

OPTIONS

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30/10/90

006492

CONSEQUENCES

1. Zn Solution Route - DEPRESSANT

- A. COSTLY
- B. MONTH 90 MT ZNSO₄ \$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. IT'S 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. VANGOROA

- 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

AND SEPARATE ORE BEFORE

MILL

E.G. Cu MINERALISATION AND CYANIDE

Pb/Zn RATIO

PbO CONTENT. ETC.

- A. SIMPLE LAB FLOAT - VISUAL GUIDE GOOD/POOR AREAS
- B. STOCKPILE ALREADY MIXED / "CONTAMINATED"
- C. LAKEFIELD CONTINUS PROCESS ROUTE INVESTIGATION IN PARALLEL.
- D. IDENTIFY SIZE/TONNAGE OF PROBLEM ZONES
- E. EXAMINE MINING CONSEQUENCIES.

| SAMPLE | TEST No. | TEST SYNOPSIS | RESPONSE |
|---|-----------|---|---|
| O3 = FIRST SAMPLE OF COMPACTANT ROCK Pb 8.22% } 14.74 Zn 6.52 } Fe 11.62 Cu 0.6 Ag 20g/t | L1 to 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 | L10 - L13 | NORMAL TREATMENT/FLOAT EXTRA COLLECTOR + FLOAT TIME ZNSO4 DEPRESSANT | 4.5% Pb RECOVERY POOR - BULK 35% Pb Grade 75% Pb-RE Ro Conc. ZN FLOAT NOT TESTED |
| FARO: VANGOROA 1:1 | L14 - L16 | NORMAL FLOAT SUBSTITUTE LIME FOR SODA ASH INCREASE REFINO DEPRESSANT | MIXING SPOILS FARO BULK FLOAT HIGH ZN IN Pb |
| DRILL CORE | 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 CuSO4 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% 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"

IMMEDIATE LAKEFIELD TESTWORK

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30/10/90

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 FARO 29/10/90.

3. NEW DEPRESSANT SUITES.

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

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/BAD
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