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Prospect 602

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1979 DRAINAGE SAMPLING

DUNDAS, E.L. 15/76

WEST TASMANIA

EMR 60/80

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ZEEHAN
September, 1980

P.M. MACNAMARA

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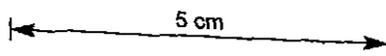
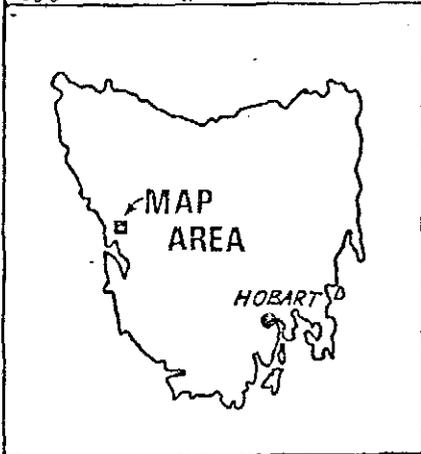
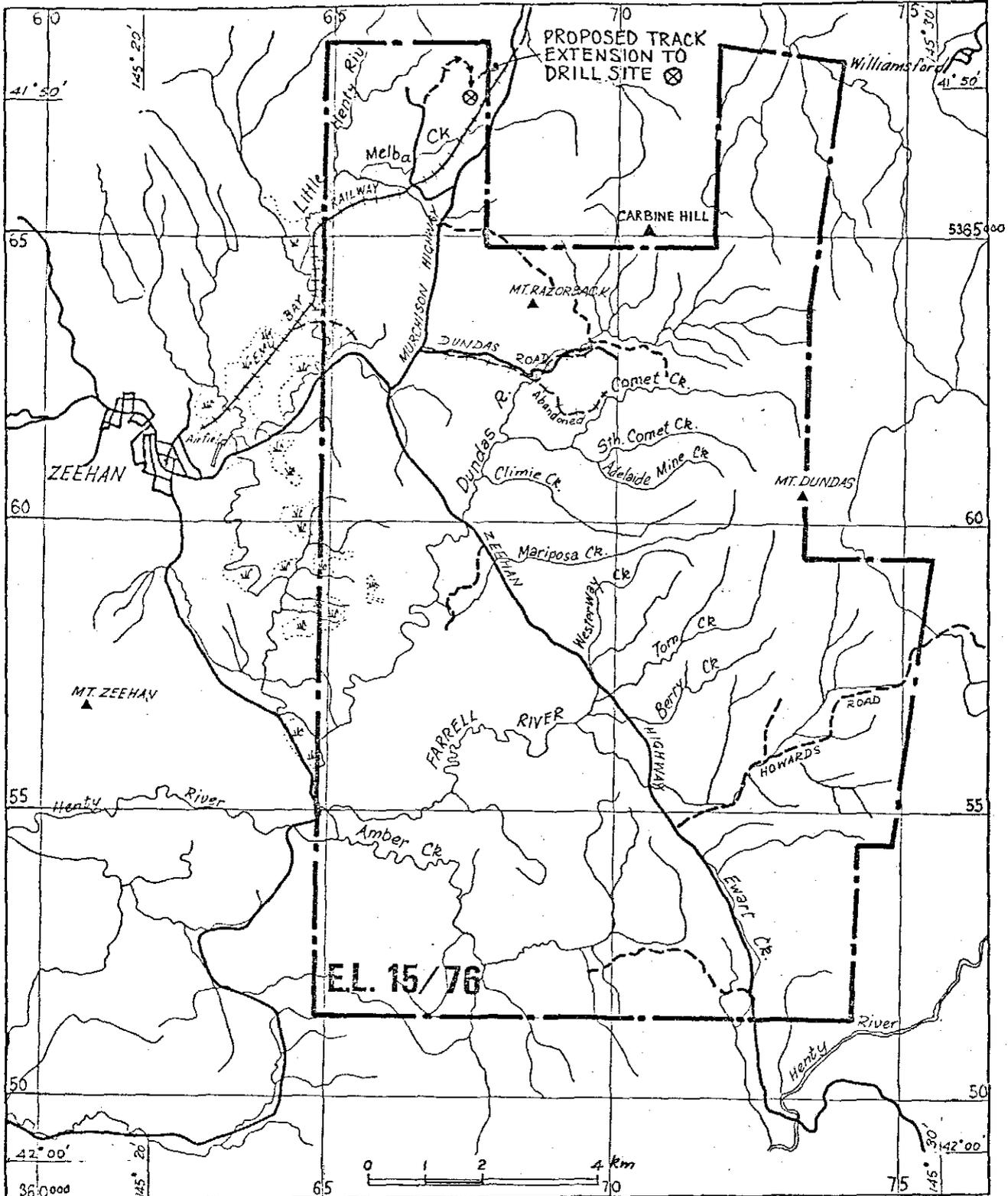
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KEYWORDS

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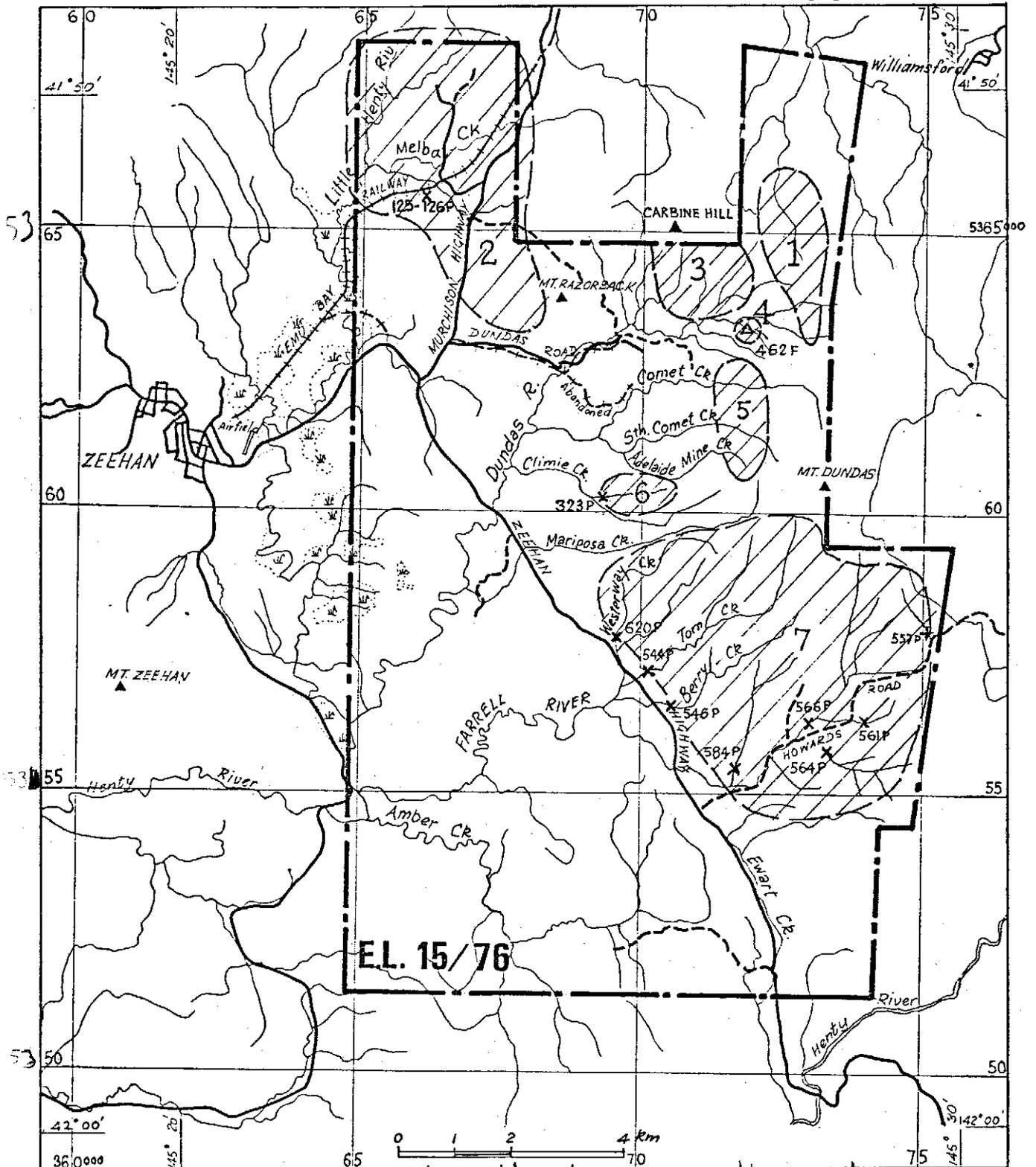
TIN
COPPER
LEAD
ZINC
SILVER
GOLD
CHROMIUM
COBALT
NICKEL
CALCIUM



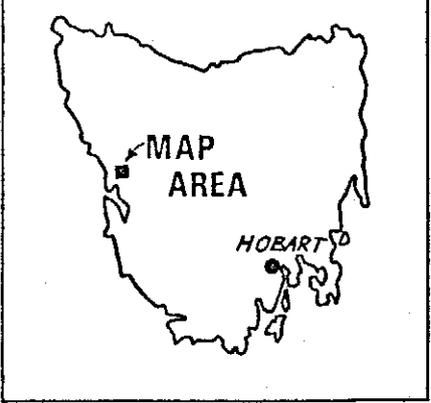
LOCATION MAP

EL. 15/76 DUNDAS
TASMANIA

FIG. 1



584P X PANNED CONCENTRATE SAMPLE No. 602 584 P
 Δ FLOAT SAMPLE
 (Z) ANOMALOUS AREAS



**ANOMALOUS DRAINAGE AREAS AND
 SAMPLE LOCATIONS: 1977-1978 SURVEY**

**EL. 15/76 DUNDAS
 TASMANIA**

FIG. 2

5 cm

1. INTRODUCTION

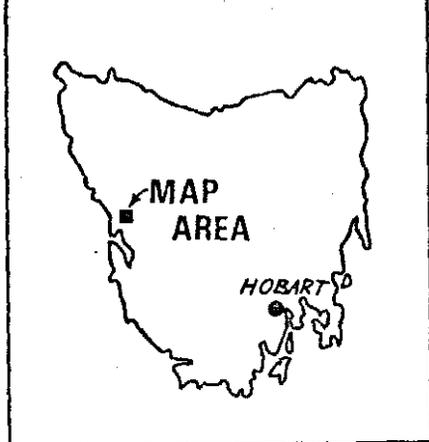
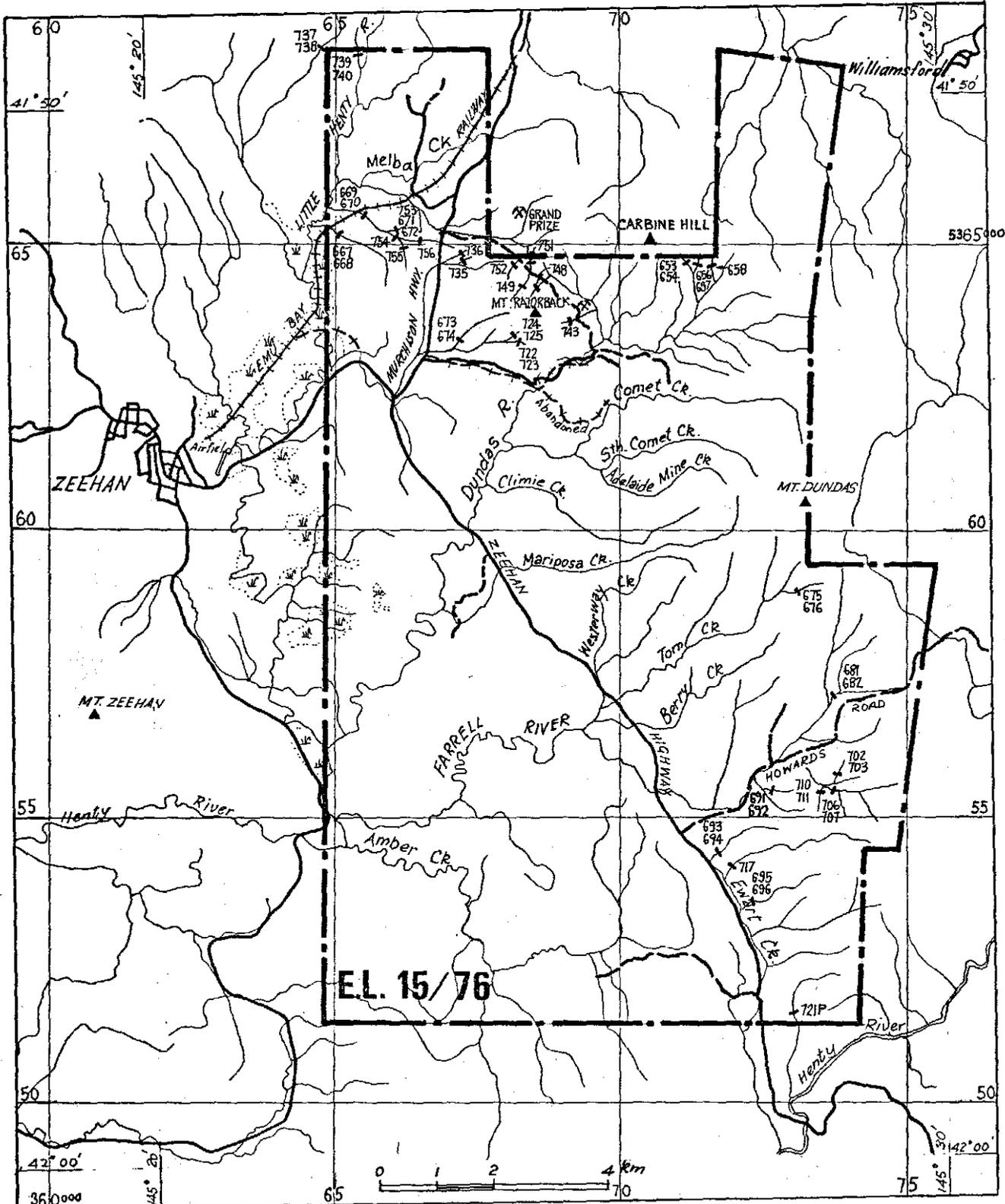
In 1977-78, drainage sampling was carried out over a major part of E.L. 15/76 (Figure 1). Minus 20 and minus 80 mesh sieved samples and panned concentrates were collected from numerous streams and analysed for a variety of elements. These multi-element analyses of various stream sediment fractions successfully outlined seven main anomalous areas (Figure 2) where above average concentrations of Sn, Pb-Zn, Ag, Cr plus other elements were indicated. Some were "new" anomalies, away from previous prospecting and pitting operations.

The techniques used showed good potential for eliminating much soil sampling reconnaissance work provided a sufficiently high density of drainage sampling was used.

In 1979, further drainage sampling was carried out. This was aimed at expanding sampling into untested areas as well as following up some of the 1977-78 anomalies by closer spaced sampling. Areas sampled included Cuni, Nevada, Razorback and Carbine East Grids in the north plus the Howards Road area in the south-east of the E.L.

Drainage mud samples were collected at 68 locations, 40 of which were also panned to yield a heavy mineral concentrate. The panned concentrates were upgraded by bromoform separation and the resulting heavy minerals examined by binocular microscope (see Appendix IV). The panned concentrates plus the -20 and -80 mesh fractions of the drainage mud samples were chemically analysed (Appendices I, II and III).

This report discusses the results of this 1979 drainage programme.



NOTE: SAMPLE No PREFIX 602
e.g. 717 (602717)

**ANOMALOUS DRAINAGE AREAS AND
SAMPLE LOCATIONS : 1979 SURVEY**

5 cm

**E.L. 15/76 DUNDAS
TASMANIA**

FIG. 3

2. SUMMARY

2.1 The main drainage anomalies located in 1979 are listed under areas, and in order of sample number on Table 1. Location of the main anomalous samples are shown on Figure 3.

The anomalous metals include Sn, Zn, Pb, Ag, Au, W and possibly Ni-Co-Cr.

2.2 Anomalous silver occurs in drainage sediments in the Cuni area on the N.W. border of the E.L. A value of +25 ppm Ag was recorded in a panned concentrate. The anomaly needs checking to ascertain whether the source zone occurs within the E.L.

2.3 Moderate tin values occur in four drainages in the Nevada Grid area immediately south of Nevada Creek and Cuni. These deserve checking, as do associated weak Ag and stronger chromium values. Some high chromium and other elevated metal values occur associated with a Hodge Slate/Razorback Conglomerate contact within the grid (Macnamara, 1980).

2.4 Tin anomalies, probably derived from the Razorback-Grand Prize "line of lode" occur north of Razorback Mine. Soil sampling is warranted to check these further. Both Razorback Mine to the south and Grand Prize to the north are subject currently to drilling programmes by CRAE and Renison Ltd. respectively.

A strong lead anomaly in the southern part of the area deserves to be followed up also.

2.5 At least some of the strong Pb-Zn drainage anomalies indicated on the Carbine East Grid are derived from the ~~NE~~ Carbine^{NE} area just north of the E.L. boundary. However, other anomalies probably are derived from within the E.L. and need to be traced back to source.

TABLE 1

Area: EL15/76 DVND.P.S.
 Prospect Number: 622
 State: NSW
 1:100,000 Sheet: 731M
 Location: EL15/76
 Grid Used: AMG

MAIN ANOMALOUS DRAINAGE SAMPLES.

Sample Type:
 M-Creekmud
 S-Soil
 SA-Soil spher
 VC-100 spher
 IIP Percussion chert
 H-Fluck
 F-Fluck
 Reference: 1/5 - insufficient sample

Sample Number Year	Sample Type	C sample fraction	Chemical Analyses (ppm or %)														Description
			Ex%	Ni%	Sn	Cu	Zn	Pb	Bi	Ag	Au	Ni	Co	Cr	Mo	W	
CUNI GRID																	
602737	M		364.8	5366.5	5.1	1.0	1.0	6.5	5.1	5.3	5	4.5	<20	<3	<5		LINE 8341N/4865E NW CORNER OF EL15/76
738	P				1/5	2.5	74.0	8.0	35	225	1/5	1.25	9.5	9.05%	1/5	10.4%	
602739	M		365.3	5368.4	5.1	5.2	1.0	5	6.5	5.3	5.5	4.20	<3	<5		CUT LINE 8341N/5400E NW CORNER OF EL15/76	
740	P				1/5	1.5	31.0	1.60	20	1.8	1/5	7.5	50	4.35%	1/5	4.0%	
NEVADA GRID																	
602667	M		365.0	5365.2	3	2	1.0	5	5.5	5.1	5.3	5	100	<3	<5		Site 602123M, 124P: 30m SE Emu Bay Railway on EL
663	P				26.00	20	1.700	9.5	40	4	5.01	240	300	37.5%		10.0%	border: abundant black lim
602668	M		365.4	5365.5	3.85	5.2	7.0	20	5	5.3	7.0	1.0	300	<3	5		30m SE Emu Bay Railway, Cuni area.
670	P				560	2.0	2.70	1.35	5	2	5.01	6.0	65	3.54%		12.4%	
602671	M		366.0	5365.2	1	10	8.0	8.0	6.5	5.1	5.3	4.0	100	<3	5		Below Hodge State/Razorback Conglomerate contact
753	M				45	8	7.0	50	5.10	5.1	5.045	2.0	1.0	850	10	<10	
673	P				2.00	2	1.200	50	85	5.01	2.00	350	38.3%			12.0%	
602754	M		365.9	5365.1	5.20	10	8.0	8.0	5.10	5.1	5.045	2.0	20	1900	<3	<10	
602755	M		366.1	5364.9	34	7	1.5	5	5.10	5.1	5.045	5.5	5.5	460	<3	<10	
602756	M		366.2	5365.1	1.55	12	7.0	1.0	5.10	5.1	5.045	1.5	40	1000	<3	<10	
RAZORBACK GRID																	
602678	M		367.1	5363.2	5.1	20	1.60	1.60	5	5.1	5.3	50	30	<20	<3	<5	
737	P				11000	5	1.200	1.75	60	5.1	5.10	21.0	260	30.5%		<10	12.0%
602732	M		368.2	5363.2	5.1	8.0	1.80	280	16	2	5.3	7.0	50	<20	<3	<5	
723	P				175	7.5	1.000	2000	30	2	5.01	7.0	60	3.05%		28%	
602724	M		368.4	5363.4	5.1	1.0	50	30	5.5	1	5.3	2.0	1.0	<20	<3	<5	
735	P				10.700	5	1.200	7.0	80	1	5.01	1.50	330	42%		10.4%	
602735	M		367.4	5364.7	5	1.5	35	20	5.5	5.1	5.3	1.5	5	20	<3	<5	
602736	M		367.3	5364.9	1.35	20	1.35	1.75	5	1	5.3	8.0	1.0	<20	<3	10	
602734	M		369.1	5363.8	1.5	32	1.20	1.80	5.10	5.1	5.3	3.5	40	<3	<50		
602734	M		369.0	5364.1	2	32	3.20	1.40	5.10	5.1	5.3	2.5	90	<3	<50		
602745	M		366.9	5364.2	8	20	2.10	1.60	5.10	5.1	5.3	7.80	1.60	530	<3	<50	
602744	M		368.8	5364.3	1.5	10	1.50	1.10	5.10	5.1	5.3	1.00	300	<3	<50		
602744	M		368.2	5364.5	5	40	1.10	90	5.10	5.1	5.3	50	40	<3	<50		
602743	M		368.3	5364.8	2.50	12	1.50	70	5.10	5.1	5.3	60	3200	<3	<50		
602742	M		368.2	5364.8	1.5	10	3.00	30	5.10	5.1	5.3	80	130	3.5%	<3	<50	
CARBINE EAST GRID																	
602684	M		371.2	5364.7	5	30	7.10	1.60	5.5	1	5.3	1.05	40				Geophoto grid line 70'N (CSR line 64720M/11920E)
680	P				10	1.45	1.300	230	45	2	5.01	1.20	90	24%			
602681	M		371.4	5364.7	5	1.5	1.20	1.30	5.5	1	5.3	80	30				Geophoto line 70'N (CSR line 64720/1174E)
682	P				175	1.15	1.600	240	40	1	5.01	1.10	85	0.61%			
602682	M		371.7	5364.6	5.5	3.5	3.20	500	5	1	5.3	1.70	45				Geophoto line 193'E/69'N: *bordered gztz and gcryst
HOWARDS ROAD																	
602670	M		372.8	5358.8	5.1	2.5	3.60	1.85	5	1	5.3	1.50	1.95	<20	<3	5	
471	P				1/5	1.5	4.40	1.90	30	5.1	5.01	85	80	3.82%		1/5	13.6%
602683	M		373.8	5357.0	5	10	6.0	2.5	5.5	5.1	5.3	5.5	1.5	<20	<3	<5	
482	P				1/5	2	6.00	1.00	4.5	5.1	5.01	1.00	1.45	12.0%		1/5	7.20%
602691	M		372.5	5355.5	5.1	5	2.0	2.0	5.5	5.1	5.3	1.5	5	<3	<5		
482	P				1/5	20	10.00	2.0	5.5	4	1.14	1.55	1.90	20.6%		1/5	10.4%
602682	M		371.7	5353.3	5.1	1.8	3.5	3.0	5.5	1	5.3	2.5	1.0	<20	<3	5	
484	P				1/5	1.5	3.20	1.10	4.0	6	5.1	8.5	1.60	14.7%		1/5	6.40%
602686	M		372.2	5353.0	5.1	1.5	9.5	1.0	2.0	1	5.3	2.5	1.5	<3	<5		
486	P				1/5	5	3.70	1.05	2.0	6.1	1.10	3.5	50	5.28%		<10	4.00%
602782	M		373.8	5355.6	5.1	2.0	1.60	1.0	1.0	5	<3	1.10	30	<20	<3	5	
602784	M		373.8	5355.3	5	10	1.05	1.0	1.5	1	<3	7.5	20	420	<3	<5	
707	P				5	5	8.00	50	1.5	1	4.8	1.95	1.10	21.6%		<10	3.00%
602710	M		373.8	5355.2	5	5	1.50	1.5	1.5	5	5.2	1.85	5	<20	<3	<5	
602711	M		372.0	5353.6	30	5	1.55	1.15	2.0	5	5.2	2.5	20	1.87%		<10	4.00%
602721	P		373.2	5351.3	3.5	10	1.20	60	3.5	5.1	6.3	1.50	95	12.0%		<10	6.40%

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2.6 Strong gold anomalies have been located associated with chromium in panned concentrates in the vicinity of Howards Road. The gold may be derived either from Quaternary moraine which blankets much of the area, or from the underlying bedrock which crops out in places through the morainal cover.

Values of 114 and 48 ppm (g/tonne) gold were recorded from panned concentrates. Most panned concentrates over a wide area are at least slightly anomalous in gold.

The area deserves further testing as a matter of priority.

3. DRAINAGE SAMPLING PROGRAMME

3.1 The bulk of work carried out on E.L. 15/76 between November 1978 and June 1979 comprised soil sampling on the Cuni, Nevada and Razorback Grids (Macnamara, 1980). In addition, drainage samples were collected at various locations on the E.L., and the results of this work form the subject of this report.

3.2 Drainage mud samples were collected at 68 localities and -20 and -80 mesh fractions sieved and chemically analysed from each. In addition, heavy mineral (h.m.) samples were panned at 40 of these localities and a h.m. concentrate separated from each sample using bromoform. Prior to chemical analysis, the heavy mineral fraction was weighed and the mineralogy of each concentrate examined using a binocular microscope.

3.3 All sample fractions were analysed for Sn, Cu, Zn, Pb, Bi, Ag, Au, Ni, Co, Cr and many also for additional elements such as Mn, Mo, W, As, Fe, etc. Where possible A.A.S. methods of analysis were utilised but emission spectrograph methods were used in some cases to scan some sieved fractions. All panned concentrates were analysed by A.A.S. and X.R.F. methods.

3.4 Appendix I is a compilation of the chemical analyses with some additional data such as location, number of 35 cm ("15 inch") pans of material panned, etc. Generally 4 to 6 pans of material (approximately 0.02 m^3) were sieved through a 10 mesh screen prior to concentration of heavy minerals. The main and strongest anomalous drainage samples in Appendix I have been tabulated on Table 1, and locations shown on Figure 3.

3.5 The analyses of the two different classes of sieved drainage material are shown in Appendix II. Appendix III tabulates the chemical analyses of the 40

heavy mineral concentrate samples. These two appendices, which were used in the compilation of Appendix I, contain only marginally more data than is shown in Appendix I. However, they are very useful for visually scanning chemical analyses of similar sample fraction types in order to "eyeball" anomalous values and ranges of values.

3.6 Appendix IV is a consultants report of a mineralogical examination of the heavy minerals using (mainly) a binocular microscope. Heavy mineral species are reported by volume as major (+5%), minor (1-5%) and trace (less than 1%). Roundness, sorting and size ranges are also given. [Note: the panning process may bias the h.m. towards good sorting?].

3.7 The results of this programme should be considered as an extension to and in part a partial follow up of similar work done on the E.L. in the 1977-1978 period. This was reported on by Macnamara (1979).

3.8 The main, more obvious anomalies indicated by this later drainage sampling are illustrated on Table 1. Approximate locations of the anomalous samples are shown on Figure 3.

Drainage sample locations are shown on DWG's K555-6 and K555-7. Minus 80 mesh values of Sn, Cu, Zn, Pb, Bi and Ag are shown in stacked form on DWG's K555-8 and K555-9.

3.9 The most important anomalies are highlighted in the summary (Section 2) of this report. Table 1 crudely lists the main anomalies in order of locality from north to south. These are discussed in detail in the following pages.

The report does not represent an exhaustive study of the data in the Appendices. A more detailed study

would probably indicate further but less obvious geochemical anomalies, anomalies of elements not discussed in detail in this report, and more complex inter-element relationships.

4. CUNI GRID ANOMALIES

4.1 Samples 602737M to 603740P

These samples, listed on Table 1, were taken in the N.W. corner of E.L. 15/76. Sampling was aimed at checking for tin mineralisation immediately above the nearby Oonah Quartzite and Slate, in the adjacent overlying Crimson Creek Formation within the E.L. Insufficient heavy minerals were obtained in the volume panned to yield sufficient sample for an X.R.F. tin analysis.

A.A.S. determinations of other metals indicated values are low with the exceptions of silver and chromium in the panned concentrates.

4.2 Heavy Mineral Species

Binocular microscope examination of 602738P indicated good sorting of rounded to subangular heavy minerals. These include, by volume, 15% chromite and major (+5%) epidote, rutile, tourmaline and zircon, minor (1-5%) ilmenite and trace (<1%) garnet, leucoxene, magnetite and talc.

Chemical analyses indicate 9% Cr and "+25 ppm Ag".

Similarly, 602740P to the east comprises well sorted, rounded to subangular h.m. These include 10% chromite plus major epidote, ilmenite, rutile and zircon, minor garnet and tourmaline and trace corundum, kyanite and magnetite.

Chemical analysis indicated 4.3% Cr and 18 ppm Ag.

4.3 Tourmaline and Chromite

The rounded nature of the h.m. may indicate a secondary reworked source provenance, such as the nearby sediments. However, the tourmaline could be related to

/....

a granitic contact metamorphic zone in the source area. This needs checking in view of the implications for tin of a granite contact.

The high chromite indicates an unmapped ultramafic body probably occurs nearby in the Crimson Creek Formation - apparently close to the Oonah Quartzite and Slate contact as is the case in the Dundas area (see Zeehan 1:63,360 Geological Sheet).

4.4 Silver

The high silver values need to be followed up to ascertain whether a silver mineralised zone occurs in E.L. 15/76.

4.5 Action

The N.W. corner of E.L. 15/76 needs to be checked further for silver (in galena or complex Pb-Sn sulphides), for tin and for signs of thermal metamorphism. Work initially will involve soil and close spaced drainage sampling plus petrological work aimed at detecting any hornfelsic textures and/or minerals.

5. NEVADA GRID ANOMALIES

5.1 Samples 602667M to 602668P

5.1.1 Samples 602667M-668P were collected on the western boundary of the E.L., just east of a disused section of the Emu Bay Railway. Both sieved fractions are low in Sn (3 ppm) and in Cu, Zn, Pb (2-10 ppm) and in other elements. These low values possibly reflect the Siluro-Devonian sediments which form much of the drainage source provenance in the upper section of the stream. However, the panned concentrate shows moderate Sn (2600 ppm), high Cr (37.5%) plus 4 ppm Ag and 300 ppm Co. The elevated Co is probably related to the Cr content.

5.1.2 Binocular microscopy indicated black h.m., good sorting, rounded (mainly) to subangular. The h.m. were described as consisting by volume of over 70% ilmenite (presumed to be actually chromite, judging by the chemical analyses of 37.5% Cr and 10% Fe), 2% chromite and trace magnetite, monazite, rutile and tourmaline.

5.1.3 Two hundred metres upstream of the sample point, the drainage channel passes out of Crimson Creek Formation across a fault into Silurian sediments. Devonian sediments occur in the headwaters. The high Cr and moderate Sn-Ag values are likely to be associated with the Crimson Creek Formation section rather than the Siluro-Devonian rocks. However, these rocks which are generally quite low in Cu, Zn, Pb probably form the bulk of the lighter minerals in the -20 mesh fraction of the stream sediment, and thus account for the low values in 602667M.

5.1.4 The tin anomaly is probably second order, but deserves to be checked by close spaced panning

/.....

upstream possibly followed by soil sampling. The high Cr values may be due to unmapped ultramafic bodies in the Crimson Creek Formation.

5.2 Samples 602669M-670P, 602754M-756M

5.2.1 These samples were collected in a creek and one of its left hand tributaries immediately to the north of the samples described above in Section 5.1.

5.2.2 Samples 602669M (385 ppm Sn) and 602670P (560 ppm Sn) are both anomalous with respect to tin as were previous samples taken nearby in this drainage, i.e. samples 602121M (80 ppm Sn) and 602122P (+ 10,000 ppm Sn), which were reported by Macnamara (1979).

Sample 602670P contained 2 ppm Ag, 3.5% Cr and 12.4% Fe. Other metal values are low. Binocular microscopy indicates brown h.m., consisting by volume of major (+5%) ilmenite, minor (2%) chromite, minor (1-5%) epidote and zircon, plus trace (<1%) garnet, leucoxene, rutile and tremolite.

5.2.3 Sieved samples 602754M (520 ppm Sn) and 602756M (155 ppm Sn) in the main drainage are both strongly stanniferous.

Sample 602755M (34 ppm Sn) is moderately stanniferous and was collected from a northward flowing left-hand tributary of the main creek.

5.2.4 In sieved samples 602669M and 602754M to 756M, other metal values are fairly low. Minus 80 mesh Cu, Zn and Pb values range 1 to 70 ppm only, while for the tributary sample 602755M, the range is only 2-20 ppm. This suggests some leaching of sulphides may have occurred as a primary source

Shedding tin is likely to have elevated values (say a few hundred ppm) of Cu, Zn, Pb, etc. associated. Alternatively the low values may even suggest a secondary origin (second cycle of weathering) for the cassiterite in the drainage.

5.2.5 Minus 20 mesh sample 602669M with 5 ppm Ag is slightly anomalous.

5.2.6 All of the drainage samples are anomalous in tin and drain alluvial flats comprising gravels under mud ("button grass") flats. These Quaternary alluvials probably originated upslope to the east, where stanniferous bearing fractures are thought to occur. These fractures are associated with the "line of lode" joining Razorback Tin Mine and the Grand Prize prospect.

The gravels now form a +2 m thick alluvial flat extending upstream of 602754M and straddling the Murchison Highway. Approximately 0.4 million m³ of material may be involved overlying in part (at least). Ordovician Gordon Limestone.

The alluvials were probably prospected and possibly worked in the past for alluvial tin as were those along Nevada Creek to the north and on Melba Flats downslope of the Grand Prize on Melba Creek.

5.2.7 While the Gordon Limestone deserves checking for skarn features, it is an improbable source of the tin. However, a number of faults have been mapped as occurring beneath the alluvial flat and in adjacent areas (see DWG K555-6, after Blisset, 1962). These subparallel the fault which is presumed to be the feeder for tin mineralisation on which Razorback and Grand Prize Mines occur. These faults deserve to be checked, particularly those immediately east of the highway (see Section 5.3).

5.3 Samples 602671P-672P and 02753M

5.3.1 These samples were collected from a small creek draining southwestwards off Nevada Grid Lines NEV 2 and NEV 3. The drainage basin involved is small (see DWG K555-6).

5.3.2 The -20 mesh sieved samples analysed at 5 and 48 ppm Sn, the -80 mesh 1 and 150 ppm Sn. Cu, Zn and Pb values ranged 8 to 90 ppm.

5.3.3 Chemical analyses of panned concentrate sample 602672P indicated moderate tin (2,200 ppm), strong chromium (38.3%) and moderate Fe (12.0%).

Microscopy indicated black euhedral h.m. showing good sorting. By volume, the panned concentrate contained +80% chromite, major (+5%) ilmenite, trace (<1%) leucoxene, magnetite, rutile, spinel and zircon.

5.3.4 Macnamara (1979) reported sample 602125M (50 ppm Sn) and 602126P (3,000 ppm Sn) were collected on a north draining stream 500 m to the N.N.E., draining the same source area (see DWG K555-6).

5.3.5 Soil sampling on Nevada Grid lines NEV 1, 2 and 3 (Macnamara, 1980) has indicated high Cr values associated with the Hodge Slate (Eh) and Razorback Conglomerate (Era) contact. An ultrabasic unit, or sediment derived therefrom, occurs on this contact. The contact forms the creek zone upstream of 602671M on lines NEV 2 and 3. It is therefore the probable origin of the high chromium values in panned concentrate 602672P. As mentioned in Macnamara (1980) this unit deserves further testing as soil sampling indicates elevated Cr, Cu, Ni, Co, Zn, etc. values are associated with it.

5.3.5 The anomalous values of tin indicated by the sieved samples are quite strong and deserve to be checked. A number of faults occur in the area and are possible "feeders" for mineralisation.

5.3.6 In summary, the chromium and tin anomalies deserve to be checked initially by grid soil sampling as a matter of fairly high priority.

A favourable aspect is the small size of the drainage basin involved.

6. RAZORBACK GRID ANOMALIES

6.1 Samples 602673M to 602674P

6.1.1 These samples were collected just north of the Dundas road in a creek draining westwards off Mt. Razorback. The drainage parallels closely Razorback Grid line 3480N (DWG K555-6) for much of its length.

The -80 mesh fraction contains less than 1 ppm Sn, 20 ppm Cu, 185 ppm Zn and 175 ppm Pb. This reflects the moderately high Zn-Pb values common in drainages in the Dundas area.

6.1.2 Panned concentrate sample 602674P contains moderate tin and gold and high chromium - 1,000 ppm Sn, 2 ppm Au and 30.5% Cr. Microscopic examination indicated black h.m., mainly euhedral shapes with minor rounded and good sorting. By volume, the concentrate consists of 80% chromite, major (+5%) ilmenite, minor (1-5%) ferruginous pebbles and zircon and trace (<1%) epidote, garnet, leucoxene, rutile and tourmaline.

The chromite is probably derived from units in the Brewery Junction Formation and Razorback Conglomerate as the creek does not directly drain the Mt. Razorback serpentinite. Excessive chromite may be tending to dilute and suppress tin and gold values in the h.m. to some extent.

6.1.3 Gold deserves to be checked by further panning and possibly by analyses of soil sample duplicate from line 3480N for gold. Further checks for tin could be done at the same time.

The close association of gold with chromium as shown on Table 1 indicates a possible stratigraphic or rock unit association with serpentinite. [Note: trace gold was reported in two samples, including

1.5 ppm Au in sample 602NEV022R from a limonitic (?) serpentinite at the Hodge Slate/Razorback Conglomerate contact on Nevada Grid Line NEV 1 - see Macnamara, 1980].

6.1.4 While the tin and gold values are of second order magnitude they are worth checking further because of other Au-Sn anomalies in the general area.

6.2 Samples 602722M to 602725P

6.2.1 These samples were collected near the 8000E baseline of the Razorback Grid. Panned concentrate 502723P is highly anomalous in lead, and 725P in tin.

6.2.2 Sample 602722M contains elevated values of Cu, Zn, Pb and Ag (in ppm, 80 Cu, 180 Zn, 280 Pb and 2-5 Ag).

Associated panned concentrate 602723P contains 2000 ppm Pb, 3% Cr and 28% Fe. Microscopic examination indicates the h.m. are brown, rounded (mainly) to angular, moderately sorted with 3% chromite plus minor (1-5%) tremolite schist, ilmenite and zircon plus trace (<1%) magnetite rubble, garnet, rutile and tourmaline. The 2000 ppm Pb value is the highest obtained from all of the panned concentrate samples analysed (see Appendix III) being 3 to 10 times higher than the rest. It is supported by a 280 ppm Pb value in the associated sieved sediment fraction.

The source of the anomaly may be related to a mineralised zone which was also indicated by a slope wash/drainage sample just west of base line 8000E at 7970E. This sample analysed (in ppm) 220 Sn, 310 Cu, 3600 Zn, +1% Pb and 360 Ag - see Macnamara, 1980.

These results indicate further soil sampling on lines across the baseline 8000E in this vicinity are desirable.

6.2.3 Sample 602724M carries low values of all metals tested for. Associated panned concentrate sample 602625P is anomalous in Sn, W and Cr, i.e. (in ppm) 10700 Sn, 220 W, 42% Cr and 10.4% Fe. The panned concentrate material was plentiful and consists of vitreous and buff coloured h.m. showing excellent sorting of euhedral and angular grains. It is composed of +95% chromite and traces (< 1%) of epidote, garnet, magnetite and rutile.

The tin anomaly is quite strong, even with the heavy dilution due to the high chromite content.

The anomaly is probably first order, with some reservations because of the poor tin content of the sieved sample. Further sampling is required to check the anomaly probably in conjunction with checks on sample 602723P (see section 6.2.1.)

6.3 Samples 602735M to 736M

6.3.1 Samples 602736M (5 to 30 ppm Sn) and 602736M (135 ppm Sn) on the northern section of Razorback baseline 8000E are weakly to moderately anomalous. Contamination from ore dropped on the track joining the Murchison Highway to the Grand Prize Tin Mine is a possibility in the case of 602736M, but a residual source within E.L. 15/76 is more probable.

6.3.2 These anomalous samples are upslope of the alluvials to the west mentioned in Section 5.2, and both anomalies may be shed from the same stanniferous primary source to the east.

6.3.3 The minor tributaries of all drainages crossing the Razorback 8000E baseline between (say) line 4220N to 5400N need to be closely drainage sampled. Some additional soil sampling lines parallel to line 4220N are warranted. Line 4220N itself needs

to be extended eastwards to intersect the Razorback to Grand Price track. This work should be carried out in conjunction with that suggested in section 6.4

6.3.4 The anomalies are considered first order.

6.4 Samples 602743M to 752M

6.4.1 Stanniferous drainage samples 602743M to 602746M and 602749M to 752M were collected from east flowing drainages off the Razorback-Grand Prize "line of lode" north of Razorback Mine. Blissett's (1962) Zeehan Geological Sheet indicates the West Comet, Razorback and Grand Prize Mines are probably on the same NNW trending fault line. This subparallels the gossanous lodes at Grand Prize and Razorback Mines each of which has been recently drilled by Renison Ltd. and C.R.A.E. respectively.

6.4.2 Most of these sieved drainage samples report 5 to 15 ppm Sn, but 602751M analysed at 250 ppm Sn. This latter value is a fairly high result for a sieved drainage sample. In view of this result, plus the results from areas to the east discussed in sections 6.3 and 5.2 plus current drilling activity to the north and south, a number of soil sampling traverses appear warranted in the source areas of the tin drainage anomalies.

6.4.3 This work deserves fairly high priority.

7. CARBINE EAST GRID

7.1 Samples 602653M to 602658M were collected south-east of Carbine Hill near the northern border of E.L. 15/76 on the Carbine East Grid. The samples were collected along the Geophoto gridlines 70'N and 1931'E. The object of sampling close to the E.L. border was to establish whether strong geochemical Pb-Zn values (up to 1,800 ppm Pb and 450 ppm Zn) collected further downstream still persisted upstream on the E.L. border (see Macnamara, 1979 samples 602430M, 431M, etc.; this report indicates at least some of the strong Pb-Zn drainage anomalies on the grid originate within E.L. 15/76).

7.2 Samples 602653M to 602657P show strong Pb-Zn values occur on the border, indicating a probable origin outside E.L. 15/76.

7.3 A strong Pb-Zn anomaly indicated by drainage sample 602658M (320 ppm Zn, 500 ppm Pb) may have originated within the E.L. This needs checking initially by detailed drainage sampling of the general area of the anomaly within E.L. 15/76.

7.4 Panned concentrate sample 602654P and 602657P were of some interest and binocular microscope study identified trace molybdenite in both.

Sample 602654P h.m. concentrate is described as dark brown, rounded to subangular worn grains showing poor sorting. It consists of major (+5%) limonitic pebbles and garnetiferous mica schist, minor (1-5%) molybdenite, sphene, tourmaline and zircon plus trace (<1%) rutile and red spinel.

Sample 602657P is described as brown, black and white, subangular, moderately sorted, bimodal grains. The concentrate comprises major limonitic lumps, chlorite schist, garnetiferous schist, calc-silicate and leucoxene plus minor

magnetite and rutile and trace biotite, epidote, molybdenite, spinel and zircon.

7.5 Apart from checking within E.L. 15/76 in the vicinity of 602658M, some checks are also desirable to confirm chemically whether molybdenite is actually present in drainages. Initially work should involve a few days of close spaced drainage sampling.

7.6 The anomaly is considered to be of fairly high priority.

8. HOWARDS ROAD AREA ANOMALIES

8.1 Samples 602675M-676P

8.1.1 These samples occur north of Howards Road and just south of the dolerite mass of Mt. Dundas, near an eastern corner of the E.L.

Sieved sample 602675M is weakly to moderately anomalous with (in ppm) 360 Zn and 185 Pb.

8.1.2 Chemical analysis of panned concentrate sample 602676P shows unremarkable Zn and Pb values but carries 3.8% Cr and 13.6% Fe.

Binocular microscopy indicated black and yellow subangular to angular grains, very good sorting. The heavy minerals comprise major (+5%) hypersthene, minor (1-5%) magnetite rubble, limonitic pebbles, leucoxene and zircon, garnet, rutile, tourmaline and specularite.

8.1.3 The anomaly appears to be third order only.

8.2 Samples 602702M-703P and 602710M-711P

8.2.1 Sieved sample 602702M and 602710M each with 5 ppm Ag, and slightly elevated Zn-Pb values are weakly anomalous compared with other sieved drainage samples in the Howards Road area.

8.2.2 Sample 602564P (Figure 2) collected in 1978 (Macnamara, 1979) in the main creek downstream of 602702M and 602710M contained 20 ppm Ag.

8.2.3 Panned concentrate sample 602703P contains 3 ppm Ag, 18.7% Cr, 9.6% Fe.

Microscopic description (see Table 2) indicated brown and yellow h.m., euhedral and angular grains, good sorting. It consists by volume of 40% chromite plus major (+5%) ilmenite and leucoxene, minor (1-5%) limonitised garnet schist and trace (<1%) magnetite rock aggregates, epidote, garnet, rutile and zircon.

Chemical analyses of sample 602711P indicated less than 1 ppm Ag, 0.47% Cr and 4.8% Fe. Microscopic description (Table 2) indicated green angular poorly sorted h.m. with major epidote pebbles, epidote and actinolite and trace chromite and magnetite rubble.

8.2.4 While the chromium was probably derived from an ultrabasic rock, the garnet schist and actinolite grains were unexpected in this section of the E.L.

8.2.5 Except for the 1978 value of 20 ppm, the above samples are weakly anomalous only. However, they gain added significance by their proximity to the more highly anomalous samples discussed in the following section (8.3).

8.3 Panned Concentrate Samples 602682-721P

8.3.1 Panned concentrate samples 602682P to 721P (Table 1) all contain anomalous gold values, associated with moderately high Cr values. In addition nearby samples 602701P, 709P and 719P from the Howards Road area are also weakly anomalous with 0.1 ppm Au (see Appendix III).

8.3.2 The samples were collected in the SE corner of E.L. 15/76 from streams draining morainal material through which Dundas Group rocks crop out along some valleys. Other valleys and the ridges have been mapped as Pleistocene Moraine (Blissett, 1962).

032032

TABLE 2 : HEAVY MINERAL SUITES, HOWARDS ROAD AREA, BINOCULAR MICROSCOPE STUDY

Sample No.	Colour	Shape	Sorting	Major (+5%)	Minor (1-5%)	Trace (1%)
602682P	Black and grey	Subangular to angular	Good	Chromite (15%) Epidote Ilmenite	Tourmaline Zircon	Anatase Biotite Diopside Garnet Leucoxene Magnetite Brookite
602692P (= 691P)	-	-	-	Ilmenite Leucoxene	Rutile Zircon	Magnetite rubble Limonitic pebbles Beryl* Gold* Epidote Garnet Monazite Sphene Tourmaline
602694P	Yellow, black	Angular to subangular	Excellent	Ilmenite Leucoxene Zircon	Chromite (2%) Magnetite Rutile	Epidote Garnet (orange, pink) Tourmaline
602696P	Yellow, black	Angular, subangular	Excellent	Epidote Ilmenite Leucoxene	Magnetite	Chromite Corundum* Zircon
602703P	Brown, yellow	Euhedral, angular	Good	Chromite (40%) Ilmenite Leucoxene	Limonitised garnet schist*	Magnetite rock aggregates Epidote Garnet Rutile Zircon
602707P	Black, yellow	Fragmented angular	Moderate	Chromite (40%) Tremolite schist Epidote Leucoxene	Talc	Rutile Zircon Magnetite rubble
602711P	Green	Angular	Poor	Epidote pebbles Epidote Actinolite	- -	Chromite Magnetite rubble
602717P	Brown, green	Subangular, some angular	Moderate	Epidote Ilmenite Leucoxene	Epidote pebbles Magnetite rubble Actinolite Zircon	Chromite Rutile Tourmaline
602721P		Subangular, some angular	Poor	Epidote pebbles Epidote Chromite Ilmenite	Zircon	Rutile Garnet (pink and orange)

8.3.3 In order of decreasing gold content, the panned concentrate analyses are set out below. Each sample represents four to six 35 cm (15") pans of material - approximately 0.02 m³.

<u>Sample No:</u>	<u>Au</u> (ppm)	<u>Ag</u> (ppm)	<u>Cr</u> (%)	<u>Fe</u> (%)	<u>Weight</u> (g)
602692P	114	4	20.6	10.4	?
602707P	48	1	21.6	8.0	44.6
602721P	6.3	<1	12.0	6.4	55.3
602694P	3.7	6	14.7	6.4	9.0
602682P	1.3	<1	12.0	7.2	9.0
602696P	1.0	<1	5.3	4.0	50.4

8.3.4 Results indicate strong gold anomalies are reporting in panned concentrates associated with elevated Ag and Cr values. Cr and Fe possibly vary proportionately with gold when it does occur in the h.m.

8.3.5 Table 2 outlines a description of the heavy mineral suites of the anomalous gold samples. It is an abstract from Appendix IV.

The presence of beryl, biotite, corundum, tremolite schist, garnet schist, etc. in the concentrates may indicate a combination of source provenances or a granite/schist source. This aspect has yet to be checked.

8.3.6 Follow-up work starting with the strongest anomalies will involve further panning aimed at closing off the anomalous area and at checking the source of the gold. Both the morainal material and bedrock need to be checked as potential host rocks.

The work deserves a high priority.

9. REFERENCES

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Geological Survey Explanatory Report K555-50, Zeehan 1-Mile
Geological Map. Tasmania Dept. of Mines.

- .. MACNAMARA, P.M. (1980)
1979 Soil Sampling. Cuni-Nevada-Razorback Grids, E.L. 15/76,
Dundas, West Tasmania.
CSR Minerals Division Report EMR 20/80

- .. MACNAMARA, P.M. (1979)
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PMR 5/79

PMM/SS
17/9/80

APPENDIX I

CHEMICAL ANALYSES

ALL SAMPLE FRACTIONS

PACMINEX LTD. — SAMPLE DATA SHEET

AREA EL15/16, Dundas
 STATE TAS LOCATION _____

PROSPECT NUMBER 602
 1:100,000 SHEET 7914

DATE SAMPLED _____
 SAMPLER _____

LABORATORY REPORT NO. _____
 ANALYTICAL METHOD _____

NOTATIONS: SAMPLE TYPE — M - Creek mud, S - Soil
 SA - Soil Auger, RC - Drill Core,
 RP - Percussion Chips
 R - Rock
 ANALYSES: Please state element

ADDITIONAL _____

DRAINAGE SAMPLING

SAMPLE NUMBER	SAMPLE TYPE	ABSENCE OF SILICA (MICRO%)	CHEMICAL ANALYSES (ppm)										SUMMARY DESCRIPTION	LOCATION			
			Sb	Mo	W	F	In	Cd	Nb	As	Fe	E/W		N/S			
602650	P				1.5					4			13.6%	Razorback grid line 3480N : 3485N/7990E, d/c qtz-chert breccia h.m. sparse and v.fg. (602650P = 602RG100P)			
651	P												6	10.4%	Razorback Grid line 3480N/7180E : c.b. flows SSW over muddy tree-ree Alluvial flat.		
652	M	-20	<30	<3	<50									<50			
		-80			5												
653	M	-20															
		-80			10												
654	P				<10					8			34.4%	= 602 CE 065M : Geophoto Grid CARBINE East line 70°N (CSR line 64720N/1293mE) : 2m gully flows to 148°M = 602 CE 069P : AS for 602 653			
655	M	-20															
		-80			30												
656	M	-20															
		-80			10												
657	P				1.5												
		-80								7			35.2%	CARBINE EAST : 70°N Line (64720N/1350mE) 0.2m gully = 602 CE 070M CARBINE EAST Grid : 70°N line (64720mN/1474mE) = 602 CE 071M : 1.5m ch flows to 260°M. = 602 CE 072P AS for 602 656M.			
658	M	-20															
		-80			5												
659	M	-20															
		-80			<5												
659A	M	-20															
		-80			5												
602660	M	-20	<30	<3	<50												
		-80			5												
661	P																
		-80								2			4.0%	Howards Road area (N th) on Geophoto (?McIntyre) grid at 00°N/1125°N : 3m major Cr. d/c dk. grey slate 000/60°W dip Cobble mainly slate, some dolerite + qtz veined (?) igneous ch (tuff?)			
662	R		<30	<3													
		-80															
663	M	-20	<30	<3	<50												
		-80			5												
664	P																
		-80								4			15.2%	Nth of Howards Rd : 00/00N grid 1.5m ch just above junction slate 010-030/90° - blue grey sl. cobbles of slate, dk. green chloritic granular rk ± qtz frags (= tuff?)			
665	M	-20	<30	<3	<50												
		-80			10												
666	P																
		-80								4			8.8%	Small ch above 602663 (not a tributary) at 00°N line/250°E			
667	M	-20	<30	<3	<50												
		-80			<5												
668	P																
		-80								6			10.0%	CUNI area : site 602123M, 124P. 30m SE of railway : 4x -20mesh pans → plentiful black h.m. (heavy mineral)			
669	M	-20	<30	<3	<50												
		-80			5												
602670	P																
		-80								3			12.4%	CUNI : above site of 602121M, 122P. at 30m SE of railway 3 pans of -20mesh → plentiful h.m.			

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PACMINEX Y. LTD. — SAMPLE DATA SHEET

AREA EL15/76, Dundas PROSPECT NUMBER 602
 STATE TAS LOCATION _____ SHEET 7914

DATE SAMPLED April 79
 SAMPLER P.M.M.

LABORATORY REPORT NO. _____
 ANALYTICAL METHOD -80: AAS + XRF(S_w, W)

NOTATIONS: SAMPLE TYPE — M - Creek mud, S - Soil
 SA - Soil Auger, RC - Drill Core,
 RP - Percussion Chips
 R - Rock
 Please state element

ADDITIONAL Peppered concent.

DRAINAGE SAMPLING

SAMPLE NUMBER	SAMPLE TYPE	ANALYSE DEPTH (cm)	CHEMICAL ANALYSES (ppm)																	Weight g	LOCATION	
			Sn	Cu	Zn	Pb	Bi	Ag	Au	Ni	Co	Cr	V	Tl	Zr	P	B	Mn	Cu		Ba	E/W
602-671	M	-20	1	10	80	60	<20	<2	<3	40	10	100										
		-80	5	10	75	55	<5	<1		20	20											
672	P		2200	2	1200	50	85	1	<0.1	200	350	38.3%					1200				115.1	
673	M	-20	<1	20	160	160	<20	<2	<3	50	30	<20					50					
		-80	<5	20	185	175	5	<1		35	35											
674	P		1.000	5	1200	175	60	<1	2.0	210	260	30.5%					1100				33.8	
675	M	-20	<1	40	370	240	<20	<2	<3	170	200	<20					100					
		-80	<5	25	360	185	5	1		150	195											
676	P		1/S.	15	440	150	30	<1	<0.1	85	80	3.83%					3400				5.8	
677	M	-20	<1	20	100	80	<20	<2	<3	70	30	<20					50					
		-80	<5	10	90	75	5	<1		45	20											
678	P		1/S.	50	340	130	20	<1	1/S.	65	40	1.20%					1300				3.4	
679	M	-20	<1	30	100	60	<20	<2	<3	70	20	<20					30					
		-80	<5	15	115	65	10	1		60	15											
602-680	M	-20	<1	20	90	40	<20	<2	<3	50	10	<20					30					
		-80	5	15	90	55	10	<1		40	10											
681	M	-20	<1	10	70	40	<20	<2	<3	70	10	<20					100					
		-80	5	10	60	25	5	<1		55	15											
682	P		1/S.	2	600	80	45	<1	1.3	100	145	12.0%					1200				9.0	
683	M	-20	<1	20	100	40	<20	<2	<3	60	20	<20					100					
		-80	<5	15	105	65	10	1		45	20											
684	P		1/S.	55	880	350	40	1	<0.1	120	125	4.8%					1600				6.2	
685	M	-20	<1	20	100	60	<20	<2	<3	70	40	20					100					
		-80	<5	20	150	70	10	1		105	50											
686	P		1/S.	15	1100	85	60	1	<0.1	160	220	22.4%					1300				6.3	
687	M	-20	<1	20	90	60	<20	<2	<3	80	20	<20					30					
		-80	<5	10	85	45	5	1		50	15											
688	P		1/S.	25	1200	160	50	2	<0.1	165	180	16.5%					1300				5.8	
689	M	-20	<1	10	70	40	<20	<2	<3	60	<5	<20					10					
		-80	<5	15	75	45	5	1		40	10											
602-690	P		1/S.	35	1100	175	30	2	<0.1	65	85	6.30%					880				5.8	
691	M	-20	<1	20	20	40	<20	<2	<3	40	<5	20					30					
		-80	<5	5	20	20	5	<1		15	<5											
602-692	P		1/S.	20	1000	90	55	4	114	155	190	20.6%					800					

-20 : A/E = AAS for Cu, Zn, Pb, Bi, Ag, Co, Ni ; Emission : Sn, W etc

1/S. = insufficient sample (heavy minerals, generally)

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PACMINEX Y. LTD. — SAMPLE DATA SHEET

AREA EL 15/76 Dundas PROSPECT NUMBER 602
 STATE TAS LOCATION _____ SHEET 7914

DATE SAMPLED April 79
 SAMPLER _____

LABORATORY REPORT NO. _____
 ANALYTICAL METHOD _____

NOTATIONS: SAMPLE TYPE — M - Creek mud, S - Soil
 SA - Soil Auger, RC - Drill Core,
 RP - Percussion Chips
 R - Rock
 ANALYSES: Please state element

ADDITIONAL _____

DRAINAGE SAMPLING

SAMPLE NUMBER	SAMPLE TYPE	DEPTH (m)	CHEMICAL ANALYSES (ppm)										SUMMARY DESCRIPTION	LOCATION		
			Sb	Mo	W	F	In	Cd	Nb	As	Fe	E/W		N/S		
602 671	M	-20	<30	<3	<50							<50		Below Eh/Era contact (1:63360 Geology Sheet)		
672	P	-80			5						6	12.0%		at 5365.13N/366mE : 3 fans (-20 mesh) 30m above junction.		
673	M	-20	<30	<3	<50							<50		Dundas road E of highway near 602602M (5363.2N/367.2E)		
674	P	-80			5						6	12.0%		50m above Ch junction. (5 fans of -20 mesh)		
675	M	-20	<30	<3	<50							<50		Howards Road - N ^W near 602662. 7 fans (-20 mesh)		
676	P	-80			5						4	13.6%		372 800E / 5358 800m N approx. (End of road branch banded slate 150°/70°E)		
677	M	-20	<30	<3	<50							<50		N ^W of Howards Rd and E of main branch: 100m from junction		
678	P	-80			5						3	8.8%		7 fans (-20 mesh) Ref 5357200N / 373600E.		
679	M	-20	<30	<3	<50							<50		V. minor ch east of 602650 (5357200N / 373850E)		
602 680	M	-20	<30	<3	<50							<50		Minor ch E of 602681		
681	M	-20	<30	<3	<50							<50		Howards Rd : 30m above junction 6 fans.		
682	P	-80			5						4	7.2%		5357150N / 373800E.		
683	M	-20	<30	<3	<50							<50		East of Howards road : 20m above junction approx		
684	P	-80			5						5	25.6%		5356300N / 373900E		
685	M	-20	<30	<3	<50							<50		Other branch near 602683.		
686	P	-80			5						5	9.6%				
687	M	-20	<30	<3	<50							<50		North of Howards Rd below 602683 near		
688	P	-80			5						6	10.4%		5356350N / 373250E : 30m above junction ± main ch.		
689	M	-20	<30	<3	<50							<50		South of Howards Road : 5355600N / 372500E		
602 690	P	-80			5						6	11.2%		15m above junction		
691	M	-20	<30	<3	<50							<50		On old track near 602689M. (5355.5N) - 372.5E)		
692	P	-80			5						5	10.4%		5 fans. (-20 mesh)		

032039

PACMINEX LTD. — SAMPLE DATA SHEET

AREA EL15/76, Dundas PROSPECT NUMBER 602
 STATE TAS LOCATION _____ SHEET 7914

DATE SAMPLED April 79
 SAMPLER _____

LABORATORY REPORT NO. _____
 ANALYTICAL METHOD -80: AAS/XRF(Sn,W)

NOTATIONS: SAMPLE TYPE — M - Creek mud, S - Soil
 SA - Soil Auger, RC - Drill Core,
 RP - Percussion Chips
 R - Rock
 ANALYSES: Please state element

ADDITIONAL Panned concentrate

DRAINAGE Sampling

SAMPLE NUMBER	STATE	DEPTH (cm)	CHEMICAL ANALYSES (ppm)																		LOCATION	
			Sn	Cu	Zn	Pb	Bi	Ag	Au	Ni	Co	Cr	V	Ti	Zr	P	B	Mn	Ca	Ba	Weight	E/W
E 602-693	M	-20	<1	10	40	40	<20	<2	<3	40	<5	<20								30		
		-80	<5	10	35	30	<5			25	10											
E 694	P		1/5	15	820	110	40	6	3.7	85	160	14.7%							1200		9.0	
E 695	M	-20	<1	20	70	20	<20	<2	<3	30	10	<20							10			
		-80	<5	15	95	30	10			25	15											
E 696	P		10	5	370	105	20	<1	1.0	35	50	5.28%							960		50.4	
E 697	M	-20	<1	20	40	20	<20	<2	<3	30	10	<20							10			
		-80	<5	15	40	35	5	1		10	10											
E 698	M	-20	<1	30	110	40	<20	<2	<3	40	20	<20							30			
		-80	5	30	145	45	5	1		30	20											
E 699	P		10	2	145	70	20	1	<0.1	10	20	1.8%							740		204.5	
E 602-700	M	-20	<1	10	90	40	<20	<2	<3	90	20	100							30			
		-80	<5	10	115	45	5	1		70	20											
E 701	P		<5	5	780	65	50	<1	0.1	160	155	18.7%							880		31.6	
A/E 702	M	-20	<1	30	120	60	<20	5	<3	100	20	<20							30			
		-80	<5	20	160	70	10	1		110	30											
A/E 703	P		1/5	15	1200	115	50	3	1/5	125	220	18.7%							920		5.0	
A/E 704	M	-20	<1	10	60	40	<20	<2	<3	50	20	<20							30			
		-80	10	10	80	45	5	1		55	15											
A/E 705	P		1/5	5	1400	80	60	5	<0.1	240	250	24.5%							1100		6.3	
A/E 706	M	-20	<1	10	70	40	<20	<2	<3	80	20	<20							30			
		-80	5	10	105	40	5	1		75	20											
A/E 707	P		<5	2	800	50	50	1	48	195	170	21.6%							840		44.6	
A/E 708	M	-20	<1	40	160	40	<20	<2	<3	60	20	<20							10			
		-80	<5	35	190	60	10	1		25	20											
A/E 709	P		5	5	185	80	25	<1	0.1	50	40	3.83%							620		21.3	
E 602-710	M	-20	<1	60	120	60	<20	5	<3	170	30	<20							30			
		-80	5	55	150	60	15	2		185	45											
E 711	P		<5	15	75	75	20	<1	<0.1	50	25	0.47%							600		82.7	
E 712	M	-20	<1	10	10	60	<20	<2	<3	30	<5	<20							5			
		-80	<5	5	10	10	<5	<1		10	<5											
E 713	P		1/5	80	2200	105	55	<1	<0.1	160	260	27.0%							1700		8.4	

-20: A/E - AAS - Cu, Zn, Pb, Bi, Ag, Ni, Co ; E = Emission = Sn, W etc.

1/5: insufficient sample

032040

PACMINEX Y. LTD. — SAMPLE DATA SHEET

AREA EL15/76 Dundas

PROSPECT NUMBER 602
 1:100,000 SHEET 7914 Pieman

DATE SAMPLED April 79
 SAMPLER J. Dunn

LABORATORY REPORT NO. _____
 ANALYTICAL METHOD _____

NOTATIONS: SAMPLE TYPE — M - Creek mud, S - Soil
 SA - Soil Auger, RC - Drill Core,
 RP - Percussion Chips
 R - Rock
 ANALYSES: Please state element

ADDITIONAL _____

DRAINAGE SAMPLING

SAMPLE NUMBER	SAMPLE TYPE	DEPTH (cm)	CHEMICAL ANALYSES (ppm)										SUMMARY DESCRIPTION	LOCATION		
			Sb	Mo	W	F	In	Cd	Nb	As	Fe	E/W		N/S		
602 693	M	-20 -80	<30 <30	<3 <3	<50 <50							<50		Near Queenstown Highway South of Howards Road 200m NE of hwy (5353 300N / 371700E) 5 pans (-20 mesh)		
694	P				1.5					4		6.40%				
695	M	-20 -80	<30 <30	<3 <3	<50 <50							<50		South of 60 693M (5353 400mN / 372200E) 4 pans		
696	P				<10					2		4.00%				
697	M	-20 -80	<30 <30	<3 <3	<50 <50							<50		Small ck 200m S of 602 695M. (5353150N / 372200E)		
698	M	-20 -80	<30 <30	<3 <3	<50 <50							<50		South of 697M. 4 pans. (5353 900N / 372400E)		
699	P				5 <10					2		4.00%				
602 700	M	-20 -80	<30 <30	<3 <3	<50 <50							<50		Above third tram crossing of ck approx 500m SE of Howards Road. 5 pans (5355700N / 373300E)		
701	P				<10					5		8.00%				
702	M	-20 -80	<30 <30	<3 <3	<50 <50							<50		East of Howards Rd near 5355600N / 373800E. 5 pans.		
703	P				5 1.5					5		9.60%				
704	M	-20 -80	<30 <30	<3 <3	<50 <50							<50		Near 602 702 M : 4 pans (-20 mesh)		
705	P				5 1.5					6		10.4%				
706	M	-20 -80	<30 <30	<3 <3	<50 <50							<50		South of 602 702 M : Main ck nr. 5355300N / 373850E 5 pans (-20 mesh)		
707	P				<5 <10					5		8.00%				
708	M	-20 -80	<30 <30	<3 <3	<50 <50							<50		East branch of ck nr. 602 706 5 pans (-20 mesh)		
709	P				<5 <10					4		5.60%				
602 710	M	-20 -80	<30 <30	<3 <3	<50 <50							<50		West branch of ck nr. 602 706. 5 pans.		
711	P				<5 <10					3		4.80%				
712	M	-20 -80	<30 <30	<3 <3	<50 <50							<50		1.6 km South of Dundas Ck. Along Queenstown Highway and 50m to E. 5358500N / 368400E (6 pans)		
713	P				5 1.5					6		8.80%				

032041

PACMINEX LTD. — SAMPLE DATA SHEET

AREA ELIS/76, Dundas PROSPECT NUMBER 602
 STATE TAS LOCATION _____ SHEET 7914

DATE SAMPLED April 79
 SAMPLER PM/JD

LABORATORY REPORT NO. _____
 ANALYTICAL METHOD AAS/XRF(Sn,W) = -80 Mesh

NOTATIONS: SAMPLE TYPE — M - Creek mud, S - Soil
 SA - Soil Auger, RC - Drill Core,
 RP - Percussion Chips
 R - Rock
 ANALYSES: _____
 Please state element

ADDITIONAL _____
P = panned concentr.

DRAINAGE SAMPLING

SAMPLE NUMBER	SAMPLE TYPE	APERTURE SIZE (MICRONS)	CHEMICAL ANALYSES (ppm)																	LOCATION			
			Sn	Cu	Zn	Pb	Bi	Ag	Au	Ni	Co	Cr	V	Ti	Zr	P	B	Mn	Ca	Ba	Weight g	E/W	N/S
602 714	M	-20	<1	<2	10	<20	<20	<2	<3	20	20	<20									<5		
		-80	5	5	10	10	<5	<1		5	<5												
715	P	1/5	30	1200	390	30	2	<0.1	115	110	10.5%									620		6.6	
716	M	-20	<1	30	100	40	<20	<2	<3	50	10	<20									30		
		-80	<5	20	125	45	10	1		45	20												
717	P	20	5	155	115	20	5	0.2	25	20	1.87%									960		26.3	
718	M	-20	<1	20	30	<20	<20	<2	<3	40	10	20									100		
		-80	<5	10	35	20	<5	<1		25	10												
719	P	25	5	600	65	40	1	0.1	190	120	18.0%									820		61.8	
720																							
721	P	25	10	420	60	35	<1	6.3	150	95	12.0%									720		55.3	
722	M	-20	<1	80	180	280	<20	5	<3	70	50	<20									100		
		-80	<5	70	210	290	10	2		45	45												
723	P	1/5	75	1000	2000	30	2	<0.1	70	60	3.05%									360		8.6	
724	M	-20	<1	10	50	<20	<20	<2	<3	20	10	<20									100		
		-80	5	10	55	30	<5	1		20	10												
725	P	1,0,7,0,0	5	1200	70	80	1	<0.1	150	330	42%									1300		312.7	
726	M	-20	1	10	30	40	<20	<2	<3	10	10	<20									30		
		-80	5	5	25	45	<5	<1		5	10												
727	M	-20	<1	10	20	<20	<20	<2	<3	10	<5	<20									5		
		-80	5	2	10	10	<5	<1		5	<5												
728	P	1/5	2	540	95	40	<1	<0.1	160	125	14.4%									460		10.4	
729	M	-20	<1	10	30	160	<20	<2	<3	10	<5	<20									<5		
		-80	5	10	40	195	5	1		5	<5												
602 730	M	-20	<1	10	20	120	<20	<2	<3	20	<5	<20									100		
		-80	<5	5	10	120	<5	1		5	<5												
731	M	-20	10	20	130	100	<20	<2	<3	40	10	100									100		
		-80	<5	30	230	195	10	1		35	30												
732	P	1/5	10	1100	440	45	1	<0.1	180	140	13.5%									720		5.2	
733	M	-20	<1	20	180	80	20	<2	<3	90	20	<20									10		
		-80	<5	15	220	70	<5	1		95	35												
734	P	50	5	880	130	40	<1	<0.1	115	120	13.5%									720		313.0	

-20 : A/E = AAS for Cu, Zn, Pb, Bi, Ag, Ni, Co ; Emission Spec = E for Sn, W etc.

1/5 = insufficient sample (heavy minerals)

032042

PACMINEX Y. LTD. — SAMPLE DATA SHEET

AREA EL15/76 Dundas
 STATE 7AS LOCATION _____

PROSPECT NUMBER 602
 1:100,000 SHEET 7914

DATE SAMPLED May 79
 SAMPLER J. Dunn / P.M.M.

LABORATORY REPORT NO. _____
 ANALYTICAL METHOD _____

NOTATIONS: SAMPLE TYPE — M - Creek mud, S - Soil
 SA - Soil Auger, RC - Drill Core,
 RP - Percussion Chips
 R - Rock
 Please state element

ADDITIONAL _____
P = ground concentration

DRAINAGE SAMPLING

SAMPLE NUMBER	SAMPLE TYPE	ANALYSE (depth, microns)	CHEMICAL ANALYSES (ppm)										SUMMARY DESCRIPTION	LOCATION		
			Sb	Mo	W	F	In	Cd	Nb	As	Fe	E/W		N/S		
602 714	M	-20 -80	<30 <30	<3 <3	<50 <5							<50		Mariposa Creek 200m E of Queenstown Highway. 6 fans (-20 mesh) (5359 300N / 368 000E)		
715	P				1.5							5	8.0%			
716	M	-20 -80	<30 <30	<3 <3	<50 <5							<50		Tributary of Ewart Cr. south of Howards Road E of highway. 5 fans (-20 mesh ck sediment). Approx. 535360N / 372000E		
717	P				<10							2	4.00%			
718	M	-20 -80	<30 <30	<3 <3	<50 <5							<50		800m N of highway bridge over Ewart Cr. 3 fans (-20 mesh) 5352400N / 372600E		
719	P				<10							4	7.20%			
720														Not Sampled.		
721	P				<10							3	6.40%	Ewart Cr tributary Sedge of EL15/76. Very braided cr. near track. 5351500N / 373200E		
602 722	M	-20 -80	<30 <30	<3 <3	<50 <5							<50		Along Razorback Grid (R.G.) baseline (B/L) at 2940N Minor ck. 6 fans (-20 mesh sieved ck sediment).		
723	P				1.5							7	28%			
724	M	-20 -80	<30 <30	<3 <3	<50 <5							<50		Razorback B/L 3123 N. 6 fans.		
725	P				2.0							6	10.4%			
726	M	-20 -80	<30 <30	<3 <3	<50 <5							<50		Razorback B/L 3167 N		
727	M	-20 -80	<30 <30	<3 <3	<50 <5							<50		Razorback B/L 3235 N. 6 fans.		
728	P				1.5							3	6.4%			
729	M	-20 -80	<30 <30	<3 <3	<50 <5							<50		R.G. B/L 3500N		
602 730	M	-20 -80	<30 <30	<3 <3	<50 <5							<50		R.G. B/L 3547mN.		
731	M	-20 -80	<30 <30	<3 <3	<50 <5									R.G. B/L 3840mN. 6 fans (-20 mesh)		
732	P				1.5							5	10.4%			
733	M	-20 -80	<30 <30	<3 <3	<50 <10							<50		R.G. B/L 4472mN. 5 fans - very narrow gully (0.3m)		
734	P				<10							4	19.2%			

032043

PACMINEX Y. LTD. — SAMPLE DATA SHEET

AREA EL15/76 Dundas PROSPECT NUMBER 602
 STATE TAS LOCATION _____ SHEET 7914

DATE SAMPLED _____
 SAMPLER _____

LABORATORY REPORT NO. _____
 ANALYTICAL METHOD _____

NOTATIONS: SAMPLE TYPE — M - Creek mud, S - Soil
 SA - Soil Auger, RC - Drill Core,
 RP - Percussion Chips
 R - Rock
 ANALYSES: Please state element

ADDITIONAL _____
P = panned concn

DRAINAGE SAMPLING

SAMPLE NUMBER	SAMPLE TYPE	DEPTH (cm)	CHEMICAL ANALYSES (ppm)										SUMMARY DESCRIPTION	LOCATION		
			Sb	Mo	W	F	In	Cd	Nb	As	Fe	E/W		N/S		
E 602 735	M	-20 -80	<30 <3	<3 <5	<50 <5							<50		Razorback Grid (R.G.) baseline (B/L) at 4570mN		
F 736	M	-20 -80	<30 <3	<3 <5	<50 10							<50		R.G. B/L 4800N.		
737	M	-20 -80	<30 <3	<3 <5	<50							<50		Cuni Grid: line 8341mN along northern boundary and west of 6200E baseline at 4865mE. 6 fans of sieved-20 mesh ck sediment.		
738	P				1/5							4	10.4%			
739	M	-20 -80	<30 <3	<3 <5	<50							<50		Cuni Grid (G.G) 5400mE on line 8341N		
602 740	P				1/5							2	4.00%			
602 741	M	-20 -80	<30 <3	<3 <5	<50							<50		CG 8341N/6130E (geographic grid: 5368.3N/366.1E)		
742																
743		-20 -80										<20 <20		Razorback Mine Area: 5363.8N/369.1E (geographic grid)		
744		-20 -80										<20 <20		ditto 5364.1N/369.0E		
745		-20 -80										<20 <20		Razorback 5364.2N/368.9E		
746		-20 -80										<20 <20		Razorback : 5364.3N/368.8E		
747		-20 -80										<20 <20		Razorback : 5364.4N/368.7E		
748		-20 -80										<20 <20		Razorback 5364.4N/368.7E		
602 749		-20 -80										<20 <20		Razorback 5364.5N/368.3E		

↑
 sec Augers 13 and 14
 for Full results
 ALSO
 ↓

E = Emission Spec.

032015

PACMINEX Y. LTD. — SAMPLE DATA SHEET

AREA E.L. 15/76 Dundas
 STATE TAS LOCATION _____

PROSPECT NUMBER 602
 1:100,000 SHEET 7914

DATE SAMPLED _____
 SAMPLER _____

LABORATORY REPORT NO. _____
 ANALYTICAL METHOD _____

NOTATIONS: SAMPLE TYPE —
 ANALYSES: _____

M - Creek Mud, S - Soil
 SA - Soil Auger, RC - Drill Core,
 RP - Percussion Chips
 R - Rock
 Please state element

ADDITIONAL _____

SAMPLE NUMBER	SAMPLE TYPE	APERTURE (mm)	DEPTH (cm)	CHEMICAL ANALYSES (ppm)																	Weight	LOCATION	
				Sn ^E	Cu	Zn	Pb	Bi	Ag	Au	Ni	Co	Cr	V	Ti	Zr	P	B	Mn	Ca ^E		Ba	E/W
602 750	M	-20	5	10	110	45	<10	<1		1450	250	8800							X				
			-80	<1	5	110	40	<10	<1		1650	310	3800							X			
751	M	-20	10	12	160	65	<10	<1		390	65	8000							X				
			-80	250	12	150	70	<10	<1		420	60	3200							X			
752	M	-20	15	10	310	25	<10	<1		960	160	4.3%							X				
			-80	<1	10	300	30	<10	<1		800	150	3.5							X			
753	M	-20	48	8	90	50	<10	<1	<0.05	20	10	2700							X				
			-80	150	10	95	70	<10	<1	<0.05	20	10	830							X			
754	M	-20	520	10	80	40	<10	<1	<0.05	20	20	1900							X				
			-80	2000	10	80	50	<10	<1	<0.05	20	20	370							X			
755	M	-20	34	2	15	5	<10	<1	<0.05	<5	<5	460							X				
			-80	2	<2	15	<5	<10	<1	<0.05	<5	<5	230							X			
602 756	M	-20	155	12	70	40	<10	<1	<0.05	15	40	1000							X				
			-80	20	12	70	40	<10	<1	<0.05	15	30	280							X			

E = Emission Spectrograph

x = below limit of detection

032046

CSR LIMITED - SAMPLE DATA SHEET



AREA EL 15/76
 STATE TAS LOCATION Dundas

PROSPECT NUMBER 602
 1:100,000 SHEET

DATE SAMPLED _____
 SAMPLER _____

LABORATORY REPORT NO. _____
 ANALYTICAL METHOD _____

NOTATIONS: SAMPLE TYPE - M - Creek mud, S - Soil
 SA - Soil Auger, RC - Drill Core,
 RP - Percussion Chips
 R - Rock
 ANALYSES: Please state element

ADDITIONAL _____

SAMPLE NUMBER	DEPTH (meters)	CHEMICAL ANALYSES (ppm)																		LOCATION		
		Sn	Cu	Zn	Pb	Bi	Ag	Au	Ni	Co	Cr	Sb	Mo	W	As	Mn	Ba	Ca	Ti	Ce	E/W	N/S
602753	-20	48	8	90	50	<10	<1	<0.05	20	10		<3	<10	<20		<200				50		
	-80		10	95	70	<10	<1		20	10	830		10	<20		<200						
	-20	30		100		<1	0.3					<30			<50							
754	-80	150		100		<1	0.3					<30		<50								
	-20	520	10	80	40	<10	<1	<0.05	20	20		<3	<10	<20		<200				60		
	-80		10	80	50	<10	<1		20	20	370		<3	<20		<200						
755	-20	600		100		<1	0.3					<30		<50								
	-80	2000		100		<1	0.4					<30		<50								
	-20	34	2	15	5	<10	<1	<0.05	<5	<5		<3	<10	<20		<200				20		
602756 M	-80	5	<2	20	<5	<10	<1		<5	<5	230		<3	<20		<200						
	-20	2		20		<1	0.2					<30		<50								
	-80	2		30		<1	0.3					<30		<50								
602756 M	-20	155	12	70	40	<10	<1	<0.05	15	40		<3	<10	<20		<200				90		
	-80		12	70	40	<10	<1		15	30	280		<3	<20		<200						
	-20	60		80		<1	0.3					<30		<50								
602756 M	-80	20		70		<1	0.3					<30		<50								

A = A.O.S.

032049

APPENDIX II

CHEMICAL ANALYSES

SIEVED DRAINAGE SAMPLES



Australian Laboratory Services PTY. LTD.

CONSULTING CHEMISTS & ANALYSTS

OFFICE & LABORATORY
44 BALACLAVA ST., WOOLLOONGABBA 4102
Phone (07) 391 6986 A/H 355 0776
TELEX ALSEV 42344

LABORATORY REPORT

R. W. YERBURY
DIRECTOR

BATCH No.: 20 E CLIENT PACMINEX PTY. LTD.
ORDER No.: 18254 AREA: DUNDAS - TAS. DATE RECEIVED: 3-5-79
SAMPLE TYPE: SOIL (-80#) & ROCKS No.: 85 DATE COMPLETED: 16-5-79
ATTENTION: Mr. P. MACNAMARA

SAMPLE No.	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Bi ppm	Sn ppm	W ppm
<i>Stream silt</i> 602652M	15	130	80	1	25	10	10	5	5
<i>Sediments</i> 660	10	95	130	1	30	35	10	5	5
63	30	185	185	1	70	100	15	<5	5
65	30	105	290	2	155	105	10	<5	10
67	2	5	10	<1	5	<5	<5	<5	<5
69	<2	20	70	<1	20	10	<5	385	5
671	10	55	75	<1	20	20	<5	5	5
73	20	175	185	<1	35	35	5	<5	<5
75	25	185	360	1	150	195	5	<5	5
77	10	75	90	<1	45	20	5	<5	<5
79	15	65	115	1	60	15	10	<5	5
680	15	55	90	<1	40	10	10	5	<5
81	10	25	60	<1	55	15	5	5	<5
83	15	65	105	1	45	20	10	<5	5
85	20	70	150	1	105	50	10	<5	5
87	10	45	85	1	50	15	5	<5	5
89	15	45	75	1	40	10	5	<5	<5
91	5	20	20	<1	15	<5	5	<5	<5
93	10	30	35	1	25	10	<5	<5	5
95	15	30	95	1	25	15	10	<5	<5
97	15	35	40	1	10	10	5	<5	<5
98	30	45	145	1	30	20	5	5	5
700	10	45	115	1	70	20	5	<5	<5
02	20	70	160	1	110	30	10	<5	5
04	10	45	80	1	55	15	5	10	<5
06	10	40	105	1	75	20	5	5	<5
08	35	60	190	1	25	20	10	<5	<5
710	55	60	150	2	185	45	15	5	<5
12	5	10	10	<1	10	<5	<5	<5	5
602714M	5	10	10	<1	5	<5	<5	5	<5



This Laboratory is registered by the National Association of Testing Authorities, Australia. The tests reported herein have been performed in accordance with its terms of registration. This Docu

METHODS: Cu Pb Zn Ag Ni Co Bi by method 1 ; Au by method 120; Sn W by method 9 A (XRF)



Australian Laboratory Services PTY. LTD.

CONSULTING CHEMISTS & ANALYSTS

OFFICE & LABORATORY
44 BALACLAVA ST., WOOLLOONGABBA 4102
Phone (07) 391 6986 A/H 355 0776
TELEX ALSEV 42344

LABORATORY REPORT

- 2 -

R. W. YERBURY
DIRECTOR

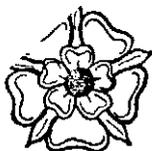
BATCH No.: 20 E CLIENT PACMINEX PTY.LTD.
ORDER No.: _____ AREA: _____ DATE RECEIVED: _____
SAMPLE TYPE: _____ No.: _____ DATE COMPLETED: _____
ATTENTION: _____

SAMPLE No.	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Bi ppm	Sn ppm	W ppm
602716M	20	45	125	1	45	20	10	<5	<5
18	10	20	35	<1	25	10	<5	<5	<5
22	70	290	210	2	45	45	10	<5	<5
24	10	30	55	1	20	10	<5	5	<5
26	5	45	25	<1	5	10	<5	5	<5
27	2	10	10	<1	5	<5	<5	5	5
29	10	195	40	1	5	<5	5	5	<5
730	5	120	10	1	5	<5	<5	<5	<5
31	30	195	230	1	35	30	10	<5	5
33	15	70	220	1	95	35	<5	<5	10
35	15	20	35	<1	15	5	<5	5	<5
36	20	175	135	1	40	10	5	135	10
37	2	10	10	<1	5	<5	<5	<5	<5
39	<2	5	<2	<1	<5	<5	<5	<5	<5
741M	2	15	10	<1	5	<5	<5	<5	<5
602CG164	5	80	220	1	540	140	10	<5	10
202	35	270	650	1	160	80	5	10	5
209	70	170	370	2	110	45	15	10	5
270	35	500	0.27%	2	230	230	5	5	20
649AR001	5	5	5	<1	10	<5	<5	<5	<5
02	2	5	5	<1	5	<5	<5	<5	<5
04	10	10	30	<1	20	10	<5	<5	5
05	<2	10	10	<1	5	<5	<5	<5	<5
06	<2	5	15	<1	10	5	<5	<5	<5
07	2	5	2	<1	5	<5	<5	<5	<5
08	<2	5	2	<1	5	<5	<5	<5	<5
09	5	10	10	<1	10	10	<5	<5	<5
602CE002	30	80	90	1	20	20	5	5	5
012	25	145	20	1	5	20	5	5	5
035	70	0.13%	630	8	95	45	5	5	15



This Laboratory is registered by the National Association of Testing Authorities, Australia. The tests reported herein have been performed in accordance with its terms of registration. This Docu-

METHODS:



ADELAIDE
Tel.: 272 5733

XXXX SYDNEY
XXXX XXXXXXX
Tel.: 977 6495

A.C.S. Laboratories Pty. Ltd.
55 ALEXANDER STREET
XX MANLY, N.S.W. 2216
50 Mary Street,
UNLEY. 5061.
(P.O. Box 3)

ANALYTICAL RESULTS

Samples from: Pacminex Pty.Ltd.

Area: Zeehan, Tas.

Samples of: Soil and rock.

Preparation: Crush, pulverize and sieve.

Sheet No.: 6.

Batch No.: S A 2905.

Date: 28/5/79.

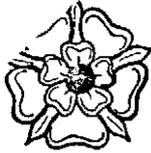
SAMPLES WILL BE DISPOSED OF AFTER TWO MONTHS UNLESS WE ARE OTHERWISE ADVISED

Sample Description	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Bi ppm
602NEV 115	120	40	40	<2	40	<5	<20
6	120	<20	20	<2	40	10	<20
7	130	220	50	<2	60	10	<20
8	30	400	10	5	30	10	<20
9	30	40	30	<2	20	<5	<20
20	10	40	20	<2	10	<5	<20
1	90	60	50	5	60	<5	<20
602NEV 122	30	420	20	<2	30	<5	<20
602NEV 001 R	50	60	170	<2	90	20	<20
022 R	420	80	650	<2	950	90	<20
024 R	20	<20	390	<2	50	10	<20
051 R	10	40	50	<2	50	10	<20
052 R	50	80	170	<2	110	30	<20
081 R	10	40	290	<2	80	40	<20
086 R	250	20	210	<2	100	<5	<20
602 662 R	<2	20	150	<2	30	10	<20
602 CE 013 R	50	200	30	<2	60	50	<20
602 652 M	10	100	80	<2	30	<5	<20
660	20	100	130	<2	40	20	<20
663	20	120	130	<2	50	60	<20
665	20	80	210	<2	120	50	<20
667	<2	20	20	<2	30	<5	<20
669	<2	<20	50	5	20	10	<20
671	10	60	80	<2	40	10	<20
673	20	160	160	<2	50	30	<20
675	40	240	370	<2	170	200	<20
677	20	80	100	<2	70	30	<20
679	30	60	100	<2	70	20	<20
680	20	40	90	<2	50	10	<20
681	10	40	70	<2	70	10	<20
683	20	40	100	<2	60	20	<20
685	20	60	100	<2	70	40	<20
687	20	60	90	<2	80	20	<20
689	10	40	70	<2	60	<5	<20
691	20	40	20	<2	40	<5	<20
693	10	40	40	<2	40	<5	<20
695	20	20	70	<2	30	10	<20
697	20	20	40	<2	30	10	<20
698	30	40	110	<2	40	20	<20
700	10	40	90	<2	90	20	<20
702	30	60	120	5	100	20	<20
704	10	40	60	<2	50	20	<20
706	10	40	70	<2	80	20	<20
708	40	40	160	<2	60	20	<20
710	60	60	120	5	170	30	<20
712	10	60	10	<2	30	<5	<20
714	<2	<20	10	<2	20	20	<20
716	30	40	100	<2	50	10	<20
718	20	<20	30	<2	40	10	<20
602 722	80	280	180	5	70	50	<20

ANALYTICAL METHODS: Cu, Pb, Zn, Ag, Ni, Co, Bi by AAS.

DISTRIBUTION: Pacminex Pty.Ltd.

Signed: *[Signature]*



ADELAIDE
Tel.: 272 5733

~~XXXXXXXXXX~~ SYDNEY
~~XXXXXXXXXX~~ Tel.: 977 6495

A.C.S. Laboratories Pty. Ltd.
~~50 ALEXANDER STREET~~
~~50 MARY STREET, U.N.C. 2098~~
50 Mary Street,
UNLEY. 5061.
(P.O. Box 3).

ANALYTICAL RESULTS

Samples from: Pacminex Pty.Ltd.

Area: Zeehan, Tas.

Samples of: Soil and rock.

Preparation: Crush, pulverize and sieve.

Sheet No.: 7.

Batch No.: S A 2905

Date: 28/5/79.

SAMPLES WILL BE DISPOSED OF AFTER TWO MONTHS UNLESS WE ARE OTHERWISE ADVISED

Sample Description	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Bi ppm
602 724	10	<20	50	<<<	20	10	<20
726	10	40	30	<<<	10	10	<20
727	10	<20	20	<<<	10	<5	<20
729	10	160	30	<<<	10	<5	<20
730	10	120	20	<<<	20	<5	<20
731	20	100	130	<<<	40	10	<20
733	20	80	180	<<<	90	20	20
735	30	40	30	<<<	30	<5	<20
736	20	160	90	<<<	90	<5	<20
737	10	<20	10	<<<	<5	<5	<20
739	<2	<20	10	<<<	20	<5	<20
741	<2	<20	20	<<<	<5	<5	<20
602 CG 164 M	10	40	150	<<<	450	100	<20
202	30	240	1500	<<<	130	60	<20
209	40	280	500	<<<	100	40	<20
270	20	<20	20	<<<	20	<5	<20
649 AR 001	10	<20	30	<<<	30	<5	<20
2	10	<20	30	<<<	10	10	<20
4	10	<20	30	<<<	20	10	<20
5	<2	<20	20	<<<	10	<5	<20
6	20	<20	20	<<<	30	<5	<20
7	<2	<20	10	<<<	20	<5	<20
8	10	<20	10	<<<	20	<5	<20
9	10	<20	20	<<<	20	20	<20
602 RG 069 M	<2	<20	20	<<<	10	<5	<20
183	10	80	50	<<<	10	10	<20
602 CE 002 M	30	60	80	<<<	30	20	<20
012	80	1140	500	10	80	20	<20
035	70	900	450	10	70	20	<20
057	30	60	30	<<<	20	10	<20
065	20	280	170	<<<	70	10	<20
067	30	100	30	<<<	20	10	<20
068	50	100	200	<<<	70	50	<20
070	130	960	1150	<<<	230	80	<20
071	20	100	170	<<<	80	30	<20
073	30	340	220	<<<	130	20	<20
074	20	140	190	<<<	80	20	<20
075	30	140	220	<<<	60	40	<20
Repeat and check -							
602 CG 494	10	60	160	<<<	600	70	<20
509	50	20	120	<<<	80	20	<20
602 CE 029	30	40	20	<<<	30	10	<20
046	<2	20	10	<<<	10	10	<20
602 NEV 015	60	40	70	<<<	70	10	<20
032	<2	<20	20	<<<	20	10	<20
068	10	40	80	<<<	40	<5	<20
084	60	60	100	<<<	380	20	<20
117	120	200	50	<<<	80	10	<20
602 652 M	10	100	70	<<<	30	10	<20
722	70	280	170	<<<	70	40	<20
602 CG 209	50	140	250	<<<	100	40	<20
602 CG 209	60	140	250	<<<	110	40	<20

ANALYTICAL METHODS

Cu, Pb, Zn, Ag, Ni, Co, Bi by AAS.

Emission Spec. to Follow.

DISTRIBUTION: Pacminex Pty.Ltd.

Signed: *[Signature]*



A.C.S. Laboratories Pty. Ltd.
 50 MARY STREET
 UNLEY, S.A. 5061
 P.O. BOX 3
 UNLEY, S.A. 5061
 PHONE: 272 5733

ANALYTICAL RESULTS

Samples from: Pacminex Pty.Ltd.
 Area: Zeehan, Tas.

O/No.18253.

Samples of: Soil, sediment and rock.

Preparation: Sieve, crush and pulverize.

Sheet No.: 5.

Batch No.: A 2905.

Date: 28/6/79.

SAMPLES WILL BE DISPOSED OF AFTER TWO MONTHS UNLESS WE ARE OTHERWISE ADVISED

Sample Description	Cr ppm	W ppm	Mo ppm	Mn ppm	Sn ppm	As ppm	Sb ppm	Au ppm
602NEV 116	<20	50	Δ	5	Δ	50	30	Δ
7	20	50	Δ	30	Δ	50	30	Δ
8	20	50	Δ	10	1	50	30	Δ
9	20	50	Δ	10	Δ	50	30	Δ
20	20	50	Δ	30	Δ	50	30	Δ
1	30	50	Δ	30	Δ	50	30	Δ
602NEV 122	20	50	Δ	10	1	50	30	Δ
602NEV 001 R	20	50	Δ	30	10	50	30	Δ
022 R	300	50	Δ	300	Δ	50	30	Δ
024 R	3000	1000	Δ	100	Δ	50	30	Δ
051 R	100	50	Δ	30	30	50	30	Δ
052 R	100	50	Δ	30	30	50	30	Δ
081 R	20	50	Δ	100	Δ	50	30	Δ
086 R	1000	50	Δ	30	Δ	50	30	Δ
602 662 R	300	50	Δ	100	1	50	30	Δ
602CE 013 R	30	50	Δ	100	3	50	30	Δ
602 562 M	20	50	Δ	30	Δ	50	30	Δ
660	<20	50	Δ	100	Δ	50	30	Δ
663	20	50	Δ	100	Δ	50	30	Δ
665	<20	50	Δ	100	Δ	50	30	Δ
667	100	50	Δ	30	3	50	30	Δ
669	300	50	Δ	30	1000	50	30	Δ
671	100	50	Δ	50	1	50	30	Δ
673	<20	50	Δ	50	Δ	50	30	Δ
675	<20	50	Δ	100	Δ	50	30	Δ
677	<20	50	Δ	50	Δ	50	30	Δ
679	<20	50	Δ	30	Δ	50	30	Δ
680	<20	50	Δ	30	Δ	50	30	Δ
681	<20	50	Δ	100	Δ	50	30	Δ
683	<20	50	Δ	100	Δ	50	30	Δ
685	20	50	Δ	100	Δ	50	30	Δ
687	<20	50	Δ	30	Δ	50	30	Δ
689	<20	50	Δ	10	Δ	50	30	Δ
691	20	50	Δ	30	Δ	50	30	Δ
693	<20	50	Δ	30	Δ	50	30	Δ
695	<20	50	Δ	10	Δ	50	30	Δ
697	<20	50	Δ	10	Δ	50	30	Δ
698	<20	50	Δ	30	Δ	50	30	Δ
700	100	50	Δ	30	Δ	50	30	Δ
702	<20	50	Δ	30	Δ	50	30	Δ
704	<20	50	Δ	30	Δ	50	30	Δ
706	<20	50	Δ	30	Δ	50	30	Δ
708	<20	50	Δ	10	Δ	50	30	Δ
710	<20	50	Δ	30	Δ	50	30	Δ
712	<20	50	Δ	5	Δ	50	30	Δ
714	<20	50	Δ	5	Δ	50	30	Δ
716	<20	50	Δ	30	Δ	50	30	Δ
718	20	50	Δ	100	Δ	50	30	Δ
722	<20	50	Δ	100	Δ	50	30	Δ
602 724	<20	50	Δ	100	Δ	50	30	Δ

ANALYTICAL METHODS: Cr, W, Mo, Mn by ES1; Sn, Sb, As, Au by ES2.



DISTRIBUTION: Pacminex Pty.Ltd., Zeehan.
 Sydney.

Signed

M Thomas for J.R. Beaves



A.C.S. Laboratories Pty. Ltd.
 50 MARY STREET
 UNLEY, S.A. 5061
 P.O. BOX 3
 UNLEY, S.A. 5061
 PHONE: 272 5733

ANALYTICAL RESULTS

Samples from: Pacminex Pty. Ltd.
 Area: Zeehan, Tas.
 Samples of: Soil, sediment and rock.
 Preparation: Sieve, crush and pulverize.
 Batch No.: A 2905.

O/No. 18253.
 Sheet No.: 6.
 Date: 28/6/79.

SAMPLES WILL BE DISPOSED OF AFTER TWO MONTHS UNLESS WE ARE OTHERWISE ADVISED

Sample Description	Cr ppm	W ppm	Mo ppm	Mn ppm	Sn ppm	As ppm	Sb ppm	Au ppm
602 726	20	50	5	30	1	50	30	5
727	20	50	5	5	1	50	30	5
729	20	50	5	5	1	50	30	5
730	20	50	5	100	1	50	30	5
731	100	50	5	100	10	50	30	5
733	20	50	5	10	1	50	30	5
735	20	50	5	10	30	50	30	5
736	20	50	5	5	1	50	30	5
737	20	50	5	5	1	50	30	5
739	20	50	5	10	1	50	30	5
741	300	50	5	100	1	50	30	5
602 CG 164 M	20	50	5	5	10	50	30	5
202	20	50	5	10	1	50	30	5
209	30	50	5	50	1	50	30	5
270	20	50	5	30	1	50	30	5
649 AR 001	20	50	5	30	1	50	30	5
002	20	50	5	30	1	50	30	5
004	20	50	5	5	1	50	30	5
005	20	50	5	5	1	50	30	5
006	20	50	5	10	1	50	30	5
007	20	50	5	5	1	50	30	5
008	20	50	5	10	1	50	30	5
009	20	50	5	10	1	50	30	5
602RG 069 M	20	50	5	10	3	50	30	5
183	20	50	5	5	1	50	30	5
602 CE 002 M	30	50	5	10	1	50	30	5
012	20	50	5	30	1	50	30	5
035	20	50	5	100	1	50	30	5
057	20	50	5	100	1	50	30	5
065	20	50	5	100	1	50	30	5
067	20	50	5	100	1	50	30	5
068	20	50	5	100	1	50	30	5
070	20	50	5	300	1	50	30	5
071	20	50	5	300	1	50	30	5
073	20	50	5	100	1	50	30	5
074	20	50	5	100	1	50	30	5
602CE 075	30	50	5	300	1	50	30	5

ANALYTICAL METHODS: Cr, W, Mo, Mn by ES1; Sn, Sb, As, Au by ES2.

DISTRIBUTION: Pacminex Pty. Ltd., Zeehan, Sydney.

Signed *[Signature]* for J.R. Brewer
 This Laboratory is registered by the NATA



The Australian
Minerals Development
Laboratories

1000
Fleming Road, Frewville,
South Australia 5063
Phone Adelaide 79 1662
Telex AA 82520

Please address all
correspondence to
P.O. Box 114 Eastwood
SA 5063
In reply quote:

amdel

AC 3/8/9/0 - 5043/7

27 June 1979,

NATA CERTIFICATE

PART REPORT 1

Mr. P. Macnamera,
CSR Exploration,
G.P.O. Box 483,
SYDNEY N.S.W. 2001

REPORT AC 5043/79

YOUR REFERENCE: Order No 18264. Prospect No 602.
Application dated 5 June 1979.

IDENTIFICATION: As listed.

DATE RECEIVED: 13 June 1979.

Enquiries quoting AC 5043/79 to the Manager please

D. K. Rowley
Manager
Analytical Chemistry Division

g.f. Bowditch
for Norton Jackson
Managing Director

dg

Pilot Plant: Osman Place
Thebarton S.A.
Telephone 43 8053
Branch Laboratory: Perth



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032058

FORM 6

JOB 5042/79

AMDEL ANALYTICAL SERVICE
Results in ppm unless otherwise stated

BATCH NO. 1/2.A

TT	Sample No.		Cu	Pb	Zn	Co	Ni	Cr
1	602743M	-20%	32	90	120	30	35	50
2	4		28	130	290	25	380	220
3	5		25	160	210	150	730	1400
4	6		10	100	170	90	560	1.1%
5	7		10	70	250	240	2000	1.3%
6	8		15	40	140	100	970	5000
7	9		40	95	100	40	50	100
8	50		10	45	110	250	1450	8800
9	1		12	65	160	65	390	8000
10	2		10	25	310	160	960	4.3%
11	3		8	50	90	10	20	2700
12	4		10	40	80	20	20	1900
13	5		2	5	15	<5	<5	460
14	602756M		12	40	70	40	15	1000
15	602REV123S	-20%	15	15	410	40	40	2.5%
16	STO.							
17	602743M	-80%	32	100	120	40	35	40
18	4		32	140	320	25	430	90
19	602745M	-80%	20	160	210	160	780	530
20	7							

FORM 6

JOB 5042/79

AMDEL ANALYTICAL SERVICE
Results in ppm unless otherwise stated

BATCH NO. 2.A

TT	Sample No.		Cu	Pb	Zn	Co	Ni	Cr
1	602746M	-80%	10	110	150	100	610	3900
2	7	"	8	65	240	270	2000	8500
3	8	"	15	50	130	110	1000	2100
4	9	"	40	90	110	40	50	70
5	STO.							
6	50	"	5	40	110	310	1650	3800
7	1	"	12	70	150	60	420	3200
8	2	"	10	30	300	150	800	3.5%
9	3	"	10	70	95	10	20	830
10	4	"	10	50	80	20	20	270
11	5	"	<2	<5	15	<5	<5	230
12	602756M	"	12	40	70	30	15	280
13	602REV123S	-80%	5	10	470	30	25	2.2%
14	602REV124R		90	45	540	60	720	2800
15	125		15	50	460	30	60	7000
16	126		670	180	1700	190	1700	5300
17	602REV127P		10	15	240	15	45	4200
18	558							
19	CODE		C ₁					
20			% Cr	CODE	Fi			



The Australian
Mineral Development
Laboratories

Remington Street, Frewville,
South Australia 5063
Phone Adelaide 79 1662
Telex AA 82520

Please address all
correspondence to
P.O. Box 114 Eastwood
SA 5063
In reply quote:

amdel

NATA CERTIFICATE

AC 3/8/9/0 - 5043/7

30 July 1979,

REPORT COMPLETE

Mr. P. Macnamera,
CSR Exploration,
G.P.O. Box 483,
SYDNEY N.S.W. 2001

REPORT AC 5043/79

YOUR REFERENCE: Order No 18264. Prospect No 602.
Application dated 5 June 1979.

IDENTIFICATION: As listed.

DATE RECEIVED: 13 June 1979.

ANALYSIS

ppm

SAMPLE MARK	TIN Sn	TUNGSTEN W	NIObIUM Nb	TANTALUM Ta	CERIUM Ce
602NEV 124	<4	<10	<4	<10	<20
602NEV 125	<4	<10	<4	<10	30
602NEV 126	<4	<10	<4	<10	80
602NEV 127	<4	<10	<4	<10	40
602 753	48	<10	<4	<10	50
602 754	520	<10	<4	<10	60
602 755	34	<10	<4	<10	20
602 756	155	<10	<4	10	90

METHOD: B1

Enquiries quoting AC 5043/79 to the Manager please

D. K. Rowley
Manager
Analytical Chemistry Division

for Norton Jackson

for Norton Jackson
Managing Director

dg

Pilot Plant: Osman Place
Thebarton S.A.
Telephone 438053
Branch Laboratory: Perth



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SA 5063
In reply quote:

amdel

NATA CERTIFICATE

PART REPORT 2

Mr. P. Macnamera,
CSR Exploration,
G.P.O. Box 483,
SYDNEY N.S.W. 2001

AC 3/8/9/0 - 5043/79

13 July 1979,

REPORT AC 5043/79

YOUR REFERENCE: Order No 18264. Prospect No 602.
Application dated 5 June 1979.

IDENTIFICATION: As listed.

DATE RECEIVED: 13 June 1979.

Enquiries quoting AC 5043/79 to the Manager please

D. K. Rowley
Manager
Analytical Chemistry Division

D. K. Rowley

for Norton Jackson
Managing Director

dg



REPORT AC 5043/79

x = not detected at the limits quoted

Results in ppm unless otherwise stated. Detection limits in brackets.

Sample No.	Ba (200)	Ta (100)	V (10)	Yb (1)	Be (1)	Mo (3)	W (50)	Ge (300)	La (50)	Nb (20)
-20# 02743	x	x	510	3	14	x	x	x	x	
4	x	x	21010	12	12	x	y	x	x	
5	x	x	1510	2	11	x	y	x	x	
6	x	x	11010	1	x	x	x	x	x	
7	x	x	11010	x	x	x	y	x	x	
8	x	x	1810	2	11	x	x	x	x	
9	x	x	1810	1	12	x	x	x	x	
50	x	x	1710	1	x	x	x	x	x	
1	x	x	131010	4	12	x	x	x	x	
2	x	x	131010	2	x	x	x	x	x	
3	x	x	1710	x	y	x	y	x	x	
4	x	x	1810	4	x	x	x	x	x	
5	x	x	1510	2	x	x	y	x	x	
02756	x	x	1810	2	x	x	x	x	x	
5 2NEV123	x	x	21010	1	x	x	x	x	x	
-80# 02743	x	x	1510	3	13	x	x	x	11010	
4	x	x	11510	12	12	x	x	x	x	
5	x	x	1510	2	12	x	x	x	x	
6	x	x	11010	12	11	x	x	x	x	
7	x	x	1810	1	x	x	x	x	x	
8	x	x	11010	12	12	x	x	x	x	
9	21010	x	1810	1	12	x	x	x	x	
50	x	x	1710	x	x	x	x	x	x	
1	x	x	121010	5	12	x	x	x	x	
2	x	x	151010	3	12	110	x	x	x	
3	x	x	121010	12	11	x	x	x	x	
02754	x	x	11010	13	11	x	x	x	x	

Results are semi-quantitative. Elements apparently present in concentrations of economic

REPORT AC 5043/79

x = not detected at the limits quoted

Results in ppm unless otherwise stated. Detection limits in brackets.

Sample No.	Ag (0.1)	Cd (3)	Ge (1)	Sb (30)	As (50)	In (10)	Sn (1)	Bi (1)	Ga (1)	Zn (20)
20# 02743	10:13	X	X	X	X	X	1.5	X	20	18
4	10:15	X	X	X	X	X	1.3	X	20	10
5	10:13	X	X	X	X	X	1.8	X	110	110
6	10:14	X	X	X	X	X	1.5	X	1.7	20
7	10:12	X	X	X	X	X	X	X	X	1.5
8	10:13	X	X	X	X	X	1	X	1.7	10
9	10:13	X	X	X	X	X	X	X	1.5	1.3
50	10:12	X	X	X	X	X	1.5	X	1.3	1.0
1	10:14	X	X	X	X	X	1.0	X	1.8	20
2	10:13	X	X	X	X	1.0	1.5	X	1.8	1.3
3	10:13	X	X	X	X	X	3.0	X	1.8	1.0
4	10:13	X	X	X	X	X	6.00	X	1.0	1.0
5	10:12	X	1	X	X	X	1.5	X	1	1.2
02756	10:13	X	X	X	X	X	6.0	X	1.5	1.8
1235 03NEV	10:14	X	1	X	X	2.0	1	X	1.3	1.7
80# 02743	10:14	X	X	X	X	X	1.4	X	1.5	1.0
4	10:15	X	X	X	X	X	X	X	1.5	2.0
5	10:14	X	X	X	X	X	1.5	X	1.5	2.0
6	10:13	X	X	X	X	X	1.2	X	1.8	2.0
7	10:12	X	X	X	X	2.0	X	X	1.1	2.0
8	10:13	X	X	X	X	X	X	X	1.7	1.0
9	10:13	X	X	X	X	X	X	X	1.5	1.5
50	10:12	X	X	X	X	1.0	X	X	1.2	1.5
1	10:14	X	X	X	X	X	2.5:0	X	2.5	2.0
2	10:1X	X	X	X	X	2.0	X	X	1.5	5.0
3	10:13	X	X	X	X	X	1.5:0	X	1.0	1.0
02754	10:14	X	1	X	X	X	2.0:0:0	X	1.0	1.0

Results are semi-quantitative. Elements apparently present in concentrations of economic

REPORT AC 5043/79

x = not detected at the limits quoted

Results in ppm unless otherwise stated. Detection limits in brackets

Sample	Ba (200)	Ta (100)	V (10)	Yb (1)	Be (1)	Mo (3)	W (50)	Co (300)	La (50)	Nb (20)
2755	X	X	7 0	2	X	X	Y	X	X	
56	X	X	7 0	2	1	X	X	X	X	
1235 2NEV	X	X	3 0 0	1	1	X	X	X	X	
124	X	X	5 0	1	3	X	X	X	X	
25	X	X	1 0 0	1	X	X	X	X	X	X
26	X	X	7 0	2	5	X	X	X	X	Y
27	X	X	8 0	1	X	X	X	X	X	X
Sample	Ag (0.1)	Cd (3)	Ge (1)	Sb (30)	As (50)	In (1)	Sn (1)	Bi (1)	Ga (1)	Zn (20)
2755	0 1 3	X	1	X	X	X	2	X	1	3 0
56	0 1 3	X	X	X	X	X	2 0	X	3	17 0
1235 2NEV	0 1 5	X	X	X	X	X	12	X	3	10 0 0
124	0 1 4	X	X	X	X	X	X	X	X	16 0 0
25	0 1 3	X	X	X	X	X	X	X	3	15 0 0
26	0 1 3	X	X	X	X	X	X	X	X	5 0 0 0
27	0 1 3	X	1	X	X	X	X	X	1	17 0 0

Results are semi-quantitative. Elements apparently present in concentrations of economic

SPECTROGRAPHIC ANALYSIS

Detection-Limit Concentrations of Elements
DC Arc Excitation

Element	%	ppm	Element	%	ppm
Ag	0.00001	0.1	Na	0.005	50
Al	0.02	200	Nb	0.02	20
As	0.005	50	Nd	0.03	300
Au	0.0003	3	Ni	0.0005	5
B	0.001	10	Os	0.001	10
Ba	0.005	50	P	0.01	100
Be	0.0001	1	Pb	0.0001	1
Bi	0.0001	1	Pd	0.001	10
Ca	0.002	20	Pr	0.01	100
Cd	0.003	3	Pt	0.001	10
Ce	0.03	300	Rb	0.001	10
Co	0.0005	5	Re	0.001	10
Cr	0.002	20	Rh	0.0002	2
Cs	0.003	30	Ru	0.0002	2
Cu	0.00005	0.5	Sb	0.003	30
Dy	0.01	100	Sc	0.005	50
Er	0.01	100	Si	0.02	200
Eu	0.005	50	Sm	0.03	300
Fe	0.005	50	Sn	0.0001	1
Ga	0.0001	1	Sr	0.001	10
Gd	0.03	300	Ta	0.01	100
Ge	0.0001	1	Tb	0.01	100
Hf	0.02	200	Te	0.002	20
Hg	0.01	100	Th	0.01	100
Ho	0.01	100	Ti	0.01	100
In	0.001	10	Tl	0.0001	1
Ir	0.0002	2	Tm	0.01	100
K	0.0005	5	U	0.1	1000
La	0.01	100	V	0.001	10
Li	0.0001	1	W	0.005	50
Lu	0.03	300	Y	0.001	10
Mg	0.01	100	Yb	0.005	50
Mn	0.001	10	Zn	0.002	20
Mo	0.0003	3	Zr	0.02	200

APPENDIX IIICHEMICAL ANALYSESDRAINAGE PANNED CONCENTRATESSAMPLES 602651P TO 602740P



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Phone (07) 391 6986 A/H 355 0776
TELEX ALSEV 42344

LABORATORY REPORT

R. W. YERBURY
DIRECTOR

BATCH No.: M038 CLIENT C. S. R. LTD - MINERALS & CHEMICALS DIVISION
ORDER No.: 20130 AREA: _____ DATE RECEIVED: 5.12.
SAMPLE TYPE: CONCENTRATES No.: 41 DATE COMPLETED: 24.1.81
ATTENTION: P. MACNAMARA

SAMPLE No.	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Bi ppm	Co ppm	Ni ppm			
602651P	10	580	0.12%	2	60	240	220			
61	10	55	145	<1	15	20	45			
64	30	260	540	<1	35	80	115			
66	10	180	165	<1	20	35	50			
68	20	95	0.17%	4	40	300	290			
70P	20	135	270	2	5	65	60			
72	2	50	0.12%	1	85	350	200			
74	5	175	0.12%	<1	60	260	210			
76	15	150	440	<1	30	80	85			
78	50	130	340	<1	20	40	65			
82	2	80	600	<1	45	145	100			
84	55	350	880	1	40	125	120			
86	15	85	0.11%	1	60	220	160			
88	25	160	0.12%	2	50	180	165			
90P	35	175	0.11%	2	30	85	65			
91 42	20	90	0.10%	4	55	190	155			
94	15	110	820	6	40	160	85			
96	5	105	370	<1	20	50	35			
99	2	70	145	1	20	20	10			
602701P	5	65	780	<1	50	155	160			
03	15	115	0.12%	3	50	220	125			
05	5	80	0.14%	5	60	250	240			
07	2	50	800	1	50	170	195			
09	5	80	185	<1	25	40	50			
11P	15	75	75	<1	20	25	50			
13	80	105	0.22%	<1	55	260	160			
15	30	390	0.12%	2	30	110	115			
17	5	115	155	5	20	20	25			
19	5	65	600	1	40	120	190			
602721P	10	60	420	<1	35	95	150			



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METHODS: Cu Pb Zn Ag Bi Co Ni Cd Cr Fe Mn METHOD 1
Sn W METHOD 9-A Au METHOD 120



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LABORATORY REPORT

Page 1 A

R. W. YERBURY
DIRECTOR

BATCH No.: M038 CLIENT C. S. R. LTD

ORDER No.: _____ AREA: _____ DATE RECEIVED: _____

SAMPLE TYPE: _____ No.: _____ DATE COMPLETED: _____

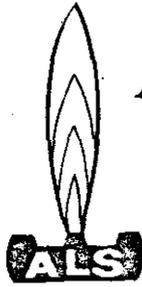
ATTENTION: _____

SAMPLE No.	Cd ppm	Cr %	Fe %	Mn ppm	Au ppm	Sn ppm	W ppm			
602651P	6	27.0	10.4	880	Insufficient	Sample				
61	2	0.30	4.00	520	<0.1	20	<10			
64	4	7.60	15.2	600	<0.1	Insufficient	Sample			
66	4	0.20	8.80	0.20%	<0.1	20	<10			
68	6	37.5	10.0	0.13%	<0.1	0.26%	<10			
602670P	3	3.54	12.4	0.12%	<0.1	560	<10			
72	6	38.3	12.0	0.12%	<0.1	0.22%	<10			
74	6	30.5	12.0	0.11%	2.0	0.10%	<10			
76	4	3.83	13.6	0.34%	<0.1	Insufficient	Sample			
78	3	1.20	8.80	0.13%	Insufficient	Sample				
82	4	12.0	7.20	0.12%	1.3	Insufficient	Sample			
84	5	4.80	25.6	0.16%	<0.1	"	"			
86	5	22.4	9.60	0.13%	<0.1	"	"			
88	6	16.5	10.4	0.13%	<0.1	"	"			
90P	6	6.30	11.2	880	<0.1	"	"			
91 92	5	20.6	10.4	800	114	"	"			
94	4	14.7	6.40	0.12%	3.7	"	"			
96	2	5.28	4.00	960	1.0	10	<10			
99	2	1.80	4.00	740	<0.1	10	<10			
602701P	5	18.7	8.00	880	0.1	<5	<10			
03	5	18.7	9.60	920	Insufficient	Sample				
05	6	24.5	10.4	0.11%	<0.1	"	"			
07	5	21.6	8.00	840	48.0	<5	<10			
09	4	3.83	5.60	620	0.1	5	<10			
11P	3	0.47	4.80	600	<0.1	<5	<10			
13	6	27.0	8.80	0.17%	<0.1	Insufficient	Sample			
15	5	10.5	8.00	620	<0.1	"	"			
17	2	1.87	4.00	960	0.2	20	<10			
19	4	18.0	7.20	820	0.1	25	<10			
602721P	3	12.0	6.40	720	6.3	25	<10			



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METHODS:



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LABORATORY REPORT

R. W. YERBURY
DIRECTOR

PAGE 2

BATCH No.: MO38 CLIENT C. S. R. LIMITED
ORDER No.: _____ AREA: _____ DATE RECEIVED: _____
SAMPLE TYPE: _____ No.: _____ DATE COMPLETED: _____
ATTENTION: _____

SAMPLE No.	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Bi ppm	Co ppm	Ni ppm			
602723P	75	0.20%	0.10%	2	30	60	70			
25	5	70	0.12%	1	80	330	150			
28	2	95	540	<1	40	125	160			
32P	10	440	0.11%	1	45	140	180			
34	5	130	880	<1	40	120	115			
38	25	800	740	>25	35	95	125			
602740P	15	140	310	18	20	50	75			
602654P — 602CE 069P	145	230	0.17%	3	45	90	120			
602657P — 072P	115	240	0.16%	1	40	85	110			
602650P — 602RG 100P	40	270	940	<1	35	10	140			
649AR 003P	35	50	270	<1	30	65	60	←	Other area	



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LABORATORY REPORT

PAGE 2A

R. W. YERBURY
DIRECTOR

BATCH No.: M038 CLIENT C.S.R. LIMITED
ORDER No.: _____ AREA: _____ DATE RECEIVED: _____
SAMPLE TYPE: _____ No.: _____ DATE COMPLETED: _____
ATTENTION: _____

SAMPLE No.	Cd ppm	Cr %	Fe %	Mn ppm	Au ppm	Sn ppm	W ppm			
602723P	7	3.05	28.0	360	<0.1	Insufficient	Sample			
25	6	42.0	10.4	0.13%	<0.1	1.07%	220			
28	3	14.4	6.40	460	<0.1	Insufficient	Sample			
32P	5	13.5	10.4	720	<0.1	"	"			
34	4	13.5	19.2	720	<0.1	50	<10			
38	4	9.03	10.4	460	Insufficient	Sample				
602740P	2	4.35	4.00	260	Insufficient	Sample				
602654P — 602CE 069P	8	2.40	34.4	0.28%	<0.1	10	<10			
657P — 072P	7	0.61	35.2	0.30%	<0.1	Insufficient	Sample			
650P — 602RG 100P	4	11.1	13.6	0.14%	<0.1	Insufficient	Sample			
— 649AR-003P	4	0.60	22.4	400	<0.1	Insufficient	Sample			



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METHODS:

APPENDIX IV

MINERALOGICAL EXAMINATION
OF HEAVY MINERAL DRAINAGE SAMPLES

MINPET SERVICESREPORT NO. 23/79MINERALOGICAL EXAMINATION OF HEAVY MINERAL
DRAINAGE SAMPLES FROM E.L. 15/76, DUNDAS, TASMANIA

(For P.M. Macnamara, Regional Geologist, CSR Limited
Exploration Group)

LIST OF CONTENTS

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INTRODUCTION	1
SUMMARY	2
MINERALOGY DISCUSSION	3
REFERENCES	7

APPENDICES

Table I	HEAVY MINERAL CONCENTRATE ANALYSIS, 1979 EXPLORATION PROGRAMME, E.L. 15/76, TASMANIA
Map 1	LOCATION MAP SHOWING SAMPLING POINTS FOR HEAVY MINERAL SAMPLES (NOT SUPPLIED)
Map 2	LOCATION MAP SHOWING SAMPLING POINTS FOR HEAVY MINERAL SAMPLES (NOT SUPPLIED)

INTRODUCTION

Forty one panned heavy mineral samples were received from the Dundas CSR Exploration office for further concentration over tetrabromoethane and determination of heavy minerals present.

Heavy minerals were tabulated as major (more than 10.0 percent), minor (1.0% to 10.0%) and trace (less than 1.0%).

SUMMARY

Other than an abundance of chromite and ilmenite (including leucoxene) in many samples and major zircon and rutile in several there is little of interest or significance in these concentrates. There are however, traces of gold, beryl and monazite in sample 691. (= 692P)

Chromite is present as non-magnetic opaque octahedra having a bluish reflectance was checked out by Central Mineralogical Services, Adelaide and was confirmed to be a magnesian variety of the mineral.

Chromite was found in large quantities in the drainage samples from streams draining the extensive serpentine outcrop of Mount Razorback (metamorphosed pyroxenite sills) and its extension. Chromite also appears to be eroding from the Cambrian gabbro/norite in the south-east sector of the lease, and from an unknown source occupying high country on the east side of the lease.

The problem of chromite from ultrabasic intrusives having a close association with gabbro/norite dykes is exemplified in The Lizard occurrence where a metamorphosed serpentine magma has been intruded by gabbro and norite. The chromite there is in fluxion bands in fine grained serpentinite which is converted to anthophyllite, tremolite and talc in shear/crush zones. The serpentinite described has a ratio of 4:1 chrome to nickel (i.e., 0.28% Cr_2O_3 and 0.07% NiO). It is interesting to note the Cr_2O_3 :NiO contents of other serpentinite present :

	W/W Percent	
	Cr_2O_3	NiO
Durite serpentinite	0.28	0.15
Tremolite serpentinite	0.25	0.17
Bastite serpentinite (Lherzolite)	0.20	0.16
Chromite serpentinite	0.28	0.07

The tremolite serpentinite therefore has a close chrome:nickel relationship.

MINERALOGY DISCUSSION

Sample locations unknown.

649 AR 003 P : LYONS RIVER (HILDERS Road)

Mostly consists of an abundance of calc-silicate minerals and limonite particles. A poorly sorted coarse concentrate of tremolite, actinolite and epidote and heavy rock particles.

602654P CE 069 : 602654P

Limonite particles are abundant with prominent gametiferous schist and traces of red spinel. Worn mineral grains, poorly sorted.

602657P CE 072 : 602657P

Abundant limonite particles and calc-silicate and some granite derived minerals occur with traces of molybdenite. Partly worn mineral particles, moderately sorted in a bimodal distribution.

602650P RG 100 : 602650P

An abundance of goethite particles and zircon, appreciable leucosene ilmenite and rutile. Granite and basic rock sources or from sediments. Well sorted.

NW Corner just beyond the lease (5368 m N to 5368.5 m N/ 36500 m N to 36600 m N). Catchment from Crimson Creek-Oonah Quartzite and Slate 738 and 740 :

These concentrates are similar with epidote rock fragments and abundant chromite, epidote and rutile, zircon and tourmaline in 738. Chromite appears fresh and is probably derived from the southerly extension of Serpentine Hill. ?

NW Part of lease (5365 m N - 5365.5 m N/3650 m E - 3660 m E),
668, 670 and 672 :

There is an abundance of magnetite rubble in 670. Ilmenite is abundant in all specimens with moderate chromite in 668 and 670, abundant in 672. In 672 the chromite is fresh, euhedral and probably originated from the south west extension of the ultramafic exposure which includes Serpentine Hill. Other minerals and their proportions are common to the area and are well sorted.

Central West (5363 m N to 5365 m N/367 m E to 368.5 m E).
Samples 734, 732, 651, 725, 726, 723 and 674; 728 is missing.

The drainage is from Mt. Razorback. As one would expect all samples except those from the most southerly streams contain appreciable quantities of fresh crystalline chromite from the serpentiferous Mt. Razorback. Samples 725 and 650 contain more than 90 volume percent with rather less than in 726, 734 and 725 with least in 723 which contains mostly epidote rock fragments. Rutile, ilmenite and zircon (726) are also abundant.

Central East (1) (5359 m N to 5360 m N/368 m E. Sample 715 :

Major chromite is present with appreciable epidote and zircon, less ilmenite and tourmaline. The chromite is unlikely from Mt. Dundas dolerite of high relief, yet the Mariposa stream drains from this mountain. No other source of basic/ultramafic rocks is observed. The ilmenite association is weak, chromite varies from fresh to weathered. The origin is therefore diverse.

Central East (2) (5357 m N to 5358 m N/375 m E to 376 m E).
Sample 557 :

Major hypersthene and tremolite present indicates an origin from rivers draining south from Mt. Dundas (?) and tremolite from the Dundas Group. Tremolite could be from metamorphosed serpentine, hypersthene is from norite.

East (1) (5357 m N to 5358 m N/373m E to 374 m E). Samples 678, 682:

Largely ilmenite and epidote, but traces of chromite occur in 678 and the mineral is in abundance (10 percent) in 682. Otherwise magnetite, zircon and tourmaline and contact metamorphic (?) garnet and tremolite are present.

Origin of chromite unlikely to be from Mt. Dundas the only basic igneous intrusive in the catchment ?

East (2) (5356 m N to 5357 m N/373 m E to 374 m E). Samples 684, 686 and 688 :

A major abundance of chromite occurs in all three samples.

The only source of basic rock derived minerals is gabbro or norite which occupies high ground to the east and just west of the lease boundary. An abundance of leucoxenised ilmenite also occurs and epidote from catchment metamorphosed serpentinite or metasediments. Contact metamorphic garnet and andalusite are present. The freshness of chromite probably indicates an adjoining source.

East (3) (Adjoins 5365 m N/373 m E). Samples 546 and 566 :

Sample 564 contains anthophyllite, augite and both concentrates contain 50 to 60 percent of hypersthene and rutile and spectrographic analysis shows 0.2 percent chromium. However 0.2% antimony and zinc were not accountable. The hypersthene and anthophyllite probably derived from exposed norite/gabbro in the area. The anthophyllite could also derive from metamorphosed serpentinite.

East (4) (5355 m N to 5356 m N/372 m E to 373 m E). Samples 690 and 692 :

Leucoxene and ilmenite are very abundant (70 and 90 volume percent, respectively), and chromite (4 percent) in 690 which also contains a trace of hypersthene. A gabbroic

source in the east is the likely source). An abundance of zircon (20 percent) in Sample 690 and a trace of gold with monazite, tourmaline and beryl in 691. A possible granite/basic rock contact may be responsible for the trace of gold present (where is the granite?).

East (5) (5355 m N to 5356 m N/373 m E to 374 m E). Samples 701, 703, 705, 707 and 709 :

From samples 701 to 707 inclusive all contain major chromite (35, 40, 48 and 40 volume percent respectively). All samples are from streams draining the gabbro near the eastern border of the lease. Sample 709 contains only 3 percent of chromite and is from the southernmost stream. Ilmenite and leucoxene are also dominant minerals in the above concentrates. Towards 707 and 709 calc-silicate minerals, epidote, actinolite and tremolite (from altered serpentinite and basic intrusives?) become dominant and most of sample 709 is epidote. The minerals are fresh and largely angular fragmented grains but are well sorted. Talc appears as an impurity in 707 (from metamorphosed gabbro?). From whence the garnet schist in 703?

South (5351 m N to 5355 m N/371 m E to 373 m E). Samples 694, 717, 696, 699, 719 and 721.:

The drainage trend is SSW and samples were taken from NE trending tributaries of the main stream - Ewart River which joins the Henty River (to the west coast). The tributaries drain Quaternary Moraine to the east. Heavy mineral suites contain a large abundance of epidote and leucoxenised ilmenite with minor (694) or traces (717, 696 and 699) of chromite. The neighbouring tributary contains (in 719) a major abundance of chromite with a balance of mainly epidote and a little ilmenite; similarly for the last sample (just south of the lease boundary, 721) which contains 15 volume percent chromite and large amounts of ilmenite and epidote. The mineral grains vary from angular to subangular and are fairly fresh.

REFERENCES

1. Zeehan, 1 Mile Series, Sheet No. 50, Geological Survey of Tasmania.
2. Explanatory Report, K'55-5-50 Zeehan by A.H. Blissett, 1962. 1 Mile Geological Map Series, Geological Survey of Tasmania.
3. A Mineralogical Examination of Heavy Mineral Concentrates and Petrographic Survey of Rock Types, E.L. 15/76, Dundas, Tasmania. Pacminex Report PMR 215/77.
4. A Mineralogical/Geochemical Appraisal of Heavy Mineral Concentrates, E.L. 15/76, Dundas, Tasmania. Pacminex Report PMR 88/78.
5. Geology of the Lizard and Meneage 1946, by J.S. Flett and J.B. Hill. H.M. Stationery Office, London, U.K.

5/12/79

DUNDAS H.M., STREAM SEDIMENT EXPLORATION PROGRAMME 1979LEGENDRock Particles

Actinolite, Tremolite, Schist	TS
Banded ferruginous shale	BF
Chlorite Schist	CS
Epidote rock fragments	ED
Ferruginous Pebbles	FP
Ferruginous Siltstones	FS
Garnetiferous Schist	GS
Goethite Pebbles	GP
Graphite Schist	G
Limonitised Garnet Schist	LGS
Limonitic Pebbles	LP
Limonitic Schist	LS
Magnetite Rubble	MR
Mica Schist	MS
Magnetite Rock Aggregates	MA

Colours

BL	Black;	BR	Brown;	BLU	Blue;	BU	Buff;
DBR	Dark Brown;	GR	Grey;	GN	Green;		
W	White;	VT	Vitreous;	Y	Yellow;		

Grain ShapesSorting

Euhedral, crystalline	1	Excellent	1
Aggregated laths	2	Very Good	2
Subangular	3	Good	3
Angular	4	Mainly Good	4
Fragmented	5	Moderate	5
Rounded	6	Poor	6
Pitted	7		

Mineral, Rock Fragments Abundance

1 Major 5 → 2 Minor 1 → <5 3 Trace 0 → <1

DUNDAS STREAM SEDIMENT HE MINERAL SAMPLING PROGRAMME 1979

SAMPLE No.s	Rock Fragments Abundance	MINERAL ABUNDANCE																			GRAIN SHAPES	GRAIN SIZE LIMITS (mm)			SCORING	COMMENTS	CONCENTRATE WEIGHT %									
		ACTINOLITE	ANORTHE	ANDALUSITE	AUGITE/PICRODITE	BERYL	BIOTITE	CHROMITE	COBALTUM	DIOPHASE	EPIDOTE	GARNET	GOLD	HYPERTHENE	ILMENITE	KYANITE	LEUCOCENE	MAGNETITE	MALACONITE	MONAZITE		RUHLE	SPHRE	SPINEL				TALC	TORVALITE	TRICALITE	ZIRCON	CLIN CLOURS	MINIMUM	MAXIMUM	MEDIAN	
649 AR 00R P	LP1 TB1 CS2									1								2			2					2		3	CH, BR, BL	4-6	.05	4.0	1.2 0.1	6	Many grains show crystalline forms. Clinzoisite 2%	13.1
602 654 P (CE 069)	LP1 MB1																	2			3	2	3			2		2	B, BR	6-3, 7	.06	5.0	0.90 0.11	6		38.7
602 657 P (CE 072)	LP1 CB1 GB1									3								1	2	3		2				3		3	BR, BL, W	3	.05	6.0	1.3 0.1	5		16.6
602 650 P (RG 100)	GP1		3																							2	3	1	BR, BL, Y	4-3	.04	3.0	0.1	4	Good concentrate for basic demonstration purposes	8.0
602 651	LP2																										3	1	BL	1-6	.05	6.0	0.50 0.22	4	Chromite 79% concentrate. Zircon, rutile are rounded	12.3
602 661	EP1 CS2 LP3																											3	BR, BL	5, 2	.06	10.0	0.90 0.10	4	Epidote rock fragments 79% concentrate	26.0
602 664	BF1																											1	Y, BL, GR	5, 4, 6	.05	10.0	0.10	4	Zircon rounded	9.0
602 666	MR1 EP1																											2	BR, WH	4				4	Zircon Rutile } round	23.1
602 668																													BL	6 7 3	.05	1.2	0.14	3	Ilmenite > 70% Chromite 2%	16.0
602 670	MR1																												BR	4 7 3	.05	2.0	0.20	3	Chromite 8%	16.4
602 672																													BL	1	.05	1.6	0.30	2	chromite > 80% present	115.1
602 674	FP2																												BL	1 2 6	.20	2.9	0.40	3	chromite 60%	33.8
602 676	MR2 LP2																												Y, BL						Specularite, trace	5.8
602 678	EP1																												BR	3 7 4	.06	2.9	0.10	2		
602 682			3																										Y, BR	3 7 4	.14	2.9	0.10	3		3.9
602 684	FS1 EP1 MR3																												BL, GR	3 = 4	.05	1.1	0.10	3	Brookite - trace chromite - 15%	9.0
602 684	FS1 EP1 MR3																												D, BL	4-3	.08	7.5	0.14	3	Brookite trace	6.2
602 686	EP1 FP1																												BL, Y	4 7 3, 1	.06	4.5	0.14	3	Clinzoisite 39% chromite 30%	6.3

032083

A

DUNGEN STREAM SEDIMENT HEAVY MINERAL SAMPLING PROGRAMME - 1979

SAMPLE No.s	ROCK FRAGMENTS Abundance	MINERAL ABUNDANCE																				GRAIN SHAPES	GRAIN SIZE LIMITS μ m			SORTING	COMMENTS	CONCENTRATE WEIGHT %						
		ACTINOLITE	ANORTHE	ANDALUSITE	AUGITE/PIEDONITE	BERIL	BIOXIDE	CHROMITE	COCORINDUM	DIOPSIDE	EPIDOTE	GARNET	GOLD	HYPERTHENE	ILMENITE	KYANITE	LEUCITENE	MAGNETITE	MALACONITE	MONTICHITE	OPALE		SPHENE	SPINEL	TALC				TOURMALINE	TRENOLITE	ZIRCON	GRAIN COLOURS	MINIMUM	MAXIMUM
602 688	FP 1 CS 3		2				1	3		1				1		1	3				3				3	2	Y, BL	374	02	1.0	0.11	5	Chromite 20%	5.8
602 690	LS 2					2	3			3			3	1							3				2	1	Y, BL	374	06	0.8	0.10	3	Zircon class, pink Chromite 4%	5.8
602 694						2			3	3				1		1	2				2				3	1	Y, BL	473	08	4.5	0.16	1	Garnet, orange, pink Chromite 2%	9.0
602 696						3	3			1				1		1	2									3	Y, BL	473	10	1.8	0.20	1		50.4
602 699	LP 3	3				3				1				1		1					3					3	BR, Y	374	08	4.5	0.21	3		204.5
602 701	TS 2					1				1						1	3										BL, Y	1,4	07	1.8	0.46	3	Chromite 35%	31.6
602 703	LG 2 MA 3					1			3	3				1		1					3					3	BR, Y	1,4	05	3.2	0.14	3	Chromite 40%	5.0
602 705		3				1			2	3				2		1	3				3				3	1	BL, W	1,4,3,6	04	1.1	0.08	3	Chromite 48%	6.3
602 707	TS 1 MR 3					1				1						1					3			2		3	BL, Y	5,4	09	6.1	0.17	5	Chromite 40% Chromite 3%	44.6
602 709	EP 1 - MR 3								1	2				2												2	GN	473	10	4.0	0.10	1	Garnet orange	21.3
602 711	EP 1 MR 3									1																	GN	4	08	5.5	0.17	6		52.7
602 713	FS 3					1				3				2			3								2	1	BL, GR	673	05	2.5	0.11	3	Chromite 70% Magnetite, fine euhedral	8.4
602 715	EP 1	2				3	1			2	3			2			3				3				2	1	BL, Y	37476	05	4.5	0.07	6	Chromite 49%	6.6
602 717	EP 2 MR 2	2					3			1				1		1					3					2	BR, GN	374	03	2.5	0.07	5		26.3
602 719	EP 1					1				2				2			3				3					2	BL, Y	473	04	4.5	0.10	6	Chromite 30% Chromite 15%	61.8
602 721	EP 1 MR 3									1	3			1							3					2	BL, GN	473	04	3.0	0.11	6	Garnet, pink and orange	55.3
602 723	EP 1 TS 2 MR 3					2					3			2							3					2	BR	674	02	6.0	0.11	5	Chromite 3%	8.6

032084 B

Central Mineralogical Services



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Mr. P. Curtis
Minpet Services
P.O. Box 24
RUSHCUTTERS BAY / N.S.W. 2011

12th October, 1979

REPORT CMS 79/10/21

YOUR REFERENCE: Order No. 24/79
DATE RECEIVED: 10th October, 1979
SAMPLE NOS.: 602725, 602672
SUBMITTED BY: P. Curtis
WORK REQUESTED: Mineralogy

H. W. Fander

H.W. Fander, M. Sc.

CENTRAL MINERALOGICAL SERVICES PTY. LTD.

Date 12th October, 1979

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

Job No. CMS 79/10/21 Date Received: 10.10.1979

Reference Order No. 24/79

Sample No. 602725, 602672

Nature of Sample: Mineral fractions

DESCRIPTION SECTION No.

a. Hand Specimen:

b. Microscopic:

Optical and physical examinations showed that in each sample the dominant mineral is chromite. Very minor amounts of silicates and possible traces of ilmenite are present.

The term "chromite" is used here in a fairly loose sense to include the various members of the magnesiochromite ($Mg Cr_2 O_4$)-ferrochromite ($Fe Cr_2 O_4$) series; optical properties suggest a magnesian chromite. X-ray powder diffraction would be inadequate to distinguish between them and further data would need to be obtained by chemical analysis.

H.W. Fander, M. Sc.

IDENTIFICATION
602725, 602672
Chromite



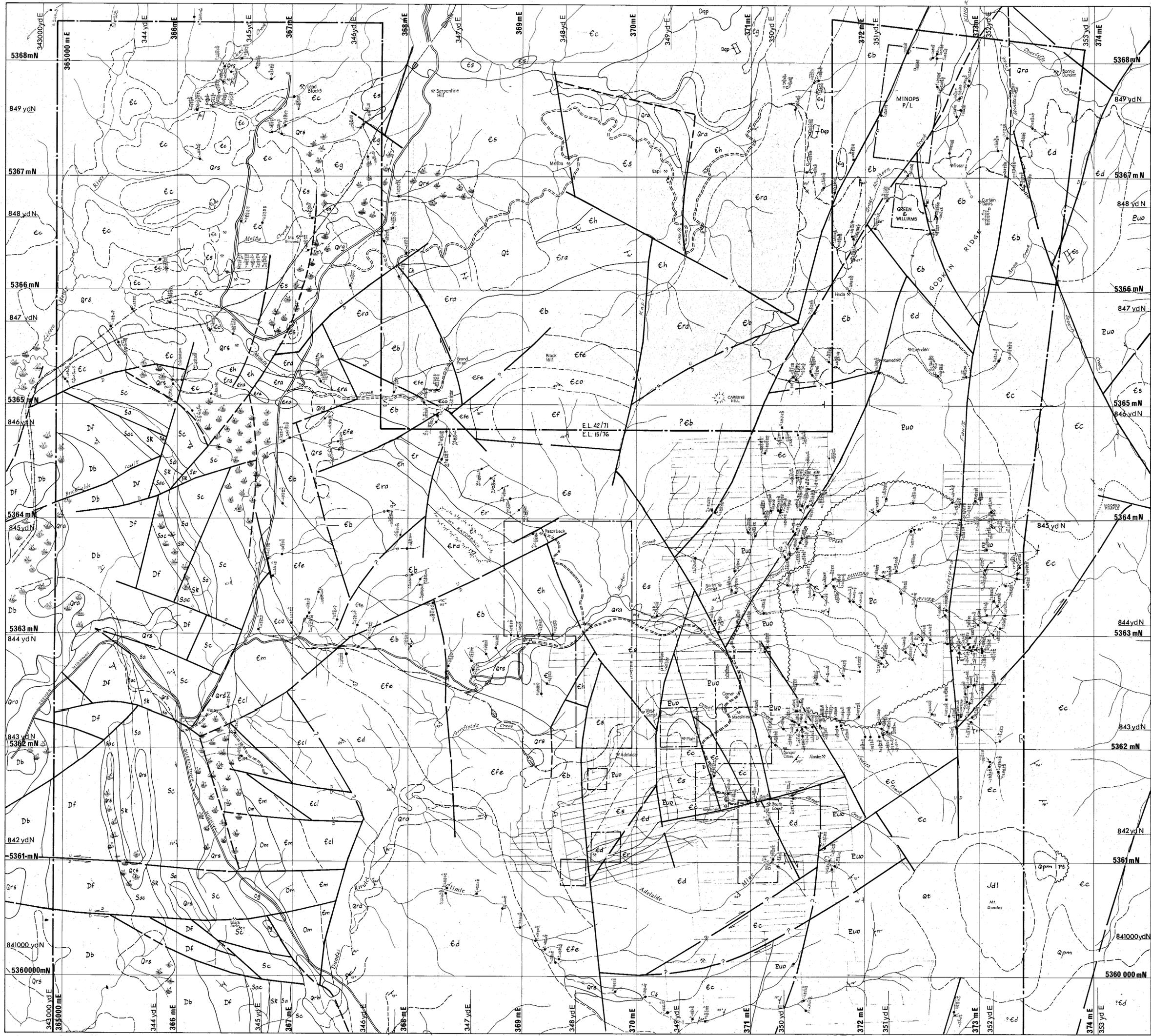
PACMINEX PTY. LIMITED

DRAINAGE SAMPLE NUMBERS
032089

E.L. 15/76 - South Sheet
DUNDAS, WEST TASMANIA

SCALE 1:10 000
DRAWN P.M.M./P.H.
DATE December 1977
REVISED Jan '79

K555-7



REFERENCE

Qra	Alluvium
Qrg	Gravels
Qt	Conglomerate talus
Qrs	Dolerite talus
Qrs	Older alluvium marsh deposits, downwash etc.
Qpl	Fluvio-glacial & lacustrine deposits
Qpm	Moraine

QUATERNARY

P	Zeekam Glacial Formation
---	--------------------------

DEVONIAN PERMIAN

Db	Bell Shale
Df	Florence Quartzite

SILURIAN

Sac	Austral Creek Siltstone
Sk	Keel Quartzite
Sa	Amber Slate
Sc	Crotty Quartzite
S	Unassigned

ORDOVICIAN

Og	Gordon Limestone
Om	Maina Sandstone
Oz	Mt Zeekam Conglomerate

CAMBRIAN

Em	Misery Conglomerate
Ecl	Climo Formation
Ef	Fernflon Formation
Eco	Comel Formation
Efe	Fernfields Formation
Eb	Brewery Junction Formation
Era	Razorback Conglomerate
Er	Hodge Slate
Eh	Red Lead Conglomerate
Ed	Dundas Group unassigned
Ec	Crimson Creek Formation
E	Cambrian unassigned

PROTEROZOIC

Puo	Dundas Quartzite & Slate
Pc	Concord Schist
Pw	Whyte Schist

IGNEOUS ROCKS

Jdl	JURASSIC Dolerite
D	Quartz porphyry
Eg	Gabbro, norite and dolerite
Ea	Serpentine and pyroxenite

- Stream sediments (M) (-80 mesh)
 - Panned concentrate (P)
 - Rock chip, float (r, f)
 - Limonite (L)
- Sequence of values (p.p.m.)
- Sn
Cu
Pb
Zn
Bi
Ag

PACMINEX PTY. LIMITED

DRAINAGE GEOCHEMISTRY
(Sn, Cu, Zn, Pb, Bi, Ag)
(-80 mesh and rock chip samples)
E. L. 15/76 - North Sheet
DUNDAS, WEST TASMANIA

SCALE 1:10,000
DRAWN P.M.M./P.H.
DATE Jan-79
REVISED

032000

80-1499

K 555-8

71-1556

