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CRA EXPLORATION PTY. LIMITED

EXPLORATION AT THE LAKE BARRINGTON COPPER

PROSPECT, SHEFFIELD EL 7/73

NORTHERN TASMANIA

MAY 1981 - DECEMBER 1982

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Date : 21st January, 1983.

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1. SUMMARY

The Lake Barrington prospect lies some 12 kilometres west-south-west of Sheffield within EL 7/73.

Previous exploration (Purvis 1981) showed a sequence of Cambrian acid volcanic lavas and related sediments contained minor copper mineralisation.

Geophysical surveys were completed (Misc-a-la-masse, Crone Pulse E-M and Self Potential to define a target zone for further drilling.

Drillhole DD82 LB3 was drilled and intersected significant copper mineralisation within a stringer zone, the best intervals being:-

14	-	14.25m	0.25m @ 2.4% Cu, 19gm Ag, 0.18gm Au.
140.8	-	140.98m	0.18m @ 9.14% Cu, 52gm Ag, 0.04gm Au.
156.6	-	157.98m	1.38m @ 3.43% Cu, 49gm Ag, 0.28gm Au.
167.3	-	170.8m	3.5m @ 3.2% Cu, 28gm Ag, 0.25gm Au.
167.3	-	172.45m	5.15m @ 2.45% Cu, 23gm Ag, 0.18gm Au.
156.5	-	172.45m	15.85m @ 1.17% Cu, 12gm Ag.

The mineralisation was located within zones showing moderate - strong chlorite alteration together with increased carbonate veining (calcite and siderite). The drillhole failed to intersect the gritty tuff horizon which hosted the mineralisation in DD80 LB1, indicating a lava dome occurs in this area. Mineralisation in LB3 was confined to fracture filling within a stringer zone.

2. INTRODUCTION

This report details additional exploration work during 1981 - 1982 on the Lake Barrington prospect some 12 kilometres west-south-west of Sheffield on the steep slopes on the western side of Lake Barrington.

The Sheffield licence area was originally applied for by Asarco (Australia) Pty. Limited on March 15th, 1973. It occupied an area of 743 square kilometres and covered most of the Cambrian volcanics (Mt. Read

equivalents) within the Fossey Mountain Trough in Northern Tasmania. The area was reduced to 429 square kilometres in March 1974. CRAE entered the Joint Venture on 12th July, 1976 and title was transferred to CRAE on 29th December, 1977. In August 1979 the licence was reduced to the current 199 square kilometres and Asarco transferred its interest in the Joint Venture to Carpentaria Exploration Co. Pty. Limited on 11th June, 1980.

The prospect was initially located by Asarco in 1973 as a 1300 ppm Cu drainage anomaly in a creek draining a 0.5 square kilometre area of Cambrian acid volcanics.

Asarco gridded the prospect, mapped it and completed selected lines of soil and rock sampling. Soil values upto 2800 ppm Cu were delineated but as no signs of actual mineralisation could be found work ceased in 1975 (refer Barker 1975).

During 1979 the prospect was visited by G. Purvis of CRAE and in the zone of highest copper values some evidence of mineralisation was found. A secondary limonite weep highly anomalous in Cu was located. Further gridding, mapping, sampling together with ground magnetics and a dipole-dipole I.P. survey were completed (refer Purvis 1981). From these results two drillholes were sited totalling 485 metres of diamond drilling. The first hole DD80 LB1 intersected 10 cm of massive 'stringer' Copper-pyrite mineralisation, several other zones were also intersected assaying up to 1.88% Copper.

This report details geophysical exploration conducted during 1981 and 82 and the results of the third hole drilled during June-July 1982. Further drilling and geophysics is recommended.

3. CONCLUSIONS

The third drillhole confirmed that copper mineralisation is increasing to the east, although the mineralisation is not stratiform but is present as fracture infilling of a stringer zone.

The Mise-a-la-masse survey indicated the presence of a conductive zone from LB1 through the zone of LB3.

The Chlorite alteration and carbonate veining is increasing to the east.

4. RECOMMENDATIONS

Further diamond drilling is recommended to determine the geometry of the stringer zone mineralisation intersected in LB3. The tuff sequence at the end of LB1 should be tested more thoroughly.

1. DD80 LB1 be re-entered and lengthened for 50 metres to fully evaluate the fine grained tuff shale sequence which immediately overlies the mineralised gritty tuff.
2. A drillhole be sited at 4800E 4950N depressed -46° to 210° magnetic (grid south) for 200 metres to intersect the stringer zone at a vertical depth of 70 metres.
3. That drillholes LB1, LB3 and the proposed hole be surveyed with a downhole Pulse E-M system to determine whether the stringer zone is a feeder for a stratiform ore horizon.

5. GEOLOGY

The sequence of rocks at the Lake Barrington prospect consists of a suite of Cambrian acid-intermediate volcanics, breccio - conglomerates and tuffaceous grits and shales. As reported by Purvis (1981) the hydrothermal alteration (quartz-seicite-siderite) of the volcanic rocks within the drillholes was only slight to moderate. However in DD82 LB3 the mineralisation was generally accompanied by strong to very strong chlorite alteration which in some cases masked the original rock type. An interrelation between chlorite alteration and sulphide mineralisation was very evident on drillhole LB3. This hole also intersected considerably more carbonate (calcite-siderite) veining.

6. GEOPHYSICS

In June 1981 a mise-a-la-masse survey was completed in DD82 LB1. This showed a displaced anomaly some 70 metres to the east of the electrode. This anomaly was co-incident with an earlier subtle I.P. chargeability/resistivity anomaly (Purvis 1981). Full results of the mise-a-la-masse survey are given in Appendix Three.

In August 1981 a Pulse E.M. (Crone) survey was completed. No anomalies were discovered but the loop layout may have been wrongly positioned so that it was unable to charge the conductive zone, and the results of the survey are suspect.

In May 1982 a review of the geophysical surveys was conducted (Appendix 3). Which recommended an S.P. survey over lines 4700E and 4800E. This survey produced anomalies which showed good correlation with the mise-a-la-masse anomaly, and further drill testing then appeared warranted.

7. DRILLING

DD82 LB³ was commenced on the 28th June and completed at 221 metres on the 12th July, 1982. The hole developed adjacent to DD80 LB1 but drilled at 190° magnetic (20° east of grid south) and at -46° to intersect the centre of the mise-a-la-masse target at a vertical depth of 100 metres and some 40 metres east of the 4700E line.

A detailed log can be found in Appendix 1 and a section at the back of the report (refer TASH 1238) The general sequence of rocks intersected was similar to LB1 and a fair to good correlation was obtained.

The tuff shale sequence intersected at the ends of both LB1 and LB2 was not located in LB3 indicating a thickening sequence of lava's in this direction (lava dome?).

LB3 intersected stringer zone mineralisation associated with zones of greater chloritic alteration. No evidence of stratiform mineralisation was found.

8. ALTERATION PATTERNS

The three drillholes were relogged diagrammatically (refer Appendix 4). Each core box was examined and features were noted such as observable alteration, lithological boundaries, mineralisation, veining, jointing. The results can be summarised as follows:-

1. It was extremely difficult to log degree of sericite alteration as the alteration was rarely strong enough to obliterate feldspar phenocrysts. Thin section descriptions showed that pervasive sericite alteration occurred throughout the hole.
2. Apart from the breccia-conglomerate zones where pyrite stringer mineralisation is fairly prevalent the mineralisation within the rhyolite/felsite sequence was accompanied by increasing chlorite alteration. This was especially noticeable in drillhole LB3.
3. A marked increase in calcite/siderite veining occurred in LB3 compared with LB1.

The alteration pattern which emerged shows a marked increase in chlorite alteration and carbonate veining towards the east within the Lake Barrington prospect. Sericite alteration varies from low to moderate throughout the prospect.

9. REFERENCES

- | | | |
|--------------|------|---|
| BARKER, R.G. | 1974 | EL 7/73 Stream Sediment Sampling Paradise Tasmania.
Asarco (Aust.) Pty. Ltd. internal report. |
| BARKER, R.G. | 1975 | EL 7/73 Paradise Tasmania. Report for the year ending March, 1975.
Asarco (Aust.) Pty. Ltd. internal report. |
| PURVIS, J.G. | 1981 | Exploration at the Lake Barrington Copper Prospect. Sheffield EL 7/73 Northern Tas. CRAE Report No. 10520. |

10. KEYWORDS

Copper - acid volcanics - alteration - stringer mineralisation - sulphides - drill-diamond - geophysics - P.E.M. - S.P. - Mise-a-la-masse.

11. LIST OF PLANS

<u>Plan No.</u>	<u>Title</u>	<u>Scale</u>
(TV 375) (TASH 1624)	Locality Plan - Lake Barrington Prospect Lake Barrington Prospect - Grid Location Plan	1 : 500000 1 : 25000
(TV 376)	Geological Plan	1 : 1000
(TASH 1238)	Drillhole Section LB3	1 : 1000
TASH 1719	Prospect Location Plan West Sheet	1 : 25000
TASH 1720	Prospect Location Plan East Sheet	1 : 25000

JA 12. LIST OF APPENDICIES

- Appendix 1. Drillhole Log LB3.
- Appendix 2. Petrological Reports.
- Appendix 3. Geophysical Surveys - M. Flis.
- Appendix 4. Diagramatic Logging Sheets for LB1, LB2, LB3.

APPENDIX ONE

DRILLHOLE LOG DD82 LB3

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1 of 6

No. 7/73

TENEMENT NAME SHEFFIELD

CO-ORDINATES 4700E 4920N AZIMUTH 191°m DRILLERS PARRY COMMENCED 28.06.82 DEPTH 221 metres HOLE No. JDB2 LB3
RL COLLAR INCLINATION -46° DRILL TYPE ROTARY COMPLETED 12.07.82 CASING LEFT Nil DPO No(s) 30205

DEPTH		Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weather, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ANALABS...)							
From (M)	To (M)										Cu	Pb	Zn	Ag	As	Au		
0.0	0.6				TRICONES - NO CORE													
0.6	11.0	447	NQ		BRECCIA - CONGLOMERATE													
11.0	44.8	32.98	BQ		Mod. well rounded volcanic clasts of chert, lava, elliptical volcanic, granitic fragments and silty particles upto 5cm diameter cemented in a fairly gritty volcanic matrix. Thin zones of gritty stuff after 30.5m	Mod weathered 0.6-14m. Then very weathered until 30.5m. Many thin gas-concave zones after 5" in upper portion of the core. Joints Fe stained - mod fractured. Occ Fe staining in breccia-conglomerate. At 28m a 1cm py vein. Other	572.780	0.6	8.7	2.55	140	15	15	x	50	-		
					32-40m bands of feeder breccia-conglomerate with interbedded +1m zones of leached sulphide rich qtz veins - Mn staining + py - tuffaceous gneiss	gasconous veins and fracture fillings esp. at 25m.	781	8.7	11.0	1.92	250	5	10	x	x	-		
					42-44.8m massive feldspathic - gritty py - cp veins wavy Fe staining	2 major sets of joints 1° at 26° to long core axis 2° at 19° - each being almost at rt 13° to each other	782	11.0	14.0	2.25	1100	x	10	x	50	-		
					43.6m small tourmalinized granite clast.	At 30m and 37m Mn staining and secondary hematite in fractures.	783	14.0	14.52	0.52	24%	25	15	150	1000	0.187		
							784	14.52	16.27	1.75	775	10	35	x	x	-		
							785	16.27	18.17	1.30	430	x	15	x	50	-		
							786	18.17	20.00	1.76	245	10	20	x	100	-		
							787	20.00	22.30	2.30	320	5	25	x	50	-		
							788	22.30	24.40	2.10	540	x	15	0.5	x	-		
							789	24.40	26.40	2.0	2700	30	15	3.5	100	-		
							790	26.40	27.70	1.30	445	25	10	1.0	x	-		
							791	27.70	28.0	0.30	2600	50	20	3.5	50	-		
							792	28.0	30.0	1.35	4500	15	50	x	x	-		
							793	30.0	31.7	1.60	1400	15	15	x	50	-		
							794	31.70	23.80	2.1	1150	5	30	x	x	-		
							795	33.80	36.0	2.2	575	x	10	x	x	-		
							796	36.0	37.24	1.24	990	20	10	0.5	x	-		
							797	37.24	39.0	1.76	2400	10	10	x	x	-		
							798	39.0	40.9	1.30	1300	25	15	6.5	x	-		
							799	40.9	41.5	0.60	2400	15	50	2.0	x	-		
							800	41.5	42.9	1.40	800	60	20	60	50	x		
							801	42.9	43.8	0.30	3250	10	10	1.5	x	-		
							802	43.8	45.0	1.15	135	x	10	0.5	x	-		
44.8	46.0	1.2	BQ		CRITTY TUFF (PORPHYRIC RHYOLITE) Tuffaceous rock containing Amphibole lava clasts to 10cm	Minor 5° in core	803	45.0	47.0	2.0	1950	5	20	x	x	-		

B12010

* GROUND SAMPLES

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 2/6
No. 7/73

TENEMENT NAME SHEFFIELD
PLAN - MAP REFERENCE LAKE BARRINGTON PROJECT
DEPTH 221 metres HOLE No. DD2 LB3
CASING LEFT Nil DPO No(s) 30205

CO-ORDINATES 4700E/4300N AZIMUTH 191°m DRILLERS PARRY COMMENCED 28.06.82
RL COLLAR INCLINATION -46° DRILL TYPE BOYLES COMPLETED 12.07.82

DEPTH		Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by AMLABS)								
From (M)	To (M)										Cu	Pb	Zn	Ag	As	Au			
					Lava clasts vary from yellow fine grained with angular of eyes to red-br clasts f.g. lava with weathered folds and of eyes - porphyritic.														
					T.S. 45m PORPHYRITE RHYOLITE T.S. probably of a lava clast.														
46.0	61.0	13.37	BQ		<u>BRECCIA - CONGLOMERATE</u> Much finer grained than previous generally no greater clasts than 1cm occ. to 5cm. occ lava blocks 58-59m coarse more feldspathic zone - minor py.	py > Cp veins common. Min ² zones after weathered - granular.	972804* 805 806 807 808 809* 810*	47.0 49.2 50.2 52.4 54.4 55.1 57.9	49.2 50.2 52.4 54.4 55.1 57.9 61.0	2.17 1.0 2.2 2.0 0.7 2.8 3.1	325 2200 1630 235 4400 220 210	x x x x 10 10 5	55 60 55 40 45 35 20	x x x x x x x	x x 50 x 100 0.5 150	-	-	-	
61.0	66.4	5.4	BQ		<u>GRITTY TUFFS</u> Coarse grained buff-grey zone V. fract. loaded, over thin breccia-cong bands	py infilling of fract. zone	811 812 813 814	61.0 62.0 63.5 65.0	62.0 63.5 65.0 66.4	1.0 1.5 1.5 1.4	335 1400 1550 600	25 35 65 35	10 10 5 95	0.5 1.0 1.5 x	150 150 100 150	-	-	-	
66.4	77.0	9.55	BQ		<u>BRECCIA - CONGLOMERATE</u> Start fine grained - becomes coarse grained at 68m as before. Larger lava clasts upto 15cm. Gritty tuff band at 70m. Clasts of red-br rhyolitic lava first noticed in core at 74.5m.	Fault at 70.2m - py zone V. broken core - rhyolitic altered 75-76m: mod fractural py veins (infilling?) occ zones veins.	815 816 817 818 819*	66.4 68.35 70.5 71.9 74.0	68.35 70.5 71.9 74.0 77.0	1.95 2.0 1.4 1.9 2.3	200 285 535 495 1040	5 x x 15 5	40 120 30 65 40	x x 0.5 x 0.5	100 100 x x x	-	-	-	
												* GROUND SAMPLES							

612011

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 3 of 6
No. 7/73

TENEMENT NAME... SHEFFIELD
PLAN - MAP REFERENCE LAKE BARRINGTON PROSP.
DEPTH... 221 metres
HOLE No. DD 82 LB3
COMPLETED... 12.07.82
CASING LEFT... Nil
DPO No(s)... 30305

CO-ORDINATES 4700E/4320N AZIMUTH 131° DRILLERS PARRY COMMENCED 28.06.82
RL COLLAR..... INCLINATION -4.6° DRILL TYPE BOYLES

DEPTH om (M)	To (M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by AMLABS.....)					
											Cu	Pb	Zn	Ag	As	Au
17.0	103.0	26.0	8Q		LAPILLI TUFF (LOGGED AS IGNIMBRITE?) More compact rock - auto-tempered? - welded. Occ thin ash flows. Int L @ 83m - 65°. V. fine py. infilling fractures At 85 and 86m. thin py. & joints infilled with brecciated chalk and py. at 85+86m int LS 7° Granitic dent at 88m. Large lava clast at 73.5m	V. py 89-93.3. Sl more fractured V. py 91-93m. T.S. 96m - LAPILLI TUFF.	372820	89.0	89.3	0.3	155	75	30	30	500	-
73.0	105.0	2.0	8Q		GRITTY TUFF Pale gy - qtz and feldspar clasts occ lava clasts	More porous - weathered horizons occ. py in veins.										
105.0	110.0	5.0	8Q		LAPILLI TUFF (LOGGED AS KNIMBRITE?) As above - some clasts of silicified lava, chert, lava.											
110.0	111.6	1.6	8Q		INTERMEDIATE DYKE? Generally yellow-grey clay V. weathered some remnant feldspar - pyroxene/amphibole crystals.	Sl foliated Fault at 111m										
111.6	180.8	62.3	8Q		ALTERED LAVA Red brn occ sil. vuggy. occ clasts of chert & chert of albite - epidote alt. V. thin int. dyke at 125m and 128.5m - maybe large clasts - weathered clayey zones	mod. well fractured - pyritic some zones V. pyritic Yellow (epidote?) alt 122-124m Epidote alt 130.5 - 131.2m.	372821	119.2	121.0	1.8	115	80	30	10	50	-

612012

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

TENEMENT NAME.....SHEFFIELD..... No. 7/73

PLAN - MAP REFERENCE LAKE BARRINGTON GRID

CO-ORDINATES 4700E/4920N AZIMUTH.....191°..... DRILLERS.....PARRY..... COMMENCED.....28.06.82..... DEPTH.....221 metres..... HOLE No. JD92 LB3

RL COLLAR..... INCLINATION.....-46°..... DRILL TYPE.....SCALES..... COMPLETED.....12.07.82..... CASING LEFT.....Nil..... DPO No(s).....30205

DEPTH (m)	To (M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ANALABS)							
											Cu	Pb	Zn	Ag	As	Au		
					Int. dyke (clast?) at 131.8m	med gr alt ⁿ zone 120-136.3m												
					135-136.3m V. weathered prob. intercalated quartz tuff	thin red-brown fractured alt ⁿ zone	372822	134.0	137.0	2.82	585	50	150	x	50	-		
						Becomes more fractured at 137.5m	823	137.0	139.0	2.0	2400	130	195	0.5	50	-		
					T.S. 133.0 - Sericitized Porphyritic Feltsite	Mg rich chlorite alt ⁿ darkens zone with thin Cp veinlets from 138.8m	824	139.0	140.8	1.8	3000	95	195	0.5	100	-		
					now describe down to 138.8m	At 140.8 3x2cm veins Cp > py followed by 100mm m. fractured chlorite	825	140.8	140.98	0.18	9.142	865	4000	52	400	0.083		
						alt ⁿ of qtz-carb veins Ba? occ	826	140.98	143.0	1.87	65	60	225	x	x	-		
						thin Cp veinlets 150-156m pink	827	143.0	144.8	1.80	340	35	225	0.5	x	-		
						red ore fractured ore thin of qtz-carb	828	144.8	146.0	1.2	260	35	135	0.5	50	-		
						- barite? veinlets - siderite?	829	146.0	147.5	1.9	870	80	250	1.0	50	-		
						At 156m first presence of Cp stringer	830	147.5	149.6	1.9	2800	300	1050	35	150	-		
						min ² in qtz-carb veins Cp stringer	831*	149.6	152.0	2.4	455	495	350	1.0	50	-		
						157-158m 162-163m strong qtz-	832*	152.0	155.0	3.0	185	35	130	x	x	-		
						carb-barite veins also cont. bl sh	833	155.0	156.6	1.6	1050	x	65	x	50	-		
						brecciated fragments - Cp min ²	834	156.6	157.1	0.5	1.442	1025	1850	13	100	0.076		
						Int L 14°	835	157.1	157.98	0.87	4.602	3025	2600	71	50	0.405		
						chlorite + epidote alt ⁿ	836	157.98	160.04	2.06	230	30	65	0.5	50	-		
						Almost describe core as a brecciated	837	160.04	162.70	1.66	2300	15	75	1.0	100	-		
						lava here, contains much alabaster	838	162.70	163.20	1.50	4200	20	50	15	x	-		
						material - brecciated in veins.	839	163.2	165.3	2.10	355	15	40	1.0	50	-		
						171.5m V. broken qtz-carb veining	840	165.3	167.3	2.0	390	20	85	x	100	-		
						172.5 - less fractured	841	167.3	168.3	1.0	2.302	495	280	27	x	0.167		
						174.8m - tension grab vein style	842	168.3	169.0	0.7	5.002	575	285	26	50	0.377		
						brecciated shale - qtz-carb vein	843	169.0	170.0	1.0	2.052	385	725	21	300	0.089		
						Int L 5°	844	170.0	170.8	0.7	4.202	685	740	44	450	0.430		
						178m bleached zone 30cm pale qtz	845	170.8	172.45	1.65	8575	685	260	12	100	0.043		
						with coarse qtz carb vein	846*	172.45	174.8	2.35	245	35	105	x	x	-		
						* cm wide.	847*	174.8	178.5	3.70	165	10	75	0.5	x	-		
							848*	178.5	180.5	2.30	45	x	60	x	x	-		

* GROUND CORE

612013

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 5 of 6

TENEMENT NAME SHEFFIELD No. 773

PLAN - MAP REFERENCE LAKE BARAKTON PROSPECT

CO-ORDINATES 4700E/4920N AZIMUTH 191°m DRILLERS PARRY COMMENCED 28.06.82 DEPTH 221 metres HOLE No. DD82 LB3

RL COLLAR INCLINATION -46° DRILL TYPE BOYLES COMPLETED 12.07.82 CASING LEFT Nil DPO No(s) 30205

DEPTH om M)	To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by... AMALAB...)										
											Cu	Pb	Zn	Ag	As	Au					
						Line shows increasing chlorite alt ⁿ generally red-bn lava tan gr. often fractured and v. dk gr Mg chlorite. alt ⁿ zone with Cp ² py veins															
180.8	201.8	20.35	8Q		<u>Vitric Tuff? - Altered Lava?</u> Generally reddish gr more dead particles interbedded with lava zone seems to be more Pb min ² . Lava zone at 187.2-189m has v. strong chloritic alt ⁿ zone Cp - py min ² T.S. 184.3m - PORPHYRITIC RHODITE T.S. 194.4m - SERICITISED PORPHYRITIC FELSITE	At 185.8 and 187.2m chlorite alt ⁿ so strong in places it makes the host rock - (ca) 199-200m	97284-9 850 851 852 853 854 855* 856* 857*	180.8 182.0 183.9 185.85 188.0 188.0 189.5 191.0 194.0 197.0	182.0 183.90 185.85 188.0 189.5 191.0 194.0 197.0 200.0	1.20 1.90 1.95 2.15 1.50 1.50 2.35 3.0 3.0	315 100 195 75 70 200 110 335 120	10 15 20 5 10 35 15 5 25	35 35 50 45 70 75 105 180 100	0.5 0.5 X 0.5 X X X X X	X 50 X 50 X 150 X 50 X	- - - - - - - - -					
201.8	216.0	14.2	8Q		<u>ALTERED LAVA</u> Red-bn volcanic lava cont. zone of v. strong dk gr mag. chlorite alt ⁿ often with Cp min ² . T.S. 204m - SERICITISED PORPHYRITIC FELSITE	At 209m Cp vein 3cm wide 207.85-209m min ² zone Cp > Zn Pb Thin zone rock part with chlorite alt ⁿ as dk gr - veinlets?	858* 859 860 861 862 863 864* 865*	200.0 202.0 204.6 206.0 207.85 209.0 210.2 213.0	203.0 204.6 206.0 207.85 209.0 210.2 213.0	3.0 1.6 1.4 1.85 1.45 1.2 2.8 3.0	280 280 570 490 1529 1750 195 160	340 50 35 45 1050 90 15 15	170 380 60 415 1050 245 100 70	X X X X X X X X	X X X 100 250 250 150 X	- - - - 0.415 - - -					

* GROUND CORE

412014

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 6 of 6

TENEMENT NAME SHEFFIELD No. 7/3

PLAN - MAP REFERENCE LAKE BARRINGTON PROSPECT

CO-ORDINATES T700E/4920N AZIMUTH 191°m DRILLERS PERRY COMMENCED 28.06.82 DEPTH 221 metres HOLE No. DD82 LB 3

RL COLLAR INCLINATION -46° DRILL TYPE BONES COMPLETED 12.07.82 CASING LEFT Nil DPO No(s) 30205

DEPTH		Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ANLABS)								
From (M)	To (M)										Cu	Pb	Zn	Ag	As	Au			
216.0	218.9	2.78	BQ		VITRIC TUFF Sl. more fractural - more chlorite zones and qtz-carb veins containing brecciated volcanic fragments	chlorite alt ⁿ along	972866	216.0	218.7	2.58	755	110	75	1.0	X	-			
218.9	221.0	2.1	BQ		LAVA Generally fresh lith altered over thin qtz-carb veins, chlorite alt. developed along fractures	chlorite alt ⁿ along fractures	867*	218.7	221.0	2.1	250	45	175	0.5	50	-			
					E.O.H.														
					<u>SURVEY DATA</u>														
					<u>DEPTH</u>	<u>AZIMUTH</u>	<u>DECLINATION</u>												
					0m	191°m	-46°												
					50m	195°m	-43°												
					116m	196°m	-39°												
					158m	197°m	-37°												
					190m	? (199°m)	-35°												
					220m	? (201°m)	-33°												

* GROUND CORE.

612015

APPENDIX TWO

PETROLOGICAL REPORTS

Central Mineralogical Services



39 Beulah Road
Norwood, S.A. 5067
Telephone 42 5659

Mr. G.B. Weber
Senior Geologist
C.R.A. Exploration Pty. Ltd.
P.O. Box 138
BURNIE / TAS. 7320

11th August, 1982

REPORT CMS 82/7/28

YOUR REFERENCE:	D.P.O. No. 30204
DATE RECEIVED:	21st July, 1982
SAMPLE NOS.:	972375 - 972381
SUBMITTED BY:	G.B. Weber
WORK REQUESTED:	Petrology

Copy to:
The Chief Geologist
C.R.A. Exploration Pty. Ltd.
G.P.O. Box 384D
MELBOURNE / VIC. 3001

H.W. Fander
H.W. Fander, M. Sc.

Copy & Invoice to:
Administration Officer
C.R.A. Exploration Pty. Ltd.
P.O. Box 138
BELLERIVE / TAS. 7018

REPORT CMS 82/7/28

Seven drill core samples were received for petrological examination; thin-sections were prepared, and potash stain tests were carried out on the offcuts. All the rocks are briefly described in the attached table.

Summary

Six of the rocks are acid-igneous types and are believed to be intrusive, judging from their fabric; however, this interpretation needs to be considered in the light of evidence from contacts and rocks above and below. Normally, acid extrusives are much less uniform. The seventh rock (376) has been interpreted as a lapilli-tuff, but because it is relatively coarse-grained, the thin-section may not be an accurate representation of the rock type, and the rock could be a tuff-lava or flow-breccia. The difficulty is that, if it is assumed that this rock is in sequence in the hole, i.e. between 375 and 377, and if those rocks are intrusive, then 376 is extremely unlikely to be pyroclastic; this is based on the assumption that the rocks are sequential.

Alteration is widespread, and is of two different types; one is sericitisation, which ranges from very little in 375 to intense in others, and is often selective in that phenocrystal feldspars are affected, but the groundmass is not. In one rock, traces of tourmaline also occur, and the sericitisation is a low-temperature hydrothermal or greisening effect. The other type of alteration has involved the replacive introduction of siderite, evidently accompanied by traces of sulphides, younger than the sericisation and probably unrelated.

The rocks are not metamorphosed except for relatively minor fracturing and veining, though one rock (378) is a breccia, believed to be of tectonic rather than igneous (i.e. flow-breccia) origin; there is evidence of fragmentation of phenocrysts, but this is regarded as being contemporaneous with intrusion (or ?extrusion).

H.W. Fander, M. Sc.

Sample No.	Rock Type - Composition	Fabric	Minor Minerals	Central Mineralogical Services Comments
972375 (T.S. 42913) 45m	<u>Porphyritic Rhyolite</u> . Phenocrysts of quartz and sanidine, set in microcrystalline groundmass of quartz and abundant replacive siderite, minor feldspar.	Some brecciation of phenocrysts; relict felsic textures in groundmass.	Leucoxenic rutile. Isolated patches of chalcopyrite, pyrrhotite.	Believed to be an intrusive rhyolite (shallow or minor), very extensively sideritised and weakly mineralised.
972376 L83 96m	<u>Lapilli Tuff</u> . Small and large fragments of porphyritic rhyolite, felsite, vitric tuff, phenocrystal quartz, feldspar; cemented by fine quartz, siderite.	Poorly-sorted/sized, with grains up to 20 mm, closely-packed.	Quartz veinlets with traces of sulphides (?chalcopyrite).	Components are derived from rhyolitic sources similar to 375; similar type of alteration.
972377 L83 133m	<u>Sericitised Porphyritic Felsite</u> . Small embayed quartz and completely sericitised feldspar phenocrysts, in a felsitic groundmass of quartz and sericite.	Uniform; weakly flow-orientated. Networks of microfractures.	Siderite veinlets. Rare scattered sulphide grains.	Minor or shallow intrusive, presumably of rhyolitic composition, but depending on nature of feldspars.
972378 L83 178m	<u>Altered Rhyolite-Breccia</u> . Irregular fragments of sericitised porphyritic rhyolite/felsite; abundant massive crystalline dolomite, with siderite patches.	Traces of relict fine flow-banding in some fragments. Felsitic textures.	Isolated fine sulphide grains and small tourmaline crystals.	May be a brecciated, carbonated equivalent of 377, i.e. intrusive. Sulphides introduced with carbonates but tourmaline is older.
972379 L83 184.3m	<u>Porphyritic Rhyolite</u> . Mostly small embayed quartz phenocrysts and altered feldspar (?sanidine) in felsitic quartz/K-feldspar groundmass.	Weak flow-banding and alignment of phenocrysts. Fine-grained.	Microgranular siderite throughout. Apatite needles. Quartz veins.	Minor or shallow intrusive, correlatable with 375, 377. These rocks differ from the more usual dacites of the Mt. Read Volcanics.
972380 L83 194.4	<u>Sericitised Porphyritic Felsite</u> . Many whole and fragmentary sericitised feldspars, embayed quartz phenocrysts; sericitised fine felsitic groundmass.	Faint flow-alignment, and fine relict banding. Devitrification textures.	Apatite. Dark siderite streaks accentuating flow.	Closely resembles the other rocks, especially 377. Regarded as intrusive, but dependant on field relations.
972381 (T.S. 42919) 204m	<u>Sericitised Porphyritic Felsite</u> . Embayed quartz and completely sericitised feldspar phenocrysts in felsitic quartz/K-feldspar groundmass.	Fine flow-banding in places, faint alignment. Fracturing, veining.	Fine scattered siderite, coarser veins with quartz, pyrite. Chlorite veinlets.	Correlatable with the other rocks; selective alteration of phenocrysts in preference to groundmass.

APPENDIX 3

GEOPHYSICAL SURVEYS

M. FLIS



CRA EXPLORATION PTY. LIMITED

(INC. IN N.S.W.)

LEVEL 4, BELLERIVE QUAY,
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TELEPHONE: 44 3533
AREA CODE: (002)

IN REPLY PLEASE QUOTE

5th August, 1981.

Memorandum To: G.B.WEBER

Copy: T.W.DICKSON

From: M.F.FLIS

Subject: LAKE BARRINGTON - P.E.M. SURVEYINTRODUCTION

Following encouraging geochem, I.P., and drilling results at the Lk.Barrington copper prospect, it was decided to conduct an electromagnetic survey on the grid. The aim of the survey was the confirmation and delineation of a massive chalcopyrite deposit.

Crone Geophysics (Aust.) Pty.Ltd. were contracted to carry out this survey using the Crone P.E.M. system in a DEEPEM mode (i.e large transmitter loop with roving receiver). Data, along with loop positions, are attached.

CONCLUSIONS AND RECOMMENDATIONS

The P.E.M. survey did not produce a drillable anomaly. For various reasons the results are inconclusive - primarily due to the fact that the decay rates appear reasonable for an anomalous response yet none exists!

As it is intended to drill a third hole on the basis of geochemistry/ I.P./mise-a-la-masse data, it is recommended that, should a significant sulphide intersection occur the hole be logged with a downhole E.M. system.

DISCUSSION

Results of the P.E.M. survey are disappointing. No obvious anomaly is associated with the I.P. response.

The horizontal component data often indicates slight highs adjacent to the I.P. anomaly centre, however, these are always confined to the first few channels. This would generally indicate a near surface conductive zone. Noise in the first channel is usually quite high.

Decay rates in the vertical component data are proportional to approximately t^{-1} and hence reflect a conductive situation. It does not suggest a homogenous half-space (decay rates proportional to $t^{-2.5}$). A time constant (τ) of 600 micro seconds on line 4600mE is well within the range of 200 to 800 micro-seconds within which most conductive ore deposits fall.

The lack of an obvious anomaly may be due to a number of factors:

- a) there is no conductive massive sulphide present,
- b) the target was not "illuminated" i.e. coupling between the primary field and the target was minimal,
- c) the lines were not long enough to define a non-anomalous background and
- d) target depth was too great for the loop geometry used.

In view of the supporting data, it would seem that b) and c) are the most acceptable explanations.

MARCUS FLIS

LK.BARRINGTON GRID P.E.M. DATA

Loop Geometry:- Tx: Rectangular, single turn, horizontal loop. Size as indicated below.

Rx: Roving receiver reading vertical and horizontal (along line) components of secondary field

Gain: 800

Timebase: 20msec

Loop 1 : 100m x 100m, loop laid out on 4500mE to 4600mE, 5100mN to 5200mN

Channel	Vertical Component								Horizontal Component							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
<u>Line 4500mE</u>																
4750mN	-14	-5	-2	-1	-1	-1	-1	0	5	1	1	0	0	0	0	0
4800mN	-12	-2	-1	0	0	0	0	0	4	2	1	1	0	0	0	0
4850mN	-14	-5	-2	-1	-1	0	0	0	3	0	0	0	0	0	0	0
4900mN	-15	-4	-2	-1	-1	0	0	0	2	0	0	0	0	0	0	0
4950mN	-16	-4	-1	-1	0	0	0	0	3	1	-1	-1	0	0	0	0
5000mN	-14	-3	-1	0	0	0	0	0	2	0	0	0	0	0	0	0
5050mN	-21	-5	-2	-2	-2	-1	0	0	2	0	0	0	0	0	0	0

Line 4600mE

4800mN	-10	-4	-2	-1	0	0	0	0	5	1	0	0	0	0	0	0
4850mN	-13	-4	-1	0	0	0	0	0	7	1	0	0	0	0	0	0
4900mN	-14	-4	-1	0	0	0	0	0	3	1	0	0	0	0	0	0
4950mN	-15	-2	-1	0	0	0	0	0	2	0	0	0	0	0	0	0

Loop 2 : 200m x 400m, loop laid out on 4500mE to 4900mE, 5000mN to 5200mN

Line 4600mE

4800mN	-46	-19	-7	-3	-2	-1	-1	0	7	3	-1	-1	0	0	0	0
4850mN	-46	-18	-7	-3	-2	-1	0	0	8	2	-1	-1	-1	0	0	0
4900mN	-47	-17	-5	-2	-2	0	0	0	7	-2	-2	0	0	0	0	0
4950mN	-55	-15	-3	-1	-1	0	0	0	5	-2	-2	-1	0	0	0	0

Line 4700mE

4700mN	-36	-16	-6	-3	-1	0	0	0	20	6	0	0	0	0	0	0	0
4750mN	-30	-6	-5	-3	-1	0	0	0	18	2	-1	-1	-1	0	0	0	0
4800mN	-39	-16	-7	-3	-2	-1	0	0	16	3	0	0	0	0	0	0	0
4850mN	-31	-13	-4	-1	-1	0	0	0	10	2	-1	-1	0	0	0	0	0
4900mN	-34	-10	-5	-2	-1	0	0	0	10	-5	-3	-2	-1	0	0	0	0
4950mN	-40	-8	-2	-1	0	0	0	0	12	-4	-3	-2	-1	-1	-1	0	0

Mid point of Channels (microseconds)

<u>Channel</u>	<u>Time</u>
1	300
2	600
3	1100
4	1800
5	2900
6	4800
7	8000
8	12800

Sample width : 200 microseconds

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AREA CODE (002)

612025

IN REPLY PLEASE QUOTE

3rd June, 1981.

MEMORANDUM TO: G.WEBER

COPY: T.DICKSON
R.SMITH

FROM: M.FLIS

Mise-a-la-Masse Survey in DD 80 Lb1
Lake Barrington Prospect, Sheffield, Tas.

INTRODUCTION

A mise-a-la-masse survey was carried out on the Lake Barrington prospect on the 26th and 27th of May, 1981. The survey was designed to investigate the distribution and possible extension of a small zone of massive sulphides encountered in hole DD 80 Lb1.

An electrode was emplaced in the intersection which occurred at a hole depth of 179 metres (real depth of 130 metres). The electrode plots vertically above 4825m N on line 4700m E (Eastman camera survey indicates the hole to be true).

Scintrex was contracted to do the work. A 2.5 Kva transmitter and an IPR - 7 receiver were used to obtain potential readings every 25 metres along the five grid lines. Distant current electrodes were placed 1.5 kilometres north and south of the Lb1 collar. These electrodes were connected to one polarity of the transmitter with the down hole electrode being connected to the other. Polarity was frequently reversed to avoid electrode polarization. A d.c. current of approximately 0.5 Amps was maintained. A stationary potential electrode was placed at 4650m E, 4940m N.

Readings were also attempted down DD 80 LB 2; the hole was found to be caved at 45 metres.

...2/..

DISCUSSION

Results of the survey are attached. Data is contoured at 50 millivolt intervals with respect to the zero reference contour at the stationary potential electrode position.

Although the potential field data does not deviate a great deal from that which would be produced by an electrode emplaced in a homogeneous medium I believe it is significant. The centre of the field is at 4750m E, 4765m N - a displacement of some 70 metres from the in-hole electrode position. The data indicates the presence of a body striking west-north-west, dipping steeply to the south-south-west and possibly plunging to the west-north-west.

In addition, I.P. data on line 4700m E and 4800m E shows a chargeability/resistivity anomaly at 4775m N and 4750m N respectively. This is in good agreement with the mise-a-la-masse survey.

It must be cautioned, however, that this anomaly does not conclusively indicate the presence of a conductive ore-zone. My major concern is that the pattern may simply reflect a lithological effect - the whole mineralized zone resides in a host rock of low resistivities.

RECOMMENDATIONS

Further drilling has already been recommended by Purvis (Report 10520). I recommend that the hole planned for line 4800m N be re-targeted to pass through 4750m E, 4765m N. Unfortunately no depth information can be gained from mise-a-la-masse data, however, I believe a depth of 100 metres will test both this data and the I.P. data. The hole should be drilled before the hole planned for 4700m E. If no favourable intersections are found then wedging within the hole should be done to pass through the original 130m depth target zone.


M. FLIS
GEOPHYSICIST

**CRA EXPLORATION PTY. LIMITED**

(INC. IN N.S.W.)

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IN REPLY PLEASE QUOTE

3rd May, 1982.

Memorandum To: T.W.DICKSON

~~G.WEBER~~

Copy: R.J.SMITH

From: M.Flis

LK.BARRINGTON COPPER PROSPECTSHEFFIELD, E.L. 7/73INTRODUCTION

Lk. Barrington copper prospect has been geophysically and geochemically surveyed, drilled and disregarded. Due to the confusion which now surrounds the status of this prospect a review and integration of work completed was needed.

CONCLUSION AND RECOMMENDATIONS

The possibility of significant mineralisation occurring on the Lk.Barrington grid is, from a geophysical point of view, high. Comparisons between I.P. and mise-a-la-masse results indicate the drilling targets were peripheral to a conductive zone shown to be electrically connected to massive copper mineralisation.

It is therefore recommended that:

- 1) An S.P. survey be run over lines 4700mE and 4800mE. This will serve to indicate whether mineralisation is relatively deep or shallow. Approximate cost: \$200.
- 2) Conduct an orientation E.M. survey on lines 4700mE and 4800mE using a dipole E.M. system (Max Min, Crone). Approximate cost: \$1,500.

- 3) Drill the mise-a-la-masse target, with confirmation by above recommendations, at 4775mE, 4740mN. Target depth is not well defined, however hole should be designed for a steeply dipping (south-south-westerly) body at approximately sixty metres depth.
- 4) Downhole E.M./I.P. survey to be conducted on the hole recommended in 3). in the event of an intersection.

DISCUSSION

Geochemistry

Asarco delineated a 400 metre anomalous copper zone with highs of 4500 ppm Cu. Rock chips returned up to 0.94% Cu. No lead and only very minor zinc was found. The main anomalous zone runs from 4550mE, 4850mN to 5000mE, 4875mN.

Magnetics

No coherent magnetic response was found to be associated with the copper anomaly. The area proved to be remarkably noisy. A magnetic unit appears to be present to the south of the grid. Conclusions from the magnetic survey are:

- a) pyrrhotite and/or magnetite are not present in any appreciable amount.
- b) the anomalous copper does not reside in a magnetically distinguishable lithology.
- c) copper mineralisation is not in the form of cubanite - a magnetic copper sulphide!

I.P.

Five lines of I.P. were read over the grid, the survey outlined a moderately chargeable zone (anomalous: background values being about 2:1) coincident with a very conductive zone (10:1). These zones are well defined and juxtaposed with the copper geochem anomaly. The anomalies are moderately deep and open to depth. Surface projections of "definite" and "probable" I.P. anomalies are indicated on the attached plan.

Diamond Drilling

Two drill holes were targetted on the coincident I.P./geochem anomalies. Moderate widths of disseminated (0.3% to 1.8%) copper mineralisation were intersected in both holes, together with the omni-present 5-10% pyrite. The conclusion drawn from this drilling was that "copper mineralisation appears to be strengthening eastwards."

A 10cm band of massive sulphide (chalcopyrite) was intersected in LB-1. This was interpreted to be "a conformable syngenetic sulphide sediment".

Mise-a-la-Masse

The sulphide intersection LB-1 was used to carryout a mise-a-la-masse survey on the grid. The potential field from this survey is shown on the accompanying plan. The essential results of the survey were:

- a) the anomaly is not due to a point source - the centre has shifted some 70 metres eastwards of the electrode emplaced in LB-1 indicating the massive sulphide intersection is electrically connected to a larger conductive zone,
- b) this conductor strikes parallel to both the I.P. and geochem anomalies.
- c) a steep dip to the south-south-west and possibly a plunge to the west-north-west is indicated.
- d) depth to source is unknown, although it appears to have a substantial depth extent.

P.E.M.

A pulse E.M. survey over lines 4600mE and 4700mE was conducted to define the conductor. Data was extremely noisy. No 'good' anomalies were detected. Unfortunately line 4800mE was not done. The fact that no anomalies were detected is either due to there being no massive sulphide to detect, the target is too deep, or the target was not "illuminated" by the particular loop position used. In view of the results from I.P., drilling and mise-a-la-masse, I would suggest the last of these to be the most likely.

GENERAL

It is evident that the "definite" and "probable" I.P. anomalies flank the mise-a-la-masse potential anomaly - a pattern highly reminiscent of a massive sulphide body (mapped by mise-a-la-masse) surround by a disseminated halo (mapped by I.P.).

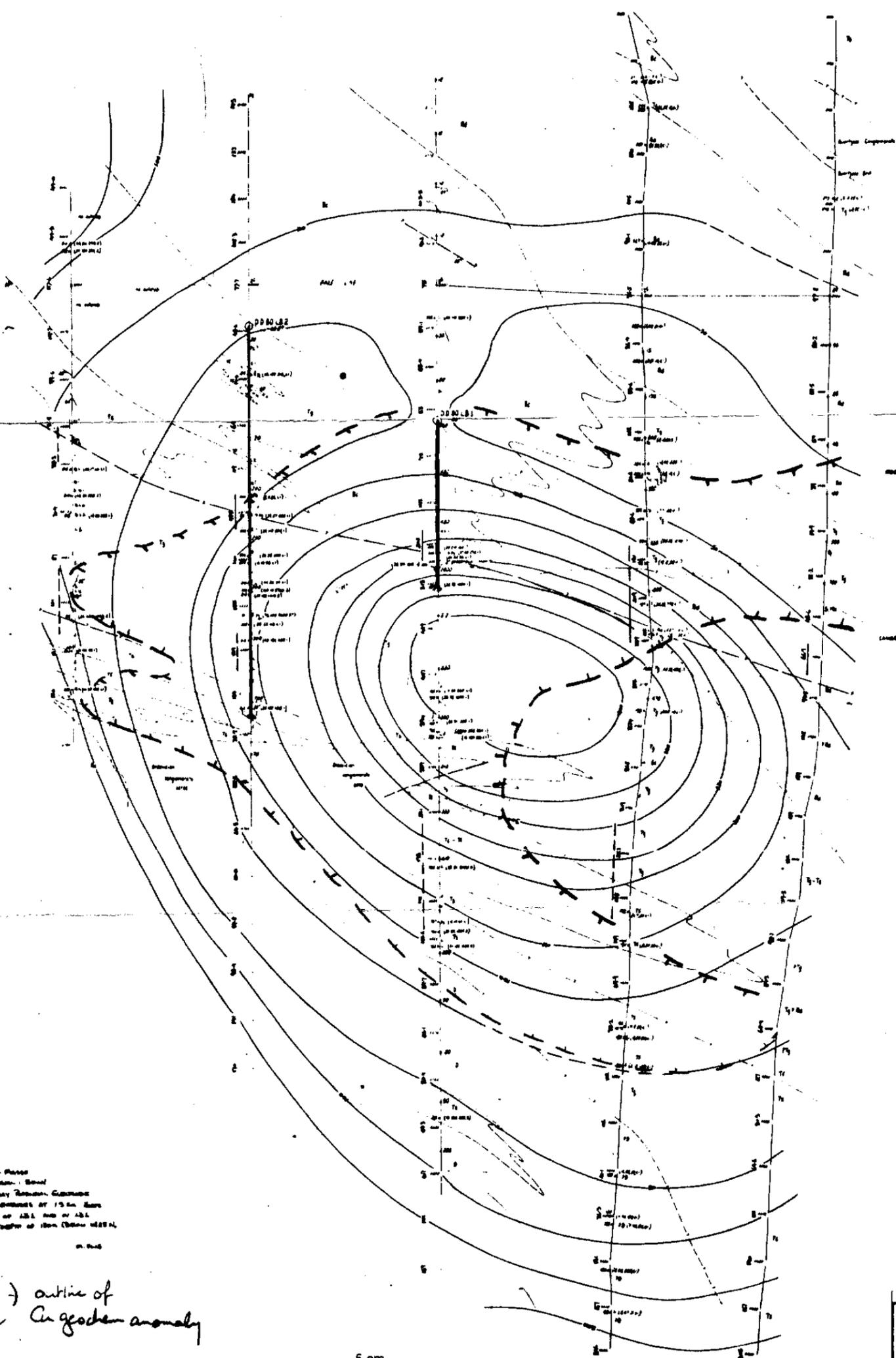
Drilling was targetted on the I.P. response and therefore, in retrospect, should have been expected to come up with what they did - i.e. disseminated mineralisation. In the absence of any other data that was all that could have been achieved. It is interesting to note that LB-1, the hole closest to the applied potential anomaly, contains the richest mineralisation. The observation that mineralisation increases to the east is also in support of the mise-a-la-masse data.

Attached are two I.P. psuedo-sections (lines 4700 and 4800mE) with the mise-a-la-masse centres indicated.

It would seem that the applied potential anomaly corresponds with a deep seated chargeability high on the southern flank of the resistivity low. The major portion of the I.P. anomaly is caused by disseminated copper mineralisation and pyrite.

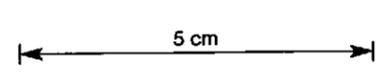
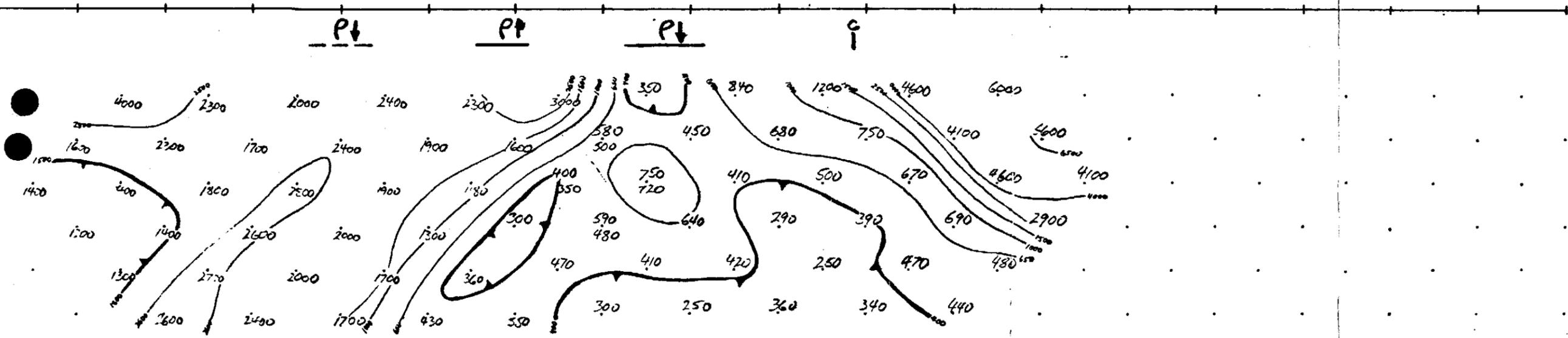
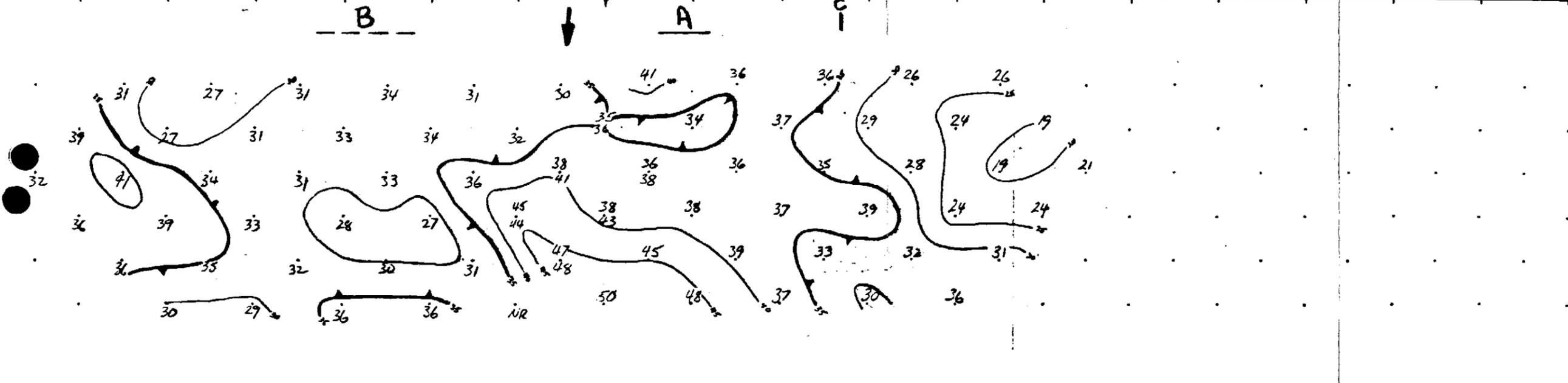
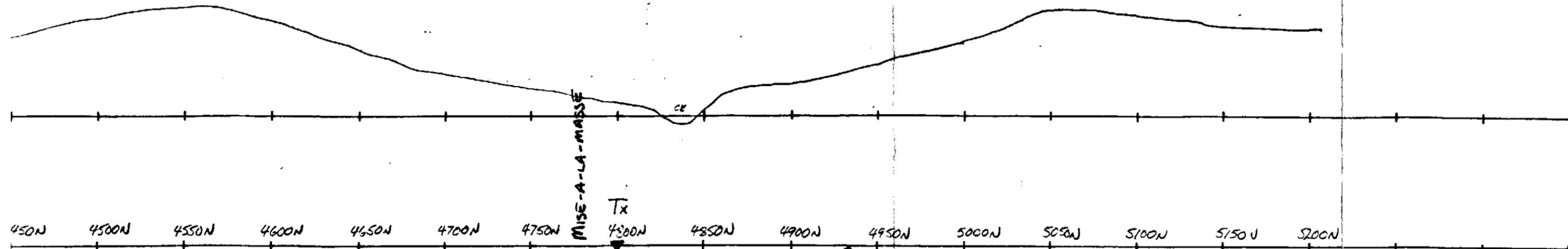


MARCUS FLIS



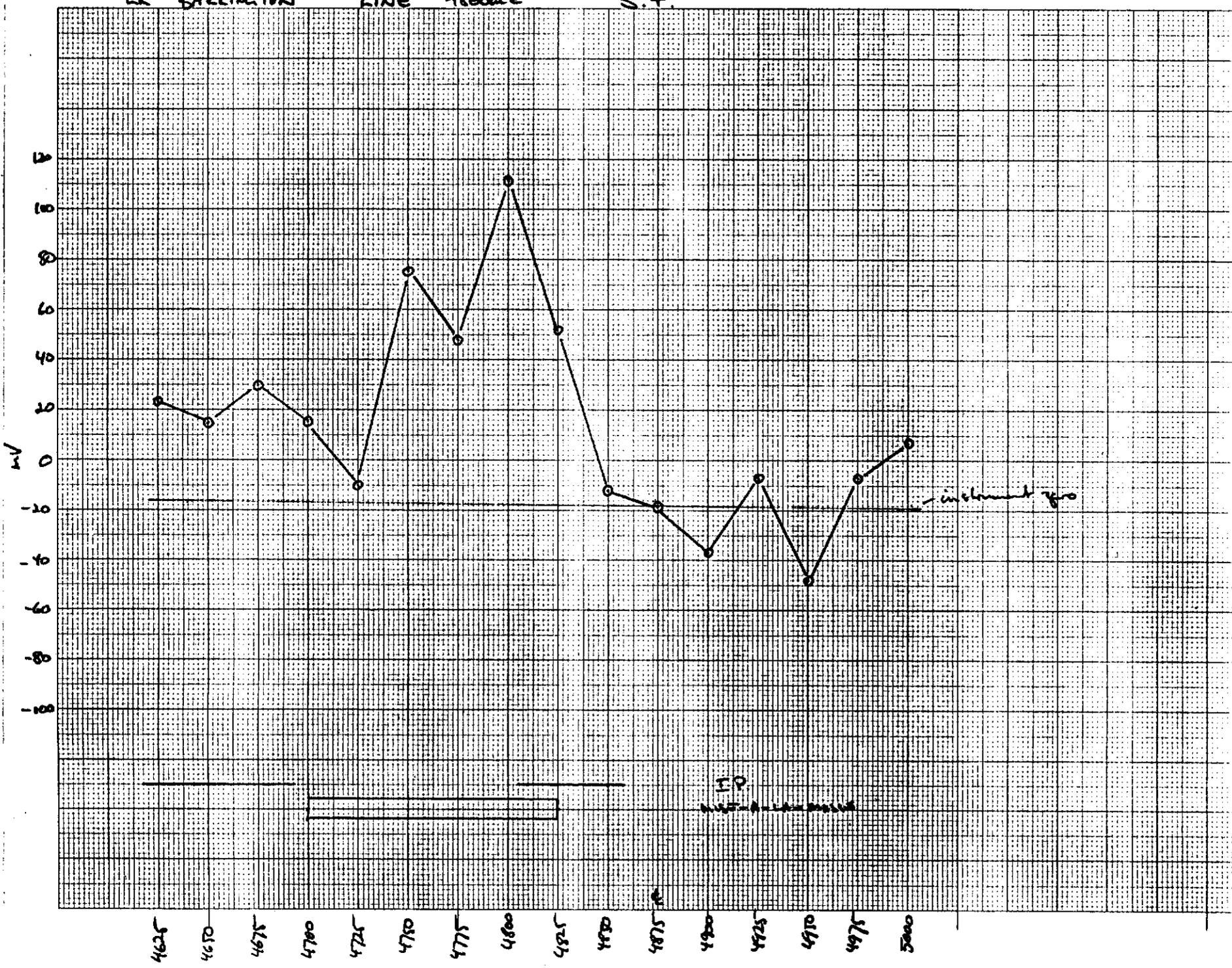
LEGEND

- 1:10000 Contour Interval
- 1:20000 Contour Interval
- 1:40000 Contour Interval
- 1:80000 Contour Interval
- 1:160000 Contour Interval
- 1:320000 Contour Interval
- 1:640000 Contour Interval
- 1:1280000 Contour Interval
- 1:2560000 Contour Interval
- 1:5120000 Contour Interval
- 1:10240000 Contour Interval
- 1:20480000 Contour Interval
- 1:40960000 Contour Interval
- 1:81920000 Contour Interval
- 1:163840000 Contour Interval
- 1:327680000 Contour Interval
- 1:655360000 Contour Interval
- 1:1310720000 Contour Interval
- 1:2621440000 Contour Interval
- 1:5242880000 Contour Interval
- 1:10485760000 Contour Interval
- 1:20971520000 Contour Interval
- 1:41943040000 Contour Interval
- 1:83886080000 Contour Interval
- 1:167772160000 Contour Interval
- 1:335544320000 Contour Interval
- 1:671088640000 Contour Interval
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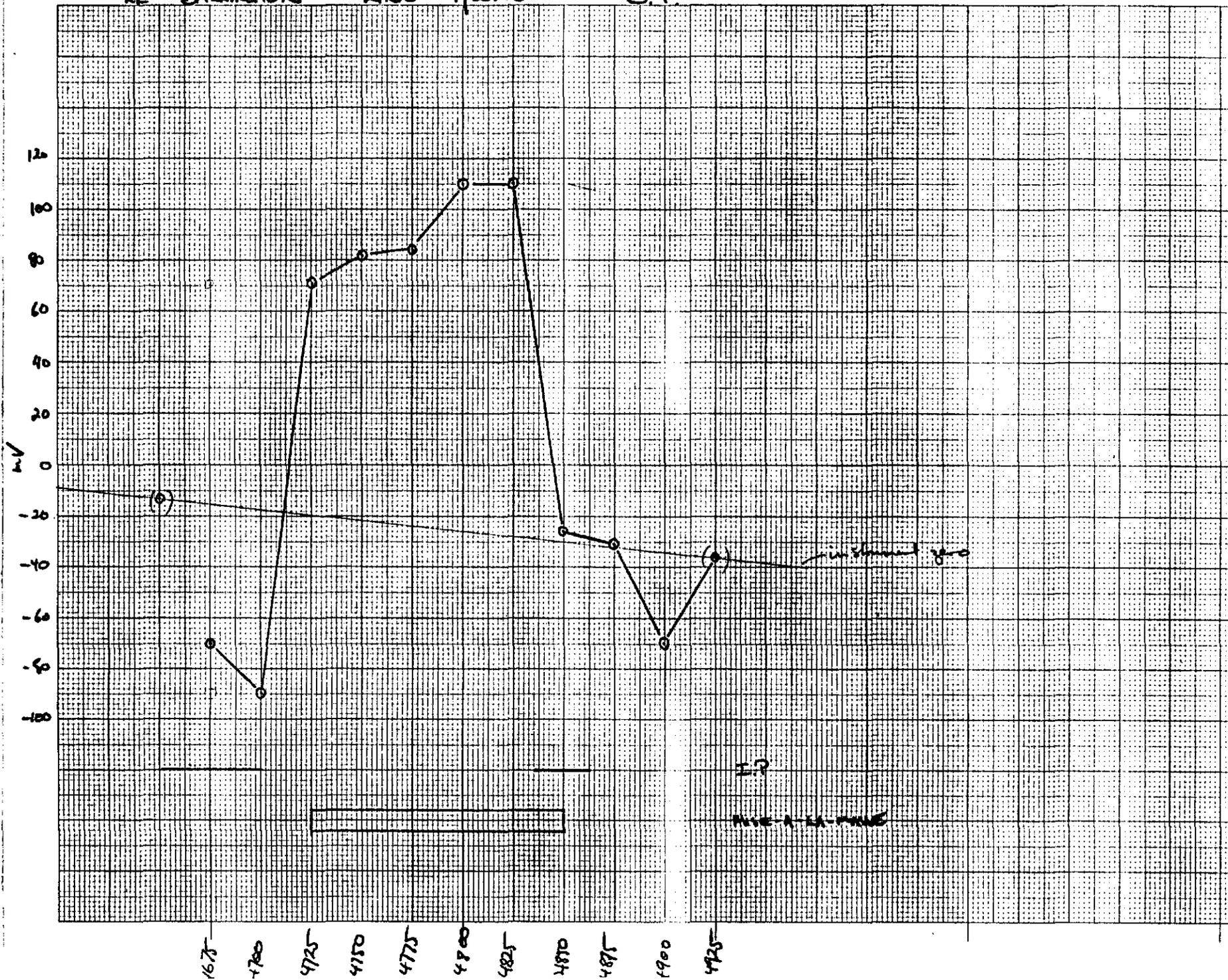
C. R. A. EXPLORATION	
INDUCED POLARIZATION and RESISTIVITY SURVEY	
<u>BARRINGTON</u>	
LINE : 4700E	
Array Dipole - Dipole	Dipole length 50m

LK BARRINGTON LINE 4800mE S.P.



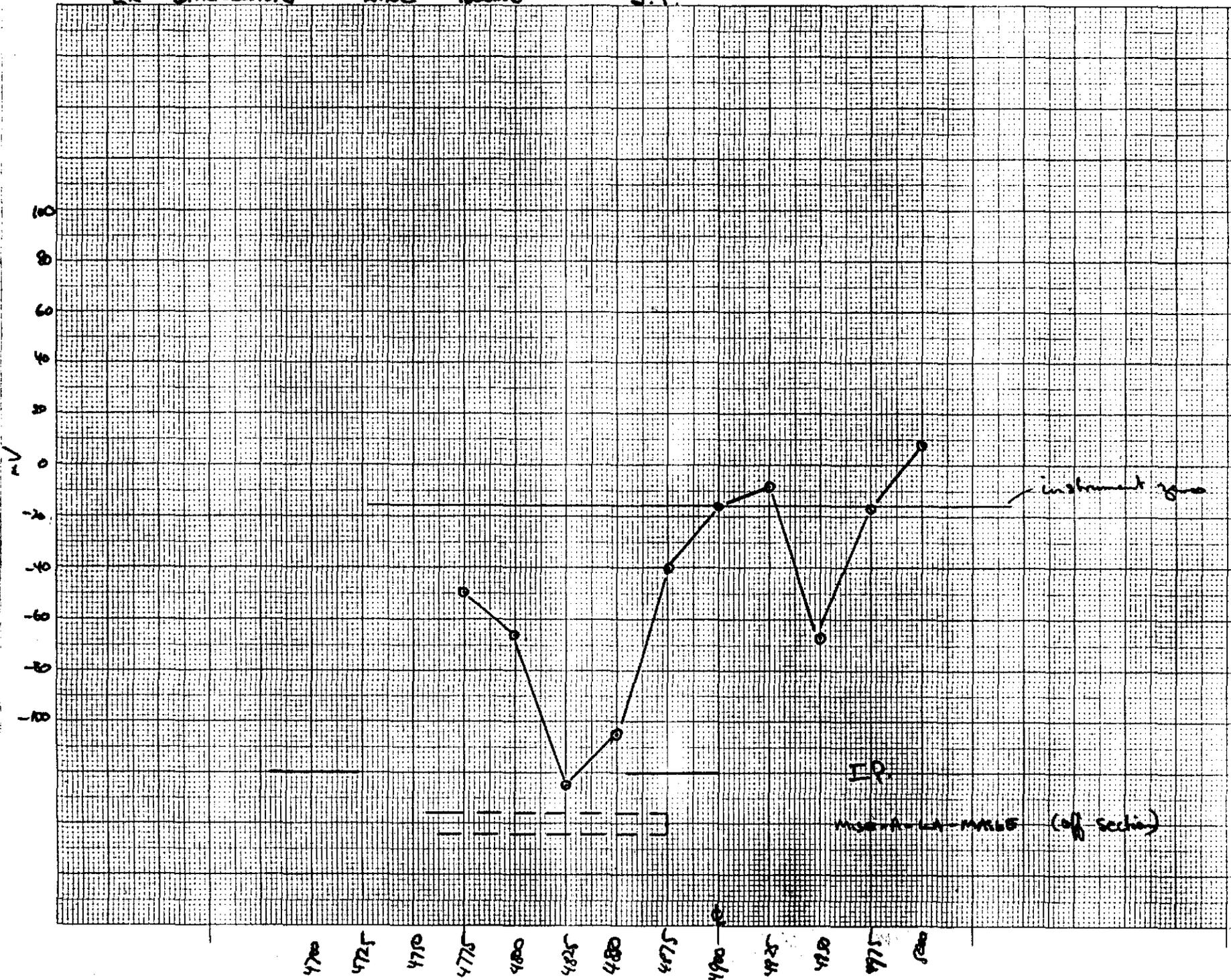
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LL BARRINGTON LINE 4700ME S.P.



612035

LK BARRINGTON LINE 4600mE S.P.



612036



CRA EXPLORATION PTY. LIMITED
(INC. IN N.S.W.)

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CAMBRIDGE ROAD, BELLERIVE, 7018, TASMANIA, AUSTRALIA

612037

P.O. BOX 138
BELLERIVE 7018
TELEGRAMS: CRAEX
TELEX: AAS7144
TELEPHONE: 44 3533
AREA CODE: (002)

IN REPLY PLEASE QUOTE

18th May, 1982.

Memorandum To: G.WEBER
T.W.DICKSON

Copy: R.J.SMITH

From: M.FLIS

SELF POTENTIAL SURVEY AT LK.BARRINGTON
SHEFFIELD EL 7/73, NTH.TASMANIA.

INTRODUCTION

A self potential (S.P.) survey was conducted by the author along three lines of the Lk.Barrington grid. The survey was intended to provide qualitative information about the depth to source of the mise-a-la-masse anomaly previously defined, and to corroborate with previous survey results.

DISCUSSION

Three lines - 4600mE, 4700mE, 4800mE - were surveyed with an Austral SP-3 S.P.meter (#323). The array used consisted of a stationary negative potential electrode with a "roving" positive potential electrode for each line. Readings were taken every 25 metres together with a "base" reading to indicate error between the electrodes with "zero" separation.

The three profiles are attached. Positions of I.P. and mise-a-la-masse anomalies are indicated.

From these three profiles a number of conclusions may be drawn:-

- a) the S.P. anomalies on lines 4700mE and 4800mE are directly correlatable to the mise-a-la-masse centres,
- b) the character of the S.P. response changes drastically between 4700mE and 4600mE. No mise-a-la-masse anomaly is associated with 4600mE,
- c) from the symmetry of the S.P. curves the dip is postulated as near vertical, and
- d) from the half width of the S.P. curves, the depth is indicated to be around 45 to 65 metres although this figure is very crude.

Although S.P. data is subject to many forms of degradation, ranging from topography to type of soil cover, the coincidence between mise-a-la-masse and S.P. anomalies is impressive. The fact that an S.P. response was obtained in the first place suggests a relatively shallow source and not the 130 metres interpreted from I.P. data. Shallow, in this context, is at or around the water table.

CONCLUSIONS AND RECOMMENDATIONS

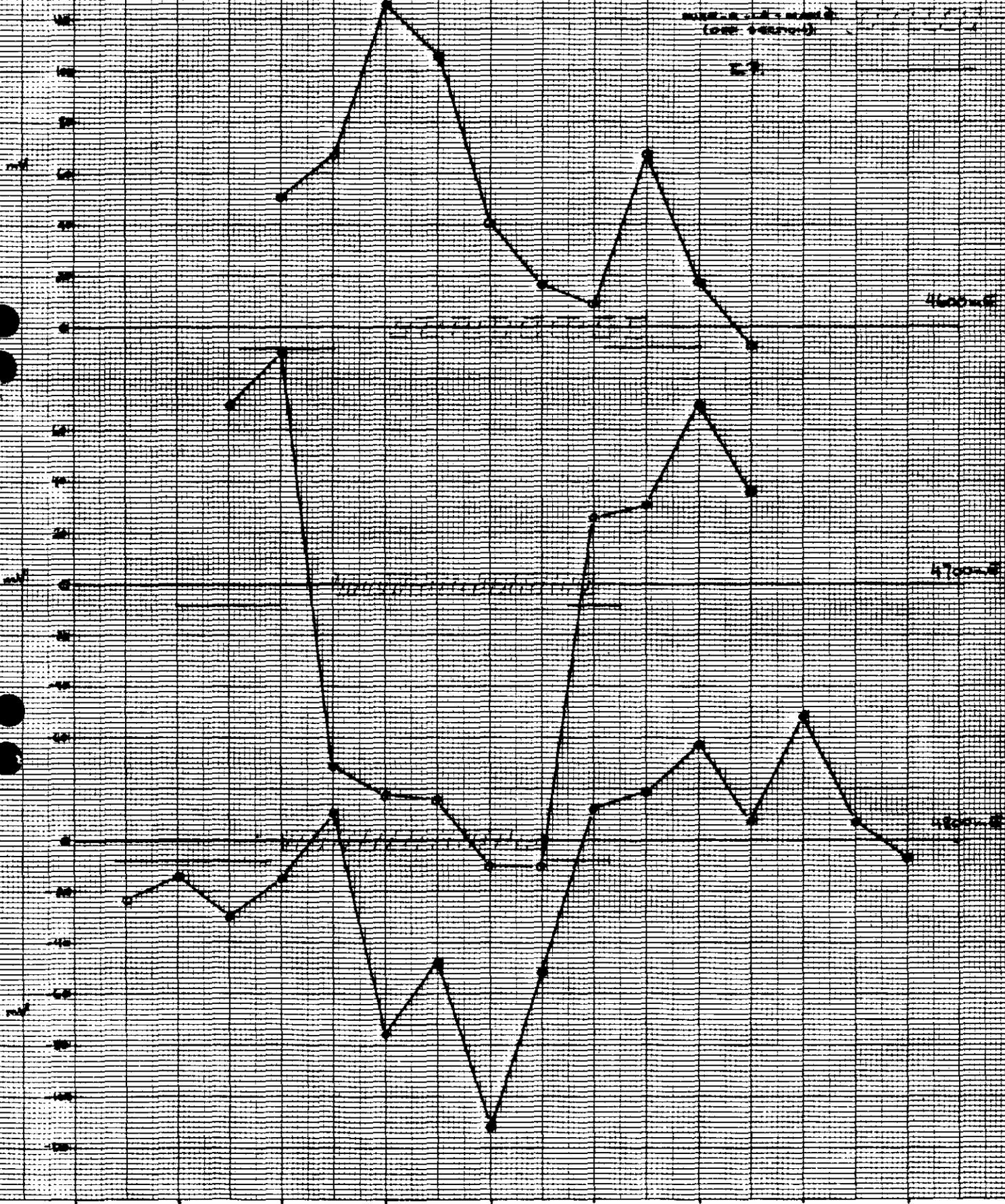
The S.P. survey has given further supportive evidence in favour of mineralisation occurring on the Lk.Barrington prospect. The recommendation for drilling the mise-a-la-masse anomaly still holds. The target zone is 4775mN on 4725mE at a depth of 60 metres.



MARCUS FLIS

LE. BATHURON S.P. SURVEY
10-1-52

WIND - 10-15 KNOTS
WIND - 10-15 KNOTS
(SEE SURVEY)



4600-5

4700-5

4800-5

4600

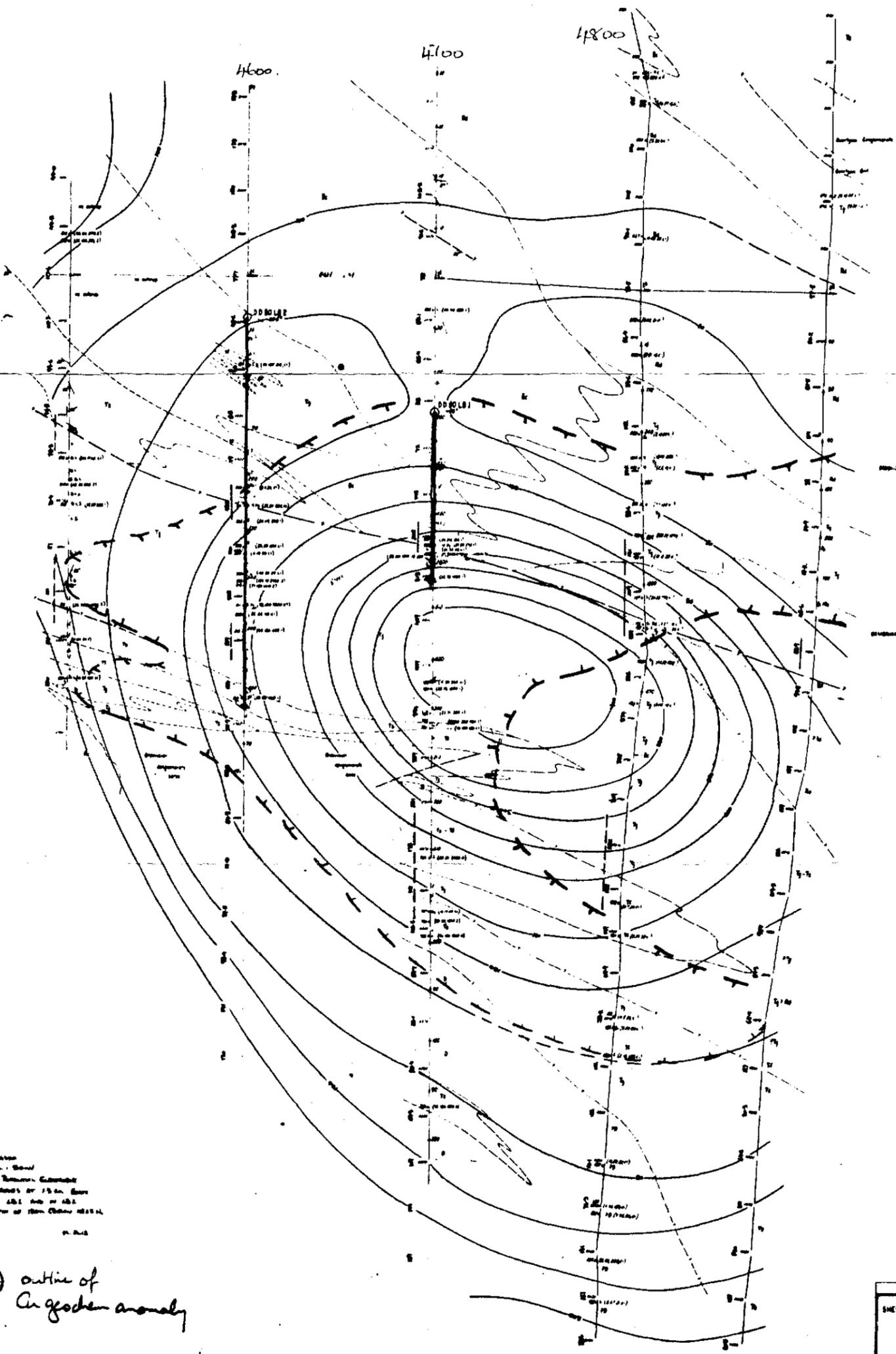
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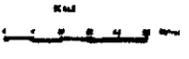
5000

WIND - 10-15 KNOTS



LEGEND

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CRA EXPLORATION PTY LIMITED
 SHEFFIELD G. T. 73 CRAE - ASARCO JV
 LAKE BARRINGTON PROSPECT
 GEOLOGICAL PLAN

Scale 1:50,000
 Contour Interval 10m
 © Copyright 1973, CRAE - ASARCO JV
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 This map is a reproduction of the original map
 at a scale of 1:50,000.

○ outline of
 Argosden anomaly

5 cm

APPENDIX FOUR

DIAGRAMMATIC LOGGING SHEETS

DRILLHOLES DD80 LB1

DD80 LB2

DD80 LB3

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD 80 L81.

PROSPECT LAKE BARRINGTON.

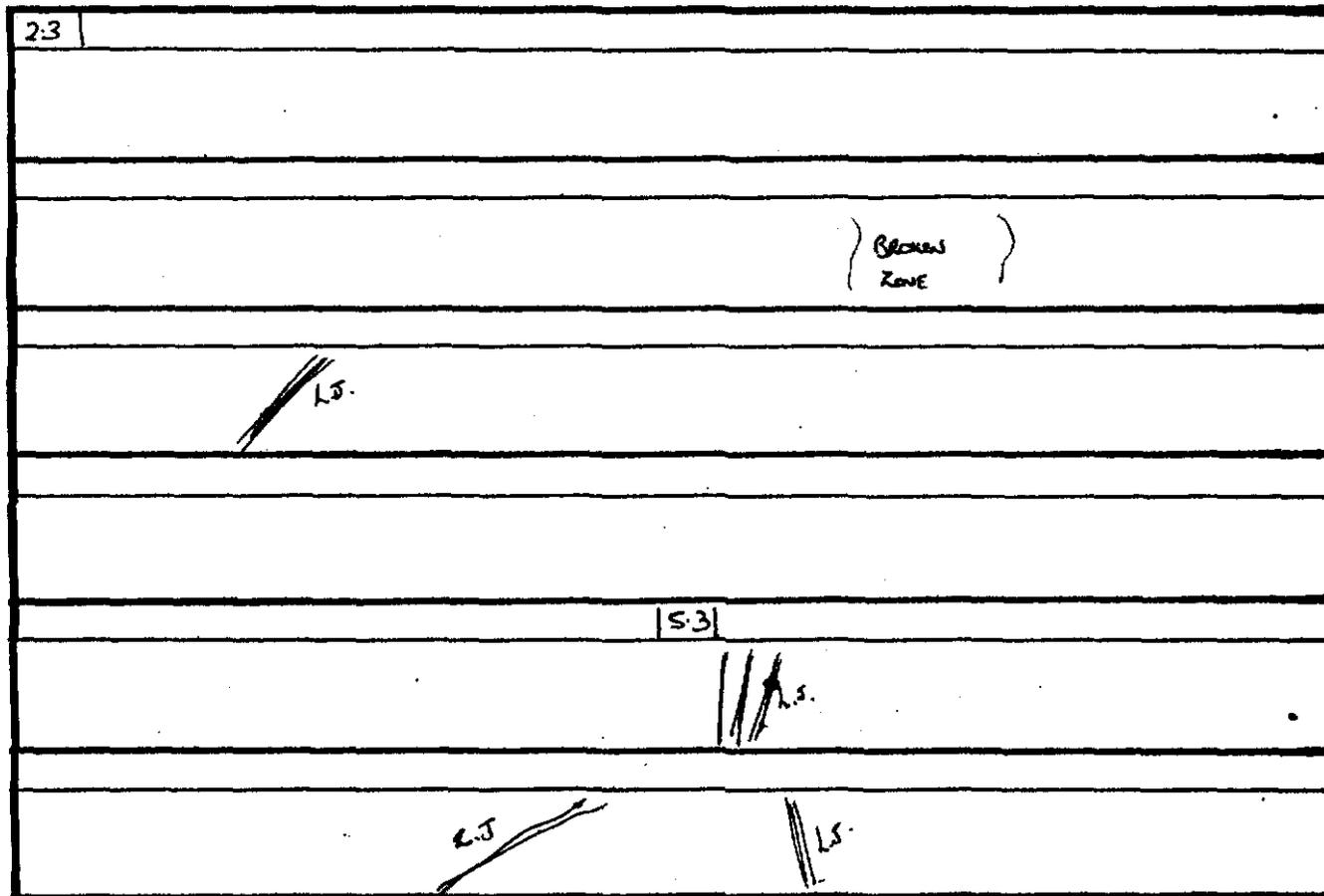
DEPTH FROM 2.3m

TO 6.2m

DIAGRAMATIC DRILLHOLE LOG

PAGE ONE OF THIRTY-FIVE.

NQ TRAY



BRECCIA-CONGLOMERATE.
SL. JOINED & STAINED
AFTER M.

612042

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD 80. L81

PROSPECT LAKE BARRINGTON

DEPTH FROM 10.2m

TO 14.6m

DIAGRAMATIC DRILLHOLE LOG

PAGE THREE OF THIRTY-FIVE

NQ TRAY

104
FRAGMENTS. FRAGMENTS.
(B-7)
LS.
LS.
132
Limonic zone.

BRECCIO-CONGLOMERATE

SYMBOLS

L.J. - limonite joint

Mn-J - manganese joint

Fe-J. limonite joint.

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD80 LS 1.

PROSPECT LAKE BARRINGTON

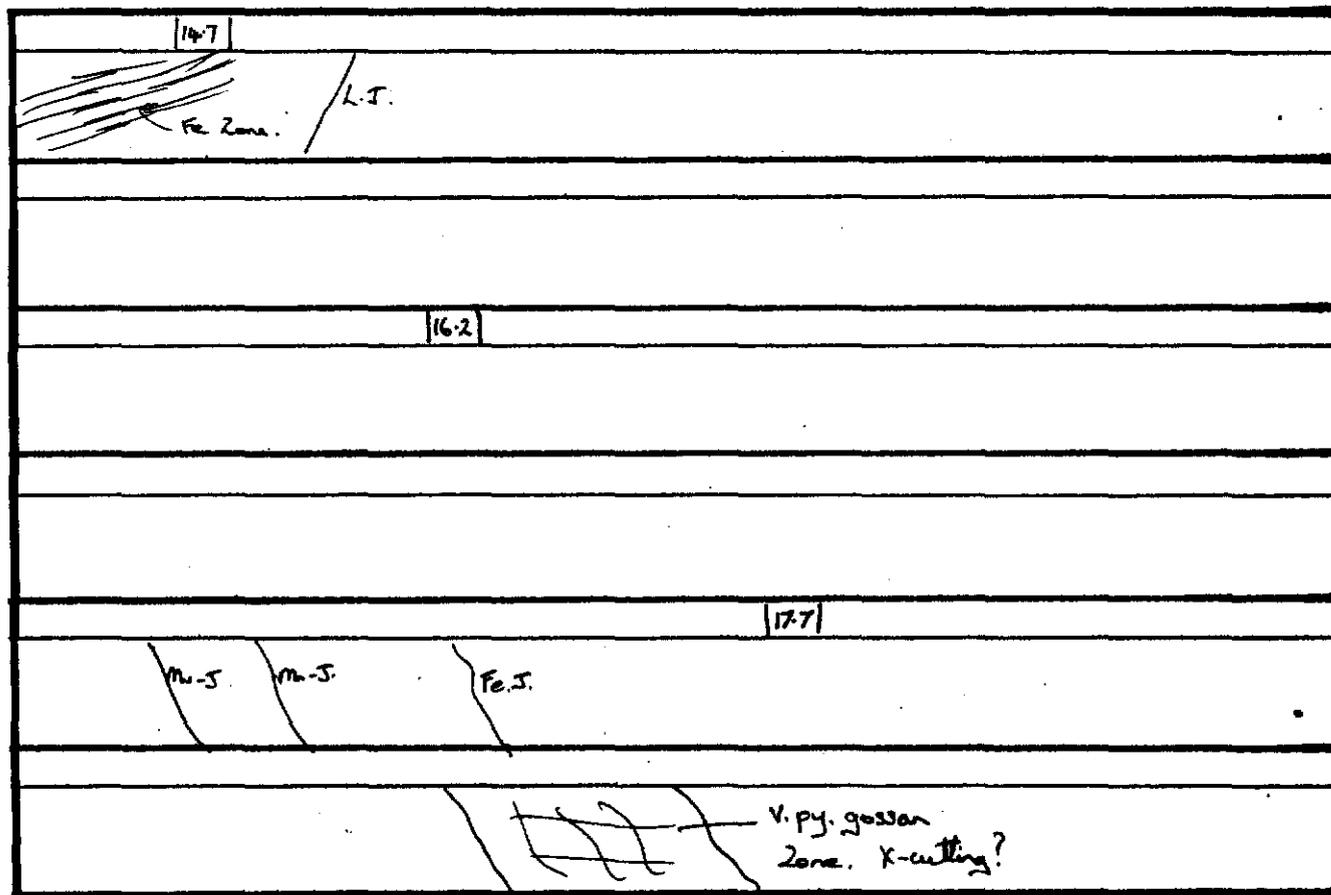
DEPTH FROM 14.6m

TO 18.9m

DIAGRAMATIC DRILLHOLE LOG

PAGE Four. OF THIRTY-FIVE.

NQ TRAY



612045

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD 80 L81

PROSPECT LAKE BARRINGTON

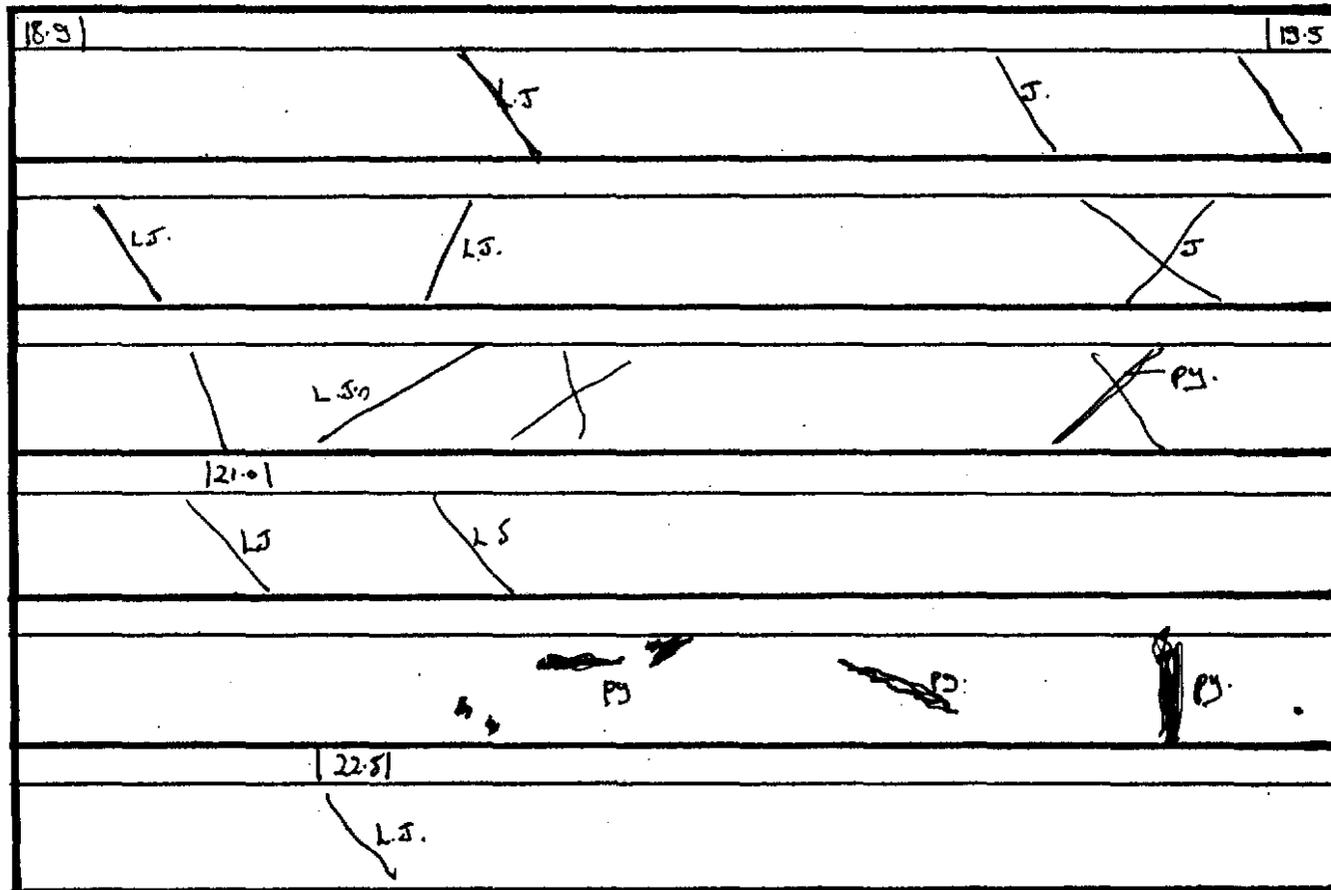
DEPTH FROM 18.9

TO 23.0

DIAGRAMATIC DRILLHOLE LOG

PAGE FIVE OF THIRTY-FIVE

NQ TRAY



612046

SYMBOLS

EL. NAME SHEFFELD

NUMBER 773

DRILLHOLE NO. DD 80 LB1

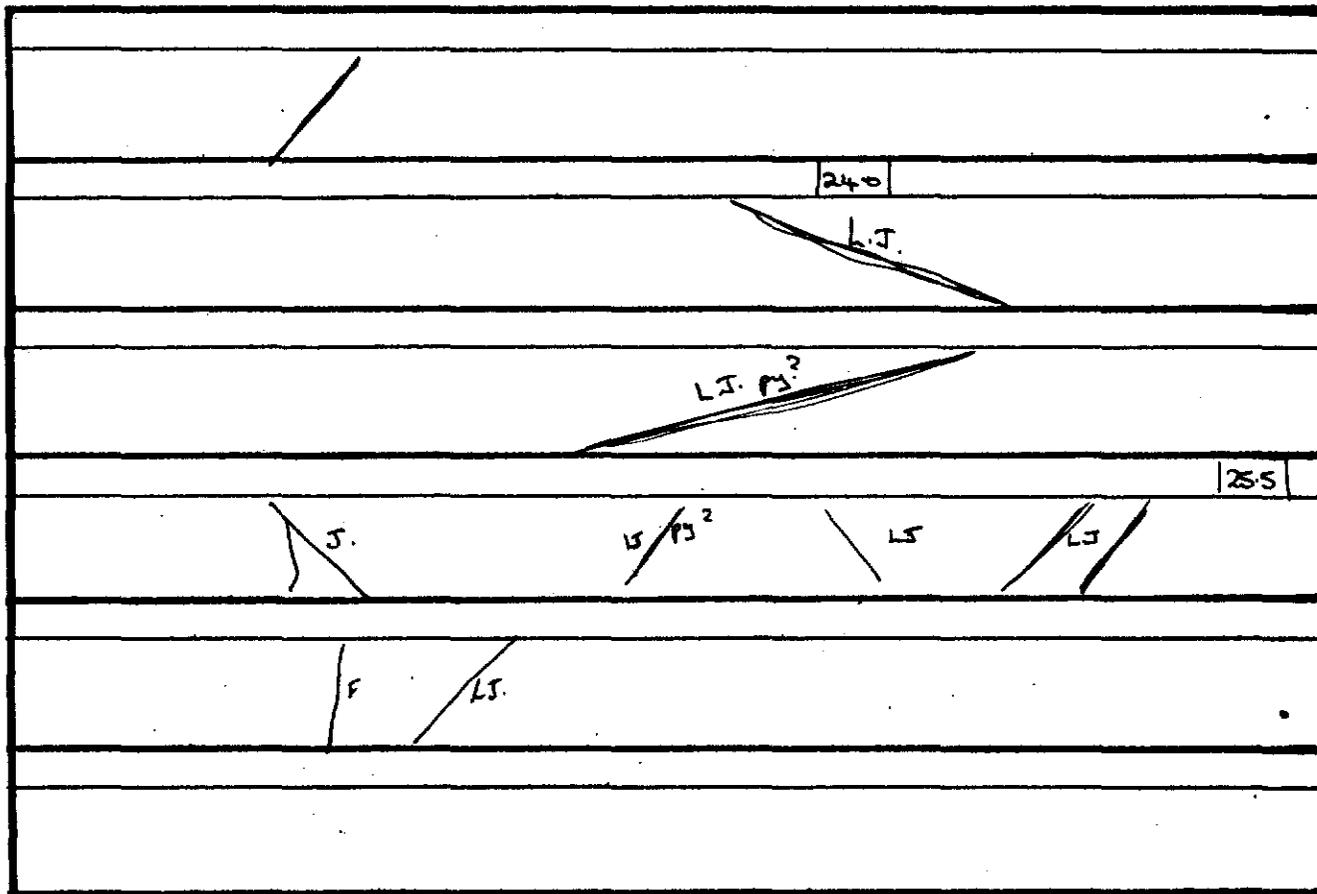
PROSPECT LAKE BARRINGTON

DEPTH FROM 23.0m
TO 26.8m

DIAGRAMATIC DRILLHOLE LOG

PAGE SIX OF THIRTY-FIVE

NQ TRAY



BRCCIO - CONGLOMERATE
MED FRACTURED LIMONITE
JOINTS - OCC ZONES YELLOWY
EPIDOTE? - SERICITE ACT.
BLEACHED FROM JOINTS.

612047

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DIAGRAMATIC DRILLHOLE LOG

DRILLHOLE NO. JD 80 LB 1.

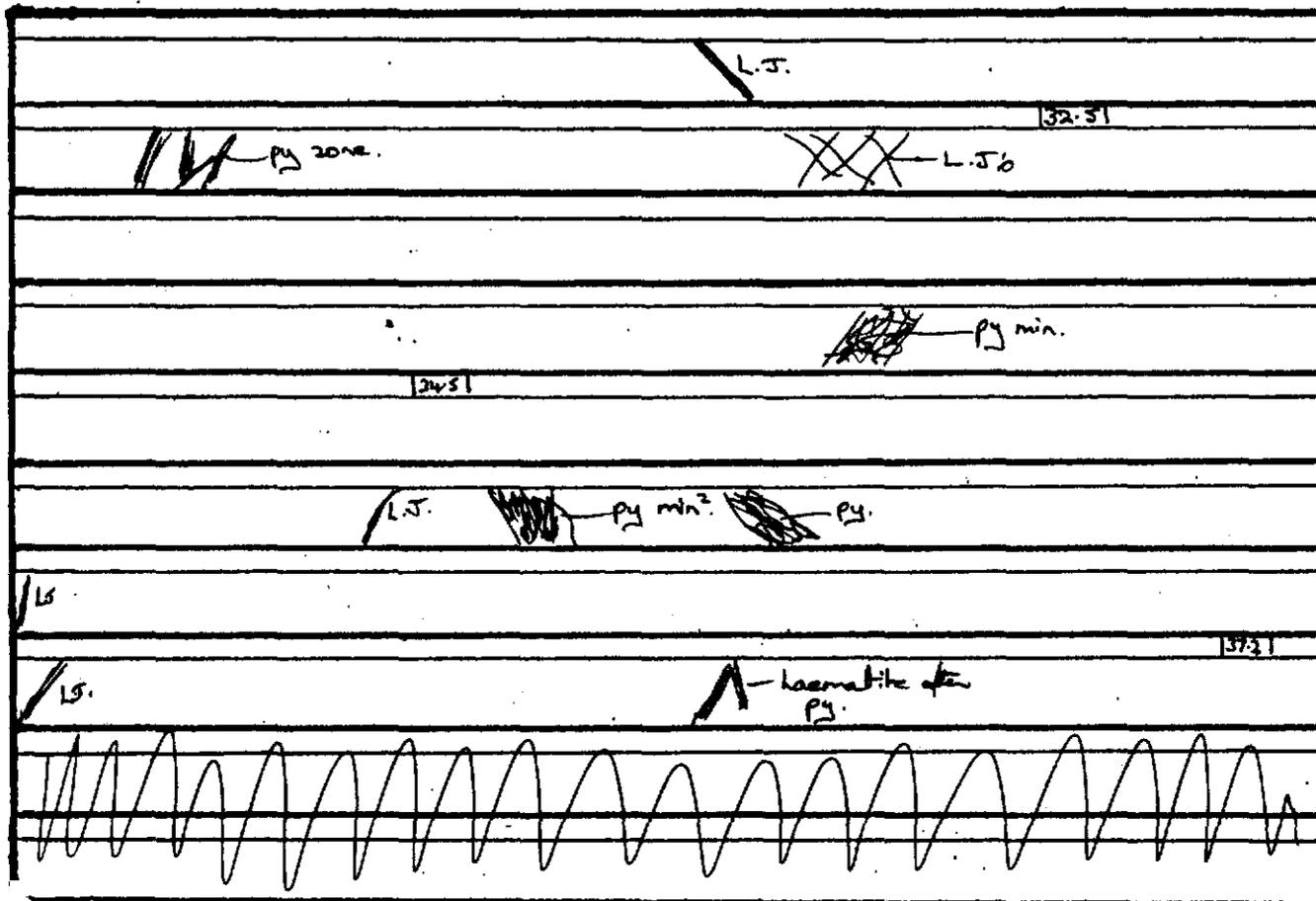
PROSPECT LAKE BARRINGTON

DEPTH FROM 31.0m

TO 37.2m

PAGE EIGHT OF THIRTY-FIVE

NQ TRAY



612049

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DIAGRAMATIC DRILLHOLE LOG

DRILLHOLE NO. DD 80 LB1.

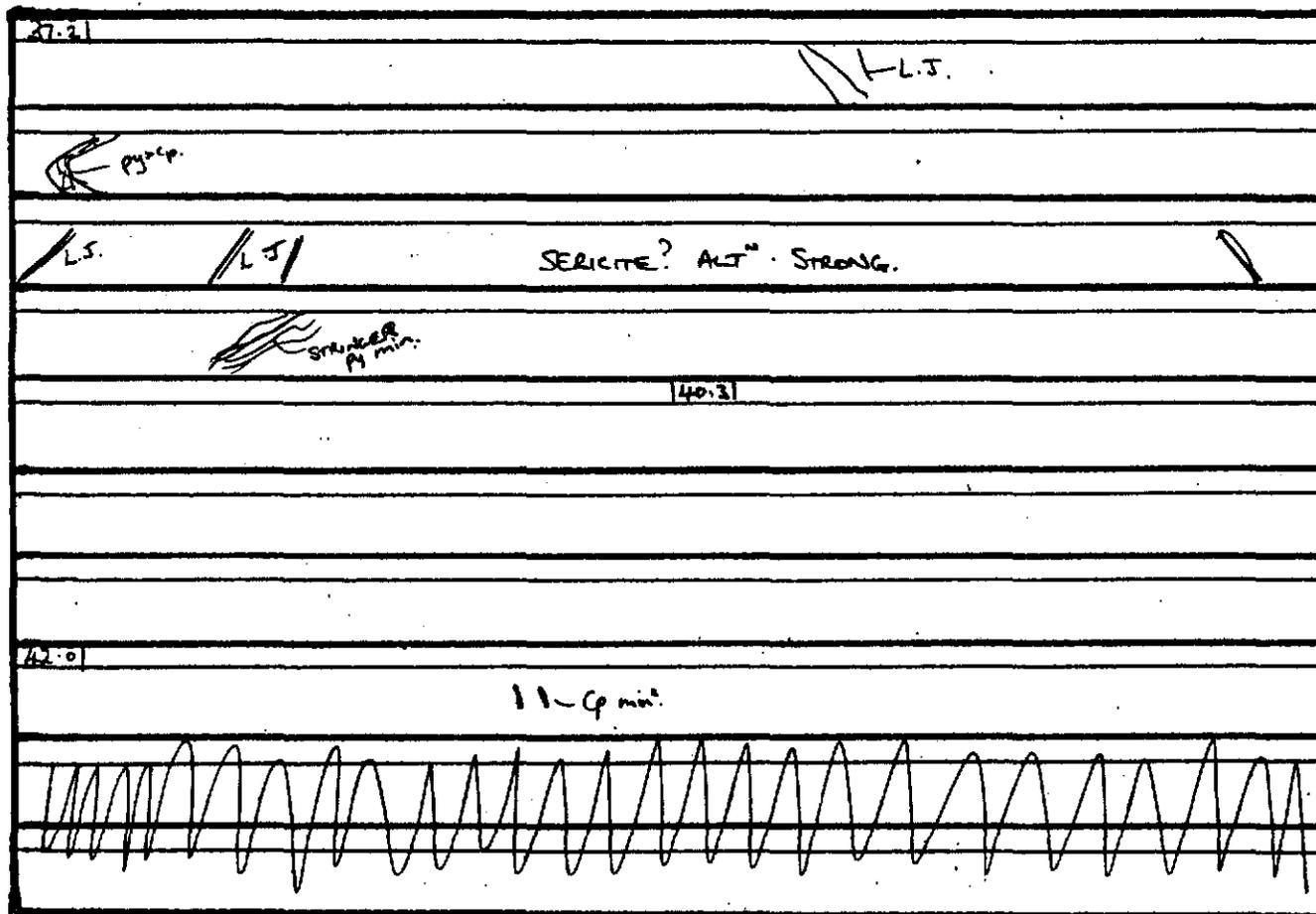
PROSPECT LAKE BARRINGTON

DEPTH FROM 37.2m

TO 42.5m

PAGE NINE OF THIRTY-FIVE

NQ TRAY



GRITTY TUFF -
 CONGLOMERATE SANDS.
 SL - MOD FRACTURED
 SERICITE ALT. MOD-ST.

612050

SYMBOLS

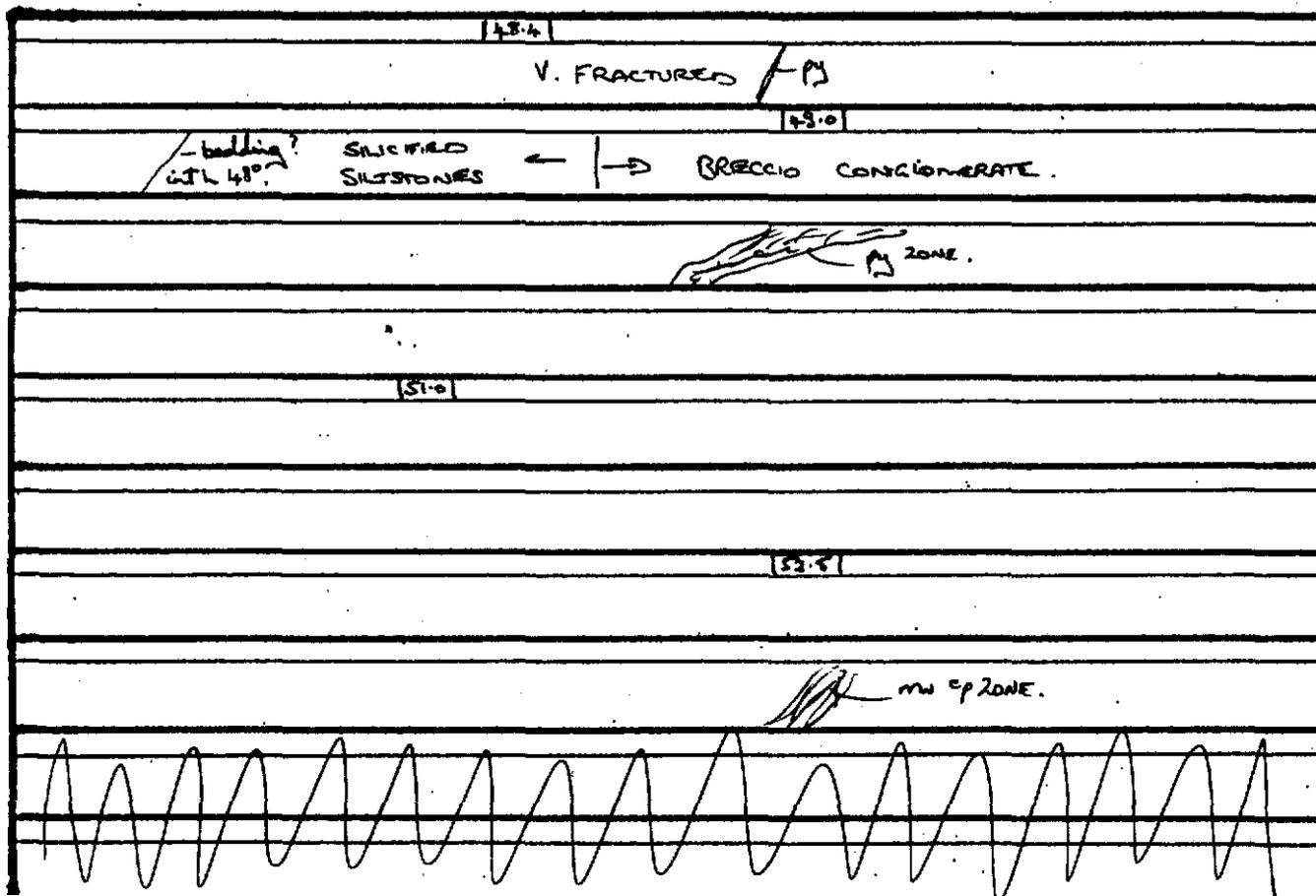
EL. NAME SHEFFIELD
NUMBER 7/73

DRILLHOLE NO. DD 80 L B 1.
PROSPECT LAKE BARRINGTON
DEPTH FROM 48.0m
TO 53.5m

DIAGRAMATIC DRILLHOLE LOG

PAGE ELEVEN OF THIRTY-FIVE

NQ TRAY



BRECCIO-CONGLOMERATE
MOD FRACTURED
ST. SERICATE MAT. IN
ZONES. — YELLOWY-SHAPED.

612052

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD 80 L81.

PROSPECT LAKE BARRINGTON

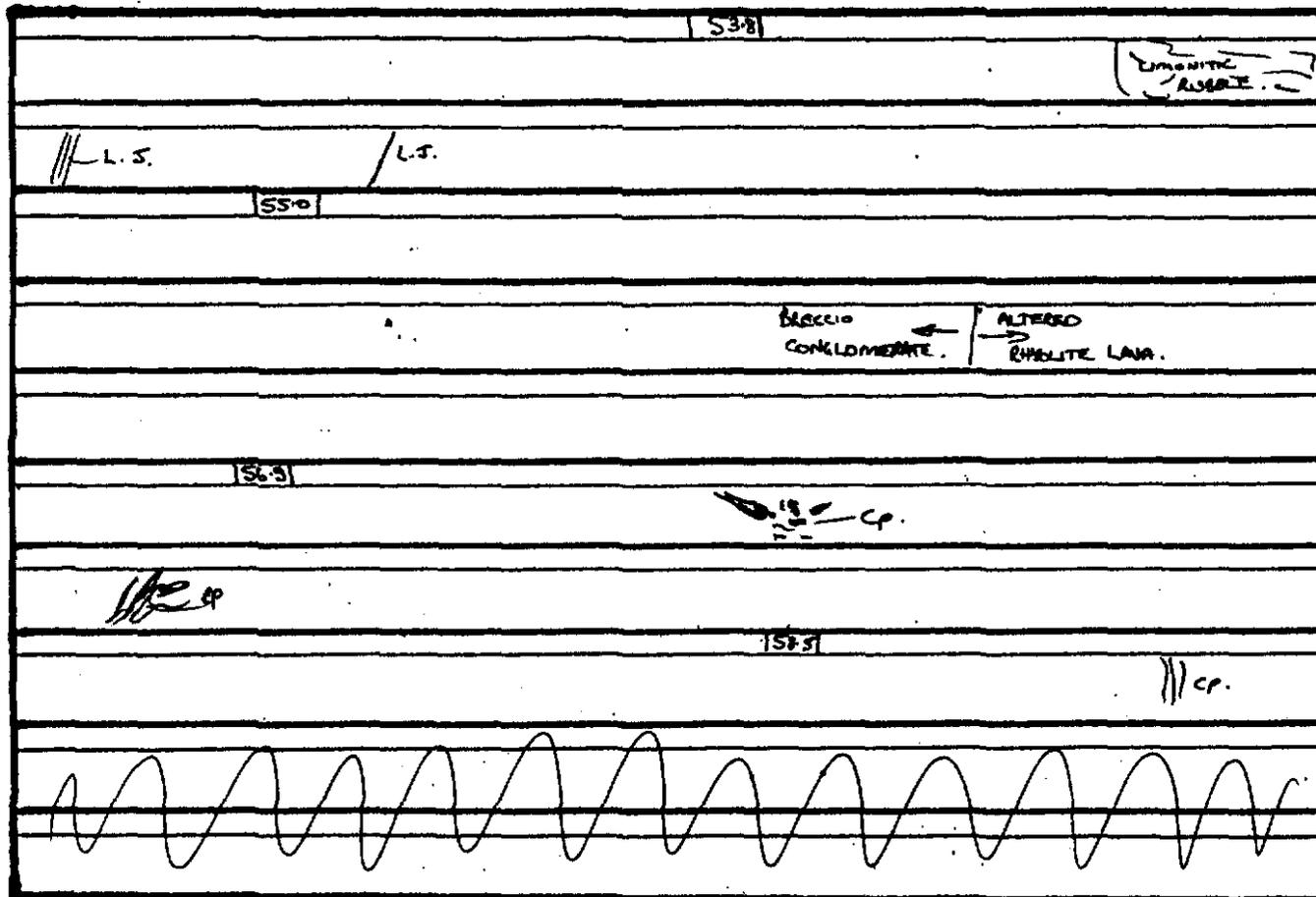
DEPTH FROM 53.5m

TO 58.7m

DIAGRAMATIC DRILLHOLE LOG

PAGE TWELVE OF THIRTY-FIVE

NQ TRAY



BRECCIO-CONGLOMERATE
(AS BEFORE).

RHYOLITE LAVA
 FAIRLY COMPACT
 SL. FRACTURED.
 SOME V. SL. CHLORITIC
 ALTHO ALONG JOINTS
 PALE DK GR-GN COLOUR.

612053

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD 80 LB1.

PROSPECT LAKE BARRINGTON

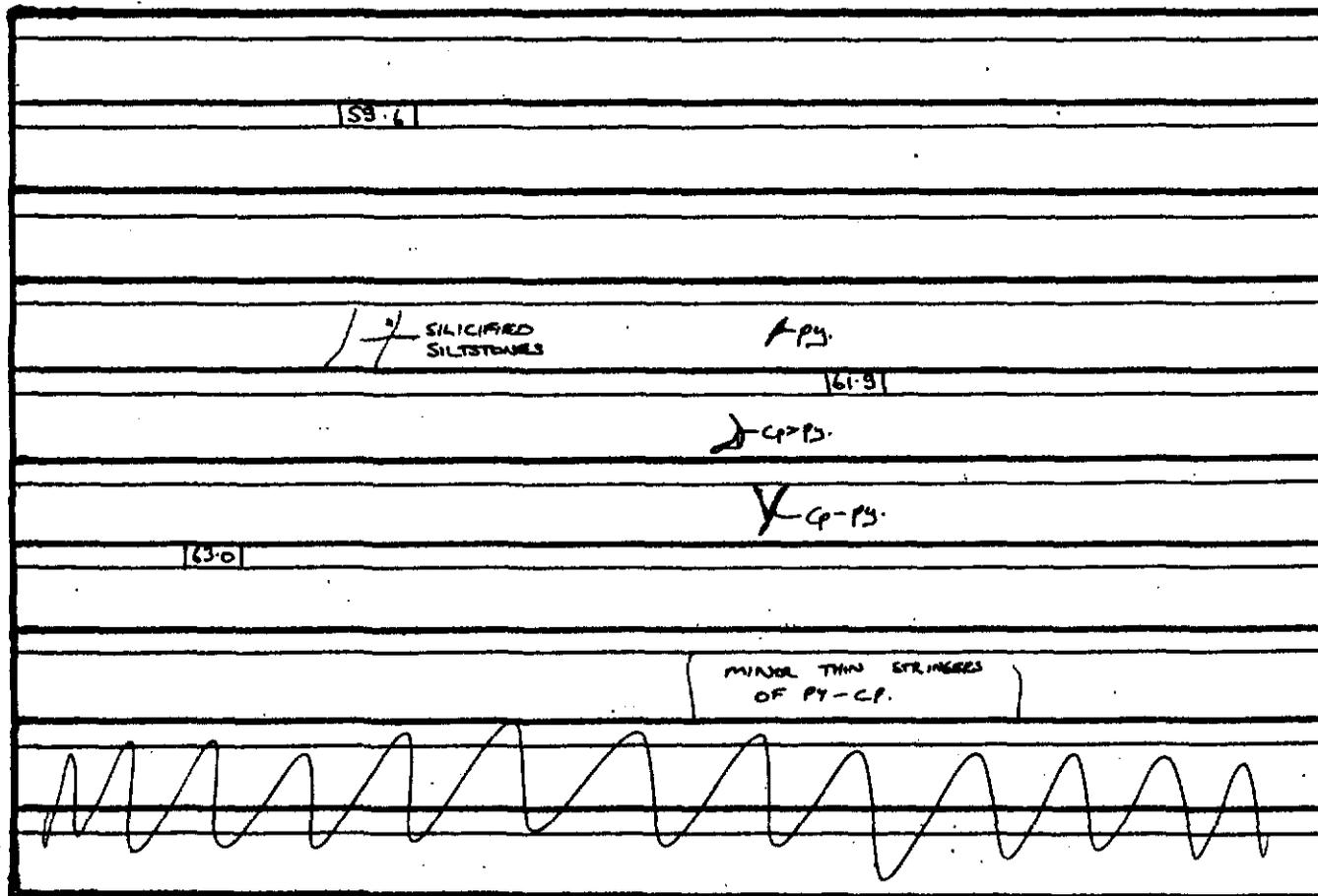
DEPTH FROM 58.7m

TO 64.3m

DIAGRAMATIC DRILLHOLE LOG

PAGE THIRTEEN OF THIRTY-FIVE

NQ TRAY



ALTERED RHYOLITIC
 LAVA. - FERROMAG
 PHENOCRYSTS
 FAIRLY MASSIVE
 SL. FEATURED
 LESS MIN².

612054

SYMBOLS

EL. NAME SHEFFIELD
 NUMBER 7/73

DRILLHOLE NO. DD 80 LB 1.

PROSPECT LAKE BARRINGTON

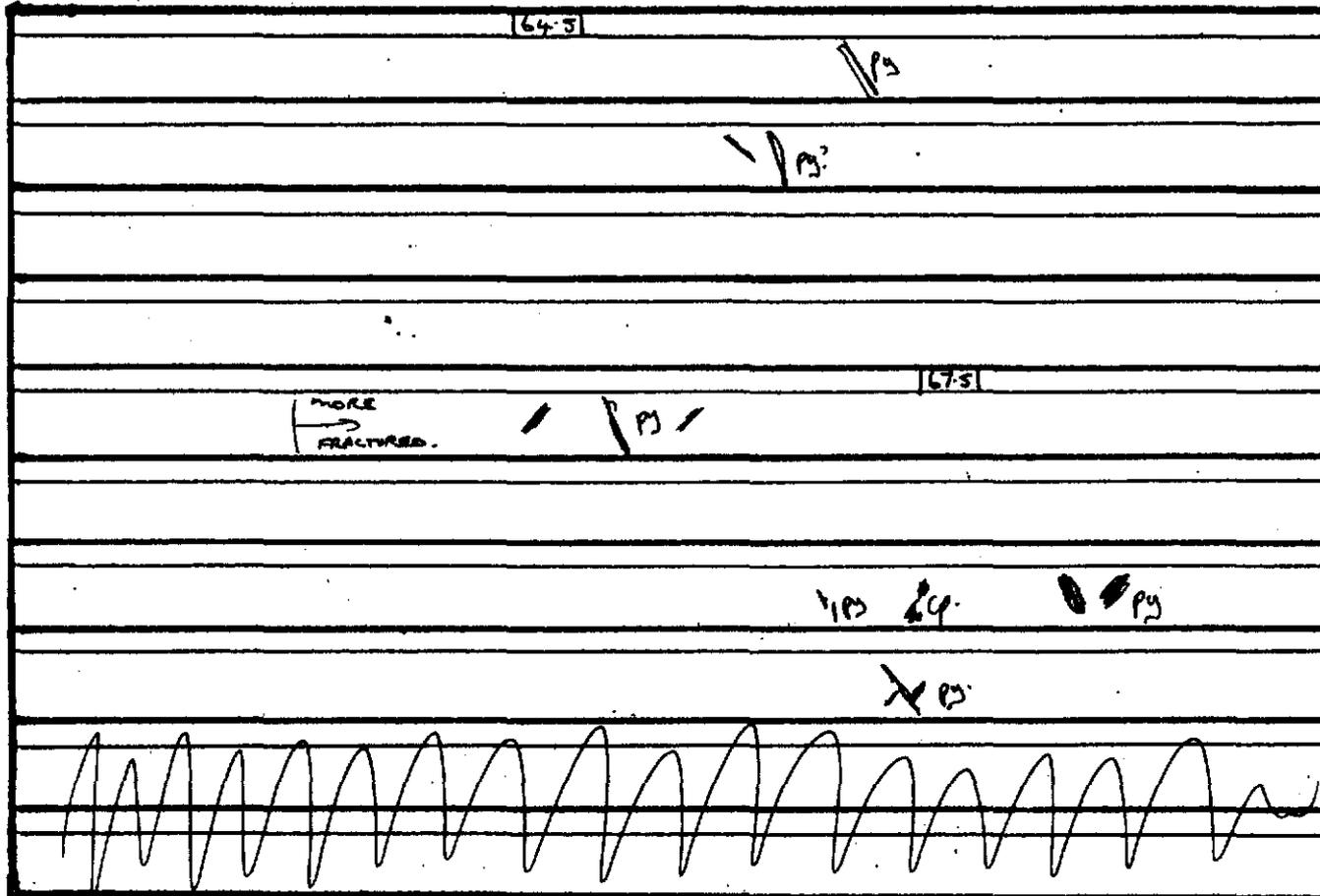
DEPTH FROM 64.3m

TO 69.8m

DIAGRAMATIC DRILLHOLE LOG

PAGE FOURTEEN OF THIRTY-FIVE

NQ TRAY



ALTERED RHYOLITIC LAVA.
 SL - MOD FRACTURE
 PYRITE MIN. FILLS
 FRACTURES.
 CORE ALTERED
 MOD - ST FRACTURING
 SIDERITE? - PROB SERICITE
 DILL ALONG FRACTURES
 FROM 67m.

612055

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 773

DRILLHOLE NO. DD80 L81.

PROSPECT LAKE BARRINGTON

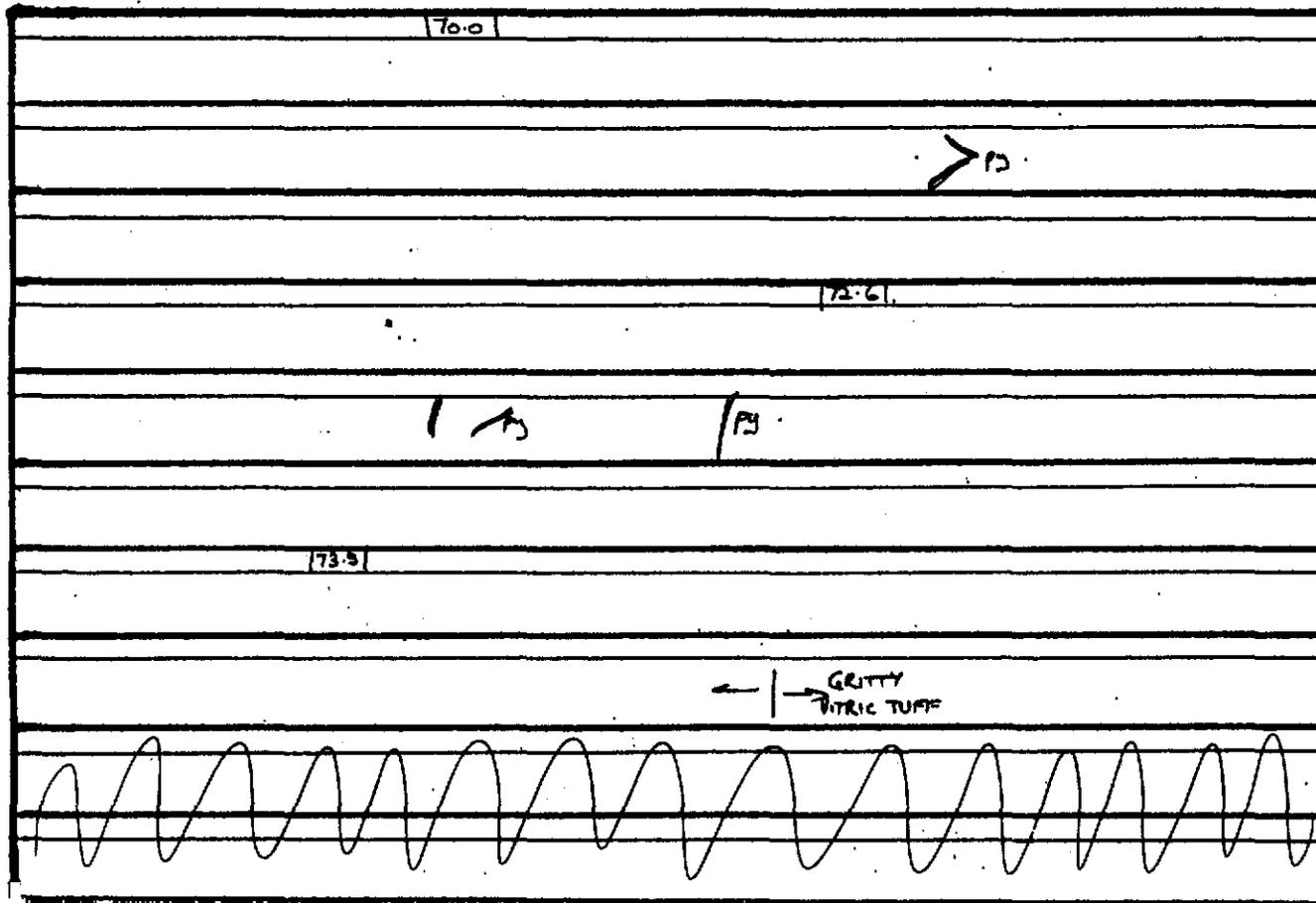
DEPTH FROM 63.8m

TO 75.0m

DIAGRAMATIC DRILLHOLE LOG

PAGE FIFTEEN. OF THIRTY-FIVE

NQ TRAY



ALTERED LAVAS.
 THIN STRAKER MIN²
 MOD - STRONGLY FRACTURED.
 V. MINOR CHLORITE ALTⁿ
 ALONG FRACTURES/JOINTS.

612056

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD80 LB1.

PROSPECT LAKE BARRINGTON

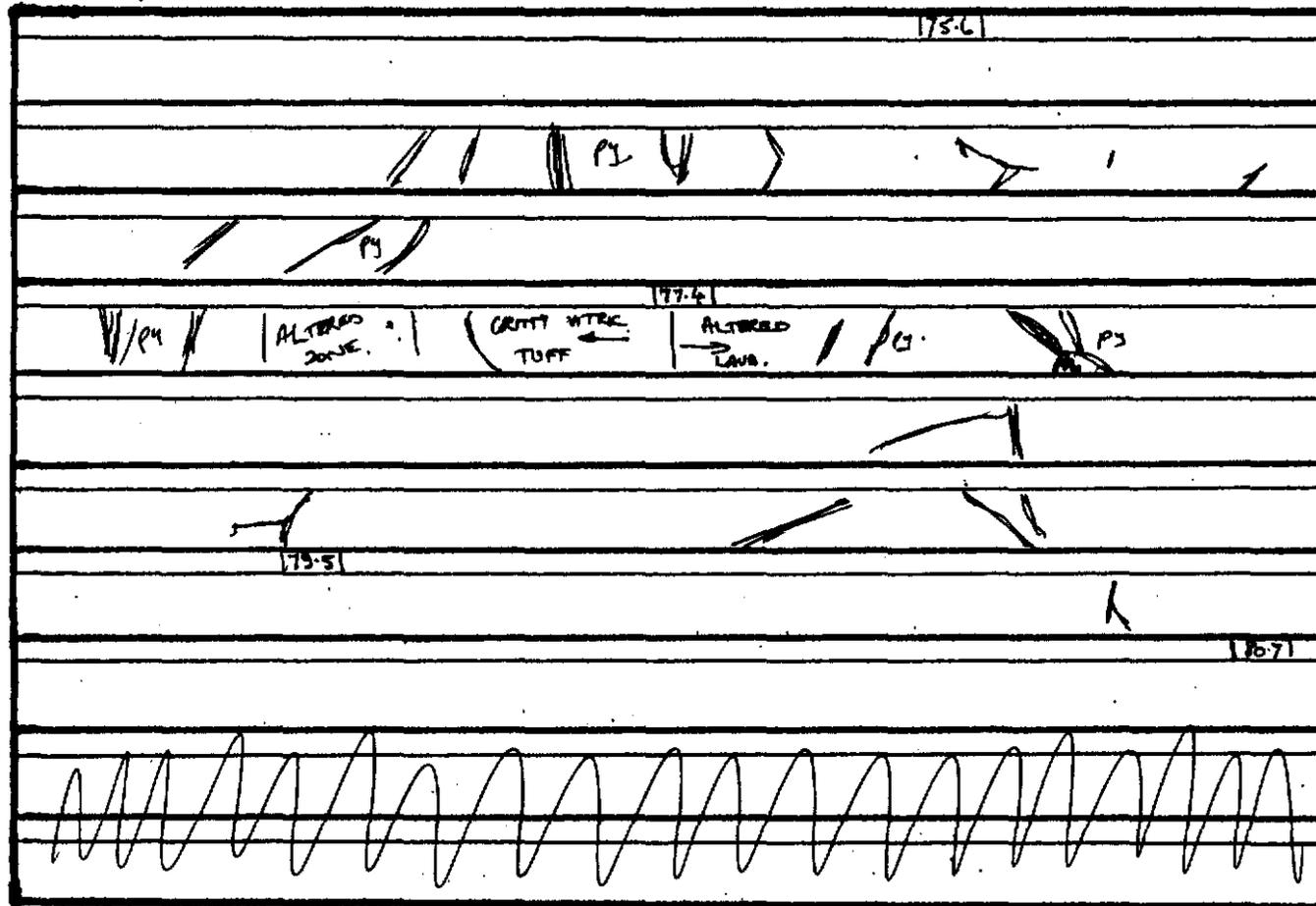
DEPTH FROM 75.0m

TO 80.7m

DIAGRAMATIC DRILLHOLE LOG

PAGE SIXTEEN. OF THIRTY-FIVE

NQ TRAY



GRITTY VITRIC TUFF
V. FRACTURED TAN
PY STRINGER MIN²
THROUGHOUT

ALTERED LAVA.
SL-MOD FRACTURED
PY INFILLING V. SL
CHL. ALT ALONG JOINTS.

612057

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/T3

DRILLHOLE NO. DD80 LB1.

PROSPECT LAKE BARRINGTON

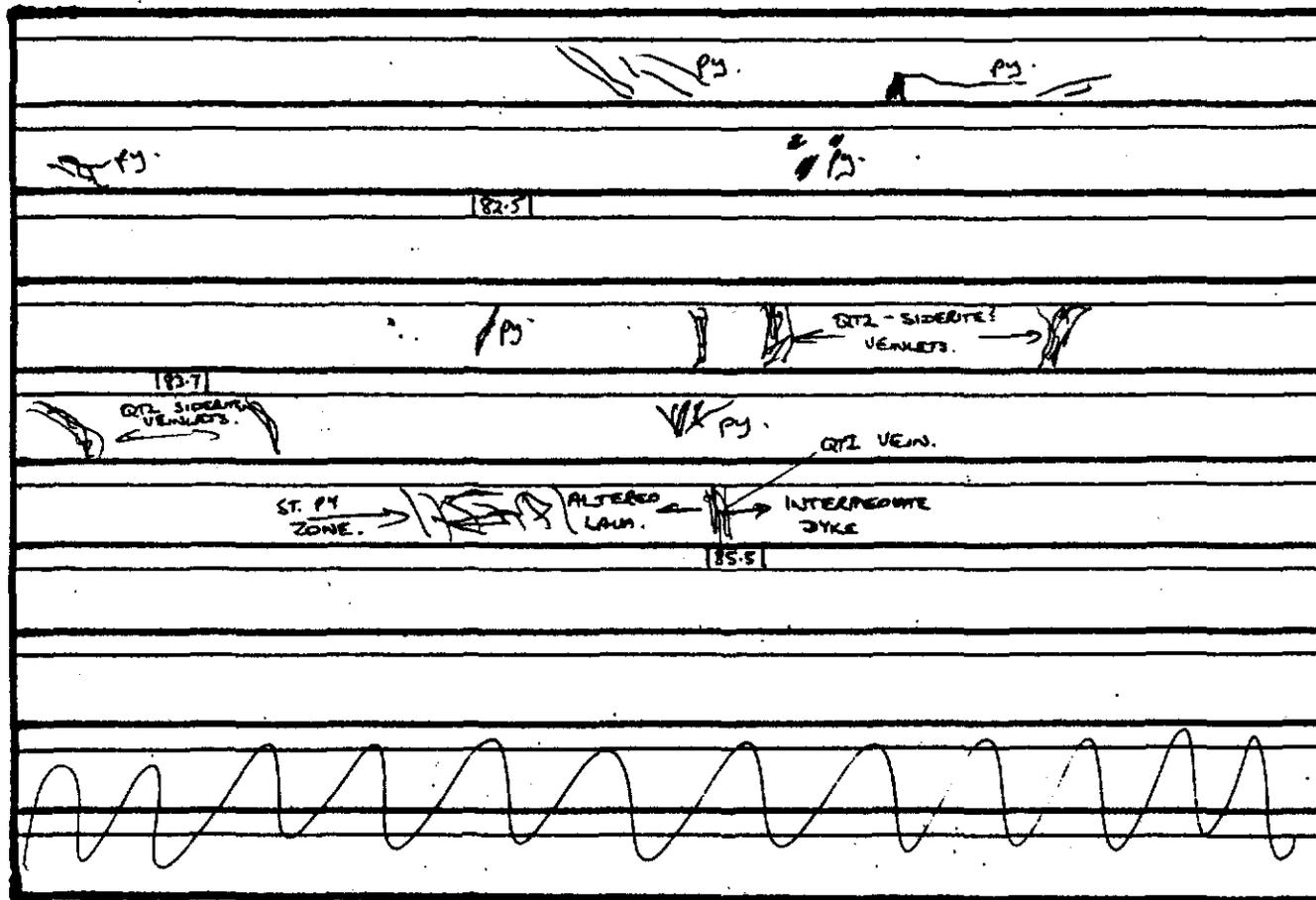
DEPTH FROM 80.7m

TO 86.8m

DIAGRAMATIC DRILLHOLE LOG

PAGE SEVENTEEN OF THIRTY-FIVE

NQ TRAY



ALTERED LAUN
 FIRST SIGNS OF QTZ -
 SIDERITE? (LITTLE ACCRETIONS)
 VEINLETS. CORE MOD
 FRACTURED PY INFILING.
 CORE PROB. SILICIFIED, AND
 SIDERITE ALT - MOD.
 INTERMEDIATE DYKE
 MORE BROKEN SOME
 ALTERATION.

612058

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DIAGRAMATIC DRILLHOLE LOG

DRILLHOLE NO. DD 80 LB1.

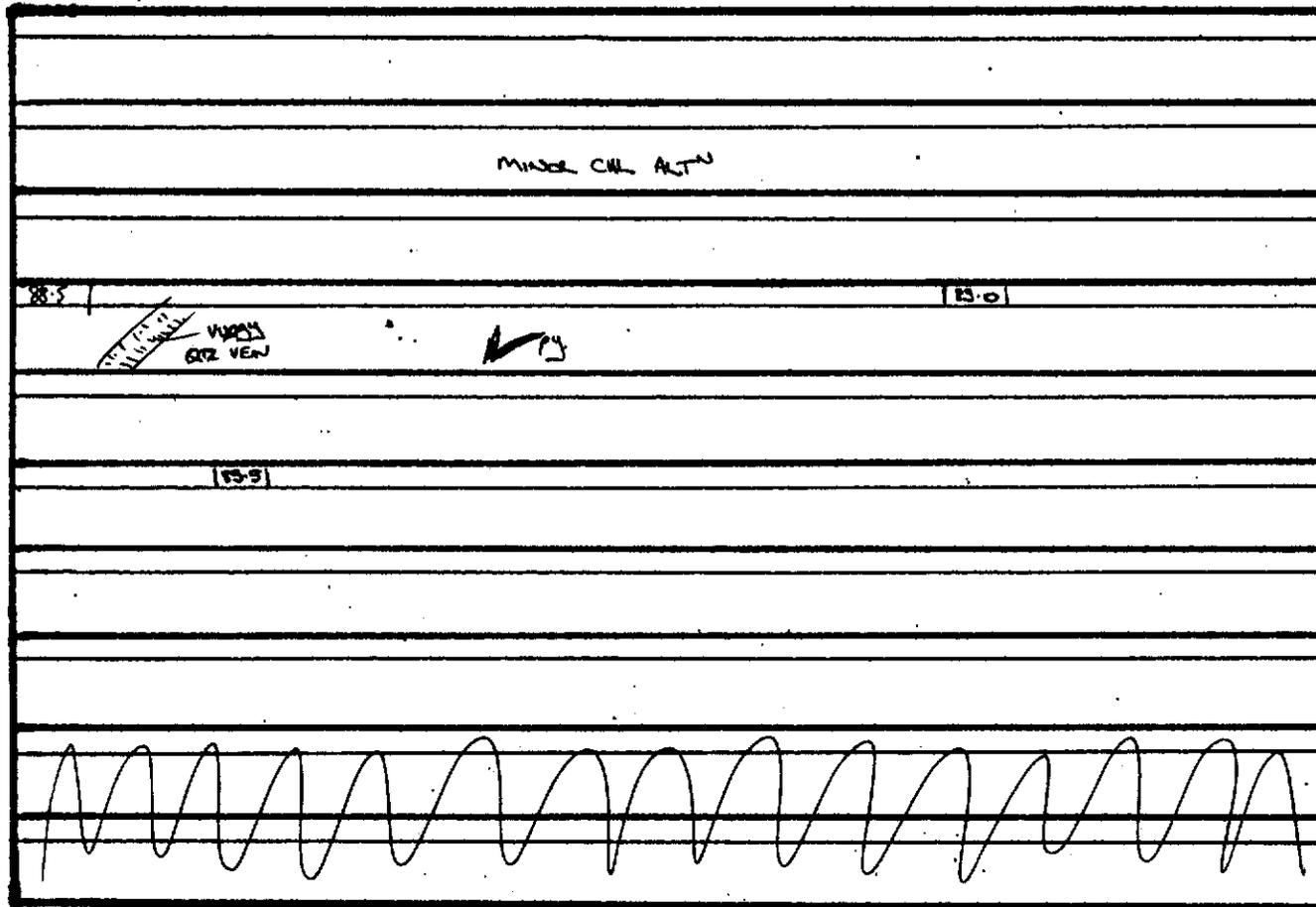
PROSPECT LAKE BARRINGTON

DEPTH FROM 86.8m

TO 92.0m

PAGE EIGHTEEN OF THIRTY FIVE

NQ TRAY



ALTERED RHICLITIC
LAVA. MOD FRACTURED
SL. 5' MIN²

612059

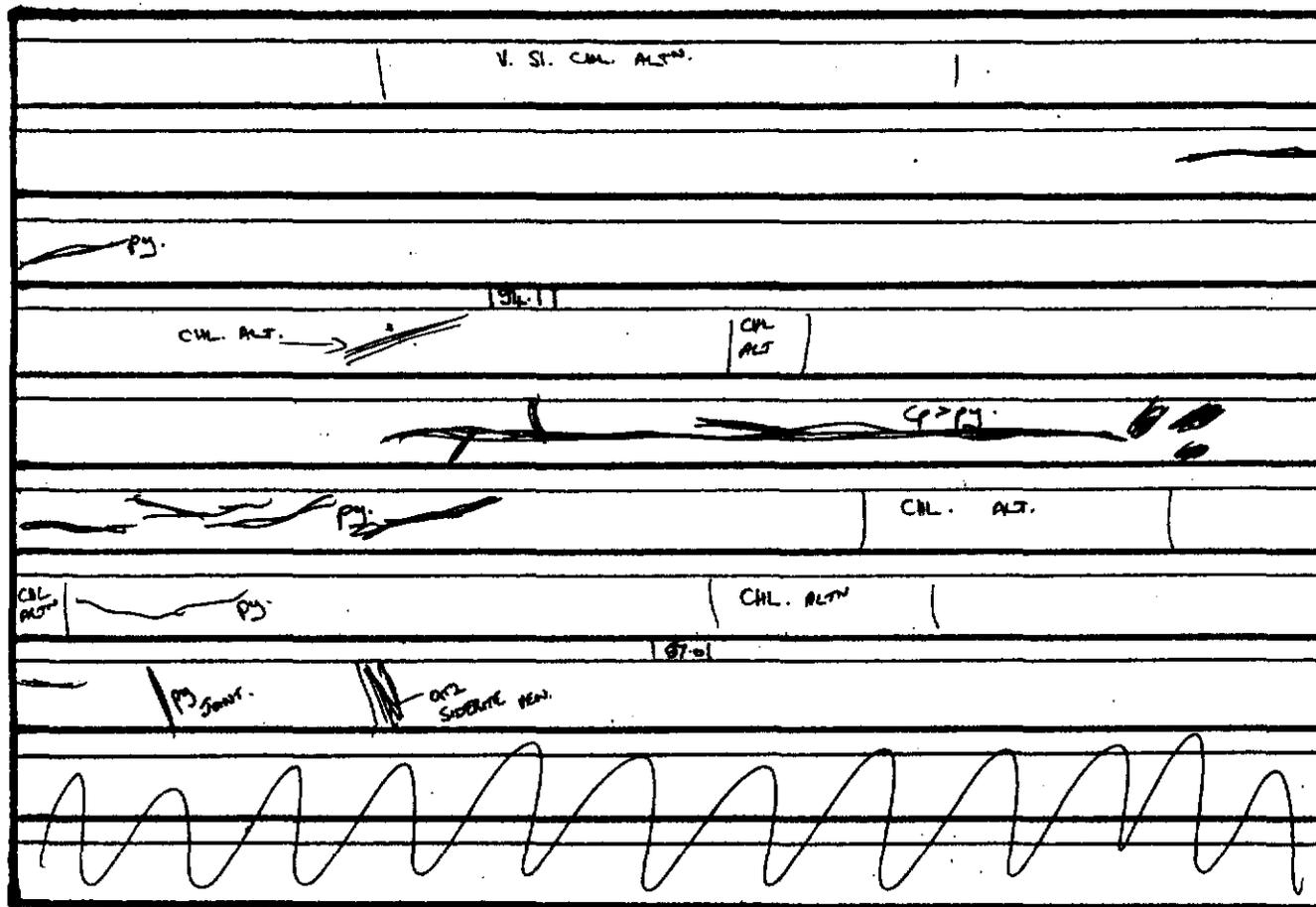
SYMBOLS

EL. NAME SHEFFIELD
 NUMBER 7/73

DRILLHOLE NO. JD 80 LRT
 PROSPECT LAKE BARRINGTON
 DEPTH FROM 92.0m
 TO 97.3m
 PAGE NINETEEN. OF THIRTY-FIVE

DIAGRAMATIC DRILLHOLE LOG

NQ TRAY



ALTAISO RHYOLITIC LAVA.
 SL CHL. ALT. CONFINED
 TO JOINTS/FRACTURES.

612060

SYMBOLS

EL. NAME SHEFFIELD
NUMBER 7/73

DRILLHOLE NO. DD 80 LB1.

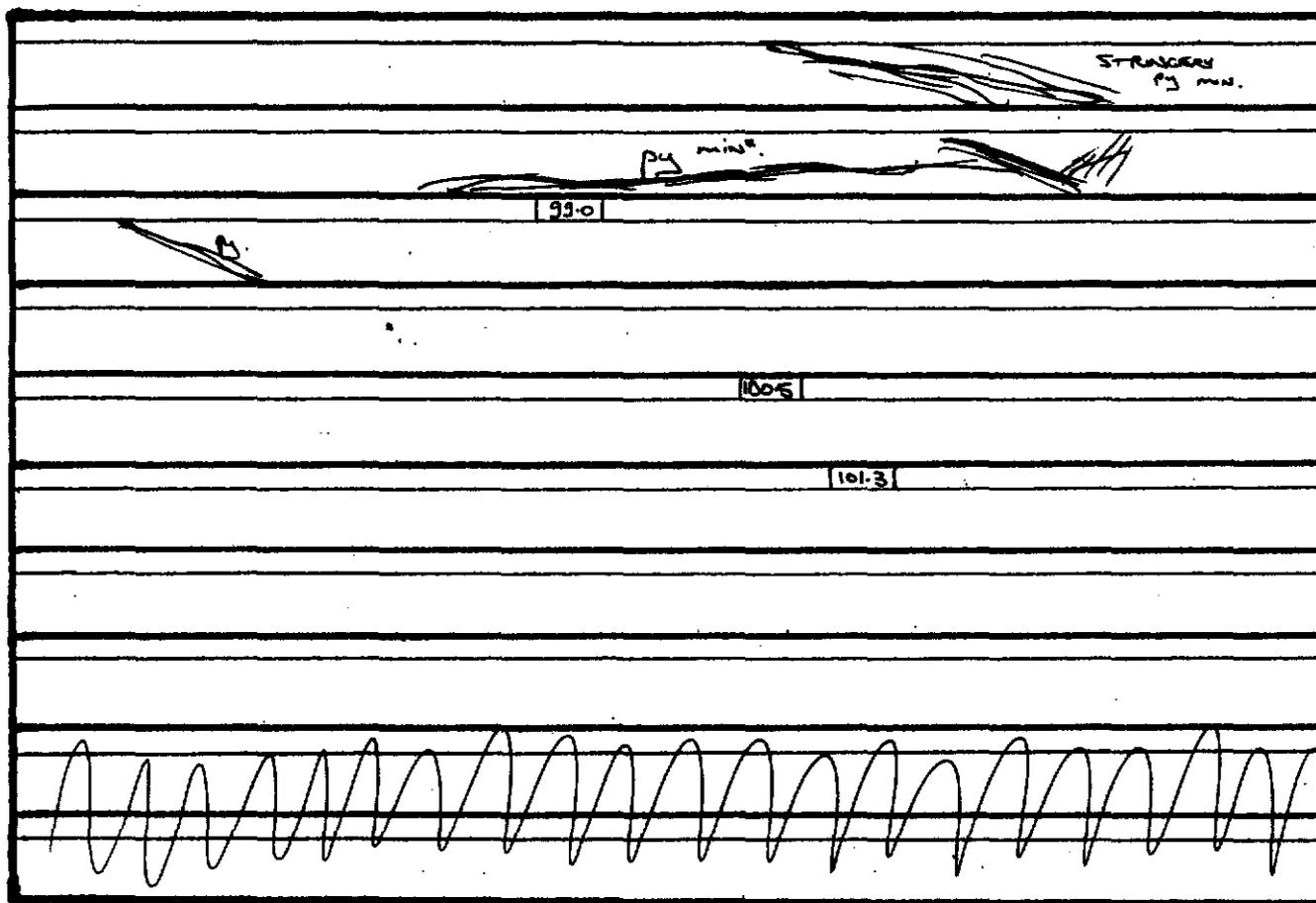
PROSPECT LAKE BARRINGTON

DEPTH FROM 97.3m
TO 103.0m

DIAGRAMATIC DRILLHOLE LOG

PAGE TWENTY. OF THIRTY-FIVE

NQ TRAY



ALTERED RHYOLITIC LAVA.
SL - MOD FRACTURE
1st 3 ROWS - PY.
MINOR QTZ VEINING.

612061

SYMBOLS

EL. NAME SHEFFIELD
 NUMBER 7/73

DRILLHOLE NO. DD80 LB1.

PROSPECT LAKE BARRINGTON

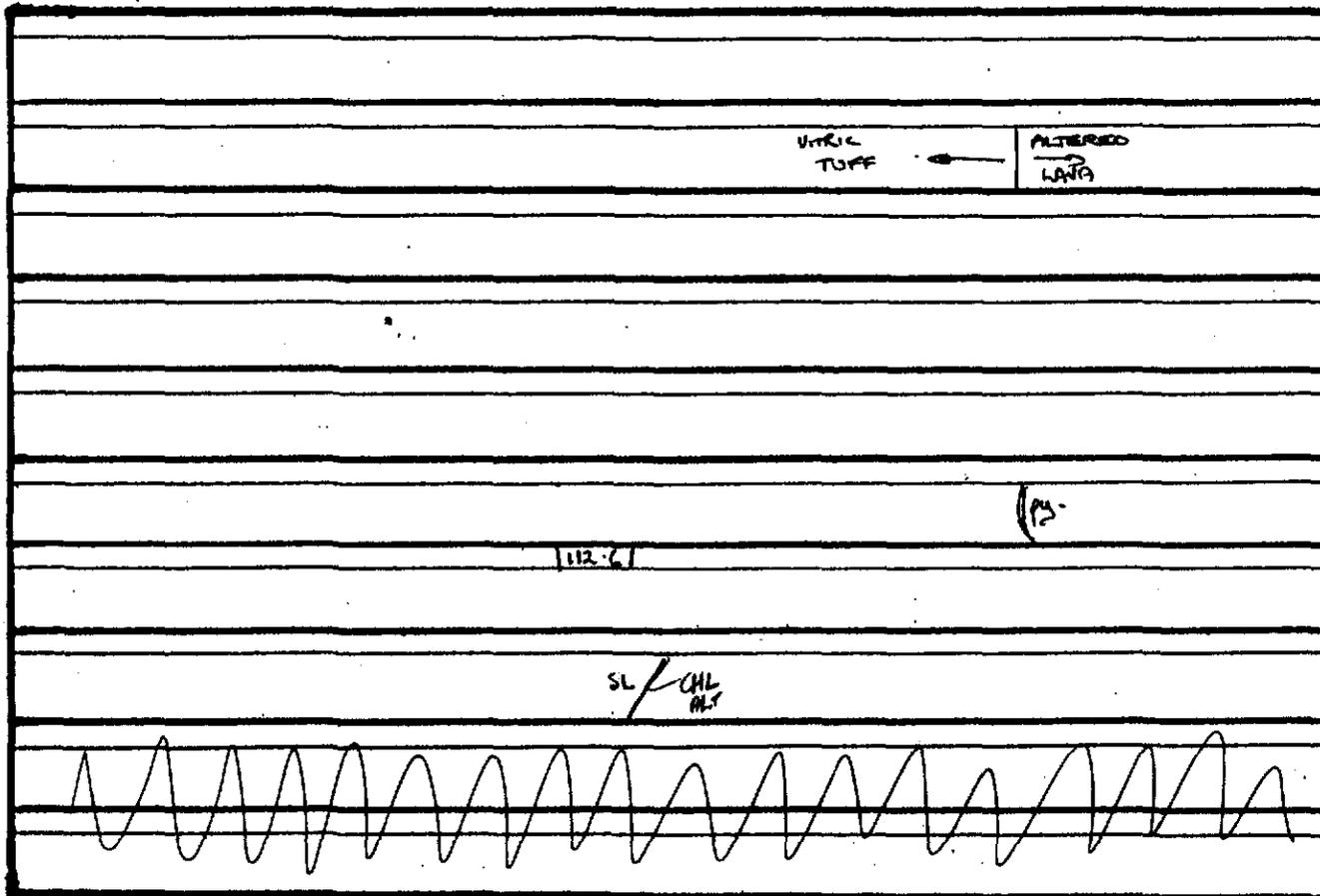
DEPTH FROM 108.9m

TO 113.2m

DIAGRAMATIC DRILLHOLE LOG

PAGE TWENTY-TWO OF THIRTY-FIVE

NQ TRAY



VITRIC TUFFS HIGHLY FRACTURED SOME SE INFILLING.

ALTERED LAVA'S STRONGER IN MIN² N FRACTURES. LOOKS LIKE MOD SECTATE ALT^N. MOD FRACTURED.

612063

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD80 LB1.

PROSPECT LAKE BARRINGTON

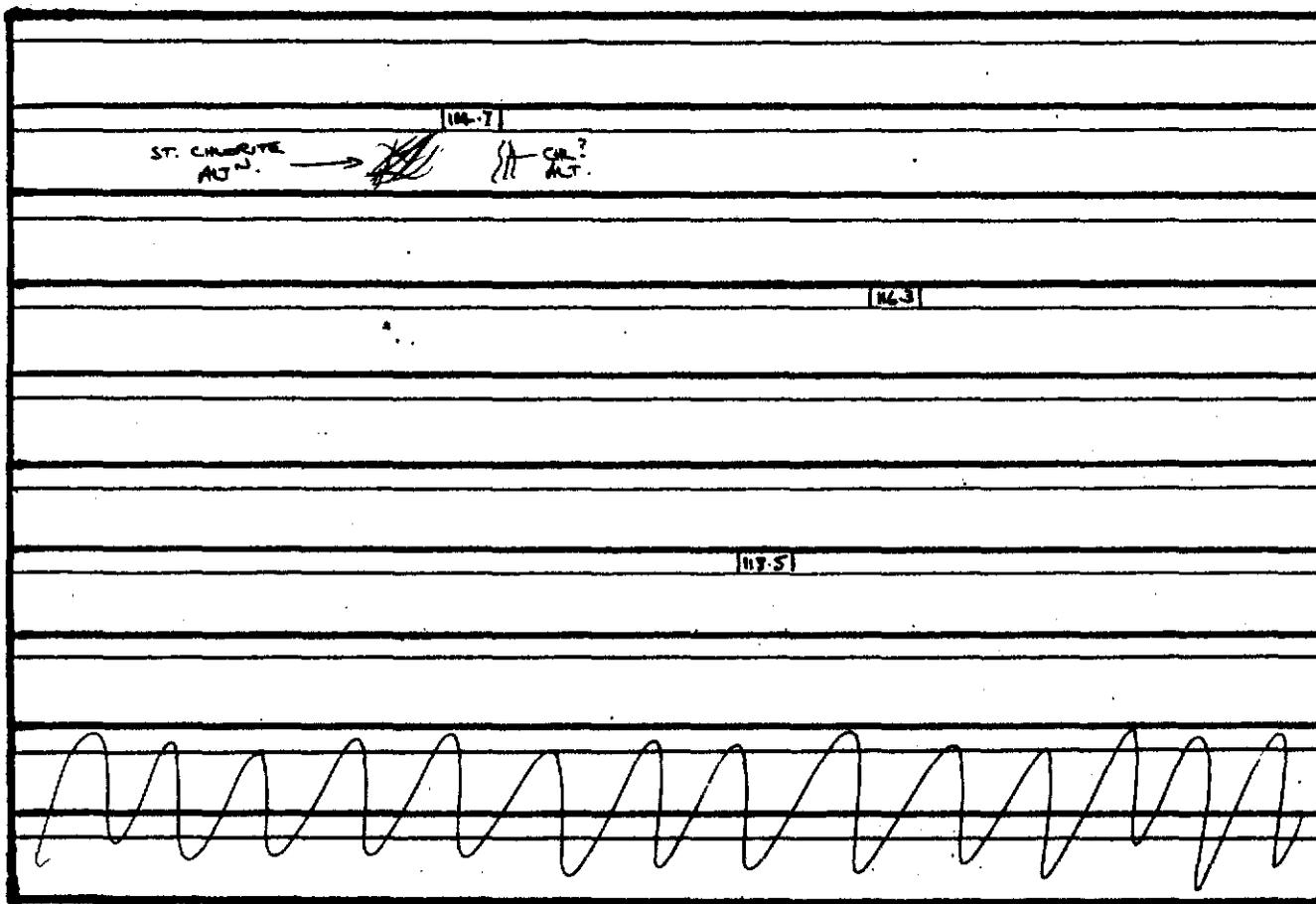
DEPTH FROM 113.2m

TO 113.7m

DIAGRAMATIC DRILLHOLE LOG

PAGE TWENTY-THREE OF THIRTY-FIVE

NQ TRAY



ALTERED LAVA.
 ST? SERPENTINE ALT?
 MOD-WELL FRACTURED.
 ORANGE - BN IMPURE
 SERPENTINE?

612064

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DIAGRAMATIC DRILLHOLE LOG

DRILLHOLE NO. D080 L81.

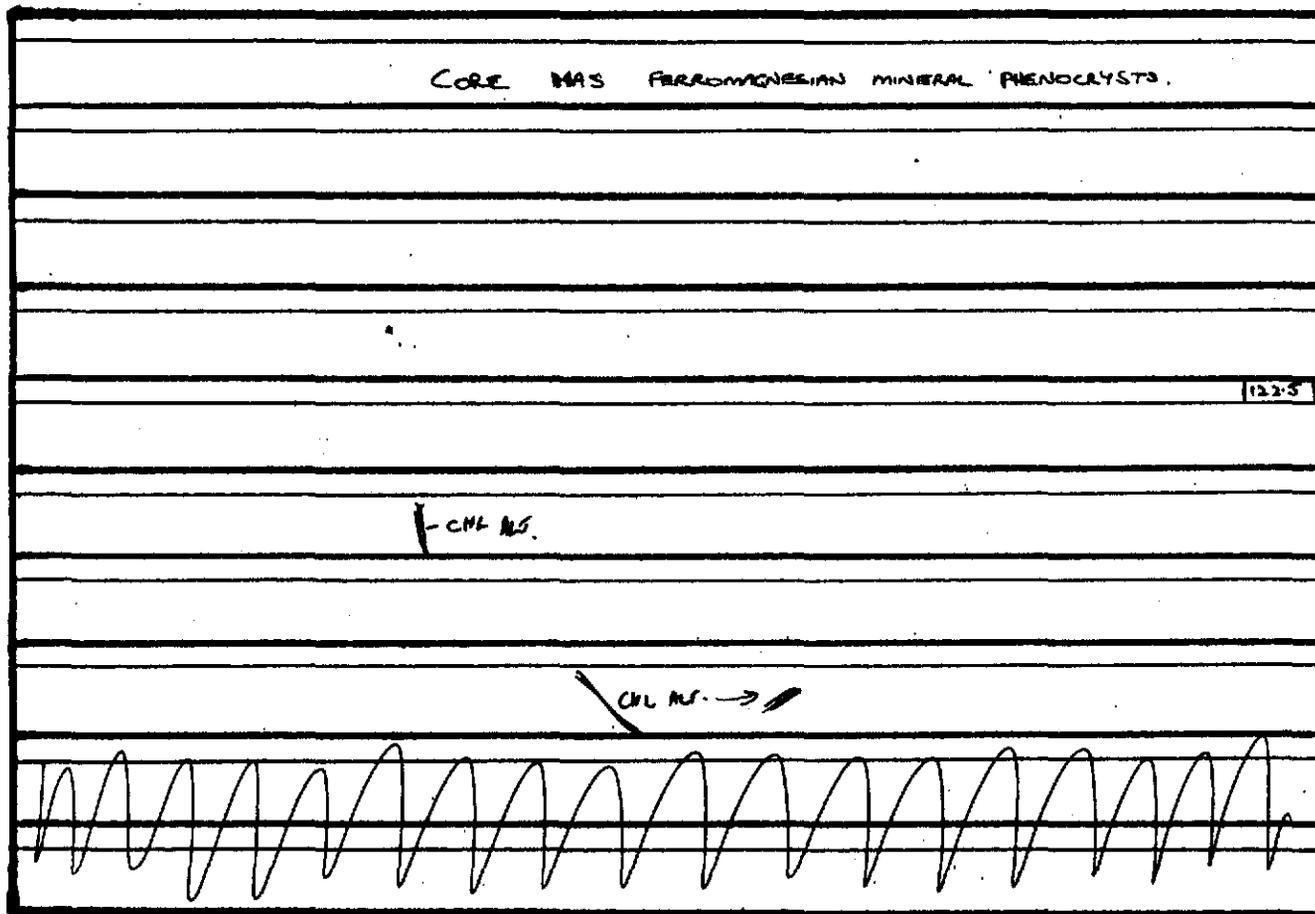
PROSPECT LAKE BARRINGTON

DEPTH FROM 113.7

TO 124.2m

PAGE TWENTY-FOUR OF THIRTY-FIVE

NQ TRAY



ALTERED LAVA.
 MOD-ST SERPITE ALTⁿ
 CHL. ALT ALONG JOINTS.
 FDR GW.
 MOD-STRONG FRACTURED.

612065

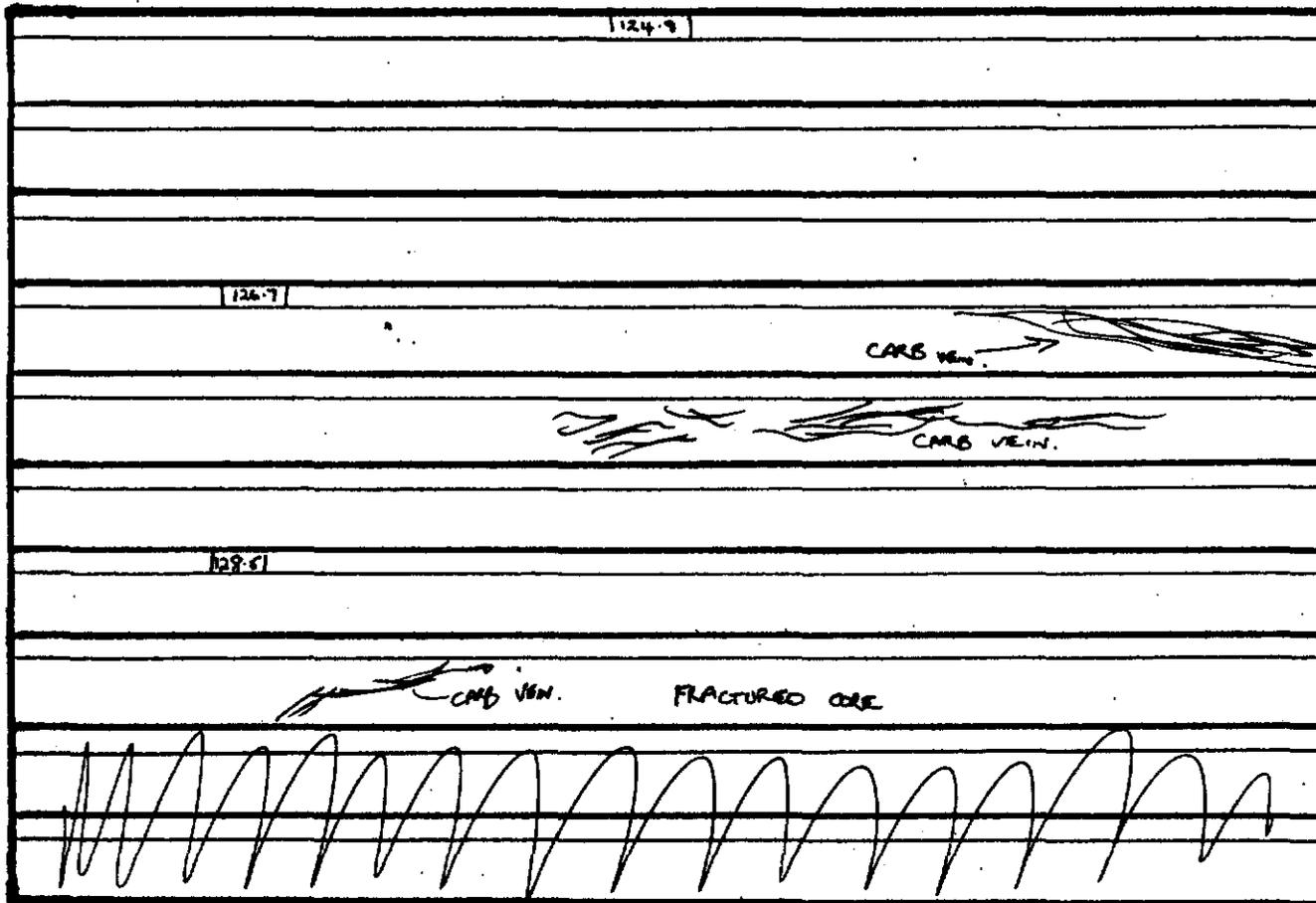
SYMBOLS

EL. NAME SHEFFIELD
NUMBER 7/73

DRILLHOLE NO. JD80 LB1.
PROSPECT LAKE BARRINGTON
DEPTH FROM 124.2m
TO 133.0m
PAGE ~~TWENTY-FIVE~~ OF THIRTY-FIVE

DIAGRAMATIC DRILLHOLE LOG

NQ TRAY



ALTERED LAVA.
MOD FRACTURED
MOD SERICITE ALT.?
CARBONATE VEINS.

612066

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD 80 LB1

PROSPECT LAKE BARRINGTON

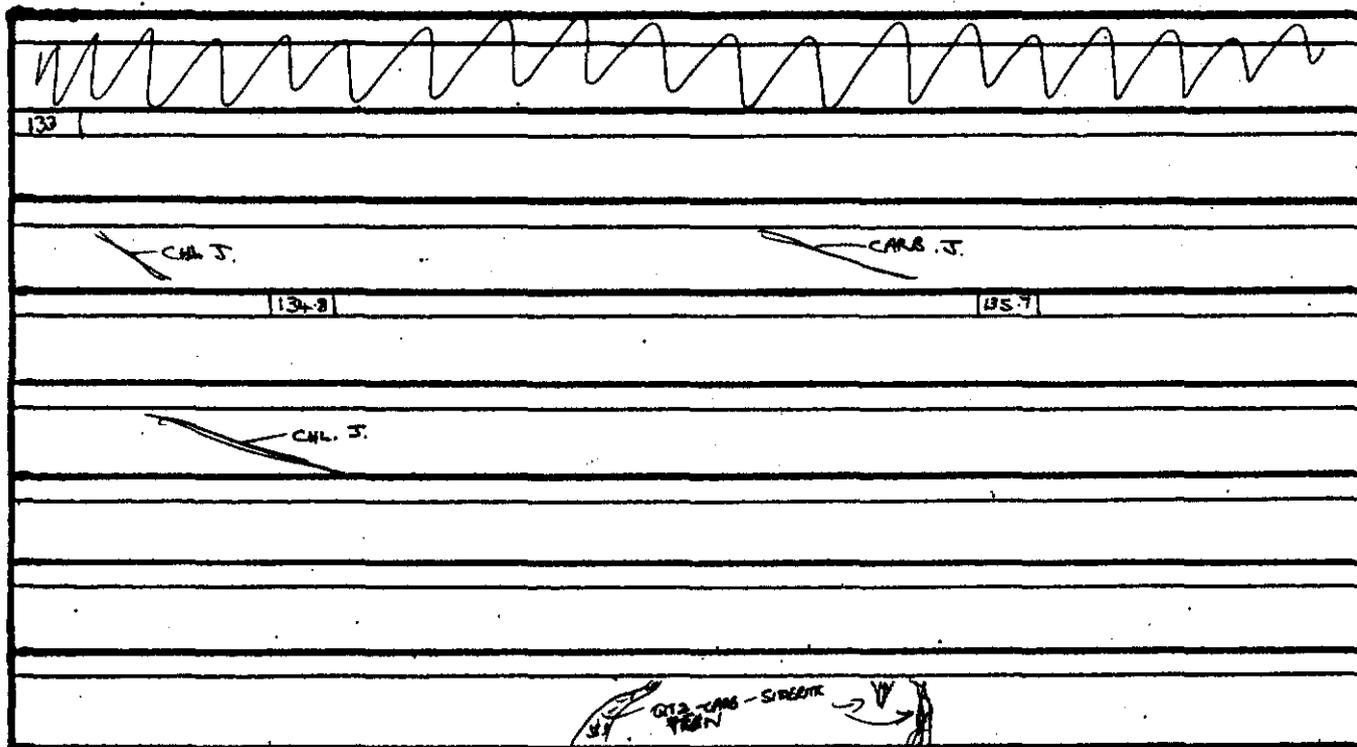
DEPTH FROM 133.0m

TO 138.1m

DIAGRAMATIC DRILLHOLE LOG

PAGE TWENTY-SIX OF THIRTY-FIVE

NQ TRAY



ALTERED LAVA.
MINOR CHLORITE ALTN
ALONG JOINTS - FRACTURES
MOD SERICITE ALI.

612067

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD 80 LB 1.

PROSPECT LAKE BARRINGTON

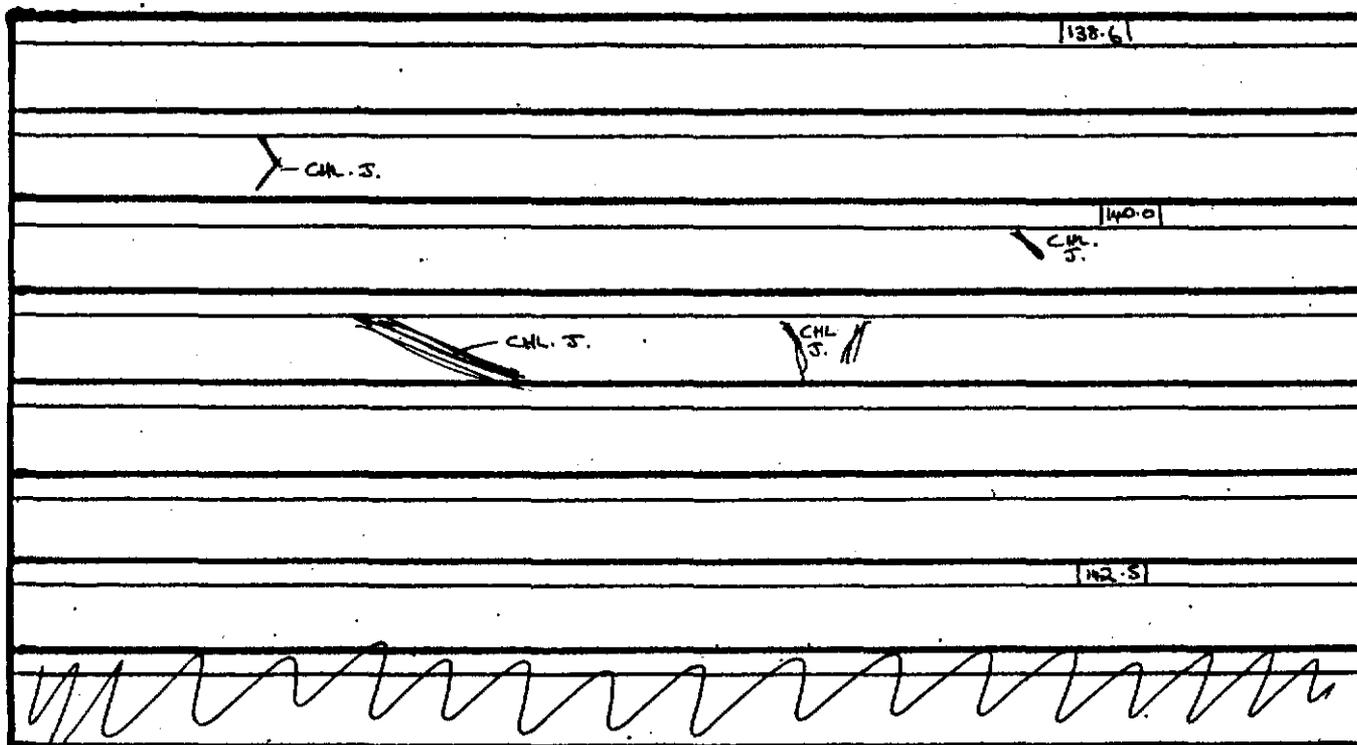
DEPTH FROM 138.1m

TO 142.7m

DIAGRAMATIC DRILLHOLE LOG

PAGE TWENTY-SEVEN OF THIRTY-FIVE

NQ TRAY



ALTERED LAVA.
 SL-MOD FRACTURED
 CARB. INFILTR. VENS.
 MORE PRESENT FROM
 141 m.
 MINOR CHL. ALT ALONG
 JOINTS. - SL. STRONGER
 THAN LAST TRAY.

612068

SYMBOLS

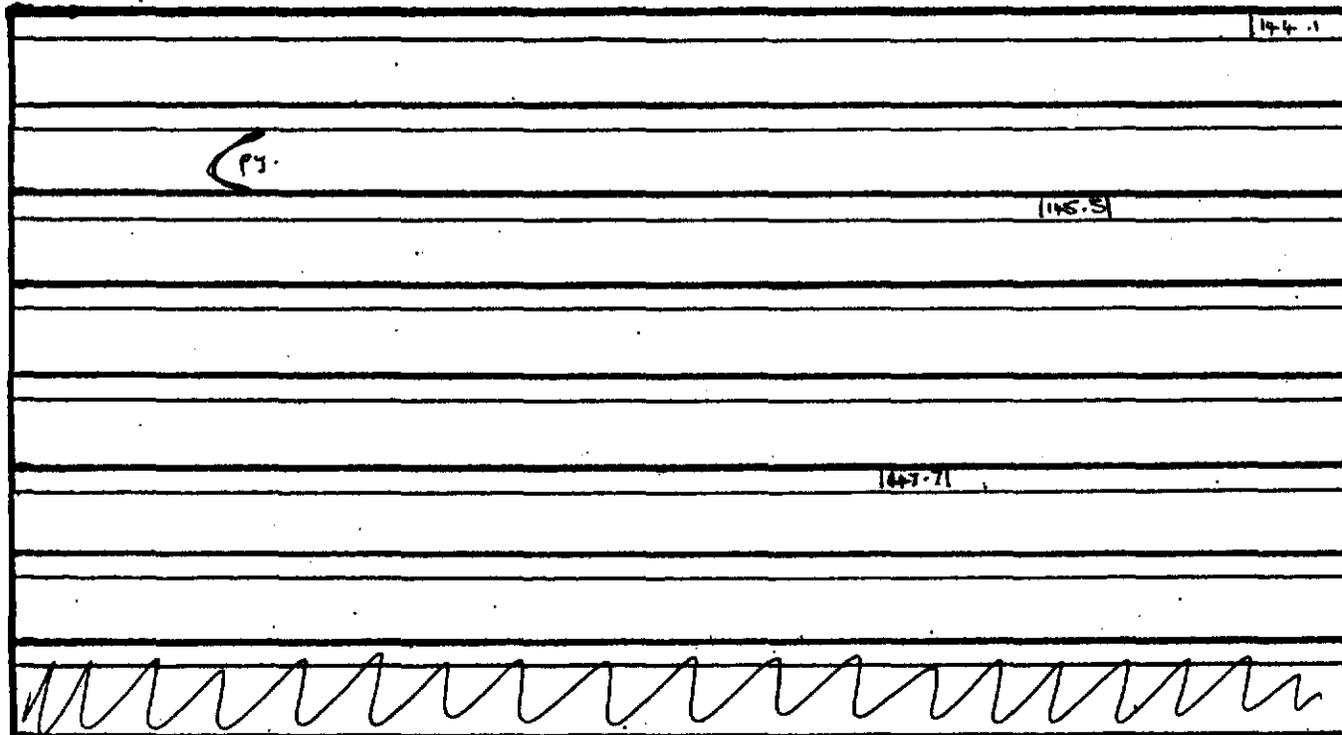
EL. NAME SHEFFIELD
 NUMBER 7/73

DRILLHOLE NO. DD 80 LB1.
 PROSPECT LAKE BARRINGTON
 DEPTH FROM 142.7m
 TO 148.6m

DIAGRAMATIC DRILLHOLE LOG

PAGE TWENTY-SEVEN OF THIRTY-FIVE

NQ TRAY



ALTERED LAVA.
 MOD FRACTURED
 MOD SERICITE ALT.ⁿ
 NO OBS. CHL. ALT.ⁿ

V. MINOR QTZ SERICITE
 VEINING. SOME
 CALCAREOUS.

612069

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DIAGRAMATIC DRILLHOLE LOG

DRILLHOLE NO. DO TO LB1.

PROSPECT LAKE BARRINGTON

DEPTH FROM 154.5m

TO 158.8m

PAGE THIRTY. OF THIRTY-FIVE

NQ TRAY

155.0
153.0
154.2
156.7
QZ CARB.
WIDEST VIEW 8mm. QZ-CARB.
158.7

ALTERED LAVAS
 NUMEROUS QZ-FIBERITE-
 CARBONATE VEINS.
 MOD SERICITE ALT^N
 MOST VEINS 1mm. COULD
 NOT DRAW IN.

612071

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD 80 LB 1.

PROSPECT LAKE BARRINGTON

DEPTH FROM 158.8m

TO 164.8m

DIAGRAMATIC DRILLHOLE LOG

PAGE THIRTY-ONE OF THIRTY-FIVE

NQ TRAY

158.1
160.6
162.7
 QZ CARB VEIN
163.2
 QZ CARB VEIN.

→ START OF CHLORITE ALT ZONE.

ALTERED LAMAS.
 FROM 161m - CHL. ALT
 ZONE STARTS EL FOR
 FIRST METRE THEN STRONGER
 DISSEMINATED NOT JUST
 CONFINED TO FRACTURES.
 STRONG QZ-SIDERITE-
 CARBONATE VEINING 162.7-
 164.

612072

SYMBOLS

EL. NAME SAEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD80 LB1

PROSPECT LAKE BARRINGTON

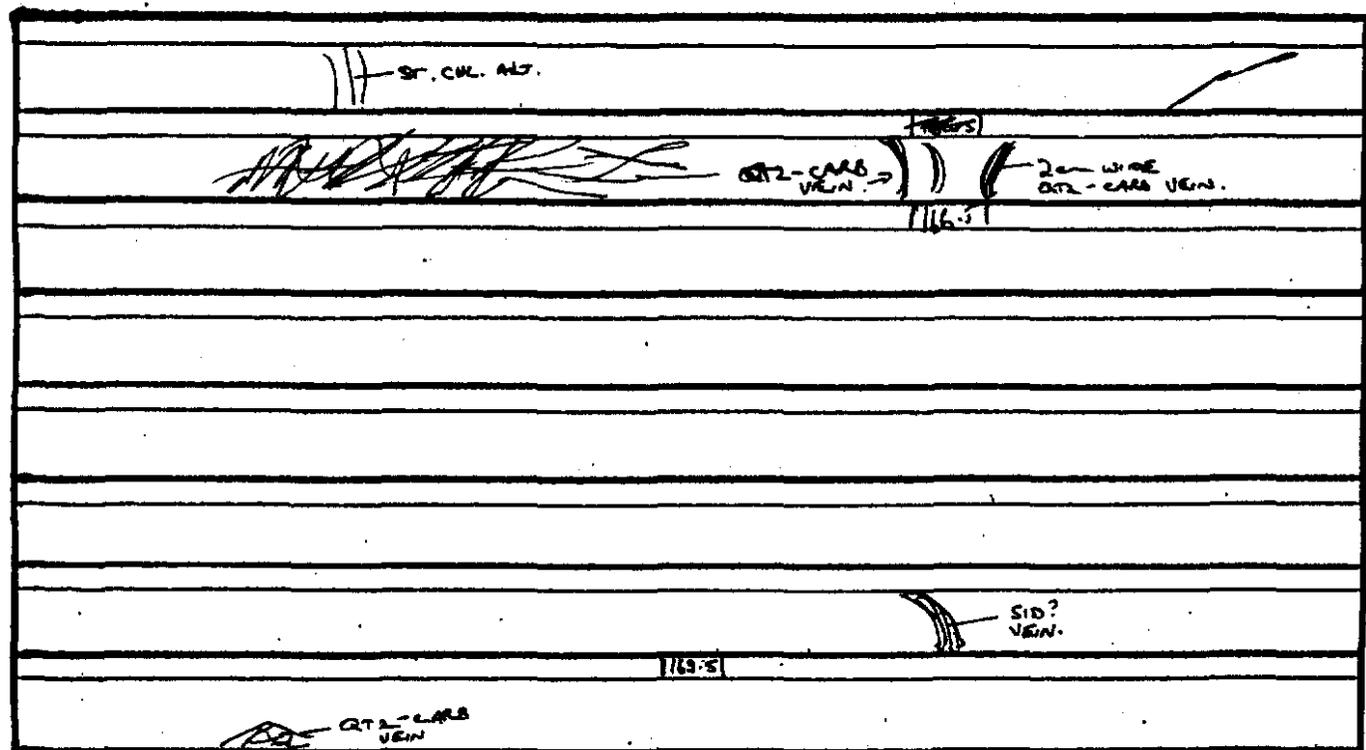
DEPTH FROM 1648m

TO 1698m

DIAGRAMATIC DRILLHOLE LOG

PAGE THIRTY-TWO OF THIRTY-FIVE

NQ TRAY



ALTERED LAVAS.
 CHLORITE ALT MARKEDLY
 LESS. QTZ-CARB-SIORITE
 VEIN PROMINENT UNTIL
 166.3m
 CHLORITE ALT^N - STILL SL -
 MOD.

612073

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. D080 LB

PROSPECT LAKE BARRINGTON

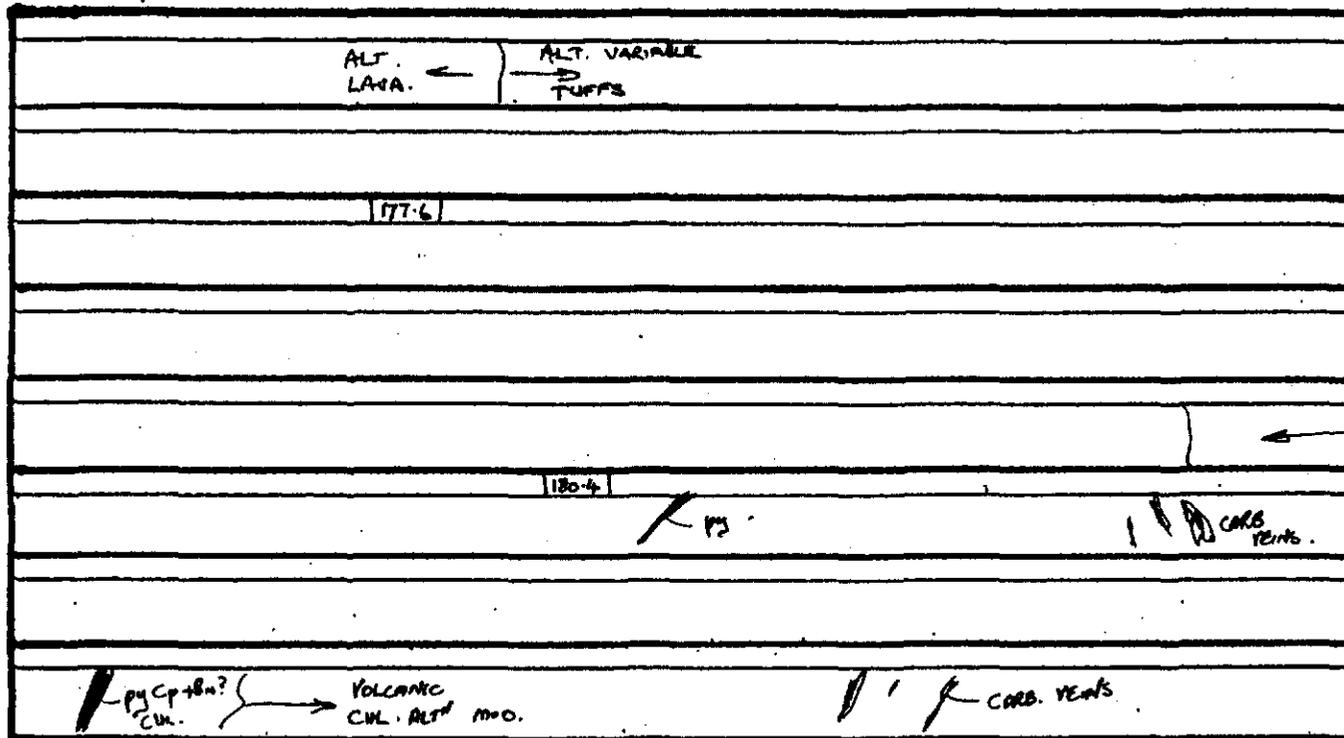
DEPTH FROM 175.5m

TO 182.5m

DIAGRAMATIC DRILLHOLE LOG

PAGE THIRTY-FOUR OF THIRTY-FIVE

NQ TRAY



ALT. VARIABLE TUFFS.
SOME LOOK LIKE SILICIFIED
SILTSTONES OTHERS QUITE
COARSE GRAINED.
WELL FRACTURED.
CARBONATE INFILLING.

612075

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD 80 162-

PROSPECT LAKE BARRINGTON

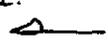
DEPTH FROM 3.0

TO 6.9m

DIAGRAMATIC DRILLHOLE LOG

PAGE ONE OF FIFTY-SEVEN

NQ TRAY

30	WEATHERED SILTSTONE.	VOLCANICS WEATHERED
	SL. COSSANOUS ALONG JOINTS.	// ETIOPE - SERICITE ALTERATION. V
	5.5	
		VOLC. 
	→ SILTSTONE.	MID-WELL JOINED LIMONITE - MANGANESE IN JOINTS.

612077

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD 2 LB 2

PROSPECT LAKE BARRINGTON

DEPTH FROM 6.3m

TO 10.6m

DIAGRAMATIC DRILLHOLE LOG

PAGE TWO OF FIFTY-SEVEN

NQ TRAY

7.0
V. well jointed - limonite stains
V. well jointed - limonite stains
8.5
SAND ←
SILTSTONES ←
10.0
→ VOLCANICS WEATHERED JOINTED - Fe + Mn staining

612078

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. 2080 LS 2

PROSPECT LAKE BARRINGTON

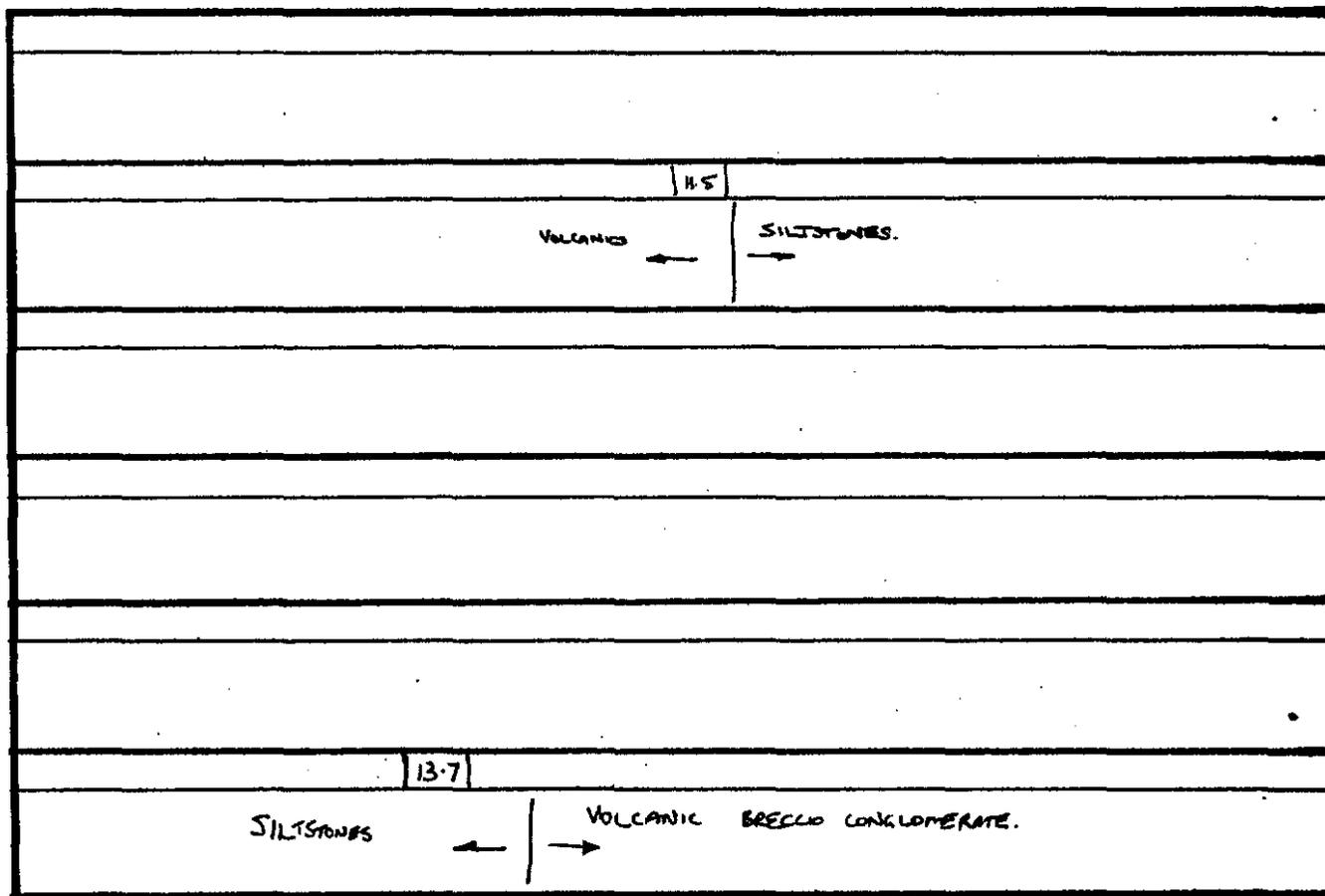
DEPTH FROM 10.6m

TO 14.2m

DIAGRAMATIC DRILLHOLE LOG

PAGE THREE OF FIFTY-SEVEN

NQ TRAY



612079

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DIAGRAMATIC DRILLHOLE LOG

DRILLHOLE NO. DD 80 LB 2

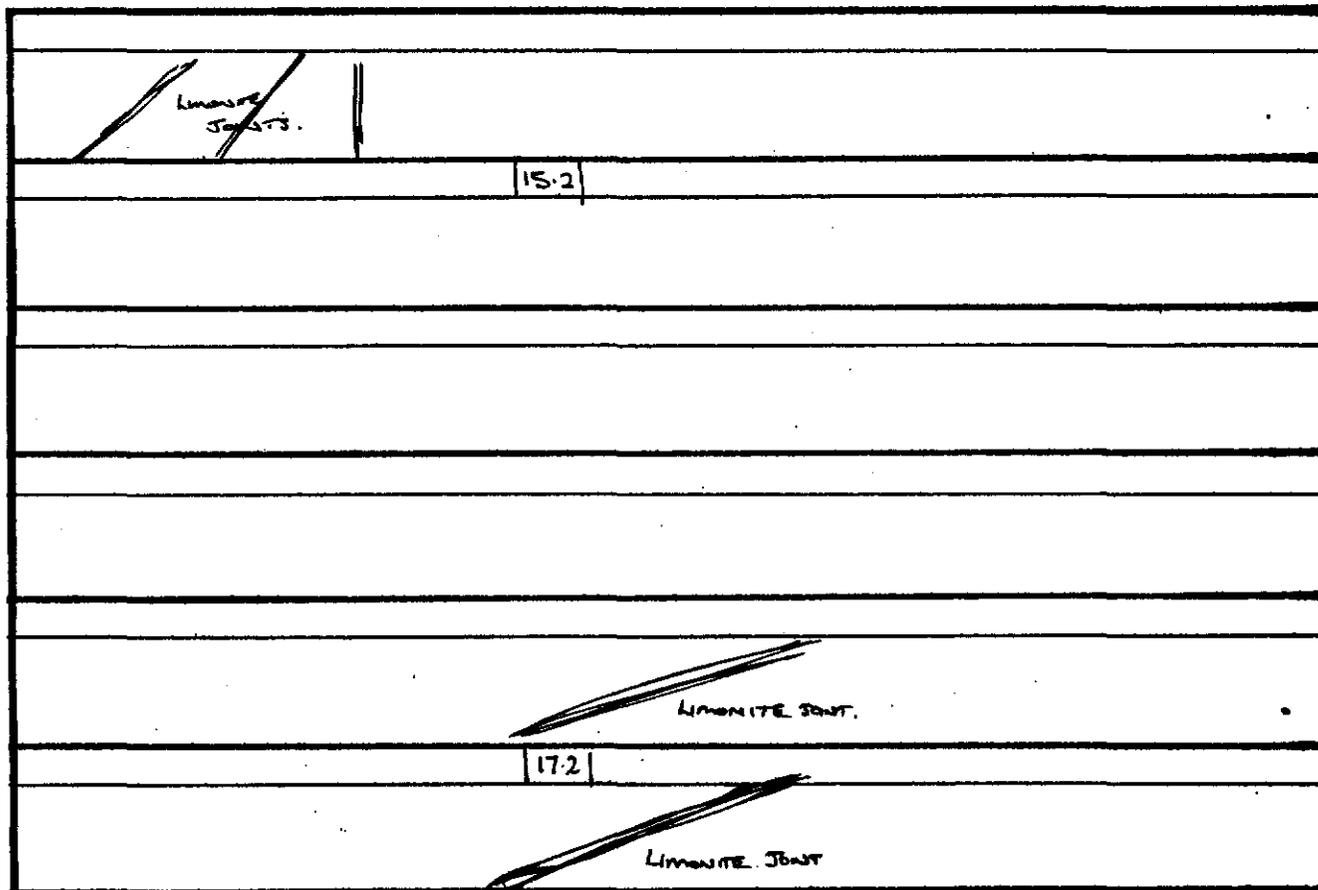
PROSPECT LAKE BARRINGTON

DEPTH FROM 14.2m

TO 17.6m

PAGE FOUR OF FIFTY-SEVEN

NQ TRAY



VOLCANO-BRECCIA
CONGLOMERATE.

612080

SYMBOLS

L.J. LIMONITIC JOINTS.

M.J. MANGANESE JOINTS.

EL. NAME SHEFFIELD

NUMBER 7/73

DIAGRAMATIC DRILLHOLE LOG

DRILLHOLE NO. JD 80 LB2

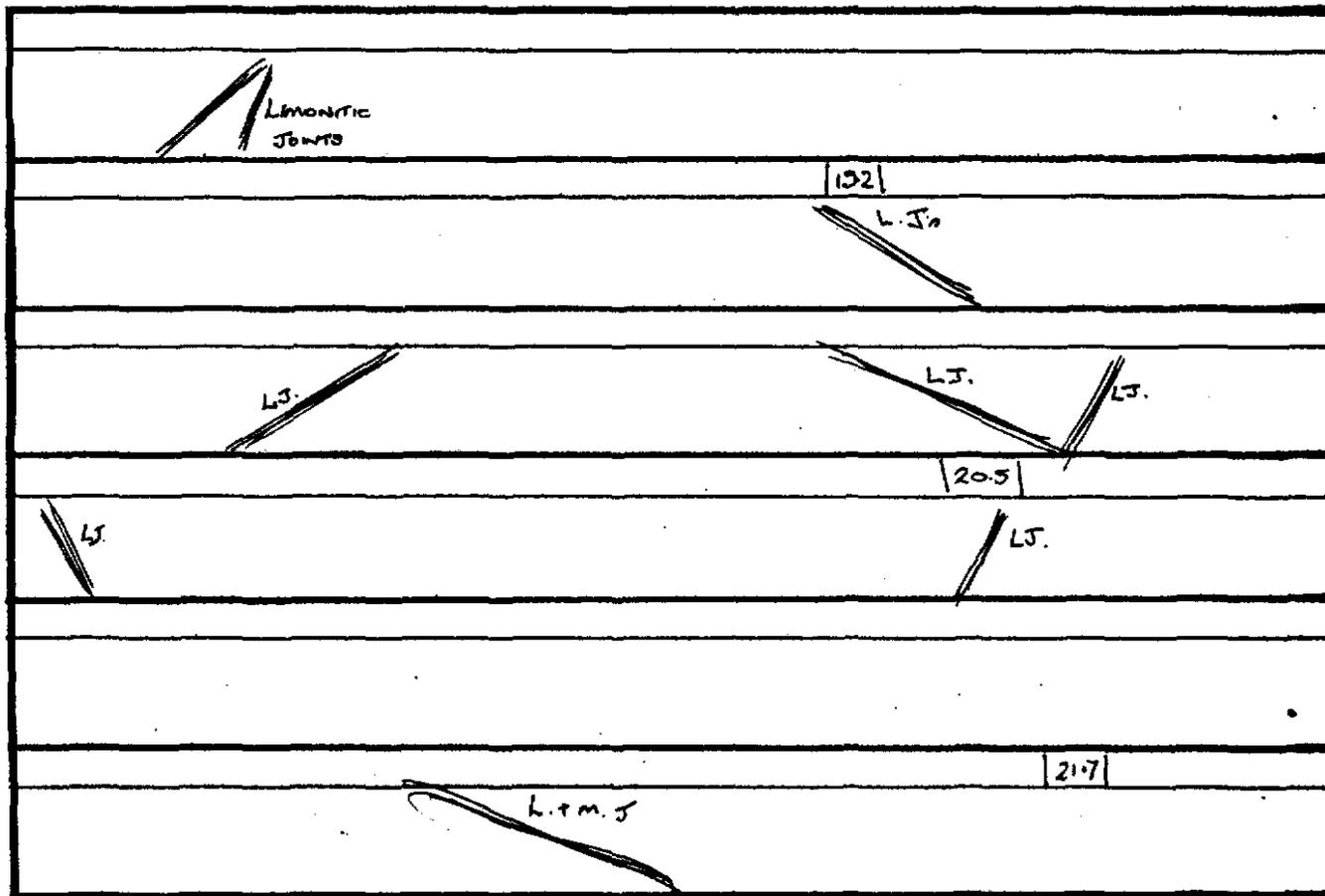
PROSPECT LAKE BARRINGTON

DEPTH FROM 17.6m

TO 21.8m

PAGE FIVE OF FIFTY-SEVEN

NQ TRAY



VOLCANIC BRECCIA
CONGLOMERATE
| THIN SILTY SAND.

612081

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD80 LB2

PROSPECT LAKE BARRINGTON

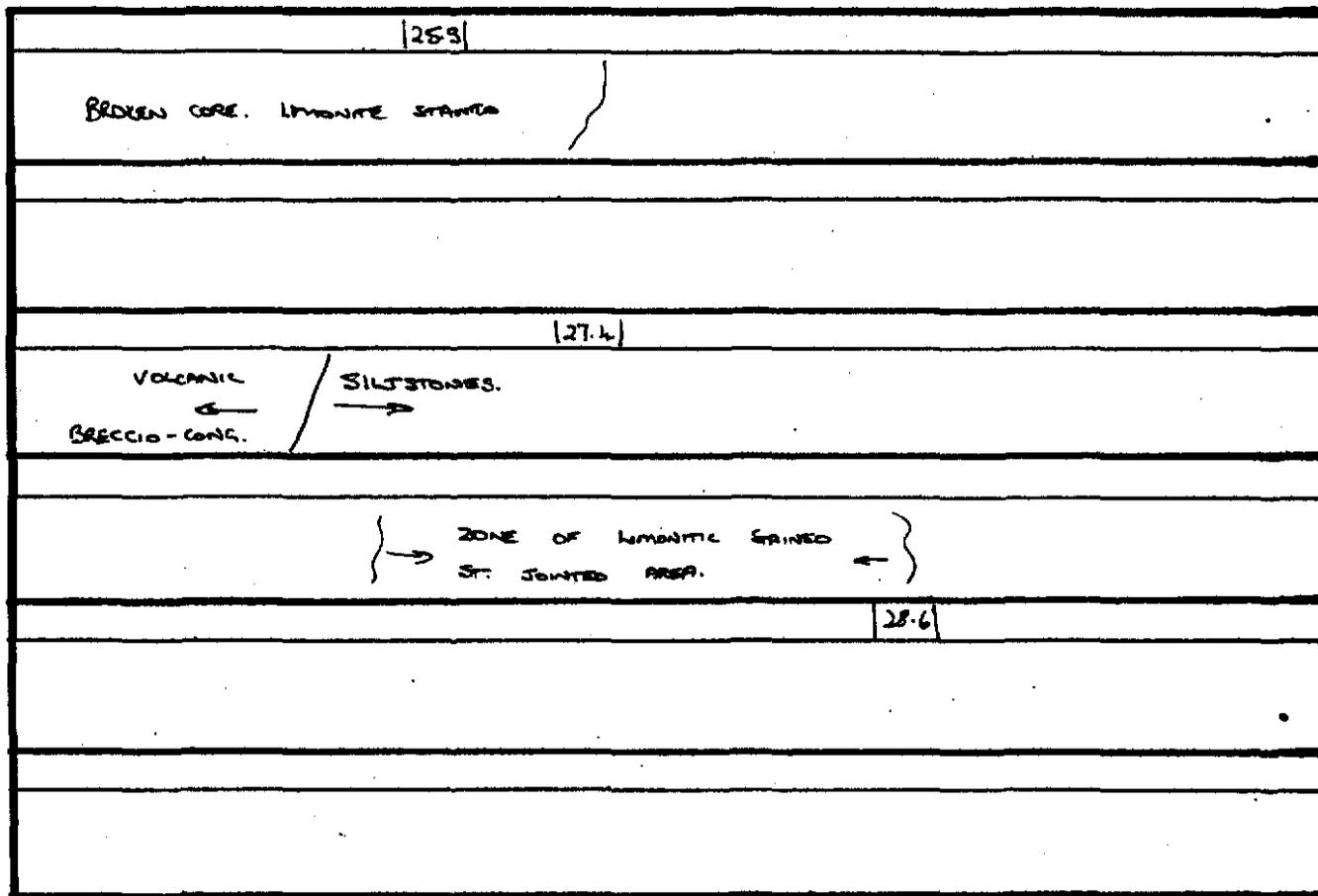
DEPTH FROM 25.7m

TO 29.5m

DIAGRAMATIC DRILLHOLE LOG

PAGE SEVEN. OF FIFTY-SEVEN

NQ TRAY



BRECCIO-CONGLOMERATE

SILTSTONES.

612083

SYMBOLS

EL. NAME SHEFFIELD
 NUMBER 7/73

DRILLHOLE NO. DD82 LB2

PROSPECT LAKE BARRINGTON

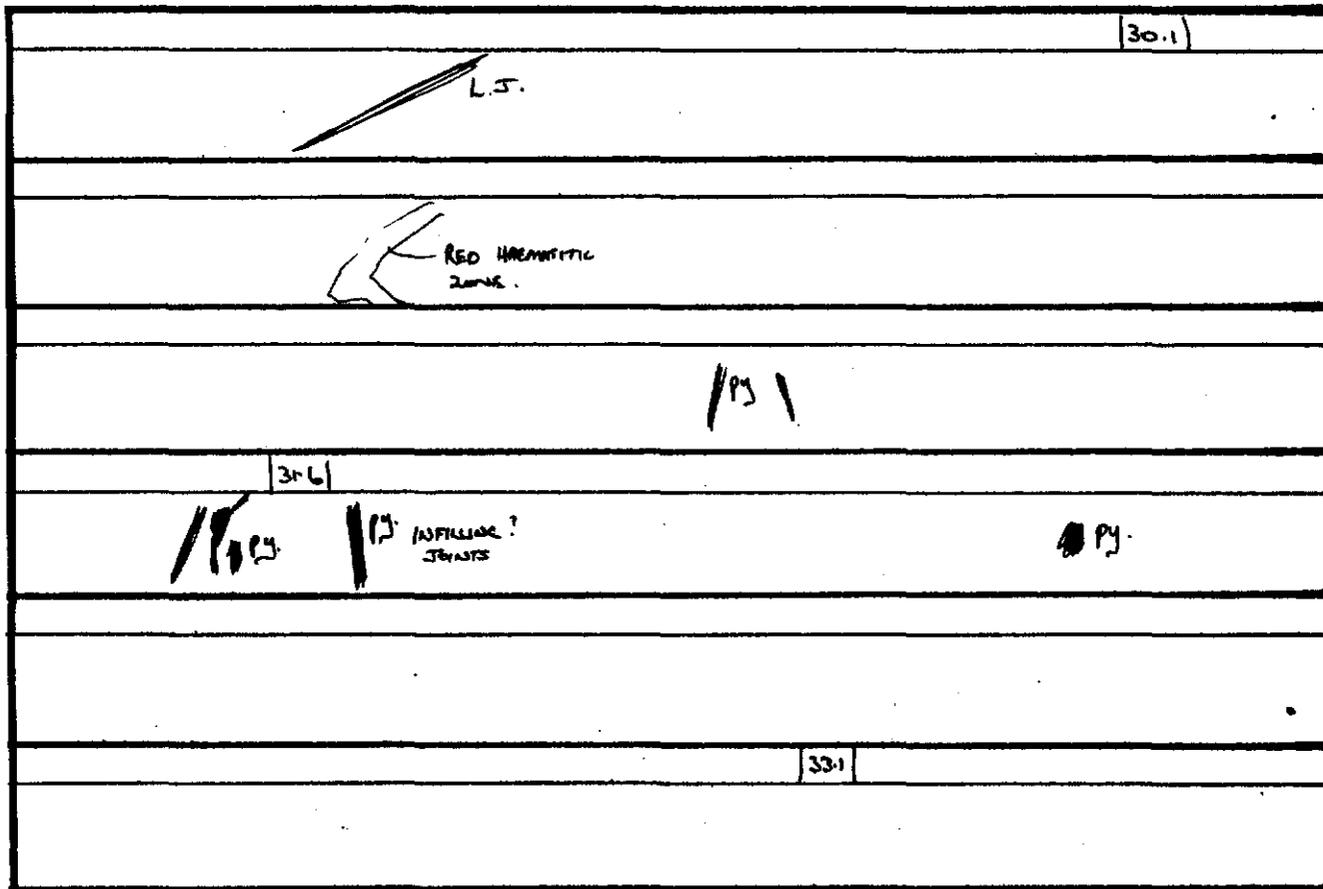
DEPTH FROM 29.5m

TO 33.3m

DIAGRAMATIC DRILLHOLE LOG

PAGE EIGHT OF FIFTY-SEVEN

NQ TRAY



SILTSTONES

SYMBOLS

J - JOINTS

EL. NAME SHEFFIELD
NUMBER 7/73

DRILLHOLE NO. PD82 LB 2

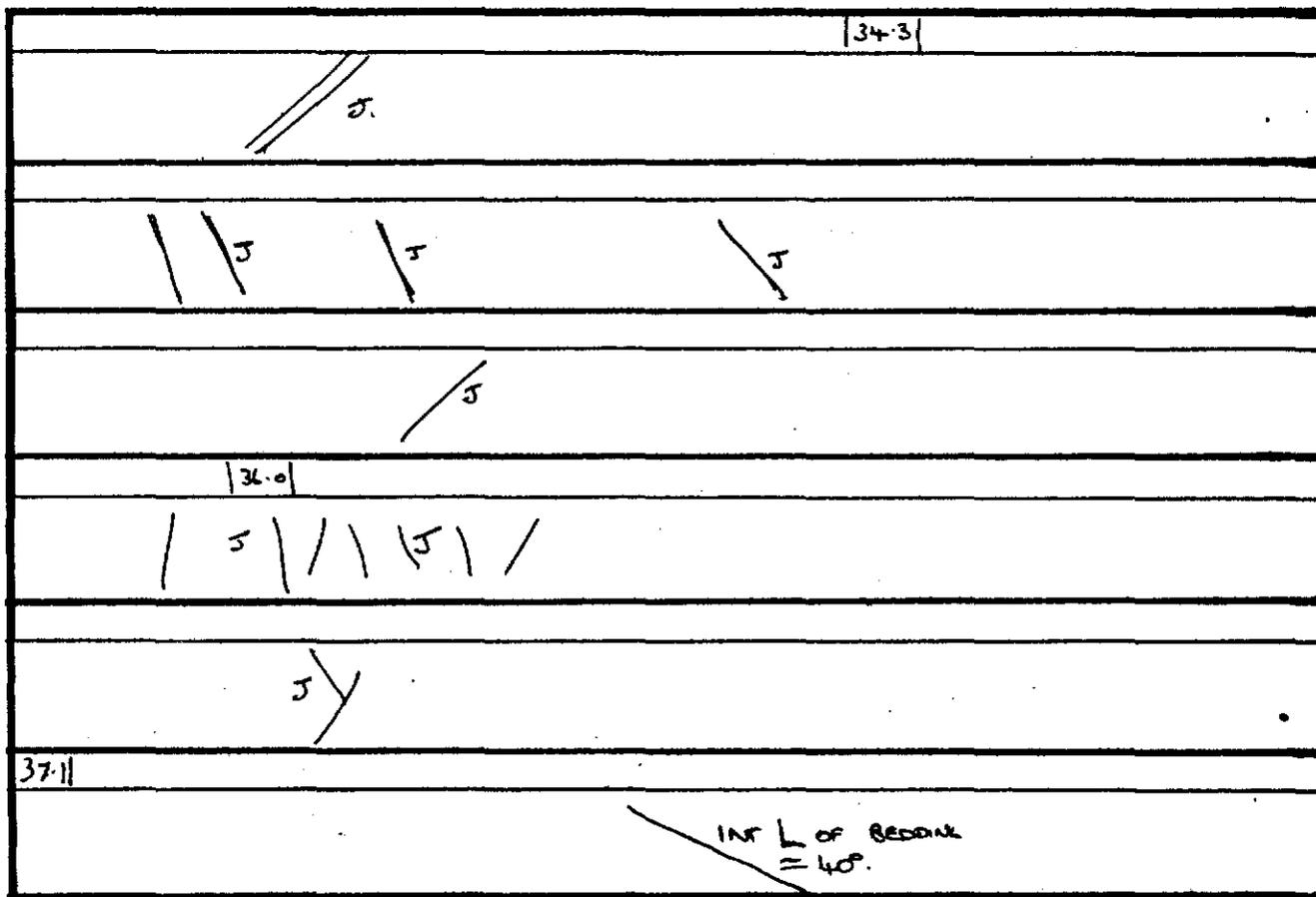
PROSPECT LAKE BARRINGTON

DEPTH FROM 33.3m
TO 37.7m

DIAGRAMATIC DRILLHOLE LOG

PAGE NINE OF FIFTY-SEVEN

NQ TRAY



SILTSTONES.

612085

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/T3.

DRILLHOLE NO. DD80LB2

PROSPECT LAKE BARRINGTON

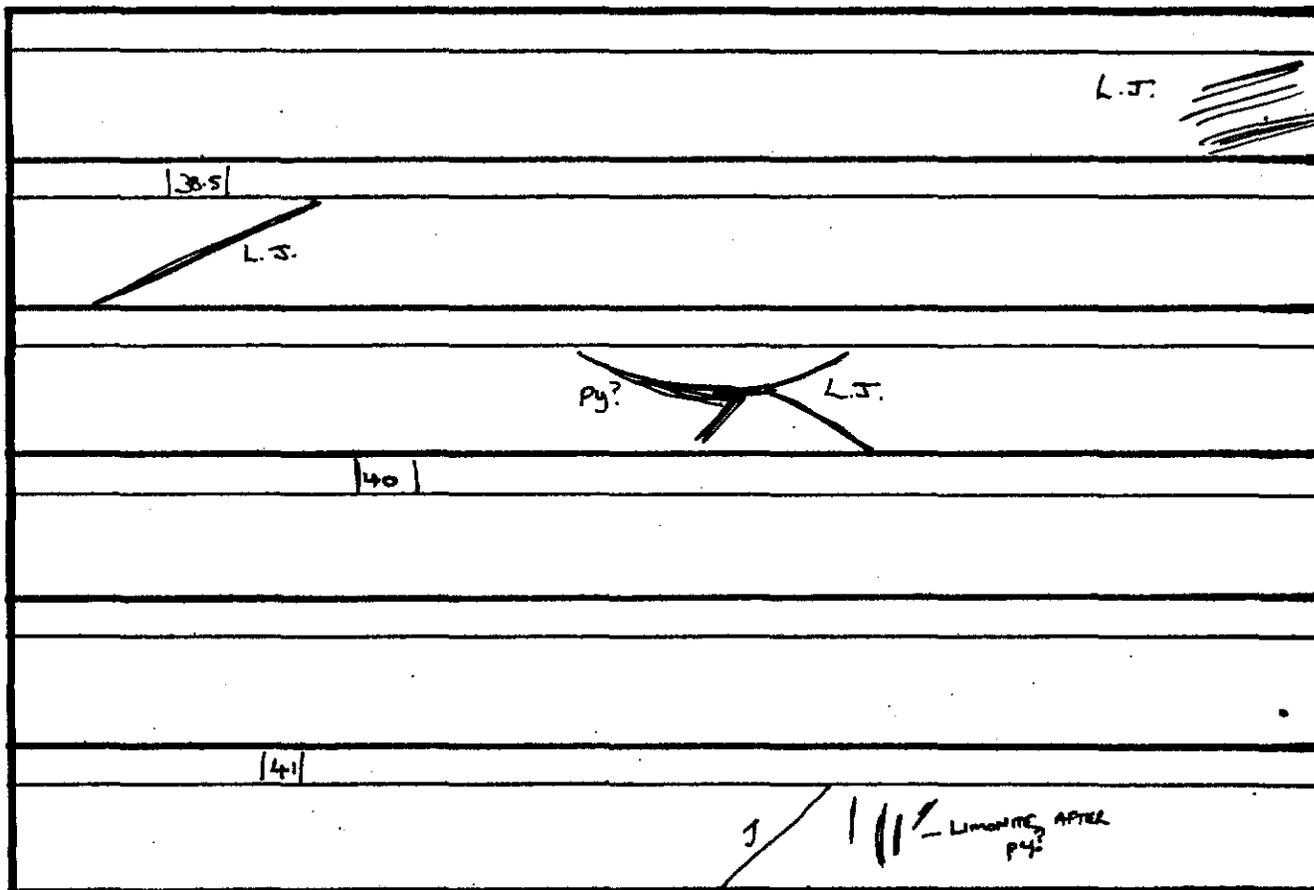
DEPTH FROM 37.7m

TO 41.4m

DIAGRAMATIC DRILLHOLE LOG

PAGE TEN. OF FIFTY-SEVEN

NQ TRAY



B?

SILTSTONES.

612086

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD 82 LB 2,

PROSPECT LAKE BARRINGTON

DEPTH FROM 44.8m

TO 49.0m

DIAGRAMATIC DRILLHOLE LOG

PAGE TWELVE OF FIFTY-SEVEN

NQ TRAY

45.4	
CORE BROKEN LIMONITE STAINING	SILTSTONES LESS JOINTED JOINTS NOT LIMONITE STAINED.
47.5	

SILTSTONES.

612088

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD82 LB 2

PROSPECT LAKE BARRINGTON

DEPTH FROM 43.0m

TO 52.4m

DIAGRAMATIC DRILLHOLE LOG

PAGE THIRTEEN OF FIFTY-SEVEN

NQ TRAY

49.1	SILTSTONES NOT FRACTURED.
49.2	MAJOR PY. MASS. TUFF FRACTURED ZONE. INTERMEDIATE LAVA OR INTRUSIVE
51.0	THIS ZONE V. BROKEN.
52	INTERMEDIATE LAVA OR INTRUSIVE V. BROKEN ZONE
	NO LIMONITE DEVELOPMENT.

612089

SYMBOLS

MOD CHL. AL^N - Moderate chlorite alteration

EL. NAME SHEFFELD

NUMBER 7/73

DIAGRAMATIC DRILLHOLE LOG

DRILLHOLE NO. DD80 LB2

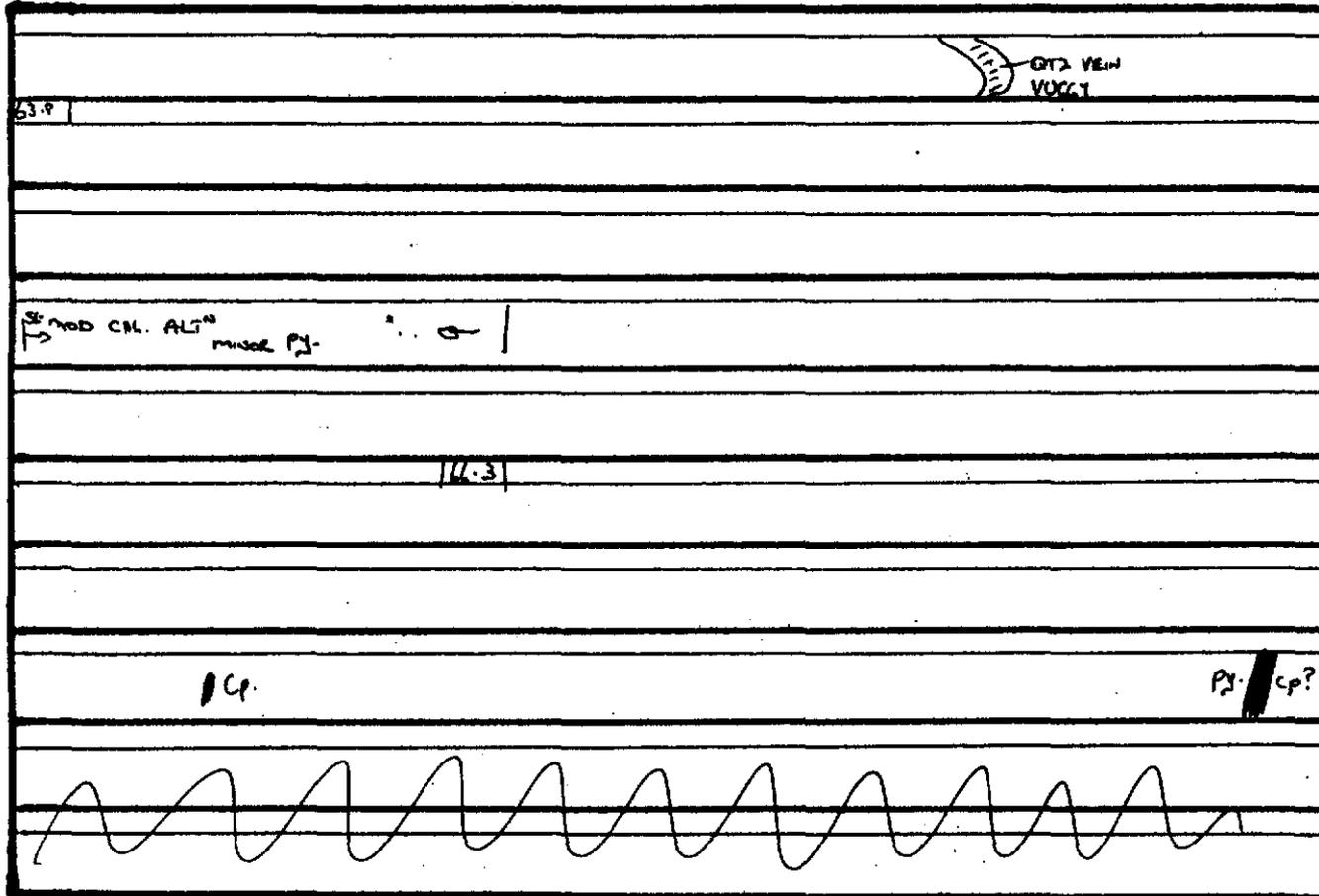
PROSPECT LAKE BARRINGTON

DEPTH FROM 63.2m

TO 68.4m

PAGE SIXTEEN OF FIFTY-SEVEN.

BQ TRAY



612092

SYMBOLS

EL. NAME SHEFFIELD
 NUMBER 7/73

DRILLHOLE NO. DD 80 LB3

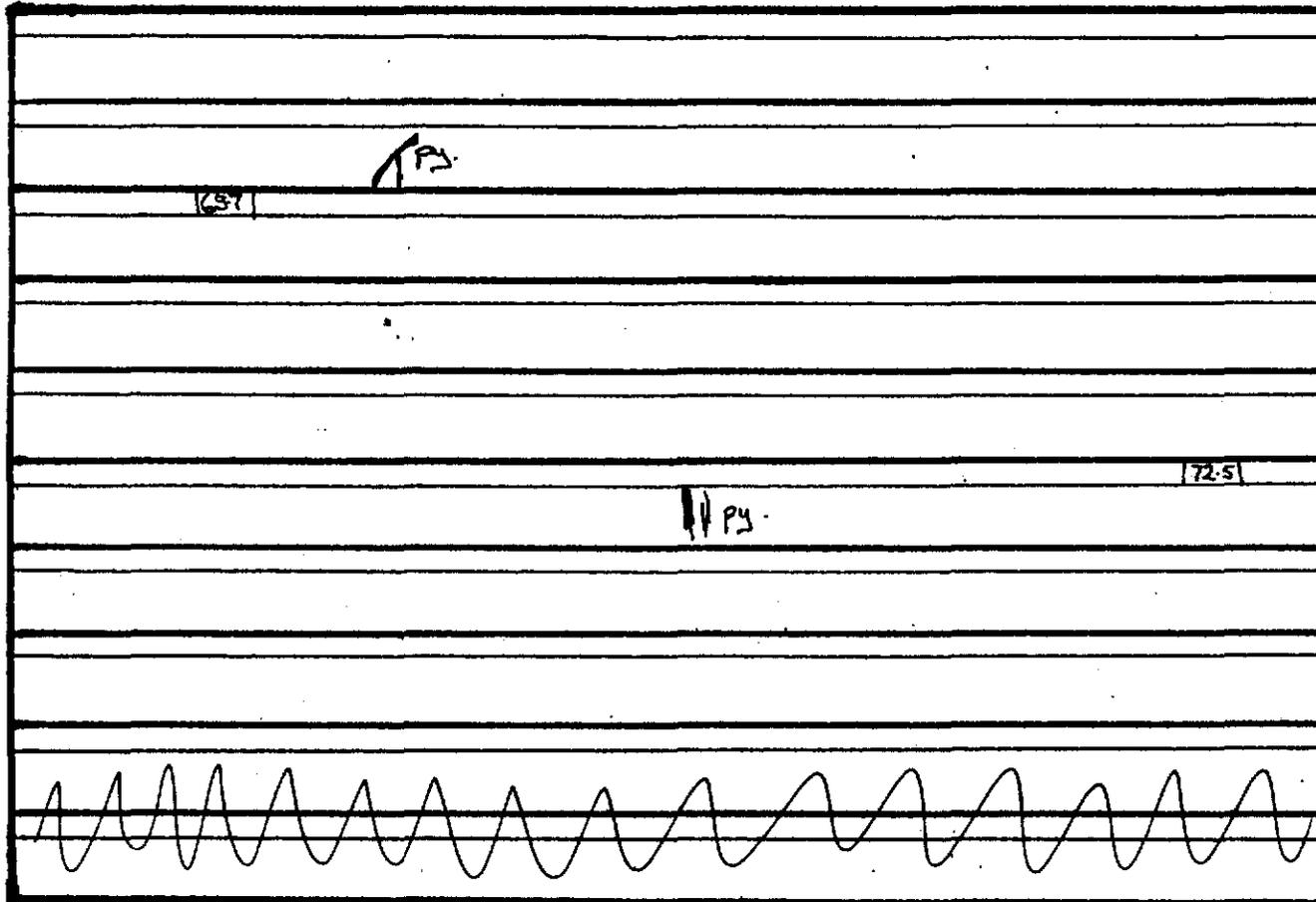
PROSPECT LAKE BARRINGTON

DEPTH FROM 68.4m
 TO 74.2m

DIAGRAMATIC DRILLHOLE LOG

PAGE SEVENTEEN OF FIFTY-SEVEN

BQ TRAY



BLECCIO-
 CONGLOMERATE.

LITTLE ALT^N
 SL - MOD JONTED.

612093

SYMBOLS

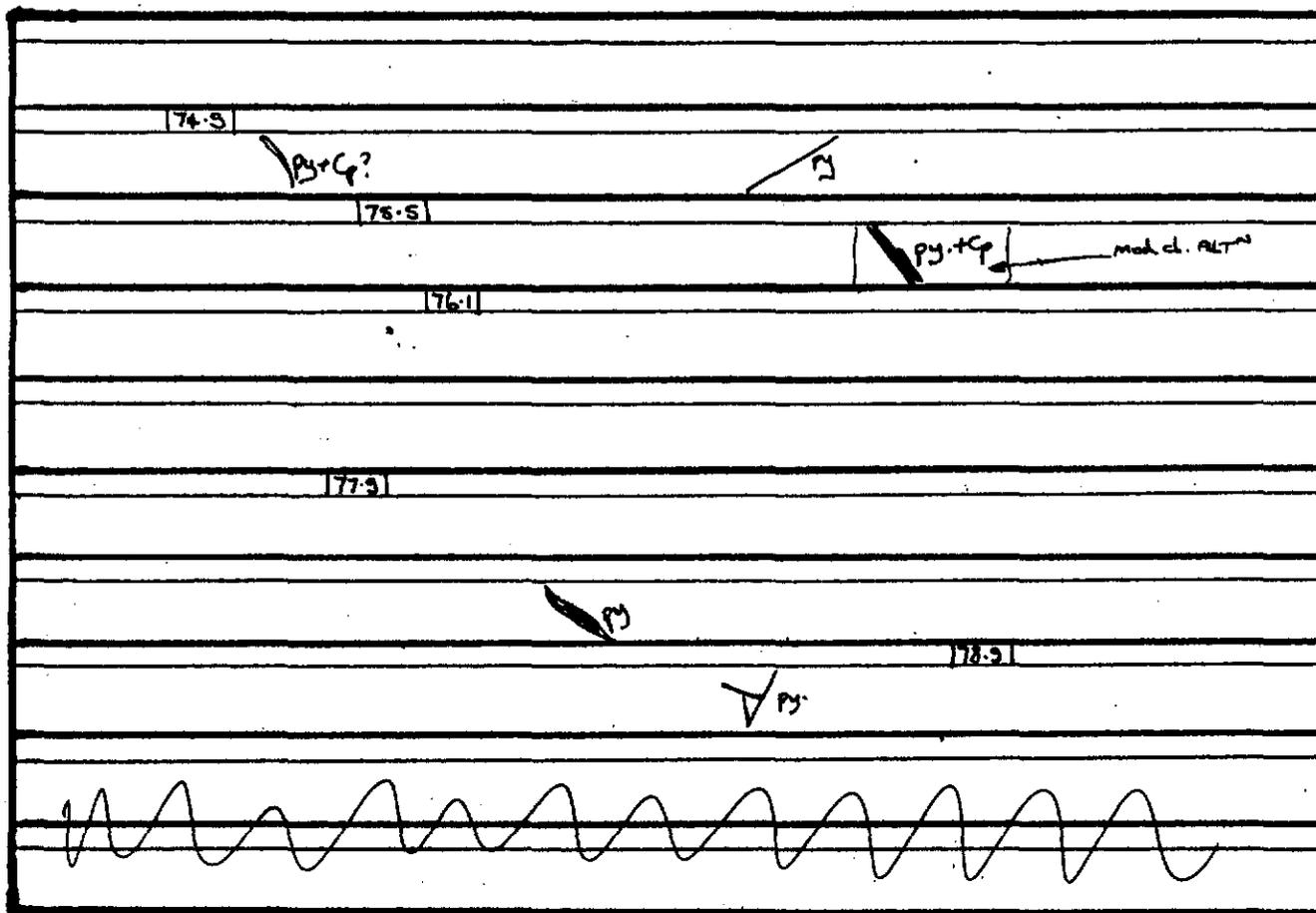
EL. NAME SHEFFIELD
NUMBER 7/73

DRILLHOLE NO. DDP 102 LB 2
PROSPECT LAKE BARRINGTON
DEPTH FROM 74.2m
TO 79.0m

DIAGRAMATIC DRILLHOLE LOG

PAGE EIGHTEEN OF FIFTY-SEVEN

BQ TRAY



612094

SYMBOLS

EL. NAME SHEFFIELD
 NUMBER 7/73

DRILLHOLE NO. DD 82 LB2.

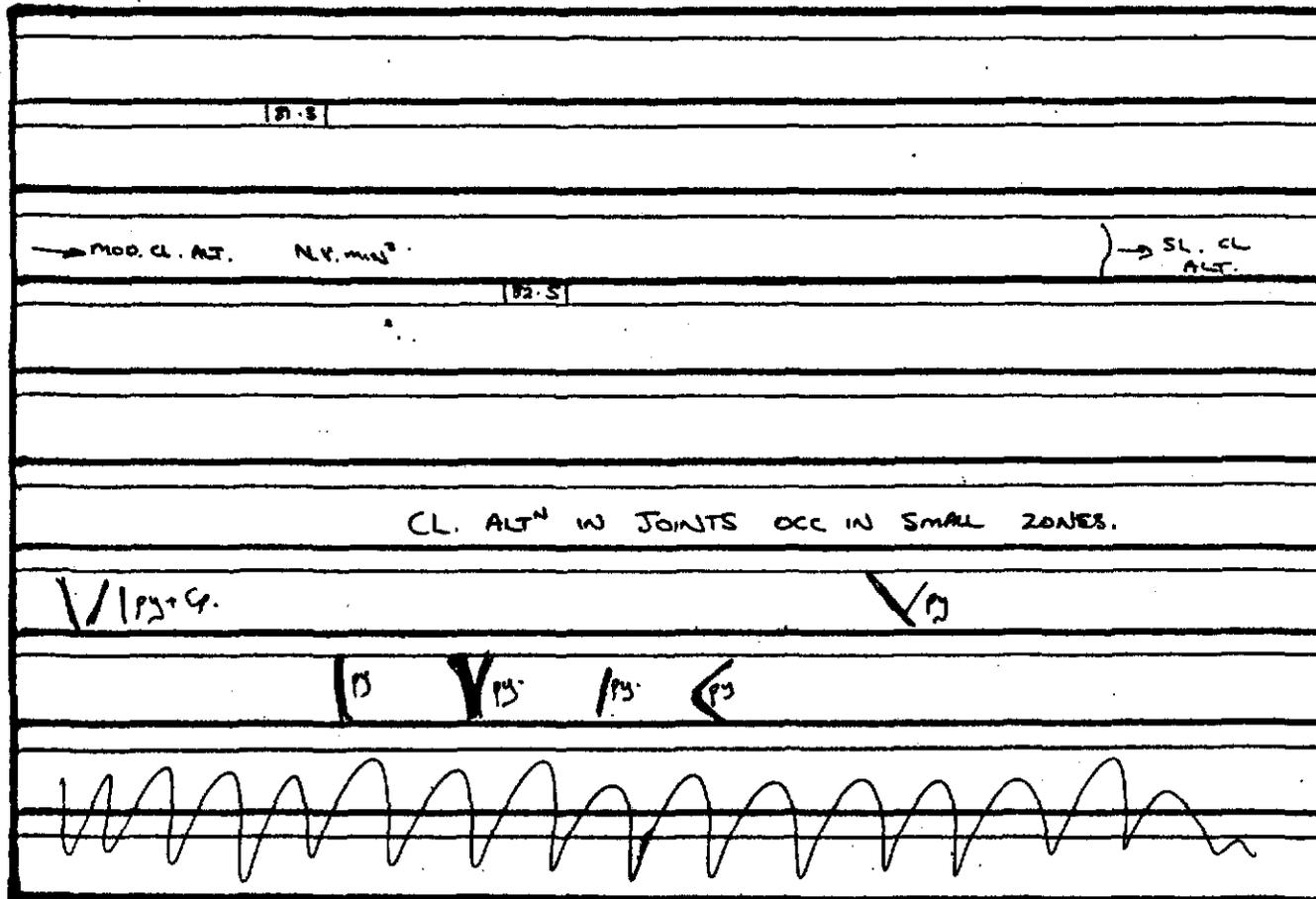
PROSPECT LAKE BARRINGTON

DEPTH FROM 73.0 m
 TO 86.0 m

DIAGRAMATIC DRILLHOLE LOG

PAGE NINETEEN OF FIFTY-SEVEN

8Q TRAY



612095

SYMBOLS

EL. NAME SHEPHERD

NUMBER 773

DRILLHOLE NO. DD80 LB2

PROSPECT LAKE BARRINGTON

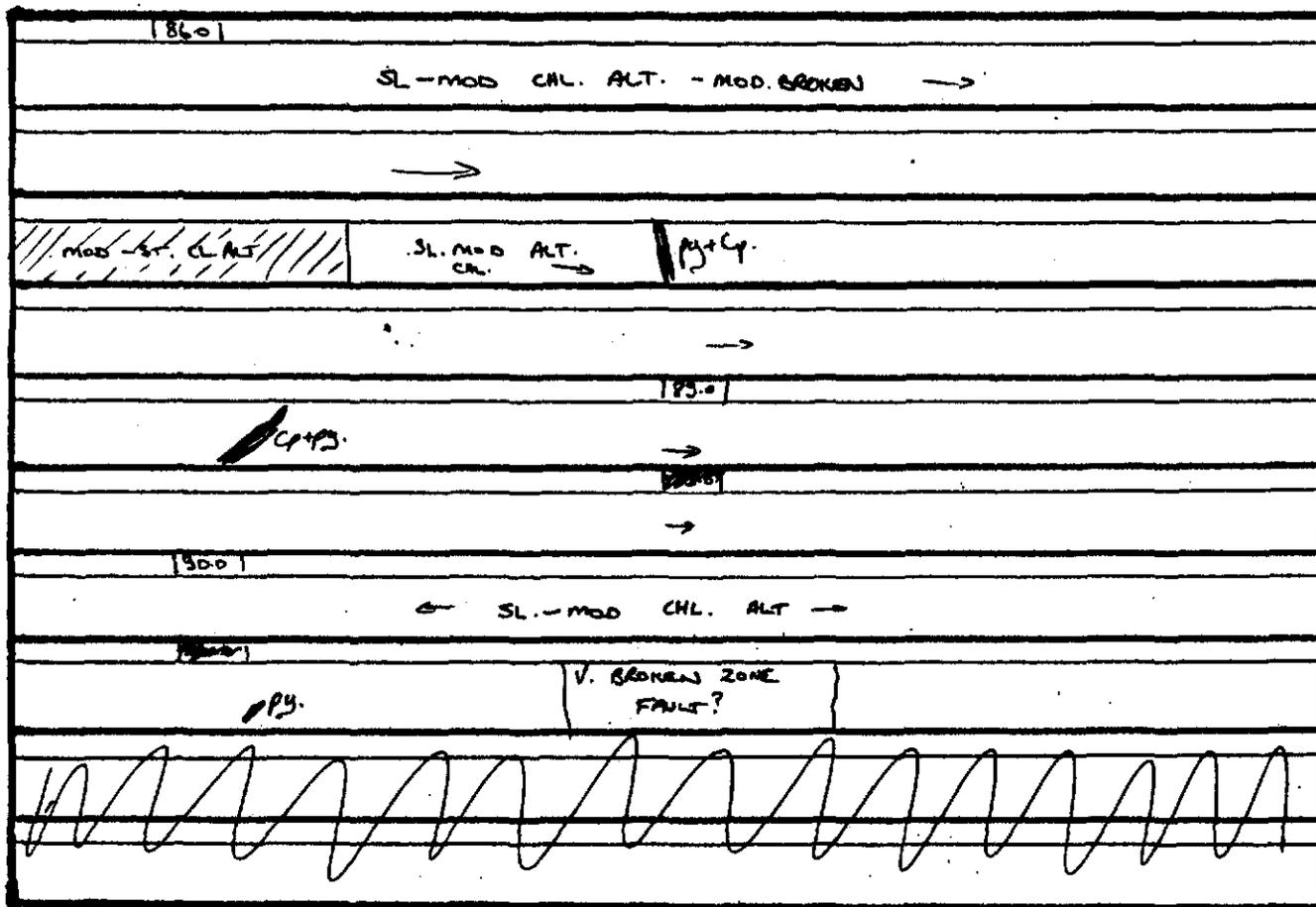
DEPTH FROM 86.0

TO 91.5

DIAGRAMATIC DRILLHOLE LOG

PAGE TWENTY OF FIFTY-SEVEN

BQ TRAY



SL-MOD
 CHLORITE ALT.
 MAINLY JOINTS.
 MINOR LIPS OF
 SULPHIDE MIN².

612096

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD 80 LB 2

PROSPECT LAKE BARRINGTON

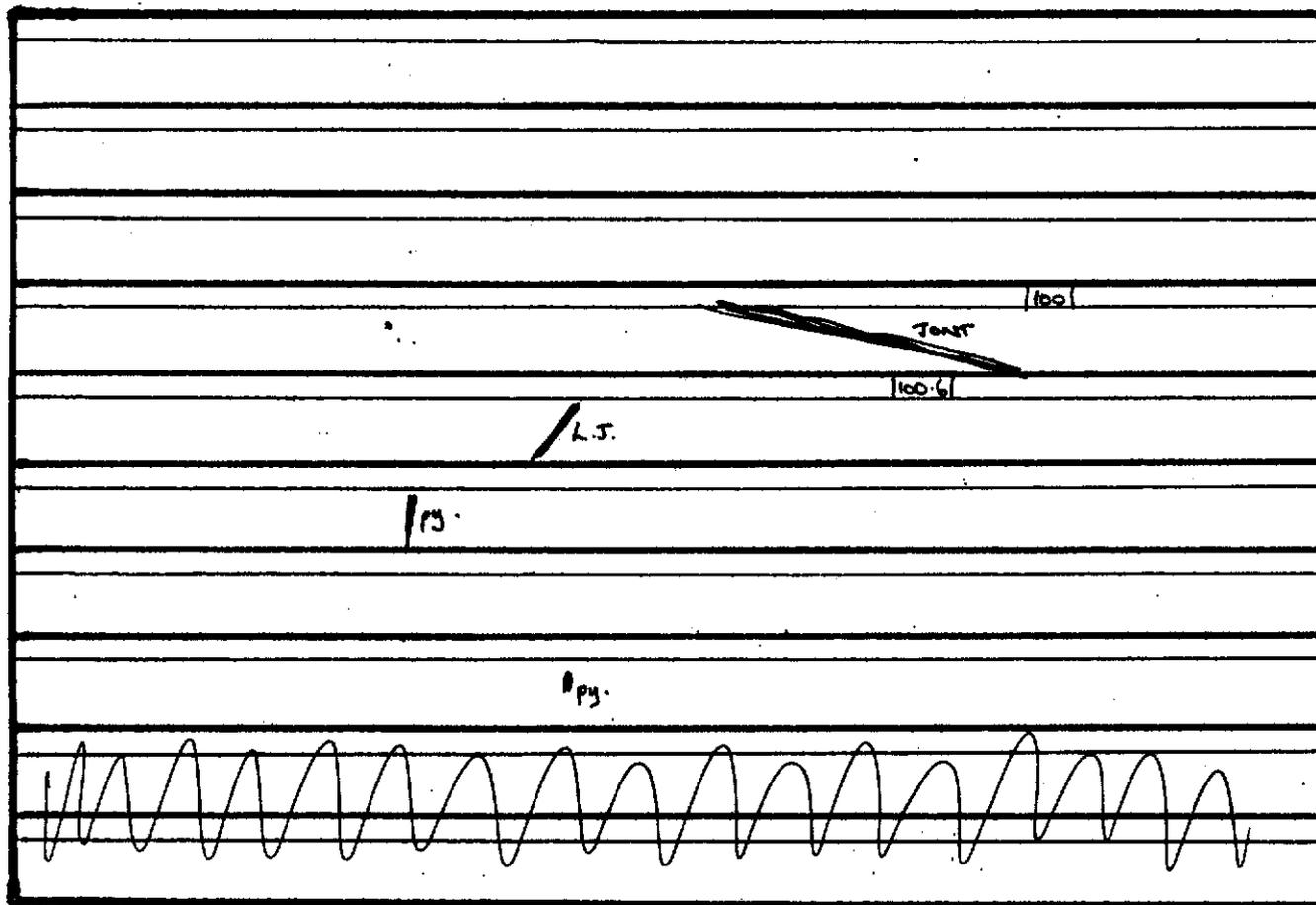
DEPTH FROM 97.2m

TO 102.9m

DIAGRAMATIC DRILLHOLE LOG

PAGE TWENTY-TWO OF FIFTY-SEVEN

BQ TRAY



612098

SYMBOLS

SID - SIDERITE

EL. NAME SHEFFIELD
NUMBER 7/13

DRILLHOLE NO. DD80 LB 2

PROSPECT LAKE BARRINGTON

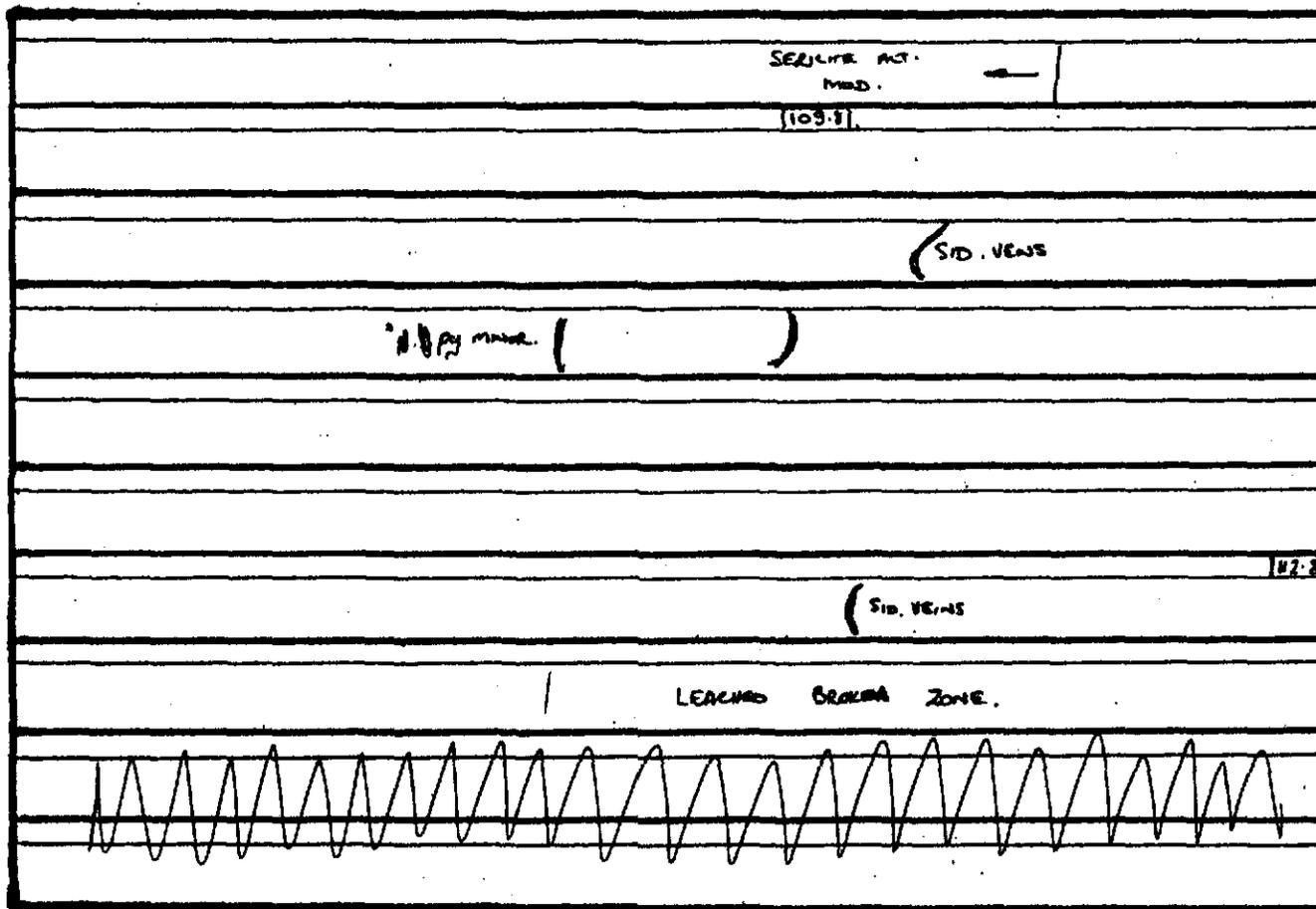
DEPTH FROM 108.2m

TO 113.4m

DIAGRAMATIC DRILLHOLE LOG

PAGE TWENTY-FOUR OF FIFTY-SEVEN

BQ TRAY



VOLCANIC LAVA.
SERICITE ALT.
WEAK - MOD.
THROUGH TRAY.

612100

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 713

DRILLHOLE NO. DD 80 LB 2

PROSPECT LAKE BARRINGTON

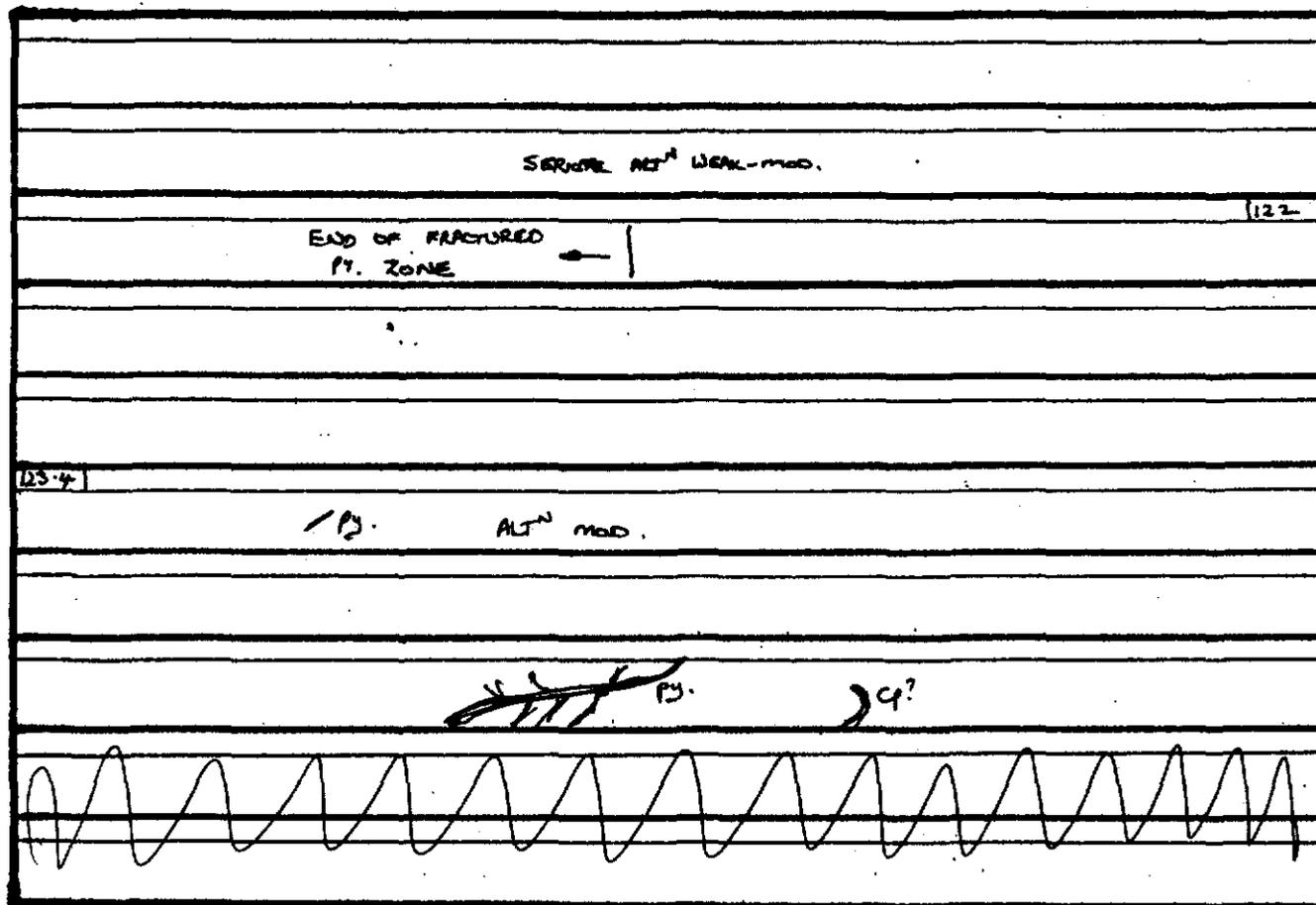
DEPTH FROM 120.5m

TO 125.6m

DIAGRAMATIC DRILLHOLE LOG

PAGE TWENTY-SIX OF FIFTY-SEVEN

BQ TRAY



LAWS - WEAK - MOD. ALTERED.

612102

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD 80 LB2

PROSPECT LAKE BARRINGTON

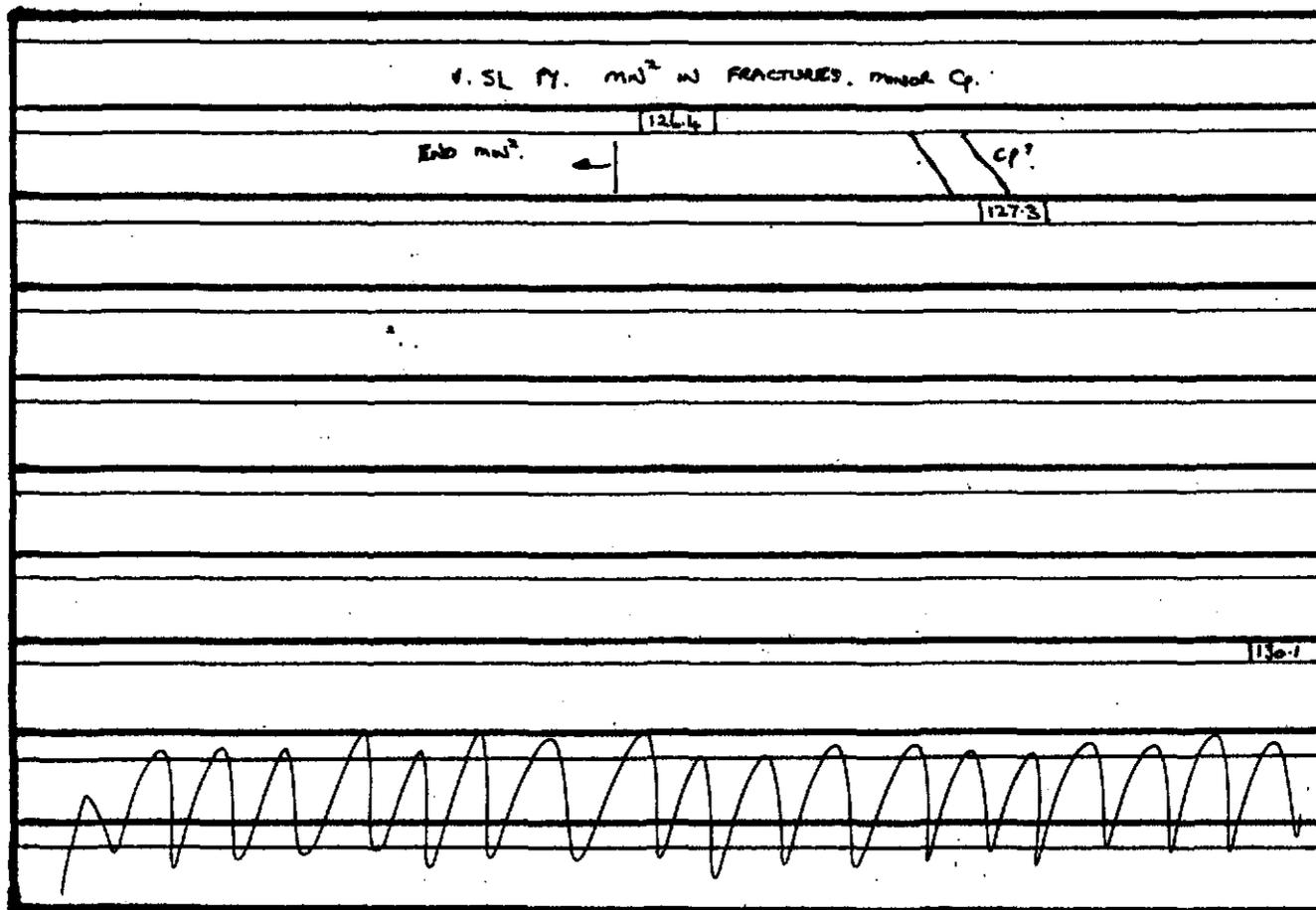
DEPTH FROM 125.6m

TO 130.1m

DIAGRAMATIC DRILLHOLE LOG

PAGE TWENTY-SEVEN OF FIFTY-SEVEN

BQ TRAY



LAVAS. - MOD. FRACTURED.
PROB. MOD AL² SILICATE.

612103

SYMBOLS

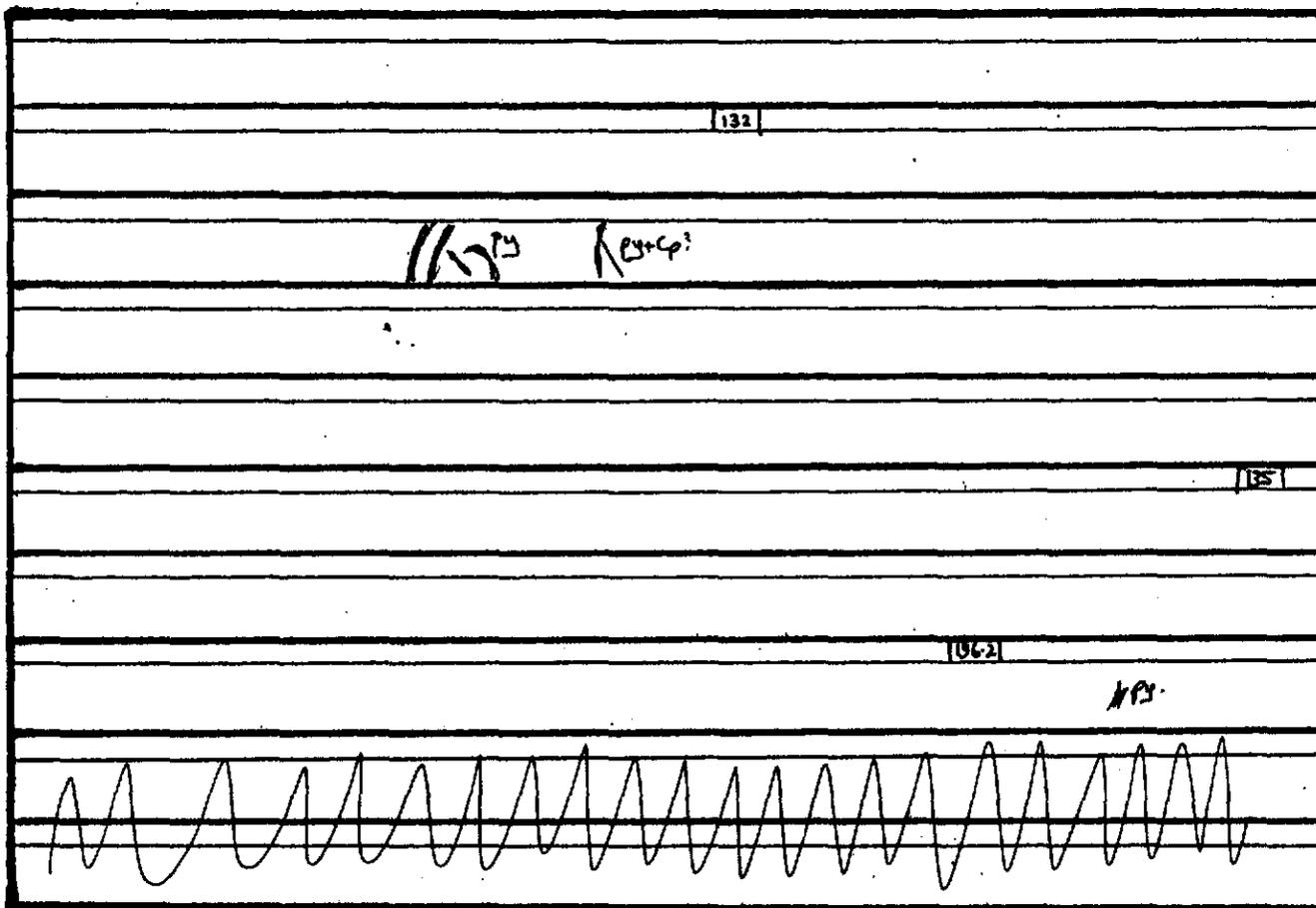
EL. NAME SHEFFIELD
NUMBER 7/T3

DRILLHOLE NO. DD 80 LB 2
PROSPECT LAKE BARRINGTON
DEPTH FROM 130.1m
TO 136.3m

DIAGRAMATIC DRILLHOLE LOG

PAGE TWENTY-EIGHT OF FIFTY-SEVEN

BQ TRAY



612104

SYMBOLS

EL. NAME SHEFFIELD
 NUMBER 7/73

DRILLHOLE NO. DD80 LB2

PROSPECT LAKE BARRINGTON

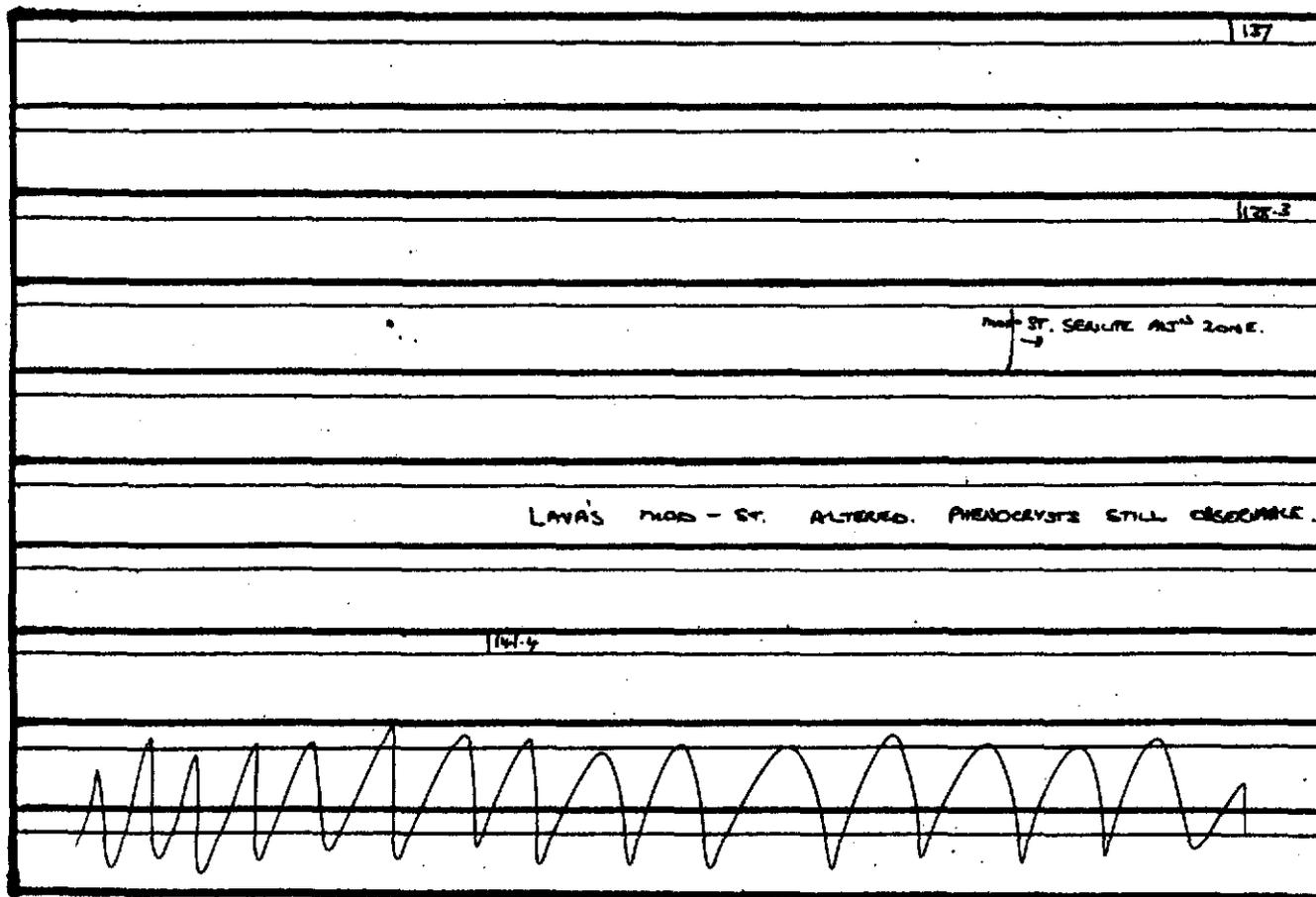
DEPTH FROM 136.3m

TO 141.7m

DIAGRAMATIC DRILLHOLE LOG

PAGE TWENTY-NINE OF FIFTY-SEVEN.

BQ TRAY



LAVA'S MOD
 FRACTURED - MOD-
 ST. SEALITE ALI

MOD. ST. SEALITE ALI ZONE.

LAVA'S MOD - ST. ALTERED. PHENOCRYSTS STILL OBSERVABLE.

612105

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD 80 LB 2

PROSPECT LAKE BARRINGTON

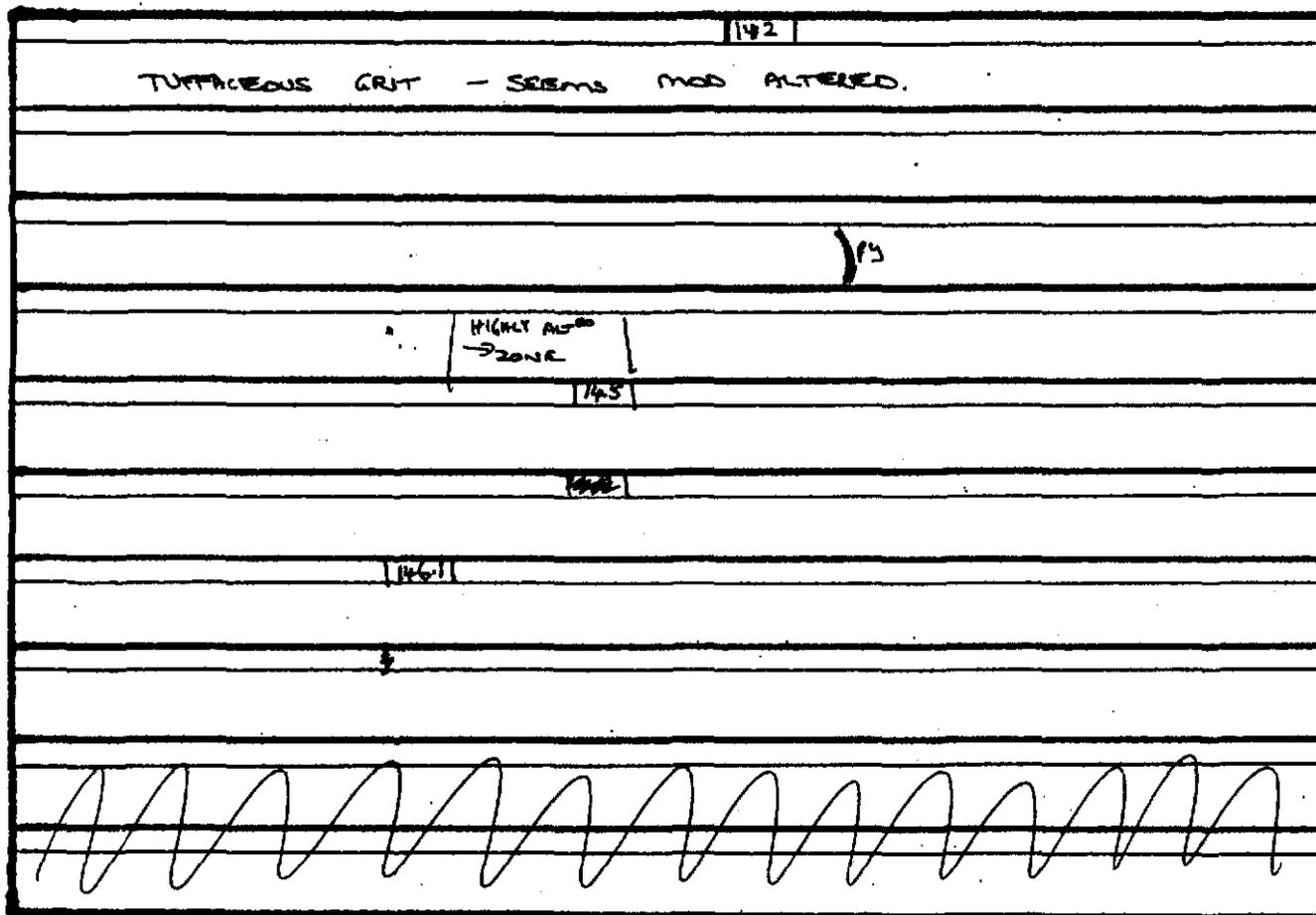
DEPTH FROM 141.7m

TO 147.0m

DIAGRAMATIC DRILLHOLE LOG

PAGE THIRTY OF FIFTY-SEVEN

8Q TRAY



GRITS - BRECCIA
CONGLOMERATE.

612106

SYMBOLS

EL. NAME SHEFFIELD
NUMBER 7/73

DIAGRAMATIC DRILLHOLE LOG

DRILLHOLE NO. DD 80 LB 2

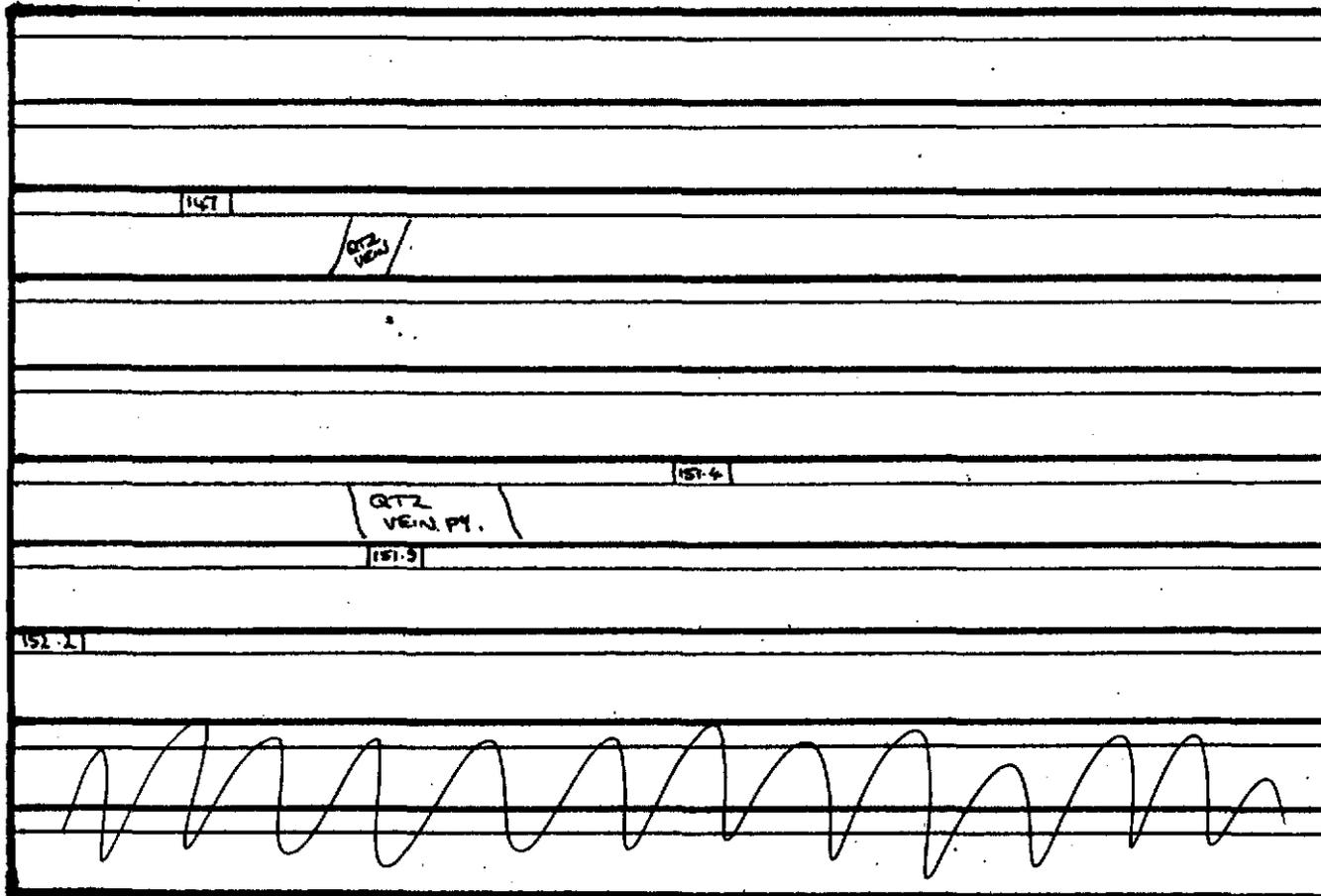
PROSPECT LAKE BARRINGTON

DEPTH FROM 147.0m

TO 152.8m

PAGE THIRTY-ONE OF FIFTY-SEVEN

Q TRAY



MOD FRACURED
SL. ALTⁿ-SERRATE.

612107

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. JD 80 LB 2

PROSPECT LAKE BARRINGTON

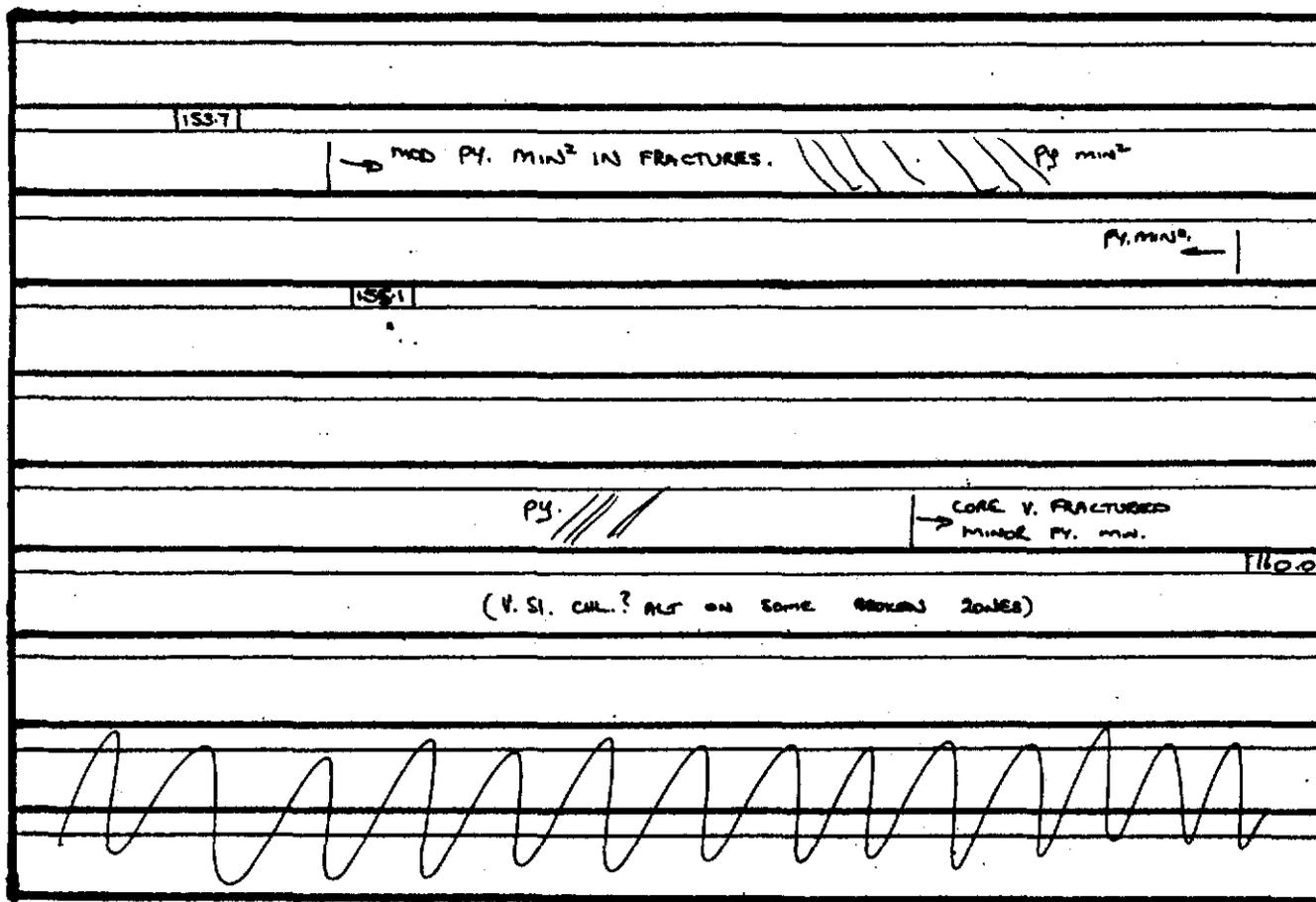
DEPTH FROM 152.8m

TO 160.6m

DIAGRAMATIC DRILLHOLE LOG

PAGE THIRTY-TWO OF FIFTY-SEVEN

BQ TRAY



612108

SYMBOLS

EL. NAME SHEFFIELD
 NUMBER 7/73

DRILLHOLE NO. DD 80 LB 2

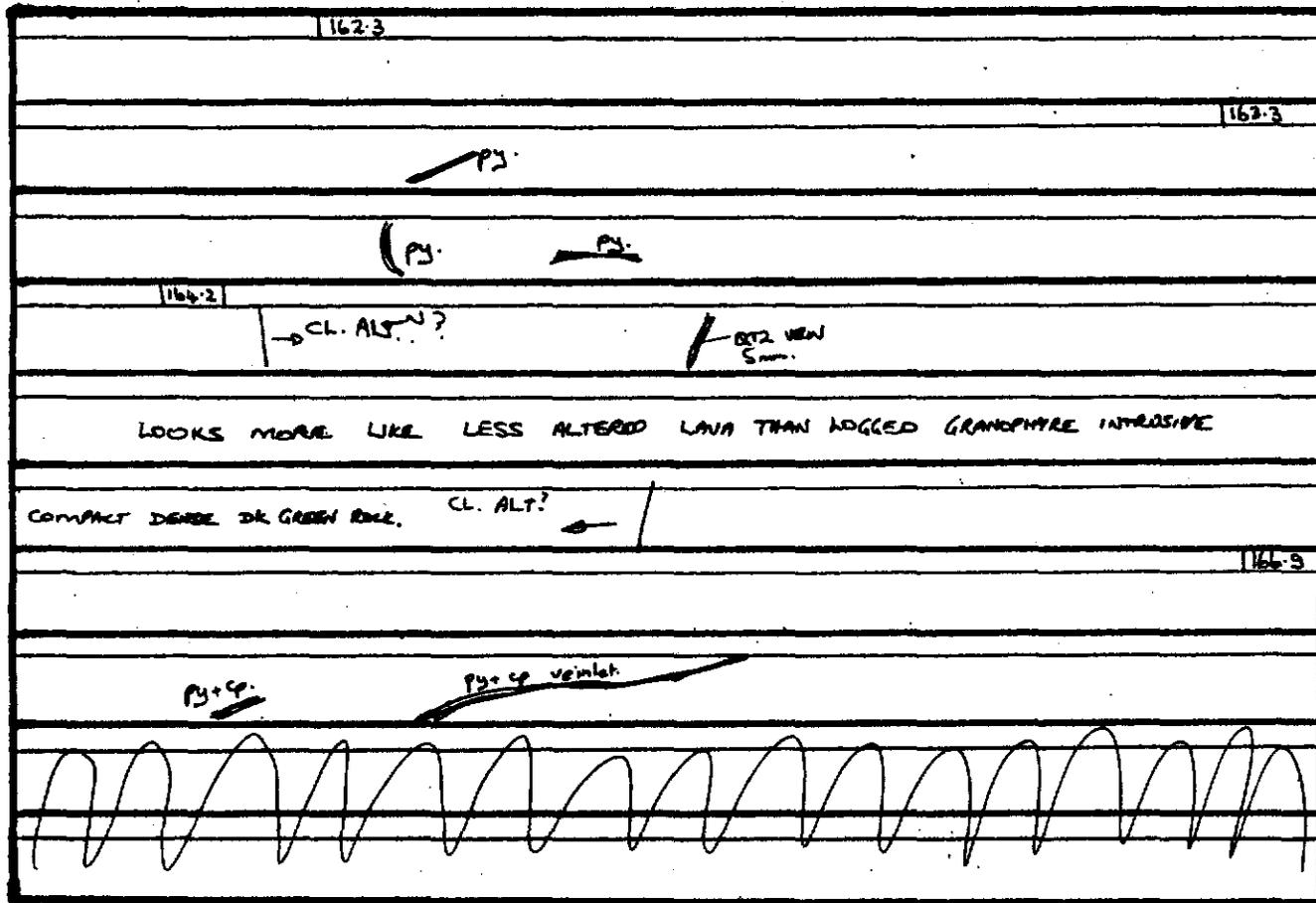
PROSPECT LAKE BARRINGTON

DEPTH FROM 160.6m
 TO 167.5m

DIAGRAMATIC DRILLHOLE LOG

PAGE THIRTY-THREE OF FIFTY-SEVEN

BQ TRAY



612109

SYMBOLS

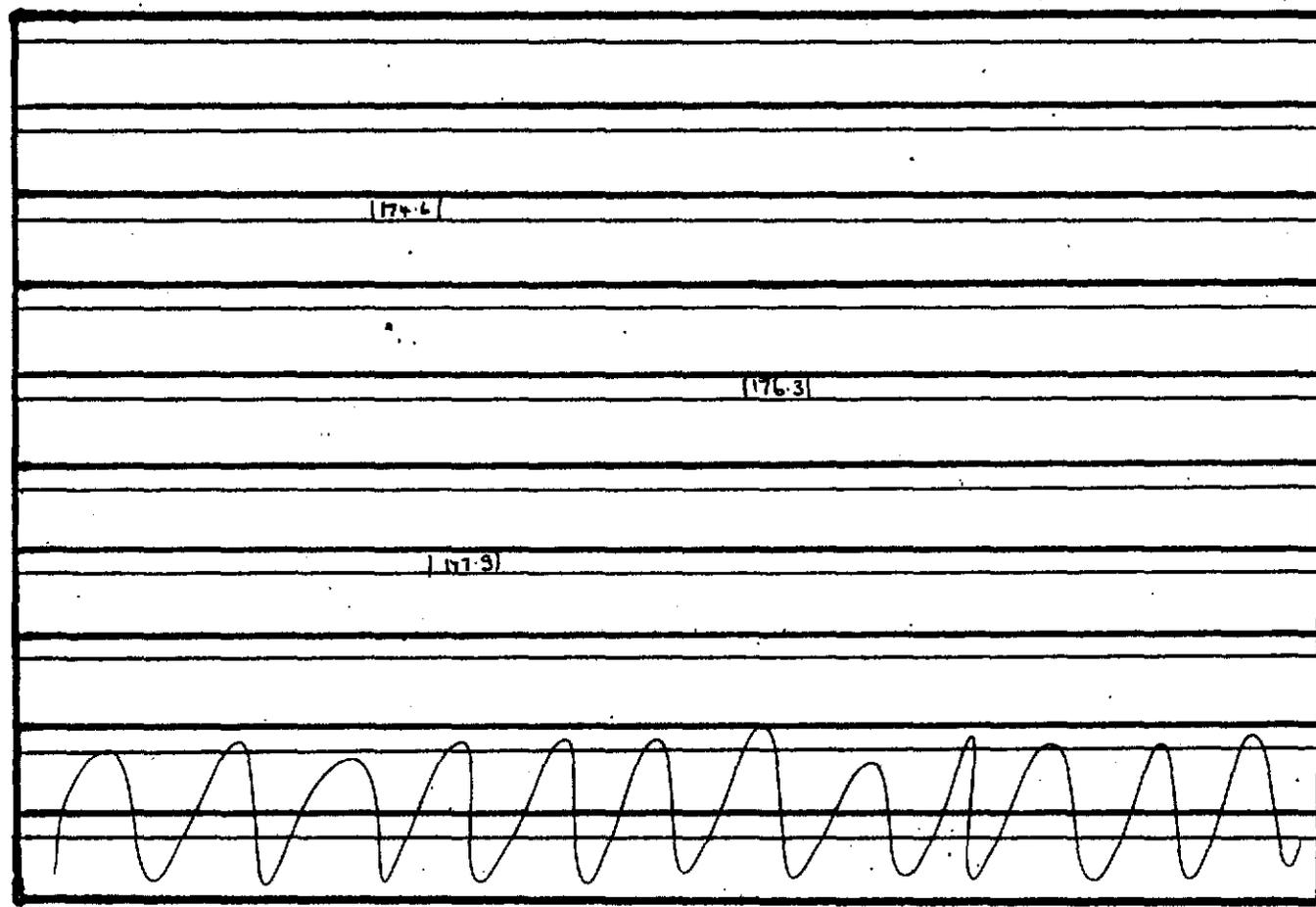
EL. NAME SHEFFIELD
 NUMBER 7/73

DRILLHOLE NO. DD82 LB 2
 PROSPECT LAKE BARRINGTON
 DEPTH FROM 173.5m
 TO 173.0m

DIAGRAMATIC DRILLHOLE LOG

PAGE THIRTY-FIVE OF FIFTY-SEVEN

8Q TRAY



MOD FRACTURED
 MINOR PYRITE IN
 FRACTURES - CARBONATE
 -SIDERITE VEINS
 SERICITE AL^N MOD-
 STRONG.

6121111

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD 80 LB 2

PROSPECT LAKE BARRINGTON

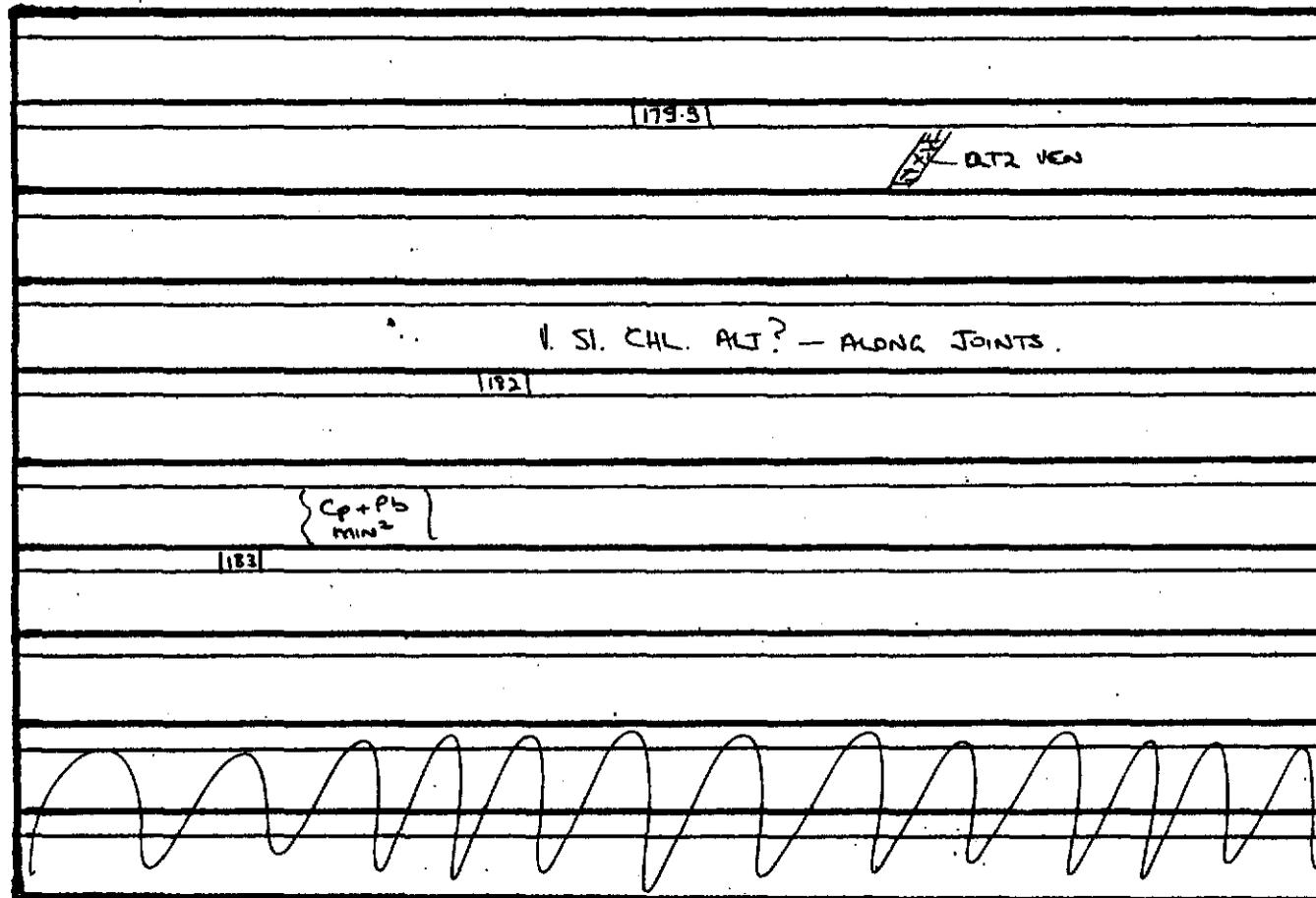
DEPTH FROM 179.0m

TO 184.0

DIAGRAMATIC DRILLHOLE LOG

PAGE THIRTY-SIX OF FIFTY-SEVEN

8Q TRAY



MOD - WELL FRACTURED.
SIDERITE INFILLING
V. MINOR PY.

612112

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD 82 LB2

PROSPECT LAKE BARRINGTON

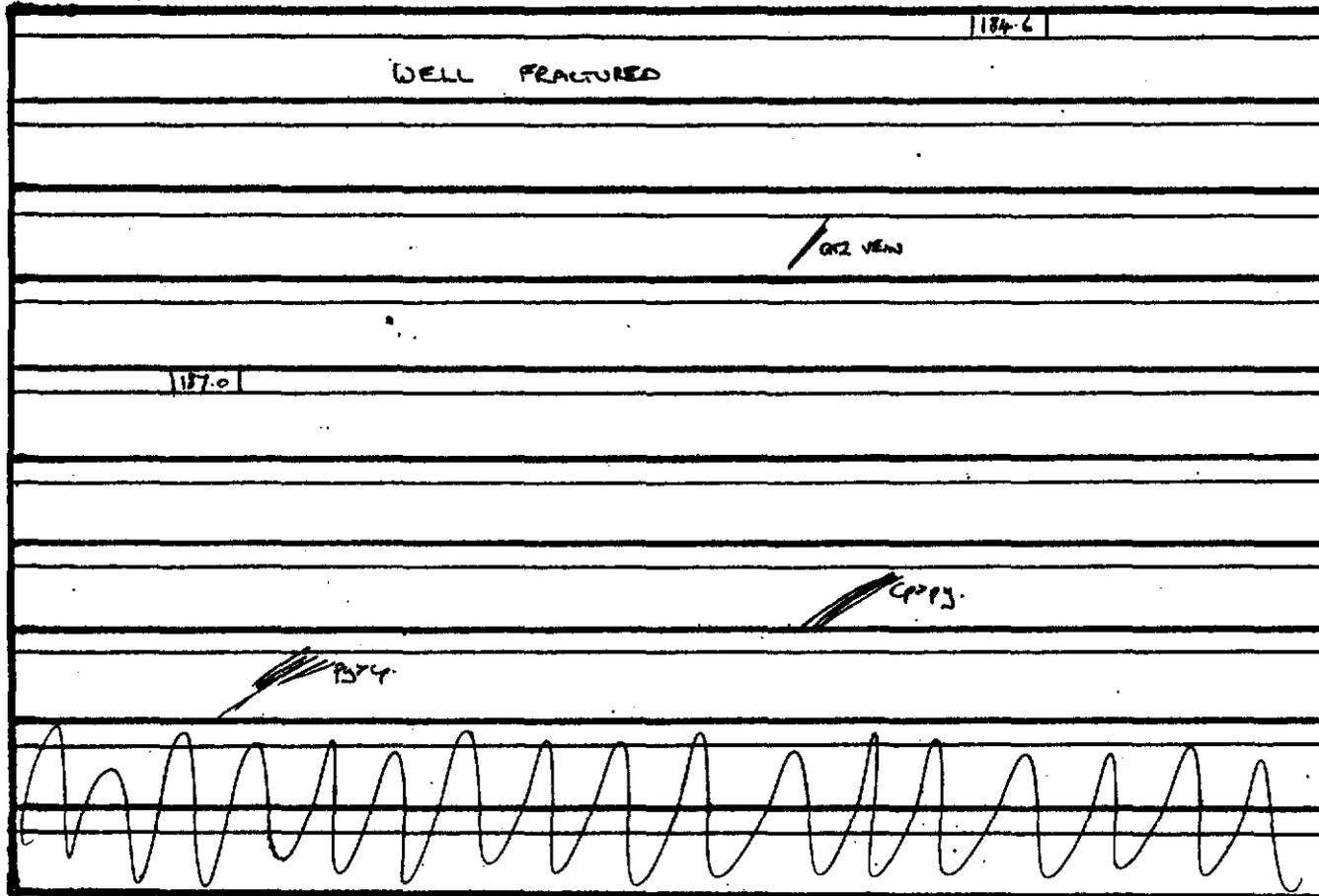
DEPTH FROM 184.0

TO 190.0

DIAGRAMATIC DRILLHOLE LOG

PAGE THIRTY-SEVEN OF FIFTY-SEVEN

BQ TRAY



WELL FRACTURED
SILICEOUS SILTSTONES?
CRIS-CROSSED WITH
THIN SIDERITE? VENELETS.

612113

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD80LB2

PROSPECT LAKE BARRINGTON

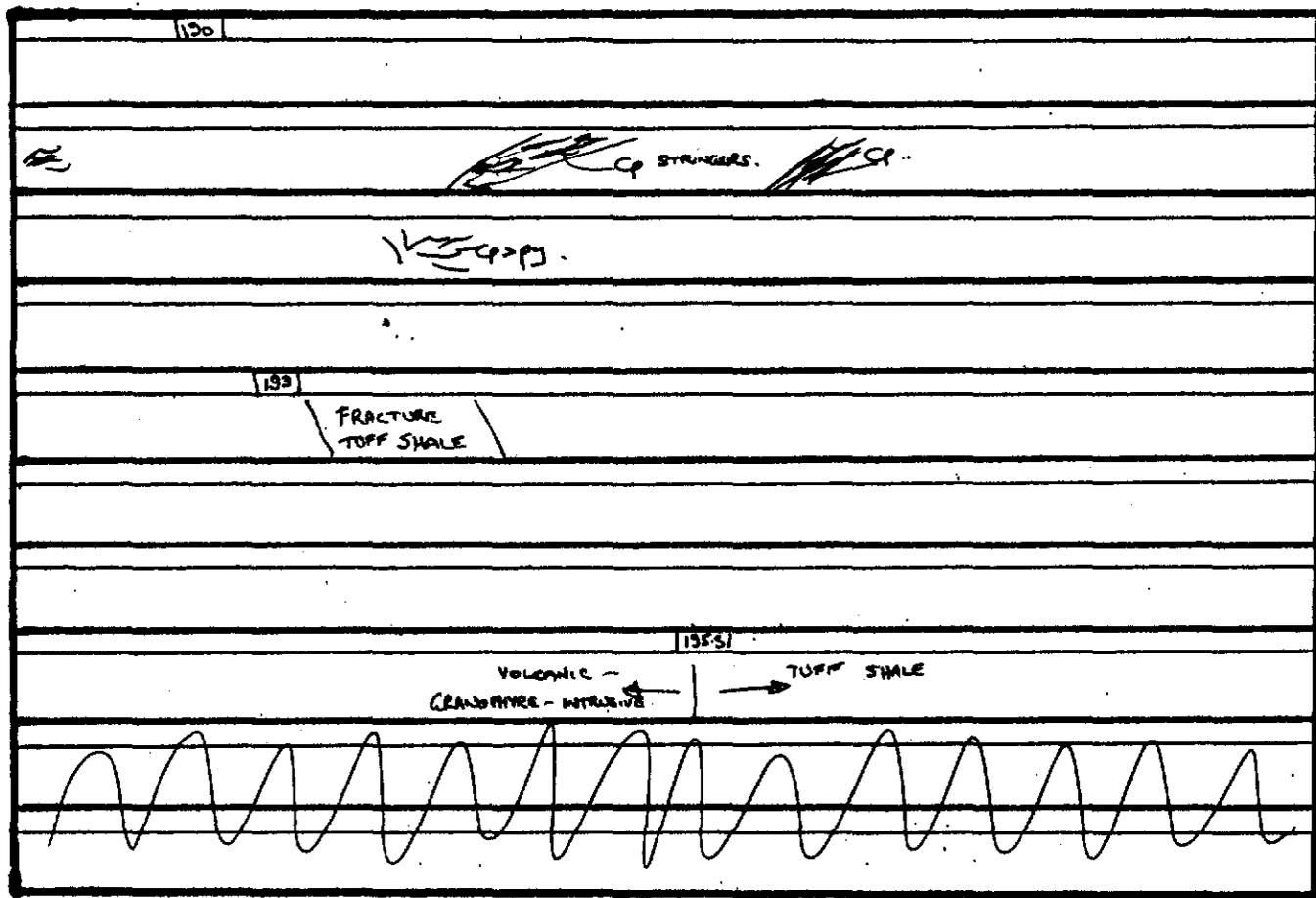
DEPTH FROM 190.0

TO 195.9m

DIAGRAMATIC DRILLHOLE LOG

PAGE THIRTY-EIGHT OF FIFTY-SEVEN

BQ TRAY



612114

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/13

DRILLHOLE NO. JD 80 LB 2

PROSPECT LAKE BARRINGTON

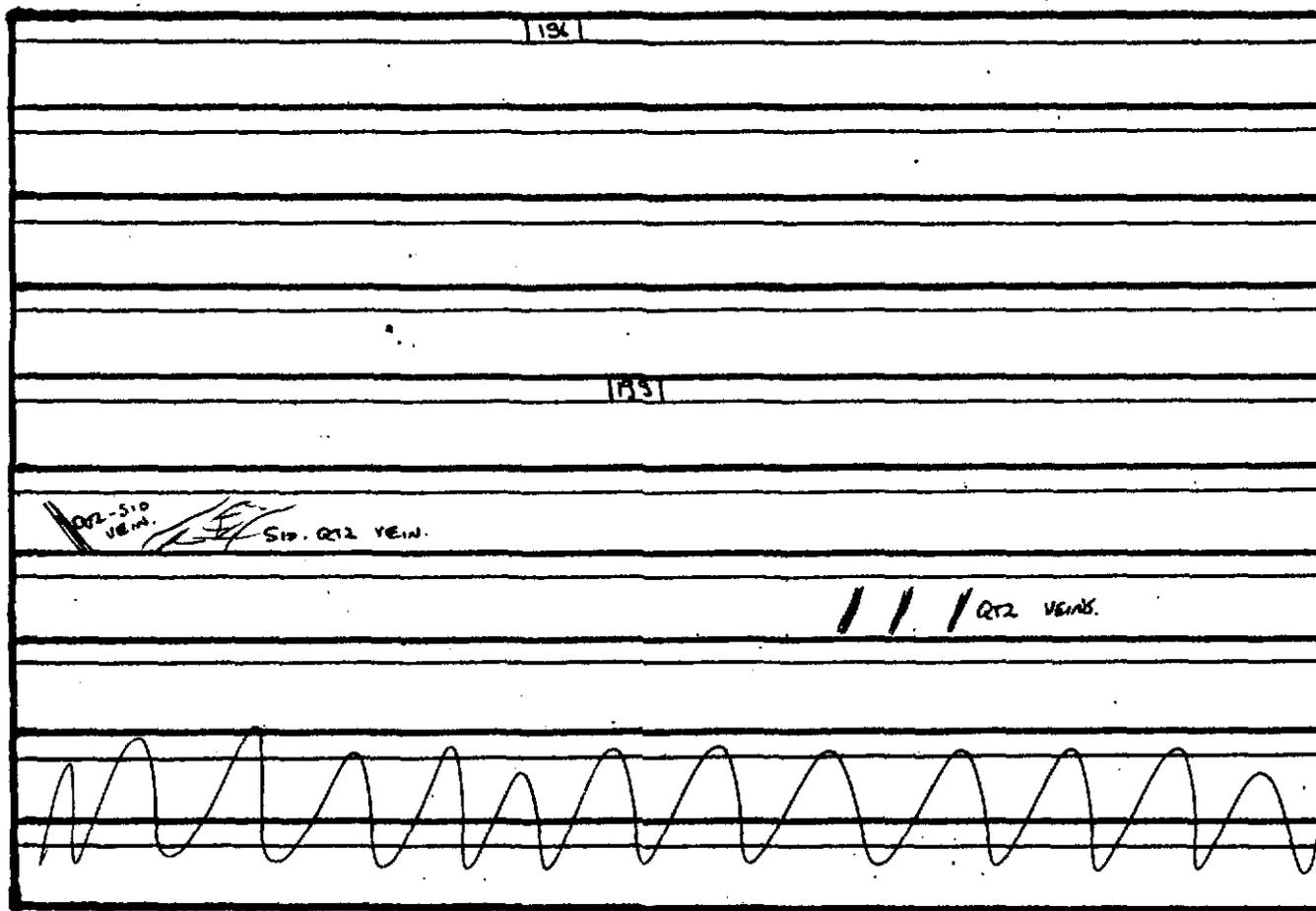
DEPTH FROM 135.9m

TO 201.6m

DIAGRAMATIC DRILLHOLE LOG

PAGE THIRTY-NINE OF FIFTY-SEVEN

BQ TRAY



TUFF SHALE
 SIDERITE VEINETS
 NUMEROUS WALLING
 MOD JOINTS - FRACTURES.
 SIDERITE-Q12 VEIN
 UP TO 5mm OVER LAST
 3 mts.

612115

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD80 LB3

PROSPECT LAKE BARRINGTON

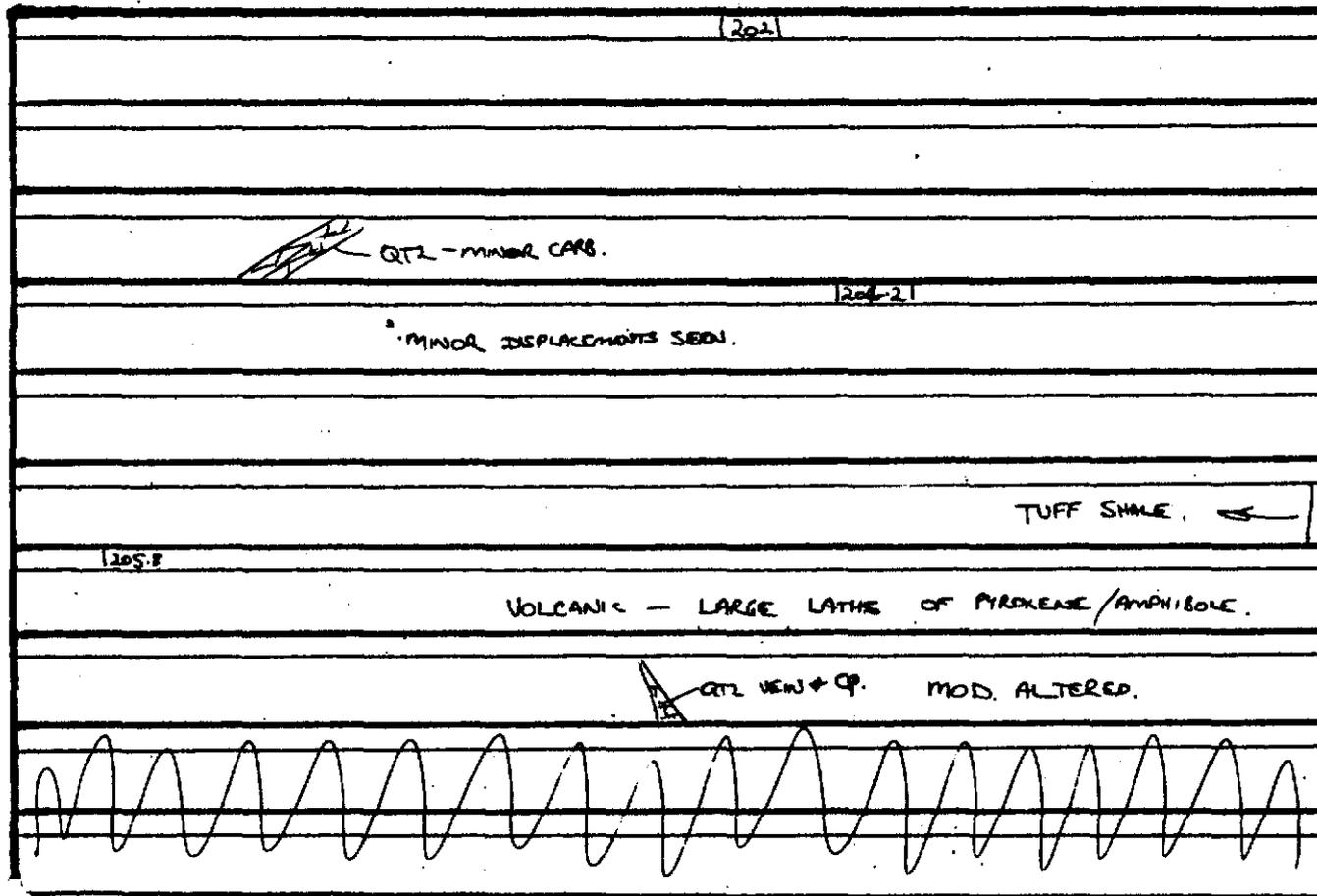
DEPTH FROM 201.6m

TO 207.3m

DIAGRAMATIC DRILLHOLE LOG

PAGE Forty. OF FIFTY-SEVEN

Q TRAY



TUFF SHALES - WELL
FRACTURES - SILENT
VEINLETS.

} LESS FRACTURED
MOD ALTERED.

612116

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/13

DRILLHOLE NO. JD 82 LB 2

PROSPECT LAKE BARRINGTON

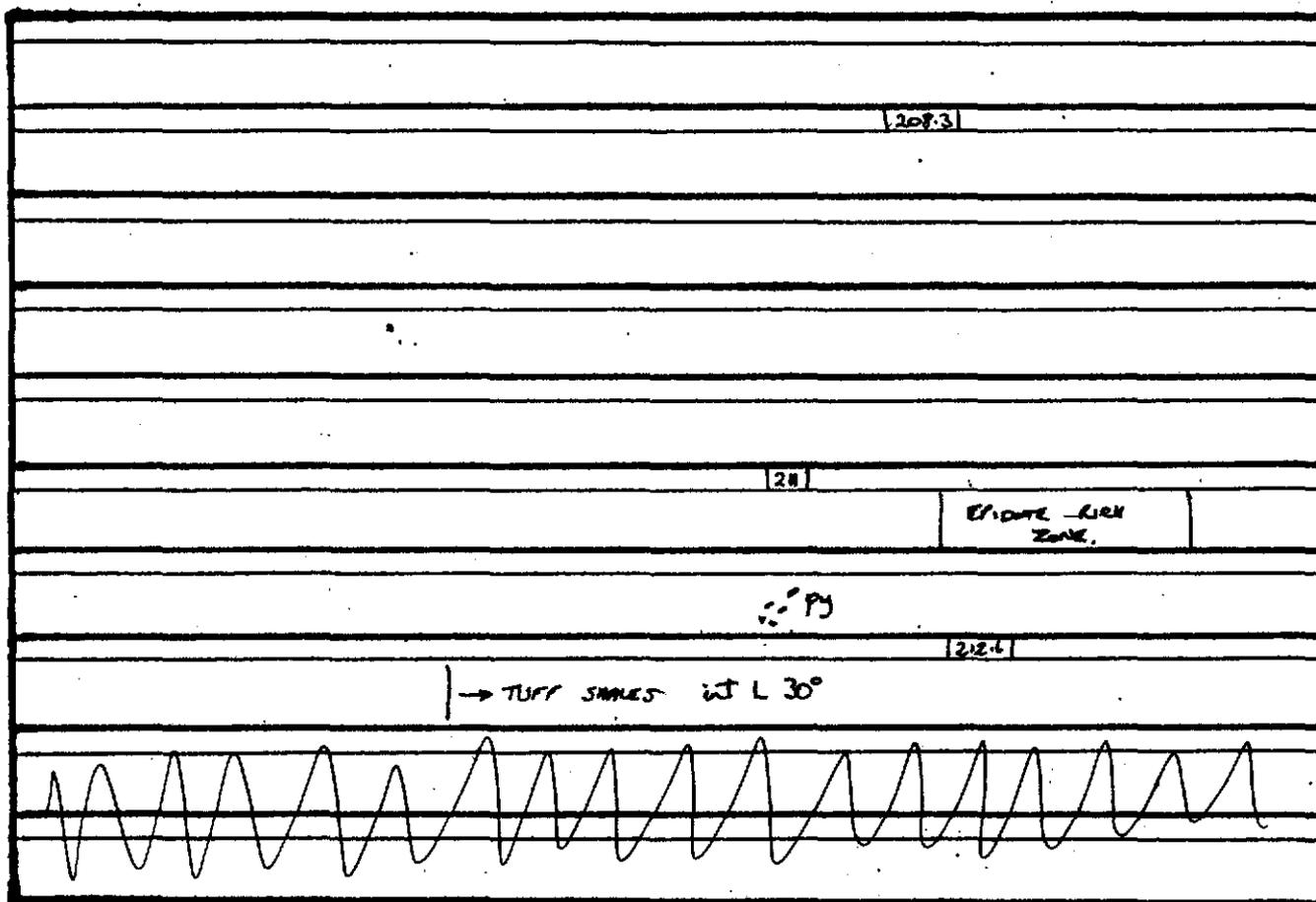
DEPTH FROM 207.3m

TO 212.7m

DIAGRAMATIC DRILLHOLE LOG

PAGE FORTY-ONE OF FIFTY-SEVEN

BQ TRAY



GRANOPHIRE?
SMALL AMOUNT
FRACTURING

612117

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73.

DRILLHOLE NO. DD 80 LB 2

PROSPECT LAKE BARRINGTON

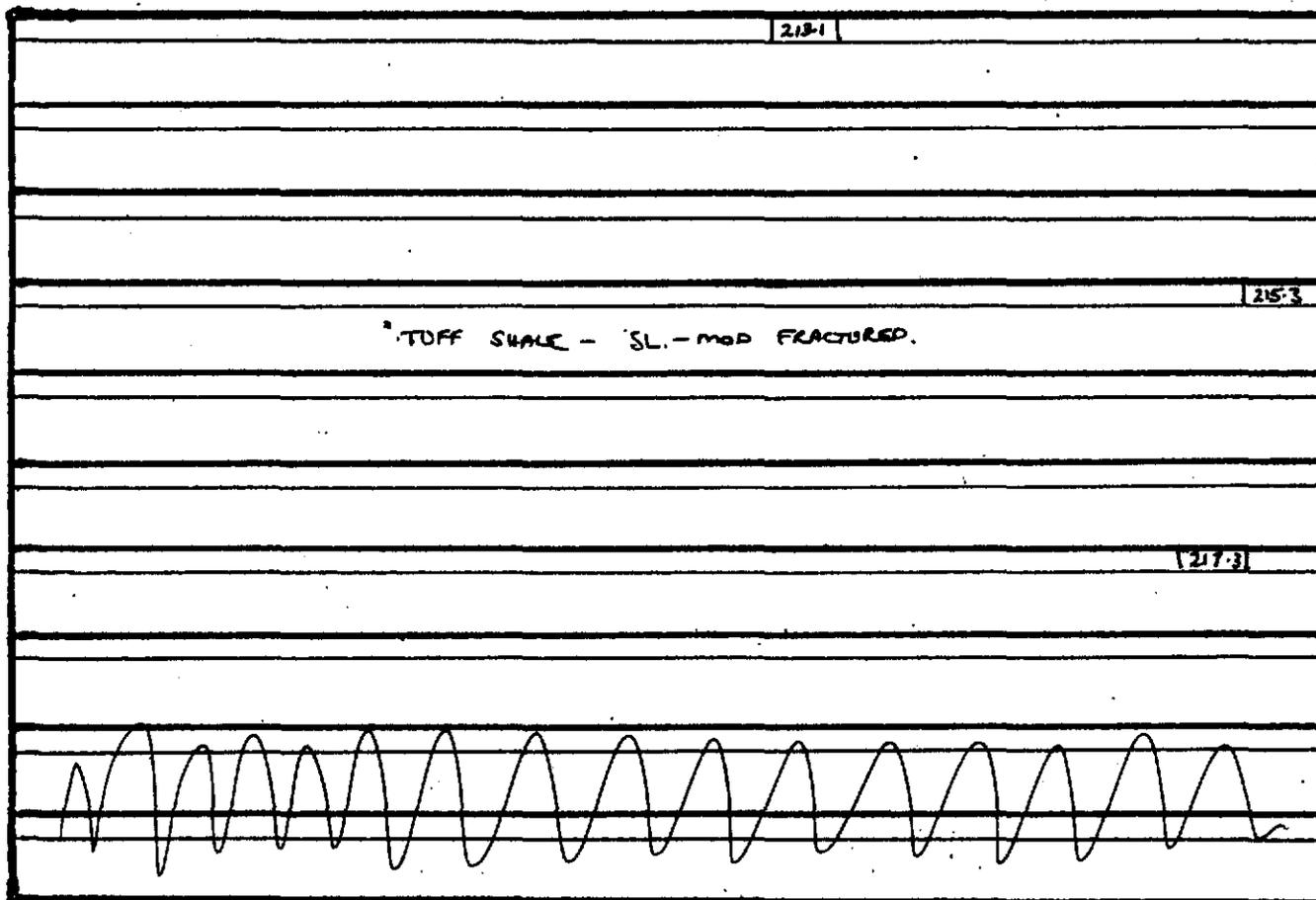
DEPTH FROM 212.7m

TO 218.0m

DIAGRAMATIC DRILLHOLE LOG

PAGE FORTY-TWO OF FIFTY-SEVEN

BQ TRAY



TUFF-SHALE
SILICEOUS - CHEST
(PALE CREAM - LIGHT - NO
ACID REACTION) INTERBEDS.
MINOR SIDERITE - RTZ
VEINS.

612118

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD 80 LB 2

PROSPECT LAKE BARRINGTON

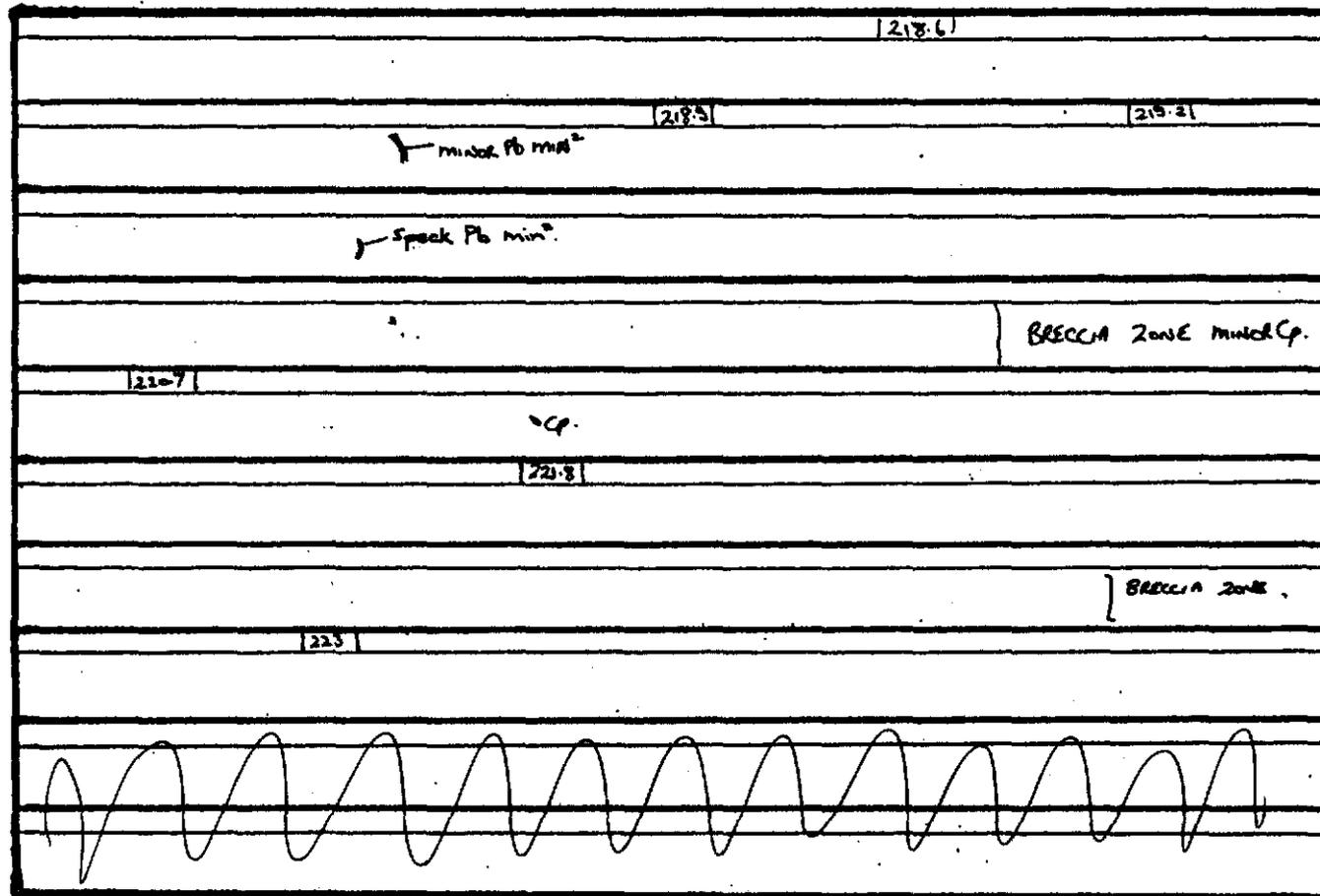
DEPTH FROM 218.0m

TO 223.5m

DIAGRAMATIC DRILLHOLE LOG

PAGE FOURTY-THREE OF FIFTY-SEVEN

8Q TRAY



TUFF SHALES
MOD FRACTURED
BEDDING DISPLACEMENTS.

612119

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73.

DRILLHOLE NO. DD80LR2

PROSPECT LAKE BARRINGTON

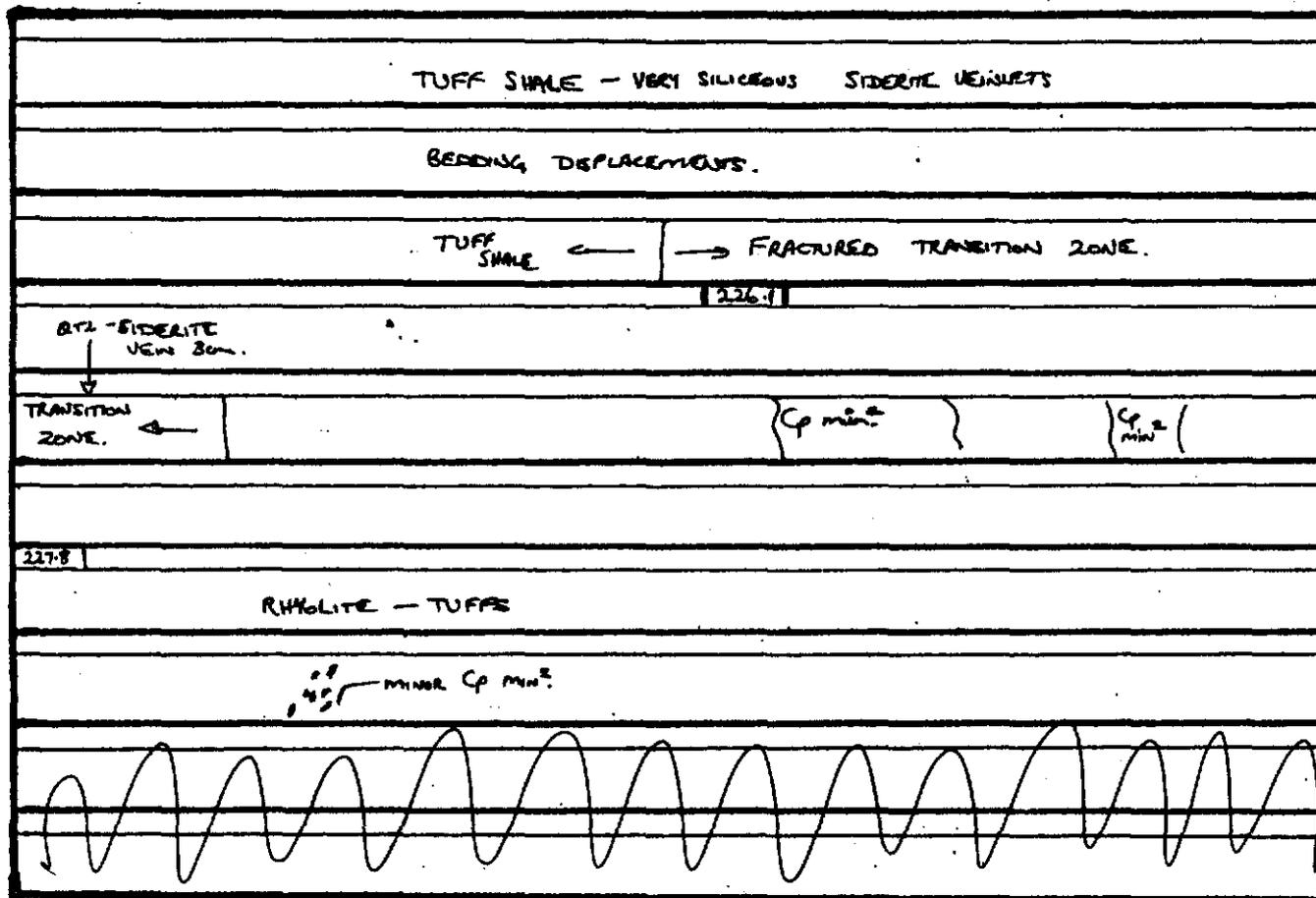
DEPTH FROM 223.5m

TO 228.0m

DIAGRAMATIC DRILLHOLE LOG

PAGE ^{FORTY} ~~FOUR~~ OF FIFTY-SEVEN

BQ TRAY



612120

SYMBOLS

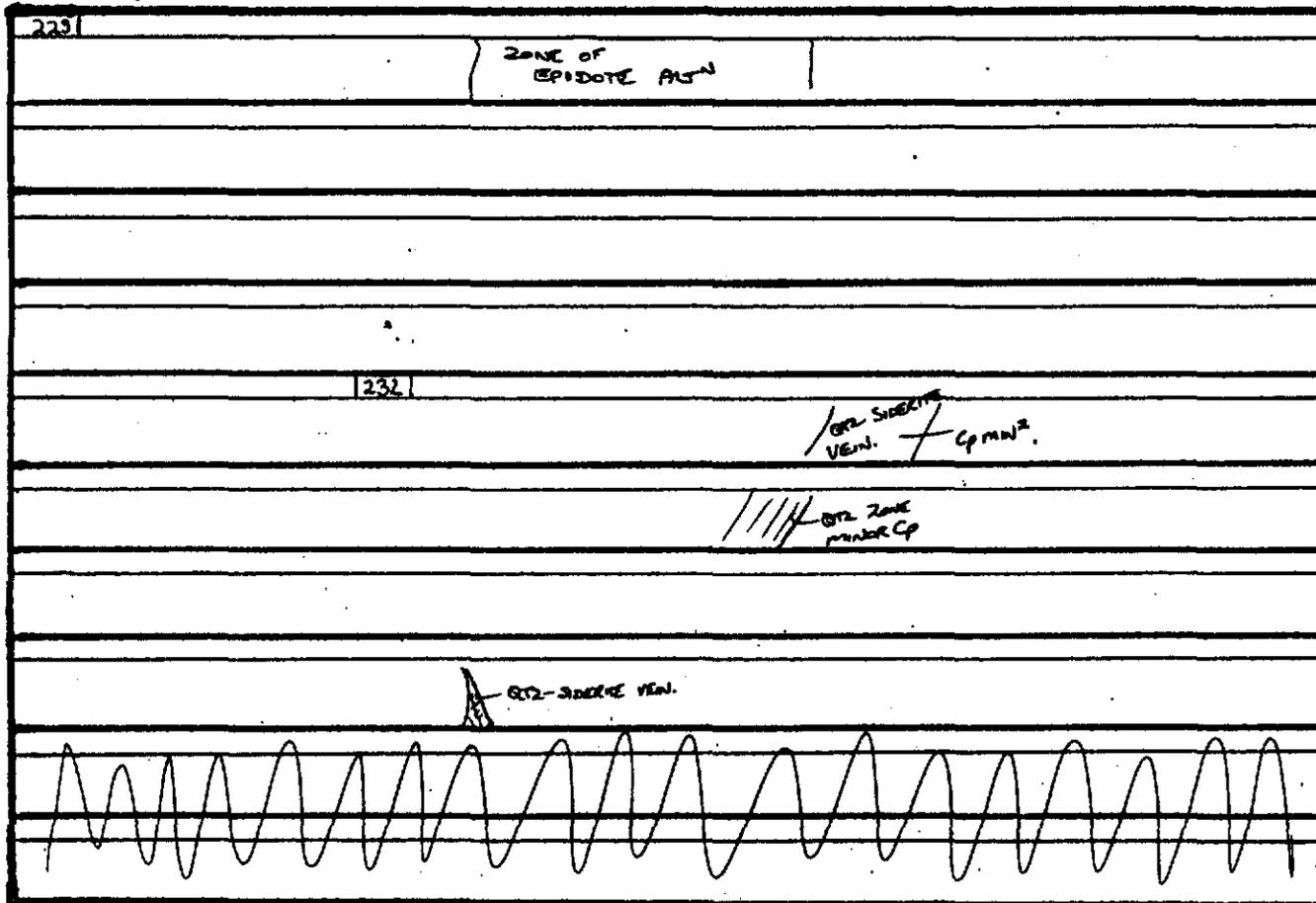
EL. NAME SHEFFIELD
 NUMBER 7/73

DRILLHOLE NO. JD 80 LB 2
 PROSPECT LAKE BARRINGTON
 DEPTH FROM 228.0m
 TO 234.7m

DIAGRAMATIC DRILLHOLE LOG

PAGE FORTY-FIVE OF FIFTY-SEVEN

BQ TRAY



RHYOLITIC TUFFS?
 LOOK LIKE COMBINATION
 OF ROCKS. MOD FRACTURED
 MOD SERICITE ALTERATION.
 MINOR MINERALISATION.

612121

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD80 LB2

PROSPECT LAKE BARRINGTON

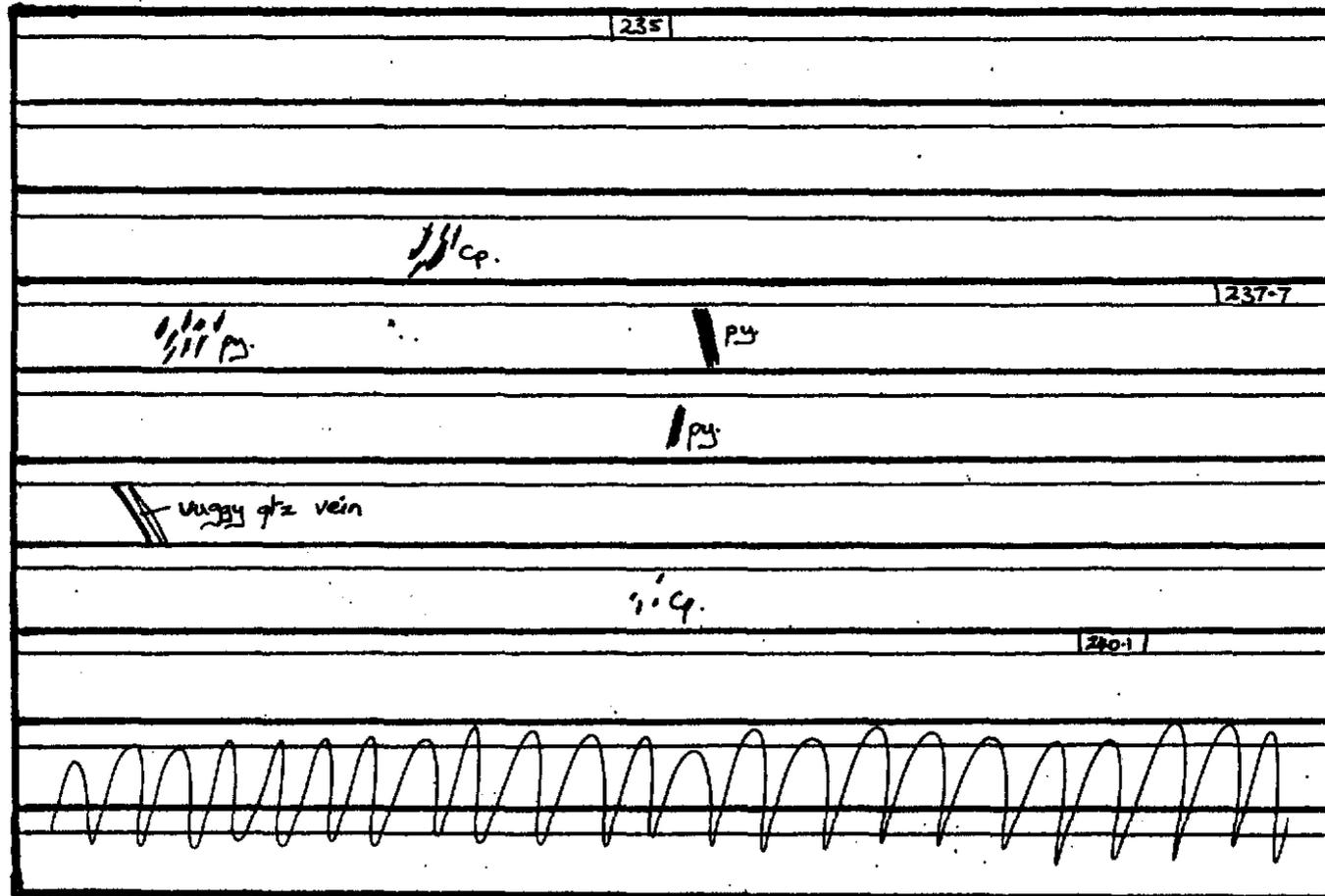
DEPTH FROM 234.7m

TO 240.2m

DIAGRAMATIC DRILLHOLE LOG

PAGE Forty-six OF Fifty-seven

BQ TRAY



TUFF SHALES
MOD FRACTURED
SIDERITE INFILLING
QTZ VEINETS

612122

SYMBOLS

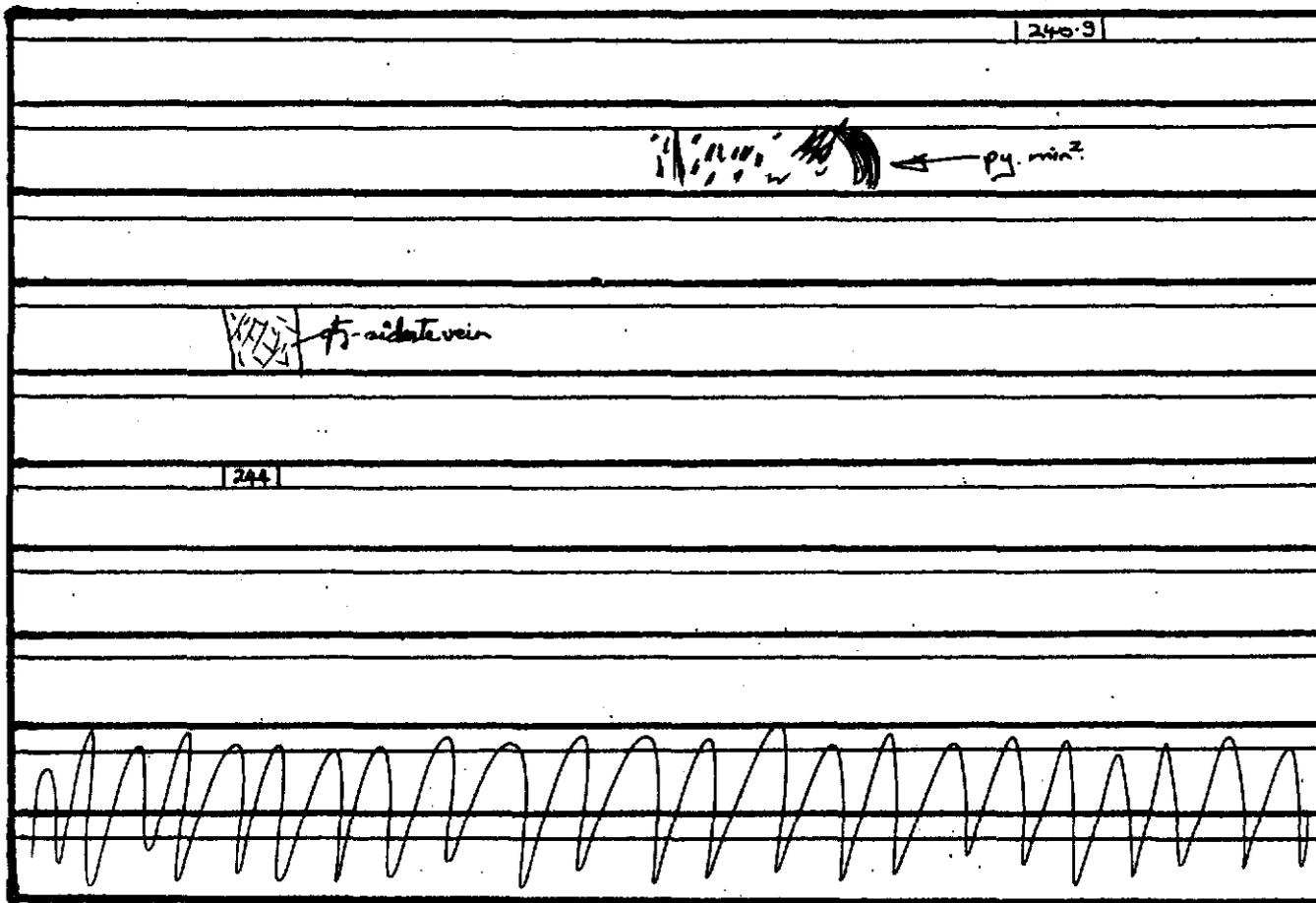
EL. NAME SHEFFIELD
NUMBER 7/73

DRILLHOLE NO. DD 80 LB2
PROSPECT LAKE BARRINGTON
DEPTH FROM 240.2m
TO 246.1m

DIAGRAMATIC DRILLHOLE LOG

PAGE FORTY-SEVEN OF FIFTY-SEVEN

6Q TRAY



612123

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/T3

DRILLHOLE NO. DB 80 LB 2

PROSPECT LAKE BARRINGTON

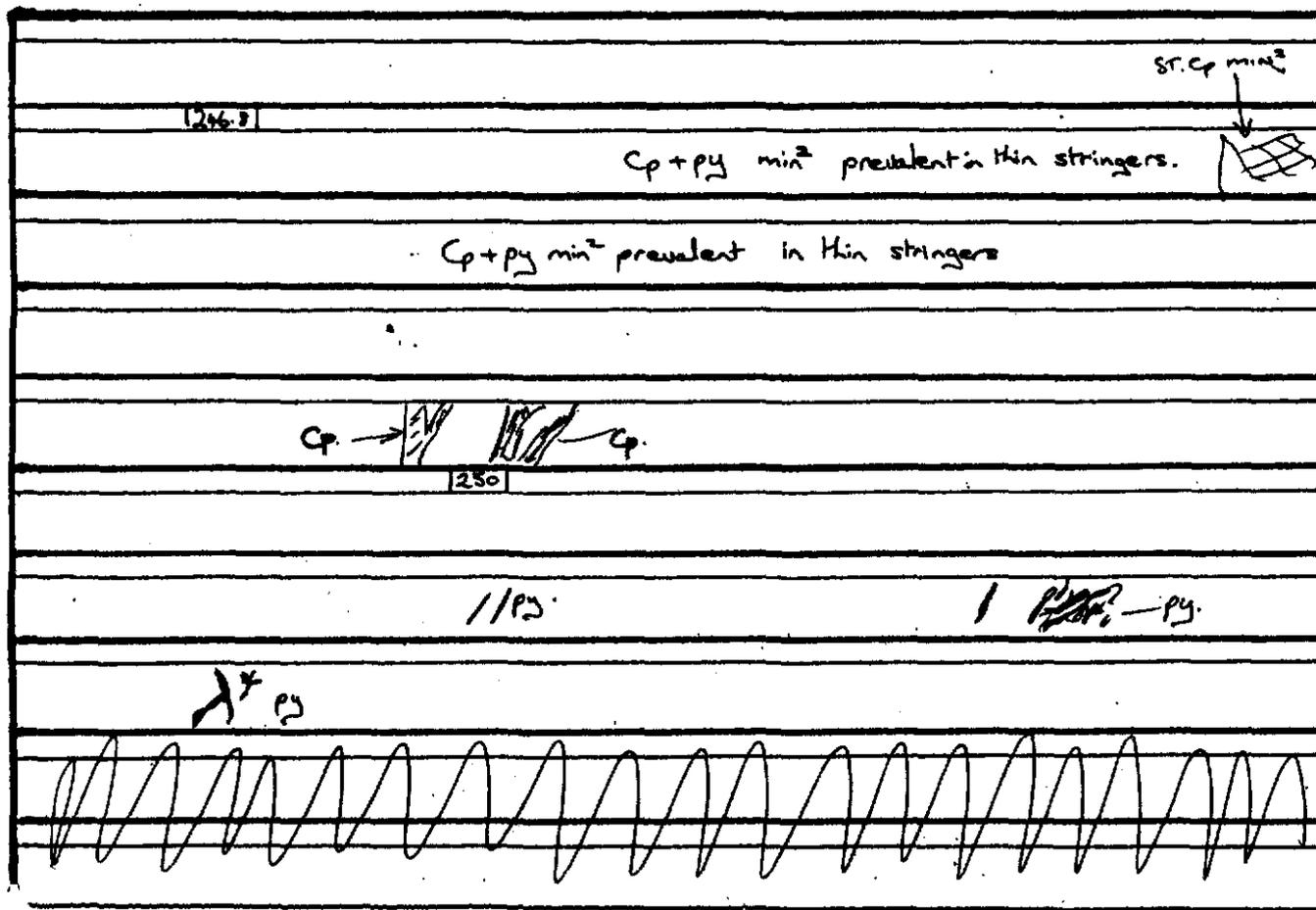
DEPTH FROM 246.1m

TO 252m

DIAGRAMATIC DRILLHOLE LOG

PAGE FORTY-EIGHT OF FIFTY-SEVEN

BQ TRAY



RHYOLITIC TUFFS.
 THIS BOX CONTAINS
 MUCH MORE PYRITE.
 Cp VENS UP TO 1cm.
 MORE FRACTURED
 SOME ZONES LOOK
 QUITE SHATTERED.

612124

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD BQ LB 2.

PROSPECT LAKE BARRINGTON

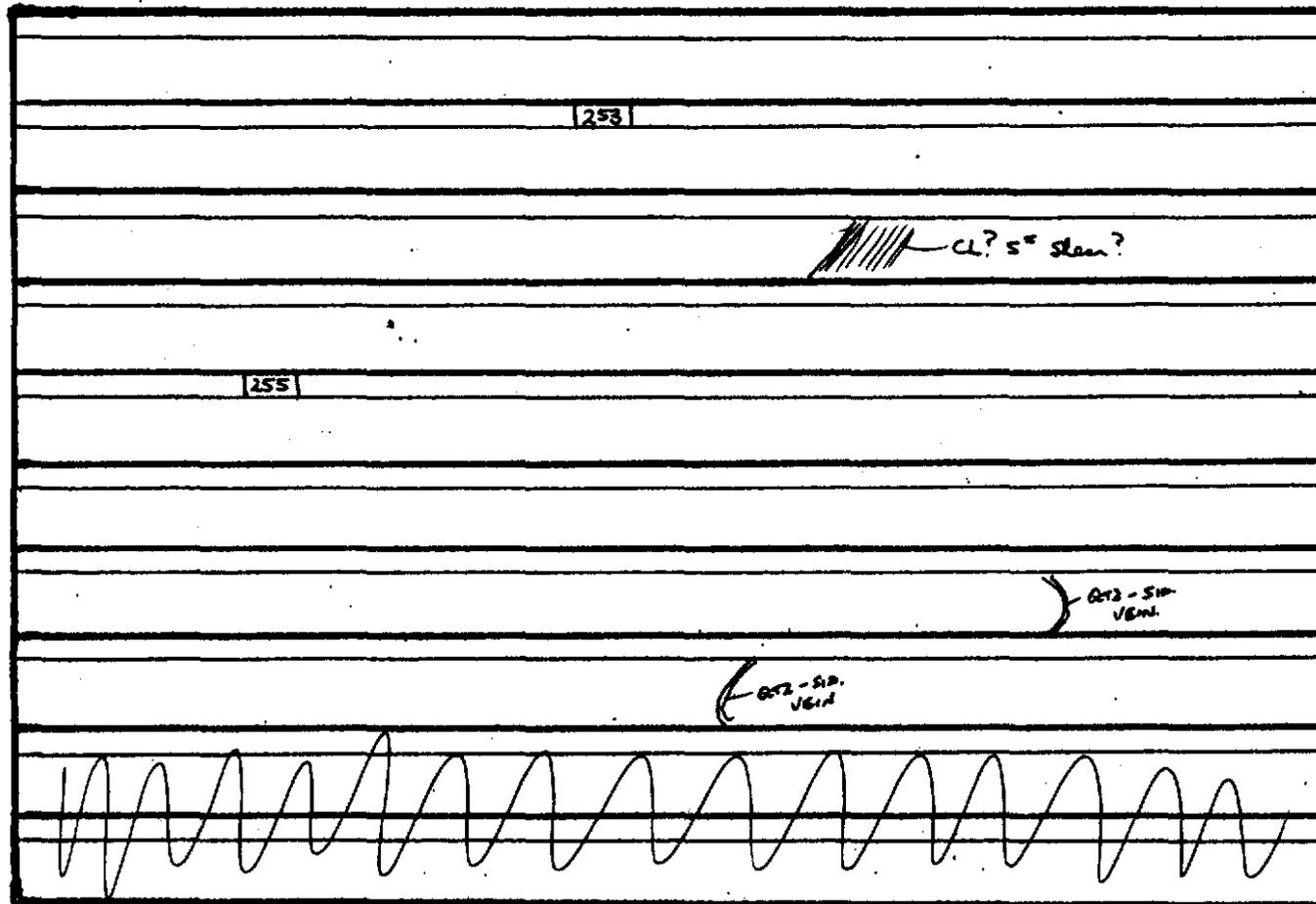
DEPTH FROM 252.0m

TO 257.8m

DIAGRAMATIC DRILLHOLE LOG

PAGE FORTY-NINE OF FIFTY-SEVEN

BQ TRAY



RHYOLITIC TUFFS
FAIRLY MASSIVE
MOD-ST SERRATE
ALT.

612125

SYMBOLS

EL. NAME SHEFFIELD
NUMBER 7/73

DRILLHOLE NO. JDD 80 LB2

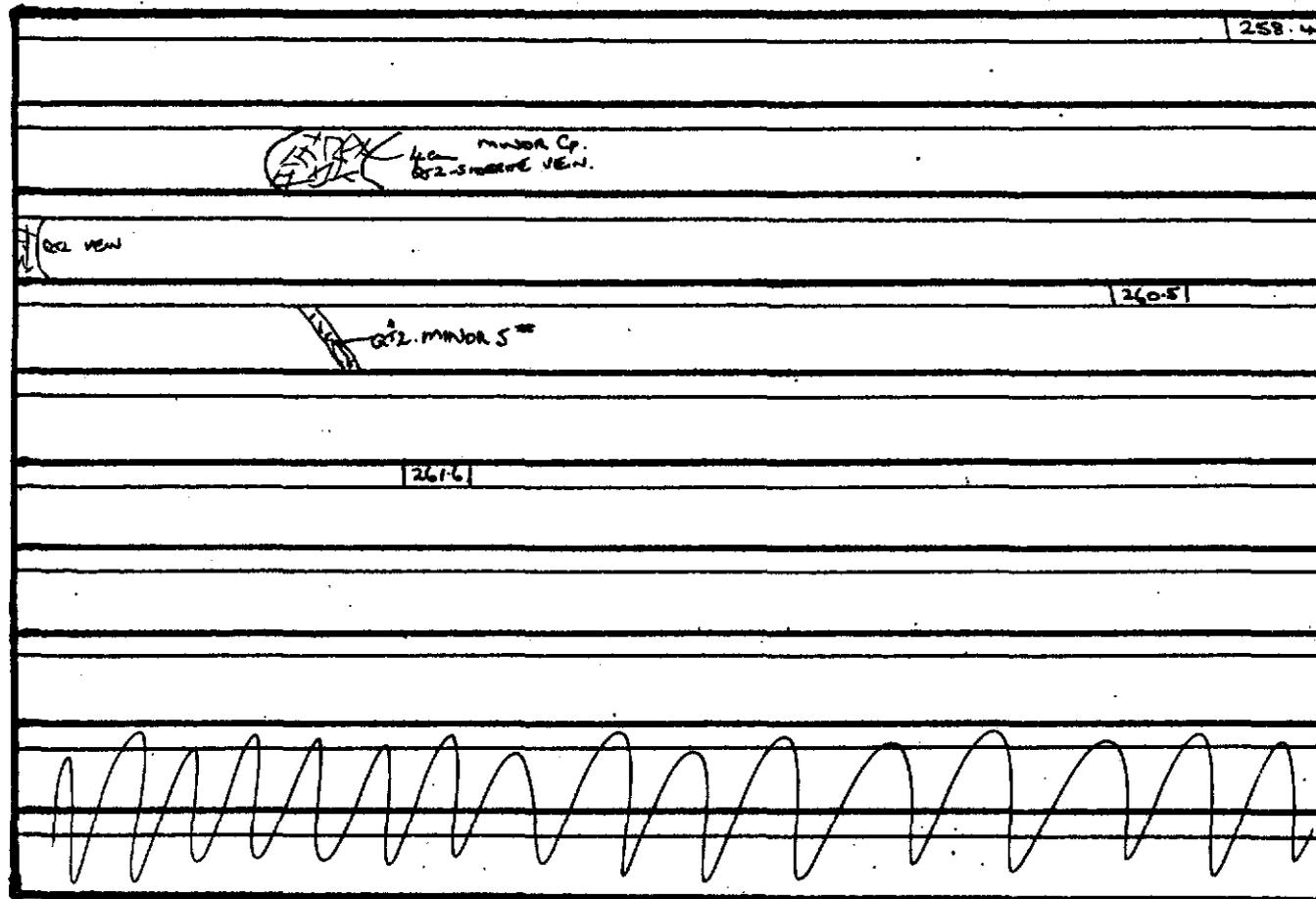
PROSPECT LAKE BARRINGTON

DEPTH FROM 257.8m
TO 263.4m

DIAGRAMATIC DRILLHOLE LOG

PAGE FIFTY OF FIFTY-SEVEN

BQ TRAY



RHYOLITIC TUFFS
FAIRLY MASSIVE
SIDEITE VENNETS.

612126

SYMBOLS

EL. NAME SHEFFIELD
 NUMBER 7/73

DRILLHOLE NO. DD 80 LB 2

PROSPECT LAKE BARRINGTON

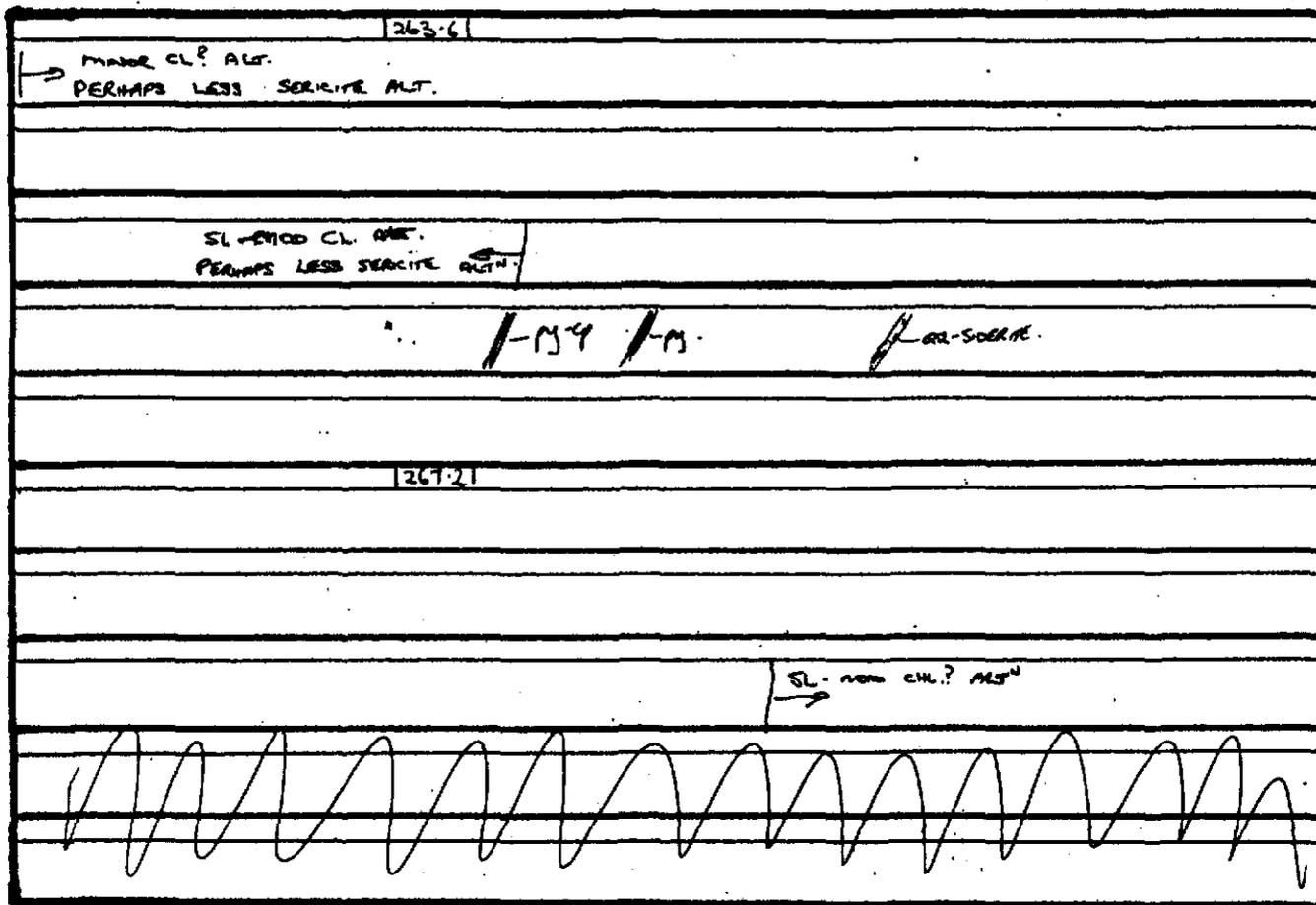
DEPTH FROM 263.4m

TO 263.4m

DIAGRAMATIC DRILLHOLE LOG

PAGE FIFTY-ONE OF FIFTY-SEVEN

BQ TRAY



612127

SYMBOLS

EL. NAME SHEFFIELD
 NUMBER 7/13

DRILLHOLE NO. DD80 LB 2

PROSPECT LAKE BARRINGTON

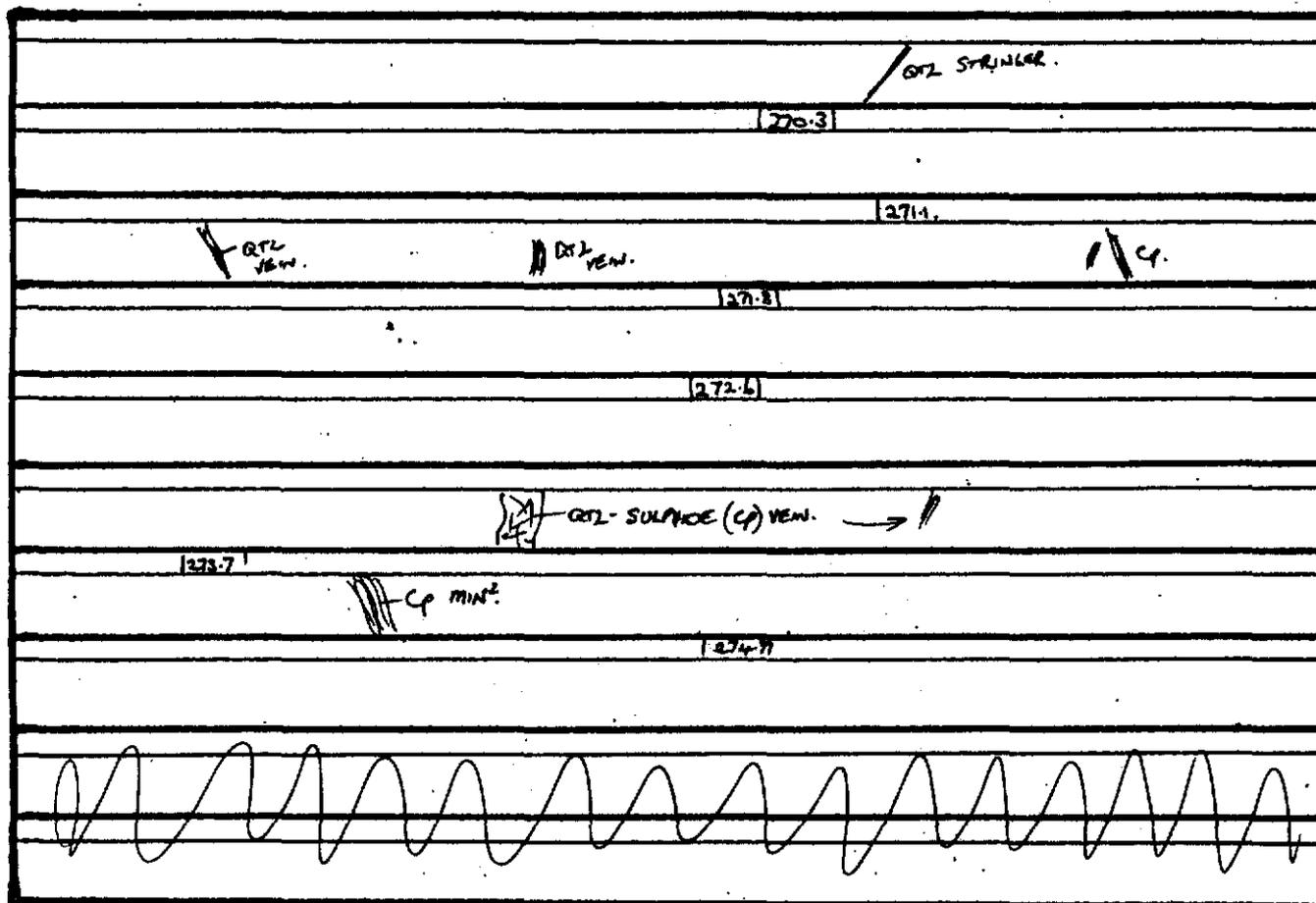
DEPTH FROM 269.4

TO 275.0

DIAGRAMATIC DRILLHOLE LOG

PAGE FIFTY-TWO OF FIFTY-SEVEN

8Q TRAY



RHYOLITE TOPS.
 THIS TRAY IX GN-CY
 CHLORITE? ALT.
 CORE GN. HAS
 MUCH MORE S²
 MIN²

612128

SYMBOLS

EL. NAME SHEFFIELD
 NUMBER 7/73.

DRILLHOLE NO. DD82 LB 2.

PROSPECT LAKE BARRINGTON

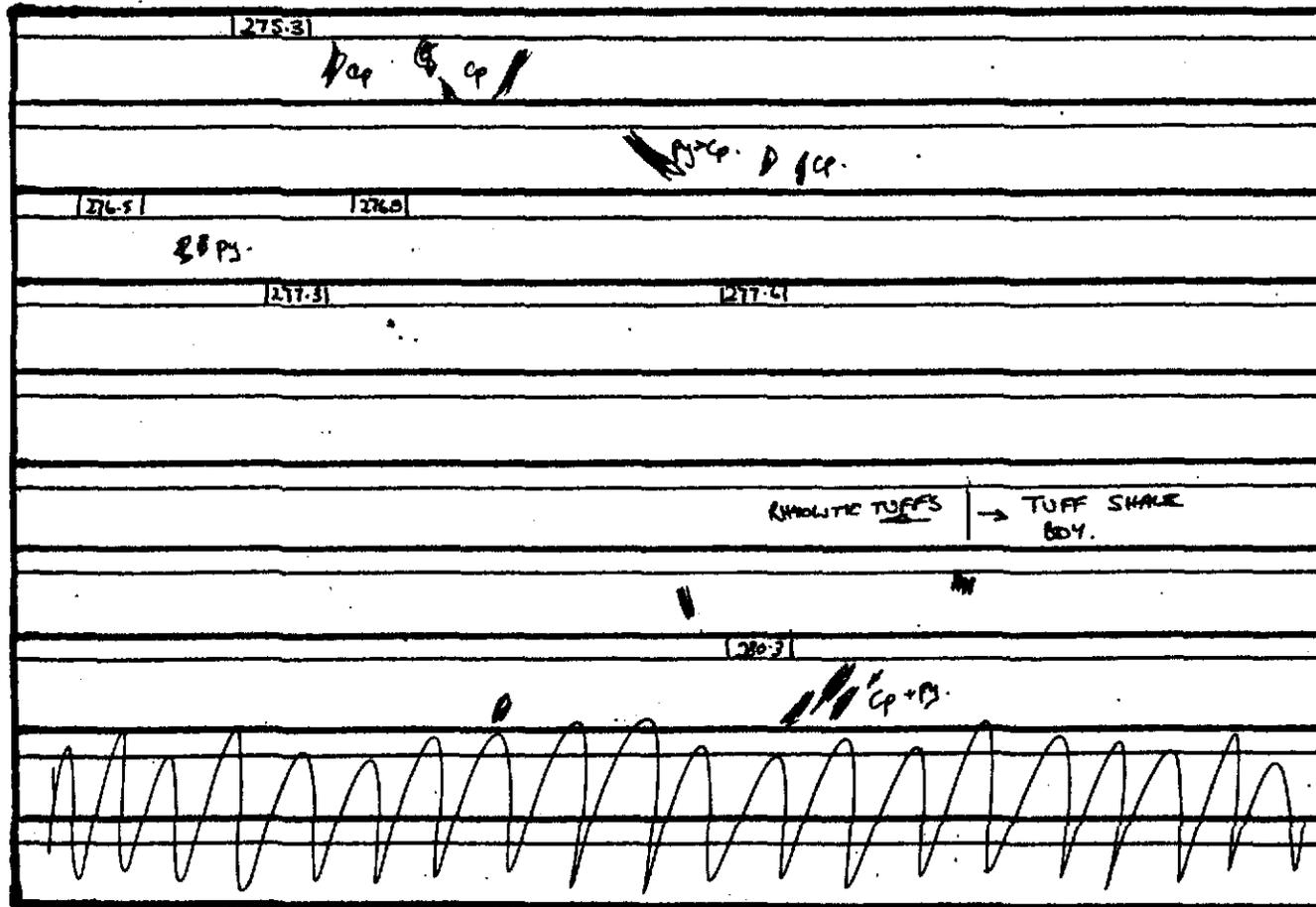
DEPTH FROM 275.0m

TO 280.5m

DIAGRAMATIC DRILLHOLE LOG

PAGE FIFTY-THREE OF FIFTY-SEVEN

BQ TRAY



RHYOLITE TUFFS
 ACCORDING TO T.S.
 NOCHLORITE. QUITE
 EXTENSIVE SERICITE AL²⁺
 CARBONATE.
 V. FRACTURED GOOD
 S² MIN. IN X-CUTTING
 SITUATIONS.

612129

SYMBOLS

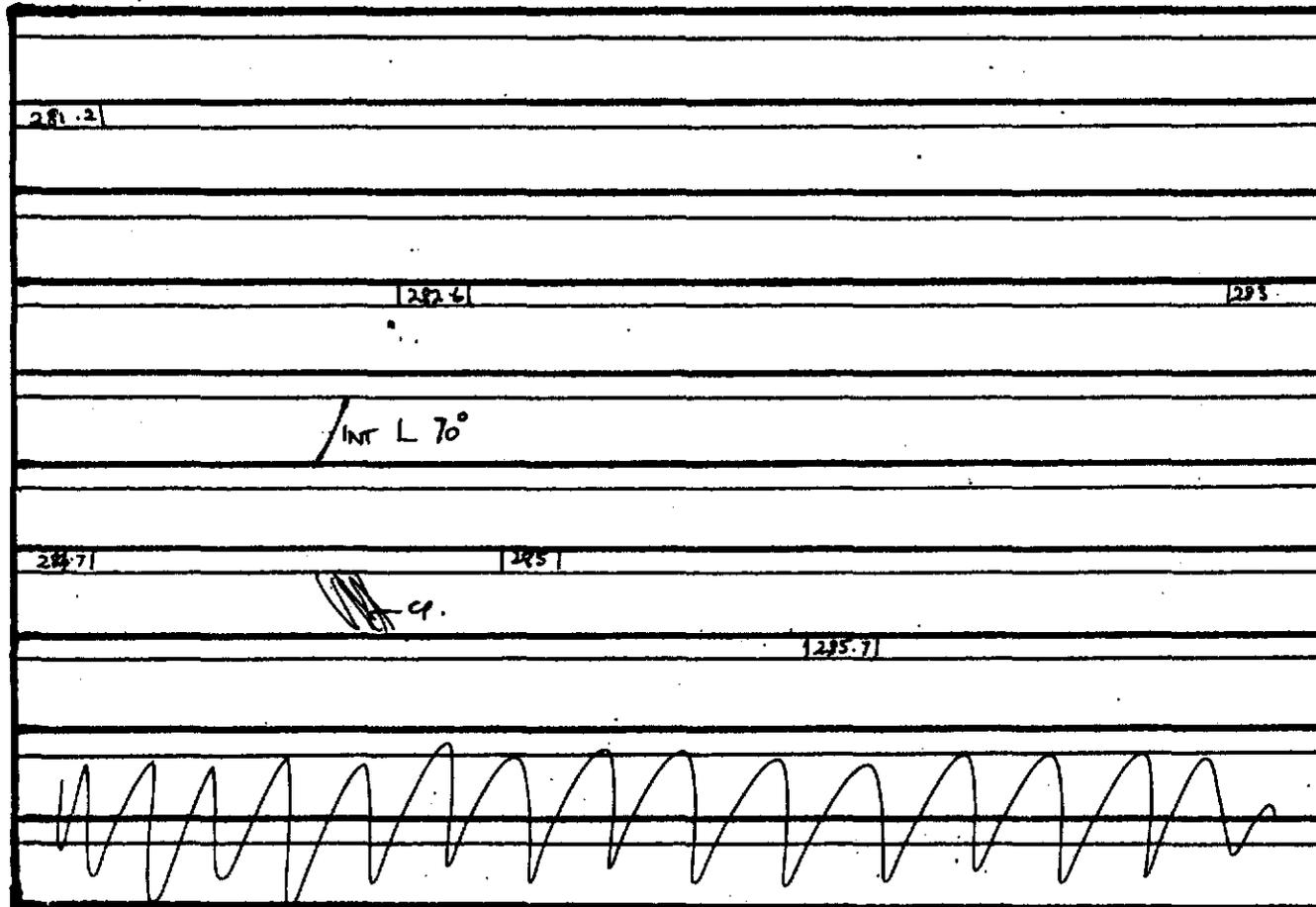
EL. NAME SHEPHERD
 NUMBER 7/73

DRILLHOLE NO. DD 80 LB 3
 PROSPECT LAKE BARRINGTON
 DEPTH FROM 280.5m
 TO 285.9m

DIAGRAMATIC DRILLHOLE LOG

PAGE FIFTY-FOUR OF FIFTY-SEVEN

BQ TRAY



TUFF SHALE
 BANDED DRBY -
 PALE CREAM SLICIFIED
 SHALEY UNITS.
 MINOR STRINGER X-CUTTING
 MIN.
 MOD. FRACTURED.

612130

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DIAGRAMATIC DRILLHOLE LOG

DRILLHOLE NO. DD 80 LB 2

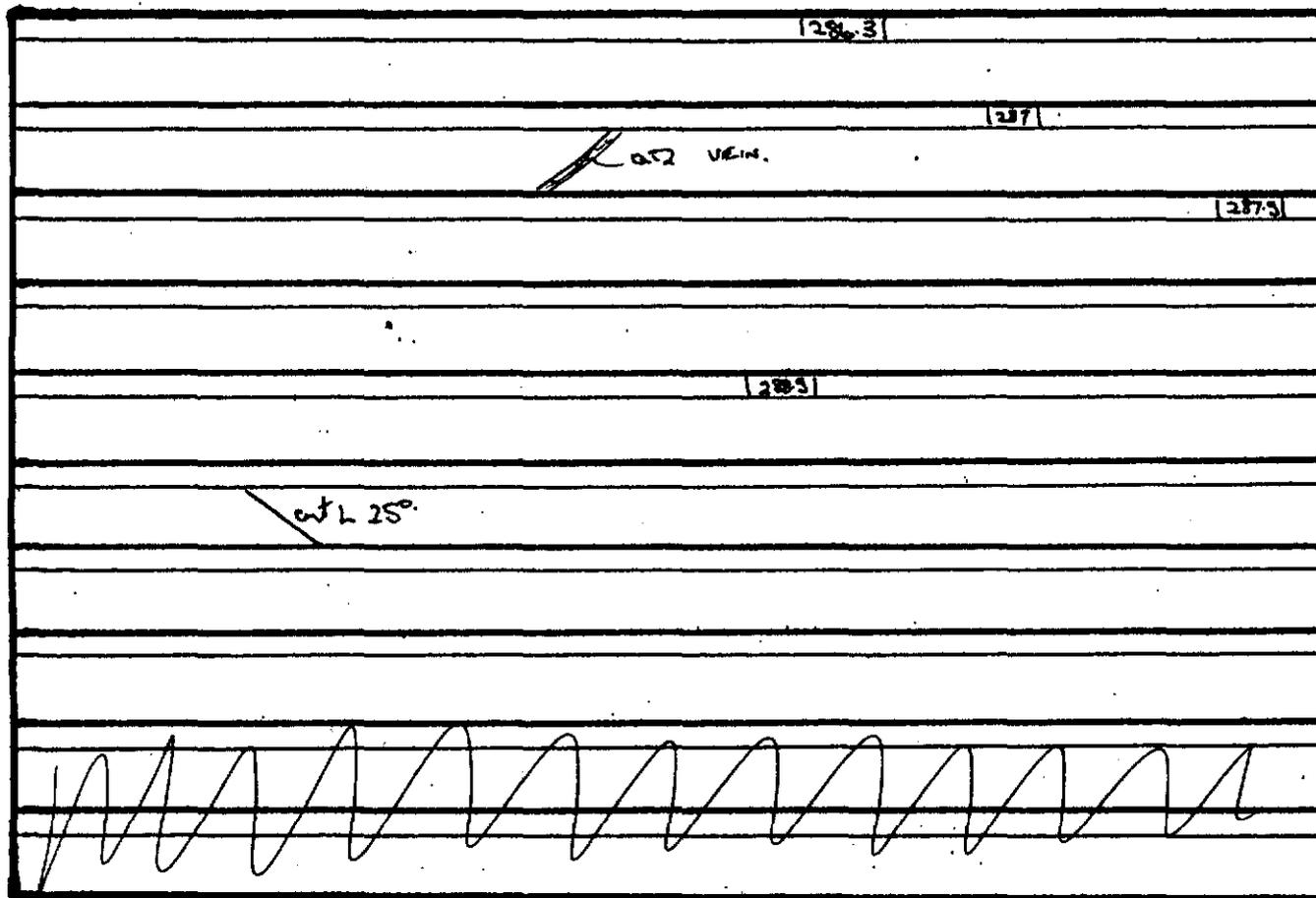
PROSPECT LAKE BARRINGTON

DEPTH FROM 285.3m

TO 291.3m

PAGE FIFTY-FIVE OF FIFTY-SEVEN

BQ TRAY



TOP SHALES.
 INCL BECOMING LESS
 SLIGHT BEDDING DISP.
 MINOR MIN² ABS
 WITH FRACTURES
 SILICIFIED.
 AT 293 - SOLITIC
 TEXTURES? IN CLAM
 BED. NO ACID
 REACTION.

612131

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD 80 LB 2

PROSPECT LAKE BARRINGTON

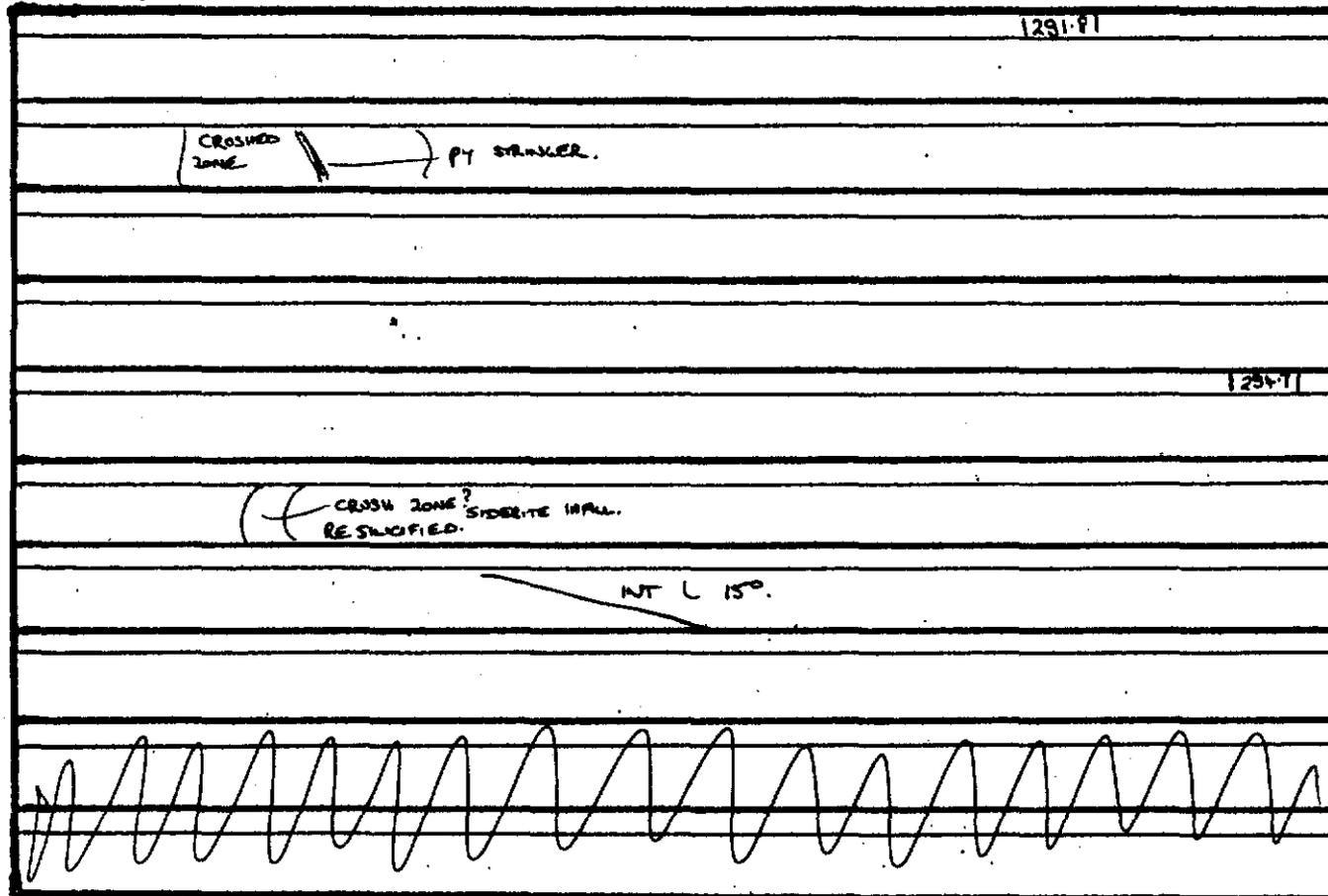
DEPTH FROM 291.3m

TO 297.2m

DIAGRAMATIC DRILLHOLE LOG

PAGE FIFTY-SIX OF FIFTY-SEVEN

BQ TRAY



TUFF SHALES

DITTO.

INT L. LOWER.
MORE CREAMY CHERT
BANDS.

MANY BEDDING DISPLACEMENTS

612132

SYMBOLS

EL. NAME SHEPHERD

NUMBER 7/73.

DRILLHOLE NO. DD82 LB3

PROSPECT LAKE BARRINGTON.

DEPTH FROM 0.6m

TO 12.5m

DIAGRAMATIC DRILLHOLE LOG

PAGE ONE OF TWENTY-THREE

NQ TRAY

0.6	
WEATHERED BRECCIA-CONG.	
int L60° Fracture Fe on joint/fracture faces.	
	9.0
Gossanous vein 1cm.	
NQ ← n.o → BQ.	
SI Cu staining	
Cu staining	

612134

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD82LB3

PROSPECT LAKE BARRINGTON

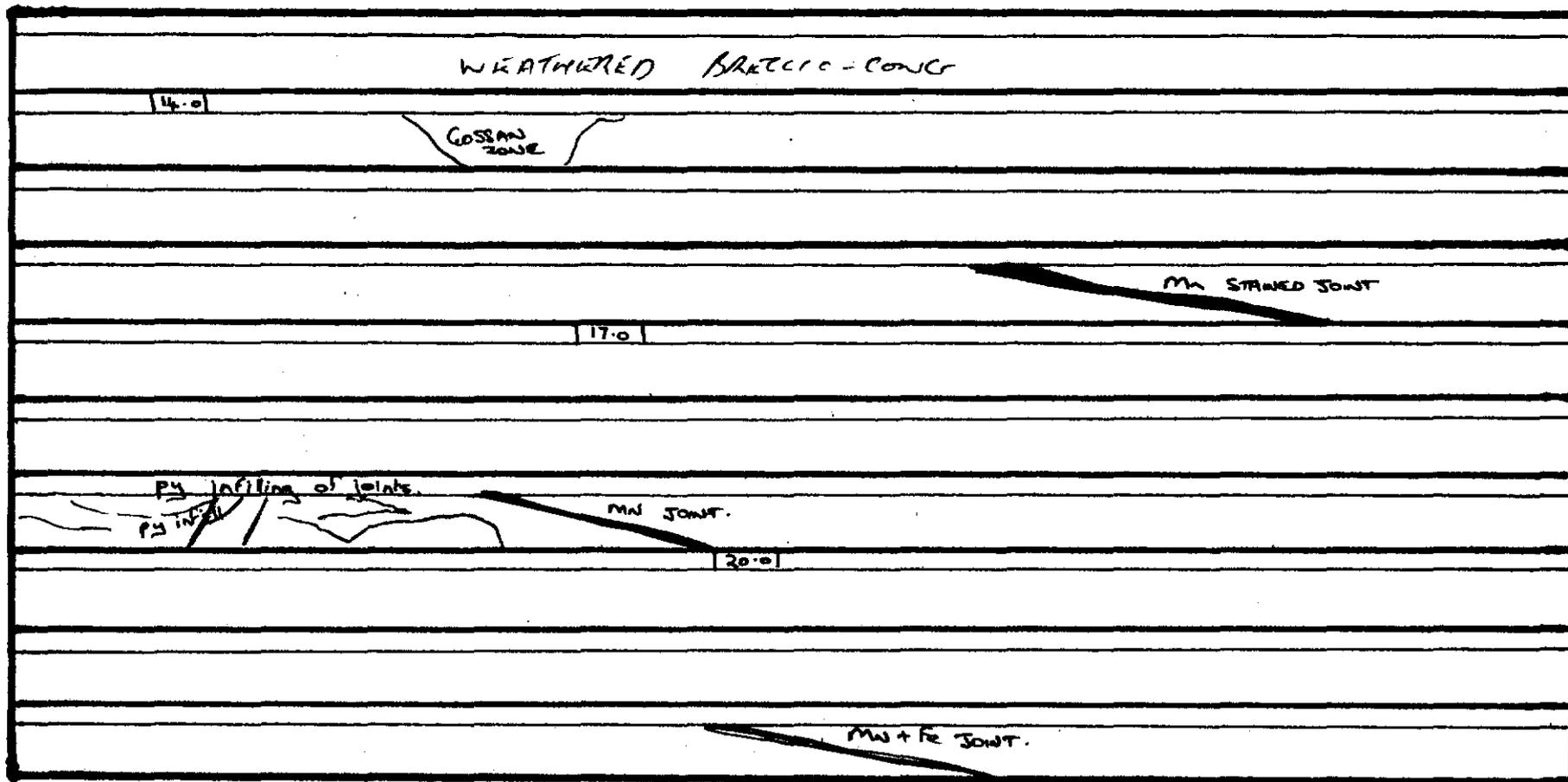
DEPTH FROM 12.5m

TO 22m

DIAGRAMATIC DRILLHOLE LOG

PAGE Two OF TWENTY-THREE

BQ TRAY



CORE
mod-v.
weathered

612135

SYMBOLS

DRILLHOLE NO. DD82133

EL. NAME SHEFFIELD

PROSPECT LAKE BARRINGTON

NUMBER 7/73

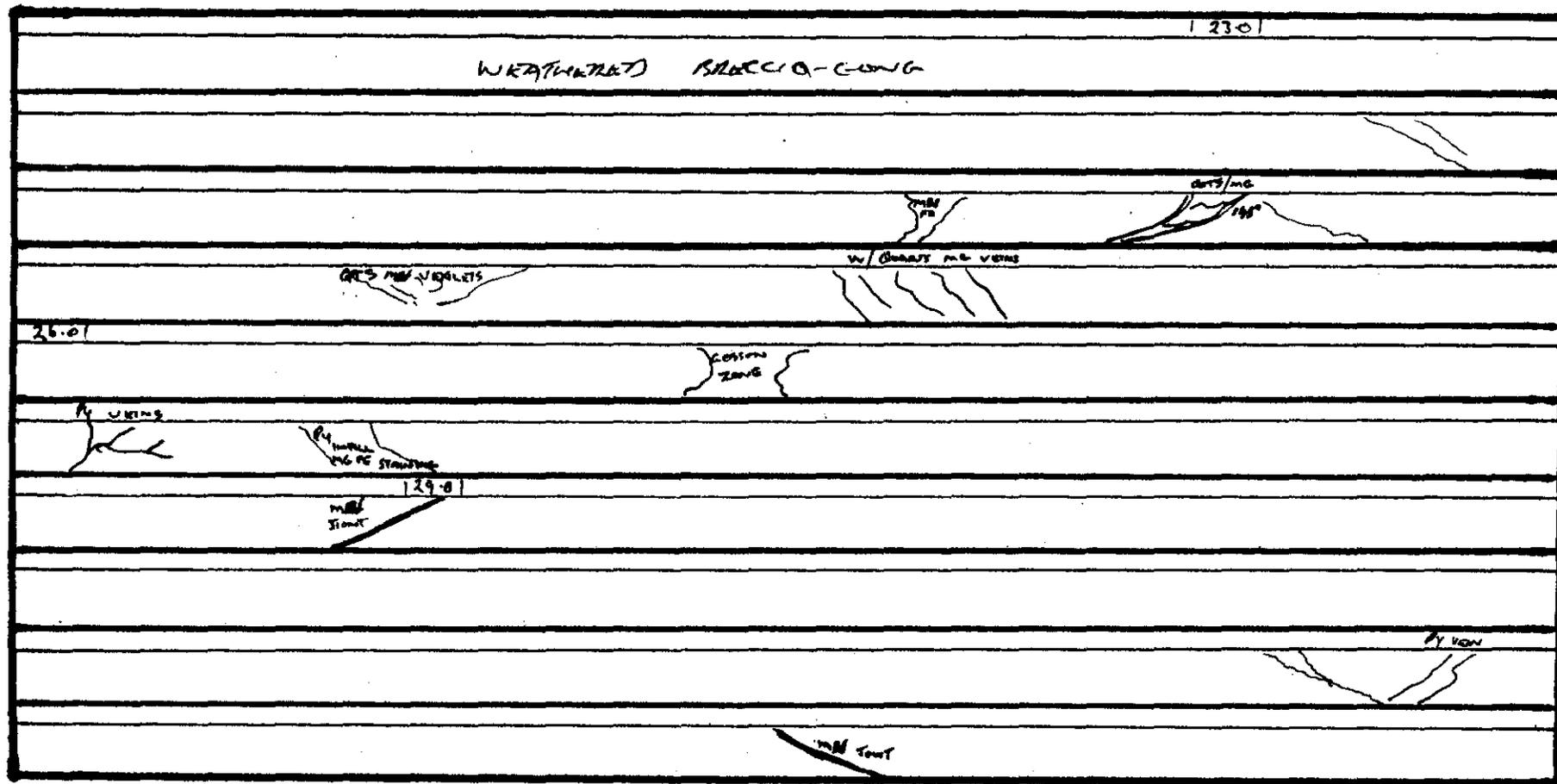
DEPTH FROM 22.0m

TO 31.6m

DIAGRAMATIC DRILLHOLE LOG

PAGE THREE OF TWENTY-THREE.

BQ TRAY



COAL
BECOMING
FRESHER

612136

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. JD82 LB 3

PROSPECT LAKE BARRINGTON

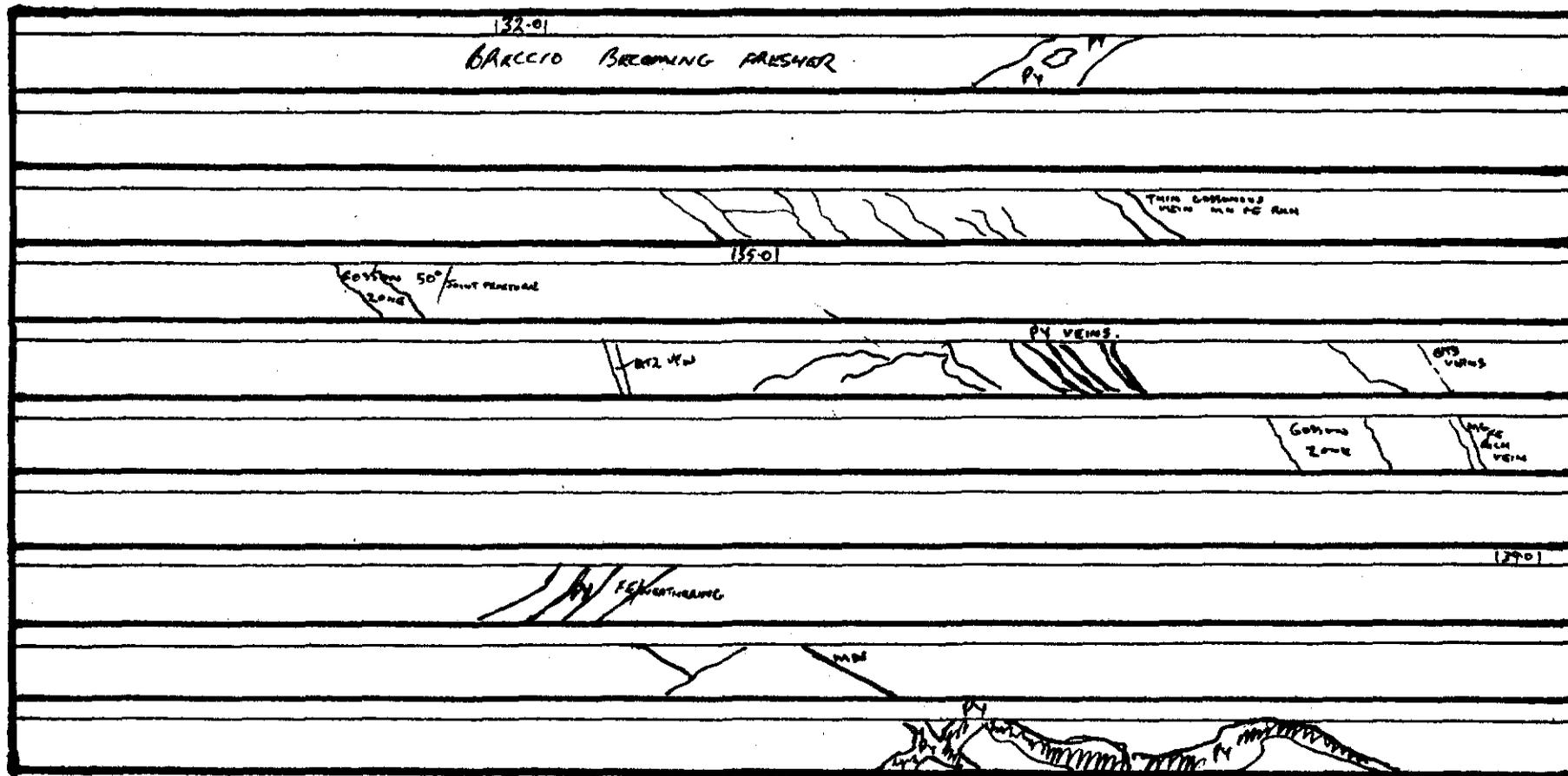
DEPTH FROM 31.6m

TO 40.9m

DIAGRAMATIC DRILLHOLE LOG

PAGE FOUR OF TWENTY-THREE

BQ TRAY



612137

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD 82 L83

PROSPECT LAKE BARRINGTON

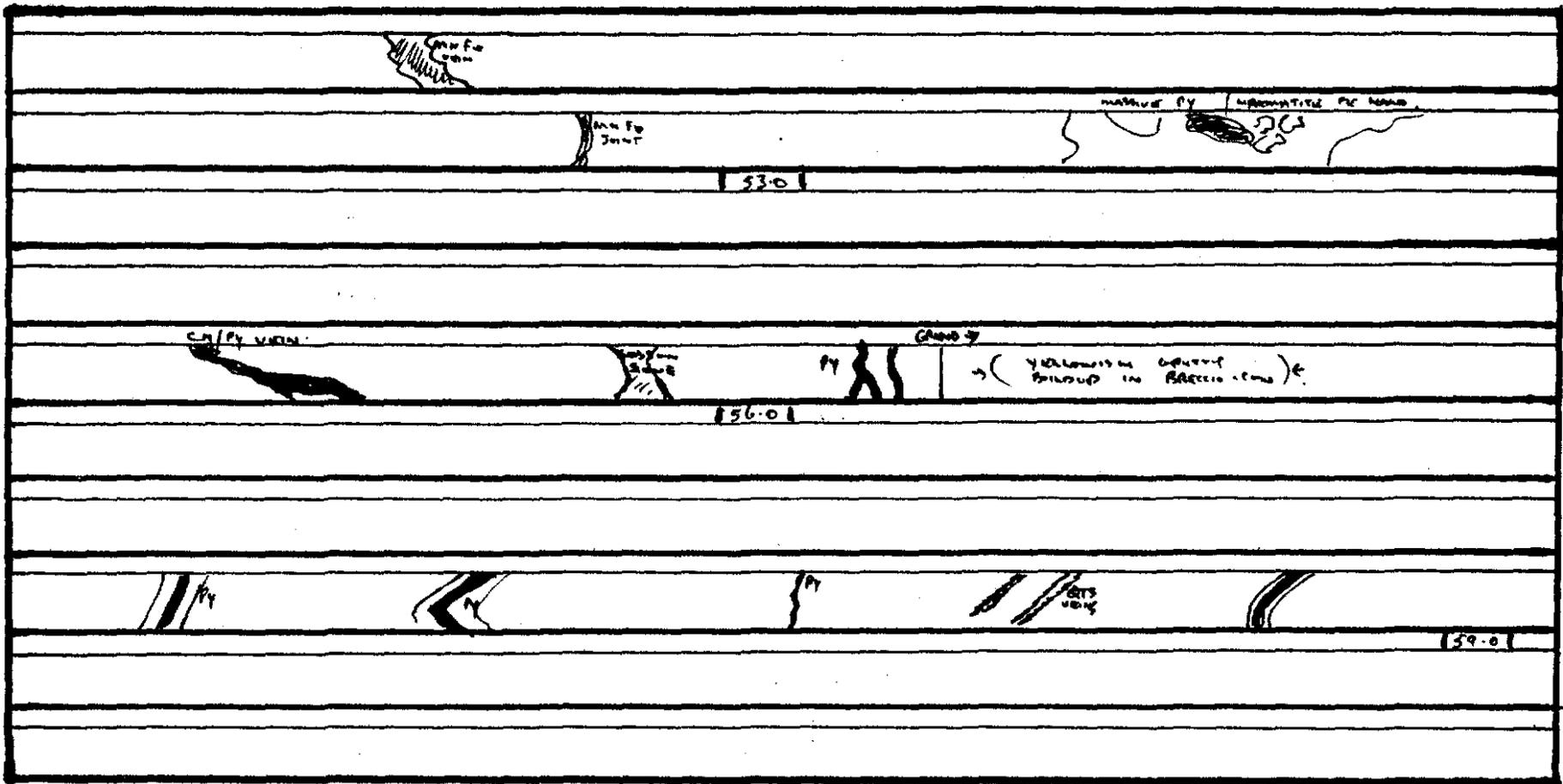
DEPTH FROM 50.5m

TO 60.0m

DIAGRAMATIC DRILLHOLE LOG

PAGE SIX OF TWENTY-THREE

BQ TRAY



REASONABLE
FRESH
CORE

612139

SYMBOLS

CL. S - CHLORITE SLIGHTLY ALT. (USUALLY ON
JOINT FACES)

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD82 LB3

PROSPECT LAKE BARRINGTON

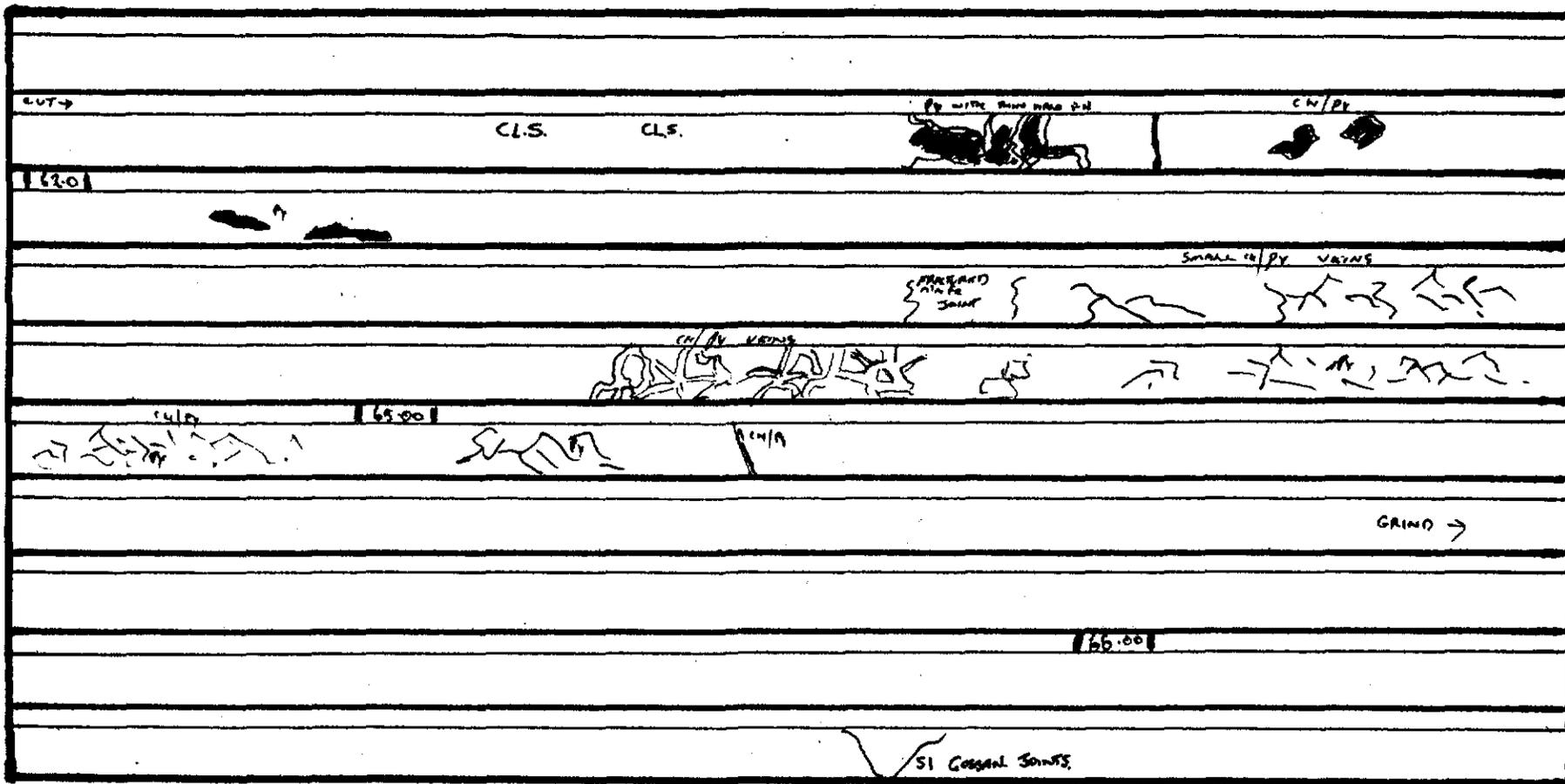
DEPTH FROM 60.0m

TO 63.5m

DIAGRAMATIC DRILLHOLE LOG

PAGE SEVEN OF TWENTY-THREE.

BQ TRAY



612140

SYMBOLS

CL.S. - CHLORITE STAINC.

EL. NAME SHEFFIELD

DRILLHOLE NO. DD82 LB3

PROSPECT LAKE BARRINGTON

NUMBER 7/73.

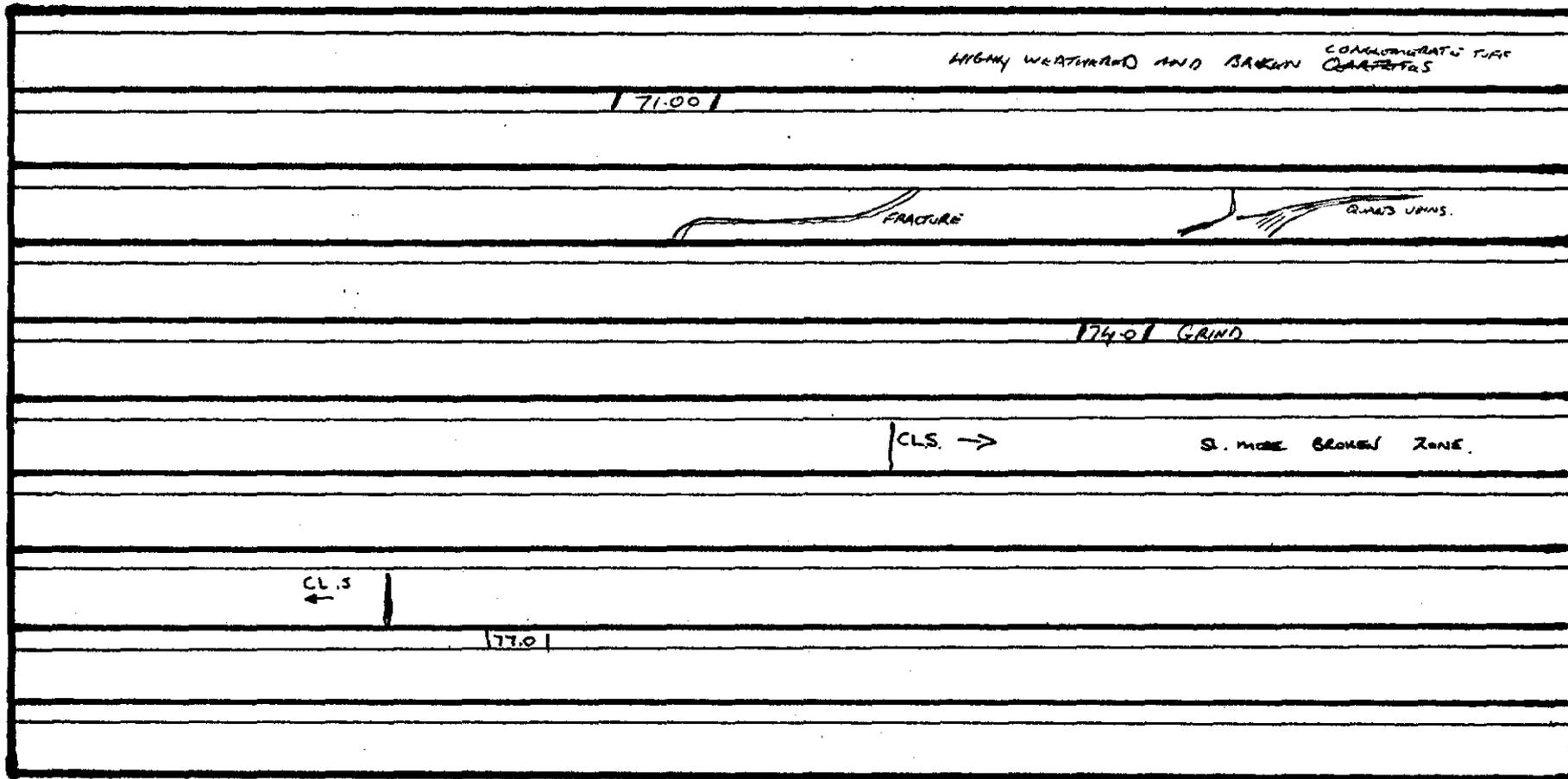
DEPTH FROM 69.5m

TO 78.5m

DIAGRAMATIC DRILLHOLE LOG

PAGE EIGHT. OF TWENTY-THREE.

BQ TRAY



612141

SYMBOLS

DRILLHOLE NO. DD82 LB3

EL. NAME SHEFFIELD

PROSPECT LAKE BARRINGTON

NUMBER 7/73

DEPTH FROM 78.5m

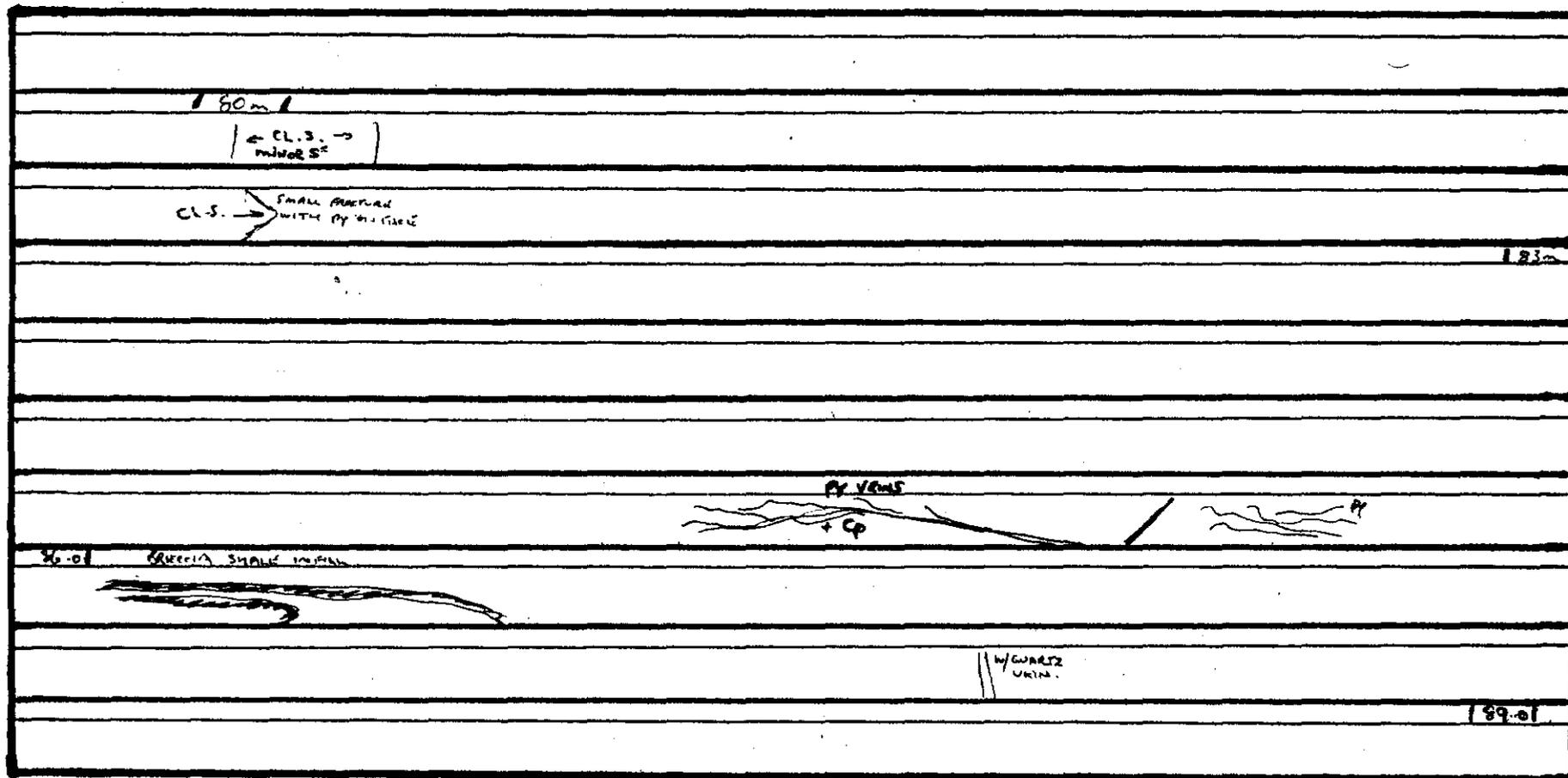
TO 89.0m

DIAGRAMATIC DRILLHOLE LOG

PAGE NINE OF TWENTY-THREE.

BQ TRAY

GRIND →



612142

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DIAGRAMATIC DRILLHOLE LOG

DRILLHOLE NO. DD 82 L B 3

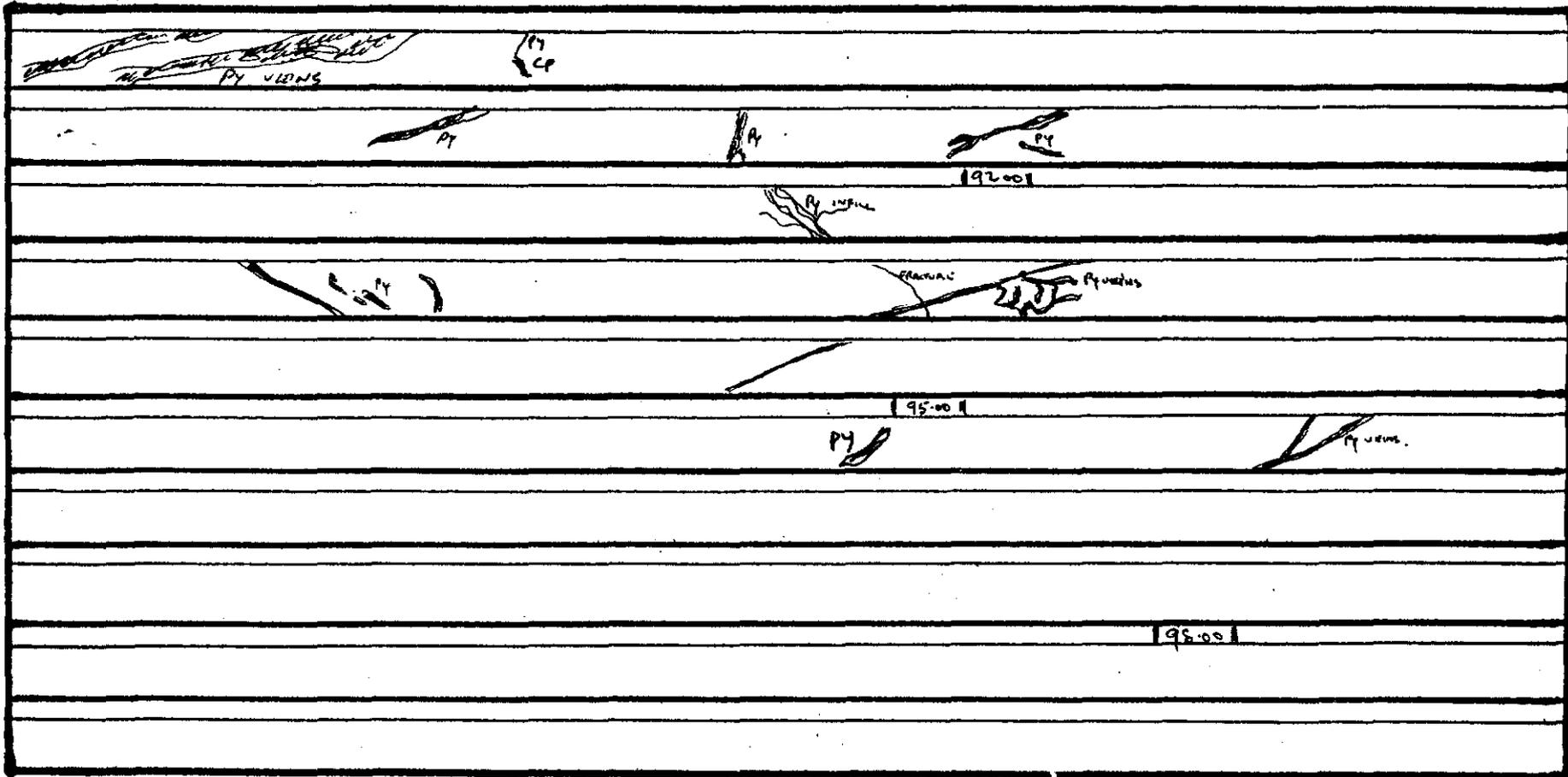
PROSPECT LAKE BARRINGTON

DEPTH FROM 89.0m

TO 99.3m

PAGE TEN OF TWENTY-THREE

BQ TRAY



612143

SYMBOLS

DRILLHOLE NO. DD82 LB 3

SL - MOD - S. ALT (SERICITE ALT)

EL. NAME SHEFFIELD

PROSPECT LAKE BARRINGTON

NUMBER 7/73

DEPTH FROM 109.3m

TO 119m

DIAGRAMATIC DRILLHOLE LOG

PAGE TWELVE OF TWENTY-THREE

BQ TRAY

110

INT. DYKE →

DYKE - MOD - STRONG SERICITE? ALT. - SOFT FELDSPARS SHOW REARRANGEMENT.

← INT. DYKE

115

CORE FROM 111.8m SL-MOD S. ALTⁿ.

116

117

FRAS. POC? + DYKE?

118

612145

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD82 LB3

PROSPECT LAKE BARRINGTON

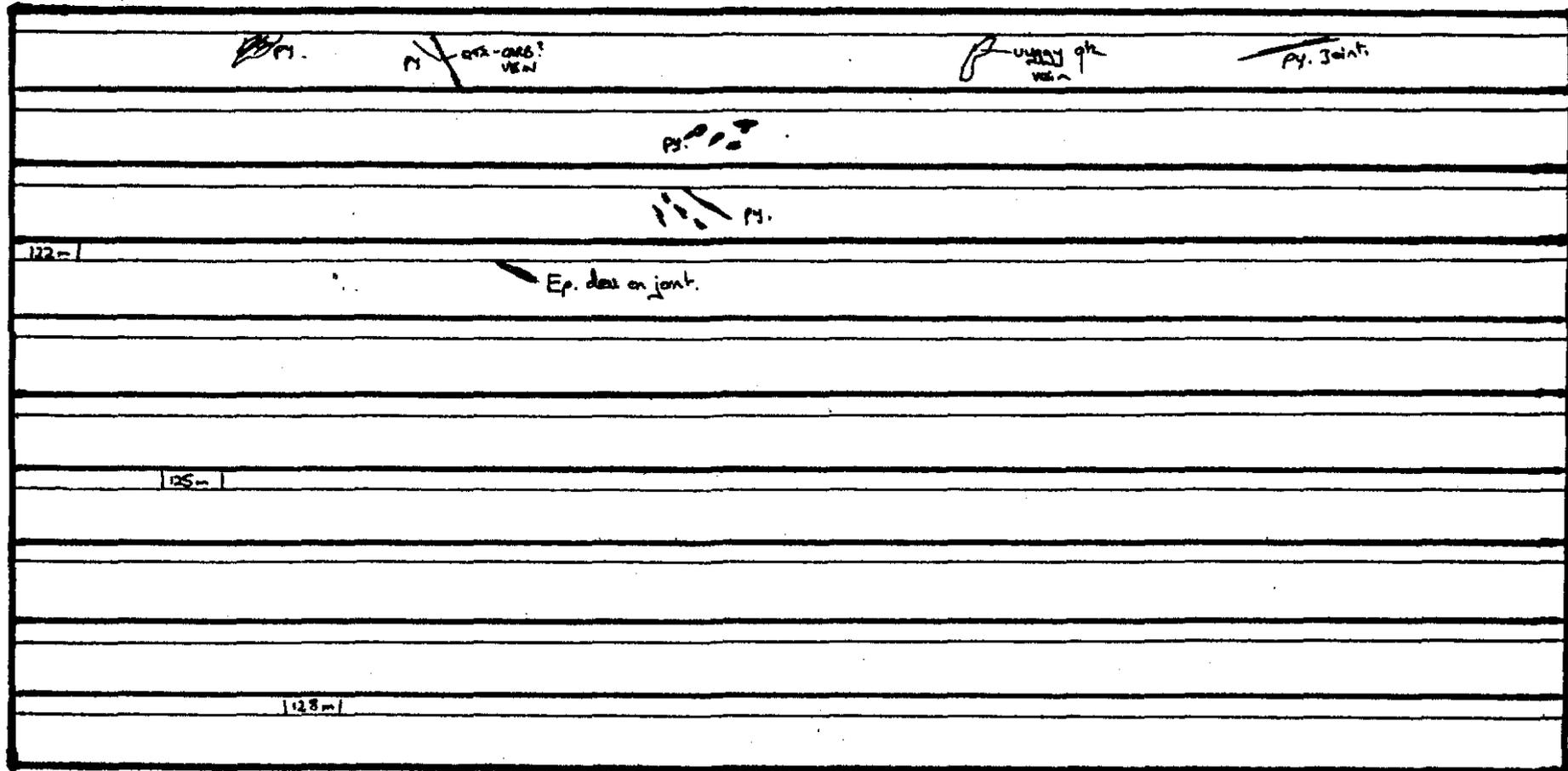
DEPTH FROM 119.0m

TO 128.7m

DIAGRAMATIC DRILLHOLE LOG

PAGE THIRTEEN OF TWENTY-THREE

BQ TRAY



CORE SI-MOD
 SERICITE ALT^N
 SERICITE REPLACEMENT
 10-20%

612146

SYMBOLS

Cp - CHALCOPYRITE.

MOD-CL. ALTⁿ - MODERATE CHLORITIC ALTERATION.

EL. NAME SHEFFIELD:

NUMBER 7/73

DRILLHOLE NO. DD82 LB3

PROSPECT LAKE BARRINGTON

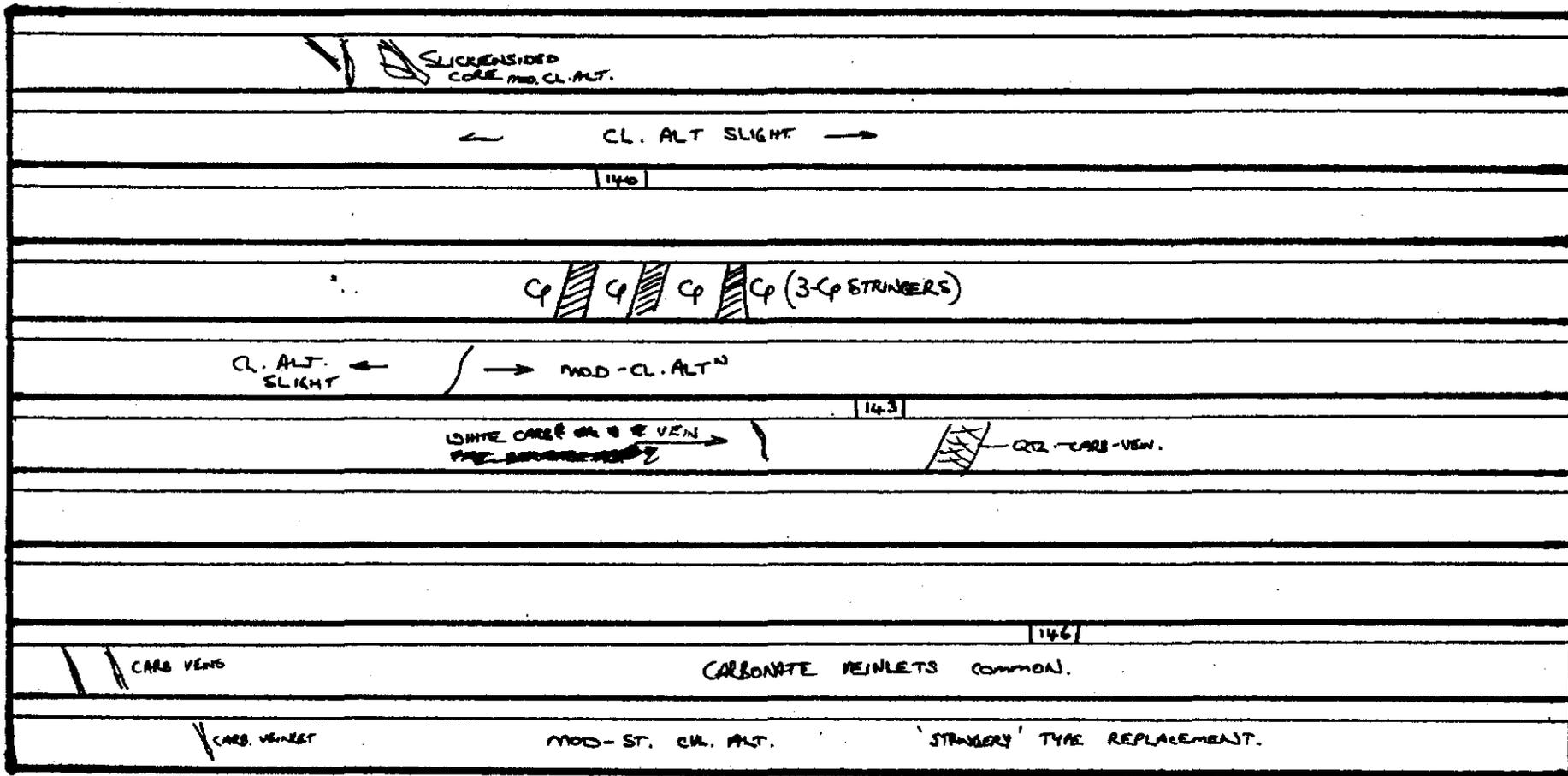
DEPTH FROM 138.0m

TO 147.2m

DIAGRAMATIC DRILLHOLE LOG

PAGE FIFTEEN OF TWENTY-THREE.

BQ TRAY



612148

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD 82 LB3

PROSPECT LAKE BARRINGTON

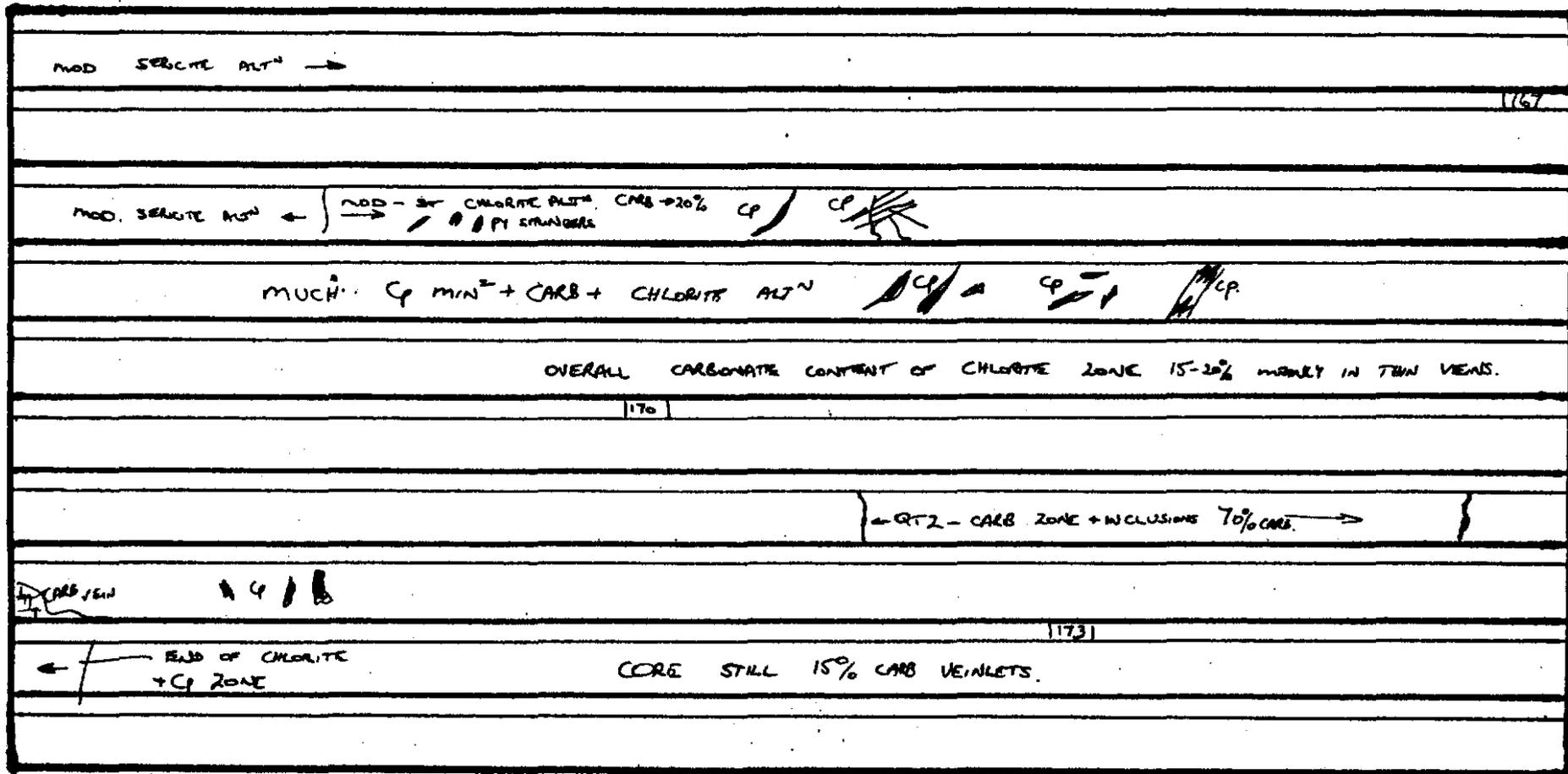
DEPTH FROM 165.5m

TO 174.2m

DIAGRAMATIC DRILLHOLE LOG

PAGE EIGHTEEN OF TWENTY-THREE

BQ TRAY



612151

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. JD 82 LB3

PROSPECT LAKE BARRINGTON

DEPTH FROM 174.2m

TO 184.0m

DIAGRAMATIC DRILLHOLE LOG

PAGE NINETEEN OF TWENTY-THREE

BQ TRAY

CORE FRACTURED CARBONATE VENULETS TO 20%.

1761

SERICITE ALT - MOD.

BLANK ST.
THIN CARB. VENE

SL. CHLORITIC ALT → CARB. VENULETS 10-15%

No. OBSERVABLE
MIN².

← SERICITE ALT. 5-10% CARB. VENULETS

175

→ SL. CHLORITIC

ALTERATION ZONE CHLORITE MORE DISS. THAN RESTRICTED TO JOINT PLANES. → 10% CARB VENULETS.

182

612152

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD 82 LB 3

PROSPECT LAKE BARRINGTON

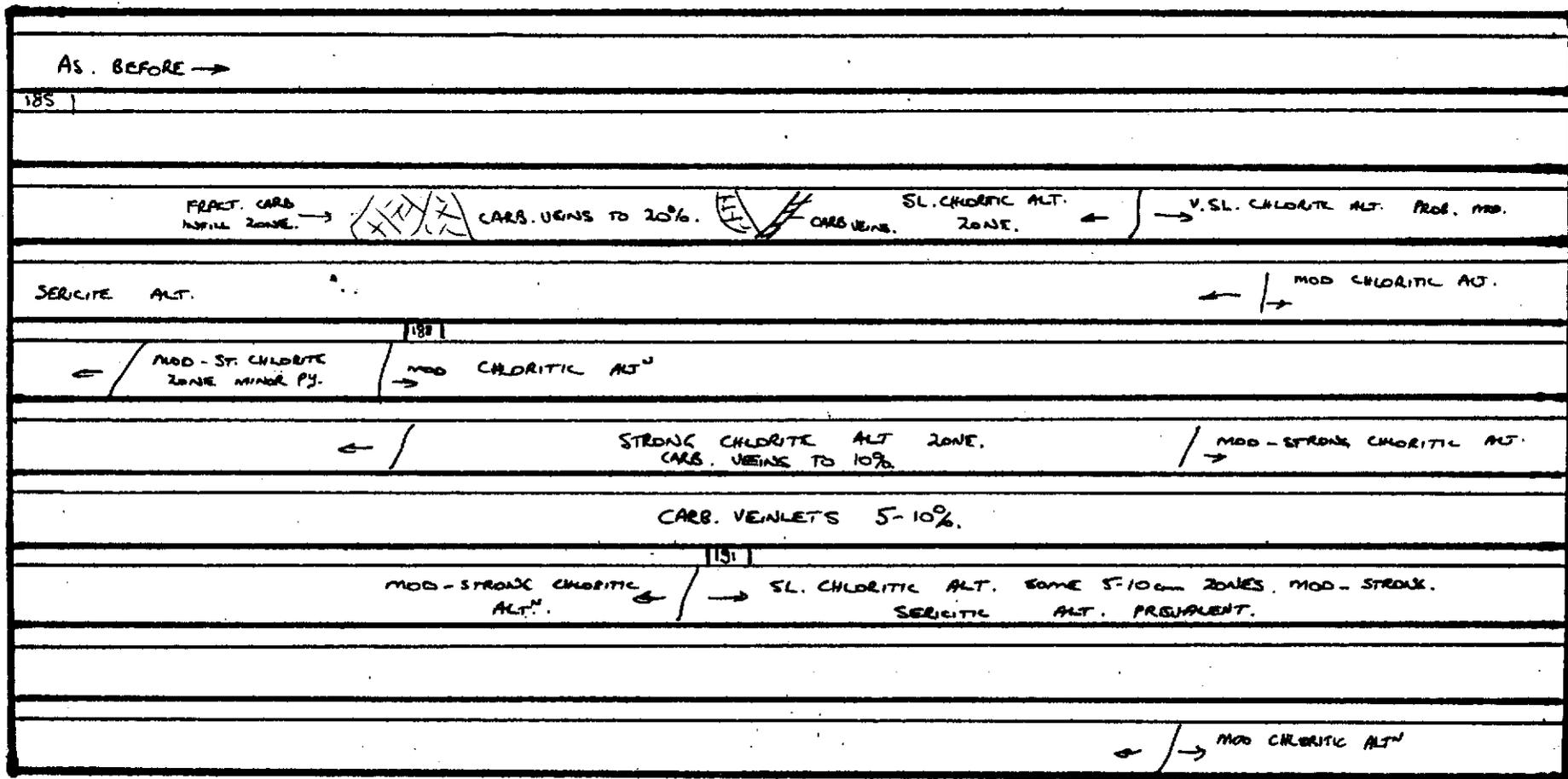
DEPTH FROM 184.0m

TO 193.6m

DIAGRAMATIC DRILLHOLE LOG

PAGE TWENTY OF TWENTY-THREE

BQ TRAY



MINERALIZATION
V. POOR - WEAK.

612153

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD82 LB3

PROSPECT LAKE BARRINGTON

DEPTH FROM 193.6m

TO 202.6m

DIAGRAMATIC DRILLHOLE LOG

PAGE TWENTY-ONE OF TWENTY-THREE

BQ TRAY

	184
→ AS BEFORE MOD. CHLORITIC ALTN. < 5% CARB VENELETS,	
	197
OCC THIN ZONES EPIDOTE ALTN. - MAYBE SERKITE ALTN	
	200
	MOD CHLORITIC ALTN < 5% CARB. VEINS
← → SL. CHLORITIC ALTN	
SL. CHLORITIC ALTN ←	MOD - ST. CHLORITIC ALTN MINOR S

612154

SYMBOLS

EL. NAME SHEFFIELD

NUMBER 7/73

DRILLHOLE NO. DD82 LB3

PROSPECT LAKE BARRINGTON

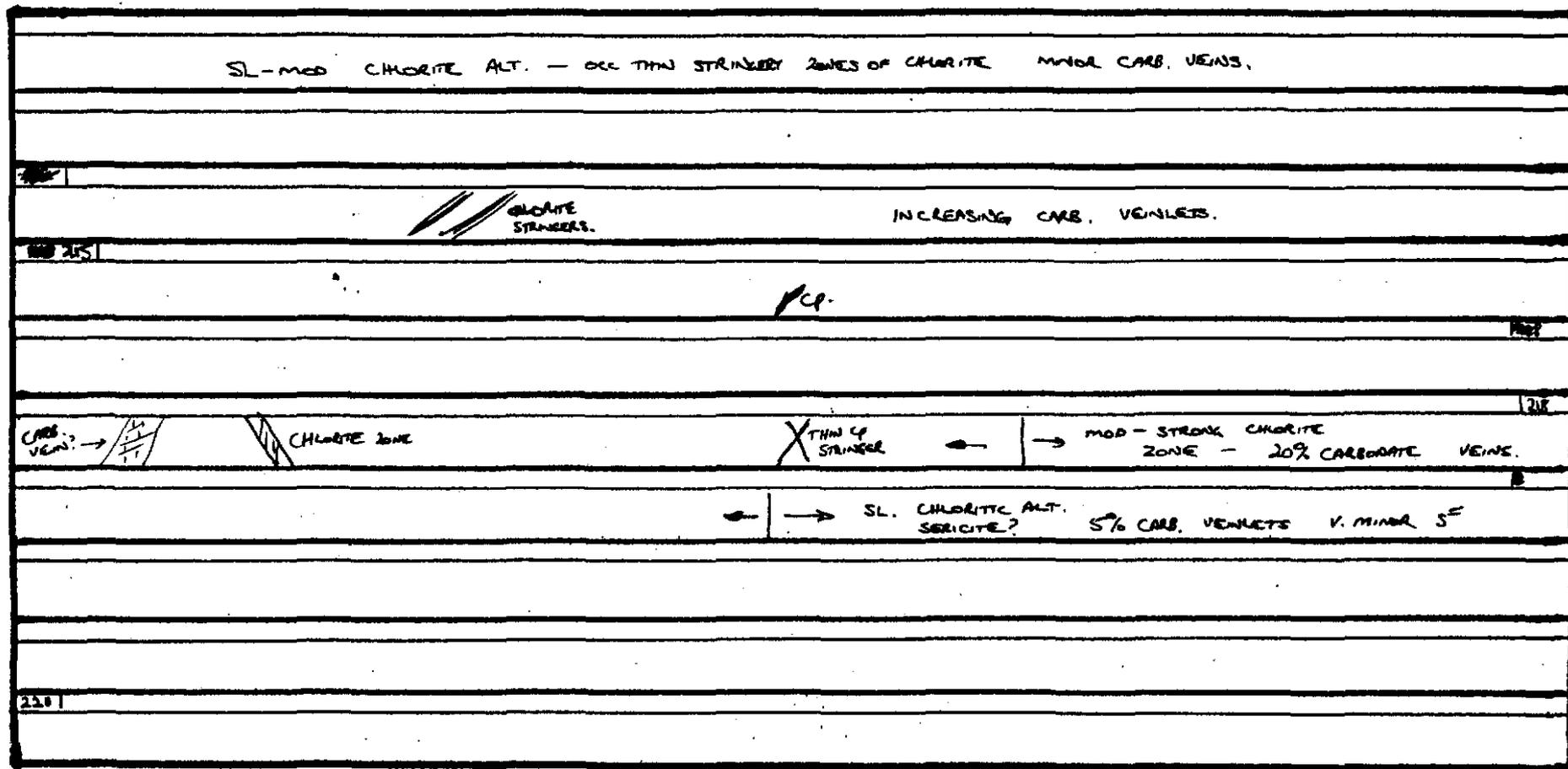
DEPTH FROM 212.0m

TO 221.0m

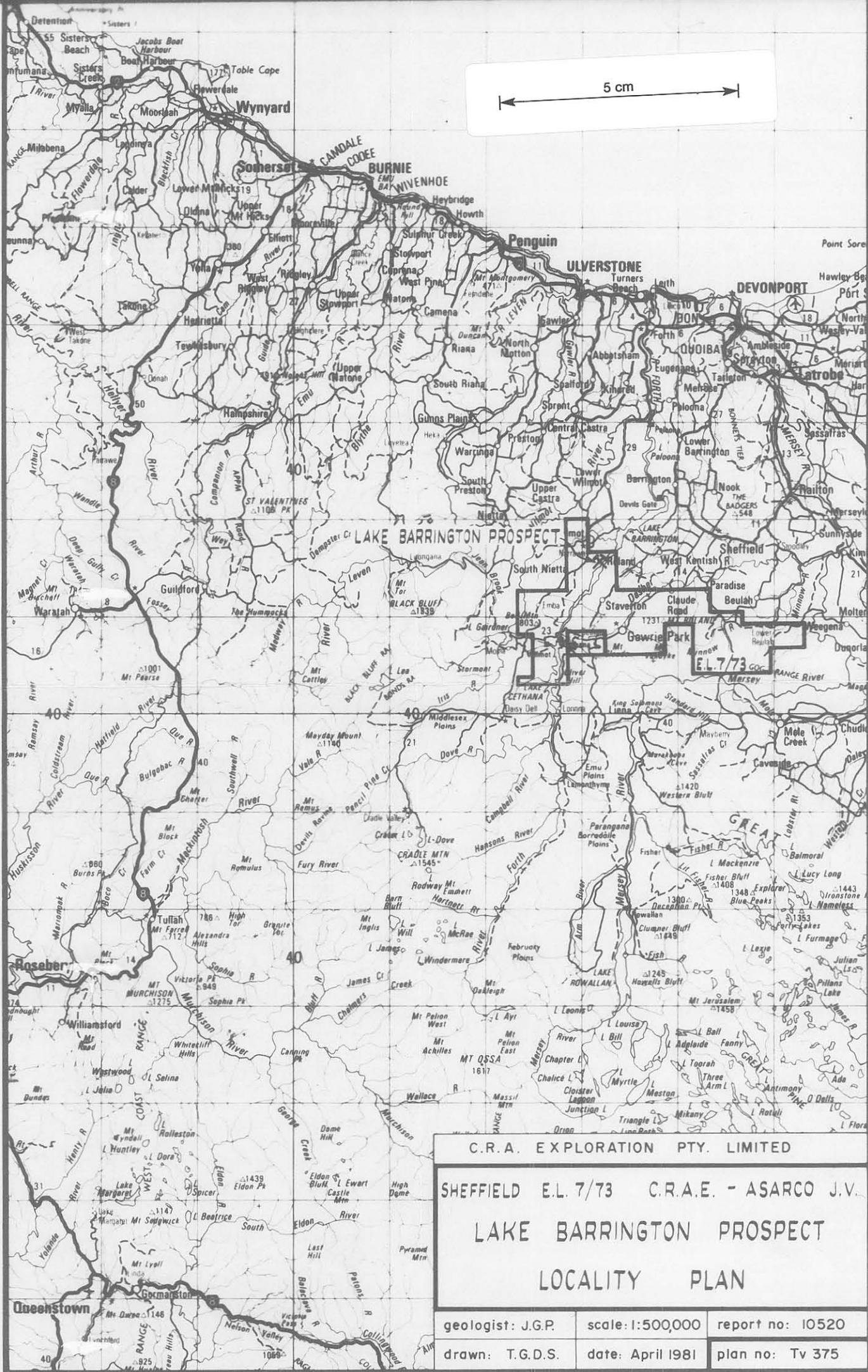
DIAGRAMATIC DRILLHOLE LOG

PAGE TWENTY-THREE OF TWENTY-THREE

BQ TRAY



612156

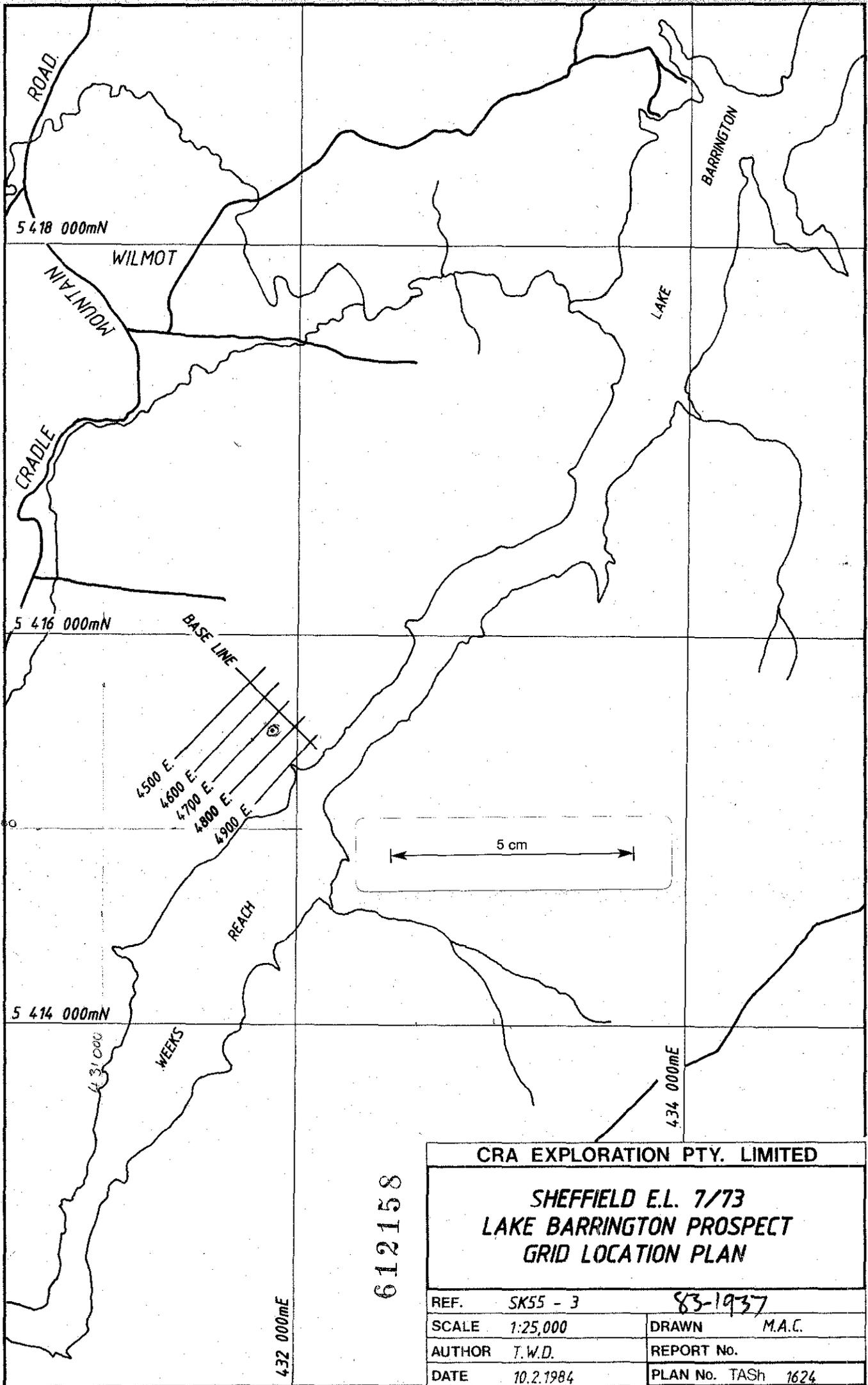


C.R.A. EXPLORATION PTY. LIMITED

SHEFFIELD E.L. 7/73 C.R.A.E. - ASARCO J.V.

LAKE BARRINGTON PROSPECT
LOCALITY PLAN

geologist: J.G.P.	scale: 1:500,000	report no: 10520
drawn: T.G.D.S.	date: April 1981	plan no: Tv 375



CRA EXPLORATION PTY. LIMITED

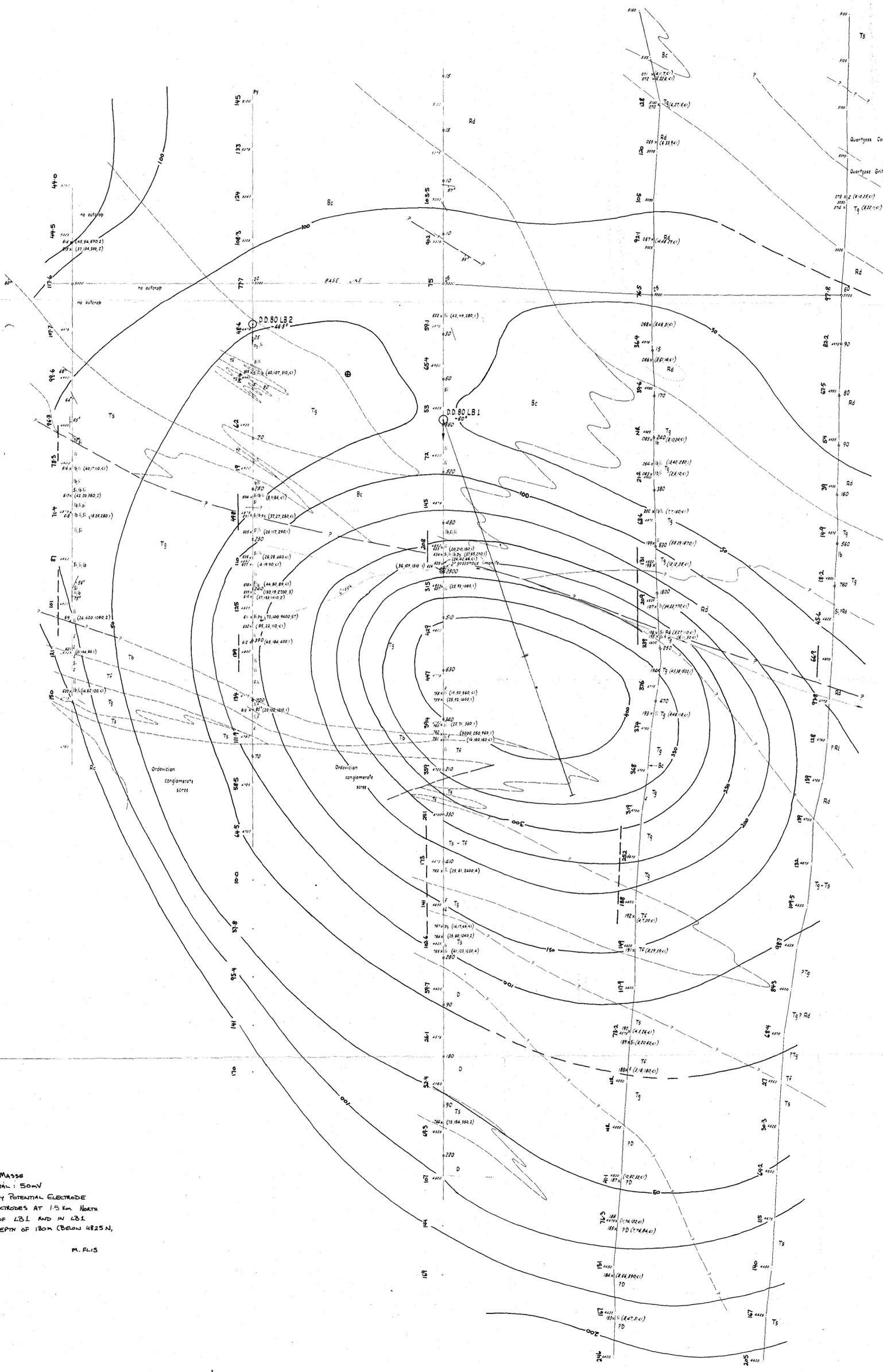
**SHEFFIELD E.L. 7/73
LAKE BARRINGTON PROSPECT
GRID LOCATION PLAN**

REF. SK55 - 3	83-1937
SCALE 1:25,000	DRAWN M.A.C.
AUTHOR T.W.D.	REPORT No.
DATE 10.2.1984	PLAN No. TASH 1624

612158

432 000mE

4500E 4600E 4700E 4800E 4900E



LEGEND

ORDOVICIAN

- D** **QUARTZ CONGLOMERATE**
Massive to micaceous
- D** **DACTIC VOLCANICS**
Massive dark grey to black unaltered volcanics comprising fessper-hornblende chlorite glass and rare quartz. Includes lava fragments and fine tuffs.
- Rd** **RHYO-DACITIC LAVAS**
Massive unaltered
- Bc** **Volcanic BRECCIO-CONGLOMERATE**
Unaltered, occasionally weakly altered. Angular and well-sorted clasts of volcanics up to 30cm, usually 4-8cm in quartz matrix of similar material. Crude stratification in places, generally poorly sorted and massive.
- Tg** **TUFFACEOUS GRIT**
Sandy to gritty tuff, with quartz, glass and accidental fragments in vitric matrix. In places clayey, waterlain with pieces of volcanics up to 3cm and ill defined bedding. Lenses commonly agglomeratic with angular fragments, no sorting, and no evidence of water-marking (as on line 4500E). Generally weakly to moderately altered.
- Ts** **FINE GRAINED TUFF**
Fine grained crystalline tuff and siliceous vitric tuff.
- Ts** **TUFF - SHALE**
Grey unaltered vitric tuff shale and tuffaceous siltstone. Well-sorted.
- Ts** **TUFFACEOUS BRECCIA**
Fine breccia with clasts of tuff-shale up to 2cm in highly ferruginous matrix. On line 4600E rock shows evidence of water-marking, and on 4600E rock appears agglomeratic.

CAMBRIAN

- Ts** **TS**

Symbols

- $\frac{1}{2}$ Dip and strike of bedding or primary rock lineation.
- $\frac{1}{2}$ Trend of outcrop.
- $\frac{1}{2}$ Fault.
- $\frac{1}{2}$ Limonite after sulphides. Generally at gossanous fracture-filling.
- $\frac{1}{2}$ Iron oxides, usually hematite, not necessarily related to mineralisation.
- $\frac{1}{2}$ Leached, bleached, mineralised rock.
- $\frac{1}{2}$ Silicification - generally weak.
- $\frac{1}{2}$ Pyrite.
- $\frac{1}{2}$ Rock sample. All samples prefixed B6 (Pb, Zn, Cu, Ag) results in ppm.
- $\frac{1}{2}$ CRAE grid peg.
- $\frac{1}{2}$ Astero grid peg with soil sample Cu value in ppm.
- $\frac{1}{2}$ Assumed position Astero grid peg.

Line Anomaly - Definite
Line Anomaly - Probable

Note: Lines 4500E, 4600E & 4700E drawn from page 612159, 4800E & 4900E drawn from page 612159. 4800E & 4900E drawn from compass, some and top survey.

MISE-A-LA-MASSÉ
 CONSOLE INTERNAL: 50mV
 STATIONARY POTENTIAL ELECTRODE
 CURRENT ELECTRODES AT 1.5 km NORTH
 AND SOUTH OF LB1 AND IN LB1
 AT A REAL DEPTH OF 130m (Below 4825N,
 4700E).
 28-5-81 M. FLIS

612159

SCALE 1:1000

0 10 20 30 40 50 METERS

5 cm

CRA EXPLORATION PTY LIMITED

SHEFFIELD E.L. 7.73 CRAE - ASARCO J.V.

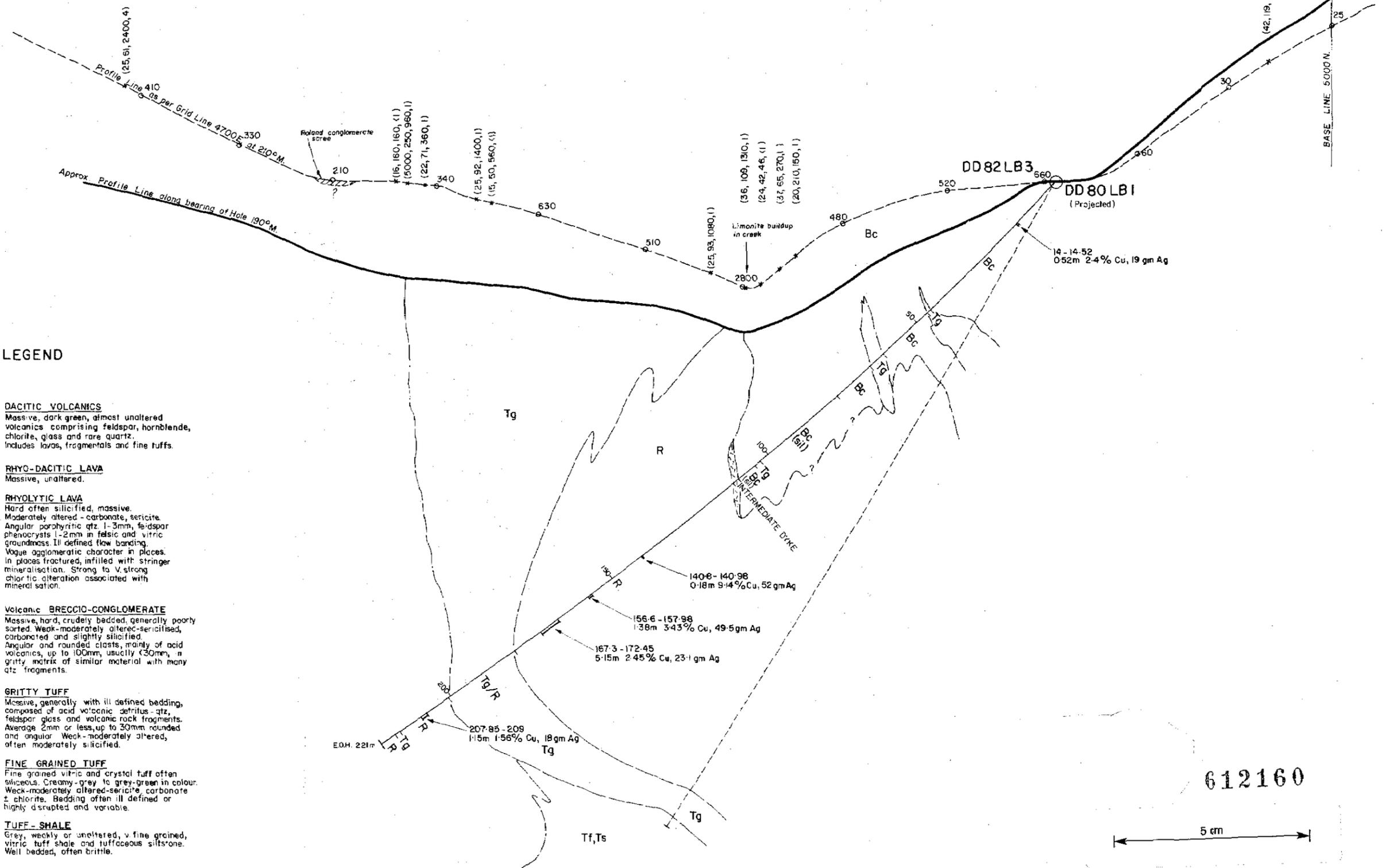
LAKE BARRINGTON PROSPECT

GEOLOGICAL PLAN

Geologist: M.F.L.S.	Scale: 1:1000	Sheet No: 10520
Date: 28-5-81	Plan No: TV 376	

SOUTH

NORTH



LEGEND

- D** **DACITIC VOLCANICS**
Massive, dark green, almost unaltered volcanics comprising feldspar, hornblende, chlorite, glass and rare quartz. Includes lavas, fragmentals and fine tuffs.
- Rd** **RHYO-DACITIC LAVA**
Massive, unaltered.
- R** **RHYOLYTIC LAVA**
Hard often silicified, massive. Moderately altered - carbonate, sericite. Angular porphyritic qtz 1-3mm, feldspar phenocrysts 1-2mm in felsic and vitric groundmass. Ill defined flow banding. Vague agglomeratic character in places. In places fractured, infilled with stringer mineralisation. Strong to V. strong chloritic alteration associated with mineralisation.
- Bc** **Volcanic BRECCIO-CONGLOMERATE**
Massive, hard, crudely bedded, generally poorly sorted. Weak-moderately altered - sericitised, carbonated and slightly silicified. Angular and rounded clasts, mainly of acid volcanics, up to 100mm, usually <30mm, in gritty matrix of similar material with many qtz fragments.
- Tg** **GRITTY TUFF**
Massive, generally with ill defined bedding, composed of acid volcanic detritus, qtz, feldspar glass and volcanic rock fragments. Average 2mm or less, up to 30mm rounded and angular. Weak-moderately altered, often moderately silicified.
- Tf** **FINE GRAINED TUFF**
Fine grained vitric and crystal tuff often siliceous. Creamy-grey to grey-green in colour. Weak-moderately altered-sericite, carbonate ± chlorite. Bedding often ill defined or highly disrupted and variable.
- Ts** **TUFF-SHALE**
Grey, weakly or unaltered, v. fine grained, vitric tuff shale and tuffaceous siltstone. Well bedded, often brittle.
- Tb** **TUFFACEOUS SPECCIA**
Fine breccia with clasts of tuff-shale up to 2cm in highly ferruginous matrix. On the 4600E rock shows evidence of water-working, or line 4500E rock appears agglomeratic.

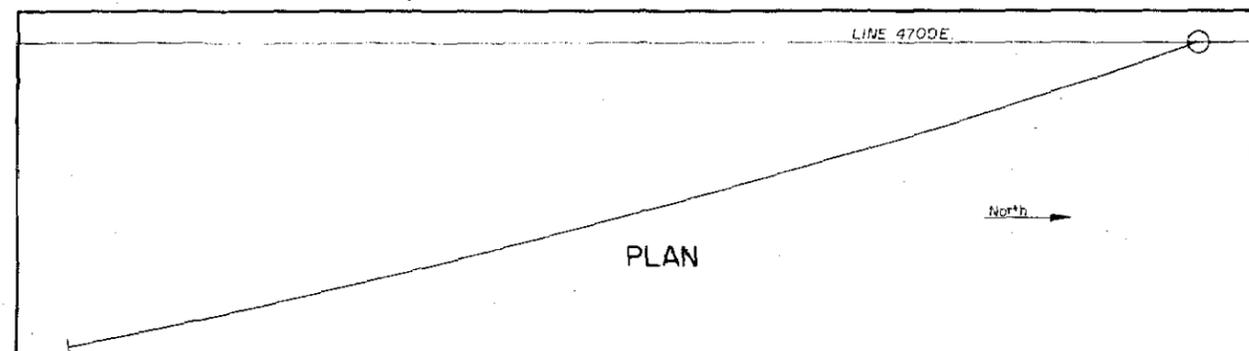
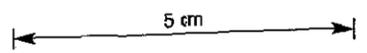
Symbols

x Rock sample (Pb, Zn, Cu, Ag) results in ppm.

240 Asarco grid peg with soil sample Cu value in ppm.

CAMBRIAN

612160



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SHEFFIELD E.L.7/73 - CRA - C.E.C. J.V.

LAKE BARRINGTON PROSPECT

SECTION DD82 LB 3

(LOOKING WEST)

Geologist: G.W.	Scale: 1:1000	Report No: 11934
Drawn: T.G.D.S.	Date: Feb. 1983	Plan No: TAS h 1238

