

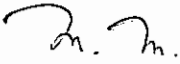

ESTIMATED FEED GRADES

-002366

Date: March 1, 1978Period: March 1-15, 1978Milling Rate: 10,500 SDT/Day

Phase	Source	Tons	% Pb	% Zn	Remarks
IV	3730 C Blast	52,500	2.8	5.6	Blasthole Information
V	3830	105,000	3.8	5.7	Incomplete Assays
	TOTAL	157,500	3.4	5.7	

Note: 50-60% of 3830 ore is expected to be oxidized; similar to 3870 ore.


 J. W. Mustard
 Mine Geologist

cc. J. Devitt
 B. Ferguson

ESTIMATED FEED GRADESDate: March 1, 1978Period: March 16-31, 1978Milling Rate: 10,500 SDT/Day

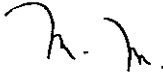
Phase	Source	Tons	% Pb	% Zn	Remarks
IV	3730 C Blast	2,500	2.8	5.6	
IV	3730 D Blast	40,000	2.9	3.5	
IV	3730	101,000	3.3	5.6	Mine Model Information
V	3830	24,000	3.0	5.9	Incomplete Assays Oxidized
	TOTAL	167,500	3.1	5.1	

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ESTIMATED FEED GRADESDate: April 3, 1978Period: April 1-15, 1978Milling Rate: 10,230 SDT/Day

Phase	Source	Tons	% Pb	% Zn	Remarks
IV	3730 F Blast	40,000	2.1	4.2	
IV	3710 X Blast	45,000	2.7	5.3	
IV	3710	68,500	2.8	5.2	Mine Model Data
	Total	153,500	2.6	5.0	


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ESTIMATED FEED GRADESDate: April 3, 1978Period: April 16-30Milling Rate: 10,230 SDT/Day

Phase	Source	Tons	% Pb	% Zn	Remarks
IV	3710	47,000	3.1	5.2	Mine Model Data
V	3810	63,000	2.4	4.6	Mine Model Data
V	3790	43,500	1.9	3.3	Mine Model Data
	Total	153,500	2.5	4.4	

Note: High pyrrhotite content in Phase V ore. Py/Po ratio < 3 .


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ESTIMATED FEED GRADESDate: April 17, 1978Period: April 16-30Milling Rate: 10,230 SDT/Day

Phase	Source	Tons	% Pb	% Zn	Remarks
IV	3710 Y Blast	10,000	3.1	4.1	
IV	3710 Z Blast	73,500	3.0	3.6	Estimated tonnage-incomplete assays
V	3810 G Blast	60,000	3.3	5.1	Estimated tonnage 30,000 tons oxidized
V	3790 Sump	10,000	2.4	4.6	Estimated tonnage and grade, oxidized
	TOTAL	153,500	3.08	4.28	

Note: 3710 ore Pb/Zn ratio approaching 1.
Estimated Phase V ore Py/Po ratio < 3.

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ESTIMATED FEED GRADESDate: May 1, 1978Period: May 1-15, 1978Milling Rate: 10,230 SDT/Day

Phase	Source	Tons	% Pb	% Zn	Remarks
IV	3710 Z Blast	5,000	3.0	5.0	Clean-Up
IV	3710 AA Blast	80,000	2.4	4.3	Incomplete Assays
V	3810	22,000	2.8	4.3	
V	3790	46,500	1.8	3.9	Mine Model, Talc Dilution
	Total	153,500	2.3	4.2	

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ESTIMATED FEED GRADESDate: May 1, 1978Period: May 16-31Milling Rate: 10,230 SDT/Day

Phase	Source	Tons	% Pb	% Zn	Remarks
V	3790	58,500	2.1	3.5	Mine Model
	CFSP	36,000	3.0	4.8	Mine Model <i>Blot Ass est</i>
V	3770	69,500	2.6	5.6	Mine Model - North East Wall
	TOTAL	164,000	2.5	4.7	

J. W.

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ESTIMATED FEED GRADESDate: MAY 9, 1978Period: MAY 1-31Milling Rate: 10,230 SDT/Day

Phase	Source	Tons	% Pb	% Zn	Remarks
	MET. BAL. MAY 5	52,000	3.37	4.67	
	CFSP	20,000	2.8	4.3	
IV	3710	52,000	2.4	4.7	
V	3770	119,000	2.4	6.0	Slut Mon May 15 N.E. RAMP oxidized
V	3790	54,000	2.14	5.29	N.E. Ramp oxidized
	TOTAL	297,000	2.55	5.30	

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ESTIMATED FEED GRADESDate: MAY 9, 1978Period: JUNE 1-30Milling Rate: 10,230 SDT/Day

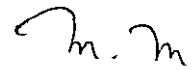
Phase	Source	Tons	% Pb	% Zn	Remarks
IV	3710	20,000	2.4	4.7	
V	3790	66,000	2.41	4.02	West side of pit
V	3770	68,000	3.79	6.28	West side of pit
IV	3690	40,000	3.4	4.8	possibly more of 3690
V	3750	113,000	2.88	4.07	
	TOTAL	307,000	3.02	4.68	

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ESTIMATED FEED GRADESDate: May 16, 1978Period: May 16-31, 1978Milling Rate: 9,560

Phase	Source	Tons	% Pb	% Zn	Remarks
IV	3710	15,000	2.4	4.6	
V	3770	119,000	2.4	6.0	Blast Tuesday, May 16 Mine Model
V	3790	19,000	2.14	5.2	
	Total	153,000	2.37	5.76	



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ESTIMATED FEED GRADESDate: May 30, 1978Period: June 15-30Milling Rate: 10,230 SDT/Day

Phase	Source	Tons	% Pb	% Zn	Remarks
V	3770 Blast B	23,500	2.2	4.7	N.E. Ramp
IV	3690	31,000	3.4	4.8	Mine Model - East Side
V	3770	68,000	3.79	6.28	Mine Model - West Side
V	3750	31,000	2.88	4.07	Mine Model - North East
	Total	153,500	3.3	5.3	

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ESTIMATED FEED GRADESDate: May 30, 1978Period: June 1-15Milling Rate: 10,230 SDT/Day

Phase	Source	Tons	% Pb	% Zn	Remarks
V	3770 Blast B	106,500	2.2	4.7	N.E. Ramp Oxidized
B	3790	47,000	3.9	6.2	C.F.S.P. and West Side
	Total	153,500	2.7	5.2	

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ESTIMATED FEED GRADESDate: June 15, 1978Period: June 15-30Milling Rate: 10,230 SDT/Day

Phase	Source	Tons	% Pb	% Zn	Remarks
V	3790	37,000	3.7	6.1	West Side
V	3770	54,000	1.8	4.4	N.E. Ramp
IV	3690	31,000	3.4	4.8	Mine Model - East Side
V	3770	31,500	3.8	6.3	Mine Model - West Side
	Total	153,500	3.0	5.3	

R. Lopaschuk
R. Lopaschuk
for Geological/Geotechnical Engineer

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ESTIMATED FEED GRADESDate: JUNE 23/78Period: JUNE 23-30Milling Rate: 10,230 SDT/Day

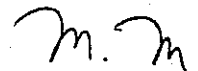
Phase	Source	Tons	% Pb	% Zn	Remarks
	3770	30,000	2.4	6.0	
	3750	27,000	2.4	5.4	
	CFSP	25,000	<u>2.9</u>	<u>5.6</u>	
		<u>82,000</u>	2.5	5.7	

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Mine Geologist

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ESTIMATED FEED GRADESDate: July 3, 1978Period: July 16-31, 1978Milling Rate: 10,230 SDT/Day

Phase	Source	Tons	% Pb	% Zn	Remarks
V	3750	107,500	4.64	6.72	Model West Side
V	3750	56,500	2.8	5.9	N.E. Ramp Test Holes
	Total	164,000	4.01	6.44	



R. Lopaschuk
Geological/Geotechnical Engineer



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D. Gregoire
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ESTIMATED FEED GRADESDate: July 3, 1978Period: July 1-15, 1978Milling Rate: 10,230 SDT/Day

Phase	Source	Tons	% Pb	% Zn	Remarks
V	3770	20,000	2.4	5.4	Blasthole Assays
	Coarse Ore S.P.	55,000	2.7	5.2	Estimated from Average of June Feed Grades
V	3770	68,000	3.79	6.28	Model West Side
V	3750	10,500	4.64	6.72	Model West Side
	Total	153,500	3.28	5.81	


 R. S. Lopaschuk
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 D. Gregoire
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ESTIMATED FEED GRADES

Date: July 31, 1978

Period: August 1-15

Milling Rate: 10,230 SDT/Day

Phase	Source	Tons	% Pb	% Zn	Remarks
V	3750 NE Ramp	28,000	1.6	3.6	Mine Model
V	3750 West	20,000 12,000	4.3 3.6	6.2 5.5	Mine Model
V	3750 AZ Blast	25,000	2.7	5.0	
V	3730 G Blast	35,000 - 53,000 -	2.5	5.5	
V	3730 NE Ramp	45,450 - 18,000 -	3.0 2.6	6.0 5.4	Mine Model
	Total	<u>153,450</u>	<u>2.75</u>	<u>5.31</u>	

2.51 5.07

55
76
12
39,500

M. M. 17,130
J. W. Mustard
Mine Geologist

Revised Old
3.02 5.57
2.89 5.45

- cc. A. von Kursell
- P. Taggart
- J. Devitt
- B. Ferguson
- D. Gregoire
- D. Marr

ESTIMATED FEED GRADESDate: July 17, 1978Period: July 16-31Milling Rate: 10,230 SDT/Day

Phase	Source	Tons	% Pb	% Zn	Remarks
V	3770	5,500	3.8	5.6	West Side - Blasthole Assays
	CFSP	12,000	2.5	5.5	
V	3750	25,000	2.3	5.0	N.E. Ramp - Blasthole Assays
V	3750	60,000	3.8	5.8	West Side - Blasthole Assays + Test Holes (38,000 tons proven)
V	3750	61,500	2.7	5.6	N.E. Ramp - Testholes
	TOTAL	164,000	3.06	5.57	

R. M.
 R. Lopaschuk
 Geological/Geotechnical Engineer

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ESTIMATED FEED GRADES

Date: July 31, 1978

Period: August 16-31

Milling Rate: 10,230 SDT/Day

Phase	Source	Tons	% Pb	% Zn	Remarks
V	3730 N-E Ramp	90,550	3.0	6.0	Mine Model
V	3730 West	73,130	3.6	5.6	Mine Model
	Total	163,680	3.27	5.82	
			3.17	5.6	

M. M.

fu J. W. Mustard
Mine Geologist

- cc. A. von Kursell
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D. Marr

3.6 / 5.6
161

2


ESTIMATED FEED GRADES

Date: Aug 10, 78

Period: Aug 10 - Aug 31 / 78

Milling Rate: 10,230 SDT/Day.

Phase	Source	Tons	% Pb	% Zn	Remarks
	3750 BC Blast	10,000	1.6	3.6	
	3730 H+G	15,000	2.5	5.3	
	3750 AZ	25,000	2.7	5.0	
	3730 I NER BS	70,000	3.0	5.1	Estimate - incomplete assays
	3730 NER BS	28,000	3.0	5.8	Mine Model.
	3730 West FGA	77,600	3.4	5.81	Mine Model.


 Pull in
 225,600 3.01 5.36

325,000

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ESTIMATED FEED GRADESDate: August 24, 1978Period: August 23-31Milling Rate: 10,230 SDT/Day
(92,070)

Phase	Source	Tons	% Pb	% Zn	Remarks
V	3730 L	6,000	4.2	6.6	Blast hole assays
V	3730 M	28,000	3.4	5.7	Blast hole assays
	CFSP	58,070	2.6	5.3	40% NE ramp, 60% "West" ore
	TOTAL	92,070	2.95	5.51	

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ESTIMATED FEED GRADESDate: August 17, 1978Period: August 16-31, 1978Milling Rate: 10,230

Phase	Source	Tons	% Pb	% Zn	Remarks
V	3730, I Blast	30,000	3.0	5.5	Hard bottom -- shovel currently 7' high.
V	3730, H & G Blast	20,000	2.4	5.8	Clean-up along toe
V	3730, NE Ramp	23,000	2.8	6.0	Mine model
	CFSP	20,000	2.5	4.7	Revised CFSP Pb grade
V	3730 West	10,000	2.6	3.8	Blast hole indicated tonnage and grade - outside estimated sulfide limits
V	3730 West	60,680	3.2	4.5	Mine model - including 10% dilution
	TOTAL	163,680	2.89	5.03	

- Note:
1. "Loss" of 3730 I ore because of hard bottom - estimated at 25,000 tons.
 2. Inclusion of CFSP ore at lower grade.
 3. Lower grade ore encountered on 3730 in sinking cut.
 4. Dilution factor of 10% included for all 3730 "West" ore.

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 Mine Geologist

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Revised

ESTIMATED FEED GRADESDate: Sept 6 /78Period: Sept 1-15Milling Rate: 10,250 SDT / Day

Phase	Source	Tons	% Pb	% Zn	Remarks
	CFSP	24,000	2.8	5.6	6,000 SDT @ 23/4.6 milled in October
✓	3730R	38,000	3.3	5.3	incomplete assays, talcdilution, 00.77%
✓	3730	20,000	3.0	5.8	N.E. Ramp, mine model
✓	3710AC	28,000	2.1	4.5	N.E. Ramp, pyritic
✓	3710	43,750	3.5	4.7	West, mine model
	TOTAL	153,750	3.0	5.1	

cc. A. von Kursell
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D. Marr

Revised

ESTIMATED FEED GRADESDate: Sept 5/78Period: Sept 16-30Milling Rate: 10,250 SDT/Day

Phase	Source	Tons	% Pb	% Zn	Remarks
✓	3710	153,750	3.4	5.4	West, mine model
		153,750	3.4	5.4	

Note: Only 28,000 ^{tons} ~~tons~~ scheduled from the N.E. Ramp during the month.

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ESTIMATED FEED GRADESDate: September 18, 1978Period: September 18 *Sept 15-30/78*Milling Rate: 10,250 SDT/DAY

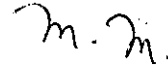
Phase	Source	Tons	% Pb	% Zn	Remarks
V	3710 AE	74,000	3.8	5.8	Blasted September 14, Graphitic
V	3710	79,750	2.9	4.8	MSW, Graphitic, 25% 78-01, 75% 78-03
	TOTAL	153,750	3.3	5.3	

J. W. Mustard
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ESTIMATED FEED GRADESDate: October 3, 1978Period: October 1-15, 1978Milling Rate: 10,250 SDT/Day

Phase	Source	Tons	% Pb	% Zn	Remarks
	3710 AF	110,000	4.8	7.3	DDH 78-03, WSW, 25% graphitic, baritic
	3710 AG	17,000	2.3	3.9	SSW, graphitic similar to 3710 AE
	3710 AH	26,750	3.2	5.2	Not blasted, WSW, 78-04
	TOTAL	153,750	4.2	6.6	



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R E V I S E DESTIMATED FEED GRADESDate: October 3, 1978Period: October 16-31, 1978Milling Rate: 10,250 SDT/Day

Phase	Source	Tons	% Pb	% Zn	Remarks
	3710 AH	23,250	3.2	5.2	Not blasted, WSW, 78-04
	3710	120,750	3.2	5.4	WSW, 78-04, Mine Model
	CFSP	20,000	3.0	5.5	Graphitic
	TOTAL	164,000	3.2	5.4	

Pb %Zn %

Flash Forecast for October

3.7

6.0

Third Quarter Review

3.4

5.0

Grades Used for October Short Range Plan

3.6

5.6 (Pb Reduction 4%, Zn - 7%)

*J. W. Mustard*J. W. Mustard
Mine Geologistcc. P. Taggart
A. von Kursell
D. Gregoire
J. Devitt
B. Ferguson

ESTIMATED FEED GRADESDate: October 18, 1978Period: October 16-31Milling Rate: 10,250

Phase	Source	Tons	% Pb	% Zn	Remarks
	3710 AH	153,750	3.7	5.7	Grades will vary depending on location of shovel
					in face, 80% of which is expected to have
					elevated pyrrhotite levels (> 12%). Minor
					graphite with increased non-sulfide dilution as
					contact areas are approached can be expected.
	TOTAL	153,750	3.7	5.7	

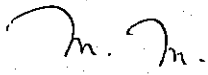
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ESTIMATED FEED GRADCSDate: November 1, 1978Period: November 1-15Milling Rate: 10,250

Phase	Source	Tons	% Pb	% Zn	Remarks
V	3710 AJ	42,000	3.2	6.2	ENE
V	3690 G	70,750	3.7	5.0	0.30% Cu, Borehole 78-06, SSE
	Coarse Ore Stockpile	41,000	3.8	5.7	4 Day Primary Shutdown
	TOTAL	153,750	3.6	5.5	



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ESTIMATED FEED GRADES

Date: November 1, 1978

Period: November 16-30

Milling Rate: 10,250

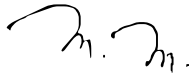
Phase	Source	Tons	% Pb	% Zn	Remarks
V	3690 G	22,000	3.7	5.0	SSW
V	3690	131,750	3.8	5.5	Surface oxidation, SSW, Borehole 78-03 on Western Margin, Pb Reduction 4%, Zn - 7%
	TOTAL	153,750	3.8	5.4	

% Pb % Zn

Flash Forecast for November

3.8 5.5

- cc. P. Taggart
- A. von Kursell
- D. Gregoire
- J. Devitt
- B. Ferguson


 J. W. Mustard
 Mine Geologist

ESTIMATED FEED GRADESDate: November 15, 1978Period: November 15-30Milling Rate: 10,250

Phase	Source	Tons	% Pb	% Zn	Remarks
	3710 AJ	50,000	3.2	6.2	ENE, Oxidized
	3710 AK	5,000	4.1	4.5	Talc Dilution
	3690 H	50,000	5.1	6.2	Surface Oxidized, SSW, Borehole 78-03
	Coarse Ore Stockpile	10,250	3.8	5.7	
	3690 I	42,500	4.0	6.0	WSW, Borehole 78-03
	TOTAL	157,750	4.1	6.1	

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 Mine Geologist

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ESTIMATED FEED GRADESDate: December 1, 1978Period: December 1-15Milling Rate: 10,250 SDT/Day

Phase	Source	Tons	% Pb	% Zn	Remarks
	3690 "I"	11,000	4.0	6.0	
	3710 "AM"	121,000	3.6	6.3	NNE, Blasted November 30
	3710	21,750	3.8	6.1	Mine Model, NNE
	TOTAL	153,750	3.7	6.2	

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ESTIMATED FEED GRADESDate: December 1, 1978Period: December 16-31Milling Rate: 10,250 SDT/Day

Phase	Source	Tons	% Pb	% Zn	Remarks
	3690 "I"	124,000	4.6	6.7	WSW, Borehole 78-04, 78-03
	3690	40,000	3.0	4.5	Mine Model, WSW
	TOTAL	164,000	4.2	6.2	

	<u>Tons</u>	<u>% Pb</u>	<u>% Zn</u>
Flast Forecast for December	317,750	4.0	6.2

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JW J. W. Mustard
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ESTIMATED FEED GRADESDate: December 15, 1978Period: December 16-31Milling Rate: 10,250 SDT/Day

Phase	Source	Tons	% Pb	% Zn	Remarks
	3690 I	96,000	4.3	6.4	WSW, Borehole 78-04, 78-03
	3690 J	68,000	4.5	6.5	Graphitic, Pyrrhotitic, WSW
	TOTAL	164,000	4.4	6.4	

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