/IL MINING CORPORATION LIMITE

MEMORANDUM

000735

TO: W. Krats FROM: P. M. Pettigrew

SUBJECT: COPPER IN FARO ZONES 1 - 3 DATE: April 11, 1973

Introduction:

A report by P. Dyas ("Production of a Copper Concentrate from the Anvil Ore") dated 20/1/73 assumes 0.17% Cu will be available fairly continuously for an indefinite period - possibly the life of the mine. There has been no evidence compiled to support or contradict this.

The present report is an attempt to sketch in some idea as to the apparent distribution and likely reliability of prediction of Cu values in Zones 1 to 3.

Summary:

Zones 1 - 3 were examined in terms of Cu values and in particular in terms of 5' diamond drill core increments with Cu $\geqslant$ 0.2%. It was found that Zone 1 has quite considerable amounts of high Cu ($\geqslant$ 0.2%), but that these values are not entirely correlatable to Pb, Zn or Pb + Zn values. Zone 3 contains some high Cu but this is very localized. Zone 2 appears to contain little, if any worthwhile Cu.

Cu values generally seem to be as reliably predicted as are (Pb + Zn) values.

The massive pyrite in Zone 1 contains approximately 900,000 tons of 0.30% Cu with estimated values of 1.5% Pb and 2.0% Zn. This could amount to a gross value of $1.6 million @ 66% recovery and $0.45/lb. for Cu. Any Pb and Zn produced from this material would enhance its value.

Some alternatives are suggested for stockpiling and/or mining rather than wasting this material.

CURRAGH RESOURCES INC.

Diamond Drill Core Log

DDH 87F-10 (2 — 8)

Date: Dec 14/87 Logged By: SBC

Code	Drillhole	Elevation	Northing	Easting	Units (feet/metres)	R.F.E.	
	2 — 8	10 — 16	17 — 24	25 — 32	34 — 39	41 42	
T	87F-10	3834.49	81 52.82	15 144.71	FEET	S2	

Code	Drillhole	Depth	Zenith Angle	True Azimuth	Comments
	2 — 8	10 — 14	22 — 26	28 — 32	34 — 56
R	87F-10	000	177.0	225.0	AT COLLAR
R	87F-10	395.0	178.0	192.0	SPERRY SUN
R					
R					
R					
R					
R					
R					
R					
R					
R					
R					
R					
R					
R					
R					
R					
R					
R					
R					
R					
R					
R					
R					
R					
R					

Code	Drillhole	Comments, Errant Remarks, Snivellings and / or Lewd Suggestions
	2 — 8	10 — 56

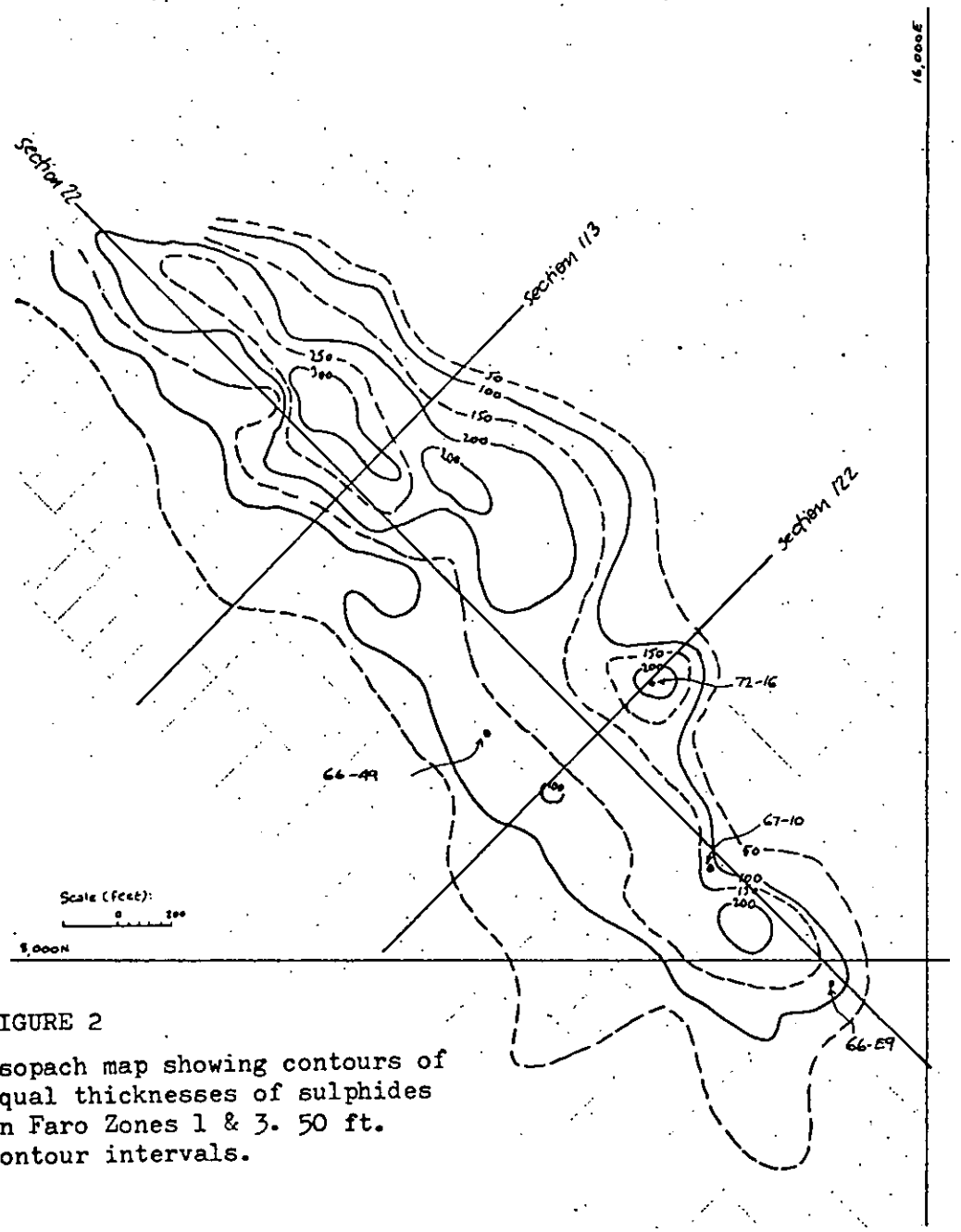


FIGURE 2

Isopach map showing contours of equal thicknesses of sulphides in Faro Zones 1 & 3. 50 ft. contour intervals.

The following points can be made:

(i) Values appear to be quite independent of Pb, Zn and Pb + Zn. Thus there are very high ($\geq$ 0.3% Cu) values in the massive pyrite zone as well as low values (< 0.1%). The same can be observed in high grade ore zones.

(ii) For the present Cu values should not deviate significantly from the present average ($< 0.2\%$). Within the next two years Cu values should climb to 0.2% and quite possibly to values $> 0.2\%$ depending on the role Zone 2 plays in the mill feed at that time (See iv below).

(iii) A major part of Zone 3 is extremely erratic in its Cu distribution. Only three localized highs occur: In the vicinity of holes 66-49 and 72-16 and within the extreme south end of the zone with a long axis defined by holes 66-E9 and 67-10.

The Cu in hole 72-16 is largely associated with very low Pb + Zn values, that in 66-49 is associated with good Pb + Zn values. The southernmost Cu-high is fairly close to surface (unlike that at 66-49) but is of rather low Pb + Zn value, although it is very probably ore-grade.

(iv) There is little or no Cu in Zone 2.

2. Reliability of Cu Grade Predictions:

In order to obtain some idea of the reliability of predictions and continuity of Cu values, blast hole data from the 3910 bench were examined in terms of Cu assays. As far as these were available (from July 1972) they were collated on a plan and contoured in terms of areas containing $< 0.1\%$, $\geqslant 0.1\%$, $\geqslant 0.2\%$ Cu respectively. Figure 3 is a sketch showing the results of this. Also shown are the D.D.H. Cu assays and the tonnage block outlines.

Inspection of the sketch suggests that the Cu values are fairly continuous in broad zones and that the tonnage predicted in the three categories was quite close to that experienced. If anything, there appears to be a slight gain as there was much less $< 0.1\%$ Cu experienced than that predicted.

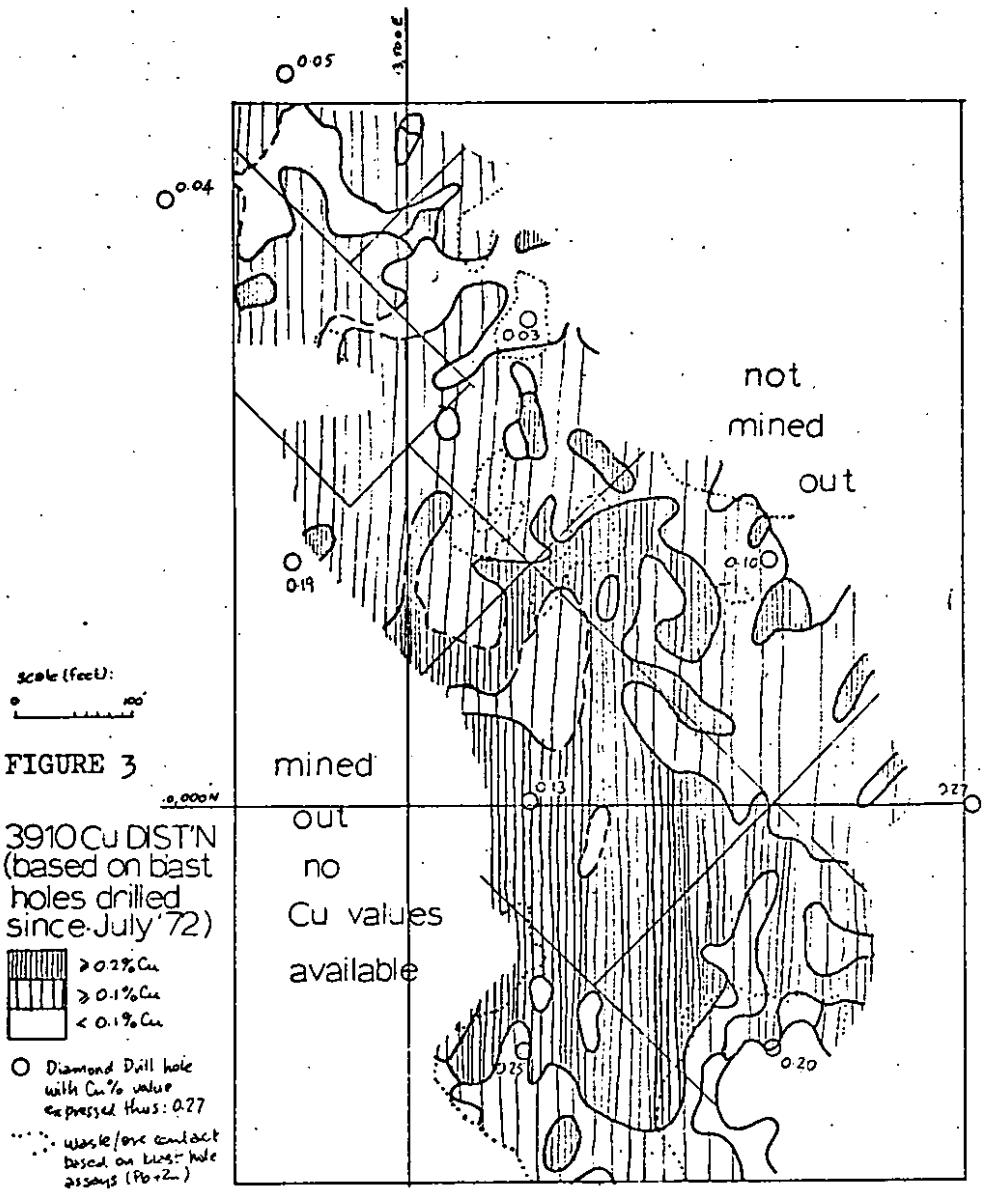
Both these observations suggest as good a reliability of prediction of Cu % as there is of (Pb + Zn)%.

Two further observations seem valid:

(i) The trend of Cu-zone-boundaries seems to be somewhat discordant to the boundaries of the observed (Pb + Zn) zones.

(ii) Cu values do not follow the ore/waste contact (as experienced in blast holes) altogether rigidly.

This serves to emphasize the point made in I (i) above.



3. Cu Values in the Massive Pyrite Zone:

Mention has been made in 2 (ii) that waste (i.e. material assaying (for 40') less than 5% Pb + Zn) sometimes contains anomalous Cu values. This is presently of little significance though mention of Cu in the massive pyrite zone is of some interest.

A simple straight line correlation of $\geqslant$0.2% Cu values for the cross-sections was carried out and this data was then converted into ½ bench outlines contouring areas containing $\geqslant$ 20 ft. of $\geqslant$ 0.2% Cu in 5' increments. The outlines were drawn onto copies of the recently developed bench plans for 3830 to 3590 benches in Zone 1.

There is an overlap of Cu onto the massive pyrite zone in these bench plans. Thus in some cases around 50-75% of the high-Cu is in the ore zone as presently defined and the balance is within the massive pyrite.

An estimate of the amount of this high-Cu massive pyrite suggests around 900,000 tons of 0.30% Cu. Because of the method employed in the tonnage and grade estimate it is difficult to easily obtain Pb and Zn values without reworking a considerable amount of data. However, the writer would conservatively estimate values of 1.5% Pb and 2.0% Zn for this material. This estimate is very likely a trifle low.

Below is a summary per bench of the tonnages and Cu % predicted within these portions of the massive pyrite.

Bench	Tonnage	Cu %
3830	66,898	0.37
3790	212,942	0.29
3750	322,239	0.25
3710	146,986	0.37
3670	39,573	0.33
3630	54,649	0.29
3590	52,764	0.32
Total	896,051	0.30

No attempt has been made at assessing the Cu values within the ore zone as it is felt that this should be done when the ore reserves are put into a computer format.

From a conversation with P. Dyas, it seems that a 66% Cu recovery can reasonably be expected. Thus the 900,000 tons of Cu-high massive pyrite would have a gross value of $1.6 million assuming a price of $0.45/lb. for copper.

Conclusions:

(a) Copper values can be as reliably predicted as (Pb + Zn) values. They should be incorporated into the ore reserve figures as they will be economically significant in some phases of the mining sequence.

(b) Pb + Zn + Cu values should be compiled for studies to determine stripping ratios, especially in the region of D.D.H. 66-49.

(c) High-Cu massive pyrite should be stockpiled. This copper ore could then be blended with low-Cu Pb/Zn ore or left until the end of the mine's life. Some consideration could be given to bacterial leaching (part-time, due to the Arctic winter).

(d) The Metallurgical Department should be made aware of any possible fluctuations in Cu content in the mill feed within the context of mining sequences post-dating the installation of a Cu circuit in the mill. This is dependent on (b).

P.M. Pettigrew

P. M. Pettigrew
Geologist

PMP/mm

cc. D. Philip