

## OPTIONS

007223

1. ZnSO<sub>4</sub> ROUTE - DEPRESSANTCONSEQUENCES

- A. COSTLY
- B. MONTH 90 MT ZnSO<sub>4</sub> \$500,000  
420 MT NaCN
- C. EXTEND Pb ROUGHER TIME
- D. POTENTIAL PROBLEMS REACTIVATING ZINC
- E. ENVIRONMENTAL
- F. LOGISTICS / DELIVERIES.

2. "TIME" ROUTE - DELIBERATELY  
FLOAT ZINC IN Pb ROUGHERS  
PUMP TO ZINC CIRCUIT

- A. FLOAT TIME REQUIRES CONSTANT  
SUPERVISION FOR CUT-OFF  
POINT Zn FLOAT - Pb FLOAT
- B. ITS A CIRCUIT CHANGE
- C. "CAP" HAS TO BE TREATED SEPARATE
- D. CIRCUIT CHANGE WHEN ORE CHANGES

3. Pb DEPRESSION ROUTE - DICHROMATE

- A. MAKE BULK FLOAT FIRST. DEPRESS Pb  
WITH DICHROMATE.
- B. MAJOR CIRCUIT CHANGES.

4. BLENDING FERR. VANGORDA

- A. NOT A GOOD OPTION. GIVES BULK  
CONCENTRATE.
- B. TRY 90:10 LAB FLOAT.
- C. POTENTIAL COSTLY MINING ADJUSTMENTS.

5. BULK FLOAT -

- A. MARKETING CONSEQUENCE LOOKS  
POOR.

6. IDENTIFY COMMON FACTOR

- A. SIMPLE LAB FLOAT - VISUAL GUIDE GOOD/  
POOR AREAS
- B. STOCKPILE ALREADY MIXED / "CONTAMINATED"

AND SEPARATE ORE BEFORE

MILL

- C. LAKEFIELD CONTINUES PROCESS ROUTE  
INVESTIGATION IN PARALLEL.

E.G. Cu MINERALISATION AND CYANIDE

Pb/Zn RATIO

PbO CONTENT. ETC.

- D. IDENTIFY SIZE/TONNAGE OF PROBLEM  
ZONES
- E. EXAMINE MINING CONSEQUENCES.

SAMPLE	TEST No.	TEST SYNOPSIS	RESPONSE
O3 = First SAMPLE OF COMPETENT ROCK Pb 8.22g } Zn 6.52 } 14.74 Fe 11.62 Cu 0.6 Ag 20g/t V90PL-01	L1 & L9	2 x STD. TESTS 2 x HIGH CYANIDE 5 x ZINC PREFLOATS - DELIBERATE TRY DEPRESSANT TRY COARSE GRIND TRY FINE GRIND	BULK CONCENTRATE LOW Pb RECOVERY ZINC FLOATS EARLY
O8 MIDDLE OF STOCKPILE RAYS "GOOD" SAMPLE V90DT-12	L10 - L13	NORMAL TREATMENT/FLOAT EXTRA COLLECTOR + FLOAT TIME ZNSO <sub>4</sub> DEPRESSANT	4.5% Pb RECOVERY POOR BULK 35% Pb Grade 75% Pb. Re Ro Conc ZN FLOAT NOT TESTED
FA20: VANGOROA 1:1	L14 - L16	NORMAL FLOAT SUBSTITUTE LIME FOR SOOA ASH INCREASE REFINO DEPRESSANT	MIXING SPOILS FARO BULK FLOAT HIGH ZN IN Pb
DRILL CORE V90PL-09	L17	LAKEFIELD CONDITIONS	O.K. ZINC Ro FLOAT ALSO DONE
MORE 1:1	L18	MORE + DIFFERENT DEPRESSANTS	BULK
	L19	LITTLE CYANIDE IN FLOAT 25g/t	91% ZN REC. IN Pb NOTE
	L20	MIX ALL DEPRESSANTS	BULK
	L21	15 MINUTES AERATION - SERGE	RATE OF ZN FLOAT INCREASED
	L22	4 " " " + DEPRESSANTS	STILL BULK
	L23	MAKE BULK CONCENTRATE THEN TRY DEPRESSING Pb WITH DICHROMATE	WORKED (ZINC FLOAT RESULTS ONLY)
	L24	TRY CuSO <sub>4</sub> TO REACTIVATE ZINC IN Pb TAILINGS	NO ADDITIONAL ZN FLOATED NO SAMPLE ASSAYED ALL ZN ALREADY IN Pb CONCENTRATE
O8 AGAIN (PURE)	L25	MAKE BULK TRY AGAIN TO DEPRESS ZN LOTS DEPRESSANT	50.4% Pb 17.9% ZN CONCENTRATE
	L26	3 MINS ZINC FLOAT FIRST - CAN PLANT SEND THIS TO ZINC CIRCUIT?	REQUIRES ADDITIONAL COLLECTORS + EXTRA Pb SCAVENGING TIME LAB. Ro FLOAT ONLY. [TIME ROUTE]
	L27	LOTS DEPRESSANT TRIED REACTIVATING ZN IN Pb TAIL	Pb Ro Conc. 21.3% Pb 23.1% ZN NO SUCCESS

BULK ROUTE - FOLLOW L23 OR L25

SELECTIVE FLOAT - FOLLOW L26 "TIME ROUTE"

G. Wilson  
30/10/90

## IMMEDIATE LAKEFIELD TESTWORK

1. MODIFIED SD200 (NACN DISSOLVES COPPER MINERALS  
(Cu MINERAL THEORY - Cu / HEAVY METALS COAT ZINC)  
AND PROMOTE ZINC FLOTATION)

2. SEPARATE COMPOSITE FLOAT - REMOVE SAMPLES FROM TOP 6 METRES - FLOAT THE  
REMAINDER

- SEE SERGES LATEST LABORATORY TESTWORK DELIVERED  
TO FARD 29/10/90.

3. NEW DEPRESSANT SUITES.

NOTE ALL OF LAKEFIELD UNGORBA TESTWORK SHOWED HIGH  
ZINC IN Pb ROUGHERS.  
SEPARATION WAS DONE IN Pb CLEANERS.  
HENCE 4TH STAGE CLEANING  
(POSSIBLE CHANGED PLANT BOTTLENECKS).

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30/10/90

## IMMEDIATE FARO TESTWORK

1. CONFIRMATION FLOAT POOR RESULTS OLD COMPETENT ROCK SAMPLE 03.
2. NEWEST SAMPLE - VISUALLY FLOATS WELL - A. FARO REAGENT SUITE  $\frac{1}{2}$  STRENGTH 30/10/90  
B. NaCN/S0200 30/10/90
3. SAMPLE 08 - DON'T ADD NaCN UNTIL REGRIND 31/10/90 (COPPER CONTAMINATION THEORY)
4. BLEND FARO: VANGOROA 90:10
5. SIMPLE LAB FLOATS FOR VISUAL GUIDE - 6 SAMPLES EX GEOLOGY NOON 31/10/90  
i.e. DEVELOP "STANDARD METHOD"  
FOR FARO DETERMINATION OF ZONE TYPE GOOD/BAO  
SET UP A "PRODUCTION UNIT"  
- QUICK TURN AROUND ANALYSIS REQUIRED.
6. IDENTIFY POSSIBLE OTHER COMMON FACTORS  
e.g. PbO Zn: ~~Pb~~ Soluble Cu, secondary Cu