APPENDIX B

Ref No. 14791

37 022

DDH.23 MURRAY'S REWARD PROSPECT

DRILL LOG

Grid reference	~~N.A.~~ 434134N, 320146E
Elevation	~~N.A.~~ 205 metres
Angle	65°
Direction	N70°E (true)
Date drilled	21/1/72 to 26/1/72
Drilling rate	18.0 metres per shift

INTERSECTION (METRES)	DESCRIPTION
0 to 24.38	AIR DRILLING Carbonaceous slaty shales.
24.38 to approx. 44.64	DIAMOND DRILLING Pale grey and medium to dark grey slaty carbonaceous siltstone and fine grained sandstone occurring in graded beds. The graded beds consist of pale grey fine grained sandstone (at base) grading up to dark grey, porphyroblastic (leucoxene) carbonaceous siltstone at top. The leucoxene porphyroblasts are commonly elongate to acicular ($\leq$ 1mm) and are commonly aligned parallel to cleavage. Few thin (generally $\leq$ 2mm) quartz veins, commonly slightly chloritic and/or pyritic. Few thicker ($\leq$ 1cm) quartz-chlorite-pyrite veins, slightly to moderately cavernous and with pale lime-green chlorite. Finely to coarsely laminated in parts but generally finely bedded. Few minor microfaults, fragmentary in parts. Minor disseminated euhedral pyrite, most common in the pale grey sandstone. The sandstone has a faint green chloritic tinge in parts. Rare irregular quartz-chlorite, pyrite blebs and segregations, one of which defines a dragfold axial plane at about 30.7 metres. The axial plane dips about 45°. A thin band ($\leq$ 10cm) of medium to dark green chloritic and carbonaceous siltstone containing common euhedral pyrite, rare arsenopyrite(?) and quartz occurs at about 32.3 metres. Bedding (S_o) and cleavage (S_1) dips; S_o = 15° to 20° at 25.9m, 25° at 28.3m, 20° at 30.1m, 10° at 31.3m, 20° at 32.2m, 20° at 33.8m, S_o = 0 to 5°, S_1 = 45° at 35.3m, S_o = 15° to 20° at 36.5m, 20° at 38.3m, 15° at 39.6m, 20° to 25° at 42.4m, 20° at 43.8m.
44.64 to 55.35	Similar to the interval 24.38 to 44.64 metres. Medium to dark grey carbonaceous and graphitic slaty siltstone. Bedding planes less well preserved or absent in parts giving this unit a massive appearance.

APPENDIX "A"

DDH.23 DRILL RUNS AND CORE RECOVERY

INTERSECTION (METRES)	INTERVAL (METRES)	CORE RECOVERY	
		METRES	PER CENT
24.38 to 25.29	0.91	0.46	50
25.29 " 26.51	1.22	1.22	100
26.51 " 27.88	1.37	1.37	100
27.88 " 29.40	1.52	1.52	100
29.40 " 30.01	0.61	0.61	100
30.01 " 32.00	1.99	1.99	100
32.00 " 32.91	0.91	0.91	100
32.91 " 33.52	0.61	0.61	100
33.52 " 34.44	0.92	0.92	100
34.44 " 35.50	1.06	1.06	100
35.50 " 35.80	0.30	0.30	100
35.80 " 36.58	0.76	0.76	100
36.58 " 37.19	0.61	0.61	100
37.19 " 38.10	0.91	0.91	100
38.10 " 38.71	0.61	0.61	100
38.71 " 39.93	1.22	1.22	100
39.93 " 41.14	1.21	1.21	100
41.14 " 42.51	1.37	1.37	100
42.51 " 43.27	0.76	0.76	100
43.27 " 44.64	1.37	1.37	100
44.64 " 45.86	1.22	1.22	100
45.86 " 49.00	3.14	3.14	100
49.00 " 49.99	0.99	0.99	100
49.99 " 51.51	1.52	1.52	100
51.51 " 53.11	1.60	1.60	100
53.11 " 53.72	0.61	0.61	100
53.72 " 55.55	1.83	1.83	100
55.55 " 56.99	1.44	0.96	67
56.99 " 57.75	0.76	0.53	70
57.75 " 59.12	1.37	1.14	83
59.12 " 59.88	0.76	0.25	33
59.88 " 60.49	0.61	0.61	100
60.49 " 60.81	0.32	0.23	72
60.81 " 61.34	0.53	0.28	53
61.34 " 61.64	0.30	0.03	10
61.64 " 62.02	0.38	0.28	74
62.02 " 62.33	0.31	0.18	58
62.33 " 63.09	0.76	0.02	3

The bedding and lamination plans are more common towards the base and graded bedding consisting of pale to medium grey and dark grey to black carbonaceous and graphitic porphyroblastic siltstone occurs towards base.

At about 48.2 metres is a 12cm band of thin ($\leq$2mm) sub-parallel veinlets of medium brown carbonate-pyrite-chlorite.

At about 51.6 metres is an irregular and discontinuous vein-like quartz segregation ($\leq$ 1cm) containing sporadic euhedral pyrite and arsenopyrite(?)

At about 52.1 metres is a 5cm band of pitted and slightly cavernous quartz-chlorite-pyrite which dips about 40°.

At about 53.7 metres is a white and slightly cavernous quartz fracture filling (10 to 15cm) containing minor coarse ($\leq$ 5mm) euhedral pyrite, chalcopyrite and pale lime-green chlorite and dark grey to black carbonaceous and graphitic siltstone fragments.

Minor disseminated pyrite. Minor thin ($\leq$ 5mm) quartz veins.

Bedding (S_0) and cleavage (S_1) dips; S_1 (cleavage and quartz veins) 30° at 46.3m, S_1 (cleavage and quartz veins) 40° at 48.8m. $S_0 = S_1 = 30°$ to 35° at 50.8 metres, $S_0 = 25°$ to 30° at 52.5m, $S_0 = 25°$, $S_1 = 45°$ at 53.0m, $S_0 = 15°$ to 20° at 53.5m, $S_1 = 35°$ to 40° at 54.6m.

55.35 to approx. 56.99 — Medium grey-green, slightly chloritic and carbonaceous, slaty siltstone/fine sandstone with common chlorite porphyroblasts and minor fine grained ($<$ 1mm) disseminated pyrite.

Few irregular pyritic quartz veins and veinlets ($\leq$2mm).

The basal 30cm is pale grey-green, finer-grained and phyllitic.

$S_0 = S_1 = 30°$.

56.99 to approx. 59.12 — Banded white quartz and green chlorite and chloritic sediments. The individual bands, which dip about 40 to 50°, are commonly irregular and discontinuous.

This unit contains common fine grained ($\leq$ 1mm) pyrite and minor chalcopyrite which occurs as small blebs ($\leq$2mm) within the quartz or as short discontinuous stringers along fractures in the quartz or along quartz/chloritic material boundaries.

Few thicker ($\leq$ 8cm) cavernous quartz bands.

Copper estimated $\leq$0.5% Cu.

59.12 to 60.49 — MINERALIZED QUARTZ ZONE

White quartz slightly pitted and cavernous, containing abundant (20 to 25%) sulphides (pyrite and chalcopyrite).

3% Cu	The chalcopyrite occurs as very irregular blebs, commonly connected by thin stringers, and in intimate association with pyrite. The chalcopyrite also occurs as irregular stringers filling incipient fractures in the quartz. The basal 25cm contains much less pyrite than the top 1.1 metres and contains minor amounts of grey and pale brown weathered carbonate. The sulphides are crudely banded in parts with a dip of about 35°. Considerable core loss. Copper estimated 4 to 5% Cu.
50.49 to approx. 60.81	Similar to the interval 56.99 to 59.12 metres. Rare disseminated chalcopyrite. Bedding dips 40° to 45°. Copper estimated 0.1 to 0.25% Cu.
60.8[illegible] to 63.09	Medium to dark grey-green chloritic and carbonaceous slate. Few fragments of caved quartz - caution contamination.
	DDH.23 ABANDONED AT 63.09 METRES.

INTERSECTION (METRES)	INTERVAL (METRES)	SAMPLE NO. BAL	ASSAY VALUE ppm/% Cu
51.51 to 53.11	1.60	1696	108 ppm
53.11 " 55.35	2.24	1697	183
55.35 " 56.99	1.64	1698	45
56.99 " 59.12	2.13	1699	0.41%
59.12 " 60.49	1.37	1700	5.07
60.49 " 60.81	0.32	1701	8400 ppm
60.81 " 63.09	2.28	1702	53

The interval 56.99 to 60.81 metres contains an average of 2.1% Cu over an estimated true thickness of about 3.1 metres although by far the greatest proportion (> 85%) of the copper is concentrated within the 1.1 metre (estimated true thickness) interval between 59.12 and 60.49 metres, this interval assaying 5.07% Cu with a core recovery of 63%.

4. CONCLUSION

DDH 23 on the southern side of Tin Creek, proved a southern continuation of the Central-Murray's Reward Prospects mineralized zone which has now been shown to extend some 1100 metres along strike between DDH 22 and DDH 23 and which is apparently open at both ends.

M.H. McINTYRE

MARCH, 1972

AUSTRALIAN CONSOLIDATED INDUSTRIES LIMITED

MINERAL RESOURCES DIVISION

TASMANIAN EXPLORATION, EL.16/68, BALFOUR

REPORT ON DDH 23, MURRAY'S REWARD PROSPECT

8/ 042

SUMMARY

DDH.23, the southernmost drillhole on Murray's Reward Prospect, was successfully completed at a depth of 63.09 metres.

A chalcopyritic, quartzose and chloritic zone was intersected between 56.99 and 60.81 metres, this interval averaging 2.1% Cu over an estimated true thickness of 3.1 metres. The bulk of the chalcopyrite occurs within pyritic quartz between 59.12 and 60.49 metres, this interval assaying 5.07% Cu, 13.52 dwt per ton Ag and <0.05 dwt per ton Au, over an estimated true thickness of 1.1 metres. The mineralized zone dips about 70° towards the west, and occurs between a hanging wall of chloritic and carbonaceous slaty siltstone and a footwall of chloritic and carbonaceous slate.

Appreciable core loss (core recovery 59%) below 55.55 metres has obscured the boundary between the mineralized zone (apparent core recovery 72%) and the footwall (apparent core recovery 35%), and the reported grade and thickness of the mineralized zone must be considered as approximations only.

Drilling costs for DDH 23 were about $1,739 excluding the cost of mud, cement and additives.

DDH.23, MURRAY'S REWARD PROSPECT

Grid reference	434134 N 320114 E
Elevation	~~Not available~~ 205 metres
Angle	65°
Bearing	N 70° E (true)
Date drilled	21/1/72 to 26.1.72
Drilling rate	18.0 metres per drilling shift
Air drilling	0 to 24.38 metres
Diamond drilling	24.38 to 63.09 metres.

1. OPERATIONAL DETAILS

1.1. Drilling details

Drilling of DDH 23 commenced on January 21, 1972 ~~and~~ HW casing was seated at 1.5 metres and the drillhole continued with the air mast.

Technical problems with the hammer and severe sludging of the hole forced a halt to the air drilling at about 24.38 metres.

It was intended that the drillhole be cased with NW casing and the hole continued with NQWL diamond coring equipment but difficulty was experienced in running the NW casing which was reamed down to 18.3 metres. At this depth, however, the casing snapped about 12.2 metres down the hole and fishing attempts were unsuccessful. An NW casing tap was not available on site.

The drillhole was then cased off with 24.38 metres of BW casing and the hole continued with BQWL diamond coring equipment with a triple-tube core barrel.

Diamond drilling continued satisfactorily to about 55.5 metres but core recovery between 55.5 and 63.1 metres was low and unsatisfactory.

At 63.09 metres, the hole collapsed and mud was used in an unsuccessful attempt to lift the sludge from the bottom of the hole. The hole was then cemented but the cement failed to penetrate the loose material at the bottom of the hole which again collapsed and was abandoned.

A final attempt at fishing for the NW casing was unsuccessful and 6.1 metres of casing, together with an NW casing shoe, was abandoned down the hole.

1.2. Drilling conditions

Drill runs and core recovery are tabulated in Appendix A.

Air drilling progress was hindered by slight collapse of the hole wall and subsequent heavy sludging at the bottom of the hole. Running of the NW casing was also made difficult by irregularities in the hole.

Diamond drilling advanced satisfactorily to about 55.5 metres and, although drill runs were generally short, core recovery was satisfactory and was almost invariably 100%.

Below about 55.5 metres, core recovery was deleteriously affected by soft and broken ground and between 55.55 metres and the bottom of the hole at 63.09 metres core recovery averaged only 49%.

Core recovery in the mineralized zone between 56.99 and 60.81 metres averaged 72% but the interval 59.12 to 60.49 metres, which represents the high grade mineralized zone, averaged only 63% and the true grade and thickness of this zone is therefore not accurately known.

The cause of the poor core recovery in the mineralized zone is probably related to leaching of sulphides (and carbonate?) and fracturing of the quartz.

1.3. Drillhole deviation

The results of the acid etch inclination surveys were as follows:-

Collar	65°
30 metres	61.5°
60 metres	55°

2. GEOLOGY

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

AIR DRILLING

0 to 24.38 metres

Carbonaceous slate and siltstone.

DIAMOND DRILLING

24.38 to 44.64 metres

Pale grey and medium to dark grey slaty carbonaceous siltstone and fine sandstone in graded beds. Elongate to acicular leucoxene porphyroblasts occur in the dark carbonaceous siltstone. Minor disseminated euhedral pyrite. Rare irregular quartz-chlorite-pyrite blebs or segregations.

44.64 to 55.35 metres

Similar to the interval 24.38 to 44.64 metres. Consists dominantly of medium to dark grey carbonaceous and graphitic slaty siltstone which is apparently massive with bedding planes poorly preserved.

Few irregular pyritic quartz veins and segregations. Minor chalcopyrite occurs in a quartzose fracture filling at about 53.7 metres.

55.35 to 56.99 metres

Medium grey-green slaty, slightly chloritic and carbonaceous siltstone and fine grained sandstone with common chlorite porphyroblasts and minor fine grained disseminated pyrite.

56.99 to 59.12 metres

MINERALIZED QUARTZOSE AND CHLORITIC ZONE

Banded, white quartz and green chloritic phyllite and sediments containing common fine grained pyrite and sporadic chalcopyrite.

59.12 to 60.49 metres

MINERALIZED QUARTZ ZONE

White quartz, slightly pitted and cavernous, containing common pyrite and chalcopyrite which are crudely banded in parts.

60.49 to 60.81 metres

MINERALIZED QUARTZ AND CHLORITE ZONE

Similar to the interval 56.99 to 59.12 metres.

60.81 to 63.09 metres

Medium to dark grey-green chloritic and carbonaceous slate.

3. SAMPLES AND ASSAYS

Seven core samples from DDH 23 were collected from between 51.51 and 63.09 metres.

In any interpretation of the assay results, the considerable core loss occurring below about 55.55 metres should be taken into consideration.

The assay results were:-