

Calculations based on recoveries and concentrate grades which the ore can be made.
 Wm. Row. Sept 22/55.

VANGORDA

Assume 75% Pb recovery and 55% Pb Conc.
 65% Zn " and 50% Zn "

020701

LEAD

Lead content of ore 3.05% 61 lbs per ton ore
 Recovery in lead concentrate 75% 45.75 " " " "
 Assume 55% lead concentrate 1100 lbs per ton concentrate
 Ratio of Concentration:
 75% recovery $\frac{1100}{45.75}$ -- 24.04

Lead paid in lead concentrate:
 55% less 1.5% -- 53.5% @ 94.5% = 50.558
 or 1011 lbs p. t. conc.
 at ratio of conc. 24.04 -- 42.05 lbs p. t. ore

ZINC

Zinc content of ore 4.84% 96.8 lbs per ton of ore
 Recovery in Zinc concentrate 65% 62.92 " " " " "
 Assume 50% Zinc concentrate 1000 lbs p. t. conc.
 Ratio of Concentration $\frac{1000}{62.92}$ -- 15.89

Zinc paid Zinc concentrate
 .85 x 1000 850 lbs per ton concent.
 at ratio of concentration 15.89 53.49 lbs per ton of ore

COPPER, SILVER, GOLD -- no change.

LEAD: Treatment charge:	9.00	Can
Lead duty on 55% less 1.5		
53.5% or 1070 lbs @ .75	8.03	
Freight of Piglead		
$\frac{1011}{2000}$ @ 7.62	3.85	
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	\$ 20.88 U.S.	20.57
Refinery 1.5¢ per lb		
1011 X 1.5¢	15.17	14.94
Road Transportation		18.80
Rails Ocean		30.05
Sampling & Assaying		<hr/> .30

84.66
 or \$3.52 per ton of ore

ZINC

	U. S.	Can.
Treatment, refinery & duty	\$56.60	55.75
(\$3.00 deducted, see B.M.C. letter 30/8)		
Sampling Assaying		.30
Road Transportation		18.80
Rail & Ocean Transport.		<hr/> 30.05

\$ 104.90 Can p. t. conc.

VANGORDA

9/10 September 1955

Lead

V.M.I.R.

Lead content of ore	3.05%	61 Lbs per ton ore
Recovery in lead concentrate	75%	45.75 " " " "
	80%	48.80 " " " "
	85%	51.85 " " " "
Assume 60% lead concentrate	- -	1,200 Lbs per ton concentrate
Ratio of concentration: 75% recov.	$\frac{1200}{45.75}$	-- 26.23
	80% "	$\frac{1200}{48.80}$ -- 24.59
	85% "	$\frac{1200}{51.85}$ -- 23.14

Lead paid in concentrate (60% less 1.5% = 58.5% @ 94.5% = 55.28%)
or 1106 Lbs per ton conc.

75% rec.	-- 42.2 Lbs p. t. ore
80% "	-- 45.0 " " " "
85% "	-- 47.8 " " " "

Zinc

Zinc content of ore	-- 4.84%	-- 96.8 P. T. ore
Recovery in Zinc concentrate	-- 70%	67.8 Lbs p. t. ore
	75%	72.6 " " " "
	80%	77.4 " " " "

Assume 55% Zinc concentrate -- 1100 lbs

Ratio of Concentration -- 70%	$\frac{1100}{67.8}$	-- 16.2
	75%	$\frac{1100}{72.6}$ -- 15.2
	80%	$\frac{1100}{77.4}$ -- 14.2

Zinc paid for in concentrate
(.85 x 1100)

935 lbs per ton of concentrate

70% recovery	-- 57.7 lbs p. t. ore
75% "	-- 61.5 " " " "
80% "	-- 65.8 " " " "

Smelter, Transportation, etcLead

xTreatment Charges & Duty

Refinery 1.5¢ per lb
(1106 x 1.5¢)

Sampling & Assaying

Road Transportation
(225 miles @ .8355 mile)Rail and ocean transport
(6.55 + \$10.50 + 13.00)U. S.
21.99

16.59

Can.
21.66 per ton conc

16.34 " " "

.30 " " "

18.80 " " "

30.05 " " "

87.15

3.32 per ton of ore

75% Pb rec

80% " "

85% " "

3.56 " " " "

3.77 " " " "

ZincTreatment refinery, duty
(\$3.00 deducted, see B.M.C. letter 30/8)

Sampling Assaying

Road transportation

Rail & ocean transport

\$56.60

55.75 per ton conc

.30 " " "

18.80 " " "

30.05

104.90

6.48 per ton of ore

70% Zn rec

75% " "

80% " "

6.90 " " " "

7.39 " " " "

Combined Charges: 75% Pb - 70% Zn
80% Pb - 75% Zn
85% Pb - 80% Zn

9.80 per ton of ore

10.46 " " " "

11.16 " " " "

xTreatment Charge: \$9.00

Lead Duty on 60% 1.5 -

58.5% or 1170 lbs @ .75 8.78

Freight of Pighead:

1106
2000 @ 7.62 4.2121.99

V9/12

Copper

Copper content of ore 0.30% 6 lbs per ton of ore
 Recovery in lead concentrate 50% 3 lbs per ton of ore

Copper in lead Concentrate

75% Pb recovery -- 78.69 lbs Cu per ton conc.
 80% " " -- 73.77 " " " " "
 85% " " -- 69.42 " " " " "

Copper paid for in Lead Concentrate

75% Rec: 78.69 lbs @ 85% -- 66.89 lbs @ 60% of 40¢ - 24¢
 less 0.125
 Less 30% of 15¢ 4.50 19.375

\$ 12.96 per ton conc. or $\frac{12.96}{26.23}$ or 49¢ per ton of ore

80% 73.77 lbs @ 85% -- 62.70 @ 19.375 = 12.15

\$ 12.15 per ton conc. or $\frac{12.15}{24.59}$ -- 49¢ per ton of ore

85% 69.42 lbs @ 85% -- 59.01 @ 19.375 = \$11.43

\$11.43 per ton of conc. or $\frac{11.43}{23.14}$ -- 49¢ per ton of ore

Silver

Silver content in ore 1.84 oz per ton
 Recovery in Lead Concentrate -- 65% or 1.20 oz per ton of ore

Paid for in lead: .95 x 1.20 or 1.14 " " " " "

Gold

Gold content in ore 0.02 ozs per ton of ore
 Recovery in Lead concentrate 80% -- 0.016 oz p. t. ore

Paid for in Lead Concentrate 91.137% of U. S. Mint Price
 (\$34.90)

Paid at Mint Price

0.01458 *oz/t*

75% Pb - 70% Zn Recovery

Recoveries	Value per ton of ore			
	14¢ Pb 12¢ Zn	15¢ Pb 12¢ Zn	16¢ Pb 13¢ Zn	
Copper (.40¢)	.49	.49	.49	
Lead 42.2 lbs	5.91	6.33	6.75	
Zinc 57.7 lbs	6.92	7.21	7.50	
Gold 0.01458	.51	.51	.51	
Silver (.90¢) 1.10 ozs	.99	.99	.99	
	14.82	15.53	16.24	U. S.
	14.60	15.30	16.00	Can.
Smelting, Transp. etc	9.80	9.80	9.80	Can.
Net Value	\$ 4.80	\$ 5.50	\$ 6.20	Can.

80% Pb - 75% Zn recovery

Copper	.49	.49	.49	
Lead 45.0	6.30	6.75	7.20	
Zinc 61.5	7.38	7.68	8.00	
Gold 0.01458	.51	.51	.51	
Silver 1.10 ozs	.99	.99	.99	
	15.67	16.42	17.19	U. S.
	15.43	16.17	16.93	Can.
Smelting, Transp.	10.46	10.46	10.46	
Net Value	\$ 4.97	\$ 5.71	\$ 6.47	

85% Pb - 80% Zn recovery

Copper	.49	.49	.49	
Lead 47.8	6.69	7.17	7.65	
Zinc 65.8	7.90	8.23	8.55	
Gold 0.01458	.51	.51	.51	
Silver 1.10 ozs	.99	.99	.99	
	16.58	17.39	18.19	U. S.
	16.33	17.13	17.92	Can.
Smelting, Transp.	11.16	11.16	11.16	
Net Value	\$ 5.17	\$ 5.97	\$ 6.76	

65% Zn recovery

\$ 6.60 p. t. ore

Total charges

\$10.12

Value per ton of ore

	<u>14¢ Pb</u> <u>12¢ Zn</u>	<u>15¢ Pb</u> <u>12½¢ Zn</u>	<u>16¢ Pb</u> <u>13¢ Zn</u>
Copper (40¢	.49	.49	.49
Lead 42.05 lbs.	5.89	6.31	6.73
Zinc 53.49 lbs	6.42	6.69	6.95
Gold 0.01458	.51	.51	.51
Silver (90¢ 1.10 ozs	.99	.99	.99
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	14.30	14.99	15.67
Smelting Transp	10.12	10.12	10.12
Net Value	\$ 4.18	4.87	5.52 (Can) per ton ore