

R.L. 8810 MOINA TASMANIA - ANNUAL REPORT
for the period to 21.10.95

Author: D.J. Borton
 Date: September 1995

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2. CRA Exploration Pty. Ltd., Preston
3. Acacia Metals Pty. Ltd., Melbourne

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ACACIA RESOURCES

95-3786

RL 8810 MOINA - ANNUAL
 REPORT 1995 - BORTON, D J

ACACIA RESOURCES

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3. WORK CONDUCTED - HUGO J.V.

Lyndsay Newnham of Newnham Exploration and Mining Services has supervised Goldstream Minings and Titan Resources work in the area. His report is attached as Appendix II. It incorporates a proposal to drill a further 3 diamond drill holes. Expenditure incurred by Goldstream and Titan is presented within the report.

4. EXPENDITURE - MOINA J.V. 1.10.94 to 31.9.95.

Staffing and support costs	1,350
Tenement costs	520
Hazard audit costs	4,132
General administration	600
TOTAL:	<u>6,602</u>

5. PROPOSED WORK

On the Moina J.V. it is proposed to complete the request from the Inspector of Mines to make safe the workings associated with the old Shepherd and Murphy Mines under the duty of care requirement. The budgeted cost is \$15,670. No field exploration work is anticipated.

On the Hugo J.V. a proposal to drill a further 3 diamond drill holes has been put to Goldstream/Titan management and should be conducted in the spring. The programme is estimated to cost \$68,000

6. REFERENCES

Randell, J.P. Sept 1991 Moina Joint Venture R.L. 8810. 1991 Annual Status Report.

1. INTRODUCTION

R.L. 8810 was granted to the Shell Company of Australia Ltd and CRA Exploration on 21.10.88 for a 3 year term. It was renewed for a further 3 year term until 20.10.97 in 1994. Shells interest in the project was assigned to Acacia Metals Pty. Ltd. late in 1994.

The licence covers a 2km² area of which the greater part is Crown Land. A 0.6km² segment is private land. The title was granted to cover probably Australia's largest resource of fluorite-tin and tungsten bearing wriggilite skarn comprising 26.5Mt of 18% CaF₂, 0.1% Sn 0.1% W and some significant zinc and gold intersections.

The western part of the title incorporating the fluorite-tin-tungsten resource is covered by the Moina joint venture between Acacia and CRAE with each party holding a 50% equity and the former managing J.V. interests. The eastern part of the title (east of the Bismuth Creek and Hugo faults) covers a number of interesting Zn-Au intersections in skarns which are the subject of the Hugo joint venture in which Goldstream mining NL and Titan Resources NL can earn a 50% equity with CRA and Acacia each diluting to 25%. This J.V. commenced on 9.9.93.

2. WORK CONDUCTED - MOINA JOINT VENTURE

No work has been conducted during the term on the fluorite resource. The annual report of Randell, J.P. No. 08.5593 in Sept. 1991 reviewed resource, marketing and financial implications of the project which is the most recent appraisal. On the marketing front there have been no significant changes that may impact on the projects viability.

The only work conducted on the joint venture has resulted from a letter of 7.6.95 from Inspector of Mines, W. Grun requesting that immediate steps be taken to make safe under "the duty of care" workings related to the old Shepherd and Murphy Mine.

Initially signs warning of the hazards in the area were erected close to the Shepherd and Murphy shaft and on the track providing access to the old workings.

Consultant Lyndsay Newnham was contracted to conduct an audit of unsafe workings in the area (all lie within the Moina J.V. ground) and to recommend a programme to make safe the old workings. This report is attached as Appendix I. The report has been sent to Inspector of Mines W. Grun for clearance a) that the recommendations are acceptable to him and b) that the proposed work does not impact in any heritage values that may be attached to the sites. The Inspectors response was awaited at the time of writing this report.

APPENDIX I

**R.L. 8810 SHEPHERD AND MURPHY MINE
MINE WORKINGS HAZARD AUDIT.**

By L.A. Newnham

NEWNHAM EXPLORATION & MINING SERVICES**RL 8810****SHEPHERD & MURPHY MINE****MINE WORKINGS HAZARD AUDIT***Prepared for:*

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By:

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26 August 1995

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1. RL 8810 Location Plan
2. Mine Workings Plan

1. **DISCLAIMER**

The writer of this report has made every reasonable attempt to locate and identify all significant mine workings associated with the Shepherd & Murphy Mine. However, in an old mining field as complex as this one, it was beyond the scope of this exercise to identify all minor workings and disturbances, and this report does not claim to have identified and assessed all workings.

An assessment of the level of hazard presented by any particular mine working is a subjective matter and difficult to quantify. The assessments and recommendations contained herein are therefore the personal views of the writer, who thereby accepts that other parties may assess the hazard level differently in other circumstances.

2. SUMMARY

The former Shepherd & Murphy Mine lies 40 kilometres south of Devonport within Retention Licence 8810, held by CRA Exploration Pty Ltd and Acacia Resources Ltd.

The mine closed in 1957 and little or no rehabilitation or securing of the mine workings has taken place since then.

The area is reasonably accessible to the general public.

This report identifies the nature of the workings and assesses their potential hazard to persons accessing the area. It further recommends actions which might be taken to reduce the hazard level and make the workings safer.

Two large, prominent signs warning people of the presence of unmarked mine workings were erected on the property by the tenement holders on 9 July 1995.

The workings consist of a number of shafts, tunnels, stopes, open cuts, trenches, mill foundations and dams, spread over a 30 hectare area in timbered, moderately rugged country.

Summary conclusions are:

- ◆ The principal hazards to the general public are **open shafts and open stopes**. In particular, the Main Shaft is readily accessible and open. It is considered dangerous. The open Vent Shaft on No. 5 lode is less accessible but is also dangerous.

Open stopes are widespread and dangerous to persons who may locate them. Most are difficult to access but several near the Main Shaft are reasonably accessible.

- ◆ Five of the six significant adits are open. Four of the five open adits are moderately difficult to find and not readily accessible.

The fifth open adit (No. 3 adit) is readily accessible and is assessed as the most hazardous of the adits.

These adits would present a danger to anyone entering them both from ground stability and air quality points of view.

- ◆ The mill exists as a number of concrete foundations. It is highly visible and readily accessible. It would present a low level of hazard to persons climbing or playing on it.
- ◆ Numerous trenches, small open cuts and waste dumps exist over the property. Most are overgrown and not readily accessible. They present a level of danger to anyone walking through the bush but no more so than natural gullies, cliffs and steep hills.

- ◆ Several dams on the property are not considered particularly hazardous. They are not readily accessible and all have shallow dipping banks.

Summary recommendations are:

- ◆ The Main Shaft and No. 5 Vent Shaft should be capped with a heavy steel grate and sign posted.
- ◆ An attempt to fill the open stopes around the Main Shaft (No. 6 lode) should be considered. If this is too difficult, they should be fenced off and signs placed on the fences.
- ◆ A barbed wire fence should be constructed around No. 3 adit portal and signs placed on the fence. A portal grate should be considered.
- ◆ The open stopes on No's. 2, 4 and 5 lodes are too extensive to backfill. However, a sign warning of their presence should be erected on the main access road near No. 1 adit.
- ◆ A sign should be erected adjacent to the old mill warning of the potential dangers of climbing on the foundations.
- ◆ No work is recommended on the remaining adits, trenches and waste dumps other than maintenance of the existing warning signs.

An indicative cost estimate to complete this recommended work is \$16,000.00.

3. LOCATION & ACCESS (Maps 1, 2)

The mine lies approximately 40 kilometres south of Devonport adjacent to the sealed Cradle Mountain Road.

It is accessed from this road by way of a four kilometre, good quality, all weather, 2-wheel drive dirt road which leads to the Iris River.

The mine lies only 100 metres south of this road and access to the actual mine workings is by way of several short 4-wheel drive tracks, the principal one of which leads to the Main Shaft and mill area.

This track does extend from the Main Shaft to the No. 4 Creek Drive, thereby accessing most of the workings. However, beyond the Main Shaft area it is blocked by numerous trees and is therefore only accessible on foot.

The mine is located in moderately rugged country southwest of Bismuth Creek. The area has been burnt out in the past and is now covered by wattle and eucalypt regrowth. The understory varies from man fern filled gullies, to dense blackberry and dogwood, to open fern covered hill slopes.

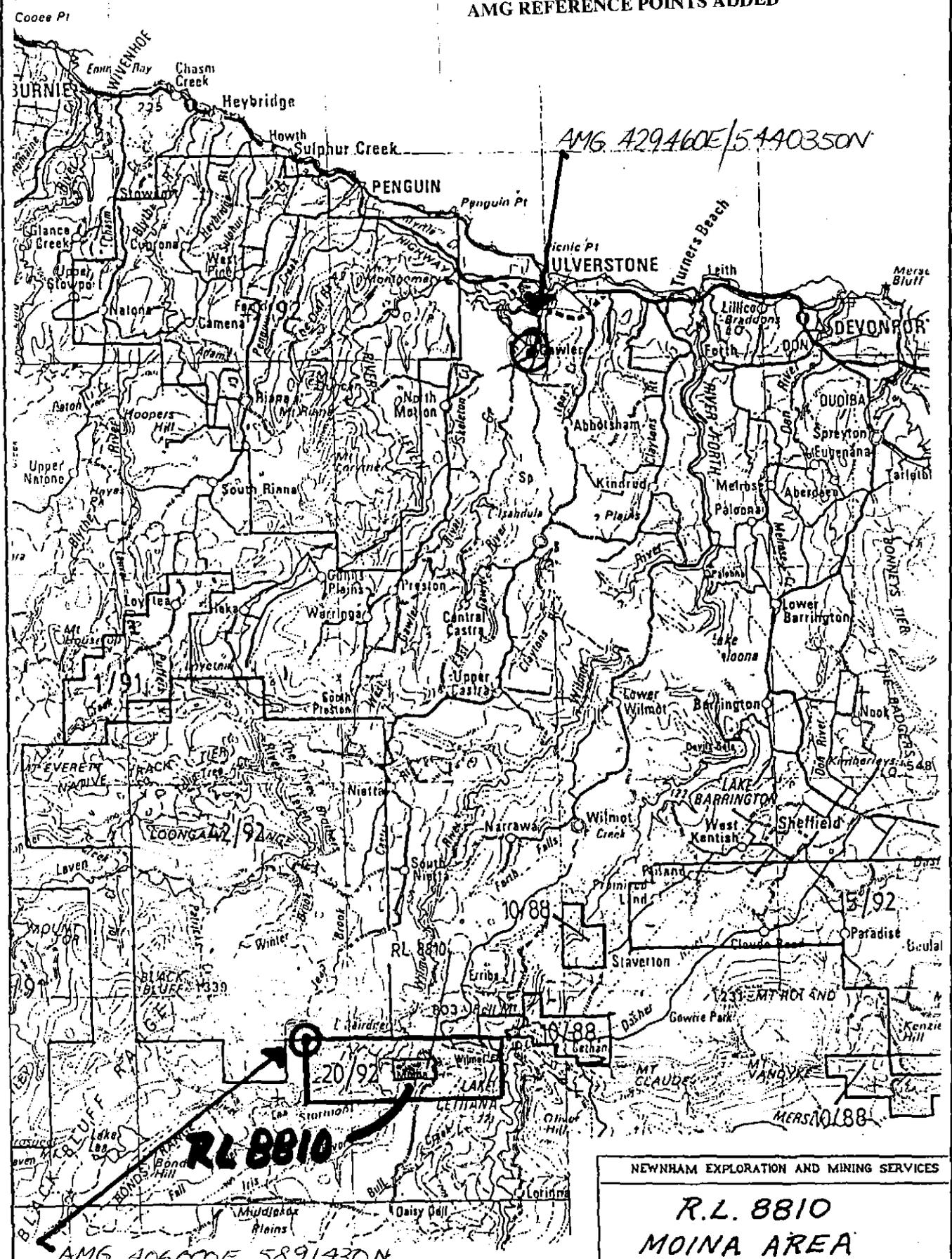
Some areas are reasonably accessible to casual bush walkers, picnickers, etc, whilst other areas are, for all practical purposes, only likely to be visited by persons either doing some serious "bush bashing" or specifically looking for the former mine workings.

The area is elevated (750 metres), cold and wet for much of the year but is a popular and well frequented area by family groups and fossickers in better weather periods.

The former Moyna township, which serviced the mine, has essentially vanished and all that remains are a few concrete house stumps.

218012

AMG REFERENCE POINTS ADDED



AMG 406000E, 5891430N

AMG 429460E / 5440350N

5 cm

NEWNHAM EXPLORATION AND MINING SERVICES		
R.L. 8810 MOINA AREA LOCATION MAP		
10 km	10	Scale: 1:250,000
Drawn: L.A. Newham	Date: Aug 95	Figure: 1

4. MINING HISTORY

The deposits were discovered in 1892 and closed in 1957. Intermittent production during that period resulted in the recovery of 525 tonnes tin, 255 tonnes wolfram and 71 tonnes bismuth from approximately 100,000 tonnes ore mined from a series of narrow, near vertical quartz veins hosted by Ordovician limestones (skarns) and sandstones.

There were seven eastwest veins, with strike lengths up to 360 metres and average widths of 200 millimetres, worked to a maximum depth of 150 metres below surface.

The veins were largely quartz filled but carried a varied mineral assemblage including coarse cassiterite, wolframite, bismuthinite, fluorspar, beryl, topaz and molybdenite. It is this assemblage which makes the area popular with fossickers and gem collectors.

On closure, resources on these veins were estimated as 80,000 tonnes 0.21% tin and 0.37% wolfram. More recent exploration has highlighted the potential in the area for fluorite, magnetite, gold, silver and bismuth mineral resources.

There were four main eastwest lodes worked: the No. 2, 4, 5 and 6 lodes. The principal access was the Main shaft, sunk to 150 metres on the No. 6 lode, with cross cut access to the other three lodes.

The No. 3 adit was driven south to intersect all four lodes, and the No. 1 adit was driven south to intersect No's. 2, 4 and 5 lodes. No. 2 adit was driven west along the No. 6 lode from the bottom of an open cut developed on the east end of No. 6. The No. 4 Creek Drive was driven west along the No. 4 lode. Goodwins Adit was driven to explore for additional lodes north of No. 6 lode.

Alluvial material was mined in a shallow open cut as a sub basaltic deep lead over the central outcrop sections of No's. 2, 4 and 5 lodes, and a short unnamed adit was driven beneath these alluvial workings. The No. 5 lode was developed west beneath a tertiary basalt cap and this was ventilated with a 30 metre rise through the basalt to surface (No. 5 Vent Rise).

Narrow shrink stopes were developed on the main veins and these were carried through to surface.

Exploration for additional veins or strike extensions of known veins was by shallow trenching.

Ore was treated in a mill located just north of the Main Shaft.

5. POTENTIAL HAZARDS & RECOMMENDATIONS

Accurate plans of the old workings exist at Mineral Resources Tasmania in Hobart. These were used to locate and evaluate the safety of most of the workings over a two day period.

The Shepherd & Murphy Mine was a significant operation and there exists a vast number of minor workings such as pits, trenches, water holes, tracks, etc. Most of these are not considered to represent a high level of safety risk to casual visitors to the area because they are not significantly different to many natural land forms in the area.

This report concentrates on the major workings. Recommendations are strongly influenced by ease of access. Some workings, which are difficult to locate or access, are arguably best left alone, because to undertake any significant safety improvement would mean improving access to them thereby making them more obvious and accessible to visitors to the area.

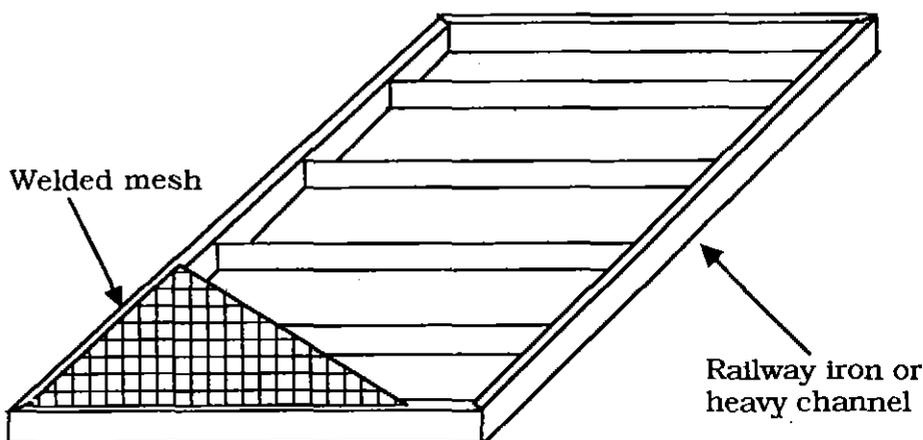
5.1 MINE WORKINGS (Map 2)

5.1.1 SHAFTS

Plans show three significant shafts: Main Shaft approximately 150 metres deep; No. 5 Vent Shaft approximately 30 metres deep; and a shaft on No. 5 lode. The first two were located but the latter was not - it may in fact now be a part of the No. 4 lode open stope to surface.

The **Main Shaft** is accessible and open (photos). It measures approximately 3000 x 1500 mm and is currently surrounded by a flimsy mesh wire fence. It was sunk on the No. 6 lode and stoping appears to have taken place right up to the brace.

This shaft is considered dangerous and a safety risk. It is recommended that it be capped with a large, heavy steel grate with mesh welded on top.





Main Shaft - readily accessed and poorly fenced



Main Shaft - open and considered dangerous

The area should then be fenced with barbed wire, with appropriate mine working warning signs attached. The fence should enclose the open stope (?) adjacent to the brace.

The **No. 5 Vent Shaft** (photos) is a small shaft, difficult to locate but lies in relatively open fern covered country. (This writer nearly fell down it!)

It is largely overgrown with water standing at about 10 metres. A steel rung ladder is installed in the shaft to surface thereby making it tempting and dangerous to visitors.

This shaft is considered dangerous and represents a significant safety risk.

A steel grate made of heavy channel or railway iron with mesh welded on top should be placed over this shaft and a barb wire fence with appropriate signs erected around it.

5.1.2 ADITS

Plans show six significant adits. All were located in the field. This writer did not enter any of the adits hence their internal conditions and air quality are unknown.

◆ **No. 1 Adit:** (photo)

Driven south to intersect eastern end of No's. 2, 4 and 5 lodes. Difficult to locate above the main access road (walking track). Portal is open with some standing water. Adit is considered hazardous for entry by unskilled persons.

Short of blocking the adit with soil and rock, it would be difficult to prevent access. Fences are not particularly successful. To place a grid or gate over the portal would require reopening the access road to an excavator.

Recommended that an appropriate warning sign be placed at the portal:

<p>WARNING Old Mine Tunnel Because of unknown ground conditions and air quality, access to this tunnel is considered dangerous. DO NOT ENTER</p>

218017



**Water filled shaft on No 5 Lode
with ladders in shaft -
accessible but largely concealed**



218018



No 1 Adit

◆ **No. 2 Adit:** (photo)

This adit was driven west along No. 6 lode from the bottom of a small overgrown open cut. The adit is relatively difficult to locate and the same comments and recommendations as for No. 1 adit apply.

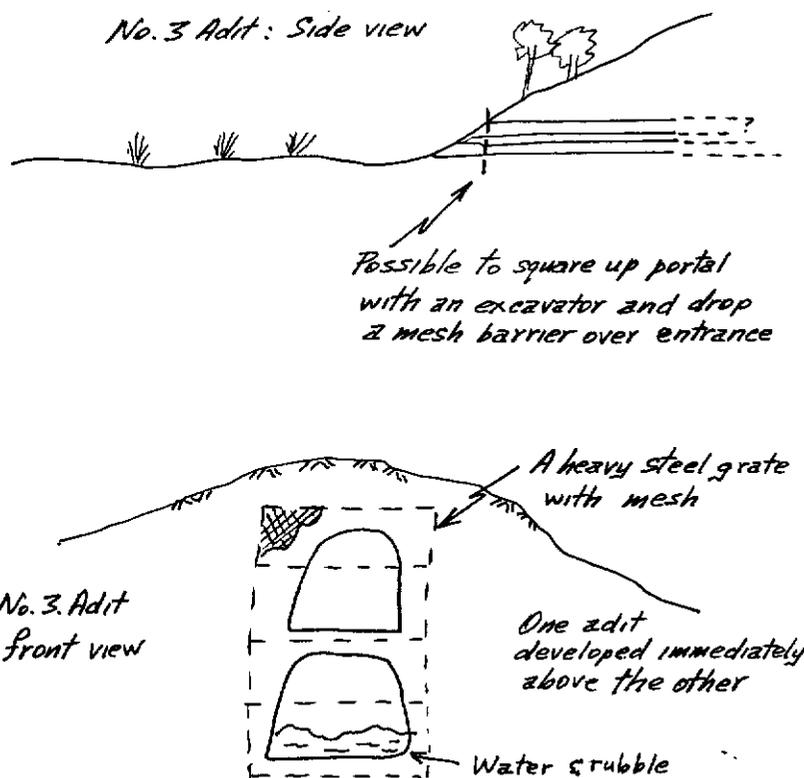
◆ **No. 3 Adit:** (photos)

This adit was driven south to intersect all main lodes and connects with the Main Shaft.

It is considered dangerous, firstly because it is very accessible being adjacent to the main vehicular access track, and secondly because of its rather peculiar portal construction, whereby a second shallow adit appears to have been driven above the main lower adit which contains deep water.

Recommended that this adit should be fenced with barbed wire and signs attached.

It may also be prudent to square up the portal of this adit with an excavator and place a vertical steel grid/mesh panel over the entrance.





Open cut on No 6 Lode east of Main Shaft - heavily overgrown



**No 2 Adit - driven
from end of open
cut onto No 6 Lode**

218020

218021



Entrance area to No 3 Adit - readily accessible



No 3 Adit - portal area



Goodwins Adit - portal largely collapsed



**No 3 Adit -
two adits,
one above
the other
very
accessible**

◆ **No. 4 Creek Drive:** (photos)

This adit was driven west along No. 4 lode. The portal lies on the banks of Bismuth Creek and it is very difficult to access and locate.

Any significant work here would diminish its inaccessibility and would probably impact on the creek.

Recommended that a sign be erected near the portal as for No. 1 adit.

◆ **Goodwins Adit:** (photo)

Short adit driven to explore for new lodes north of No. 6 lode. Portal now collapsed. Moderately difficult to locate and access. This adit is not considered particularly dangerous and no action is recommended.

◆ **Unnamed Adit:** (photo)

Adit driven into sub basaltic lead adjacent to alluvial workings. Moderately difficult to locate and access.

Recommended it be sign posted as with No. 1 adit.

5.1.3 STOPES

The four principal veins have all been stoped to the surface over varying strike lengths. Hence, there are long lines of narrow "crevasses" across the side of the hill.

◆ **No. 6 Lode Open Stopes:** (photos)

These appear to be mainly developed between the Main Shaft and No. 2 adit open cut area. As such, they are reasonably accessible and easy to locate. They are considered dangerous and a safety hazard.

However, to attempt to fill them would be quite difficult and would result in considerable local disturbance of the bush.

Recommended the open stope area be fenced off and sign posted and a general warning sign be erected.

Some filling with an excavator should be considered. ?



No 4 Creek Drive Portal - behind ferns Adit is well concealed and difficult to access.



No 4 Creek Drive Portal is open



No 6 Lode open stope (?) adjacent to Main Shaft



**No 6 Lode open stope east of Main Shaft
Accessible and considered dangerous**

◆ **No's. 2, 4 & 5 Lode Open Stopes:** (photos)

These are located on the side of a timbered hill south of the main access track, which can now only be accessed, with difficulty, on foot.

The stopes are certainly dangerous for anyone who comes across them. However, they are remote and relatively difficult to access. To attempt to fill them in seems impractical and the area affected is too large to fence.

Recommended that a sign, similar to those erected in July near the main access, be erected on the access track.

5.1.4 OPEN CUTS

There are two "open cut" developments, one on the eastern end of the No. 6 lode, and one on the sub basaltic lead over No's. 2, 4 and 5 lodes.

◆ **No. 6 Lode Open Cut**

This is an excavation which appears to be a combination of shallow alluvial workings and a portal cut for No. 2 adit. There are no benches as such and whilst the sides are steep, they are not regarded as more hazardous than a natural steep gully.

The area is now filled with man ferns, eucalypt and wattle regrowth.

This area is moderately accessible but is not considered to be particularly hazardous to people accessing this type of bush.

Recommended that no action be taken.

◆ **Sub Basaltic Deep Lead**

This is a collection of shallow alluvial workings over a considerable area. It consists of a multitude of trenches, small cuts and generally reworked ground.

It is moderately accessible, covered by dense regrowth, and not considered to be particularly hazardous to persons walking through the bush.

Recommended that no action be taken.



Open Slope - eastern end of No 4 lode



Narrow open Slope - eastern end of No 2 (?) lode

5.1.5 TRENCHES & PITS

As with many old mining fields, the principal form of shallow exploration was to dig trenches and pits in prospective areas.

The Shepherd & Murphy area has abundant such workings. They are generally shallow (<1000 millimetres), often with slumped sides and vegetated.

A number exist east of Bismuth Creek where presumably exploration was for extensions of the main lodes. These workings are regarded as no more hazardous than the many natural depressions and cliffs in this region.

Recommended that no action be taken.

5.1.6 WASTE DUMPS

◆ Waste Rock Dumps:

These dumps exist outside each of the major adits as classical elongated mounds where mine trolleys were dumped. These are not particularly high or steep and are now well vegetated. They are not regarded as specially hazardous.

Recommended no special action be taken.

◆ Mill Waste Dumps:

These dumps exist to the north of the mill area. They are not fine tailings but rather a fine crushed product together with coarse jig tails. The dump area is quite stable and the material is used locally to top dress roads, driveways, etc.

No fine/slime tailings as such were identified, although it is known that the mill contained buddles and keives.

Recommended that no special action needs to be taken on the mill product dumps.

5.2 MILL (photo)

All that remains of the mill are the large concrete foundations. No buildings as such exist. These foundations are structurally stable but represent a hazard to anyone who might be climbing on them and fall. They are very easy to find and are vehicular accessible.

218029



**Unnamed Adit in
sub-basaltic drift
open cut**



Treatment Plant remains - very accessible

Recommended that two warning signs be erected on the site:

<p>WARNING</p> <p>Old Mill Foundations</p> <p>Caution should be shown by any person climbing on these foundations.</p>
--

*Check working with
Geneve.*

5.3 DAMS (photos)

- ◆ The mine was fed by a water race from the Iris River. A number of small dams were located on the mine for various mining and milling needs. The most significant of these was developed on Bismuth Creek and consists of a rock wall and concrete spillway. It is well constructed and appears stable. The dam itself has shallow, low banks and is home to platypuses.

The dam is not particularly easy to find and is not frequented by casual visitors. It is not considered to be any more hazardous than other well constructed small dams.

Recommended no action be taken.

- ◆ Two other small dams exist, one to the immediate south, and one to the immediate east of the Main Shaft. They are very small, have low banks and probably not deep. They are accessible but not regarded as particularly hazardous.

Recommended no action be taken.

- ◆ Another small dam which is little more than a marshy area exists on the creek above the sub basaltic open cut. It is remote and difficult to access.

Recommended no action be taken.



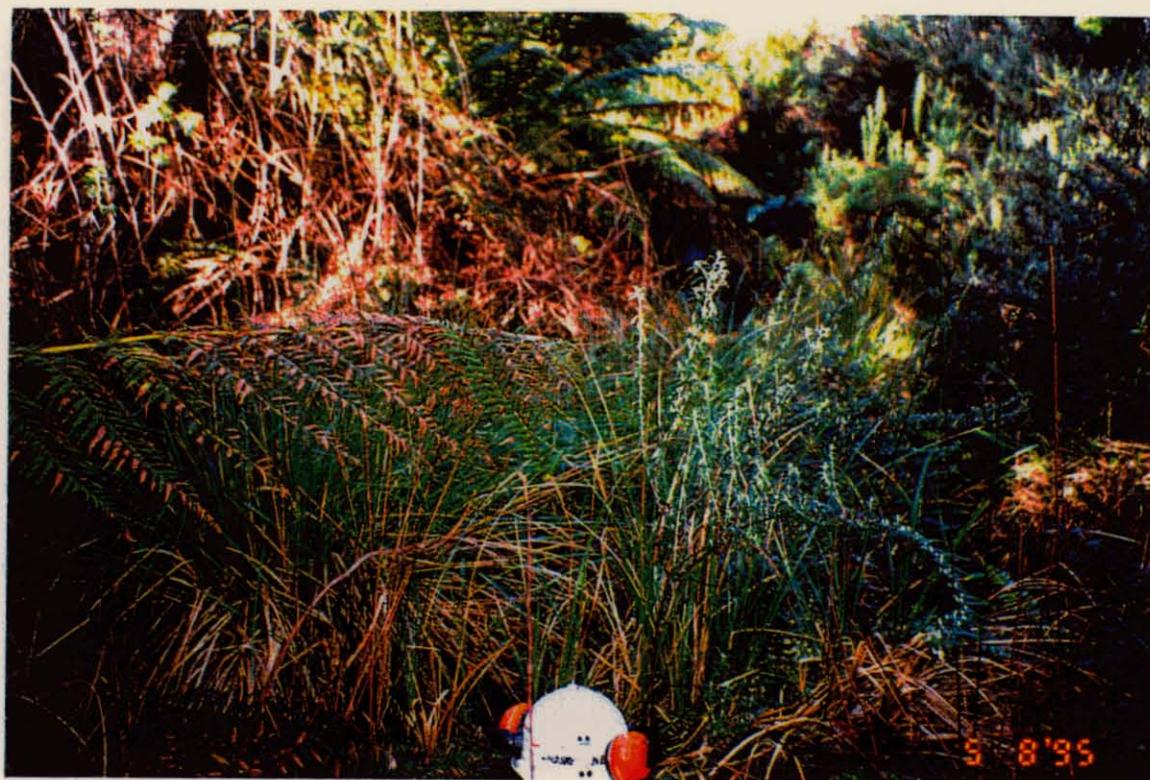
Small dam east of Main Shaft



Main water supply dam on Bismuth Creek



Small dam south of Main Shaft



**Small dam southeast of Main Shaft -
inaccessible and not considered hazardous**

6. COST ESTIMATE TO COMPLETE RECOMMENDED WORK

This estimate is a "ball-park" figure, and not based on specific quotations.

The main cost item is the three steel grates. Their cost would vary significantly depending on materials used.

6.1 FREE STANDING SIGNS

◆ Nine signs at \$150 each (five adit signs; two mill signs; two open stope signs)	1,350	
◆ Materials at \$100 per sign (posts, cement, bolts, etc)	900	
◆ Erection time - 2 days x 2 people at \$700 per day	1,400	
	<u> </u>	
<i>HOURLY RATE</i> <i>Accom.</i>		\$3,650

6.2 FENCES & ATTACHED METAL WARNING SIGNS (Main Shaft; Vent Shaft; No. 6 Lode Open Stopes; No. 3 Adit - 4 sites)

◆ Materials at \$400 per site (wire, droppers, signs)	1,600	
◆ Labour - 2 days x 2 people at \$700 per day	1,400	
	<u> </u>	
		\$3,000

6.3 GRATES

◆ Main Shaft	2,000	
◆ No. 5 Vent Shaft	1,500	
◆ No. 3 Adit	1,500	
◆ Placement time - 1 day x 2 people	700	
	<u> </u>	
		\$5,700

6.4 MACHINERY HIRE

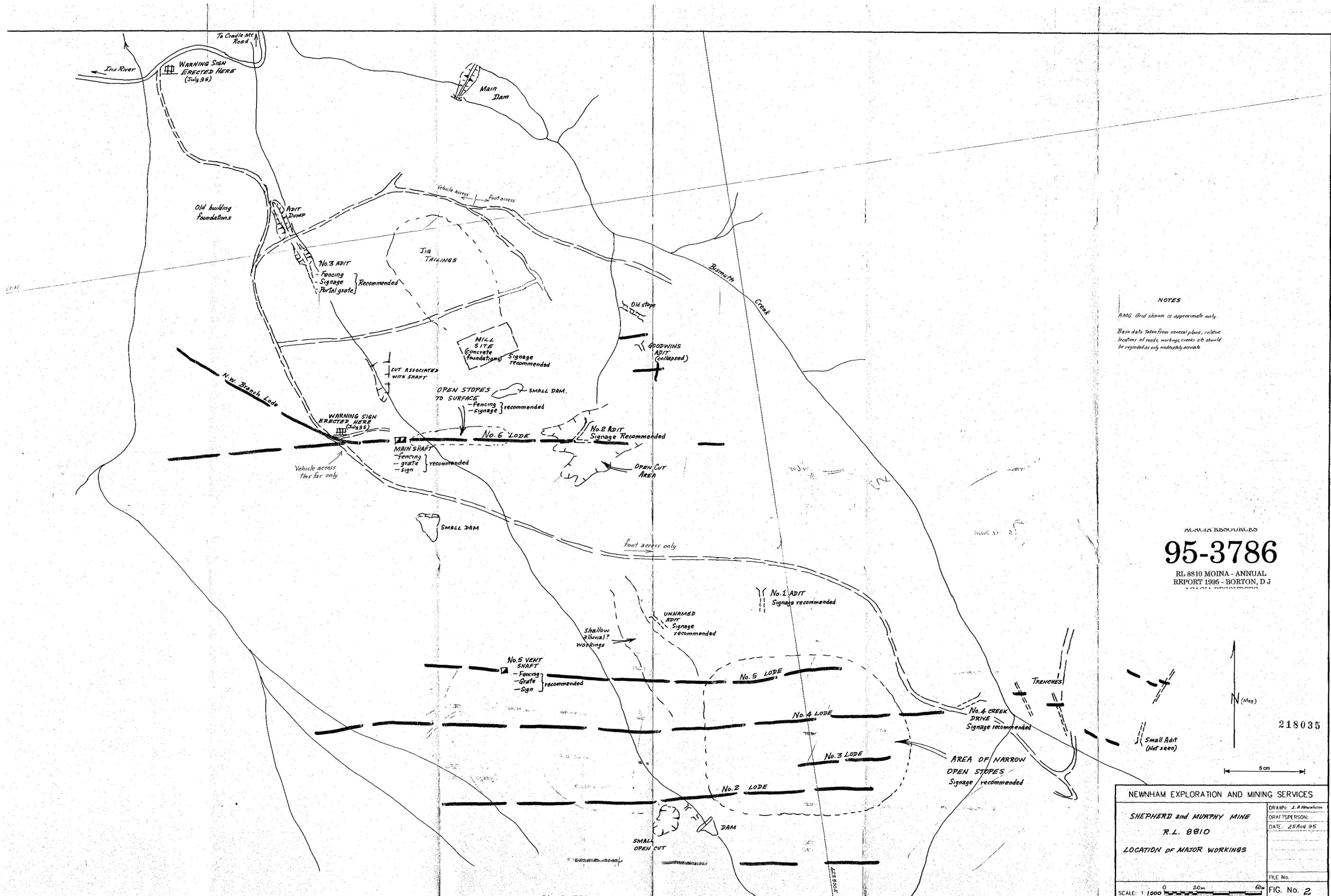
◆ Excavator placing grates, filling No. 6 lode open stopes, No. 3 portal area - 2 days at \$750 per day	1,500	
◆ Truck hire for excavator & grates for 1 day	800	
	<u> </u>	\$2,300

6.5 TRAVEL & ACCOMMODATION

◆ 1,200 kms at \$0.35 per km	420	
◆ 4 nights accommodation	600	
	<u> </u>	\$1,020

ESTIMATE TOTAL**\$15,670**

= \$7840 A CADIP



NOTES

AMG Grid shown is approximate only.
 Base data taken from several plans, relative locations of roads, workings, creeks etc should be regarded as only moderately accurate.

ACACIA RESOURCES

95-3786

RL 8810 MOINA - ANNUAL REPORT 1995 - BORTON, D J

218035



5 cm

NEWHAM EXPLORATION AND MINING SERVICES

SHEPHERD and MURPHY MINE
 R.L. 8810
 LOCATION OF MAJOR WORKINGS

DRAWN: J. A. Newham
 DRAFTSPERSON:
 DATE: 25 Aug 95
 FILE No.

SCALE: 1:1000
 0 20m 60m
 FIG. No. 2

218036

APPENDIX II

HUGO JOINT VENTURE, R.L. 8810, MOINA AREA
ANNUAL REPORT 994 - 95.

By L.A. Newnham

NEWNHAM EXPLORATION & MINING SERVICES

HUGO SKARN PROJECT JOINT VENTURE

MOINA AREA

RL 8810

ANNUAL REPORT

1994-95

Prepared for:

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27 September 1995

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4. Work Proposed 1995-96
5. Expenditure

TABLES

Table 1: Expenditure

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2. Proposed Drill Holes Plan
3. Proposed Drill Holes Section

1. SUMMARY

RL 8810 covers an area of Ordovician sediments adjacent to the Devonian Dalcoath Granite. The area is underlain at shallow depths by a spur or ridge of this granite and has been folded in several directions and extensively faulted as a result of the granite intrusion.

Extensive and intensive fluorine metasomatism adjacent to the granite ridge has resulted in widespread alteration of the Ordovician sediments.

These metasomatic fluids have leached metals from both the granite and adjacent Cambrian volcanic rocks, and transported these to mineral deposit repositories in both the sediments and structures.

Deposits of Sn, W, Bi, Mo, Zn, Au and CaF_2 are widespread.

The principal exploration objectives of Titan-Goldstream are commercially viable Au-base metal deposits within the Hugo Skarn.

A four hole cored drilling program to test the Hugo Skarn was completed in July 1994.

Results suggested potential for a Zn-Bi-Au skarn deposit remained to the south of existing drilling, but potential to the north was diminished.

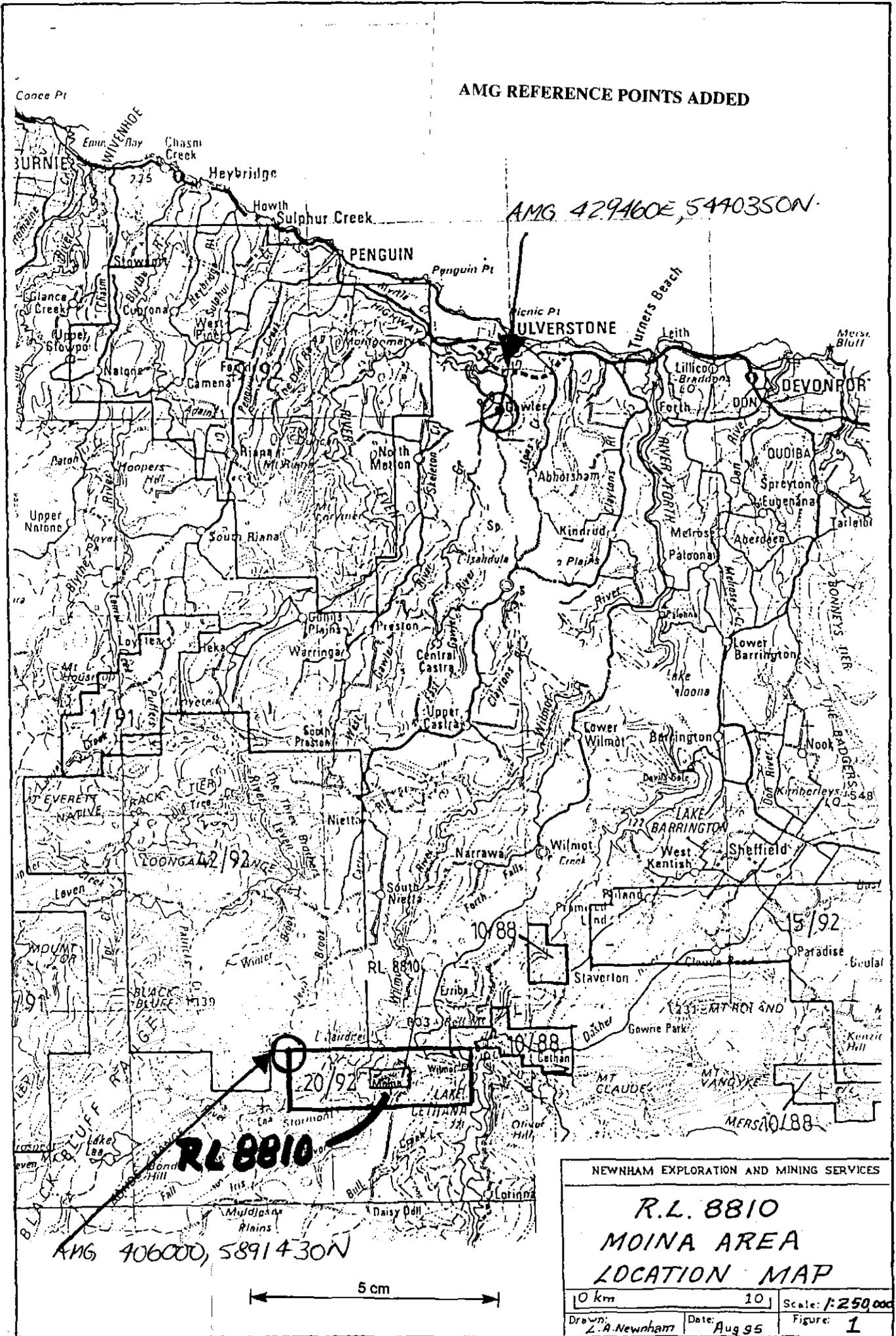
A further program of drilling to test this southern potential is planned for October-November 1995 at an estimated cost of \$68,000.

2. TENURE

Retention Licence 8810 covers a two square kilometre area of Ordovician sediments which has been skarned and altered by the intrusion of a Devonian granite.

The licence is held jointly by CRA and Acacia Resources Ltd. That section of the licence area which lies generally east of the Bismuth Creek Fault cover the Hugo Skarn and is subject to a joint venture agreement between CRA and Acacia on the one hand, and Titan Resources NL and Goldstream Mining NL on the other.

AMG REFERENCE POINTS ADDED



NEWNHAM EXPLORATION AND MINING SERVICES

**R.L. 8810
MOINA AREA
LOCATION MAP**

0 km	10	Scale: 1:250,000
Drawn by Z.A. Newnham	Date: Aug 95	Figure: 1

3. WORK COMPLETED 1994-95

A four hole core drilling program totalling 790 metres was completed in July 1994 at a cost of \$90,000.

Results were presented in a report titled "*EL 20/92 and RL 8810, Moina Area, Report on Drilling Program, May-July 1994*" for Goldstream Mining NL by L A Newnham, 12 September 1994.

This program indicated the Hugo Skarn was disrupted by a series of steeply dipping north south faults. Potential for skarn hosted mineralisation to the north was restricted to a narrow zone adjacent to the Bismuth Creek Fault at depths exceeding 150 metres.

However, there remains potential for skarn hosted Au-Bi-Zn mineralisation to the south of existing drilling. Best results obtained in the 1994-95 drilling program were:

- ◆ HS 001: 17 metres 0.32 Au, 0.36 Bi
- ◆ HS 002: 5 metres 1.73 Zn.

4. WORK PROPOSED

It is planned to further drill test the Hugo Skarn for gold and base metals in October-November 1995.

Three cored HQ holes are planned to test the southern extension of the Au-Bi-Zn skarn east of the Bismuth Creek Fault (Hugo Skarn).

The holes are shown on the attached maps 2 and 3.

Recommended Hole 1

Approximately 170 metres long, designed to further test the significant Zn intersections in SMD 16, SMD 13, and to a lesser extent in HS 002.

Recommended Hole 2

Approximately 150 metres long, designed to test the southern extensions of the four significant Zn and Au intersections in SMD 16.

Recommended Hole 3

Approximately 150 metres long, primarily to test the southern extension of the Au-Bi intersection in HS 001 (10 m, 0.4 Au, 0.52% Bi). Bismuth is becoming a reasonably attractive commodity and this skarn body does have the potential to host a moderate sized deposit.

The total metreage in these three holes is 500 metres. HQ coring is recommended. Drilling conditions are difficult and unit costs will reflect this.

Hugo Budget Estimate

500 metres HQ at \$80 per metre	40,000
Mobilise/demobilise	1,000
Access development	3,000
Field supplies (trays, etc)	3,000
Management (including reporting)	12,000
Assaying (200 samples at \$20 per sample)	4,000
Travel and accommodation	5,000
	<hr/>
Total	\$ 68,000
	<hr/>

5. EXPENDITURE

Expenditure for 1994-95 was \$46,702.00. The majority of this was attributed to payments to drilling contractors for work completed late in 1993-94, and to consultants for preparation of reports on that drilling program.

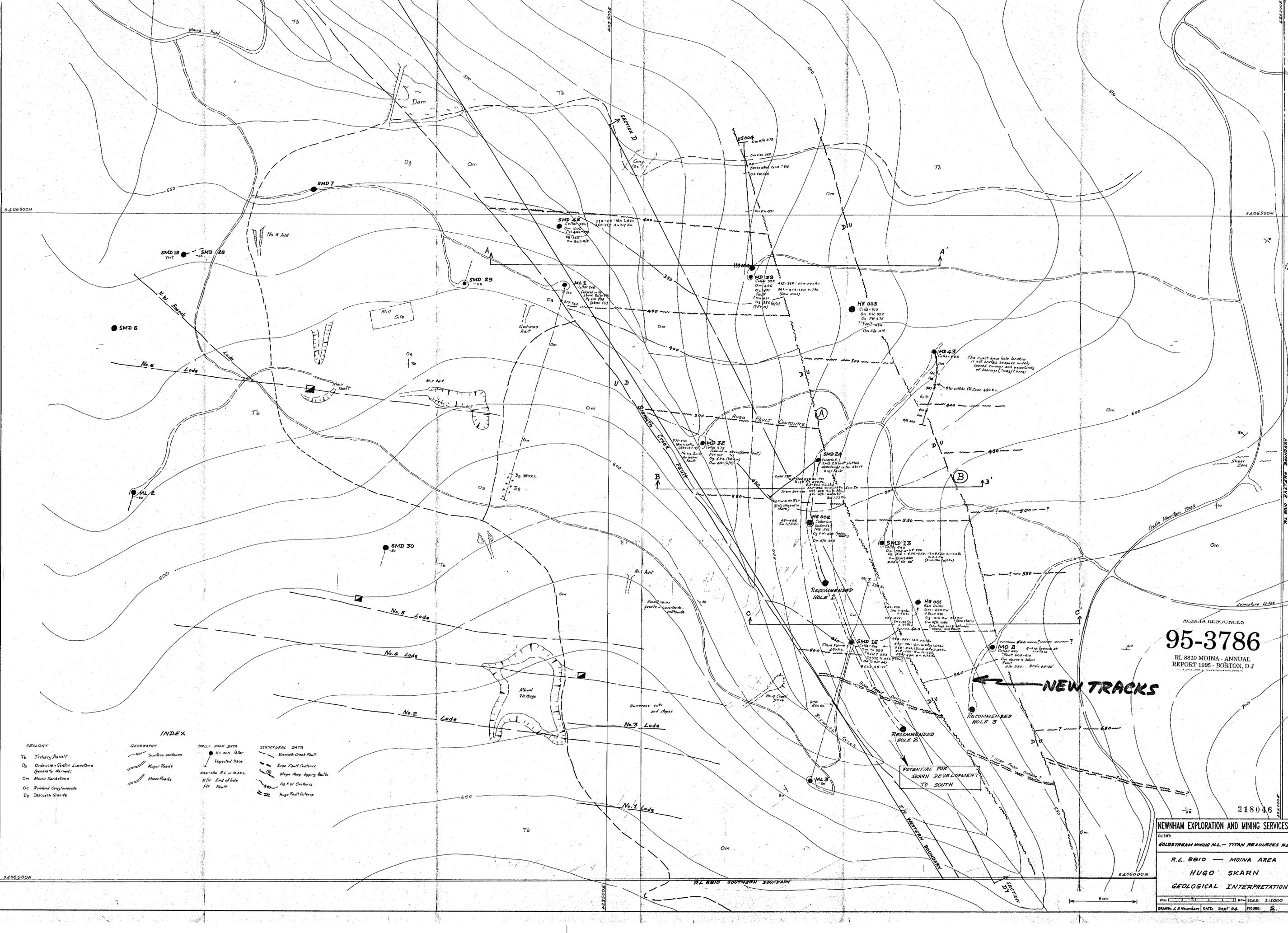
Expenditure to date on the Hugo Skarn is \$93,405.00.

Budget estimate for drilling planned for 1995-96 is \$68,000.00.

AC	ACCOUNT-NAME	O/P BAL	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	THIS YR	PROJ TOTAL
		\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
1450001	****HUGO JOINT VENTURE															
1451661	Accommodation	517.35														517.35
1451667	Analysis		5,140.00		945.00										6,085.00	6,085.00
1451670	Drafting & Maps		497.52												497.52	497.52
1451673	Drilling	49,242.58	(35,509.48)	49,242.58											13,733.10	62,975.68
1451676	Equipment Hire					390.00									390.00	390.00
1451679	Field Expenditure/Consumables															
1451681	Food and Messing															
1451682	Freight & cartage			349.00											349.00	349.00
1451685	Fuel															
1451688	General Contractors															
1451691	Geological Consultants	11,184.00	6,918.00	350.00	2,080.00	175.00									9,523.00	20,707.00
1451700	Insurance															
1451703	Legal / stamp Duty		308.10												308.10	308.10
1451706	Office Expenditure/Consumables															
1451712	Rates & Taxes															
1451718	Salaries		1,312.50			262.50									1,575.00	1,575.00
1451721	Small Tools & Equipment															
1451724	Surveying & Pegging															
1451730	Tenement Administration															
1451733	Tenement Costs															
1451736	Travel															
1451740	Vehicles															
1451760	Acquisition Costs															
1453990	Reimbursement of Expenses	(30,472.00)			(15,817.00)			(413.00)							(16,230.00)	(46,702.00)
1453996	Retained Earnings															
1453997	Year to Date Net Income															
1454999	Total Sales															
		30,471.93	(21,333.36)	49,941.58	(12,792.00)	827.50		(413.00)							16,230.72	46,702.65
		30,471.93	9,138.57	59,080.15	46,288.15	47,115.65	47,115.65	46,702.65	46,702.65	46,702.65	46,702.65	46,702.65	46,702.65	46,702.65	46,702.65	46,702.65
															32,460.72	93,404.65

Total 1994-95.

Table I: 1994-95 EXPENDITURE.



INDEX

GEOLOGY	GEOGRAPHY	DRILL HOLE DATA	STRUCTURAL DATA
Tb Tertiary Basalt	Sur-face contours	HS 000 Collar	Blomfield Creek Fault
Og Ordovician Guden Limestone (Generally Abandoned)	Major Roads	Projected trace	Hugo Fault Contours
Om Moana Sandstone	Minor Roads	400-450 R.L. in MAX.	Major steep dipping faults
Oc Roubid Conglomerate		E/H End of hole	Og F.W. Contours
Dg Dalcoath Granite		F/H Fault	Hugo Fault Outcrop

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95-3786
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 REPORT 1995 - BORTON, D J

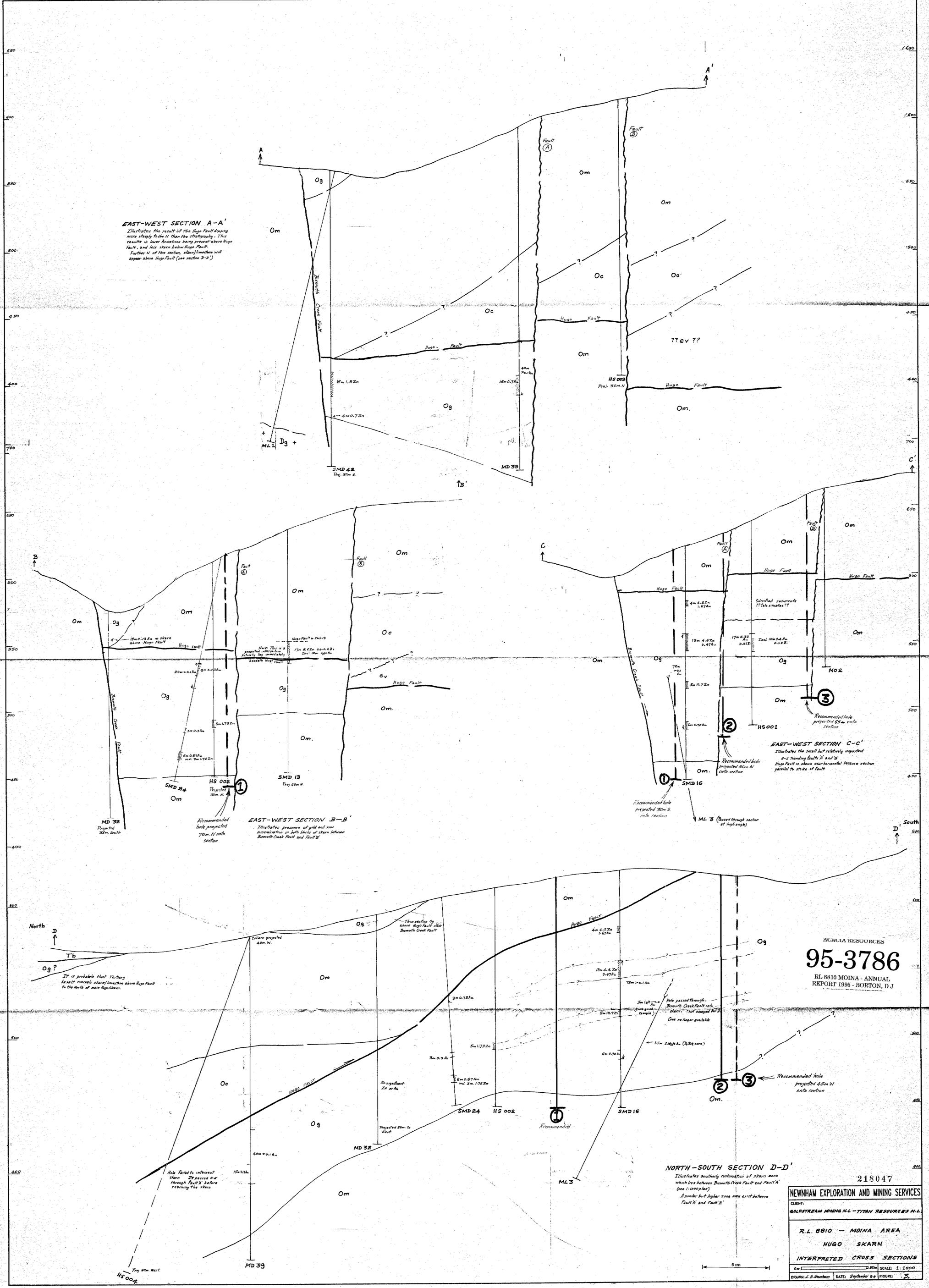
218046

NEWNHAM EXPLORATION AND MINING SERVICES

CLIENT:
 GOLDSTREAM MINING N.L. - TITAN RESOURCES N.L.

R.L. 8810 - MOINA AREA
HUGO SKARN
GEOLOGICAL INTERPRETATION

SCALE: 1:1000
 DRAWN: L.A. Newham DATE: Sept 94 FIGURE: 22



EAST-WEST SECTION A-A'
 Illustrates the result of the Huge Fault dipping more steeply to the N than the stratigraphy. This results in lower formations being present above Huge Fault, and less strata below Huge Fault. Further N of this section, strata/formation will appear above Huge Fault (see section B-B')

EAST-WEST SECTION B-B'
 Illustrates presence of gold and zinc mineralization in both blocks of strata between Barnett Creek Fault and Fault B.

EAST-WEST SECTION C-C'
 Illustrates the small but relatively important N-S trending faults A and B. Huge Fault is shown near horizontal because section parallel to strike of fault.

NORTH-SOUTH SECTION D-D'
 Illustrates southerly continuation of strata zone which lies between Barnett Creek Fault and Fault A (see 1:1000 map). A similar but higher zone may exist between Fault A and Fault B.

AURUBA RESOURCES
95-3786
 RL 8810 MOINA - ANNUAL REPORT 1996 - BORTON, D J

218047

NEWNHAM EXPLORATION AND MINING SERVICES	
CLIENT: GOLDSTREAM MINING NL - TITAN RESOURCES NL	
R.L. 8810 - MOINA AREA	
HUGO SKARN	
INTERPRETED CROSS SECTIONS	
0m	100m
SCALE: 1:1000	
DRAWN: J. A. Howland	DATE: September 94
	FIGURE: 3

5 cm

North

South

BILLITON AUSTRALIA - METALS INFORMATION UNITMIUREP DATA INPUT SHEET

TITLE
 R.L. 8810 - MOINA ANNUAL REPORT FOR THE PERIOD TO 21/10/95

DATE 20/11/94⁵ (Publication date in Format dd/mm/yy)

AUTHOR
 D.J. BORTON

SOURCE (If Non-SCOA)
 N/A

PROSPECT/PROJECT
 MOINA/HUGO JOINT VENTURE

KEYWORDS
 FLUORITE, SKARN, ZINC, GOLD, TIN, TUNGSTEN

STATE
 TASMANIA

REGION
 WEST COAST

SHEET NAME (1:250,000)
 BURNIE

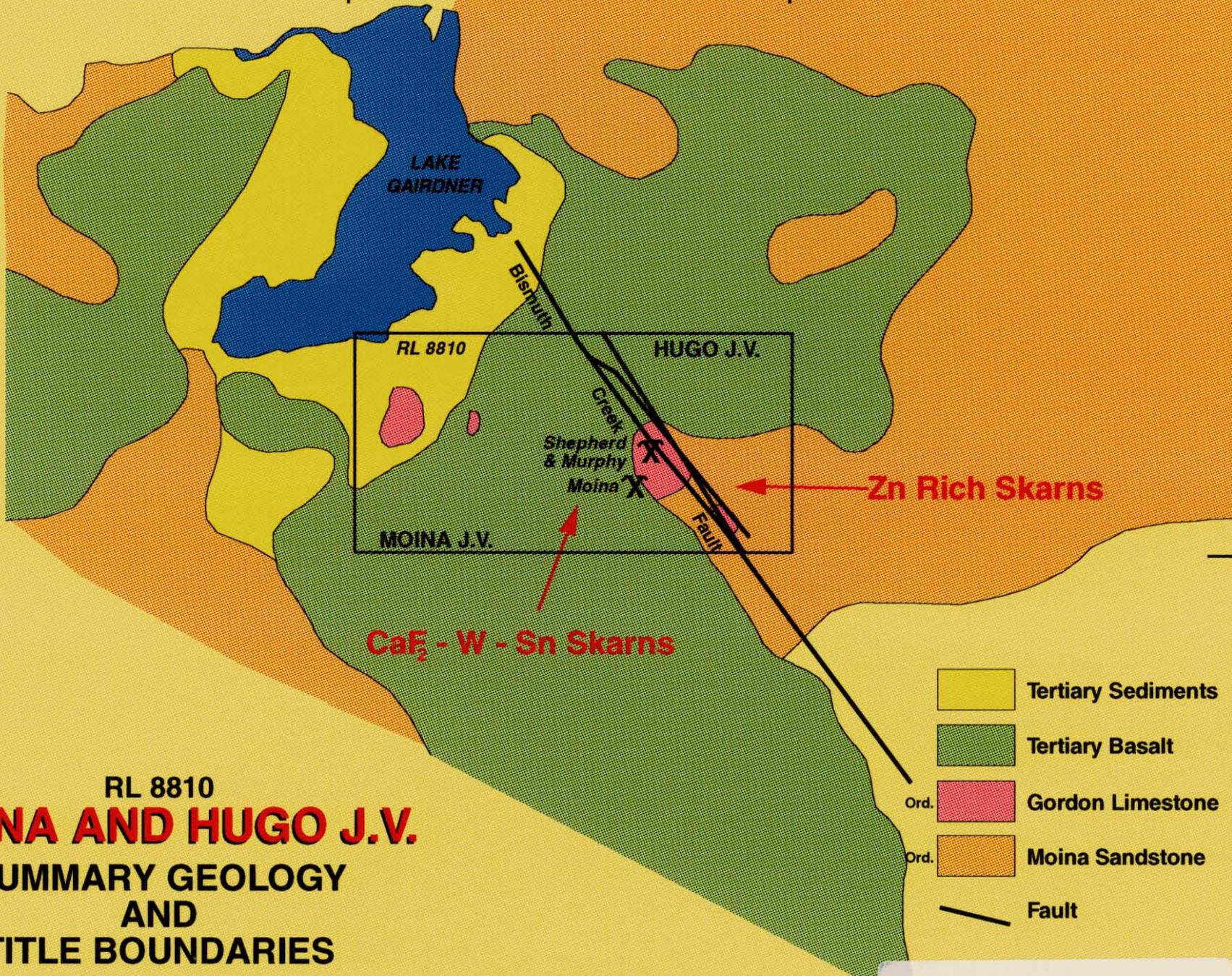
REPORT NUMBER
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218049

N

422000mE

424000mE



5406000mN

RL 8810

HUGO J.V.

MOINA J.V.

Bisnuth Creek

Shepherd & Murphy Moina

Fault

Zn Rich Skarns

CaF₂ - W - Sn Skarns

RL 8810
MOINA AND HUGO J.V.
 SUMMARY GEOLOGY
 AND
 TITLE BOUNDARIES

- Tertiary Sediments
- Tertiary Basalt
- Ord. Gordon Limestone
- Ord. Moina Sandstone
- Fault

0 1km

5 cm