

002555

To

W. N. Wallinger

Date

August 30, 1977

From

R. B. Ferguson

J. Mustard

Subject

Third Quarter Review, 1977
Production and Metallurgical Forecast1. Throughput

10,000 short dry tons per calendar day.

2. Lead Metallurgy

a) Recovery

Based on a more rigorous analysis of plant data, we can predict scavenger tails and apply a factor to develop expected final recovery with standard deviation.

<u>Month</u>	<u>Final Recovery</u>
September	82.8 + 9.3
October	82.3 + 9.4
November	62.6 + 7.6
December	82.5 + 8.7

Details appended.

b) Grade

In order to maintain recoveries at year to date levels, grade must be maintained at 65.0%.

3. Zinc Metallurgy

a) Recovery

As per lead recovery.

<u>Month</u>	<u>Final Recovery</u>
September	80.8 + 6.7
October	81.1 + 6.6
November	81.6 + 6.4
December	81.8 + 8.0

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The estimate for December is rather poor since the historical data for zinc feed over 6% is weak and scattered.

b) Grade

No change, 50.5%.

4. Bulk Production

Hold recovery to bulk close to historical minimum of 9.8% and 10.2% for lead and zinc respectively during September and October.

Must assume that the zinc first cleaner mass flow loop and larger launders on zinc cleaner cells will be installed and effective by November 1, 1977. This will allow bulk recoveries to drop to the level expected in "Bulk Production", R. B. Ferguson to W. N. Wallinger, March 23, 1977. Those are, 9.06% lead and 8.83% zinc metal to bulk, or as close as feed grade ratios will allow.

By month then, bulk production will be:

<u>Month</u>	<u>SDT Bulk</u>	<u>% Pb</u>	<u>% Zn</u>
September	5,032	18.0	29.8
October	5,093	18.0	29.8
November	4,379	18.0	29.8
December	5,786	18.0	29.8

5. Silver

No information on silver in feed is available. Will assume that most recent experience will continue. Details appended.

11.0 oz/ton selective lead
2.8 oz/ton bulk

6. Iron

In selective zinc, 10.8%; in bulk 15.8%.

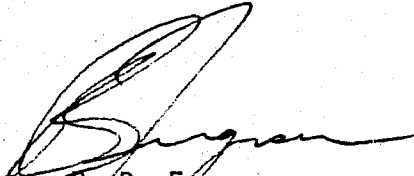
7. Operating Time

92.5%

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8. Moistures

Lead Select 5.0%
Zinc Select 6.0%
Bulk 5.8%



R. B. Ferguson
Chief Metallurgist

Enc.

/klc

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CYPRUS ANTIMONY MINING CORPORATION
 METALLURGICAL FORECAST WORKSHEET
 LEAD, ZINC, SILVER RECOVERIES

1977

To Date 1974

TIME PERIOD	January	February	March	April	May	June	July	1977	to 1977
ORE SOURCE									
LEAD: Feed %	2.34	2.46	3.22	2.76	2.66	2.35	2.99		
Scavenger Tail %	0.49	0.47	0.55	/	0.49	0.49	0.48		
Arithmetic Rougher Recovery	79.06	80.89	82.92	/	81.58	79.15	83.95		
X Factor	1.0033	1.0077	1.0134	/	0.9990	0.9771	0.9820	0.9971	0.9962
= Total to Selective Plus Bulk	79.32	81.51	84.03	82.64	81.50	77.34	82.44	± 0.0145	± 0.0194
ZINC: Feed %	5.60	4.39	5.30	4.41	4.81	4.23	4.77		
Final Tail %	0.95	0.78	0.91	0.80	1.01	0.88	0.77		
Arithmetic Total Recovery	78.15	82.23	82.83	81.86	79.00	79.20	83.86		
X Factor	1.0592	0.9846	0.9773	0.9710	0.9870	0.9840	0.9726	0.9908	0.9833
= Total to Selective Plus Bulk	82.78	80.96	80.95	79.49	77.97	77.93	81.56	± 0.0308	± 0.016'
SILVER: Feed TrOz/Ton	0.34	0.42	0.67	0.56	0.54	0.46	0.67		
% lead in feed	2.34	2.46	3.22	2.76	2.66	2.35	2.99		
= TrOz/Ton lead in feed	14.53	17.07	20.81	20.29	20.30	19.57	22.41		
X Factor	0.8321	0.6503	0.7780	0.9221	0.8059	0.8871	0.8835	0.8227	0.7761
= TrOz/Ton lead in selective	12.09	11.10	16.19	18.71	16.36	17.36	19.80	± 0.0911	0.1275
X lead selective grade	65.02	64.98	62.49	63.82	64.99	65.02	64.83		
= TrOz/Ton lead concentrate	7.86	7.21	10.12	11.95	10.63	11.29	12.84		
X Factor	0.8809	0.7118	0.7790	1.0202	0.7112	0.7112	0.6332	0.7750	0.8414
= TrOz/Ton lead in bulk	12.80	12.15	16.21	20.70	18.62	9.44	14.19	± 0.1832	± 0.187
X lead bulk grade	19.38	18.76	18.26	20.77	16.76	19.57	23.26		
= TrOz/Ton bulk concentrate	2.42	2.20	2.20	4.30	2.42	2.42	2.42		

CYPRUS ANVIL MINING CORPORATION
METALLURGICAL FORECAST WORKSHEET
LEAD, ZINC, SILVER RECOVERIES

THIRD QUARTER REVIEW, 1977

TIME PERIOD	January	February	March	April	May	June	July	August	Sept.	October	November	December
ORE SOURCE												
LEAD: Feed %									2.6	2.3	2.9	2.8
Scavenger Tail %									0.44±.2	0.40±.18	0.49±.18	0.48±0.20
Arithmetic Rougher Recovery									83.08±7.7	82.61±7.8	83.10±6.21	82.86±7.1
X Factor									^{.9562} ±0.0194			
= Total to Selective Plus Bulk									82.76±2.3	82.30±2.4	82.78±7.8	82.54±8.7
ZINC: Feed %									4.9	4.8	4.6	6.3
Final Tail %									0.87±.27	0.84±.26	0.78±.24	1.40±0.48
Arithmetic Total Recovery									82.24±5.5	82.50±5.4	83.04±5.2	77.78±7.6
X Factor									0.9833	±0.0162		
= Total to Selective Plus Bulk									80.87±6.7	81.12±6.6	81.65±6.4	76.5±8.7
SILVER: Feed TrOz/Ton												
% lead in feed												
= TrOz/Ton lead in feed									20.00	20.00	20.00	20.00
X Factor									0.8227	±0.0911		
= TrOz/Ton lead in selective									16.45	±1.82		
X lead selective grade									65.0			
= TrOz/Ton lead concentrate									11.0	±1.2		
X Factor									0.7750	±0.1832		
= TrOz/Ton lead in bulk									15.50	±3.66		
X lead bulk grade									18.0			
= TrOz/Ton bulk concentrate									2.79	±0.66		

CYPRUS ANVIL MINING CORPORATION
 PRODUCTION AND GENERAL ADMINISTRATIVE

Schedule 1

1977 3rd QUARTER

	Jan.	Feb.	Mar.	1st Qtr.	Apr.	May	June	1st Half	July	Aug.	Sept.	3rd Qtr.	YTD	Oct.	Nov.	Dec.	4th Qtr.	Qtr. REV.	Memo Plan
Feed Grade %																			
Lead											2.6			2.3	2.9	2.8			3.0
Zinc											4.9			4.8	4.6	6.3			5.1
Total																		8.1	
Cu. Yds. Moved (000's)																			
Waste & Low Grade														91.9	83.9	82.9	257.6		
Ore														58.6	55.3	56.5	169.8		
Total														150.5	139.2	139.4	427.4		
Tons Milled (000's)											300			310	300	310	920		3650
Mill Feed (000 lbs)																			
Lead											15600			14260	17400	17360	49020		219060
Zinc											29400			29760	27600	39060	96420		372200
Metal Recovered (000 lbs)																			
Lead Select											11105			9903	12831	12239	34973		163444
Lead Bulk											1811			1833	1576	2083	5492		15841
Total Lead											12916			11736	14407	14322	40465		183285
Zinc Select											20756			21100	19912	28503	69515		260025
Zinc Bulk											2999			3035	2610	3448	2093		32850
Total Zinc											23755			24135	22522	31951	78608		292875
Recoveries %																			
Lead Select											71.19			62.44	73.74	70.50	71.34		74.6
Lead Bulk											11.61			12.86	9.06	12.00	11.21		2.1
Total Lead											82.80			75.30	82.80	82.50	82.55		83.7
Zinc Select											70.6			70.20	72.14	72.97	72.10		69.9
Zinc Bulk											10.2			10.20	9.46	8.83	9.43		8.8
Total Zinc											80.80			80.40	81.60	81.80	81.53		78.7
Concentrate Grades %																			
Select Lead											65.0			65.0	65.0	65.0	65.0		66.5
Select Zinc											50.5			50.5	50.5	50.5	50.5		50.5
Bulk - Lead											18.0			18.0	18.0	18.0	18.0		18.0
Bulk - Zinc											29.8			29.8	29.8	29.8	29.8		29.8
Silver in Sel. Pb											11.0			11.0	11.0	11.0	11.0		13.5
Silver in Bulk Pb											2.8			2.8	2.8	2.8	2.8		5.4
Fe in Sel. Zinc											10.8			10.8	10.8	10.8	10.8		10.8
Fe in Bulk											15.8			15.8	15.8	15.8	15.8		15.8

PRODUCTION STATISTICS

	Jan.	Feb.	Mar.	1st Qtr.	Apr.	May	June	2nd Qtr.	1st Half	July	Aug.	Sept.	3rd Qtr.	3rd Qtr. YTD	Full Year			MEMO		
															Oct.	Nov.	Dec.		4th Qtr.	Qtr. REV.
<u>Concentrate Produced (DST)</u>																				
Lead												8542			7617	2870	2415	26903		122887
Zinc												20551			20821	19715	28220	68826		257451
Bulk												5032			5093	4379	5786	15258		55115
Total												34125			33601	33964	43421	110986		435453
<u>Concentrate Produced (DMT)</u>																				
Lead																				
Zinc																				
Bulk																				
Total																				
<u>Marketable Metal (000 lbs.)</u>																				
Select Lead																				
Bulk Lead																				
Total Lead																				
Select Zinc																				
Bulk Zinc																				
Total Zinc																				
Select Silver (oz)																				
Bulk Silver (oz)																				
Total Silver																				
Operating Time %												22.5			22.5	22.5	22.5			22.5
<u>Moisture</u>																				
Pb Select												5.0			5.0	5.0	5.0			5.8
Zn Select												6.0			6.0	6.0	6.0			6.3
Bulk												5.8			5.8	5.8	5.8			5.8