | Tonnes | Tonnes |
| 163 | 1440 | 37.6 | - | 1440 |
| 164 | 305,575 | 57.5 | 519 | 306,094 |
| 173 & 174 | 15,901 | 52.2 | 647,413 | 663,314 |
| Totals = | 322,916 | 57.15 | 647,932 | 970,848 |

Additional potential resources of magnetite skarn would be expected in a southerly direction (towards the Companion Skarn location) and a northerly direction (towards Location L. 13).

## 6 MAGNETITE SKARNS - GEOLOGICAL RESOURCES

In addition to the extensive diamond drilling programmes at the Kara No. 1 and Kara North 266 Zone deposits, more exploratory drilling programmes have been undertaken at a number of other known magnetite skarn deposits within the Exploration Licence area, namely:-

- West Limb deposit
- Eastern Ridge
- Location L. 5
- Kara North Magnetite Anomaly

These programmes were again essentially directed at proving reserves of $WO_3$ mineralisation, and although drilling was generally initiated on a systematic section line basis (either 40 or 60m intervals), the drill data to date can only be considered sufficient to calculate geological resources.

### A - West Limb Deposit

This deposit is the northerly extension of the western limb of the Kara No. 1 deposit, occuring over a strike length of 240m between 5980N and 6220N, before continuing to the north as the "Companion Skarn" deposit. The West Limb occurrence provides a more extensive development of magnetite skarn than the Kara No. 1 deposit, but lacks a consistent development of tungsten mineralisation.

Drilling has been completed on a 40 metre interval basis, with between 2 to 4 holes per section line, and from this data, the possible geological resources of F and Y magnetire rich skarn have been calculated on a 20metre level basis.

As tabulated on Table No. 8, the West Limb deposit between 5980N and 6220N is estimated to contain a possible geological resource of 4,701,880 tonnes of magnetite skarn.

The above tonnages could only be regarded as possible until such time that supplementary in-fill drilling is completed. The associated tungsten mineralisation reserves have, because of their narrow (45 metres), steeply dipping (65° West) nature of the lens, always been considered of probable underground mining potential.

However because of their overall magnitude, the West Limb magnetite skarn tonnages could be a totally different proposition and considered An open-pit possibility (N.B. This area is currently being utilised as the Kara No. 1 waste dump-site).

One significant attraction of the West Limb deposit is the tungsten mineralisation associated with the magnetite skarn. Between Section Lines 6020N and 6140N, Golder Associates (October 1980) calculated a total of 154,000 tonnes of indicated and inferred fresh and partially weathered reserves grading 0.47% $WO_3$.

The rock type breakdown is as follows:-

| | | | |
|---|---|---|---|
| Fresh Ore - indicated & inferred reserves | 104,000 tonnes | @ | 0.43% |
| Part. Weathered Ore " " " | 50,000 " | @ | 0.56% |

B. Eastern Ridge and Location L. 5.

Both these skarn deposits have been diamond drilled at 40 metre intervals along their respective strike lengths of 220metres and 90 metres, and these occurrences show quite extensive developments of tungsten bearing magnetite skarn (both the magnetite-amphibole facies, and the garnet diopside magnetite facies). However the tungsten lenses (and enclosing host skarns) are steeply dipping, fairly narrow lenses (3 to 22 metres wide) and generally masked by a substantial thickness of Tertiary basalt and sediment cover. For these reasons, any future possible mining operation would without a doubt be of an underground nature, and consequently no estimate of magnetite skarn tonnage resources have at this stage been calculated for these deposits.

C. KARA NORTH MAGNETITE ANOMALY DEPOSIT, is likewise of underground mining potential and only sparsely drilled, so probably does not justify consideration as a potential source of magnetite skarn. However brief mention of the occurrence is made on the basis of its enormous size and tonnage potential.

TABLE Nº 8.

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830247

WEST LIMB - E.L. 17/68.

GEOLOGICAL RESERVES - F+Y MAGNETITE (+30% Fe) SKARN.

| SECTION LINE | | BENCH LEVEL 4480L T. | 4460L T. | 4440L T | 4420L T. | 4400L T. | 3801 T | TOTAL TONNES. |
|---|---|---|---|---|---|---|---|---|
| 5980 N | = | NIL | 188,800 | 321,600 | 150,400 | NIL | NIL | = 660800 |
| 6020 N | = | 96,000 | 102,400 | 148,480 | 208,000 | 48000 | NIL | = 602,880 |
| 6060 N | = | NIL | 64,000 | 144,000 | 255,000 | 224,000 | NIL | - 687,000 |
| 6100 N | = | NIL | 19,040 | 70,400 | 208,000 | 288,000 | NIL | = 585,440. |
| 6140 N | = | NIL | 106,560 | 217,600 | 307,200 | 320,000 | 288,000 | = 1,239,360 |
| 6180 N. | = | NIL | 118,400 | 128,000 | 150,400 | 256,000 | NIL | = 652,800 |
| 6220 N. | = | NIL | 72,000 | 83,200 | 60,800 | 57,600 | NIL | = 273,600. |
| TOTALS | = | 96,000 | 671,200 | 1,113,280 | 1,339,800 | 1,193,600 | 288,000 | = 4,701,880. |

The location is on the eastern bank of the Companion River adjacent to the tungsteniferous Kara North 266 Zone, and although completely masked by younger Tertiary basalt and recent alluvial, on the basis of delineation by detailed ground magnetics, the anomaly would extend over an area measuring 550 metres (north-south) and 120 metres (E-W).

Drilling of a systematic nature, has only been completed on one drill section line, namely 7160N. This shows a well developed magnetite skarn zone forming the west limb of a syncline structure, and although open ended, measures 90 metres true thickness and 150 metres down dip. If continuous along strike, such a zone would represent a tonnage potential of 5.4 million tonnes of magnetite skarn per 100 metre strike distance.

## 7. POTENTIAL MAGNETITE

At least six skarn locations within E.L. 17/68 could be of interest in providing a potential future source of magnetite. These are:-

A - Kara South
B - Kara No. 2 Skarn Zones
C - Location L. 1
D - Companion Skarn
E - Hampshire Magnetite Skarn
F - Bobs Bonanza Skarn

Their initial potential is assessed on the basis of being on-surface or near surface type deposits, indications on surface being that they contain high grade magnetite, are generally of a flat lying disposition (rather than steeply dipping), and are located in easily accessable areas of the E.L.

At this stage, their major disadvantage is the general lack of information or factual data. There is generally insufficient data to enable only tentative calculations of their potential, and only a tonnage range potential has been attempted. This is summarised as follows:-

| | Est. Min. Tonnage | or Potential Tonnage Range |
|---|---|---|
| A - Kara South | 800,000 | |
| B - Kara No. 2 Main | | 500,000 to 2,000,000 |
| East | 25,000 | |
| South | 500,000 | |
| C - Location L. 1 | | 500,000 to 1,500,000 |
| D - Companion Skarn | | 1 to 3.2 million |
| E - Hampshire Magnetite Skarn | Not estimated | |
| F - Bobs Bonanza | | 250,000 to 750,000 |

It is emphasised the above are only potential tonnage estimates of deposits which lack any factual data on degree and continuity of grade.

Brief comments on each skarn regarding their potential are attached, tables 9A to 9F.

830250

TABLE N° 9A.

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KARA South.

NOTES ON MAGNETITE POTENTIAL.

- CENTRAL SECTION OF SKARN COULD BE PROSPECTIVE.
- DEPOSIT (CEN' SEC') INTERPRETED TO BE FLAT LYING – SHALLOW DIP.
- LITTLE OR NO OVERBURDEN, OPEN PIT MINING POTENTIAL, LOW S/R.
- AV. THICKNESS OF POTENTIAL MAG' SKARN ESTIMATED TO BE MINIMUM 25 METRES.
- SURFACE AREA DIMENSIONS CONSERVATIVELY ESTIMATED AT. 100 × 80 m.
- MINIMUM POTENTIAL TONNAGE ESTIMATE OF 800,000 TONNES.
- SURFACE EXPOSURES GOOD, REVEALING FRESH, UNOXIDISED MAGNETITE-GARNET – DIOPSIDE SKARN, COARSE TEXTURE, AND HIGH GRADE MAGNETITE SKARN.
- GEOLOGIC MAPPING TO DATE INADEQUATE TO DIFFERENTIATE DIFFERENT SKARN FACIES.
- SKARN HAS (IN CENTRAL SECTION) GOOD POTENTIAL FOR ASSOCIATED $WO_3$ MINERALISATION.
- OCCURS AT READILY ACCESSIBLE LOCATION RELATIVE TO KARA. N° 1.
- ONLY EASTERN SECTION OF KARA S. DRILLED FOR ASSOC $WO_3$ MINERAL – NO STRONG MAGNETITE POTENTIAL IN THIS E. SEC.

TABLE N° 9B

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830251

# KARA. N° 2 MAGNETITE SKARNS.

(NOTES ON MAGNETITE POTENTIAL)

- CONSIST OF 3 WELL EXPOSED MAGNETITE SKARN ZONES ("MAIN", "EAST" AND "SOUTH" ZONES) BORDERING OR ENCLOSED IN HOUSETOP OR INTRUSIVE AS ROOF PENDENTS.

- ALL SKARNS READILY ACCESSIBLE, FREE OF THICK VEGETATION., FLAT TERRAIN.

- ALL SHOW STRONG MAGNETITE DEVELOPMENT., GOOD POSSIBLE TONNAGE POTENTIAL, OPEN PIT MINING POTENTIAL, WOULD BE GIVEN STRONG PRIORITIES FOR FURTHER INVESTIGATIONS RE MAGNETITE POTENTIAL

- KARA 2 EAST + SOUTH. - LEAST WELL KNOWN OR INVESTIGATED.
  - ONLY PARTIALLY EXPOSED - N°2 EAST ONLY CONSISTS OF SCATTERED MAGNETITE RUBBLE OVER AREA OF 450 x 270 m. N° 2 SOUTH, MORE RESTRICTED SURFACE EXPOSURE OVER AREA OF 75m x 10m. HEMATITIC ON SURFACE - SAVAGE RIVER MINES ACQUIRE 100 TONNES BULK SAMPLE FOR TEST WORK FROM THIS LOCATION.

- KARA. N° 2 - MAIN SKARN -
  - DEPOSIT HAS BEEN COVERED BY CONSOLIDATED MINING LEASE SINCE 26-4-64 - PEARSON. MC 26M/6W.
  - SKARN WELL EXPOSED, TOTAL SKARN DEVELOPMENT COVERS AN AREA OF 1000m x 350m., WITHIN WHICH ARE 5-6 STRONGLY MAGNETIC SUB ZONES.
  - MINES DEPT (1963) COMPLETED GROUND MAG SURVEY AND DRILLED 6 DDH'S. MAINLY IN NORTH PART OF DEPOSIT AND ALONG FLANKS.
  - TASMINEX ALSO COMPLETED 8 PERCUSSION HOLES ALONG FLANKS.
  - DEPOSIT ANTICIPATED TO BE SAUCER SHAPED, NOT OF ANY SIGNIFICANT DEPTH (40m?) DRILLING REQUIRED IN CENTRAL SECTIONS OF SKARN.
  - DEGREE OF OXIDATION AND LEVEL OF MAGNETITE COULD BE A VARIABLE PROBLEM. MAGNETITE CONTENT SEEMS BEST DEVELOPED ALONG WESTERN MARGIN.

SAVAGE RIVER MINES. - EXAMINED KARA. N°2 SKARNS IN JAN-FEB 1976. THEIR EVALUATION CONCLUDED THAT "EXPLORATION WORK COMPLETED BY MINES DEPT AND TASMINEX N.L WAS

TABLE N° 9B
(CONTINUED)

KARA. N° 2.
(CONTINUED).

GENERALLY INADEQUATE FOR PROPER DETERMINATION OF ORE RESERVES" ----- HOWEVER S.R.M. CALCULATED ONE MILLION TONNES OF ORE INFERRED FROM THIS WORK. BREAKDOWN BEING.

| | | |
|---|---|---|
| MAIN ZONE | = | 500,000 TONNES |
| SOUTH ZONE | = | 475,000 " |
| EAST ZONE | = | 25,000 " |

- KARA N° 2 MAIN ZONE - JUSTIFIES FURTHER CONSIDERATION, ESPECIALLY A DETAILED EXAMINATION OF N.E MARGIN (AREA RECENTLY CLEARED 1984-85)

HAS POSSIBLE Sn ASSOCIATION.

DRILL LOGS, CORE, SAMPLES SHOULD BE EXAMINED.

INDIVIDUAL MAGNETITIC SUBZONES TRENCHED/SAMPLED.

EXPLORATION WORK HAD BEEN RECOMMENDED (CHW - M&I 1965) FOR KARA. N° 2 MAIN SKARN ZONE.

TECK CORP EVALUATION (1982-83?) WORK INCLUDED FAVOURABLE METALLURGICAL TEST WORK OF MAGNETITE SKARN FROM MAIN ZONE RE APPLICABILITY AS DENSE HEAVY MEDIUM (COAL WASHERY INDUSTRY).

253

TABLE. N° 9.C.

LOCATION. L.1.

NOTES ON MAGNETITE POTENTIAL.

- ONLY LIMITED AMOUNT OF WORK UNDERTAKEN IN PAST PROJECTS ON THIS SKARN.
- BASICALLY AN AEROMAGNETIC - GROUND MAG' ANOMALY, APPROX SIZE DIMENSIONS ARE 280m (E-W) AND 180m (N-S).
- GOOD LOCATION IN N.E. CORNER OF E.L., AND RELATIVE TO HAMPSHIRE.
- GOOD ROAD ACCESS / FLAT TERRAIN
- ANOMALY IS PARTIALLY SURFACE EXPOSED IN CENTRAL SECTIONS, EXPOSING FRESH UNOXIDISED MAGNETITE RICH SKARN.
- REMAINDER OF ANOMALY NOT EXPOSED OR BOUNDARIES ACCURATELY DELINEATED BY SURFACE WORK TO DATE.
- HOUSETOP GRANITE BORDERS SKARN ON NORTH BORDER, ALSO SUSPECTED ON WEST MARGIN.
- MAGNETIC PATTERN WOULD INDICATE GOOD STRONG MAGNETITE CONTENT, AND SAUCER SHAPED ROOF PENDENT TYPE DEPOSIT OF A FAIRLY SHALLOW 20-30m NATURE.
- TONNAGE POTENTIAL RANGE (MINIMUM) - 500,000 TO 1,500,000 TONNES.
- OVERALL MAX TONNAGE COULD BE SIGNIFICANTLY GREATER - IS A SKARN PROSPECT WHICH DEFINETELY JUSTIFIES ADDITIONAL WORK (ORIENTATION DRILLING - DETAILED GROUND MAGNETICS - TRENCHING)
- N.B. THIS EXPLORATION WORK HAS ACTUALLY BEEN INCLUDED IN THE PROPOSED 1986 E.L. M/68 EXPLORATION WORK. (C.H.W. NOV. 1985).

TABLE Nº. 9.D.

## COMPANION SKARN.

### (NOTES ON MAGNETITE POTENTIAL)

- OCCURS IMMEDIATELY NORTH OF KARA Nº1 – WEST LIMB MAGNETITE SKARNS (GEOLOGIC CONTINUATION)
- REPRESENTED BY A VERY WELL DEVELOPED PRONOUNCED GROUND MAGNETIC ANOMALY – APPROX DIMENSIONS 400m x 120m.
- GROUND MAG ANOMALY / GEOL' INTERP WOULD INDICATE STRIKE CONTINUATION OF KARA Nº1 KEEL AREA., BUT MORE DEEP SEATED AND MORE EXTENSIVELY DEVELOPED.
- TWO DDH's AT LOCATION, ANZECO DDH 147, AND MCINTYRE DDH 219.
- BOTH HOLES SHOWED 50-60m OF GOOD MAG SKARN DEVELOPMENT, HIGH GRADE MAGNETITE.
- PART OF LOC' COVERED BY ALLUVIAL (BORDERS COMPANION RIVER) AND ZONE OF OXIDATION REACHES 27-28m.
- NO ASSOC $WO_3$ MINERALISATION PROVEN.
- GOOD TONNAGE POTENTIAL – 1 MILLION TO 3·2 MILLION TONNES.
- WOULD BE SYSTEMATIC DRILLING PROPOSITION. FURTHER INVESTIGATIONS PROBABLY BEST DEFERRED UNTIL SUCH TIME WEST LIMB DEPOSIT IS EVALUATED AND ITS POTENTIAL ($WO_3$ + Fe) CONFIRMED.

830255

TABLE Nº 9E.

255

# HAMPSHIRE MAGNETITE SKARN.

## (NOTES ON MAGNETITE POTENTIAL).

- EXCELLENT LOCATION, N.W CORNER OF E.L., ADJACENT TO HAMPSHIRE RAILWAY SIDING.
- BASICALLY A BROAD EXTENSIVE GROUND MAGNETIC ANOMALY OF APPROX 1000 m STRIKE LENGTH ALONG NW MARGIN OF HAMPSHIRE GRANITE STOCK.
- STRONGEST SECTION OF ANOMALY OCCURS ON NNW CORNER, COVERING AN AREA OF 400m × 100m SIZE., AND HERE DEPOSIT IS PARTIALLY SURFACE EXPOSED. (LITTLE MAGNETITE SKARN RUBBLE/PEBBLES ETC).
- ANZECO POWER AUGER DRILLING INDICATED MEDIUM TO HIGH LEVEL OF OXIDATION.
- COULD HAVE ASSOCIATED $WO_3$ POTENTIAL. (SOIL GEOCHEM SAMPLING IN NNW SURFACE EXPOSED AREA WERE $WO_3$ ANOMALOUS. PAN CONC SAMPLING OF DRAINAGE HAD SCHEELITE GRAIN COUNTS)
- MAGNETICS COULD REPRESENT A 10-28 m ZONE OF SHALLOW TO MODERATE DIPPING MAGNETIFEROUS SKARN, BORDERING THE INTRUSIVE. MAGNETITE CONTENT PROBABLY INCONSISTENT / LENSES ALONG STRIKE.
- TONNAGE POTENTIAL – COULD BE STRONG, BUT AT THIS STAGE NOT ESTIMATED.
- BECAUSE OF DEGREE OF WEATHERING, THIS SKARN WOULD NOT BE GIVEN TOP PRIORITY FOR FUTURE INVESTIGATIONS (UNLESS ASSOCIATED $WO_3$ MINERALISATION CAN BE CONFIRMED).

830256 TABLE N° 9.F.

256

## BOB'S BONANZA SKARNS.

### (NOTES ON MAGNETITE POTENTIAL)

- THE EASTERN SKARN ZONE (MINED AREA IS PART OF W. ZONE) COULD PROVIDE POTENTIAL MAGNETITE TONNAGES. DEPOSIT NOT LARGE SCALE THOUGH.
- EASTERN SECTION COULD BE STRONGER MAGNETITE TYPE SKARN RATHER THAN GARNET-DIOPSIDE FACIES OF W. SECTION.
- GROUND MAGNETICS COMPLETED, ANOMALY COVERS 400 m STRIKE LENGTH, ZONE ANTICIPATED TO BE 15-20 m WIDE, 40°-60° DIP W.
- ZONE HAS OPEN PIT POTENTIAL, FAVOURABLE LOW STRIPPING RATIO.
- TONNAGE POTENTIAL ESTIMATED AT 250,000 TO 750,000 TONNES.
- SKARN HAS EXCELLENT LOCATION/ACCESS (BORDERS NEW KARA N°1 MILL STOCKPILE SITE!)
- SKARN COULD HAVE POTENTIAL FOR DENSE HEAVY MEDIA TYPE MAGNETITE.
- " " " ASSOCIATED TUNGSTEN POTENTIAL.
- DEPOSIT, ALTHOUGH NOT OF LARGE SCALE TONNAGE POTENTIAL, WOULD JUSTIFY ADDITIONAL INVESTIGATIONS, EG. COSTEANING, SAMPLING, ETC EXAMINING DEGREE OF MAGNETITE DEVELOPMENT, OXIDATION. ETC.

## 8. SUMMARY

The current "order of magnitude" review has shown that high grade magnetite material of quite substantial tonnages could be available from a number of sources within the confines of the Exploration Licence area. These sources, which are all believed to be of open-pit potential, are itemised below. Data available at the current time initially permits the magnetite material to be classified as either reserves (measured and geological), resources or potential.

The E.L. magnetite sources include:-

A - The current stockpile of magnetite tailings at the Kara No. 1 mine site, estimated to total approximately 400,000 to 450,000 tonnes of magnetite material.

B - Mineable Reserves

i) - At the Kara No. 1 tungsten operation, mineable reserves of F and Y magnetite rock skarn total 988,136 tonnes (603,081 tonnes as ore, and 385,055 tonnes waste - Oct. 1983 figures).

ii) - At the proposed Kara North tungsten open pit operation, a total of 326,455 tonnes of mineable reserves of F and Y magnetite rich skarn will be available (172,247 tonnes as ore and 154,208 tonnes as waste).

C - Geological Reserves

i) Kara No. 1 deposit (5600N - 5980N) - total geological reserves of F and Y magnetite rich skarns available at October 1983 total 3,360,031 tonnes.

ii) Within a restricted section of Kara No. 1 East (5820N to 6000N) an initial exercise indicated that:

- 267,600 tonnes of F and Y magnetite rich skarn would be mined inside the proposed tungsten open-pit.
- An additional 644,920 tonnes of F and Y magnetite rich skarn could easily be mined outside the limits of the tungsten open-pit, and it was estimated this tonnage would include approx. 59,800 tonnes of fresh $WO_3$ bearing material averaging 0.40% $WO_3$.

- Other such mineable areas probably exist at Kara No. 1.

iii) - At the Kara North 266 Zone, geological reserves of F and Y magnetite rich skarn are estimated to total 970,848 tonnes at 57.15% Fe.

D - GEOLOGICAL RESOURCES

- The West Limt deposit (5980N - 6220N) shows a possible resource of magnetite rich material totalling 4.9 million tonnes. Over the same strike length F and Y tungsten mineralisation totals 154,000 tonnes of inferred/indicated ore averaging 0.47% $WO_3$.
- Similar geological resources of magnetite skarn would be available from other partially drilled skarns, eg. Eastern Ridge and Location L. 5, but these would be of underground mine potential, and reserves have not been calculated.

E - POTENTIAL MAGNETITE

On review, potential magnetite reserves of a possible open pit nature could be available from six skarn zones on the E.L. Factual subsurface, even surface data is sparse, and generally does not permit even estimates of potential tonnages. However, at least four of the skarns, Location L.1, Kara South, Kara No. 2, Main Zone and Bobs Bonanza could provide significant tonnages and justify additional work.

One additional magnetite skarn on the E.L. - Kara North Magnetite Anomaly - is worthy of mention, because of its potential magnitude. On the basis of drilling on one drill section line (7160N), a possible tonnage of 5.4 million per 100 metre strike distance has been estimated.

GENERAL

- In addition to the above magnetite sources providing a possible supply of metallurgical magnetite, some of them justify test work to investigate their potential use in the coal washery industry. In this respect, the magnetite material at the Kara No. 1 Eastern Section, and potential resources from Bobs Bonanza and the Kara No. 2 Main Skarn should receive attention.

- No review has been made of other known magnetite bodies outside the confines of the E.L. 17/68, and at present not covered by E.L.'s eg. Blythe River, Redwater Magnetite.

Recommendations

If the above 'first pass' tonnage estimates of potential magnetite sources are considered of sufficient size to justify serious consideration in the metallurgical magnetite market, more detailed investigations would be recommended at the following locations:-

- Kara No. 1 Eastern Section, undertaking a more thorough examination (geological, core log inspection, metallurgical testwork,) on available fresh magnetite skarn reserves outside the proposed tungsten operation.

- Surface exploration work (mapping, ground magnetics, trenching, sampling) at the potential magnetite skarns of Kara South, Location L. 1 and the Kara No. 2 main skarn. Two thirds of this work (L.1 and Kara 2) was recommended in the proposed 1986 E.L. 17/68 exploration work (C.H.W. Nov. 1985).

Cliff H. Whitehead,
26th November 1985.

APPENDIX NO.10B

MAGNETITE STUDIES - E.L. 17/68

NO.10B "ASSESSMENT OF SEVEN SAMPLES (MAGNETITE) FOR PRODUCTION OF DENSE MEDIUM GRADE MAGNETITE"

ACIRL - REPORT NO. 09/1444

COAL RESEARCH
INCORPORATED IN N.S.W.
REGISTERED OFFICE 14-30 DELHI ROAD, NORTH RYDE, N.S.W. 2113
TELEPHONE: 887 3777 TELEX: 27257

228

830261

COPY

REPORT TO :

TASMANIA MINES NL

Assessment of Seven Bore-core Samples
for Production of
Dense Medium Grade Magnetite.

REPORT NO. 09/1444

JUNCTION STREET, TERRIGAL, N.S.W., AUSTRALIA. TELEPHONE: (043) 84 3377, 84 4588
P.O. BOX 29, WAITARA, N.S.W. 2077. TELEX: 27257

ACIRL COAL RESEARCH
AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
INCORPORATED IN N.S.W.
REGISTERED OFFICE 14-30 DELHI ROAD, NORTH RYDE, N.S.W. 2113
TELEPHONE: 887 3777 TELEX: 27251

229.

830262

CCG/cb

REPORT TO : Mr. N. Moony,
General Manager,
Tasmania Mines NL,
P.O. Box 815,
BURNIE, TAS, 7320

COPY TO : Mr. C. Whitehead

REPORT ON : Assessment of Seven Borecore Samples for Production of Dense Medium Grade Magnetite.

REFERENCE : Request by Mr. C. Whitehead, 5 February, 1986.

PREPARED BY : C.C. Graham

REPORT NO : 09/1444

DATE : 3 March, 1986

.....
C.C. Graham,
Manager - Coal Preparation

[illegible]

TABLE OF CONTENTS

SUMMARY

Seven samples of crushed borecore labelled HM 1/86 to HM 7/86, supplied by TASMANIA MINES NL, were assessed as potential sources of magnetite for dense medium coal preparation.

The response to laboratory testing in a Davis Tube Magnetics Tester low field strengths and subsequent chemical analysis of the concentrates for oxidation state, indicated that all samples (with t exception of HM 1/86) represented prospective magnetite ore for coal preparation dense medium production.

## INTRODUCTION

Seven samples of Tasmania Mines NL borecore, pre-crushed to approximately -4mm, were received from Mr. C. Whitehead, consulting geologist for Tasmania Mines NL., for preliminary laboratory tests to determine the suitability of the ore for the production of coal washing grade magnetite concentrates.

The samples were described as follows :-

| Code | Approx. Mass (kg) | Described Location |
|---|---|---|
| HM1/86 | 11 | Kara No. 1 |
| HM2/86 | 8 | Kara No. 1 |
| HM3/86 | 11 | Kara No. 1 |
| HM4/86 | 11 | Kara No. 1 |
| HM5/86 | 11 | Comparison Skarn |
| HM6/86 | 11 | Kara North Magnetic Anomoly |
| HM7/86 | 5 | Bob's Bonanza |

## SAMPLE PREPARATION

The samples as received were sampled representatively by rotary samp division and an appropriate portion crushed in a Retsch hammer mill minus 1mm. After further representative subdivision, an appropriate portion was crushed in a Tema disc mill to approximately 95% passing 0.053mm.

The crushed sample was then subdivided representatively to provide t masses required for subsequent analyses.

## TEST SCHEDULE

Each sample was treated in the following manner.

(a) Moisture

The sample was dried in air at 105 degrees Celsius for 2 hours

(b) Percentage Magnetic

The magnetic content of the sample was determined in the Davis Tube apparatus set to achieve the appropriate field strength midway between the magnet pole pieces. The tube inclination w 45 degrees, the machine stroke frequency was 1.08 Hz and the water flow was maintained at 7.4 mL/s.

The test method used was that recommended by the manufacturer the Davis Tube, Eriez Magnetics, but modified to carry out determinations at nominated field strengths. The analysis was carried out on a 15g sample, and the results were reported as percentage of dry solids. Tests were carried out at both 50 a 70 millitesla.

(c) Ferrous to Total Iron Ratio

The concentrates produced at 70 millitesla were subdivided af drying to provide samples for wet chemical analysis to determ the ferrous iron and total iron percentage in the sample.

This work was done by others under sub-contract.

RESULTS

(a) Moisture

| Sample | % Moisture |
|---|---|
| HM 1/86 | 0.7 |
| HM 2/86 | 3.0 |
| HM 3/86 | 0.4 |
| HM 4/86 | 0.7 |
| HM 5/86 | 2.7 |
| HM 6/86 | 0.1 |
| HM 7/86 | 5.5 |

(b) Percentage Magnetic

| Sample | 50 millitesla | | | 70 millitesla |
|---|---|---|---|---|
| | Pass 1 | Pass 2 | Total | |
| HM 1/86 | 52.7 | 14.4 | 67.1 | 65.0 |
| HM 2/86 | 47.5 | 3.7 | 51.2 | 51.2 |
| HM 3/86 | 52.5 | 9.5 | 62.0 | 67.9 |
| HM 4/86 | 48.6 | 4.4 | 53.0 | 53.1 |
| HM 5/86 | 55.1 | 19.5 | 74.6 | 77.0 |
| HM 6/86 | 49.0 | 10.0 | 59.0 | 58.4 |
| HM 7/86 | 64.3 | 11.0 | 75.8 | 77.9 |

(c) Ferrous to Total Iron Ratio

| Sample | Fe++ % | Total Iron % | Ratio |
|---|---|---|---|
| HM 1/86 | 20.1 | 69.8 | 0.29 |
| HM 2/86 | 21.2 | 69.1 | 0.31 |
| HM 3/86 | 21.8 | 70.1 | 0.31 |
| HM 4/86 | 22.3 | 69.5 | 0.32 |
| HM 5/86 | 22.3 | 69.7 | 0.32 |
| HM 6/86 | 21.5 | 69.4 | 0.31 |
| HM 7/86 | 21.4 | 68.3 | 0.31 |

E.L.17/68 ANNUAL REPORT 1985/86

APPENDIX NO. 11

PROPOSED WORK PROGRAMME 1986/87

REPORT A/86

TASMANIA MINES N.L.

EXPLORATION LICENCE 17/86

# PROPOSED WORK PROGRAMME AND ESTIMATED EXPENDITURES

PERIOD - 4TH NOVEMBER, 1986 to 3RD NOVEMBER, 1987

238

# EXPLORATION LICENCE 17/68

## INTRODUCTION & SUMMARY:

In support of an application for the renewal of E.L. 17/68 for a further period of 12 months from November 4th, 1986, Tasmania Mines N.L. submit details of a proposed work programme and estimated exploration expenditures for the period in question.

The proposed programme of exploration work is confined to the area embraced by E.L.17/68, and exclusive of any mine geologic/pre-production work being carried out in the area covered by Consolidated Lease 105M/77. It is envisaged that proposed activities would be continuous throughout the twelve month period, and is in fact a continuation of ongoing activities currently underway by Tasmania Mines N.L.

Estimated exploration expenditures for the proposed work programme to November 3rd, 1987 are calculated at $155,250. Application is made for the renewal of exploration rights for the entire area of 75sq.kms at present covered by E.L.17/68. Attached Plan No. 1 shows the location of proposed exploration activities.

In support of this application, an additional report(Attached Report 8) summarises preliminary details of the nature and results of work completed during the initial ten month period of the current term of E.L.17/68. For the 12 month period ending July 1, 1986, total actual exploration expenditure amounted to $154,304.

The nature of the proposed exploration programme for the forthcoming year is essentially designed to fully evaluate the overall potential of the E.L. area prior to the eventual relinquishment of the E.L. Licence on November 3, 1987.

Proposed work is two fold in nature, details of which are as follows:-

1. EXPLORATORY DRILLING PROGRAMMES.

Drilling of an exploratory nature is proposed for the entire 12 month period, and will be concentrated in areas where previous surface explorative work has been finalised and successful in outlining potential

zones of magnetite skarn buried beneath Tertiary basalt and sediments. Exploration drilling is required to confirm both the presence of these subsurface skarns and of course investigate the possibility of associated tungsten mineralisation.

The drilling programme would be completed by utilising the in-house Tasmania Mines N.L. drill rig and crew.

Areas proposed for investigation would include the following:-
(please refer to attached plan).

a) Between Location L.5 and Eastern Ridge
b) North of Location L.5
c) Location L.1
d) Hampshire Silver Mine
e) North of the Kara North 266 Zone
f) Kara North Magnetite Anomaly
g) Hampshire Magnetite Skarn
h) Location L.13

Dependent upon progressive results, the above proposed exploratory drilling programmes could be modified at any time during the 12 month period. If successful results are obtained, and more extensive infill drilling is required, supplementary budgets will be requested, and if obtained, outside drill contractors will be hired.

2. SURFACE EXPLORATION INVESTIGATIONS:

Ground surveys, both regional and detailed are planned at the following areas and regions -(please refer to accompanying plan). The surveys are proposed in the outlying sections of the E.L. area over areas which require final assessment prior to E.L. relinquishment.

a) Limestone Creek area - a continuation of the 1985/86 surface exploration work, namely an evaluation of known wollastonite units. This work will consist of detailed geologic mapping, structural interpretation and detailed sampling of calc-silicate units in the area.

b) Mt. Misery region - a general geologic appraisal, supplemented by a regional pan concentrate geochemical sampling programme of the regions drainage.

c) Kara No. 2 East and South Skarn Zones - An overall geologic - geophysical evaluation of those skarns in the extreme western sections of the E.L. - both skarns scantily examined in previous exploration programmes.

3. GENERAL:

It is envisaged the overall programme of work proposed above could be completed within the twelve month period in question. The surface exploration investigations are anticipated to be completed by one exploration field crew over a 5 - 6 month period. Ideally this section of work would be finalised during the first half of the year.

4. ESTIMATED EXPENDITURE:

It is believed that the required Department of Mines minimum expenditure for an E.L. covering an area of 75 sq.kms($37,500) will be exceeded.

Although the proposed work programme and estimated expenditures are both subject to modifications and changes dependent upon unforseen circumstances, it is estimated that the exploration expenditures for the above programme during the twelve month period to November 3, 1987 will total $155,250.

A breakdown of this proposed total project expenditure is as follows:

| | |
|---|---|
| a) Diamond drilling | $120,250 |
| b) Surface exploration work | $35,000 |

CLIFF H. WHITEHEAD,
for
TASMANIA MINES N.L.

29th September, 1986.

830274



TASMANIA MINES LIMITED

EXPLORATION LICENCE 17/68

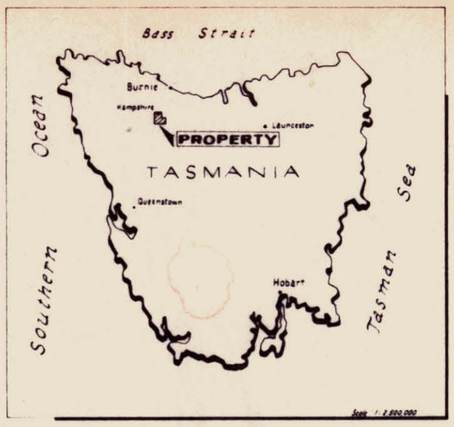
ANNUAL REPORT 1985/86
VOLUME
LIST OF PLANS

830275

# EXPLORATION LICENCE 17/68
# ANNUAL REPORT - 1985/86

## LIST OF PLANS (In separate volume)

| Plan No. | Title | Scale |
|---|---|---|
| 1/86 | E.L. 17/68 - Location Plan of Exploration Work Completed November 1985 - November 1986 | 1:20,000 |
| 2A/86 | Kara No.2 Main Zone | 1:1,200 |
| 2B/86 | Kara No.2 Main Zone Ground Magnetic Survey/Sample Location | 1:500 |
| 2C/86 | Kara No.2 Main Skarn Region Pan Concentrate Samples | 1:500 |
| 3A/86 | Horizontal Creek Region Ground Magnetic Survey/Sample Location | 1:1,000 |
| 3B/86 | Bobs Bonanza Drill Site Locations/ Ground Magnetic Survey | 1:500 |
| 3C/86 | Bobs Bonanza Drill Section Line 5820N | 1:500 |
| 4A/86 | Location L.1 Soil Sample Location Plan | 1:500 |
| 4B/86 | Location L.1 Geochemical Soil Anomalies - Tungsten | 1:500 |
| 4C/86 | Location L.1 Geochemical Soil Anomalies - Tin | 1:500 |
| 4D/86 | Location L.1 Geochemical Soil Anomalies - Lead | 1:500 |
| 4E/86 | Location L.1 Geochemical Soil Anomalies - Molybdenum | 1:500 |
| 4F/86 | Location L.1 Ground Magnetic Survey | 1:500 |
| 5A/86 | Location L.5 to Eastern Ridge Ground Magnetic Survey/Drill Site Location | 1:1,000 |
| 6/86 | Valentines Region Pan Concentrate Sample Location | 1:10,000 |
| 7/86 | Kara South - Evaluation Drilling | 1:500 |
| 8/86 | Eastern Ridge - Evaluation Drilling | 1:250 |
| 9/86 | Limestone Creek - Geological Interpretation | 1:2,500 |




# TASMANIA MINES N.L.

## E.L. 17/68 - KARA PROPERTIES

5 cm

N

SCALE 1:20,000

LOCATION L1

HAMPSHIRE MAGNETITE

HAMPSHIRE/ LOUDWATER CREEK AREA

HAMPSHIRE SILVER MINE

LIMESTONE/ WOLLASTONITE CREEK REGION

LOCATION L13

LOCATION L5

KARA N. EXTENSION

KARA 'N' MAGNETITE

KARA NORTH 268 ZONE

KARA N. COMPANION SKARN

L5 TO E. RIDGE REGION

COMPANION SKARN

EASTERN RIDGE

HORIZONTAL CREEK

KARA N°1

RINGWOOD GRANITE STOCK

KARA GRANITE STOCK

BOBS BONANZA

KARA SOUTH

VALENTINES AREA

HOUSETOP GRANITE

KARA N°2 MAIN ZONE

KARA N°2 EAST ZONE

KARA N°2 SOUTH ZONE

GEOLOGY

RECENT — Alluvium

TERTIARY — Basalt; Conglomerate breccias etc

DEVONIAN — Gravels

GORDON LIMESTONE / TRANSITION BEDS / MOINA SANDSTONE / EMLEN CONGLOMERATE — Limestone; Sandstone with calcareous members; Sandstone and quartzite; Conglomerate and grits

CAMBRIAN — HORNFELS GROUP; ACID VOLCANICS — Hornfels; Acid volcanics; Skarn, garnet

REFERENCE

River; Creek; Road; Track; Railway; Trig. Beacon; Geological Boundary

Base Map enlarged from 1:10,000 Hedges NTM Sheet 2016 & Aerial Photographs

## E.L. 17/68

## COMPLETED WORK PROGRAMME NOV. 1985 - OCT. 1986

= Exploration - Localised investigations

= Exploration - Regional

= Evaluation Drilling

= Exploration Drilling

88-2759

6191

PEARSONS CONSOLIDATED MINERAL LEASE (EXPIRED)
MC 26M/64. 90 acres. 26-4-64. to May 1985.

ANOMALY 1.
ANOMALY 2.
ANOMALY 3.
ANOMALY 4.
ANOMALY 5.
ANOMALY 6

D.D.H.1 -50°
D.D.H.2 -50°
D.D.H.3 -50°
D.D.H.4 Vert.
D.D.H.5
D.D.H.6 -50°
D.D.H.7 -50°
D.D.H.8 -50°
D.D.H.9 -50°
D.D.H.10 -50°
D.D.H.14 -50°
D.D.H.16 -50°
D.D.H.17 -50°
D.D.H.18 -50°

DRILL SECTION A
DRILL SECTION B
DRILL SECTION C
DRILL SECTION D
DRILL SECTION E
DRILL SECTION F

To Rogetta Road
To Roadmetal Quarries
To Kara No 2 Sawmill
To Upper Natone Road
QUARRY

LONGITUDINAL SECTION LINE

LEGEND

- Mines Dept. Diamond Drill Hole
- Tasminex Diamond Drill Hole
- Skarn / Granite Contact
- K2/10 Rock Sample Location
- 1100 Sn / 300 $WO_3$ Results in P.P.M.

MAGNETIC BLOCKS
- > 50,000 Gammas
- 40 – 50
- 30 – 40
- 20 – 30
- 10 – 20
- < 10000 Gammas

N

5 cm

0 50 100 150 ft.
0 10 20 30 40 50 m.
SCALE: 1:1200

BASE MAP & GROUND MAGNETIC CONTOURS Compiled from Mines Dept. Report No 2312 – 36.

830277

88-2759

TASMANIA MINES LIMITED

KARA No 2 — MAIN SKARN
E.L. 17/68

| | | |
|---|---|---|
| DRAWN: C.H.W. | SCALE: 1:1200 | PLAN 2A/86 |
| TRACED: T.G.D.S. | DATE: July, 1981 | |

6192

6193

LINE 10 N
TRENCH 10 N.
LINE 9 N
LINE 8 N
LINE 7 N
LINE 6 N
LINE 5 N
LINE 4 N
TRENCH 4 N
LINE 3 N
LINE 2 N
LINE 1 N
LINE 0
LINE 1 S
LINE 2 S
LINE 3 S
LINE 4 S
TRENCH 4 S.
LINE 5 S
LINE 5·5 S
LINE 6 S
LINE 6·5 S
LINE 7 S
LINE 7·5 S
LINE 8 S
LINE 8·5 S
LINE 9 S
LINE 10 S
LINE 11 S
LINE 12 S
DDH'S 505 506

LEGEND

SOIL GEOCHEMISTRY

SAMPLE No. 1 2 3 4 = TRENCH SAMPLE
ASSAY Sn ppm 5000 425 3170 2100

X 325 Sn ppm = SOIL SAMPLE

MAGNETICS

= 59,000 – 60,000 gammas
= 60,000 – 61,000
= 61,000 – 62,000
= 62,000 – 63,000
= 63,000 – 64,000
= 64,000 – 65,000
= >65,000 gammas

5 cm

Metres
10 5 0 10
SCALE 1:500

830278

88-2759

TASMANIA MINES N.L.

E.L. 17/68

KARA NO. 2 MAIN ZONE

# GROUND MAGNETICS
# SOIL GEOCHEMISTRY

PLAN No. 2B / 86

| DRAWN: C.H.W. | TRACED: T.G.D.S | SCALE: 1:500 | DATE: Jan. 1986 |
|---|---|---|---|

6193

LEGEND

GRANITE CONTACT

DRAINAGE

RIVER

ROAD

TRACK

PAN CONCENTRATE SAMPLE LOCATION

TO UPPER NATONE RIVER

KARA No. 2 MAIN ZONE

KARA No. 2 EAST

BLYTHE

830279

5 cm

N

100 0 100 200 300 400 500

METRES

TASMANIA MINES LIMITED

E.L. 17/68

# KARA No. 2 MAIN SKARN REGION

| | | |
|---|---|---|
| DRAWN: C.H.W. | SCALE: 1:7 200 | PLAN No. |
| TRACED: T.G.D.S. | DATE: FEB.'86 | 2C/86 |

88-2759

6194

7 800 E.

8 000 E.

8 200 E.

6 200 N.

6 000 N.

5 800 N.

5 600 N.

5 400 N.

HORIZONTAL CREEK

LEGEND

X No. 11 = Pan Concentrate Sample

- 616 = Magnetic Reading

20 10 0 10 20 30 40 metres

N

830280

5 cm

TASMANIA MINES LIMITED

E.L. 17/68 KARA PROPERTIES

HORIZONTAL CREEK REGION

GROUND MAGNETIC SURVEY

AND SAMPLE LOCATION

PLAN No.

| DRAWN: | TRACED: T.G.D.S. | SCALE: 1:1000 | DATE: Dec '87 | 3A / 86 |
|---|---|---|---|---|

88-2759

6195

7600 E. 7700 E. 7800 E.

TO EASTERN RIDGE (CREEK 380m)

5900 N.

64,000 62,000 66,000 68,000 70,000 72,000 74,000

BOB'S BONANZA ACCESS ROAD

TERTIARY VALLEY (45m Basalt + 35m Sediments)

5840 N.

A.H.243 A.H.242 DDH 504 DDH 500 DDH 501 DDH 502 DDH 503

Mt Skarn

D.D.H.322 D.D.H.310 D.D.H.309

A. B. C. D.

DRAIN

D.D.H.141

5800 N.

22m @ 1.45% $WO_3$

D.D.H.114 D.D.H.123

A.H.212 A.H.213 A.H.214

GRANITE

BOB'S BONANZA PIT

BASALT

LOWER SKARN UNIT

A.H.119 Tr. 38

5760 N.

A.H.120 A.H.126 A.H.125 A.H.124 A.H.123

D.D.H.142 D.D.H.140 D.D.H.117

DD.H.308 A.H.122

5720 N.

A.H.9 A.H.1 A.H.2 A.H.8 A.H.10 A.H.121 A.H.3 A.H.7 A.H.11 A.H.4 A.H.6 A.H.16 A.H.17 A.H.12 A.H.5 A.H.18 A.H.13 A.H.19 A.H.14 A.H.15 A.H.20 A.H.21 A.H.22 A.H.23

UPPER SKARN UNIT

UPPER SANDSTONE UNIT

A.H.209 A.H.208 A.H.207 A.H.219 A.H.218 5m @ 0.85% A.H.217 A.H.30 A.H.29 A.H.28 A.H.27 A.H.26 A.H.25 A.H.216 A.H.215

D.D.H.119 A.H.24

5700 N.

5680 N.

LOWER SST. UNIT

Tr. 39 AH.96

Tr. 40

To Kara No 1.

3m @ 0.21%

N

MAGNETICS:

- < 60,000 Gammas
- 60,000 – 62,000
- 62,000 – 64,000
- 64,000 – 66,000
- 66,000 – 68,000
- 68,000 – 70,000
- 70,000 – 72,000
- > 72000

- AIR-TRACK HOLES
- DIAMOND DRILL HOLES

10 5 0 10 20 Metres

SCALE 1:500

5 cm

830281

6196

TASMANIA MINES LIMITED

# BOB'S BONANZA

## GEOLOGY, GROUND MAGNETICS DRILL SITE LOCATIONS

| | | |
|---|---|---|
| DRAWN C.H.W. | SCALE 1:500 | PLAN No. |
| TRACED T.G.D.S. | DATE June 1986 | 3B / 86 |

88-2759

WEST

EAST

7600E

7800E

D.D.H. 141 -90°

D.D.H. 310 -83°

D.D.H. 309 -60°

D.D.H. 322 -65°

D.D.H 500 -85°

530m

520m

500m

480m

460m

440m

420m

Tb

Tbs

Tgd

Tgde

Tu

Tm(45)

Tm(60)

Tm(50)

Tcd

Tse

Te

Tsc

Tm

Tmc

QTgd

Fault Clay

Q

Qs

Qsn

Qn

QE

G

NC

SS

V

36.27m

54.86m

105.11m

5 cm

830282

7700E

BASALT

UNDIFFERENTIATED SKARN

UPPER SKARN UNIT

UPPER SANDSTONE

LOWER SKARN UNIT

LOWER SANDSTONE

GRANITE

10 5 0 10 20 Metres

SCALE 1:500

6197

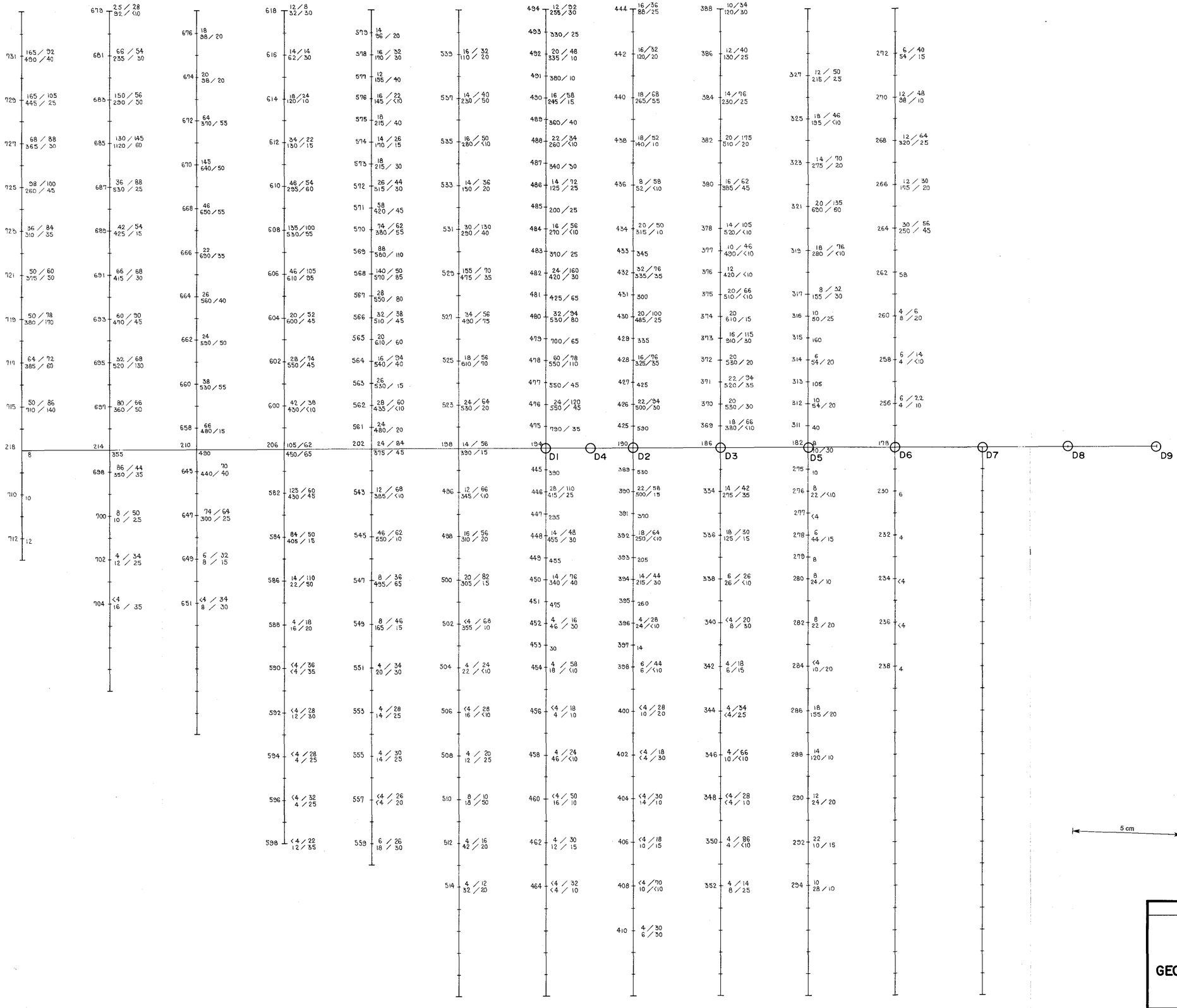
TASMANIA MINES LIMITED

# BOB'S BONANZA

## SECTION LINE 5820 N.

| | | |
|---|---|---|
| DRAWN: C.H.W. | SCALE: 1:500 | PLAN No. 3C/86 |
| TRACED: T.G.D.S. | DATE: June 1986 | |

88-2759




LEGEND:

$O_{D1}$ = AIR TRACK DRILL LOCATION SITE

Sample No. 311 — 10 / 20 Mo / Pb; 520 / 30 Sn / $WO_3$

N

10 5 0 10 Metres

SCALE 1:500

5 cm

NOTE:
GRID NOT SURVEYED ACCURATELY

830283

88-2759

TASMANIA MINES N.L.

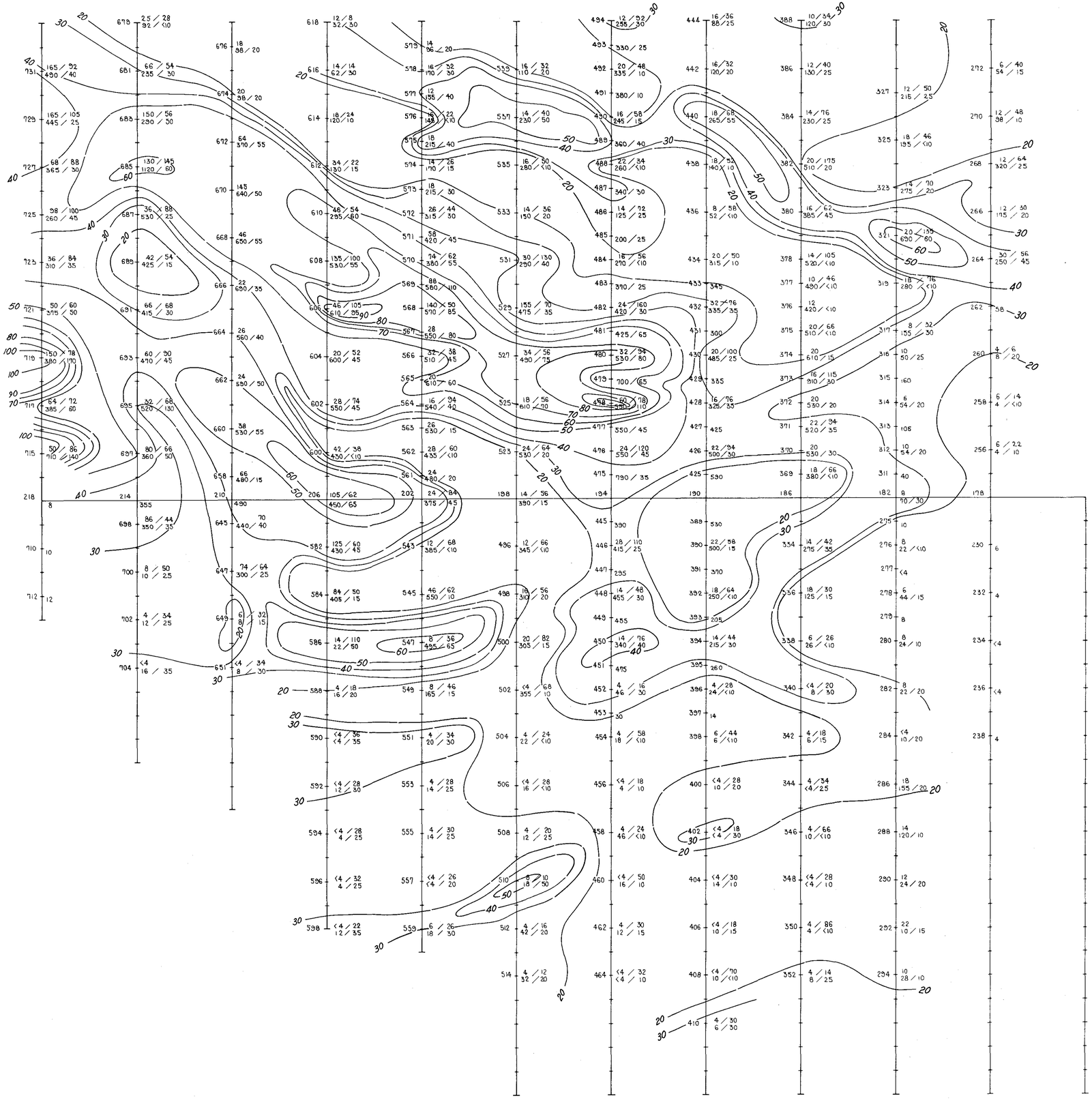
E.L. 17/68

LOCATION L1

**GEOCHEMICAL SOIL SAMPLE LOCATIONS AND DRILL SITE LOCATIONS**

| DRAWN: C.H.W. | TRACED: T.G.D.S. | SCALE: 1:500 | DATE: June 1986 | PLAN NO. 4A/86 |
|---|---|---|---|---|

6198




LEGEND

- >100
- 90 - 100
- 80 - 90
- 70 - 80
- 60 - 70
- 50 - 60
- 40 - 50
- 30 - 40
- 20 - 30
- <20

NOTE
GRID NOT SURVEYED ACCURATELY

830284 88-2759

TASMANIA MINES N.L.

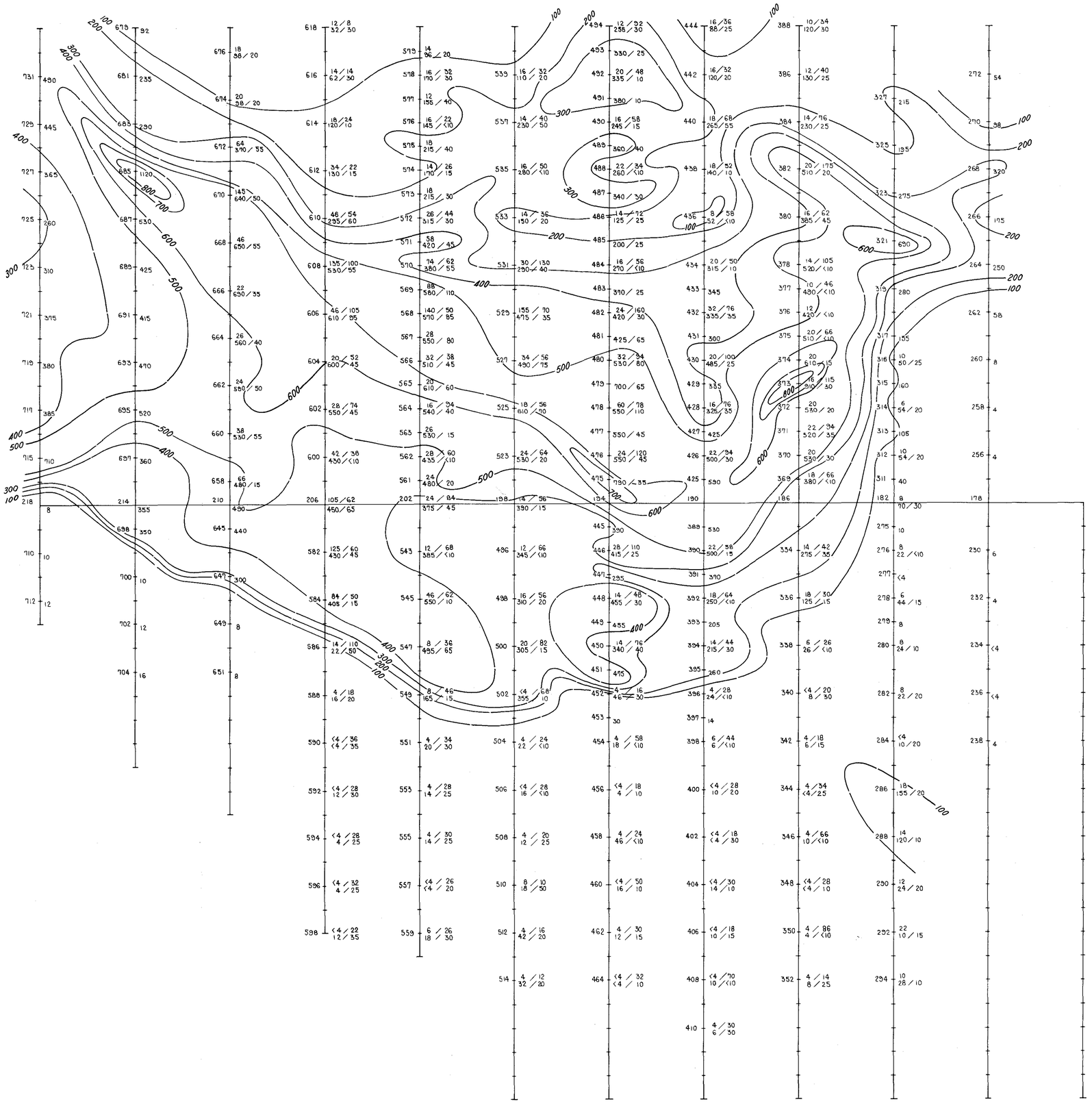
E.L. 17/68

LOCATION L 1

# GEOCHEMICAL SOIL ANOMALIES
# TUNGSTEN

6199

| DRAWN: C.H.W | TRACED: T.G.D.S | SCALE: 1:500 | DATE: March '86 | PLAN NO. 48/86 |
|---|---|---|---|---|




LEGEND

- > 800 p.p.m. Sn
- 700 - 800
- 600 - 700
- 500 - 600
- 400 - 500
- 300 - 400
- 200 - 300
- 100 - 200
- < 100

Sample No. 311 — 10 / 20 Mo / Pb; 520 / 30 Sn / $WO_3$

5 cm

N

10 5 0 10 Metres

SCALE 1:500

NOTE
GRID NOT SURVEYED ACCURATELY

830285

88-2759

TASMANIA MINES N.L.

E.L. 17/68

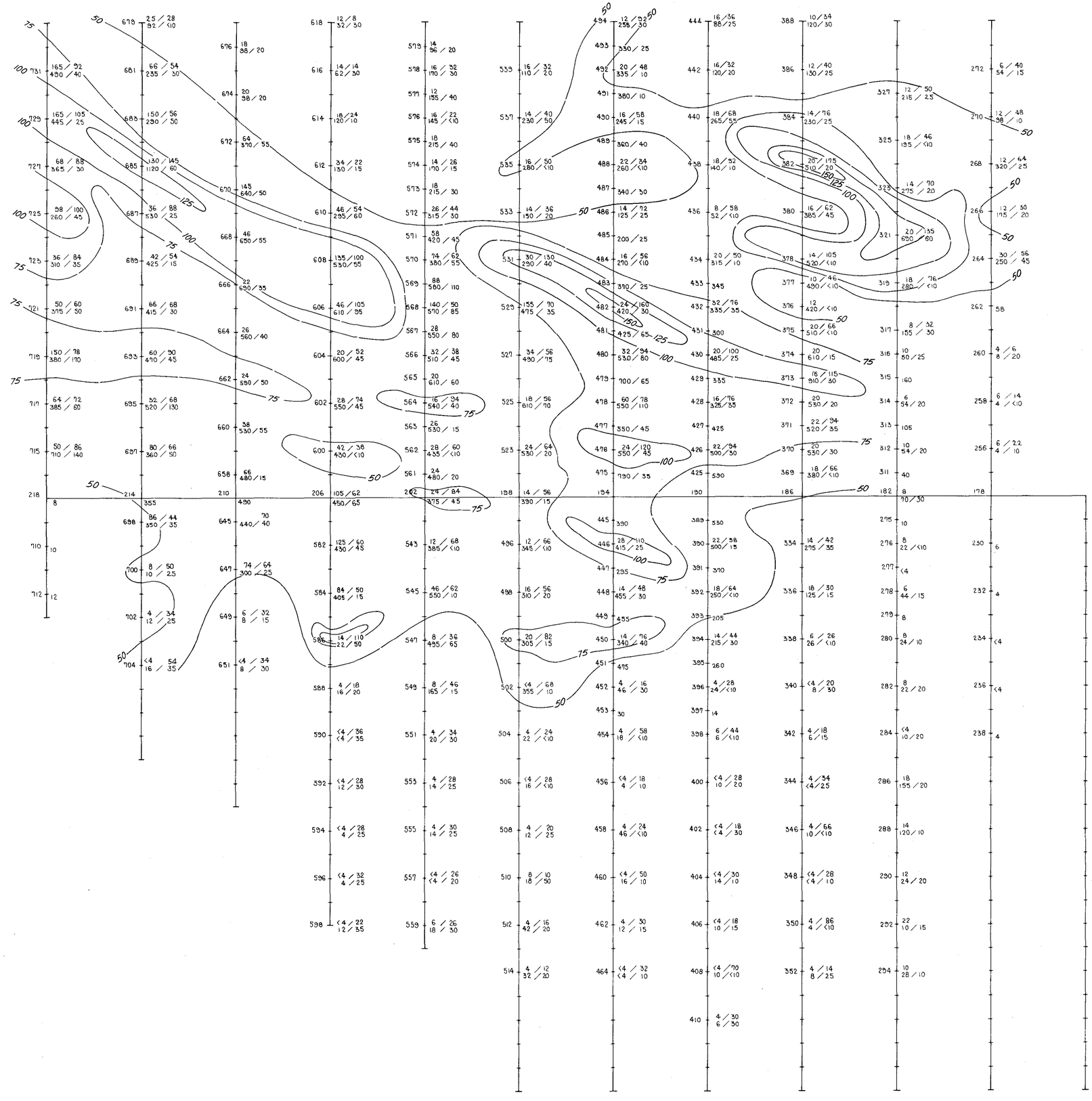
LOCATION L1

GEOCHEMICAL SOIL ANOMALIES

TIN

| DRAWN: C.H.W. | TRACED: T.G.D.S. | SCALE: 1:500 | DATE: March '86 | PLAN NO. 4C/86 |
|---|---|---|---|---|

6200




830286

NOTE
GRID NOT SURVEYED ACCURATELY

88-2759

TASMANIA MINES N.L.

E.L. 17/68

LOCATION L I

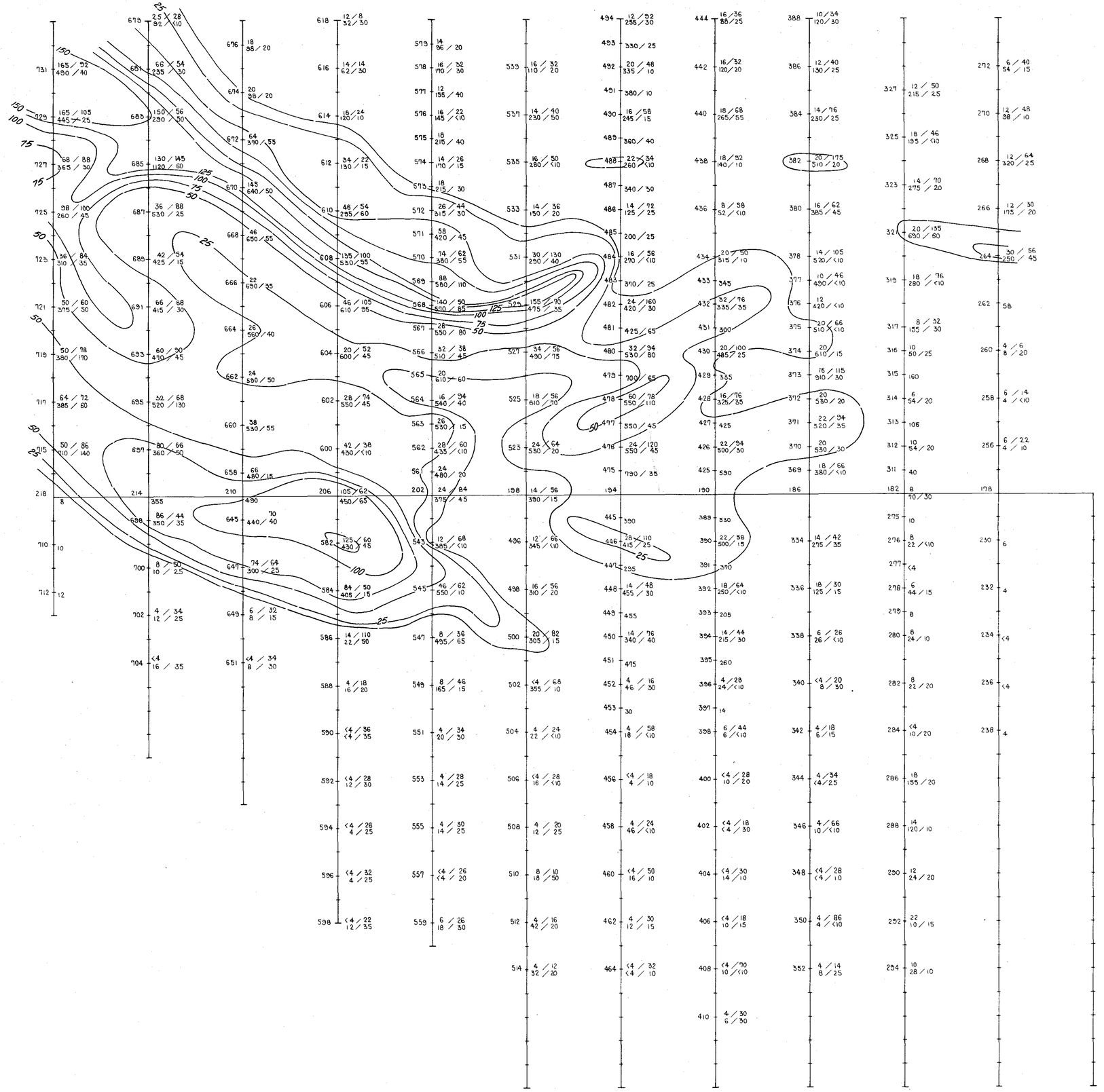
GEOCHEMICAL SOIL ANOMALIES

LEAD

6201

620

| DRAWN: C.H.W | TRACED: T.G.D.S. | SCALE: 1:500 | DATE: March '86 | PLAN NO. 4D/86 |
|---|---|---|---|---|




LEGEND

- > 150
- 125 - 150
- 100 - 125
- 75 - 100
- 50 - 75
- 25 - 50
- 20 - 25
- <20

NOTE
GRID NOT SURVEYED ACCURATELY

830287

88-2759

TASMANIA MINES N.L.

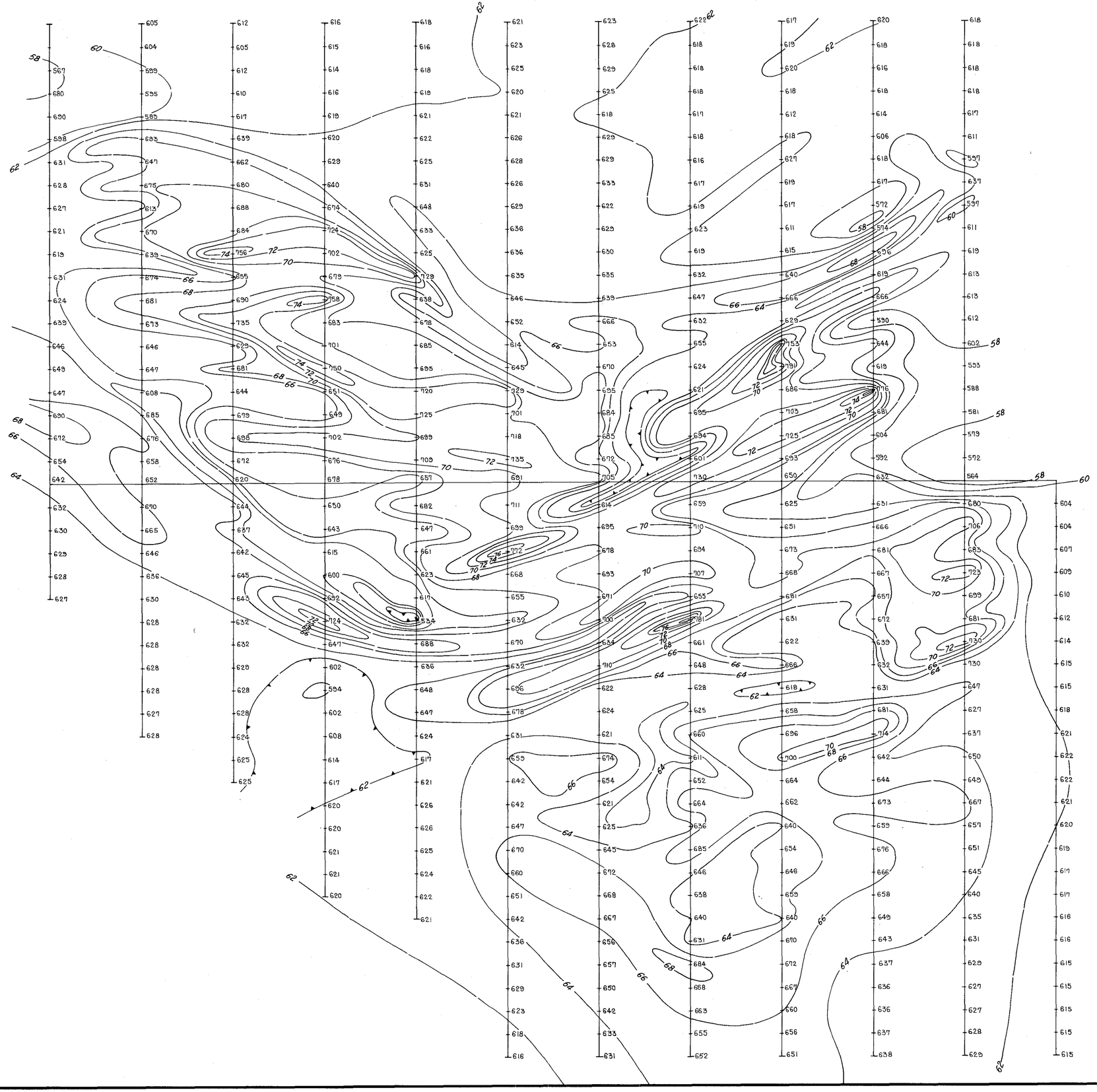
E.L. 17/68

LOCATION L I

# GEOCHEMICAL SOIL ANOMALIES
# MOLYBDENUM

6202

| DRAWN: C.H.W. | TRACED: T.G.D.S. | SCALE: 1:500 | DATE: March '86 | PLAN NO. 4E/86 |
|---|---|---|---|---|




830288

88-2759

| TASMANIA MINES N.L. | | | | |
|---|---|---|---|---|
| E.L. 17/68 | | | | |
| LOCATION L I | | | | |
| GROUND MAGNETICS | | | | |
| DRAWN: C.H.W | TRACED: T.G.D.S. | SCALE: 1:500 | DATE: March '86 | PLAN NO. 4 F/86 |

6203

L5 LOCATION

6204

COMPANION RIVER

7400N.

7200N.

7000N.

6800N.

6600N.

KARA NORTH
MAGNETIC ANOMALY

D.D.H.6
D.D.H.5
D.D.H.321
D.D.H.146
D.D.H.287
D.D.H.289
D.D.H.320
D.D.H.317
D.D.H.288
D.D.H.318

DDH 510
476·7m

DDH 508/509
482·6m

DDH 511
524·11m

D.D.H. 147
D.D.H. 319
D.D.H. 277
D.D.H.151
D.D.H.274
D.D.H./203
D.D.H.202
D.D.H.150
D.D.H.272

EASTERN RIDGE

7400E.
7600E.
7800E.
8000E.

5 cm

830289
88-2759

LEGEND:

| | |
|---|---|
| > 65,000 Gammas | 61 - 62 |
| 64 - 65 | 60 - 61 |
| 63 - 64 | 59 - 60 |
| 62 - 63 | < 59 |

TASMANIA MINES LIMITED

KARA TUNGSTEN PROJECT, TASMANIA

GROUND MAGNETIC SURVEY
AND DRILL SITE LOCATIONS

PLAN No 5A / 86

| DRAWN: C.H.W. | TRACED: T.G.D.S. | SCALE: 1:1000 | DATE: Nov'86 |
|---|---|---|---|

396 000 mE

397 000 mE

5 424 000 mN

5 423 000 mN

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

G167

G166

## LEGEND

GRANITE CONTACT

DRAINAGE

RIVER

ROAD

TRACK

PAN CONCENTRATE SAMPLE LOCATION

5 cm

N

830290

100 0 100 200 300 400 500

METRES

TASMANIA MINES LIMITED

E.L. 17/68

# VALENTINES REGION

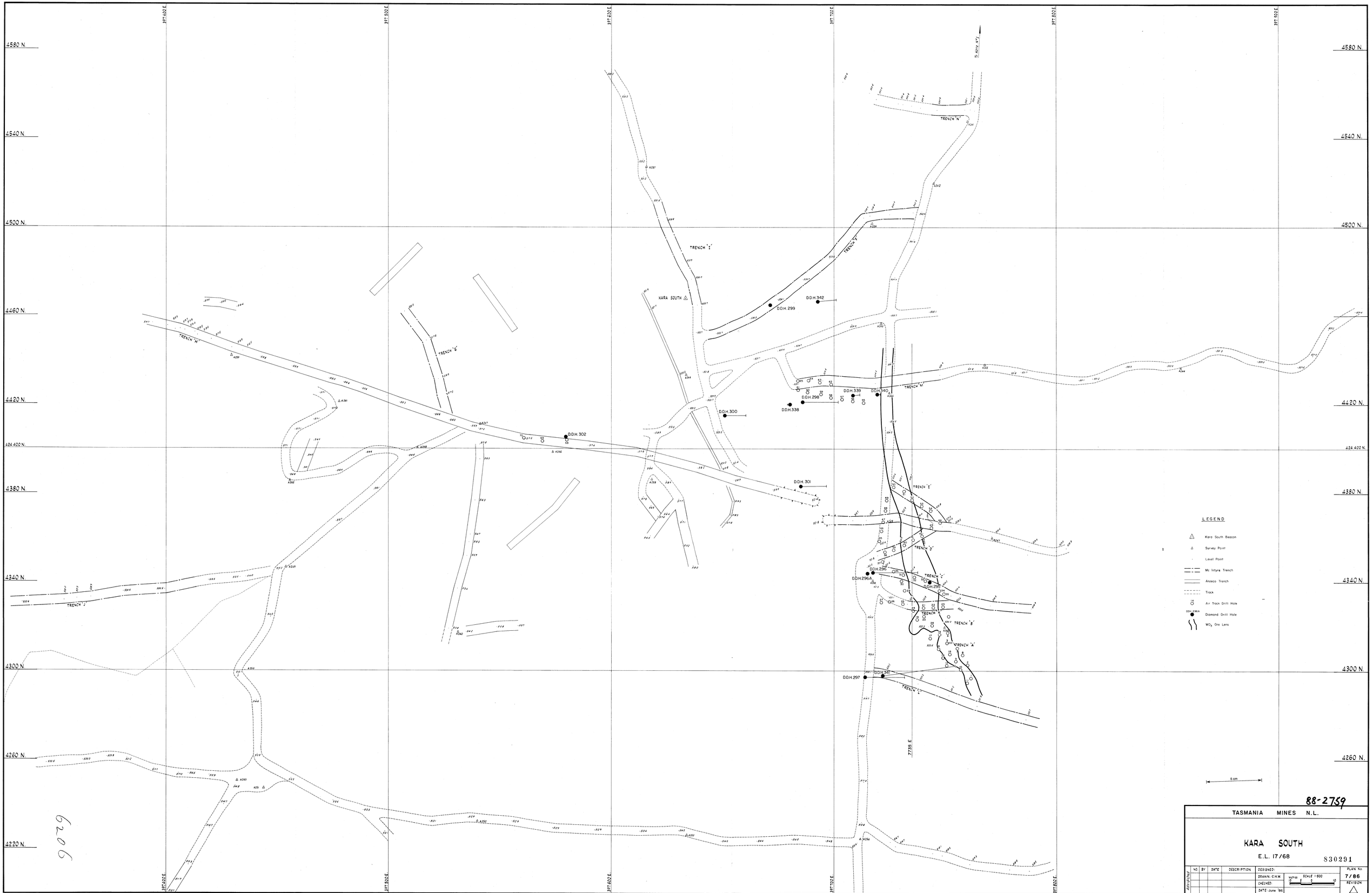
PAN CONCENTRATE SAMPLE LOCATIONS

| | | |
|---|---|---|
| DRAWN : C H W | SCALE : 1:10 000 | PLAN No. 6/86 |
| TRACED : T.G.D.S. | DATE : OCT.' 86 | |

6205

6205

88-2759




88-2759

TASMANIA MINES N.L.

KARA SOUTH

E.L. 17/68

830291

| NO. | BY | DATE | DESCRIPTION |
|---|---|---|---|
| | | | |

DESIGNED:
DRAWN: C.H.W.
CHECKED:
DATE: June '86

SCALE 1:800

PLAN No. 7/86

REVISION

6206

6206

7600 E.
7650 E.
7700 E.
7750 E.
7800 E.
6300 N.
6250 N.
6200 N.
D.D.H. 271 -45°
D.D.H. 275 -55°
D.D.H. 138 -50°
D.D.H. 139 -70°
D.D.H. 323 -54°
D.D.H. 507
D.D.H. 276 -55°
D.D.H. 325 -55°
D.D.H. 324 -50°
D.D.H. 143 -75°
475m Level
485m Level
495m Level
East Kara Creek
Gully Creek
A211
A212
470
480
490
460
450
280

GEOLOGY

- BASALT
- UNDIFFERENTIATED SKARN
- UPPER SKARN UNIT
- UPPER SANDSTONE
- LOWER SKARN
- LOWER SANDSTONE
- GRANITE

5 cm

LEGEND

- McINTYRE MINES DIAMOND DRILL HOLE
- ANZECO DIAMOND DRILL HOLE
- TRENCH ASSAY VALUES (Expressed in ppm or %)
- PRE-PRODUCTION HOLES

830292
88-2759

TASMANIA MINES N.L.

# EASTERN RIDGE (SOUTHERN EXTENSION)

6207

## GEOLOGY AND TRENCH ASSAY VALUES

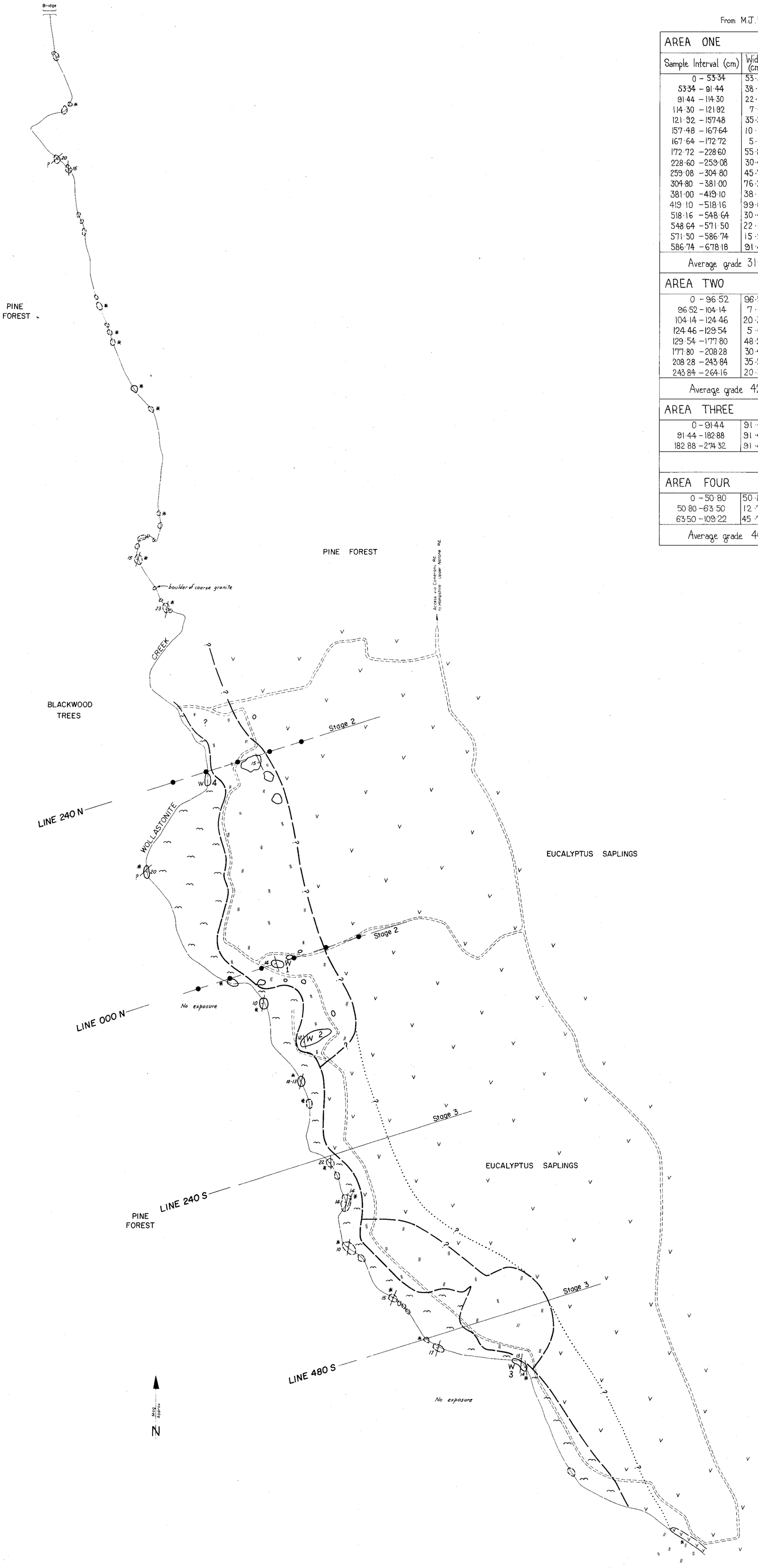
| REVISIONS | NO. | BY | DATE | DESCRIPTION |
|---|---|---|---|---|
| | | | | |

DESIGNED: C.H.W.
DRAWN: T.G.D.S.
CHECKED:
DATE JULY '86
SCALE 1:250 (Metres 0 2.5 5 5)

PLAN No. 8/86
REVISION

From M.J. Longman 1961 Tasmanian Department of Mines report, no. 6.

| Sample Interval (cm) | Width (cm) | Wollastonite $CaCO_3$ % | Lithotype |
|---|---|---|---|
| **AREA ONE** | | | |
| 0 – 53·34 | 53·34 | 32·7 | Hornfels containing wollastonite. |
| 53·34 – 91·44 | 38·10 | 5·6 | Banded chert. |
| 91·44 – 114·30 | 22·86 | 45·6 | Hornfels composed dominantly of wollastonite. |
| 114·30 – 121·92 | 7·62 | — | No sample. Badly weathered limestone. |
| 121·92 – 157·48 | 35·56 | 33·6 | Hornfels with wollastonite. |
| 157·48 – 167·64 | 10·16 | 13·4 | Banded chert. |
| 167·64 – 172·72 | 5·08 | 9·8 | Impure limestone. |
| 172·72 – 228·60 | 55·88 | 53·1 | Hornfels with small lenses of limestone. |
| 228·60 – 259·08 | 30·48 | 4·3 | Banded chert. |
| 259·08 – 304·80 | 45·72 | 42·6 | Hornfels composed dominantly of wollastonite. |
| 304·80 – 381·00 | 76·20 | 25·3 | Hornfels containing wollastonite. |
| 381·00 – 419·10 | 38·10 | 14·2 | Alternating bands of chert containing wollastonite (?). |
| 419·10 – 518·16 | 99·06 | 44·5 | Alternating bands of hornfels, chert and limestone. |
| 518·16 – 548·64 | 30·48 | 27·7 | Chert bands containing wollastonite (poorly bedded). |
| 548·64 – 571·50 | 22·86 | 31·3 | Limestone and wollastonite hornfels. |
| 571·50 – 586·74 | 15·24 | 20·6 | Alternating bands of chert and hornfels. |
| 586·74 – 678·18 | 91·44 | 20·8 | Limestone and wollastonite hornfels. |
| Average grade 31·5%. Grade rejecting chert bands 34·1%. | | | |
| **AREA TWO** | | | |
| 0 – 96·52 | 96·52 | 60·0 | Wollastonite hornfels. |
| 96·52 – 104·14 | 7·62 | 10·2 | Banded cherts. |
| 104·14 – 124·46 | 20·32 | 64·8 | Wollastonite hornfels. |
| 124·46 – 129·54 | 5·08 | 14·8 | Banded chert. |
| 129·54 – 177·80 | 48·26 | 46·3 | Wollastonite hornfels with limestone lenses. |
| 177·80 – 208·28 | 30·48 | 2·9 | Banded chert. |
| 208·28 – 243·84 | 35·56 | 18·8 | Limstone with wollastonite hornfels. |
| 243·84 – 264·16 | 20·32 | 10·4 | Banded chert. |
| Average grade 42·5%. Grade rejecting chert bands 52·0%. | | | |
| **AREA THREE** | | | |
| 0 – 91·44 | 91·44 | 12·1 | Banded chert containing wollastonite. |
| 91·44 – 182·88 | 91·44 | 16·3 | Banded chert containing wollastonite. |
| 182·88 – 274·32 | 91·44 | 24·5 | Banded chert containing wollastonite. |
| Average grade 17·6% | | | |
| **AREA FOUR** | | | |
| 0 – 50·80 | 50·80 | 53·9 | Wollastonite hornfels with limestone lenses |
| 50·80 – 63·50 | 12·70 | 9·2 | Chert bands. |
| 63·50 – 109·22 | 45·72 | 49·0 | Wollastonite hornfels with limestone lenses |
| Average grade 46·5%. Grade rejecting chert bands 52·0%. | | | |




LEGEND:

- Recent Alluvium
- Tertiary Basalt
- Gordon Limestone (Transition Series). [Calc-silicates, re-crystallised l/s., quartzites (cherts), hornfels.]
- Inferred Surface Geological Boundary
- Inferred Surface Geological Boundary (doubtful).
- Postulated sub-outcrop of Gordon Limestone (Transition Series) beneath Tertiary Basalt and basaltic scree.
- Dip and Strike.
- Dip and Strike approximate or validity of outcrop doubtful.
- Outcrop.
- Outcrop, Wollastonite observed in field.
- Outcrop number; 1-4 equals Longman's (1961) outcrop areas.
- Outcrop, specimen collected.
- Access tracks.
- Proposed drill holes. (Stage 2)
- Proposed stage 3 drill holes (holes not shown).

5 cm

830293

TASMANIA MINES LIMITED

E.L. 17/68
WOLLASTONITE CREEK

**GEOLOGICAL INTERPRETATION**

DRAWN BY : M.P.E.
DRAFTSMAN : T.G.D.S.
DATE : Oct 1985
REVISIONS :
FILE NO.

SCALE: 1:2500 (50 25 0 50 100 Metres)

PLAN - 9/86

88-2759