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CRA EXPLORATION PTY. LIMITED

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# EL 35/92 ANDERSON'S CREEK, TASMANIA
# REPORT ON EXPLORATION FOR THE SECOND YEAR OF TENURE, 17/3/94 TO 16/3/95.





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# 1. SUMMARY

CRAE is investigating the potential of the Anderson's Creek Ultramafic Complex (ACC), which crops out within EL 35/92, for bulk, low grade Ni-sulphide resources. Work undertaken during the reporting period involved:

- Identifying prospective stratigraphy.
- Testing this stratigraphy by geochemical sampling and IP/resistivity survey.

Review of previous drilling, geological mapping and rock chip sampling highlighted three areas prospective for Ni-sulphide resources:

- The ACC underlying a one sq km area of outcropping nickeliferous laterite at **Barnes Hill** (481000mE 5437000mN) has not been tested by deep drilling. Drilling of the lateritic profile by King Island Scheelite (1947) Ltd. (KIS) intersected ?fresh serpentinite with Ni values up to 0.64% (no recorded sulphides).
- Rodingite dykes outcrop within a 0.5 sq km area of the ACC (481500mE 5435000mN). ?Fresh serpentinite intersected in Mineral Resources Tasmania (MRT) drilling in this area assayed up to 0.43% Ni - this was attributed to garnierite. Inspection of this drill core revealed sulphide veinlets in the alteration halos of some dykes.
- Cumulate layered pyroxenite-gabbronorite with rare pyrrhotite-chalcopyrite-pentlandite mineralisation outcrops over two sq km in the NW and W of the ACC (479500mE 5441000mN). This stratigraphy has not been tested by drilling.

In addition, the faulted contact between the ACC and host Cambrian quartzite-slate-chert sequence intersected in DDH Scotts Hill1 graded 3 m @ 0.94 (1.04) g/t Au (from selected reassay of drill core). A large structurally controlled Au resource at this contact is a valid target given the contact is untested over its exposed eight km extent (except for DDH Scotts Hill1), and significant Au mineralisation occurs nearby at Beaconsfield.

Soil sampling over the cumulate layered pyroxenite-gabbronorite returned weakly elevated Ni-Cu over 180 m up to 676 ppm Ni, downgrading the potential for significant outcropping or subcropping Ni-sulphides within the area sampled.

Soil geochemistry collected over the ACC/Cambrian contact returned a maximum point value of 0.4 ppm Au. Elsewhere, As values up to 217 ppm were detected, but lacked elevated Au. An outcropping silica-flooded zone at the contact was not anomalous in Au or As. No additional follow-up work is currently planned.

A program of orientation pisolite sampling was undertaken at **Barnes Hill** to determine whether Ni-sulphide mineralisation (if present) hosted by serpentinite underlying the laterite profile could be discriminated geochemically in pisolite. Results from this work are:

- A weak, 100 m PGE anomaly in the east of the traverse, up to 0.8 ppb Pd and 1.2 Pt.

- A weak 200 m Ni:Co ratio anomaly (without elevated PGE's) in the west of the traverse.

No prominent geochemical anomalies were indicated by the data.

Approximately 3.5 line km of IP data was collected along a single line profiling the ACC including the nickeliferous laterite cover at **Barnes Hill.** Preliminary interpretation of the data indicates the ultramafic has unusually high phase values over 2500 m with areas regularly exceeding 50 mrad. The response is strongly horizontally stratified, suggesting the cause is not exposed at surface. More intense chargeability anomalies occur within 300 m of the W and E contacts of the ACC. Theoretically the response is too strong to be caused by magnetite, graphite is not known in the body, and serpentinite is non-chargeable. Therefore it is feasible to suggest the anomalies are due to disseminated sulphides in the ACC at depth.

The major focus for exploration in 1995 will be testing anomalies identified in IP data by diamond drilling.

## 2. INTRODUCTION

EL 35/92 Anderson's Creek was granted on the 17th of April 1993. The exploration licence encompasses an area of 65 sq km and is located on the Tamar 8215 1:100,000 map sheet as shown in Plan Tv 668. This report details all exploration activities conducted within EL 35/92 by CRAE during the period 17.3.94 to 16.3.95.

Exploration activities by CRAE elsewhere in Australia have led to the recognition that certain types of ultramafic complex may host low-grade Ni mineralisation in a form that offers superior metallurgical characteristics to the conventional pyrrhotite-pentlandite ores. Whilst the mechanism to produce this style of mineralisation is not yet understood, serpentine development and low Fe may be key requirements.

The AAC crops out or is covered by residual laterite over an area of 12 sq km. BHP airborne magnetic data show the ACC to have a strike extent of 19 km (Newman, 1965), covered to the north and south by post-Cambrian sediments. Laterite developed on the serpentinite is nickeliferous. Despite extensive drilling of this laterite, the underlying serpentinite is relatively untested. CRAE is investigating the potential of this serpentinite to host bulk, low-grade Ni-sulphide resources.

The location of RAP areas, AHARE areas, and other important land status classifications within EL 35/92 are shown on Plan Tv 669.

## 3. CONCLUSIONS

Unusually high phase values over 2500 m in IP data from a 3500 m traverse profiling the ACC probably indicates disseminated sulphides at depth hosted by the ACC.

The perceived potential for a large, structurally controlled Au resource at the ACC/Cambrian contact has been significantly downgraded by patchy and typically low geochemical results from a soil sampling program testing this contact.
Prominent Ni-Cu-Co-PGE anomalies were not interpreted in pisolite geochemical data from laterite developed over serpentinite at **Barnes Hill**. This is consistent with either significant Ni-Cu-Co-PGE sulphide mineralisation hosted by the serpentinite having a subtle (invisible) geochemical signature, or an absence of this type of mineralisation at the top of the serpentinite.

Prominent Ni-Cu-Co anomalies were not interpreted in C-horizon geochemical data collected in the vicinity of mineralised layered cumulate pyroxenite-gabbronorite rocks. This is consistent with only trace amounts of Ni-Cu-Co sulphide being present within outcropping/subcropping layered cumulates within the area sampled.

## 4. RECOMMENDATIONS

Chargeability and resistivity tests on representative rocks of the ACC should be undertaken to aid in the interpretation of IP data.

Anomalies in the IP data should be tested by diamond drilling.

## 5. REGIONAL GEOLOGY

### 5.1 Regional Geological Setting

Faulting has juxtaposed and segmented blocks and slices of Precambrian metasedimentary rocks, Cambrian marine sedimentary and ultramafic (ACC) rocks, and Early-Middle Palaeozoic strata in the Badger Head region (Elliot et al., 1993). The Geology in the Badger Head region, and location of the ACC is shown in Figures 1 and 2.

### 5.2 Geology of the Anderson's Creek Ultramafic Complex

The ACC outcrop over a length of 6.5 km with a maximum width of 1.5 km. BHP aeromagnetic data indicates that the ultramafic belt continues under a cover of Permian sediments over a length of 19 km with a maximum width of 4 km (Newman, 1965). The distribution of major rock types is shown in Plan Tv 884.

*Serpentinite*

The ACC has been extensively serpentinized, this has obscured the original nature of some rocks. Geochemical analysis of rocks from the ACC indicate that peridotites and dunites form a substantial part of the ACC (Gee & Legge, 1974). The serpentinite is composed predominantly of antigorite (platy) and seamed by irregular veins of chrysotile (fibrous).

Magnetite and chromite occur as intramagmatic disseminations. Additionally, magnetite replaces vein chrysotile.

*Pyroxene Gabbronorite*

Massive and cumulate layered pyroxene gabbronorite occur in the NW and W of the ACC. The rock shows evidence of saussuritization (plagioclase alteration to epidote - syn serpentinization?) and contains ilmenite, pyrrhotite, and occasionally pentlandite, and chalcopyrite.

*Pyroxenite*

Pyroxenite outcrops in units up to 40 m wide throughout the serpentinite. The pyroxenite consists almost entirely of enstatite, bronzite or diallage, with rare olivine, chromite, magnetite, chalcopyrite and chalcocite. The diallage pyroxenite shows weak serpentinization.

*Rodingite*

Rodingite (gabbroic rock containing grossular and cpx) occurs south of Barnes Hill and is the product of lime metasomatism of coarse hornblende gabbro prior to serpentinization. Hornblende is probably the product of alteration of pyroxene during late magmatic stages of crystallisation.

*Leucocratic Rocks*

25 m bodies of sausseritized diorite consisting of pyroxene, amphibole, plagioclase, sericite, and secondary felspar with coarsely crystalline amphibole and pyroxene remnants occur in association with hornblende gabbro.

*Metamorphic Rocks*

Septas of metamorphic rocks consisting of quartz, plagioclase and biotite and which show a gneissic lineation (biotite gneiss) occur within the ACC.

## 5.3 Lateritic Weathering

Two main periods of lateritization have occurred in the area, producing the older laterite (late Mesozoic to early Tertiary) and the younger laterite (middle Tertiary) (Summons et al., 1981).

Zeissink (1971) distinguished three zones within ferruginous laterite:

| | |
|---|---|
| the upper ferruginous zone I | $Fe_2O_3$ > 30 mass percent |
| the intermediate smectite zone II | $Fe_2O_3$ 15-30 mass percent |
| the bleached /weathered rock zone III | $Fe_2O_3$ < 15 mass percent |

Secondary silica is commonly associated with the smectite group of clay minerals (zones II & III) in laterite profiles over ultramafic complexes.

The older laterite consists of weathered serpentinite and smectite clays containing opaline and chalcedonic silica veinlets and thin plates which are coloured pale blue (Ni?), white, grey, green, brown, and black. These silica plates and veinlets form subrectangular to ovoid and mesh-like boxworks with non-platelike masses of chalcedonic silica. This represents predominantly zone III with some nickeliferous basal zone II remnants of a previously intact ferruginous laterite. The older laterite is preserved at Barnes Hill and the Rifle Range area, and is capped by Tertiary sedimentary rocks (Summons et al., 1981). The younger laterite (zone I) is developed at Tattersall's Hill and is superimposed on the Tertiary lower clay member, which overlies the older laterite (Summons et al., 1981).

The older laterite is the only ferruginous laterite of economic significance, because it contains lateritic nickel mineralisation (nickeliferous smectite).

## 6. MINERALISATION

The ACC has a long history of mining. The Tasmanian Charcoal Iron company first mined iron ore from ferruginous laterites on the summits of Scotts Hill, Mt. Vulcan, and Tattersall Hill in 1872. Additionally, asbestos, serpentinite, chromite and ochre have been mined for short periods. Chromite was extracted from Cenozoic sediment at Barnes Hill.

## 7. PREVIOUS EXPLORATION

Ni in the Beaconsfield area was first recorded by Thereau (1883) from the old Victoria mine. This was later confirmed by Twelvetrees (1903), but no further investigations were undertaken until 1955.

Between 1955-1957 the Ben Lomond Mining Co. sampled Ni bearing serpentine from outcrop and pits sunk to hard rock. They discovered an "enormous area of nickeliferous plastic clay of deep brown or yellowish colour with 1.75% Ni" derived from the decomposition of serpentinite. In 1957, they entered into an agreement with Enterprise Exploration to investigate this mineralisation.

Enterprise Exploration Co. Pty. Ltd. (EEC) (1957-58) produced a geology plan of the ACC. Mapping showed outcrop of garnierite (an apple green serpentine formed as an alteration product of Ni-rich peridotites) bearing serpentinite restricted to the area bounded by Hinds Road to the south, Ordovician quartzite to the east, and the Barnes Hill laterite to the north. Rodingite outcrops nearly exclusively in this area.

EEC bored 147 auger holes in traverses across "unconcealed ultrabasics". 57 holes were augured into the garnierite bearing serpentinite area. Holes were located at 30 m intervals along three traverses. A further 90 holes were augured into other areas within the ACC at 60 m intervals along traverses totalling 4.8 km. Auguring sampled soil derived from the serpentinite; and where present, quartzite and laterite cover. With two exceptions, holes bottomed on hard rock. Whole samples were recovered and assayed for Ni, Fe, and Co (10 samples only) over selected intervals.

Best assay results were of samples taken from the garnierite bearing serpentinite area.

| | | |
|---|---|---|
| Line 1 (420 m) | 16 holes | Best interval 1.25 m @ 1.83% Ni<br>Average assay 0.96% Ni |
| Line 2 (465 m) | 18 holes | Best interval 1.5 m @ 0.83% Ni<br>Average assay 0.41% Ni |
| Line 3 (675 m) | 23 holes | Best interval 1.25 m @ 1.3% Ni<br>Average assay 0.52% Ni |

Assay results of auger lines in other areas averaged below 0.3%. The best assay result was 0.5% Ni.

EEC concluded "It is unlikely that the body of soil within the garnierite bearing serpentinite area exceeds 0.5 Mt @ 1% Ni. Ni mineralisation observed is a secondary accumulation formed in the soil profile over nickeliferous zones of the ACC.".

Following mineralographic studies by the CSIRO, the Department of Mines - Tasmania drilled a single 49 m diamond hole to test the nickel-rodingite association. It was shown that elevated nickel values were due to the presence of garnierite generally associated with rodingite.

In May 1965, AMEG Pty. Ltd. conducted an airborne proton magnetometer survey over an area including the ACC for BHP (Newman, 1965). Airborne magnetic data show a long line of large amplitude north trending anomalies coincident with mapped ultramafics and laterite. BHP interpreted several bodies of moderate susceptibility underlying surface material at shallow depth (Anon., 1966?). A follow-up ground magnetometer survey profiled laterite at Barnes Hill. This data showed the laterite cover was strongly and non-uniformly magnetised.

A 4000 gamma aeromagnetic anomaly coincident with Scotts Hill was investigated by ground magnetic survey and a single diamond drill hole, Scotts Hill1. Drilling intersected serpentine with minor asbestos and magnetite veining from 95 m to 207 m EOH, Ni-sulphide mineralisation was not observed. Magnetite veining, although uneconomic, was sufficient to account for the magnetic anomaly.

A drainage sediment sampling survey was undertaken by BHP over an area of 325 sq km - including the ACC. Samples were assayed for leachable Cu, Zn, and Ni; and for total Mo (only one sample above background).

Nickel and chrome bearing laterite developed over the ACC identified by previous workers was drilled and costeaned by BHP.

| | | |
|---|---|---|
| Mt Vulcan | 4 bores | 3 excavations |
| Scotts Hill | 2 bores | 2 excavations |
| Barnes Hill | 5 bores | 11 excavations |

Holes were bored to depths between 6 and 25 m, and where possible bottomed in bedrock. Samples were taken at 1.5 m intervals and assayed for Fe, Ni, $Cr_2O_3$ and Co. Excavations were between 2 and 6 m deep and generally bottomed in laterite. Samples were taken from lithologically defined intervals and assayed for Ni and Co.

Chromite bearing Cenozoic gravel was tested by pitting. 99 pits were excavated along 17 lines. Pits were up to 3.5 m deep and where possible bottomed in bedrock. 315 samples were taken from lithologically defined intervals. Samples were assayed for Ni, Co, Pt (assay results not recorded), and $Cr_2O_3$.

In 1967 KIS commenced a detailed sampling program of the lateritic weathering profile. 37 diamond drill holes defined four areas of mineralisation totalling 6 Mt @ 1% Ni (0.7% Ni cut-off) and 0.06% Co. Mineralogical studies indicated the Ni to be bound to smectite clays and iron oxides within the saprolite zone.

Assay of ?fresh ultramafic intersected in drilling indicated an average Ni content of between 0.2 - 0.3% (up to 0.64%). Garnierite occurring with opaline silica along partings was observed in fresh ultramafic, particularly near rodingite occurrences (Gee & Legge, 1979).

In 1971-72 Allstate Exploration N.L. drilled 15 diamond drill holes totalling 2000 m to determine the extent of development of asbestos serpentine (also several thousand metres of trenching).

## 8. EXPLORATION ACTIVITIES FOR THE PERIOD 17.3.93 TO 16.3.94

48 grab outcrop and float rock chip samples were collected as part of a reconnaissance/ orientation mapping and geochemical survey.

Four rock chips submitted for geochemical analysis were selected for petrological description. Samples were sent to R.N. England for transmitted light thin section preparation and description.

Samples 3530513, 3530520, and 3530522 returned Ni values of 1.71% Ni, 0.83% & 0.61%. These samples were taken from the area north of Hinds Road and south of Barnes Hill and did not contain sulphides. EEC recognised garnierite associated with rodingite in this location.

## 9. EXPLORATION ACTIVITIES FOR THE PERIOD 17.3.94 TO 16.3.95

### 9.1 Review of Drilling of the Anderson's Creek Ultramafic Complex

A review of all drilling which tested the ACC was undertaken with the objective of identifying mineralised or prospective stratigraphy or structures beneath the zone of surface weathering. Additionally, drill core held by the Tasmanian Industry Safety & Mines Division (ISMD) was inspected, and selectively sampled for geochemical analysis.

A detailed account of this work is given in Appendix I and Plan Tv 885. Significant result are:

- The ACC has been deep drilled more extensively than previously thought.
- No Ni-sulphide mineralisation was observed in available drill core. Best Ni assay from sampling of drill core was 1950 ppm.
- The ACC underlying a one sq km area of outcropping nickeliferous laterite at **Barnes Hill** (481000mE 5437000mN) has not been tested by deep drilling. Drilling of the lateritic profile by KIS intersected ?fresh serpentinite with Ni values up to 0.64% (no recorded sulphides, rare decomposed seams).
- Rodingite dykes outcrop within a 0.5 sq km area of the ACC (481500mE 5435000mN). ?Fresh serpentinite intersected in ISMD drilling in this area assayed up to 0.43% Ni - this was attributed to garnierite. Inspection of this drill core revealed Ni-sulphide veinlets in the alteration halos of some dykes.
- Cumulate layered pyroxenite-gabbronorite with rare pyrrhotite-chalcopyrite-pentlandite mineralisation outcrops over two sq km in the NW and W of the ACC (479500mE 5441000mN). This stratigraphy has not been tested by drilling.
- Sampling of the faulted contact between the ACC and host Cambrian quartzite-slate-chert sequence intersected in DDH Scotts Hill1 returned a best assay of 3 m @ 0.94 (1.04) g/t Au. This contact has not been drill tested (except for this one hole) along its eight km exposed extent.

### 9.2 Geological Mapping and Rock Chip Geochemistry

A program of reconnaissance rock chip sampling and mapping was undertaken over a 13 sq km area covering the ACC.

In areas where the ultramafic is not covered by laterite or alluvium, systematic traverses across stratigraphy were undertaken with the objective of identifying horizons/zones prospective for Ni-sulphide mineralisation. The observed geology was compiled at 1:10,000 scale and is shown in Plan Tv 884.

A total of 24 rock chip samples were collected. Samples weighing 1-2 kg were sent to Analabs where they were dried, crushed, pulverised (GPO33) and analysed for Cu Pb Zn Ag Ni Co Fe Mn As by GA140 (0.3 g aqua regia/perchloric acid digest - AAS). Selected samples were also analysed for Au by GG309 (30 g fire - AAS). Sample locations are shown on Plan Tv 941. Sample ledgers with assay results are included in Appendix II.

Four rock chip samples submitted for geochemical analysis were also submitted for petrological description. Samples were sent to Mason Geoscience Pty. Ltd. for description of sulphide minerals and textures. Petrological laboratory reports are included in Appendix III.

Significant results from this work are:

- At two locations within the layered gabbronorite-pyroxenite sequence, fine grained, intercumulus textured pyrrhotite-pentlandite-chalcopyrite was observed. The gabbronorite-pyroxenite sequence is exposed over 1.5 sq km in the NW and W of the ACC (479500mE 5441000mN). The relationship between the gabbronorite-pyroxenite sequence and other, typically intensely serpentinized sequences of the ACC is unclear. Best results from analysis of rock chip samples of the sulphide bearing gabbronorites are 171 ppm Ni, 40 ppm Co, and 125 ppm Cu.

- A sample of weathered magmatic magnetite schlieren outcrop returned a best assay of 3155 ppm Ni and 119 ppm Co.

- Analysis of rock chip samples of intensely silicified and ferruginous slate, and slate with rare quartz veinlets from the Cambrian sequence to the west of the ACC returned As values up to 248 ppm. Au assays were below detection limit (<0.008 ppm).

## 9.3 Soil Geochemistry

A program of soil sampling was undertaken profiling the ?locally faulted contact between the ACC and host Cambrian sequence to test for a large structurally controlled Au resource. This target is valid given the contact is untested over its exposed eight km extent except for DDH Scotts Hill1 which intersected 3 m @ 0.94 g/t Au, and significant Au mineralisation occurs nearby at Beaconsfield.

39 C-horizon soil samples were collected at 10 and 25 m intervals along six traverses by hand auger from depths up to 1.2 m. Samples weighing 0.2-1 kg were sent to Analabs where they were dried, crushed, pulverised (GPO33) and analysed for Cu Pb Zn Ag Ni Co Fe As Mn by GA140 (0.3 g aqua regia/perchloric acid digest - AAS), Bi As by HA140 (hydride generation - AAS), and Au by GG313 (50 g fire - AAS). Sample locations are shown on Plan Tv 941. Sample ledgers with assay results are included in Appendix IV.

Significant results from this work are:
( Plans Tv 937 & 938 show Au & As anomalism in soil and pisolite.)

- A sample taken at the contact 400m south of DDH Scotts Hill1 assayed 0.422 g/t Au. Adjacent (25 m interval) samples lack elevated Au and Au pathfinder element results.

- A weak 20 m >22 ppm As anomaly (best Au: 6 ppb) corresponds to a silica flooded zone at the contact (478800mE 5441400mN).

- Several samples with elevated As results occur within the Cambrian host sequence. The best is a 30 m interval (open to W) with 151-217 ppm As (up to 5 ppb Au) at 478900mE 5440250mN.

- Samples of ultramafic derived soil have a relatively high Co-Ni-Fe tenor.

Follow up of this target is a low priority at this time.

A 375 m orientation soil sampling traverse (18 samples) across observed Ni-sulphide mineralisation within the gabbro-pyroxenite sequence (479500mE 5441000mN) was undertaken to determine whether the mineralisation could be discriminated geochemically in soil, and if so, to determine the extent of the mineralisation.

18 C-horizon soil samples were collected at 25 and 10 m intervals by hand auger from depths up to 0.9 m. Samples weighing 0.2-1 kg were sent to Analabs where they were dried, crushed, pulverised (GPO33) and analysed for Cu Pb Zn Ag Ni Co Fe Mn by GA140 (0.3 g aqua regia/perchloric acid digest - AAS) and As by HA140 (hydride generation - AAS). Sample locations are shown on Plan Tv 941. Sample ledgers with assay results are included in Appendix IV.

Significant results from this work are:

- A 180m wide zone of weakly elevated Ni-Cu corresponds to the area where Ni-sulphides were observed. Plan Tv 939 shows Ni anomalism in soil and pisolite.

- Best soil assay was 676 ppm Ni corresponding to the area where Ni-sulphides were observed. Manganese scavenging is probably responsible for this and several other elevated Ni and Cu results.

The low assays of rock chips and soils in this area preclude follow-up work at this time.

## 9.4 Orientation Pisolite Geochemistry

A program of orientation pisolite sampling was undertaken at **Barnes Hill** to determine whether Ni-sulphide mineralisation (if present) hosted by serpentinite underlying the laterite profile could be discriminated geochemically in pisolite.

31 surficial pisolite samples were collected at 25 intervals along a 750 m traverse. Samples weighing 1 kg were sent to Analabs where they were dried, crushed, pulverised (GPO33), and analysed for Cu Pb Zn Ag Ni Co Fe Mn by GA140 (0.3 g aqua regia/perchloric acid digest - AAS), and As by HA140 (hydride generation - AAS). One in four samples were additionally assayed for Au Pt Pd by GS333 (50 g fire - ICPMS). Sample locations are shown on Plan Tv 941. Sample ledgers with assay results are included in Appendix IV.

Significant results from this work are:

- Best PGE assay was 0.8 ppb Pd and 1.2 ppb Pt.
- The data indicated a weak, 100 m Pt anomaly in the east of the traverse. Plan Tv 940 shows Pt anomalism in pisolite.
- The data indicated a weak 200 m Ni:Co ratio anomaly (without elevated PGE's) in the west of the traverse. Plan Tv 939 shows Ni anomalism in soil and pisolite.

No prominent geochemical anomalies were indicated by the data.

### 9.5 IP-Resistivity Survey

Approximately 3.5 line km of IP data was collected along a single line profiling the ACC including the nickeliferous laterite cover at **Barnes Hill.** Preliminary interpretation of data indicates the ultramafic has unusually high phase values over 2500 m with areas regularly exceeding 50 mrad. The response is strongly horizontally stratified, suggesting the cause is not exposed at surface. More intense chargeability anomalies occur within 300 m of the W and E contacts of the ACC. Theoretically the response is too strong to be caused by magnetite, graphite is not known in the body, and serpentinite is non-chargeable. Therefore it is feasible to suggest the anomalies are due to disseminated sulphides in the ACC at depth.

Chargeability and resistivity tests on representative rocks of the ACC will be undertaken to aid in the interpretation of IP data. IP data and a detailed interpretation of data will be included in the next annual report to ISMD.

## 10. ENVIRONMENT AND REHABILITATION

A 3.5 km grid line was cut to allow collection of IP data. 1.0x0.8x0.3 m hand dug IP pits, spaced at 50 m intervals along the grid line, were rehabilitated on completion of the survey.

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## KEYWORDS

Nickel, Iron Ore, Laterite, Cambrian, Geology, Mineralisation, Rock Geochemistry, Ultrabasic, Chemical Analysis, Geological Mapping, Detailed, Literature Review.

## LOCATION

| | | |
|---|---|---|
| Launceston | 1:250,000 | SK55-4 |
| Tamar | 1:100,000 | 8215 |

## LIST OF DPO'S

77222, 77224, 77225, 77228.

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| Tv 669 | Anderson's Creek EL 35/92 - Land Status Plan | 1:25,000 |
| Tv 884 | Anderson's Creek EL 35/92 - Anderson's Creek Ultramafic Complex: Geological Plan | 1:10,000 |
| Tv 885 | Anderson's Creek EL 35/92 - Anderson's Creek Ultramafic Complex: Diamond Drill Hole Location Plan | 1:10,000 |
| Tv 941 | Anderson's Creek EL 35/92 - Rock Chip, Pisolite and Soil Sample Loaction Plan | 1:10,000 |
| Tv 937 | Anderson's Creek EL 35/92 Anomaly Map - Au ppb | 1:10,000 |
| Tv 938 | Anderson's Creek EL 35/92 Anomaly Map - As ppm | 1:10,000 |
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**Appendix One** - **Review of Drilling of the Anderson's Creek Ultramafic Complex**

1929
Twenty one diamond holes (16-36) were drilled by the Mineral Resources Tasmania (MRT) testing for an iron ore resource in laterite developed over serpentinite on Mount Scott (2 holes), Mount Vulcan (13 holes), and Barnes Hill (6 holes) (Nye, 1930). Holes were mostly drilled for less than 40m and assayed for NiO, S, $SiO_2$, $Fe_2O_3$, FeO, $Cr_2O_3$, $Al_2O_3$, MgO, CaO, $TiO_2$, $P_2O_5$, Mni & $MnO_2$, and $H_2O$. Assays of fresh serpentinite are not recorded. Hole "(31) Beaconsfield 1 South Lode" was drilled to 168m and intersected medium and pebbly sandstone and quartzite. Core from these holes is not held by the MRT.

1960
A single 48m (50-270?N) diamond hole was drilled by the MRT, "(5971) Anderson's Creek 1", testing for a Ni mineralisation - rodingite dyke association (Hughes, 1961). Intervals were assayed for Ni and Cr. Best intersection was 4m @ 0.70% Ni in a mottled serpentinite which hosts rodingite dykes. The high Ni value was attributed to garnierite, but inspection of drill core revealed a single silver sulphide veinlet within the mineralised interval (sample 3989193). Best Ni result in ?fresh ultramafic was 6m @ 0.43% - sulphides were not observed.

1966
A single 205m (45-230TN) diamond hole was drilled by BHP testing for an iron ore resource in serpentinite corresponding with aeromagnetic anomalies on Scotts Hill. "(3691) Scotts Hill DDH No.1" intersected uneconomic magnetite (Anon., 1966), drill core was not assayed. Relogging of drill core showed unmineralised, weakly-moderately serpentinised, orthocumulate textured, massive dunite from 94-205m. The dunite is overlain by ?Cambrian shale, chert and quartzite; a fault separates these two lithologies.
Summary of stratigraphy across the fault:

| | |
|---|---|
| -91m | Black, pitted, medium to fine grained quartzite. |
| 91-94m | Zone of pitted, sulphidic, broken milky quartz - poor recovery. (sample 3989195). |
| 94-94.2m | Black carbonaceous zone, with relict ?dunite seams preserved in the orientation of the foliation (sample 3989194). |
| 94.2-94.6m | Pitted, amorphous, milky quartz "foliation" sheets (dunite absent). |
| 94.6- | Dunite with amorphous, milky quartz bearing foliation. |

1967-68
Thirty-seven diamond holes were drilled by King Island Scheelite (1947) Limited testing for ?Ni-silicate mineralisation in the residual laterite profile developed over the ACC at Barnes Hill (28 holes), Scotts Hill (4 holes), Mt. Vulcan (4 holes), and The Flat (1 hole). Most holes bottomed in ?fresh serpentinite (decomposed bands are frequently reported in "fresh" serpentinite). Ni, Co, Cr, ±Fe, ±$Al_2O_3$, ±CaO, ±MgO, ±$SiO_2$, and ±FeO assays are reported for most fresh serpentinite intervals. Best reported results from bottom of hole ?fresh serpentinite are 0.64% Ni, 0.46% Ni, 0.42% Ni, 0.40% Ni, and 0.67% Ni (rodingite area) from holes drilled in the Barnes Hill area, and 0.42% Ni from a hole drilled in the Mt Vulcan area; Ni-sulphides are not described. Core is not held by the MRT.

1970
Two diamond holes were drilled by the MRT, (2250) AC1 and (2251) AC2, testing for the presence of laterite developed over serpentinite underlying Permian cover. Laterite profiles were not intersected in either hole - lateritisation is post Permian in age (Summons *et al*, 1981). Weathered serpentinite was intersected between 152-153m EOH and 120-126m EOH in AC1 and AC2 respectively. Serpentinite returned Ni assays of 0.21% and 0.25%. Relogging of serpentinite showed no indication of Ni sulphide mineralisation.

1977
Allstate Explorations N.L. drilled 15 diamond holes for 2013m, testing asbestos development and type in the northeast of the ACC. Drill core was not assayed.

A4 was drilled for 244m (45-215?N). Relogging of the interval 225-244m showed (foliated) serpentinite with minor localised mauve ?alteration.
A5 was drilled for 244m (45-21?N). Relogging of the interval 222-244m showed (foliated) serpentinite. Trace sulphides line some serpentinite partings.
A6 was drilled for 244m (45-270?N). Relogging of the interval 227-244m showed massive, weak to intensely serpentinised pyroxenite with rare carbonate veining.

A7 was drilled for 134m. Relogging of the interval 116-134m showed strongly serpentinised ?dunite and pyroxenite.
A8 was drilled for 142m. Relogging of the interval 127-142m showed strongly serpentinised ?dunite and pyroxenite.
A9 was drilled for 139m. Relogging of the interval 123-139m showed serpentinite and pyroxenite.
A10 was drilled for 137m (45-270?N). Relogging of the interval 105-137m showed coarse pyroxenite with zones of intense serpentinisation. Trace ?pyrrhotite occurs as films lining partings in chrysotile-magnetite veins (sample 3989187).
A11 was drilled for 138m (45-270?N). Relogging of the interval 100-138m showed coarse pyroxenite with zones of intense serpentinisation and rare pegmatoidal ?gabbronorite dykes. Trace pyrrhotite occurs as films lining partings in chrysotile-magnetite veins.
A12 was drilled for 123m (45-270?N). Relogging of the interval 90-123m showed coarse pyroxenite with zones of intense serpentinisation and rare pegmatoidal ?gabbronorite dykes. Trace pyrrhotite occurs as films lining partings in chrysotile-magnetite veins.
A13 was drilled for 56m (45-270?N). Relogging of the interval 20-56m showed serpentinite.
A14 was drilled for 91m (45-90?N). Relogging of the interval 60-90m showed serpentinite and medium pyroxenite. Mauve ?alteration occurs as a halo about a ?gabbronorite dyke.
A15 was drilled for 91m (45-212?N). Relogging of the interval 53-91m showed serpentinite and fine pyroxenite with prominent disseminated spinel. Rare sulphides are intergrown with some serpentine-magnetite veins (sample 3989189). ?Brassite (deceptively like sulphide) occurs in blue-black alteration zones (sample 3989190).
A16 was drilled for 76m (45-65?N). Relogging of the interval 58-76m showed serpentinite and fine pyroxenite with prominent disseminated spinel. Rare sulphides are intergrown with some serpentine-magnetite veins. ?Brassite (deceptively like sulphide) occurs in blue-black alteration zones. 1-2mm disseminated ?spinel/brassite/sulphide occur in a 2.5m zone at 69m (sample 3989192) and at 64m (sample 3989191).
A17 was drilled for 76m (45/75?N). Relogging of the interval 45-76m showed serpentinite.
A18 was drilled for 78m (45-90?N). Relogging of the interval 59-78m showed serpentinite with minor pyroxenite (brassite) zones - deceptively like sulphide - and trace sulphide blebs in serpentine-magnetite veins (sample 3989188).

Drill core samples selected for assay were submitted to ALS where they were dried, crushed, pulverised, and analysed for Cu Pb Zn Ag As Fe Mn Co Ni by IC587 ($HF/HNO_3/HCl$ digest - ICP). Selected samples were also analysed for Au Pt Pd by PM217 (50 g fire - AAS). Sample ledgers and assay results accompany this review.

| CRAE Exploration Pty. Limited GEOCHEMICAL SAMPLE LEDGER: DIAMOND DRILL CORE | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Project: Tasmanian ultramafic Ni | | | Map Sheets | | | Sampler: SM | | LAB: Australian Laboratory Services P/L | | | | | | | | | | | | | |
| Tenement: EL 35/92 | | | 250,000: SK55-4 | | | Date: November, 1994 | | Units | ppm | ppm | ppm | ppm | ppm | % | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| DPO: 77225 | | | 100/25,000: 8215/4643-44, 4842-44, | | | | | Det.Limit: | 5 | 5 | 5 | 1 | | | | | | 0.01 | 0.01 | 0.01 | 0.01 |
| | | | | | | | | Method: | IC587 | IC587 | IC587 | IC587 | IC587 | IC587 | IC587 | IC587 | IC587 | PM217 | PM217 | PM217 | PM217 |
| SAMPLEno. | EASTAMG | NORTHAMG | DDHOLE | COMPANY | DEPTHto-from | sampleTYPE | ROCKtype | NOTES | Cu | Pb | Zn | Ag | As | Fe | Mn | Co | Ni | Pt | Pd | Au | Au(R) |
| 3989187 | 480600 | 5439450 | A10 | Allstate Expl. | 124.7-125.6m | 1/2 NQ core | Pyrrhotite bearing serpentinite | Massive serpentinite. Pyrrhotite fims line intensely serpentinised (magnetite bearing) partings (1%). | 20 | -5 | 45 | -1 | 13 | 4.27 | 592 | 78 | 864 | | | | |
| 3989188 | 480600 | 5438000 | A18 | Allstate Expl. | 63.7-64.3m | 1/2 NQ core | Serpentinised pyroxenite | Fg pyroxenite with local zones of intense serpentinisation - pyroxene is brassite. Rare pyrite/pyrrhotite blebs in serpentinite-magnetite seams. | 16 | -5 | 55 | -1 | 20 | 3.89 | 1930 | 60 | 948 | | | | |
| 3989189 | 480600 | 5439750 | A15 | Allstate Expl. | 74.1m | 1/2 NQ core | Serpentinised dunite | Prominent spinel and rare pyrite/pyrrhotite in serpentinite-magnetite seams. | 41 | -5 | 49 | -1 | 21 | 4.62 | 476 | 115 | 1780 | | | | |
| 3989190 | 480600 | 5439750 | A15 | Allstate Expl. | 80.8m | 1/2 NQ core | Serpentinised pyroxenite | Rare pyrite/pyrrhotite in serpentinite-magnetite seams. | 12 | -5 | 16 | -1 | 25 | 2.01 | 768 | 39 | 634 | | | | |
| 3989191 | 480450 | 5438100 | A16 | Allstate Expl. | 63.7m | 1/2 NQ core | ?Sulphidic serpentinised pyroxenite | Fine grained with prominent brassite. | 15 | -5 | 41 | -1 | 11 | 4.48 | 2550 | 32 | 239 | | | | |
| 3989192 | 480450 | 5438100 | A16 | Allstate Expl. | 68.9-71.4m | 1/2 NQ core | Serpentinised pyroxenite | With prominent brassite. | 15 | -5 | 42 | -1 | 24 | 3.35 | 355 | 99 | 1460 | | | | |
| 3989193 | 481300 | 5435700 | ACrk.1 | DOM | | 1/2 BQ core | Dark serpentinite with trace ?pentlandite | Alteration halo about ?rodingite dyke, rare silver sulphide veinlets. | 10 | -5 | 34 | -1 | 15 | 3.65 | 188 | 78 | 1950 | | | | |
| 3989194 | 479800 | 5439700 | ScottsHill1 | B-P | 94.3m | 1/2 NQ core | Carbonaceous material | Carbonaceous material with continuous and wispy discontinuous quartz filled foliations. | 14 | 30 | 307 | -1 | 7 | 3.63 | 893 | 42 | 1390 | -0.01 | -0.01 | 0.43 | |
| 3989195 | 479800 | 5439700 | ScottsHill1 | B-P | 94.2m | 1/2 NQ core | Sulphidic buck quartz | Pitted, sulphidic carbonaceous buck quartz. | 45 | 2150 | 24100 | -1 | 18 | 2.28 | 125 | 36 | 720 | -0.01 | -0.01 | 0.92 | 1.04 |

803021

[redacted]

**AUSTRALIAN LABORATORY SERVICES P/L**
A.C.N. 009 936 029

# ANALYTICAL REPORT



CLIENT: MR S MAHER
ADDRESS: CRA EXPLORATION PTY LTD
P O BOX 3093
NORTHLAND CENTRE
VIC 3072
CONTACT:

LABORATORY: BENDIGO
BATCH NUMBER: BE2169-0

No. of SAMPLES: 9
DATE RECEIVED: 09/11/94
DATE COMPLETED: 22/11/94

ORDER No: 77885 SAMPLE TYPE: DRILL CORE PROJECT No:

| SAMPLE NUMBER | ELEMENT UNIT METHOD | Cu ppm IC587 | Pb ppm IC587 | Zn ppm IC527 | Ag ppm IC527 | As ppm IC587 |
|---|---|---|---|---|---|---|
| 3989187 | | 20 | <5 | 45 | <1 | 13 |
| 3989188 | | 16 | <5 | 35 | <1 | 20 |
| 3989189 | | 41 | <5 | 49 | <1 | 21 |
| 3989190 | | 12 | <5 | 16 | <1 | 25 |
| 3989191 | | 15 | <5 | 41 | <1 | 11 |
| 3989192 | | 15 | <5 | 42 | <1 | 24 |
| 3989193 | | 10 | <5 | 24 | <1 | 15 |
| 3989194 | | 14 | 30 | 307 | <1 | 7 |
| 3989195 | | 45 | 3150 | 2.41% | <1 | 18 |
| DETECTION LIMIT: | | 5 | 5 | 5 | 1 | 5 |

RECEIVED 28 NOV 1994 CRAE PRESTON

COMMENTS: Zn values >1.00% reassayed by Method A101

All pages of this report have been checked and approved for release.

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# ANALYTICAL REPORT



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P O BOX 8093
NORTHLAND CENTRE
VIC 3072
CONTACT:

LABORATORY: BENDIGO
BATCH NUMBER: BE2169-0

No. of SAMPLES: 9
DATE RECEIVED: 09/11/94
DATE COMPLETED: 22/11/94

ORDER No: 77225 SAMPLE TYPE: DRILL CORE PROJECT No:

| SAMPLE NUMBER | ELEMENT UNIT METHOD | Fe % IC587 | Mn ppm IC587 | Co ppm IC587 | Ni ppm IC587 | Pt ppm PM217 |
|---|---|---|---|---|---|---|
| 3989187 | | 4.27 | 592 | 78 | 864 | ---- |
| 3989188 | | 3.99 | 1030 | 60 | 948 | ---- |
| 3989189 | | 4.62 | 476 | 115 | 1780 | ---- |
| 3989190 | | 2.01 | 768 | 39 | 874 | ---- |
| 3989191 | | 4.48 | 2550 | 32 | 239 | ---- |
| 3989192 | | 3.35 | 355 | 99 | 1460 | ---- |
| 3989193 | | 3.65 | 198 | 79 | 1950 | ---- |
| 3989194 | | 3.63 | 893 | 42 | 1390 | <0.01 |
| 3989195 | | 2.28 | 185 | 36 | 720 | <0.01 |
| DETECTION LIMIT: | | 0.01 | 5 | 5 | 5 | 0.01 |

COMMENTS:

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# ANALYTICAL REPORT



CLIENT: MR S MAHER
ADDRESS: CRA EXPLORATION PTY LTD
P O BOX 8093
NORTHLAND CENTRE
VIC 3078
CONTACT:

LABORATORY: BENDIGO
BATCH NUMBER: BE2138-0

No. of SAMPLES: 9
DATE RECEIVED: 09/11/94
DATE COMPLETED: 22/11/94

ORDER No: 77825 SAMPLE TYPE: DRILL CORE PROJECT No:

| SAMPLE NUMBER | ELEMENT UNIT METHOD | Pd ppm PM217 | Au ppm PM217 | Au PM217 ppm CHECKS | | |
|---|---|---|---|---|---|---|
| 3989187 | | ---- | ---- | ---- | | |
| 3989188 | | ---- | ---- | ---- | | |
| 3989189 | | ---- | ---- | ---- | | |
| 3989190 | | ---- | ---- | ---- | | |
| 3989191 | | ---- | ---- | ---- | | |
| 3989192 | | ---- | ---- | ---- | | |
| 3989193 | | ---- | ---- | ---- | | |
| 3989194 | | <0.01 | 0.43 | | | |
| 3989195 | | <0.01 | 0.92 | 1.04 | | |
| DETECTION LIMIT: | | 0.01 | 0.01 | 0.01 | | |

COMMENTS:

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# ANALYTICAL REPORT



CLIENT: MR S MAHER
ADDRESS: CRA EXPLORATION PTY LTD
P O BOX 3903
NORTHLAND CENTRE
VIC 3072
CONTACT:

LABORATORY: BENDIGO
BATCH NUMBER: BE2169-0

No. of SAMPLES: 9
DATE RECEIVED: 09/11/94
DATE COMPLETED: 22/11/94

ORDER No: 77285 SAMPLE TYPE: QUALITY CONTROL PROJECT No:

| SAMPLE NUMBER | ELEMENT UNIT METHOD | Cu ppm IC58T | Pb ppm IC58T | Zn ppm IC58T | Ag ppm IC58T | As ppm IC58T |
|---|---|---|---|---|---|---|
| *** 3989107 | | 20 | 15 | 49 | <1 | 12 |
| DETECTION LIMIT: | | 5 | 5 | 5 | 1 | 3 |

COMMENTS: Results which appear on this report are routine laboratory checks for QUALITY CONTROL purposes.

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803025

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# ANALYTICAL REPORT



CLIENT: MR S MAHER
ADDRESS: CRA EXPLORATION PTY LTD
P O BOX 9093
NORTHLAND CENTRE
VIC 3070
CONTACT:

LABORATORY: BENDIGO
BATCH NUMBER: BE2169-0

No. of SAMPLES: 9
DATE RECEIVED: 09/11/94
DATE COMPLETED: 22/11/94

ORDER No: 77225 SAMPLE TYPE: QUALITY CONTROL PROJECT No:

| SAMPLE NUMBER | ELEMENT UNIT METHOD | Fe % IC587 | Mn ppm IC587 | Co ppm IC587 | Ni ppm IC587 | |
|---|---|---|---|---|---|---|
| *** 3985187 | | 4.86 | 598 | 76 | 341 | |
| DETECTION LIMIT: | | 0.01 | 5 | 5 | 5 | |

COMMENTS:

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**Appendix Two - Geochemical Rock Sample Ledgers and Laboratory Reports**

CRAE Exploration Pty. Limited GEOCHEMICAL SAMPLE LEDGER: ROCK

Project: Tasmanian ultramafic Ni | Map Sheets | Sampler: SM & LV | LAB: ANALABS,Burnie

Tenement: EL 35/92 | 250,000: SK55-4 | Date: August, 1994 | Units

DPO: 77222 | 100/25,000: 8215/4643-44, 4842-44. | Det. Limit:

Method:

| SAMPLEno. | EASTAMG | NORTHAMG | localEAST | localNORTH | EL | PROSP. | sampleTYPE | ROCKtype | NOTES | Cu ppm | Pb ppm | Zn ppm | Ag ppm | Fe % | Fe(1) % | Mn ppm | Co ppm | Ni ppm | As ppm | As ppm | Au ppm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | HA140 | GA140 | GG309 |
| | | | | | | | | | | 2 | 3 | 2 | 1 | 0.01 | 0.1 | 3 | 3 | 3 | 0.5 | 100 | 0.008 |
| 3989163 | 479500 | 5440870 | | | 35/92 | | selective grab-float | Hornblende gabbro | Coarse grained hornblende gabbro. 30%, <1-20mm hornblende. | 7 | <3 | 22 | <1 | 1.16 | - | 194 | 7 | 16 | 2.5 | - | - |
| 3989164 | 479300 | 5441150 | | | 35/92 | | selective grab-float | Sulphide bearing albitite | Medium grained, holocrystalline, banded, pyroxene bearing albitite. Banding defined by variations in crystal sizes/proportions, and sulphide content. <1% fine grained disseminated ?pyrite/pyrrhotite/chalcopyrite/pentlandite. | 37 | <3 | 32 | <1 | 2.48 | - | 429 | 40 | 171 | 4.5 | - | - |
| 3989165 | 479170 | 5441220 | | | 35/92 | | selective grab-subcrop | Pyroxene gabbro | Fe,Mn-oxide stained, medium-fine grained, massive pyroxene gabbro. | 44 | <3 | 41 | <1 | 3.43 | - | 564 | 26 | 113 | 2 | - | - |
| 3989166 | 479105 | 5441400 | | | 35/92 | | selective grab-float | Sulphide bearing gabbro | Light green-grey, medium to fine grained, equigranular gabbroic rock. Weakly developed flow banding. Trace *chalcopyrite & ?pentlandite.* | 74 | <3 | 52 | <1 | 2.84 | - | 805 | 20 | 41 | 2 | - | - |
| 3989167 | 479075 | 5441410 | | | 35/92 | | selective grab-float | Pentlandite bearing banded pyroxene gabbro | Fine grained pentlandite, locally up to 5%, present at silicate mineral triple junctions. Intergrown with spinel needles. | 125 | <3 | 36 | <1 | - | 5.2 | 399 | 27 | 98 | 3 | - | - |
| 3989168 | 478950 | 5439400 | | | 35/92 | | selective grab-float | Slate | Light green slate with hairline hematite and quartz veining. | 126 | 19 | 27 | <1 | 3.98 | - | 34 | <3 | <3 | 22.5 | - | <0.008 |
| 3989169 | 478950 | 5439400 | | | 35/92 | | selective grab-float | Silicified slate | Silicified slate (some relict textures) with ironstone blebs and seams. | 19 | 17 | 157 | <1 | - | 6.9 | 74 | <3 | 6 | 38 | - | <0.008 |
| 3989170 | 478950 | 5439400 | | | 35/92 | | selective grab-float | Silicified slate | Weakly brecciated silicified slate (some relict textures) with ironstone blebs and seams. | 61 | 97 | 348 | <1 | - | 19.3 | 113 | 3 | 9 | - | 164 | <0.008 |
| 3989171 | 478800 | 5439400 | | | 35/92 | | selective grab-float | Ironstone | Fine grained specular hematite replacing sediment. | 17 | 39 | 37 | <1 | - | 15.9 | 21 | <3 | <3 | 30 | - | <0.008 |
| 3989172 | 478950 | 5439400 | | | 35/92 | | selective grab-float | Ironstone | laterite duricrust. | 46 | 112 | 911 | <1 | - | 23.7 | 490 | 9 | 42 | - | 248 | <0.008 |
| 3989173 | 479300 | 5441090 | | | 35/92 | | selective grab-float | Albitite | Albitite with minor pyroxene and trace disseminated fine grained spinel. | 4 | 5 | 20 | <1 | 1.73 | - | 348 | 9 | 32 | 5.5 | - | - |
| 3989174 | 479210 | 5441125 | | | 35/92 | | selective grab-subcrop | ?Pentlandite bearing gabbro | Gabbro with <1% fine grained silver ?pentlandite as seams and blebs. | 119 | <3 | 53 | 1 | - | 5.3 | 714 | 37 | 120 | 4 | - | - |
| 3989175 | 479210 | 5441125 | | | 35/92 | | selective grab-float | ?Pentlandite bearing gabbro | Gabbro with <1% fine grained silver ?pentlandite as seams and blebs. | 82 | <3 | 48 | <1 | 3.53 | - | 616 | 31 | 79 | 2 | - | - |
| 3989176 | 479210 | 5441125 | | | 35/92 | | selective grab-float | ?Pentlandite bearing gabbro | Gabbro with trace fine grained silver ?pentlandite as seams and blebs. | 70 | <3 | 48 | <1 | 3.34 | - | 567 | 29 | 63 | 3 | - | - |
| 3989177 | 479340 | 5440275 | | | 35/92 | | selective grab-float | Serpentinite | Serpentinite with disseminated spinel and prominent magnetite veining. | 3 | <3 | 54 | <1 | - | 10.2 | 1604 | 114 | 1211 | 2.5 | - | - |
| 3989178 | 481090 | 5437085 | depth | 0-0.4m | 35/92 | Barnes Hill | channel sample-laterite profile | Pisolites | Pisolites from Pisolite zone-King Island Scheelite (KIS). | 3 | <3 | 143 | <1 | - | 45.1 | 411 | 126 | 1075 | 10 | - | - |
| 3989179 | 481090 | 5437085 | depth | 0.4-1m | 35/92 | Barnes Hill | channel sample-laterite profile | Orange clay. | Burnt orange clay with rare pisolites and relict ultramafic textures. | 7 | <3 | 220 | <1 | - | 27.1 | 1652 | 562 | 1493 | 8 | - | - |
| 3989180 | 481090 | 5437085 | depth | 1-1.4m | 35/92 | Barnes Hill | channel sample-laterite profile | Orange clay. | Burnt orange clay with green-black, relict ultramafic textured zones. | 7 | <3 | 200 | <1 | - | 26.1 | 2336 | 779 | 2442 | 6.5 | - | - |
| 3989181 | 481090 | 5437085 | depth | 1.4-1.8m | 35/92 | Barnes Hill | channel sample-laterite profile | Weathered serpentinite | Green-black-burnt orange-burnt red clay with ultramafic textures well preserved. Transition zone of KIS. | 10 | <3 | 204 | <1 | - | 33.9 | 598 | 224 | 3927 | 5.5 | - | - |
| 3989182 | 479650 | 5437320 | | | 35/92 | | selective grab-outcrop | Albitite | Medium grained albitite with minor pyroxene. | 3 | <3 | 61 | <1 | 2.35 | - | 2236 | 41 | 383 | 2 | - | - |
| 3989183 | 479990 | 5435900 | | | 35/92 | | selective grab-subcrop | Hornfels | Simmonds Hill. Fine-medium grained, recrystallised host sediment to the ultramafic complex. Unidentified porphyroblastic mineral. | 18 | 11 | 71 | <1 | 1.95 | - | 375 | 12 | 54 | 2 | - | - |
| 3989184 | 480665 | 5439125 | | | 35/92 | | grab-mine face | Serpentinite | Asbestos Mine. Slickensided serpentinite with chrysotile seams. | 2 | <3 | 32 | <1 | 2.75 | - | 547 | 65 | 1117 | 2.5 | - | - |
| 3989185 | 480810 | 5438820 | | | 35/92 | | grab-outcrop | Serpentinite | Green, pyroxene bearing serpentinite with >10% disseminated spinel, also magnetite seams. Possible minor pitting ?after sulphide. | 3 | <3 | 66 | <1 | 2.64 | - | 583 | 98 | 1413 | 3 | - | - |
| 3989186 | 481130 | 5438270 | | | 35/92 | | selective grab-outcrop | Spinel schlieren | Predominantly magnetite, conformable with local banding. | 5 | <3 | 72 | <1 | - | 6.9 | 1098 | 119 | 3155 | 4.5 | - | - |

803028.

# Analabs

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A.C.N. 004 591 664

Phone (004) 316837 | 14 Thirkell St. COOEE TAS 7320 | Fax (004) 318890

RECEIVED -8 SEP 1994 CRAE PRESTON

## ANALYTICAL REPORT No. 194165 AU10359

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

INVOICE TO:

CRA Exploration Pty Limited
P.O. Box 8093
NORTHLAND CENTRE VIC 3072

| ORDER No. | PROJECT |
|---|---|
| 77222 | |

| DATE RECEIVED | RESULTS REQUIRED |
|---|---|
| 10/08/94 | ASAP |

| No. OF PAGES OF RESULTS | DATE REPORTED | No. OF COPIES | TOTAL No. OF SAMPLES |
|---|---|---|---|
| 6 | 06/09/94 | 1 | 73 |

| SAMPLE NUMBERS | SAMPLE DESCRIPTION | ELEMENT/METHOD |
|---|---|---|
| 3989163/3989186<br>3989432/3989449<br>3989401/3989431 | RC Prep : GP033/GP032 | Cu,Pb,In,Ag,Fe,Mn,Co,Ni/GA140<br>Fe(1)/GA140<br>Au/GG309<br>Au,Pt,Pd/GS333<br>As/HA140 As/GA140 |

RESULTS TO

Mr S Maher
CRA Exploration Pty Limited
P.O. Box 8093
NORTHLAND CENTRE VIC 3072

RESULTS TO

Mr C Hayward
CRA Exploration Pty Limited
P.O. Box 8093
NORTHLAND CENTRE VIC 3072

RESULTS TO

CRAE Information Systems
P.O. Box 3709
MANUKA ACT 2603

REMARKS

Fe(1)/GA140 results are over the recommended analytical range for this method

AUTHORISED OFFICER

803029

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# ANALYTICAL DATA

| SAMPLE PREFIX | REPORT No. | REPORT DATE | CLIENT ORDER No. | PAGE |
|---|---|---|---|---|
| | 104165.60.10359 | 06/09/94 | 77222 | 1 OF 6 |

| | SAMPLE No. | Cu | Pb | Zn | Ag | Fe | Fe(1) | Mn | Co | Ni |
|---|---|---|---|---|---|---|---|---|---|---|
| METHOD | | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 |
| 1 | 3989163 | 7 | <3 | 22 | <1 | 1.16 | - | 194 | 7 | 16 |
| 2 | 3989164 | 37 | <3 | 32 | <1 | 2.48 | - | 429 | 40 | 171 |
| 3 | 3989165 | 44 | <3 | 41 | <1 | 3.43 | - | 564 | 28 | 113 |
| 4 | 3989166 | 74 | <3 | 52 | <1 | 2.84 | - | 605 | 20 | 41 |
| | 3989167 | 125 | <3 | 36 | <1 | - | 5.2 | 399 | 27 | 98 |
| 6 | 3989168 | 128 | 19 | 27 | <1 | 3.98 | - | 34 | <3 | <3 |
| 7 | 3989169 | 19 | 17 | 157 | <1 | - | 6.9 | 74 | <3 | 6 |
| 8 | 3989170 | 61 | 97 | 348 | <1 | - | 19.3 | 113 | 3 | 9 |
| 9 | 3989171 | 17 | 39 | 37 | <1 | - | 15.9 | 21 | <3 | <3 |
| 10 | 3989172 | 46 | 112 | 911 | <1 | - | 23.7 | 490 | 9 | 42 |
| 11 | 3989173 | 4 | 5 | 20 | <1 | 1.73 | - | 348 | 9 | 32 |
| 12 | 3989174 | 119 | <3 | 53 | 1 | - | 5.3 | 714 | 37 | 120 |
| 13 | 3989175 | 62 | <3 | 48 | <1 | 3.53 | - | 616 | 31 | 79 |
| 14 | 3989176 | 70 | <3 | 48 | <1 | 3.34 | - | 567 | 29 | 63 |
| 15 | 3989177 | 3 | <3 | 54 | <1 | - | 10.2 | 1604 | 114 | 1211 |
| 16 | 3989178 | 3 | <3 | 143 | <1 | - | 45.1 | 411 | 126 | 1075 |
| 17 | 3989179 | 7 | <3 | 220 | <1 | - | 27.1 | 1652 | 562 | 1493 |
| 18 | 3989180 | 7 | <3 | 200 | <1 | - | 28.1 | 2338 | 779 | 2442 |
| 19 | 3989181 | 10 | <3 | 204 | <1 | - | 33.9 | 598 | 224 | 3927 |
| 20 | 3989182 | 3 | <3 | 81 | <1 | 2.35 | - | 2236 | 41 | 383 |
| 21 | 3989183 | 18 | 11 | 71 | <1 | 1.95 | - | 375 | 12 | 54 |
| 22 | 3989184 | 2 | <3 | 32 | <1 | 2.75 | - | 547 | 65 | 1117 |
| 23 | 3989185 | 3 | <3 | 66 | <1 | 2.64 | - | 583 | 98 | 1413 |
| 24 | 3989186 | 5 | <3 | 72 | <1 | - | 6.9 | 1098 | 119 | 3155 |
| 25 | 3989401 | 3 | <3 | 78 | <1 | - | 45.7 | 235 | 20 | 150 |

Results in ppm unless otherwise specified
- = element not determined

IS = insufficient sample
SNR = sample not received

AUTHORISED OFFICER

803050

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## ANALYTICAL DATA

| SAMPLE PREFIX: | | REPORT No: | REPORT DATE: | CLIENT ORDER No: | PAGE: |
|---|---|---|---|---|---|
| | | 104165.60.10359 | 06/09/94 | 77222 | 2 OF 6 |

| | SAMPLE No. | Cu% | Pb% | Zn% | Ag% | Fe% | Fe(1:1)% | Mn% | Co% | Ni% |
|---|---|---|---|---|---|---|---|---|---|---|
| METHOD: | | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 |
| 1 | 3989402 | 2 | 3 | 70 | <1 | - | 48.7 | 264 | 20 | 215 |
| 2 | 3989403 | 3 | <3 | 93 | <1 | - | 47.7 | 554 | 46 | 536 |
| 3 | 3989404 | 4 | <3 | 64 | <1 | - | 31.4 | 348 | 49 | 408 |
| 4 | 3989405 | 3 | <3 | 43 | <1 | - | 24.5 | 233 | 18 | 200 |
| | 3989406 | 3 | 10 | 61 | <1 | - | 37.8 | 315 | 13 | 171 |
| 6 | 3989407 | 3 | 7 | 63 | <1 | - | 46.6 | 305 | 12 | 188 |
| 7 | 3989408 | 3 | <3 | 77 | <1 | - | 45.4 | 337 | 28 | 341 |
| 8 | 3989409 | 2 | <3 | 77 | <1 | - | 48.5 | 330 | 29 | 258 |
| 9 | 3989410 | 3 | <3 | 80 | <1 | - | 45.4 | 373 | 44 | 372 |
| 10 | 3989411 | 2 | <3 | 75 | <1 | - | 49.5 | 324 | 41 | 349 |
| 11 | 3989412 | 2 | <3 | 82 | <1 | - | 50.7 | 338 | 42 | 324 |
| 12 | 3989413 | <2 | <3 | 92 | <1 | - | 52.3 | 564 | 71 | 366 |
| 13 | 3989414 | 2 | <3 | 119 | <1 | - | 50.9 | 454 | 40 | 302 |
| 14 | 3989415 | 3 | <3 | 69 | <1 | - | 46.7 | 195 | 12 | 86 |
| 15 | 3989416 | 4 | 4 | 55 | <1 | - | 31.7 | 207 | 10 | 97 |
| 16 | 3989417 | 3 | <3 | 98 | <1 | - | 44.8 | 320 | 24 | 145 |
| 17 | 3989418 | 3 | <3 | 52 | <1 | - | 33.3 | 162 | 7 | 98 |
| 18 | 3989419 | 2 | <3 | 89 | <1 | - | 48.2 | 270 | 23 | 151 |
| 19 | 3989420 | 3 | <3 | 90 | <1 | - | 54.2 | 212 | 20 | 165 |
| 20 | 3989421 | 2 | <3 | 73 | <1 | - | 49.8 | 164 | 16 | 137 |
| 21 | 3989422 | 2 | <3 | 96 | <1 | - | 51.5 | 298 | 50 | 281 |
| 22 | 3989423 | 2 | <3 | 93 | <1 | - | 52.4 | 266 | 35 | 183 |
| 23 | 3989424 | 2 | <3 | 97 | <1 | - | 54.7 | 274 | 31 | 180 |
| 24 | 3989425 | 2 | <3 | 87 | <1 | - | 54.8 | 207 | 21 | 155 |
| 25 | 3989426 | 2 | <3 | 99 | <1 | - | 54.9 | 304 | 45 | 231 |

Results in ppm unless otherwise specified
- = element not determined
IS = insufficient sample
SNR = sample not received

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## ANALYTICAL DATA

| SAMPLE PREFIX | REPORT No. | REPORT DATE | CLIENT ORDER No. | PAGE |
|---|---|---|---|---|
| | 104165.60.10359 | 06/09/94 | 77222 | 3 OF 6 |

| | SAMPLE No. | Cu | Pb | Zn | Ag | Fe | Fe(1) | Mn | Co | Ni |
|---|---|---|---|---|---|---|---|---|---|---|
| METHOD | | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 |
| 1 | 3989427 | 2 | <3 | 95 | <1 | - | 54.8 | 536 | 152 | 541 |
| 2 | 3989428 | 2 | <3 | 87 | <1 | - | 48.7 | 222 | 39 | 281 |
| 3 | 3989429 | 3 | <3 | 108 | <1 | - | 35.2 | 232 | 45 | 283 |
| 4 | 3989430 | 3 | <3 | 109 | <1 | - | 41.0 | 344 | 47 | 220 |
| 5 | 3989431 | 3 | <3 | 187 | <1 | - | 50.7 | 347 | 94 | 939 |
| 6 | 3989432 | 48 | <3 | 46 | <1 | - | 10.0 | 186 | 48 | 242 |
| 7 | 3989433 | 32 | <3 | 43 | <1 | - | 15.9 | 195 | 53 | 367 |
| 8 | 3989434 | 20 | <3 | 41 | <1 | - | 17.4 | 443 | 38 | 169 |
| 9 | 3989435 | 21 | <3 | 56 | <1 | - | 15.7 | 92 | 53 | 374 |
| 10 | 3989436 | 13 | <3 | 33 | <1 | - | 10.2 | 1989 | 422 | 676 |
| 11 | 3989437 | 2 | 6 | 44 | <1 | - | 34.2 | 148 | 45 | 287 |
| 12 | 3989438 | 50 | <3 | 39 | <1 | - | 10.7 | 132 | 50 | 272 |
| 13 | 3989439 | 21 | 5 | 56 | <1 | - | 12.4 | 168 | 38 | 155 |
| 14 | 3989440 | 29 | 11 | 53 | <1 | - | 16.3 | 219 | 25 | 62 |
| 15 | 3989441 | 39 | <3 | 40 | <1 | - | 7.3 | 359 | 83 | 119 |
| 16 | 3989442 | 25 | 3 | 38 | <1 | - | 7.6 | 47 | 19 | 49 |
| 17 | 3989443 | 50 | 10 | 105 | <1 | - | 13.5 | 573 | 131 | 128 |
| 18 | 3989444 | 81 | 15 | 132 | <1 | - | 12.2 | 125 | 68 | 159 |
| 19 | 3989445 | 24 | <3 | 44 | <1 | - | 6.1 | 930 | 370 | 569 |
| 20 | 3989446 | 41 | <3 | 95 | <1 | - | 9.9 | 864 | 247 | 309 |
| 21 | 3989447 | 21 | 71 | 584 | <1 | - | 6.1 | 1787 | 214 | 158 |
| 22 | 3989448 | 17 | 48 | 128 | <1 | 4.17 | - | 130 | 7 | 19 |
| 23 | 3989449 | 40 | 62 | 95 | <1 | - | 6.4 | 73 | 7 | 26 |
| 24 | DETECTION | 2 | 3 | 2 | 1 | 0.01 | 0.1 | 3 | 3 | 3 |
| 25 | UNITS | ppm | ppm | ppm | ppm | % | % | ppm | ppm | ppm |

Results in ppm unless otherwise specified
- = element not determined

IS = insufficient sample
SNR = sample not received

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## ANALYTICAL DATA

| SAMPLE PREFIX | REPORT No. | REPORT DATE | CLIENT ORDER No. | PAGE |
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| | 104165.60.10359 | 06/09/94 | 77222 | 4 OF 6 |

| | SAMPLE No. | As | As | Au | Pt | Pd | Au | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| METHOD | | HA140 | GA140 | GS333 | GS333 | GS333 | GB309 | | | |
| 1 | 3989163 | 2.5 | – | – | – | – | – | | | |
| 2 | 3989164 | 4.5 | – | – | – | – | – | | | |
| 3 | 3989165 | 2.0 | – | – | – | – | – | | | |
| 4 | 3989166 | 2.0 | – | – | – | – | – | | | |
| 5 | 3989167 | 3.0 | – | – | – | – | – | | | |
| 6 | 3989168 | 22.5 | – | – | – | – | <0.008 | | | |
| 7 | 3989169 | 38.0 | – | – | – | – | <0.008 | | | |
| 8 | 3989170 | – | 164 | – | – | – | <0.008 | | | |
| 9 | 3989171 | 30.0 | – | – | – | – | <0.008 | | | |
| 10 | 3989172 | – | 248 | – | – | – | <0.008 | | | |
| 11 | 3989173 | 5.5 | – | – | – | – | – | | | |
| 12 | 3989174 | 4.0 | – | – | – | – | – | | | |
| 13 | 3989175 | 2.0 | – | – | – | – | – | | | |
| 14 | 3989176 | 3.0 | – | – | – | – | – | | | |
| 15 | 3989177 | 2.5 | – | – | – | – | – | | | |
| 16 | 3989178 | 10.0 | – | – | – | – | – | | | |
| 17 | 3989179 | 8.0 | – | – | – | – | – | | | |
| 18 | 3989180 | 6.5 | – | – | – | – | – | | | |
| 19 | 3989181 | 5.5 | – | – | – | – | – | | | |
| 20 | 3989182 | 2.0 | – | – | – | – | – | | | |
| 21 | 3989183 | 2.0 | – | – | – | – | – | | | |
| 22 | 3989184 | 2.5 | – | – | – | – | – | | | |
| 23 | 3989185 | 3.0 | – | – | – | – | – | | | |
| 24 | 3989186 | 4.5 | – | – | – | – | – | | | |
| 25 | 3989401 | 8.5 | – | <1 | 0.8 | <0.5 | – | | | |

Results in ppm unless otherwise specified.
– = element not determined.
IS = insufficient sample
SNR = sample not received

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## ANALYTICAL DATA

| SAMPLE PREFIX | REPORT No. | REPORT DATE | CLIENT ORDER No. | PAGE |
|---|---|---|---|---|
| | 104165.60.10359 | 06/09/94 | 77222 | 5 OF 6 |

| | SAMPLE No. | As | As | Au | Pt | Pd | Au | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| METHOD | | HA140 | GA140 | GS333 | GS333 | GS333 | GG309 | | | |
| 1 | 3989402 | 8.0 | - | - | - | - | - | | | |
| 2 | 3989403 | 7.0 | - | - | - | - | - | | | |
| 3 | 3989404 | 9.0 | - | - | - | - | - | | | |
| 4 | 3989405 | 7.5 | - | <1 | 1.2 | 0.8 | - | | | |
| 5 | 3989406 | 10.0 | - | - | - | - | - | | | |
| 6 | 3989407 | 10.0 | - | - | - | - | - | | | |
| 7 | 3989408 | 9.0 | - | - | - | - | - | | | |
| 8 | 3989409 | 8.0 | - | <1 | 1.2 | <0.5 | - | | | |
| 9 | 3989410 | 8.0 | - | - | - | - | - | | | |
| 10 | 3989411 | 7.0 | - | - | - | - | - | | | |
| 11 | 3989412 | 7.0 | - | - | - | - | - | | | |
| 12 | 3989413 | 6.0 | - | <1 | 0.9 | <0.5 | - | | | |
| 13 | 3989414 | 6.5 | - | - | - | - | - | | | |
| 14 | 3989415 | 9.0 | - | - | - | - | - | | | |
| 15 | 3989416 | 6.0 | - | - | - | - | - | | | |
| 16 | 3989417 | 7.5 | - | <1 | 1.0 | <0.5 | - | | | |
| 17 | 3989418 | 10.5 | - | - | - | - | - | | | |
| 18 | 3989419 | 7.5 | - | - | - | - | - | | | |
| 19 | 3989420 | 7.0 | - | - | - | - | - | | | |
| 20 | 3989421 | 8.5 | - | <1 | <0.5 | <0.5 | - | | | |
| 21 | 3989422 | 7.0 | - | - | - | - | - | | | |
| 22 | 3989423 | 8.0 | - | - | - | - | - | | | |
| 23 | 3989424 | 7.0 | - | - | - | - | - | | | |
| 24 | 3989425 | 7.5 | - | <1 | <0.5 | <0.5 | - | | | |
| 25 | 3989426 | 6.5 | - | - | - | - | - | | | |

Results in ppm unless otherwise specified
- = element not determined

IS = insufficient sample
SNR = sample not received

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## ANALYTICAL DATA

| SAMPLE PREFIX | REPORT No. | REPORT DATE | CLIENT ORDER No. | PAGE |
|---|---|---|---|---|
| | 104165.60.10359 | 06/09/94 | 77222 | 6 OF 6 |

| | SAMPLE No. | As | As | Au | Pt | Pd | Au | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| METHOD | | HA140 | GA140 | GS333 | GS333 | GS333 | GG309 | | | |
| 1 | 3989427 | 7.5 | - | - | - | - | - | | | |
| 2 | 3989428 | 8.0 | - | - | - | - | - | | | |
| 3 | 3989429 | 7.0 | - | <1 | 1.0 | <0.5 | - | | | |
| 4 | 3989430 | 7.5 | - | - | - | - | - | | | |
| 5 | 3989431 | 9.0 | - | - | - | - | - | | | |
| 6 | 3989432 | 7.0 | - | - | - | - | - | | | |
| 7 | 3989433 | 12.0 | - | - | - | - | - | | | |
| 8 | 3989434 | 8.5 | - | - | - | - | - | | | |
| 9 | 3989435 | 12.0 | - | - | - | - | - | | | |
| 10 | 3989436 | 8.0 | - | - | - | - | - | | | |
| 11 | 3989437 | 31.5 | - | - | - | - | - | | | |
| 12 | 3989438 | 8.5 | - | - | - | - | - | | | |
| 13 | 3989439 | 11.5 | - | - | - | - | - | | | |
| 14 | 3989440 | 8.0 | - | - | - | - | - | | | |
| 15 | 3989441 | 5.0 | - | - | - | - | - | | | |
| 16 | 3989442 | 4.0 | - | - | - | - | - | | | |
| 17 | 3989443 | 14.5 | - | - | - | - | - | | | |
| 18 | 3989444 | 12.5 | - | - | - | - | - | | | |
| 19 | 3989445 | 8.0 | - | - | - | - | - | | | |
| 20 | 3989446 | 7.0 | - | - | - | - | - | | | |
| 21 | 3989447 | 5.0 | - | - | - | - | - | | | |
| 22 | 3989448 | 3.0 | - | - | - | - | - | | | |
| 23 | 3989449 | 10.0 | - | - | - | - | - | | | |
| 24 | DETECTION | 0.5 | 100 | 1 | 0.5 | 0.5 | 0.008 | | | |
| 25 | UNITS | ppm | ppm | ppb | ppb | ppb | ppm | | | |

Results in ppm unless otherwise specified
- = element not determined

IS = insufficient sample
SNR = sample not received

AUTHORISED OFFICER

# Appendix Three - Petrology Laboratory Reports

**Mason Geoscience Pty. Ltd.**
ACN 063 539 686

PO Box 78, Glenside SA 5065, Australia
141 Yarrabee Road, Greenhill SA 5140, Australia
Ph: 08-390-1507 Fax: 08-390-1194

*Petrological Services*
*for the Minerals Exploration and Mining Industry*

# SAMPLE RETURN ADVICE

803036

Date 21 Sep 1994

To CRA Exploration Pty. Ltd.
Unit 1 / 23 Bell Street
PRESTON VIC 3072
Attention: Simon Maher

Our Job No. 2048
Your Ref. DPO No. 77224
Shipping Wards Express courier

Enclosed please find the following:

| | |
|---|---|
| 19 | Rock sample offcuts and remnants. |
| 16 | Thin sections. |
| 1 | Polished thin sections. |
| 2 | Polished blocks. |

One (1) copy of Mason Geoscience Report #2048
[One copy directed to Admin. Officer, Preston]
[One copy directed to CRAE Info. Systems, Canberra]

We thank you for your patronage, and look forward to providing further petrological services in the future.

Yours sincerely,

for Mason Geoscience Pty. Ltd.

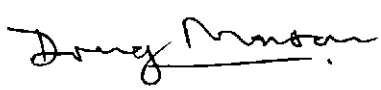
**Mason Geoscience Pty. Ltd.**
ACN 063 539 686

PO Box 78, Glenside SA 5065, Australia
141 Yarrabee Road, Greenhill SA 5140, Australia
Ph: 08-390-1507 Fax: 08-390-1194

*Petrological Services*
*for the Minerals Exploration and Mining Industry*

803037

| | |
|---|---|
| REPORT TITLE | **Mineragraphic and Petrographic Descriptions for Nineteen Rock Samples** |
| REPORT # | 2048 |
| CLIENT | CRA Exploration Pty. Ltd. |
| ORDER NO. | DPO No. 77224 |
| CONTACT | Mr. Simon Maher |

| | |
|---|---|
| REPORT BY | Dr. Douglas R. Mason |
| SIGNED |  |
| | for Mason Geoscience Pty. Ltd. |
| DATE | 21 September 1994 |

## 1. INTRODUCTION

A suite of nineteen (19) rock, drill chip, and drill core samples was received from Mr. Simon Maher (CRA Exploration Pty. Ltd., Preston, VIC) on 27 August 1994.

Background information, together with particular requests, was provided as follows:

i) Samples 3989164, -167, -172, and -183 are from the Anderson's Creek Ultramafic Complex, Tasmania. Of particular interest are sulphide mineralogy and textures (service code MIN 1) for samples 3989164, -167, and -174. Samples 3989183 is from ?host slates to the ultramafic complex, and should be checked for contact metamorphic textures and mineralogy (service code PETRO 1).

ii) Samples 3530446 - 450 are half core samples from testing of porphyry-type Cu-Mo mineralisation, Dogwood Prospect, eastern Victoria. Of particular interest are alteration mineralogies and style (service code PETRO 1 or PETRO 2 as appropriate).

iii) Samples 3530444, 4138501 - 510 are from host rock settings of several possible porphyry-type mineralisation occurrences in eastern Victoria. Of particular interest are alteration mineralogies and style (service code PETRO 1 or PETRO 2 as appropriate).

iv) Samples 4138511 - 513 are half core samples from prospect testing in the Cerberean Cauldron ring dyke. Of particular interest are alteration mineralogies and style (service code PETRO 1 or PETRO 2 as appropriate).

v) Sample 3992047 is bottom-of-hole auger rock chips from a Cambrian Greenstone Belt prospect, described in the field as altered ?dolerite with glassy ?quartz grains and acicular ?amphibole crystals. Service code PETRO 1 is required.

This report contains the full results of this work.

## 2. METHODS

Polished blocks were prepared for samples 3989164 and 3989174, a polished thin section was prepared for sample 3989167, and standard thin sections were prepared for all other samples. The sections were obtained at commercial rates from the Department of Geology, University of Ballarat.

Conventional transmitted and reflected polarised light microscopy were used to prepare the petrographic and mineragraphic descriptions. Each sample was evaluated as approprite for specific preparation of a brief mineragraphic description, a brief petrographic description, a routine petrographic description, or a combined petrographic and mineragraphic description.

Section offcuts for particular samples (3530444, 4138501, 4138510, 4138511, 4138512) were stained for K-feldspar using the conventional sodium cobaltinitrite method. These samples were selected after preliminary petrographic study because of the possibility of some K-feldspar being present. Each offcut was etched in HF for ~5 seconds, rinsed in water, covered with freshly made saturated solution of sodium cobaltinitrite, and finally rinsed. This method reveals the presence of K-feldspar, which accepts a strong yellow stain.

## 3. MINERAGRAPHIC AND PETROGRAPHIC DESCRIPTIONS

The mineragraphic and petrographic descriptions are provided in the following pages.

# Mineragraphic and Petrographic Descriptions

# for Nineteen Rock Samples

## SUMMARY

### 1. Rock Samples

- A suite of nineteen (19) rock samples from diverse locations has been studied using petrographic and mineragraphic methods.

### 2. Results

| SAMPLE | RESULTS |
|---|---|
| 3989164 | Intercumulus pyrrhotite (+ exsolved pentlandite) + chalcopyrite; alteration marcasite |
| 3989167 | Altered gabbronorite (intercumulus pyrrhotite + chalcopyrite; alteration pyrrhotite) |
| 3989174 | Pyrrhotite, chalcopyrite (intercumulus and alteration generations) |
| 3989183 | Altered mylonitic quartz-biotite schist |
| 3992047 | Quartz-actinolite-epidote-altered dolerite |
| 3530444 | Altered rhyolite porphyry (negative K-feldspar stain) |
| 3530446 | Veined, altered meta-quartzose sandstone |
| 3530447 | Fractured, altered crenulated phyllite |
| 3530448 | Medium- to high-intensity phyllic-altered granitoid |
| 3530449 | Veined, high-intensity phyllic-altered quartzo-feldspathic rock (?granitoid) |
| 3530450 | Medium- to high-intensity phyllic-altered granitoid porphyry |
| 4138501 | Veined, altered meta-siltstone (negative K-feldspar stain) |
| 4138502 | Meta-pelite |
| 4138506 | Meta-quartzose sandstone |
| 4138508 | Meta-quartzose sandstone |
| 4138510 | Altered leuco-granitoid; Meta-siltstone wall rock (negative K-feldspar stain) |
| 4138511 | Veined, altered leuco-granitoid (negative K-feldspar stain) |
| 4138512 | Fractured, veined, altered granite porphyry (negative K-feldspar stain) |
| 4138513 | Veined, high-intensity phyllic-altered hydrothermal breccia |

SAMPLE : 3989164 (Anderson's Creek Ultramafic Complex, Tasmania)

SECTION NO. : 3989164

HAND SPECIMEN : The rock sample is a fine- to medium-grained, weakly laminated crystalline rock with a waxy greenish grey colour and an orange ferruginous weathering rind.

BRIEF MINERAGRAPHY :

In polished block, small ragged sulphide grains are sparsely and irregularly disseminated through the rock.

Marcasite is most abundant, occurring as small angular to ragged aggregates ranging from ~0.2mm down to micron size. It is concentrated in dark non-opaque patches in the rock which might represent alteration patches. The marcasite aggregates are fine-grained, and commonly contain a turbid dark indeterminate patchy zone in their core. Their size and shape are reminiscent of pyrrhotite (see next).

Pyrrhotite occurs in trace amount as small ragged grains ~0.1-0.2mm in size. It is very sparsely and irregularly scattered through the rock. It contains a trace of pentlandite as small ragged elongate "flames".

Chalcopyrite is present in trace amount. It forms small angular grains in close association with the pyrrhotite, but also occurs associated with the marcasite aggregates. Some grains contain very fine-grained dark blue covellite alteration rims.

INTERPRETATION:

Pyrrhotite and chalcopyrite are considered to have been part of the late magmatic igneous assemblage of this mafic to ultramafic rock. Subsequent alteration has caused partial replacement of pyrrhotite by marcasite. Incipient supergene alteration of chalcopyrite has generated a trace of covellite as replacement rims.

SAMPLE : 3989167 (Anderson's Creek Ultramafic Complex, Tasmania)

SECTION NO. : 3989167

HAND SPECIMEN : The rock sample is composed of a fine- to medium-grained, weakly lineated crystalline assemblage of off-white grains (altered feldspar) and dark greenish grey grains (ferromagnesian phases).

ROCK NAME : **Altered gabbronorite**

COMBINED ROUTINE PETROGRAPHY AND MINERAGRAPHY:

A visual estimate of the modal mineral abundances gives the following:

| Mineral | Vol.% | Origin |
|---|---|---|
| Plagioclase | 2 | Relict igneous |
| Clinopyroxene | 25 | Igneous |
| Orthopyroxene | 20 | Igneous |
| Alteration phases (incl. sericite) | 50 | Alteration (after plagioclase) |
| Actinolite | 1 | Alteration (after orthopyroxene) |
| Pyrrhotite | 1 | Late igneous / alteration |
| Chalcopyrite | Tr | Late igneous |
| Pentlandite | Tr | Late igneous (inclusions in pyrrho.) |

In polished thin section, this samples displays a weakly laminated cumulate igneous texture modified by pervasive alteration of feldspar.

Plagioclase was abundant, occurring as subhedral crystals and blocky to cuspate grains ~0.4-1.0mm in size. All have suffered intense alteration to dense mats of very fine-grained alteration materials, mostly with the appearance of fine sericite flecks. The exceptionally fine grain size and turbid appearance prevents positive identification, but it is likely that other phases such as prehnite are also present in the darker, more diffuse alteration patches in the feldspar sites. A minor amount of relict plagioclase is observable in some grains.

Orthopyroxene builds subhedral prismatic crystals and somewhat more cuspate grains. Commonly the more elongate crystals display a preferred orientation which defines the primary igneous layering. Most grains are quite fresh, but some display partial replacement by fibrous pale to colourless actinolite around margins and along microfractures through grains.

Clinopyroxene occurs as small anhedral grains that tend to be moulded on the orthopyroxene, suggesting slightly later crystallisation. The clinopyroxene therefore tends to display shapes that are more cuspate than prismatic. It is quite fresh, with minor to moderate development of thin exsolution lamellae.

Pyrrhotite forms cuspate interstitial grains that range in size from ~0.8mm down to <0.1mm. Rare pentlandite occurs as small ragged "flames" entirely within pyrrhotite. A trace amount occurs as minute (micron sized) ragged grains concentrated in actinolitic alteration in incipiently altered orthopyroxene grains.

Chalcopyrite occurs as small anhedral grains ~0.1mm in size, invariably at the margins of pyrrhotite grains.

INTERPRETATION:

This sample represents a gabbroic cumulate rock that formed during crystallisation of a mafic intrusion. The presence of two pyroxenes in the ferromagnesian assemblage strongly suggests that the parental basaltic magma was of tholeiitic magmatic affinity. Textures suggest that orthopyroxene formed early, but was quickly joined by plagioclase and clinopyroxene. Sulphides (pyrrhotite >> chalcopyrite) filled late magmatic interstices.

A minor amount of very fine-grained pyrrhotite formed in association with actinolite during mild alteration of ferromagnesian grains. At this time, plagioclase suffered almost complete replacement by very fine-grained sericite and other possible alteration phases (including ?prehnite).

SAMPLE : 3989174 (Anderson's Creek Ultramafic Complex, Tasmania)

SECTION NO. : 3989174

HAND SPECIMEN : The rock sample is a medium-grained waxy greenish grey crystalline rock with a gabbroic appearance.

BRIEF MINERAGRAPHY :

In polished block, a minor amount of sulphides are observed disseminated throughout the rock.

Pyrrhotite is the dominant sulphide. It occurs in two sites and size ranges:

i) Larger grains ~0.1-0.6mm in size form cuspate grains that fill interstices between larger equant non-opaque grains.

ii) Smaller grains of micron size occur along cleavage traces in altered non-opaque grains.

Chalcopyrite is the only other sulphide phase identified. It is much less abundant than the pyrrhotite, but like that phase, it too occurs in two sites and size ranges:

i) Larger grains of curved, cuspate, or blebby form up to ~0.1mm in size occur in close association with the larger pyrrhotite grains.

ii) Minute (micron sized) ragged grains occur with pyrrhotite entrained along cleavage traces of altered non-opaque grains.

INTERPRETATION:

The presence of minor pyrrhotite and trace chalcopyrite in this sample is consistent with its occurrence in a mafic / ultramafic igneous complex. The presence of two size ranges in the sulphides is explained by:

i) Initial crystallisation of sulphides as part of the late magmatic mineral assemblage. They filled interstices between earlier-formed phases (ferromagnesian phases, plagioclase feldspar).

ii) Development of trace pyrrhotite and chalcopyrite during low-grade alteration of the rock body. This allowed crystallisation of minute grains of sulphides along cleavage traces in suitable grains (most probably ferromagnesian phases).

SAMPLE : 3989183 (Anderson's Creek Ultramafic Complex, Tasmania)

SECTION NO. : 3989183

HAND SPECIMEN : The rock sample is a fine-grained, grey, hard rock with a strong foliation defined by small black mica flakes.

ROCK NAME : **Altered mylonitic quartz-biotite schist**

BRIEF PETROGRAPHY:

In thin section, this sample displays a strongly foliated metamorphic texture in which relict quartz particles display mylonitic flattening and recrystallisation, and relict unstrained feldspar grains have suffered virtually complete sericitic alteration.

Quartz is moderately abundant, occurring as subparallel elongate lenses whose alignment contributes to a strong foliation. The lenses display recrystallisation to finer-grained sutured granoblastic polycrystalline aggregates. Prior to deformation, the quartz most likely occurred as discrete equant grains of probable clastic sedimentary origin.

Biotite forms large flakes, strongly pleochroic from bright red to pale straw yellow. They are strongly aligned in the trace of the foliation, and many appear to have suffered incipient recrystallisation within the foliation. Chlorite has partly replaced some biotite.

Equant blocky crystals are more-or-less uniformly distributed through the rock. They are enwrapped by the foliation, suggesting they formed prior to the deformation event. Most have been completely replaced by massive fine-grained sericite, forming clear fibrous blocky cores and turbid pale brownish rims. In rare grains, relict feldspar is evident, suggesting that most of the sites were feldspar grains. Less commonly, some blocky to subhedral prismatic crystal sites have been completely replaced by fine-grained massive drab green chlorite: whether these were feldspar or not remains uncertain.

Tourmaline occurs in minor amount as large porphyroblastic grains, pleochroic from orange-brown to very pale brown, lying subparallel to the foliation and weakly deformed (shadowy strain extinction in single crystals).

INTERPRETATION:

This sample represents a quartzo-feldspathic sedimentary rock that was originally composed of abundant quartz and lesser feldspar in a finer-grained, clay-bearing matrix. Subsequent dynamic regional metamorphism caused recrystallisation of the clay matrix to foliated biotite, and also caused elongation and recrystallisation of quartz particles. Subsequent low-grade alteration caused virtually complete sericitic alteration of feldspar, and partial chloritisation of biotite. This alteration may be attributed to local intrusive events, but there appear to be no new contact metamorphic minerals developed in the rock.

**Appendix Four - Geochemical Soil and Pisolite Sample Ledgers and Laboratory Reports**

| CRAE Exploration Pty Ltd GEOCHEMICAL SAMPLE LEDGER: SOIL | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Project: Ultramafic Ni, Tasmania | | | Map Sheets | | Sampler: S.Maher | | | | | | LAB: | ANALABS, Burnie | | | | | | | | | | | | | | |
| Tenement: EL 35/92 | | | 250,000: SK55-4 | | Date: August 1994 | | | | | | Units | ppm | ppm | ppm | ppm | % | % | ppm | ppm | ppm | ppm | ppm | ppb | ppb | ppb | ppm |
| DPO#77222 | | | 25,000: 4643-42, 4842-44 | | | | | | | | Det.Limit: | 2 | 3 | 2 | 1 | 0.01 | 0.1 | 3 | 3 | 3 | 0.5 | 100 | 1 | 0.5 | 0.5 | 0.008 |
| | | | | | | | | | | | Method: | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | HA140 | GA140 | GS333 | GS333 | GS333 | GG309 |
| SAMPLEno. | EASTAMG | NORTHAMG | PROSP. | sampleTYPE | SOILtype | horizon | colour | texture | depth(m) | comments | Cu | Pb | Zn | Ag | Fe | Fe(1) | Mn | Co | Ni | As | As | Au | Pt | Pd | Au |
| 3989401 | 481400 | 5437115 | BarnesHill | grab-ferruginous laterite | residual | zone I | N-O-B | | 0.00 | Sub-spherical goethite-maghemite pisolite, minor sub-angular magnetite. | 3 | <3 | 78 | <1 | - | 45.7 | 235 | 20 | 150 | 8.5 | - | <1 | 0.8 | <0.5 | - |
| 3989402 | 481424 | 5437122 | BarnesHill | grab-ferruginous laterite | residual | zone I | N-O-B | | 0.00 | Sub-spherical goethite-maghemite pisolite, minor sub-angular magnetite. | 2 | 3 | 70 | <1 | - | 48.7 | 264 | 20 | 215 | 8 | - | - | - | - | - |
| 3989403 | 481448 | 5437128 | BarnesHill | grab-ferruginous laterite | residual | zone I | N-O-B | | 0.00 | Sub-spherical goethite-maghemite pisolite, minor sub-angular magnetite. | 3 | <3 | 93 | <1 | - | 47.7 | 554 | 46 | 536 | 7 | - | - | - | - | - |
| 3989404 | 481473 | 5437135 | BarnesHill | grab-ferruginous laterite | residual | zone I | N-O-B | | 0.00 | Sub-spherical goethite-maghemite pisolite, duricrust, & minor sub-angular magnetite. | 4 | <3 | 64 | <1 | - | 31.4 | 348 | 49 | 408 | 9 | - | - | - | - | - |
| 3989405 | 481497 | 5437142 | BarnesHill | grab-ferruginous laterite | residual | zone I | N-O-B | | 0.00 | Sub-spherical goethite-maghemite pisolite, duricrust, & minor sub-angular magnetite. | 3 | <3 | 43 | <1 | - | 24.5 | 233 | 18 | 200 | 7.5 | - | <1 | 1.2 | 0.8 | - |
| 3989406 | 481521 | 5437149 | BarnesHill | grab-ferruginous laterite | residual | zone I | N-O-B | | 0.00 | Sub-spherical goethite-maghemite pisolite, minor sub-angular magnetite. | 3 | 10 | 61 | <1 | - | 37.8 | 315 | 13 | 171 | 10 | - | - | - | - | - |
| 3989407 | 481545 | 5437155 | BarnesHill | grab-ferruginous laterite | residual | zone I | N-O-B | | 0.00 | Sub-spherical goethite-maghemite pisolite, minor sub-angular magnetite. | 3 | 7 | 63 | <1 | - | 46.6 | 305 | 12 | 188 | 10 | - | - | - | - | - |
| 3989408 | 481569 | 5437162 | BarnesHill | grab-ferruginous laterite | residual | zone I | N-O-B | | 0.00 | Sub-spherical goethite-maghemite pisolite, minor sub-angular magnetite. | 3 | <3 | 77 | <1 | - | 45.4 | 337 | 28 | 341 | 9 | - | - | - | - | - |
| 3989409 | 481594 | 5437169 | BarnesHill | grab-ferruginous laterite | residual | zone I | N-O-B | | 0.00 | Sub-spherical goethite-maghemite pisolite, minor sub-angular magnetite. | 2 | <3 | 77 | <1 | - | 48.5 | 330 | 29 | 258 | 8 | - | <1 | 1.2 | <0.5 | - |
| 3989410 | 481618 | 5437175 | BarnesHill | grab-ferruginous laterite | residual | zone I | N-O-B | | 0.00 | Sub-spherical goethite-maghemite pisolite, minor sub-angular magnetite. | 3 | <3 | 80 | <1 | - | 45.4 | 373 | 44 | 372 | 8 | - | - | - | - | - |
| 3989411 | 481642 | 5437182 | BarnesHill | grab-ferruginous laterite | residual | zone I | N-O-B | | 0.00 | Sub-spherical goethite-maghemite pisolite, minor sub-angular magnetite. | 2 | <3 | 75 | <1 | - | 49.5 | 324 | 41 | 349 | 7 | - | - | - | - | - |
| 3989412 | 481666 | 5437189 | BarnesHill | grab-ferruginous laterite | residual | zone I | N-O-B | | 0.00 | Sub-spherical goethite-maghemite pisolite, minor sub-angular magnetite. | 2 | <3 | 82 | <1 | - | 50.7 | 338 | 42 | 324 | 7 | - | - | - | - | - |
| 3989413 | 481690 | 5437195 | BarnesHill | grab-ferruginous laterite | residual | zone I | N-O-B | | 0.00 | Sub-spherical goethite-maghemite pisolite, minor sub-angular magnetite. | <2 | <3 | 92 | <1 | - | 52.3 | 564 | 71 | 368 | 6 | - | <1 | 0.9 | <0.5 | - |
| 3989414 | 481378 | 5437109 | BarnesHill | grab-ferruginous laterite | residual | zone I | N-O-B | | 0.00 | Sub-spherical goethite-maghemite pisolite, minor sub-angular magnetite. | 2 | <3 | 119 | <1 | - | 50.9 | 454 | 40 | 302 | 6.5 | - | - | - | - | - |
| 3989415 | 481355 | 5437102 | BarnesHill | grab-ferruginous laterite | residual | zone I | N-O-B | | 0.00 | Sub-spherical goethite-maghemite pisolite, duricrust, & minor sub-angular magnetite. | 3 | <3 | 69 | <1 | - | 46.7 | 195 | 12 | 86 | 9 | - | - | - | - | - |
| 3989416 | 481333 | 5437096 | BarnesHill | grab-ferruginous laterite | residual | zone I | N-O-B | | 0.00 | Sub-spherical goethite-maghemite pisolite, minor sub-angular magnetite. | 4 | 4 | 55 | <1 | - | 31.7 | 207 | 10 | 97 | 6 | - | - | - | - | - |
| 3989417 | 481310 | 5437089 | BarnesHill | grab-ferruginous laterite | residual | zone I | N-O-B | | 0.00 | Sub-spherical goethite-maghemite pisolite, minor sub-angular magnetite. | 3 | <3 | 98 | <1 | - | 44.8 | 320 | 24 | 145 | 7.5 | - | <1 | 1 | <0.5 | - |
| 3989418 | 481288 | 5437083 | BarnesHill | grab-ferruginous laterite | residual | zone I | N-O-B | | 0.00 | Sub-spherical goethite-maghemite pisolite, minor sub-angular magnetite. | 3 | <3 | 52 | <1 | - | 33.3 | 162 | 7 | 98 | 10.5 | - | - | - | - | - |
| 3989419 | 481265 | 5437077 | BarnesHill | grab-ferruginous laterite | residual | zone I | N-O-B | | 0.00 | Sub-spherical goethite-maghemite pisolite, minor sub-angular magnetite. | 2 | <3 | 89 | <1 | - | 48.2 | 270 | 23 | 151 | 7.5 | - | - | - | - | - |
| 3989420 | 481243 | 5437070 | BarnesHill | grab-ferruginous laterite | residual | zone I | N-O-B | | 0.00 | Sub-spherical goethite-maghemite pisolite, minor sub-angular magnetite. | 3 | <3 | 90 | <1 | - | 54.2 | 212 | 20 | 165 | 7 | - | - | - | - | - |
| 3989421 | 481220 | 5437064 | BarnesHill | grab-ferruginous laterite | residual | zone I | N-O-B | | 0.00 | Sub-spherical goethite-maghemite pisolite, minor sub-angular magnetite. | 2 | <3 | 73 | <1 | - | 49.8 | 164 | 16 | 137 | 8.5 | - | <1 | <0.5 | <0.5 | - |
| 3989422 | 481198 | 5437057 | BarnesHill | grab-ferruginous laterite | residual | zone I | N-O-B | | 0.00 | Sub-spherical goethite-maghemite pisolite, minor sub-angular magnetite. | 2 | <3 | 96 | <1 | - | 51.5 | 298 | 50 | 281 | 7 | - | - | - | - | - |
| 3989423 | 481175 | 5437051 | BarnesHill | grab-ferruginous laterite | residual | zone I | N-O-B | | 0.00 | Sub-spherical goethite-maghemite pisolite, minor sub-angular magnetite. | 2 | <3 | 93 | <1 | - | 52.4 | 256 | 35 | 183 | 8 | - | - | - | - | - |
| 3989424 | 481153 | 5437045 | BarnesHill | grab-ferruginous laterite | residual | zone I | N-O-B | | 0.00 | Sub-spherical goethite-maghemite pisolite, minor sub-angular magnetite. | 2 | <3 | 97 | <1 | - | 54.7 | 274 | 31 | 180 | 7 | - | - | - | - | - |
| 3989425 | 481130 | 5437038 | BarnesHill | grab-ferruginous laterite | residual | zone I | N-O-B | | 0.00 | Sub-spherical goethite-maghemite pisolite, minor sub-angular magnetite. | 2 | <3 | 87 | <1 | - | 54.8 | 207 | 21 | 155 | 7.5 | - | <1 | <0.5 | <0.5 | - |
| 3989426 | 481108 | 5437032 | BarnesHill | grab-ferruginous laterite | residual | zone I | N-O-B | | 0.00 | Sub-spherical goethite-maghemite pisolite, minor sub-angular magnetite. | 2 | <3 | 99 | <1 | - | 54.9 | 304 | 45 | 231 | 6.5 | - | - | - | - | - |
| 3989427 | 481085 | 5437025 | BarnesHill | grab-ferruginous laterite | residual | zone I | N-O-B | | 0.00 | Sub-spherical goethite-maghemite pisolite, minor sub-angular magnetite. | 2 | <3 | 95 | <1 | - | 54.8 | 536 | 152 | 541 | 7.5 | - | - | - | - | - |

| CRAE Exploration Pty Ltd GEOCHEMICAL SAMPLE LEDGER: SOIL | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Project: Ultramafic Ni, Tasmania | | | Map Sheets | | Sampler: S.Maher | | | | | LAB: | ANALABS, Burnie | | | | | | | | | | | | | | |
| Tenement: EL 35/92 | | | 250,000: SK55-4 | | Date: August 1994 | | | | | Units | ppm | ppm | ppm | ppm | % | % | ppm | ppm | ppm | ppm | ppm | ppb | ppb | ppb | ppm |
| DPO#77222 | | | 25,000: 4643-42, 4842-44 | | | | | | | Det.Limit: | 2 | 3 | 2 | 1 | 0.01 | 0.1 | 3 | 3 | 3 | 0.5 | 100 | 1 | 0.5 | 0.5 | 0.008 |
| | | | | | | | | | | Method: | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | HA140 | GA140 | GS333 | GS333 | GS333 | GG309 |
| SAMPLEnc. | EASTAMG | NORTHAMG | PROSP. | sampleTYPE | SOILtype | horizon | colour | texture | depth(m) | comments | Cu | Pb | Zn | Ag | Fe | Fe(1) | Mn | Co | Ni | As | As | Au | Pt | Pd | Au |
| 3989428 | 481063 | 5437019 | BarnesHill | grab-ferruginous laterite | residual? | zone I | N-O-B | | 0.00 | Sub-spherical goethite-maghemite pisolite, minor sub-angular magnetite. | 2 | <3 | 87 | <1 | - | 48.7 | 222 | 39 | 281 | 8 | - | - | - | - | - |
| 3989429 | 481040 | 5437013 | BarnesHill | grab-ferruginous laterite | residual? | zone I | N-O-B | | 0.00 | Sub-spherical goethite-maghemite pisolite, minor sub-angular magnetite. | 3 | <3 | 108 | <1 | - | 35.2 | 232 | 45 | 283 | 7 | - | <1 | 1 | <0.5 | - |
| 3989430 | 481018 | 5437006 | BarnesHill | grab-ferruginous laterite | residual? | zone I | N-O-B | | 0.00 | Sub-spherical goethite-maghemite pisolite, minor sub-angular magnetite. | 3 | <3 | 109 | <1 | - | 41 | 344 | 47 | 220 | 7.5 | - | - | - | - | - |
| 3989431 | 480995 | 5437000 | BarnesHill | grab-ferruginous laterite | residual | zone I | N-O-B | | 0.00 | Goethite duricrust in laterite profile o/c. | 3 | <3 | 187 | <1 | - | 50.7 | 347 | 94 | 939 | 9 | - | - | - | - | - |
| 3989432 | 479190 | 5441135 | Wcontact | hand auger-soil | residual | C | R-O-Y | Ccy | 0.45 | We lgb chips. Ni sulphide observed in lgb subcrop. | 48 | <3 | 46 | <1 | - | 10 | 186 | 48 | 242 | 7 | - | - | - | - | - |
| 3989433 | 479200 | 5441135 | Wcontact | hand auger-soil | residual | C | O-B | Ccy | 0.30 | We lgb and pisolite chips. | 32 | <3 | 43 | <1 | - | 15.9 | 195 | 53 | 367 | 12 | - | - | - | - | - |
| 3989434 | 479225 | 5441135 | Wcontact | hand auger-soil | residual | C | Y-B | Ccy | 0.25 | Pisolite chips. | 20 | <3 | 41 | <1 | - | 17.4 | 443 | 38 | 169 | 8.5 | - | - | - | - | - |
| 3989435 | 479250 | 5441135 | Wcontact | hand auger-soil | residual | C | O-B-R | Ccy | 0.60 | Ovq and pisolite chips. | 21 | <3 | 56 | <1 | - | 15.7 | 92 | 53 | 374 | 12 | - | - | - | - | - |
| 3989436 | 479275 | 5441135 | Wcontact | hand auger-soil | residual | C | L-O-B | Ccy | 0.70 | Relict lgb texture and ?magnetite seams. | 13 | <3 | 33 | <1 | - | 10.2 | 1989 | 422 | 676 | 8 | - | - | - | - | - |
| 3989437 | 479300 | 5441135 | Wcontact | hand auger-soil | residual | B | Y-B | Ccy | 0.50 | Pisolite chips. Relict laterite cover. Chalcopyrite bearing lgb float. | 2 | 6 | 44 | <1 | - | 34.2 | 148 | 45 | 287 | 31.5 | - | - | - | - | - |
| 3989438 | 479180 | 5441135 | Wcontact | hand auger-soil | residual | C | Y-B | Ccy | 0.40 | Relict lgb texture. | 50 | <3 | 39 | <1 | - | 10.7 | 132 | 50 | 272 | 8.5 | - | - | - | - | - |
| 3989439 | 479170 | 5441135 | Wcontact | hand auger-soil | residual | C-B? | Y-O | Ccy | 0.50 | Relict lgb texture plus pisolites. | 21 | 5 | 56 | <1 | - | 12.4 | 168 | 38 | 155 | 11.5 | - | - | - | - | - |
| 3989440 | 479150 | 5441135 | Wcontact | hand auger-soil | residual | C | Y-O-B | Ccy | 0.70 | We lgb chips. | 29 | 11 | 53 | <1 | - | 16.3 | 219 | 25 | 62 | 8 | - | - | - | - | - |
| 3989441 | 479125 | 5441135 | Wcontact | hand auger-soil | residual | C | LO-B | Ccy | 0.70 | Relict lgb texture. | 39 | <3 | 40 | <1 | - | 7.3 | 359 | 83 | 119 | 5 | - | - | - | - | - |
| 3989442 | 479100 | 5441135 | Wcontact | hand auger-soil | residual | C | O-W | Ccy | 0.75 | We albitite chips. | 25 | 3 | 38 | <1 | - | 7.6 | 47 | 19 | 49 | 4 | - | - | - | - | - |
| 3989443 | 479075 | 5441135 | Wcontact | hand auger-soil | residual | C | LO-B-Y | Ccy | 0.90 | We lgb chips. | 50 | 10 | 105 | <1 | - | 13.5 | 573 | 131 | 128 | 14.5 | - | - | - | - | - |
| 3989444 | 479050 | 5441135 | Wcontact | hand auger-soil | residual | C | O | Ccy | 0.80 | Relict pyroxenite texture. | 81 | 15 | 132 | <1 | - | 12.2 | 125 | 68 | 159 | 12.5 | - | - | - | - | - |
| 3989445 | 479025 | 5441135 | Wcontact | hand auger-soil | residual | C | Y-B | Ccy | 0.80 | Relict lgb texture. | 24 | <3 | 44 | <1 | - | 6.1 | 930 | 370 | 569 | 8 | - | - | - | - | - |
| 3989446 | 479000 | 5441135 | Wcontact | hand auger-soil | residual | C | O-B | Ccy | 0.75 | We pyroxenite textures w/ N ?magnetite seams. | 41 | <3 | 95 | <1 | - | 9.9 | 864 | 247 | 309 | 7 | - | - | - | - | - |
| 3989447 | 478975 | 5441135 | Wcontact | hand auger-soil | residual | C | LO-B-V | Ccy | 0.75 | We pyroxenite textures. | 21 | 71 | 584 | <1 | - | 6.1 | 1787 | 214 | 158 | 5 | - | - | - | - | - |
| 3989448 | 478950 | 5441135 | Wcontact | hand auger-soil | residual | C | B | Ccy | 0.40 | N-W cherty chips. Cambrian host sediments. | 17 | 48 | 128 | <1 | 4.17 | - | 130 | 7 | 19 | 3 | - | - | - | - | - |
| 3989449 | 478925 | 5441135 | Wcontact | hand auger-soil | residual | C | D-O-B | Ccy | 0.60 | Cherty and fine sedimentary rock chips. | 40 | 62 | 95 | <1 | - | 6.4 | 73 | 7 | 26 | 10 | - | - | - | - | - |

| CRAE Exploration Pty. Limited GEOCHEMICAL SAMPLE LEDGER: SOIL | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Project: Ultramafic Ni, Tasmania | | | Map Sheets | | | Samplers: SM & VM | | | | LAB: Inchcape Testing Services Pty. Ltd. (Analabs) | | | | | | | | | | | | | | | |
| Tenement: EL 35/92 | | | 250,000: SK55-4 | | | Date: December, 1994 | | | | Units | ppm | ppm | ppm | ppm | % | % | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| DPO# 77228 | | | 25,000: 4643-42, 4842-44 | | | | | | | Det.Limit: | 2 | 5 | 2 | 1 | 0.01 | 0.1 | 3 | 3 | 1 | 0.005 | 0.005 | 0.5 | 50 | 1 |
| | | | | | | | | | | Method: | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GG313 | GG313 | HA140 | GA140 | HA140 |
| SAMPLEno. | EASTAMG | NORTHAMG | PROSP. | sampleTYPE | SOILtype | horizon | colour | texture | depth(m) | comments | Cu | Pb | Zn | Ag | Fe | Fe(1) | Mn | Co | Ni | Au | Au(R) | As | As | Bi |
| 3989485 | 479890 | 5441430 | Wcontact | hand auger | residual | C | 0-W | friable clay | 1.20 | Traverse A, on road. Relict fg ?gabbronorite texture. | 6 | 38 | 57 | <1 | - | 7.2 | 194 | 37 | 109 | 0.009 | - | 10.5 | - | <1 |
| 3989486 | 479870 | 5441416 | Wcontact | hand auger | residual | C | 0-W | friable clay | 0.70 | Relict fg ?gabbronorite texture. Minor clean, comb textured vein quartz. | 8 | 22 | 34 | <1 | 4.21 | - | 99 | 7 | 32 | 0.006 | - | 22.3 | - | <1 |
| 3989487 | 479861 | 5441410 | Wcontact | hand auger | residual | C | O | clay | 0.60 | Relict fg ?gabbronorite texture. Minor clean, comb textured vein quartz. | 14 | 51 | 36 | <1 | 4.41 | - | 94 | 10 | 39 | <0.005 | - | 2.8 | - | <1 |
| 3989488 | 479853 | 5441404 | Wcontact | hand auger | | A | W-K | gritty silt | 0.40 | Rock fragments are pited amorphous silica - fault zone? | 38 | 163 | 90 | <1 | - | 5.5 | 385 | 15 | 6 | <0.005 | - | 42.6 | - | <1 |
| 3989489 | 479845 | 5441398 | Wcontact | hand auger | residual | B | MO-W | gritty clay | 1.00 | Minor pallid quartzite rock fragments with rare silver sulphides. | 9 | 36 | 18 | <1 | 3.25 | - | 41 | <3 | 4 | <0.005 | - | 17.8 | - | <1 |
| 3989490 | 479837 | 5441393 | Wcontact | hand auger | residual | B | MO-W | clay | 1.00 | Relict slatey texture. | 3 | 30 | 11 | <1 | 4.85 | - | 28 | <3 | <1 | <0.005 | - | 12.6 | - | <1 |
| 3989491 | 479816 | 5441378 | Wcontact | hand auger | residual | B | MO-W | gritty clay | 0.80 | Relict slatey texture. Minor quartzite rock fragments. | 7 | 60 | 11 | <1 | 2.99 | - | 15 | <3 | 2 | <0.005 | - | 6.8 | - | <1 |
| 3989492 | 479796 | 5441364 | Wcontact | hand auger | residual | C | W-K | sandy clay | 0.80 | Relict foliation. Minor comb textured vein quartz. | 34 | 7 | 15 | <1 | 3.32 | - | 18 | <3 | 17 | 0.005 | - | 39.7 | - | <1 |
| 3989493 | 479775 | 5441350 | Wcontact | hand auger | residual | C | W | clay | 0.70 | Relict slatey texture. Minor comb textured vein quartz. | 19 | 14 | 16 | <1 | 1.45 | - | 12 | 4 | 75 | <0.005 | - | 19.6 | - | 1 |
| 3989494 | 479000 | 5441135 | Wcontact | hand auger | residual | C | W&O | gritty clay | 0.80 | Traverse B. Relict gabbronorite texture. Rare clean vein quartz. | 24 | 8 | 47 | <1 | 4.98 | - | 137 | 34 | 140 | <0.005 | - | 4 | - | <1 |
| 3989495 | 478975 | 5441135 | Wcontact | hand auger | residual | C | V | clay | 0.70 | Relict foliated ?serpentinite texture. | 114 | 300 | 676 | <1 | - | 10.2 | 749 | 105 | 80 | <0.005 | - | 3.6 | - | <1 |
| 3989496 | 478965 | 5441135 | Wcontact | hand auger | residual | C | V | clay | 0.70 | Relict foliated ?serpentinite texture. | 111 | 95 | 582 | <1 | - | 9.8 | 532 | 98 | 87 | <0.005 | - | 2.9 | - | <1 |
| 3989497 | 478955 | 5441135 | Wcontact | hand auger | residual | B | K-W | gritty silt | 0.45 | ?Fault zone. | 49 | 250 | 149 | <1 | - | 6.8 | 346 | 28 | 25 | <0.005 | - | 2.5 | - | <1 |
| 3989498 | 478940 | 5441135 | Wcontact | hand auger | residual | C | O | gritty clay | 0.70 | Slate and rare clean vein quartz rock fragments. | 20 | 44 | 75 | <1 | - | 5.6 | 127 | 3 | <1 | <0.005 | <0.005 | 8.5 | - | <1 |
| 3989499 | 478930 | 5441135 | Wcontact | hand auger | residual | C | O | gritty clay | 0.70 | Slate rock fragments. | 24 | 33 | 48 | <1 | 3.69 | - | 85 | 4 | 5 | <0.005 | - | 7.7 | - | <1 |
| 3989500 | 478905 | 5441135 | Wcontact | hand auger | residual | ?BC | O | clay | 0.80 | | 56 | 77 | 43 | <1 | 4.9 | - | 132 | <3 | 18 | <0.005 | - | 7.1 | - | <1 |
| 3989301 | 478880 | 5441135 | Wcontact | hand auger | residual | C | O | clay | | Pitted quartzite float. | 183 | 138 | 135 | <1 | - | 3.6 | 70 | 7 | 17 | <0.005 | - | - | 107 | <1 |
| 3989302 | 478855 | 5441135 | Wcontact | hand auger | residual | C | W | fg sand | 0.80 | Minor chert rock fragments. | 107 | 86 | 159 | <1 | 1.84 | - | 14 | 8 | 35 | <0.005 | - | 37.3 | - | <1 |
| 3989303 | 479065 | 5440210 | Wcontact | hand auger | residual | C | V | clay | 0.90 | Traverse C. Relict UM textures - including magnetite veining. | 69 | 122 | 231 | <1 | - | 12.5 | 250 | 38 | 103 | <0.005 | - | 22.4 | - | <1 |
| 3989304 | 479040 | 5440214 | Wcontact | hand auger | residual | C | V | clay | 0.90 | Relict UM textures - including magnetite veining. | 97 | 93 | 305 | <1 | - | 10.8 | 536 | 51 | 68 | <0.005 | - | 4.7 | - | <1 |
| 3989305 | 479016 | 5440219 | Wcontact | hand auger | residual | C | W | | 0.85 | Relict gabbronorite texture. | 102 | 98 | 78 | <1 | - | 7.4 | 30 | 6 | 11 | <0.005 | - | 7.1 | - | <1 |
| 3989306 | 478991 | 5440223 | Wcontact | hand auger | residual | ?C | K-W | friable clay | 0.50 | East of ?scree filled depression (Fault). | 51 | 13 | 23 | <1 | 2.57 | - | 38 | <3 | 9 | <0.005 | - | 11.6 | - | <1 |
| 3989307 | 478898 | 5440240 | Wcontact | hand auger | residual | B | O | clay | 1.00 | Sample taken in window through scree. | 55 | 54 | 87 | <1 | - | 9.5 | 28 | <3 | 13 | 0.005 | - | - | 217 | <1 |
| 3989308 | 478868 | 5440245 | Wcontact | hand auger | ?res./trans. | ?BC | O-W | gritty friable clay | 0.60 | Sample taken in window through scree. Rock fragments are quartzite. | 66 | 7 | 26 | <1 | - | 6 | 17 | 4 | 7 | <0.005 | - | - | 151 | <1 |
| 3989309 | 479400 | 5439215 | Wcontact | hand auger | residual | ?C | O | clay | 0.80 | Talc altered UM with disem. chromite and pisolite float. | 57 | 34 | 72 | <1 | - | 11.8 | 188 | 19 | 87 | <0.005 | - | 19 | - | <1 |
| 3989310 | 479378 | 5439226 | Wcontact | hand auger | residual | ?C | O | clay | 0.80 | Talc altered UM with disem. chromite and pisolite float. | 37 | 35 | 46 | <1 | - | 11.9 | 94 | 11 | 56 | <0.005 | - | 12.4 | - | <1 |
| 3989311 | 479365 | 5439238 | Wcontact | hand auger | residual | ?C | O | gritty clay | 0.80 | Minor quartzite rock fragments and organics. Pisolite float. | 99 | 37 | 75 | <1 | - | 10.5 | 466 | 15 | 35 | <0.005 | - | 6.7 | - | <1 |
| 3989312 | 479333 | 5439249 | Wcontact | hand auger | residual | ?C | O | gritty clay | 0.80 | Minor quartzite rock fragments and organics. Pisolite float. | 108 | 64 | 82 | <1 | - | 12.8 | 173 | 12 | 25 | <0.005 | <0.005 | 6 | - | <1 |
| 3989313 | 479311 | 5439260 | Wcontact | hand auger | residual | ?C | O | gritty clay | 0.80 | Minor quartzite rock fragments and organics. Pisolite float. | 68 | 122 | 44 | <1 | - | 10.4 | 163 | 3 | 17 | 0.006 | - | 16.8 | - | <1 |
| 3989314 | 479289 | 5439272 | Wcontact | hand auger | residual | ?C | O | gritty clay | 0.80 | Minor quartzite rock fragments and organics. Pisolite float. | 191 | 205 | 141 | <1 | - | 14.6 | 280 | 31 | 37 | <0.005 | - | 16.4 | - | <1 |
| 3989315 | 479235 | 5438840 | Wcontact | hand auger | residual | C | K-W | gritty friable clay | 0.60 | Schist rock fragments. | 51 | 12 | 23 | <1 | 3.24 | - | 76 | 5 | 33 | <0.005 | - | 2.4 | - | <1 |
| 3989316 | 479258 | 5438829 | Wcontact | hand auger | residual | C | K-W | gritty friable clay | 0.60 | Schist rock fragments. | 119 | 32 | 21 | <1 | - | 8.5 | 53 | 8 | 29 | <0.005 | - | 4.2 | - | <1 |
| 3989317 | 479280 | 5438819 | Wcontact | hand auger | residual | C | O&W | clay | 0.60 | Relict gabbro texture. | 68 | 23 | 195 | <1 | - | 10 | 886 | 319 | 242 | 0.422 | - | 2.9 | - | <1 |
| 3989318 | 479303 | 5438808 | Wcontact | hand auger | residual | C | O-V&W | clay | 0.60 | Relict gabbro texture. | 75 | 10 | 69 | <1 | - | 9 | 941 | 216 | 188 | <0.005 | - | 3 | - | <1 |
| 3989319 | 479326 | 5438798 | Wcontact | hand auger | residual | C | O-V&W | clay | 0.60 | Relict gabbro texture. | 33 | 9 | 65 | <1 | - | 8.2 | 214 | 99 | 266 | <0.005 | - | 2.5 | - | <1 |
| 3989320 | 479950 | 5435880 | Wcontact | hand auger | residual | C | O-V | silty clay | 0.70 | Traverse F. Schist rock fragments. | 86 | 15 | 108 | <1 | - | 6.4 | 390 | 22 | 88 | <0.005 | - | 6.1 | - | <1 |
| 3989321 | 479974 | 5435888 | Wcontact | hand auger | residual | C | V | clay | 1.00 | Relict serpentinite-magnetite-chromite textures. | 33 | <5 | 226 | <1 | - | 13.1 | 5749 | 1597 | 3803 | <0.005 | - | 2.8 | - | <1 |
| 3989322 | 479998 | 5435895 | Wcontact | hand auger | residual | C | V | clay | 1.00 | Relict serpentinite-magnetite-chromite textures. | 41 | 23 | 119 | <1 | - | 24.4 | 319 | 48 | 722 | <0.005 | <0.005 | 10.2 | - | <1 |
| 3989323 | 480021 | 5435903 | Wcontact | hand auger | residual | C | V | clay | 1.00 | Relict serpentinite-magnetite-chromite textures. | 47 | 8 | 88 | <1 | - | 22 | 253 | 53 | 636 | 0.005 | - | 33.3 | - | 2 |

803049

# Analabs

Analabs Pty. Ltd.
A.C.N. 004 591 664

RECEIVED
-8 SEP 1994
CRAE
PRESTON

Phone (004) 316837 | 14 Thirkell St. COOEE TAS 7320 | Fax (004) 318890

## ANALYTICAL REPORT No. 94165 RR10359

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

INVOICE TO:

CRA Exploration Pty Limited
P.O. Box 8093
NORTHLAND CENTRE VIC 3072

| ORDER No. | PROJECT |
|---|---|
| 77222 | |

| DATE RECEIVED | RESULTS REQUIRED |
|---|---|
| 10/08/94 | ASAP |

| No. OF PAGES OF RESULTS | DATE REPORTED | No. OF COPIES | TOTAL No. OF SAMPLES |
|---|---|---|---|
| 6 | 06/09/94 | 1 | 73 |

| SAMPLE NUMBERS | SAMPLE DESCRIPTION | ELEMENT/METHOD |
|---|---|---|
| 3989163/3989186<br>3989432/3989449<br>3989401/3989431 | RC Prep : GP033/GP032 | Cu,Pb,In,Ag,Fe,Mn,Co,Ni/GA140<br>Fe(1)/GA140<br>Au/GG309<br>Au,Pt,Pd/GS333<br>As/HA140 As/GA140 |

RESULTS TO

Mr S Maher
CRA Exploration Pty Limited
P.O. Box 8093
NORTHLAND CENTRE VIC 3072

RESULTS TO

Mr C Hayward
CRA Exploration Pty Limited
P.O. Box 8093
NORTHLAND CENTRE VIC 3072

RESULTS TO

CRAE Information Systems
P.O. Box 3709
MANUKA ACT 2603

REMARKS

Fe(1)/GA140 results are over the recommende analytical range for this method

AUTHORISED OFFICER

SC30E0

Analabs

Analabs Pty. Ltd.
A.C.N. 004 591 664

## ANALYTICAL DATA

| SAMPLE PREFIX | REPORT No. | REPORT DATE | CLIENT ORDER No. | PAGE |
|---|---|---|---|---|
| | 104165.60.10359 | 06/09/94 | 77222 | 1 OF 6 |

| | SAMPLE No. | Cu | Pb | Zn | Ag | Fe | Fe(1) | Mn | Co | Ni |
|---|---|---|---|---|---|---|---|---|---|---|
| METHOD | | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 |
| 1 | 3989163 | 7 | <3 | 22 | <1 | 1.16 | - | 194 | 7 | 16 |
| 2 | 3989164 | 37 | <3 | 32 | <1 | 2.48 | - | 429 | 40 | 171 |
| 3 | 3989165 | 44 | <3 | 41 | <1 | 3.43 | - | 564 | 28 | 113 |
| 4 | 3989166 | 74 | <3 | 52 | <1 | 2.84 | - | 605 | 20 | 41 |
| | 3989167 | 125 | <3 | 36 | <1 | - | 5.2 | 399 | 27 | 98 |
| 6 | 3989168 | 128 | 19 | 27 | <1 | 3.98 | - | 34 | <3 | <3 |
| 7 | 3989169 | 19 | 17 | 157 | <1 | - | 6.9 | 74 | <3 | 6 |
| 8 | 3989170 | 61 | 97 | 348 | <1 | - | 19.3 | 113 | 3 | 9 |
| 9 | 3989171 | 17 | 39 | 37 | <1 | - | 15.9 | 21 | <3 | <3 |
| 10 | 3989172 | 46 | 112 | 911 | <1 | - | 23.7 | 490 | 9 | 42 |
| 11 | 3989173 | 4 | 5 | 20 | <1 | 1.73 | - | 348 | 9 | 32 |
| 12 | 3989174 | 119 | <3 | 53 | 1 | - | 5.3 | 714 | 37 | 120 |
| 13 | 3989175 | 62 | <3 | 48 | <1 | 3.53 | - | 616 | 31 | 79 |
| 14 | 3989176 | 70 | <3 | 48 | <1 | 3.34 | - | 567 | 29 | 63 |
| 15 | 3989177 | 3 | <3 | 54 | <1 | - | 10.2 | 1604 | 114 | 1211 |
| 16 | 3989178 | 3 | <3 | 143 | <1 | - | 45.1 | 411 | 126 | 1075 |
| 17 | 3989179 | 7 | <3 | 220 | <1 | - | 27.1 | 1652 | 562 | 1493 |
| 18 | 3989180 | 7 | <3 | 200 | <1 | - | 28.1 | 2338 | 779 | 2442 |
| 19 | 3989181 | 10 | <3 | 204 | <1 | - | 33.9 | 598 | 224 | 3927 |
| 20 | 3989182 | 3 | <3 | 81 | <1 | 2.35 | - | 2236 | 41 | 383 |
| 21 | 3989183 | 18 | 11 | 71 | <1 | 1.95 | - | 375 | 12 | 54 |
| 22 | 3989184 | 2 | <3 | 32 | <1 | 2.75 | - | 547 | 65 | 1117 |
| 23 | 3989185 | 3 | <3 | 66 | <1 | 2.64 | - | 583 | 98 | 1413 |
| 24 | 3989186 | 5 | <3 | 72 | <1 | - | 6.9 | 1098 | 119 | 3155 |
| 25 | 3989401 | 3 | <3 | 78 | <1 | - | 45.7 | 235 | 20 | 150 |

Results in ppm unless otherwise specified
- = element not determined

IS = insufficient sample
SNR = sample not received

AUTHORISED OFFICER

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Analabs Pty. Ltd.
A.C.N. 004 591 664

80307

## ANALYTICAL DATA

SAMPLE PREFIX | REPORT No. | REPORT DATE | CLIENT ORDER No. | PAGE

| | | 104165.60.10359 | 06/09/94 | 77222 | 2 OF 6 |
|---|---|---|---|---|---|

| | SAMPLE No. | Cu | Pb | Zn | Ag | Fe | Fe(t) | Mn | Co | Ni |
|---|---|---|---|---|---|---|---|---|---|---|
| METHOD | | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 |
| 1 | 3989402 | 2 | 3 | 70 | <1 | – | 48.7 | 264 | 20 | 215 |
| 2 | 3989403 | 3 | <3 | 93 | <1 | – | 47.7 | 554 | 46 | 536 |
| 3 | 3989404 | 4 | <3 | 64 | <1 | – | 31.4 | 348 | 49 | 408 |
| 4 | 3989405 | 3 | <3 | 43 | <1 | – | 24.5 | 233 | 18 | 200 |
| | 3989406 | 3 | 10 | 61 | <1 | – | 37.8 | 315 | 13 | 171 |
| 6 | 3989407 | 3 | 7 | 63 | <1 | – | 46.6 | 305 | 12 | 188 |
| 7 | 3989408 | 3 | <3 | 77 | <1 | – | 45.4 | 337 | 28 | 341 |
| 8 | 3989409 | 2 | <3 | 77 | <1 | – | 48.5 | 330 | 29 | 258 |
| 9 | 3989410 | 3 | <3 | 80 | <1 | – | 45.4 | 373 | 44 | 372 |
| 10 | 3989411 | 2 | <3 | 75 | <1 | – | 49.5 | 324 | 41 | 349 |
| 11 | 3989412 | 2 | <3 | 82 | <1 | – | 50.7 | 338 | 42 | 324 |
| 12 | 3989413 | <2 | <3 | 92 | <1 | – | 52.3 | 564 | 71 | 366 |
| 13 | 3989414 | 2 | <3 | 119 | <1 | – | 50.9 | 454 | 40 | 302 |
| 14 | 3989415 | 3 | <3 | 69 | <1 | – | 46.7 | 195 | 12 | 86 |
| 15 | 3989416 | 4 | 4 | 55 | <1 | – | 31.7 | 207 | 10 | 97 |
| 16 | 3989417 | 3 | <3 | 98 | <1 | – | 44.8 | 320 | 24 | 145 |
| 17 | 3989418 | 3 | <3 | 52 | <1 | – | 33.3 | 162 | 7 | 98 |
| 18 | 3989419 | 2 | <3 | 89 | <1 | – | 48.2 | 270 | 23 | 151 |
| 19 | 3989420 | 3 | <3 | 90 | <1 | – | 54.2 | 212 | 20 | 165 |
| 20 | 3989421 | 2 | <3 | 73 | <1 | – | 49.8 | 164 | 16 | 137 |
| 21 | 3989422 | 2 | <3 | 96 | <1 | – | 51.5 | 298 | 50 | 281 |
| 22 | 3989423 | 2 | <3 | 93 | <1 | – | 52.4 | 266 | 35 | 183 |
| 23 | 3989424 | 2 | <3 | 97 | <1 | – | 54.7 | 274 | 31 | 180 |
| 24 | 3989425 | 2 | <3 | 87 | <1 | – | 54.8 | 207 | 21 | 155 |
| 25 | 3989426 | 2 | <3 | 99 | <1 | – | 54.9 | 304 | 45 | 231 |

Results in ppm unless otherwise specified. IS = insufficient sample.
– = element not determined. SNR = sample not received.

AUTHORISED OFFICER

Analabs

Analabs Pty. Ltd.
A.C.N. 004 591 664

S03052

## ANALYTICAL DATA

| SAMPLE PREFIX | REPORT No. | REPORT DATE | CLIENT ORDER No. | PAGE |
|---|---|---|---|---|
| | 104165.60.10359 | 06/09/94 | 77222 | 3 OF 6 |

| | SAMPLE No. | Cu | Pb | Zn | Ag | Fe | Fe(I)S | Mn | Co | Ni |
|---|---|---|---|---|---|---|---|---|---|---|
| METHOD | | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 |
| 1 | 3989427 | 2 | <3 | 95 | <1 | – | 54.8 | 536 | 152 | 541 |
| 2 | 3989428 | 2 | <3 | 87 | <1 | – | 48.7 | 222 | 39 | 281 |
| 3 | 3989429 | 3 | <3 | 108 | <1 | – | 35.2 | 232 | 45 | 283 |
| 4 | 3989430 | 3 | <3 | 109 | <1 | – | 41.0 | 344 | 47 | 220 |
| 5 | 3989431 | 3 | <3 | 187 | <1 | – | 50.7 | 347 | 94 | 939 |
| 6 | 3989432 | 48 | <3 | 46 | <1 | – | 10.0 | 186 | 48 | 242 |
| 7 | 3989433 | 32 | <3 | 43 | <1 | – | 15.9 | 195 | 53 | 367 |
| 8 | 3989434 | 20 | <3 | 41 | <1 | – | 17.4 | 443 | 38 | 169 |
| 9 | 3989435 | 21 | <3 | 56 | <1 | – | 15.7 | 92 | 53 | 374 |
| 10 | 3989436 | 13 | <3 | 33 | <1 | – | 10.2 | 1989 | 422 | 676 |
| 11 | 3989437 | 2 | 6 | 44 | <1 | – | 34.2 | 148 | 45 | 287 |
| 12 | 3989438 | 50 | <3 | 39 | <1 | – | 10.7 | 132 | 50 | 272 |
| 13 | 3989439 | 21 | 5 | 56 | <1 | – | 12.4 | 168 | 38 | 155 |
| 14 | 3989440 | 29 | 11 | 53 | <1 | – | 16.3 | 219 | 25 | 62 |
| TS | 3989441 | 39 | <3 | 40 | <1 | – | 7.3 | 359 | 83 | 119 |
| 16 | 3989442 | 25 | 3 | 38 | <1 | – | 7.6 | 47 | 19 | 49 |
| 17 | 3989443 | 50 | 10 | 105 | <1 | – | 13.5 | 573 | 131 | 128 |
| 18 | 3989444 | 81 | 15 | 132 | <1 | – | 12.2 | 125 | 68 | 159 |
| 19 | 3989445 | 24 | <3 | 44 | <1 | – | 6.1 | 930 | 370 | 569 |
| 20 | 3989446 | 41 | <3 | 95 | <1 | – | 9.9 | 864 | 247 | 309 |
| 21 | 3989447 | 21 | 71 | 584 | <1 | – | 6.1 | 1787 | 214 | 158 |
| 22 | 3989448 | 17 | 48 | 128 | <1 | 4.17 | – | 130 | 7 | 19 |
| 23 | 3989449 | 40 | 62 | 95 | <1 | – | 6.4 | 73 | 7 | 26 |
| 24 | DETECTION | 2 | 3 | 2 | 1 | 0.01 | 0.1 | 3 | 3 | 3 |
| 25 | UNITS | ppm | ppm | ppm | ppm | % | % | ppm | ppm | ppm |

Results in ppm unless otherwise specified
– = element not determined

!S = insufficient sample
SNR = sample not received

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A.C.N. 004 591 664

## ANALYTICAL DATA

SAMPLE PREFIX | REPORT No. | REPORT DATE | CLIENT ORDER No. | PAGE

| | | 104165.60.10359 | 06/09/94 | 77222 | 4 OF 6 |
|---|---|---|---|---|---|

| | SAMPLE No. | As | Ast | Au | Pt | Pd | Au | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| METHOD | | HA140 | GA140 | GS333 | GS333 | GS333 | GG309 | | | |
| 1 | 3989163 | 2.5 | - | - | - | - | - | | | |
| 2 | 3989164 | 4.5 | - | - | - | - | - | | | |
| 3 | 3989165 | 2.0 | - | - | - | - | - | | | |
| 4 | 3989166 | 2.0 | - | - | - | - | - | | | |
| 5 | 3989167 | 3.0 | - | - | - | - | - | | | |
| 6 | 3989168 | 22.5 | - | - | - | - | <0.008 | | | |
| 7 | 3989169 | 38.0 | - | - | - | - | <0.008 | | | |
| 8 | 3989170 | - | 164 | - | - | - | <0.008 | | | |
| 9 | 3989171 | 30.0 | - | - | - | - | <0.008 | | | |
| 10 | 3989172 | - | 248 | - | - | - | <0.008 | | | |
| 11 | 3989173 | 5.5 | - | - | - | - | - | | | |
| 12 | 3989174 | 4.0 | - | - | - | - | - | | | |
| 13 | 3989175 | 2.0 | - | - | - | - | - | | | |
| 14 | 3989176 | 3.0 | - | - | - | - | - | | | |
| 15 | 3989177 | 2.5 | - | - | - | - | - | | | |
| 16 | 3989178 | 10.0 | - | - | - | - | - | | | |
| 17 | 3989179 | 8.0 | - | - | - | - | - | | | |
| 18 | 3989180 | 6.5 | - | - | - | - | - | | | |
| 19 | 3989181 | 5.5 | - | - | - | - | - | | | |
| 20 | 3989182 | 2.0 | - | - | - | - | - | | | |
| 21 | 3989183 | 2.0 | - | - | - | - | - | | | |
| 22 | 3989184 | 2.5 | - | - | - | - | - | | | |
| 23 | 3989185 | 3.0 | - | - | - | - | - | | | |
| 24 | 3989186 | 4.5 | - | - | - | - | - | | | |
| 25 | 3989401 | 8.5 | - | <1 | 0.8 | <0.5 | - | | | |

Results in ppm unless otherwise specified
- = element not determined
IS = insufficient sample
SNR = sample not received

AUTHORISED OFFICER

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A.C.N. 004 591 684

# ANALYTICAL DATA

803054

| SAMPLE PREFIX | REPORT No. | REPORT DATE | CLIENT ORDER No. | PAGE |
|---|---|---|---|---|
| | 104165.60.10359 | 06/09/94 | 77222 | 5 OF 6 |

| | SAMPLE No. | As | As | Au | Pt | Pd | Au | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| METHOD | | HA140 | GA140 | GS333 | GS333 | GS333 | GG309 | | | |
| 1 | 3989402 | 8.0 | - | - | - | - | - | | | |
| 2 | 3989403 | 7.0 | - | - | - | - | - | | | |
| 3 | 3989404 | 9.0 | - | - | - | - | - | | | |
| 4 | 3989405 | 7.5 | - | <1 | 1.2 | 0.8 | - | | | |
| 5 | 3989406 | 10.0 | - | - | - | - | - | | | |
| 6 | 3989407 | 10.0 | - | - | - | - | - | | | |
| 7 | 3989408 | 9.0 | - | - | - | - | - | | | |
| 8 | 3989409 | 8.0 | - | <1 | 1.2 | <0.5 | - | | | |
| 9 | 3989410 | 8.0 | - | - | - | - | - | | | |
| 10 | 3989411 | 7.0 | - | - | - | - | - | | | |
| 11 | 3989412 | 7.0 | - | - | - | - | - | | | |
| 12 | 3989413 | 6.0 | - | <1 | 0.9 | <0.5 | - | | | |
| 13 | 3989414 | 6.5 | - | - | - | - | - | | | |
| 14 | 3989415 | 9.0 | - | - | - | - | - | | | |
| 15 | 3989416 | 6.0 | - | - | - | - | - | | | |
| 16 | 3989417 | 7.5 | - | <1 | 1.0 | <0.5 | - | | | |
| 17 | 3989418 | 10.5 | - | - | - | - | - | | | |
| 18 | 3989419 | 7.5 | - | - | - | - | - | | | |
| 19 | 3989420 | 7.0 | - | - | - | - | - | | | |
| 20 | 3989421 | 8.5 | - | <1 | <0.5 | <0.5 | - | | | |
| 21 | 3989422 | 7.0 | - | - | - | - | - | | | |
| 22 | 3989423 | 8.0 | - | - | - | - | - | | | |
| 23 | 3989424 | 7.0 | - | - | - | - | - | | | |
| 24 | 3989425 | 7.5 | - | <1 | <0.5 | <0.5 | - | | | |
| 25 | 3989426 | 6.5 | - | - | - | - | - | | | |

Results in ppm unless otherwise specified.
– = element not determined.

IS = insufficient sample.
SNR = sample not received.

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803085

# ANALYTICAL DATA

| SAMPLE PREFIX | REPORT No. | REPORT DATE | CLIENT ORDER No. | PAGE |
|---|---|---|---|---|
| | 104165.60.10359 | 06/09/94 | 77222 | 6 OF 6 |

| | SAMPLE No. | As | As | Au | Pt | Pd | Au | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| METHOD | | HA140 | GA140 | GS333 | GS333 | GS333 | GG309 | | | |
| 1 | 3989427 | 7.5 | - | - | - | - | - | | | |
| 2 | 3989428 | 8.0 | - | - | - | - | - | | | |
| 3 | 3989429 | 7.0 | - | <1 | 1.0 | <0.5 | - | | | |
| 4 | 3989430 | 7.5 | - | - | - | - | - | | | |
| 5 | 3989431 | 9.0 | - | - | - | - | - | | | |
| 6 | 3989432 | 7.0 | - | - | - | - | - | | | |
| 7 | 3989433 | 12.0 | - | - | - | - | - | | | |
| 8 | 3989434 | 8.5 | - | - | - | - | - | | | |
| 9 | 3989435 | 12.0 | - | - | - | - | - | | | |
| 10 | 3989436 | 8.0 | - | - | - | - | - | | | |
| 11 | 3989437 | 31.5 | - | - | - | - | - | | | |
| 12 | 3989438 | 8.5 | - | - | - | - | - | | | |
| 13 | 3989439 | 11.5 | - | - | - | - | - | | | |
| 14 | 3989440 | 8.0 | - | - | - | - | - | | | |
| 15 | 3989441 | 5.0 | - | - | - | - | - | | | |
| 16 | 3989442 | 4.0 | - | - | - | - | - | | | |
| 17 | 3989443 | 14.5 | - | - | - | - | - | | | |
| 18 | 3989444 | 12.5 | - | - | - | - | - | | | |
| 19 | 3989445 | 8.0 | - | - | - | - | - | | | |
| 20 | 3989446 | 7.0 | - | - | - | - | - | | | |
| 21 | 3989447 | 5.0 | - | - | - | - | - | | | |
| 22 | 3989448 | 3.0 | - | - | - | - | - | | | |
| 23 | 3989449 | 10.0 | - | - | - | - | - | | | |
| 24 | DETECTION | 0.5 | 100 | 1 | 0.5 | 0.5 | 0.008 | | | |
| 25 | UNITS | ppm | ppm | ppb | ppb | ppb | ppm | | | |

Results in ppm unless otherwise specified.
- = element not determined.

IS = insufficient sample.
SNR = sample not received.

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A.C.N. 004 581 664

Phone (004) 316837 | 14 Thirkell St. COOEE TAS 7320 | Fax (004) 318890

# ANALYTICAL REPORT No. 104165.60.10583

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

INVOICE TO:

CRA Exploration Pty Limited
P.O. Box 8093
NORTHLAND CENTRE VIC 3072

| ORDER No. | PROJECT |
|---|---|
| 77228 | |

| DATE RECEIVED | RESULTS REQUIRED |
|---|---|
| 06/12/94 | ASAP |

| No. OF PAGES OF RESULTS | DATE REPORTED | No. OF COPIES | TOTAL No. OF SAMPLES |
|---|---|---|---|
| 4 | 30/12/94 | 1 | 39 |

| SAMPLE NUMBERS | SAMPLE DESCRIPTION | ELEMENT/METHOD |
|---|---|---|
| 3989301/323,3989485/500 | SO Prep : GP032<br><br>SO Prep : | Cu,Pb,In,Ag,Fe,Fe(1),Mn,Co,<br>Ni/GA140<br>Au,Au(R)/GG313<br>As,Bi/HA140 As/GA140 |

RESULTS TO

Mr S Maher
CRA Exploration Pty Limited
P.O. Box 8093
NORTHLAND CENTRE VIC 3072

REMARKS

Fe(1)/GA140 results are over the recommended analytical range.

RESULTS TO

Mr C Hayward
CRA Exploration Pty Limited
P.O. Box 8093
NORTHLAND CENTRE VIC 3072

RESULTS TO

CRAE Information Systems
P.O. Box 3709
MANUKA ACT 2603

AUTHORISED OFFICER

Analabs

Analabs Pty. Ltd.
A.C.N. 004 591 664

# ANALYTICAL DATA

| SAMPLE PREFIX | REPORT No. | REPORT DATE | CLIENT ORDER No. | PAGE |
|---|---|---|---|---|
| | 104165.60.10583 | 30/12/94 | 77228 | 1 OF 4 |

| | SAMPLE No. | Cu | Pb | Zn | Ag | Fe | Fe(1) | Mn | Co | Ni |
|---|---|---|---|---|---|---|---|---|---|---|
| METHOD | | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 |
| 1 | 3989301 | 183 | 138 | 135 | <1 | - | 8.6 | 70 | 7 | 17 |
| 2 | 3989302 | 107 | 86 | 159 | <1 | 1.84 | - | 14 | 8 | 35 |
| 3 | 3989303 | 69 | 122 | 231 | <1 | - | 12.6 | 250 | 38 | 103 |
| 4 | 3989304 | 97 | 93 | 305 | <1 | - | 10.8 | 536 | 51 | 68 |
| 5 | 3989305 | 102 | 98 | 78 | <1 | - | 7.4 | 30 | 6 | 11 |
| 6 | 3989306 | 61 | 13 | 23 | <1 | 2.57 | - | 38 | <3 | 9 |
| 7 | 3989307 | 55 | 54 | 87 | <1 | - | 9.5 | 28 | <3 | 13 |
| 8 | 3989308 | 66 | 7 | 26 | <1 | - | 6.0 | 17 | 4 | 7 |
| 9 | 3989309 | 57 | 34 | 72 | <1 | - | 11.8 | 188 | 19 | 87 |
| 10 | 3989310 | 37 | 35 | 46 | <1 | - | 11.9 | 94 | 11 | 56 |
| 11 | 3989311 | 99 | 37 | 76 | <1 | - | 10.6 | 466 | 15 | 35 |
| 12 | 3989312 | 108 | 64 | 82 | <1 | - | 12.8 | 173 | 12 | 25 |
| 13 | 3989313 | 68 | 122 | 44 | <1 | - | 10.4 | 153 | 3 | 17 |
| 14 | 3989314 | 191 | 205 | 141 | <1 | - | 14.6 | 280 | 31 | 37 |
| 15 | 3989315 | 51 | 12 | 23 | <1 | 3.24 | - | 76 | 5 | 33 |
| 16 | 3989316 | 119 | 32 | 21 | <1 | - | 8.5 | 53 | 8 | 29 |
| 17 | 3989317 | 68 | 23 | 195 | <1 | - | 10.0 | 886 | 319 | 242 |
| 18 | 3989318 | 75 | 10 | 69 | <1 | - | 9.0 | 941 | 216 | 188 |
| 19 | 3989319 | 33 | 9 | 66 | <1 | - | 8.2 | 214 | 99 | 266 |
| 20 | 3989320 | 86 | 15 | 108 | <1 | - | 6.4 | 390 | 22 | 88 |
| 21 | 3989321 | 33 | <5 | 226 | <1 | - | 13.1 | 5749 | 1597 | 3803 |
| 22 | 3989322 | 41 | 23 | 119 | <1 | - | 24.4 | 319 | 48 | 722 |
| 23 | 3989323 | 47 | 8 | 88 | <1 | - | 22.0 | 253 | 53 | 636 |
| 24 | 3989485 | 6 | 38 | 57 | <1 | - | 7.2 | 194 | 37 | 109 |
| 25 | 3989486 | 8 | 22 | 34 | <1 | 4.21 | - | 99 | 7 | 32 |

Results in ppm unless otherwise specified
- = element not determined

IS = Insufficient sample
SNR = sample not received

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**Analabs Pty. Ltd.**
A.C.N. 004 591 664

E03003

# ANALYTICAL DATA

| SAMPLE PREFIX | REPORT No. | REPORT DATE | CLIENT ORDER No. | PAGE |
|---|---|---|---|---|
| | 104165.60.10583 | 30/12/94 | 7722B | 2 OF 4 |

| | SAMPLE No. | Cu | Pb | Zn | Ag | Fe | Fe(1) | Mn | Co | Ni |
|---|---|---|---|---|---|---|---|---|---|---|
| METHOD | | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 | GA140 |
| 1 | 3989487 | 14 | 51 | 36 | <1 | 4.41 | - | 94 | 10 | 39 |
| 2 | 3989488 | 38 | 163 | 90 | <1 | - | 5.5 | 385 | 15 | 6 |
| 3 | 3989489 | 9 | 36 | 18 | <1 | 3.25 | - | 41 | <3 | 4 |
| 4 | 3989490 | 3 | 30 | 11 | <1 | 4.85 | - | 28 | <3 | <1 |
| 5 | 3989491 | 7 | 60 | 11 | <1 | 2.99 | - | 15 | <3 | 2 |
| 6 | 3989492 | 34 | 7 | 15 | <1 | 3.32 | - | 18 | <3 | 17 |
| 7 | 3989493 | 19 | 14 | 16 | <1 | 1.45 | - | 12 | 4 | 75 |
| 8 | 3989494 | 24 | 8 | 47 | <1 | 4.98 | - | 137 | 34 | 140 |
| 9 | 3989495 | 114 | 300 | 676 | <1 | - | 10.2 | 749 | 105 | 80 |
| 10 | 3989496 | 111 | 95 | 582 | <1 | - | 9.8 | 532 | 98 | 87 |
| 11 | 3989497 | 49 | 250 | 149 | <1 | - | 6.8 | 346 | 28 | 25 |
| 12 | 3989498 | 20 | 44 | 75 | <1 | - | 5.6 | 127 | 3 | <1 |
| 13 | 3989499 | 24 | 33 | 48 | <1 | 3.69 | - | 85 | 4 | 5 |
| 14 | 3989500 | 56 | 77 | 43 | <1 | 4.90 | - | 132 | <3 | 18 |
| 15 | | | | | | | | | | |
| 16 | | | | | | | | | | |
| 17 | | | | | | | | | | |
| 18 | | | | | | | | | | |
| 19 | | | | | | | | | | |
| 20 | | | | | | | | | | |
| 21 | | | | | | | | | | |
| 22 | | | | | | | | | | |
| 23 | | | | | | | | | | |
| 24 | DETECTION | 2 | 5 | 2 | 1 | 0.01 | 0.1 | 3 | 3 | 1 |
| 25 | UNITS | ppm | ppm | ppm | ppm | % | % | ppm | ppm | ppm |

Results in ppm unless otherwise specified
– = element not determined

IS = insufficient sample
SNR = sample not received

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8003039

## ANALYTICAL DATA

| SAMPLE PREFIX | REPORT No. | REPORT DATE | CLIENT ORDER No. | PAGE |
|---|---|---|---|---|
| | 104165.60.10583 | 30/12/94 | 77228 | 3 OF 4 |

| | SAMPLE No. | Au | Au(R) | As | As | Bi | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| METHOD | | GG313 | GG313 | HA140 | GA140 | HA140 | | | | |
| 1 | 3989301 | <0.005 | - | - | 107 | <1 | | | | |
| 2 | 3989302 | <0.005 | - | 37.3 | - | <1 | | | | |
| 3 | 3989303 | <0.005 | - | 22.4 | - | <1 | | | | |
| 4 | 3989304 | <0.005 | - | 4.7 | - | <1 | | | | |
| 5 | 3989305 | <0.005 | - | 7.1 | - | <1 | | | | |
| 6 | 3989306 | <0.005 | - | 11.6 | - | <1 | | | | |
| 7 | 3989307 | 0.005 | - | - | 217 | <1 | | | | |
| 8 | 3989308 | <0.005 | - | - | 151 | <1 | | | | |
| 9 | 3989309 | <0.005 | - | 19.0 | - | <1 | | | | |
| 10 | 3989310 | <0.005 | - | 12.4 | - | <1 | | | | |
| 11 | 3989311 | <0.005 | - | 6.7 | - | <1 | | | | |
| 12 | 3989312 | <0.005 | <0.005 | 6.0 | - | <1 | | | | |
| 13 | 3989313 | 0.006 | - | 16.8 | - | <1 | | | | |
| 14 | 3989314 | <0.005 | - | 16.4 | - | <1 | | | | |
| 15 | 3989315 | <0.005 | - | 2.4 | - | <1 | | | | |
| 16 | 3989316 | <0.005 | - | 4.2 | - | <1 | | | | |
| 17 | 3989317 | 0.422 | - | 2.9 | - | <1 | | | | |
| 18 | 3989318 | <0.005 | - | 3.0 | - | <1 | | | | |
| 19 | 3989319 | <0.005 | - | 2.5 | - | <1 | | | | |
| 20 | 3989320 | <0.005 | - | 6.1 | - | <1 | | | | |
| 21 | 3989321 | <0.005 | - | 2.8 | - | <1 | | | | |
| 22 | 3989322 | <0.005 | <0.005 | 10.2 | - | <1 | | | | |
| 23 | 3989323 | 0.005 | - | 33.3 | - | 2 | | | | |
| 24 | 3989485 | 0.009 | - | 10.5 | - | <1 | | | | |
| 25 | 3989486 | 0.006 | - | 22.3 | - | <1 | | | | |

Results in ppm unless otherwise specified
-- = element not determined

IS = insufficient sample
SNR = sample not received

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A.C.N. 004 591 664

S030C0

# ANALYTICAL DATA

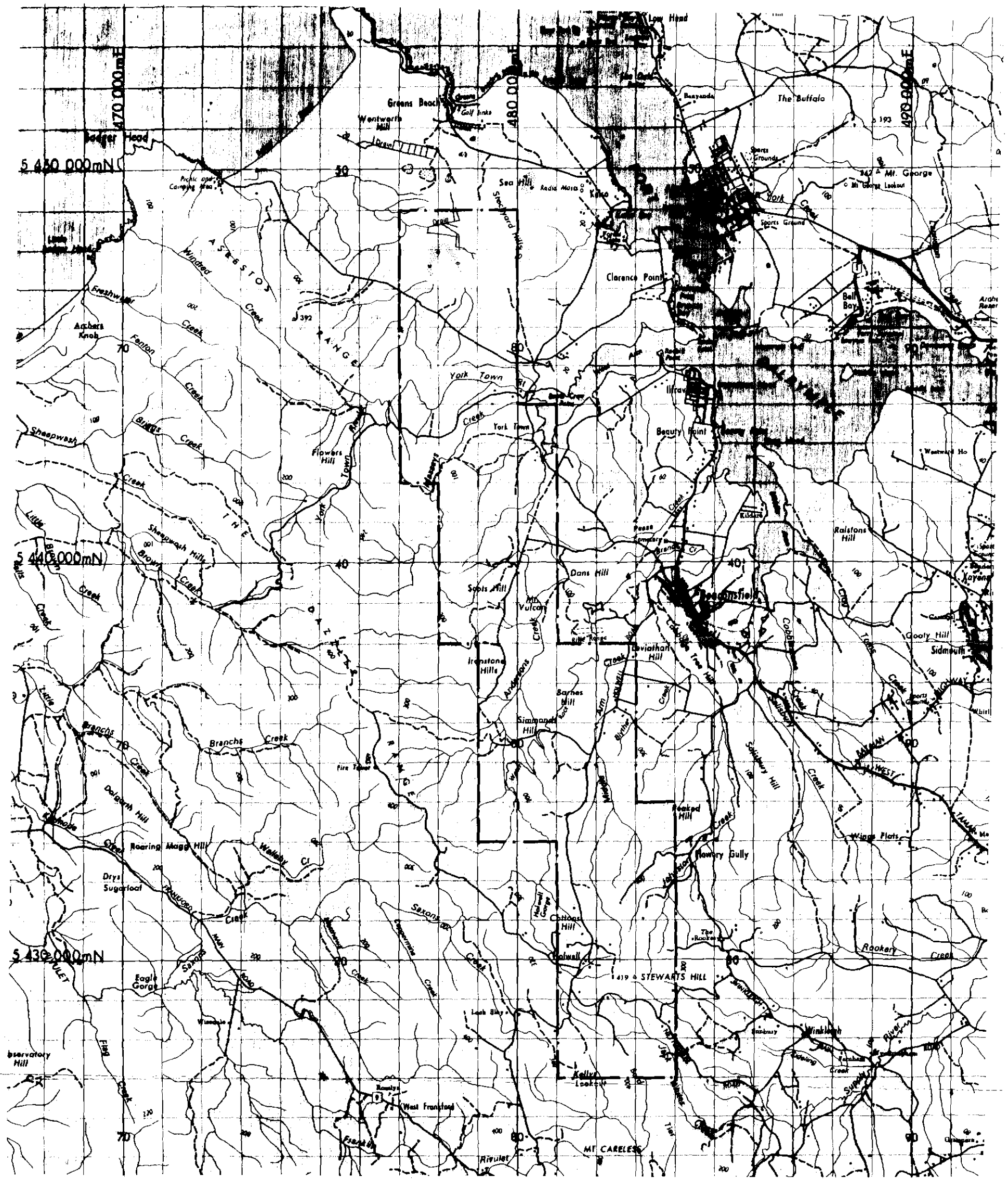
| SAMPLE PREFIX | REPORT No. | REPORT DATE | CLIENT ORDER No. | PAGE |
|---|---|---|---|---|
| | 104165.60.10583 | 30/12/94 | 77228 | 4 OF 4 |

| | SAMPLE No. | Au | Au(R) | As | As | Bi | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| METHOD | | GG313 | GG313 | HA140 | GA140 | HA140 | | | | |
| 1 | 3989487 | <0.005 | - | 28.0 | - | <1 | | | | |
| 2 | 3989488 | <0.005 | - | 42.6 | - | <1 | | | | |
| 3 | 3989489 | <0.005 | - | 17.8 | - | <1 | | | | |
| 4 | 3989490 | <0.005 | - | 12.5 | - | <1 | | | | |
| 5 | 3989491 | <0.005 | - | 6.8 | - | <1 | | | | |
| 6 | 3989492 | 0.005 | - | 39.7 | - | <1 | | | | |
| 7 | 3989493 | <0.005 | - | 19.6 | - | 1 | | | | |
| 8 | 3989494 | <0.005 | - | 4.0 | - | <1 | | | | |
| 9 | 3989495 | <0.005 | - | 3.6 | - | <1 | | | | |
| 10 | 3989496 | <0.005 | - | 2.9 | - | <1 | | | | |
| 11 | 3989497 | <0.005 | - | 2.5 | - | <1 | | | | |
| 12 | 3989498 | <0.005 | <0.005 | 8.5 | - | <1 | | | | |
| 13 | 3989499 | <0.005 | - | 7.7 | - | <1 | | | | |
| 14 | 3989500 | <0.005 | - | 7.1 | - | <1 | | | | |
| 15 | | | | | | | | | | |
| 16 | | | | | | | | | | |
| 17 | | | | | | | | | | |
| 18 | | | | | | | | | | |
| 19 | | | | | | | | | | |
| 20 | | | | | | | | | | |
| 21 | | | | | | | | | | |
| 22 | | | | | | | | | | |
| 23 | | | | | | | | | | |
| 24 | DETECTION | 0.005 | 0.005 | 0.5 | 50 | 1 | | | | |
| 25 | UNITS | ppm | ppm | ppm | ppm | ppm | | | | |

Results in ppm unless otherwise specified
- = element not determined

IS = insufficient sample
SNR = sample not received

AUTHORISED OFFICER




803061

CRA EXPLORATION PTY. LIMITED

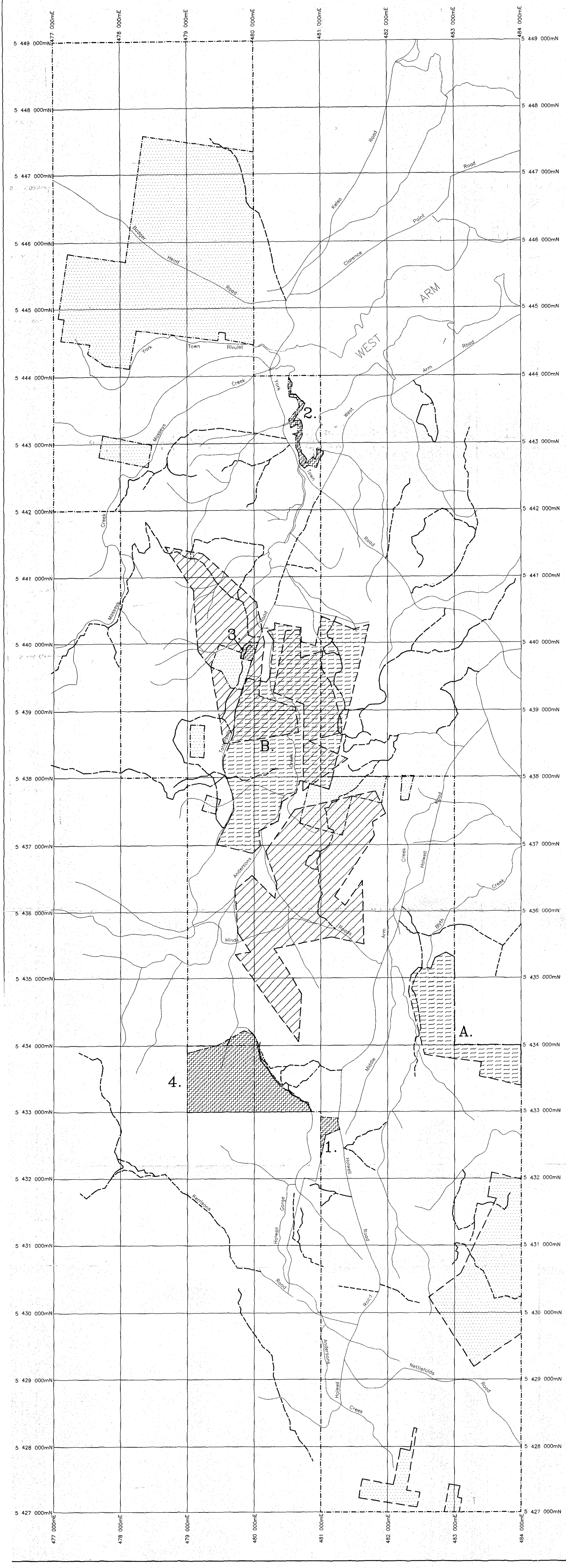
# ANDERSON'S CREEK
# EL 35/92

## LOCATION PLAN

| | |
|---|---|
| Ref.: SK55-04 | Scale: 1:100 000 |
| Author: S. Maher | Report No.: 20794 |
| Drawn: S. Brook | Plan No.: Tv 668 |

Mar. 1994

95-3724.




EL BOUNDARY :

EXCLUDED AREAS :

Mining Leases

1. Holwell Gorge State Reserve
2. West Arm State Recreation Area
3. Crown Reserves
4. Holwell Gorge RAP

RAP AREAS :

A. Peaked Hill RAP
B. Dans Hill RAP

OTHER :

Mt. Vulcan Simmonds Hill Australian Heritage Act Registered Entry

AMG North
Mag. North
12.7°

803062

95-3724.

5 cm

CRA EXPLORATION PTY. LIMITED

# ANDERSONS CREEK EL 35/92 Land Status Plan

| | |
|---|---|
| Ref.: Launceston SK55-04 | File: Tv669 |
| Scale: 1 : 25 000 | Date: Mar '94 / May '95 |
| Author: S. Maher | Report No.: 20794 |
| Drawn: S. Brook / T. Sargeant | Plan No.: Tv 669 |

478 000mE
479 000mE
480 000mE
481 000mE
482 000mE
483 000mE
5 442 000mN
5 441 000mN
5 440 000mN
5 439 000mN
5 438 000mN
5 437 000mN
5 436 000mN
5 435 000mN
5 434 000mN

Ts
Pl
Qa
Cpy
Cc
Oct
Qt
TPI
Es
P
ms
A
R
Hg

25
pitted, ferruginous quartz fault zone
pyrrhotite, pentlandite, chalcopyrite bearing layered gabbro float
chalcopyrite bearing gabbro
felsite
40
trace ?pentlandite bearing layered pyroxenite–gabbro
Hg–A
Cumulate layering, increasing number of A, R, Hg ?dykes and gabbro norite inter layers.
70
87
75
77
88
83
dominantly pyroxenrites
talus
tectonised serpentinite
80
88
85
silicified, ferruginous zone
mafic, ?volcaniclastic interbeds
talc–magnesite development
87
crysotile veins replaced by magnetite
70
coarse pyroxenite
55
83
75
60
55
cumulate layering gabbro norite interlayers
prominent asbestos veining in serpentinite
89
40
88
dominantly pyroxenite
75
conformable spinel schleiren
50
50
60
65
coarse pyroxenite
80
boudined tectonised serpentinite
83
Hg, R, A interlayers and dykes
85
47
83
schist subcrop
relict laterite cover
boudoned tectonised serpentinite
coarse pyroxenite
60
60

## GEOLOGICAL LEGEND

| | | |
|---|---|---|
| Quaternary | Qa | River alluvium and marsh deposits. |
| | Qt | Gravel talus. |
| Tertiary | Cc | Partially consolidated conglomerate. |
| | Ts | Sand, clay and gravel. |
| | TPI | Pisolitic Ironstone. |
| | | Unconformity. |
| Permian | Pl | Masseys Creek Group – mudstone, pebbly siltstone and sandstone. |
| | | Unconformity. |
| Ordovician | Oct | Cabbage Tree Formation – quartz sandstone. |
| Cambrian | €s | Slate ( ✕ – hornfels with andalusite). |
| Proterozoic | P | Badger Head Group – sandstone, slate and phyllite. |

Anderson's Creek Ultramafic Complex.

| | | |
|---|---|---|
| Cambrian | Cpy | Serpentinite, localised pyroxenite and gabbro norite. |
| | Hg | Hornblende gabbro |
| | A | Albitite. |
| | R | Rodingite. |
| | ms | Included Septum of metamorphic rocks. |

- 50 ⊥ — Strike & dip of layering (bedding).
- 50 ⌊ — Strike & dip of strain foliation.
- Geological boundary – position accurate.
- Geological boundary – position approximate.
- Fault – position accurate.
- Fault – position approx.
- EL boundary

Geology modified from :


Gee, R.D. and Legge, P.J. 1979. Geological atlas 1 mile Series. Zone 7, Beaconsfield, edition 2 : Tasmanian Geol. Survey, Expl. Pert. Sheet 30 (8215N).

Summons, T.G., Green, D.C. and Everard, J.L. 1981. The occurence of chromite in the Anderson's Creek area, Beaconsfield, Tasmania. Econ. Geol. 76, 505–518.

Elliot, C.G. Woodward, N.B. and Gray, D.R., 1993. Complex regional fault history of the Badger Head region, northern Tasmania. Australian Journal of Earth Sciences 40, 155–168.


Mapping and drill core inspection by S. Maher, 1994.

803063

95-3724.

AMG North
12.7
Magnetic North

5 cm

0 200 400 600 800
metres

CRA EXPLORATION PTY. LIMITED

# ANDERSONS CREEK
## EL 35/92
### Andersons Creek Ultramafic Complex : Geological Plan

| | |
|---|---|
| Ref.: Launceston SK55–04 | File: Tv884s |
| Scale: 1 : 10,000 | Date: November, 1994 |
| Author: S. Maher | Report No.: **20794** |
| Drawn: S. Brook | Plan No.: Vv Tv 884 |

478 000mE
479 000mE
480 000mE
481 000mE
482 000mE
483 000mE
5 442 000mN
5 441 000mN
5 440 000mN
5 439 000mN
5 438 000mN
5 437 000mN
5 436 000mN
5 435 000mN
5 434 000mN

0.19/0.02 15
18 0.04/0.01
0.20/tr. 19
0.24/0.02 14 SH1
0–91m Quartzite–slate–chert.
91–94m Sulphidic fault zone. 3m @ 0.82g/t Au, 2.4% Zn.
94–205m Orthocumulate textured dunite with magnetite veining. No sulphides observed.
205m
36 37
0.42/0.02 16
35
A15 91m
Blue black alteration zones with brassite. Trace sulphides in chrysotile–magnetite veins.
Trace pyrrhotite in chrysotile–magnetite veins.
A10 137m
A9 139m
A11 138m
Rare gabbronorite ?dykes. Trace pyrrhotite in chrysotile – magnetite veins.
Rare carbonate veining.
A6 244m
A4 244m
A7 134m
A5
A8 142m
A16 76m
Trace sulphides in chrysotile–magnetite veins. Possible sulphide disseminations in blue–black alteration zones.
168m SL1
Sandstone and quartzite.
76m A17
78m A18
Trace sulphides in chrysotile–magnetite veins.
A12 123m
Rare gabbronorite ?dykes. Trace pyrrhotite in chrysotile– mgnetite veins.
58m A13
A14 91m
Rare ?gabbronorite dykes with mauve alteration halos.
0.13/0.02 17
22 0
31 0.46/0.01 13 0.10/0.01 10
0.40/0.06 30 0.64/0.01 12 8 0.24/0.01
25 26
0.22/tr. 24
6
0.23/0.01 5
0.24/<0.01 3
0.23/0.01 4A
0.20/.02 9
0.36/0.02 27
0.42/0.05 29
23
0.04/0.08 28
0.23/tr. 21
0.27/0.01 76
0.30/0.02 34
32
0.26/tr. 20
0.20/0.01 11
2
33
0.67/0.01 1
48m Anderson's Creek 1
Tested rodingite dyke.
6m @ 0.43% Ni in unweathered serpentinite (?garnierite).
Rare sulphides (veinlet) in alteration halo about dykes.
126m AC2
AC1 153m
Tested for laterite beneath Permian cover. Did not test fresh serpentinite.

803064

95-3724.

AMG North
Magnetic North
12.7

0 200 400 600 800
metres
5 cm

## LEGEND

- BHP Diamond drillhole location. Hole tested aeromagnetic anomaly. Core not assayed.
- Department of Mines Diamond drillhole location.
- King Island Scheelite (1947) Limited Diamond drillhole location. Holes tested Ni grade in laterite profile.
  0.64/0.01: %Ni/%Co in fresh serpentinite at hole bottom.
- Allstate Explorations N.L. Diamond drillhole location. Holes tested asbestos development and type. Core not assayed.
- EL boundary

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# ANDERSONS CREEK EL 35/92 Andersons Creek Ultramafic Complex : Diamond Drillhole Location Plan

| | |
|---|---|
| Ref.: Launceston SK55–04 | File: Tv885s |
| Scale: 1:10 000 | Date: November, 1994 |
| Author: S. Maher | Report No.: 20794 |
| Drawn: S. Brook | Plan No.: Vv Tv885 |

5 442 000mN
478 000mE
479 000mE
480 000mE
481 000mE
482 000mE
483 000mE
5 441 000mN
5 440 000mN
5 439 000mN
5 438 000mN
5 437 000mN
5 436 000mN
5 435 000mN
5 434 000mN

3989493...
...3989485
3530529
3989167
3989166
3989494
3989495
3989496
3989497
3989498
3989499
3989500
3530530
3530531
3989165
3989174..6
3530532
3989164
3989173
3989302
3989301
3989449
3989448
3989447
3989446
3989445
3989444
3989443
3989442
3989441
3989440
3989439
3989438
3530533..4
3530535
3989163
3530537
3989437
3989436
3989435
3989434
3989433
3989432
3530536
3530538
3989177
3989308...
...3989303
3530553
3530539
3530540
3530555..6
3530554
3530541
3989171
3989168..70/3989172
3530557
3989314...
...3989309
3530546
3530547..8
3989184
3530542..3
3530549
3530550
3989315...
3989319
3530544
3530545
3989185
3989186
3530551
3989182
3989178..81
3989413
3989401...
...3989414
3989431...
3530509..11
3530524
3530558
3530523
3530519
3530527
3530521..2
3530520
3989183...
...3989323
3989320...
3530516
3530517
3530525
3530528
3530526
3530515
3530552
3530518
3530514
3530512..3

AMG North
12.7°
Magnetic North

5 cm

0 200 400 600 800
metres

803065

95-3724.

LEGEND

× Soil Sample Location

○ Pisolite Sample Location

● Rockchip Sample Location

—·—·— EL boundary

**CRA EXPLORATION PTY. LIMITED**

ANDERSONS CREEK
EL 35/92

Rock Chip, Pisolite and Soil
Sample Location Plan

| | |
|---|---|
| Ref.: Launceston SK55-04 | File: Tv941 |
| Scale: 1:10 000 | Date: November, 1994 |
| Author: S. Maher | Report No.: 20794 |
| Drawn: T. Sargeant | Plan No.: Tv 941 |

478000 479000 480000 481000 482000 483000

5442000 5441000 5440000 5439000 5438000 5437000 5436000 5435000 5434000

- 5
- 5-7
- 7-10
- 10-20
- 20-50
- 50-100
- 100-200
- 200-400
- +400

95-3724.

803066

5 cm

All Samples Chorizon soil and pisolite

imap 100m

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ANDERSON'S CREEK EL 35/92

Anomaly Map - Au ppb

| | | |
|---|---|---|
| Geol: S.Maher | Scale: 1:10,000 | Report: 20794 |
| Drawn: | Date: 4/19/95 | Plan: Tv 937 |

478000 479000 480000 481000 482000 483000

5442000 5441000 5440000 5439000 5438000 5437000 5436000 5435000 5434000

• - 5 • 5-10 o 10-20 O 20-25

25-30 30-35 35-40 40-50 +50

5 cm

C horizon soil and pisolite

jmap 100m

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**ANDERSON'S CREEK EL 35/92**

**Anomaly Map - As ppm**

| | | |
|---|---|---|
| Geol: S.Maher | Scale: 1:10,000 | Report: **20794** |
| Drawn: | Date: 4/19/95 | Plan: Tv 938 |

478000 479000 480000 481000 482000 483000

5442000 5441000 5440000 5439000 5438000 5437000 5436000 5435000 5434000

• -10 ○ 10-50 ○ 50-100 ○ 100-200

○ 200-500 ● 500-1000 ● 1000-3000 ● 3000-5000 ● +5000

95-3724.

5 cm

All Samples C horizon soil and pisolite

jmap 100m

803068

PLORATION PTY. LIMITED

ANDERSON'S CREEK EL 35/92

Anaomaly Map - Ni ppm

| | | |
|---|---|---|
| Geol: S Maher | Scale: 1:10,000 | Report: 20794 |
| Drawn: | Date: 4/19/95 | Plan: Tv 439 |

478000 479000 480000 481000 482000 483000

5442000 5441000 5440000 5439000 5438000 5437000 5436000 5435000 5434000

• -0 5 • 0.5-0.5 ○ 0.5-0 7 ○ 0.7-0 9

○ 0.9-1.1 ◉ 1.1-1.3 ◉ 1 3-1 5 ● 1.5-2.0 ● +2.0

5 cm

C horizon soil and pisolite

jmap 100m

CRA EXPLORATION PTY LIMITED

ANDERSON'S CREEK EL 35/92

Anomaly Map - Pt ppb

| | | |
|---|---|---|
| Geol: S.Maher | Scale: 1:10,000 | Report: 20794 |
| Drawn: | Date: 4/19/95 | Plan: Tv 940 |

803069

95-3724.