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## 1. SUMMARY

RL 8810 and the surrounding EL 20/92 are underlain by a sequence of Ordovician sediments, extensively folded and faulted and then intruded by the Devonian Dalcoath Granite. The granite outcrops east of Moina and forms a long subsurface spine to the west.

Sediments above this spine were intensely altered by fluorine and iron rich metasomatic fluids, resulting in wide spread formation of skarned limestones and silicification-pyritisation of sandstones and conglomerates.

Various base and precious metals, including Sn, W, Zn, Bi, Mo, Au, accompanied the metasomatic fluids and accumulated as metal deposits in a range of structural and strata-bound repositories.

One such deposit is the **Hugo Skarn**, formed by the alteration of a thick section of limestone occurring within a faulted synclinal structure on the east side of the northwest trending Bismuth Creek Fault.

The Hugo Skarn is mineralogically complex and previous drilling intersected deposits of fluorite, magnetite, bismuthinite, molybdenite, sphalerite, gold, scheelite, tin (?cassiterite) within the skarn.

It is partially concealed to the north, beneath an older sequence of sandstones and conglomerates thrust over the skarn along a shallow dipping fault known as the Hugo Fault.

Of special interest within the Hugo Skarn were several zones of Au-Zn intersected in previous drilling programs. A re-interpretation of this drilling suggested these intersections were of potential economic interest, and scope existed for the mineralised zones to extend north and east. To undertake an initial test of this interpretation, a four hole core drilling program totalling 790 metres was completed between May-July 1994, at a cost of \$90,000.

Two holes (HS 001 and HS 002) were drilled to infill between mineralised intersections in previous holes, whilst two holes (HS 003 and HS 004) were drilled to test for northern extensions of the Au-Zn skarn.

Results indicate the following:

- (a) the skarn is disrupted by a set of steeply dipping north south trending faults. Uplift on these faults to the east appears to eliminate skarn development in that direction.
- (b) skarn potential to the north is limited to a block adjacent to the Bismuth Creek Fault, where depth to the top of the skarn is in excess of 150 metres.

✓

- (c) potential remains for the skarn to continue south of the drilled area at a shallow depth.

Best mineralised intersections were:

HS 001: 17 m 0.32 Au, 0.36 Bi, including 10 m 0.40 Au, 0.52 Bi  
HS 002: 5 m 1.73 Zn.

HS 001 was drilled 50 metre south of SMD 13, which intersected 17 metres 8.6 Zn of which the hanging wall 10 metres assayed 1 g/t Au.

HS 002 was drilled 60 metres west of SMD 13, and 90 metres north of SMD 16, which intersected three zones of zinc mineralisation:

4 m 4.2 Zn, 1.67 Au  
13 m 4.4 Zn, 0.47 Au  
5 m 10.7 Zn

Holes HS 003 and HS 004 failed to intersect skarn.

Potential remains for the mineralised skarn zone intersected to SMD 13, SMD 16, HS 001 and HS 002 to extend to the south. The magnitude of this potential will be determined by the rate of convergence of the north south faults in that direction, and the dip of stratigraphy.

A limited program of 2-3 drill holes would be required to better define both the tonnage and mineralisation potential in that direction. Such a program would total 500 metres and cost \$60,000.

## 2. TENURE

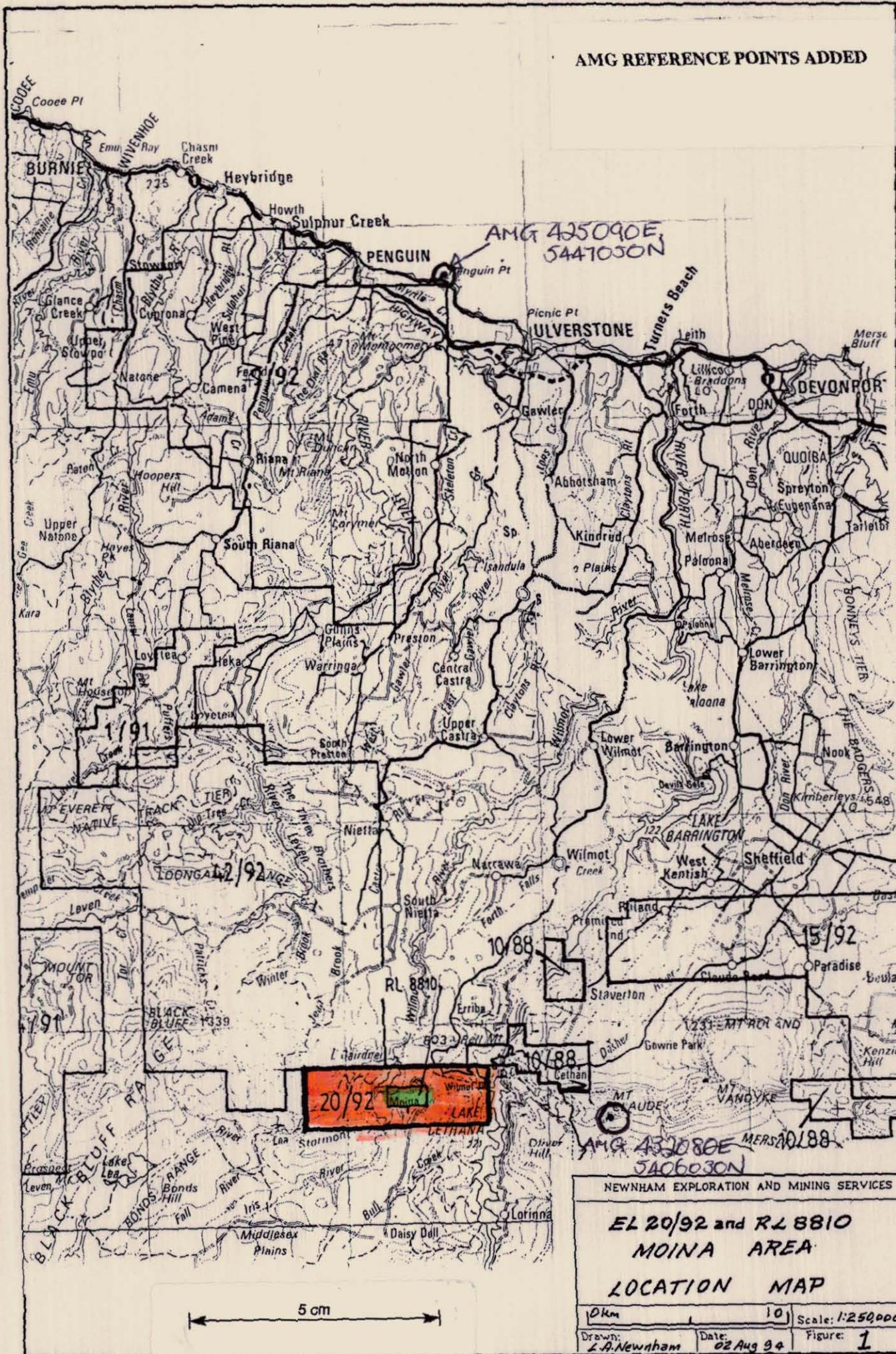
(Location Map, Figure 1)

Retention Licence (RL) 8810 of two square kilometres, is held jointly by the Shell Company of Australia Ltd and CRA Exploration Pty Ltd.

The eastern half of the licence area is currently explored under a joint venture agreement, dated 9 September 1993, between those companies, Titan Resources NL, and Goldstream Mining NL. The tenement is due for renewal in October 1994.

RL 8810 is surrounded by Exploration Licence (EL) 20/92 of 24 square kilometres, held jointly by Titan Resources NL and Goldstream Mining NL. It is due for renewal on 11 September 1994.

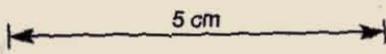
AMG REFERENCE POINTS ADDED



NEWNHAM EXPLORATION AND MINING SERVICES

**EL 20/92 and RL 8810  
MOINA AREA  
LOCATION MAP**

0km 10 Scale: 1:250,000  
 Drawn: L.A. Newham Date: 02 Aug 94 Figure: 1



### 3. DISTRICT GEOLOGY

187007

(Geological Map 1:25,000, Figure 2)

The accompanying geological map is a direct photocopy of the relevant area of the 1:25,000 Winterbrook geological map, produced by Mineral Resources Tasmania.

It portrays clearly those geological factors considered important to the development of mineral deposits within the tenement areas.

Most of the area is underlain by a graded sequence of shallow marine sediments collectively known as the Denison and Gordon Groups, represented in this region by Roland Conglomerate, transitional into Moina Sandstone, transitional into Gordon Limestone. The formations are several hundred metres thick and have been broadly folded in an eastwest direction and more sharply in a later northwest-southeast direction.

Faulting accompanied (?) this later phase of folding and resulted in development of several significant northwest trending faults (eg. Bismuth Creek Fault, Kauri and Stormont Faults).

These sedimentary formations are underlain by various felsic and rhyolitic members of the Cambrian Mt Read Volcanics, but their outcrop is restricted to relatively small areas in the southern section of the EL.

In the upper Devonian-lower Carboniferous, the Cambrian volcanics and Ordovician sediments were intruded by the highly fractionated Dalcoath Granite, which outcrops east of Moina and forms an eastwest elongated spine at shallow depths to the west of that outcrop. This spine is well defined by gravity surveys.

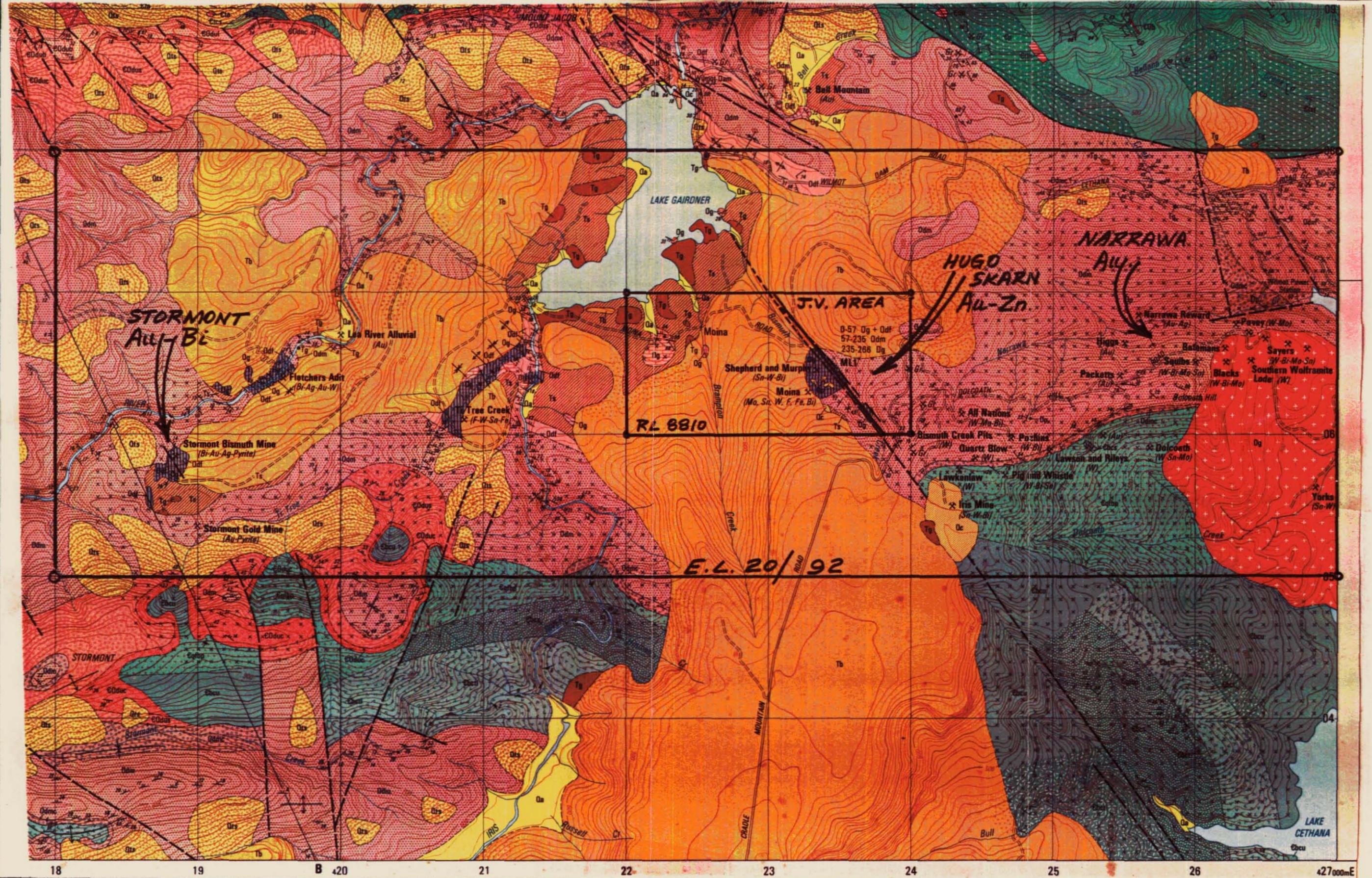
Large volumes of metasomatic fluids emanated from this granite spine and migrated along structures and favourable stratigraphy, resulting in widespread alteration of the Ordovician sediments, in particular the Gordon Limestone. These fluids appear to have been locally iron and fluorine rich, and either carried a metalliferous component from the granite (eg. Sn, W, Mo, Bi) or leached metals from the Cambrian volcanics on their upward passage into the Ordovician sediments.

Various deposit styles resulted including vein swarms, fault infillings and metalliferous skarn assemblages.

The region has been affected by several phases of significant post(?) mineralisation faulting including low angled thrusting (eg. Hugo Fault) and continued movement on earlier structures (eg. Bismuth Creek and Stormont Faults), resulting in dislocation and fragmentation of some deposits.

In the tertiary, localised patches of silicified sediments developed prior to much of the area being concealed beneath basalt flows.

A more detailed geological description of the Hugo Skarn, which lies under the eastern end of RL 8810, is presented in section 4.3.



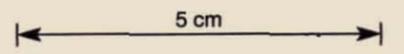
18 19 20 21 22 23 24 25 26 427000mE

Hugo Fault projected outcrop  
 Hugo Skarn Au-Zn mineralisation  
 Possible skarn extensions beneath Basalt.

Tb Tertiary Basalt  
 Tg, Ts Tertiary sediments and gravels  
 Og Gordon Limestone  
 (Vertical stripes = skarn)  
 Odm Moina Sandstone  
 Odmc Roland Conglomerate  
 Evxx Various Cambrian Volcs + Seds

Dg Dalcouth Granite  
 xx Contact alteration zone around Dg.

Map is a photocopied section of the  
 State 1:25000 Winterbrook-Moina Geol. Map.  
 (MRVP Map 9).



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**MOINA AREA  
REGIONAL GEOLOGY**

0 km. 0.5 km 1 | Scale 1:25000  
 Drawn LAN Date APR 92 Figure 2

187009

**4.1 PREVIOUS WORK**

The intensity and diversification of mineralisation in the alteration aureole surrounding the Dalcoath Granite has attracted substantial small-medium scale mining and a considerable amount of exploration effort.

Mining has been directed principally at Sn, W, Mo, Bi narrow vein deposits (eg. Shepherd and Murphy, All Nations mines, and alluvial Sn, W).

Exploration programs have been directed at a number of targets:

- extensions of the narrow high grade Sn, W veins;
- lode and alluvial Au and Sn;
- skarn hosted Sn, W;
- skarn hosted Zn, Au;
- skarn hosted fluorite.

Because of the enormous quantity of skarned limestone developed above the Dalcoath Granite spine, considerable recent exploration has been directed at the skarn.

This work has often been hampered firstly by extensive tertiary basalt flows, and secondly by widespread thrusting of older sedimentary formations over the limestone/skarn units. These two factors of concealment have often hampered and disrupted exploration.

Because of their typically high (but not always so) magnetite content, airborne and ground magnetic surveys have been favoured exploration tools in defining skarn areas. However, there are a few traps with this. Firstly, the tertiary basalts are often magnetic; secondly, deep burial of skarn beneath thrust slices of siliceous (non-magnetic) sediments can confuse; thirdly, and probably most importantly, those skarns with the highest precious metal-base metal potential are magnetite poor.

Several programs of core drilling have been completed into the Hugo Skarn:

- Mt Lyell Mining & Railway Co in the late 1960's, searching for extensions of the Shepherd and Murphy veins;
- Comalco in the mid 1970's, defining a large fluorite resource;
- Shell in the early 1980's, exploring for large tonnage, low grade Sn, W deposits, and Au-Zn mineralisation;

- CRA in late 1980's, testing for easterly extensions of the Hugo Skarn.

The combined results of these exploration efforts were the successful definition of a large metallurgically complex fluorite deposit, a large low grade Sn, W and magnetite deposit, and a relatively small deposit of Zn-Au mineralisation known as the Hugo Skarn, concealed beneath a thrust block of older siliceous sediments lying east of the Bismuth Creek Fault.

## **4.2 EXPLORATION MODEL**

In 1992, the existing exploration data in the Moina area was re-assessed by Titan/Goldstream.

On a regional/district scale, the initial approach involved stripping off the tertiary basalt and creating a pre-tertiary basement map, which sought to highlight the principal features associated with metallogenesis in the district.

This approach highlighted the potential of receptive host rock formations adjacent to substantial north northwest trending structures developed across the Dalcoath Granite spine.

The Hugo Skarn was identified as an area of such potential due to the coincident presence of firstly, a number of substantial northwest faults, including the Bismuth Creek Fault; secondly, a thick sequence of Gordon Limestone; and thirdly, massive alteration of this limestone by fluorine-iron enriched metasomatic fluids.

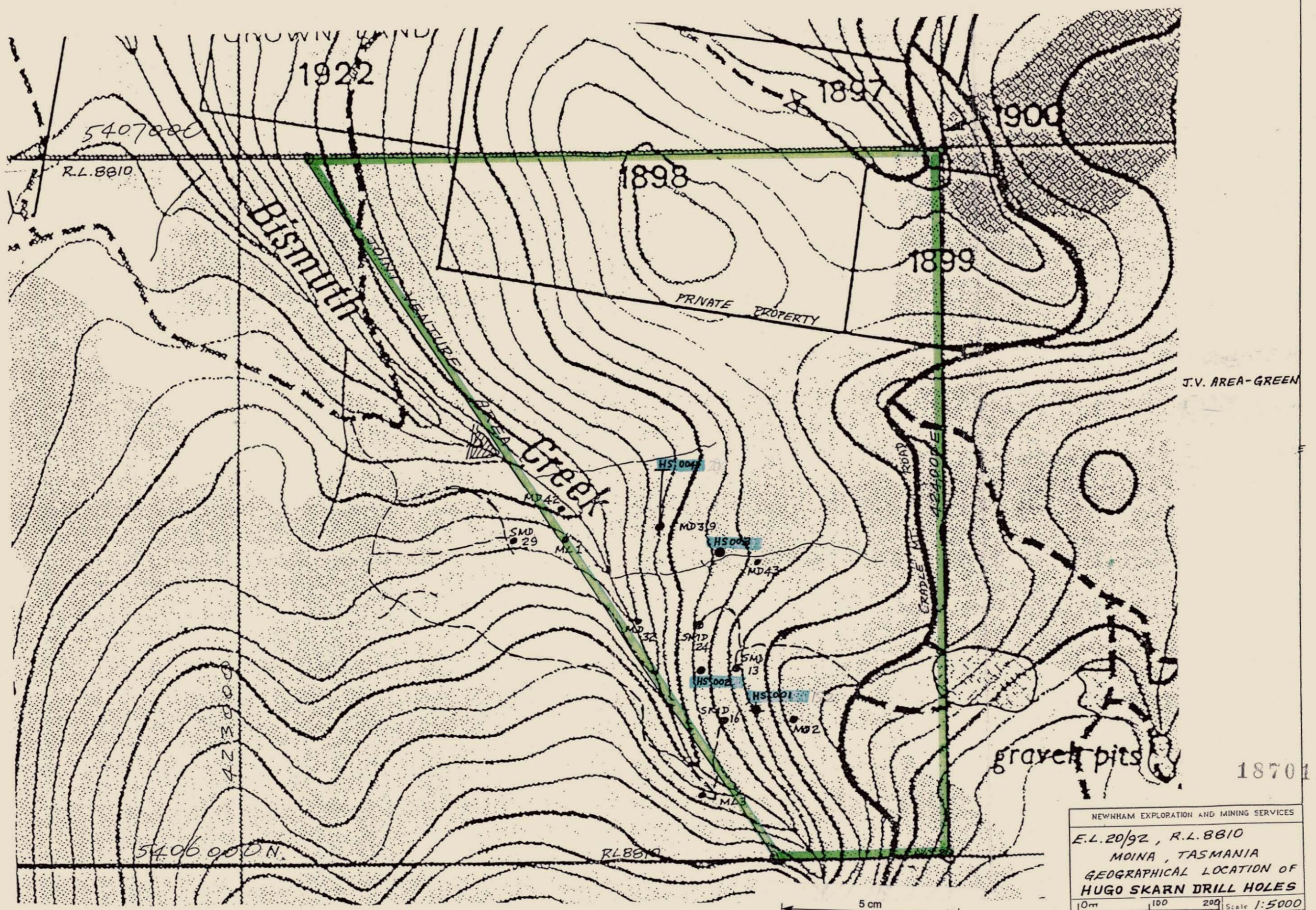
Of special interest was the fact that these fluids, upon emanating from the granite, probably had access to substantial thicknesses of Cambrian volcanics. Any base or precious metals in the volcanics adjacent to the migrating metasomatic fluids may have been leached out and redeposited in skarned and faulted limestone.

This concept was supported by several drill intersections of sphalerite-gold bearing skarn, concealed beneath older siliceous sediments thrust over the top of the limestone.

These intersections indicated potential existed at shallow depths in the Hugo Skarn for medium sized deposit of Au-Zn mineralisation.

## **4.3 1993-94 DRILLING PROGRAM**

To evaluate this Au-Zn potential in the Hugo Skarn, four cored holes totalling 790 metres were drilled between May-July 1994, at a total cost of \$90,000. An expenditure statement is attached as appendix (a).



NEWNHAM EXPLORATION AND MINING SERVICES  
 E.L. 20/92, R.L. 8810  
 MOINA, TASMANIA  
 GEOGRAPHICAL LOCATION OF  
 HUGO SKARN DRILL HOLES  
 0m 100 200 Scale 1:5000  
 Drawn LAN Date Sept 94 Figure 3

The holes were drilled by Diamond Drilling Tasmania Pty Ltd and supervised by this writer. Full drill logs appear as appendix (b).

Holes were cored HQ-NQ and recoveries were excellent. Down hole surveys were undertaken with single shot camera. Collar locations were not surveyed by a registered surveyor, but were located by their relative positions to known holes, and tape traverses on detailed contour plans.

All core was logged and photographed, and is currently stored in a shed in Devonport hired by this writer.

Core for assay (usually NQ) was split in one metre intervals on a diamond saw, and submitted to Amdel in Adelaide for assay.

Assay sample preparation involved total fine pulverising in a mixer mill. Gold was fire assayed; Zn, Bi, Mo, Sn, W was by ICP analysis with a lithium metaborate fusion; and fluorine as fluorite was by sodium peroxide fusion and specific ion electrode determination. Some Sn and W analyses were XRF. (Assay sheets appear as appendix (d) and results are shown in the drill logs.)

A number of selected samples were submitted to Central Mineralogical Services for petrological description and their report appears as appendix (c).

Below is a brief description of each hole, followed by an overall interpretation of results.

#### **4.3.1 Drill Hole Description**

##### **HS 001:**

Drilled to test the easterly and southerly extensions of the sphalerite skarn intersected in SMD 16 and SMD 13. It passed from Moina Sandstone through a fault into a silicified sediment, then a 50 vertical metre skarn zone before ending in Moina Sandstone.

Within the diopside-chlorite-garnet skarn was a 17 metre zone of 0.32 Au; 0.36 Bi which included a 10 metre zone 0.40 Au; 0.52 Bi. Zn values were low throughout.

Of interpretative importance was the fact that the skarn FW was almost at the same level as in SMD 13, but some 56 metres above that in SMD 16.

**HS 002:**

Drilled to test the extent of the gold-sphalerite skarn zone between SMD 13, 16 and 24. Again the hole passed from Moina Sandstone, through a fault into a 103 vertical metre skarn zone, before ending in Moina Sandstone. The middle section of the skarn was represented by a massive wrigglyite unit (fluorite-magnetite skarn).

Again of interest, is the fact that the skarn FW in HS 002 was at about the same level as SMD 16, 100 metres to the south.

**HS 003:**

Drilled to test the Au potential of the skarn between MD 39 and MD 43.

It intersected a thick sequence of broken Moina Sandstone and Roland Conglomerate before passing through a probable fault zone into Moina Sandstone.

No skarn zone was intersected.

**HS 004:**

Once it became apparent from HS 003 that skarn development was structurally limited to the northeast, the fourth hole was resighted to test the northerly extension of the thick auriferous skarn unit intersected in MD 39.

Again, Moina Sandstone and Roland Conglomerate were intersected prior to passing through a fault into Moina Sandstone.

**4.3.2. Interpretation of Results**

An interpretation of the data from this and previous drilling program is presented on the accompanying figures 4 and 5.

The Hugo Skarn is interpreted as a block of mineralised Gordon Limestone which lies east of the major Bismuth Creek Fault. It dips gently to the north, has been broadly folded around a north plunging synclinal axis and has been disrupted by two north northwest trending faults named Fault A and Fault B, which approximately parallel the Bismuth Creek Fault.

The Hugo Skarn is essentially concealed beneath a north dipping and similarly folded sequence of older sandstones and conglomerates, which have been thrust over the skarn by the east-west trending Hugo Fault which dips north at a slightly greater angle than the sediments.

Prior to the last drilling program, the Hugo Skarn was interpreted as a simple, tightly folded syncline which was concealed beneath the Hugo Fault.

The latest drilling, however, suggests the skarn is only gently folded, faulted by north northwest trending faults rather than being tightly folded, but still dips at approximately 40° to the north.

Support for this interpretation is derived from firstly contouring of the skarn foot wall; secondly, the observed high BCA angles in the core; and thirdly, the existence of a sequence of small cliffs co-incident with the proposed Fault 'A' outcrop.

Faults A and B appear to have caused only minimum disruption to the Hugo Fault, thereby suggesting that the Hugo Fault either postdated the major movements on A and B, or much of the movement on Faults A and B was lateral and not vertical (as is the case with the Bismuth Creek Fault).

The principal outcomes of this **structural** interpretation are:

- there is no development of skarn below the Hugo Fault east of Fault B;
- there is no development of skarn between Faults A and B north of a position midway between SMD 13 and HS 003. This is because the skarn in this block appears flat dipping and is therefore truncated by the Hugo Fault to the north;
- the skarn block between Fault A and the Bismuth Creek Fault extends north of existing drill patterns, because it dips slightly steeper than the Hugo Fault in this direction and is therefore not truncated;
- the Hugo Fault outcrops south of SMD 16 and HS 001. However, because the skarn appears to be dipping at a very shallow angle to the south, then the skarn may extend several hundreds of metres south before it also outcrops.

This last point is important to understand in the context of the resource potential of the area. If the

skarn was to rise rapidly to the south, then tonnage potential would be severely limited in that direction.

However, SMD 16 intersected the Hugo Fault at a shallow depth (30 metres), then 130 vertical metres of skarn. This depth of skarn was confirmed by the adjacent hole ML 13. Hence the skarn FW is 160 vertical metres below surface. It is therefore likely that this skarn block extends at least 200-300 metres south of SMD 16.

Similarly, the skarn FW in HS 001 between Faults A and B was 135 metres below surface. Shallow skarn dips therefore again suggest the skarn FW will outcrop 200-300 metres south of HS 001.

This potential skarn tonnage south of SMD 16 and HS 001 appears substantial, but could be severely limited if Faults A and B converged on the Bismuth Creek Fault at a sharper angle than shown on figure 4.

The other area where significant tonnages of skarn may be developed is northwest of SMD 42 and MD 39, between the Bismuth Creek Fault and Fault A. SMD 42 intersected 50 vertical metres skarn beneath the Hugo Fault. An 18 metre zone around the fault averaged 1.8 Zn. SMD 39 intersected approximately 100 vertical metres skarn including a 15 metre zone 0.7 Au. Hole HS 004 drilled to the north of MD 39, is interpreted as passing through Fault A before intersecting skarn.

The negative feature associated with this northern block is its depth. Depth to the top of skarn in SMD 42 and MD 29 is approximately 160 metres, and will increase north of these holes.

**Mineralisation** in the four recently completed holes was disappointing.

Apart from minor pyrite associated with faulted and brecciated sandstones, HS 003 and HS 004 failed to intersect any significant mineralisation.

HS 001 failed to intersect the sphalerite skarn intersected 50 metres north in SMD 13 (17 metres 8.6 Zn). However, it did intersect significant Au-Bi mineralisation in a stratigraphically equivalent zone (17 metres 0.36 Bi, 0.32 Au), thereby suggesting a mineralised horizon 17 metres thick does exist in the skarn between Faults A and B, and may extend north and south of SMD 13 and HS 001 respectively.

**The existing two hole test of such a block is not considered adequate and further drilling is justified.**

HS 002 was designed to test the northern extension of the three Zn-Au zones intersected in SMD 16. Only one zone (5 metres 1.7 Zn) was intersected which may relate stratigraphically with a 5 metre 10.7 Zn zone in SMD 16. As with the mineralised zone between Faults A and B, this mineralised zone between the Bismuth Creek Fault and Fault A is approximately 30-40 metres above the skarn FW. This suggests mineralisation intersected in those four holes may be correlatable, and therefore continuous in a strata-bound context between the four holes.

**Further drilling of this mineralised skarn block between Fault A and the Bismuth Creek Fault is recommended, northwest and southeast of SMD 16.**

## 5. ENVIRONMENTAL CONSIDERATIONS

In order to complete the recent four hole drilling program, access tracks were developed by reopening existing drill tracks and constructing short extensions off these with an excavator.

Another existing drill track was reopened to access a water supply.

On completion of the program, the tracks were left open in anticipation of further near-term drilling programs. Cross drains were developed on several steep sections.

In the event that further drilling does not take place, rehabilitation of these tracks will be undertaken. This will not be a difficult task as there was no side cutting or top soil removal during track construction.

## 6. FUTURE EXPLORATION

Skarn development within RL 8810 to the **east** of Fault 'B' appears unlikely.

**North** of the existing drill pattern, skarn may be developed both at shallow depth above Hugo Fault and beneath tertiary basalt, and at depths in excess of 150 metres beneath the Hugo Fault, between the Bismuth Creek Fault and Fault 'A'.

Little is known of the shallow skarn potential beneath the basalt.

The only encouragement in the deeper skarn block is hole SMD 42, which intersected 18 metres 1.8 Zn. Some justification exists to follow up this intersection, but the increasing depth to the north is a substantial negative factor.

Greatest potential for a shallow, higher grade Au-Zn resource exists to the **south**. Holes SMD 13, SMD 16, HS 002, HS 001 indicate a strata-bound and mineralised zone in the skarn in that area, bounded to the west by the Bismuth Creek Fault, to the east by Fault B and disrupted by Fault A.

Contouring of structures and stratigraphy in that area suggest the skarn may continue south a further 200-300 metres prior to either outcrop or pinching out due to the convergence of Fault B and the Bismuth Creek Fault.

As such, this area represents a good exploration opportunity to locate medium tonnage extensions of the significant Au-Zn mineralisation intersected further north in the same geological environment.

This potential could be further tested by way of a three hole core drilling program as shown on figures 4 and 5.

These holes would total 500 metres and cost approximately \$60,000 to drill (total program costs).

187620

# APPENDICES

187021

**APPENDIX (a)**

**Expenditure**

22/09/94

GOLDSTREAM EXPLORATION : 1/7/93 - 30/6/94

PAGE

ACCOUNT-NAME	QUARTER-1	QUARTER-2	QUARTER-3	QUARTER-4	CURRENT-YEAR	PROJECT-TOTAL
****MOINA****	0.00	0.00	0.00	0.00	0.00	0.00
Accommodation	0.00	0.00	102.66	172.00	274.66	274.66
Drafting & Maps	30.00	0.00	0.00	0.00	30.00	30.00
Geological Consultants	700.00	550.00	410.00	225.00	1885.00	4085.00
Legal / stamp Duty	0.00	0.00	305.00	0.00	305.00	305.00
Office Expenditure/consumables	45.00	0.00	0.00	0.00	45.00	45.00
Salaries	0.00	0.00	367.50	1427.50	1795.00	1795.00
Small Tools & Equipment	0.00	0.00	0.00	2008.00	2008.00	2008.00
Tenement Costs	660.00	0.00	0.00	0.00	660.00	1635.20
Travel	0.00	0.00	819.50	711.00	1530.50	1530.50
	1435.00 *	550.00 *	2004.66 *	4523.50 *	8513.16 *	11700.36
****HUGO JOINT VENTURE****	0.00	0.00	0.00	0.00	0.00	0.00
Accommodation	0.00	0.00	0.00	517.35	517.35	517.35
Drilling	0.00	0.00	0.00	49242.58	49242.58	49242.58
Field Expenditure/Consumables	0.00	0.00	0.00	0.00	0.00	0.00
Food and Messing	0.00	0.00	0.00	0.00	0.00	0.00
Geological Consultants	0.00	0.00	0.00	11184.00	11184.00	11184.00
	0.00 *	0.00 *	0.00 *	60943.93 *	60943.93 *	60943.93

12/09/94

GOLDSTREAM EXPLORATION - 1/7/94 - 30/6/95

PAGE 1

ACCOUNT-NAME	QUARTER-1	QUARTER-2	QUARTER-3	QUARTER-4	CURRENT-YEAR	PROJECT-TOTAL
****MOINA****	0.00	0.00	0.00	0.00	0.00	0.00
Accommodation	0.00	0.00	0.00	0.00	0.00	274.66
Drafting & Maps	497.53	0.00	0.00	0.00	497.53	527.53
Geological Consultants	1210.00	0.00	0.00	0.00	1210.00	5295.00
Legal / stamp Duty	0.00	0.00	0.00	0.00	0.00	305.00
Office Expenditure/consumables	0.00	0.00	0.00	0.00	0.00	45.00
Salaries	262.50	0.00	0.00	0.00	262.50	2057.50
Small Tools & Equipment	0.00	0.00	0.00	0.00	0.00	2008.00
Tenement Costs	660.00	0.00	0.00	0.00	660.00	2295.20
Travel	0.00	0.00	0.00	0.00	0.00	1530.50
	2630.03 *	0.00 *	0.00 *	0.00 *	2630.03 *	4438.39 *
****HUGO JOINT VENTURE****	0.00	0.00	0.00	0.00	0.00	0.00
Accommodation	0.00	0.00	0.00	0.00	0.00	517.35
Analysis	5140.00	0.00	0.00	0.00	5140.00	5140.00
Drafting & Maps	497.52	0.00	0.00	0.00	497.52	497.52
Drilling	13733.10	0.00	0.00	0.00	13733.10	62975.68
Field Expenditure/Consumables	0.00	0.00	0.00	0.00	0.00	0.00
Food and Messing	0.00	0.00	0.00	0.00	0.00	0.00
Freight & cartage	349.00	0.00	0.00	0.00	349.00	349.00
Geological Consultants	7268.00	0.00	0.00	0.00	7268.00	18452.00
Legal / stamp Duty	308.10	0.00	0.00	0.00	308.10	308.10
Salaries	1312.50	0.00	0.00	0.00	1312.50	1312.50
	28608.22 *	0.00 *	0.00 *	0.00 *	28608.22 *	89552.15 *

187023

**APPENDIX (b)**

**Drill Logs**

**COMPANY:** GOLDSTREAM MINING NL/TITAN RESOURCES NL  
**PROJECT:** MOINA RL 8810  
**HOLE NUMBER:** HS 001

<b>Commenced:</b>	06May94
<b>Completed:</b>	18May94
<b>Logged By:</b>	L A Newnham
<b>Drilled By:</b>	Dia. Drill Tas.

Purpose of Hole
To test the Au-Zn potential of the Hugo Skarn adjacent to previously drilled holes SMD 13 and SMD 16.

Comments on Completion
No significant Zn mineralisation intersected. However, the skarn unit between 76.0-124.0m contained a significant Au-Bi zone with minor moly.

**Collar Details**

Grid	Northing	Easting	Elevation	Dip	Bearing
AMG	5406210	423730	640	-90	-

Length (m)
152m

Hole Size	
To (m)	Size
3.0	HW
66.0	HQ
152.0	NQ

Significant Core Loss Zones		
From	To	%Rec.
47.0	52.0	32
75.0	76.0	0

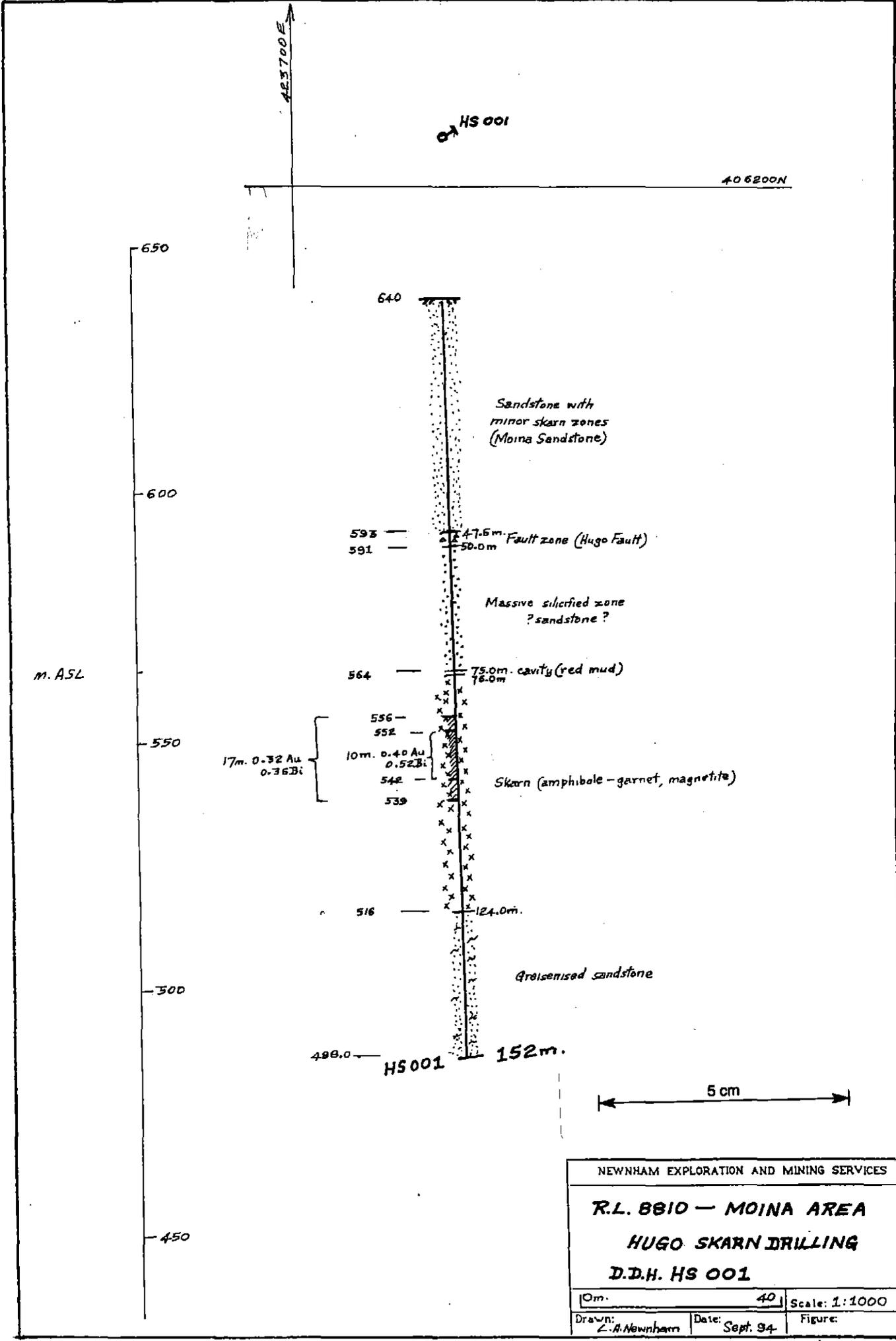
Hole Condition on Completion
All rods and casing removed from hole.

**Summary of Results**

Depth		Recovery	Description	Assays							
From	To	%		Length	Au(g/t)	An	Mo	Bi%	Sn	W	F(CaF <sub>2</sub> )
84.0	101.0	98	Diopside-chlorite-garnet? skarn	17m	0.32			0.36			
Including:											
87.0	97.0	100		10m	0.40			0.52			

187024





NEWNHAM EXPLORATION AND MINING SERVICES		
R.L. 8810 — MOINA AREA		
HUGO SKARN DRILLING		
D.D.H. HS 001		
0m.	40	Scale: 1:1000
Drawn: Z.A. Newnham	Date: Sept. 94	Figure:

COMPANY: GOLDSTREAM-TITAN  
 PROJECT: MOINA RL 8810  
 HOLE NUMBER: HS 001

Description		Core Recovery			RQD			Assays							
From	To	From	To	%	From	To	%	From	To	Au(g/t)	Zn	Mo	Bi	Sn	W
<b>SUMMARY LOG</b>															
0	3.0	HW casing.													
3.0	47.5	Silicified sandstone with minor skarn zones.													
47.5	50.0	Fault zone.													
50.0	75.0	Massive silicified zone.													
75.0	76.0	Cavity containing red mud.													
76.0	124.0	Skarn, variably amphibole and garnet rich, with some magnetite zones.													
124.0	152.0	Greisenised sandstone, gradational with unit above.													
<b>DETAILED LOG</b>															
0	3.0	0	3.0	0											
3.0	33.2	<b>Sandstone-Siltstone Broken &amp; Pyritic:</b>													
		3.0	32.0	100	%F as CaF2										
					0.02	27.0	28.0	<0.005	1250	<20	7	<50	<10		
					0.11	31.5	32.5	<0.005	400	<20	5	<50	15		
		Generally light grey sandstone with darker fine grain siltstone beds; sandstone matrix weathering to brown clay in part.													
		1% pervasive pyrite as fine disseminations and aggregates; numerous thin fractures often filled with pyrite and micaceous material.													
		Several blebs and veinlets of dark brown mineral between 6-8m, hard with brown streak.													
		Greenish colour due to weathering of sandstone clay matrix.													
		Below 10m, sandstone cut by network dark microveins, often with dendritic appearance; veinlets filled with pyrite and dark mica.													

187097

COMPANY: GOLDSTREAM-TITAN  
 PROJECT: MOINA RL 8810  
 HOLE NUMBER: HS 001

Description		Core Recovery			RQD			Assays							
From	To	From	To	%	From	To	%	From	To	Au(g/t)	Zn	Mo	Bi	Sn	W
		Pyrite increasing down hole to 1-2% below 10m, and 2-3% below 20m.													
		Several 1-10mm quartz veins cut core, and contain minor blebs of a soft brown mineral.													
		Some sections of sandstone between 20-33m are conglomeratic.													
		Core generally very broken.													
33.3	36.2	<b>Mottled Skarn:</b>													
		32.0	35.0	100											
		35.0	37.7	93			0.17	34.5	35.5	<0.005	150	<20	6	<50	<10
							0.19	35.5	36.0	<0.005	200	<20	<4	<50	<10
		Mottled dark grey-green-pink unit with minor magnetite.													
		Pyrite in clots up to 10mm and in dark fine vein network.													
		Unit hard and competent.													
36.2	40.0	<b>Silicified Sandstone:</b>													
		37.7	42.5	100			0.04	39.9	40.9	<0.005	150	<20	<4	<50	<10
		Light grey, hard sandstone, intensely silicified and cut by network 1-2mm quartz veins.													
		1-2% pervasive pyrite, often concentrated along thin dark veinlets and on quartz vein margins; core broken towards base.													
40.0	41.4	<b>Mottled Skarn:</b>													
		Similar to skarn unit above but only trace magnetite. Greenish areas are hard/ ?epidote.													
41.4	47.5	<b>Sandstone:</b>													
		42.5	44.0	87											
		44.0	47.0	93											
		Dark grey-greenish mottled appearance in top half grading into light grey-white near base.													
		1-2% disseminated pyrite.													

187028

COMPANY: GOLDSTREAM-TITAN  
 PROJECT: MOINA RL 8810  
 HOLE NUMBER: HS 001

Description		Core Recovery			RQD			Assays								
From	To		From	To	%	From	To	%	From	To	Au(g/t)	Zn	Mo	Bi	Sn	W
		Unit broken, becoming rubbly below 44m, limonite common on fractures.														
47.5	50.0	<b>Pug-Fault Zone:</b> Clays, brown-yellow-white. Poor recoveries.	47.0	48.0	40											
			48.0	49.0	0											
			49.0	49.5	80			%F as CaF2								
			49.5	50.0	0											
50.0	75.0	<b>Silicified Sandstone-Siltstone:</b> Light grey, massive silicified unit, generally featureless with patchy texture and ghosted quartz veins; several narrow soft beds (mudstone?). Several 5-15mm quartz veins almost obliterated by silicification. Trace pyrite and limonitic coating on some joint surfaces. Core very broken to 57m but then becomes more competent. High angled jointing 60-70° CA. Probable bedding 70° CA. Running sand in tray 50.9-54.7m, probably came from higher in hole. 20cm clay zone 63.3m. Reduced HQ-NQ at 66m. (Unit looks like hydrothermal silicification in trap zone below fault at 50m.)	50.0	50.5	20		0.27		63.5	64.5	<0.005	<50	<20	8	<50	<10
			50.5	50.9	50											
			50.9	51.7	50											
			51.7	61.8	100											
			61.8	63.5	94											
			63.5	66.0	100											
			66.0	68.0	90											
			68.0	75.0	100											
75.0	76.0	<b>Cavity:</b> Driller reports bright red mud in water return.	75.0	76.0	0			%F as CaF2								

187029

COMPANY: GOLDSTREAM-TITAN  
 PROJECT: MOINA RL 8810  
 HOLE NUMBER: HS 001

Description		Core Recovery			RQD			Assays								
From	To	From	To	%	From	To	%	From	To	Au(g/t)	Zn	Mo	Bi	Sn	W	
76.0	124.0	<b>Skarn:</b>														
		Massive skarn unit.														
		76.0	84.9	100				0.88	76.0	77.0	0.285	150	<20	820	200	25
		84.9	86.0	90				0.72	77.0	78.0	0.125	100	<20	600	200	15
		86.0	98.0	100				1.01	78.0	79.0	0.210	100	<20	420	250	10
		<b>76.0-82.6:</b>														
		Pink (garnet-diopside?) skarn with sugary texture. Mottled green appearance in places (chlorite, epidote?), sometimes fibrous (?actinolite).														
								1.40	79.0	80.0	0.085	100	<20	320	250	20
								1.58	80.0	81.0	0.265	100	<20	940	250	20
								1.94	81.0	82.0	0.030	100	<20	340	250	15
								0.66	82.0	83.0	0.046	1700	20	250	150	15
								0.41	83.0	84.0	0.105	50	<20	770	350	<10
								0.19	84.0	85.0	0.715	50	<20	1860	400	10
		Several zones massive pink feldspar.														
		<b>82.6-82.9:</b>														
		Dark grey skarn with magnetite.														
								0.89	85.0	86.0	0.125	100	<20	1420	450	15
								0.37	86.0	87.0	0.315	50	<20	1420	550	<10
								0.36	87.0	88.0	0.240	100	<20	3900	450	<10
								0.51	88.0	86.0	0.265	100	20	4100	650	10
								0.60	89.0	90.0	0.285	100	50	1620	850	20
								0.46	90.0	91.0	0.230	150	320	6800	900	30
								0.42	91.0	92.0	0.230	200	1350	1.26%	900	10
								0.49	92.0	93.0	0.200	150	1400	0.92%	1000	15
								3.53	93.0	94.0	0.145	100	120	2150	800	25
								1.65	94.0	95.0	1.3	100	40	5800	700	35
		<b>89.8-92.9:</b>														
		Magnetite skarn with common bismuthinite and minor molybdenite.														
		Garnet-diopside skarn with abundant disseminated magnetite in bands.														
		Abundant bismuthinite as aggregates, clusters either in skarn ground mass or associated with magnetite.														
		98.0	101.0	90												
		101.0	107.0	100												
			110.0	91				%F as								
			113.0	96				CaF2								
			124.0	100												
		<b>92.9-94.5:</b>														
		Light brown diopside skarn with several zones of very dark amphibole.														





**COMPANY:** GOLDSTREAM MINING NL/TITAN RESOURCES NL  
**PROJECT:** MOINA RL 8810  
**HOLE NUMBER:** HS 002

<b>Commenced:</b>	19May94
<b>Completed:</b>	30May94
<b>Logged By:</b>	LA Newnham
<b>Drilled By:</b>	Dia. Drill Tas.

Purpose of Hole
To test the Au-Zn potential of the Hugo Skarn between previously drilled holes, SMD 24 and SMD 16 to the west of SMD 13.

Comments on Completion
A vertical thickness of 105 metres of calc silicate skarns and wrigglyite skarns was intersected. The skarn was strongly Sn-W anomalous, but only moderately Au anomalous. A zone of significant sphalerite intersected in lower half of skarn.

**Collar Details**

Grid	Northing	Easting	Elevation	Dip	Bearing
AMG	5406270	423650	610	-90	-

Length (m)
157.4

Hole Size	
To (m)	Size
1.0	HW
	HQ
157.4	NQ

Significant Core Loss Zones		
From	To	%Rec.

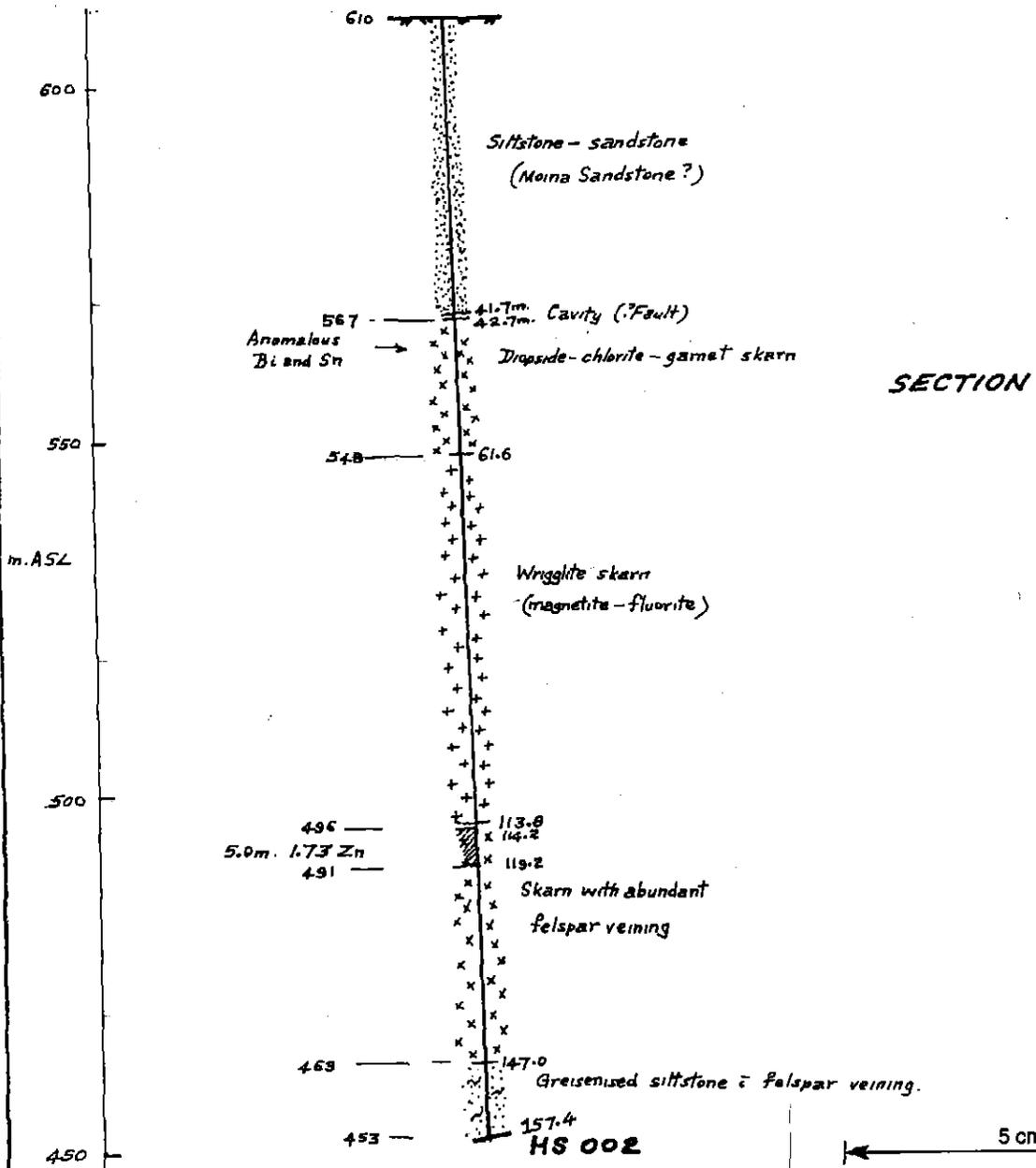
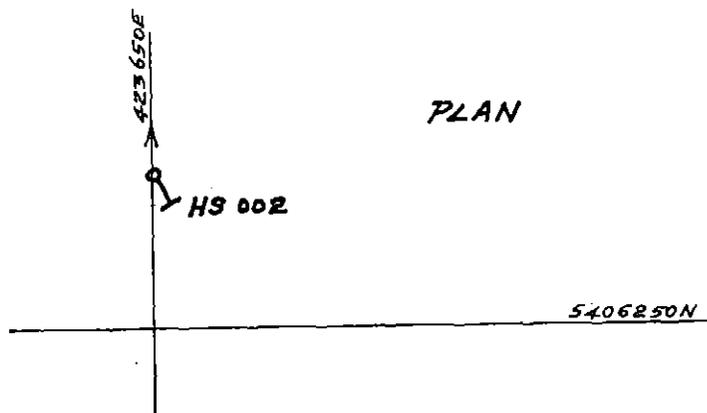
Hole Condition on Completion
All rods and casing removed from hole.

**Summary of Results**

Depth		Recovery	Description	Assays							
From	To	%		Length	Zn						
114.2	119.2	100	Feldspar veined skarn.	5.0	1.73						



PLAN



NEWHAM EXPLORATION AND MINING SERVICES		
R.L. 8810 - MOINA AREA HUGO SKARN DRILLING DDH HS 002		
10m	40	Scale: 1:1000
Drawn: L.A. Newham	Date: Sept 94	Figure:

COMPANY: GOLDSTREAM-TITAN  
 PROJECT: MOINA RL 8810  
 HOLE NUMBER: HS 002

Description		Core Recovery			RQD			Assays							
From	To	From	To	%	From	To	%	From	To	Au	Zn	Mo	Bi	Sn	W
<b>SUMMARY LOG:</b>															
0	1.0														
1.0	42.7														
42.7	61.6														
61.6	113.8														
113.8	147.0														
147.0	157.4														
<b>DETAILED LOG:</b>															
0	1.0	0	1.0	0											
1.0	41.7	1.0	4.0	7											
<b>Sandstone-Siltstone:</b>		4.0	6.9	85											
		6.9	8.7	50											
Bleached, buff brown siltstone and fresher dark grey siltstone and sandstone.		8.7	10.5	10											
		10.5	12.0	40											
Anastomosing network < 1 mm veinlets and fractures.		12.0	12.9	55											
		12.9	13.8	80											
		13.8	16.5	90											
Minor fine grained pyrite less than 0.5% disseminated in fresher units and leading to limonite in weathered equivalents.		16.5	18.5	70											
		18.5	19.5	30											
		19.5	20.3	75		0.26		31.0	32.0	<0.005	740	3	8	20	<10
		20.3	21.3	40		0.22		32.0	33.0	<0.005	550	3	6	15	45
Generally very broken and rubbly with occasional harder, more competent beds.		21.3	25.0	90		0.12		33.0	34.0	<0.005	640	4	7	5	25
		25.0	26.1	75		0.08		34.0	35.0	<0.005	330	6	6	5	15
		26.1	27.8	100											
Some worm casts up to 4 mm long.		27.8	28.3	80											
		28.3	28.9	60											
Softer green sericite material on fractures.		28.9	30.9	50											
		30.9	32.7	80											
Virtually sandstone rubble 18 - 42 metres.		32.7	34.5	100											
		34.5	40.3	90											
30-35: strongly pyritic, semi massive in placed, disseminated in sandstone and abundant in thin veins and fracture filling.		40.3	40.8	80											
		40.8	41.7	80											

187036





COMPANY: GOLDSTREAM-TITAN  
 PROJECT: MOINA RL 8810  
 HOLE NUMBER: HS 002

Description		Core Recovery			RQD			Assays												
From	To	From	To	%	From	To	%	From	To	Au	Zn	Mo	Bi	Sn	W					
113.8	117.5	<b>Feldspar Veined Skarn:</b>  Grey-green calc silicate with zones softer green skarn; cut by abundant 5-50mm pink quartz-feldspar veins 60 - 70° CA and a fine network < 1 mm veinlets parallel to feldspar veins filled with magnetite.  Magnetite and ?sphalerite? common as selvages along quartz-feldspar veins, which are themselves occasionally zoned with quartz centres.  Disseminated and aggregate pyrite commonly associated with magnetite.  Unit competent.																		
			115.5	118.5	100															
			117.5	147.0	<b>Skarns:</b>  Pyroxene-epidote-garnet skarn, mottled pink and green; interbedded with a hard pink skarn.  Only minor magnetite; mottled green-pink skarn to 134 m, then hard pink skarn with patches dark green amphibole/epidote and softer light green mineral, and red garnets.  Near top of unit, several thin veins (< 2 mm) of sphalerite.  Generally competent - few broken zones.  Grades into hornfelsed siltstone and sandstone with minor limestone beds.															
118.5	147.0	100																		

100000

COMPANY: GOLDSTREAM-TITAN  
 PROJECT: MOINA RL 8810  
 HOLE NUMBER: HS 002

Description		Core Recovery			RQD			Assays													
From	To		From	To	%	From	To	%	From	To	Au	Zn	Mo	Bi	Sn	W					
147.0	153.8	<b>Greisenised Siltstone, Minor Skarn, with Feldspar Veining:</b>  Mottled dark grey-green hornfelsed and greisenised siltstone with occasional pink-light grey calc silicate beds.  Pink feldspar veining common to 151 m then gradually diminishes. Veins typically have magnetite along margins, with or without pyrite.	147.0	157.4	100																
			153.8	157.4	<b>Hornfelsed Siltstone (Greisenised):</b>  Dominantly dark grey-black hornfelsed siltstone cut by numerous thin veins filled with magnetite or quartz with magnetite or pyrite selvages. Disseminated pyrite also in hornfelses (2-3%).  Occasional pink feldspar veins with quartz centres and magnetite rims.  Unit hard and competent.  ---- END OF HOLE ----																

07070

**COMPANY:** GOLDSTREAM MINING NL/TITAN RESOURCES NL  
**PROJECT:** MOINA RL 8810  
**HOLE NUMBER:** HS 003

<b>Commenced:</b>	01Jun94
<b>Completed:</b>	21Jun94
<b>Logged By:</b>	LA Newnham
<b>Drilled By:</b>	Dia. Drill Tas.

Purpose of Hole
To test the eastern margin of the Hugo Skarn between MD 39 and MD 43.

Comments on Completion
Hole passed through Moina Sandstone and Rowland Conglomerate to 134 metres, then into unit of intensely silicified sediments. If these were Moina Sandstone again, then the hole must have passed beneath an upturned skarn unit to the south.

**Collar Details**

Grid	Northing	Easting	Elevation	Dip	Bearing
AMG	5406430	423680	610	-90	-

Length (m)
199.6

Hole Size	
To (m)	Size
4.0	HW
50.8	HQ
199.6	NQ

Significant Core Loss Zones		
From	To	%Rec.

Hole Condition on Completion
All rods and casing withdrawn from hole.

**Summary of Results**

Depth		Recovery	Description	Assays							
From	To	%		Length	Au	Ag	Cu	Pb	Zn	As	S
			No significant mineralisation.								

180611

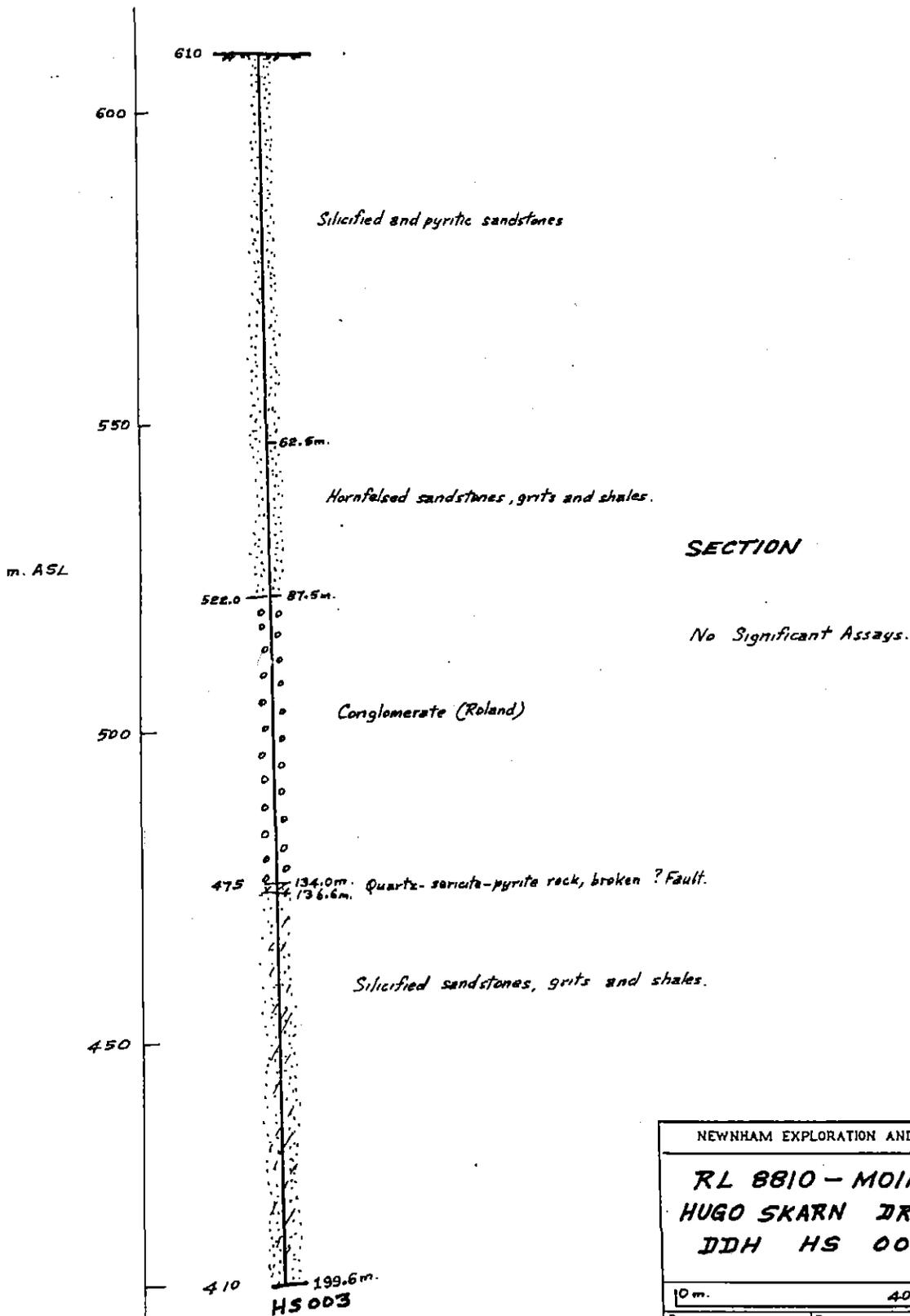


HS 003 10

PLAN

5 406 450 N

4 237 000 E



SECTION

No Significant Assays.

NEWHAM EXPLORATION AND MINING SERVICES

RL 8810 - MOINA AREA  
 HUGO SKARN DRILLING  
 DDH HS 003

10 m.	40	Scale: 1:1000
Drawn: Z.A. Newham	Date: Sept. 94	Figure:

COMPANY: GOLDSTREAM-TITAN  
 PROJECT: MOINA RL 8810  
 HOLE NUMBER: HS 003

Description		Core Recovery			RQD			Assays									
From	To		From	To	%	From	To	%	From	To	Au	Sn	W				
<b>SUMMARY LOG</b>																	
0	4.0	No core.															
4.0	62.5	Silicified and pyritic sandstone.															
62.5	87.5	Hornfelsed sandstones, grits, shales.															
87.5	134.0	Rowland Conglomerate.															
134.0	199.6	Silicified siltstones, sandstones, shales.															
<b>DETAILED LOG</b>																	
0	4.0	HW casing; no core.	0	4.0	0												
4.0	62.5	<b>Silicified Pyritic Sandstone:</b>	4.0	4.6	100												
		Light grey-cream sandstone becoming gritty towards base.	4.6	13.4	90				9.6	10.6	<0.01	4	<10				
			13.4	16.6	80				12.2	13.2	<0.01	<4	<10				
			16.6	24.8	90				16.2	17.2	<0.01	4	<10				
		Intensely silicified and some shaley units reduced to softer creamy coloured clay seams.	24.8	32.8	100				26.6	27.6	<0.01	<4	<10				
			32.8	34.6	90				30.8	31.8	<0.01	<4	<10				
			34.6	62.5	100				36.3	37.3	<0.01	<4	<10				
									38.8	39.8	<0.01	<4	<10				
		Gradational with unit below which gradually becomes coarser grained down hole.							40.3	41.3	<0.01	5	<10				
									41.3	42.3	<0.01	4	<10				
		Some zones contain significant pyrite 5-10% as large aggregates, blebs, veins and semi massive on joint surfaces.							49.3	50.3	<0.01	<4	<10				
									53.6	54.6	<0.01	4	<10				
		Hard and broken but improving below 30 metres. Strongly jointed.															
		Reduced to NQ at 50.8 metres.															
62.5	87.5	<b>Hornfelsed Sandstones-Grits-Shales:</b>	62.5	85.6	100												
		Light grey-white silicified sandstones and grits with softer light grey-green sericitic clay material, possibly after shale beds.	85.6	88.6	90				70.6	71.6	0.01	<4	<10				
									79.6	80.6	<0.01	<4	<10				

187044



COMPANY: GOLDSTREAM-TITAN  
 PROJECT: MOINA RL 8810  
 HOLE NUMBER: HS 003

Description		Core Recovery			RQD			Assays							
From	To	From	To	%	From	To	%	From	To						
		chalcopyrite; brittle fracturing in several directions.													
		Below 151 m, soft green material reappears and pyrite becomes common veinlets, fracture filling, and disseminated in both siliceous and soft green materials.													
		Fragmental?/conglomeratic appearance in places.													
		Below 157 m, strongly silicified sandstone with sericitic fracture surfaces; pyrite 1-3% as veinlets, blebs and on fracture surfaces amount of sericite decreases below 160 m, 20 cm chlorite-garnet zone 163.9 m, coarse brown-red garnet clots.													
		Sandstone creamy appearance 168-170; cut by numerous 2-10 mm white quartz veins.													
		Below 170 m, sericite on fracture surfaces less common.													
		Below 174 m, more fragmented and sericitic; 5-20 mm quartz veining common; pyrite 1-2% in fractures and veinlets in sandstone.													
		Below 183 m, intensely fractured and brecciated sandstone with abundant 3-5% pyrite, occasionally up to 10%(near fault?).													
		Sericite common along fractures and surrounding pebbles.													
		Quartz veins common but post-date pyrite.													
190.6	193.6	<b>Altered Shale:</b>													
		190.6	193.6	66											
		Grey-buff brown soft altered unit; minor weathered/leached pyrite; 90 cm cavity.													

187040



**COMPANY:** GOLDSTREAM MINING NL/TITAN RESOURCES NL  
**PROJECT:** MOINA RL 8810  
**HOLE NUMBER:** HS 004

<b>Commenced:</b>	22Jun94
<b>Completed:</b>	19Jul94
<b>Logged By:</b>	LA Newnham
<b>Drilled By:</b>	Dia. Drill Tas.

Purpose of Hole
To test the Hugo Skarn north of MD 39.

Comments on Completion
Hole failed to intersect skarn. Molna Sandstone and Rowland Conglomerate to 196 metres appears to be thrust over greisenised Moina Sandstone to 280 metres, suggesting skarn has been folded up to west of hole.

**Collar Details**

Grid	Northing	Easting	Elevation	Dip	Bearing
AMG	5406460	423600	590	-70	360

Length (m)
279.7

Hole Size	
To (m)	Size
4.0	HW
39.6	HQ
279.7	NQ

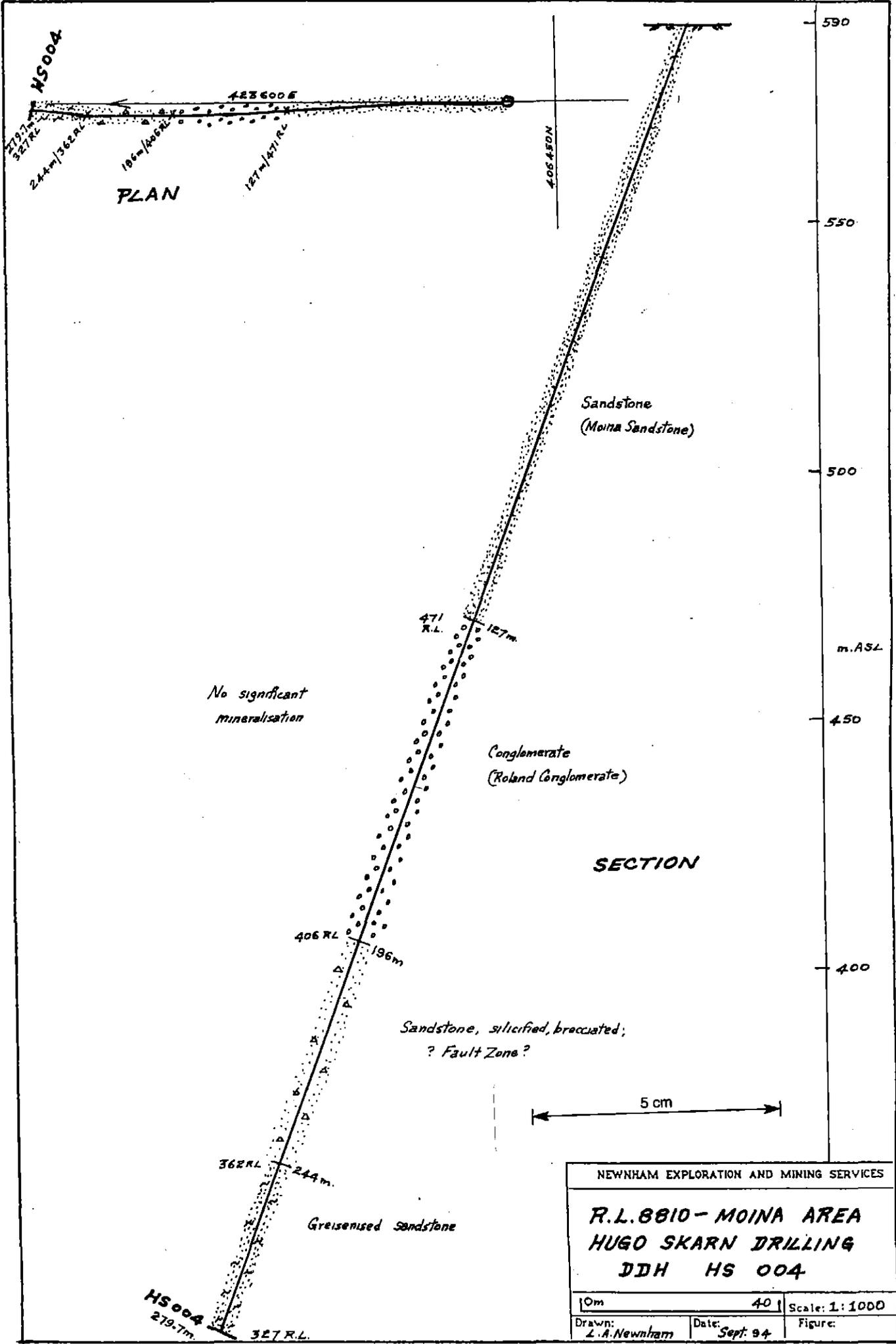
Significant Core Loss Zones		
From	To	%Rec.

Hole Condition on Completion
All rods and casing removed from hole,

**Summary of Results**

Depth		Recovery %	Description	Assays							
From	To			Length	Au	Ag	Cu	Pb	Zn	As	S
			No significant mineralisation.								





COMPANY: GOLDSTREAM-TITAN  
 PROJECT: MOINA RL 8810  
 HOLE NUMBER: HS 004

Description		Core Recovery			RQD			Assays									
From	To		From	To	%	From	To	%	From	To	Au	Sn	W				
<b>SUMMARY LOG</b>																	
0	4.0	No core.															
4.0	127.0	Sandstone.															
127.0	196.4	Rowland Conglomerate.															
196.4	244.0	Silicified and brecciated sandstone and grit (possible fault zone).															
244.0	279.7	Greisenised sandstone.															
<b>DETAILED LOG</b>																	
0	4.0	HW tricone, no core.	0.0	4.0	0												
4.0	127.0	<b>Sandstone:</b>	4.0	7.5	95												
			7.5	39.6	100												
			39.6	43.5	98				38.0	39.0	<0.01	<4	10				
		Limonic sandstone and clay zones; (after shale?), becoming darker grey and fresher below 10 m, limonite probably after pyrite.	43.5	46.5	95				41.0	42.0	<0.01	<4	<10				
			46.5	100.0	100				44.0	45.0	<0.01	<4	<10				
			100.0	101.1	90				52.0	53.0	<0.01	<4	<10				
		14.2 m, possible BCA 40°.	101.1	103.5	100				58.0	59.0	<0.01	<4	<10				
			103.5	106.3	90				64.0	65.0	<0.01	8	15				
		Minor quartz veins with pyrite below 13 m.	106.3	118.5	100				68.0	69.0	0.01	5	15				
			118.5	121.5	95				74.0	75.0	<0.01	5	10				
		Generally friable and broken; dominant joints 30, 70 CA.	121.5	127.0	100												
		Below 17 m, silicified and cut by suite of < 5 mm quartz veins.															
		1-2% pyrite disseminated in sandstone and associated with quartz veins.															
		BCA at 23 m, 35°.															
		Possible fine grained hematite in sandstone matrix.															
		Below 34.5 m, siliceous sandstone with boudinaged or stretched quartz veins with															



COMPANY: GOLDSTREAM-TITAN  
 PROJECT: MOINA RL 8810  
 HOLE NUMBER: HS 004

Description		Core Recovery			RQD			Assays										
From	To	From	To	%	From	To	%	From	To	Au	Sn	W						
127.0	196.4	<p>Sericite common component as grit ground mass and on joint surfaces; below 107 m, intensely silicified sandstone and grit.</p> <p>Below 122 m, becoming pebbly and gradational with conglomerate below; softer cream-green partings common; cut by network very fine short veinlets filled with pyrite.</p> <p><b>Quartz-Cobble-Conglomerate (Rowland Conglomerate):</b></p> <p>Quartz pebbles-cobbles set in dark grey ground mass.</p> <p>Minor disseminated pyrite in ground mass and in-filling vags.</p> <p>Some pyrite on joint surfaces; reasonably competent but some very broken zones and two strong joint sets 20-30 CA.</p> <p>Unit gradational with sandstone above.</p> <p>149-157.0: sandy-gritty beds; BCA gradually diminishing down hole; 156 m BCA 35-40°.</p> <p>Below 157 m, conglomerate very coarse with cobbles up to 5-6 cm.</p> <p>Core very broken below 183 m. BCA 196 m in dark grey sandstone 55°.</p>	127.0	196.4	100													
			196.4	244.0														
											200.0	201.0	<0.01	8	15			
											206.0	207.0	<0.01	15	100			
											215.0	216.0	<0.01	8	15			
											219.0	220.0	<0.01	20	25			
											226.0	227.0	<0.01	9	45			
											228.0	229.0	0.01	4	50			

187053

COMPANY: GOLDSTREAM-TITAN  
 PROJECT: MOINA RL 8810  
 HOLE NUMBER: HS 004

Description		Core Recovery			RQD			Assays						
From	To	From	To	%	From	To	%	From	To	Au	Sn	W		
	1-2% pyrite throughout as disseminated grains and aggregates.							230.0	231.0	<0.01	20	670		
	212.5-214.5 m: some 1-10 mm quartz veining.							232.0	233.0	<0.01	10	60		
	216-218 m: darker (hematitic?) zones below 218 m. Intense spotting of sandstone (see petrological description 220 m).							234.0	235.0	<0.01	9	35		
	223 m: quartz veining common - major fault?; some greisen veins with dark selvages.							236.0	237.0	<0.01	4	40		
	Intensely silicified and greisenised below 226 m, dark grey, abundant quartz veins, lighter silicified zones;							238.0	239.0	<0.01	7	30		
	Biotite/mica common on quartz vein margins.							240.0	241.0	<0.01	20	45		
	Clots and aggregates pyrite common (see petrological description 228.4).							242.0	243.0	<0.01	6	15		
	Below 243 m, silicification is intense and obliterates all original rock textures.													
	244 m: minor Bi/Mo? in quartz veins.													
244.0	<b>Greisenised Sandstone:</b>	244.0	279.7	100				244.0	245.0	<0.01	5	10		
	Gradational contact with unit above; intensely fractured and silicified sandstone.							246.0	247.0	<0.01	9	<10		
	Dark grey-white with some orange-brown zones (limonitic after sulfides).							248.0	249.0	<0.01	6	10		
	1-3 cm quartz veins common, often with microveins component.							250.0	251.0	<0.01	10	10		
	Greisenisation intense below 260 m, greisen-quartz veins common consisting of quartz-							252.0	253.0	0.01	7	<10		
								254.0	255.0	0.010	<4	10		
								256.0	257.0	0.010	<4	30		
								257.0	258.0	0.010	4	95		
								258.0	259.0	<0.01	<4	55		
								260.0	261.0	<0.01	5	115		
								264.0	265.0	<0.01	5	<10		
								269.0	270.0	<0.01	4	10		
								272.0	273.0	<0.01	4	<10		

187054



187056

**APPENDIX (c)**

**Petrological Report**



## Central Mineralogical Services

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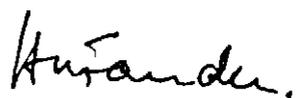
8 Bradshaw Avenue, Crafers, S.A. 5152  
Telephone (08) 370 9779 Fax (08) 370 9788  
International: Telephone + 618 370 9779 Fax + 618 370 9788

16 August 1994

Mr L.A. Newnham  
Newnham Exploration & Mining Services  
PO Box 40  
LEGANA TAS 7277

### REPORT CMS 94/8/4

YOUR REFERENCE: Letter 3 August 1994  
DATE RECEIVED: 5 August 1994  
SAMPLE NO'S: HS001 - HS004  
SUBMITTED BY: L.A. Newnham  
WORK REQUESTED: Petrology

  
H.W. Fander, M.Sc.

REPORT CMS 94/8/4MOINA DD CORE SAMPLES HS001-HS004

Seven drill core slabs were received for petrographic study; thin sections were prepared (two from HS002/52.5m because of the apparent variability) and were examined; the descriptions are attached.

The rocks comprise garnet skarns - some are brecciated and altered, and various metaquartzites which are believed to be thermally metamorphosed sandstones (orthoquartzites) showing little effect except recrystallisation. Such rocks are unreactive and thus unlikely to undergo much chemical change.

The last rock (HS004/277.6m) is a quartz-magnetite rock or brecciated metaquartzite in which magnetite was deposited together with other minerals, including a trace of fine sphalerite.

Several of the rocks have undergone a series of changes from the original sediment through contact-metamorphism, brecciation, one or more replacive events, and younger fracturing and veining.

**SAMPLE NO:** HS001/90.8m (T.S. 64399) Page 1

**CLASSIFICATION:** Garnet Skarn.

**COMPOSITION:** Dominantly granular to subhedral grossularite garnet, with patches and streaks of magnetite, many small inclusions of carbonate (?ankerite), interstitial quartz and hastingsite needles.

**FABRIC:** Granular textures, medium-grained. Weak relict banding or layering (?bedding). Fairly uniform, featureless.

**MINOR MINERALS:** Fine diopside enclosed in garnet. Shreds of phlogopite-biotite.

**INTERPRETATION/COMMENTS:** Thought to be a metasomatised carbonate rock, as the carbonate inclusions in garnet form parallel lines suggesting bedding. Silica-Fe metasomatism with minor Mg, Na.

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**SAMPLE NO:** HS002/52.3m (T.S. 64400/64400A)

**CLASSIFICATION:** Chloritised Skarn Breccia.

**COMPOSITION:** Large and small angular fragments of garnet skarn, extensively replaced by carbonate (calcite) set in a mass of dark chlorite and fine-grained quartz with earthy hematite in places.

**FABRIC:** Tectonic breccia fabric, with fragments up to 10-20mm or more. Fragments have medium-grained granular fabrics.

**MINOR MINERALS:** A few magnetite-rich skarn fragments. Scattered small pyrite aggregates associated with chlorite. Quartz-carbonate veinlets.

**INTERPRETATION/COMMENTS:** The skarn fragments can be correlated with HS001/90.8m; they were replaced by calcite prior to chlorite-quartz emplacement, possibly before brecciation. Thus the rock has a complex history of skarn formation, replacement by calcite, brecciation and cementing by chlorite-quartz.

**SAMPLE NO:** HS002/56.4m (T.S. 64401) **Page 2**

**CLASSIFICATION:** Altered Skarn.

**COMPOSITION:** Individual crystals, small and large clusters and parallel lenses of garnet, variably replaced by calcite, which in turn is partly replaced by chlorite, in a mass of chlorite and coarse quartz.

**FABRIC:** Random fabric, but garnet-rich patches are vaguely banded. Varied and complex replacive textures; quartz is porphyroblastic.

**MINOR MINERALS:** Late-stage calcite veinlets cutting all other minerals, with associated micaceous hematite. Trace pyrite.

**INTERPRETATION/COMMENTS:** Probably originally a more compact garnet skarn, progressively altered and silicified.

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**SAMPLE NO:** HS004/220m (T.S. 64402)

**CLASSIFICATION:** Spotted Sericite-Metaquartzite.

**COMPOSITION:** Bands and lenses of silt-sized quartz grains with interstitial sericite, and thicker bands of matted sericite with subordinate quartz. Small ovoid spots and thin bands of fine phlogopite.

**FABRIC:** Good preferred orientation verging on schistosity. Quartzose bands are finely folded, stretched and lensed out, probably due to soft-sediment deformation.

**MINOR MINERALS:** Scattered patches of pyrite. Very small grains of detrital heavy minerals and of authigenic tourmaline.

**INTERPRETATION/COMMENTS:** Originally a slumped argillaceous siltstone which was indurated and mildly contact-metamorphosed, then patchily metasomatized by replacive phlogopite and associated traces of quartz.

**SAMPLE NO:** HS004/228.4m (T.S. 64403) Page 3

**CLASSIFICATION:** Metaquartzite.

**COMPOSITION:** Almost entirely composed quartz, as irregular large and small interlocking grains and as patches and interstitial areas of fine, clear mosaic quartz. A few irregular phlogopite veinlets.

**FABRIC:** Many grains are stressed, fractured, some are cloudy. They are thought to be modified clastic grains, up to 3mm across. Much quartz is recrystallised.

**MINOR MINERALS:** A few chlorite patches, with carbonate needles. Scattered pyrite crystals. Isolated ?chert grains with apatite inclusions.

**INTERPRETATION/COMMENTS:** Originally a poorly sorted gritty sandstone (orthoquartzite), extensively recrystallised, then penetrated by phlogopite veinlets.

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**SAMPLE NO:** HS004/252.6m (T.S. 64404)

**CLASSIFICATION:** Metaquartzite.

**COMPOSITION:** Grains of cloudy, milky quartz cemented by a mosaic of clear quartz, with a few grit - to pebble sized patches of milky quartz believed to have been coarse vein-quartz material.

**FABRIC:** Some relict clastic textures preserved but recrystallisation has obliterated features. This process has 'clarified' the milky quartz.

**MINOR MINERALS:** Scattered pyrite crystals with associated minor chlorite and muscovite.

**INTERPRETATION/COMMENTS:** Appears to have been a pebbly, gritty sandstone composed mainly of milky quartz; extensively recrystallised as a result of thermal metamorphism.

**SAMPLE NO:** HS004/277.6m (T.S. 64405) Page 4

**CLASSIFICATION:** Quartz-Magnetite Rock (with Sphalerite)

**COMPOSITION:** Mainly coarse, stressed, platy interlocking quartz, and patches/lenses of granular magnetite with fine interstitial siderite. Scattered traces of sphalerite.

**FABRIC:** Strongly stressed, originally coarser fabric but now fractured and partly recrystallised. No relict features. Sphalerite is <0.1mm.

**MINOR MINERALS:** Minor chlorite intergrown with the magnetite; traces of associated muscovite. Small patches of pyrite.

**INTERPRETATION/COMMENTS:** Apparently a quartz rock, possibly vein quartz, which was stressed, fractured; the other minerals were then deposited; they show no evidence of stress/deformation.

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**APPENDIX (d)**

**Assay Reports**



## ANALYTICAL REPORT

Job: 4AD2397

O/N:

Sample	Mo	Sn	Zn	Au	Dp1	Au	Dp2	Bi	W
HS001 27.0-28.0	<20	<50	1250		2		1	7	<10
HS001 31.5-32.5	<20	<50	400		1		--	5	15
HS001 34.5-35.5	<20	<50	150		1		--	6	<10
HS001 35.5-36.0	<20	<50	200		1		--	<4	<10
HS001 39.9-40.9	<20	<50	150		1		--	<4	<10
HS001 63.5-64.5	<20	<50	<50		2		--	8	<10
HS001 76.0-77.0	<20	200	150		285		--	820	25
HS001 77.0-78.0	<20	200	100		125		--	600	15
HS001 78.0-79.0	<20	250	100		210		--	420	10
HS001 79.0-80.0	<20	250	100		85		--	320	20
HS001 80.0-81.0	<20	250	100		265		--	940	20
HS001 81.0-82.0	<20	250	100		30		--	340	15
HS001 82.0-83.0	20	150	1700		46		--	250	15
HS001 83.0-84.0	<20	350	50		105		--	770	<10
HS001 84.0-85.0	<20	400	50		715		610	1860	10
HS001 85.0-86.0	<20	450	100		125		--	1420	15
HS001 86.0-87.0	<20	550	50		315		--	1420	<10
HS001 87.0-88.0	<20	450	100		240		--	3900	<10
HS001 88.0-89.0	20	650	100		265		--	4100	10
HS001 89.0-90.0	50	850	100		285		--	1620	20
HS001 90.0-91.0	320	900	150		230		240	6800	30
HS001 91.0-92.0	1350	900	200		230		250	1.26%	10
HS001 92.0-93.0	1400	1000	150		200		180	9200	15
HS001 93.0-94.0	120	800	100		145		--	2150	25
HS001 94.0-95.0	40	700	100		1300		990	5800	35
HS001 95.0-96.0	30	500	150		755		--	3700	10
HS001 96.0-97.0	<20	300	50		440		--	2050	<10
HS001 97.0-98.0	<20	300	150		90		--	1220	20
HS001 98.0-99.0	<20	350	150		200		230	950	10
HS001 99.0-100.0	<20	450	50		22		--	1080	<10
HS001 100.0-101.0	<20	450	50		30		--	1380	<10
HS001 101.0-102.0	<20	250	50		70		--	195	25
HS001 102.0-103.0	20	100	100		230		220	330	10
HS001 103.0-104.0	<20	100	50		13		--	400	<10
HS001 104.0-105.0	<20	200	50		4		--	40	<10
HS001 105.0-106.0	20	250	50		90		--	25	160
HS001 106.0-107.0	<20	100	50		8		--	50	10
HS001 107.0-108.0	<20	150	100		2		--	65	15
HS001 108.0-109.0	20	150	100		6		--	260	<10
HS001 109.0-110.0	<20	250	50		560		390	750	<10
HS001 110.0-111.0	40	450	50		80		90	840	80
HS001 111.0-112.0	<20	500	100		2		--	25	10
HS001 112.0-113.0	<20	500	50		5		--	700	<10
HS001 113.0-114.0	<20	450	50		2		--	170	20
HS001 114.0-115.0	<20	300	50		2		--	50	20

Units	ppm	ppm	ppm	ppb	ppb	ppm	ppm
DL	20	50	50	1	1	4	10
Scheme	IC4E	IC4E	IC4E	FA3	FA3	XRF1	XRF1
Upper Scheme						XRF2	



107080

ANALYTICAL REPORT

Job: 4AD2397  
O/N:

Sample	Mo	Sn	Zn	Au	Dp1	Au	Dp2	Bi	W
HS001 115.0-116.0	20	400	50		2	--		135	10
HS001 116.0-117.0	20	400	50		9	--		1620	<10
HS001 117.0-118.0	<20	500	<50		22	--		8	<10
HS001 118.0-119.0	20	450	50		1	--		20	10
HS001 119.0-120.0	30	500	50		<1	--		20	<10
HS001 120.0-121.0	30	500	100		1	--		15	<10
HS001 121.0-122.0	30	550	50		<1	--		4	30
HS001 122.0-123.0	40	450	150		50	--		150	15
HS001 123.0-124.0	90	150	6900		310	290		550	10
HS001 124.0-125.0	40	150	4750		10	--		30	25
HS001 125.0-126.0	50	150	300		3	--		15	30
HS001 136.0-137.0	50	150	200		<1	--		15	90
HS001 141.5-142.5	200	100	100		<1	--		5	380
HS001 150.0-151.0	90	150	100		<1	--		4	220
Units	ppm	ppm	ppm		ppb	ppb		ppm	ppm
DL	20	50	50		1	1		4	10
Scheme	IC4E	IC4E	IC4E		FA3	FA3		XRF1	XRF1

## ANALYTICAL REPORT

Job: 4AD2397

O/N:

Sample	F
HS001 27.0-28.0	0.02
HS001 31.5-32.5	0.11
HS001 34.5-35.5	0.17
HS001 35.5-36.0	0.19
HS001 39.9-40.9	0.04
HS001 63.5-64.5	0.27
HS001 76.0-77.0	0.88
HS001 77.0-78.0	0.72
HS001 78.0-79.0	1.01
HS001 79.0-80.0	1.40
HS001 80.0-81.0	1.58
HS001 81.0-82.0	1.94
HS001 82.0-83.0	0.66
HS001 83.0-84.0	0.41
HS001 84.0-85.0	0.19
HS001 85.0-86.0	0.89
HS001 86.0-87.0	0.37
HS001 87.0-88.0	0.36
HS001 88.0-89.0	0.51
HS001 89.0-90.0	0.60
HS001 90.0-91.0	0.46
HS001 91.0-92.0	0.42
HS001 92.0-93.0	0.49
HS001 93.0-94.0	3.53
HS001 94.0-95.0	1.65
HS001 95.0-96.0	0.69
HS001 96.0-97.0	0.46
HS001 97.0-98.0	0.68
HS001 98.0-99.0	0.29
HS001 99.0-100.0	0.19
HS001 100.0-101.0	0.22
HS001 101.0-102.0	0.40
HS001 102.0-103.0	1.99
HS001 103.0-104.0	1.66
HS001 104.0-105.0	1.24
HS001 105.0-106.0	0.37
HS001 106.0-107.0	0.25
HS001 107.0-108.0	0.31
HS001 108.0-109.0	0.25
HS001 109.0-110.0	0.36
HS001 110.0-111.0	0.36
HS001 111.0-112.0	0.25
HS001 112.0-113.0	0.22
HS001 113.0-114.0	0.24
HS001 114.0-115.0	0.37

Units	%
DL	0.01
Scheme	SIE2

## ANALYTICAL REPORT

Job: 4AD2397

O/N:

Sample	F
HS001 115.0-116.0	0.24
HS001 116.0-117.0	0.24
HS001 117.0-118.0	0.24
HS001 118.0-119.0	0.24
HS001 119.0-120.0	0.28
HS001 120.0-121.0	0.24
HS001 121.0-122.0	0.27
HS001 122.0-123.0	0.30
HS001 123.0-124.0	0.36
HS001 124.0-125.0	1.00
HS001 125.0-126.0	0.84
HS001 136.0-137.0	1.20
HS001 141.5-142.5	0.70
HS001 150.0-151.0	1.63

Units	%
DL	0.01
Scheme	SIE2



ANALYTICAL REPORT

Job: 4AD2661

O/N:

Sample	Bi	Mo	Sn	W	Au Dp1	Au Dp2	Zn
HS002 31.0-32.0	8	3	20	<10	4	4	740
HS002 32.0-33.0	6	3	15	45	1	--	550
HS002 33.0-34.0	7	4	5	25	1	--	640
HS002 34.0-35.0	6	6	5	15	1	--	330
HS002 42.7-43.5	15	4	40	240	3	--	770
HS002 43.5-45.1	260	13	340	260	12	--	510
HS002 45.1-46.1	480	<2	1980	100	8	--	800
HS002 46.1-46.8	390	2	2050	470	17	--	580
HS002 46.8-47.8	500	3	2650	230	70	60	670
HS002 47.8-48.8	1.61%	9	3300	140	<1	--	510
HS002 48.8-49.8	1580	8	3450	130	55	--	750
HS002 49.8-50.8	990	4	4050	145	55	--	580
HS002 50.8-51.8	460	2	1950	120	36	--	1420
HS002 51.8-52.8	300	<2	3850	110	19	--	1020
HS002 52.8-53.8	15	<2	35	90	2	--	550
HS002 53.8-54.8	15	<2	40	105	2	--	780
HS002 54.8-55.3	15	<2	210	260	2	--	1300
HS002 55.3-56.7	550	<2	1880	230	80	75	470
HS002 56.7-57.7	175	4	300	240	14	--	300
HS002 57.7-58.6	350	<2	390	175	40	--	610
HS002 58.6-59.6	290	<2	190	105	13	17	630
HS002 59.6-60.3	200	<2	1240	90	24	--	650
HS002 60.3-61.3	165	6	5700	65	22	--	460
HS002 61.3-62.3	600	8	1800	85	46	--	640
HS002 63.3-64.3	580	5	2750	110	100	110	390
HS002 64.3-65.3	570	8	980	160	46	--	240
HS002 65.3-66.3	350	8	1850	490	30	--	230
HS002 66.3-67.3	630	9	3000	320	26	--	210
HS002 67.3-68.3	950	4	2450	410	38	--	155
HS002 68.3-69.2	135	5	670	510	17	--	115
HS002 69 .2-70 .2	340	15	2150	550	22	--	140
HS002 70 .2-71 .2	610	7	2250	380	44	--	125
HS002 71 .2-72 .2	650	5	3050	320	105	--	165
HS002 72 .2-73 .2	1720	5	3750	610	180	150	125
HS002 73 .2-74 .2	570	5	1900	420	60	--	160
HS002 74 .2-75 .2	1220	19	1640	790	120	120	175
HS002 75 .2-76 .2	540	40	1440	1220	50	--	250
HS002 76 .2-77 .2	390	9	2800	460	46	--	100
HS002 77 .2-78 .2	660	20	2300	1340	110	100	185
HS002 78 .2-79 .2	310	25	1500	1240	22	--	130
HS002 79 .2-80 .2	220	12	1320	570	17	14	105
HS002 80 .2-81 .2	380	12	1160	390	34	--	115
HS002 81 .2-82 .2	630	65	1340	590	60	65	220
HS002 82 .2-83 .2	590	15	1680	1120	55	--	220
HS002 83 .2-84 .2	940	65	2000	960	50	--	230

Units	ppm	ppm	ppm	ppm	ppb	ppb	ppm
DL	4	2	4	10	1	1	2
Scheme	XRF1	XRF1	XRF1	XRF1	FA3	FA3	AA3
Upper Scheme	XRF2						

ANALYTICAL REPORT

Sample	Bi	Mo	Sn	W	Au Dp1	Au Dp2	Zn
HS002 84 .2-85 .2	500	13	1120	650	34	46	190
HS002 85 .2-86 .2	490	14	960	830	44	--	230
HS002 86 .2-87 .2	550	16	1000	1000	65	--	230
HS002 87 .2-88 .2	440	8	1140	720	44	--	220
HS002 88 .2-89 .2	460	10	1380	610	34	50	210
HS002 89 .2-90 .2	710	18	1020	530	110	--	450
HS002 90 .2-91 .2	530	20	1020	1500	48	--	240
HS002 91 .2-92 .2	660	19	1200	710	110	110	180
HS002 92 .2-93 .2	660	15	1080	650	75	--	150
HS002 93 .2-94 .2	460	35	1150	870	60	--	180
HS002 94 .2-95 .2	600	30	1200	1120	48	--	120
HS002 95 .2-96 .2	530	35	1100	950	90	--	145
HS002 96 .2-97 .2	470	20	1780	1120	55	--	220
HS002 97 .2-98 .2	570	16	980	720	70	--	340
HS002 98 .2-99 .2	490	17	980	680	48	--	600
HS002 99 .2-100.2	630	10	990	770	75	70	410
HS002 100.2-101.2	380	30	1050	520	48	--	230
HS002 101.2-102.2	210	17	1500	370	28	--	210
HS002 102.2-103.2	770	3	2200	350	100	--	240
HS002 103.2-104.2	500	20	1360	2050	40	--	230
HS002 104.2-105.2	590	4	2050	620	38	--	195
HS002 105.2-106.2	610	140	1380	1.03%	80	--	150
HS002 106.2-107.2	660	12	1300	790	70	--	240
HS002 107.2-108.2	670	11	1620	1160	85	--	210
HS002 108.2-109.2	660	45	1680	1580	90	140	370
HS002 109.2-110.2	420	15	1200	900	65	--	310
HS002 110.2-111.2	550	17	1500	930	65	--	260
HS002 111.2-112.2	630	75	1460	870	210	150	370
HS002 112.2-113.2	520	12	1240	970	80	--	220
HS002 113.2-114.2	210	30	1580	590	44	--	6900
HS002 114.2-115.2	15	35	370	280	30	--	2.30%
HS002 115.2-116.2	35	40	240	1180	15	--	1.64%
HS002 116.2-117.2	40	20	420	220	85	85	2.95%
HS002 117.2-118.2	45	9	750	140	4	--	5300
HS002 118.2-119.2	35	25	700	330	9	--	1.23%
HS002 119.2-120.2	45	2	670	50	2	2	380
HS002 120.2-121.2	4	4	700	10	2	--	200
HS002 121.2-122.2	4	4	670	<10	1	--	155
HS002 122.2-123.2	<4	100	620	2450	2	--	135
HS002 123.2-124.2	5	<2	520	15	<1	--	115
HS002 124.2-125.2	4	100	510	175	1	--	195
HS002 125.2-126.2	7	2	640	20	<1	--	135
HS002 126.2-127.2	4	<2	760	25	<1	--	100
HS002 127.2-128.2	4	<2	760	30	<1	--	100
HS002 128.2-129.2	6	<2	760	35	1	--	105

Units	ppm	ppm	ppm	ppm	ppb	ppb	ppm
DL	4	2	4	10	1	1	2
Scheme	XRF1	XRF1	XRF1	XRF1	FA3	FA3	AA3
Upper Scheme				XRF2			AA4



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ANALYTICAL REPORT

Job: 4AD2661  
O/N:

Sample	Bi	Mo	Sn	W	Au Dp1	Au Dp2	Zn
HS002 129.2-130.2	10	60	590	340	2	--	85
HS002 130.2-131.2	15	<2	570	<10	1	--	85
HS002 131.2-132.2	15	2	480	<10	2	--	95
HS002 132.2-133.2	10	<2	430	30	1	--	105
HS002 133.2-134.2	20	<2	390	20	<1	--	110
HS002 134.2-135.2	15	<2	350	20	1	--	70
HS002 135.2-136.2	25	<2	330	<10	<1	--	70
HS002 136.2-137.2	6	2	440	<10	1	--	100
HS002 137.2-138.2	20	<2	310	35	1	--	65
HS002 138.2-139.2	<4	<2	310	25	1	--	55
HS002 139.2-140.2	30	<2	360	<10	2	4	60
HS002 140.2-141.2	8	<2	270	15	10	12	320
HS002 141.2-142.2	4	3	300	<10	1	--	105
HS002 142.2-143.2	8	4	340	<10	<1	--	75
HS002 143.2-144.2	5	<2	440	20	1	--	75
HS002 144.2-145.2	6	<2	440	25	3	--	80
HS002 145.2-146.2	<4	<2	470	20	5	--	125
HS002 146.2-147.2	<4	<2	250	10	16	13	210
HS002 153.0-154.0	6	95	320	450	<1	--	150
HS002 156.0-157.0	<4	35	140	980	<1	--	95
Units	ppm	ppm	ppm	ppm	ppb	ppb	ppm
DL	4	2	4	10	1	1	2
Scheme	XRF1	XRF1	XRF1	XRF1	FA3	FA3	AA3

ANALYTICAL REPORT  
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AMDEL Report            4AD2661

Sample ID Code Results in		F SIE 3 %
HS 002	31.0-32.0	0.26
	32.0-33.0	0.22
	33.0-34.0	0.12
	34.0-35.0	0.08
	42.7-43.5	0.30
	43.5-45.1	0.22
	45.1-46.1	3.05
	46.1-46.8	10.2
	46.8-47.8	2.80
	47.8-48.8	0.16
	48.8-49.3	0.22
	49.8-50.8	0.12
	50.8-51.8	0.18
	51.8-52.8	0.08
	52.8-53.8	0.12
	53.8-54.8	0.06
	54.8-55.3	0.18
	55.3-56.7	0.28
	56.7-57.7	0.16
	57.7-58.6	0.14
	58.6-59.6	0.16
	59.6-60.3	0.08
	60.3-61.3	0.30
	61.3-62.3	0.12
	63.3-64.3	0.20
	64.3-65.3	8.80
	65.3-66.3	14.4
	66.3-67.3	7.50
	67.3-68.3	7.02
	68.3-69.2	5.52

ANALYTICAL REPORT

AMDEL Report

4AD2661

Sample ID		F
Code		SIE 3
Results in		%
HS 002	69.2-70.2	8.10
	70.2-71.2	10.9
	71.2-72.2	10.0
	72.2-73.2	9.60
	73.2-74.2	9.32
	74.2-75.2	12.7
	75.2-76.2	12.2
	76.2-77.2	7.60
	77.2-78.2	9.85
	78.2-79.2	12.2
	79.2-80.2	10.3
	80.2-81.2	11.5
	81.2-82.2	13.2
	82.2-83.2	13.9
	83.2-84.2	12.4
	84.2-85.2	13.8
	85.2-86.2	12.1
	86.2-87.2	14.4
	87.2-88.2	11.2
	88.2-89.2	12.2
	89.2-90.2	11.2
	90.2-91.2	12.4
	91.2-92.2	14.0
	92.2-93.2	13.0
	93.2-94.2	13.0
	94.2-95.2	14.7
	95.2-96.2	13.1
	96.2-97.2	11.3
	97.2-98.2	11.7
	98.2-99.2	10.2

ANALYTICAL REPORT

AMDEL Report 4AD2661

Sample ID		F
Code		SIE 3
Results in		%
HS 002	99.2-100.2	10.6
	100.2-101.2	10.5
	101.2-102.2	8.00
	102.2-103.2	7.60
	103.2-104.2	9.12
	104.2-105.2	11.9
	105.2-106.2	11.3
	106.2-107.2	12.4
	107.2-108.2	11.5
	108.2-109.2	12.5
	109.2-110.2	11.0
	110.2-111.2	13.4
	111.2-112.2	14.5
	112.2-113.2	14.5
	113.2-114.2	8.20
	114.2-115.2	1.93
	115.2-116.2	1.90
	116.2-117.2	1.26
	117.2-118.2	1.22
	118.2-119.2	0.99
	119.2-120.2	0.58
	120.2-121.2	0.36
	121.2-122.2	1.21
	122.2-123.2	0.51
	123.2-124.2	0.51
	124.2-125.2	0.88
	125.2-126.2	0.39
	126.2-127.2	0.53
	127.2-128.2	0.47
	128.2-129.2	1.15

**ANALYTICAL REPORT**  
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AMDEL Report

4AD2661

Sample ID Code Results in		F SIE 3 %
HS 002	129.2-130.2	1.19
	130.2-131.2	0.63
	131.2-132.2	0.50
	133.2-134.2	0.90
	134.2-135.2	0.55
	135.2-136.2	0.75
	136.2-137.2	0.35
	137.2-138.2	0.85
	138.2-139.2	0.20
	139.2-140.2	0.55
	140.2-141.2	0.25
	141.2-142.2	0.25
	142.2-143.2	0.20
	143.2-144.2	0.25
	144.2-145.2	0.25
	145.2-146.2	0.15
	146.2-147.2	0.15
	153.2-154.2	3.50
	156.2-157.2	3.00



ANALYTICAL REPORT

Job: 4AD3223  
O/N:

Sample	Au Avg	Au	Au Rpl	AuSS	Sn	W
HS003 9.6-10.6	<0.01	<0.01	--	<0.01	4	<10
HS003 12.2-13.2	<0.01	<0.01	--	--	<4	<10
HS003 16.2-17.2	<0.01	<0.01	--	--	4	<10
HS003 26.6-27.6	<0.01	<0.01	--	--	<4	<10
HS003 30.8-31.8	<0.01	<0.01	--	--	<4	<10
HS003 36.3-37.3	<0.01	<0.01	--	--	<4	<10
HS003 38.8-39.8	<0.01	<0.01	--	--	<4	<10
HS003 40.3-41.3	<0.01	<0.01	--	--	5	<10
HS003 41.3-42.3	<0.01	<0.01	--	--	4	<10
HS003 49.3-50.3	0.01	0.01	--	--	<4	<10
HS003 53.6-54.6	<0.01	<0.01	--	--	4	<10
HS003 70.6-71.6	0.01	0.01	--	--	<4	<10
HS003 79.6-80.6	<0.01	<0.01	--	--	<4	<10
HS003 104.6-105.6	0.01	0.01	--	--	9	10
HS003 144.6-145.6	<0.01	<0.01	--	--	<4	<10
HS003 154.6-155.6	<0.01	<0.01	--	--	<4	<10
HS003 157.2-158.2	<0.01	<0.01	--	--	<4	<10
HS003 163.8-164.8	<0.01	<0.01	--	--	5	15
HS003 170.8-171.8	<0.01	<0.01	--	--	30	35
HS003 174.4-175.4	<0.01	<0.01	--	--	4	15
HS003 182.6-183.6	<0.01	<0.01	--	<0.01	7	20
HS003 183.6-184.6	<0.01	<0.01	--	--	4	10
HS003 184.6-185.6	<0.01	<0.01	--	--	10	10
HS003 185.6-186.6	<0.01	<0.01	--	--	8	<10
HS004 38-39	<0.01	<0.01	--	--	<4	10
HS004 41-42	<0.01	<0.01	--	--	<4	<10
HS004 44-45	<0.01	<0.01	--	--	<4	<10
HS004 52-53	<0.01	<0.01	--	--	<4	<10
HS004 58-59	<0.01	<0.01	--	--	<4	<10
HS004 64-65	<0.01	<0.01	--	--	8	15
HS004 68-69	0.01	0.01	--	--	5	15
HS004 74-75	<0.01	<0.01	--	--	5	10
HS004 81-82	<0.01	<0.01	--	--	5	<10
HS004 95-96	0.01	0.01	--	--	10	<10
HS004 103-104	<0.01	<0.01	--	--	<4	10
HS004 110-111	<0.01	<0.01	--	--	<4	<10
HS004 116-117	<0.01	<0.01	--	--	6	<10
HS004 200-201	<0.01	<0.01	--	--	8	15
HS004 206-207	<0.01	<0.01	--	--	15	100
HS004 215-216	<0.01	<0.01	--	--	8	15
HS004 219-220	<0.01	<0.01	--	<0.01	20	25
HS004 226-227	<0.01	<0.01	--	--	9	45
HS004 228-229	0.01	0.01	--	--	4	50
HS004 230-231	<0.01	<0.01	--	--	20	670
HS004 232-233	<0.01	<0.01	--	--	10	60

Units	ppm	ppm	ppm	ppm	ppm	ppm
DL	0.01	0.01	0.01	0.01	4	10
Scheme	FA1	FA1	FA1	FA1	XRF1	XRF1



187079

ANALYTICAL REPORT

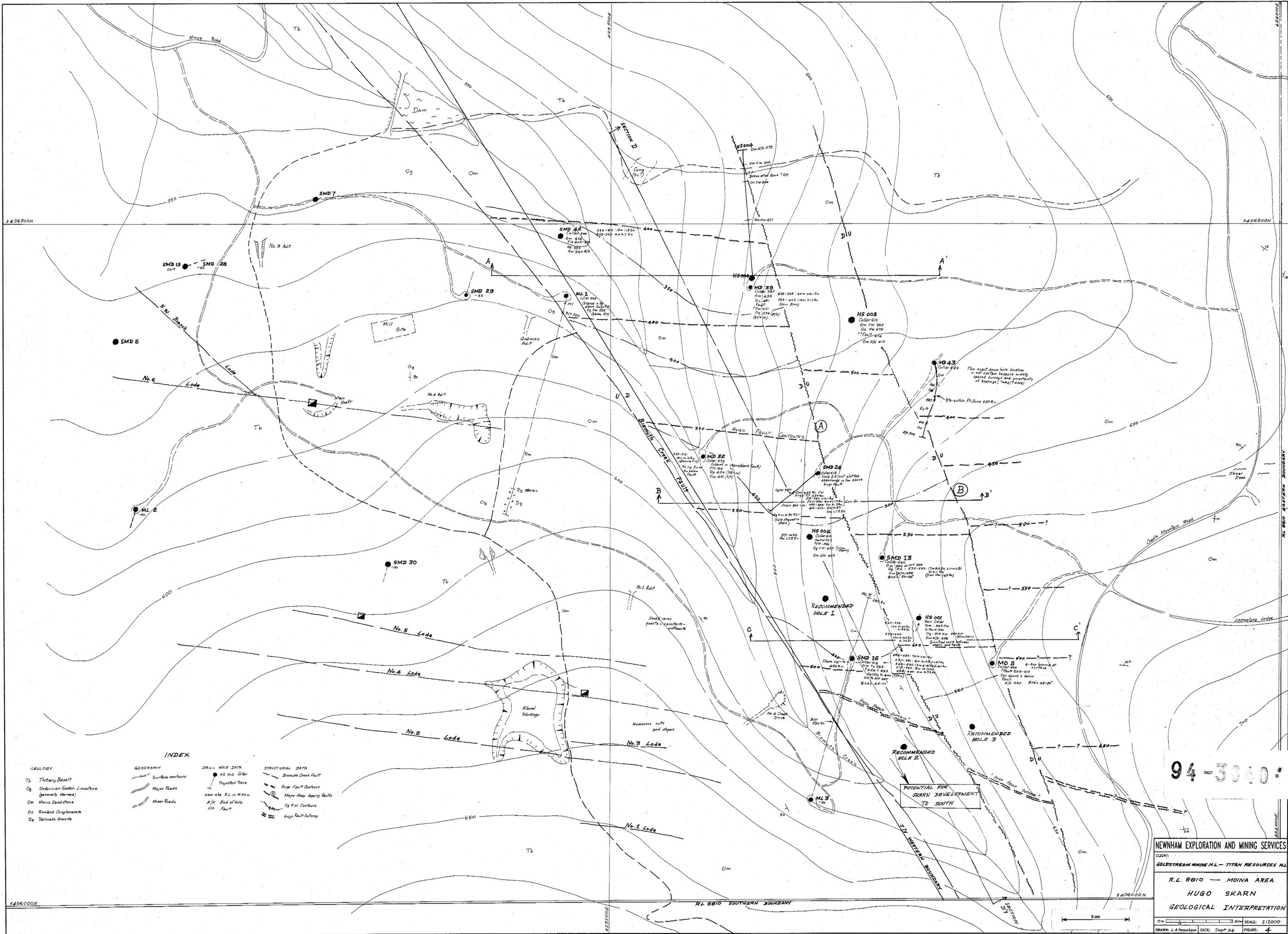
Job: 4AD3223

O/N:

Sample	Au Avg	Au	Au Rpl	AuSS	Sn	W
HS004 234-235	<0.01	<0.01	--	--	9	35
HS004 236-237	<0.01	<0.01	--	--	4	40
HS004 238-239	<0.01	<0.01	--	--	7	30
HS004 240-241	<0.01	<0.01	--	--	20	45
HS004 242-243	<0.01	<0.01	--	--	6	15
HS004 244-245	<0.01	<0.01	--	--	5	10
HS004 246-247	<0.01	<0.01	--	--	9	<10
HS004 248-249	<0.01	<0.01	--	--	6	10
HS004 250-251	<0.01	<0.01	--	--	10	10
HS004 252-253	0.01	0.01	--	--	7	<10
HS004 254-255	0.01	0.01	--	--	<4	10
HS004 256-257	0.01	0.01	--	--	<4	30
HS004 257-258	0.01	0.01	--	--	4	95
HS004 258-259	<0.01	<0.01	--	--	<4	55
HS004 260-261	<0.01	<0.01	--	--	5	115
HS004 264-265	<0.01	<0.01	--	<0.01	5	<10
HS004 269-270	<0.01	<0.01	--	--	4	10
HS004 272-273	<0.01	<0.01	--	--	4	<10
HS004 275-276	<0.01	<0.01	--	--	<4	<10
HS004 277-278	0.01	0.01	--	--	7	<10

Units	ppm	ppm	ppm	ppm	ppm	ppm
DL	0.01	0.01	0.01	0.01	4	10
Scheme	FA1	FA1	FA1	FA1	XRF1	XRF1



**INDEX**

<b>GEOLOGY</b>	<b>GEOGRAPHY</b>	<b>DRILL HOLE DATA</b>	<b>STRUCTURAL DATA</b>
Tb Tertiary Basalt	Surface contours	HS 000 Collar	Brumby Creek Fault
Og Ordovician Gorton Limestone (generally shaly)	Major Roads	Projected Trace	Huge Fault Outcrop
Om Moira Sandstone	Minor Roads	400-450 R.L. in MASS.	Major Shear Along Faults
Oo Rowland Conglomerate		R/H End of hole	Og F.W. Contours
Dg Dalrocks Granite		RT Fault	Huge Fault Outcrop

94-3010

**NEWHAM EXPLORATION AND MINING SERVICES**

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

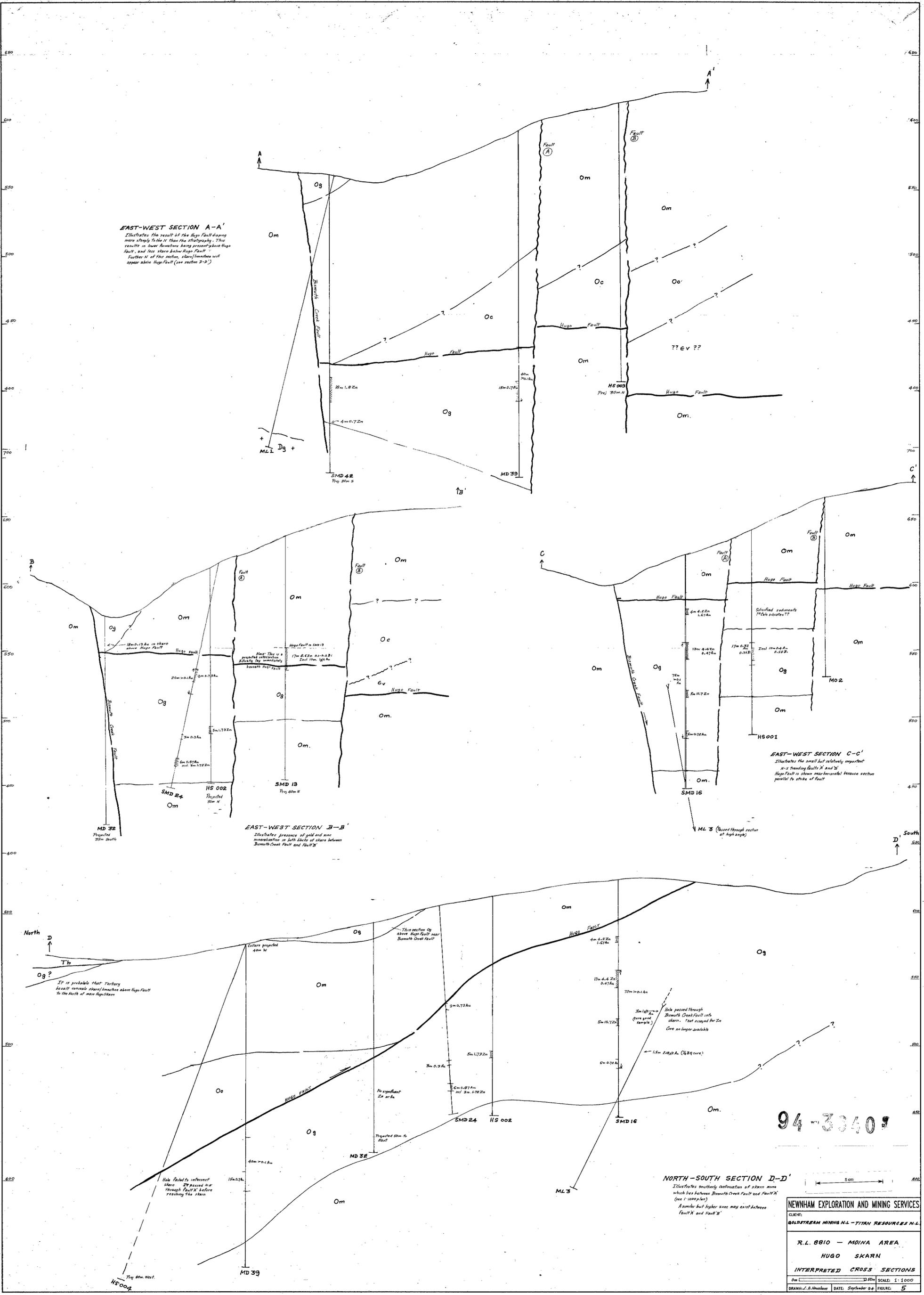
R.L. 8810 - MOIRA AREA

**HUGO SKARN**

**GEOLOGICAL INTERPRETATION**

0 m 1 km SCALE: 1:1000

DRAWN: C.A. Newham DATE: Sept 94 FIGURE: 4



94-3340

NEWMHAM EXPLORATION AND MINING SERVICES	
CLIENT: GOLDSTREAM MINING N.L. - TITAN RESOURCES N.L.	
R.L. 8810 - MOINA AREA HUGO SKARN	
INTERPRETED CROSS SECTIONS	
0m	100m
SCALE: 1:1000	
DRAWN: J.A. Althaus	DATE: September 94
FIGURE: 5	