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REPORT ON SECOND STAGE OF ALLUVIAL EXPLORATION

AT LEFROY, TASMANIA

JANUARY - MARCH, 1984

FOR EPOCH MINERAL EXPLORATION N.L.

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AMG REFERENCE POINTS ADDED

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SUMMARY

1. The second stage of alluvial exploration at Lefroy has concentrated on the sampling and evaluation of Area 1 as defined by the first programme.

2. Samples of wash of 1/30th of a cubic metre have been screened to -¼ inch, passed over a Wilfry Table device, the concentrate over a gold wheel, and the total sample assayed for free gold.

3. Using this procedure about 80,000 cubic metres of wash in-situ with a recoverable grade of 0.6 gms/metre have been outlined. Such a reserve may only provide sufficient profit to pay for an alluvial plant and this may not justify the risk involved, even though there are at least 3 other alluvial areas yet to explore in detail.

4. It is very important now to determine whether the recovery indicated above can be improved at all by using some of the specialist alluvial concentrating equipment and by using large volume samples in a pilot plant situation.

5. It is also important before too much investment in alluvial exploration is made, to determine whether the main potential of the area actually lies in reef or alluvial mining. Exploration so far has concentrated on alluvial exploration, the next stage will concentrate on making a preliminary evaluation of available reefs within Area 1.

6. Later exploration will move to other areas at Lefroy.

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1. INTRODUCTION

1.1 This report summarises the second stage of exploration at Lefroy, Tasmania. The work performed was designed to test in more detail prospective area 1 as defined on Plate 1 (Scale 1:10000). The underlying objective was to locate sufficient reserves of alluvial gold to at least amortize an alluvial plant, so that a cash flow could be generated at the earliest opportunity.

1.2 During this latest programme another 100 test pits were dug within Area 1, at positions shown on Plates 2 - 4 accompanying this report. Eighty-eight samples were taken from selected sites. Each sample was passed over the Wilfry-Table twice and then the combined concentrate was put over a small automatic panning device, (gold wheel).

1.3 The gold wheel concentrate was sent to Maroochydore, where because they were still a little large for assay, were hand panned down to a suitable size. The individual samples were fire assayed, to determine the amount of free gold present, by Australian Laboratory Services, Brisbane.

1.4 Each sample was approximately 1/30th of a loose cubic metre. The treating of small samples in alluvial exploration is not ideal because of the potential for losses of gold specs along the way. However, we believe this is the best method, at this stage, for determining approximate reserves in the area. Ultimate reserves recoverable could be expected to be slightly higher than the results given herein.

1.5 Area 1 at Lefroy has been divided into six sectors, each have been given a letter, corresponding to the letter used for the reconnaissance line of test pits dug during the Stage 1 programme in November, 1983.

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1.6 Sectors M and O are on Morning Star Creek and V, N, P and Q on Sludge Creek and its respective tributaries.

The area covered by these Sectors are shown on 3 separate plans at a scale of 1:2000.

Plate 2 - Sector M,O,N and V

Plate 3 - Sector Q

Plate 4 - Sector P

The relative position of each of these plans is shown on Plate 1.

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2. ALLUVIAL GEOLOGY

2.1 Approximately 100 new test pits were dug during the second stage exploration programme at Lefroy, bringing the total holes dug to date within this area to approximately 120.

2.2 The wash tested was of two types -

(a) The brown wash associated with ancient channels meanders and

(b) The younger rejuvenated wash associated with the present water courses.

2.3 The brown wash comprises of rounded cobbles and small boulders of bedrock contained within a matrix of brown clays, silts, sands and gravels. This wash occurs within old water-courses away from the present course. It has been located on terraces at the sides of the present alluvial plain and below the present alluvial plain, away from present water-courses. This wash is discontinuous where it has been eroded by more recent stream meanders.

2.4 The darker grey wash associated with more recent water-courses is similar in lithology to the brown wash, but is different in colour, contains less clays and is less compacted and more porous, with a higher moisture content. This wash appears to be less auriferous than the older brown wash.

2.5 A light grey alluvial deposit of gravel and clay (or fine wash) occurs in many areas above the wash. In places this deposit can be quite thick. It does contain gold but generally in uneconomical proportions (0.1 - 0.3 gms/tonne). In many places this layer directly overlies the brown wash. Generally the loose grey wash is in the tributaries to the main creek.

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2.6 Basement rock intersected in virtually all test pits comprised green-grey weathered schist. The schist was very weathered, forming a smooth channel bottom, generally devoid of hard rock bars that might trap the alluvial gold. The better deposits appear to occur on flatter areas just upstream from the contact between the schists and younger Tertiary basalts. The ancient channels go under the basalts as deep leads. However, they are yet to be prospected.

2.7 Detailed descriptions of the alluvial section encountered in every hole is given in Appendix I, and the locations of each hole is shown at its respective position on Plates 1 - 3. The majority of the holes encountered wash, and those where the wash was considered to be of reasonable quality, were sampled.

2.8 The test holes are approximately 20 metres apart on lines approximately 200 metres apart, across the trend of the alluvium. Each hole is identified by a letter indicating the sector in which it occurs, and then a number.

2.9 At each hole the sample dumps are all denoted by a letter, with A always representing the deepest dump. Each dump was marked with a peg. For hole V41 for instance, the dumps are labelled V41/A, V41/B, V41/C etc. The clay overburden from each site was not kept, it was used to refill the holes.

2.10 A sample of the lowest wash was taken from chosen holes. Each sample comprised approximately 45,000 loose cubic cm or approximately 1/30th of a cubic metre. The samples were collected in cut down 200 litre drums and carted to Valken Mining's Plant site using a 4WD and trailer. At the plant site each sample was screened to $\frac{1}{4}$ inch mesh to remove the large cobbles of quartz. The undersize was passed over a Wilfry-Table to remove the lighter slimes and sands and to concentrate each sample to approximately 3 kgs.

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The tails were collected from all the samples and immediately put over the Table again and a second concentrate collected. The second concentrate was added to the first concentrate.

2.11 The combined concentrate was then passed over the gold-wheel, and a further concentrate from the gold-wheel of approximately 400 grams obtained from each sample. This later concentrate was further reduced by hand-panning it down to about 100 grams.. The final concentrate was dried, weighed and fire assayed for total recovered free gold.

2.12 Tails from the gold-wheel were put over the gold-wheel again, panned down and assayed. The tailings from the hand-panning were repanned and assayed.

2.13 Prior to assay some of the pinhead size gold was removed from the samples and these specimens accurately weighed at Australian Laboratory Services facility.

2.14 Holes N21 - N28 all failed to encounter wash. They all terminated still in slimes which should overlie deep alluvials. The slimes are yet to be assayed or mapped to determine their gold content.

2.15 Some outstanding work associated with Stage 2 exploration work in Area 1 is -

(a) Detailed mapping of geology, alluvium, old reef workings, structural trends to refine the location of reserves and provide a basis for the planning and interpreting of future exploration and mine development work. The location of underground workings from old plans could be plotted on the plan.

(b) Test pit sampling of eluvium overlying old reef workings, as such areas could provide limited additional reserves for an alluvial plant.

(c) Later, geophysical prospecting of potential reef areas to locate hitherto undiscovered reefs areas.

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3. TESTHOLE RESULTS

3.1 Full details of the amount of free gold recovered from the samples are given below in Table 1. The amount of free gold collected is given in milligrams and the grade in both grams/loose cubic metre and per bank cubic metre. The grade per bank cubic metre is higher as the alluvium swells an average of 1.3 times upon extraction. The grade per loose cubic metre is the grade per metre of loose material fed through the plant. The grade per bank cubic metre is the grade per cubic metre of material in its undisturbed state in the ground. It is this later grade that has been used to calculate the reserves.

TABLE 1

Sample No	Wt. of free gold (milligrams)	Grade in gms/cubic metre (loose)	Grade in gms/bank cubic metre
M1/A	24.5	* 0.70	0.91
M21/B&C	9.735	* 0.28	0.36
M23/B	1.09	0.03	
M24/A	13.68	* 0.39	0.51
M25/B	21.0	* 0.60	0.78
M26/A	12.5	* 0.35	0.46
M27/A	20.0	* 0.57	0.74
M28/A	14.0	* 0.40	0.52
M29/A	12.0	* 0.34	0.44
M29/B	5.75	0.16	
N1	12	* 0.34	0.44
N2	30.6	* 0.88	1.14
N3	8.0	* 0.23	0.30
O2/A	1.2	0.03	
O21/A	4.44	0.13	
O22/A&B	29.5	* 0.84	1.09
O41/A	18.5	* 0.53	0.69
O61/A	17.79	* 0.51	0.66

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Sample No	Wt. of free gold (milligrams)	Grade in gms/cubic metre (loose)	Grade in gms/bank cubic metre	
062/A	2.13	0.06		
081/A	4.0	0.11		
082/B	17.3	* 0.49	0.64	
P2/A	30.15	* 0.86	1.12	
P2/B	26.3	* 0.75	0.97	
P3/A	3.80	0.11	0.14	
P4/A	2.60	0.07	(Assay of Reconnaissance sample was 0.6 gms/tonne)	
P21/B	0.258	0.01		
P23/A	0.218	0.01		
P24/A	0.161	0.01		
P25/A	0.825	0.02		
P26/A	0.315	0.01		
P27/A	2.34	0.07		
P28/B	0.213	0.01		
P41/A	0.64	0.02		
P42/A	0.77	0.02		
P43/A	2.02	0.06		
P44/B	1.50	0.04		
P62/A	0.2	0.01		
P62/B	1.19	0.03		
P63/A	17.07	* 0.49	0.64	
P81/A	1.52	0.04		
P101/A	0.27	0.01		
P121/A	0.152	0.01		
P122/A	0.09	0.01		
P141/A	3.315	0.09		
P142/A	0.81	0.02		
P151/A	1.47	0.04		
P181/A	0.965	0.02		
P182/B	0.15	0.01		
P183/A	0.82	0.02		
P201/B	0.86	0.02		

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Sample No	Wt. of free gold (milligrams)		Grade in gms/cubic metre (loose)	Grade in gms/bank cubic metre
Q1/A	3.99		0.11	
Q2/A	1.63		0.05	
Q3/A	4.23		0.12	
Q4/A	1.32		0.04	
Q23/A	0.775		0.02	
Q24/A	0.765		0.02	
Q25/A	0.59		0.02	
Q42/A	3.15		0.09	
Q43/A	1.31		0.04	
Q44/A	0.525		0.01	
Q62/A	3.77		0.11	
Q63/A	3.81		0.11	
Q81/A	10.5	*	0.30	0.39
Q121/A	5.25		0.15	
Q122/A	1.56		0.04	
Q124/B	0.046		0.01	
Q125/A	9.0	*	0.26	0.34
Q125/C	0.10		0.01	
Q126/A	6.61		0.19	
Q127/B	0.61		0.02	
Q128/B	5.7		0.16	
Q129/B	4.65		0.13	
Q130/B	0.24		0.01	
Q141/A	0.55		0.02	
Q161/A	0.08		0.01	
V23/A	5.0		0.14	
V24/B	15.5	*	0.44	0.57
V25/A	32.7	*	0.93	1.21
V26/A	10.0	*	0.28	0.36
V27/A	2.58		0.07	
V30/B	1.96		0.06	
V41/A	17.0	*	0.48	0.62

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Sample No	Wt. of free gold (milligrams)	Grade in gms/cubic metre (loose)	Grade in gms/bank cubic metre
V42/B	4.03	0.11	
V43/B	2.26	0.06	
V44/B	6.25	0.18	
V45/A	11.0	* 0.31	0.40
V47/A	2.45	0.07	
V48/A	4.38	0.12	
Gold Pan tailings	10.48	0.003	

3.2 The samples having the better grades are marked with an asterisk in Table 1 above. Alluvial sections over which there is a grade of 0.4 gms/tonne or better are listed in Table 2 below. For each section the average grade, width and thickness has been calculated. On each line listed in Table 2 an economical cross sectional area has been determined which has been used to calculate the reserves below.

TABLE 2

Alluvial Sections - Average grade, widths, thickness, and cross sectional areas.

Line	Sections	No of Samples	Avg. Grade in bank metres	Avg. Width of section	Avg.thickness of wash	Cross-sect. area (M^2)
M	M1	1	0.91	20	0.70	14
M20	M21-29 (ex M22 & 23)	7	0.57	140	0.70	98
N	N1-3	3	0.63	60	0.90	54
O20	O21-22	2	0.63	40	0.70	28
O40	O41	1	0.69	20	0.40	8
O60	O61	1	0.66	20	0.40	8
O80	O82	1	0.64	20	0.60	12
P	P2-4	4	0.5	60	0.76	45.6
P60	P63	1	0.64	20	1.0	20
Q80	Q81	1	0.39	20	0.80	16
Q125	Q125	1	0.34	20	0.80	16
V20	V24-26	3	0.71	60	0.77	46.2
V40	V41,44,45	3	0.42	60	0.50	30

3.3. Most of these occur within two sections of Area 1. These sections have been labelled Area 1A and 1B on Plates 1-3.

(a) Area 1A - Sludge Creek from Line P to Line V. A strip of alluvium approximately 60 metres wide and 800 metres long occurs in this area closely associated with the old creek. This area includes the area of the dam and 2 road reserves which will probably have to be ultimately excluded from mining.

(b) Area 1B - Morning Star Creek from Line 041 to Line M1. A strip initially 20 metres wide, widening to 160 metres on Line M20 near the basalt contact and constricting again to only 20 metres near M1.

3.4 Within each of Areas 1A and 1B the reserves considered to be economical for extraction are calculated in Table 3 below. For each line the cross-sectional area considered economical from Table 2, has been multiplied by a meander length factor to calculate volume. The meander length factor used for each line, is the sum of half the distance of that line from each of the two adjoining lines. The volume (in bank cubic metres) is multiplied by the grade (in bank cubic metres) to determine the total gold content. The volume for each section in Area 1A and 1B has been added, as has the total gold content. From these results an average grade per bank cubic metre has been calculated.

TABLE 3 - RESERVE CALCULATIONS

Area 1A

(a)Probable

	Cross sectional area	Length	Volume	Grade	Total Gold (ozs)
Line V20	46.2	200	9240	0.71	210.9
Line V40	30	150	4500	0.42	60.77
Line N	54	100	5400	0.63	109.4
Line P	45.6	260	11856	0.5	190.6
			30996	0.57	571.67

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	Cross sectional area		Length	Volume	Grade	Total Gold (ozs)
(b) Possible						
Line V20 downstream	46.2		400	18480	0.71?	421.89
		Total		49476	0.62	993.56
Area 1B						
Line 080	12		180	2160	0.64	44.45
Line 060	8		160	1280	0.66	27.16
Line 0	12		180	2160	0.13	9.03
Line 040	8		200	1600	0.69	35.50
Line 020	28		200	5600	0.63	113.44
Line M20	98		200	19600	0.57	359.23
Line M	14		300	4200	0.91	122.89
				36600	0.60	711.70

Total Area 1A and 1B = 86076 M^3 (in situ) at a grade of 0.6 gms/tonne.

3.5 The reserves outlined by this programme are approximately 68,000 cubic metres an average grade of 0.6 gms/cubic metre plus possible additional reserves of 18,500 cubic metres at about 0.6 gms/cubic metre?, making a total of 86,500 cubic metres at 0.6 gms/cubic metre.

3.6 Converted to loose cubic metres (as feed into a plant) this indicates reserves of 112,500 cubic metres at a grade of about 0.47 gms/cubic metre.

3.7 Areas 2 - 4 outlined in Report 975 are yet to be fully tested. Area 2 could now be tested to see what additional reserves might be available in that area. Only part of Area 3 is available for testing, the remainder being covered by a current application. Area 4 is partly outside the present lease areas on private land. The area downstream from Area 1 to line J requires further evaluation as well.

3.8 These other areas combined might increase the reserves by another 200 - 300,000 cubic metres, taking total alluvial reserves available at Lefroy to around 300 - 400,000 cubic metres at say an average grade of 0.5 gms/metre.

3.9 As a follow up to the field work 2 x ¼ tonne samples were taken from hole V41. One sample was screened and put over the Wilfry table at Lefroy. The sand tailings from the Wilfry table were collected. The concentrate was run over the "gold wheel" and the tailings collected. The "gold wheel" concentrate was panned down, the free gold collected and weighed. The other full sample and the tailings from the table and gold wheel were sent to Outokumpu-Bateman in Sydney and run over the Knelson Concentrator.

3.10 The concentrate recovered over the table was shipped to Maroochydore where it was panned down and inspected. At least 40 specs of gold, including 2 large specs, were visible. The sample was assayed and found to contain 75.3 milligrams of gold. This result indicated a grade here of at least 0.6 gms/cubic metre.

3.11 The gold recovered over Knelson Concentrator in Sydney was 15.35 mgs from 232 kgs of sample or 0.13 gms/cubic metre. The extra gold recovered from the table tailings and Gold Wheel over the Knelson Concentrator was 3.5 mgs or only 0.03 gms/cubic metre.

3.12 The losses from the Knelson Concentrator were assayed from all three samples and generally over 80% of the free gold originally in the sample was recovered. However, the results from the Knelson Concentrator are much poorer than either the original sample taken from Hole V41 and quoted in Table 1, or from the larger sample described in paragraph 3.10.

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3.12 The results indicate that either -

(a) The sample used for the Knelson Concentrator tests was of a poorer grade than used for either the Wilfry Table tests or in the original sample.

(b) The Wilfry Table at Lefroy may be capable of recovering as much (if not more) gold as the Knelson Concentrator. If this is the case then it is unlikely that we can significantly improve the recovered grade encountered in the sampling programme.

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4. POTENTIAL ECONOMICS

4.1 The Stage II testing programme has outlined reserves of around 100,000 loose cubic metres of a grade of about 0.5 gms/tonne. The total gold likely to be recovered is in the order of 1700 ounces. At a gold price of $400 per ounce the projected income from an alluvial mining operation within Areas 1A and 1B is estimated to be $0.68 million ($6.80 per cubic metre).

4.2 At a treatment capacity of 300 cubic metres per day and assuming a plant running time of 90%, the annual production would be about 65,000 metres, deposits 1A and 1B would take about 1.5 years to treat. If Areas 2 - 4 and downstream from Area 1 provide another 200,000 cubic metres(?) then, the ultimate life of the alluvial mine may be about 4 - 5 years.

4.3 At this stage the most likely method of treating for the wash is to -

Stage I - Site preparation (summer time)

(a) Clear all vegetation over the proposed area to be mined and a strip 20 metres each side.

(b) Construct a by pass drain to redirect gully/creek flow away from area to be worked.

Total estimated cost .10¢ per metre of wash.

Stage II - Mining

(a) Strip topsoil and stack at edge of clearing adjacent to by-pass drain for later return to site.

(b) Mine overburden using excavater and dump in previously mined area.

(c) Mine wash and stockpile on opposite side of pit from topsoil and by-pass drain, ready for treatment by mobile plant.

Estimated cost $1.00 per metre of wash.

Stage III -

Pick up of stockpiled wash using 4WD loader. Feed into hopper leading into trommel. Trommel sizing with coarse + 200 microns being concentrated over a jig and the - 200 microns being concentrated in a Knelson Concentrator. This plant to be skid mounted and moved approximately 100 metres at a time using the excavater. It could be powered by HEC Electricity using a private line. The plant should be operated by 2 men.

For a throughput of 300 metres per day, the likely costs are -

Reloading	0.30 per metre
Labour	0.40 per metre
Electricity	0.10 per metre
Fuel/lubricants	0.10 per metre
Maintainence	0.20 per metre
Total	$1.10 per metre

Stage IV -

The gold could be recovered from the concentrate using a Butler Jig already purchased for the pilot plant operation at some central workshop point.

Estimated management overheads and on-going prospecting costs	0.40 per metre
Restoration - Average	0.10 per metre
Unforseens	0.40 per metre
Estimated total cost of treatment	$3.00 per metre

4.4 The royalty to the Tasmanian Government is 2½% and to Valken Mining is 7%. The total anticipated royalties is $0.65 per metre of wash.

4.5 The likely capital cost of a suitable 300 metre per day skid mounted plant is likely to be $100,000. An excavator could be either purchased or the work done on contract. A small loader would be required to feed the plant. The clearing could be done on contract using a bulldozer, each summer. With an excavator, loader and support equipment, the total capital costs is likely to be $200,000.

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4.6 If the capital cost is $200,000 and this is amortized over 300,000 cubic metres, then the cost of amortization per metre is $0.75.
The total estimated cost of operation is likely to be in the order of $4.40 per metre.

4.7 On the above basis the estimated profit after amortization would be about $2.40 per metre or about $150,000 per annum, on 65,000 metres production. If ultimate exploration in Areas 2 - 4 increase the total reserves to 300,000 cubic metres, then the total profit after total amortization of plant could be in the order of $700,000 in terms of 1984 dollar values.

4.8 The above preliminary profit projections are considered sufficiently encouraging to justify continued exploration in the area. The next stage of work should be directed to seeing whether the recovered grade can be improved on a bulk sample basis. A pilot operation should be set up using both the Wilfry Table and Knelson Concentrator to treat a significant volume of wash from say two separate areas, to see how bulk sample results compare with the smaller samples so far tested. Often the grades obtained from a bulk sample are better and if this is the case here then the ultimate profit might be better than that projected above.

4.9 Once the recovered grade has been determined, a full scale mining feasibility study can be carried out and a plant established. Later exploration can extend onto Areas 2 - 4 and the available hard rock gold areas explored.

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5. GEOPHYSICS

5.1 As part of the geological mapping carried out over Area 1 some reconnaissance electromagnetics was carried out using the EM 34 2 man roped reconnaissance Slingram Geophysical technique.

5.2 The work involved -

(a) One long reconnaissance line, approximately north-south through Area 1, perpendicular to the orientation of most of the major reefs in the area. Readings on this line were taken at intervals of 10 metres and the results have been plotted on Plate 4.

(b) More detailed profiling across selected lines near the Golden Paint a Crown; Bain and Richards; Native Youth and Morning Star Mines. Whereever possible these results have been contoured on Plates 5 and 6.

5.3 The results plotted on Plate ~~4~~ 7? are conductivity (in millimhos/metre) on the vertical axis against line position on the horizontal axis. The vertical scale is logarithmic with one cycle = 4 cms. The horizontal scale is 1 cm = 40 metres.

5.4 The results indicate 2 levels of conductivity in the area. The lower level is under 10 millimhos/metre and has been identified on Plate ~~4~~ 7 by a heavier black line called background. Areas where the conductivity is significantly higher are denoted by a heavy black line. The northern gradient between background and the areas of higher conductivity have been denoted by the letter G.

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5.5 It is interesting to note that gradient G coincides with many of the known lines of workings at Lefroy. The geology behind the geophysical results is not yet clearly understood. However, it is likely that the conductive anomalies reflect areas of softer, more weathered, locally deeper or more fractured bedrock. From the evidence studied in the alluvial test pits it appears that the anomalies are more likely to be of a structural rather than lithological nature.

5.6 The mineralization appears to occur on the edge or walls of the geological feature causing the conductor to occur. This pattern is not uncommon and has been seen previously adjacent to major shear or brecciation zones at the New Golden Gate Mine at Mathinna and at many other gold deposits around Australia.

5.7 In such a situation where mineralization is concentrated along one or both walls of a shear zone then the richest intersections are normally encountered where a cross-cutting shear or fracture cuts the main shear. This happens at Mathinna and there the main shear is generally devoid of mineralization, the gold being mainly concentrated in cross-cutting features.

5.8 To determine whether this pattern occurs at Lefroy or not a small 20 metre x 10 metre grid of data was collected around some of the main workings. Unfortunately thick scrub and problems with the instrument prevented completion of this work, but an indication particularly at the Golden Point and Crown was obtained that such mineralization at Lefroy may be similarly concentrated. The most likely scenario is that of a major anticline running north - south through the centre of the Lefroy goldfield. This anticline may well be heavily fractured as is the case with similar features at Alberton and Mathinna, acting as the main fluid passage for the quartz gold mineralization eminating from intruding granites at depth.

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Crystallization then having taken place in cross-cutting fractures adjacent to the major anticlinal shear?

5.9 The electromagnetic results obtained around the Golden Point and Crown and Bain and Richards are plotted on Plate 5 and the results obtained around the Native Youth and Morning Star are plotted and contoured on Plate 6. The NW - SW trending gradient on Plate 5 marking the edge of the shear zone has a very distinct bulge near the Golden Point and Crown shaft, indicating that here the shear has been cut by a significant cross-cutting feature. At the Native Youth, the gradient appears to be more east-west (?) but the extent of coverage is too limited to be confident of that at this stage. A conductor (high) superimposed onto this gradient near the old workings may reflect the cross-cutting feature and hence target here?

5.10 The extent of coverage at the Morning Star is insufficient to be effectively interpreted. However, here it appears that the gradient is orientated north-south parallel to the basalt contact. The basalt occupying the more deeply weathered valley above the shear zone?

5.11 At the Bain and Richards, the gradient is probably on the opposite side of the conductor than at the Golden Point and Crown. The trend is roughly parallel (NW - SW) to the Golden Point and Crown gradient with a bulge in the contours to the south of a line of shafts indicated on the plan. This area may ultimately be a worthwhile target? However, we believe further geophysical profiling should be carried out in the area before such targets are drilled or opened up by costeaning.

5.12 Ultimately all the gradients in the area should be located and surveyed in detail with a line separation of 20 metres and a number of targets selected for evaluation.

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6. RECOMMENDATIONS - AREA 1 ONLY

6.1 Stage III - Exploration Programme - Alluvial

(a) Establish pilot plant to see if gold recovery can be improved beyond that indicated by sampling programme. Bulk test two areas (Line P on Sludge Creek and Line 080 on Morning Star Creek).

(b) From each area approximately 100 cubic metres of wash is to be carted to Valken Mining's Plant Site and be placed on separate stockpiles. The overburden is to be returned to the pits and covered with the topsoil and levelled.

(c) To screen the wash a "make-shift" hopper and screen should be constructed on site to screen down to -1/8". The undersize should be fed over either the Knelson Concentrator or the Wilfry Table and the concentrate obtained from both methods collected separately for both sites.

(d) The gold from each set of concentrates should be extracted using a Butler Tube Jig.

(e) Estimated cost of Stage III in total is $20,000 spread over two months.

(f) The trial mining and pilot plant operation will allow an evaluation of the likely costs and hazards of alluvial mining in the area and allows an evaluation of proposed rehabilitation methods.

6.2 Stage 1 - Exploration Programme - Hardrock Areas.

(a) The geophysical trial described herein indicates that that method should be useful in locating major fault zones and contacts between different lithologies and degrees of shearing within the Mathinna Beds, but may not always locate all zones of mineralization.

(b) The excavator costean over the Morning Star Reef shows that this is a very quick and effective method of locating reefs and opening them up for sampling.

../21

022

(c) As a result a combination of geophysics and costeans are proposed as the method of exploration of the reefs. Stage I programme which could be implemented at any time, should involve excavation costeaning of 5 selected reef systems at intervals of 100 metres along each reef and a regional programme of geophysics within Area 1 to define the major geo-electric contacts, which may reflect faults that in part have controlled the mineralization.

APPENDIX I

M21

0 - 0.6	o/b	
0.6 - 0.8	D	
0.8 - 1.0	C	Wash
1.0 - 1.2	B	
1.2 - 1.8	A	
1.8+	Basalt	

M22

0 - 3.5	Extremely weathered basalt

M23

0 - 1.5	o/b
1.5 - 1.8	C Grey-brown clay and gravels
1.8 - 2.0	B Grey-brown mottled gravels
2.0 - 2.6	A Bedrock (basalt)
2.6 - 3.2	Bedrock

M24

0 - 0.9	o/b
0.9 - 1.2	B Brown and grey clays, minor gravels
1.2 - 1.8	A Grey-brown clay and gravel
1.8+	Bedrock

M25

0 - 1.2	o/b
1.2 - 1.5	C Brown-grey clay and gravel
1.5 - 1.8	B Brown gravel wash
1.8 - 2.1	A Extremely weathered basalt
2.1+	B/r Basalt

M26

0 - 1.0	o/b
1.0 - 1.2	B Brown-grey clay and gravel
1.2 - 2.0	A Brown wash
2.0+	B/r Basalt

M27

0 - 1.0		o/b
1.0 - 1.4	B	Brown-grey clay and gravel
1.4 - 2.0	A	Brown wash
2.0 +		B/r Basalt

M28

0 - 0.9		o/b
0.9 - 1.9	A	Brown wash
1.9+		B/r Basalt

M29

0 - 0.6		o/b
0.6 - 0.8	B	Brown clay and gravel
0.8 - 1.4	A	Grey brown gravel and clay
1.4 - 1.8		B/r Basalt

N21

0 - 2.8		Tailings

N22

0 - 0.7		Tailings
0.7 - 2.6		Tailings

N23

0 - 1.4		
1.4 - 2.6	A	Tailings
2.6 - 2.8+		

N24

0 - 1.0		
1.0 - 1.6	A	Tailings
1.6 - 3.0+	B/r	

N25

0 - 0.7		
0.7 - 1.2	C	
1.2 - 1.7	B	Tailings
1.7 - 2.2	A	
2.2 - 2.5		

021

0 - 1.3		o/b
1.3 - 1.6	B	Grey-brown gravel and clay
1.6 - 2.0	A	Brown wash
2.0+		B/r

022

0 - 0.9		O/B
0.9 - 1.1	C	Grey-brown gravel and clay
1.1 - 1.7	B	Brown finer wash, gravel and clay
1.7 - 1.9	A	Brown wash
1.9+		B/r

041

0 - 1.5		o/b
1.5 - 1.9	C	Grey-brown gravel and clay
1.9 - 2.3	B	Grey and brown wash
2.3 - 2.6	A	Grey-brown coarse gravel and clay
2.6 - 2.8		B/r

042

0 - 1.1		o/b
1.1 - 2.1	C	Brown clay, coarse gravel and clay
2.1 - 2.4	B	Grey-brown gravel and clay
2.4 - 2.6	A	Predom. W. Schist with some brown coarse gravel and clay
2.6+		B/r

061

0 - 0.9		o/b
0.9 - 1.5	B	Mottled brown gravel and clay
1.5 - 1.8	A	Grey wash
1.8+		Bedrock

062

0 - 1.0		o/b
1.0 - 1.5	B	Mottled brown gravel and clay
1.5 - 2.0	A	Grey wash
2.0+		B/r

081

0	- 1.0	o/b
1.0	- 1.7	B Brown-grey wash
1.7	- 2.0	A Predominantly bedrock
2.0+		Bedrock

082

0	- 1.2	o/b
1.2	- 1.7	A Grey wash
1.7+		Bedrock

083

0	- 0.7	o/b
0.7	- 1.1	B Brown-grey clay and gravel
1.1	- 1.8	A Bedrock

P21

0	- 0.6	o/b
0.6	- 1.4	B Mottled grey and brown gravel
1.4	- 1.9	A Weathered bedrock
2.4+		Bedrock

P22

0	- 1.3	o/b
1.3	- 1.6	D Clay and gravel
1.6	- 2.0	C Finer gravel
2.0	- 2.4	B Some bedrock and gravel
2.4+		B/r A - weathered bedrock

P23

0	- 1.1	o/b
1.1	- 3.1	B Fine gravel and clay
3.1	- 3.5	A Gravel and clay
3.5+		Bedrock

P24

0	- 1.1	o/b
1.1	- 2.1	C Finer gravel and clay
2.1	- 2.7	B Finer gravel and clay
2.7	- 3.6	A Gravel and clay
3.8+		Bedrock

027

286028

P25

0 - 1.2		o/b
1.2 - 1.6	D	Sandy clay, some gravel
1.6 - 2.8	C	Sandy clay, some gravel
2.8 - 3.6	B	Sandy clay, some gravel
3.6 - 4.4	A	Bedrock and gravel
4.4+		B/r

P26

0 - 1.1		o/b
1.1 - 1.9	E	Gravel and clay finer
1.9 - 2.6	D	Gravel and clay finer
2.6 - 3.1	C	Gravel and clay finer
3.1 - 4.0	B	Grey gravel and clay
4.0 - 4.7	A	Wash
4.7+		B/r

P27

0 - 1.1		o/b
1.1 - 1.8	F	Gravel and clay (finer)
1.8 - 2.3	E	Gravel and clay (finer)
2.3 - 3.2	D	Gravel and clay (finer)
3.2 - 3.8	C	Gravel and clay
3.8 - 5.0	B	Wash
5.0 - 5.8	A	Wash
5.8+		B/r W.Schist

P28

0 - 1.1		o/b
1.1 - 1.6	C	Clayey gravel
1.6 - 3.2	B	Clayey gravel (good wash)
3.2 - 4.2	A	W bedrock and clayey gravel
4.4+		B/r W.Schist

P41

0 - 1.1		o/b
1.1 - 1.9	C	Grey clay and gravel
1.9 - 2.4	B	Grey clay and gravel (coarser)
2.4 - 3.1	A	Brown wash
3.1+		B/r

028

286029

P42

0 - 1.0		o/b
1.0 - 2.0	D	Grey-brown mottled clay and gravel
2.0 - 2.5	C	Grey-brown clay and gravel
2.5 - 3.5	B	Clay and gravel
3.5 - 4.2	A	Wash
4.2+		B/r

P43

0 - 0.6		o/b
0.6 - 0.9	D	Grey clay and gravel (Top wash)
0.9 - 2.0	C	Clay and gravel
2.0 - 3.0	B	Grey wash and clay
3.0 - 3.5	A	Wash
3.5+		B/r

P44

0 - 0.8		o/b
0.8 - 1.1	D	Top wash
1.1 - 1.7	C	Grey wash
1.7 - 2.3	B	Grey gravel and clay (fine)
2.3 - 2.7	A	Weathered bedrock
2.7+		B/r

P61

0 - 1.2		o/b
1.2 - 1.8	B	Upper wash
1.8 - 2.4	A	Grey clayey sand
2.4		B/r

P62

0 - 1.0		o/b
1.0 - 1.7	B	Wash
1.7 - 3.2	A	Grey clayey sand and gravel
3.2+		B/r

P63

0 - 1.4		o/b
1.4 - 1.8	B	Grey clay sand and gravel
1.8 - 2.9	A	Grey clay sand and gravel
2.9 - 3.2+		B/r

P64

0 - 1.1		o/b
1.1 - 1.9	B	Mottled brown-grey clay, sand and gravel
1.9 - 2.7	A	Grey clay, sand and gravel
2.7+		B/r

P81 (in gully)

0 - 0.5		o/b
0.5 - 1.2	A	Dark Clay wash
1.2+		Bedrock

P101 (in gully)

0 - 0.4		o/b B - Gravel
0.4 - 1.3	A	Brown clayey wash
1.3 - 2.5+		Bedrock

P102

0 - 0.7		o/b
0.7 - 1.1	A	Brown clay gravel
1.1+		Bedrock

P121

0 - 0.8		o/b
0.8 - 1.4	C	Mottled brown grey clay and gravel
1.4 - 1.8	B	Mottled grey brown wash and clay
1.8 - 2.0	A	Grey clay and gravel
2.0+		Bedrock

P122

0 - 0.8		o/b
0.8 - 1.2		Grey sandy clay and gravel
1.2+		Bedrock

P141

0 - 0.5		o/b
0.5 - 0.8	E	Brown grey mottled clay and gravel
0.8 - 1.9	D	Grey clay and gravel
1.9 - 2.2	C	Grey clay and gravel (fine wash)
2.2 - 2.8	B	Grey clay and gravel (wash)
2.8 - 3.2	A	Brown wash
3.2+		Bedrock

P142

0 - 1.2		o/b
1.2 - 1.8	B	Grey clay and gravel
1.8 - 2.2	A	Mottled brown grey gravel and clay
2.2+		Bedrock

P151

0 - 1.0		o/b
1.0 - 1.9	B	Grey wash (fine)
1.9 - 2.3	A	Coarse wash
2.3+		Bedrock

P181

0 - 0.7		o/b
0.7 - 1.4	C	Mottled brown and grey clay, minor gravel
1.4 - 1.9	B	Clay, minor gravel
1.9 - 3.4	A	W. bedrock
3.6		B/r W. bedrock

P182

0 - 1.0		o/b
1.0 - 1.3	B	Mottled grey brown clay, minor gravel
1.3 - 2.6	A	W. bedrock
2.6 - 2.8		B/r W. bedrock

P183

0 - 0.9		o/b
0.9 - 1.8	B	Grey/brown clay and minor gravel
1.8 - 3.0	A	Wash and W. bedrock
3.0 - 3.2		B/r W. bedrock

P201

0 - 0.5		o/b
0.5 - 0.9	B	Shallow gravel and clay
0.9 - 1.6	A	Brown clay, W. bedrock and minor gravel
1.6		B/r W. Bedrock

Q21

0 - 0.5		o/b
0.5 - 1.1	C	Brown to grey clay, minor gravel
1.1 - 2.2	B	W. Schist and grey sandy clay
2.2 - 2.7	A	Weathered Schist
2.7		B/r Schist

Q22

0 - 0.5		o/b
0.5 - 1.3	B	Brown/grey sandy to gravelly clay
1.3 - 1.7	A	Some schist and some grey clayey gravel
1.7 - 2.7		B/r Schist

Q23

0 - 0.5		o/b
0.5 - 1.4	C	Grey/Brown sandy clay
1.4 - 2.7	B	Mainly schist, some clayey gravel
2.7 - 3.5	A	Weathered schist
3.5		B/r Schist

Q24

0 - 0.9		o/b
0.9 - 1.6	B	Grey/brown clayey sand
1.6 - 2.4	A	Black wash
2.4		B/r

Q25

0 - 1.1		o/b
1.1 - 2.2	B	Mottled brown and grey sandy clay
2.2 - 3.2	A	Grey/brown clayey sand
3.2		B/r

Q41

0	- 0.5		o/b
0.5	- 1.7	B	Grey/brown sandy clay
1.7			B/r Schist

Q42

0	- 1.0		o/b
1.0	- 1.4	C	Finer dark wash and clayey sand
1.4	- 1.7	B	Dark reworked wash
1.7	- 2.0	A	W.Schist and wash

Q43

0	- 0.8		o/b
0.8	- 1.3	C	Clay and gravel dark
1.3	- 1.5	B	Dark wash
1.5	- 2.0	A	W.Schist
2.0			Bedrock

Q44

0	- 1.5		o/b
1.5	- 2.2	C	Grey/brown sandy clay
2.2	- 2.7	B	Grey clayey sand and gravel
2.7	- 3.0	A	Brown wash
3.0			Bedrock

Q61

0	- 0.6		o/b
0.6	- 1.0+		Bedrock

Q62 (Centre of gully)

0	- 0.6		o/b
0.6	- 1.0	B	Finer dark gravel and clay
1.0	- 1.6	A	Gravel-wash
1.6+			Bedrock

Q63

0 - 0.9	o/b	
0.9 - 1.3	B	Dark finer gravel and clay
1.3 - 2.0	A	Gravel wash
2.0	B/r	

Q64

0 - 0.8	o/b	
0.8 - 2.0	A	Grey/brown gravelly clay
2.0+	B/r	

Q81

0 - 0.6	o/b	
0.6 - 0.9	B	Dark clay and gravel
0.9 - 1.6	A	Dark wash
1.6+	B/r	

Q121

0 - 1.8	o/b	
1.8 - 2.2	B	Grey clayey gravel
2.2 - 2.7	A	Brown wash
2.7 - 3.2	B/r	Schist

Q122

0 - 1.2	o/b	
1.2 - 1.5	B	Grey gravelly clay
1.5 - 1.9	A	Grey wash
1.9 - 2.2	B/r	Schist

Q123

0 - 1.1	o/b	
1.1 - 1.4	B	Grey sandy clay and gravel
1.4 - 2.3	A	Weathered Schist
2.3 - 3.5	B/r	Weathered Schist

Q124

0 - 1.0	o/b	
1.0 - 1.5	B	Grey sandy clay and gravel
1.5 - 2.5	A	Weathered Schist
2.5 - 2.9		Weathered Schist

Q125

0 - 1.0	o/b	
1.0 - 1.3	C	Grey sandy clay
1.3 - 2.0	B	Grey sandy clay and gravel
2.0 - 2.7	A	Very Weathered Schist and wash
2.7		Schist

Q126

0 - 1.2	o/b	
1.2 - 1.5	C	Grey clayey sand
1.5 - 1.8	B	Grey clayey sand and gravel
1.8 - 3.1	A	Wash and Weathered Schist
3.1	B/r	Schist

Q127

0 - 1.5	o/b	
1.5 - 3.0	B	Sandy clay
3.0 - 3.5	A	Weathered bedrock and clayey sand and gravel
3.5	B/r	Schist

Q128

0 - 1.6	o/b	
1.6 - 2.1	D	Sandy clay
2.1 - 3.5	C	Sandy clay
3.5 - 4.1	B	Grey sandy clay and gravel
4.1 - 4.5	A	Weathered Bedrock
4.5	B/r	Schist

Q129

0 - 1.0	o/b	
1.0 - 1.2	D	Clayey sand and minor gravel
1.2 - 1.8	C	Finer wash
1.8 - 2.6	B	Grey wash
2.6 - 3.9	A	Weathered bedrock and wash
3.9	B/r	Schist

Q130

0 - 0.9	o/b	
0.9 - 1.2	C	Finer and darker wash
1.2 - 1.4	B	Wash
1.4 - 2.0	A	Weathered Schist
2.0	B/r	Weathered Schist

Q141

0 - 1.8	o/b	
1.8 - 2.4	B	Gravel and clay
2.4 - 3.2	A	Wash
3.2	B/r	

Q142

0 - 0.7	o/b	
0.7 - 1.6	B	Gravel and clay
1.6 - 2.7	A	Wash
2.7	B/r	

Q143

0 - 1.0	o/b	
1.0 - 1.4	B	Light grey-fawn clay and gravel
1.4 - 2.1	A	Light grey-green weathered schist
2.1	B/r	

Q144

0 - 1.4	o/b	
1.4 - 1.8	B	Brown clay and gravel
1.8 - 2.1	A	Fawn clay and gravel
2.1	B/r	

Q161

0 - 0.7	o/b	
0.7 - 1.5	C	Grey-brown mottled sandy clay
1.5 - 2.8	B	Grey-brown mottled clay and gravel
2.8 - 3.3	A	Weathered bedrock
3.3	Bedrock	

Q162

0 - 2.0	o/b	
2.0 - 2.7	C	Fine grey-brown gravel and clay
2.7 - 3.3	B	Fine grey-brown gravel and clay
3.3 - 3.7	A	Grey-brown gravel and clay
3.7	B/r	

Q163

0 - 1.0	o/b	
1.0 - 1.7	C	Grey-brown sandy clay and minor gravel
1.7 - 2.1	B	Grey-brown sandy clay
2.1 - 2.7	A	Gravel and weathered bedrock
2.7		Bedrock

Q201

0 - 1.0	o/b	
1.0 - 1.6	B	Brown gravelly clay
1.6 - 1.8	A	Weathered Schist
1.8 - 2.4	B/r	

Q202

0 - 1.1	o/b	
1.1 - 1.5	B	Brown gravelly clay
1.5 - 1.9	A	Weathered Schist
1.9 - 2.4	B/r	Schist

V21

0 - 2.0+	Weathered basalt	

V22

0 - 1.0	o/b	
1.0 - 1.2	B	Weathered basalt and some gravel
1.2 - 1.7	A	Weathered basalt
1.7 - 2.0	B/r	Basalt

V23

0 - 0.8	o/b	
0.8 - 1.5	A	Brown-grey wash.
1.5 - 2.6	B/r	Basalt boulder?

V24

0 - 1.9	o/b	
1.9 - 2.5	C	Gravel and clay
2.5 - 3.1	B	Brown-grey wash
3.1 - 3.4	A	Extremely weathered basalt
3.4+	B/r	Basalt

V25

0 - 1.6	o/b	
1.6 - 1.7	B	Gravel and clay
1.7 - 2.3	A	Brown-grey wash
2.3 - 3.2+	B/r	

V26

0 - 1.6	o/b	
1.6 - 2.2	B	Gravel and clay
2.2 - 3.0	A	Wash
3.0+	B/r	Basalt

V27

0 - 0.6	o/b	
0.6 - 0.8	B	Gravel and clay
0.8 - 2.0	A	Brown and grey wash
2.0 - 2.3	B/r	Basalt

V28

0 - 0.6	o/b	
0.6 - 1.7	B	Wash (finer)
1.7 - 1.9	A	Basalt bedrock

V29

0 - 2.8+	Weathered Basalt	

V30

0 - 0.8	o/b	
0.8 - 1.2	B	Wash
1.2 - 1.5	A	Wash and some bedrock
1.5+	Basalt bedrock	

V41

0 - 1.1	o/b	
1.1 - 1.8	C	Mottled brown and grey clay and gravel
1.8 - 2.0	B	Mottled brown and grey clay and gravel
2.0 - 2.4	A	Wash
2.6	B/r	Basalt

V42

0 - 2.2	o/b	
2.2 - 2.7	C	Recent grey wash
2.7 - 3.1	B	Recent grey wash
3.1 - 4.4	A	Weathered basalt
4.6	B/r	Basalt

V43

0 - 1.3	o/b	
1.3 - 1.6	C	Clay and gravel
1.6 - 1.8	B	Brown wash
1.8 - 2.4	A	Weathered basalt
2.4+	B/r	Basalt

V44

0 - 1.3	o/b	
1.3 - 1.7	B	Brown wash
1.7 - 1.8	A	Weathered basalt
1.8+	B/r	Basalt

V45

0 - 1.6	o/b	
1.6 - 2.0	A	Brown wash
2.0 - 2.2	B/r	Basalt

V46

0 - 0.9	o/b	
1.2 - 1.5	B	Brown wash
1.5 - 1.9	A	Brown wash
2.1	B/r	Basalt

V47

0 - 1.0	o/b	
1.0 - 1.6	B	Brown wash
1.6 - 2.1	A	Brown wash
2.1 - 2.2	B/r	Basalt

039

286040

V48

0 - 0.7	o/b	
0.7 - 1.4	B	Grey wash
1.4 - 1.6	A	Grey wash
1.6+	B/r	Basalt

V49

0 - 0.7	o/b	
0.7 - 1.2	B	Darker gravel and clay
1.2 - 1.5	A	Grey gravel and clay
1.5 - 1.8	B/r	Basalt


AMG
497065E
5454040N
Private Land
Lease
1033 P/M
Valken Mining
Valken Mining
Plant Site
RIVER
CURRIES
BEECHFORD
ROAD
Blanket
Creek
Alluvium - yet to be covered
by reconnaisance survey.
Valken Mining
Consolidated
Lease
Perpetual
Creek
Chum
Kitto Chum
Chum
New Pinafore
White
Pinafore
East Chum
East Pinafore
Central Pinafore
Pinafore North
Pinafore South
AREA 3
N, M, O, V
SECTIONS
PLATE 2
Golden Era
North Clarence
South Clarence
Morning Star
Morning Star
Creek
Sludge
Nugget
Native
South
LEFROY
Hit or Miss
Proposed
Epoch Mineral
ML Application
AREA 4
AREA 1
Bain & Richards
Golden
Paint a Crown
Australasian
Mc Ivor
Brisbane
Tablier
AREA 2
Windermere
Epoch Mineral
Application
J. Weberbauer
& M. Milward
ML
P SECTION
FOR DETAILS
SEE PLATE 3
Q SECTION
FOR DETAILS
SEE PLATE 4
Valken Leefloyd
Consolidated Mining
Lease
Golden Crest
Reward
New Years Gift
Specimen Hill Reefs
D.E. Young
T. Jacob
H. Holm
R. Westmore
ML
R. Westmore
H. Holm
&
T. Jacob
ML
Land O' Cakes
Volunteer
Bell Bay
AMG
497030E
5448030N
Bell - Bay - Birdport Road
Bridport
Alluvial Potential
in this area
- not yet tested.
Monarch
N
286041
AMG REFERENCE POINTS ADDED
84-2275.
LEGEND
Main prospective alluvial areas.
Other alluvial areas.
Gold reefs.
Sites tested by 1983 programme.
MURDOCH GEOSCIENCES
Client : Epoch Mineral Exploration N.L
Location : Lefroy - Tasmania.
1983 Alluvial Testing Programme.
Scale - 1 : 10,000
1325
Plate 2 Report 975 Dec. 1983
Also Plate 1 Report 1008 June 1984
5 cm


BEECHFORD ROAD
MORNING STAR CREEK
CCS
Pm
Tb
Qa
Qs
Tailings
Dumps
Morning Star Old Workings
Im reef uncovered by costean
Old fence line
TRAMWAY
(NB: Wash on this line is grey / brown)
Native Youth Shaft
Excelsior Shaft
Old battery site
Dam
City of Launceston
Sand Tailings
Old Tailings
Post Office
JW, WJ & DW HENTY ML
Cemetery Reserve
Shaft
For details see Plate 3 Pm
LEGEND
Old alluvium workings on Qs areas
Qa : Quaternary recent alluvium
Qs : Quaternary sediments (includes alluvium terraces)
CCS : Cainozoic Siliceous Conglomerate
Tb : Tertiary basalt
Pm : Lower Palaeozoic Mathinna Beds
LEGEND
o/b : Overburden.
s/c : Sandy / clay.
G/C : Gravel & clay (light grey)
W : Wash (dark grey).
BW : Terrace wash (brown).
Br : Bedrock.
[0·11] : Sample test results gms / cubic metre
5 cm
286042
MURDOCH GEOSCIENCES
84-2275
Client : Epoch Mineral Exploration N.L.
Location : Lefroy - Tasmania.
Plan showing results of alluvial test pits.
Areas : I-O, M, V & N
Scale - 1 : 2000.
1324
Plate 2 Report 1008 March 1980

Pm

For detail see Plate 2

Sand Tailings

Old Tailings

ROAD

Qa

Qs

BR-10
BR-8
BR-6
BR-4
BR-2
BR 0
BR 2

GPC-12
GPC-10
GPC-8
GPC-6
GPC-4
GPC-2
GPC 0
GPC 2
GPC 4
GPC 6

P1
P2 [0.56]
P3 [0.11]
P4 [0.6]
P5
Q1
Q201
Q202

P201 (0-0.9 o/b; 0.9-1.6 G/C; 1.6+ Br) [L]

P28 (0-1.1 o/b; 1.1-4.0 G/C; 4.0+ Br) [L]
P27 (0-1.1 o/b; 1.1-3.8 G/C; 3.8-5.8 W; 5.8+ Br) [L]
P26 (0-1.2 o/b; 1.2-4.0 G/C Br; 4.0+) [L]
P25 (0-1.1 o/b; 1.1-4.0 G/C; 4.0-4.7 W; 4.7+ Br) [L]
P24 (0-1.1 o/b; 1.1-3.5 G/C Br; 3.5+) [L]
P23 (0-1.1 o/b; 1.3-3.6 G/C Br; 3.6+) [L]
P22 (0-1.3 o/b; 1.3-2.2 G/C Br; 2.4+) [L]
P21 [L]
(0-0.6 o/b; 0.6-1.4 G/C Br; 7.4+)

P183 (0-1.8 o/b; 1.8-3.0 W; 3.0+ Br) [L]
P182 (0-1.3 o/b; 1.3+ Br) [L]
P181 (0-1.9 o/b; 1.9+ Br) [L]

P41 (0-1.1 o/b; 1.1-2.4 G/C; 2.4-3.1 BW; 3.1+ Br) [L]
P42 (0-1.1 o/b; 1.0-3.5 G/C; 3.5-4.2 W; 4.2+ Br) [L]
P43 (0-0.6 o/b; 0.6-2.0 G/C; 3.6+ Br) [L]
P44 (0-0.8 o/b; 0.8-1.7 W; 1.7-2.3 G/C; 2.3+ Br) [L]

P191 (0-1.0 o/b; 1.0-2.3 W; 2.3+ Br) [L]

P141 (0-0.8 o/b; 0.8-2.8 G/C; 2.8-3.2 BW; 3.2+ Br) [L]
P142 (0-1.2 o/b; 1.2-2.2+ G/C; 2.2+ Br) [L]

P61 (0-1.2 o/b; 1.2-1.8 W; 1.8-2.4 G/C; 2.4+ Br)
P62 (0-1.0 o/b; 1.0-1.7 W; 1.7-3.2 G/C; 3.2+ Br) [L]
P63 (0-1.4 o/b; 1.4-2.3 G/C; 2.3+ Br) [0.49]
P64 (0-1.1 o/b; 1.1-2.7 G/C; 2.7+ Br)

P81 (0-0.5 o/b; 0.5-1.2 W; 1.2+ Br) [L]

P122 (0-0.8 o/b; 0.8-1.2 g/c; 1.2+ Br) [L]
P121 (0-0.8 o/b; 0.8-2.0 g/c; 2.0+ Br) [L]

P101 (0-0.4 o/b; 0.4-1.3 W; 1.3+ Br) [L]
P102 (0-0.7 o/b; 0.7-1.1 G/C; 1.1+ Br) [L]

N

5 cm

LEGEND

o/b : Overburden.
s/c : Sandy / clay.
G/C : Gravel & clay (light grey).
W : Wash (dark grey).
BW : Terrace wash (brown).
Br : Bedrock.
[0.11] Sample test results gms / cubic metre

LEGEND

\\\\\\ : Old alluvium workings on Qs areas.
Qa : Quaternary recent alluvium.
Qs : Quaternary sediments (includes alluvium terraces).
CCS : Cainozoic Siliceous Conglomerate.
Tb : Tertiary basalt.
Pm : Lower Palaeozoic Mathinna Beds.
—·—·— : Geological boundary

286043

MURDOCH GEOSCIENCES

Client : Epoch Mineral Exploration N.L.

Location : Lefroy - Tasmania.
Plan showing results of alluvial test pits.
Area 1 - P

Scale - 1 : 2000.

1326

Plate 3 Report 1008 March 1984

JW, WJ & DW Henty
ML

Shaft

LEFROY TOWNSHIP
(Generally private land)

Sludge Creek

Reserve

Recreation

Crown Leased By D.K Payne

Line of shafts

Shaft

Windimere Tunnel

Valken Mining Consolidated Lease

200

5 cm

LEGEND

o/b : Overburden
s/c : Sandy / clay
G/C : Gravel & clay (light grey).
W : Wash (dark grey)
BW : Terrace wash (brown).
Br : Bedrock.
(0·11) Sample test results gms / cubic metre

LEGEND

/////// : Old alluvium workings on Qs areas.
Qa : Quaternary recent alluvium.
Qs : Quaternary sediments (includes alluvium terraces).
CCS : Cainozoic Siliceous Conglomerite.
Tb : Tertiary basalt.
Pm : Lower Palaeozoic Mathinna Beds.

286044

MURDOCH GEOSCIENCES

Client : Epoch Mineral Exploration N.L.

Location : Lefroy - Tasmania.
Plan showing location of alluvial test pits.
Area I - Q

1327

Scale - 1 : 2000.

Plate 4 Report 1008 March 1984

BEECHFORD ROAD

CREEK

STAR

MORNING

CCS

Tb

Pm

Qa

Qs

Tailings

Old Tailings

Sand Tailings

Dam

Dumps

Old battery site

Old fence line

Excelsior Shaft

Native Youth Shaft

Shaft

Tramway

Post Office

Cemetery Reserve

JW, WJ & DW HENTY

ML

Costean Im reef exposed

Morning Star Workings

POSSIBLE TARGET AREA (Conductive Anomaly)

POSSIBLE TARGET AREA (Conductive area on gradient)

M23 M24 M25 M26 M27 M22 M21 M28 M29

V21 V22 V23 V24 V25 V26 V27 V28 V29 V30 V42 V43 V44 V45 V46 V47 V48 V49

N1 N2 N3 N4 NY 10 NY 9 NY 8 NY 6 NY 4 NY 2 NY 0 NY-4

BR-12 BR-10 BR 8 BR-6 N24 BR-4 N23 N22 N21 BR-2 BR-01 BR 2 BR 4 BR 6 BR 8 BR 10 BR 12 BR 14 BR 16

GPC-12 GPC-10 GPC-8 GPC-6 GPC-4 GPC-2 GPC 0 GPC 2 GPC 4 GPC 6 GPC 8

P1 P2 P3 P4 P5

Q1 Q2 Q4 Q8 Q130 Q129 Q128 Q127 Q126 Q125 Q20 Q22 Q21 Q23

MS-6 MS-4 MS-2 MS 2 MS 4 MS 6 MS 8 MS 10

01 02 03 021 022 041 042 061 063 081 082 083

LEGEND

: Old alluvium workings on Qs areas

Qa : Quaternary recent alluvium

Qs : Quaternary sediments (includes alluvium terraces).

CCS : Cainozoic Siliceous Conglomerate

Tb : Tertiary basalt

Pm : Lower Palaeozoic Mathinna Beds

5 cm

MURDOCH GEOSCIENCES

84-2275

Client : Epoch Mineral Exploration N.L.

Location : Lefroy - Tasmania.

Geophysical Results.

Areas : I - O, M, V & N. 1328

Scale - 1 : 2000.

Plate 5 Report 1008 March 1984

286045

JW, WJ & DW Henty
ML

Shaft

Shaft

LEFROY TOWNSHIP
(Generally
private land)

Recreation Reserve

Possible Target Area
Conductive area
on gradient

Crown Leased
by DK Payne

Possible Target Area
Conductive anomaly

Line of shafts

Shaft

Windimere
Tunnel

Valken Mining
Consolidated Lease

200

286046

5 cm

LEGEND

: Old alluvium workings on Qs areas.
Qa : Quaternary recent alluvium.
Qs : Quaternary sediments (includes alluvium terraces).
CCS : Cainozoic Siliceous Conglomerite.
Tb : Tertiary basalt.
Pm : Lower Palaeozoic Mathinna Beds.
—·—·— : Geological boundary.
—14— : Geophysical contours - Electro mognetics (GM 34)

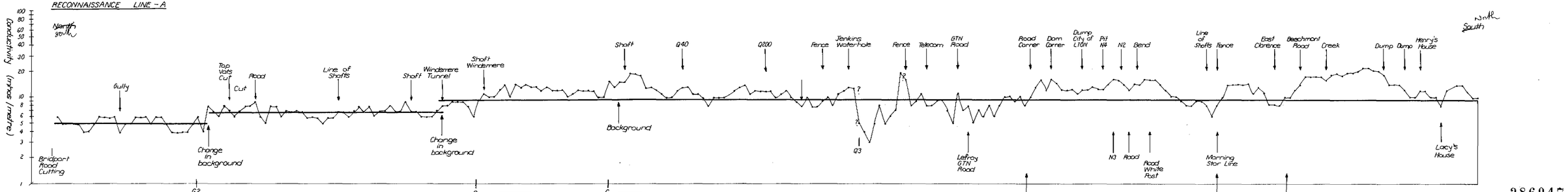
MURDOCH GEOSCIENCES

Client : Epoch Mineral Exploration N.L.
Location : Lefroy - Tasmania.
Geophysical Results.
Area I - Q.
Scale - 1 : 2000.
Plate 6 Report 1008 March 1984

1329

ELECTROMAGNETIC SURVEY - LEFROY

RECONNAISSANCE LINE - A



286047

5 cm

LEGEND

: Conductive anomalies.

G : Northern gradients.

MURDOCH GEOSCIENCES

84-2275

Client : Epoch Mineral Exploration N.L.

Location : Lefroy - Tasmania.

Scales : - Vertical Scale - 1 cycle = 4 cms

Horizontal Scale - 1 cm = 40 m. 1330

Plate 7 Report 1008 June 1984