

ANNUAL REPORT

E.L. 14/86

HUSKISSON RIVER AREA

WESTERN TASMANIA 1987-88

BLACK HORSE MINING N.L.

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1st August, 1988

1. SUMMARY

The 1987-88 exploration programme on E.L. 14/86, in the Huskisson River area, consisted primarily of stream sediment and bulk soil sampling. The programme was completed by contractors on behalf of Black Horse Mining N.L. Various methods of sampling were employed with the objective being to cover the greatest possible area of the exploration licence. The sampling methods included: stream sediment samples, bulk soil samples and bulk cyanide samples. The sediments were concentrated in the field to examine the visible presence of precious metals.

Samples taken from the area were initially bagged and held in storage at the exploration headquarters of Callina N.L. (located at Wilson River), an associated company of Black Horse Mining N.L. The samples were later transported to Perth for processing.

The work carried out was largely dependent upon accessibility within the exploration licence. The major rivers provided good access to the area with the use of a rubber dinghy. A foot track was cut to gain access to Keenan Creek and the area north of Harman River.

The exploration programme took four weeks of field time and a total of nine weeks to completion. The cost of carrying out the work programme was approximately \$27,000. The sampling results indicate three areas of high prospectivity: Keenan Creek, Bealey-Barnes-King Creeks System and Chromite Creek, which are all worthy of further detailed ground investigations.

In 1988-89, it is proposed to expend \$10,000 on E.L. 14/86 in the following areas:

1. Regional geological mapping.
2. Stream sediment sampling.
3. Soil sampling.
4. Chemical and mineralogical analysis of all samples for gold, platinum group elements and chromite.

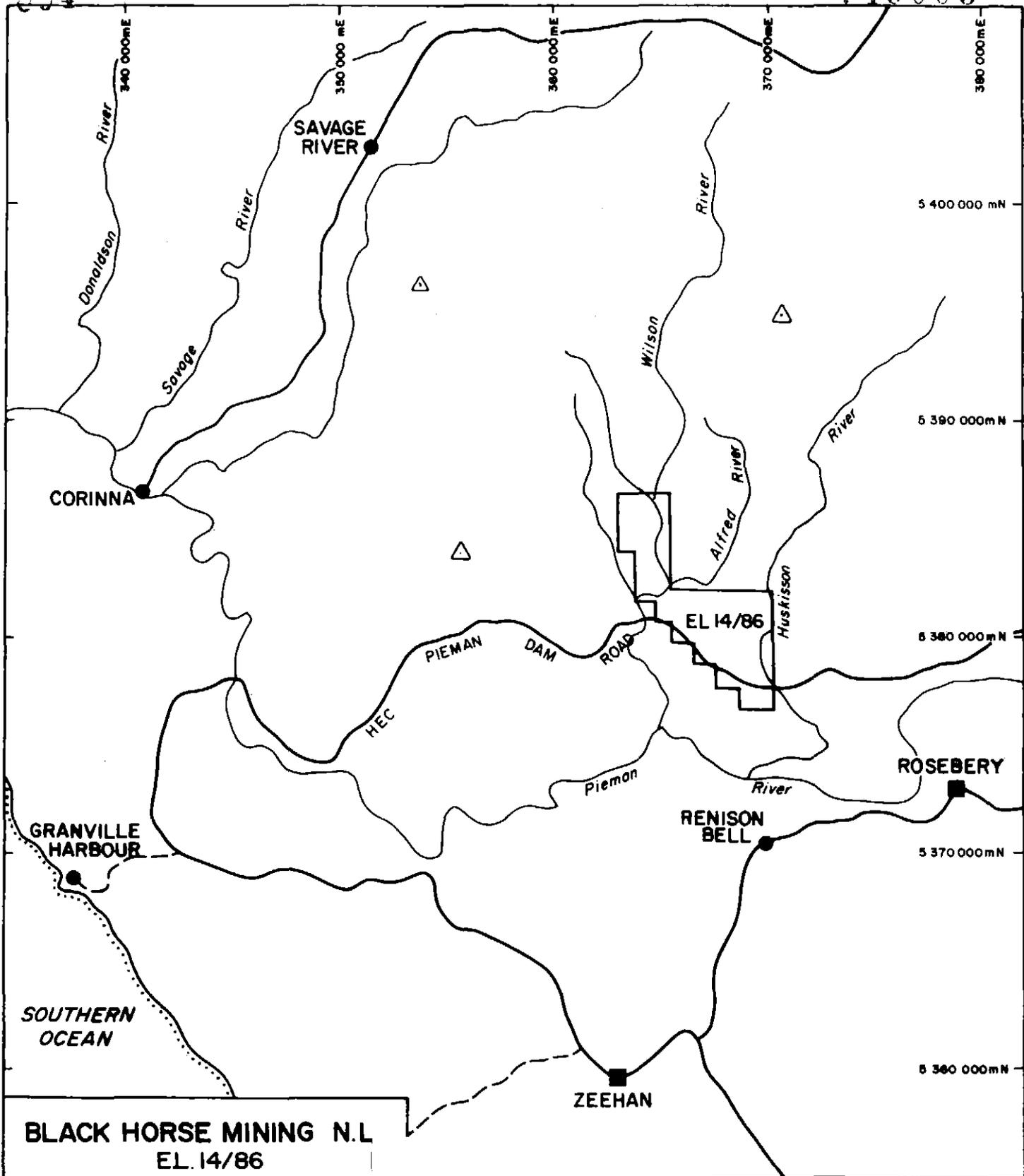
2. INTRODUCTION

Exploration Licence 14/86 covers an area of 30 square kilometres (Figure 1) in Western Tasmania. The licence contains the Wilson and Huskisson Rivers and associated tributaries which in the first quarter of the century were prospected and worked for alluvial concentrations of osmiridium and gold. The main tributary networks of the Huskisson River are Merton Creek, Barnes Creek and Chromite Creek. Major tributary networks of the Wilson River are Limestone Creek and Alfred River.

Access into the area is good via the Pieman Dam Road and walking tracks (Figure 2). This year the extremely dry weather allowed good access along the major rivers, but many smaller creeks were dry making location and sampling difficult. A rubber dinghy was used to access the river systems in the area.

3. LICENCE TENURE

L.E. Webb is the registered holder of E.L.14/86. He holds the tenement on trust for Black Horse Mining N.L. Ownership of the licence is 80% Black Horse Mining N.L. and 20% M.G. Creasy. The licence is current to 1st September, 1988.



BLACK HORSE MINING N.L.
EL. 14/86
 Locality Map

LEGEND

- MAJOR ROAD
- MINOR ROAD
- RIVER
- COASTLINE
- TOWN
- MINING CENTRE
- TRIG STATION

0 1 2 3 4 5 6 7 8 9 10km

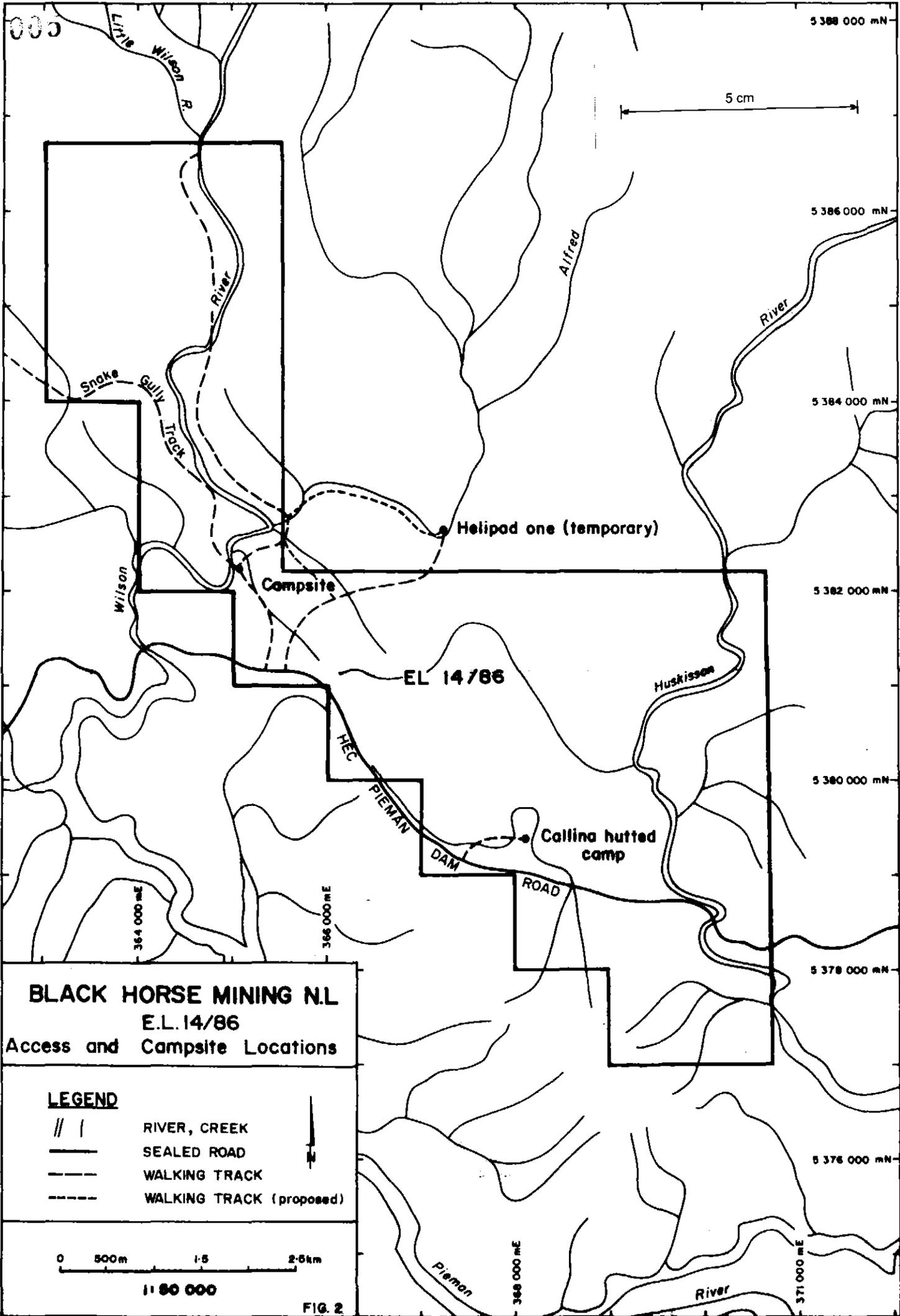
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FIG. 1

5 cm



TASMANIA



000

5 388 000 mN

5 cm

5 386 000 mN

5 384 000 mN

5 382 000 mN

5 380 000 mN

5 378 000 mN

5 376 000 mN

5 374 000 mN

Little Wilson R

Snake River

Snake Gully Track

Wilson

Alfred

River

Huskisson

EL 14/86

HEC

PIEMAN

DAM

ROAD

Callina hutted camp

Campsite

Helipad one (temporary)

364 000 mE

366 000 mE

368 000 mE

371 000 mE

Pieman

River

4. PREVIOUS WORK AND EXPLORATION ACTIVITY

The Huskisson River locality was an area of small scale alluvial mining and prospecting for tin, gold and osmiridium during the early 1900's. Historical records show that gold and osmiridium were mainly gained from Limestone Creek and tin from Wilson River.

In the 1960's, Aberfoyle conducted reconnaissance geological mapping in this area. They located minor sulphides in silicified ultrabasics near the Wilson-Little Wilson River junction.

During 1976-77, the Australia New Zealand Exploration Company explored and sampled much of the area under E.L.3/76. However, the company did not follow up the exploration results and no anomalies were further investigated.

G.F.E. surveyed the area in the 1978-79 period. They carried out an Airborne Input E.M./Magnetics survey (Butt, 1978) and a photogeological survey. G.F.E. then performed reconnaissance, geological mapping and stream sediment sampling in the Huskisson syncline from 1981-84 (Martin, 1981; Roberts & Martin, 1982).

Renison Ltd. conducted a stream sediment orientation survey during 1980-81. The survey was carried out in the immediate streams surrounding the Merton Hill area to determine the density of sampling, sieve sizes for samples, and which elements to assay the samples for. A total of 59 samples were taken at spacings of approximately 150 metres. Three size fractions were screened out at -180um, -300um and -425um. Each fraction was assayed for Sn, As, Wo, Cn, Pb, Zn and Ni.

The results of the 1980-81 survey show slightly anomalous responses around the adits and small responses along drainage from the adits. The survey also showed that sample spacing should be less than 200m and that there is little distinction between assay results for the three size fractions.

Renison also completed 7 diamond drill holes during their 1980-82 field seasons in the area. A mineralised zone was intersected and intervals were assayed for Sn, As, Sn, Pb, Zn, S, Fe and W by XRF and for Ag, Bi, Sn, Cr, Ni, Sb and Mo by AAS. In addition, Renison located 3 adits cut into Merton Hill during tin mining in the early 1900's. Two adits were chip sampled at 1m intervals and the samples were analysed for Ag, Zn, Pb and Sn.

In 1986, Black Horse Mining N.L. began investigating the potential of the Huskisson River/Merton Hill area. Initial field work consisted mainly of reconnaissance to relocate old workings and to accurately map a drainage diagram of the area. Stream sediment samples were taken from active streams surrounding Merton Hill. These streams included Merton Creek, Osmiridium Creek and Sweeney Creek. In addition, rock chip samples were taken from existing adits. Air photo interpretation of the area was also completed.

The exploration results by Black Horse Mining showed that significant gold values are present in some stream sediment samples and that chromite and platinum group elements are also present.

Further work on, or in, the vicinity of E.L. 14/86 is reported in the following list of reports submitted to the Tasmanian Department of Mines:-

RENISON LTD

1. Gradient Array E.I.P. Survey, Mt. Merton Grid. 1979-80.
2. Mt Lindsay Area Annual Report. 1979-80.
3. Merton Hill Area Progress Report. May 1980.
4. Mt Lindsay Area - Merton Hill Area Progress Report. May 1980.
5. Summary Report on the 1982 Geophysical Surveys over the Little Wilson River Infill Grid. September 1982.
6. Detailed E.I.P. Gradient Array Survey, Little Wilson River Grid. October 1982.

GOLD FIELDS EXPLORATION PTY LTD.

1. Alfred River Final Report. October 1985.

5. REGIONAL GEOLOGY

E.L.14/86 covers the western most portion of a folded sequence of Ordovician to Devonian sediments known as the Huskisson Syncline. The western areas of the lease cover the Eocambrian serpentinitized ultramafics. Brown (1986) studied the geology of the area in detail (Fig.3).

In the northern section of the lease, near Limestone Creek and Wilson River, Ordovician Limestone (correlate of Gordon Limestone) is exposed through recent river alluvials. Brown (1986) describes the limestone beds as being up to 200mm thick and containing interbedded 1-2mm thick mudstone units. Some of the beds are massive or foliated limestone whilst other beds contain thin discontinuous mudstone laminae (Brown, 1986). A minimum thickness of 150m of limestone is exposed in the area.

A Silurian sandstone sequence overlies the Ordovician Limestone. Although this is structurally conformable, Brown (1986) found that the biostratigraphy implies a disconformity in sedimentation between Middle Ordovician and Early Silurian. The sandstone sequence is composed of white and pink quartz sandstone beds which generally range in thickness from 20-300mm with beds up to 600mm occasionally occurring. Truncated cross-bedding is common and minor units of granule and pebble conglomerate, siltstone, and mudstone occur in the sequence.

Conformably overlying the sandstone sequence is a finer grained sedimentary succession composed of well bedded and laminated, grey-green siltstone and mudstone with minor, 50-300mm thick, cross bedded sandstone units with siltstone partings (Brown, 1986).

With a fairly sharp, gradational contact the lithology changes from a white sandstone into a unit comprised of interbedded dark grey siliceous siltstone with mudstone lamellae, bioturbated muddy sandstone and siltstone, and minor sandstone. The succession also contains multiple ripple marked horizons, scours and bulbous bases in the sandstone units. Cross laminated and thinly bedded micaceous sandstones with platy partings, and siltstone units, 5mm thick with convolute slumpings, also occur (Brown, 1986). The unit is more than 950m thick.

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The licence covers the eastern border of a 2km wide zone of steeply dipping ultramafic rocks comprised of serpentinized layers of peridotite and pyroxenite. These rocks belong to the Layered Dunite Harzburgite (LDH) succession and form the southern extension of the Cambrian Heazlewood River Complex. The arcuate boundary between the ultramafic rocks and the synclinal sediments is a complex fault zone, illustrated by a segment of westerly dipping sediments at Merton Hill.

The ultramafic rocks contain chromite and are also the source of osmiridium which, being heavy, has concentrated in the alluvial gravels of creeks within the area.

6. WORK COMPLETED

6.1 AIM

The major objective of the exploration programme this season was to locate anomalous areas of chromite, gold and platinum group elements. Geological variables influencing the sampling strategy included the following:

1. The Dunite Harzburgite Ultramafic Unit.

The dunite ultramafics have been shown to contain precious and strategic metals namely gold, platinum group elements and chromite.

2. The Gordon Limestone Unit

Exploration drilling completed by Renison showed that the Gordon Limestone unit is mineralised in the Merton Hill area. Wide gold in alluvials of Limestone Creek indicate that the unit may also be auriferous. In addition, contact metamorphic alterations are indicated in the Renison reports.

3. The Glacial Alluvials

The glacial alluvial deposits are known to contain gold, osmiridium and chromite in the general proximity of the ultramafic source.

The 1987-88 exploration programme concentrated on assessing the potential of alluvial deposits within the area. In deciding upon specific sampling targets, careful evaluation of all likely alluvial deposits has been made for chromite. It was thought that if economic deposits of chromite should occur then it is probable that minor gold and osmiridium would also be present.

Glacial deposits are ubiquitous throughout the Huskisson Valley. Where these deposits have been dissected by tributaries, reasonable upgrading of gold and osmiridium has occurred and some have been hand-sluiced. No evaluation of chromite has ever been made, however reports of the area mention "abundant chromite" in several creeks which dissect the Huskisson gravel units. Reconnaissance and sampling of Chromite Creek by Black Horse Mining N.L. has demonstrated a close affinity of the contained chromite with the Serpentine Ridge area.

The potential reserve of the glacial deposits is demonstrated by formulating estimates for the Harman River gravels. These are mapped as having an area of approximately 1 square kilometre. An average depth of 50m is considered likely. This indicates a potential volume of 50 million cubic metres of gravel being present, equivalent to about 80 million tonnes. If these gravels contain 5% chromite then a possible 4 million tonnes of chromite may be present.

In order to test these theories it was decided that the sampling methods had to include stream sediment and bulk soil samples. The bulk soil samples were collected from creek bank slopes so that the variability and quality of chromite grade at depth in the gravels could be determined.

Valley side samples, taken below the colluvial (scree) surface, provide an indication of likely grade variability. Nearby stream sediment sampling enabled a measure of upgrading in contemporary channel systems to be determined.

The specific alluvial targets were determined to be:

1. Harman River gravels.
2. Huskisson Valley gravels.

These targets were stream sediment and bulk soil sampled where values of 5% chromite and/or economic grades of gold, osmium and iridium appeared likely.

In order to determine the most prospective areas within the licence, the 1987-88 exploration programme was designed to sample the greatest possible area so that the most prospective sites within the licence could be determined. The following major creeks and tributaries were sampled:

1. Huskisson River and associated tributaries
2. Wilson River and associated tributaries
3. Chromite Creek
4. Barnes Creek
5. Bealey Creek
6. King Creek
7. McArthur Creek
8. Limestone Creek
9. Keenan Creek
10. Tin Creek
11. Sweeney Creek
12. Sandstone Creek
13. Merton Creek

6.2 Sampling Procedure

The various sampling methods employed throughout the field season were: stream sediment samples, bulk soil samples, and bulk cyanide samples. For purposes of comparability, standard stream sediment samples were collected from each site but where appropriate other samples were also taken.

The stream sediment samples consist of a panned heavy mineral concentrate collected at 200m intervals along an active stream channel. The stream sediment was wet-screened to -2mm and panned to produce between 100 and 200 grams of concentrate. Panning allowed a rapid assessment of the likely potential of the deposit.

The bulk soil samples consisted of hand augered 20kg samples collected to a 1 metre depth, where possible, using a 100mm soil auger. The samples were usually collected below the surface, particularly where organic or scree material occur, and the sites were carefully prepared by excavation and benching (using a hand shovel). Samples were usually collected on a downslope transect at approximately 90° to slope contours. In many cases difficulty was experienced in obtaining bulk soil samples any distance away from the creeks.

This applied especially in the more hilly terrain where bedrock was often struck at shallow depths. As a result samples were taken closer to the creeks than planned.

The bulk cyanide leach samples consisted of 20kg of material screened to -2mm. These samples were usually collected from the junction of tributaries which were inaccessible to further standard upstream sampling.

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Approximately 157 samples were collected and transported back to headquarters in Perth. These include 4 bulk cyanide soil samples and 46 auger samples with the remainder being stream sediment samples. The samples have been forwarded for further analysis. Refer to Figure 4 for sample site locations.

7. RESULTS

The sample details, and panning results of stream sediment samples, are summarised in Appendix 1. The results show that chromite was observed throughout the area with fair to good quantities of the material being recorded in many of the sampled creeks and tributaries. Both gold and osmiridium were sighted in panned concentrate samples taken from Chromite Creek, the Huskisson River tributaries, Keenan Creek, and the Barnes-Bealey-King Creeks System. Pan concentrates from Sandstone Creek contained gold while grains of osmiridium were sighted in samples taken from Tin Creek.

The best precious metals were at Chromite Creek mainstream and Chromite Creek Tributary 1. Cubic sulphides were only sighted in one pan concentrate taken from the soak that was believed to be in the vicinity of Chromite Creek Tributary 3. Ruby tin was readily visible in the pan concentrates taken from Huskisson River Tributary 4.

Assay results from the samples taken in the 1987-88 season have not yet been received from the laboratory.

8. RECOMMENDATIONS AND PROPOSED EXPLORATION PROGRAMME

The sampling results indicate that the areas of highest prospectivity are:

1. Keenan Creek
2. Bealey, Barnes and King Creeks System
3. Chromite Creek Tributary 1

Keenan Creek is given the highest prospectivity because of the large amount of shallow alluvial gravels which exist in that area. It is recommended that Keenan Creek is further investigated.

The Bealey, Barnes and King Creeks System is regarded as prospective as the large amount of alluvial workings indicate that significant precious metals must have been found in that area.

Although Chromite Creek showed good precious metals, old workings have been limited to a small section of Tributary 1. The amount of workable ground does not appear extensive due to its hilly nature. However, further samples should be taken at the sulphides sample on Chromite Creek Tributary 3.

The Crotty Quartzite should be further investigated as Renison reported in 1982 that hard rock mineralisation had been observed in this unit near Merton Hill. Wire gold, observed in the concentrates from Limestone and Chromite Creeks, has been suggested as evidence for a proximate hard rock gold source on the basis that wire gold could not have originated in glacial moraines.

Assuming that wire gold is indicative of local provenance, some detailed geological mapping is warranted on a limited number of cross-sections in the Limestone and Chromite Creeks tributary catchments. This will check for lithological and structural sequences likely to host gold mineralisation in catchments where wire gold has been observed.

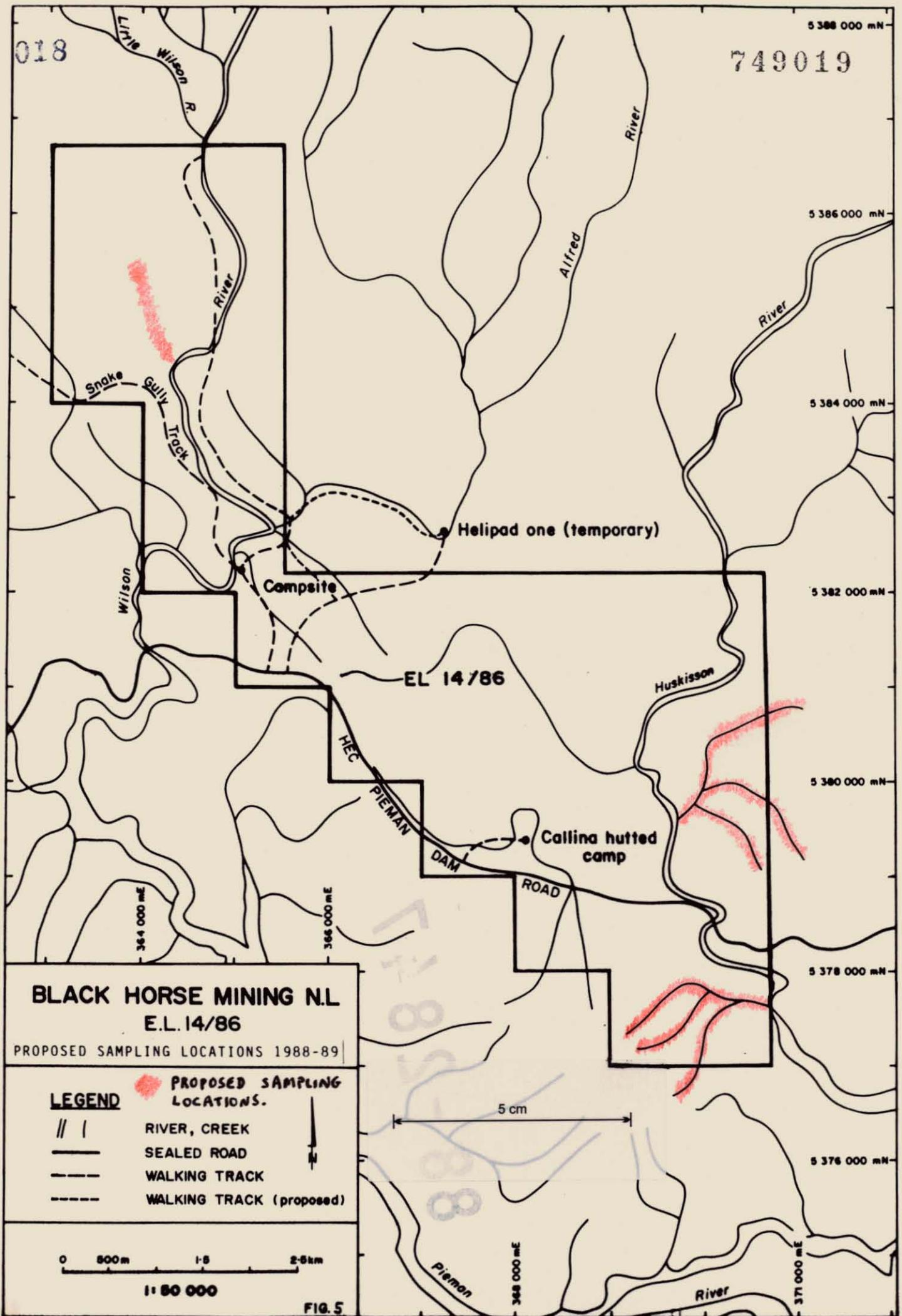
In conjunction with field mapping, channel rock chip sampling across known or new zones of mineralisation should be undertaken. In particular, the Crotty Quartzite mineralised section on the Merton Fault should be sampled as a possible gold source. Also, acid dykes which occur close to the ultramafic/sedimentary contact should be sampled as potential host rocks.

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It is recommended that in the 1988-89 exploration season the company should complete the following works:

1. Regional geological mapping of the area to determine the relationship of the gold, osmiridium and chromite anomalies with those located at Wilson River (E.L. 24/85) and Alfred River (E.L. 9/86). This should include some detailed mapping of Limestone and Chromite Creek tributary catchments. ✓
2. Further stream sediment sampling to determine the extent of anomalies located in the 1986 and 1987 field seasons. Specifically, areas to be further sampled (Figure 5) are:
 - a) Keenan Creek
 - b) Bealey Creek, Barnes Creek and King Creeks System
 - c) Chromite Creek and its tributaries. }
3. Soil sampling and hand auger coring in the vicinity of anomalous stream sediment samples. ||
4. Hard rock and gravel sampling of outcrops indicative of sulphides and other mineralisation; specifically, the Crotty Quartzite and acid dykes occurring close to the ultramafic/sediment contact should be sampled.

All samples taken during the season will be analysed for gold, platinum group elements and chromite.



9. PROPOSED EXPLORATION BUDGET 1988-89

The budget for the proposed exploration programme is \$10,000 and is outlined below:

1. Regional Geological Mapping
(Includes some detailed local mapping) \$4,500
The budget makes provision for the employment of a geologist, use of a helicopter, sample analysis and report preparation.

2. Sampling
(Stream sediment, soil and hard rock/gravel sampling) \$5,500
The budget provides for the employment of a geologist and field assistant, sample analysis and mineralogy.

Should the results be encouraging the budget may be increased to allow for further sampling and chemical analysis.

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- Roberts, P.A., and Martin L.L., 1982
82-1857 Annual Report, E.L. 17/77 - Wilson River Area, Western Tas., 1981-82. Gold Fields Exploration Pty Ltd Report.
- McIntosh Reid, A. Geological Survey Bulletin, Osmiridium in Tasmania, 1920.

APPENDIX 1 Table Summarising Sample Details and Results.

RIVER OR CREEK	*SAMPLE NUMBER	LOCATION	GRID REF.	TRAP DETAILS	PAN CONCEN BULK SAMPLE DESCRIPTION
Tin Creek	TCSS1	Junction with Huskisson River	69707920	Poor	Poor Chromite; No PM
Tin Creek	TCSS2	200m upwards from junction with Huskisson River	69507919	Fair	Fair Chromite; 1 grain <1mg Os
Tin Creek	TCSS3	400m upwards from junction with Huskisson River	69307916	Fair	Good Chromite; No PM
Tin Ck Trib. 1	TCT1SS4	450m upwards from junction with Huskisson River	69257920	Fair	No PM
Tin Ck Trib. 1	TCT1SS5	200m up tributary	69237930	Fair	Fair Chromite; No PM
Tin Creek	TCSS6	600m from junction with Huskisson River	69087922	Poor	Poor Chromite; No PM
Tin Creek	TCSS7	650m from junction with Huskisson River	69227907	Poor (Stream Peters Out)	Poor Chromite;
Chromite Creek	CHRSS1	Just above junction of creek with Huskisson River.	69847966	Good	Good Chromite; 1 grain 1mg Au
Chromite Creek	CHRSS2	200m upwards from junction with Huskisson River	69967980	Excellent	V.Good Chromite; (2 bags); PM difficult to see but 2 grains Fine Au, 2 grains Fine Os

* Note: The sample numbers are coded such that:-

SS = Stream Sediment Sample

BS = Bulk Soil Sample

BC = Bulk Cyanide Sample

The grid reference is coded such that: the first four digits refer to the northing and the last four digits refer to the southing A.M.G. co-ordinates.

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RIVER OR CREEK	*SAMPLE NUMBER	LOCATION	GRID REF.	TRAP DETAILS	PAN CONCEN./ BULK SAMPLE DESCRIPTION
Chromite Creek	CHRSS3	400m upwards from junction with Huskisson	70238000	Good	V. Good Chromite; Au & Os noticed whilst bagging.
Chromite Creek	CHRSS4	600m upwards from junction with Huskisson River	70427994	Poor	Fair Chromite; 2 grains V. Fine Au & Os.
Chromite Creek	CHRSS5	800m upwards from junction with Huskisson River	70627989	Fair	Fair Chromite; 3 grains V. Fine Au.
Chromite Creek	CHRSS6	1000m upwards from junction with Huskisson River	70807982	Poor	Poor Chromite; No PM Fine Quartz sand & gravel
Chromite Creek	CHRSS7	1200m upwards from junction with Huskisson River	70877963	Poor	Poor Chromite; No PM
Chromite Creek	CHRSS8	1400m upwards from junction with Huskisson River	70967947	Poor	Poor Chromite; No PM
Chromite Creek	CHRSS9	200m up CHR2 which is second right hand (east) branch from Huskisson River	70127964	Fair	Fair Chromite; No PM White Quartz Gravel
Chromite Creek	CHRSS10	40m above CHRSS9	70177962	Good	Poor Chromite; 1 grain 1mg Au; 2 grains Fine Au; & 2 grains Fine Os
Chromite Creek	CHRSS11	15m up right hand branch going up above CHRSS9	70207960	V. Good	Poor Chromite; No PM

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RIVER OR CREEK	*SAMPLE NUMBER	LOCATION	GRID REF.	TRAP DETAILS	PAN CONCEN./ BULK SAMPLE DESCRIPTION
Chromite Creek	CHRSS12	15m above CHRSS10 on left hand going up branch which peters out a further 20m upwards.	70197965	No trap	Poor Chromite; No PM
Chromite Creek	CHRSS13	200m upwards from CHRSS11. Creek peters out and becomes a soak.	70397955	Good	Little Chromite; No PM
Chromite Creek	CHRSS14	Return to Mainstream. Chain up to small branch from the left (west). Sample taken 10m up it. This branch peters out another 30m up it.		No trap	Fair Chromite; No PM
Chromite Creek	CHRSS15	20m upwards from junction on CHR1	70108010	Poor	V. Good Chromite; No PM visible because of too much chromite
Chromite Creek	CHRSS16	200m upwards from CHRSS15	70108030	Poor	V. Good Chromite; 2 grains fine Au; 2 grains 3mg Au; 2 grains fine Os
Chromite Creek	CHRSS17	Taken 10m up small trib. which was later found to be part of old workings.	70108040	No trap	Fair Chromite; 1 grain fine Au; 1 grain fine Os
Chromite Creek	CHRSS18	Wide flat appears to have been ground sluiced.	70188047	Poor	V. Good Chromite; No PM visible (too much chromite)

RIVER OR CREEK	*SAMPLE NUMBER	LOCATION	GRID REF.	TRAP DETAILS	PAN CONCEN./ BULK SAMPLE DESCRIPTION
Chromite Creek	CHRSS19		70408050	Poor	V. Good Chromite; No PM visible
Chromite Creek	CHRSS20	Taken on right hand (southern) branch of Creek junction. Narrow stream channel.	70508050	V. Good	Fair Chromite; 5 grains of 2 mg Au; 1 grain fine Os.
Chromite Creek	CHRSS21	Left hand (northern) branch of creek junction.	70508052	Good	Good Chromite; 1 grain fine Os; 10 grains fine Au.
Chromite Creek		Return to Chromite Creek. Went 350m upstream to try and locate tributary CHR3 but all that could be found were three soaks.			
Chromite Creek	CHRSS22	10m away from creek. Taken on one of the soaks.	70567994	No trap	Fair Chromite; 2 grains fine Au; Tail of Cubic sulphides.
Chromite Creek	CHRSS23	Return to Huskisson River. About 100m upstream from river is a small tributary from south.	69917967	Poor	V. Poor Chromite; No PM
Huskisson Trib. 3	H3SS24	15m up from Huskisson River.	69558013	V. Good	Fair Chromite; 3 grains fine Au; 1 grain fine Os.
Huskisson Trib. 3	H3SS25	200m up from Huskisson River. Steep sided Creek	69718023	Poor	V. Little Chromite. 1 grain fine Au.
Huskisson Trib 1.	H1SS27	Taken on small soak on south side of creek junction with Huskisson River	70067828	No trap	V. Little Chromite; No PM

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RIVER OR CREEK	*SAMPLE NUMBER	LOCATION	GRID REF.	TRAP DETAILS	PAN CONCEN./ BULK SAMPLE DESCRIPTION
Huskisson Trib. 1	H1SS28	20m up from Huskisson River Near Renison SS423.	70087829	No trap, swampy.	Poor Chromite; No PM
Huskisson Trib. 1	H1SS29	200m upwards from Huskisson River.	69907832	Poor (Con- glomerate and Sand- stone scree in creek.)	Poor Chromite; No PM
Huskisson Trib 1.	H1SS30	400m upwards from Huskisson River.	69767845	No trap (Open flat.)	Poor Chromite No PM
		No further samples taken on H1 due to lack of stream channel. Drainage is a wide swampy flat.			
Keenan Creek	W6	Junction of Creek with Wilson River is impenetrable. Access was made via hills on eastside. Samples were taken, then chained and flagged out.			
Keenan Creek	W6SS31	15m upwards from RP1185 & RP1186.	64248454	No trap	V. Good Chromite; No PM
Keenan Creek	W6BS1	100m west of W6SS31. Teatree forest on wide flat.	64148455		Topsoil 300mm; Augered to 700mm (Mud).
Keenan Creek	W6BSA	300m upstream. Bulk Sample taken from wash in old prospecting pit above alluvial workings.			Sample taken from top to bottom of the hole. The bottom of pit was not on bedrock.

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RIVER OR CREEK	*SAMPLE NUMBER	LOCATION	GRID REF.	TRAP DETAILS	PAN CONCEN./ BULK SAMPLE DESCRIPTION
Keenan Creek	W6SS1	5m west of Keenan Creek. Between W6BS2 & W6BS3	64128481	No trap Pan conc. 1 grain <1mg of 2 lts Au; 1 grain of clayey <1mg Os. wash taken from the bottom of a pit.	Good Chromite;
Keenan Creek	W6BS2	50m west of Creek & W6SS1 Teatree Flat.	64088481		Topsoil 250mm; Augered to 700mm and struck hardwash.
Keenan Creek	W6BS3	15m east of Creek	64148482		Topsoil 200mm; Augered to 1m. Didn't reach bedrock.
		Return to W6SS31. Chain back to Wilson River.			
Keenan Creek	W6BS4	Arrival point on Wilson River is 250m upstream of W6 junction with Wilson River	643084		Topsoil 500mm; Augered to 1100mm (mud). Didn't reach bedrock
Wilson River	NHBS1	Commence at Cliff Base (Grid 64708458). 300m upstream to ford across Wilson River to North Harman River Area.	64718492		Topsoil 300mm; Augered to 1200m in sandy clay. Sandy alluvial river flat 2m above river level.
Wilson River	NHABS2	10m from NHABS1.	64748504		Topsoil 300mm; Orange sandy clay to 1200mm
Wilson River	NHABS3	15m south of junction of Flood Creek and Wilson River.	64818514		Topsoil 200mm Sandy clay to 1200m.

RIVER OR CREEK	*SAMPLE NUMBER	LOCATION	GRID REF.	TRAP DETAILS	PAN CONCEN.o BULK SAMPLE DESCRIPTION
Wilson River	SHBS4	South Harman bulk soils - 300m upstream of Alfred River on west bank of Wilson River and 25m up on bank.	65228283		Topsoil 200mm; Orange sandy clay to 1200mm.
Wilson River	SHBS5	30m due west of limestone bar at junction of Limestone Creek and Wilson River	65488265		500mm humus; Sandy clay to 1000mm.
Wilson River	SHBS6	100m west of SHBS5. Up above a flood creek.	65428271		500mm humus; Sandy clay to 1000mm.
Lime- stone Creek	LCBS1	Up Limestone Creek for 350m then 20m north of creek.	65808449		Topsoil 200mm; Mostly limestone grit. Limestone bedrock at 500mm.
Lime- stone Creek	LCBS2	670m up from Wilson River above water- fall.	65998222		Topsoil 200mm; discarded. 600mm of gritty limestone clay then limestone bedrock.
Lime- stone Creek	LCBS3	20m north of creek on foot track to Alfred River. Small swampy flat.			Clay to 700mm; Limestone bedrock.
Sweeney Creek	MCBS1	25m east of Sweeney Creek on transmission line track	68537851		Topsoil 200mm; Yellow sandy clay to 600mm; Hard clay bottom.
Sweeney Creek	MCBS2	130m west of Sweeney Creek on transmission line track	68407861		Quartz fragments visible in sandy clay to 800mm.
Sweeney Creek	MCBS3	100m east of Gold Creek on transmission line track	68857827		Sand and quartz pebbles to 1000mm.

RIVER OR CREEK	*SAMPLE NUMBER	LOCATION	GRID REF.	TRAP DETAILS	PAN CONCEN./ BULK SAMPLE DESCRIPTION
Wilson River Trib. 1	W1SS2	Taken immed. below where foot track to Limestone Creek crosses Wilson River (W1).	65158229	Good	Good Chromite; No PM.
Wilson River Trib. 1	W1SS3	200m down- stream of W1SS2, not far from Wilson River.	65038242	Good	Good Chromite; No PM.
Wilson River Trib. 1	W1SS32	600m upstream of track at top end of tailrace dug through bare serpentine flat. No further sampling possible upstream due to lack of water and stream channel.	65238168	Poor	Fair Chromite; No PM.
Wilson River Trib. 2	W2SS33	50m up second eastern trib. (W2).	65278189	Fair	Fair Chromite; No PM.
Wilson River Trib. 3	W3SS34	50m up first eastern trib. (W3) No samples taken above SS33 and SS34 due to a lack of a suitable stream channel and water.	65278198	Good	Fair Chromite; No PM.
Barnes Bealey & King Creek System	BCSS1	30m up creek system from Huskisson River.	70687773	No trap (Tail of gravel.)	Fair Chromite; 3 grains V. Fine Au.
Barnes Bealey & King Creek System	BCSS2	200m upstream from BCSS1.	70507777	No trap (Bouldery gravel.)	Fair Chromite; No PM.

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RIVER OR CREEK	*SAMPLE NUMBER	LOCATION	GRID REF.	TRAP DETAILS	PAN CONCEN./ BULK SAMPLE DESCRIPTION
Barnes Bealey & King Creek System	BCSS3	200m upstream from BCSS2	70307776	No trap (Bouldery Gravel).	Fair Chromite; No PM.
Barnes Bealey & King Creek System	BCSS4	40m to King Creek Junction 200m upstream from BCSS3.	70107782	No trap (Tail of gravel)	Fair Chromite; >6 grains V. Fine Au.
Barnes Bealey & King Creek System	BCSS5	200m upstream from BCSS4. (80m up from Bealey Creek)	69947793	Good	Good Chromite; 1 grain V. Fine Au; 1 grain V. Fine Os.
Barnes Bealey & King Creek System	BCSS6A	200m upstream from BCSS5. (Wide flat with very minor workings.)	69797804	Fair	Good Chromite; 1 grain Fine Au.
Barnes Bealey & King Creek System	BCSS6B	Main branch of Barnes Creek, 20m above trans- mission line track.	69707784	Fair	Fair Chromite; 2 grains 1mg Au; 3 grains Fine Au; 2 grains Fine Os.
Barnes Bealey & King Creek System	BCSS7	200m upstream from BCSS6B (Alluvial workings evident.)	69537770	Good	Poor Chromite; No PM.
Barnes Bealey & King Creek System	BCSS8	200m upstream from BCSS7.	69457763	Fair	Fair Chromite; 3 grains V. Fine Au; 2 grains V. Fine Os.
Barnes Bealey & King Creek System	BCSS9	80m to fork in Creek. Northern branch.	69437757	Poor	Poor Chromite; 1 grain 1mg Au.

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RIVER OR CREEK	*SAMPLE NUMBER	LOCATION	GRID REF.	TRAP DETAILS	PAN CONCEN./ BULK SAMPLE DESCRIPTION
Barnes Bealey & King Creek System	BCSS10	Southern branch of fork in creek.	69407760	Poor	Poor Chromite; >6 grains V. Fine Au.
		No suitable stream channels located for further sampling.			
Bealey Creek	BLYSS1	Just above junction of Barnes & Bealey Creeks.	70177776	No trap	Fair Chromite; 1 grain V. Fine Au; 1 grain V. Fine Os.
Bealey Creek	BLYSS2B	200m upstream from BLYSS1 & 80m before the track.	70077767	No trap	Fair Chromite; No PM.
Bealey Creek	BLYSS2A	100m upstream from BLYSS2B & 40m above track.	70037762	No trap	Poor Chromite; No PM.
Bealey Creek	BLYSS3	200m upstream from BLYSS2B	69887749	No trap	Fair Chromite; No PM.
Bealey Creek	BLYSS4	200m upstream from BLYSS3	69717738	No trap	Fair Chromite; No PM.
Bealey Creek	BLYSS5	Not taken due to being too late and unsafe to continue on. No alluvial workings evident.			
King Creek Trib.1	K1SS1A	10m above Barnes & King Creeks junction.	70297775	No trap	Poor Chromite; No PM.
King Creek Trib. 1	K1SS1B	160m upstream from junction. (50m to alluvial workings - minor then major).	70237761	(Fine Gravel)	Good Chromite; 3 grains fine Au; 2 grains fine Os.

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RIVER OR CREEK	*SAMPLE NUMBER	LOCATION	GRID REF.	TRAP DETAILS	PAN CONCEN./ BULK SAMPLE DESCRIPTION
King Creek Trib. 1	K1SS2	50m above track	70137754	No trap	Fair Chromite; 3 grains V. Fine Au.
		Renison SS431 at 35m before King Trib. 2.			
King Creek Trib. 1	K1SS3	Immediately above King Trib. 2.	70027737	No trap	Poor Chromite; 1 grain V. Fine Au; 1 grain V. Fine Os.
King Creek Trib. 1	K1SS4	200m upstream from K1SS3	69817727	No trap (Cemented and Iron stained gravel.)	Fair Chromite; 1 grain Fine Au.
King Creek Trib. 1	K1SS5	200m upstream from K1SS4	69637717	No trap	Poor Chromite; No PM
King Creek Trib. 1	K1SS6	200m upstream from K1SS5. Tributaries K3 & K4 Indef- ineable. Serpentine Bedrock.	69687719	No trap	Fair Chromite; No PM.
King Creek Trib. 2	K2SS1	10m above junction of Trib. 1 and Trib. 2.	70047736	Good (Cemented Iron- stained gravel.)	Fair Chromite; 2 grains fine Au.
King Creek Trib. 2	K2SS2	200m upstream from K2SS1 (Alluvial workings all the way.)	70037715	Good	Fair Chromite; 1 grain fine Au.
Barnes Bealey & King Creek System	BCBS1	200m up the road from transmission line tower and 20m down hill	69447781		Topsoil 400mm; Augered in white sand to 1000mm.

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RIVER OR CREEK	*SAMPLE NUMBER	LOCATION	GRID REF.	TRAP DETAILS	PAN CONCEN./ BULK SAMPLE DESCRIPTION
Barnes Bealey & King Creek System	K1SBS3	On road cutting 10m west of track crossing King Creek in glacial gravels.	70177755		Scraped from road cutting.
Barnes Bealey & King Creek System	KBS1	Edge of track	69997710		Topsoil 100mm; Grey soil with quartz stones. Bottom brown/ yellow at 1050mm.
Barnes Bealey & King Creek System	KBS2	Access via Riley Knob walking track, then down button grass tongue to forest, then due north 300m.	69957778		Topsoil 200mm; Yellow clay to 500mm; then quartz pebbles and rocks to 900mm.
Barnes Bealey & King Creek System	BLYBS2	Access via vehicle (bull- dozed) track down to edge of button grass and forest then 70° for 200m.	69407719		Topsoil 300mm; Quartz and sandy pebbles to 1000mm.
Tin Creek	TCBS1	250m up from Huskisson River on Tin Creek, 30m north.	69437925		Topsoil 50mm; Sandy gravel to 500mm; Sand to 1000mm
Tin Creek	TCBS2	300m from Huskisson River, 30m south.	69437915		Topsoil 100mm; Iron stained sand to 300mm.
Tin Creek	TCBS3	600m from Huskisson River, 25m east.			Topsoil 100mm; Sand to 600mm.
Sandstone Creek	SSSS1	100m up from junction with Merton Creek	68588033	Good (Slatey bedrock)	Fair Chromite; No PM.
Sandstone Creek	SSSS2	400m upstream	68478071	Good	Good Chromite; 1 grain Fine Au.

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RIVER OR CREEK	*SAMPLE NUMBER	LOCATION	GRID REF.	TRAP DETAILS	PAN CONCEN./ BULK SAMPLE DESCRIPTION
Sandstone Creek	SSSS3	800m upstream, 10m above SSBC3 & Renison SS653	68178101	Fair	Fair Chromite; 1 grain fine Au.
Sandstone Creek	SSSS4	1200m upstream	68038136	Fair	Fair Chromite; No PM.
Sandstone Creek	SSSS5	1600m upstream	67708148	V. Good	Fair Chromite; No PM.
Sandstone Creek	SSSS6	2000m upstream, 100m to Renison SS707 & 200m to Renison SS709	67388147	V. Good	Fair Chromite; No PM.
Sandstone Creek	SSSS7	2400m upstream	67188128	Good	Poor Chromite; No PM.
Sandstone Creek	SSSS8	2800m upstream, Renison SS714 at 2900m.	66938119	Poor (Iron- stained cemented gravels.)	Fair Chromite; No PM.
Sandstone Creek	SSSS9	Taken on right (west) trib. in Serpentine Flat.	66798108	No trap	Fair Chromite; No PM.
Sandstone Creek	SSSS10	Left hand branch (south tributary).	66218108	No trap	Fair Chromite; No PM.
McArthur Creek	McASS1	20m up from Merton Creek	68007986	Good	Fair Chromite; No PM.
McArthur Creek	McASS2	200m upstream	67807990	Good	Fair Chromite; No PM.
McArthur Creek	McASS3	400m upstream	67648000	Fair	Fair Chromite; No PM.
McArthur Creek	McASS4	600m upstream	67438012	Fair	Good Chromite; No PM.
McArthur Creek	McASS5	800m upstream	67218023	Fair	Good Chromite; No PM.
McArthur Creek	McASS6	1000m upstream (Alluvial workings)	67128036	Good	Good Chromite; No PM.

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RIVER OR CREEK	*SAMPLE NUMBER	LOCATION	GRID REF.	TRAP DETAILS	PAN CONCEN./ BULK SAMPLE DESCRIPTION
McArthur Creek	McASS7	1200m upstream (Serpentine)	67028050	Fair	Good Chromite; No PM.
McArthur Creek	McASS8	1400m upstream (Serpentine)	66878063	Poor	Fair Chromite; No PM.
McArthur Creek	McAT3SS1	Just above junction.	67108046	Poor	Poor Chromite; No PM.
McArthur Creek	McAT3SS2	100m upstream (only suitable sample site)	67178055	Poor	Poor Chromite; No PM.
McArthur Creek	MCAT2SS1	Just above junction	67218033	Good	Fair Chromite; No PM.
McArthur Creek	McAT2SS2	200m up where 400 ⁰ E Gridline meets Creek	67078026	Poor	Fair Chromite; No PM.
McArthur Creek	McAT2SS3	200m upstream Creek petering out. Serpentine outcrop.	66968010	Poor	Fair Chromite; No PM.
McArthur Creek	McAT1SS1	10m up trib.	67538007	Poor (Tail of gravel)	Good Chromite; Plenty of silica sand; No PM.
Huskisson Trib. 4	H4SS1	400m upstream from Huskisson River. Small trib from north.	69508125	Poor	5 grains Os & Au Fines.
Huskisson Trib. 4	H4SS2	450m upstream from Huskisson River.	69458127	Good	Fair Chromite; 1 grain 1mg Au; 1 grain fine Au.
Huskisson Trib. 4	H4SS3	700m upstream	69358144	Good	Fair Chromite; 1 grain 1mg Au; 1 grain fine Os; 1 grain fine Au.
Huskisson Trib. 4	H4SS4	170m further up creek forks. H4SS4 on smaller tributary.	69338160	Good	Good Chromite; No PM. Ruby tin visible.

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RIVER OR CREEK	*SAMPLE NUMBER	LOCATION	GRID REF.	TRAP DETAILS	PAN CONCEN./ BULK SAMPLE DESCRIPTION
Huskisson Trib. 4	H4SS5	Larger western tributary	69338160	Good	Fair chromite; 1 grain 1mg Au; 1 grain 1mg Os; 2 grains fine Os. Ruby tin visible.
		Insufficient water to take further samples. Back to junction at 150m.			
Huskisson Trib. 4	H4SS6	20m up from Junction at 150m.	69618099	Good	Fair Chromite; 1 grain Fine Os.
Huskisson Trib. 4	H4SS7	200m upstream	69438102	Good	Fair Chromite; No PM.
Huskisson Trib. 4	H4SS8	400m upstream	69308117	Good	Fair Chromite 1 grain 1mg Os.
Huskisson Trib. 4	H4SS9	30m below the junction at 150m, and 120m from Huskisson River.		Good	Fair Chromite No PM
Huskisson Trib. 5	H5SS1	Just above Huskisson River.	69878104	Good	Good Chromite; 1 grain Fine Au.
Huskisson Trib. 5	H5SS2	70m upstream. Stream peters out.	69878104	Poor	Good Chromite; 1 grain V. Fine Au. Ruby Tin visible.
Huskisson Trib. 6	H6SS1	10m upstream then creek peters out.	69938100	Poor	Fair Chromite; No PM.
Chromite Creek	CHRBS1	240m up CHR2, then 20m up north trib. then 25m north.	70107968		Topsoil 200mm; Brown clay to 600mm; then hard clay to 1000mm.
Chromite Creek	CHRBS2	240m up CHR2, then 20m up north trib. then 25m south.	70107963		Yellow clay to 800mm; green clay to 1000mm.
Chromite Creek	CHRBS3A	150m up Chromite Creek from Huskisson River then west 25m.	69947988		Difficult to auger; depth only 300mm.

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RIVER OR CREEK	*SAMPLE NUMBER	LOCATION	GRID REF.	TRAP DETAILS	PAN CONCEN./ BULK SAMPLE DESCRIPTION
Chromite Creek	CHRBS4A	100m above junction of Chromite Creek and CHR1; then 50m west.	70168004		Topsoil 800mm; Kept only last 300mm. (Total 1100mm).
Chromite Creek	CHRBS5A	300m above 4A then 25m west	70417999		Topsoil 100mm; Bedrock at 600mm.
Lower Harman	LHBS1	Road Cutting	64858222		Fine quartz gravel to 200mm; Coarse quartz gravels to 300mm Soft soil to 1100mm.
Lower Harman	LHBS2	Track junction	64328270		White quartz pebbles on surfaces and in clay; bedrock at 800mm.
Lower Harman	LHBS3	Road Cutting	64408288		Ironstone on surface to decomposed serpentine at 1100mm.
Sandstone Creek	SSBC2	Trib 1 on south/west	68508079		
Sandstone Creek	SSBC3	Trib 2 on north/east.	68368090		
Sandstone Creek	SSBC4	Trib 3 on south/west	68508098		
Sandstone Creek	SSBC5	Trib 4 on south/west	68148110		
Wilson River	W1BS1	Taken 10m north of where foot track crosses W1	65158230		Serpentine bedrock at 300mm.
Wilson River	W2BS3	100m south of W2, then 50m east.	65308172		Topsoil 100mm; 300mm yellow soil; 500mm decomposed serpentine.

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RIVER OR CREEK	*SAMPLE NUMBER	LOCATION	GRID REF.	TRAP DETAILS	PAN CONCEN./ BULK SAMPLE DESCRIPTION
Wilson River	W2BS4 (Two)	100m north of W1SS32, 50m east.	65258193		Topsoil 50mm; Hard serpentine bedrock at 300mm.
McArthur Creek	McABS1		67628015		Topsoil 200mm; White clay to 1200mm.
McArthur Creek	McABS2		67168042		Topsoil 200mm; Brown clay to 600mm; decom- posed serpen- tine to 1100mm.
McArthur Creek	McABS3		67123848		400mm grey soil with white sand. 500m brown clay with wash; 200mm white sand; 1100mm depth.
McArthur Creek	McABS4		67318032		400mm black soil; 300mm white quartz rocks; 700mm depth.
Huskisson River Trib. 4	H4BS1	50m south of H4SS6	69608080		Topsoil 300mm; 400mm light brown clay; 700mm depth.
Huskisson River Trib. 4	H4BS2	100m north west of H4SS6 on sharp ridge line.	69608102		Topsoil 300mm; 400mm light brown clay.
Huskisson River Trib. 4	H4BS3	75m east of 150m creek junction.	69658100		Topsoil 300mm; 400mm light brown clay.
	BLYBS1	Track cutting (top side)	69357736		Topsoil 400mm; White sandy gravel to 600mm.
Merton Ck/ Sandstone Ck Junct.	SSBS1	50m before McASS1 then 200m north.	68908020		Augered to 600mm and hit hard clay, possibly sandstone.

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RIVER OR CREEK	*SAMPLE NUMBER	LOCATION	GRID REF.	TRAP DETAILS	PAN CONCEN./ BULK SAMPLE DESCRIPTION
Merton Ck Sandstone Ck Junct.	SSBS2	150m due east of McArthur/ Merton Creek Junction.	68367995		Topsoil 100mm; 400mm silica sand; 300mm sandstone pebbles and sand then hard sandstone bedrock.
Merton Ck Sandstone Ck Junct.	SSBS3.	North of bend in creek and straight up ridge line.	67907995		Silica sand and quartz rock to 1100mm.



STREAM SEDIMENT SURVEY
1987 / 88

- LEGEND
- Bulk Soil Sample
 - ⊕ Stream Sediment Sample
 - ⊖ Bulk Cyanide Sample
 - ⊞ Alluvial Workings
 - Tributary Junction (distance measure point)
 - 1000m distance between measure points (metres)

749040
88-2847

BLACK HORSE MINING N.L.

HUSKISSON RIVER TASMANIA

E 14/86 7619

Date	July, 1988	Compiled	Timon Mining
Drawn	Carto-graphic	Figure no.	6