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*T.O.*

006491

CURRAGH RESOURCES INC

INTER-OFFICE MEMORANDUM

FARO OFFICE

DATE: December 17, 1990

TO: WM.W. DUNN  
CHIEF ENGINEER

FROM: DAVE TENNEY  
CHIEF GEOLOGIST

SUBJECT: VANGORDA MILL TEST OF NON REFRACTORY ORE  
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The 50,000 + tonnes of Vangorda non-refractory ore sent to the crusher during the first half of December came from the 1134-GG, 1134-HH and 1134-II blasts. It was sorted by geologists and grade control technicians by visual methods, generally after a significant amount of dozer work. The following were dozed as carefully as possible:

*Visual inspection was to be for fine granitic sands*

1) Refractory ore and rubble showing clear evidence of oxidation and leaching was scalped from on top of non-refractory ore.

A trench was dozed on the hanging wall contact of the refractory ore usually in phyllite.

3) The contact between the footwall of the refractory and the hanging wall of the non refractory ore was flagged based on visual inspection.

4) Additional information used includes:

a) plans showing distribution of oxide ore according to diamond drill holes.

b) results of metallurgical float tests on samples of broken ore taken from the blast (these are considered reliable)

c) results of metallurgical float tests on samples of blast hole chippings (considered unreliable because blastholes are all wet and easily soluble copper will have gone into solution).

*These are to be confirmed As discussed these may not be the right test agreed*

Oxide Ore:

*I don't understand  
the terms - are we concerned  
with oxide, or soluble copper?*

Estimates of oxide refractory ore based upon the diamond drill hole logs vary from approximately 700,000 to 900,000 tonnes for the total pit depending on the calculation method. However, these numbers are considered to be at the maximum end of the likely range as not all ore within the calculated envelope was oxidized. This conclusion was supported by evidence from the 1134-HH blast where part of the blast expected to be oxidized and refractory (based on diamond drill log information) turned out to be relatively unoxidized and was judged to be non refractory by visual inspection. A calculation of oxidized (i.e. refractory) ore by bench is attached. It amounts to (a probable maximum of ) 15% of the Vangorda ore reserves. To date over 450,000 tonnes of refractory ore have been stockpiled.

Mill Test/ Monday, December 10

The material milled during this early part of the test came from the Vangorda 1134-GG blast, and was similar in character to nearby metallurgical test sample V90DT-12 which gave good floatation results.

Screen Test of Refractory Ore:

Products from the initial screening plant run of Vangorda refractory ore were inspected December 13. The oversize +3/4" - 5" product looks largely clean and non refractory. The +5" material contains a few lumps of frozen ground which will include some (refractory) fines.

*D. Tenney*  
Dave Tenney  
Chief Geologist

DT:cc

- cc: D. Basso
- E. Beaumont
- J. Hendry
- G. Jilson
- G. Wilson

## 6 METER BENCH - REFRACTORY ORE TONNAGES AND GRADE ACCORDING TO THE V9009 BLOCK MODEL

-Block Model Tonnages are Geological Reserves With No Dilution or Mining Loss.

-Refractory Tonnages were Determined From a Contoured Oxidation Surface. (derived From 1990,88,87 DDH)

-Van25a Pit Design By J. Hendry & G. Vos.

-Refractory Ore Calculations Only Done For Baritic Ore With No Cut Off.

BENCH	VOLUME t/bcm	TONNAGE tonnes	%Pb+Zn	%Pb	%Zn	Ag g/t	Au g/t	TOTAL ORE TONNAGE (Good+Bad Ore)	% REFRACTORY ORE
1146	14,920	59,440	11.03	5.16	5.87	65.95	1.04	68,900	86
1140	54,140	215,030	10.05	4.63	5.42	62.23	0.90	292,190	74
1134	61,360	245,280	9.71	4.68	5.03	58.34	0.89	534,870	46
1128	21,800	88,590	10.06	4.82	5.24	51.05	0.67	437,150	20
1122	18,450	75,950	10.38	5.05	5.32	60.12	0.75	313,600	24
1116	16,700	67,430	10.50	4.79	5.71	58.19	0.63	285,710	24
1110	7,710	31,500	10.51	4.74	5.76	59.53	0.76	311,060	10
TOTALS	195,080	783,220	10.11	4.77	5.34	59.37	0.84	2,243,480	35 % of top 7 Bchs

Total Percent of Refractory Baritic Ore In Vangorda Pit

15 %

*This information is based on  
unadjusted block model estimates,  
and does not represent the ore that  
we expect to be produced by the  
mining operations*