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REPORT ON THE FIRST STAGE

ALLUVIAL EXPLORATION PROGRAMME

(NOVEMBER 1983)

AT LEFROY, TASMANIA

FOR EPOCH MINERALS

OPEN FILE

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AMG REFERENCE POINTS ADDED

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SUMMARY

1. The first stage (reconnaissance) alluvial exploration programme was carried out at Lefroy in November, 1983. It involved the digging of about 80 test pits and the evaluation of two sets of samples from 54 separate sites.
2. One set of samples were individually concentrated and assayed, whilst the second set was concentrated as a bulk sample. This later concentrate was separated into different size fractions, which were separately assayed.
3. The total gold in the bulk sample was over 4 times higher than the total gold in the individual samples. The difference between the two was that the first set were panned and the second set treated on an automatic panning device. Some losses in panning and handling of individual samples is expected, but unlikely to totally account for such a large disparity. We believe the disparity is more a reflection of the wide variations in grade that can occur in alluvial areas. Normally a more reliable indication of grade results from larger samples.
4. However, from the individual samples we can see which areas appear richer than others. We have selected three areas for more detailed exploration. The average grade of the two sets indicates that economical grades of gold are possible in each of these three areas.
5. The 3 areas selected are shown on Plate 2, along with a smaller fourth area on Henty's Lease, expected to be rich but not yet tested. Within each of the 3 main areas reserves of between 100,000 - 200,000 cubic metres of auriferous wash are anticipated.



6. The second phase of exploration in January 1984 will examine Area 1, with the aim of proving up sufficient reserves to justify the establishment of a small alluvial plant at Lefroy.

7. The gold reefs were not examined in this first stage of exploration and alluvial prosperity has not yet been carried out in the Curries River area.



1. INTRODUCTION

1.1 Under instructions from Epoch Mineral Exploration N.L., Murdoch Geosciences have completed the first stage of alluvial exploration programme at Lefroy Tasmania.

1.2 Epoch have an option to acquire Consolidated Mining Lease 97M/80 covering 1381 hectares and a Private Land Lease 1033P/M covering 100 hectares. Both areas are currently held by Valken Mining Pty. Ltd. The option expires in March, 1984. In addition Epoch Minerals have acquired Mining Lease 59M/79 held by J.W., W.J. & D.W. Henty (100 hectares) and Mining Lease 15M/80 (1 hectare) held by M. Weberbauer and M. Milward. The relative location of these various mining titles is shown on Plate 1 accompanying this report.

1.3 Also shown on Plate 1 are details of areas of private land (shown by hatching) and crown land grazing leases (dotted outline) in the Lefroy area. The plan is at a scale of 1:10,000 and also shows topographical contours at 10 metre vertical intervals. The contours were traced from 2.5 times enlargements of the published TAS. LANDS 1:25,000 topographical maps.

1.4 The first stage evaluation involved the excavating of 80 test pits in 23 separate locations considered prospective for alluvial gold. These locations are labelled A - V on Plate 2, another 1:10,000 topographical plan of the Lefroy area.

1.5 Two samples of gravels (each approx. 1/30th cubic metres) were obtained from 54 separate holes. They were separately concentrated on a Wilfry-Table at Valken Mining's Plant. One set of samples was then panned down to about 100 grams of concentrate by hand, whilst the other set was bulked together and reduced to a similar concentrate by using an automatic panning device (Gold Wheel).



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1.6 The first set of individual samples were fire assayed to determine the amount of free gold present. The bulked set of samples were sized and each size fraction was separately assayed to determine the percentage of gold present within each size fraction.

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2. ALLUVIAL GEOLOGY

2.1 Approximately 80 test pits were dug at 23 separate locations at Lefroy. These locations are labelled A to V on Plate 1. At each location holes were dug approximately 20 - 30 metres apart in a line across the alluvial area.

2.2 Three ages of alluvial wash (auriferous gravel) occurs at Lefroy. The oldest wash occurs below the Tertiary basalt in the deep leads. This wash occurs at depth of 100 - 200 metres and it was not the aim of this programme to test that material.

2.3 The next oldest wash occurs on both terrace areas adjacent or near to, the existing alluvial plain, or below younger wash within that plain. This older wash comprises large cobbles of quartz often subrounded to subangular with small quartz pebbles and gravel, sand and a brown clayey matrix.

2.4 This wash was the oldest found during this exploration programme and where it occurs is generally between 0.5 - 1.0 metres thick and rests unconformably on basement rocks.

2.5 In some places within the flood plain of the gullies and creeks this wash has been eroded away and replaced by a younger grey wash.

2.6 It is this older brown wash that has in the past been the more productive yielding very high grades in places and overall appears to have produced better results in this programme.



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2.7 The youngest wash comprises subangular to angular quartz cobbles and pebbles, gravel and sand in a grey clayey matrix. This wash is generally confirmed to the recent flood plain of gullies and creeks in the area. The grey wash in some holes, was found to overlie the older brown wash, but in general directly overlie basement rocks.

2.8 Basement rocks were intersected in all the test pits at depths of between 2 - 7 metres. The basement rock comprised either grey-green weathered schist or brown sandstones and siltstones of the Ordovician Mathinna Beds. In each hole the top 0.3 metres of bedrock was sampled, in case gold has worked down cracks and fractures within the weathered rock.

2.9 The brown and/or grey wash is overlain in some holes by a finer grey clayey gravel, containing a lower percentage of finer grained quartz, pebbles and gravels with a generally light grey silty to clayey matrix. This shallower wash has only been tested by a few samples. It appears to be poorer in grade than the deeper wash. Additional samples will be tested in areas where the lower wash is found to contain economical mineralization.

2.10 Closer to the surface the alluvium becomes more clayey and contains less quartz pebbles and gravels. This fine grained material is still light grey in colour and may contain minor gold.

2.11 The youngest alluvium comprised a sequence of mottled brown to grey clays, in part silty to slightly sandy. This material is considered to be overburden. It was not sampled and was used to refill the holes after completion. The clay overburden was overlain by a thin cover of top soil at the surface. (Average 0.2 metres thick). The depth of overburden was generally in the order of 1 - 2 metres.



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3. SAMPLE LOCATIONS

3.1 Line A and H: Holes dug over the shallow "Pinafore Lead" adjacent to Chum Creek. Line A is west of the Beachford Road and Line H to the east of this road.

Line B, C, D, E, F: Holes dug on the recent flood plain of Chum Creek and its tributaries east of the Beachford Road.

Line G: Chum Creek - below the Beachford Road.

Line I: Across Blanket Creek downstream from its confluence with Sludge Creek.

Line K: Across Blanket Creek upstream from Sludge Creek.

Line L, M: Across Sludge Creek and tributaries west of the Beachford Road.

Line O, P, Q: Across tributary of Sludge Creek east of the Beachford Road.

Line R, S, T, V: Across gullies cut by the Pipers River Road, upstream in the Blanket Creek area.

3.2 In hind-sight two lines were of little value - Line V was conducted near Sludge Creek in an area of some shafts, but no real wash was intersected.

Line S: Comprised only one hole which in hind-sight was not well sited and subsequently hole S1, is not considered to be a true indication of the gold potential of Poverty Gully within which it was dug.

3.3 The majority of holes on the other lines all encountered good wash and are considered a good indication as to whether or not the areas tested are auriferous or not. However, in any area additional holes would be required to give a reliable indication of grade in that area.

3.4 The digging of the holes was supervised by the author and a signal system established with the excavator operator so that different types of materials encountered could be stockpiled onto separate heaps. The alluvial geology of each material and the depth from which it came was recorded and full details are given in Appendix I attached.



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3.5 At each location (denoted by letters A to V) the holes dug are numbered starting at 1. (e.g. the holes at location A are numbered A1, A2, A3 etc.) The dumps of different material at each hole are denoted by a letter (e.g. A1/A, A1/B, A1/C etc.) Each dump was labelled with a peg. The clay overburden from each site was not kept. It was used to refill the holes.

3.6 Two samples were taken of the lowest wash at the majority of holes (total $54 \times 2 = 108$ samples). Each sample comprised 45,000 loose cubic cm (0.035 bank cubic metres) and weighed about 70 - 80 kgs. The samples were collected in cut down 200 litre drums and carted to Valken Mining's Plant site using initially a local tractor and trailer and later a 4WD and trailer.

3.7 At the plant site each sample was screened to $\frac{1}{4}$ inch mesh to remove the larger cobbles of quartz.

3.8 The undersize was passed over a Wilfry-Table to remove the lighter slimes and sand and to concentrate each sample to about 3 kgs. The tails were collected from all the samples and at the end of the project were passed over the table again as a bulk sample, to obtain another concentrate sample.

3.9 The concentrate collected from the table was then treated in two ways.

(a) The first set of samples were hand panned to about 0.5 kgs. by Mr. V. Rautner and sent to Maroochydore where they were further panned down by the author to about 100 - 200 grams. The tails from each panning operation were later repanned as two samples to make sure no gold was lost.



(b) The second set of samples were sent direct to Maroochydhore where they were reduced to about 100 grams of concentrate using an automatic panner (Gold Wheel device). In the automatic panner the heavy minerals work their way up a spiral to a central collection outlet and lighter factors are eventually washed out of the pan. The tails from the panning device was collected and was retreated through the Gold Wheel twice more as a bulk sample, at the end of the programme.

3.10 The concentrate from both sets of samples were dried and screened to remove + 1.18 mm gravel. In addition the second set was split into 3 size ranges (i.e. + 600 microns, + 300 microns and - 300 microns).

3.11 Pinhead size gold and larger was removed from the sample using tweezers. This gold was then accurately weighed at Australian Laboratory Services. The rest of each sample was then weighed and sent to Australian Laboratory Services for fire assay.

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4. ASSAY RESULTS

4.1 The assay results obtained and the gold grades calculated in grams per cubic metres for each of the individual samples are given below.

Table I - Grade of Individual samples

	<u>Gold Assay result</u> (ppm)	<u>Wt. of sample</u> (grams)	<u>Gold per sample in</u> (micrograms) (A x B = C)	<u>Wt. of free gold taken</u> out	<u>Grade gms/ cubic metre</u> (C+D)x28.5 = E)
	<u>A</u>	<u>B</u>		<u>D</u>	
A3	2.78	168.14	467.4		0.013
A4	1.88	154.17	289.8	7000	0.21 *
A5	2.50	145.04	362.6		0.01
B1	7.39	149.11	1101.9		0.03
C1	3.28	138.62	454.7		0.013
D1/B	2.8	152.68	427.5		0.012
D2	0.48	149.62	71.8		Trace
E3	20	144.8	2896	5900	0.25 *
F1	2.98	124.25	370.2		0.01
F2	7.33	104.94	769.2		0.022
F3	7.03	356.19	2504		0.071
G1/A	8.03	229.85	1846		0.053
G1/B	5.88	203.69	1198		0.034
G3/A	5.81	213.88	1243		0.035
G3/B	3.36	168.49	566		0.016
G4/A	14.8	101.76	1506	3400	0.14 *
H2	6.8	103.09	701	8900	0.27 *
H3	11.8	230.12	2715		0.077
H4	56.3	129.75	7305	9200	0.47 *
H5	7.68	203.55	1563		0.045
H6	3.4	136.56	464		0.013
I3	9.6	104.54	1004		0.029
I5	17.9	173.64	3108		0.089
J1	54.7	176.46	9652		0.27 *
J2	6.42	243.57	1564		0.045
J3	19.74	232.36	4587		0.13 *
K1/B	3.54	260.15	921		0.026

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	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>
K3/A	10.3	122.40	1261		0.036
K3/B	10.7	96.30	1030		0.029
L2	6.6	299.98	1980		0.056
L3	14.0	229.85	3215		0.092
M1	66.8	259.55	17338	10000	0.78 *
N1	32.5	143.87	4676	12500	0.49 *
N2	35.0	160.51	5618	10000	0.045
O2	29.9	113.26	3386		0.097
P2/B	46.5	141.60	6584		0.188 *
P3	18.7	170.1	3180		0.091
P4/A	151	141.10	21306		0.61 *
P4/B	6.9	122.9	848		0.024
Q2	66.3	86.70	5748		0.164 *
Q4	68.9	93.60	6449		0.184 *
R1	24.6	125.37	3084		0.088
R2	2.74	128.47	352		0.01
S1	33.7	111.35	3752		0.11 *
T2	84.5	177.47	14996		0.427 *
T4	45.0	113.4	5103		0.145 *
U3/A	70.5	131	9235		0.263 *
U3/B	7.84	217.16	1702		0.049
U4	28.7	125.4	3599		0.103
V3	9.29	169.95	1579		0.045
Z2	46.5	140.14	6516		0.186 *

Z2 is a sample whose location is unknown, as the label was off the plastic bag. It may be sample N3 or O1 both of which were prepared, but only one of which was received.

The total free gold contained within these 54 samples is only 0.22 gms or an average of 0.11 gms/cubic metre. The better grades are indicated by an asterisk.

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4.2 The tailings from the Tasmanian panning operation were passed over the Wilfry Table again and panned down to a new concentrate. The tailings from the Queensland panning operation were passed over the Gold Wheel and panned down to a new concentrate. Both concentrates were dried, screened into 3 separate size fractions, weighed and assayed.

The results obtained were -

Table 2 - Individual Samples - Retreatment of pan tailings

	<u>Gold Assay</u> <u>ppm</u>	<u>Sample</u> <u>wt.(gms)</u>	<u>Gold content</u> <u>in sample</u> <u>(micrograms)</u>	<u>Grade</u> <u>gms/cubic</u> <u>metre</u>
	A	B	A x B = C	E
<u>Tasmanian Tailings</u>				
+ 600 microns	244	36	8784	
+ 300 microns	93.9	180	16902	
- 300 microns	15.1	114.30	<u>1726</u>	
		<u>TOTAL</u>	<u>27412</u>	<u>0.014</u>
<u>Queensland Tailings</u>				
+ 600 microns	77.5	29.22	2264	
+ 300 microns	93.9	180.0	16902	
- 300 microns	15.1	114	<u>1726</u>	
		<u>TOTAL</u>	<u>20892</u>	<u>0.011</u>

4.3 Adding the gold in both the Tasmanian and Queensland panning tailings to the total gold increases the average grade by 22% to 0.27 gms or 0.14 gms/cubic metre.

4.4 The second lot of samples were assayed in their different size fractions plus the gold specs taken out prior to assay were weighed. The total weight of specs taken out was 124900 micrograms (0.125 gms).

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4.5 The assay results of the various size fractions were -
1st run over gold wheel.

Table 3 - Bulk sample - Grade by sizing 1st Run over gold wheel.

<u>Sizing in microns</u>	<u>Gold assay (ppm) A</u>	<u>Sample wt. (grams) B</u>	<u>Gold content of sample C = A x B</u>
+ 600	1180	33.6	39648
+ 300	9830	96.35	947120
- 300	103	136.04	<u>14012</u>

Total gold extracted
first run over wheel

1000780 (1.0 gms)

Add gold taken out as specs

124900 (0.125 gms)

Cumulative

1125680 (1.126 gms) were
extracted on the
first run over the
gold wheel.

Table 4 - Bulk sample - Grade by sizing 2nd Run over gold wheel.

	<u>A</u>	<u>B</u>	<u>C</u>
+ 600	131	25	3275
+ 300	193	57.85	11165
- 300	17.9	95.30	<u>1706</u>

Total gold extracted 2nd Run

16146 (0.016 gms)

Cumulative specs 1st & 2nd Run

1141826 (1.142 gms)

Gold extracted 2nd Run as a percentage of 1st Run & specs = 1.4%.

Table 4 - Bulk sample - Grade by sizing 3rd Run over gold wheel.

	<u>A</u>	<u>B</u>	<u>C</u>
+ 600	0.9	20.30	18
+ 300	13.2	84.96	1121
- 300	1.0	221.76	<u>221</u>

Total gold extracted 3rd Run

1360 (0.001 gms)

Cumulative specs 1st, 2nd & 3rd Runs 1143186 (1.143 gms)

Gold extracted 3rd Run as a percentage of 1st and 2nd Runs
and specs = 0.08%

4.6 The total gold recovered from 3 Runs over the gold wheel
of the second set of samples was 1.143 gms compared with 0.27
gms obtained by panning and then repanning the tailings for the
first set. This is a variation between the two sets of over
4 times.

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4.7 The most likely reason for this variation is that, what we call the second set of samples was actually collected in the field first and hence the sample would have been originally deeper wash and naturally could be expected to be richer.

Other possible reasons are:

- (a) Gold values in alluvial areas vary widely and one or two parts of the bulk sample may have been very rich.
- (b) Conversely some parts of the first sample normally in richer areas could have been poorer.
- (c) The panning techniques used may not have been effective. To check this panning has been eliminated in the second stage of exploration.
- (d) A more reliable estimate of grade in alluvial areas can usually be obtained from a larger sample.

4.8 With respect to (e) above, it is interesting to note that the repanning of tailings added 22% to the first panning, whereas the second run over the gold wheel added only 1.4% to the first run. This certainly indicates that gold could be lost by relying on panning techniques.

4.9 Furthermore it is interesting to note that in the bulk sample only 1.4% of the gold collected in the first run was - 300 microns. This indicates that we have collected only coarse gold and have not recovered fine gold which we would expect to also exist in the area. Most of the fine gold would have been lost over the table, but some would have also been lost over the gold wheel and from panning. This is a fairly normal situation for conventional tables or for that matter jigs. To collect fine gold one really needs to pass the table or jig tailings over some form of fine gold separator. A number of separators are available on the market and experimentation in fine gold recovery, will form part of the third stage of exploration, as preliminary work towards a mining feasibility study.



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4.10 After running both the first set and second set of samples over the table all the tailings were put over the table a second time, and the table concentrate so derived, was panned down, dried, weighed and assayed.

42.5 milligrams of gold was hand picked out of the sample prior to assay.

The assay results were -

<u>Sizing in</u> <u>microns</u>	<u>Gold Assay</u> <u>(ppm) A</u>	<u>Sample wt.</u> <u>(grams) B</u>	<u>Total Gold Content</u> <u>A x B = C</u>
+ 600	0.8	15.92	13
+ 300	12.4	50.70	628
- 300	4.7	144.52	<u>679</u>
			1320 micrograms
			plus free gold picked out
			<u>42500</u> micrograms
		Total gold	43820 micrograms

4.11 These results showed that a second run over the Wilfry Table produced another 0.044 gms of gold. This result adds another 0.012 gms/tonne to the total gold recovered. It is interesting to note that on this second run over the table a much greater percentage of - 300 microns gold was collected, than for the first run.

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5. DISCUSSION ON THE RESULTS

5.1 The first programme of exploration was essentially reconnaissance and designed to indicate those alluvial areas likely to be more auriferous than others. Areas selected could be examined by a more detailed sampling programme.

5.2 In an alluvial area having the type of overburden to wash ratios as were found at Lefroy, grades in the order of 0.5 gms/cubic metre are required before the area could be considered economical (0.3 gms/cubic metre is considered marginal).

5.3 The first set of samples indicate that such areas may be limited to lines H, M, N, P & T. However, the total gold contained in the second set of samples was at least 4 times higher than that in the first set. If the second set of samples are taken as being more representative then lines A, E, G, J, O, Q, S & U are also of interest.

5.4 The correct approach at this stage should be to take an average of the two sets. From 108 samples a total of 1.413 gms of gold was recovered. This is an average of 0.37 gms/cubic metre, which indicate that overall the area is marginal.

5.5 However, obviously some alluvial areas are richer than others and from the reconnaissance work 3 areas have been selected for further investigation.

These areas are delineated on Plate 2.

Area I - Sludge Creek, Upstream Area, Represented by lines
M, N, O, P & Q

Area II - Blanket Creek, Upstream Area, Represented by lines
S, T & U

Area III - Chum Creek and Pinafore Leed, Represented by
lines A, E, G & H and perhaps F.



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5.6 Taking the two sets of samples as an average the grades given in Table 1 have to be multiplied by a factor of 3.36 to get an average.

Average Grade anticipated (gms/cubic metre)	
Area I - Line M	2.6 ?
Line N	0.89
Line O	0.33
Line P	0.75
Line Q	<u>0.58</u>
Average 0.63 gms/cubic metre	
(excluding Line M which is rich)	

Indication of the possibility of grades occurring in excess of 0.5 gms/cubic metre make a more detailed exploration of Area I worthwhile.

5.7 Average Grade anticipated (gms/cubic metre)	
Area II - Line S	0.37
Line T	0.96
Line U	<u>0.46</u>
Average 0.60 gms/cubic metre	

Similarly Area II is worthwhile exploring. However, priority has been given to Area I, as a lot of the more prospective alluvial area within Area II is within a mining lease application area as yet not granted.

5.8 Average Grade anticipated (gms/cubic metre)	
Area III - Line A	0.26
Line E	0.84
Line G	0.18
Line H	<u>0.59</u>
Average 0.47 gms/cubic metre	

This area is slightly less prospective than Area I and hence has been given lower priority. Line F has probably missed the better section of auriferous wash present in the upper section of Chum Creek and hence has not been included in the above calculation. However, it has been included in the area of interest for further exploration.



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Old alluvial workings occur higher up on this creek with good gold being reported. In the next stage of exploration here, the line needs to be extended further east.

5.9 The area of main reef workings have been shown on Plate 2. These areas have not been examined yet. However, detailed exploration in specific areas is likely to locate small and isolated, yet useful reserves of shallow wash, gold bearing eluvium and residual soils above the lines of reefs.

5.10 The potential reserves of wash in each of the three areas has been roughly calculated using meander lengths, widths and wash thicknesses as indicated from the reconnaissance programme.

The early estimate of reserves from the limited work so far is -

- Area 1 150,000 - 200,000 cubic metres
- Area 2 125,000 - 170,000 cubic metres
- Area 3 125,000 - 170,000 cubic metres
- Area 4 30,000 - 50,000 cubic metres
- Total say - $\frac{1}{2}$ million cubic metres

An early estimate of the amount of overburden overlying the wash is about 0.8 million cubic metres.

5.11 In addition reconnaissance exploration is yet to be carried out in the Curries River Area, in the northern and western part of Valken's Consolidated Lease and on the Private Land Lease.



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6. THE SECOND STAGE OF EXPLORATION

6.1 An average grade of 0.60 gms/cubic metre within Area 1 is encouraging and certainly sufficient justification for the implementation of a second exploration programme. The aim of the second exploration programme should be to determine whether sufficient reserves occur within Area 1 to establish a small scale alluvial mining operation, at the earliest opportunity.

6.2 The recommended programme for Area 1 comprises -

(a) Re sample pits on lines M, N, O, P & Q. Pass samples over Wilfry Table and concentrate over Gold Wheel on site. Reduce concentrate to 100 gms sample. Dry, weigh and assay.

(b) Dig a second set of about 80 test pits in this area on lines 200 metres apart. Treat one sample from each hole in the manner described in (a) above.

6.3 The estimated cost of this programme is \$15,000 and field work associated with this programme was carried out in January - February 1984.

6.4 If sufficient reserves are indicated from the programme then a mining feasibility study and/or a pilot plant operation would be undertaken.

6.5 As a prelude to this work the prospective area should be mapped at a lcm = 20 metres scale, to identify cultural features, alluvial areas, old workings, shafts etc. These maps can be used on a basis for planning mining operations.

6.6 It is also important early in the feasibility study to carefully look at fine gold recovery. Whilst care will be taken with fine gold handling in the second exploration programme, it is unlikely that that programme by itself will solve the problem. The main emphasis of the second programme being in proving that sufficient reserves exist to justify a feasibility study into fine gold recovery.



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7. PROPOSED LONG TERM PROGRAMME - LEFROY

(a) Field work

- November 1983 - STAGE I Exploration -
Alluvial reconnaissance - completed.
- January 1984 - STAGE II Exploration -
Detailed examination Alluvial Area 1 - Field work completed.
- March 1984 - STAGE III Preliminary to Mining Feasibility Study Area 1.
(a) Fine gold recovery.
(b) Detailed Mapping Area 1.
(c) Planning pilot plant programme.
- May 1984 - STAGE IV - Pilot Plant Study Area 1. *
(a) Bulk mining - Three selected areas.
(b) Pilot Plant treatment and determination of recoveries.
- July 1984 - STAGE V Completion of Mining Feasibility Study Area 1.
- September 1984 - Ordering of equipment for alluvial plant.
- November 1984 - Commencement of plant erection.
- February 1985 - Plant commissioning - Area 1.

(b) Reports to Directors -

- Stage I Exploration - February 1984.
- Stage II Exploration - April 1984 (summary report late March 1984)
- Mining Feasibility Study - July 1984.

* This stage is optional and could be by-passed by going straight to a small production plant.



APPENDIX I-Test pit Geology - Grade for Table 1.

<u>Depth</u> (metres)	<u>Geology</u>	<u>Sample numbering</u>	<u>Grade</u> <u>Table 1</u> <u>gms/cubic</u> <u>metre</u>
<u>A1 (Centre of Chum Creek)</u>			
0 - 1.2	Overburden (Soil and Clay)		
1.2 - 2.0	Gravel	A1/A	
2.0+	W. Shale		
<u>A2 (10 metres east)</u>			
0 - 1.1	Overburden	A2/D	
1.1 - 4.0	Gravel	A2/C 1 - 2 metres	
		A2/B 2 - 3 metres	
		A2/A 3 - 4 metres	
4.0 - 4.5	W. Shale		
<u>A3 (10 metres east)</u>			
0 - 2.2	Overburden	A3/E & A3/D	
2.2 - 5.0	Gravel	A3/C 2 - 3 metres	
		A3/B 3 - 4 metres	
		A3/A 4 - 5 metres	0.013
5.0 - 5.4	W. Shale		
<u>A4 (10 metres east)</u>			
0 - 2.5	Overburden	A4/E & A4/D	
2.5 - 4.8	Gravel/Clay	A4/C 2-3 metres (Gravel/clay)	
		A4/B 3-4 metres (wash)	
		A4/A 4-5 metres (wash)	0.21
4.8 - 5.0+	Shale		
<u>A5 (10 metres east)</u>			
0 - 3	Overburden	A5/E, A5/D, A5/C	
3 - 5	Gravel/Clay	A5/B 3-4 metres (Gravel/clay)	
		A5/A 4-5 metres (wash)	0.01
<u>A6 (15 metres east)</u>			
0 - 2.5	Overburden	A6/D, A6/C	
2.5 - 3.3	Gravel/Clay	A6/B 2-3 metres(Gravel/Clay)	
		A6/A 3-4 metres(Wash)	
3.3 - 4.0	Schist	(white)	



B1 (In centre of creek)

0	- 1.2	Overburden		
1.2	- 2.0	Clay and Gravel		
2.0	- 2.8	Coarser Wash	(B1/A)	0.03
2.8	- 3.0+	Schist		

C1 (In centre of creek)

0	- 0.2	Overburden		
0.2	- 1.3	Clay and Gravel		
1.3	- 1.7	Coarser Wash	(C1/A)	0.013
1.7	- 2.0+	Schist		



023

287024

D1 West (Around other side of creek rises quickly)

0	- 1.3	Overburden		
1.3	- 1.8	Fine Gravel & Clay	(D1/B)	
1.8	- 2.4	Grey sandy clay - Water at 2.4 metres		0.01
2.4	- 3	Wash	(D1/A)	?
3.4	- 3.7+	Schist		

D2 (20 metres South)

0	- 1.1	Overburden		
1.1	- 1.7	Clay wash	(D2/B)	
1.7	- 2.5	Coarse clay wash	(D2/A)	Trace
2.5	- 2.7+	Schist		

D3 (20 metres South)

0	- 1.0	Overburden (lower part gravelly and wet)		
1.0	- 1.7	Very clayey wash	(D3/A)	
1.7	- 3.1	Very Weathered Schist		



E1 (At North end)

0 - 0.8 Overburden
0.8 - 1.2 Clay & Gravel (E1/A)
1.2+ Weathered siltstone

E2 (20 metres South)

0 - 1.0 Overburden
1.0 - 1.6 Fine wash (E2/D)
1.6 - 2.4 Sandy wash (E2/C)
2.4 - 3.3 Sandy wash (yellow sand) (E2/B)
3.3 - 3.4 Coarse layer of wash (E2/A)
3.4+ Shale

E3 (20 metres from E2)

0 - 1.5 Overburden
1.5 - 3.0 Gravel wet (E3/A) 0.25
3.0 - 3.5 Schist



025

287026

F1 (15 metres west of creek)

0	- 0.9	Overburden		
0.9	- 1.6	Clay & Sand	(F1/D)	
1.6	- 2.5	Gravelly wash	(F1/C)	
2.5	- 3.5	Gravelly wash, more clay	(F1/B)	
3.5	- 4.0	Coarse wash	(F1/A)	0.01
4.0+		Schist		

F2 (20 metres east of F1)

0	- 1.2	Overburden		
1.2	- 2.0	Gravel (wet below 1.6 metres)	(F2/A)	0.022
2.0+		Schist		

F3 (In gully east of F1 & F2)

0	- 1.0	Overburden		
1.0	- 1.8	Clay/Gravel		
1.8	- 2.8	Gravel	(F3/A)	0.071
2.8	- 3.0+	W. Schist		



026

287027

G1 (On Chum Creek)

0	- 1.2	Clay/Overburden		
1.2	- 2.7	Sandy/Gravel	(G1/B)	0.029
2.7	- 5+	Brown wash (Failed at 5 metres)	(G1/A)	0.053

G2 (30 metres to South)

0	- 0.3	Overburden		
0.3	- 1.3	Gravel (Recent)	(G2/B)	
1.3	- 4.0+	Clay wash (Failed at 4 metres)	(G2/A)	

G3 (20 metres to South)

0	- 1.3	Overburden		
1.3	- 2.4	Sand		
2.4	- 3.7	Sandy wash		
3.7	- 4.5	Coarser wash	(G3/B)	0.016
4.5	- 5.2	Wet coarse wash	(G3/A)	0.035
5.2+		Shale		

G4 ((20 metres to South)

0	- 1.4	Overburden		
1.4	- 2.8	Sand		
2.8	- 3.8	Sandy wash	(G4/B)	
3.8	- 4.2	Coarse brown wash (Failed at 4.2 metres)	(G4/A)	0.14

G5 (20 metres to South)

0	- 1.2	Overburden		
1.2	- 2.9	Clay & Gravel		
2.9	- 4.2	Brown sand wash	(G5/A)	
4.2	- 4.8	W Shale		



027

287028

H1 on Pinnafore Lead - North side

0 - 0.3 Sandy Overburden
 0.3 - 1.3 Gravel (H1/A)
 1.3 - 2.8 Clay and Weathered Schist

H2 (15 metres South)

0 - 0.3 Overburden
 0.3 - 1.6 Gravel (loose brown) (H2/B)
 1.6 - 2.8 Grey clay/wash (H2/A) 0.27
 2.8+ W Schist

H3 (20 metres South)

0 - 0.3 Overburden
 0.3 - 1.5 Gravel (H3/B)
 1.5 - 3.3 Grey clay/wash (H3/A) 0.077
 3.3+ W Schist

H4 (20 metres South)

0 - 0.3 Overburden
 0.3 - 1.4 White Gravel (H4/B)
 1.4 - 2.8 Brown Gravel (H4/A) 0.47
 2.8 - 4 W. Schist

H5 (20 metres South)

0 - 0.2 Overburden
 0.2 - 0.8 White gravel (H5/C)
 0.8 - 1.7 Clay gravel (H5/B)
 1.7 - 2.6 Gravelly wash (H5/A) 0.045
 2.6 - 3 W Schist

H6 (20 metres South)

0 - 0.6 Overburden
 0.6 - 1.3 Clay gravel & clay wash (H6/B)
 1.3 - 2.5 Wash (H6/A) 0.013
 2.5+ W Schist



028

287029

H7 - (25 metres South)

- 0 - 1.0 Overburden
- 1.0 - 1.5 Clay/gravel
- 1.5 - 3.0 Brown wash (H7/B)
- 3.0 - 3.5 Brown wash (H7/A)
- 3.5+ W Schist

H8 (20 metres South)

- 0 - 1.0 Overburden
- 1.0 - 1.8 Dark sandy clay
- 1.8 - 3.3 Clay and gravel (H8/B)
- 3.3 - 4.1 Gravel (H8/A)
- 4.1 - 4.4+ W Schist



I1 (East side of Sludge Creek)

0 - 1.3 Overburden
 1.3 - 1.6 W basalt (no gravel)

I2 (25 metres West)

0 - 2.0 Overburden - Blue grey basaltic clay
 2.0+ W basalt - no gravel

I3 (25 metres West)

0 - 2.0 Overburden - Blue grey basaltic clay
 2.0 - 2.9 Clay & Gravel
 2.9 - 3.8 Coarse wash (I3/B)
 3.8 - 4.3 Coarse wash (Caved at 4.3)(hard digging) (I3/A) 0.029

I4 (25 metres West)

0 - 3.0 Overburden - basaltic clays
 3.0+ W. Basalt (no gravel)

I5 (25 metres West)

0 - 1.7 Overburden
 1.7 - 3.4 Mottled sandy clay (I5/B)
 3.4 - 4.0 Clay/gravel (I5/A) 0.089
 4.0+ W Basalt

I6 (25 metres West)

0 - 0.3 Overburden
 0.3 - 1.5+ Sand (loose) caving below 1.5 metres (I6/A)

I7 (15 metres West)

0 - 1.0 Overburden
 1.0+ W Basalt



030

287031

J1 (East side of Sludge Creek)

0	- 1.8	Overburden - Basaltic clays	
1.8	- 3.4	Clayey wash (dark grey) (J1/A)	0.27
3.4	- 4+	W Basalt	

J2 (15 metres West)

0	- 1.6	Overburden - Basaltic clay	
1.6	- 3.3	Clayey wash (dark grey) (J2/A)	0.045
3.3	- 4.0+	W Basalt	

J3 (15 metres West)

0	- 0.8	Overburden	
0.8	- 1.7	Blue grey sandy clay	
1.7	- 2.8	Gravelly clay (J3/A)	0.13
2.8	- 3.0+	W Basalt	



031

287032

K1 (on east side, Blanket Creek)

0	- 0.6	Overburden		
0.6	- 1.0	Clay & Gravel	(K1/C)	
1.0	- 1.7	Hard wash	(K1/B)	0.026
1.7	- 2.2	Basalt and gravel	(K1/A)	
2.2		Hard layer, basalt		

K2 (20 metres West)

0	- 1.8	Overburden		
1.8	- 2.6	Clay & Gravel	(K2/B)	
2.6	- 3.0	Hard wash	(K2/A)	
3.0+		Hard layer probably basalt		

K3 (20 metres West)

0	- 4.0	Overburden	(K3/B)	0.029
4.0	- 4.7	Sandy wash - wet	(K3/A)	0.036
4.7+		Hard Lateritic layer		

K4 (20 metres West)

0	- 1.6	Overburden - Basaltic clays		
1.6	- 3.0+	W basalt		



L1 (On south side of Sludge Creek)

0 - 0.2 Overburden
 0.2 - 1.1 Sandy clay, minor gravel (L1/A)
 1.1+ Hard basalt

L2 (20 metres North)

0 - 1.9 Overburden
 1.9 - 2.7 Clayey/gravel wash (L2/A) 0.056
 2.7 - 3.1+ Minor wash, and then weathered basalt

L3 (20 metres North)

0 - 1.6 Overburden
 1.6 - 2.3 Gravel (L3/A) 0.092
 2.3 - 3.0+ W Basalt

M1 (Single hole on Sludge Creek)

0 - 1.0 Overburden
 1.0 - 1.5 Fine clayey wash
 1.5 - 2.1 Coarse wash (M1/A) 0.78
 2.1+ Basalt

N1 (On Sludge Creek near Lefroy/Beachford Road)

0	- 2.3	Overburden		
2.3	- 3.0	Gravel	(N1/A)	0.49
3.0+		W Shale		

N2 (25 metres South)

0	- 0.3	Overburden		
0.3	- 1.3	Shallow gravel	(N2/C)	
1.3	- 2.3	Clay and sand	(N2/B)	
2.3	- 3.3	Lower gravel/wash	(N2/A)	0.045
3.3+		W Shale		

N3 (20 metres South)

0	- 0.9	Overburden and shallow gravel		
0.9	- 2.3	Light sandy clay and gravel	(N3/B)	
2.3	- 3.0	Brown wash	(N3/A)	
3.0+		W Shale		

N4 (20 metres South)

0	- 0.9	Overburden		
0.9	- 2.6	Sandy, clayey gravel	(N4/A)	
2.6+		W Schist		

O1 (On upper Sludge Creek)

0	- 1.1	Overburden		
1.1	- 1.5	Gravel and clay	(O1/B)	
1.5	- 2.2	Gravel	(O1/A)	
1.8+		W Schist		

O2 (20 metres South)

0	- 1.5	Overburden		
1.5	- 1.8	Gravel	(O2/A)	0.097
1.8+		W Schist		



P1 (on East side Shaw Creek)

0 - 1.9	Overburden		
1.9 - 2.3	Clay and gravel	(P1/A)	
2.3+	W Schist		

P2 (20 metres South West)

0 - 1.5	Overburden		
1.5 - 2.1	Fine wash		
2.1 - 2.8	Coarse grey wash	(P2/C)	
2.8 - 3.2	Coarse grey wash	(P2/B)	0.188
3.2 - 3.8	Brown wash	(P2/A)	
3.8+	Bedrock		

P3 (20 metres South West)

0 - 1.0	Overburden		
1.0 - 2.3	Clay/gravel	(P3/C)	
2.3 - 2.8	Coarse gravel	(P3/B)	
2.8 - 3.2	Coarse wash	(P3/A)	0.090
3.2 - 3.4	Coarse brown wash		
3.4+	Bedrock		

P4 (20 metres South West)

0 - 2.8	Overburden		
2.8 - 4.0	Sandy clay, some gravel clay	(P4/B)	0.024
4.0 - 4.8	Coarse sand and gravel (wash)	(P4/A)	0.60
4.8 - 5.0	Brown W Shale		

P5 (20 metres South West)

0 - 0.6	Overburden		
0.6 - 1.4	Clayey gravel	(P5/A)	
1.4 - 2.2+	W Schist		



Q1 (Golden Point & Crown west side Gully)

0	- 1.2	Overburden	
1.2	- 2.1	Clay/Gravel	(Q1/D)
2.1	- 3.2	Clay/Gravel	(Q1/C)
3.2	- 4.0	Clay/Gravel	(Q1/B)
4.0	- 4.6	Wash	(Q1/A)
4.6+		Bedrock	

Q2 (20 metres East)

0	- 1.2	Overburden	
1.2	- 2.9	Clay/gravel	(Q2/B)
2.9	- 3.8	Wash	(Q2/A)
3.8	- 4.0	W Schist	0.164

Q3 (20 metres East)

0	- 1.2	Overburden	
1.2	- 2.0	Fine grey wash	(Q3/C)
2.0	- 2.7	Coarse grey wash	(Q3/B)
2.7	- 3.3	Coarse grey wash & brown wash	(Q3/A)
3.3+		W Schist	

Q4 (20 metres East)

0	- 1.2	Overburden	
1.2	- 2.1	Sandy clay/gravel	(Q4/B)
2.1	- 2.4	Wash	(Q4/A)
2.4+		W Schist	0.184



R1 Gully near Recreation Ground

0 - 0.7	Overburden		
0.7 - 1.2	Wash	(R1/B)	
1.2 - 1.7	Clayey gravel	(R1/A)	0.088
1.7 - 2.0+	W Schist		

R2 (20 metres S.E.)

0 - 1.3	Overburden		
1.3 - 1.9	Wash	(R2/A)	0.01
1.9+	W Schist		

R3 (20 metres S.E.)

0 - 1.1	Overburden		
1.1 - 1.5	Wash	(R3/A)	
1.5+	W Schist		

S1 (Poverty Gully at Piper's Road)

0 - 1.2	Overburden		
1.2 - 2.0	Black clay and gravel	(S1/A)	0.11
2.0+	W Schist		



037

287038

T1 - Blanket Creek (N.W. side)

0 - 2.2 Overburden
2.2+ W Schist

T2 (20 metres S.E.)

0 - 1.1 Overburden
1.1 - 2.0 Black clay and gravelly wash (T2/A) 0.427
2.0+ W. Schist

T3 (20 metres to S.E.)

0 - 0.9 Overburden
0.9 - 1.4 Wash (T3/A)
1.4+ Bedrock

T4 (20 metres S.E.)

0 - 0.8 Overburden
0.8 - 1.2 Grey wash (T4/B)
1.2 - 1.7 Brown wash (T4/A) 0.145
1.7+ W Schist

T5 (20 metres S.E.)

0 - 1.2 Overburden
1.2 - 2.1 Clayey gravel (T5/B)
2.1 - 2.6 Wash (T5/A)
2.6+ W. Schist



U1 - Gully to S.E. of Blanket Creek near Piper's River Road)

0	- 1.3	Overburden	
1.3	- 2.0	Grey wash	(U1/B)
2.0	- 2.6	Brown wash	(U1/A)
2.6	- 3.2+	Bedrock	

U2 (20 metres to S.E.)

0	- 1.4	Overburden	
1.4	- 2.0	Clayey gravel	
2.0	- 2.6	Grey wash	(U2/B)
2.6	- 3.6	Brown wash	(U2/A)
3.6+		Bedrock	

U3 (20 metres S.E.)

0	- 2.0	Overburden		0.049?
2.0	- 2.8	Grey wash	(U3/A)	0.263
2.8+		Bedrock		

U4 (20 metres S.E.)

0	- 1.5	Overburden		
1.5	- 2.2	Wash	(U4/A)	0.10
2.2+		W Schist		

U5 (20 metres S.E.)

0	- 1.2	Overburden	
1.2	- 1.8	Wash	(U5/A)
1.8	- 2.2+	W Schist	



V1 (North side of Sludge Creek)

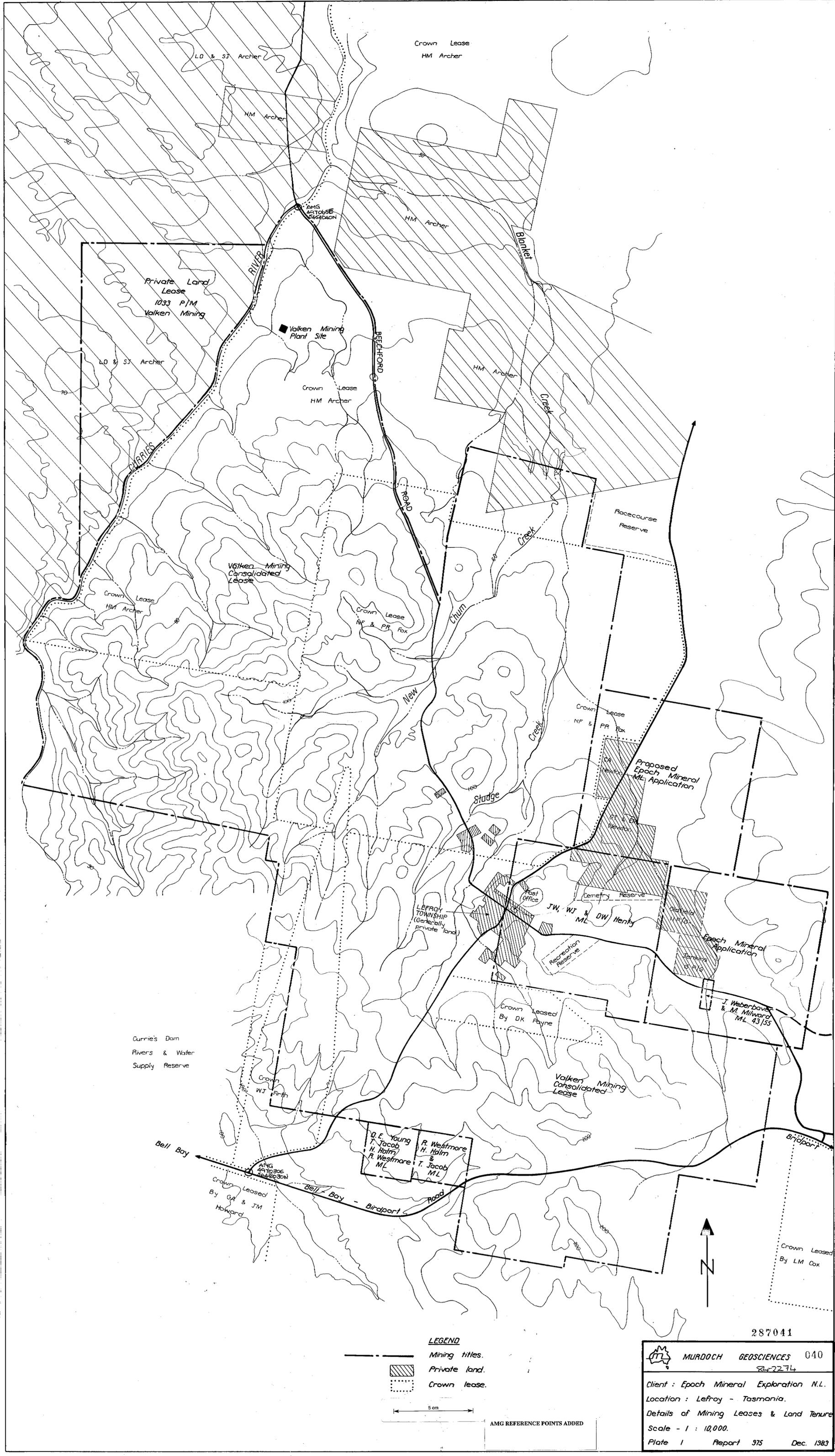
0 - 1.0 Overburden
1.0 - 1.6 W Basalt

V2

0 - 0.5 Old Gravel (previously washed?)
0.5 - 2.5 Overburden
2.5 - 3.0 Clay and Minor gravel (U2/A)
3.0+ W Basalt

V3

0 0.3 Old Gravels (previously washed?)
0.3 - 1.0 Overburden
1.0 - 1.7 Clay/Gravel (fine) U3/A 0.045
1.7+ W Basalt



Currie's Dam
Rivers & Water
Supply Reserve

LEGEND

- Mining titles.
- ▨ Private land.
- ⋯ Crown lease.

5 cm

AMG REFERENCE POINTS ADDED

287041

MURDOCH GEOSCIENCES 040
84-2274

Client : Epoch Mineral Exploration N.L.
Location : Lefroy - Tasmania.
Details of Mining Leases & Land Tenure
Scale - 1 : 10,000.
Plate 1 Report 975 Dec. 1983

