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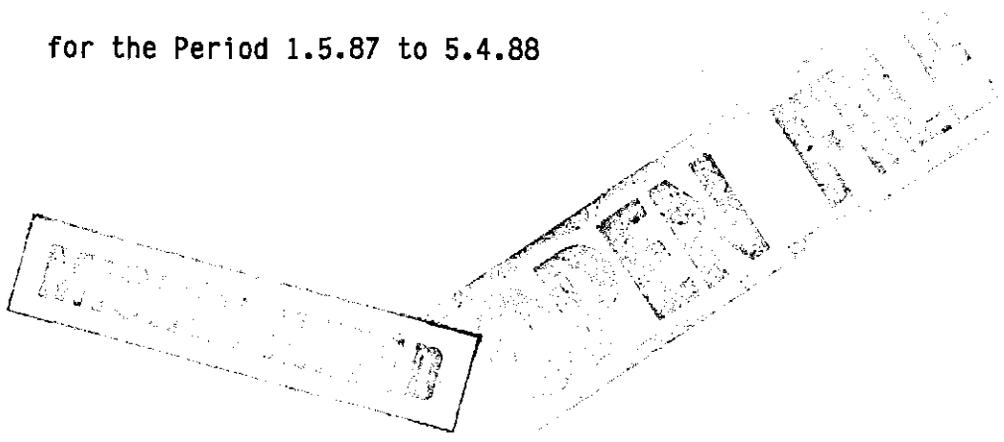
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EXPLORATION LICENCE 37/82

LONGBACK, TASMANIA

Annual Report on Exploration
for the Period 1.5.87 to 5.4.88



S Taylor
 Norgold Limited
 on behalf of the
 H D Nolan-Norgold-Savage
 Resources "Longback"
 Joint Venture
 April 1988

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1 INTRODUCTION

EL 37/82, held by H D Nolan since 1 May 1982, comprises a 68 km² area of Proterozoic metasediments and metavolcanics southwest of the township of Savage River (Figs 1, 2). At its southern end, between the Savage River and the road to Corinna, the EL encloses five mineral leases, 98M-102M 84, totalling 3.2 km², which cover the silica flour deposits currently being exploited by Monier.

On 30 June 1987 the Electrolytic Zinc Company of Australasia Limited and Savage Resources Ltd jointly farmed-in to the EL under the terms of the Longback Joint Venture Agreement. Since then EZ's interest in the area has been transferred to Norgold Limited.

Exploration of the EL is presently being managed by Norgold, using funds supplied by Norgold and Savage Resources in the ratio 2:1.

The following report summarizes the exploration undertaken by Norgold from the inception of the joint venture until 5 April 1988.

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2 GEOLOGY AND EXPLORATION POTENTIAL

In EL 37/82 (Fig 2) the southwest trending Longback Fault, transecting the central part of the area, subdivides the EL into two lithologically and stratigraphically distinct blocks of Proterozoic stratigraphy. North of the fault lies the Rocky Cape Group of siltstones and orthoquartzites. To the south lies a more lithologically diverse northerly-trending succession comprising, from west to east:

Donaldson Group	mudstones and slates
Savage Dolomite	fine grained locally stromatolitic dolomites
Bernafai Volcanics	basic volcanics and intercalated slate
Corinna Dolomite	dolomites and slates
Longback Formation	tuffs, amphibolites and slates

Alluvial gold derived from Tertiary gravels has been worked in a number of creeks within the EL but there are no known occurrences of hard rock gold workings. Recently, however, the hardrock gold potential of the area has been enhanced by H Nolan's discovery of three distinct types of gold in microscopic examination of panned concentrate samples within MLs 98M-102M/84, viz

Type A	flaky, well travel-worn orange gold with a silver content of 0-4% (average 2% Ag)
Type B	crystalline yellow coloured gold showing no travel damage, with a silver content of 10-23% (average 16% Ag)
Type C	yellow gold, exhibiting some travel wear, with a silver content of 5-10% (average 8% Ag)

Type A gold, the most common in the area, is derived from Tertiary gravels, but Types B and C, which show little or no travel wear and have higher silver contents, are thought to be derived from a hardrock source in the immediate area.

Through painstaking examination of panned concentrate samples, Nolan has apparently succeeded in tracing the crystalline gold to a possible source area at the Brookside Prospect (Figs 2, 3), in the vicinity of a faulted contact between the Corinna Dolomite and the underlying mudstones of the Bernafai Volcanics sequence.

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3 PREVIOUS EXPLORATION

There has been no previous modern systematic regional ground exploration of EL 37/82, but the area has been covered in two regional airborne geophysical surveys. In 1973 Esso Australia conducted an INPUT EM/magnetics survey over the whole EL as part of their extensive coverage of EL 2/73. Within EL 37/82 twelve significant anomalies were detected, (fig 5), seven of which were subsequently followed up by brief helicopter-supported field examinations (Neale, 1973, 1974). Four of the anomalies (X16-X19) were shown to be due to pyritic black shales but at the other three localities (X12, X13, X15) there was no outcrop. The remainder (X6, X9, X10, X11, X14) were not inspected on the ground due to difficulties of access.

In 1982 the Tasmanian Mines Department West Coast aeromagnetic survey delineated a number of anomalies within EL 37/82. The following year Geopeko entered into an option agreement with the licence holder Hugh Nolan to investigate the tin potential of the area. At the Longback One magnetic anomaly (Fig 2), gridding, mapping, ground magnetics, limited drainage sampling and hand held power auger sampling were undertaken (Pemberton, 1984a). Anomalous Ba values up to 1.48% were obtained, but the other analyses for Cu, Pb, Zn, Ag, Fe, Sn, W and As contained only one spot high (185 ppm Cu, 220 Pb, 480 Zn) in carbonates in the northern part of the grid. A 302 m diamond drill test of the significant magnetic anomaly passed through a sequence of black shales and grey dolomitic shales with prominent pyrrhotite as bands and veinlets (Pemberton, 1984b). Analyses for Cu, Pb, Zn, Ag, Fe, Sn, W and Ba produced nothing of interest.

At Longback Two, in the northwest corner of the EL, exploration was limited to a brief three line coverage of magnetics, plus soil sampling and minor drainage sampling, which returned no geochemical anomalies (Pemberton, 1984b). The anomaly was attributed to the amphibolites and pyrrhotite-rich laminated siltstones mapped within the grid.

Since Geopeko's involvement, the licence holder H D Nolan has concentrated on the exploration and development of the silica flour deposits in MLs 98M-102M 84 at the southern end of the EL, in partnership with Monier Ltd.

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4 WORK COMPLETED

The following exploration work was undertaken by Norgold from the inception of the Joint Venture to 5 April 1988. Field work was undertaken by contract geologists J G Purvis and P A Jones in January 1988 and March 1988, respectively.

- * Review of data on Esso's 1973 INPUT EM survey and follow-up work, in Neale (1973, 1974).
- * Reconnaissance field traverses in the southern half of the EL, south of the Longback Fault, mainly in the vicinity of INPUT anomalies X6, X9, X10 and X11, and the northern strike extension of the contact zone hosting the Brookside Prospect, as shown in Fig 3.
- * Collection of 14 stream sediment samples, 16 panned concentrate samples and 55 rock chip samples. Sample localities are shown in Fig 3 and further details are given in Appendix 1 and Table 1.
- * Analysis by Analabs of 7 stream sediment samples and 34 rock chip samples collected in the first phase of field work for Au, Ag, Pb, Zn, Cu, Ba, Sb, Hg, Te and As; Analabs analysis of the 7 stream sediment and 21 rock chip samples taken in the second phase for Cu, Pb, Zn, Ag, As and Au.

Analytical methods employed were as follows:

<u>Element</u>	<u>Analabs Code</u>	<u>Method</u>	<u>Detection Limit</u>
Cu, Pb, Zn, Ag	101	AAS after perchloric acid digestion	Cu, Pb, Zn 5 ppm; Ag 0.5 ppm
As	114	Vapour Generation/AAS	1 ppm
Te	116	Vapour Generation/AAS	0.1 ppm
Hg	122	Vapour Generation/AAS	0.005 ppm
Ba, Sb	401	Pressed Powder XRF	Ba 10 ppm; Sb 3 ppm
Au	309	Fire Assay Fusion/AAS	0.008 ppm
Au	313	Fire Assay Fusion/AAS	0.005 ppm

- * Microscopic examination of the panned concentrate samples by H D Nolan to investigate the types of gold present.

5 RESULTS RECEIVED

5.1 Reconnaissance Mapping

The limited reconnaissance mapping undertaken resulted in a modification to the simplified photogeological interpretation depicted in Fig 2. As shown in Fig 3, the upper volcanic sequence or Longback Formation was mapped at localities L4, 5, 10, 21, 22, 25, 26 in the vicinity of the Savage River, instead of the Corinna Dolomite in the interpretation.

At the locations of the Esso INPUT EM anomalies the following geology was observed - refer to Fig 3.

- X6 A 100 m wide unit of dark grey, non sulphidic, slightly carbonaceous shale within the Upper Volcanic sequence is delineated by localities P6 and P5. This appears to be the most likely source of the anomaly.
- X9 The locality of this anomaly, within the Savage Dolomite close to the southern edge of a large area of Tertiary gravels, was not examined. Sampling of Longback Creek at a point (P19) less than 500 m downstream of the anomaly encountered silicified dolomite in float and unaltered dolomite in outcrop.
- X10 Little outcrop was observed over the EM response as the area is largely covered by Tertiary gravels to >1 m depth. Bedrock fragments in the roots of fallen trees on the periphery of the anomaly are of weathered orange tuffaceous shales.
- X11 Sampling of a creek draining the anomaly at locality L9 encountered float of quartz chlorite ferruginous breccias, veined chloritic weathered shale and outcrop of green/brown tuffaceous sediment.

5.2 Chip Sampling

The chip sample results are tabulated in Appendix 2. In general the results were disappointing for the principal exploration target, as gold values were mainly below detection level. However the following results for gold and gold pathfinder elements are considered worthy of follow-up - refer to Fig 2.

- Location P3, sample 003 a value of 1.42 ppm Au in a sample of siliceous ironstone float in the area of INPUT EM anomaly X6
- Location P8, sample 014 anomalous Zn (1,000 ppm), As (56 ppm) and Te (5 ppm) in a float sample of brown limonite and manganese oxide gossan, 40 m southwest of P8

- Location P10, sample 017 anomalous Au (0.1 ppm) in an outcrop sample of highly weathered dolomite with minor quartz veining
- Location P12, sample 025 anomalous Cu (215 ppm), As (270 ppm) and Sb (25 ppm) in an outcrop of puggy bluish-yellow clay on the contact zone between dolomite (Savage Dolomite) and mudstone (Bernafai Volcanics Sequence?)
- Location 23, sample 23b anomalous As (292 ppm) in an outcrop sample of strongly pyritic, calcite veined, silicified brecciated dolomite, possibly adjacent to a fault

5.3 Stream Sediment Samples

The 14 stream sediment samples contained no anomalous values.

5.4 Panned Concentrate Samples

Microscopic scanning by H Nolan of the 7 panned concentrate samples collected by G Purvis (Appendix 3) identified crystalline gold, showing little wear, in sample 007 from locality P7, near INPUT EM anomaly X6. At locality P18 in Longback Creek, which drains the vicinity of INPUT EM X9, the gold grains are not crystalline in form, but due to their pale colour, angular shape and lack of wear, they are also thought to be derived from a hardrock source in the immediate area.

Microscope investigation of the 9 panned concentrate samples collected by P A Jones had not been completed at the time of writing this report.

6 EXPENDITURE

Expenditure incurred by Norgold in EL 37/82 to 5.4.88 totals \$17,921, as tabulated below.

Salaries	\$1,790
Geological Contractors	7,775
Travel and Vehicles	878
Geochemistry	2,181
Geology, Petrology	210
Accommodation	714
Field Living and Supplies	148
Tenement Rent	880
General Expenses	358
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Sub-total	14,934
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Plus Overheads (20%)	2,987
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TOTAL	\$17,921
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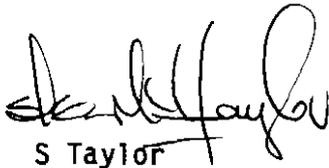
7 REDUCTION OF EL AREA

In accordance with Mines Department regulations concerning reduction of the area of ELs after five years of tenure, the Mines Department was notified of the Joint Venture's intention to reduce the EL to an area of 32.5 km², as shown in Fig 4, in correspondence dated 8 April 1988.

8 PROPOSED EXPLORATION PROGRAMME

The following work is proposed for 1988/89:

- * extension of the reconnaissance mapping, chip sampling and drainage sampling coverage in the whole EL. Initially work will concentrate on the contact zones between the volcanic sequences (Longback and Bernafai) and the carbonate sequences (Savage and Corinna Dolomites), and also in the carbonate sequences adjacent to the Longback Fault;
- * follow-up of the crystalline gold and chip sample anomalies detected to date, as reported in sections 5.2 and 5.4, and shown in Fig 2.



S Taylor

REFERENCES

- | | | |
|--------------|-------|---|
| Pemberton, J | 1984a | Progress Report on Longback EL 37/82 Tasmania; Geopeko Report March 1984 |
| Pemberton, J | 1984b | Progress Report on EL 37/82 Longback Tasmania; Geopeko Report May 1984 |
| Neale, R C | 1973 | Pieman River EL 2/73, Progress Report for the Period January 31 - July 31 1973: Esso Australia Report; Mines Department Open File No 73-964 |
| Neale, R C | 1974 | EL 2/73 Pieman River, Tasmania, Completion Report: Esso Australia Report; Mines Department Open File No 74-987 |

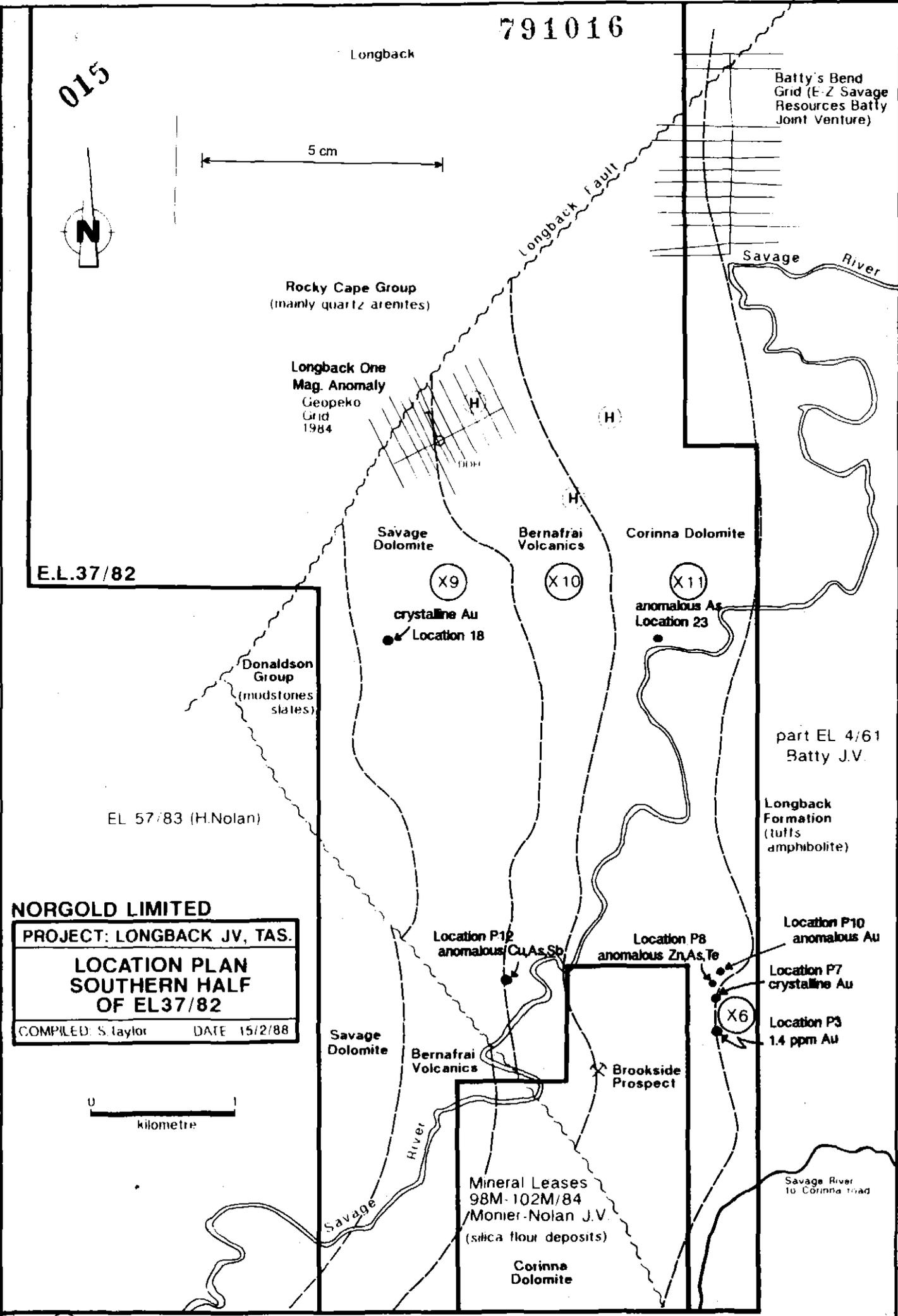
<u>Location</u>	<u>Outcrop or Float Description</u>
1	Siliceous dolomite - float
2	Siliceous dolomite breccia - float
3	Black-green shale, weakly chloritic, minor tuffaceous material
4	Green chloritic feldspathic crystal tuff
5	Green chloritic feldspathic crystal tuff
6	Grey beige weakly laminated shale
7	Pyritic graphitic shale
8	Grey beige weakly laminated shale
9	A Dark greenish brown tuffaceous sediment B Quartz-chlorite-ferruginous breccia - float C Quartz-ferruginous veined slickensided chloritic shale
10	Chloritic altered fragmental volcanic with haematite? layers
11	Weathered orange/yellow shale, tuffaceous?
12	Orange/yellow weathered medium grained tuffaceous basic volcanic with Mn staining along fractures
13	Clay soil with minor shale fragments
14	Tuffaceous volcanic
15	Weathered tuffaceous volcanic with possible casts after pyrite
16	Grey beige tuffaceous volcanic with minor ferruginous vughy quartz veining
17	Green orange tuffaceous shale
18	Green-grey laminated shale; ferruginous quartz float
19	Green cleaved shales
20	White spotted tuffaceous volcanic, weakly ferruginous with minor Mn veining
21	Chloritic, minor epidote-altered, coarse grained, crystalline lithic basic tuff

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- 22 Olive brown phyllitic shale
- 23 A Black calcite-veined massive dolomite
 B Heavily pyritic, calcite-veined silicified brecciated dolomite
 C Very pyritic carbonaceous shale
 D Silicified dolomite breccia - float
 E Gossanous siliceous dolomite - float
- 24 Black massive dolomite overlain by shales
- 25 Green tuffaceous shaley volcanic
- 26 Vughy green-grey layered tuffaceous shale and lithic to lapilli tuffs, with minor ferruginous patches after chlorite
- 27 siliceous agate textured weakly ferruginous dolomite
- 28 Weathered dolomite outcrop; tuffaceous float
- 29 Pyritic siliceous dolomite breccia float

Rock Types in the Locations Sampled by P A Jones, March 1988
 (refer to Figure 3)

TABLE 1



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Longback

Batty's Bend Grid (E-Z Savage Resources Batty Joint Venture)

5 cm



Rocky Cape Group (mainly quartz arenites)

Longback Fault

Savage River

Longback One Mag. Anomaly Geopeko Grid 1984

Savage Dolomite

Bernafrai Volcanics

Corinna Dolomite

E.L.37/82

(X9)

(X10)

(X11)

crystalline Au Location 18

anomalous As Location 23

Donaldson Group (mudstones slates)

part EL 4/61 Batty J.V.

EL 57/83 (H.Nolan)

Longback Formation (tuffs amphibolite)

NORGOLD LIMITED
PROJECT: LONGBACK JV, TAS.
LOCATION PLAN
SOUTHERN HALF
OF EL37/82
 COMPILED: S. Taylor DATE: 15/2/88

Location P12 anomalous Cu,As,Sb

Location P8 anomalous Zn,As,Te

Location P10 anomalous Au

Location P7 crystalline Au

Location P3 1.4 ppm Au

Savage Dolomite

Bernafrai Volcanics

Brookside Prospect

0 1 kilometre

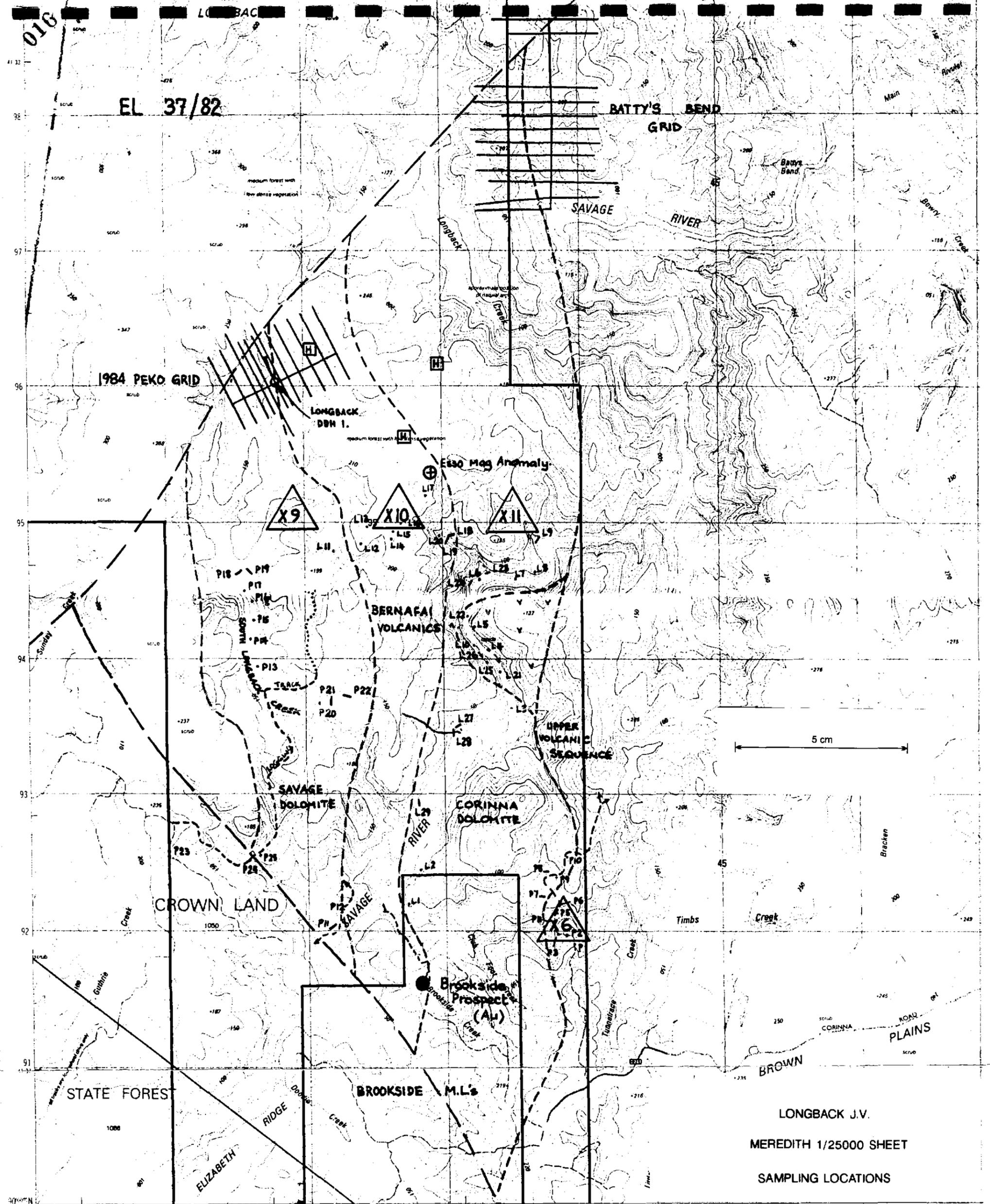
Mineral Leases 98M-102M/84 Monier-Nolan J.V. (silica flour deposits)

Corinna Dolomite

Savage River to Corinna road

- (X9) ESSO INPUT FM anomaly
- (H) Helicopter pad

FIGURE 2



5 cm

LONGBACK J.V.
 MEREDITH 1/25000 SHEET
 SAMPLING LOCATIONS

P. JONES {

- L29 Stream Sediment and/or panned conc. Esso EM Anomaly
- L21 Geological Observ. and/or rock sample.

Sample sites prefixed with P belong to G. Purvis.
 * Geology from Purvis, 1988 with modifications based on local field observations.

LONGBACK EL 37/82



[H] Helipad.

⊕ Esso Mag. Anomaly.

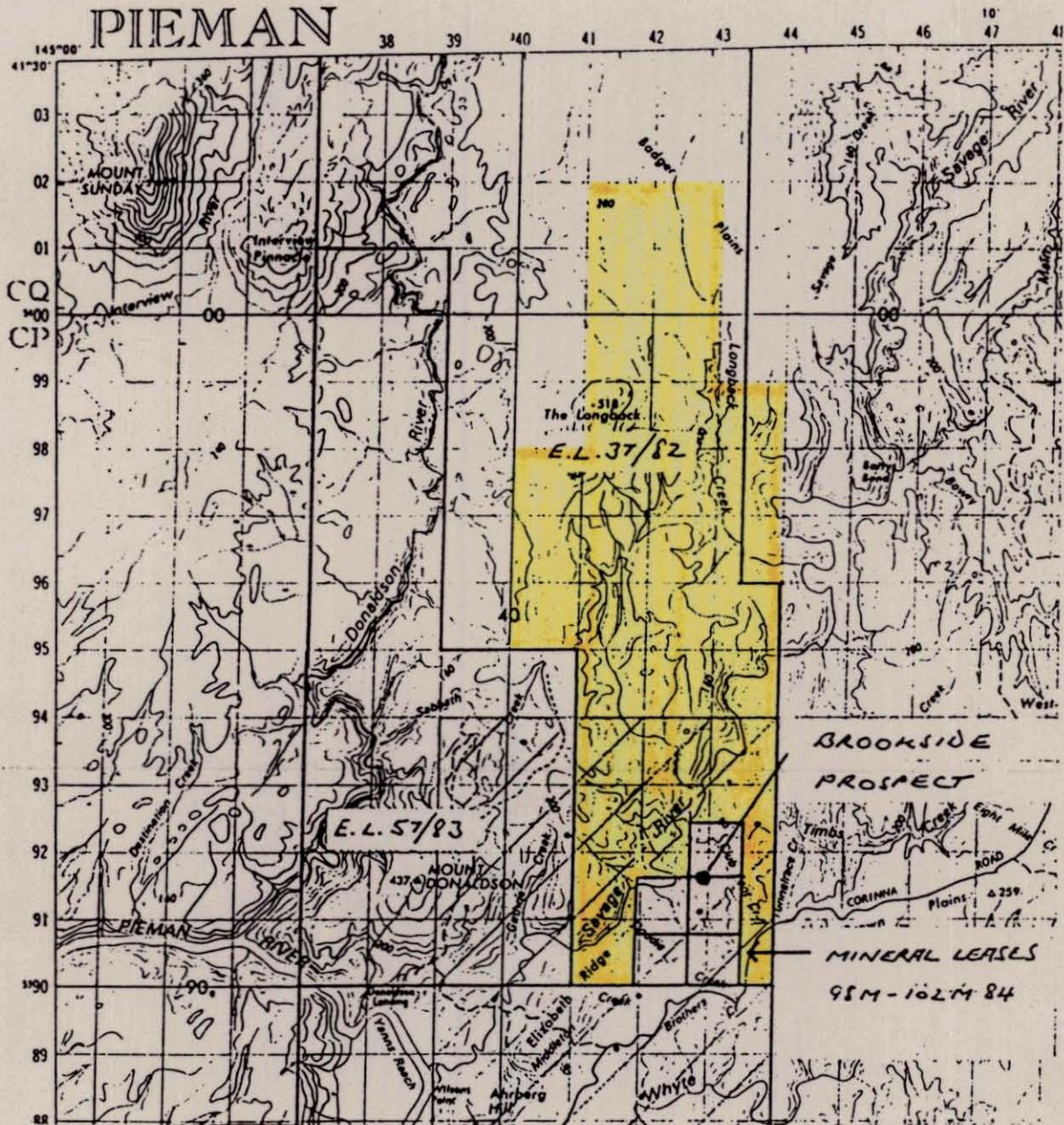
Basic Volcanics (lavas, tuffs)

- Residential area. Commercial buildings
- Roads maintained for continuous public use
 - Primary road with route number
 - Secondary road with route number
 - Mixed road with route number
 - Other road
- Roads of restricted use or access
 - Other roads with bridge
 - Venue track with gate
- Walking track, horse trail (approximate position with bridge)
- Railway with station, Places entered in National Estate Register
- Power transmission line with pylon positions
- Building, Feature of historic or special interest, Run, Mine
- Post office, Police station, Fire station, School

PRODUCTION Mapping Division Department of Lands, Parks and Wildlife, Hobart, 1987
 ACCURACY Horizontal: Not less than 90% of points of well defined detail are within 12.5 metres of their true positions at map scale
 Vertical: Not less than 90% of elevations are within 5 metres of their true elevation. This accuracy may not be achieved in areas of dense vegetation
 RELIABILITY The information content of this map has been determined from aerial photography taken in 1985 and verified by field inspection undertaken in 1986. It contains as far as possible information appropriate to the scale, the geographical locality and the general purpose of this map
 NOMENCLATURE Place names have been approved by the Nomenclature Board of Tasmania
 PUBLIC RIGHT OF WAY Roads on this map do not necessarily indicate a public right of way
 REVISION A five yearly revision cycle is intended for this series. Users noting errors and omissions are invited to write to the Director of Mapping, GPO Box 44A, Hobart, Tasmania, 7001

FIGURE 3

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EL 37/82 - The Longback

Schedule of Area of Renewal

Commencing at the southeast corner at grid co-ordinates
 344000mE 5390000mN, thence
 grid north to 344000mE 5399000mN, thence
 grid west to 343000mE 5399000mN, thence
 grid north to 343000mE 5402000mN, thence
 grid west to 341000mE 5402000mN, thence
 grid south to 341000mE 5398000mN, thence
 grid west to 340000mE 5398000mN, thence
 grid south to 340000mE 5395000mN, thence
 grid east to 341000mE 5395000mN, thence
 grid south to 341000mE 5390000mN, thence
 grid east to the point of commencement.

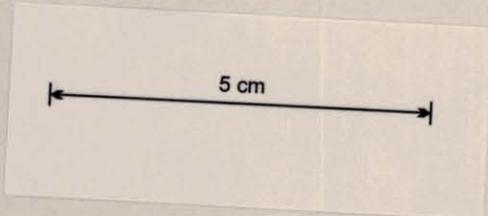


FIGURE 4

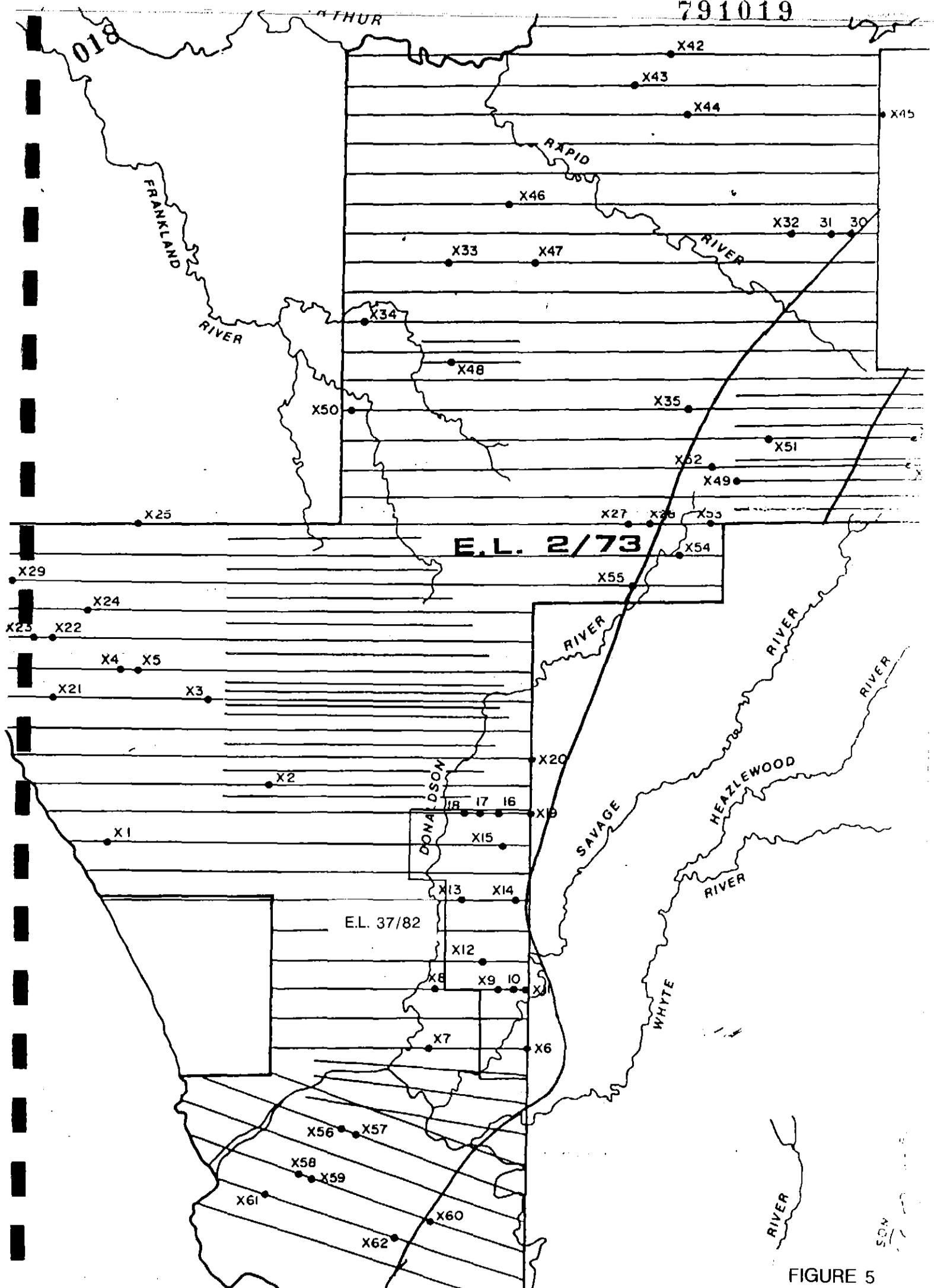


FIGURE 5

APPENDIX 1

Field Notes, J G Purvis, January 1988

EL 37/82 LONGBACK, TASMANIA

TRAVERSE NOTES - J.G.PURVIS

JANUARY 1988

P 1. (AMG: 5391890N 343920E)

o/c: TUFFACEOUS VOLCANOMICT SEDIMENTS

Brown and yellow, weathered, partly leached and clayey. Some Fe and Mn oxide stains. Sandy to silty textured, regularly bedded - $353^{\circ}/80^{\circ}/263^{\circ}$ (strike, dip, dip direction). Volcanic andesitic composition.

P 2. (5391970N 343860E)

o/c: TUFFACEOUS VOLCANOMICT SEDIMENTS

Yellow, highly weathered. Minor limonite stains and boxworks on bedding. Andesitic composition. Bedding $003^{\circ}/65^{\circ}/273^{\circ}$.

SAMPLE 001: o/c - Schistose, weathered tuffaceous sediments, possibly slightly sericitised, with limonite and MnOx stains and small stringers of vein Qtz to 30mm in 3 discontinuous irregular veins parallel bedding/schistosity. (These are the only veins noted here).

P 3. (5391990N 343790E)

o/c: CHLORITIC TUFFACEOUS MUDSTONE

Schistose and disrupted. Bedding $191^{\circ}/65^{\circ}/101^{\circ}$. Apparent synclinal axis between P 2 & 3 - much disruption of bedding in this vicinity.

SAMPLE 002: o/c - Irregular poddy Qtz veins to 30mm. Approx 5 veins over 0.5m. Veins heavily stained with limonite and MnOx.

SAMPLE 003: Float. 0.25m partly rounded cobble of siliceous ironstone - gossaneous capping? Partly leached sugary Qtz stained yellow-brown, with limonite boxworks in fractures and patches.

P 4. (5392070N 343780E)

o/c: CLAYEY WEATHERED ROCK

Base-of-soil exposure of weathered unidentifiable rock and leached vein Qtz fragments.

SAMPLE 004: Leached and scalloped vein Qtz fragments - almost coralline in appearance.

P 5. (5392120N 343800E)

o/c: DARK GREY SHALE

Fissile with strong slaty cleavage. Moderately chloritic and very slightly carbonaceous. No pyrite or limonite.

P 5 (continued)

SAMPLE 005: o/c - irregular qtz vein to 50mm with some chlorite. Minor Fe and Mn ox.

Between P4 & P5 small outcrops of Tertiary gravel.

P 6. (5392180N 343820E)

o/c: DARK GREY CHLORITIC AND SLIGHTLY CARBONACEOUS SHALE

SAMPLE 006: o/c- qtz-chlorite vein in slightly greasy phyllitic shale with minor Fe stains - possibly from chlorite.

P5 & P6 delimit a 100m wide unit of chloritic and slightly carbonaceous shale. This appears most likely cause of the weak EM anomaly X6. Bedding only noted in one place midway between P5 & 6: 167°/50°/257°.

P 7. (5392260N 343690E)

No o/c. In Timbs Creek.

SAMPLE 007: PANNED CONCENTRATE. 1 level pan full (400mm diameter) of raw gravel from good trap site (log trap).
Result: 1 small bright colour of water worn gold. Good tail of blacksand.

SAMPLE 008: STREAM SEDIMENT. -80mesh. Taken from panned concentrate sample site.

SAMPLE 009: ROCK FLOAT. Pale green, slightly silicified and chloritised fine grained rock, with network of small qtz veins up to 5mm. 5-10% pyrite both in qtz veins and as general fine-grained disseminations.

Creek 8m wide, flowing. Banks alluvial 0.5m high. Float to 200mm, av 50-100mm, moderately Fe-stained. Float: Crystalline vein qtz - 25%
Lacy agate qtz - 10%
Sugary silicified dolomite - 10%
Magnetic green fine-grained basic volcanic - 5%
Variably-schistose fine-grained sediments - 50%
(Most slightly carbonaceous, some tuffaceous).

P 8. (5392440N 343720E)

o/c: Variably-silicified dolomite with abundant qtz veins.
Small TR tributary of Timbs Creek.

SAMPLE 010: STREAM SEDIMENT. - 80 mesh. Taken from panned concentrate sample site.

SAMPLE 011: PANNED CONCENTRATE. 1 level pan full of raw gravel from reasonable boulder trap.
Result: 1 small bright colour of water worn gold. Small tail of blacksand.

SAMPLE 012: ROCK FLOAT. Colloform lacy agate qtz with white and dark grey-black layers.

SAMPLE 013: O/C. Grey, moderately-silicified dolomite with calcite veins and qtz stringers. Some dark grey patches and some pale red hematite (?).

P 8 (continued)

SAMPLE 014: ROCK FLOAT. (From slopes 40m SW of P 8). Brown limonite and Mn ox gossan. Could be a capping off the dolomite. Several similar floaters here, up to 0.3m in size.

At P 8: Creek 3m wide, flowing. Banks +3m lacy agate scree over dolomite. All rock float covered with Mn oxides. Float: Silicified dolomite - 60%
(includes qtz-veined dolomite, some veining of lacy-agate type)
Unsilicified dolomite - 40%

P 9. (5392400N 343780E)

No o/c. 50m E of P 8. In area of abundant lacy agate qtz float.

SAMPLE 015: Lacy agate vein qtz with much limonitic rock material attached. ROCK FLOAT.

SAMPLE 016: Lacy agate qtz - colloform with white and dark grey layers. ROCK FLOAT.

P 10. (5392540N 343830E)

SAMPLE 017: O/C Highly weathered dolomite. Dark grey, black, brown and cream clay, with minor sugary qtz veins and occasional small patches of calcite. Some Mn ox veining.

P 11. (5392030N 342180E)

Tributary on TR of Savage River, immediately NW of Brookside Prospect. Sample site 200m upstream from main river. No o/c.

SAMPLE 018: STREAM SEDIMENT. -80 mesh. Taken from panned concentrate sample site.

SAMPLE 019: PANNED CONCENTRATE. 1 level pan full of gravel sieved to -4mm (equivalent to 2 level pans of raw gravel.) From reasonable log trap.
Result: 1 colour of osmiridium. Moderate tail of black sand. Some very fine-grained light grey heavy mineral.

SAMPLE 020: ROCK FLOAT. Silicified dolomite. Some black sooty carbonaceous material and some lacy agate qtz patches.

SAMPLE 021: ROCK FLOAT. Black chert.

SAMPLE 022: ROCK FLOAT. Pale orange-brown ocherous siliceous rock. Some banding evident on outside, dusty limonite inside in places. Very hard. A capping from off the Tertiary conglomerate or dolomite.

Creek 3m wide, flowing. Gravel to 300mm, average 100mm. Banks 1-3m, alluvial.

Float: Tertiary qtz conglomerate - 40%. Occ boulders to 300mm, but mainly as well rounded qtz pebbles av 10mm, max 50mm.

Silicified dolomite - 45%. Some sugary, others with qtz veins, including 10% with lacy agate vein qtz. Dolomite varies from black to white. Forms the larger, sub-rounded float.

Weathered clayey volcanics - 5%. Orange-coloured.

Black chert - 5%.

100m downstream of P 11: Much well-rounded alluvial cobbles of lacy agate qtz and silicified dol.

SAMPLE 023: ROCK FLOAT. (Derived from alluvium here). Highly silicified pink and grey dolomite - now mainly very hard sugary silica.

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P 12. (5392100N 342240E)

On old logging track. O/c: Apparent contact zone between mudstone and dolomite.

SAMPLE 024: ROCK FLOAT. Lacy agate qtz with some dark grey material.

SAMPLE 025: O/C. Puggy bluish-yellow clay with fragments of white lacy agate qtz.

P 13. (5393960N 341640E)

In Longback Creek 225m upstream of logging road.

SAMPLE 026: O/C. Silicified dolomite. Hard, dark grey to black, with qtz veins to 100mm.

P 14. (5394140N 341600E)

In Longback Creek 460m upstream of logging road.

SAMPLE 027: O/C. Highly silicified dolomite. Rock comprises sugary qtz, pale grey.
O/c appears to lie on western side of fault striking 340°M up creek.

P 15. (5394300N 341620E)

In Longback Creek, 560m upstream of logging road. O/c: Partly-silicified massive dolomite, dark grey to black in colour.

P 16. (5394450N 341600E)

In Longback Creek, 730m upstream of logging road. O/c: Unsilicified dolomite. Creamy, soft, with minor dark grey streaks.

P 17. (5394510N 341540E)

In Longback Creek, 810m upstream of logging road. O/c: Massive grey crystalline dolomite, with only minor silicification as colloform qtz filling vughs. Some calcite stringers.

P 18. (5394640N 341500E)

In Longback Creek, 930m upstream of logging road, and 50m upstream of tributary on TL which drains from the vicinity of EM anomaly X9.

O/C: UNSILICIFIED DOLOMITE. Grey and cream, hard, massive. Some irregular banding striking 165°M.

SAMPLE 028: STREAM SEDIMENT. -80 mesh. Taken from panned concentrate sample site.

024

791025

J. G. PURVIS & ASSOCIATES PTY. LIMITED

5.

SAMPLE 029: PANNED CONCENTRATE. 2 level pan fulls of raw gravel, from good trap site on bedrock. Result: 1 flake of bright water-worn gold 3mm x 1.25mm. 1 small colour of gold and 1 small flake of osmiridium. Moderate tail of black sand.

SAMPLE 030: ROCK FLOAT. Sugary-textured silicified dolomite with some carbonaceous(?) materi

Creek 5m wide, flowing. Gravel a mixture of much fine material (<50mm), and scattered cobble to 200mm. Banks 0.3-0.5m, alluvial.

Float: 50% - Dolomite. Grey to dark grey, generally silicified with sugary qtz texture, some intensely silicified with qtz veins. Minor unsilicified dolomite.
 40% - Vein qtz. Well rounded. Most probably derived from Tertiary qtz conglomerate (1 or 2 small fragments of this conglomerate noted here), however some qtz is vughy with lustre similar to lacy agate qtz and could be derived from veining in dolomite. Only 1 piece of definite lacy agate qtz seen here.
 10% - Quartz-sericite schist. After finely banded impure quartzite. Small, well-rounded pebbles.

P 19. (5394640N 341600E)

In TL tributary of Longback Creek, which drains vicinity of EM anomaly X9. 120m up from jctn.

O/C: UNSILICIFIED DOLOMITE. Creamy, fine grained, hard, massive.

SAMPLE 031: STREAM SEDIMENT. -80 mesh. Taken from panned concentrate site.

SAMPLE 032: PANNED CONCENTRATE. 1 level pan of -4mm material (equivalent to 2 level pans of raw gravel). From excellent trap (crévice and hole) on bedrock. Result: 1 small colour of gold. Several small flakes of probable osmiridium. Good tail of black sand.

SAMPLE 033: ROCK FLOAT. Silicified black and grey dolomite - very hard.

SAMPLE 034: ROCK FLOAT. Intensely silicified dolomite with lacy agate qtz.

SAMPLE 035: ROCK FLOAT. Lacy agate qtz - slightly friable. Some dark carbonaceous (?) material.

Creek 3m wide, flowing. Gravel reasonably fine - up to 150mm, av <50mm. West bank 0.2m alluvium, east bank +2m steep slope with soil and scree over dolomite.

Float: 60% - Crystalline qtz. Some with lacy agate-like texture. Several pieces of definite lacy agate qtz. Much of qtz is well-rounded and probably derived from Tertiary qtz conglomerates.

5% - Tertiary qtz conglomerate.

10% - Quartzite. Friable. Grey and white.

25% - Silicified grey-black dolomite.

P 20. (5393680N 342090E)

In Longback Creek, approx 400m downstream of logging road.

O/C: UNSILICIFIED DOLOMITE. Mid-grey, massive.

025

P 21. (5393680N 342170E)

In Longback Creek, approx 500m downstream of logging road.

O/C: UNSILICIFIED DOLOMITE. Creamy, reasonably hard, massive.

SAMPLE 042: STREAM SEDIMENT. -80 mesh. Taken from same site as panned concentrate.SAMPLE 043: PANNED CONCENTRATE. 2 level pan-fulls of raw gravel, from good trap site on bedrock. Result: 1 small colour of gold. Good tail of black sand.SAMPLE 044: ROCK FLOAT. Black highly silicified dolomite. Carbonaceous?SAMPLE 045: ROCK FLOAT. Lacy agate qtz. Dark grey and white. Several pieces.

Creek 10m wide, flowing. TL bank dolomite overlain by 1-2m of alluvium. TR bank 1m of sandy alluvium. Gravel mostly fine (av 10-20mm), with occasional cobbles to 300mm.

Float: 75% - Quartz. Mostly well-rounded. Some excellent examples of lacy agate qtz.
23% - Silicified dolomite. Silicification varies from very strong to weak.
2% - Quartzite. Generally small, slightly rotten pebbles.

P 22. (5393740N 342300E)

100m up TL tributary of Longback Creek approx 630m below logging road. Tributary drains general vicinity of EM anomaly X10. No o/c.

SAMPLE 036: STREAM SEDIMENT. -80 mesh. Taken from same site as panned concentrate.SAMPLE 037: PANNED CONCENTRATE. 2 level pan-fulls of raw gravel, from good trap against tree. Result: 1 flake of bright water-worn gold 1.25mm x 0.5mm. Considerable tail of very fine-grained, evenly-sized, ball-shaped khaki-grey material -pyrite? Moderate tail of black sand.SAMPLE 038: ROCK FLOAT. Dark grey to black highly-silicified dolomite. With 5% black metallic? mineral - non-magnetic.SAMPLE 039: ROCK FLOAT. Grey moderately-silicified dolomite (silicification pervasive - no qtz veins). 1% fine framboidal pyrite. Looks similar to pyrite in panned con.SAMPLE 040: ROCK FLOAT. Black chert.SAMPLE 041: Partly-silicified dolomite with lacy agate veins and patches. Some minor hematite? ROCK FLOAT.

Creek 2m wide, flowing. Gravel generally fine (av <30mm), with stones to 250mm. TL bank 0.3m alluvium. TR bank +3m -steep slope of soil and scree.

Float: 45% - Quartz. Some (about 50%) with vague lacy agate-like lustre and texture. Only one piece of definite lacy agate qtz seen. Well rounded.

25% - Silicified dolomite. Generally dark grey to black.

20% - Unsilicified creamy dolomite. Some with very minor qtz veining.

10% - Black chert.

One piece of cemented Tertiary qtz conglomerate.

026

P 23. (5392620N 341000E)

On old logging track to Savage River.

SAMPLE 046: ROCK FLOAT. (Sub o/c). Weathered intermediate to basic volcanic fragmental. Weakly schistose. 5-10% pits and limonite boxworks after disseminated pyrite.

SAMPLE 047: ROCK FLOAT. (Sub o/c). Weathered intermediate to basic volcanic fragmental. weakly sericitised, bleached and schistose. +10% pits and limonite boxworks after fine disseminated pyrite. Some thin limonite veins.

P 24. (5392510N 341570E)

On new logging road to Longback Creek.

O/C: VARIABLE DOLOMITIC SEDIMENTS. Schistose greasy dolomitic mudstone, irregular bands of black silicified dolomite or chert, and creamy weathered greasy dolomitic siltstone.

Bedding 004^o/47^o/274^o.

SAMPLE 048: O/C. Black highly silicified dolomite or chert.

P 25. (5392560N 341650E)

On new logging track, 80m NE of P 24, across deep gully.

O/C: SILTSTONES AND SHALES. Grey to black, thinly bedded, slightly schistose. Some massive sandstone interbeds. Bedding predominantly 115^o/75^o/205^o, but strong local folding and bedding deformation - suggests the presence of major structure in this gully.

=====

J.G.Purvis January 1988.

027

APPENDIX 2

Analytical Results

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106
FAX: 004 31 8890

028
Phone (09) 458 7999

Telex AA92560

ANALYTICAL REPORT No. 999.37.08.05119

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

J.G. Purvis and Assoc.,
Norgold P.L.
P.O. Box 1026
Burnie
Tasmania 7320

ORDER No.	PROJECT
DATE RECEIVED	RESULTS REQUIRED
03/02/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
4	22/02/88	1	41

STATE OF SAMPLES	REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT						ANALYSIS				
			DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD	
	Various		RO	Prep: 006,010,011,012,014,016							Cu,Pb,Zn,Ag/101,As/114		
	Various		RO								Ba,Sb/401		
	Various		RO								Hg/122,Te/116		
	Various		RO								Au/309		
	008,010,018,028,031,036,042		SS	Prep: 005,007							Cu,Pb,Zn,Ag/101,As/114		

RESULTS TO

J.G. Purvis and Assoc.,
Norgold P.L.
P.O. Box 1026
Burnie
Tasmania 7320

RESULTS TO

REMARKS

STATE OF SAMPLES	ANALYSIS — PREPARATION	ANALYSIS — METHOD
whole core	perchloric acid A1	atomic absorption AAS
split core	hydrochloric acid A2	x-ray fluorescence XRF
cutting	nitric acid A3	spectrophotometry SPEC
rock	aqua regia A4	colorimetry COL
oil	nitric-perchloric A5	chromatography CHR
slip	HF mixture A6	titration TTN
water	HF under pressure A7	other chemicals means CHEM
tissue	fusion A8	miscellaneous MISC
stream sediment		fluorescence FLUOR
heavy mineral		inductively coupled plasma ICP

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029

791030

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

0 ~ outcrop f ~ float
SS ~ 80# stream sediment

999.37.08.05119

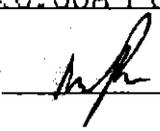
22/02/88

1 OF 4

TUBE No.	SAMPLE No.	Cu	Zn	As	Ag	Sb	Te	Ba	Au	Hg
1	001 o	70	55	6	<0.5	<3	0.30	960	0.008	0.040
2	002 o	95	310	1	<0.5	<3	0.25	290	<0.008	0.030
3	003 f	45	265	2	<0.5	<3	0.30	20	1.420	0.020
4	004 base of soil	25	190	6	<0.5	<3	<0.01	<10	0.008	0.020
5	005 o	55	210	3	<0.5	<3	0.05	30	<0.008	0.010
6	006 o	85	125	<1	<0.5	<3	<0.01	<10	<0.008	0.050
7	009 f	35	35	52	<0.5	<3	0.50	310	0.017	0.020
8	012 f	5	40	<1	<0.5	3	<0.01	<10	<0.008	0.010
9	013 o	5	65	<1	<0.5	<3	0.10	<10	<0.008	0.010
10	014 f	95	1000	56	<0.5	<3	5.00	360	<0.008	0.260
11	015 f	5	20	<1	<0.5	<3	0.05	<10	0.008	0.020
12	016 f	5	20	<1	<0.5	<3	<0.01	10	0.008	0.030
13	017 o	10	110	2	<0.5	<3	<0.01	210	0.100	0.330
14	020 f	5	10	1	<0.5	<3	<0.01	<10	<0.008	0.020
15	021 f	<5	10	<1	<0.5	<3	<0.01	15	<0.008	0.020
16	022 f	35	75	12	<0.5	15	0.20	60	0.008	0.140
17	023 f	<5	<5	<1	<0.5	3	<0.01	<10	<0.008	0.030
18	024 f NB the contact with Brookside	5	10	1	<0.5	<3	<0.01	<10	0.017	0.010
19	025 Highest Cu, As, Sb	215	40	270	<0.5	25	0.25	450	<0.008	0.030
20	026 o	10	5	<1	<0.5	3	<0.01	<10	<0.008	0.010
21	027 o	5	10	<1	<0.5	4	<0.01	<10	<0.008	0.020
22	030 f	<5	<5	<1	<0.5	<3	<0.01	80	<0.008	0.030
23	033 f	5	10	<1	<0.5	<3	0.05	<10	<0.008	0.020
24	034 f	<5	15	<1	<0.5	3	<0.01	<10	<0.008	0.010
25	035 f	<5	5	<1	<0.5	4	<0.01	<10	<0.008	0.020

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 - = element not determined

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030

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

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PAGE

999.37.08.05119

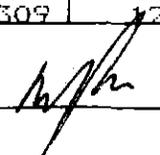
22/02/88

2 OF 4

TUBE No	SAMPLE No.	Cu	Zn	As	Ag	Sb	Te	Ba	Au	Hg
1	038 O	<5	20	2	<0.5	6	<0.01	25	<0.008	0.020
2	039 O	10	30	<1	<0.5	4	<0.01	20	<0.008	0.010
3	040 O	30	30	3	<0.5	<3	<0.01	170	<0.008	0.030
4	041 F	10	15	1	<0.5	3	<0.01	15	<0.008	0.020
5	044 F	<5	5	<1	<0.5	<3	<0.01	<10	<0.008	0.020
6	045 F	<5	10	<1	<0.5	<3	<0.01	<10	<0.008	0.020
7	046 F	195	110	<1	<0.5	<3	0.60	<10	<0.008	0.040
8	047 F	165	130	<1	<0.5	<3	0.55	<10	<0.008	0.030
9	048 O	<5	10	<1	<0.5	<3	<0.01	70	<0.008	0.020
10	008 S	55	75	4	<0.5	4	<0.01	130	<0.008	-
11	010 S	10	100	1	<0.5	<3	0.05	75	<0.008	-
12	018 S	25	70	2	<0.5	3	<0.01	65	<0.008	-
13	028 S	<5	15	<1	<0.5	<3	<0.01	25	<0.008	-
14	031 S	5	60	4	<0.5	<3	<0.01	<10	<0.008	-
15	036 S	20	80	9	<0.5	<3	0.05	320	<0.008	-
16	042 S	5	35	<1	<0.5	<3	<0.01	20	<0.008	-
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	1	0.5	3	0.01	10	0.008	0.005
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	114	101	401	116	401	309	122

Results in ppm unless otherwise specified.
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 -- = element not determined

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031

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

999.37.08.05119

22/02/88

3 OF 4

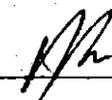
TUBE No.	SAMPLE No.	Pb	Wght	AuRpt					
1	001	<5	-	0.008					
2	002	<5	-	-					
3	003	<5	-	0.867					
4	004	<5	-	-					
5	005	<5	-	-					
6	006	<5	-	-					
7	009	<5	-	-					
8	012	<5	-	-					
9	013	<5	-	-					
10	014	<5	-	-					
11	015	<5	-	-					
12	016	<5	-	-					
13	017	215	15	-					
14	020	<5	-	-					
15	021	<5	-	-					
16	022	45	-	-					
17	023	<5	-	-					
18	024	<5	-	-					
19	025	<5	-	-					
20	026	<5	-	-					
21	027	<5	-	-					
22	030	<5	-	-					
23	033	<5	-	-					
24	034	<5	-	-					
25	035	<5	-	-					

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

-- = element not determined

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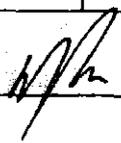
ANALYTICAL DATA

SAMPLE PREFIX REPORT NUMBER REPORT DATE CLIENT ORDER No. PAGE

999.37.08.05119 22/02/88 . 4 OF 4

TUBE No.	SAMPLE No	Pb	Wght	AuRpt					
1	038	<5	-	-					
2	039	<5	20	-					
3	040	<5	-	-					
4	041	<5	-	-					
5	044	<5	-	-					
6	045	<5	-	-					
7	046	<5	-	-					
8	047	<5	-	-					
9	048	<5	-	-					
10	008	<5	-	-					
11	010	<5	-	-					
12	018	<5	-	-					
13	028	<5	-	-					
14	031	<5	20	-					
15	036	<5	25	-					
16	042	<5	15	-					
17									
18									
19									
20									
21									
22									
23	DETECTION	5	10	0.008					
24	UNITS	PPM	GMS	PPM					
25	METHOD	101	199	309					

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 - = element not determined

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033

791034

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A division of MacDonal Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106

Phone (09) 458 7999

Telex AA92560

ANALYTICAL REPORT No. 27.2.08.05315

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

S. Taylor
Electrolytic Zinc Co. of Aust.,
476 St. Kilda Rd.,
Melbourne
Vic 3004

ORDER No.	PROJECT
DATE RECEIVED	RESULTS REQUIRED
08/04/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	13/04/88	1	28

STATE OF SAMPLES	REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT						OTHER SEE REMARKS	NONE	ANALYSIS		
			DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	REFER TO ANALYSIS SECTION			PREPARATION	METHOD	
	Various		SO	Prep: 005,007							Cu, Pb, Zn, Ag/101, As/114		
	Various		SO								Au, AuChk/313		
	Various		RO	Prep: 006,010,011,012,013,014							Cu, Pb, Zn, Ag/101, As/114		
	Various		RO								Au, AuChk/313		

RESULTS

TO

S. Taylor
Electrolytic Zinc Co. of Aust.,
476 St. Kilda Rd.,
Melbourne
Vic 3004

RESULTS

TO

P. Jones
Phil Jones and Associates
"Ocean View"
Saddle Rd.,
Kettering Tasmania 7155

REMARKS

STATE OF SAMPLES	ANALYSIS — PREPARATION	ANALYSIS — METHOD
whole core	perchloric acid A1	atomic absorption AAS
split core	hydrochloric acid A2	x-ray fluorescence XRF
cutting	nitric acid A3	spectrophotometry SPEC
rock	aqua regia A4	colorimetry COL
soil	nitric-perchloric A5	chromatography CHR
pulp	HF mixture A6	titration TTN
water	HF under pressure A7	other chemical means CHEM
sludge	fusion AB	miscellaneous MISC
stream sediment		fluorescence FLUOR
heavy mineral		inductively coupled plasma ICP

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034

791035

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX REPORT NUMBER REPORT DATE CLIENT ORDER No PAGE

27.2.08.05315

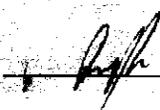
13/04/88

1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au	AuChk		
1	9 80#	40	10	125	<0.5	<1	<0.005	-		stream sed.
2	23 80#	30	<5	45	<0.5	<1	<0.005	-		" "
3	24 80#	70	<5	60	<0.5	<1	<0.005	-		" "
4	26 80#	60	<5	100	<0.5	<1	0.010	<0.005		" "
5	27 80#	115	<5	205	<0.5	<1	<0.005	-		" "
6	28 80#	125	<5	90	<0.5	<1	0.015	-		" "
7	29 80#	30	<5	35	<0.5	<1	0.035	-		" "
8	7	120	30	150	<0.5	18	0.010	-		Pyritic graphitic shale.
9	9a	155	<5	90	<0.5	<1	<0.005	-		green tuffaceous sediment.
10	9b	40	<5	140	<0.5	27	<0.005	<0.005		qtz chlorite ferrug breccia - float
11	9c	90	10	135	<0.5	<1	<0.005	-		qtz veined chloritic shale.
12	10	300	<5	205	<0.5	<1	0.015	-		chloritic fragmental volcanic.
13	11	155	<5	115	<0.5	<1	0.020	-		Clay shale - tuffac?
14	12	110	<5	110	<0.5	5	<0.005	-		Tuffaceous basic Volc.
15	14	180	<5	135	<0.5	2	0.010	-		Tuffaceous volcanic
16	16	20	<5	10	<0.5	<1	<0.005	-		Grey beige tuffac. Volc.
17	18	150	<5	255	<0.5	<1	<0.005	-		Green clayey shales
18	19	10	<5	20	<0.5	<1	0.010	-		Green clayey shales.
19	23a	10	<5	35	<0.5	<1	0.015	<0.005		Dolomite.
20	23b	115	5	35	<0.5	292	<0.005	-		Py. silic. brecciated Dolomite.
21	23c	75	5	60	<0.5	5	<0.005	-		Py Carbonaceous Shale
22	23d	15	<5	75	<0.5	62	<0.005	-		Py. Carbonaceous Shale
23	23e	10	5	55	<0.5	<1	<0.005	-		Silic. Dolomite Breccia - float
24	23f	290	110	385	<0.5	72	<0.005	-		Gossanous Silic Dolomite - float.
25	26	175	<5	150	<0.5	<1	<0.005	-		Basic Lapilli Tuff.

Results in ppm unless otherwise specified
 T = element present, but concentration too low to measure
 X = element concentration is below detection limit
 -- = element not determined

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ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

27.2.08.05315

13/04/88

2 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au	AuChk		
1	27	15	<5	25	<0.5	<1	<0.005	-	Agate textured Silic. Dolomite	
2	28	170	15	245	<0.5	<1	<0.005	-	weathered Dolomite	
3	29	15	<5	35	<0.5	<1	<0.005	-	Py. Silic. Dolomite Breccia. - float.	
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
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16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	1	0.005	0.005		
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM		Agate textured Silic. Dolomite - float.
25	METHOD	101	101	101	101	114	313	313		Basic Lapilli Tuff.

Results in ppm unless otherwise specified
 T = element present, but concentration too low to measure
 X = element concentration is below detection limit
 - = element not determined

AUTHORISED OFFICER



APPENDIX 3

Microscopic Examination of
Panned Concentrate Samples

037

COMINEX

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AUSTRALIA

Telephone (002) 65 8291

TO : STEWART TAYLOR, NORGOLD
c.c. H. Shannon, Savage Resources
J. G. Purvis, J.G.P. & Associates

FROM : HUGH NOLAN, COMINEX

REF : LONGBACK E.L. 37/82 TAS.
MICROSCOPE EXAMINATION OF
PANNED CONCENTRATE SAMPLES

COH	MINERAL RESOURCES	PJL
CBW	DIVISION	STV
KWG	REC'D	MJH
OBS	- 2 MAR 1988	TCB
	ANS'D	
EPL	GRJ	JWW

During the week commencing 25.1.88, Gerald Purvis carried out field reconnaissance in relation to E.M. anomalies x 6, x 9, x 10, x 11. In the course of this work, seven panned concentrate samples were taken and Gerald passed those to me for the purpose of microscopic examination of the gold which he observed to be present.

Tertiary gravels, hosting ilmenite, chromite, cassiterite, tourmaline, spinels etc., occur through-out the area sampled. With the exception of sample 007, the samples inspected are dominated by this heavy mineral suite.

Minor osmiridium and gold also occurs within these gravels and it was the purpose of this inspection to study all grains of gold collected and identify any grain which differed in character from that carried in the Tertiary gravel.

INSPECTION PROCESS

All samples were dried and scanned in total. The samples, which averaged 90 grams were then panned down to a concentrate of 5 grams to permit a detailed inspection of the heavy mineral suite. Following inspection, the 5 gram concentrate was returned to the bulk sample.

Inspection was carried out using an olympus 10-40 power zoom binocular microscope.

SAMPLE OBSERVATIONS

Sample numbers are those designated as Panned Concentrates in the PURVIS traverse notes of January, 1988.

SAMPLE 007

Minor presence of Tertiary gravel minerals. Predominantly hematite, both massive and specular. Yellow to green epidote? in abundance. Three fine grains of gold, one of which is well water worn and rich in colour, consistent with that occurring in Tertiary gravels.

Two grains have characteristics which suggest a local source. Both grains are paler in colour, one having minor water wear and the other being a perfect crystalline specimen.

SAMPLE 008

Predominantly Tertiary gravel heavy mineral suite, except for the minor presence of iron and arsenopyrite in undamaged crystalline form with orange clay adhering to the crystals.

The single grain of gold observed is well water worn, flattened and folded with rich colour, consistent with Tertiary gravel gold.

SAMPLE 019

Predominantly Tertiary gravel heavy mineral suite. The fine grained light grey heavy mineral observed by Purvis is hematite.

One grain of osmiridium and one fine grain of gold rich in colour and well water worn. Consistent with Tertiary gravel gold.

SAMPLE 029

Predominantly Tertiary gravel heavy mineral suite with one grain of osmiridium.

Four grains of gold, two of which consistent in character with Tertiary gravel gold.

The other two grains are slightly less rich in colour, have angular form and are less water worn. Whilst not crystalline in form, I would consider their source to be within the district.

039
SAMPLE 032

Predominantly Tertiary gravel heavy mineral suite. Two small colours of osmiridium and one well water worn, rich in colour fine grain of gold. Characteristics consistent with Tertiary gravel gold.

SAMPLE 037

Predominantly Tertiary gravel heavy mineral suite although some minor iron pyrite and hematite.

Two fine grains of osmiridium and one well water worn, rich in colour grain of gold, consistent with Tertiary gravel gold.

SAMPLE 043

Predominantly Tertiary gravel heavy mineral suite although minor quantity very fine chalcopyrite.

Five colours of gold ranging in size from fine to very fine having characteristics consistent with Tertiary gravel gold.



26.2.88