

74/22

NORTHERN TERRITORY GEOLOGICAL SURVEY REPORT G.S. 74/22

LEWIS' PROSPECT - DIAMOND DRILLING

by

J.L. WILLIS

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1. SUMMARY

Following a geological survey in 1972 of four limonitic quartz veins (infilled shear zones) within ML's 387A and 388A, two diamond drill holes were recommended to test the most persistent of the veins at depth (Willis, 1972). These holes were drilled between November and December, 1973. Only minor mineralisation was encountered in hole DDH1 and hole DDH 2 did not intersect the shear. It is recommended that another drill hole be drilled to test the shear. This hole should be sited 120 metres south of DDH 1 and should intersect the shear zone at approximately 60 metres. This hole will determine if the shear intersected in DDH 1 is in fact the same as that exposed at the surface and if the shear is mineralised.

2. INTRODUCTION

Following a request from Mr. J.A. Lewis of Mount Wells for drilling assistance, a geological survey was made of several gossan outcrops within ML's 387A and 388A (Willis, 1972). The leases are located four kilometres south east of Mount Wells.

Four limonitic quartz veins were examined and assay results for grab samples from the veins indicated that they contain anomalous concentrations of copper, lead, tin, bismuth, silver and gold. As a result of this survey two diamond drill holes were recommended to test the most persistent of the veins for mineralisation at depth.

The diamond drilling was undertaken during November and December of 1973.

3. ACCESS

The leases may be reached by following the gravel road from Fountain Head to the Mount Wells Government Battery and then via the old Frances Creek road for a distance of approximately five kilometres to where this road crosses the McKinley River. The leases are situated 1.6Km south of this crossing.

4. GENERAL GEOLOGY

The regional geology of the area is shown on the Burrundie 1:63 360 geological series sheet (D52 - 8 - 70).

Plate 2. shows the regional geology of the area at a scale of approximately 1:16 000 (Photo scale).

Outcrops in the area are sandstone and shale of the Burrell Creek Formation. In general these rocks strike north-south and dip to the east at angles ranging from 60° to 85°.

The McKinley Granite crops out approximately 0.8 kilometres south east of the leases.

5. DETAILED GEOLOGY

During the 1972 survey four separate ferruginous quartz veins were delineated, denoted V1, V2, V3 and V4 (Plate 2.). Of these four veins, vein V1 was the most persistent and a plane table survey was conducted over the area (Plate 3.). The following discussion of the geology is from Willis, 1972.

"The vein (V1) parallels the crest of a prominent ridge which rises 120 m above the surrounding plain. It can be traced over a distance of 430 m and varies in width from 0.6 to 3 m. The dip is vertical and the strike is  $357^{\circ}$ M. The vein consists mainly of quartz and limonite, with minor boxworks which appear to be after pyrite.

Seven grab samples were collected across the vein at various intervals and analysed for copper, lead, zinc, cobalt, nickel, cadmium, bismuth, molybdenum, tin, silver and gold."

The results are given in Table 1. and the sample locations are shown on Plate 3.

6. DIAMOND DRILLING

Two diamond drill holes, DDH1 and DDH 1, were drilled to test the mineralisation associated with vein V1 at depth. The collar positions for the two diamond drill holes had to be changed from the original proposed positions due to access difficulties. As a result DDH 1 was shifted 6 metres to the north and DDH 2 had to be drilled from the western side of the shear zone rather than from the eastern side (see Plate 3.).

Table 2. gives a summary of drilling information and the collar positions are shown on Plate 3.

TABLE 2.

DETAILS OF DRILLING HOLES

Hole Number	Bearing	Inclination	Total Depth (metres)
DDH 1	$267^{\circ}$ <sub>m</sub>	$55^{\circ}$	100
DDH 2	$87^{\circ}$ <sub>m</sub>	45	160

Lithological logs for DDH 1 and DDH 2 are given in Appendix 1.

TABLE 1.

ANALYTICAL RESULTS FOR GRAB SAMPLES FROM VEIN V1.

VEIN	Sample Number	Copper ppm	Lead ppm	Zinc ppm	Cobalt ppm	Nickel ppm	Molybdenum ppm	Cadmium ppm	Bismuth ppm	Tin ppm	Silver ppm	Gold dwts/ton
	L1	324	2880	19	10	15	-20	-2	145	490	15	0.33
	L2	554	3130	45	-10	15	-20	-2	95	50	2	0.25
VEIN V1	L3	412	5660	32	-10	10	-20	-2	155	130	11	0.40
	L4	1120	2490	33	-10	20	-20	2	1000	<u>13,700</u>	28	0.53
	L5	710	1110	198	25	30	-20	4	500	490	26	0.76
	L6	156	410	38	20	10	-20	-2	60	220	2	0.68
	L7	358	90	28	-10	-10	-20	-2	45	50	-2	0.14

NOTE: - indicates value less than detection limit.

7. DISCUSSION OF RESULTS

DDH 1 was drilled from the eastern side of the shear and was designed to intersect the shear zone at a depth of 75 metres (downhole). The hole was terminated at 100 metres. Rocks encountered in the drill hole consisted of a shale - greywacke sequence. The target shear was not intersected at the expected position, but a chloritised shear zone was intersected between 46 metres and 56 metres, and this could be the same shear as that exposed on the surface. However, this shear consists of highly chloritised sheared shale while the shear exposed on the surface consists mainly of quartz and limonite. Thus lithologically they are quite distinct.

DDH 2 was originally designed to be drilled from the eastern side and to intersect the shear zone at 75 metres. However, access difficulties made this site not feasible at the time and the drill bench prepared by bulldozing on the western side of the shear (see Plate 3.) was not large enough to accommodate the Longyear 44 drill rig. Thus the hole had to be drilled from the base of the hill 92 m west of the shear. This hole was drilled at 45° and was designed to intersect the shear zone assuming a near vertical dip, at a downhole depth of 120 metres. This hole failed to intersect the shear zone, which could indicate that the shear zone intersect in DDH 1 is the same as the shear exposed on the surface. If this is the case this would mean the shear dips to the east at 60°.

Plate 3. shows the location of the drill holes and a section through the drill holes is shown on Plate 4.

ASSAY RESULTS

Each tray of core from DDH 1 and DDH 2 (which contain about 10 metres of core) was scraped and analysed for copper, lead, zinc, bismuth and silver. Selected sections from DDH 1 and DDH 2 were split and analysed for copper, lead, zinc, tin, silver and gold. Analyses were carried out at the East Point Laboratory, Northern Territory Administration, Darwin, by Atomic Absorption Spectrophotometer.

Analytical results for scrape samples from DDH 1 indicate anomalous values for lead and zinc e.g.

Pb	1100 ppm	40.45 - 46.75 Metres
Zn	3180 ppm	73.00 - 80.70 Metres

Three sections from DDH 1 containing pyrite with visible chalcopyrite and galena were split and assayed for copper, lead, zinc, silver and gold. The results are given in Table 3.

TABLE 3.

ASSAY RESULTS SPLIT CORE - DDH 1.

Interval (metres)	Length metres	Cu ppm	Pb ppm	Zn ppm	Tin ppm	Ag ppm	Au ppm
42.30 - 43.15	0.85	35	4000	95	-50	-2	0.2
47.75 - 50.00	2.25	4080	2250	470	2660	33	0.3
64.60 - 65.10	0.50	1550	680	180	-50	8	-0.2

Note: - indicates less than detection limit.

The mineralised section between 47.75 metres and 50.00 metres occurs within the shear zone.

No anomalous values were encountered in the scrape results from DDH 2, except for zinc values. It can be seen from the analytical results (Appendix II) that the zinc values are anomalous, and consistently so, varying between 1000 and 3000 ppm for the length of the hole. One tray of core was split and assayed to check the analytical results from the scrape samples. The section split was between 81.50 metres and 88.95 metres. A comparison between the scrape results and the split core results is given in Table 4.

TABLE 4.

COMPARISON BETWEEN SPLIT CORE AND SCRAPE

CORE ANALYTICAL RESULTS - DDH 2.

<u>Split Core Results</u>				
Interval (metres)	Length (metres)	Cu ppm	Pb ppm	Zn ppm
81.50 - 83.50	2.0	60	20	40
83.50 - 85.50	2.0	75	15	40
85.50 - 87.50	2.0	470	15	40
87.50 - 88.95	1.45	85	130	400
<u>Scrape Core Results</u>				
81.50 - 88.95	7.45	25	95	3680

The difference in analytical results between the scrape and split core samples is attributed to the core being left out in the weather during the wet season in galvanised iron core trays for a considerable period of time before being transported to the Darwin Core shed. As a result the minor amount of pyrite in the core could have been sufficient to set up an electrochemical reaction with the zinc on the core trays

with the zinc thus being deposited on the outside of the core and contaminating the scrape samples.

Analytical results for DDH 2 and DDH 2 are given in Appendix II.

8. CONCLUSIONS AND RECOMMENDATIONS

The shear zone intersected in DDH 1 could be the same shear as that exposed on the surface even though they are lithologically dissimilar. If it is the same then the shear is dipping to the east at approximately 60°. Assay results of samples from DDH 1 indicated that the shear zone intersected in this hole contains minor copper and lead mineralisation.

It is recommended that a further drill hole, DDH 3, be drilled 120 metres south of DDH 1, to intersect the shear zone at a vertical depth of 75 metres. This hole will confirm whether the shear zone intersected in DDH 1 is the same as that exposed on the surface, and give information on mineralisation within the shear. The collar position and bearing of DDH 3 are shown on Plate 3. and a cross section through the hole is shown on Plate 4.

9. REFERENCES

- |               |      |  |
|---------------|------|--|
| Malone, E.J., | 1962 | Pine Creek, N.T. 1:250 000<br>Geological Series. <u>Bur. Min.<br/>Resour. Aust. Explan. Notes.</u><br>SD52-8     |
| Willis, J.L., | 1972 | Investigation of Gossan Outcrops<br>Within M.L.'s 387A and 388A, N.T.<br><u>N.T.G.S. Rep. GS 72/23 (unpubl.)</u> |



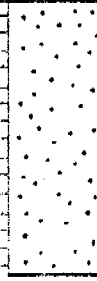
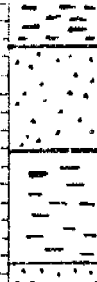
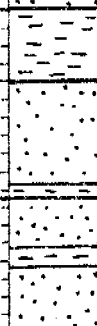
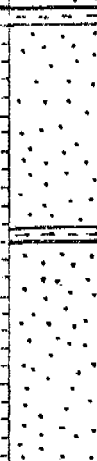
APPENDIX I



DIAMOND DRILL LOGS FOR DDH 1 AND

DDH 2 - LEWIS' PROSPECT

GEOLOGICAL LOG OF DRILL HOLE

PROJECT LEWIS PROSPECT REMARKS \_\_\_\_\_  
 HOLE N° DDH 4 CO-ORDINATES \_\_\_\_\_ RL GROUND \_\_\_\_\_  
 LOCATION Mt WELLS ANGLE FROM HORIZONTAL 55° DIRECTION 267° M

DESCRIPTION OF CORE	LOG	CORE RECOVERY %	SAMPLES
<p>No Core</p>			
<p>Interbedded shale-sandstone sequence. Rock buff coloured and highly weathered.</p>		<p>95.0 percent</p>	
<p>Light grey, weathered greywacke and shale. 16.45-16.60 - highly weathered shale band.</p>		<p>63.0 percent</p>	
<p>Buff coloured, weathered greywacke and shale sequence. 17.30-17.60 highly sheared shale band-very chloritic.</p>		<p>63.0 percent</p>	
<p>Light grey slightly weathered greywacke and shale sequence. 20 Rock becoming less weathered towards 30 metres. 18.50-18.70 quartz vein with some chloritic material. 18.70-27.45 Core highly ground in this section.</p>		<p>44.0 percent</p>	

 greywacke  
 shale

LOGGED BY J. L. Willis  
 SHEET 1 OF 5 DRAWING N° \_\_\_\_\_

**GEOLOGICAL LOG OF DRILL HOLE**

PROJECT LEWIS' PROSPECT REMARKS \_\_\_\_\_  
 HOLE N° DDH 1 CO-ORDINATES \_\_\_\_\_ R.L. GROUND \_\_\_\_\_  
 LOCATION Mt. WELLS ANGLE FROM HORIZONTAL 55° DIRECTION 267° M

DESCRIPTION OF CORE	LOG	CORE RECOVERY %	SAMPLES
Light grey slightly weathered greywacke becoming less weathered towards 30 metres.		44.0 percent	
30			
Dark grey interbedded greywacke and shale sequence. slightly chloritic.		90.0 percent	Note 1. Core extremely broken from 32 metres to 55 metres.  Note 2. Sequence is pyritic from 34 metres onwards. i.e. pyrite occurs as blabs or in small quartz veinlets.
42-42.20 quartz veins included 42-60-41.45 chloritic material. Trace 42-42.20 Pyrite present.			
35			
32 metres - bedding 60° to core axis.			
40			
45			
<b>SHEAR ZONE</b>		75.0	
Highly sheared chloritic shale.			
47.75 - 47.95 pyrite with trace ? chalcopyrite.			

greywacke  
 shale

REFERENCES  
 qtz quartz

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 SHEET 2 OF 5 DRAWING N° \_\_\_\_\_

# GEOLOGICAL LOG OF DRILL HOLE

PROJECT LEWIS' PROSPECT REMARKS \_\_\_\_\_  
 HOLE N° DDH 1 CO-ORDINATES \_\_\_\_\_ RL GROUND \_\_\_\_\_  
 LOCATION Mt. WELLS ANGLE FROM HORIZONTAL 55° DIRECTION 267° M

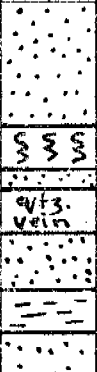

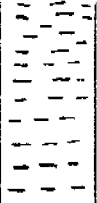
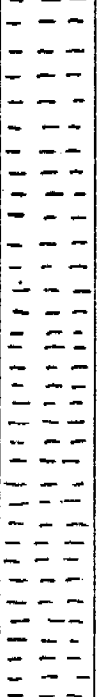
DESCRIPTION OF CORE	LOG	CORE RECOVERY %	SAMPLES
<p style="text-align: center;"><b>SHEAR ZONE</b></p> <p>Highly sheared extremely chloritic shale.</p> <p>55</p>		percent	
<p>Dark grey interbedded greywacke and shale - slightly chloritic</p> <p>64.50 - 65.10 slump zone - quartz containing included chloritic sediment, with pyrite.</p> <p>60</p> <p>72.50 - 73 slump zone - some quartz veinlets containing trace galena.</p> <p>73.30 - 1 cm. quartz vein containing minor sphalerite and galena</p> <p>65</p> <p>70</p>		83.0	
<p>65</p> <p>70</p>		94.0 percent	
<p>70</p>		88.5	



greywacke  
 shale  
**§§** slump zone

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 SHEET 3 OF 5 DRAWING N° \_\_\_\_\_

# GEOLOGICAL LOG OF DRILL HOLE

PROJECT LEWIS' PROSPECT REMARKS \_\_\_\_\_  
 HOLE N° DDH 1 CO-ORDINATES \_\_\_\_\_ R.L. GROUND \_\_\_\_\_  
 LOCATION M<sup>+</sup> WELLS ANGLE FROM HORIZONTAL SS° DIRECTION 267° M

DESCRIPTION OF CORE	LOG	CORE RECOVERY %	SAMPLES
<p>Dark grey interbedded greywacke and shale.</p> <p>76.70-77.30 slump zone - quartz veining present.</p> <p>77.60-78.20 Quartz vein. Minor sphalerite and galena present.</p> <p>80</p>		<p>percent</p> <p>88.5</p>	
<p>85 metres - bedding 30° to core axis.</p> <p>85</p>		<p>percent</p>	
<p>Dark grey slightly chloritic shale. Some greywacke beds present up to 15 cm. in width.</p> <p>90</p>		<p>100</p>	
<p>95</p> <p>99 metres - bedding 30° to core axis.</p>		<p>percent</p> <p>90.5</p>	
<p>END OF HOLE 100 M</p>			

 greywacke  
 shale

REFERENCES

SS slump zone  
 Qtz quartz

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SHEET 4 OF 5 DRAWING N° \_\_\_\_\_

**GEOLOGICAL LOG OF DRILL HOLE**

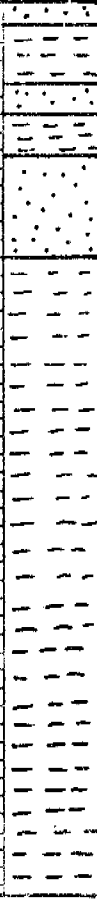

PROJECT LEWIS' PROSPECT REMARKS \_\_\_\_\_  
 HOLE N° DDH 1 CO-ORDINATES \_\_\_\_\_ RL GROUND \_\_\_\_\_  
 LOCATION M<sup>t</sup> WELLS ANGLE FROM HORIZONTAL 55° DIRECTION 287° M



DESCRIPTION OF CORE	LOG	CORE RECOVERY %	SAMPLES
<p>Total Depth of hole 100 metres</p> <p><i>Tropari Survey</i></p> <p>45 metres Dip 52° Bearing 112° M</p> <p>90 metres Dip 48° Bearing 82° M</p> <p>Drilling commenced 8-11-73</p> <p>Drilling completed 30-11-73</p>			

REFERENCES	LOGGED BY <u>J. L. Willis</u>
	SHEET <u>5</u> OF <u>5</u> DRAWING N° _____

# GEOLOGICAL LOG OF DRILL HOLE

PROJECT LEWIS' PROSPECT REMARKS \_\_\_\_\_  
 HOLE N° DDH 2 CO-ORDINATES \_\_\_\_\_ R.L. GROUND \_\_\_\_\_  
 LOCATION M<sup>s</sup> WELLS ANGLE FROM HORIZONTAL 45° DIRECTION 87° M

DESCRIPTION OF CORE	LOG	CORE RECOVERY %	SAMPLES
<p>Mainly clay material with some shale fragments present.</p> <p style="text-align: right;">5</p> <p style="text-align: right;">10</p>			
<p>Buff coloured highly weathered greywacke and shale.</p> <p style="text-align: right;">15</p> <p style="text-align: right;">20</p>		<p>68.0 percent</p>	
<p>Light grey slightly weathered greywacke and shale.</p>		<p>65.0 percent</p>	

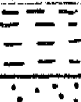
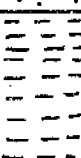


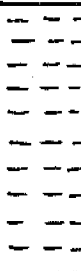
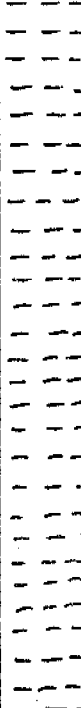
 greywacke  
 shale



REFERENCES

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# GEOLOGICAL LOG OF DRILL HOLE

PROJECT LEWIS' PROSPECT REMARKS \_\_\_\_\_  
 HOLE N° DDH 2 CO-ORDINATES \_\_\_\_\_ R.L. GROUND \_\_\_\_\_  
 LOCATION M<sup>t</sup> WELLS ANGLE FROM HORIZONTAL 45° DIRECTION 87° M

DESCRIPTION OF CORE	LOG	CORE RECOVERY %	SAMPLES
<p>Light grey slightly weathered greywacke and shale</p>		65 percent	
<p>30 Dark grey interbedded greywacke and shale.</p>			
<p>35</p>		82 percent	
<p>Mainly Dark grey shale with some greywacke beds up to 10 cm in width.</p>			
<p>40 Minor pyrite is present in small quartz veinlets.</p>		100 percent	
<p>45</p>			

 shale  
 greywacke

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 SHEET 2 OF 7 DRAWING N° \_\_\_\_\_



# GEOLOGICAL LOG OF DRILL HOLE

PROJECT LEWIS' PROSPECT REMARKS \_\_\_\_\_  
 HOLE N° DDH 2 CO-ORDINATES \_\_\_\_\_ R.L. GROUND \_\_\_\_\_  
 LOCATION M<sup>+</sup> WELLS ANGLE FROM HORIZONTAL 45° DIRECTION 87° M

DESCRIPTION OF CORE	LOG	CORE RECOVERY %	SAMPLES
<p>Mainly Dark grey shale with some greywacke beds up to 10cm in width.</p> <p>55 Minor pyrite is present in small quartz veinlets.</p> <p>51 metres - bedding 60° to core axis</p> <p>60 54 metres - bedding 60° to core axis</p> <p>59 metres - bedding 60° to core axis</p> <p>63 metres - bedding 60° to core axis</p> <p>67 metres - bedding 60° to core axis</p> <p>74 metres - bedding 60° to core axis</p> <p>65</p> <p>70</p>		<p>26.0 percent</p> <hr/> <p>100 percent</p> <hr/> <p>83.0 percent</p>	

--- shale

REFERENCES

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SHEET 3 OF 7

DRAWING N°

# GEOLOGICAL LOG OF DRILL HOLE

PROJECT LEWIS' PROSPECT REMARKS \_\_\_\_\_  
 HOLE N° DDH 2 CO-ORDINATES \_\_\_\_\_ R.L. GROUND \_\_\_\_\_  
 LOCATION M<sup>+</sup> WELLS ANGLE FROM HORIZONTAL 45° DIRECTION 87° M

DESCRIPTION OF CORE	LOG	CORE RECOVERY %	SAMPLES
<p>Mainly dark grey shale with some greywacke beds up to 10cm. in width.</p> <p>Minor pyrite is present in small quartz veinlets.</p>	<div style="display: flex; justify-content: space-between;"> <span>80</span> <span>85</span> <span>90</span> <span>95</span> </div>	<p>83.0 percent</p> <hr/> <p>100.0 percent</p> <hr/> <p>89.0 percent</p>	
<p>78 metres bedding 60° to core axis</p> <p>86 metres bedding 60° to core axis</p> <p>90 metres bedding 65° to core axis</p> <p>98 metres bedding 65° to core axis</p>			

== shale REFERENCES

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 SHEET 4 OF 7 DRAWING N° \_\_\_\_\_

# GEOLOGICAL LOG OF DRILL HOLE

PROJECT LEWIS' PROSPECT REMARKS \_\_\_\_\_  
 HOLE N° DDH 2 CO-ORDINATES \_\_\_\_\_ R.L. GROUND \_\_\_\_\_  
 LOCATION M<sup>+</sup> WELLS ANGLE FROM HORIZONTAL 45° DIRECTION 87° M

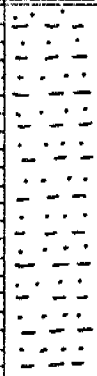
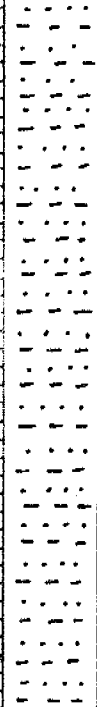
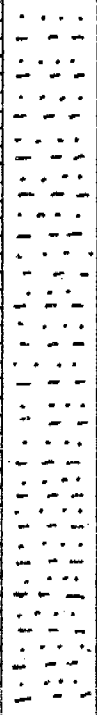
DESCRIPTION OF CORE	LOG	CORE RECOVERY %	SAMPLES
<p>105</p> <p>Mainly dark grey shale with some greywacke beds up to 10cm in width.</p> <p>Minor pyrite is present in small quartz veinlets.</p> <p>104 metres bedding 68° to core axis</p>		<p>100 percent</p>	
<p>110</p> <p>Dark grey interbedded greywacke and shale.</p> <p>Beds up to 1 metre in thickness.</p> <p>115</p> <p>111 metres bedding 60° to core axis 115 metres bedding 70° to core axis</p>		<p>100.0 percent</p>	
<p>120</p>		<p>88.0 percent</p>	

shale  
 Interbedded greywacke & shale

REFERENCES \_\_\_\_\_  
 LOGGED BY J. L. WILLIS  
 SHEET 5 OF 7 DRAWING N° \_\_\_\_\_

**GEOLOGICAL LOG OF DRILL HOLE**

PROJECT LEWIS PROSPECT REMARKS \_\_\_\_\_  
 HOLE N° DDH 2 CO-ORDINATES \_\_\_\_\_ R.L. GROUND \_\_\_\_\_  
 LOCATION M<sup>+</sup> WELLS ANGLE FROM HORIZONTAL 45° DIRECTION 87° M

DESCRIPTION OF CORE	LOG	CORE RECOVERY %	SAMPLES
<p>Dark grey interbedded greywacke and shale</p> <p>Beds up to 1 metre in thickness.</p> <p>130</p>		<p>88.0 percent</p>	
<p>126 metres bedding 70° to core axis</p> <p>135</p> <p>140</p>		<p>74.5 percent</p>	
<p>145</p>		<p>92.5 percent</p>	

REFERENCES  
 Interbedded greywacke & shale

LOGGED BY J. L. WILLIS  
 SHEET 6 OF 7 DRAWING N° \_\_\_\_\_

**GEOLOGICAL LOG OF DRILL HOLE**

PROJECT LEWIS' PROSPECT REMARKS \_\_\_\_\_  
 HOLE N° DDH 2 CO-ORDINATES \_\_\_\_\_ R.L. GROUND \_\_\_\_\_  
 LOCATION M+ WELLS ANGLE FROM HORIZONTAL 45° DIRECTION 87° M

DESCRIPTION OF CORE	LOG	CORE RECOVERY %	SAMPLES
<p>Dark grey interbedded greywacke and shale.</p> <p>Beds up to 1metre in thickness</p> <p>155</p>		<p>97.5 percent</p>	
<p>160 <b>END OF HOLE</b></p>			
<p>Total Depth of hole 160 metres.</p> <p>Note: No surveys carried out</p> <p>Drilling commenced 6-12-73</p> <p>Drilling completed 20-12-73</p>			

REFERENCES  

 Interbedded greywacke & shale

LOGGED BY J.L. WILLIS  
 SHEET 7 OF 7 DRAWING N° \_\_\_\_\_

APPENDIX II

ANALYTICAL RESULTS FOR DIAMOND DRILL

HOLES DDH 1 and DDH 2 - LEWIS' PROSPECT

Each tray of core from DDH 1 and DDH 2 (which contain about 10 metres of core) was scraped and analysed for copper, lead, zinc, bismuth and silver. Selected sections from DDH 1 were split and analysed for copper, lead, zinc, silver, tin and gold. The samples were analysed at the East Point Laboratory, Northern Territory Administration Darwin, by Atomic Absorption Spectroplotmeter. All results are expressed in parts per million (ppm) except gold which is expressed in grams per tonne. Detection limits are as follows:

copper 5 ppm  
lead 10 ppm  
zinc 2 ppm  
bismuth 20 ppm  
silver 2 ppm  
tin 50 ppm

- denotes value less than detection limit.

LEWIS' PROSPECT

DDH 1

SCRAPE CORE

Interval (metres)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Bi (ppm)	Ag (ppm)
6.10 - 13.75	50	55	755	-20	7
13.75 - 25.70	75	40	1180	-20	67
25.70 - 34.00	105	70	720	-20	102
34.00 - 40.45	120	215	730	-20	6
40.45 - 46.75	75	1100	755	-20	16
46.75 - 52.25	25	30	120	-20	-2
52.25 - 58.35	25	40	890	-20	5
58.35 - 65.45	100	140	1830	-20	2
65.45 - 73.00	55	320	1820	-20	4
73.00 - 80.70	90	295	3180	-20	15
80.70 - 88.58	45	40	1040	-20	-2
88.58 - 96.35	25	25	710	-20	-2
96.35 - 100.00	15	20	980	-20	-2

DDH 1

SPLIT CORE

Interval (metres)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Sn (ppm)	Ag (ppm)	Au (ppm)
42.30 - 43.15	35	4000	95	-50	-2	0.2
47.75 - 50.00	4080	2250	470	2660	33	0.3
64.60 - 65.10	1550	680	180	-50	8	-0.2

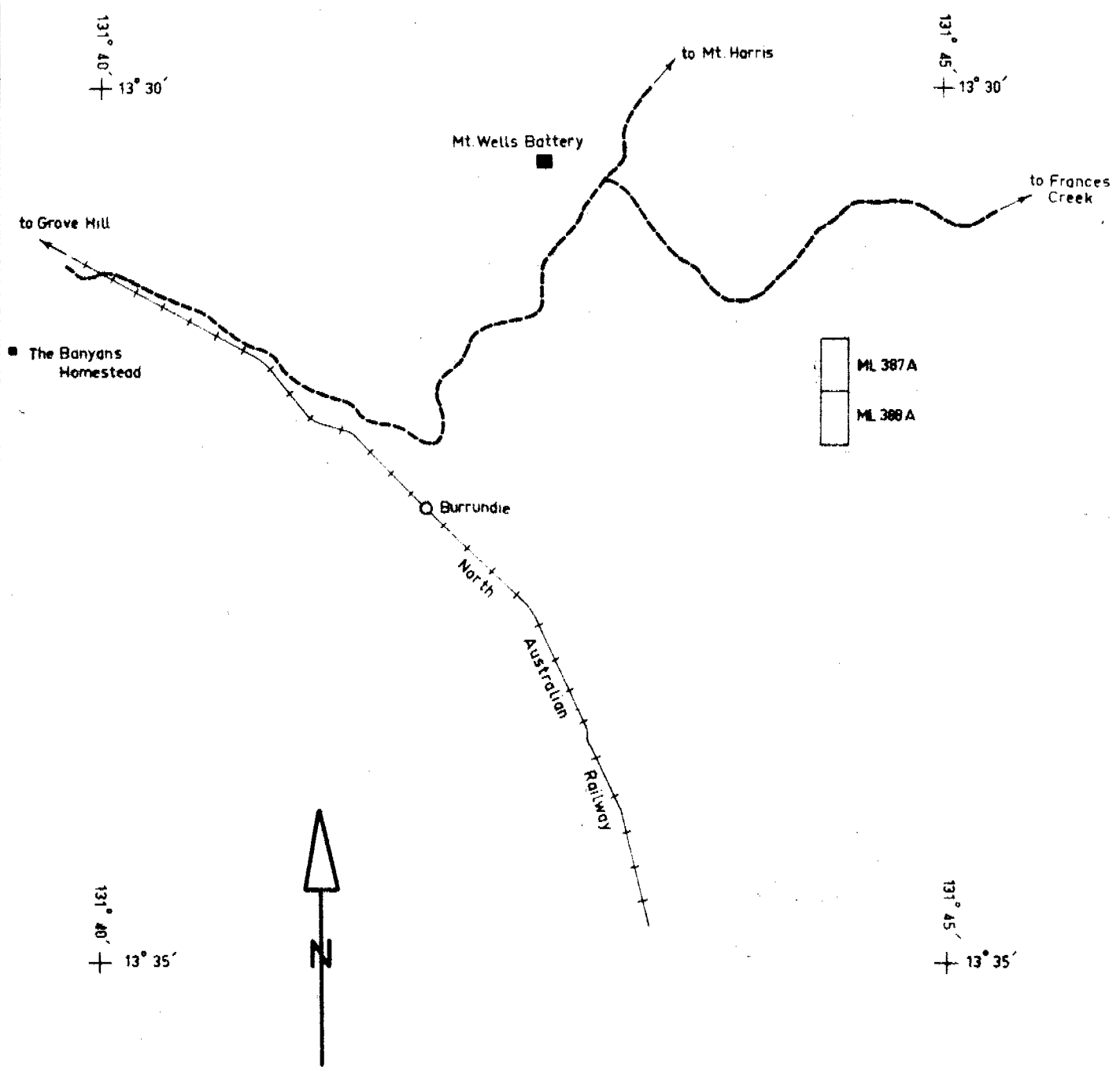
LEWIS' PROSPECT

DDH 2

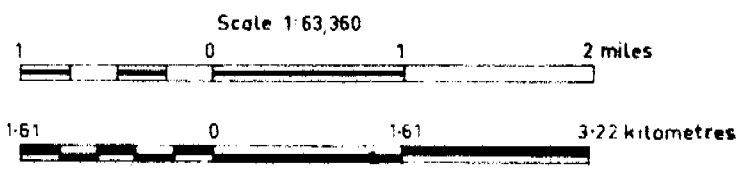
SCRAPE CORE

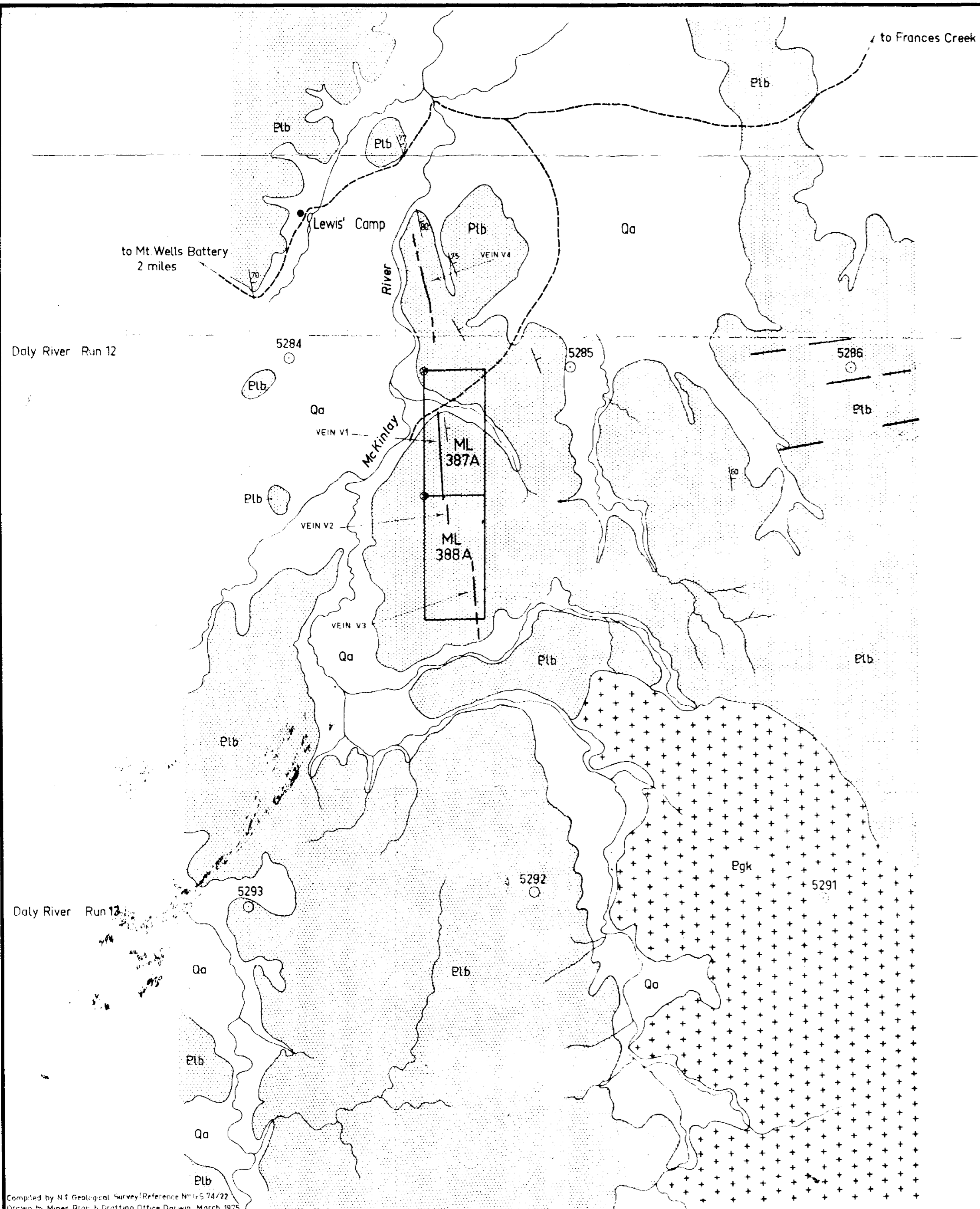
Interval (Metres)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Bi (ppm)	Ag (ppm)
9.60 - 20.15	15	20	260	-20	-2
20.15 - 28.25	15	35	1270	-20	2
28.25 - 36.17	80	45	3150	-20	2
36.17 - 43.85	35	60	1810	-20	16
43.85 - 51.42	25	50	2030	-20	-2
51.42 - 59.09	35	50	1600	-20	-2
59.09 - 66.70	20	55	2010	-20	-2
66.70 - 74.29	20	50	2560	-20	2
74.29 - 81.50	30	125	2540	-20	4
81.50 - 88.95	25	95	3680	-20	-2
88.95 - 97.02	10	40	2180	-20	-2
97.02 - 105.00	25	45	3170	-20	-2
105.00 - 112.70	35	45	3170	-20	-2
112.70 - 120.48	35	35	2560	-20	-2
120.48 - 128.12	30	40	2920	-20	-2
129.12 - 135.92	60	40	2250	-20	-2
135.92 - 143.20	55	60	2450	-20	-2
143.20 - 151.94	55	60	3560	-20	-2
151.94 - 158.94	30	40	1960	-20	-2
158.94 - 160.00	10	45	1610	-20	-2



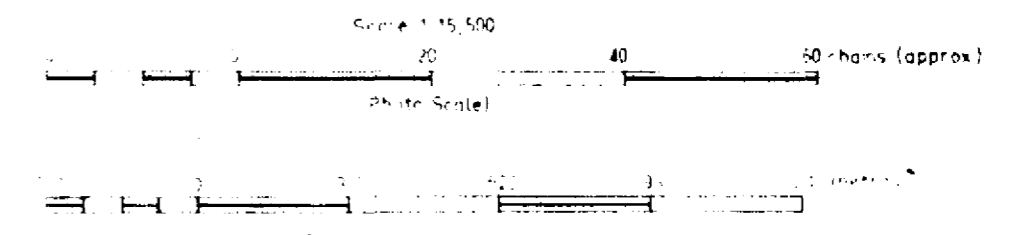


**LOCALITY MAP**  
**ML's 387A and 388 A**



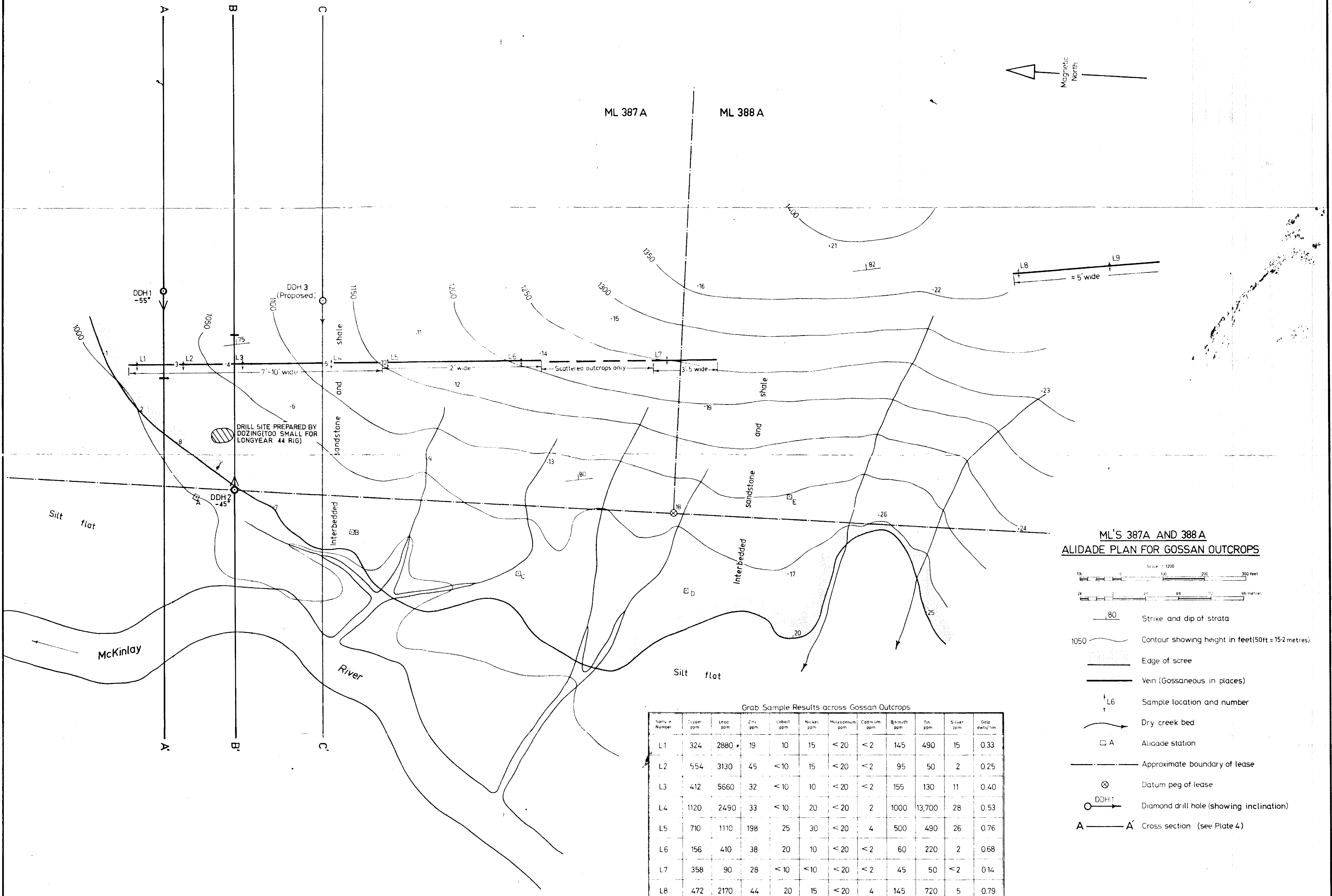


### REGIONAL GEOLOGY OF AREA SURROUNDING ML'S 387A & 388A

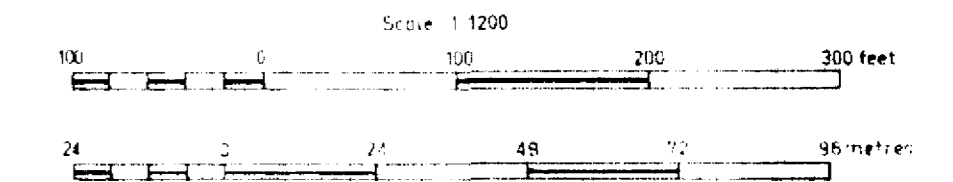


Reference

- QUATERNARY    Qa    Soil and alluvium
- LOWER PROTEROZOIC
- +Pgk+    McKinlay Granite  
    +Pgk+    Biotite-hornblende Granite
- Plb    Burrell Creek Formation  
    Plb    Greywacke, siltstone, slate.
- - - - - Geological boundary, position approximate.
- 50°    Strike and dip of strata
- Vein
- ⊙    Photo centre and number
- - - - - Vehicle track
- ⊙    Lease datum peg position approximate



**ML'S 387A AND 388A  
ALIDADE PLAN FOR GOSSAN OUTCROPS**



- Strike and dip of strata
- Contour showing height in feet (50ft = 15.2 metres)
- Edge of scree
- Vein (Gossaneous in places)
- Sample location and number
- Dry creek bed
- Alidade station
- Approximate boundary of lease
- Datum peg of lease
- Diamond drill hole (showing inclination)
- Cross section (see Plate 4)

Grab Sample Results across Gossan Outcrops

Sample Number	Copper ppm	Lead ppm	Zinc ppm	Cobalt ppm	Nickel ppm	Molybdenum ppm	Cadmium ppm	Bismuth ppm	Tin ppm	Silver ppm	Gold dwts/ton
L1	324	2880	19	10	15	< 20	< 2	145	490	15	0.33
L2	554	3130	45	< 10	15	< 20	< 2	95	50	2	0.25
L3	412	5660	32	< 10	10	< 20	< 2	155	130	11	0.40
L4	1120	2490	33	< 10	20	< 20	2	1000	13,700	28	0.53
L5	710	1110	198	25	30	< 20	4	500	490	26	0.76
L6	156	410	38	20	10	< 20	< 2	60	220	2	0.68
L7	358	90	28	< 10	< 10	< 20	< 2	45	50	< 2	0.14
L8	472	2170	44	20	15	< 20	4	145	720	5	0.79
L9	488	2010	63	20	15	< 20	< 2	50	< 50	8	1.92

Note < indicates less than detection limit

