

82KNE009 RUTH VERMONT -07

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CONSOLIDATED COLUMBIA RIVER MINES LTD.  
RUTH - VERMONT MINE

PROPERTY FILE

LEAD ZINC MINE FEASIBILITY STUDY  
SMELTING CONTRACT FOR LEAD- ZINC.  
-Consolidated Columbia River Mines  
Ltd. Ruth-Vermont Mine.

<u>Name</u>	<u>Date</u>
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CONSOLIDATED COLUMBIA RIVER MINES LTD.

RUTH - VERMONT MINE

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CALCULATION OF REVENUE

May, 1974

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*D. Scott. P. Eng.*  
*May 10/74.*

CONSOLIDATED COLUMBIA RIVER MINES LTD.

ESTIMATE OF SMELTER RETURNS

ASSUMPTIONS

1) GRADES

	<u>LEAD CONCS.</u>	<u>ZINC CONCS.</u>
Pb	60%	7%
Zn	8%	55%
Ag	69 ozs/ST	11 ozs/ST
Cu	0.7%	0.37%
Fe	6%	7%
As	0.3%	-
Al2O3	1%	-
SiO2	5%	-
CaO	1%	-
Cd	-	0.36%

2) PRICES (March 29, 1974)

Pb = Average 4 LME Quotations = £307.00/MT or 33.324¢ US/lb  
 (25% = 8.33¢  
 Cominco Canadian Price = 19¢ CAN/lb or 19.54¢ US/lb  
 45% = 8.79¢  
 Cominco American Price = 21.50¢ US/lb 30% = 6.45¢ = 23.57¢US)

Zn = Cominco Canadian Price = 31¢ CAN/lb or 31.88¢ US/lb  
 (30% = 9.56¢  
 Cominco American Price = 33¢ US/lb 45% = 14.85¢  
 G.O.B. Producer Price = £330/MT or 35.82 US/lb  
 25% = 8.96¢ = 33.37¢US)

Ag = Handy & Harman Unrefined = \$5.305 US/tr oz

Cd = Metals Week ton lots = \$3.75 US/tr oz

Cu = F.O.B. Atlantic Seaboard = \$1.40633 US/lb  
 Refinery

EXCHANGE RATES

£ = US \$2.393  
 US\$ = 0.9725¢ CAN

N.S.R.

LEAD CONCENTRATES

March 29, 1974 Prices

PAYMENTS

CAN\$/S.D.T.

<u>Pb</u> = 60% - (0.7% Cu - 0.5% = 0.2% Cu X 0.8% Pb = 0.16 Pb) = 59.84%	
or 1,197 lbs @ 92% = 1,101 lbs @ (23.57¢ US @ 0.9725 = 22.92¢ CAN	
- (3.3¢ + (22.92¢ - 14.5¢ = 8.42¢ X 0.25¢ = 2.11¢) = 17.51¢ CAN) = \$ 192.79	
<u>Zn</u> = 8% or 160 lbs @ 70% = 112 lbs @ (35.82¢ US @ 0.9725 = 34.83 CAN	
- 12.5¢ = 22.33¢ CAN)	= 25.01
<u>Ag</u> = 69 ozs @ 93% = 64.17 ozs @ (\$5.305 US @ 0.9725 = \$5.159 CAN - 7¢ =	
\$5.089 CAN)	= 326.56
<u>Cu</u> = 0.7% or 14 lbs less 10 lbs (minimum deduction) = 4 lbs @	
(\$1.40633 US @ 0.9725 = \$1.36766 CAN - 11¢ = \$1.25766 CAN)	= 5.03
	<hr/>
	\$ 549.39

DEDUCTIONS

<u>T/C</u> = \$16.00/S.D.T.	\$16.00	
<u>Fe</u> = Nil, as content lower than zinc content -		
<u>As</u> = 0.3% - 0.1% = 0.2% X \$1.00 per 1%	.20	
<u>Al2O3</u> = 1% - 0.5% = 0.5% X 25¢ per 1%	.13	
<u>H2O</u> = 10% - 8% = 2% X 30¢ per 1%	.60	
<u>Truck Charge</u> = \$85.00/50 ST	1.70	
	\$18.63	
<u>CREDIT SiO2</u> = 5% X (0.3¢ X 5% SiO2 = 1.5¢)	.08	= 18.55
		<hr/>
<u>EST. VALUE PER S.D.T., F.O.B. TADANAC</u>		\$530.84
<u>AGENCY COMMISSION</u> = 1.5% of \$530.84		7.96
		<hr/>
		\$522.88
<u>FREIGHT</u> = \$16.22/SWT @ 10% moisture		18.02
		<hr/>
<u>EST. VALUE PER S.D.T., F.O.B. PARSONS</u>		\$504.86

*Handwritten notes:*  
 1-50/10  
 JEM/ST/ST

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N.S.R.ZINC CONCENTRATESMarch 29, 1974 PricesPAYMENTSCAN\$/S.D.T.

<u>Pb</u> = 7% or 140 lbs @ 85% = 119 lbs @ (33.324¢ US @ 0.9725 = 32.408¢ CAN - 4.5¢ = 27.908¢ CAN)	= \$ 33.21
<u>Zn</u> = 55% - (7% Fe = 0.1% = 6.9% Fe X 0.1% Zn = 0.69% Zn) = 54.31% or 1,086 lbs @ 85% = 923 lbs @ (33.37¢ US @ 0.9725 = 32.452¢ CAN)	= 299.53
<u>Ag</u> = 11 ozs less 1 oz = 10 ozs X (\$5.305 US @ 0.9725 = \$5.159 CAN - 7¢ = \$5.089 CAN)	= 50.89
<u>Cd</u> = 0.36% or 7.2 lbs less 3 lbs = 4.2 lbs @ 60% = 2.5 lbs @ (\$3.75 US @ 0.9725 = \$3.647 CAN - 50¢ = \$3.147 CAN)	= 7.87
	<u>\$391.50</u>

DEDUCTIONS

<u>T/C</u> = \$14.50/S.D.T.	\$14.50	
+ 33 1/3% of zinc payment	99.83	
<u>Fe</u> = 7% - 0.1% = 6.0% X 70¢ per 1%	4.83	
<u>H2O</u> = 10% - 6% = 4% X 30¢ per 1%	1.20	
<u>Truck Charge</u> = \$85.00/50 ST	1.70	= 122.06
		<u>\$269.44</u>
		AGENCY COMMISSION = 2% of \$243.68
		5.39
		<u>\$264.05</u>
<u>FREIGHT</u> = \$16.22/SWT @ 10% moisture		18.02
		<u>\$246.03</u>

ORE RESERVES & MILL FACTORS

		<u>Ag</u>	<u>Pb</u>	<u>Zn</u>
Mineable Replacement Ore Reserve (D. Scott April, 1974)	167,033 tons @	5.67	4.28	5.94
Geological Vein Ore Reserve (L.Manning & Assoc. April '72)	80,243 " @	assumed same		
	<u>247,276</u>			
Dilution @ 10%	<u>24,728</u>			
<b>TOTAL ORE RESERVE</b>	<b><u>272,004 tons @</u></b>	<b><u>5.10</u></b>	<b><u>3.85</u></b>	<b><u>5.35</u></b>

Assuming Lead conc. = 60% Pb, tail = 0.80% Pb, overall recovery = 80% Pb

Zinc conc. = 55% Zn, tail = 1.20% Zn, overall recovery = 80% Zn

Lead concentrate produced per day @ 500 t.p.d. = 22.0 tons

Zinc concentrate produced per day @ 500 t.p.d. = 35.8 tons

Total concentrate produced per day @ 500 t.p.d. = 57.8 tons

Overall Ratio of Concentration = 8.65 @ 38% Pb Conc.  
62% Zn Conc.

Accept Overall Ratio of Concentration = 9.0

Thus Lead concentrate produced per day @ 500 t.p.d. =  $500/9 \times 0.38$   
= 21.1 tons

Zinc concentrate produced per day @ 500 t.p.d. =  $500/9 \times 0.62$   
= 34.4 tons

Ratio of concentration - Lead  $500/21.1 = 23.7$  38%

Zinc  $500/34.4 = 14.5$  62%

Total  $500/55.5 = 9.01$

CONCENTRATE & METAL PRODUCTION

		<u>Ag</u>	<u>Pb</u>	<u>Zn</u>
MILL FEED	272,004 tons @	5.10	3.85	5.35
Lead Conc production	272,004/23.7	=	11,477 tons	
Zinc Conc production	272,004/14.5	=	18,759 tons	

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Total Metal Content

<u>Metal</u>		<u>Lead Conc.</u>		<u>Zinc Conc.</u>
Pb	60%	13,772,400 lbs	7%	2,626,260 lbs
Zn	8%	1,836,320 lbs	55%	20,634,900 lbs
Ag	69 oz	791,913 ozs	11 oz	206,349 oz
Cu	0.7%	160,678 lbs	0.37%	138,817 lbs
Cd	-	-	0.36%	135,065 lbs

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SUPER - ROYALTY SCHEDULE

METAL	BASE PRICE	+20%	COMINCO MARKET PRICE	DIFF.	ROYALTY @ 50%	METAL PAID FOR	ACTUAL METAL CONTENT	SUPER ROYALTY \$
Ag in Lead Conc	\$ 2.87	\$ 3.44	\$5.159	\$ 1.719	\$0.860	736,479	791,913 oz	\$633,37
Ag in Zinc Conc	\$ 2.87	\$ 3.44	\$5.159	\$ 1.719	\$0.860	187,590	206,349 oz	161,32
Pb in Lead Conc	18.5¢	22.20¢	22.92¢	0.72¢	0.36¢	12,636,177	13,772,400 lb	45,49
Pb in Zinc Conc	18.5¢	22.20¢	32.408¢	10.208¢	5.104¢	2,232,321	2,626,260 lb	113,93
Zn in Zinc Conc	18.5¢	22.20¢	32.452¢	10.252¢	5.126¢	17,314,557	20,634,000 lb	887.54
Zn in Lead Conc	18.5¢	22.20¢	34.83¢	12.630¢	6.315¢	1,285,424	1,836,320 lb	81,17
Cu in Lead Conc	55¢	66.0¢	\$1.368	70.80¢	35.40¢	45,908	160,678 lb	16,25
Cu in Zinc Conc	55¢	66.0¢	NONE	-	-	NONE	138,817 lb	NIL
Cd in Zinc Conc	N.A.	-	\$3.647	N.A.	N.A.	46,898	135,065	N.A.

TOTAL SUPER ROYALTY - LEAD CONC	\$ 776,288
TOTAL SUPER ROYALTY - ZINC CONC	1,162,809
TOTAL SUPER ROYALTY - ALL CONC	\$ 1,939,097



BASIC & SUPER - ROYALTY SCHEDULE

	LEAD CONC \$/TON	ZINC CONC \$/TON	MILL FEED \$/TON
Super Royalty	\$ 67.64	\$ 61.99	\$ 7.13
Basic @ 4%	20.19	9.84	1.53
Basic @ 1½%	7.57	3.69	0.57
Super Royalty plus 1½%	75.21	65.68	7.70
Super Royalty plus 4%	87.83	71.83	8.66

REVENUE DISTRIBUTION

		GROSS REVENUE	SMELTER CHARGES	CONC FREIGHT	MINING MILLING	TOTAL COSTS	MINE REVENUE	4% ROYALTY	SUPER ROYALTY	TOTAL ROYALTY	NET REVENUE BEFORE TAXES
Lead	Pb	\$ 2,212,651							Pb \$ 45,490		
Conc	Ag	3,747,929							Ag 633,372		
	Other	344,769							Other 97,426		
		<u>\$ 6,305,349</u>	304,255	206,816	2,170,591	2,681,662	3,623,687	231,771	\$ 776,288	\$1,008,059	\$2,615,628
Zinc	Zn	5,618,883							Zn 887,544		
Conc	Ag	954,646							Ag 161,327		
	Other	770,620							Other 113,938		
		<u>\$ 7,344,149</u>	2,390,835	338,037	3,541,492	6,270,364	1,073,785	184,611	\$1,162,809	\$1,347,420	Deficit ( 273,635 )
TOTAL		\$13,649,498	2,695,090	544,853	5,712,083	8,952,026	4,697,472	416,382	1,939,097	2,355,479	2,341,993
PER TON		\$50.18	\$9.91	\$2.00	\$21.00	\$32.91	\$17.27	\$1.53	\$7.13	\$8.66	\$8.61

N.B. 1. Total Royalties equal 50% of (before tax) mine income.

2. Royalty on Zinc Concentrate exceeds revenue from concentrate by \$273,000