MINERALOGICAL EXAMINATION

of Grum Project testwork products

submitted on behalf of

CURRAGH RESOURCES

Project No. L.R. 3733

NOTE:

This report refers to the samples as received.

LAKEFIELD RESEARCH
A DIVISION OF FALCONBRIDGE LIMITED
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INTRODUCTION

Two Grum Project rougher concentrates were received in the Mineralogy laboratory on behalf of Curragh Resources. The concentrates were identified as:

1. Test 3733 - F3 Pb Rougher Concentrate
2. Test 3733 - F3 Zn Rougher Concentrate

and were submitted for identification of the constituent mineral species and the degree of liberation of each species.

SUMMARY

The two products contained similar minerals but in different amount.

The major features common to both products were the high percentage of pyrite plus the apparently high percentage of liberated pyrite; the relatively small average grain-size of the galena inclusions/attachments associated with pyrite and sphalerite.

Other minerals present in both products were silica/silicate, chalcopyrite, marcasite, pyrrhotite and marcasite.

2. TEST 3373 - F3 : Zn Rougher Concentrate

Mineral	Estimated Wt. %	Grain Size (µm) Range	Average (75%)
Pyrite	55	20 - 150	40 - 70
Sphalerite	30	15 - 140	25 - 40
Galena	2	5 - 35	<20
Gangue	5	10 - 110	20 - 100
Pyrrhotite	3	30 - 50	40
Chalcopyrite	2	15 - 50	<30
Marcasite	3	50 - 70	50

Weight Percent Distribution by Mineral Association

Mineral	Weight % Distribution Associate Mineral						
	py	sl	gl	ga	po	cp	ma
Pyrite	65	25	2	2	1	1	4
Sphalerite	20	75	1	2	1	-	1
Galena	35	60	-	5	-	-	-
Gangue	20	60	-	20	-	-	-
Pyrrhotite	90	-	-	-	10	-	-
Chalcopyrite	30	-	-	-	-	70	-
Marcasite	-	15	-	5	-	-	80

The tabulations on mineral associations show the necessity for finer grinding and regrinding. The particle size for sphalerite associated with galena in the Pb Ro Conc ranged downwards from 80 micrometers with the average size for the zinc mineral between 30 and 60 micrometers. However, the problem here is with the galena present on and as inclusions in sphalerite which measured 20 micrometers and smaller. This galena will not liberate readily therefore the associated sphalerite will report in the lead concentrates.

Sphalerite middlings in the zinc rougher tailing most commonly were of sphalerite and pyrite. This sphalerite measured 20 micrometers and smaller. Liberation of this sphalerite will require a fine regrind which might be uneconomical.

PREPARATION AND PROCEDURE

A portion of each rougher concentrate was briquetted and polished for microscopic examination using reflected light microscopy.

RESULTS

The estimated composition, particle size and weight percent distribution by mineral association of each minral are tabulated below.

1. TEST 3373 - F3 : Pb Rougher Concentrate

Mineral	Estimated Wt. %	Grain Size (µm) Range	Average (75%)
Pyrite	43	20 - 120	40 - 70
Sphalerite	25	10 - 120	25 - 40
Galena	20	100	<30
Gangue	10	10 - 120	20 - 100
Pyrrhotite	<1	100	100
Chalcopyrite	<1	35	20 -30
Marcasite	1	65	55

Weight Percent Distribution by Mineral Association

Mineral	Weight % Distribution Associate Mineral						
	py	sl	gl	ga	po	cp	ma
Pyrite	45	25	25	5	-	-	-
Sphalerite	5	15	70	5	2	3	-
Galena	10	52	30	5	1	1	1
Gangue	10	10	20	60	-	-	-
Pyrrhotite	-	10	90	-	-	-	-
Chalcopyrite	-	-	10	-	-	60	-
Marcasite	-	-	-	20	-	-	80