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SML 551

RADIUM HILL

PROGRESS REPORTS FOR THE PERIOD 11/3/71 TO 10/9/71

Submitted by

Longreach Metals NL
1971

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PRIMARY INDUSTRIES AND RESOURCES SA

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TENEMENT: S.M.L. 551 - Radium Hill.

TENEMENT HOLDER: Longreach Metals N.L.

230/71

LONGREACH METALS (NO LIABILITY)

0003

27 CURRIE STREET ... ADDRESS LONGREACH ...

CHIEF CLERK
21 JUL 1971
DEPT. OF MINES
ADELAIDE

LSD/AW

13th July, 1971

The Director of Mines,
Box 38,
Rundle Street P.O.,
Adelaide.S.A.5000

Dear Sir,

S.M.L. 551 RADIUM HILL S.A.

Attached are our Technical Report and Exploration Expenditure Summary for S.M.L.551 for the period 11th March to 11th June 1971

Yours faithfully,
LONGREACH METALS N.L.

for L.S.DENHOLM
Exploration Manager

Encls.

1632

TECHNICAL REPORT FOR PERIOD 11th MARCH TO 11th JUNE 1971

The following is a summary report of activities carried out in the S.M.L. area during the three month period ending 11th June,1971:-

1) MUTOOROO RIDGE PROSPECT

The diamond drilling programme which was commenced during January,1971, continued during the quarter. Three holes, (M5, M6,M7) totalling 2215'7" were completed. A fourth hole, M8, is still in progress (see Plan 4.1b for locations).

Drill holes M2, M3, M4 (completed in previous quarter) M5, M7 and M8 (in progress) have been drilled to test coincident induced polarization and geochemical anomalies located between 172E and 188E during the previous period. All holes completed to date have intersected patchy, low grade, copper mineralization.

DDH M6, which was designed to test an I.P.anomaly on line 172N, did not intersect any significant copper mineralization. Minor pyrite, with associated magnetite, is thought to have caused the I.P. anomaly.

The assay results for M2, M3, M4, M5 and M6 are summarized in Table I. Silver values of up to 44 ppm have been obtained but these occur over narrow intervals only and are not economically significant.

2) Radiometric and Magnetic Anomalies

The results of the auger drilling programme conducted during the previous quarter were not encouraging. (see report for SML 274 period 1st March 1970 to 1st March 1971 for details). No further work will be carried out over these anomalies.

Future Exploration

Further exploration will be proposed subject to the results of DDH M8.

Plans

The following are attached:-

a) Fig 1 Geological Locality Map showing location of Diamond Drill Holes.

b) Fig 2 DDH M2, 3, 4.

c) Fig 3 DDH M5

d) Fig 4 DDH M6

e) Fig 5 DDH M7

f) Drill Log Sheets for DDH M2 - 7

for A.EDWARDS
Resident Geologist

TABLE I

HOLE	DDH M2	FROM	TO	INTERVAL	COPPER %
Location	184E-101.33N	134'	158'	21'	0.45%
Depth	448'4"				
Dip	45°	166'	173'3"	7'3"	0.27%
Bearing	140°	186'10"	194'11"	8'11"	0.26%
		245'9"	261'6"	15'9"	0.48%
		328'6"	331'3"	2'9"	1.35%
		428'11"	429'	1'4"	2.8%
HOLE	DDH M3	170'8"	187'3"	16'7"	0.25%
Location	184E-101N	202'11"	239'10"	36'11"	0.51%
Depth	447'4"	261'0"	265'2"	4'2"	1.6%
Dip	-55°	333'11"	338'0"	4'1"	1.25%
Bearing	140°	373'0"	379'0"	6'0"	1.05%
HOLE	DDH M4	318'9"	320'9"	2'0"	0.30%
Location	184E-103N	493'0"	498'6"	5'6"	0.23%
Depth	717'0"	508'3"	512'7"	4'4"	0.50%
Dip	-55°	522'7"	527'9"	5'2"	1.06%
Bearing	140°				
HOLE	DDH M5	199'10"	201'4"	1'6"	0.49%
Location	188E-101.50N	206'0"	218'0"	12'0"	0.29%
Depth	501'4"	230'0"	235'0"	5'0"	0.50%
Dip	-55°				
Bearing	140°				
HOLE	DDH M6	No significant			
Location	172E-96N	mineralization intersected.			
Depth	756'9"				
Dip	-55°				
Bearing	140°				
HOLE	DDH M7				
Location	180E-102.50N	Assays not to hand			
Depth	957'6"				
Dip	-60°				
Bearing	140°				
HOLE	DDH M8				
Location	178E-103.95N	In progress			
Depth	-				
Dip	-60°				
Bearing	140°				

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COMPANY LONGREACH METALS N.L.

DIAMOND DRILL CORE RECORD

0006

PROSPECT MUTOOROO - RIDGE

Hole No.: DDH M2
Drilled By: A.D.D.
Depth: 448'4"
Core Recovery:
Survey Data: Dip 35° at 240'

Location of Site: 184E 101.03N
Date Commenced: 16.1.71
Date Completed: 6. 2. 71
Sampling By: M.Henschke

Reduced Level of Site:
Bearing of Hole: 140°
Dip of Hole: 45°
Geological Logging By: A.Edwards

GEOLOGICAL LOG				ASSAY RESULTS				
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width
0' 00"	7' 6"	90%	Pale pink and green qtz muscovite schist. Angle of sch variable from 5° - 30°. Qtz veins located 4' (10" thick) and 5'4" (10" thick)					
7' 6"	15' 6"	95%	Qtz mica schist mottled pink to pale green rock commonly stained red. Heavy mins - magnetite - disemminated through rock. Limonitic vughs probably after magnetite common at 12' Qtz veins at 9'2" (2" thick) 11'3" (1" thick) 12'-13'7" Sch commonly 45°					
15'6"	24' 6"	95%	Pink and pale green qtz mica schist c numerous irreg limonitic veinlets and bands of dark red Fe staining. Coarser grained qtz commonly occurs in bondins. Qtz veins occur 15'9" (2") 16'6" (2" thick) 17'3" (10" thick) 19'3" (12" thick) All occur // schistosity 50°. Fe oxides tend to conc. around margins of qtz.					
24' 6"	32' 6"	98%	As above c conc of Fe along kink bands. At 28'6" 6" qtz c vughs containing possible box-works and bright red weath micaceous material (Fe rich chlorite)					
32' 6"	39' 3"	100%	Pink, pale green and grey qtz mica schist c occasional bands of ferrug. material and minor magnetite - sch. 35° - 40°.					

LONGREACH GROUP MANAGEMENT PTY. LTD.

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COMPANY _____

DIAMOND DRILL CORE RECORD

0007

PROSPECT _____

Hole No.: DDH M2 | Location of Site: _____ | Reduced Level of Site: _____

Drilled By: _____ | Date Commenced: _____ | Bearing of Hole: _____

Depth: _____ | Date Completed: _____ | Dip of Hole: _____

Core Recovery: _____ | Sampling By: _____ | Geological Logging By: _____

Survey Data: _____

GEOLOGICAL LOG				ASSAY RESULTS										
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu	Pb	Zn	Ag	Au	
39' 3"	47' 0"	100%	As above c possible inc. in mica content at 43'		40' 0"	43' 0"	3' 0"							
			Possible shear zone 41'-42' - irreg qtz veining											
			c abundant remnant Fe after magnetite or pyrite.											
			- shear zone - sch 25° - 35° - 40° elsewhere.											
47' 0"	56' 9"	80%	Pale green and grey qtz muscovite schist c											
			occasional red ferrug bands - core very friable											
			and broken 48-50' (not fault zone). Low											
			angle fracs 54' - 5-10°.											
56' 9"	65' 9"	80%	- as above - more qtzitic - qtz veins 57'3" and											
			62'3" - pink bands run 75° - sch 45°											
65' 9"	73' 6"	98%	As above - sch 40° - minor Fe staining only.											
73' 6"	81' 6"	98%	As above - some Fe staining.											
81' 6"	88' 6"	90%	As above - coarser grained at 86' - minor qtz											
			veining at 88' 3".											
88' 6"	100' 3"	65%	As above - core broken into wedges along sch.											
			- sch 45° - kink bands at 45°.											
100' 3"	105' 3"	98%	As above	19501	100' 3"	105' 3"	5'		86	16	12	0.2	x	
105' 3"	108' 0"	98%	As above - leached limonitic material 106'3" -	19502	105' 3"	108' 0"	7'9"		64	16	14	0.5	x	
			after S= or magnatite (?) sch 40° minor kinking.											
108' 0"	114' 6"	95%	As above - 1" thickness of furruginous breccia	19503	108' 0"	114' 6"	6'6"		98	12	16	0.4	x	
			containing angular qtz frays - Fe staining for											
			3" either side - breccia // sch.											

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COMPANY _____

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DIAMOND DRILL CORE RECORD

0008

PROSPECT _____

Hole No.: DDH M2 Location of Site: _____ Reduced Level of Site: _____

Drilled By: _____ Date Commenced: _____ Bearing of Hole: _____

Depth: _____ Date Completed: _____ Dip of Hole: _____

Core Recovery: _____ Sampling By: _____ Geological Logging By: _____

Survey Data: _____

GEOLOGICAL LOG				ASSAY RESULTS									
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu	Pb	Zn	Ag	Au
114' 6"	126'	44%	As above - N.B. core log	19504	114' 6"	126'	11' 6"		250	18	18	0.6	0.08
			- Qtz veins at 115'6" and 126'										
			- kink bands h to sch 45°										
126'0"	134'0"	50%	As above c qtz veins at approx 134'0" and 131'0"	19505	126'0"	134'0"	8'		430	16	26	0.6	x
			- probable fault at 134'0" minor Fe bands										
			Possible Ferrug fault breccia near 130'.										
134'0"	140' 9"	95%	Soft green friable occasional chloritic schist	19506	134' 0"	140' 9"	6'9"		4900	18	120	1.0	x
			c Ferrug and bands sch 45°. Disseminated heavy										
			mins - probably magnatite (chalcocite?)(D.G.S)										
			minor Cu stains.										
140'9"	148' 0"	85%	As above	19507	140'9"	148'0"	7' 3"		6400	18	150	1.2	x
148'0"	152' 9"	98%	As above c possible boxworks in quartzitic	19508	148'0"	152'9"	4'9"		3600	20	140	1.3	x
			veins and pods.										
152'9"	156'	98%	Severely kinked qtz chloritic schist c dissemin-	19509	152' 9"	156'0"	3'3"		1900	18	72	1.6	0.12
			ated magnetite - boxworks c malachite staining.										
156'0"	158'0"	98%	Chloritic schist c irreg qtz veins and qtz in	19510	156'0"	158'0"	2'0"		2000	26	100	2.6	0.17
			lenses - minor heavy mn.										
158'0"	160'9"	99%	Ferrug. qtz mica schist limonitic veinlets and	19511	158' 0"	160' 9"	2' 9"		1200	20	38	2.2	0.39
			limonitic remnants after pyrite or magnetite sch										
			60° c minor kinking.										
160'9"	166'		Chlorite qtz magnetite schist - abundant dissem-	19512	160'9"	166'0"	5'3"		1600	16	59	3.0	0.06
			inated magnetite - minor Cu staining sch 60°.										

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DIAMOND DRILL CORE RECORD

0009

PROSPECT

Hole No.: DDH M2 | Location of Site: | Reduced Level of Site:

Drilled By: | Date Commenced: | Bearing of Hole:

Depth: | Date Completed: | Dip of Hole:

Core Recovery: | Sampling By: | Geological Logging By:

Survey Data:

GEOLOGICAL LOG				ASSAY RESULTS										
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu	Pb	Zn	Ag	Au
166'	169' 3"	98%	Qtz magnetite schist c minor malachite on sch.	19513	166'	169'3"	3'3"		3600	16	94	2.2	x
			and in small veinlet.										
			- low angle frac (limonite filled) 5°.										
169'3"	173' 3"	95%	As above - qtz vein c pyrolusite at 170'6"	19514	169' 3"	173' 3"	4'		2000	20	84	1.8	0.38
			Additional qtz veins at 171'6" and 172'3"										
173'3"	174'9"	100%	Quartz veining c ferrug. breccia and greenstone	19515	173' 3"	174' 9"	1'6"		1500	18	50	1.7	0.53
			or fractures										
174'9"	186'0"	98%	Quartz mica shist - sch 55° - abundant diss-	19516	174'9"	183' 7"	8'10"		600	16	28	0.6	x
			eminated magnetite minor qtz and limonite veining.	19517	183'7"	186'0"	2'5"		350	12	20	0.7	x
186'0"	186'10"	100%	Chlorite quartz schist - contact grades from	19518	186'0"	186'10"	10"		2100	18	170	2.1	0.20
			grms chlorite over 4"										
186'10"	191'9"	95%	Quartz veining c irregular chloritic schist frags	19519	186'10"	191'9"	4'11"		2200	28	200	1.6	x
			minor box-work.										
191'9"	194'11"	95%	Soft vughy chloritic schists -vughs possibly	19520	191' 9"	194'11"	3' 2"		3000	22	270	1.8	x
			after Fe Co_3 2										
194'11"	206' 3"	40%	- vughs possibly after Fe Co_3 2	19521	194' 11"	206' 3"	11'8"		1500	20	220	1.2	x
206' 3"	216' 0"	40%	Chloritic schist c qtz and carbonate in bondins	19522	206' 3"	216' 0"	9'9"		150	20	180	1.4	x
			up to ¼" in length. Carbonates are calcite and										
			siderite.										
216' 0"	223' 0"	98%	Chlorite schist c quartzitic members schistosity	19523	216'0"	223'0"	7'		170	22	190	1.4	x
			runs 50° - qtz and Co_3 2 veining.										
			- no bondins										
223'0"	227'0"	99%	soft friable chloritic schist c vughs after	19524	223'0"	227'0"			62	24	200	1.6	x
			siderite minor qtz and Co_3 2 lenses										

LONGREACH GROUP MANAGEMENT PTY. LTD.

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DIAMOND DRILL CORE RECORD

PROSPECT

Hole No.: DDH M2

Drilled By:

Depth:

Core Recovery:

Survey Data:

Location of Site:

Date Commenced:

Date Completed:

Sampling By:

Reduced Level of Site:

Bearing of Hole:

Dip of Hole:

Geological Logging By:

GEOLOGICAL LOG				ASSAY RESULTS										
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu	Pb	Zn	Ag	Au	
227'0"	234' 6"	99%	Gritty chloritic qtz schist $\bar{c}$ qtz and Co_3^2 bondins - dissem heavy min. Frags of grit sized pink plagioclase - sch 60°.	19525	227'0"	234'6"	7'6"		130	20	140	1.3	x	
234'6"	239'0"	100%	Soft dark green chloritic sch $\bar{c}$ angular qtz frags. Vughs Co_3^2	19527	234'6"	239'0"	4'6"		820	14	200	1.8	x	
239'0"	240'0"	100%	Dark green chloritic schist $\bar{c}$ vughs partially filled $\bar{c}$ malachite and minor veinlets of malachite 0-½% Cu.	19528	239'0"	240'0"	1'0"		5200	20	210	2.0	x	
240'0"	243'6"	95%	Core extremely broken up. Highly sheared chloritic schists. Malachite on some fractures Cu trace only	19529	240'0"	243'6"	3'6"		1000	20	220	2.8	x	
243'6"	245'9"	99%	Fine chloritic sch - slightly qtzitic $\bar{c}$ occasional grit sized frags of qtz. Minor Cu trace only. C.B.A.60°.	19530	243'6"	245'9"	2'3"		1300	22	210	2.0	x	
245'9"	248'0"	95%	Extremely frac sheared chloritic schist - numerous Co_3^2 vughs. Numerous thin veinlets of malachite Cu ½-1%	19531	245'9"	248'0"	2'3"		6200	26	200	3.0	x	
248'0"	249'3"	100%	Chloritic schist $\bar{c}$ c.g.angular qtz frags - minor Co_3^2 traces of malachite on sch planes only.	19532	248'0"	249'3"	1'3"		2100	22	230	2.4	x	
249'3"	252'0"	30%	Gritty chloritic schist $\bar{c}$ qtz veining, minor fels. numerous narrow veinlets of Cu.	19533	249'3"	252'0"	2'9"		1.10%	20	160	5.0	x	
252'0"	259'9"	30%	Cu above $\bar{c}$ little or no Cu Quartz muscovite schist. Possible chlorite C.B.A. 60° minor veinlet malachite Cu trace only.	19534	252'0"	259'9"	1'9"		660	24	160	1.8	x	

LONGREACH GROUP MANAGEMENT PTY. LTD.

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DIAMOND DRILL CORE RECORD

0011

PROSPECT

Hole No.: DDH M2 | Location of Site: | Reduced Level of Site:

Drilled By: | Date Commenced: | Bearing of Hole:

Depth: | Date Completed: | Dip of Hole:

Core Recovery: | Sampling By: | Geological Logging By:

Survey Data:

GEOLOGICAL LOG				ASSAY RESULTS									
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu	Pb	Zn	Ag	Au
259'9"	261'6"	98%	Quartzitic chloritic schist - numerous thin	19535	259'9"	261'6"	1'9"		1.30%	20	200	6.0	x
			malachite veinlets - ½-1% Cu C.B.A. 60°.										
261'6"	269'0"	95%	Fine gritty chloritic schist c qtz and possible	19536	261'6"	269'0"	8'6"		1400	20	240	2.8	x
			siderite. Minor malachite in some portions-										
			isolated blebs or veinlets.										
269'0"	275'3"	100%	as above - CBZ (sch) 60°	19537	269'0"	275'3"	6'3"		1400	22	210	3.6	x
275'3"	280'3"	100%	Fine grained chloritic schists - metatrachykes	19538	275'3"	280'3"	5'		1800	26	280	4.8	x
			(?). Numerous qtz and carbonate veinlets some										
			possible vescicles.										
			Contact btwn meta seds and volc indefinite.										
280'3"	288'0"	100%	As above - 4° qtz vein 283'9"	19539	280'3"	288'0"	7'9"		470	26	250	2.2	
288' 9"	298' 6"	100%	Fine grained dark green chlorite biotitd schist	19540	288' 9"	296' 9"	8'		200	22	240	1.8	x
			c narrow carbonate stringers and qtz veins ¼"										
			- ½" thick										
			Sch 60°	19541	296'9"	298' 6"	1'9"		200	26	230	1.6	x
			Occasional grit sized qtz frags c stain shadows										
			around qtz.										
298' 6"	307' 6"	100%	As above i.e. chlorite biotite schist	19543	298'6"	307'6"	9'6"		230	30	210	1.6	x
11' of core missing between 307'6" and 328'6" i.e. 8'6" recovered -				19542	Thin section								
uniform core loss assumed													
307'6"	315'0"	40%	As above c 6" qtz vein at ≈312'	19544	307'6"	315'0"	7'6"		460	26	300	1.6	x
315'0"	324'0"	40%	Chloritic qtz schist c irreg qtz veins 2-3" thick	19545	315'0"	324'0"	9'		170	18	290	1.2	x
			at 320'										
324'0"	328'6"	40%	Coarse gritty chloritic schist with angular and	19546	324'0"	328'6"	4'		190	26	250	1.6	x
328'6"	331'3"	100%	sub-angular qtz pebbles and fragments. Pebbles	19547	328'6"	331'3"	2'9"		1.35%	22	270	4.0	x
			up to 1" diam. Malachite occurs in chloritic										
			matrix 2-3% Cu.										

LONGREACH GROUP MANAGEMENT PTY. LTD.

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DIAMOND DRILL CORE RECORD

0012

PROSPECT

Hole No.: DDH M2
Drilled By:
Depth:
Core Recovery:
Survey Data:

Location of Site:
Date Commenced:
Date Completed:
Sampling By:

Reduced Level of Site:
Bearing of Hole:
Dip of Hole:
Geological Logging By:

GEOLOGICAL LOG				ASSAY RESULTS										
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu	Pb	Zn	Ag	Au
331'3"	337'0"		Coarse grained dark green rock consisting of elongated but angular fragments of greenstone and quartz in a chloritic ground mass. sch ≈ 60°	19548	331'3"	337'0"	5'9"		300	22	270	1.4	x
337'0"	337' 6"	100%	Sheared gritty chloritic schist with numerous thin veinlets of malachite ½-1% Cu.	19550	337'0"	337'6"	6"		5200	46	280	2.8	0.38
337'6"	340'0"	100%	Quartz vein with chloritic inclusions	19551	337' 6"	340' 0"	2'6"		120	20	50	1.0	x
340'0"	348'0"	37%	Well banded, sandy gritty chlorite qtz muscovite schist. Bands sometimes kinked. CBA - 80°	19552	340'0"	348'0"	8'		100	20	130	1.2	x
348'0"	350'6"	100%	Well banded grey-greenish grey chloritic schist containing grit sized sub angular lensoid carbonate particles	19553	348'0"	350'6"	2'6"		22	24	230	2.0	x
350'6"	355'6"	100%	Fine greenish grey chlorite biotite schist	19554	350'6"	355'6"	5'		88	24	330	2.2	x
355'6"	358'0"	100%	Greenish grey chloritic schist containing irregular lensoid carbonate fragments ranging from sand to grit sizes. 1" qtz vein at 356'6"	19555	355'6"	358'0"	2'6"		84	24	240	1.4	x
358'0"	358'10"	100%	Fine grained chlorite biotite schist - CBA 60°	19556	358'0"	358'10"	10"		120	22	330	2.0	x
358'10"	366'3"	100%	Greenish grey chloritic schist containing angular lensoid carbonate material ranging from sand grit size. Some apparent banding.	19557	358'10"	366'3"	7'9"		100	24	250	1.8	x
				19558	Thin section (363')								
366'3"	370'0"	100%	Medium grained chlorite biotite schist with elongated qtz fragments and carbonate schist 50°	19559	366'3"	370'0"	3'9"		460	22	130	1.4	x
370'0"	378'6"	90%	As above	19560	370'0"	378'6"	8'6"		140	22	130	1.2	

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COMPANY

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DIAMOND DRILL CORE RECORD

0013

PROSPECT

Hole No.: DDH M2 | Location of Site: | Reduced Level of Site:

Drilled By: | Date Commenced: | Bearing of Hole:

Depth: | Date Completed: | Dip of Hole:

Core Recovery: | Sampling By: | Geological Logging By:

Survey Data:

GEOLOGICAL LOG				ASSAY RESULTS										
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu	Pb	Zn	Ag	Au	
378'6"	382'6"	95%	Chlorite biotite schist with carbonate and	19561	378'6"	382'6"	4'		24	28	280	1.2	x	
			qtz fragments commonly lensoid often irregular											
382'6"	392'0"	92%	Fine to med grained chlorite biotite schist.	19562	382'6"	392'0"	9'6"		64	24	250	1.5	x	
			Minor irregular quartz veining. Lensoid	19572	Thin section									
			particles of quartz and carbonate											
			2" carbonate veins at 389'3"											
			2" qtz veins with chlorite inclusion at 391'											
392'0"	396'0"	100%	As above - schist 60°	19563	392'0"	396'0"	4'		34	26	210	1.6	x	
			- small faults 45°											
396'0"	401'3"	100%	As above - minor Cu staining on some low angle	19564	396'0"	401'3"	5'3"		44	94	230		x	
			fractures											
401'3"	407'9"	100%	As above	19565	401'3"	407'9"	6'6"		180	30	230	2.0	x	
407'9"	411'6"	100%	As above	19566	407'9"	411'6"	3'9"		28	24	230	1.5	x	
411'6"	420'2"	100%	As above - fault zone	19567	411'6"	420'2"	8'8"		84	34	280	1.6	x	
			418'6"-419'- // with schist i.e. 50°											
			Possible flow top 413'9"											
420'2"	428'11"	100%	As above	19568	420'2"	428'11"	7'11"		64	34	240	1.5	x	
428'11"	429'0"	100%	As above with irregular carbonate veining	19569	428'11"	429'0"	11"		3.7%	42	270	33.0	0.78	
			containing malachite and chalcocite.Chalcocite											
			is altering to malachite											
429'0"	429'5"	100%	Soft friable chloritic schist with malachite	19570	429'0"	429'5"	5"		0000	40	320	4.1	x	
			veining											
			- possible shear zone											

LONGREACH GROUP MANAGEMENT PTY. LTD.

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9

COMPANY _____

0014

DIAMOND DRILL CORE RECORD

PROSPECT _____

Hole No.: DDH M2 | Location of Site: _____ | Reduced Level of Site: _____

Drilled By: _____ | Date Commenced: _____ | Bearing of Hole: _____

Depth: _____ | Date Completed: _____ | Dip of Hole: _____

Core Recovery: _____ | Sampling By: _____ | Geological Logging By: _____

Survey Data: _____

GEOLOGICAL LOG				ASSAY RESULTS									
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu	Pb	Zn	Ag	Au
429'5"	438'0"	100%	Chlorite biotite schist with irregular lensoid	19573	429'5"	438'0"	8'7"		140	38	240	1.6	x
438'0"	448'4"	100%	carbonate and quartz fragments	19574	438'0"	448'4"	10'4"		68	34	290	1.6	x
			END OF HOLE										

LONGREACH GROUP MANAGEMENT PTY. LTD.

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COMPANY LONGREACH METALS

DIAMOND DRILL CORE RECORD

0015

1

PROSPECT Mutooroo Ridge

Hole No.: DDH M3
Drilled By: A.D.D.
Depth: 447'4"
Core Recovery:
Survey Data:

Location of Site: 184E/101.03N
Date Commenced: 7.2.71
Date Completed: 25.2.71
Sampling By:

Reduced Level of Site:
Bearing of Hole: 140° (grid)
Dip of Hole: -55°
Geological Logging By: A.Edwards

GEOLOGICAL LOG				ASSAY RESULTS				
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width
0' 0"	10' 6"	75%	Core very broken with low core recovery before					
			8½". Pale pink rocks with pale green streaks -					
			quartz muscovite schist - commonly Fe stained					
			with limonite in veinlets					
			Qtz veins - 8'3" - 8'9" contains chlorite					
			and minor felspar.					
			Qtz veins - 6'6" - 6'8" contains chlorite					
10' 6"	12' 0"	95%	Quartz vein.					
12' 0"	17' 0"	95%	Quartz muscovite schist (QMS) tending towards					
			quartzite - grey to pink in col. -					
17' 0"	19' 3"	100%	Pale greenish brown - grey siltstones containing					
			martitized magnetite Xsts - Sch 30°					
			Lower contact parallel schistosity					
19' 3"	24' 9"	85%	Grey quartzite - minor grms. - limonite stains					
			and limonitic veinlets - sch 40°					
24' 9"	26' 6"	100%	Quartz vein with chlorite, limonite fillings					
			on cavities and pink felspar - plagioclase.					
26' 6"	34' 3"	95%	Quartzite and pale green gritty Q.M.S.limonite					
			filled joints - possibly gossamous. 28'3" +					
			28'9". Quartz vein - 30'9" - 31'9"					
			Sch. 40°					
34' 3"	40' 8"	95%	Pink to pale green, gritty quartz mica schists.					
			Limonitic staining around fractures. Limonite					
			pseudomorps after magnetite and martite.					
			Sch 30°					

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY _____

DIAMOND DRILL CORE RECORD

0016

PROSPECT Mutooroo Ridge

Hole No.: DDH M3
Drilled By: _____
Depth: _____
Core Recovery: _____
Survey Data: _____

Location of Site: _____
Date Commenced: _____
Date Completed: _____
Sampling By: _____

Reduced Level of Site: _____
Bearing of Hole: _____
Dip of Hole: _____
Geological Logging By: _____

GEOLOGICAL LOG				ASSAY RESULTS					
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	
40' 8"	44' 9"	98%	As above						
44' 9"	51' 9"	98%	As above - sch. 35°						
51' 9"	55' 0"	98%	As above -						
55' 0"	63' 4"	98%	As above - qtz vein						
			61'-61'6" sch 35°. Cross frac 40° - minor kinking						
			rt.angles core						
63' 4"	68' 4"	100%	As above						
68' 4"	69' 6"	100%	Pink to pale green gritty quartz mica schists as						
			above - Two cavities filled with gossamous						
			material, possibly after sulphide.						
69'6"	72' 6"	100%	As above						
72' 6"	77' 8"	100%	As above with 6" quartz vein at 76'6" - contains						
			minor chlorite.						
77' 8"	86' 6"	95%	As above - sch 30°						
86' 6"	91' 9"	95%	Pink to pale green gritty gms with red brown						
			and yellow limonite stainings.						
91' 9"	100' 5"	100%	Pale greenish grey QMS with red brown limonitic						
			stainings - sch 40° - minor kinking						
100' 5"	107' 8"	100%	As above						
107' 8"	114' 8"	100%	As above						
114' 8"	121' 8"	100%	As above - 3" qtz vein at 114'8" with irregular						
			goethite inclusions - sch 40°.						

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY

3

DIAMOND DRILL CORE RECORD

0017

PROSPECT Mutooroo Ridge

Hole No.: DDH M3 | Location of Site: | Reduced Level of Site:

Drilled By: | Date Commenced: | Bearing of Hole:

Depth: | Date Completed: | Dip of Hole:

Core Recovery: | Sampling By: | Geological Logging By:

Survey Data:

GEOLOGICAL LOG				ASSAY RESULTS										
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu	Pb	Zn	Ag		
121' 8"	127'5"	100%	Grey to yellowish grey QMS with limonitic											
			stains around irregular veins and fractures and											
			some sch planes. Sch 45° - quart vein -											
			126'-126'10"- irregular fractures. With											
			conc Fe staining on lower side.											
127'5"	133'0"	100%	QMS as above - sch 40°											
133' 0"	143'0"	100%	QMS as above - some kinking - prominent at 142'											
143'0"	146'11"	100%	As above											
146'11"	147'10"	100%	Kinked QMS with malachite on schistosity planes	19751	146'11"	147'10"	11"		390	14	22	0.8	x	
147'10"	153'3"	100%	QMS as above - small vughy quart vein with											
			limonite in vein on open fracture parallel with											
			schistosity i.e. 40°											
153' 3"	158'0"	95%	As above											
158'0"	161'2"	25%	Gms as above. Core loss due to vughy ground											
161'2"	164'0"	20%												
164'0"	167'10"	8%												
167'10"	169'6"	100%	Sandy to gritty dark greenish grey chloritic	19752	167'10"	169'6"	1'8"		1600	56	140	1.5	x	
			schist grading to a pale grey QMS - sch 45°.											
			Some qtz veins gossanous material - 168'0"											
169'6"	170'8"	100%	Quartz vein - minor chloritic inclusions on	19753	169'6"	170'8"	1'2"		760	16	42	0.7	x	
			lower side											
170'8"	175'2"	100%	Grey AMS with quartz and carbonate layers and	19754	170'8"	175'2"	4'6"		2200	26	92	1.1	x	
			stringers grading fine grained dark greyish											
			green chloritic schist.											
			2" quartz vein 170'10". Prominent kink band at											
			171'6"											

LONGREACH GROUP MANAGEMENT PTY. LTD.

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COMPANY _____

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DIAMOND DRILL CORE RECORD

0018

PROSPECT Mutooroo Ridge

Hole No.: DDH M3 | Location of Site: _____ | Reduced Level of Site: _____

Drilled By: _____ | Date Commenced: _____ | Bearing of Hole: _____

Depth: _____ | Date Completed: _____ | Dip of Hole: _____

Core Recovery: _____ | Sampling By: _____ | Geological Logging By: _____

Survey Data: _____

GEOLOGICAL LOG				ASSAY RESULTS										
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu	Pb	Zn	Ag	Au	
175'2"	182'9"	100%	Dark greenish grey chloritic schist-sch.40°	19755	175'2"	182'9"	7'5"		2500	30	140	1.2	x	
			Fractures coated with limonite and Mn O_2											
			dendrites.											
182'9"	186'6"	100%	As above increasing bands of quartz and carbonate	19756	182'9"	186'6"	3'9"		2800	34	190	2.8	x	
			towards 186'6"											
186'6"	187'3"	100%	Bands of chloritic schist interspersed with	19757	186'6"	187'3"	9"		2200	28	100	2.0	x	
			irregular layers of vughy											
			Carbonate Minor malachite in vughs and in small											
			flecks on schistosity planes.											
187'3"	191'0"	100%	Quartz chlorite and muscovite schists containing	19758	187'3"	191'0"	3'9"		700	18	58	1.5	x	
			irregular grit and pebble sized quartz											
			fragments. Irregular 3" quartz vein approximately											
			parallel schistosity at 190' - sch.40°.											
191'0"	196'10"	100%	White to pale greenish grey banded g.m.s. with	19759	191'0"	196'10"	5'10"		420	20	72	0.8	x	
			occasional Fe bands - some boxwork after sulphide											
			sch.55°, Hematite, maratized magnetic and with											
			minor pyrite.											
196'10"	202'11"	100%	Qms grading to chlorite quartz schist (chloritic	19760	196'10"	202'11"	6'1"		2100	16	86	1.4	x	
			interbands increase vughs and boxworks, possibley											
			after sulphide. Minor kinking approximately-											
			Sch 40°											
202'11"	204'8"	100%	Chloritic schist with quartz interbeds -	19761	202'11"	204'8"	1'9"		3800	26	210	1.8	x	
			commonly with martized magnetic and limonite											
			after sulphide											

LONGREACH GROUP MANAGEMENT PTY. LTD.

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COMPANY

DIAMOND DRILL CORE RECORD

0019

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PROSPECT Mutooroo Ridge

DDH M3

Hole No.:

Location of Site:

Reduced Level of Site:

Drilled By:

Date Commenced:

Bearing of Hole:

Depth:

Date Completed:

Dip of Hole:

Core Recovery:

Sampling By:

Geological Logging By:

Survey Data:

GEOLOGICAL LOG				ASSAY RESULTS										
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu	Pb	Zn	Ag	Au
204'8"	209'4"	100%	Gritty chloritic schist with quartz chlorite	19762	204'8"	209'4"	4'8"		8000	20	120	1.5	0.29
			interbeds-malachite in veinlets and on fractures										
			-also small irregular blobs - ½% Cu. Abundant										
			dark min- martized magnetite? Sch 45°										
209'4"	214'8"	100%	Quartz chlorite muscovite schist with abundant	19763	209'4"	214'8"	5'4"		7400	16	150	1.3	x
			magnetite- blebs and veinlets of malachite -										
			vughs - after sulphide										
214'8"	220'6"	100%	Irregular bands of chlorite quartz with hematite-	19764	214'8"	220'2"	5'6"		5200	16	150	1.4	x
			- quartz commonly in boudins commonly vughy -										
			minor malachite on fractures - sch 40°										
220'6"	226'0"	100%	Quartz muscovite sch with interbands chlorite.	19765	220'6"	226'0"	5'6"		4900	18	130	1.0	x
			Abundant disseminated magnetite some boxworks										
			after sulphide - minor malachite on sch planes										
			mainly in vughs, in 1" quartz vein (parallel										
			schist at 225') and in X fracs.										
226'0"	230'6"	100%	Quartz muscovite to quartz magnetite schist.	19766	226'0"	227'8"	1'8"		3600	24	150	1.3	
			-malachite and chrysacolla in veinlets and in	19767	227'8"	230'6"	2'10"		4900	20	102	1.0	
			quartz veins.										
			Quartz veins - 6" - 226'2"										
			All with 2" 227'6"										
			malachite 1" 228'										
230'6"	232'9"	100%	Quartz vein with chloritic inclusions, sulphide	19768	230'6"	232'9"	2'3"		3400	20	150	1.4	
			boxworks and malachite										

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY

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DIAMOND DRILL CORE RECORD

0020

PROSPECT Mutooroo Ridge

Hole No.: Location of Site: Reduced Level of Site:

Drilled By: Date Commenced: Bearing of Hole:

Depth: Date Completed: Dip of Hole:

Core Recovery: Sampling By: Geological Logging By:

Survey Data:

GEOLOGICAL LOG				ASSAY RESULTS										
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu	Pb	Zn	Ag	Au	
232'9"	239'0"	90%	Quartz magnetite and muscovite schist with	19769	232'9"	239'0"	6'3"		2800	20	60	0.6		
			minor soft talcy material-minor malachite											
			Quartz veins 12" - 233'9"											
			6" - 236'0"											
			Limonite fillings on fractures.											
239'0"	243'7"	100%	Gritty gms - sometimes felspathic with dissem-	19770	239'0"	243'7"	4'7"		1700	20	48	0.4		
			inated magnetite. 6" quartz vein 243'-CBA 70°											
243'7"	248'4"	100%	As above - quartz muscovite schist - irregular	19771	243'7"	248'4"			580	50	44	0.9		
			veins with soft black min with dull lustre -											
			tenorite (?) - minor malachite veinless assoc.											
			Quartz vein with hematite inclusions 246'6"											
248'4"	252'2"	90%	Soft dark green vughy chloritic schist with	19772	248'4"	252'2"	3'10"		5600	30	390	1.7		
			carbonate phenocrysts up to 1 min.											
252'2"	253'2"	100%	As above	19773	252'2"	253'2"			330	30	230	1.6		
253'2"	257'0"	100%	Banded chloritic schist with chlorite bands	19774	253'2"	257'0"			150	30	170	1.8		
			separated by quartz felspar bands and boudins.											
			Sch 55°											
257'0"	261'0"	100%	As above-minor kinking	19775	257'0"	261'0"			84	24	240	1.9		
261'0"	264'0"	90%	As above - quartz in definite boudins with	19776	261'0"	264'0"	3'0"		1.25%	26	170	13.5		
			shadows etc. - soft dark purple min- brownish											
			black streak.											
			Bornite (?)											
264'0"	265'2"	100%	As above - quart irregular with abundant purple	19777	Polished section									
			min (Bornite?)	19778	264'0"	265'2"	1'2"		2.5%	26	220	24.5		
265'2"	270'0"	50%	As above grading to fine grained more massive	19779	265'2"	270'0"			80	30	220	1.9		
			chloritic schist with little banding. Sch 60°											

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY

0021

DIAMOND DRILL CORE RECORD

7

PROSPECT Mutooroo Ridge

Hole No.: Location of Site: Reduced Level of Site:

Drilled By: Date Commenced: Bearing of Hole:

Depth: Date Completed: Dip of Hole:

Core Recovery: Sampling By: Geological Logging By:

Survey Data:

GEOLOGICAL LOG				ASSAY RESULTS								
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu	Pb	Zn	Ag
270'0"	274'0"	100%	Gritty chloritic schist with abundant heavy min	19780	270'0"	274'0"	4'0"		450	26	102	1.8
274'0"	278'5"	100%	Chloritic schist with quartz boudins	19781	270'0"	278'5"	8'5"		170	30	180	1.9
277'0"	278'5"	100%	Gritty chloritic schists-well banded sch.60°									
278'5"	280'5"	100%	Soft vughy chloritic schist	19782	278'5"	280'5"	2'0		800	24	220	1.8
280'5"	281'8"	100%	Gritty chloritic schists	19783	280'5"	281'4"	0'9"		600	26	140	1.9
281'8"	284'0"	95%	Vughy chloritic schist - sch 45°	19784	281'8"	284'0"	2'4"		520	36	230	2.6
284'0"	288'0"	95%	Soft vughy chloritic schist - limonitic filling	19785	284'0"	288'0"	4'0"		500	24	220	2.7
			in vughs. Carbonate quartz up to 1 mm.									
			Limonitic veins and fractures sch.35° - some									
			boxwork.									
288'0"	292'0"	98%	As above - sch.50°	19786	288'0"	292'0"	4'0"		1200	28	220	3.3
292'0"	297'7"	95%	As above - sch 60°	19787	292'0"	297'7"	5'7"		1400	26	220	2.7
297'7"	300'6"	100%	Fine grained chloritic sch.	19788	297'7"	300'6"	2'11"		1500	26	210	1.8
			with quartzitic interbands									
			- mainly grms 299-300									
			- minor malachite on sch.etc.									
300'6"	306'2"	66%	Irregular chloritic schist with quartzitic inter-	19789	300'6"	306'2"	5'8"		2000	24	220	3.0
			bands - core very broken									
306'2"	311'9"	100%	Fine grained chloritic schist with minor carbon-	19790	306'2"	311'9"	5'7"		680	24	260	2.4
			ate irregular interbeds schist and boudins CBA 65°									
311'9"	316'9"	100%	As above - origin uncertain as above	19791	311'9"	316'9"	5'0"		140	30	240	1.8
316'9"	321'11"	100%	As above - sch 60°	19792	316'9"	321'11"	5'2"		1500	26	280	3.3.
			Some banding with minor heavy mn.									
321'11"	323'11"	100%	Chloritic schist lithic fragments with quartz	19793	321'11"	323'11"	2'0"		800	36	180	2.5
			carbonate matrix - flow top breccia									

LONGREACH GROUP MANAGEMENT PTY. LTD.

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COMPANY

0022

DIAMOND DRILL CORE RECORD

8

PROSPECT Mutooroo Ridge

Hole No.: DDH M3 | Location of Site: | Reduced Level of Site:

Drilled By: | Date Commenced: | Bearing of Hole:

Depth: | Date Completed: | Dip of Hole:

Core Recovery: | Sampling By: | Geological Logging By:

Survey Data:

GEOLOGICAL LOG				ASSAY RESULTS										
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu	Pb	Zn	Ag		
323'11"	329'9"	100%	Chloritic schist with irregular lensoid quartz	19794	323'11"	329'9"			1300	28	270	3.2		
			and carbonate											
329'9"	330'0"	100%	As above with minor malachite in veinlets and on	19795	329'9"	330'0"	3"		6600	24	60	13.0		
			fractures.											
330'0"	333'11"	100%	As above	19796	330'11"	333'11"	3'		1300	22	290	3.3		
333'11"	338'0"	100%	Gritty chloritic schists - some granitic pebbles	19797	333'11"	338'0"	4'1"		1.25%	28	140	18.5		
			1 cm diameter - some heavy mineral-magnetite?											
			2" quartz vein 337'6" containing tourmaline and											
			possible sulphide - chalcocite											
338'0"	341'9"	100%	Chloritic schist possibly with sandsized fragments	19798	338'0"	341'9"			1000	24	300	3.1		
			of carbonate and quartz - minor quartz veining <1"											
341'9"	347'3"	100%	As above	19799	341'9"	347'3"			600	26	310	2.0		
347'3"	352'7"	100%	As above with pebbles of quartz-sch 65°	19800	347'3"	352'7"			110			1.7	×	
352'7"	357'8"	100%	As above	19801	352'7"	357'8"			2220			1.7	×	
357'8"	362'0"	100%	As above - Evidence of ship folding - possibly of	19802	357'8"	362'0"			330			1.6	×	
			original primary structures -folding of quartz vein											
			mirrored in chloritic schists and folding not											
			ptygmatic.											
362'0"	366'4"	100%	Irregularly banded chloritic schists consisting	19803	362'0"	366'4"			2250			1.6	×	
			of beds of pure chloride with interbeds with											
			some quartz and felspar with possible carbonate.											
			Quartz veins - boudins											
			3" at 364'.											
			4" at 366'											
366'4"	371'4"	45%	As above - banding not as distinct - possibly	19804	366'4"	371'4"			2600			4.5	×	
			more disturbed - increasing in Si material and											
			felspar 370'.											

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY

DIAMOND DRILL CORE RECORD

9

0023

PROSPECT Mutooroo Ridge

Hole No.: DDH M3

Drilled By:

Depth:

Core Recovery:

Survey Data:

Location of Site:

Date Commenced:

Date Completed:

Sampling By:

Reduced Level of Site:

Bearing of Hole:

Dip of Hole:

Geological Logging By:

GEOLOGICAL LOG				ASSAY RESULTS								
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu.	Ag	Au	
371'4"	373'	100%	Chlorite quartz schist - chlorite occurs in	19805	371'4"	373'	2' 8"		2200	4.0	x	
			distinct bands - sch 55°									
373'0"	379'0"	100%	Gritty chloritic schists with some pebbles -	19806	373'0"	379'0"	6' 0"		1.052	13.5	x	
			sch disturbed (folding) traces of malachite -									
			some heavy mineral									
379'0"	383'10"	100%	Irregularly banded chloritic schist with some	19807	379'0"	383'10"	4' 10"		760	2.3	x	
			gritty quartz fragments sch 60° - minor malachite									
			staining.									
383'10"	389' 4"	100%	As above	19808					440	2.0	x	
389'0"	389'10"	100%	Fault zone - chloritic schists with pugh-fault	19809	389'0"	389'10"	0 10"		170	1.8	x	
			plane 60°									
389'10"	392'6"	100%	Gritty to pebbly chloritic schists	19810					2300	3.4	x	
392'6"	397'0"	100%	As above	19811					48	1.1	x	
397'0"	402'6"	100%	Irregularly banded chloritic schists - some	19812	397'0"	402'6"	5' 6"		70	1.5	x	
			quartzitic bands - some gritty material sch.									
402'6"	407'1"	100%	Vesicular meta trachyte quartz and carbonate	19813	402'6"	407'1"	4' 7"		12	1.7	x	
			fillings in vesicles									
407'1"	410'1"	100%	As above	19814	407'1"	410'1"	3' 0"		14	1.6	x	
410'1"	412'7"	100%	As above	19815	410'1"	412'7"	2' 6"		46	1.7	x	
412'7"	417'7"	100%	Chloritic schist - appears to have gritty tenture	19816	412'7"	417'7"	5' 0"		14	1.4	x	
			with apparent quartz bands - tuffaceous?									
417'7"	421'10"	100%	Highly sheared meta trachytes-changes in sch and	19817	417'7"	421'10"	4' 3"		86	1.7	x	
			faults fault 418'. sch changes 60°-45°									
421'10"	425'10"		As above - fault zone 422'.	19818	421'10"	425'10"	4' 0"		2220	1.6	x	
425'10"	429'10"		As above - small low angle faults	19819	425'10"	429'10"	4' 0"		130	1.5	x	

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY

DIAMOND DRILL CORE RECORD

10

0024

PROSPECT

Hole No.: DDH M3 | Location of Site: | Reduced Level of Site:

Drilled By: | Date Commenced: | Bearing of Hole:

Depth: | Date Completed: | Dip of Hole:

Core Recovery: | Sampling By: | Geological Logging By:

Survey Data:

GEOLOGICAL LOG				ASSAY RESULTS								
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu.	Ag	Au	
429'10"	434'10"	100%	As above minor malachite monocline 430'. 1" long	19820	429'10"	434'10"	5' 0"		1200	2.9	x	
			sch parallel core									
434'10"	440'3"	100%	As above - some micro faulting with kinking.	19821	434'10"	440'3"	5' 5"		98	1.6	x	
440'3"	447'8"	100%	As above									
			END OF HOLE									

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY LONGREACH METALS N.L.

1.

0025

DIAMOND DRILL CORE RECORD

PROSPECT Mutooroo Ridge

Hole No.: DDH M4 | Location of Site: 184E/103N | Reduced Level of Site:

Drilled By: A.D.D. | Date Commenced: 27.2.71 | Bearing of Hole: 140°

Depth: 713'0" | Date Completed: 31.3.71 | Dip of Hole: -55°

Core Recovery: | Sampling By: A.Edwards | Geological Logging By: A.Edwards

Survey Data: ??

GEOLOGICAL LOG				ASSAY RESULTS				
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width
0' 0"	9' 0"	60	Greenish brown weathered chloritic schists					
			containing lensoid quartz and carbonate.					
9' 0"	16'7"	100	Chloritic schists as above with quartz and					
			carbonate lensoid fragments.					
			- mem? volcanics or grits?					
			- often vughy - schistsy 25° T.C.A					
			- minor kink bands					
16'7"	24'0"	100	Banded chloritic schists with quartzitic inter-					
			beds - sometimes vughy and ferruginous - schistsy					
			very low angle (parallel core) at 20'7" average					
			schistosity 25° T.C.A.					
24'0"	52'6"	100	as above, schistyconst 25° T.C.A.					
52'6"	57'10"		as above, core very broken 55-57'10"					
57'10"	62'0"	90%	as above - core very broken 60'					
62'0"	67'1"	90%	Ferruginous chloritic schists with quartzitic					
			interbeds schistsy varies from 25° at 63'0" to					
			90°. Core loss at contact-apparently faulted					
67'1"	75'4"	95	Fine quartz muscovite schist - commonly Fe					
			stained and with irregular limonitic veinlets.					
			Irregular quartz veinlets - some possible sulphide					
			remnants.					
75'4"	81'5"	100	as above					
81'5"	87'0"	100	as above - schistsy 25°-30° T.C.A.					
87'0"	93'0"	100	as above					
93'0"	98'4"	100	Quartz muscovite schist within 2x2' quartz veins.					

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY _____

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DIAMOND DRILL CORE RECORD

0026

PROSPECT _____

Hole No.: DDH M4 | Location of Site: _____ | Reduced Level of Site: _____

Drilled By: _____ | Date Commenced: _____ | Bearing of Hole: _____

Depth: _____ | Date Completed: _____ | Dip of Hole: _____

Core Recovery: _____ | Sampling By: _____ | Geological Logging By: _____

Survey Data: _____

GEOLOGICAL LOG				ASSAY RESULTS				
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width
98'4"	105'7"	100	Bands of ferruginous and muscovite schists					
			within large quartz veins. No definite vein					
			boundaries.					
105'7"	119'4"		as above					
119'4"	123'4"	95%	Gritty quartz muscovite schist commonly ferruginous					
			with some sulphide boxworks - quartz vein (4") at					
			121'8" - possible shear zone 122'.					
123'4"	127'0"	95	As above - schistosity 30° T.C.A.					
127'0"	131'4"	95	As above					
131'4"	138'0"	95	Large quartz vein containing irregular chloritic					
			and ferruginous inclusions and veins. Possible					
			fault at 135'. Core very broken with red					
			mylonitic material.					
138'0"	143'8"	100%	Gritty quartz muscovite schists with minor					
			siliceous bands (rhyolite?)					
143'8"	149'4"	100	Quartz muscovite schist -gritty and sometimes					
			siliceous - contains minor pyrite. 6" quartz					
			vein at 146'10", irregular limonitic veinlets.					
149'4"	155'4"	100	As above					
155'4"	161'4"	100	As above with quartz vein 155'4"-157'4", other					
			minor quartz veins <½" commonly with limonitic					
			vughs					
161'4"	167'0"	100	As above - sch 30°-35° T.C.A.					
167'0"	173'6"	100	As above - sch 20° at 170', with ½" quartz vein					
			parallel schists i.e. 20°					
173'6"	179'0"	100	As above. 2" quartz vein 173'10"-sch. 30° T.C.A.					

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY _____

0027

DIAMOND DRILL CORE RECORD

3

PROSPECT _____

Hole No.: DDH M4 | Location of Site: _____ | Reduced Level of Site: _____

Drilled By: _____ | Date Commenced: _____ | Bearing of Hole: _____

Depth: _____ | Date Completed: _____ | Dip of Hole: _____

Core Recovery: _____ | Sampling By: _____ | Geological Logging By: _____

Survey Data: _____

GEOLOGICAL LOG				ASSAY RESULTS				
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width
179'0"	185'0"	100	Grey gritty quartz muscovite schist with patches					
			of Fe staining usually around veinlets minor					
			pyrite occasionally present - sch. approx 35° T.C.A					
185'0"	191'3"	100	As above with 1½" quartz vein at 187'3"					
191'3"	197'0"	100	As above with 4" quartz vein at 191'3"					
			8" " " " 194'0"					
197'0"	204'3"	100	As above with quartz veins, ~~at~~ 3" at 199', and 1"					
			veins at 201'3", 202', 202'6", 203'3" and 204'.					
204'3"	208'9"	100%	As above sch 30°. 1" quartz veins 204'3", 208', 207'.					
208'9"	214'10"	100	As above - 6" quartz 212'6", other minor irregular					
			quartz veins					
214'10"	227'0"		As above					
227'0"	234'0"	100	Quartz veins, with numerous chloritic and					
			micaceous inclusions - a little boxwork or Fe					
			staining					
234'0"	240'6"	100	As above with some Fe staining, quartz very					
			fractured at 236'					
240'6"	241'6"	100	Greenish grey gritty quartz muscovite schist	SNR	240'6"	241'6"	12"	
			sch. 40° T.C.A					
241'6"	242'0"	100	Gritty quartz muscovite schist as above with dis-	SNR	241'6"	242'0"	6"	
			seminated heavy min. and minor malachite on schist					
			planes					
242'0"	247'0"	100	Greenish grey gritty quartz muscovite schist	SNR	242'0"	247'0"		
			with unidentified dark min (soft) disseminated					
			~~th~~in core (chlorite segregations??)					

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY

0028

4

DIAMOND DRILL CORE RECORD

PROSPECT

Hole No.: DDH M4
Drilled By:
Depth:
Core Recovery:
Survey Data:

Location of Site:
Date Commenced:
Date Completed:
Sampling By:

Reduced Level of Site:
Bearing of Hole:
Dip of Hole:
Geological Logging By:

GEOLOGICAL LOG				ASSAY RESULTS									
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu			Ag	Au
247'0"	254'10"	96	Gritty quartz muscovite schist as above, limonitic vughs common 251'-254'. 9" quartz vein with muscovite 247'0"										
254'10"	268'0"	100	As above										
268'0"	274'0"		As above with finer grained interbeds 272'. Irregular quartzite fragments (original pebbles?) Possible quartz veins? commonly associated with pyrite. Possible shear zone 273'6"										
274'0"	280'0"	100	Pink and grey quartz muscovite schist with 12" quartz veins bore 275'6" 277'3" - sch. 30-35° T.C.A. flattens marked by 279-280'.										
280'	285'6"	100	As above - fault zone 280'-12" quartz vein 281'										
285'6"	291'2"	100	Greenish grey quartz muscovite schist with minor pyrite and very small segregations of dark green soft flaky min (chlorite?) - vughy 12" quartz vein located 286'6"										
291'2"	297'9"	100	Dark greenish grey chloritic schist with minor quartzitic interbeds. Abundant disseminated pyrite (1% or >) and possible fine grained chalcocite. Minor chalcopyrite - core becomes more vughy with depth and % pyrite decreasing due to weathering - schistosity 40-45° T.C.A	19826	291'2"	297'9"	6' 7"		580			1.9	x
297'9"	302'0"		Greenish grey chloritic schists with pyrite and minor chalcopyrite - boxworks, possible tenorite	19827	297'9"	302'0"	4' 3"		85			1.6	x
302'0"	306'9"		- sch. 35° T.C.A. As above	19828	302'0"	306'9"	4' 9"		290			1.6	
302'0"	306'9"		As above										

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY _____

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0029

DIAMOND DRILL CORE RECORD

PROSPECT _____

Hole No.: DDH M4 Location of Site: _____ Reduced Level of Site: _____

Drilled By: _____ Date Commenced: _____ Bearing of Hole: _____

Depth: _____ Date Completed: _____ Dip of Hole: _____

Core Recovery: _____ Sampling By: _____ Geological Logging By: _____

Survey Data: _____

GEOLOGICAL LOG				ASSAY RESULTS									
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu			Ag	Au
306'9"	313'0"	100	Soft grey sandy quartz muscovite schist grading	19829	306'9"	313'0"	6' 3"		230			0.7	
			to siliceous quartz muscovite schist with minor										
			pyrite										
313'0"	318'9"	100	Grey siliceous quartz muscovite schist with		313'0"	318'9"							
			minor pyrite sch - 45° T.C.A.										
318'9"	320'9"	100	As above with pods of psilomelane (?)	19830	318'9"	320'9"	4' 0"		3000			0.6	
320'9"	325'0"	100	Quartz muscovite schist as above		320'9"	325'0"							
325'0"	332'0"	20	As above		325'0"	332'0"							
332'0"	335'0"	33	Grey quartz muscovite schist with soft shaley		332'0"	335'0"							
			interbeds (?) largely washed away - ~~or~~ fault										
			zone?										
335'0"	341'8"	85	Pinkish grey to greenish grey with disseminated										
			pyrite and minor chalcopyrite										
341'8"	346'8"	80	As above		341'8"	346'8"							
346'8"	354'0"	80	Quartz muscovite schist as above becoming less		346'8"	354'0"							
			siliceous 354'										
354'0"	363'3"	30	Fault zone-reddish brown fine grained mylonite										
			containing grey blebs and shreds of dark grey										
			shale-possibly Mn ~~or~~ Minor boxwork after sulphide (?)										
			3" quartz vein 360'-360'3"										
363'3"	370'0"	100	Sandy grey quartz muscovite schist with dis-										
			seminated sulphide (pyrite) - sch. 70° with										
			kink bands at 85° T.C.A.										
370'0"	378'3"	100	As above, limonitic staining from veinlets, Mangan-										
			iferous veins 374' with limonitic boxworks.										

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY _____

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0030

DIAMOND DRILL CORE RECORD

PROSPECT _____

Hole No.: DDH M4 | Location of Site: _____ | Reduced Level of Site: _____

Drilled By: _____ | Date Commenced: _____ | Bearing of Hole: _____

Depth: _____ | Date Completed: _____ | Dip of Hole: _____

Core Recovery: _____ | Sampling By: _____ | Geological Logging By: _____

Survey Data: _____

GEOLOGICAL LOG				ASSAY RESULTS								
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu		Ag	Au
378'3"	381'9"	100	Quartz vein.									
381'9"	389'0"	55	Core extremely broken up with 6" cavity at 387'.									
			Grey quartz muscovite schist with minor malachite									
			crystals in vughs.									
389'0"	393'6"	100	Greenish grey and pink quartz muscovite schist									
			becoming brecciated 391' with chloritic matrix,									
			minor sulphide and pink felspar and quartz veining.									
393'6"	397'0"	100	Highly sheared dark grey chloritic muscovite	19831	393'6"	397'0"	3' 6"		1400		1.6	0.70
			schist with limonitic vughs after sulphide,									
			disseminated pyrite >1%	19832	397'0"	400'0"	3' 0"		1300		1.1	0.38
397'0"	400'0"	100	As above									
400'0"	406'9"	100	Pale grey siliceous quartz muscovite schist									
406'9"	414'0"	100	Pale grey greenish grey quartz muscovite schist									
			becoming chloritic with depth.									
414'0"	421'4"	70	Pale greenish grey quartz muscovite schist with	19833	414'0"	421'4"	7' 4"		250		1.4	0.13
			interbeds of chlorite schist - commonly pyritic -									
			>1% sulphide ~~Sch.~~									
421'4"	425'2"	40	Dark grey chlorite muscovite schists with dis-	19834	421'4"	425'2"	3' 10"		500		1.5	0.10
			seminated pyrite									
425'2"	427'6"	95	Grey quartzite and quartz muscovite schists									
			with irregular chloritic interbeds - minor pyrite									
427'6"	432'8"	100	As above - sch 40° low angle kink bands not	19835	427'9"	432'8"	4' 11"		390		1.8	0.36
			uncommon.									
432'8"	435'10"	100	As above									

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY _____

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DIAMOND DRILL CORE RECORD

0031

PROSPECT _____

Hole No.: DDH M4 | Location of Site: _____ | Reduced Level of Site: _____

Drilled By: _____ | Date Commenced: _____ | Bearing of Hole: _____

Depth: _____ | Date Completed: _____ | Dip of Hole: _____

Core Recovery: _____ | Sampling By: _____ | Geological Logging By: _____

Survey Data: _____

GEOLOGICAL LOG				ASSAY RESULTS								
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu		Ag	Au
435'10"	444'0"	25	Siliceous quartz muscovite schist - minor									
			~~disseminated pyrite - reason for core loss~~									
			unknown,									
444' 0"	450'5"	95	Greenish grey quartz muscovite schist with									
			occasional chloritic interbeds minor pyrite									
450'5"	454'6"	100	Quartz muscovite schist with chloritic interbeds									
			up to 1", vughy zones 453' and 451'6" sch.70°									
454'6"	459'0"	100	Quartz muscovite schist with chloritic interbeds	19836	454'6"	459'0"	4' 6"		470		1.2	x
			with blebs of pyrite and disseminated pyrite									
			minor limonite staining. Minor chalcopyrite									
459'0"	462'6"	100	As above									
462'6"	466'9"	100	As above possible disseminated bornite	19837	462'6"	466'9"	4' 3"		700		1.7	x
466'9"	473'9"	100	Chloritic schist with quartzite and quartz musco-	19838	466'9"	473'9"	7' 0		940		1.6	x
			vite schist interbeds, minor pyrite. Fe stained									
			bands up to ½" across, minor ~~possible~~ bornite?									
473'9"	477'6"		As above	19839	473'9"	477'6"	3' 9"		620		1.8	x
477'6"	480'9"	95	~~Quartz muscovite schist with thin irregular~~	19845	477'6"	480'9"	3' 3"		540		1.4	x
			chloritic bands, pyrite with possible minor									
			chalcopyrite sch. 75° T.C.A.									
480'9"	481'5"	95	Soft friable chloritic schist fragments, core	19846	480'7"	481'5"	0'10"		740		1.8	x
			very broken									
481'5"	485'2"	95	Sandy grey quartz muscovite schist with chloritic	19847	481'5"	485'2"	3' 9"		560		1.4	x
			interbeds abundant heavy min-rutile?									
			Sch 75°. Minor pyrite.									

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY

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0032

DIAMOND DRILL CORE RECORD

PROSPECT

Hole No.: DDH M4 | Location of Site: | Reduced Level of Site:

Drilled By: | Date Commenced: | Bearing of Hole:

Depth: | Date Completed: | Dip of Hole:

Core Recovery: | Sampling By: | Geological Logging By:

Survey Data:

GEOLOGICAL LOG				ASSAY RESULTS								
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu		Ag	Au
485'2"	493'0"	50	Sandy to gritty quartz muscovite schist with chloritic interbeds alternating with quartz chlorite muscovite schists pyrite 1%-1½%, Sch. 75° c/a Abundant heavy min rutile	19848	485'2"	493'0"	7' 10"		1100		1.7	x
493'0"	498'6"	100	Gritty chlorite quartz schists - biotite segregations ½ mm across in chloritic bands	19849	493'0"	498'6"	5' 6"		2300		4.2	x
498'6"	503'0"	100	Quartz chlorite muscovite schists chlorite tends to occur as thin interbeds contains minor pyrite sch. 75°	19850	498'6"	503'0"	4' 6"		1500		23	x
503'0"	508'3"	100	Gritty chloritic schists bornite (½-1%) biotite with blebs of carbonate minor pyrite	19851	503'0"	508'3"	5' 3"		320		2.1	x
508'3"	512'7"	30	Gritty chloritic schist disseminated fine grained chalcopyrite with some malachite	19852	508'3"	512'7"	4' 4"		5000		14.5	x
512'7"	517'4"	95	Fine grained dark greenish grey chloritic schist with numerous carbonate interbeds	19853	512'7"	517'4"	4' 9"		300		2.2	x
517'4"	521'4"	75	As above with increasing in carbonate veining. Carbonate pale brown	19854	517'4"	521'4"	4' 0"		1500		3.6	x
521'4"	522'7"	100	Chloritic schist with irregular carbonate blebs and interbeds. Some quartzitic interbeds	19855	521'4"	522'7"	1" 3"		1200		2.1	x
522'7"	523'4"	100	As above becoming more definitely banded sch 55° with kink band malachite staining. Two possible quartz pebbles ¾" x ¼"	19856	522'7"	523'4"	9"				17.0	x
523'4"	527'9"	95	As above kinking 527'. Abundant dark min possibly rutile with biotite segregations malachite staining.	19857	523'4"	527'9"	4'5"		1%		18.0	x
527'9"	532'2"	95	As above increasing in carbonate and quartz	19858	527'9"	532'2"	4' 5"		820		2.1	

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY

9

DIAMOND DRILL CORE RECORD

0033

PROSPECT

Hole No.: DDII M4 | Location of Site: | Reduced Level of Site:

Drilled By: | Date Commenced: | Bearing of Hole:

Depth: | Date Completed: | Dip of Hole:

Core Recovery: | Sampling By: | Geological Logging By:

Survey Data:

GEOLOGICAL LOG				ASSAY RESULTS										
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu	Zn.		Ag	Au	
532'2"	535'8"		Cavity											
535'8"	541'9"	65	Compact gritty chloritic schist with interbeds	19859	538'9"	541'9"	3'0"		330			1.8		
			of more friable material											
541'9"	546'10"	60	Gritty chlorite schist with numerous vughs after	19860	541'9"	546'10"	5' 1"		340			1.7		
			carbonate											
546'10"	547'10"		Cavity											
547'10"	550'10"	90	Core extremely broken up. Gritty chloritic schists	19861	547'10"	550'10"	3'0"		960			1.6	0.06	
			minor malachite low angle schistosities common											
550'10"	557'7"	75	As above	19862	550'10"	557'7"	6'9"		820			1.6	x	
557'7"	561'7"	60	2'6" cavity 261-258'6". as above definite low	19863	557'7"	561'7"	4'0"		1300			1.7	0.12	
			angle fault 557'10"											
561'7"	566'2"	90	Well banded gritty chloritic schists minor mala-	19864	561'7"	566'2"	4'7"		1800			3.9	0.08	
			chite on low fracture 565'9"-sch.50°											
566'2"	571'6"	95	As above small monocline at 570' low schist (?)	19865	561'6"	571'6"	10'0		1300			3.12	0.12	
			3" quartz vein 571'6" with biotite, chlorite and											
			manganese Min.											
571'6"	577'10"	100	Meta volcanics chlorite, biotite schists	19866	571'6"	577'10"	6'4"		780			2.6	0.06	
			originally andesites irregular quartz veins											
			271' (3") 273'3" (12") quartz veins containing											
			irregular chlorite segregations											
577'10"	597'4"	100	Meta andesites as above sch.60°	19867	577'10"	585'3"	7'5"		220			1.7	0.06	
				19868	585'3"	589'3"	4'0'		410			1.9	0.08	
				19869	589'3"	593'3"	4'0'		260			1.8	0.06	
				19870	593'3"	597'4"	4'1"		120			1.6	0.06	

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY

10

DIAMOND DRILL CORE RECORD

0034

PROSPECT

Hole No.: DDH M4 | Location of Site: | Reduced Level of Site:

Drilled By: | Date Commenced: | Bearing of Hole:

Depth: | Date Completed: | Dip of Hole:

Core Recovery: | Sampling By: | Geological Logging By:

Survey Data:

GEOLOGICAL LOG				ASSAY RESULTS								
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu		Ag	Au
597'4"	599'9"	100	Gritty chloritic schist some banding possibly	19871	597'4"	599'0"	1' 8"		400		2.1	0.06
			tuffaceous. Carbonate and quartz in lensoid									
			fragments minor kinking perpendicular sch.									
599'9"	605'9"	100	As above	19872	599'9"	605'9"	6' 0"		260		1.8	0.10
605'9"	614'0"	98	Greenish grey chloritic schists meta volcanics	19873	605'9"	614'0"	8'3"		98		1.5	0.10
			and tuffaceous. Rocks grade from chlorite with									
			quartzitic schist interbeds to massive chlorite									
			schist. Commonly with lensoid patches of quartz									
			and carbonate. Numerous veinlets of carbonate									
			and quartz usually parallel schist. Possible									
			fine grained desseminated bornite									
614'0"	621'0"	100	As above	19874	614'0"	621'0"	7' 0"		20		1.5	0.10
621'0"	628'6"	95	As above with possible grit horizon 624'6"-625'7"	19875	621'0"	628'6"	7' 6"		2000		4.7	0.12
628'6"	669'10"	80%95% 90%100%	As above	19876	628'6"	635'6"	7' 0"		100		1.7	0.10
				19877	635'6"	641'0"	5' 6"		110		1.6	0.10
				19878	641'0"	648'6"	7' 6"		210		1.6	0.08
				19879	648'6"	656'3"	7' 9"		120		1.6	0.06
				19880	656'3"	662'7"	6' 4"		190		1.7	0.04
				19881	662'7"	669'10"	7' 3"		84		1.6	0.14
669'10"	677'0"	100%	As above increasing in vescicles -CBA 80°	19882	669'10"	677'0"	7' 2"		42		1.7	0.06
677'0"	717'0"	100%	As above	19883	677'0"	685'0"	7' 0"		72		1.7	0.06
				19884	685'0"	692'0"	7' 0"		36		1.5	0.08
				19885	692'0"	700'0"	8' 0"		64		1.5	0.10
				19886	700'0"	706'9"	6' 9"		52		1.5	0.08
				19887	706'9"	714'9"	8' 0"		54		1.5	0.08
				19888	714'9"	717'0"	2' 3"		160		4.7	0.06
			END OF HOLE									

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY LONGREACH METALS N.L.

1

0035

DIAMOND DRILL CORE RECORD

S.M.L. 274

PROSPECT MUTOOROO RIDGE PROPSECT

Hole No.: DDH M5

Location of Site: 101N/188E

Reduced Level of Site:

Drilled By: ADD

Date Commenced: 2.4.71

Bearing of Hole: 140°

Depth: 501'3"

Date Completed: 25.4.71

Dip of Hole: 55°

Core Recovery:

Sampling By: A.C.Edwards

Geological Logging By: A.C.Edwards

Survey Data: 10', 152', 310'

GEOLOGICAL LOG				ASSAY RESULTS									
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu		Ag	Au	
0'	10'6"	95%	NX core										
			Pink to grey quartz muscovite schist, commonly										
			Fe stained numerous small limonitic veinlets.										
			Gossanous limonite after sulphide. Quartz										
			veins up to 12" often carrying pyrolusite.										
			Heavy min magnetite QMS varies locally quartzite.										
10'6"	15'0"	90%	As above - sch 35°										
15'0"	20'0"	100%	As above										
20'0"	25'0"	80%	As above contains 1' cavity										
25'0"	35'3"	100% 96%	As above										
35'3"	40'6"	95%	As above core very broken										
40'6"	45'0"	100%	As above - sch 35°										
45'0"	50'0"	100%	Quartz muscovite schist as above										
50'0"	80'0"	100%	As above										
80'0"	84'9"	100%	As above with 6" band weathered greenish grey										
			chloritic schist										
84'9"	90'0"	100%	QMS as above										
90'0"	110'0"	100%	AS above										
110'0"	115'0"	100%	Quartz muscovite schist as above										
115'0"	170'8"	100%	As above 120'-125' sch 40°										
170'8"	172'0"	100%	As above with malachite staining	19889	170'8"	172'0"	1'4"		820		0.3	x	
172'0"	175'6"	100%	As above										
175'6"	180'0"	100%	Quartz muscovite schist										
180'0"	199'10"	100"	As above										
199'10"	201'4"	100	As above with malachite staining	19890	199'10"	201'4"	1'6"		11900		0.1	x	

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY

DIAMOND DRILL CORE RECORD

0036

PROSPECT

Hole No.: DDH M5 | Location of Site: | Reduced Level of Site:

Drilled By: | Date Commenced: | Bearing of Hole:

Depth: | Date Completed: | Dip of Hole:

Core Recovery: | Sampling By: | Geological Logging By:

Survey Data:

GEOLOGICAL LOG				ASSAY RESULTS								
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu		Ag	Au
201'4"	206'0"	100%	QMS minor spots of malachite on fracture surfaces	19891	201'4"	206'0"	4' 8"		480		0.2	x
206'0"	210'0"	100%	As above malachite on cross fractures and assoc-	19892	206'0"	210'0"	4' 0"		2900		0.3	0.06
			iated with limonitic veinlets - sch 60° ½-1% Cu									
210'0"	215'0"	100%	As above with malachite ½-1% Cu	19893	210'0"	215'0"	5' 0"		3000		0.2	x
215'0"	218'3"	100%	As above ½-1%Cu	19894	215'0"	218'3"	3'3"		2700		0.6	x
218'3"	225'0"	100%	Qms - sch 60°	19895	218'3"	225'0"	6'9"		350		0.3	x
225'0"	230'0"	100%	As above with minor traces of malachite	19896	225'0"	230'0"	5' 0"		430		0.2	x
230'0"	255'2"	100%	QMS as above with minor malachite numerous									
			ferruginous patches some boxworks	19897	230'0"	235'0"	5' 0"		5000		0.2	x
255'2"	260'0"	100%	As above minor malachite sch 60%	19898	255'2"	260'0"	4' 10"		200		0.2	x
260'0"	275'0"	100%	Quartz muscovite schist as above	19899	260'0"	265'0"	5' 0"		440		0.3	0.34
275'0"	280'0"	100%	As above sch 60°	19900	275'0"	280'0"	5' 0"		320		0.2	x
280'0"	285'0"	100%	Highly sheared and in places brecciated quartz	19901	280'0"	285'0"	5'0"		200		0.8	0.06
			muscovite schist with some chloritic beds commonly									
			limonitic. Contact of quartz muscovite schist									
			and volcanics									
285'0"	290'0"	100%	Greenish grey chloritic schists derived from	19902	285'0"	290'0"	5'0"		26		1.0	x
			andesites or trachytes commonly with vesicles									
			filled with carbonate quartz quartz and carbonate									
			veins common. Minor heavy min magnetite or									
			rutile (285'-290')									
290'0"	385'0"	100%	As above									
385'0"	390'0"	100%	Chloritic schist meta volcanics sch 60°									
390'0"	440'0"	100%	As above									

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY _____

3

DIAMOND DRILL CORE RECORD

0037

PROSPECT _____

Hole No.: DDH M5 | Location of Site: _____ | Reduced Level of Site: _____

Drilled By: _____ | Date Commenced: _____ | Bearing of Hole: _____

Depth: _____ | Date Completed: _____ | Dip of Hole: _____

Core Recovery: _____ | Sampling By: _____ | Geological Logging By: _____

Survey Data: _____

GEOLOGICAL LOG				ASSAY RESULTS				
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width
440'0"	445'0"	100%	Highly sheared metavolcanics with numerous					
			quartzitic interbeds. Some elongated quartz					
			and carbonate vesicles sch.65°					
445'0"	465'0"	90% 100%	As above					
465'0"	470'0"	100%	Massive Masonitic chloritic schists meta volcanics					
			carbonate and quartz infilled vesicles					
470'0"	501'3"	100% 90% 30%	As above					
			END OF HOLE					

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 – 69

COMPANY Longreach Metals N.L.

1

DIAMOND DRILL CORE RECORD

0038

PROSPECT Mutooroo Ridge

Hole No.: DDH M6
Drilled By: A.D.D.
Depth: 756'9"
Core Recovery:
Survey Data: 31° at 557'8"

Location of Site: 172E/96N
Date Commenced: 27.4.71
Date Completed: 9.5.71
Sampling By: A.C.Edwards

Reduced Level of Site:
Bearing of Hole: 140°
Dip of Hole: 55°
Geological Logging By: A.Edwards

GEOLOGICAL LOG				ASSAY RESULTS				
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width
0'	10'	60	Bx casing					
			Weathered fragments of chloritic schist.					
10'	15'	95	Dark greenish grey medium grained chlorite					
			biotite with possible felspar phenocrysts.					
			Quartz veins up to 3", commonly with limonitic					
			boxworks.					
15'	30'3"	95	As above – sch 35° becoming banded i.e.					
			chloritic bands with more quartzs felspathic					
			interbeds					
30'3"	32'4"	100	As above					
32'4"	36'6"	95	Quartz vein with chloritic inclusions					
36'6"	42'0"	100	Banded dark greyish green and grey chloritic					
			biotite schists. Some vughs after carbonate					
			Sch.20° Kink bands right angle core.					
42'0"	57'0"	100	As above sch 5-10°					
57'0"	62'0"	95	As above					
62'0"	66'11"	95	As above grading to chloritic schist with					
			elongate quartz carbonate vesicles.					
66'11"	72'2"	95	Highly sheared and brecciated chloritic schist					
			with quartz veining.					
72'2"	76'2"	95	As above – fault zone.					
76'2"	92'5"	100	Massive dark greenish grey chloritic schists					
			(metasediments) with some irregular quartz and					
			carbonate infilling remnant vesicles-irregular					
			quartz veins – sch.30°					

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY _____

2

DIAMOND DRILL CORE RECORD

0039

PROSPECT _____

Hole No.: M6 | Location of Site: _____ | Reduced Level of Site: _____

Drilled By: _____ | Date Commenced: _____ | Bearing of Hole: _____

Depth: _____ | Date Completed: _____ | Dip of Hole: _____

Core Recovery: _____ | Sampling By: _____ | Geological Logging By: _____

Survey Data: _____

GEOLOGICAL LOG				ASSAY RESULTS									
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu PPM	Zn PPM	Ag PPM	Au PPM	
92'5"	124'4"	100	Medium grained chloritic schist possible										
			felspar phenocrysts (similar to schistose micro-										
			diorite)-occasional bands of vescicles.										
124'4"	149'0"	100	Highly vesicular greenish grey metavolcanics-										
			vesicles range $\frac{1}{4}$"-1/16" sch.30°										
149'0"	158'3"	100	As above-minor malachite staining within	19903	149'0"	153'3"	4' 3"		320	240	1.5	x	
			chloritic rich band at 151'9"										
158'3"	183'8"	100	Medium grained chloritic schist - no vesicles-										
			tending microdiorite sch.poorly developed at 45°										
183'8"	199'0"	100	As above grading to fine grained chloritic schist										
			with some quartz and carbonate.										
199'0"	204'2"	100	As above with increasing infilled vesicles										
			(quartz and carbonate)										
204'2"	208'0"	100	Fine grained banded chloritic schist with										
			irregular quartz carbonate particles.										
208'0"	214'4"	100	Microdiorite (medium grained)chloritic schist										
			described above).										
214'4"	219'4"	100	As above becoming vesicular sch 35°										
219'4"	224'4"	100	Medium grained chloritic schist with irregular										
			quartz and carbonate particles some banding.										
			Grading to microdiorite.										
224'4"	232'4"	100	Microdiorite.										
232'4"	245'10"	100	As above with abundant quartz and carbonate										
			blebs.										
245'10"	266'5"	100	As above with irregular quartz stringers.										

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY _____

3

DIAMOND DRILL CORE RECORD

0040

PROSPECT _____

Hole No.: M6 | Location of Site: _____ | Reduced Level of Site: _____

Drilled By: _____ | Date Commenced: _____ | Bearing of Hole: _____

Depth: _____ | Date Completed: _____ | Dip of Hole: _____

Core Recovery: _____ | Sampling By: _____ | Geological Logging By: _____

Survey Data: _____

GEOLOGICAL LOG				ASSAY RESULTS				
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width
266'5"	287'8"	100	Medium grained chloritic schist with some fine grained chloritic schist. Some quartz veining and minor brecciation sch.45° infilled vesicles common.					
287'8"	291'10"	100	As above fault 286'7"					
291'10"	305'2"	100	Banded fine to medium grained chloritic schists with some quartz carbonate infilled vesicles- sch.30°					
305'2"	314'9"	100	Medium grained chloritic schists with irregular quartz particles.					
314'9"	319'9"	100	Medium grained chloritic schist with fine grained chloritic and biotite interbeds.					
319'9"	324'10"	100	Fine grained chloritic schist with numerous quartz veins.					
324'10"	330'0"	100	Medium and fine grained chloritic schist with minor irregular patches of chlorite.					
330'0"	346'0"	100	Medium grained chloritic schist with irregular quartz blebs and veinlets. Fault 335'6"					
346'0"	365'6"	100	Fine grained chloritic schist with quartzitic interbeds with numerous irregular quartz veins.					
365'6"	370'0"	100	Dark greenish grey medium grained chloritic schist with numerous lensoid carbonate fragments and irregular carbonate stringers some of which contain minor sulphide possibly chalcopyrite.					

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY _____

4

DIAMOND DRILL CORE RECORD

0041

PROSPECT _____

Hole No.: M6 | Location of Site: _____ | Reduced Level of Site: _____

Drilled By: _____ | Date Commenced: _____ | Bearing of Hole: _____

Depth: _____ | Date Completed: _____ | Dip of Hole: _____

Core Recovery: _____ | Sampling By: _____ | Geological Logging By: _____

Survey Data: _____

GEOLOGICAL LOG				ASSAY RESULTS								
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu PPM	Ag PPM	Au PPM	
370'0"	375'0"	100	As above schist highly fractured becciation in									
			carbonate matrix. Few vesicles.									
375'0"	385'0"	100	As above minor fracturing no brecciation.									
385'0"	405'0"	100	As above with minor fine grained chlorite inter-									
			beds. Fault at 388'4" 25° sch.45°									
405'0"	410'0"	100	As above 12" quartz veins 405'									
410'0"	413'9"	100	Medium grained chloritic schist microdiorite									
			patches rich in biotite.									
413'9"	417'0	100	Medium grained chloritic schist with numerous									
			fine grained chloritic interbeds quartz and									
			carbonate veining and blebs.									
417'0"	427'0"	100	As above - sch.40°									
427'0"	442'0"	100	As above clay filled fault 432'-432'9"									
442'0"	447'0"	100	As above mainly medium grained chloritic schist									
			with biotite rich bands.									
447'0"	457'0"	100	As above - 12" quartz vein 447'.									
457'0"	467'0"	100	As above numerous quartz carbonate veins up to 3"									
467'0"	502'0"	100	As above with numerous infilled vesicles.									
502'0"	577'0"	100	Medium to fine grained chloritic schist sometimes									
			banded contains some quartz and carbonate vesicles									
			and stringers. Quartz veins up to 2" not uncommon.									
			commonly irregular with minor carbonate inclusions.									
577'0"	597'0"	100	As above-clayfilled fault zone 45°									
597'0"	607'0"	100	As above - minor chalcopyrite	19904	597'0"	602'0"	5'0"		20	4cc	1.6	x
				19905	602'0"	607'0"	5'0"		90	4.20	1.8	x
607'0"	612'0"	100	As above - minor smears of chalcopyrite/pyrite	19906	607'0"	612'0"	5'0"		100	4.10	1.8	x
			and fractured faces and on quartz vein ?									

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY _____

5

DIAMOND DRILL CORE RECORD

0042

PROSPECT _____

Hole No.: M6 Location of Site: _____ Reduced Level of Site: _____

Drilled By: _____ Date Commenced: _____ Bearing of Hole: _____

Depth: _____ Date Completed: _____ Dip of Hole: _____

Core Recovery: _____ Sampling By: _____ Geological Logging By: _____

Survey Data: _____

GEOLOGICAL LOG				ASSAY RESULTS								
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu PPM	Zn PPM	Ag PPM	Au PPM
612'0"	617'0"	100	Medium to fine grained chloritic schist with occasional bands of vesicles filled with quartz and carbonate. Numerous stringers of quartz and carbonate sch.60°. Minor chalcopyrite and pyrite on fractured faces.	19907	612'0"	617'0"			20	370	1.6	x
617'0"	622'0"	100	As above with minor sulphide.	19908	617'0"	622'0"	5' 0"		60	410	1.6	x
622'0"	637'0"	100	As above with minor traces of sulphide.	19909	622'0"	627'0"	5' 0"		240	440	2.0	x
637'0"	662'0"	100	As above quartz and carbonate veins up to 6"									
662'0"	682'0"	100	As above portions of core very broken shear zones irregular quartz veins.									
682'0"	687'0"	100	As above possible minor sulphide	19910	682'0"	687'0"	5' 0"		76	540	1.5	x
687'0"	692'0"	100	As above chalcopyrite on fractured faces	19911	687'0"	692'0"	5' 0"		52	400	1.4	x
692'0"	697'0"	100	As above trace sulphide only	19912	692'0"	697'0"	5' 0		34	660	1.4	x
697'0"	702'0"	100	As above	19913	697'0"	702'0"	5' 0		100	440	1.6	x
702'0"	707'0"	100	Medium to fine grained chloritic schist with quartzitic pods and irregular carbonate blebs thin irregular quartz and carbonate veins.	19914	702'0"	707'0"	5' 0		110	540	1.4	x
707'0"	722'0"	100	As above with possible traces sulphide	19915	707'0"	712'0"	5' 0		62	310	1.3	x
				19916	712'0"	717'0"	5' 0		60	460	1.5	x
				19917	717'0"	722'0"	5' 0		120	400	1.5	x
722'0"	727'0"		As above core with broken 723'-724' with carbonate lined vughs.	19918	722'0"	727'0"	5' 0		60	520	1.6	x
				19919					38	680	1.4	x
727'0"	756'9"	100	As above occasional traces of sulphide only.									
			END OF HOLE									

LONGREACH GROUP MANAGEMENT PTY. LTD.

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COMPANY Longreach Metals N.L.

0043

DIAMOND DRILL CORE RECORD

1

PROSPECT Mutooroo Ridge

Hole No.: DDH M7 | Location of Site: 102.50N/180E | Reduced Level of Site:

Drilled By: A.D.D. | Date Commenced: 11.6.71 | Bearing of Hole: 140°

Depth: 957'6" | Date Completed: 2.6.71 | Dip of Hole: -60°

Core Recovery: 100% | Sampling By: A.C.Edwards | Geological Logging By: A.C.Edwards

Survey Data: 0' -60°, 240' 55°, 480' 48°, 940' 25°

GEOLOGICAL LOG				ASSAY RESULTS								
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu PPM	Ag PPM	Au PPM	
0'	10'	45	White to pale grey, sandy to gritty quartz									
			muscovite schist. Some red brown Fe.staining									
			Sch.30°. Some vughs, probably after sulphide									
			Limonite pseudomorphs after magnetite common.									
10'	40'	100	As above									
40'	50'	100	As above - core brecciated and fractured at 49'									
50'	60'	95	52'6"-55'0" chrysocolla on fractures and in small	19575	50'	55'	5' 0		6400	0.5	x	
			veinlets. Core other side fractured (shears?)	19576	55'	60'	5' 0		190	0.5	x	
60'	100'	100	As above									
100'	120'	100	As above sch.15°-20°									
120'	160'	100	As above some brecciation 127'4"-128'0" vughs									
			with gossans - Fe staining common.									
~~160'~~	~~170'~~	~~100~~	~~As above with 18" quartz vein from 160'.~~									
170'	180'	100	As above core very vughy at 173'6"-175'6" with									
			gossan-sch.30°									
180'	190'	100	As above 12" quartz vein 188'									
190'	200'	100	As above 18" quartz vein.									
200'	220'	95	Pink and pale greenish grey quartz muscovite schist									
			- sch.35°									
220'	230'	95	Quartz muscovite schist becoming Fe stained.									
			Gossanous vughs probably after pyrite very common.									
			Minor chlorite interbeds.									
230'	233'	100	Quartz muscovite schist with increasing muscovite	19577	230'	233'	3' 0"		230	0.5	x	
			and chlorite, poikiloblastic biotite flakes up to									
			1 mm									

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY _____

DIAMOND DRILL CORE RECORD

2

0044

PROSPECT _____

Hole No.: M7 Location of Site: _____ Reduced Level of Site: _____

Drilled By: _____ Date Commenced: _____ Bearing of Hole: _____

Depth: _____ Date Completed: _____ Dip of Hole: _____

Core Recovery: _____ Sampling By: _____ Geological Logging By: _____

Survey Data: _____

GEOLOGICAL LOG				ASSAY RESULTS								
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu ppm	Ag ppm	Au ppm	
233'	233'6"	100	Chlorite biotite schist with abundant poikilo-	19578	233'	233'6"	3'6"		2800	2.0	0.13	
			blastic biotite commonly in rough bands. Minor									
			pyrite (½-1%)									
233'6"	237'6"		Quartz chlorite muscovite schist with some	19579	233'6"	237'6"	4'0"		440	1.1	0.06	
			poikiloblastic flakes of biotite. Fe staining									
			with gossanous vughs common. Minor sulphide.									
237'6"	242'6"	100	Chlorite, biotite quartz schist with numerous	19580	237'6"	242'6"	5'0		1300	1.5	×	
			vughs and pits probably after sulphide -sch.40°									
242'6"	246'6"	100	Bands of chloritic schist As above	19581	242'6"	246'6"	4'0"		2200	1.0	×	
246'6"	250'0"	95	Quartz muscovite schists commonly Fe stained									
			with limonitic vughs with gossans after sulphide.									
			Fe veinlets sch.30°									
250'0"	260'4"	100	As above									
260'4"	265'	95	As above core broken 263'4"-265' with limonite									
6' cavity			and fractured faces.									
265'0"	271'0"	-	Minor fefruginous rubble.									
271'0"	275'3"	95	Quartz muscovite schist as above commonly with Fe									
			on fractured faces									
275'3"	281'9"	95	As above - sheared from 281'0"-281'9"									
281'9"	287'6"	-	5' cavity - minor ferruginous quartz muscovite									
			schist.									
287'6"	291'9"		Chloritic schist with numerous Fe veins, minor	19582	287'6"	291'9"	4'3"		2800	1.3	×	
			pyrite occasional specks of malachite. Poikilo-									
			blastic flakes of biotite common.									

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY _____

3

DIAMOND DRILL CORE RECORD

0045

PROSPECT _____

Hole No.: M7 | Location of Site: _____ | Reduced Level of Site: _____

Drilled By: _____ | Date Commenced: _____ | Bearing of Hole: _____

Depth: _____ | Date Completed: _____ | Dip of Hole: _____

Core Recovery: _____ | Sampling By: _____ | Geological Logging By: _____

Survey Data: _____

GEOLOGICAL LOG				ASSAY RESULTS								
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu ppm	Ag ppm	Au ppm	
291'9"	297'8"	98	As above - less chloritic between 291'9" and	19583	291'9"	297'8"	5'11"		2800	2.8	0.07	
			292'9" and 296'11"-297'8"									
297'8"	305'0"	95	Pale grey pink quartz muscovite schist with									
			limonitic veinlets and Fe.stainings. Vughs with									
			limonite after pyrite common minor fresh pyrite.									
			Brecciated zone with quartz vein 301'.									
305'0"	310'0"	100	As above									"
310'0"	315'4"	100	As above fresh pyrite common up to 1% in patches.									
315'4"	345'0"	100	As above pyrite and remnants are patchy.									
345'0"	350'0"	100	As above poikiloblastic flakes of biotite	19584	345'0"	350'0"	5'0"		1800	0.5	x	
			increasing in sulphide with some chalcopyrite									
350'0"	355'0"	100	As above abundant biotite sulphide common pyrite	19585	350'0"	355'0"	5'0"		2400	0.6	x	
			with minor chalcopyrite									
355'0"	360'0"	100	Quartz muscovite schist with minor biotite and	19586	355'0"	360'0"	5'0"		1500	0.5	x	
			some pyrite									
360'0"	365'0"	100	Quartz muscovite schist minor pyrite with a few	19587	360'0"	365'0"	5'0"		1100	0.3	x	
			small specks of chalcopyrite sch.40°									
365'0"	380'0"	100	As above									
380'0"	385'0"	100	As above core more Fe.stained and broken pits									
			after sulphide, no fresh sulphide observed.									
385'0"	400'0"	100	As above									
400'0"	405'0"	100	As above fractured quartz vein 403'									
405'0"	410'0"	100	As above with limonite gossan.									

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY

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DIAMOND DRILL CORE RECORD

0046

PROSPECT

Hole No.: M7 | Location of Site: | Reduced Level of Site:

Drilled By: | Date Commenced: | Bearing of Hole:

Depth: | Date Completed: | Dip of Hole:

Core Recovery: | Sampling By: | Geological Logging By:

Survey Data:

GEOLOGICAL LOG				ASSAY RESULTS								
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu ppm	Ag ppm	Au ppm	
410'0"	414'11"	95	Fe stained quartz muscovite schist as above	19588	410'	414'11"	4' 11"		600	0.5	x	
			with a number of limonite filled fractures with									
			spots and rosettes of malachite.									
414'11"	919'11"	100	Quartz muscovite schist with some chlorite minor									
			Fe staining. No fresh sulphide									
419'11"	430'0"	100	As above									
430'0"	435'0"	100	Quartz muscovite schist grading to chlorite biotite									
			schist. Numerous limonitic vughs. No obvious									
			sulphide.									
435'0"	440'0"	100	As above sch.45°									
440'0"	445'0"	100	Quartz muscovite schist with minor chloritic									
			bands.									
445'0"	450'0"	100	As above 6" bands (448') dark grey and minor									
			schist with pyrite and minor chalcopyrite									
			Fe staining on fractures.									
450'0"	454'0"	100	As above									
454'0"	456'6"	100	Chlorite biotite schist with some quartzitic									
			material highly contorted and kinked									
456'6"	460'0"	100	Quartz muscovite schist									
460'0"	465'0"	100	As above minor fractures of malachite little sign									
			of initial sulphide									
465'0"	467'6"	100	Quartz muscovite schist grading to chloritic schist	19589	465'0"	467'6"	2'6"		680	1.7	0.04	
			with abundant poikiloblastic biotite									
467'6"	470'0"	100	Chlorite biotite schist with numerous thin	19590	467'6"	470'0"	2'6"		1200	1.1	x	
			quartzitic interbeds numerous vughs after sulphide	19591	470'0"	475'0"	5'0"		800	1.0	x	
470'0"	481'6"	100	As above	19592	475'0"	481'6"	6'6"		1220	1.0	x	

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY

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DIAMOND DRILL CORE RECORD

0047

PROSPECT

Hole No.: M7 Location of Site: Reduced Level of Site:

Drilled By: Date Commenced: Bearing of Hole:

Depth: Date Completed: Dip of Hole:

Core Recovery: Sampling By: Geological Logging By:

Survey Data:

GEOLOGICAL LOG				ASSAY RESULTS								
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu ppm	Ag ppm	Au ppm	Cu %
481'6"	485'0"	100	As above with abundant copper mineral chalcocite,	19593	481'6"	485'0"	3' 6"		6880	5·0	×	
			malachite, native copper and minor bornite									
485'0"	490'8"	100	As above less heavily mineralised	19594	485'0"	490'8"	5' 8"		>10	48·0	×	
490'8"	495'8"	100	Quartz muscovite schist with minor malachite,	19595	490'8"	495'8"	5' 0"		>10	75·0	0·06	1·1
			chalcocite and hematite. Disseminated bornite.									
495'8"	500'8"	100	As above malachite common minor chalcocite and	19596	495'8"	500'8"	5' 0		>10	40·0	0·08	1·1
			bornite. Hematite on some fractured faces.									
500'8"	505'0"	100	Quartz muscovite schist as above with chalcopyrite	19597	500'8"	505'0"	4' 4"		>10	22·5	0·24	1·3
			and bornite in veins and disseminated along frac-									
			tured faces									
505'0"	510'0"	100	As above minor copper minerals only	19598	505'0"	510'0"	5' 0		>10	24·5	0·12	1·4
510'0"	535'0"	100	Quartz muscovite schist with minor traces of	19599	510'0"	515'0"	5' 0		4000	1·1	×	
			malachite chalcopyrite and chalcocite. Hematite	19600	530'0"	535'0"	5' 0		1700	1·0	×	
			and poikiloblastic biotite.									
535'0"	540'0"	100	As above includes 3" chloritic schist -538'6"	19951	535'0"	540'0"	5' 0		1000	1·3	×	
540'0"	543'0"	100	As above increasing in chloritic interbeds and	19952	540'0"	543'0"	3' 0		94	0·3	×	
			poikiloblastic biotite									
543'0"	546'8"	100	Meta-volcanics chloritic schist with lensoid	19953	543'0"	546'8"	3' 8"		160	1·4	×	
			carbonate inclusions abundant biotite.									
546'8"	552'0"	100	As above with vughs after carbonate	19954	546'8"	552'0"	5' 4"		450	1·1	×	
552'0"	601'2"	100	Fine grained to medium grained chloritic schists	19955	561'8"	A 3" section of			146	1·5	×	
			sometimes chlorite biotite schists, grading to	19956	571'5"	core has been split every 10' to check			10	1·3	×	
			schistose micordiorite. Irregular veinlets and	19957	582'0"	for any minerals that may have been			22	1·2	×	
			interbeds of quartz and carbonate-sch.60°	19958	590'11"	missed by visual inspection.			10	1·2	×	

LONGREACH GROUP MANAGEMENT PTY. LTD.

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COMPANY

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DIAMOND DRILL CORE RECORD

0048

PROSPECT

Hole No.: M7 | Location of Site: | Reduced Level of Site:

Drilled By: | Date Commenced: | Bearing of Hole:

Depth: | Date Completed: | Dip of Hole:

Core Recovery: | Sampling By: | Geological Logging By:

Survey Data:

GEOLOGICAL LOG				ASSAY RESULTS								
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu ppm	Ag ppm	Au ppm	Cu %
601'2"	606'6"	100	As above small veinlets of malachite	19959	601'2"	606'6"	5' 4"		350	1·9	0·06	
606'6"	620'0"	100	As above	19960	611'10"				140	1·5	×	
620'0"	628'10"	100	Fine to medium grained chloritic schists	19961	620'0"				330	1·5	×	
628'10"	632'10"	100	Chloritic schist containing rounded quartz frag-	19962	628'10"	632'10"	4' 0		>1%	25·0	×	2·5%
			ments ranging from $\frac{1}{8}$"- 1". Definite sedimentary									
			horizen sch.45° possible disseminated bornite.									
632'10"	637'10"	100	As above	19963	632'10"	637'10"	5' 0		>1%	24·5	×	2·1
637'10"	642'0"	100	Fine to medium grained chloritic schists, some									
			biotite, irregular lensoid inclusions of quartz									
			and carbonate common. Quartz and carbonate									
			veins common - sch.50°									
642'0"	646'0"	100	As above numerous kink bands≈ right angle core.									
646'0"	660'0"	100	As above	19964	646'0"				3900	7·0	×	
				19965	655'0"				220	1·8	×	
660'0"	665'0"	100	As above with chalcopyrite in carbonate vein at 661'	19966	660'0"	661'9"	1' 9"		120	1·3	×	
665'0"	675'0"	100	As above									
675'0"	705'0"	100	As above sch 45°	19967	675'0"				36	1·2	×	
				19968	685'0"				20	1·0	×	
				19969	695'0"				100	1·4	×	
705'0"	725'0"	100	As above with 12" quartz vein (706')	19970	705'0"				20	1·2	×	
				19971	715'0"				6	1·2	×	
725'0"	795'0"	100	As above with 12" quartz vein (728'0")	19972	725'0"				8	1·3	×	
				19973	735'0"				4	1·0	×	
				19974	745'0"				10	1·2	×	
				19975	755'0"				16	1·3	×	
				19976	765'0"				28	1·1	×	
				19977	775'0"				24	1·4	×	
				19978	785'0"				14	1·1	×	

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY

7

DIAMOND DRILL CORE RECORD

0049

PROSPECT

Hole No.: M7 | Location of Site: | Reduced Level of Site:

Drilled By: | Date Commenced: | Bearing of Hole:

Depth: | Date Completed: | Dip of Hole:

Core Recovery: | Sampling By: | Geological Logging By:

Survey Data:

GEOLOGICAL LOG				ASSAY RESULTS							
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu ppm	Ag ppm	Au ppm
795'0"	825'0"	100	As above core folded with numerous quartz veins	~~19979~~	~~795'0"~~				22	1.0	x
				19980	805'0"				38	1.1	x
				19981	815'0"				18	1.0	x
825'0"	830'0"	100	Fine to medium grained chloritic schist, some-	19982	825'0"				22	1.0	x
			times containing irregular to lensoid quartz and								
			carbonate blebs (vesicles) quartz and carbonate								
			veins with irregular margins parallel schistosity								
			(60^{o}-70^{o}) thin regular quartz and carbonate veins								
			cutting across schist and irregular quartz and								
			carbonate stringers.								
830'0"	957'6"	100	As above	19983	835'0"				14	1.0	x
				19984	845'0"				12	1.0	x
				19985	855'0"				16	1.0	x
				19986	865'0"				4	1.1	x
				19987	875'0"				24	1.2	x
				19988	885'0"				82	1.1	x
				19989	895'0"				20	1.1	x
				19990	905'0"				10	1.1	x
				19991	915'0"				28	1.2	x
				19992	925'0"				34	1.0	x
				19993	935'0"				26	1.3	x
				19994	945'0"				16	1.1	x
				19995	955'0"				190	1.3	x
			E N D O F H O L E								

0050

Date: 6th September, 1971.

SPECIAL MINING LEASE 551

RADIUM HILL - SOUTH AUSTRALIA

Technical Report for the Period
11th March, 1971 to 11th
September, 1971.

A. EDWARDS,
Resident Geologist.

LIST OF FIGURES

C O N T E N T S

SUMMARY

0053

Exploration in the S.M.L. area during the period was confined to the Ridge Prospect. Four drill holes, totalling 3015', were completed. A number of narrow steeply dipping lenses of low grade copper mineralization were intersected. Further drilling will be required to test the south westerly extension of this mineralization.

INTRODUCTION

1.1 Tenancy

The S.M.L. area was initially granted to Longreach Metals No Liability on March 1st, 1969 as S.M.L. 274. Tenure of the area was retained for a further six months in March 1971 subject to the expenditure of $30,000 on exploration. The area contains 799 square miles.

1.2 Location and Access

The area is located on the 1:250000 scale Olary sheet between latitudes 32°24' and 32°50' and longtitudes 140°30' and 141°00'.

Access to the area is by way of a formed road, which leaves the main Adelaide to Broken Hill road some 4 miles west of Cockburn. The formed road terminates at the Mutooroo Homestead which lies in the north east corner of the S.M.L. area.

Access within the area is by station tracks.

1.3 Topography

The area is located on the northern margin of the Murray Basin. As a result the southern two thirds of the area is devoid of substantial relief. The country consists of open salt bush and bluebush plains, with eucalypt and acacia scrub in the south and west.

The northern portion of the area generally shows more relief. The gently undulating saltbush and bluebush plains are broken by occasional ridges of quartzite, tillite and B.I.F. The Maldorky Hills, which lie in the north west of the area form the highest point in the S.M.L.

The area is drained by a series of ephemeral streams. These drain to the south of the area where they gradually die out.

2. PREVIOUS WORK

2.1

The northern margin of the area where it laps onto the Ballara 1 mile Sheet has been mapped by Sprigg (1951) and Campana and King (1958).

The whole of the area has since been re-mapped as part of the South Australian Mines Departments regional mapping programme of the Olary 1:250,000 Sheet. Mapping of the Mutooroo 1 mile Sheet was by A.F. Williams, R.A. Callen re-mapped the Ballara sheet.

An investigation of mineral leases 3038, 3039 and 3040 was conducted by N. Hevin during 1956. These leases were located about 6 miles south of the Mutooroo Homestead.

2.2 Geophysics

Aerial magnetometer surveys were flown over the area by the South Australian Mines Department and the Bureau of Mineral Resources between 1953 and 1955.

3. REGIONAL GEOLOGY

3.1 Archean

The oldest rocks in the area are the granitic gneisses and schists of the Willyama complex. These rocks outcrop in the north east of the S.M.L. area, and are inferred in the extreme north of the area from aeromagnetics (see Figure 2). Associated with the gneisses in the Mutooroo Homestead area are a number of north easterly trending amphibolite dykes.

The Willyama blocks are bounded by north easterly and north westerly trending shears, which are parallel with the Macdonald shear zone and the Anabama-Redan fault zone respectively. These are the major basement lineations in the area.

3.2 The Adelaide System

The rocks of the Adelaide System occupy a large triangular area north of the Anabama-Redan fault zone, which trends almost diagonally across the area. These rocks are complexly folded in the zone of adjustment surrounding the Macdonald shear zone, where it intersects the nose of the north easterly trending Wadnaminga Anticline. The effects of this are well illustrated on Figure 2.

Movements on the Anabama-Redan fault zone have resulted in some complex folding and in inliers of older material being faulted in.

The main stratigraphic units present in the area are:-

(a) Callana Beds

A small, highly deformed wedge of volcanics and sediments occurs within a north easterly trending ridge some 7 miles south of the Mutooroo Homestead. The rock types recognized include trachytes, sodic rhyolites, chlortic schists and quartz muscovite schists.

(b) Burra Group

The Burra group is represented by interbedded conglomerates, coarse grained arkoses and siltstones, overlain by grey phyllitic siltstones and dolomites. South Australian Mines Department mapping has correlated the arkosic units with the Rhynie sandstone.

(c) The Yudnamutna Sub Group.

The Burra Group sediments are overlain by tillites, with some interbedded hematite lenses and siltstones, quartzites and dolomites. This unit overlies the Willyama complex unconformably in the north east of the S.M.L. area.

3.3 Recent Deposits

Much of the area is covered by a veneer of sand and silt with well developed calcrete horizons.

3.4 Igneous Rocks

(a) Anabama Granite

From the aeromagnetic survey it was inferred that the Anabama Granite extends into the far west of the S.M.L. area. Although the granite does not outcrop, its presence has been confirmed by auger drilling .

(b) Pegmatites

A number of small dykes and pods of pegmatite have been found intruding the Lower Burra Group sediments. The rock consists of pink plagioclase and quartz with coarse grained ilmenite as a common accessory mineral.

(c) Diorite

A course grained altered diorite occuring in a narrow dyke has been located within the trachytes mentioned above. The rock in principally composed of oligoclase/andesine leucoxenized opaques and chlorite epidote pseudomorphs after homblende. Minor malachite staining was also observed.

4. SUMMARY OF EXPLORATION BY LONGREACH METALS N.L. PRIOR TO MARCH 1971.

An airbourne magnetometer and spectrometer survey was carried out over the S.M.L. area during 1969. This survey revealed sixteen local magnetic anomalies and two areas of anomalous radioactivity.

The magnetic anomalies were located on the ground by traversing with a ground magnetometer. Programs of soil sampling or auger drilling were carried out in conjunction with detailed ground magnetics and geological mapping. The results from this work were not encouraging and no further work was undertaken.

The eastern area of anomalous radioactivity was examined in some detail on the ground. Initial ground exploration included geological mapping, spectrometer surveys and a percussion drilling program of four holes. Gamma ray logs and radon gas determinations run on the percussion holes were encouraging and resulted in the drilling of a 525' diamond drill hole No. DDHM1. No economic mineralization was encountered, although anomalous U_3O_8 values were recorded.

The western radiometric anomaly was tested by an auger drilling program. Results were not encouraging.

Ground investigations located two areas of copper mineralization known as the Ridge and Lyndock Prospects. Ground exploration consisted of an integrated program of detailed geological mapping, soil sampling and ground magnetics followed by an induced polarization survey over selected areas.

Coincident I.P. and geochemical anomalies were delineated over a strike length of some 2000' on the Ridge Prospect. A diamond drilling program was commenced during January 1971 to test these anomalies. Details of this work were reported in March 1971.

5. EXPLORATION DURING THE PERIOD MARCH 11TH, 1971 to SEPTEMBER 11TH, 1971.

RIDGE PROSPECT

5.1 Geology

The area was mapped on a scale of 400' = 1" during the previous year. The principal area of interest, known as the drill site was mapped on a scale of 100' = 1".

5.1.1 Rock types

(a) Arkosic Conglomerates and Sandstones.

The conglomerates consist of angular quartzite pebbles with minor shale fragments in a matrix of chlorite and sericite schist. Heavy mineral bands are common. The sandstones, which are compositionally equivalent, range from course to fine grained types.

(b) Quartz Muscovite Schists

These rocks are fine grained with quartz mullions and blebs prominent in some localities.

(c) Chlorite Biotite Schists

Over much of the area these rocks were not differentiated. In general they occur as grey green friable schists. Sedimentary laminations are retained in some areas. In the drill site area, two types of schist could be differentiated.

(i) Meta Volcanics

These are dark grey schists, commonly vesicular with quartz and carbonate infilling the vesicles. The original rock was thought to have been a sodic trachyte.

(ii) Chlorite biotite schists derived from silts and tuffs. These are are mainly greenish black schists with grey interbeds and occasional lenses of quartzitic pebbles and grits.

(d) Rhyolites and Schists

The rhyolite is a fine grained blocky siliceous rock consisting of pink and grey phases which define intricately folded laminations. The grey phase which is more prominent appears vesicular in some localities. When sheared, the rhyolite forms a grey and white spotted schist.

5.1.2 Structure

The rock mass has suffered intense shear slip folding which resulted in a major horizontal anticlinal structure trending sub parallel to the length of the ridge. This folding was accompanied by transposition. Numerous small folds occur on the limbs of the major structure.

A second episode of shear slip folding transverse to the first episode has occured in the drill site area. The secondary folding has been attributed to a strong horizontal movement to the southwest on the Amabama-Redan Fault zone, which lies to the immediate south of the prospect area.

5.1.3 Mineralization

The sulphide assemblage encountered during drilling at the Ridge Prospect includes pyrite, bornite, chalcopyrite and chalcocite. The surface expression of the mineralization is mainly in the form of malachite with minor chalcocite.

The chalcopyrite mineralization appears to be associated with magnetite rich bands within rocks of muscovite chlorite metamorphic grade. The metamorphism is accompanied by increased amounts of accessory potash felspar.

The bornite is commonly intergrown with chalcocite, and is often intimately associated with crystals of ilmenite. The ilmenite sometimes contains traces of rutile. In a number of cases the sulphides were found to be replacing the oxides. Ilmenite and rutile were identified from a number of the cores sectioned and were not always found to be associated with copper mineralization.

The mineralization tends to occur in lenses or pods up to 32' thick, and dipping to the N.W. at 70°–75°.

Concentrations of copper mineralization occur in the vicinity of quartz muscovite schist/chlorite-biotite-schist contacts, within lenses of pebbly and gritty chloritic schist, and around fault zones.

The controls for the primary mineralization have been obscured by the repeated metamorphism. Some lithological and possibly structural control can be inferred from the distribution of the secondary mineralisation.

5.2 Diamond Drilling

The diamond drilling program commenced during January 1971 was continued. Four holes, (DDH M5, M6, M7 and M8) totalling 3075' were completed during the period. The locations of these holes are shown on Figure (3).

All core was logged, and selected intersections were split and assayed. Assays were performed by Geochemical and Mineralogical Laboratories Pty. Ltd. of Sydney.

The significant assays from all holes drilled are shown in Table I. The geological logs are summarized in Figures 4 to 8 .

Holes M5 and M7 were drilled to test the mineralization encountered in holes M2, M3 and M4.

M6 was designed to test an I.P. anomaly on line 172E.

DDH M8 was designed to test any possible extension of the mineralization encountered in DDH M7.

5.3 Conclusions

1. A series of steeply dipping lenses of low grade secondary copper mineralization have been intersected by drilling between lines 180E and 188E. This mineralization should extend at least as far as 172E.
2. From the results of M4 and M8, it is possible that the mineralization is limited in depth between 180E and 188E. DDH M7 indicates that the mineralization may plunge to the SW.

3. The controls of the primary mineralization are at present not fully understood due to the repeated metamorphism. Some lithological and structural control can be inferred from the distribution of the secondary mineralization.

4. Any possible extension of the mineralization to the S.W. could be tested by drilling on line 172E. It is significant that an I.P. anomaly was delineated on line 164, along strike from the known mineralization.

6. RECOMMENDATIONS

6.1 The area surrounding the Ridge Prospect should be retained, together with all extensions along strike.

6.2 The S.M.L. with the exception of the Ridge Prospect, shows little potential and should be relinquished.

6.3 Further drilling should be undertaken to test the south west extensions of the mineralization in the vicinity of 172E.

TABLE I

Best results from drill holes DDH M2 to DDH M8.

		From	To	Interval	Copper %
Hole	DDH M2	134'	158'	24'	0.45%
Location	184E - 101.33N	166'	173'3"	7'3"	0.27%
Depth	448'4"	186'10"	194'11"	8'11"	0.26%
Dip	45°	245'9"	261'6"	15'9"	0.48%
Bearing	140°	328'6"	331'3"	2'9"	1.35%
		428'11"	429'	1'4"	2.8%
Hole	DDH M3	170'8"	187'3"	16'7"	0.25%
Location	184E - 101N	202'11"	239'10"	36'1"	0.51%
Depth	447'4"	261'0"	265'2"	4'2"	1.6%
Dip	-55°	333'11"	338'0"	4'1"	1.25%
Bearing	140°	373'0"	379'0"	6'0"	1.05%
Hole	DDH M4	318'9"	320'9"	2'0"	0.30%
Location	184E - 103N	493'0"	498'6"	5'6"	0.23%
Depth	717'0"	508'3"	512'7"	4'4"	0.50%
Dip	-55°	522'7"	527'9"	5'2"	1.06%
Bearing	140°				
Hole	DDH M5	199'10"	201'4"	1'6"	0.49%
Location	188E - 101.50N	206'0"	218'0"	12'0"	0.29%
Depth	501'4"	230'0"	235'0"	5'0"	0.50%
Dip	-55°				
Bearing	140°				
Hole	DDH M6	No significant mineralization interesected.			
Location	172E - 96N				
Depth	756'9"				
Dip	-55°				
Bearing	140°				
Hole	DDH M7	287'6"	297'8"	10'2"	0.34%
Location	102.50N/180E	350'0"	355'0"	5'0"	0.26%
Depth	957'6"	481'6"	515'0"	32'5"	1.57%
Dip	-60°	628'10"	646'0"	17'2"	1.45%
Bearing	140°				
Hole	DDH M8				
Location	178E/103.95N	690'4"	709'10"	19'6"	0.48%
Depth	860'6"				
Dip	-60°				
Bearing	140°				

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COMPANY LONGREACH METALS N.L.

DIAMOND DRILL CORE RECORD

PROSPECT MTOOROO RIDGE

0060

Hole No.: DDH M8 — Location of Site: 178E/103.95N — Reduced Level of Site:

Drilled By: A.D.D. — Date Commenced: 5th June, 1971 — Bearing of Hole: 140°

Depth: 860'6" — Date Completed: 2nd July, 1971 — Dip of Hole: -60°

Core Recovery: 92% — Sampling by: D. Barraclough — Geological Logging By: A. Edwards

Survey Data: 430'(48°) 217'6 (52°) 10' (61°)

GEOLOGICAL LOG				ASSAY RESULTS				
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width
0'0"	11'0"	75%	Grey phyllitic siltstones with some lensoid carbonate (dolomite). (B Casing to 11')					
11'0"	17'3"	90%	As above with some chlorite biotite schist. Sch 10° - 20°					
17'3"	25'4"	95%	As above.					
25'4"	30'0"	100%	Grit - gritty subangular tz. frags in a matrix of grey phyllitic silst. S. 30°					
30'0"	35'7"	100%	As above.					
35'7"	40'	95%	Grey phyllitic siltstones with minor grit frags. and small pebbles. Grit band 38' - 39'					
40'0"	45'0"	95%	As above - becoming more S rich					
45'0"	50'0"	95%	White to pale grey qtz. muscovite schist - minor specks of heavy min.					
50'0"	55'5"	80%	As above					
55'5"	60'0"	95%	As above more heavy min. bands.					
60'0"	66'4"	95%	As above - abundant Mn min. Possibly braunite. 65'0" - 66'0" - Sch. 25°.					
66'4"	70'0"	100%	Quartz muscovite schist with bands of dark mineral possibly braunite or similar Mn. oxide - sch 20°.					
70'0"	75'0"	95%	As above					
75'0"	80'0"	100%	As above					
80'0"	85'0"	100%	As above with abundant Mn rich bands - clay filled shear zone 84'/ to Sch i.e. 25°					
85'0"	90'0"	100%	As above					
90'0"	95'0"	100%	As above					
95'0"	100'5"	100%	As above.					

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY

DIAMOND DRILL CORE RECORD

PROSPECT

0061

Hole No.: Location of Site: Reduced Level of Site:

Drilled By: Date Commenced: Bearing of Hole:

Depth: Date Completed: Dip of Hole:

Core Recovery: Sampling By: Geological Logging By:

Survey Data:

GEOLOGICAL LOG				ASSAY RESULTS				
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width
100'5"	105'0"	100%	As above.					
105'0"	110'0"	100%	As above.					
110'0"	115'0"	100%	As above.					
115'0"	120'0"	100%	As above.					
120'0"	125'0"	100%	As above - Sch. 30°					
125'0"	130'0"	100%	As above.					
130'0"	135'0"	100%	As above - 9" qtz. yein @ 131'					
135'0"	140'0"	100%	As above					
140'0"	145'0"	100%	As above					
145'0"	151'7"	100%	As above - Sch. 30°					
151'7"	154'4"	100%	Green chlorite sericite qtz. schist - Sch. 25°					
154'4"	160'0"	95%	Medium to f.g. chloritic schist - original rock					
			type unknown. No evidence of vesicles etc.					
			Minimal qtz and $CO_3^{=}$ veining. Minor Fe staining.					
160'0"	165'0"	100%	As above - sch 30°					
165'0"	170'0"	100%	As above					
170'0"	175'0"	100%	As above					
175'0"	180'0"	100%	As above					
180'0"	184'0"	100%	As above					
184'0"	187'0"	100%	Medium to fine grained chloritic schist and some					
			heavy min. - magnetite, grading to q.m.s. Minor					
			veinlets of malachite - sch 45°					
187'0"	191'3"	100%	Q.m.s. as above with 12" qtz. vein 188' and with					
			chloritic inclusion.					
191'3"	196'4"	95%	As above with qtz. veins at 192' (24") and 195'6"					
			(10") - core very broken.					

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY

DIAMOND DRILL CORE RECORD

PROSPECT

0062

Hole No.:
Drilled By:
Depth:
Core Recovery:
Survey Data:

Location of Site:
Date Commenced:
Date Completed:
Sampling By:

Reduced Level of Site:
Bearing of Hole:
Dip of Hole:
Geological Logging By:

GEOLOGICAL LOG				ASSAY RESULTS				
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width
196'4"	202'4"	95%	Qms - sch 30°					
202'4"	207'3"	95%	As above					
207'3"	212'4"	95%	As above					
212'4"	216'7"	100%	Grey qms - talcose in places. Sch 10° - large					
			scale kinking.					
216'7"	221'	100%	Grey qms as above					
221'0"	227'8"	100%	As above					
227'3"	234'9"	100%	As above					
234'9"	241'3"	100%	As above					
241'3"	245'0"	100%	Grey talcose q.m.s. - sch 25° - Kink bands at					
			right angles to sch.					
245'0"	250'0"	100%	As above					
250'0"	254'10"	100%	As above					
254'10"	261'11"	100%	As above becoming more siliceous					
261'11"	269'3"	100%	As above					
269'3"	277'3"	100%	As above					
277'3"	287'6"	100%	As above					
287'6"	297'3"	100%	As above with 2'6" cavity 293' -296'					
297'3"	304'0"	100%	As above					
304'0"	311'8"	100%	As above, minor Mn bands					

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FORM 12 - 69

COMPANY

DIAMOND DRILL CORE RECORD

PROSPECT

0063

Hole No.: Location of Site: Reduced Level of Site:

Drilled By: Date Commenced: Bearing of Hole:

Depth: Date Completed: Dip of Hole:

Core Recovery: Sampling By: Geological Logging By:

Survey Data:

GEOLOGICAL LOG					ASSAY RESULTS			
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width
347'3"	352'7"	100%	As above with minor pyrite (1 3=)					
352'7"	357'3"	100%	As above with pyrite and minc hornblende					
357'3"	364'3"	100%	As above					
364'3"	371'6"	100%	Siliceous greenish grey qms sch poorly defined.					
371'6"	377'3"	100%	As above with hematite					
377'3"	385'9"	100%	As above with hematite and py tes - qtz. veins					
			at 381' (12") and 385' (9")					
385'9"	393'9"	100%	As above 3' qtz veins at 38(and 9" qtz vein 392'					
			Iron pyrite common.					
393'9"	402'9"	100%	Qms with numerous qtz boudin - pyrite occurs in					
			muscovite matrix and in some oudins.					
409'11"	414'2"	95%	Qms - 1'6" cavity from 411'0 - commonly Fe					
			stained, no boudins or pyrit					
414'2"	419'5"	95%	Fe stained qms - core very brc en - possible fault					
			zone.					
419'5"	425'9"	95%	Grey quartz muscovite schist sch 30°					
425'9"	433' :	100%	As above with pyrite, common assoc. with Mn min.					
			(braunite or manganite) with qtz.					
433'0"	441'0"	100%	As above					
441'0"	450'10"	100%	As above with 18" qtz vein om 446'					
450'10"	456'6"	100%	As above - little sulphide					
456'6"	465'3"	95%	As above with minor pyrite d occasional					
			hornblende rich bands. Core intensely broken up.					
465'3"	475'2"	95%	As above - sch 45°					

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DIAMOND DRILL CORE RECORD

PROSPECT

0064

Hole No.:
Drilled By:
Depth:
Core Recovery:
Survey Data:

Location of Site:
Date Commenced:
Date Completed:
Sampling By:

Reduced Level of Site:
Bearing of Hole:
Dip of Hole:
Geological Logging By:

GEOLOGICAL LOG				ASSAY RESULTS						
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu ppm	Ag ppm
475'0"	483'8"	95%	As above) sch 45°							
483'8"	489'0"	95%	As above) Minor pyrite, occasional hornblende							
489'0"	495'0"	95%	As above) porphyr blasts usually in bands.							
495'0"	503'0"	95%	As above)							
503'0"	511'3"	95%	As above)							
511'3"	518'0"	95%	As above)							
518'0"	525'5"	95%	As above)							
525'5"	532'0"	95%	As above)							
532'0"	534'9"	50%	As above - very sheared and friable)							
534'9"	542'11"	50%	Very sheared friable qms minor qtz at 542')							
542'11"	547'0"	90%	As above with fau gouge 546'0" - sch 50°) Shear							
547'0"	551'5"	95%	As above - fault gouge 548'7") zone							
551'5"	555'1"	95%	As above)							
555'1"	555'9"	95%	As above)							
558'9"	564'9"	20%	Qms - as above - ery sheared)							
564'0"	569'8"	95%	As above)							
569'8"	574'11"	95%	As above - minor ulphide - core extremely							
			fissile to 573'9'							
574'11"	579'7"	98%	Quartz muscovite chist with minor chloritic							
			interbeds - core very broken - minor pyrite -							
			sch 55°							
579'7"	583'11"	98%	As above	2301	579'7"	583'11"	4' 4"		500	0.4
583'11"	587'5"	100%	As above - with chloritic beds and pyrite and	2302	583'11"	587'5"	3' 6"		700	0.8
			chalcopyrite - f.g. pyrite occurs in bands -							
			chalco occurs as blebs and veinlets in assoc.							
			with pyrite. Minor poikilitic biotite.							

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FORM 12 - 69

COMPANY

DIAMOND DRILL CORE RECORD

0065

PROSPECT

Hole No.:
Drilled By:
Depth:
Core Recovery:
Survey Data:

Location of Site:
Date Commenced:
Date Completed:
Sampling By:

Reduced Level of Site:
Bearing of Hole:
Dip of Hole:
Geological Logging By:

GEOLOGICAL LOG

From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.
587'5"	589'11"	100%	Highly sheared qms with abundant poikiloblastic biotite with minor pyrite.	2303
589'11"	592'5"	100%	Qms with some chloritic and sericitic interbeds and poikiloblastic biotite - minor fg pyrite and chalco.	2304
592'5"	597'3"	100%	As above	2305
597'3"	598'6"	100%	Qms grading to chloritic schist - minor py.	2306
598'6"	605'9"	100%	Vesicular metatrachyte - py common on sch. planes.	230
605'9"	609'10"	100%	Qtz chlorite muscovite schist with poikiloblastic biotite and f.g. chlorite.	2308
609'10"	614'3"	100%	As above with f.g. py. comm	2309
614'3"	616'3"	-	Cavity	
616'3"	621'0"	100%	Chloritic schists - probable metatrachytes - py common. Sch 55°	231
621'0"	626'6"	100%	As above	231
626'6"	631'0"	95%	Quartz muscovite schist with minor py.	231
631'0"	638'4"	95%	As above	231
638'4"	642'6"	95%	As above	231
642'6"	648'4"	95%	As above	231
648'4"	654'4"	95%	As above with minor chalco and py - often very f.g. in quartzitic member.	
654'4"	661'5"	100%	Chlorite quartz muscovite schist with bands of f.g. chloritic schist - pyrite with minor chalco.	2317
661'5"	664'4"	100%	As above - dissem. f.g. py common - minor chalco with chalcocite rims.	2318

ASSAY RESULTS

From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu ppm	Ag ppm
587'5"	589'11"	2' 6"		480	0.8
589'11"	592'5"	2' 6"		86	0.5
592'5"	597'3"	4' 10"		110	0.6
597'3"	598'6"	1" 3"		96	1.1
598'6"	605'9"	7' 3"		52	1.4
605'9"	609'10"	4' 1"		120	0.8
609'10"	614'3"	4' 5"		68	1.0
614'3"	621'0"	6' 9"		44	1.7
621'0"	626'6"	5' 6"		16	1.6
626'6"	631'0"	4' 6"		270	0.8
631'0"	638'4"	7' 4"		430	0.4
638'4"	642'6"	4' 2"		760	0.5
648'4"	654'4"	6' 0"		1100	0.6
654'4"	661'4"	7' 0"		320	1.0
661'5"	664'4"	2' 11"		310	1.0

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FORM 12 - 69

COMPANY

DIAMOND DRILL CORE RECORD

PROSPECT

0066

Hole No.: Location of Site: Reduced Level of Site:

Drilled By: Date Commenced: Bearing of Hole:

Depth: Date Completed: Dip of Hole:

Core Recovery: Sampling By: Geological Logging By:

Survey Data:

GEOLOGICAL LOG				ASSAY RESULTS						
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu ppm	Ag ppm
664'4"	671'3"	100%	F.g. chloritic schist with numerous lensoid qtz/ carbonate frags orientated // sch - sch 65° - Carbonate and qtz veins and stringers. Blebs of pyrite up to 4 mm in schist.	2319	664'4"	671'3"	6' 11"		34	1.7
671'3"	679'1"	100%	As above	2320	671'3"	679'1"	7' 10"		72	1.7
679'1"	687'3"	100%	As above	2321	679'1"	687'8"	8' 7"		220	1.8
687'3"	690'4"	100%	As above	2322	687'8"	690'4"	2' 8"		1400	2.0
690'4"	692'4"	100%	Qms with f.g. dissem. py and chalco - sch 60°	2323	690'4"	696'7"	6'3"		2300	1.0
692'4"	696'7"	95%	As above							
696'7"	700'3"	80%	Qms - silicified in patches - minor chalco.	2324	696'7"	700'3"	3'6"		4300	1.2
700'3"	705'1"	95%	Qms - sometimes felspathic with chalcocite, minor malachite, bornite and chalco. Minor py.	2325	700'3"	705'1"	4'10"		5200	4.0
705'1"	709'10"	95%	As above with bornite and chalco with minor py.	2326	705'1"	709'10"	4'9"		8000	11.0
709'10"	714'0"	95%	As above - with no Cu min.	2327	709'10"	714'0"	4' 2"		60	0.8
714'0"	716'6"	95%	Chlorite quartz muscovite schist with f.g. interbeds.	2328	714'0"	719'3"	5' 3"		280	1.0
716'6"	723'4"	95%	Qms - often felspathic with shreds of grey schist - sch 80°- 90°.	2329	719'3"	723'4"	4' 1"		26	0.3
723'4"	728'4"	98%	Highly sheared qms with shreds of grey schist, Mn staining on shear planes - sch 75° kink bands at 45° at right angles to sch.							
728'4"	737'3"	50%	As above - with siliceous patches. Inner tube did not seat.							
737'3"	746'0"	100%	Brecciated qms with small patches of hematite, irreg. qtz. veins with chlorite selvages. Limonite along fractures.							
746'0"	753'6"	5%	As above. Inner tube did not seat.							

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FORM 12 - 69

COMPANY

DIAMOND DRILL CORE RECORD

PROSPECT

0067

Hole No.: Location of Site: Reduced Level of Site:

Drilled By: Date Commenced: Bearing of Hole:

Depth: Date Completed: Dip of Hole:

Core Recovery: Sampling By: Geological Logging By:

Survey Data:

GEOLOGICAL LOG				ASSAY RESULTS						
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width	Cu ppm	Ag ppm
753'6"	755'0"	50%	As above.							
755'0"	757'3"	50%	Highly sheared chloritic schists with shreds of qms.							
757'3"	760'9"	95%	Fine grained chloritic schist with irregular veinlets and blebs of quartz.							
760'9"	770'9"	30%	Chlorite quartz muscovite schist.							
770'9"	775'9"	95%	As above with irregular 12" qtz vein 773 6".							
775'9"	777'4"	95%	As above.							
777'4"	784'2"	10%	Fragments recovered include chloritic schist and qtz.							
784'2"	790'0"	100%	F.g. chlorite and chlorite qtz schists - magnetite common, especially in more sheared positions. Minor pyrite.	2330	784'2"	790'0"	5'10"		24	1.0
790'0"	797'3"	100%	Chloritic schists (meta volcanics) - lensoid qtz and carbonate. Irregular qtz and carbonate veins. Minor chalco. both in veins and disseminated through the rock.							
797'3"	802'3"	100%	As above - brecciated with qtz filled tension gashes.							
802'3"	807'0"	100%	Medium grained chloritic schists as above - sch50							
807'0"	810'8"	100%	As above with minor sulphide probably pyrite on some shear planes.							
810'8"	814'0"	95%	Chloritic schists grading to quartz chlorite muscovite schists. Minor sulphide.	2331	810'8"	814'0"	3'4"		700	2.1
814'0"	821'3"	5 %	Quartz muscovite chlorite schist with pyrite and chalcopyrite. Core barrel did not seat.	2332	814	821'3"	7'3"		540	1.1
821'3"	827'1"	50%	Chloritic schists with minor quartzitic bands.							

LONGREACH GROUP MANAGEMENT PTY. LTD.

FORM 12 - 69

COMPANY

DIAMOND DRILL CORE RECORD

0068

PROSPECT

Hole No.: Location of Site: Reduced Level of Site:

Drilled By: Date Commenced: Bearing of Hole:

Depth: Date Completed: Dip of Hole:

Core Recovery: Sampling By: Geological Logging By:

Survey Data:

GEOLOGICAL LOG				ASSAY RESULTS				
From Ft. Ins.	To Ft. Ins.	Core Recov. %	DESCRIPTION	Sample No.	From Ft. Ins.	To Ft. Ins.	Drill Width	True Width
827'1"	832'4"	100%	Chloritic schist as above. Minor thin carbonate veins.					
832'4"	840'0"	100%	Chloritic schists with lensoid qtz and carbonate frags, possibly remnant vesicles. Irreg. qtz and carbonate banding.					
840'0"	849'4"	100%	As above - sch 70°					
849'4"	860'6"	100%	As above.					
			END OF HOLE.					

To Adelaide — Railway Line — To Broken Hill

MALDORKY

PARADISE

PEAKED HILL

BLACK HILL

DUFFIELD NORTH

DUFFIELD CENTRAL

LYNDOCK

MUTOOROO

RIDGE PROSPECT

DUFFIELD SOUTH

N

SOUTH AUSTRALIA

COCKRUMS

MULGA

S.M.L. 274

(799 sq. mls.)

N.S.W.

GREAT EASTERN

JUBILEE

LEGEND

- Copper Prospects
- Radiometric Anomalies
- Magnetic Anomalies
- Geochemical Grid
- I.P. Anomalies

ENV 1632 - 1

LONGREACH GROUP MANAGEMENT PTY. LTD.

LONGREACH METALS N.L.

S.M.L. 274

MUTOOROO RIDGE PROSPECT

LOCALITY PLAN

Showing Areas Investigated

SCALE - 1" = 2·5mls.			DWG. No.
BASED ON			
DRAWN BY - Greg Croft	REVISED	DATE	1
DATE - 27 April 1971			
APPROVED BY - D.Clare			
UTM CODE			

188E
103N

102N

101·50N

100N

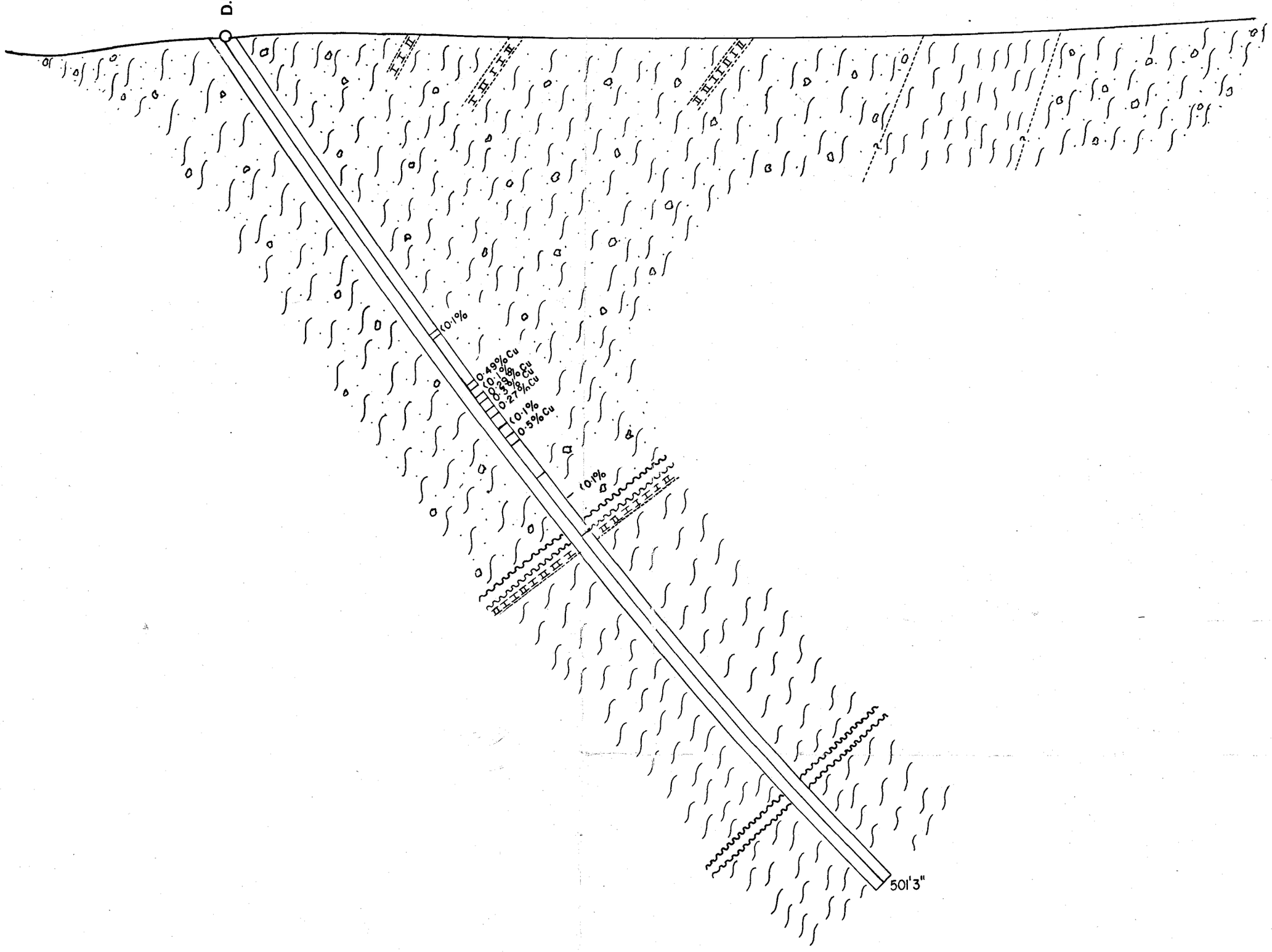
99N

98N

97N

96N

95N



LEGEND

Quartz Muscovite Schist

Chloritic Schist

Quartz Veins

Shear Zones

ENV 1632-2

FIG.3

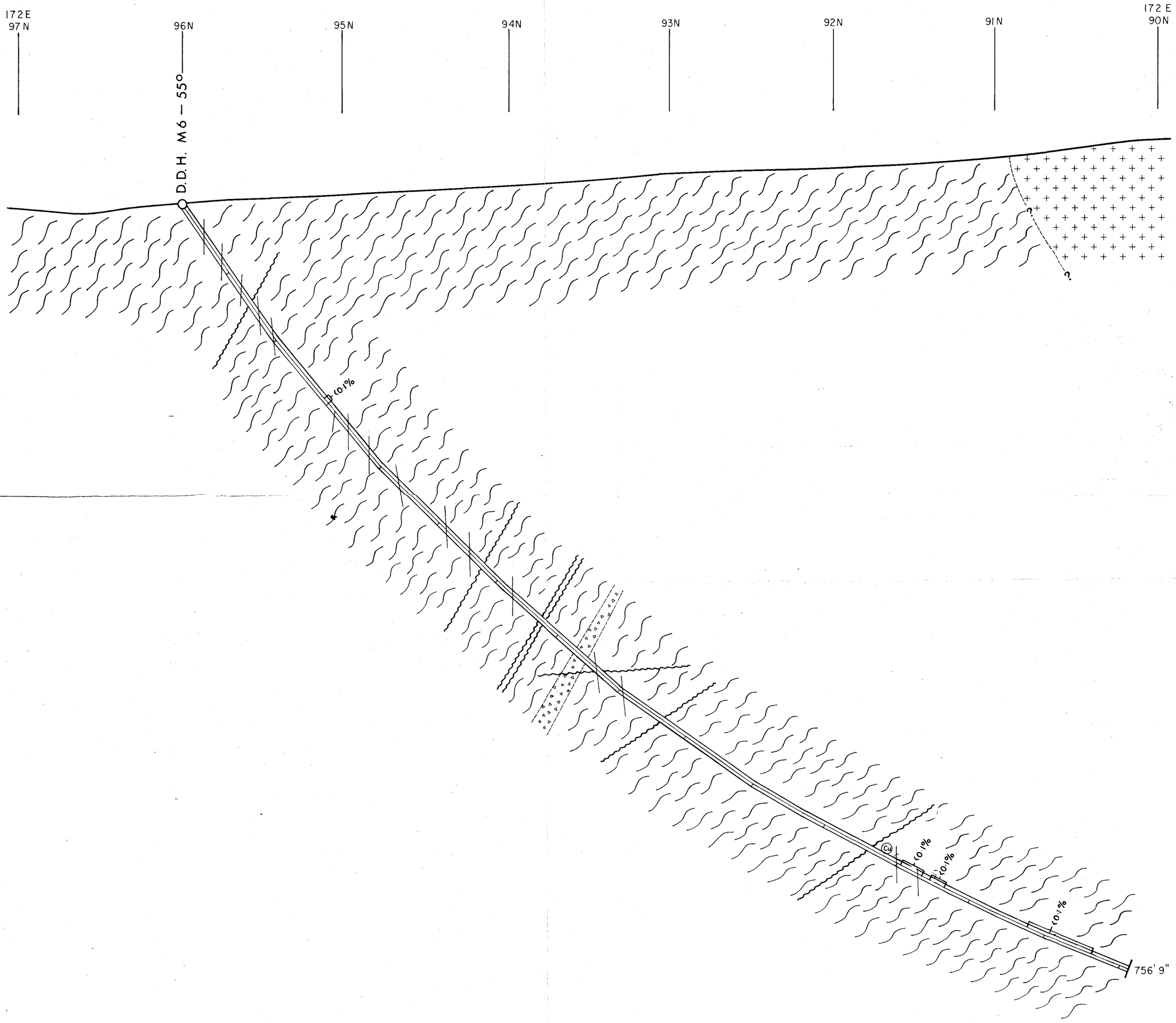
LONGREACH GROUP MANAGEMENT PTY. LTD.

LONGREACH METALS N.L.

S.M.L. 551
MUTOOROO RIDGE PROSPECT

SECTION THROUGH D.D.H. M5
ALONG LINE 188E LOOKING EAST

SCALE 1" = 50'			DWG. No.
BASED ON			
DRAWN BY Greg Croft	REVISED	DATE	
DATE 6th July 1971			
APPROVED BY M.Chatenay			
UTM CODE			



LEGEND

Chloritic Schist.

Rhyolite.

Breccia.

Cu Copper mineralization.

Trend lines.

Shear zone.

ENV 1632-3

FIG.4

LONGREACH GROUP MANAGEMENT PTY. LTD.

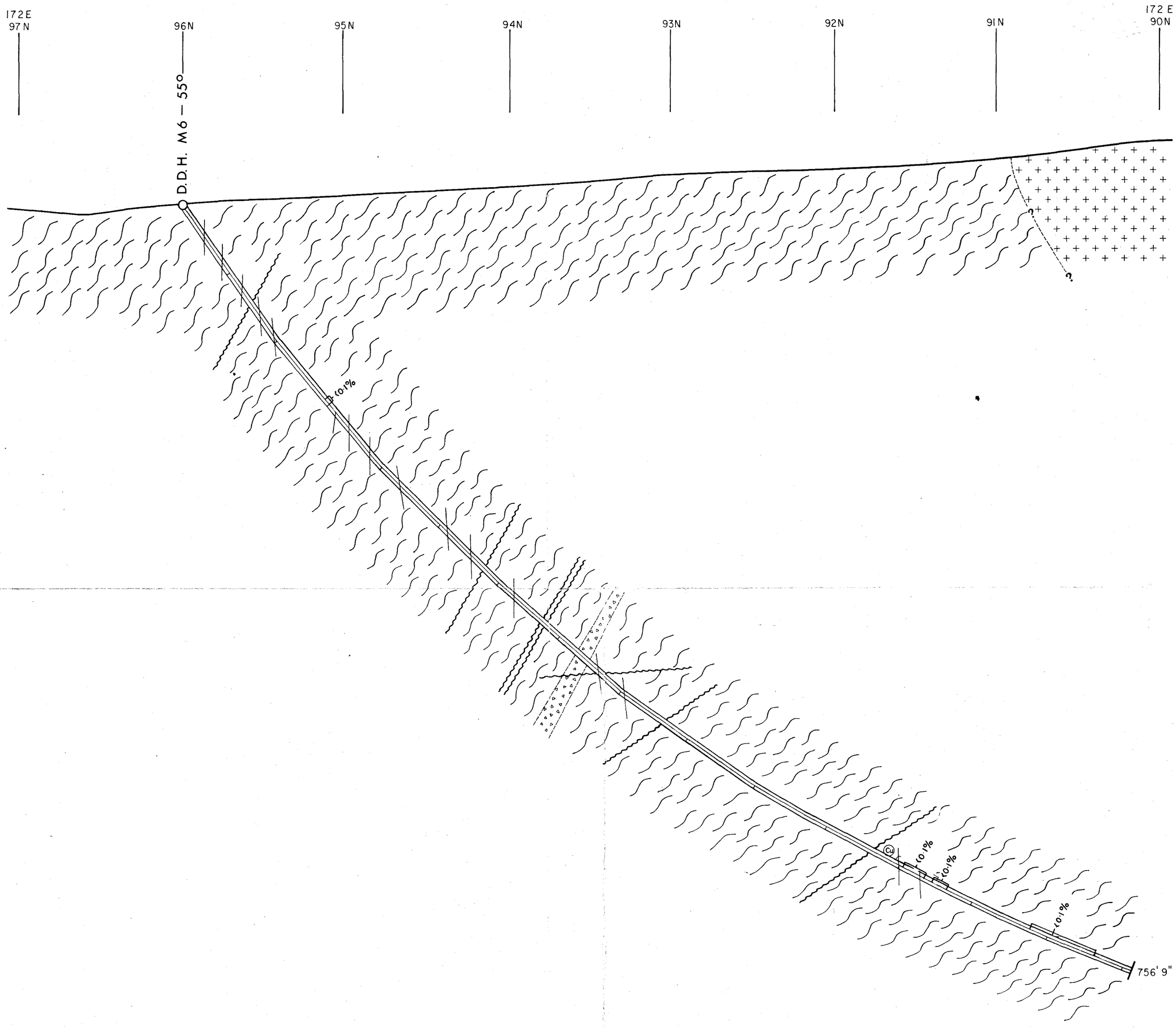
LONGREACH METALS N.L.

S.M.L. 551

MUTOOROO RIDGE PROSPECT

SECTION THROUGH D.D.H. M6 ALONG LINE 172E LOOKING EAST

SCALE 1" : 50'			DWG. No.
BASED ON			
DRAWN BY A.C. Edwards	REVISED	DATE	
DATE 5th June 1971			
APPROVED BY			
UTM CODE			



LEGEND

- Chloritic Schist.
- Rhyolite.
- Breccia.
- Ⓒu Copper mineralization.
- Trend lines.
- Shear zone.

ENV 1632-4

FIG.4

LONGREACH GROUP MANAGEMENT PTY. LTD.

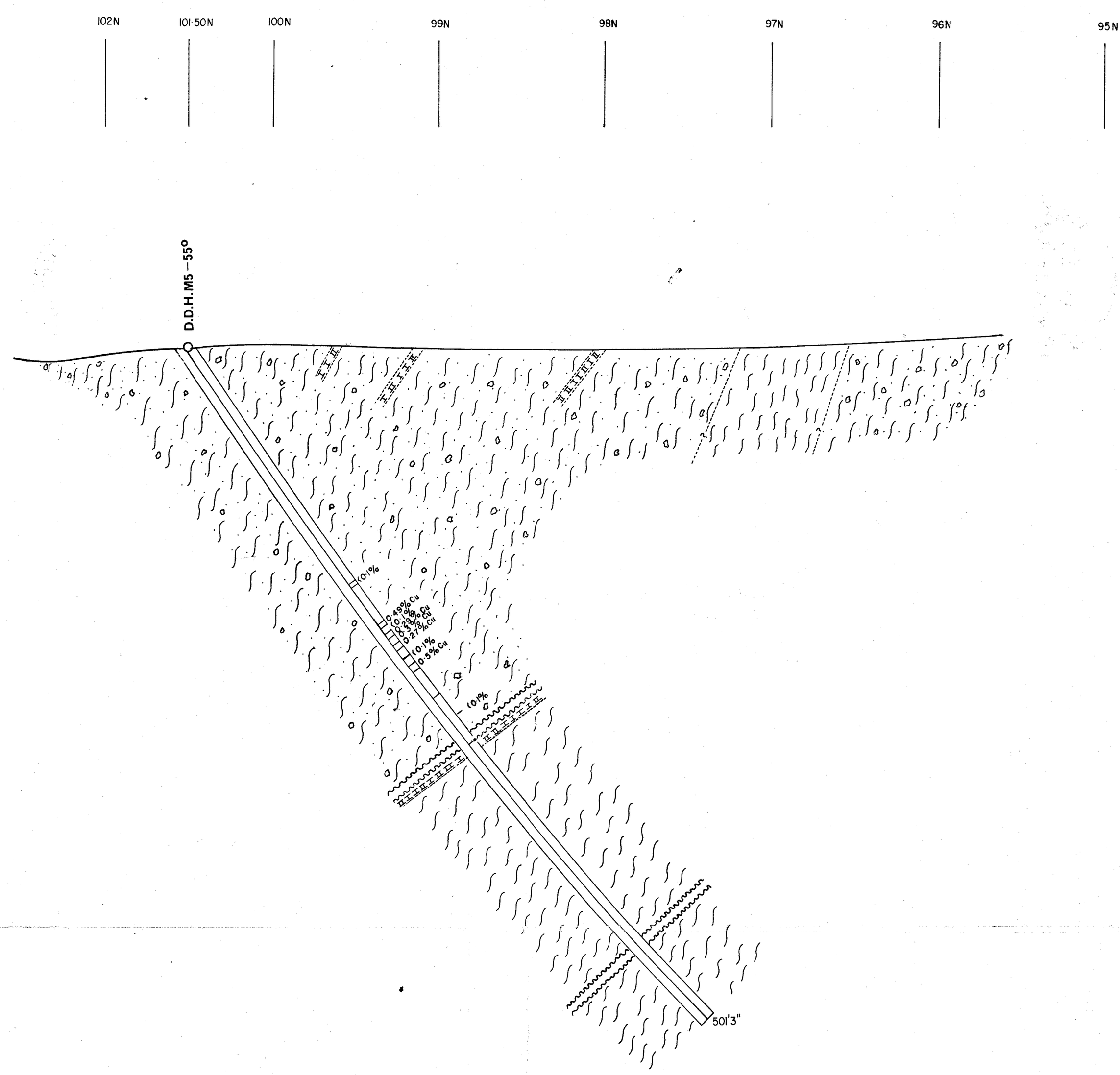
LONGREACH METALS N.L.

S.M.L. 551

MUTOOROO RIDGE PROSPECT

SECTION THROUGH D.D.H. M6 ALONG LINE 172E LOOKING EAST

SCALE 1" : 50'			DWG. No.
BASED ON			
DRAWN BY A.C. Edwards	REVISED	DATE	
DATE 5th June 1971			
APPROVED BY			
UTM CODE			



LEGEND

- Quartz Muscovite Schist
- Chloritic Schist
- Quartz Veins
- Shear Zones

FIG.3

LONGREACH GROUP MANAGEMENT PTY. LTD.

LONGREACH METALS N.L.

S.M.L. 551
MUTOOROO RIDGE PROSPECT

SECTION THROUGH D.D.H. M5
ALONG LINE 188E LOOKING EAST

SCALE 1" = 50'			DWG. No.
BASED ON			
DRAWN BY Greg Croft	REVISED	DATE	
DATE 6th July 1971			
APPROVED BY M.Chatenay			
UTM CODE			

MN

150N

120N

110N

100N

90N

86N

M.L. 5596

236E 244E 252E 260E 268E 276E 284E 292E 300E 308E 316E 324E 332E

LEGEND

- Feldspathic conglomerates and sandstones, moderately deformed sedimentary features recognisable
- Undifferentiated chlorite biotite schist
- Quartz mica schist — metamorphosed conglomerate and sandstone intensely deformed
- Rhyolite
- Sheared rhyolite
- Quartz
- Ba — Barite vein

- shaft
- pit
- trench
- foliation — vertical foliation
- cleavage — vertical cleavage
- bedding — overturned bedding — vertical bedding
- joint — vertical joint
- fault
- malachite stain
- fence
- lease boundary
- soil sample grid points

LONGREACH GROUP MANAGEMENT PTY. LTD.

LONGREACH METALS N.L.

S.M.L. 274

MUTOOROO RIDGE PROSPECT

SURFACE GEOLOGY
Sheet 2

SCALE- 1" : 400'			DWG. No.
BASED ON- Field Map by G. Arnold			
DRAWN BY- Greg. Croft	REVISED	DATE	4-1
DATE- 6th April 1971			
APPROVED BY- L. S. Denkern			
UTM CODE			

MALDORRIES

PEAK HILL

PARADISE

DUFFIELDS NORTH

DUFFIELDS CENTRAL

DUFFIELDS SOUTH

BLACK HILL

RIDGE PROSPECT

WESTERN RADIOMETRIC

COCKRUMS

GREAT EASTERN

MULGA

JUBILEE

DYKE 1

DYKE 2

DYKE 3

DYKE 4

DYKE 5

DYKE 6

DYKE 7

LEGEND

ZONE BOUNDARIES

AREA OF MAGNETIC ANOMALY

GEOPHYSICAL DISCONTINUITIES

STRATIGRAPHICAL TREND

TOTAL MAGNETIC INTENSITY

AIRBORNE MAGNETOMETER SURVEY

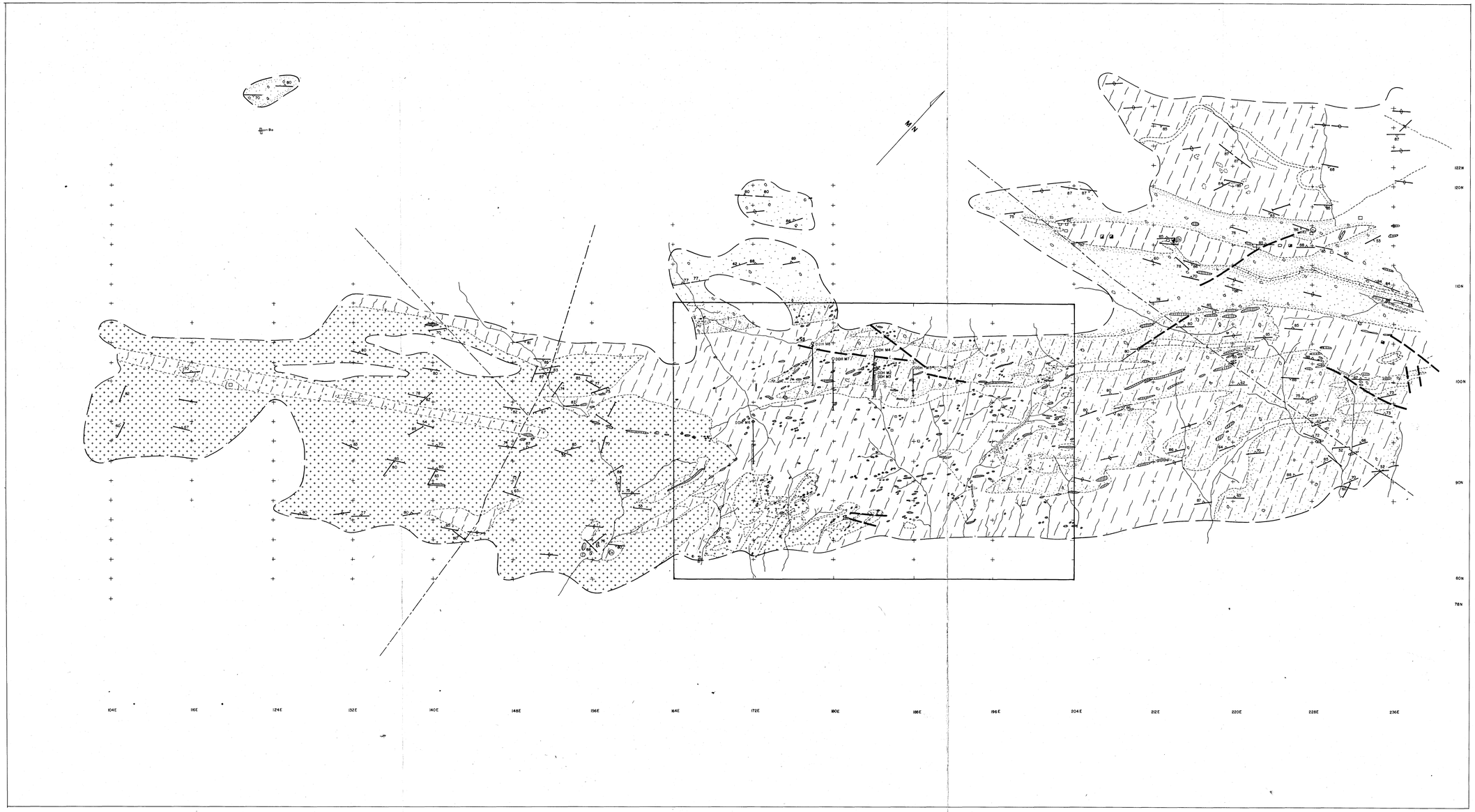
RADIUM HILL AREA – S.A.

LONGREACH MINERALS N.L.

SCALE 1" = 2640' (APPROX)

SURVEYED AND COMPILED 1969 BY GEOPHYSICAL RESOURCES DEVELOPMENT CO. MARRICKVILLE, N.S.W.

SHEET 6



Feldspathic conglomerates and sandstones, moderately deformed sedimentary features recognisable

Undifferentiated chlorite biotite schist

Quartz mica schist metaphosed conglomerate and sandstone intensely deformed

Rhyolite

Sheared Rhyolite

Quartz

Barite Vein

shaft
pit
trench
foliation — vertical foliation
cleavage — vertical cleavage
bedding — overturned bedding — vertical bedding
fault
malachite stain
fence
soil sample grid points
drill site area. see map no. 4-1(b)

LONGREACH GROUP MANAGEMENT PTY. LTD.

LONGREACH METALS N.L.

S.M.L. 274
MUTOOROO RIDGE PROSPECT

SURFACE GEOLOGY
Sheet 1

SCALE- 1" 400'			DWG. No.
BASED ON- Field Map by G.Arnold			
DRAWN BY- Greg. Croft	REVISED	DATE	4-1
DATE- 6th April 1971			
APPROVED BY- L.S.Dennehy			
UTM CODE			

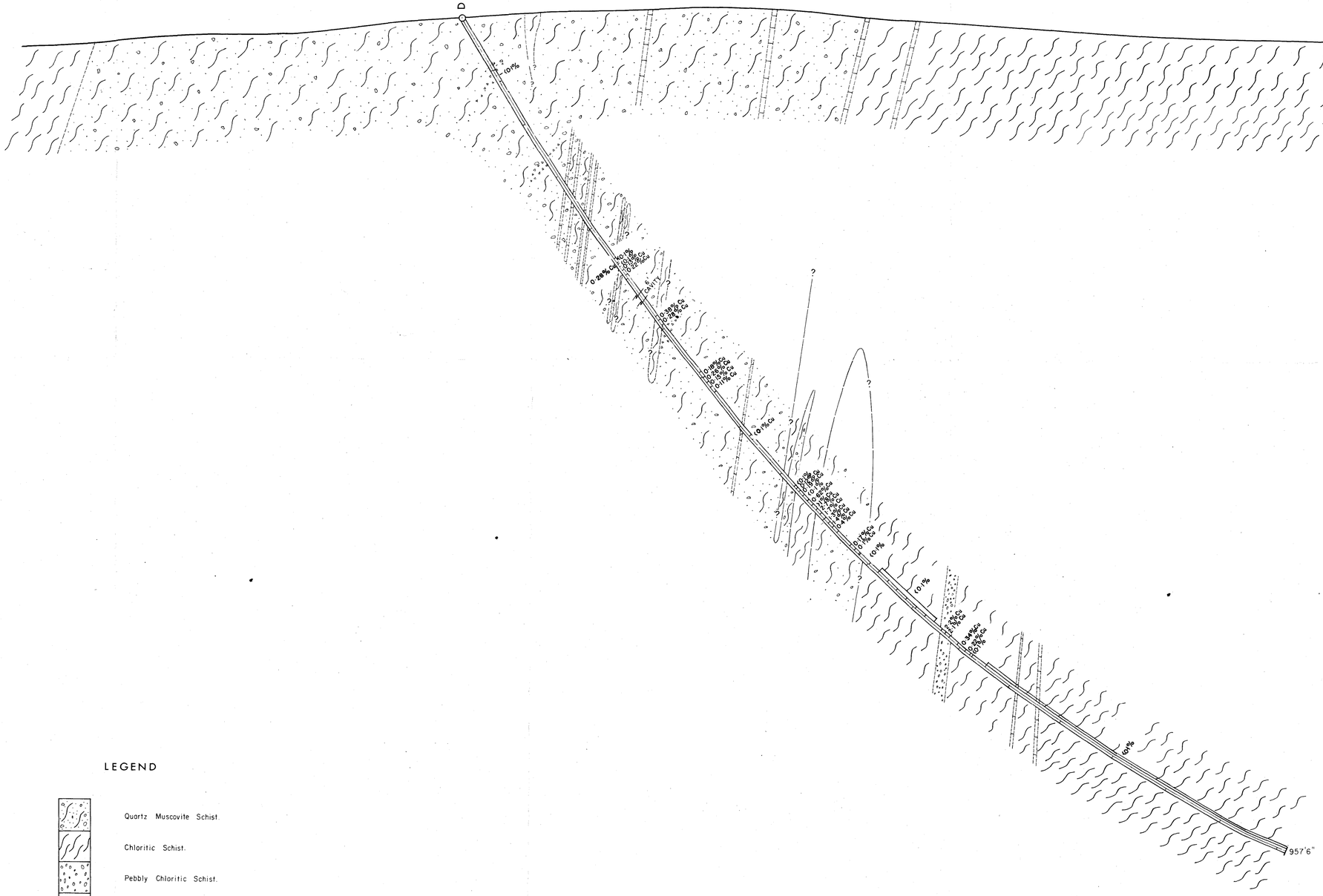


FIG.5

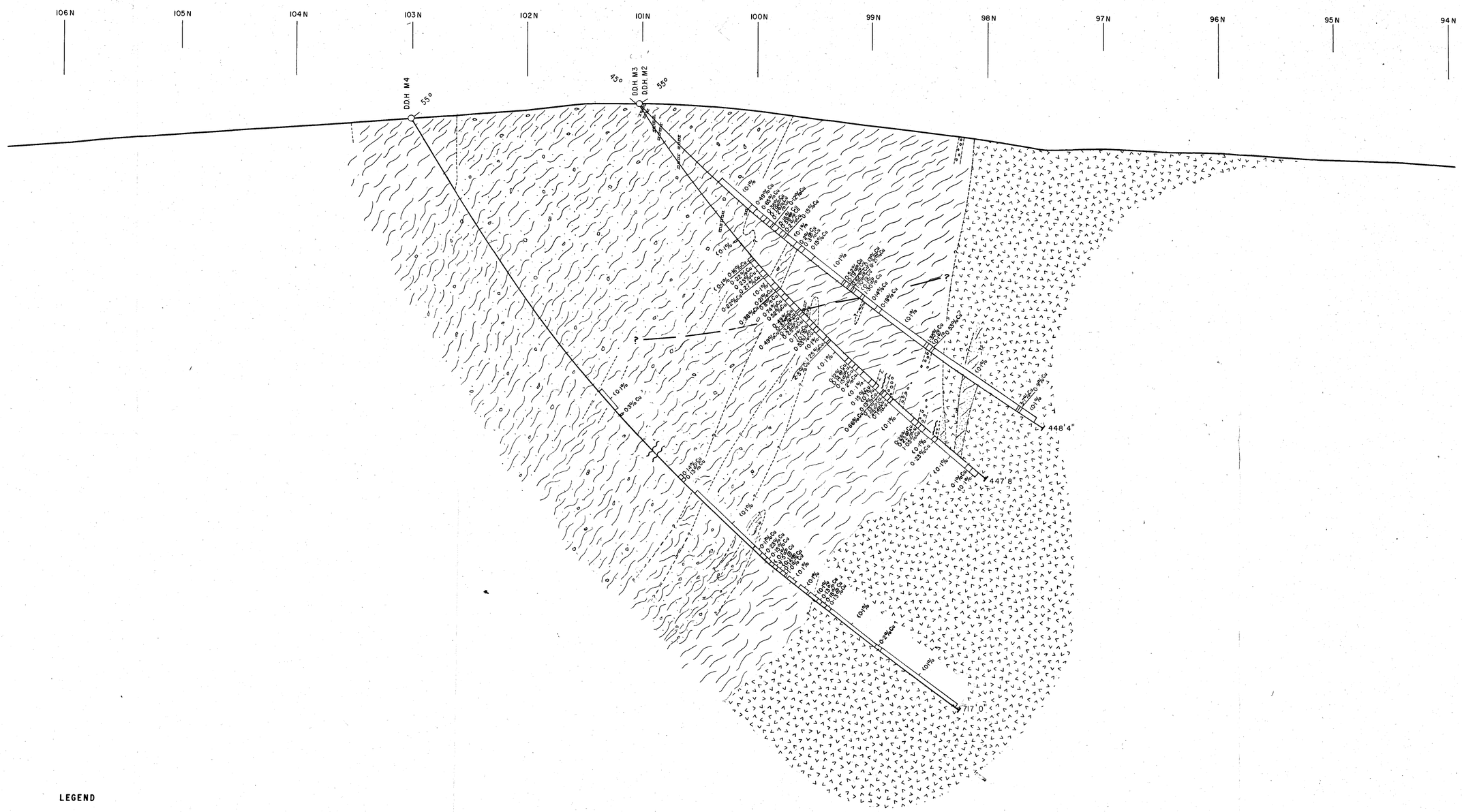
LONGREACH GROUP MANAGEMENT PTY. LTD.
LONGREACH METALS N.L.

S.M.L. 551
MUTOOROO RIDGE PROSPECT

SECTION THROUGH D.D.H.M7
ALONG LINE 180E LOOKING EAST

SCALE 1":50'			DWG. No.
BASED ON			
DRAWN BY A.C. Edwards	REVISED	DATE	
DATE 6th June 1971			
APPROVED BY			
UTM CODE			

ENV 1632-10



LEGEND

- Metatrachyte
- Pebbly Chloritic Schists
- Gritty Chloritic Schists
- Undiff. Chloritic Schists
- Quartz Mica Schists
- Quartz veins
- Shear

For location of drill holes see plan no.4-1(b)

FIG.2

LONGREACH GROUP MANAGEMENT PTY. LTD.

LONGREACH METALS N.L.

S.M.L. 274

MUTOOROO RIDGE PROSPECT

SECTION THROUGH DDH M2, M3, M4
ALONG LINE 184E LOOKING EAST

SCALE- 1" : 50'			DWG. No.
BASED ON-			
DRAWN BY- L. Frost	REVISED	DATE	4-5
DATE- 6th April 1971	M.G.	31 - 5 - 1971	
APPROVED BY- L.S. Denholm			
UTM CODE			

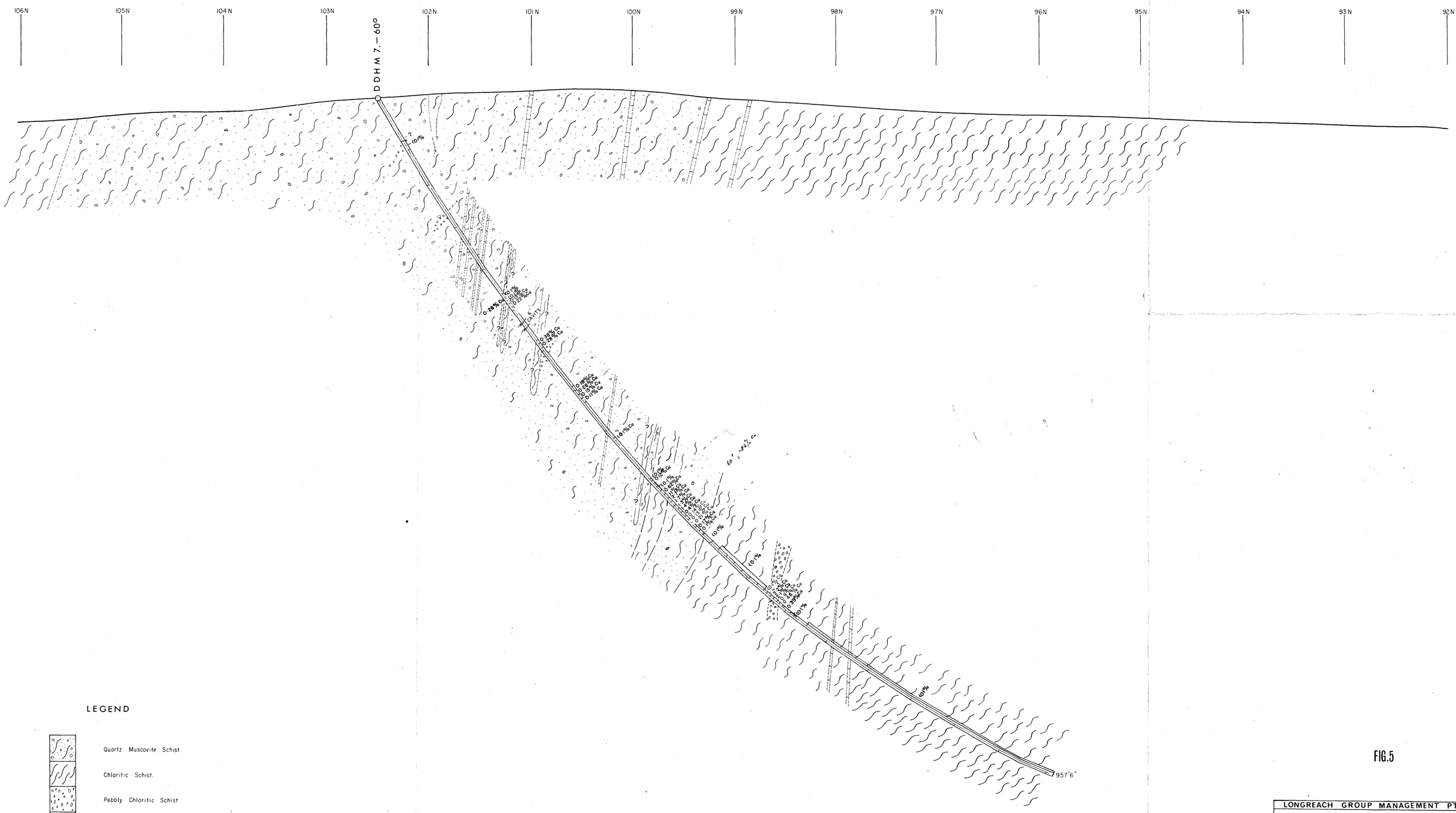


FIG.5

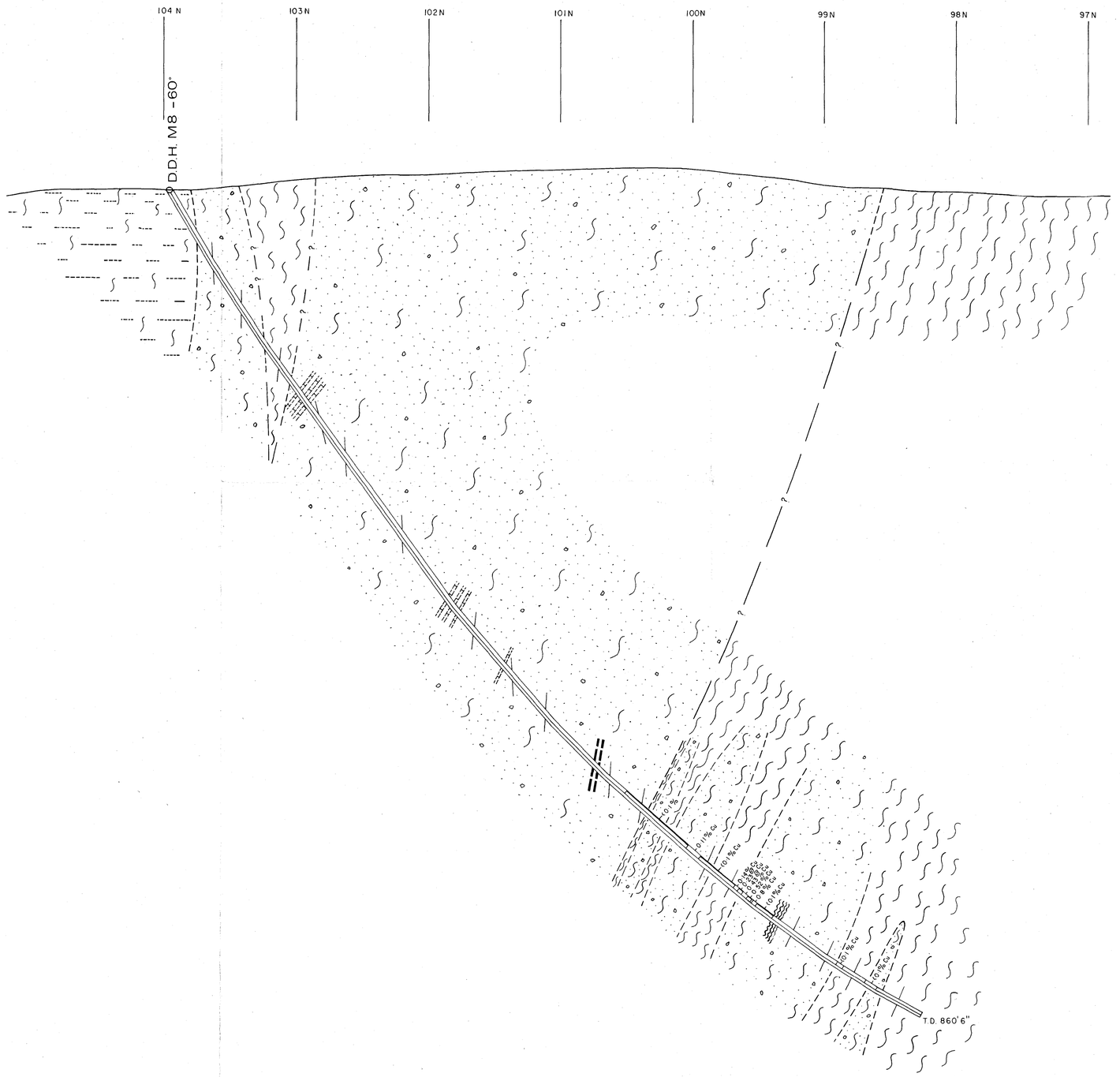
LONGREACH GROUP MANAGEMENT PTY. LTD.
LONGREACH METALS N.L.

S.M.L. 551
MUTOOROO RIDGE PROSPECT

SECTION THROUGH D.D.H. M7
ALONG LINE 180E LOOKING EAST

SCALE 1" : 50'			DWG. No.
BASED ON			
DRAWN BY A.C. Edwards	REVISED	DATE	
DATE 6th June 1971			
APPROVED BY			
UTM CODE			

ENV. 1632 – 12



LEGEND

- Quartz Muscovite Schist
- Chloritic Schist
- Grey Phyllitic Schists
- Quartz veins
- Faults
- Shearing

FIG.8

ENV 1632-13

LONGREACH GROUP MANAGEMENT PTY. LTD.
LONGREACH METALS N.L.

S.M.L. 627
MUTOOROO RIDGE PROSPECT

SECTION THROUGH D.D.H. M8
ALONG LINE 178E LOOKING EAST

SCALE 1" = 50'			DWG. No.
BASED ON Field Plan by A Edwards			
DRAWN BY M Chatenay	REVISED	DATE	
DATE 23 Sept 71			
APPROVED BY D Clare			
UTM CODE			

DDH M4
DDH M7
DDH M2
DDH M3
DDH M5
DDH M6
Costean No.1
Costean No.2
Costean No.3
MN
108 N
100 N
90 N
80 N
164 E
172 E
180 E
188 E
196 E
204 E

BROKEN HILL
Mutooroo HS.
S.M.L. 274
SOUTH AUSTRALIA
N.S.W.
N

LOCALITY PLAN

LEGEND

- Undifferentiated chlorite-biotite schist
- Chlorite-biotite schist, metamorphosed volcanics
- Chlorite-biotite schist, metamorphosed sediments
- Quartz Muscovite schist, metamorphosed quartzitic and arkosic conglomerate and sandstone
- Rhyolite
- Grey and white quartz-muscovite schist, metamorphosed rhyolite
- Diorite dyke
- Quartz
- Foliation
- Cleavage
- Joint
- Fault
- Shaft
- Pit
- Trench
- Malachite stain
- Soil sample grid point

FIG.1

LONREACH GROUP MANAGEMENT PTY. LTD.

LONGREACH METALS N.L.

MUTOOROO RIDGE PROSPECT

GEOLOGY OF DRILL SITE AREA

SCALE 1" = 100'			DWG. No.
BASED ON Field Map by G.Arnold			4.1(b)
DRAWN BY L. Frost	REVISED	DATE	
DATE MARCH 1971			
APPROVED BY L.S. DENHOLM			
UTM CODE			