

AUSTRALIAN CONSOLIDATED INDUSTRIES LTD.MINERAL RESOURCES DIVISIONTASMANIAN EXPLORATION, PL. 16/68, BALFOURREPORT ON DDH 22, CENTRAL NORTH PROSPECTSUMMARY

DDH 22, the most northerly drillhole in the Murrays Reward - Central Prospects area, was successfully completed at a depth of 105.76 metres.

A thick zone of anomalous but sub-economic copper values associated with quartz, quartzose sediments and slaty siltstone, was intersected between 67.67 and 84.90 metres, this interval averages 800 ppm Cu over an estimated true thickness of about 12.9 metres and dips about 85° towards the west.

Within this zone is a 6.3 metre (estimated true thickness) interval of slightly chalcopryitic quartz and quartzose sediments between 77.11 and 84.90 metres. Although this zone averages only 923 ppm Cu overall, it contains a 1.83 metres interval (77.11 to 78.94 metres) of white fragmentary and cavernous quartz which assays 3350 ppm Cu and which is considered to represent the mineralized zone proper.

The mineralized zone is cavernous and fragmentary in parts and care must be exercised in the interpretation of the true grade of this interval because of low core recovery (average 84%) and the loss of sulphides by leaching.

Drilling costs for DDH 22 were \$2,347 at an average cost of \$22.1 per metre. The average drilling rate was 15.1 metres per shift.

DDH 22, CENTRAL NORTH PROSPECT

Grid reference	437900N, 318760E
Elevation	192.0 metres
Angle	58°
Bearing	N 76° E true
Date Drilled	16.1.72 to 19.1.72
Drilling Rate	15.1 metres per shift
Air Drilling	0 to 39.62 metres
Diamond Drilling	39.62 to 105.76 metres

1. OPERATIONAL DETAILS1.1. Drilling details

The Longyear 38 drilling moved to the DDH.22 site on January 16th 1972 and the drillhole was completed on January 19th, 1972.

HW casing was seated at 1.5 metres, and air drilling advanced to 39.62 metres. At this depth the hole was cased off with NW casing and the drillhole was continued and completed with NQWL diamond coring equipment with a triple tube core barrel.

37 081
180 28

1.2. Drilling conditions

Drill runs and core recovery are tabulated in Appendix A.

The air drilling progress was relatively slow and the drillhole was making an appreciable quantity of water below about 25 metres.

Soft and broken ground slowed progress and resulted in short drill runs (average <1 metres) and low core recovery in parts. In addition, difficulty was experienced in returning rods to the bottom of the hole because of partial collapse of the hole wall.

Core recovery above and below the mineralized zone, i.e. between 39.62 and 67.67 metres and between 84.90 and 105.76 metres, was satisfactory and averaged more than 95%.

Core recovery from the mineralized zone was characteristically low and averaged about 83%, with several short drill runs returning less than 75% core recovery.

Core recovery over the entire length of core drilling averaged about 93%.

1.3. Drillhole deviation

The results of the drillhole inclination surveys were as follows:

Collar	58°	
30 metres	55°	acid-tube
60 metres	47.5°	acid-tube
60 metres	46°	at N 80° E magnetic (Tropari)

It will be noted that the hole shallows or flattens significantly and swings about 16° towards the south.

2. GEOLOGY

The complete drill log is presented in Appendix B and may be briefly summarised as follows:

AIR DRILLING0 to 39.62 metres

Carbonaceous and chloritic slaty sediments.

DIAMOND DRILLING39.62 to 71.01 metres

Grey-green, slightly chloritic, slaty carbonaceous siltstone containing a few thin quartz veins.

71.01 to 74.52 metres

Similar to the interval 39.62 to 71.01 metres but contains several chloritic, pyritic and chalcopyritic quartz veins and irregular quartzose segregations (\pm chalcopyrite).

74.52 to 77.11 metres

Similar to the interval 71.01 to 74.52 metres in the upper half but is pale grey and grey-green, slightly phyllitic and very fragmentary.

The basal half consists of sheared, semi-plastic,

37-082

pyritic, talcose fragmentary slaty sediment containing rare chalcopyrite.

77.11 to 84.90 metres MINERALIZED QUARTZOSE ZONE

White quartz, highly fragmental and moderately to strongly cavernous in parts, with numerous irregular fractures which are commonly limonitic and stained brown-black.

The interval 79.94 to 81.05 metres consists of quartz and grey-green silicified, irregular chloritic sediment fragments.

The interval 81.05 to 84.90 metres consists of white quartz and grey, heavily silicified carbonaceous (?) sediments with rare chalcopyrite.

84.90 to 99.55 metres

Slaty chloritic siltstone and fine grained sandstone.

99.55 to 105.76 metres

Pale grey (quartzose) and dark grey to black (carbonaceous and graphitic) graded beds.

3. SAMPLES AND ASSAYS

A number of percussion samples and core samples from DDH 22 were assayed for copper with the following results:

(i) Percussion samples

INTERSECTION METRES	SAMPLE NO. BAL.	ASSAY VALUE ppm Cu
15.24 to 16.76	1664	23
16.76 " 18.29	1665	138
18.29 " 19.82	1666	76
19.82 " 21.34	1667	95
21.34 " 22.86	1668	51
22.86 " 24.38	1669	35
24.38 " 25.91	1670	44
25.91 " 27.43	1671	20
27.43 " 28.96	1672	48
28.96 " 30.48	1673	31
30.48 " 32.00	1674	30
32.00 " 33.53	1675	33
33.53 " 35.05	1676	33
35.05 " 36.58	1677	25
36.58 " 38.11	1678	32
38.11 " 39.62	1679	39

The percussion sample assay results indicate only background copper contents for the hanging wall sediments with a mean value of 47 ppm Cu and a range of 20 to 138 ppm Cu.

(ii) Core samples

Eleven core samples collected from between 65.23 and 91.09 metres were assayed with the following results:

INTERSECTION METRES	INTERVAL METRES	SAMPLE NO. BAL.	ASSAY VALUE ppm Cu
65.23 to 67.67	2.44	1680	29
67.67 " 71.01	3.34	1681	279
71.01 " 72.84	1.83	1682	1028
72.84 " 74.52	1.68	1683	1118
74.52 " 77.11	2.59	1684	728
77.11 " 78.94	1.83	1685	3350
78.94 " 81.05	2.11	1686	74
81.05 " 82.91	1.86	1687	153
82.91 " 84.90	1.99	1688	312
84.90 " 87.77	2.87	1689	18
87.77 " 91.09	3.32	1690	12

37 084

The core sample assay values confirm the presence of a thick interval of anomalous but sub-economic copper mineralization occurring between 67.67 and 84.90 metres, this interval averaging 800 ppm Cu over an estimated true thickness of 12.9 metres.

The boundaries of the mineralized zone are apparently not lithologically contracted, neither does the copper mineralization occur exclusively within one particular lithology. Rather the bulk of the chalcopyrite is associated with massive quartz and silicified sediments (between 77.11 and 84.90 metres) and with quartz veins (within slaty chloritic sediments) which appear to be genetically related to the massive quartz.

The mineralized quartzose zone between 77.11 and 84.90 metres contains an average of about 923 ppm Cu, but the massive quartz between 77.11 and 78.94 metres, which may be considered to be the mineralized zone proper, returned an assay value of 3350 ppm Cu.

Core loss and the leaching of sulphides somewhat obscures the "true" grade of the zone of anomalous copper values and care must be exercised in any interpretation and evaluation of the assay results from this drillhole.

The mineralized zone is estimated to dip about 85° towards the west.

4. CONCLUSIONS

DDH 22 proved a northern extension of the thick zone of apparently conformable copper mineralization which is now known to extend about 1100 metres along strike between DDH 22 in the north and DDH 19 in the south. This mineralized zone is apparently open at both ends.

Although the mineralized zone intersected by DDH 22 is relatively thick, the mineralized quartz zone proper is narrow and of apparently sub-economic grade although low core recovery and leaching of the sulphides have combined to mask the true grade.

M.H. McINTYRE

GEOLOGIST, MINERAL RESOURCES DIV.

FEBRUARY 24TH, 1972.

APPENDIX A

DDH 22 DRILL RUNS AND CORE RECOVERY

37 085

INTERSECTION (METRES)	INTERVAL (METRES)	CORE RECOVERY	
		METRES	PER CENT
39.62 to 41.75	2.13	2.13	100
41.75 " 43.28	1.53	1.53	100
43.28 " 44.80	1.52	1.52	100
44.80 " 45.72	0.92	0.92	100
45.72 " 46.48	0.76	0.76	100
46.48 " 47.24	0.76	0.76	100
47.24 " 48.30	1.06	1.06	100
48.30 " 49.23	0.93	0.93	100
49.23 " 49.99	0.76	0.76	100
49.99 " 51.36	1.37	1.37	100
51.36 " 52.73	1.37	1.37	100
52.73 " 54.10	1.37	1.37	100
54.10 " 55.01	0.91	0.91	100
55.01 " 57.14	2.13	2.13	100
57.14 " 58.22	1.08	1.08	100
58.22 " 58.83	0.61	0.61	100
58.83 " 59.44	0.61	0.61	100
59.44 " 60.05	0.61	0.61	100
60.05 " 60.66	0.61	0.61	100
60.66 " 61.11	0.45	0.37	83
61.11 " 62.02	0.91	0.91	100
62.02 " 62.94	0.92	0.92	100
62.94 " 63.85	0.91	0.91	100
63.85 " 64.62	0.77	0.77	100
64.62 " 65.23	0.61	0.61	100
65.23 " 65.84	0.61	0.61	100
65.84 " 66.75	0.91	0.91	100
66.75 " 67.67	0.92	0.92	100
67.67 " 69.19	1.52	0.15	10
69.19 " 69.95	0.76	0.76	100
69.95 " 71.01	1.06	1.06	100
71.01 " 72.07	1.06	1.06	100
72.07 " 72.84	0.77	0.69	91
72.84 " 73.61	0.77	0.77	100
73.61 " 74.52	0.91	0.91	100
74.52 " 75.13	0.61	0.61	100
75.13 " 77.11	1.98	0.91	46
77.11 " 77.26	0.15	0.07	50
77.26 " 77.64	0.38	0.23	60
77.64 " 78.33	0.69	0.54	78
78.33 " 78.94	0.61	0.41	67
78.94 " 80.46	1.52	1.37	90
80.46 " 80.76	0.30	0.30	100
80.76 " 81.38	0.62	0.62	100
81.38 " 81.99	0.61	0.46	75
81.99 " 82.30	0.31	0.23	75
82.30 " 82.91	0.61	0.50	82
82.91 " 83.52	0.61	0.61	100
83.52 " 84.58	1.06	0.91	86
84.58 " 85.19	0.61	0.61	100
85.19 " 86.25	1.06	1.06	100
86.25 " 86.40	0.15	0.15	100
86.40 " 87.77	1.37	1.37	100
87.77 " 88.99	1.22	1.22	100
88.99 " 90.22	1.23	1.08	88
90.22 " 91.59	1.37	1.37	100
91.59 " 92.65	1.06	1.06	100
92.65 " 93.50	0.85	0.85	100
93.50 " 93.96	0.46	0.46	100
93.96 " 94.64	0.70	0.70	100
94.64 " 95.70	1.06	1.06	100
95.70 " 96.54	0.84	0.84	100
96.54 " 97.15	0.61	0.61	100
97.15 " 97.77	0.62	0.62	100
97.77 " 98.30	0.53	0.28	53

980 23

INTERSECTION (METRES)	INTERVAL (METRES)	CORE RECOVERY	
		METRES	PER CENT
98.30 to 98.99	0.69	0.69	100
98.99 " 99.67	0.68	0.68	100
99.67 " 100.57	0.90	0.90	100
100.57 " 101.80	1.23	1.23	100
101.80 " 102.71	0.91	0.61	67
102.71 " 104.38	1.67	1.67	100
104.38 " 105.76	1.38	1.38	100

APPENDIX B

DDH. 22 CENTRAL PROSPECT NORTH
DRILL LOG

180 23

GRID REFERENCE 437900N, 318760E) approx.
 ELEVATION 192.0 metres)
 ANGLE 58°
 DIRECTION N 76° E (true)
 DATE DRILLED 16.1.72 to 19.1.72
 DRILLING RATE 15.11 metres per shift

INTERSECTION (METRES)	DESCRIPTION
0 to 39.62	<p><u>Air Drilling</u></p> <p>Chloritic and carbonaceous slaty sediments.</p>
39.62 to 71.01	<p><u>Diamond Drilling</u></p> <p>Pale to medium grey-green, slightly chloritic slaty carbonaceous (?) siltstone.</p> <p>Few thin ($\leq 2\text{mm.}$) quartz veins, some slightly pyritic. Quartz veins commonly define cleavage planes.</p> <p>Minor disseminated pyrite, commonly in elongate aggregates (generally $\leq 5\text{mm.}$) aligned parallel to cleavage. Few pyrite veins also parallel to cleavage.</p> <p>Minor microfaults in parts (cleavage plane slip).</p> <p>Rare thin (2 cm.) breccia bands consisting of siltstone fragments in white quartz matrix.</p> <p>Shear zone (?) between 60.8 and 61.1 metres represented by extremely fragmental material.</p> <p>Subhedral to euhedral pyrite commonly aligned parallel to bedding. The rocks are fissile, parting readily parallel to the bedding and less readily parallel to the cleavage.</p> <p>Bedding (S) and cleavage (S) dips;</p> <p>S₀ = 40° at 39.9m, S₀ = 45° to 50° at 41.4m, S₀ = 20° to 25° at 42.5m, S₀ = 25° to 35° at 43.3m, S₀ = 15° to 20° at 45.8m, S₀ = 40° to 45° at 45.8m, S₀ = 20° at 47.6m, S₀ = 50° at 46.5m, S₀ = 20° at 48.5m, S₀ = 20° to 25° at 49.4m, S₀ = 20° to 25° at 50.4m, S₀ = 15° to 20° at 51.2m, S₀ = 15° to 20° at 51.9m, S₀ = 15° at 52.9m, S₀ = 20° at 53.8m, S₀ = 15° to 20° at 54.9m, S₀ = 10° at 55.6m, S₀ = 20° to 25° at 56.2m, S₀ = 15° to 20° at 57.2m, S₀ = 20° at 58.0m, S₀ = 20° at 58.9m, S₀ = 20° at 59.9m, S₀ = 20° to 25° at 60.6m, S₀ (?) = 35° at 60.9m, S₀ = 20° to 25° at 63.7m, S₀ = 30° at 64.7m, S₀ = 25° at 65.7m, S₀ = 30° to 35° at 66.8m, S₀ = 25° to 30° at 68.8m.</p>

INTERSECTION (METRES)	DESCRIPTION
71.01 to approx. 74.52 830 68	<p>Similar to the interval 39.62 to 71.01 metres but contains several chloritic, pyritic and chalcopiritic quartz veins and irregular quartzose blebs (\pm chalcopirite) some of which are parallel or sub-parallel to bedding and/or cleavage.</p> <p>One vein (2 to 2.5 cm.) at about 71.4 metres is slightly cavernous and contains white quartz and red hematitic quartz.</p> <p>Phyllitic sheen on cleavage planes.</p> <p>Copper estimated at 0.5 percent Cu.</p>
74.52 to 77.11	<p>Similar to the interval 71.01 to 74.52 metres in the upper half but is pale grey and grey-green and very fragmentary and slightly phyllitic.</p> <p>The basal half consists of sheared, semi-plastic, pyritic, talcose, fragmentary grey and green slaty sediment containing minor chalcopirite.</p> <p>Considerable core loss in parts.</p>
77.11 to approx. 84.90	<p><u>Mineralized Quartzose Zone</u></p> <p>White quartz, highly fragmental in parts, moderately to strongly cavernous in parts, containing numerous extremely irregular and anastomosing incipient fractures which are defined by infillings of pyrite, chlorite (commonly pyritic) and dark brown to black iron-staining. Minor disseminated euhedral pyrite.</p> <p>The interval 78.94 to 81.05 metres is mottled white (quartz) and hard, grey-green, silicified, irregular chloritic sediment fragments containing numerous quartz veins and segregations. Also a few thin (≤ 5 mm.) irregular chloritic "stringers" along incipient fracture planes.</p> <p>The interval 81.05 to 84.90 metres consists of white quartz and mottled white (quartz) and grey, heavily silicified carbonaceous (?) sediments. Moderately cavernous and contains minor blebs, euhedra and stringers of pyrite, and numerous irregular incipient fractures which are commonly filled with pyrite, chlorite or carbonate. Also in this sub-interval are common, thin (≤ 2 mm.) irregular and discontinuous carbonate veinlets and segregations. This interval (81.05 to 84.90 metres) is characterised by the presence of numerous medium and dark brown limonitic fracture planes.</p> <p>Rare small (≤ 1 mm.) blebs of chalcopirite. Copper estimated ≤ 0.5 percent Cu.</p> <p>Rare bands (≤ 5 cm.) of massive pyrite containing traces of chalcopirite.</p>

INTERSECTION (METRES)	DESCRIPTION
<p>84.90 to approx. 99.55</p> <p style="writing-mode: vertical-rl; transform: rotate(180deg);">660 43</p>	<p>Pale to medium green slaty chloritic siltstone and fine grained sandstone.</p> <p>Generally soft to moderately hard but contains an interval of hard, silicified and recrystallized chloritic sediment and pyritic and cavernous quartz veins (≤ 2 cm.) between 88.55 and 88.99 metres.</p> <p>Minor disseminated pyrite.</p> <p>Few pyritic quartz veins (≤ 1 cm.).</p> <p>A band of hard silicified, pyritic chloritic sediment and quartz occurs between about 93.93 and 94.23 metres.</p> <p>Subhedral pyrite (≤ 2 mm.), commonly slightly elongate, are aligned parallel to the cleavage in parts.</p> <p>Bedding is commonly poorly preserved and commonly disrupted by cleavage and microfaults and pre-consolidation slumping. Slightly porous in parts.</p> <p>Rare irregular and discontinuous, slightly pyritic vein-like quartz segregations.</p> <p>Bedding (S_0) and cleavage (S_1) dips; $S_0 = 0^\circ$ to 10°, $S_1 = 45^\circ$ to 55° at 86.1 metres, $S_0 = 0^\circ$ to 10°, $S_1 = 35^\circ$ at 87.2 metres, $S_1 = 35^\circ$ at 89.4 metres, $S_1 = 45^\circ$ to 50° at 90.8 metres, $S_1 = 30^\circ$ to 35° at 92.8 metres, $S_0 = 60^\circ$ at 94.3 metres.</p>
<p>99.55 to 105.76</p>	<p>Pale grey (quartzose) and dark grey to black (carbonaceous and graphitic) graded beds with deformed and irregular bedding planes (slumping?).</p> <p>Minor disseminated pyrite in the pale grey quartzose beds.</p> <p>The quartzose beds, which have a pale green chloritic tinge, are generally finely bedded (≤ 10 mm.) whereas the carbonaceous material is finely laminated (≤ 1 mm.).</p> <p>Bedding (S_0) and cleavage (S_1) dips; $S_0 = 25^\circ$, $S_1 = 55^\circ$ at 100.6 metres, $S_0 = 20^\circ$, $S_0 = 50^\circ$ at 103.4 metres, $S_0 = 25^\circ$, $S_1 = 55^\circ$ to 60° at 105.3 metres.</p> <p>DDH.22 COMPLETED AT A DEPTH OF 105.76 METRES.</p>