

AUSTRALIAN CONSOLIDATED INDUSTRIES LTD.

MINERAL RESOURCES DIVISION

3689
Ref No

TASMANIAN EXPLORATION E.L.16/68

16th December, 1970.

REPORT ON D.D.H.2. CLUMP PROSPECT

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SUMMARY

Diamond drill hole No. 2 at the Clump Prospect has been abandoned at a depth of 72.24 M. below collar in soft, cavernous and broken ground. The potential mineralised zone was encountered at 58.60 M. below collar and core recovery through the potential zone was approximately 5%. Copper and pyritic mineralisation was present in the fragments of core, the zone being extensively leached of carbonate and minerals, leaving a crude quartz network with soft carbonate residues.

D.D.H.2. - CLUMP PROSPECT

Grid Reference	459,299 N, 310,026 E	AMG
Collar level	c170.5 m.	
Inclination	50°	
Direction	034° magnetic	
Date drilled	13/8/70 - 26/8/70	
	No core held	

1. OPERATIONAL DETAILS:

D.D.H.2. was drilled by Associated Diamond Drillers Pty. Ltd., using an E.1000 Rig, which was set up on site ready for drilling on 13/8/70.

Drilling progress, together with engineering details are shown on Figure 1. NX Casing was set at 3.35 m. and BX Casing at 12.50 m., the remainder of the hole being cored using BX wireline equipment.

1.1 Drilling conditions

Appendix "A" shows the drill runs and core recovery and the numerous short core runs reflect moderately broken ground, which is also reflected in the core recovery. From the core recovered, jointing appears to be the main reason for drilling problems.

Below 58.50 M., core recovery was very low (about 5%), with the drilling string falling under its own weight. The hole was cemented to 63.10 M., but on re-entering the drill hole, only 10 cms. of cement was recovered, the remainder flowing away into the formation. On instructions from the site geologist, the hole was deepened to 69.19 M. in very soft ground and cemented again. On re-entering the hole no cement was found and extreme difficulty encountered getting the core barrel on bottom.

A further 3.05 metres were drilled in tight, caving ground with little recovery and the drill hole was abandoned for -

- (1) The main potential zone had been penetrated with no real core recovery.
- (2) To recover the hole casing would be required with significant cost and it is likely that similar ground conditions would be encountered below the casing shoe with further cementing and casing required.

1.2. Deviation

The deviation, measured by the acid tube method, showed a rapid build-up in the first 30.5 m. (see progress chart), but at 61.0 m. the angle had reduced significantly.

2. GEOLOGY:

The detailed geological log is presented in Appendix "B" and may be summarised as follows:

- | | | | |
|--------|---|---------|---|
| 0 m | - | c.60.m | Banded and laminated sediments becoming silicified and veined in the basal, 5 metres. |
| c.60.m | - | 72.40 m | Mineralised zone. |

The mineralised zone was soft and cavernous indicating -

- (a) The presence of old collapsed workings,
- (b) Solution of carbonate and metallic mineralisation.

The latter is believed to be correct as no workings have been located from a detailed examination of the ground surface and existing workings do not extend into the vicinity of D.D.H.2. Traces of carbonate were visible on parts of the porous recovered core and the potential zone probably consisted of a quartz network with soft clayey residues resulting from the breakdown of the carbonate and metallic minerals.

3. SAMPLING AND ASSAYS:

The core recovery in the potential mineral zone was very poor and no sludge sample was obtained due to complete loss of circulation. A composite sample of half the recovered fragments over the interval c.60.m - 72.40 m gave an assay of 0.19% Cu.

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D.D.H.2 - CLUMP PROSPECT

DRILL RUNS WITH CORE RECOVERY.

Footage		Metric		Rec. Core in Metres.
0'	- 2'	0	- 0.61	0.48
2'	- 7'6"	0.61	- 2.29	1.70
7'6"	- 11'	2.29	- 3.35	1.06
11'	- 20'	3.35	- 6.09	2.48
20'	- 30'	6.09	- 9.14	1.67
30'	- 40'	9.14	- 12.19	1.75
40'	- 42'	12.19	- 12.80	0.63
42'	- 47'	12.80	- 14.33	1.48
47'	- 50'6"	14.33	- 15.40	0.88
50'6"	- 53'6"	15.40	- 16.31	0.71
53'6"	- 57'	16.31	- 17.37	1.06
57'	- 59'4"	17.37	- 18.08	0.70
59'4"	- 61'3"	18.08	- 18.66	0.60
61'3"	- 64'6"	18.66	- 19.65	1.02
64'6"	- 67'	19.65	- 20.42	0.78
67'	- 70'9"	20.42	- 21.56	1.10
70'9"	- 74'9"	21.56	- 22.78	1.21
74'9"	- 77'	22.78	- 23.47	0.62
77'	- 79'6"	23.47	- 24.23	0.80
79'6"	- 89'8"	24.23	- 27.33	3.08
89'8"	- 94'	27.33	- 28.65	1.40
94'	- 96'3"	28.65	- 29.34	0.68
96'3"	- 98'8"	29.34	- 30.08	0.80
98'8"	- 101'	30.08	- 30.78	0.74
101'	- 103'	30.78	- 31.39	0.65
103'	- 105'6"	31.39	- 32.15	1.00
105'6"	- 107'	32.15	- 32.61	0.46
107'	- 111'6"	32.61	- 33.98	1.39
111'6"	- 112'3"	33.98	- 34.21	0.35
112'3"	- 116'3"	34.21	- 35.43	1.00
116'3"	- 117'	35.43	- 35.66	
117'	- 121'2"	35.66	- 36.93	1.22
121'2"	- 125'	36.93	- 38.10	1.20
125'	- 127'	38.10	- 38.71	0.57
127'	- 129'3"	38.71	- 39.40	0.70
129'3"	- 131'10"	39.40	- 40.19	0.88
131'10"	- 140'4"	40.19	- 42.77	2.60
140'4"	- 145'9"	42.77	- 44.42	1.65
145'9"	- 147'	44.42	- 44.80	0.48
147'	- 150'6"	44.80	- 45.87	0.55

(Continued over..)

D.D.H.2 - CLUMP PROSPECT
DRILL RUNS WITH CORE RECOVERY.

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<u>Footage</u>	<u>Metric</u>	<u>Rec. Core in Metres.</u>
(Continued)		
150'6" - 152'5"	45.87 - 46.45	0.60
152'5" - 154'9"	46.45 - 47.16	0.65
154'9" - 156'7"	47.16 - 47.72	0.60
156'7" - 158'	47.72 - 48.15	0.65
158' - 159'	48.15 - 48.45	0.27
159' - 160'6"	48.45 - 48.91	0.46
160'6" - 164'2"	48.91 - 50.03	1.15
164'2" - 166'2"	50.03 - 50.64	0.64
166'2" - 170'9"	50.64 - 52.03	1.28
170'9" - 176'2"	52.03 - 53.68	1.65
176'2" - 181'5"	53.68 - 55.28	1.60
181'5" - 187'	55.28 - 56.98	1.68
187' - 189'6"	56.98 - 57.74	0.76
189'6" - 191'8"	57.74 - 58.40	0.66
191'8" - 197'	58.40 - 60.05	0.22
197' - 207'	60.05 - 63.10	0.15
207' - 217'	63.10 - 66.14	0.05
217' - 227'	66.14 - 69.19	0.40
227' - 237'	69.19 - 72.24	0.15

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D.D.H.2. - CLUMP PROSPECT

Grid Reference.

Collar Level.

Direction: 034 Magnetic.

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Inclination: 50°.

INTERVAL IN METRES		DESCRIPTION.	APPENDIX "B"
From	To		
00	c.6.50	<p>Light grey siltstone laminae and thin bands (< 0.5 cm. in thickness) and grey argillaceous carbonaceous siltstone. The individual light grey bands shows well developed basal structures - load casts and S scours. The total light grey content is about 25%. The upper 50 cm. contains a 3 cm. thick light grey siltstone bed showing upward colour grading and small-scale cross-stratification is developed in the basal 1 cm. Pyrite is developed along the lower portion of this band. The basal 30 cms. are dark grey and very carbonaceous.</p> <p>Dip. 0 - 0.75 M. + 2°; From 0.75 - 1.13 M. S. fold, axial plane dips + 32°; within this fold, numerous microfaults occur, often filled with quartz, chlorite + soft weathered carbonate veins. Disseminated pyrite occurs in the veins. From 1.13 - 2.36 M. Dip + 6° with local 0° dip at 2.25 M. Between 2.36 - 2.60 M. S. fold, axis dipping + 44°, microfaults and veins as 0.75 - 1.13 M. Dip 2.60 - 3.35 M, 0°; 3.35 - 5.00, - 15° From 5.00 to c.5.25. S. fold axis dips + 45 with v. minor microfaulting; Dip from 5.25 - c.6.50 M. - 12°. (Core loss makes basal boundary indefinite).</p> <p>The sequence is cut by sporadic thin quartz veins, + chlorite, carbonate and pyrite. Two veins directions are present dipping steeply and intersecting at 30° - 45°. Well developed joints, locally ironstained, are prominent and some quartz veins are parallel to the joints.</p>	
c.6.50	c.7.50	<p>Light grey often chloritic siltstone with bands and laminae of dark grey argillaceous siltstone which become increasingly common towards the base. Siltstone content c.70% overall. The grey siltstones display local small-scale cross-stratification.</p> <p>Dips - 8° to - 10° throughout but steepening to - 32° in basal 10 cms. of recovered core. The unit is well jointed, the joint surface locally ironstained with patchy development of chlorite.</p>	
c.7.50	16.31	<p>Banded and laminated sequence of light grey siltstone (< 1 cm.) and dark grey carbonaceous and argillaceous siltstone. Light grey siltstone content approx. 30% and these layers show minor cross-stratification, small load casts and/or scours and upward colour grading. Chloritic bands and chlorite blebs and patches occur sporadically below c.12.50 M. The unit is well jointed with quartz/chlorite infillings.</p> <p>Dips - 20° at c.7.70 M; - 12° at c.11.50 M; - 11 at 12.19 M; -12° at 12.80 M; - 15° at 14.10. A microfault filled with quartz, chlorite and rare pyrite occurs at 14.21 M, dipping + 35° but striking at high angle to bedding strike.</p> <p>Dips at 14.35 M; - 28°; - 29° at 15.20 M; - 37° at 16.00 M; The sequence is well jointed with ironstained and chlorite coatings. Thin veins 1 - 2 cms. are sporadically developed, major veins occurring at 13.10 M, strike at 90° to bedding strike near vertical; 15.25 M, as above. Both these veins which occur along microfaults comprise quartz, chlorite blebs and patches, and trace pyrite.</p>	

INTERVAL IN METRES		DESCRIPTION.
From	To	
16.31	29.00	<p>Dark grey carbonaceous and argillaceous siltstone bearing abundant thin (1 mm) light grey siltstone laminae. Disseminated chlorite occurs throughout. Thin chlorite/quartz veins cutting bedding at 90° occur throughout, major veins occurring as follows: 3 cm. chlorite with quartz at 16.85 M. 2.5 cm. quartz, minor chlorite and pyrite at 17.87 M. 4.0 cm. quartz, chlorite, minor pyrite at 18.66 M.</p> <p>2.0 cm. quartz, chlorite, minor pyrite at 19.58 M. Small microfaults are common with displacements of up to 2 cms. Pyrite occurs rarely along bedding surfaces and also on joint planes. Irregular patches of quartz with pyrite and cavities (carbonates?) occur in association with a microfault at 20.60 M. 6 cm. vein complex-quartz, chlorite, pyrite at 23.80 M. ¼ cm. vein \searrow to core, quartz, irregular cavities, minor chalcopyrite at 24.08. 4 cm. vein 90° to bedding, quartz, included sediment fragments and cavities at 24.20 M.</p> <p>Dips: - 35° at 16.65 M, - 26° at 17.50 M; - 34° at 19.00 M; - 47° at 19.80 M (Small scour here); - 37° at 20.50 M, - 41° at 21.75 M; - 42° at 22.70 M; - 48° at 23.45 M. - 37° at 24.15 M, - 39° at 25.25 M; - 43° at 26.35; - 48° at 27.25 M.</p> <p>From 28.00 M - 28.75, dip increases to 90° and then decreases. The change in dip is associated with intense microfaulting, chlorite, quartz veining and local brecciation. The axis is difficult to locate due to broken core.</p> <p>Dip. - 15° at 28.80 M.</p>
29.00	c.34.00	<p>As 16.31-29.00, but with fewer laminae and sporadic thin light grey siltstone bands (< 2 cms) and only rare thin quartz/chlorite veins. The thicker light grey siltstone band shows local small-scale cross-stratification, upward colour darkening, small load casts and minor scours. Pyrite occurs within the grey siltstones being confined to the lower (? cleaner and possibly coarser) parts of these bands. Chlorite is present disseminated throughout this unit. Moderately well jointed in parts.</p> <p>Dip. - 20° at 29.20 M; - 12° at 30.48 M. - 10° at 31.30 M; - 6° at 32.30 M; - 5° at 33.80 M; - 8° at 33.90.</p>
c.34.00	45.87	<p>As 16.31-29.00 with a few 1 cm. thick bands displaying sedimentary features listed in 29.00-34.00 unit. The boundaries above are gradational and somewhat subjective.</p> <p>Dips: - 48° at 34.25 (No change from last reading occurs at 34.20 axial plane dips + 40°) - 65° at 34.50; - 17° at 34.80; The above fold is an S, in the steep part of fold, graphite is developed with chlorite, local microfaults, irregular quartz patches.</p> <p>Dips; - 8° at 36.15 M; - 4° at 37.25 M; - 4° - 2° at 38.10 and then 0° to 2° to 43.07 M. + 8° at 43.30 M; +10° at 44.20; +7° at c.44.60 M; + 6° at c.45.70 M. From 43.07 M to the base, strong and locally dense jointing is well developed striking at right angle to the bedding and dipping steeply, 80°. These joints are often filled with a buff, soft, decomposed carbonate.</p>

MS

INTERVAL IN METRES		DESCRIPTION.
From	To	
45.87	53.05	<p>Banded and laminated silicified light grey siltstone and dark grey, carbonaceous siltstone. Individual bands are up to 3 cms thick. The light grey bands show local cross-stratification, load casts, minor scours and a few ripple lenticles occur within the thinly laminated portions of the unit. Disseminated pyrite is present in the light grey siltstones together with minor patchy disseminated chlorite.</p> <p>Dips; +5° at 46.55; 0° between 49.20 and 51.73 M. +10° 47.90 M; +3° 52.90.</p> <p>The unit is moderately well jointed, the surfaces being coated with quartz, soft weathered carbonate, pyrite and minor chlorite, singly or mixed together. Gradational base due to slight dip of sediments relative to the core long axis.</p>
53.05	58.40	<p>Dark grey silicified carbonaceous siltstone bearing thin light grey siltstone laminae and rare bands (< 1 cms. wide). A few black carbonaceous and argillaceous bands are sporadically distributed. The grey siltstone displays good basal sedimentary features.</p> <p>Dips +3° at 53.70 M; 0° at 55.20 M; -5° at 55.40 M; 55.65 M to 56.87 M; Dip in 0°.</p> <p>-3° at 56.80; -10° at 57.10 M; -10° at 57.60 M, 23° at 58.05.</p> <p>The unit is well jointed, the joint faces often being filled/coated with a quartz, chlorite, pyrite assemblage. Dips +45 to +60°. Strike is \ to bedding. Microfaults associated with quartz chlorite ± pyrite blebs occur in a 15 cms. unit at 57.15 M. Irregular blebs of pyrite occur in light grey siltstone at 57.60. The basal part of the unit becomes increasingly silicified and flinty.</p>
58.40	60.05	<p>22 cms. of core only recovered.</p> <p>Upper 20 cms. solid core: Grey-dark grey carbonaceous silicified siltstone, disseminated pyrite, quartz, chlorite and pyrite, occur singly or admixed in thin veinlets.</p> <p>2 cms. fragments of milky white quartz, small irregular cavities locally with brownish clayey film. Minor pyrite. Total sulphide < 0.1%.</p>
60.05	63.10	<p>15 cms. of fragments recovered. 1 fragment of siliceous material with 30% sulphides - pyrite, with chalcopyrite (minor). Remainder: Milky white quartz with irregularly distributed cavities lined with brownish clay and with some broken included fragments of black sediment. Mineralisation restricted to quartz/sediment contacts - pyrite with chalcopyrite.</p>

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INTERVAL IN METRES		DESCRIPTION.
From	To	
63.10	66.14	5 cms. of fragments - milky white quartz. with sediment fragments; silicified material; no mineralisation. Multicores fragment of silicified dark grey siltstone also present
66.14	69.19	40 cms. of fragments recovered. Upper 25 cms: Black graphitic slaty sediment cut by numerous thin quartz, chlorite veins which are mineralised with pyrite. A few hexagonal quartz porphyroblasts occur. Remainder: Milky white quartz and grey siliceous material with cavities filled with brownish clay mineralised with chalcopyrite and trace pyrite. Total sulphides c.0.5 - 1%.
69.19	72.24	15 cms. of fragments recovered. Upper half: White quartz, included black argillaceous fragments. Heavily mineralised with pyrite and subordinate chalcopyrite. Total Sulphide: 30-40%, 2-3% chalcopyrite. Lower half: Massive milky white quartz with a few large, irregular cavities.

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