

MEMORANDUMTO: W. KRATSFROM: J. McLACHLANSUBJECT: RE-EXAMINATION OF  
1974 & 1975 PLANS AND  
PROJECTION TO MID-1980.DATE: AUGUST 9, 1973

The 1974 and 1975 mining plans have undergone a further <sup>close</sup> examination designed to keep the all material movement approximately equal in each year. The scheduled total movement of 7.6 M. yards (7.2 M. of which comes directly from the pit) is well within the capabilities of the present shovel-truck fleet. As well it does not throw any of the subsequent years up to 1980 into the position of requiring a <sup>much</sup> higher than average total movement.

STOCKPILES

The 1974 and 1975 mining plans are based on consuming 100% of the red and yellow stockpile quantities in existence at Jan. 1, 1974. 427,000 yards of stockpile material (all red, some yellow) are used in 1974 and 440,000 yards (balance of yellow stockpile) in 1975.

## ZONE 2

In order to keep the stripping ratio low, mining of all of the presently known ore in Zone 2 has been included in the period 1976-79. Only 2.7M yd. of waste need be mined to recover .92 M yd. of ore (stripping ratio 2.9/1). Further work needs to be done to evaluate Zone 2 since these are preliminary results only.

The effect of introducing the stockpiles in 1974-75 and Zone 2 immediately after that has been to extend the life of the presently designed five year pit another 18 months into mid-June 1980.

A summary of 1974 and 1975 is listed below:

	<u>1974</u>	<u>1975</u>
MILL FEED (TONS)	3,650,000 (4.3, 5.7)*	3,666,366 (3.4, 5.4)
(YD.)	1,147,800	1,152,945
WASTE (YD.)	6,493,725	6,504,316
TOTAL MAT'L (YD.)	7,214,605	7,217,254
RATIO	5.65/1	5.64/1
DEVELOPED ORE	2,103,673 (3.3, 5.3)	1,918,573 (2.9, 5.0)
STOCKPILE FEED (YEL)	555,907 (2.6, 4.4)	1,399,223 (2.6, 4.4)
(RED)	801,691 (3.8, 5.7)	—

\* Upgraded Pb, downgraded Zn  
✓ Downgraded Zn.

( LEFT OVER  
FROM 1975  
INTO 1976 )

	<u>REMNANT</u>	<u>ZONE 2</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>TOTALS</u>
MILL FEED (TONS)	2,756,818	2,928,175	3,660,261	3,665,075	3,669,275	16,679,604
(CU. YD.)	866,924	920,810	1,151,020	1,152,540	1,153,860	5,245,154
WASTE (CU. YD.)	4,101,530	2,702,770	9,376,940	9,014,290	9,054,850	34,250,380
RATIO	4.7/1	2.9/1	8.1/1	7.8/1	7.8/1	6.5/1
ALL MAT'L. (CU. YD.)	4,968,451	3,623,580	10,527,960	10,166,830	10,208,710	39,495,531

DISTRIBUTED OVER 4 YR.

	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>TOTALS</u>
MILL FEED (TONS)	3,650,000	3,650,000	3,650,000	3,650,000	14,600,000
(YD.)	1,147,800	1,147,800	1,147,800	1,147,800	4,591,200
WASTE	8,562,595	8,562,595	8,562,595	8,562,595	34,250,380
RATIO	7.5/1	7.5/1	7.5/1	7.5/1	7.5/1
ALL MAT'L. (CU. YD.)	9,710,395	9,710,395	9,710,395	9,710,395	38,841,580

MATERIAL MOVEMENT 1976 To MID-1980  
AT VARYING STRIPPING RATIOS

STRIPPING RATIO	<u>6.0/1</u>	<u>6.5/1</u>	<u>7.0/1</u>	<u>7.5/1</u>	<u>8.0/1</u>
MILL FEED (TONS)	3,650,000	3,650,000	3,650,000	3,650,000	3,650,000
(YD.)	1,147,800	1,147,800	1,147,800	1,147,800	1,147,800
WASTE	6,886,800	7,460,700	8,034,600	8,608,500	9,182,400
TOTAL MATERIAL	8,034,600	8,608,500	9,182,400	9,756,300	10,330,200

SHOVEL SHIFTS AVAILABLE:

15 YD - ALL WASTE - 864 SHIFTS  
 5 YD - WASTE & ORE - 3200<sup>sh</sup> (800 EACH)  
 WASTE CAPAC. - 2122 YD/SHIFT  
 ORE CAPAC. - 1600 YD/SHIFT

Operational Availability =  
 (Oper Hr. + Idle Hr.)  
 TOTAL

SHOVEL USAGE

15 YARDS	864
% of Oper. Avail. (15)	100
5 YARDS (ORE)	717
5 YARDS (WASTE)	<u>795</u>
TOTAL	<u>1512</u>
% of Oper. Avail. (5 Yd.)	47.2

864
100
717
<u>1065</u>
<u>1782</u>
58.5

864
100
717
<u>1336</u>
<u>2053</u>
64.1

864
100
717
<u>1606</u>
<u>2323</u>
72.6

864
100
717
<u>1877</u>
<u>2594</u>
81.0

CALCULATION SHEET ONLY

		<u>TONS</u>	<u>Yd.</u>
<u>Stockpile Usage</u>	1974	1,357,598	426,917
	1975	1,399,223	440,007
		<u>2,756,821</u>	<u>866,924</u>

∴ Only ore used up in originally designed 1975 pit (by reason of using stockpiles)

1,147,910 ✓  
 - 866,924  
280,986 Yd.

SAVING → 866,924 Yd.

Average stripping ratio (over ultimate pit) 7.1/1  
 Use this to estimate saving in waste yardage.  
 $7.1/1 \times 866,924 \text{ Yd.} = 6,155,160$

17,099,570 yd under original plan <sup>any way.</sup> (1974 + 1975 waste)

too high -- only going to move

17,099,570
<u>6,155,160</u>
<u>10,944,410</u>

WASTE Under original 1974-75 (without stockpiles)	17,099,570
WASTE under revised 1974-75 (using stockpiles)	12,998,040
	<u>4,101,530</u>

use this figure for waste saving

Thrown over into 1976 from 1975: 4,101,530 yd. waste  
 866,924 yd. ore.

Incorporating Zone R into the picture:

Total material	3,623,583 yd.
ore	<u>920,813</u>
WASTE.	<u>2,702,770</u>