

Report of the Directors
of
The Consolidated Mining
and Smelting
Company
of Canada
Limited

For twelve months ending December 31, 1927

BOARD OF DIRECTORS

JAMES J. WARREN, Montreal	-	-	<i>President</i>
E. W. BEATTY, K.C.	-	-	Montreal
W. A. BLACK	-	-	Montreal
S. G. BLAYLOCK	-	-	Trail, B.C.
J. C. HODGSON	-	-	Montreal
SIR HERBERT HOLT	-	-	Montreal
HENRY JOSEPH	-	-	Montreal
W. L. MATTHEWS	-	-	Toronto
SIR VINCENT MEREDITH, BART	-	-	Montreal
F. GORDON OSLER	-	-	Toronto
J. K. L. ROSS	-	-	Montreal

J. E. RILEY, *Secretary*

TRANSFER AGENTS

THE TORONTO GENERAL TRUSTS CORPORATION, TORONTO
THE ROYAL TRUST COMPANY - - - MONTREAL

The
Consolidated Mining and Smelting
Company of Canada, Limited

DIRECTORS' REPORT

To the Shareholders
of The Consolidated Mining and Smelting Company
of Canada, Limited:

Gentlemen:—

Your Directors submit the twenty-second Financial Statement along with the reports of the General Manager, the Manager of Mines, the Comptroller, and the Manager of Sales. As usual the report of the West Kootenay Power and Light Company, Limited, is included.

After providing for current development, depreciation of plant, depletion of property and adding \$62,993.74 to the Fire Insurance Reserve, the net profits were \$13,139,957.92, as compared with \$13,915,262.44 in 1926.

Capital Expenditure during the year amounting to \$3,590,506.77 was added to the reserve for Additions to Property through Profit and Loss, as compared with \$2,274,771.66 in 1926.

Your Directors think it wise to add another \$1,000,000.00 to the Contingent Reserve.

After deducting these sums and Federal and Provincial Taxes (amounting to \$1,388,989.30) and providing for Dividends Numbers 46 and 47, the remainder, \$801,586.85, was added to the Profit and Loss Account.

Both the Federal and Provincial Governments have reduced tax rates—a step in the right direction—as a Government levy of over fifteen per cent of the net profits of a mining company is hardly an incentive to capital to engage in such a hazardous enterprise as mining. At the same time the difficulties and obligations of Post-War Governments must be admitted and acknowledgment made that both Governments are doing their best to lighten as much as possible the burdens under which Canadian industry is struggling.

The decline in the prices of base metals and silver continued throughout the year. Of course, this is reflected in the value of the output and also in the operating profit. Increased production and lower costs helped materially the year's results.

The present outlook is not promising for much appreciation in metal prices.

The developments in your mines continue satisfactory, except in Rossland, which is practically finished.

If the experiments being conducted during the coming season with the application of triple phosphate to the Prairies, be as successful as expected, a good market will be gradually developed there for your phosphate deposit near Crow's Nest, British Columbia.

A perusal of the report of the Manager of Mines will disclose how extensively exploratory work has been carried on, and also that the finding of a mine is not easy, even when as a prospect the property has commended itself to your engineers through favorable surface showings.

At the same time, as it is only by prospecting, examining and developing that a mine can be found, your Company will continue its efforts as in past years.

The fact stated by your Comptroller that there was no fire loss again during 1927, speaks well for the condition of your plants and their care and up-keep. They have been well maintained.

Excellent progress is being made by the West Kootenay Power & Light Company, Limited, under the efficient management of Mr. Lorne A. Campbell, its Vice-President and General Manager, in the installation of the third plant (of 60,000 Horse Power) referred to in the last Annual Statement. Mr. Campbell's report shows that the year's operations of the Power Company have been very successful.

Capital Expenditure amounted to \$4,877,019.27, of which \$1,681,793.33 was spent on Property Account, and \$3,195,225.94 on Plant Account.

The large items were:

PROPERTY:

Purchase of shares of Henry Gardner and Company, Limited.....	\$486,512.50
Purchase of shares of West Kootenay Power and Light Company, Limited.....	800,000.00
Advance to Coast Copper Company.....	111,534.21
Sullivan Mineral Claims.....	62,608.02
Big Missouri Development.....	75,760.19
Buena Vista Mining Company (operating the Big Missouri property).....	50,500.00

PLANT:

Smelter Extensions.....	\$2,529,354.55
Sullivan Mine and Mill additions.....	557,281.47
St. Eugene Crushing plant, etc.....	60,692.42

In the Property expenditure, the two items of \$486,512.50 paid for 100,000 shares of Henry Gardner and Company, Limited, and \$800,000.00 paid for shares of the West Kootenay Power and Light Company, Limited, were added to your assets. The remainder of the Property expenditure and all of the Plant expenditure were charged to your operating revenue, and added to your "Additions to Property through Profit and Loss."

Dividends totalling 10 per cent and bonuses amounting to \$10.00 a share were declared during the year. These amounted to \$6,358,875.00. Similar disbursements for 1926 amounted to \$5,078,492.50.

Your financial position has again been strengthened.

There has been hearty co-operation between the men and the management during the year.

Your staffs and your selling representatives continued their loyal and efficient services in your behalf.

Your Directors having analysed your By-Laws, decided to have them re-drawn to suit changed conditions. Your approval will be asked of the amended and modified By-Laws as adopted by your Board.

Late in the year your much respected and loved Vice-President, Mr. Charles R. Hosmer, passed away. Your Directors feel his loss very keenly and bear testimony to the great services he performed in your behalf. You will be asked to pass a resolution of appreciation and sympathy.

His place as the Vice-President was filled by the election of Mr. Wilmot L. Matthews. Mr. W. A. Black was elected to fill the vacancy in the Board.

In recognition of his efficient services, your Board have appointed Mr. S. G. Blaylock, your General Manager, a Vice-President.

On behalf of the Board,

JAMES J. WARREN, President.

Montreal, March 6, 1928.

The Consolidated Mining and Smelting

Balance Sheet 1927

LIABILITIES

CAPITAL:

Authorized:

600,000 Shares at \$25 each..... \$15,000,000.00

Issued and Fully Paid:

As at December 31, 1926..... 12,705,525.00

Allotted during 1927:

To Employees:

As Bonus..... \$12,675.00

For Cash (on which was

paid at December 31,

1927, \$3,237.50).....

3,375.00

16,050.00

\$12,721,575.00

PREMIUM ON SHARES ISSUED:

2,294,520.00

SUNDRY CREDITORS:

Accounts Payable..... \$2,020,860.46

Reserve for Dominion and Provincial Taxes 1,682,734.33 3,703,594.79

DIVIDENDS:

Payable January 15, 1928..... \$3,180,393.75

Dividend Cheques Outstanding..... 3,422.26 3,183,816.01

RESERVES:

Fire Insurance..... \$560,605.20

Employees' Pension Fund..... 291,561.00

Contingent Reserve..... 3,000,000.00

Additions to Property through Profit and

Loss.....

9,426,072.27

13,278,238.47

CONTINGENT LIABILITIES:

As Guarantor of Principal and Interest of

West Kootenay Power & Light Company

Limited, Twenty-Year Six Per Cent

Bonds of a par value of.....

\$1,588,500.00

Bills of Exchange Discounted.....

£71,192-8-9

PROFIT AND LOSS ACCOUNT:

Balance December 31, 1926..... \$12,398,109.08

Profit for Year ended December 31, 1927.. 13,139,957.92

\$25,538,067.00

LESS: Income and Mineral Taxes paid and

reserved for in 1927.....

1,388,989.30

\$24,149,077.70

LESS: Appropriations:

For Dividends Nos. 46 and

47..... \$6,358,875.00

For Additions to Property

through Profit and Loss. 3,590,506.77

For Contingent Reserve... 1,000,000.00

10,949,381.77

13,199,695.93

\$48,381,440.20

Audited

We certify that we have audited the Accounts of The Consolidated Mining and Smelting Accounts maintained at the offices at Kimberley, Trail, Moyie, Rossland and Vancouver. Inventories of Stores and Materials and of Ore and Smelting Products are as certified by market quotations of that date less estimated cost of refining, and the refined Lead and Zinc going, we report to the Shareholders that the above Balance Sheet is, in our opinion, properly the best of our information and the explanations given to us, and as shown by the Books of Edwards, Morgan & Co., as at the date of the closing of the Accounts, December 31, 1927.

VANCOUVER, B.C., March 3rd, 1928.

Company of Canada, Limited

December 31, 1927

ASSETS

MINES, MINERAL CLAIMS AND SHARES IN OTHER COMPANIES:		
Balance December 31, 1926.....	\$9,697,826.79	
Expenditure for year ended December 31, 1927.....	1,681,793.33	
	<u>\$11,379,620.12</u>	
LESS: Provision in 1927 for Depletion of Mineral Properties.....	535,249.61	\$10,844,370.51
MINING, SMELTING, CONCENTRATING AND REFINING PLANTS:		
Balance December 31, 1926.....	\$11,395,459.67	
Expenditure for year ended December 31, 1927.....	3,195,225.94	
	<u>\$14,590,685.61</u>	
LESS: Provision in 1927 for Depreciation...	1,565,835.20	13,024,850.41
ORES, METALS AND SMELTER PRODUCTS ON HAND AND IN TRANSIT.....		4,309,160.58
MINES AND SMELTER STORES AND MATERIAL..		2,788,959.81
ADVANCES TO WEST KOOTENAY POWER AND LIGHT COMPANY, LIMITED.....		28,590.48
ACCOUNTS RECEIVABLE.....		2,173,103.04
DUE FROM SHAREHOLDERS UPON SHARES ALLOTTED.....		137.50
DOMINION, PROVINCIAL, MUNICIPAL AND INDUSTRIAL BONDS:		
At Cost, including Securities held for Fire Insurance and Employees' Pension Fund Reserves.....		13,575,501.34
CASH IN BANK AND ON HAND:		
Montreal, Toronto, Vancouver and Trail..	\$1,627,070.25	
Sundry Cash Accounts.....	2,269.45	1,629,339.70
	<u>7,426.83</u>	
DEFERRED CHARGES TO OPERATIONS.....		7,426.83
		<u><u>\$48,381,440.20</u></u>

Report

Company of Canada, Limited, for the year ended December 31, 1927, including the Mines and S. C., and that we have received all the information and explanations we have required. The Company's Officials; the values of Gold, Silver and Copper contents have been corrected to sold at December 31, 1927, have been included at the cost of production. Subject to the foregoing, we have drawn up so as to exhibit a correct view of the financial position of the Company according to Company in British Columbia and the accounts of the Montreal Office, as audited by Messrs.

HELLIWELL, MACLACHLAN & Co.,
Chartered Accountants.

The Consolidated Mining and Smelting

Profit and Loss Account for

TO ORES, METALS AND SMELTER PRODUCT ON HAND AND IN TRANSIT AT DECEMBER 31, 1926.....	\$4,836,183.61
" CUSTOMS ORE AND BULLION PURCHASED.....	3,421,206.29
" FREIGHT AND INSURANCE ON ORES FROM COMPANY'S MINES	762,454.22
" MINING, SMELTING AND GENERAL EXPENSES.....	11,572,064.25
" DEVELOPMENT EXPENSE.....	546,877.16
" DEPRECIATION OF PLANT AND EQUIPMENT.....	1,565,835.20
" PROVISION FOR DEPLETION OF MINERAL PROPERTIES.....	535,249.61
" INTEREST, BANK AND GENERAL.....	68,533.84
" DIRECTORS' FEES.....	6,360.00
" FIRE INSURANCE RESERVE.....	62,993.74
" SUNDRY ITEMS WRITTEN OFF.....	6,454.12
" BALANCE, PROFIT BEFORE PROVISION FOR DOMINION AND PROVINCIAL INCOME TAXES.....	13,139,957.92

\$36,524,169.96

Company of Canada, Limited

Ended December 31, 1927

BY SALES OF SMELTER PRODUCTS, ORE, ETC.....	\$31,438,566.74
" ORES, METALS AND SMELTER PRODUCT ON HAND AND IN TRANSIT AT DECEMBER 31, 1927.....	4,309,160.58
" REVENUE FROM INVESTMENTS AND SUNDRY ADVANCES....	743,119.96
" RENTS, ROYALTIES AND SUNDRY REVENUE.....	33,322.68

\$36,524,169.96

General Manager's Report

TRAIL, B.C., Jan. 25, 1928.

To the President,
The Consolidated Mining & Smelting Company
of Canada, Limited:

Dear Sir:

I beg to submit the following report of the Company's operations during 1927, including the reports of the Manager of Mines and the Comptroller.

From an operating viewpoint results obtained in 1927 surpass those of 1926 in every way. In each department operating costs show a reduction, and metallurgical recoveries a gain.

The gross tonnage of metal produced was very much larger. Compared with 1926, the gold production was only about 60% and the copper about 90%, but these two metals only comprise about 9% of the Consolidated's output; the silver production remained the same; the total lead production was increased 11%; the total zinc production was increased 10%. Practically all of the lead and zinc produced was refined at Tadanac—less than one percent being exported as Lead Bullion and Zinc Concentrates.

Of the construction under way or authorized at the beginning of the year, the enlargement of the Sullivan Mill to 4,000 tons, the Cottrell plant and stack for the Lead Smelter, the 80-ton addition to the zinc plant, the Smelter change house, the Zinc Residue Drying plant, the Electric Furnace plant, and the 1,000,000 gal. reservoir at Tadanac, were all completed and put into operation during the year. The Coarse crushing plants at Moyie and Tadanac were nearly completed and will be ready by the time they are needed.

The following construction was authorized and completed during the year: The addition of 12,000 horse power steam turbine generator set and 3,000 horse power of Boilers to the Kimberley auxiliary power plant; a Power Line from Cranbrook to Kimberley so that the power could be used at Moyie; a telephone line connecting Kimberley and Trail—a distance of 200 miles; a Nurses' home in connection with the Trail Hospital; additions to the Trail shops, and a large fire-proof extension of the Tadanac general office. Most of the additional authorized construction is either complete or nearly so.

The Sullivan Mine:

The greatest progress made during the year is undoubtedly in the underground work at the Sullivan Mine. The cost of mining a ton of ore has been reduced approximately twenty-five percent. At the same time the whole appearance of the mine indicates progress and a higher state of efficiency and promises a further reduction in cost in 1928.

The Kimberley Concentrator:

The ore supply was satisfactory and of about the same grade as during 1926, although the zinc content was somewhat lower.

The cost of concentration again shows a slight reduction; while the metal recoveries are again very much better than any previous work, recovering $6\frac{1}{2}$ lbs. more metal from a ton of ore of the same grade in 1927 than in 1926.

The grade of both the lead and zinc concentrates was also improved resulting in a considerable saving in freight charges and at the same time enabling the reduction plants to make lower costs and higher recoveries.

After additional capacity was available, experimental work was done to establish the benefit which might be gained from further processing the ore. When this experimental work demonstrated beyond question that recoveries could be improved by further treatment, the tonnage milled was raised to 4,000 tons per day. The additional equipment has been authorized to enable further processing to be done. It will be installed as rapidly as possible.

Through selective mining of the higher grade stopes and the operation of the 4,000 H.P. auxiliary steam plant, full production was maintained when the East Kootenay Power Company was short of power.

The very satisfactory performance of the original auxiliary steam power plant and further interruptions in the supply of power by the East Kootenay Power Company's plant made it seem advisable to install another 2,000 H.P. unit. This was authorized and completed during the year. The auxiliary steam power plant is thoroughly modern. It consists of 7 Babcock and Wilcox water tube boilers with automatic chain grate stokers and three 2,000 H.P. steam turbo generators. As 50 tons of coal a day are required to furnish the heat needed in the concentration process, most of the boilers are kept under steam so

that the generators can be put into service to supply power on a minute's notice. The entire plant has been required several times since its completion and has prevented many thousands of dollars loss.

As the East Kootenay Power Company have also installed a steam plant at Sentinel, B.C., your Kimberley operations are now assured of a plentiful power supply. The importance of this power supply is paramount as over 80% of Tadanac's lead and zinc supply comes from Kimberley.

The St. Eugene Concentrator:

This mill has been operated most of the year, only being shut down when short of power.

The results of this operation have been remarkable. A fair profit can be made while operating on tailings as low as three and one half percent of combined lead and zinc.

A coarse crushing plant has been built at this mill in order to treat the old mine dumps.

This concentrator will also be available to mill customs ore from East Kootenay points, the Sullivan mine dumps, and even to act as an auxiliary to the Kimberley Concentrator.

The Lead Smelting Plant:

Perhaps the most noteworthy improvement in the metallurgical department is in the increased efficiency of the Lead Smelting Plant. This plant had reached a very high state of efficiency in 1925 and added to this in 1926. Early in 1927 the new Cottrell plant for roaster fumes was put into commission. This plant is one of the most modern installations in existence. The estimates of savings by this plant have been very much exceeded; in fact, this treater has reduced the lead losses of 1926, which were considered as very low, to less than one half that amount in 1927.

The lead bullion production was 10% greater than in 1927.

The cost of smelting a pound of lead was substantially reduced during the year but the cost of smelting a ton of ore was slightly higher than that in 1926.

The Lead Refinery:

The year 1927 has again broken all previous tonnage records, practically 144,000 tons being produced in 1927 against 125,000 in 1926.

The cost per pound of lead refined was slightly higher than in 1926, largely due to the necessity of purchasing sulphuric acid for the greater part of the year pending the completion of the new sulphuric acid plant.

The Copper Smelter and Refinery:

A reverberatory furnace has been installed and has been in operation for the last third of the year. This furnace will undoubtedly be an improvement on the Blast Furnace for the ore available. However, it is too soon to say to what extent the costs and recoveries will be affected.

Both plants are working on an insufficient ore supply, consequently costs are high.

The Zinc Plant:

This plant again shows improvement both in recoveries and costs over all previous records. During the first five months of the year this plant continued to improve on the excellent work done in 1926. When the additions to the plant were started in June there was some falling off in extraction from the point reached in May. While the extraction at the end of the year was still below May's work there is some improvement and it is hoped that May's record will soon be reached again.

The new additions were ready in June and were put into operation as fast as power was available. It was considered that the plant could not be run to any extent until the No. 3 Power Plant at Bonnington was ready. Water conditions have been such that at least three quarters of this additional plant have been in continuous operation ever since its completion. Indications are that the Kootenay River will remain high enough through the remainder of the season to operate both No. 1 and No. 2 Plants at Bonnington to full capacity until next fall at least and probably until No. 3 Plant is ready early in 1929.

The Tadanac Concentrator:

Only 56,582 tons were milled in 1927 against 81,200 in 1926. Partly because the costs of milling intermittent lots of ore are much higher than those which can be made in a mill with a constant ore supply, and partly on account of the extra cost of freight, several small mines decided to build their own mills and stopped shipping.

A coarse crushing plant and a set of receiving bins has been added to this concentrator and it is hoped that costs will be sufficiently reduced to allow a considerable reduction in the milling charges.

The Rossland Mines:

These properties continue to be very discouraging. The town of Rossland is affording homes for Trail Workmen.

Research Department:

As in 1926, the most important work carried on in this department has been in connection with the recovery of zinc-lead-silver and iron contained in the Zinc Plant Rejects and Lead Blast furnace slags. A 1500 k.w. electric furnace has been in operation for several months and has demonstrated that these products can be treated profitably in an electric furnace.

Four or five years ago some work was done on blowing powdered coal through molten lead blast furnace slags. This work was discontinued because the electric furnace was considered more promising and because the Trail plant had no suitable coal grinding apparatus.

The mechanical difficulties in connection with electric smelting, the delicacy of the operation and the fact that powdered coal was now available, together with rumors that the Anaconda Copper Co. were having considerable success with the powdered coal treatment at Tooele, caused us to resume research work along these lines. This work promises to excel the Electro-thermic work on lead blast furnace slags and possibly on zinc plant rejects. It is expected that the process will be far enough worked out to build a plant to retreat the current production of lead slag this year. Fifty tons of zinc will be recovered each day from this source.

The Anaconda Copper Co. have already installed a commercial-sized experimental plant to use this process at Helena.

In anticipation of the success of these processes all the zinc plant residues have been saved with the exception of the amount used for flux on the lead furnaces. The lead blast furnace slags have also been stored for several months.

A plant for the recovery of cadmium from the zinc plant residues has been built and this metal will be added to the list of metals produced by the Company early in 1928.

Tests on the value of triple phosphate are being carried out in the three Prairie Provinces in conjunction with the Provincial Agricultural Departments and the Canadian Pacific Railway. One hundred and eighty tons of triple superphosphate is being made from rock from the Company's new Phosphate fields for this purpose.

Research work on antimony and bismuth indicates that these two metals will be recovered from the refinery by-products and marketed before the end of the year.

General Office Building:

An authorization was given in May to extend the General Office building and to replace the wooden portion with a fire-proof building. These alterations have been completed, making the General Offices thoroughly fireproof and of ample accommodation to take care of our rapidly growing business for some years to come. The building is in every way a credit to the Company.

The Hospital accommodation both at Trail and Kimberley has had to be increased. At Trail this was accomplished by building a Nurses' Home and converting the nurses' former quarters into wards, provision for which was made in the original plans. At Kimberley the building has been increased 100%. Both of these hospitals have been efficiently run and have contributed greatly to the comfort of our employees and their families.

The Co-operative Committees:

These committees have once more proved their usefulness both to the employees and the management. The men serving on these committees have given freely of their time and have brought about many improvements in the working conditions of the men and their relationship to the management. Their main achievements for 1927 have been securing family contracts with the doctors, increased activity in the Workmen's Benevolent Societies, and the successful inauguration of a group insurance carried by the men themselves augmenting that carried for the men by the Company.

The increased efficiency and reduced costs throughout the Company's operations give eloquent testimony to the excellent and faithful services of our employees.

The following officers have been in charge of the various departments:

General Offices. . . T. W. Bingay, Comptroller; R. C. Crowe, Solicitor; A. G. Cameron, Asst. Solicitor; H. B. Fuller, Chief Accountant; W. R. Baxendale, Purchasing Agent; G. A. Wallinger, Asst. Chief Accountant.

Mines.....W. M. Archibald, Manager of Mines, and Staff.
 Concentration....R. W. Diamond, Superintendent; C. T. Oughtred, Asst. Superintendent; R. G. Anderson, H. R. Banks, S. Grey and W. H. Poole.
 Smelter.....James Buchanan, Superintendent; G. E. Murray, Asst. Superintendent; R. K. Blois, Supt. of Smoke Treaters.
 Zinc Plant.....B. A. Stimmel, Superintendent; F. S. Willis, Asst. Superintendent; D. G. Bisset and G. Cruickshank, Departmental Superintendents.
 Refineries.....J. J. Fingland, Superintendent; P. F. McIntyre, Asst. Superintendent.
 Engineering.....E. M. Stiles, Chief Engineer; G. F. Chapman, Mechanical Superintendent, H. N. Tiedje and G. H. MacKay, Construction Engineers.
 Research.....F. E. Lee, A. L. McCallum, W. H. Hannay, R. Lepsoe and C. H. Wright.
 Assay Office.....Kurt Raht, Chief Chemist.

Yours respectfully,

S. G. BLAYLOCK,

General Manager.

Manager of Mines Report

TRAIL, B.C., Feb. 1, 1928.

To the General Manager:

Dear Sir:-

I beg to submit the following report covering the operation and development of the Company's Mines and exploratory work for the year ending December 31, 1927:

Ore Production

		12 Months 1927 Tons	1894 To Date Tons	
Sullivan Mine.....	Milling ore.....	1,250,080	6,647,588	
	Lead ore.....	22,137		
	Pyrites.....	—		
St. Eugene.....	Lead ore.....	—	1,026,435	
	Zinc ore.....	—		
	Tailings.....	204,753		
Molly Gibson.....	Silver-lead ore.....	98	9,389	
Highland.....	Lead-silver ore.....	—	12,862	
	Milling ore.....	396	8,359	
Lucky Thought.....	Silver-lead ore.....	—	120	
	Silver-lead concentrates..	—	675	
	Silver-zinc ore.....	—	307	
	Silver-zinc concentrates..	—	1,141	
Richmond-Eureka.....	Silver-lead ore.....	—	19,498	
Number One.....	Silver ore.....	—	25,009	
Ottawa.....	Silver ore.....	—	1,729	
Ottawa.....	Silver concentrates.....	—	164	
Rosland Mines, includ- ing Josie and dumps..	Gold-copper ore.....	15,416	5,425,935	
	Smelting ore.....		—	364,938
	Concentrating ore.....		—	5,928
White Bear.....	Gold-copper ore.....	—	17,238	
Silver King.....	Silver-copper ore.....	—	262,560	
Emma.....	Copper ore.....	—	2,493	
Phoenix Amalgamated..	Copper ore.....	—	7,403	
Number Seven.....	Silicious gold ore.....	—	18,470	
San Poil.....	Silicious gold ore.....	—	10,135	
Hunter V.....	Gold-silver fluxing ore..	5,344	4,173	
Rock Candy.....	Fluorspar crude.....	—	19,741	
	Fluorspar concentrates..	—	590	
Oliver.....	Silica.....	390	886	
Phosphate Claims.....	Phosphate rock.....	886		

Development—Feet

	Drift- ing	Cross- cut- ting	Raising	Sink- ing	Cutting Sta- tion	Total	Diamond Drilling
Sullivan Mine....	3,135.5	1,596	2,106.5	—	196	7,034	11,695
Molly Gibson....	25.0	—	50	—	—	75	2,510
Highland.....	42	—	—	—	—	42	—
Lucky Thought..	15	—	—	—	—	15	—
Richmond Eureka	125	—	—	—	—	125	—
Coast Copper....	2,211.5	422.0	60.5	327.5	60	3,081.5	641
Rossland Mines..	250.5	117	230.5	—	—	598	2,807
Hunter V.....	—	—	72	—	—	72	—
Molly-Lost Creek	48	—	—	—	—	48	2,723
Voigt's Camp....	—	—	—	—	—	—	3,308.5
Properties under option.....	487.5	19	95	23	—	624.5	16,880.9

making a total to December 31, 1927, of:—

	Feet	Miles
Sullivan.....	88,249.5	16.71
Molly Gibson.....	12,705.0	2.39
Highland.....	21,145.0	4.00
Lucky Thought.....	3,675.0	.69
Richmond Eureka.....	10,299.0	1.95
Coast Copper.....	16,775.0	3.17
Rossland Mines.....	431,241.5	81.67
Hunter V.....	923.0	.17
Molly-Lost Creek.....	158.0	.03

Sullivan:

Production was maintained on a 3,000 tons a day basis until the end of May, when the tonnage was gradually increased until the output reached 4,000 tons a day for October, which daily average was held until the end of the year.

Shipments of crude lead ore to Tadanac amounted to 22,137 tons, of which 12,414 tons came direct from stopes and 9,723 from the picking belt.

The concentrator treated 1,248,530 tons of lead-zinc ore and produced 183,609 tons of lead concentrates and 163,074 tons of zinc concentrates, all of which were shipped to Tadanac.

The footwall development program was continued and further stoping areas opened.

A double drum, electrically driven hoist was moved from Rossland and installed on the 4,500 level at the head of the operating raise in the north end, greatly facilitating the development of that section of the vein between the 3900 and 4500 levels.

Extensions of development drifts in the north ore zone, while defining irregularities in the vein, have not materially

increased the tonnage possibilities. Work on the north side of the south ore zone, however, has developed concentrating ore within what has heretofore been considered the limits of the iron zone.

South ore zone stopes produced 462,268 tons or 37% of the concentrating ore shipped. The balance of 787,812 tons as well as the crude lead ore came from stopes in the north ore zone.

Additional improvements were made to the main haulage tunnel and the heavier steel extended to the north end of the mine. Another 24-ton tandem locomotive was installed. The aerial tram, which had handled ore from the upper mine since the property attained production and the upper mine crushing plant were closed down in August upon the completion of the necessary underground connections, which enabled the upper mine product to be handled through the main haulage or 3900 level.

Mining costs were further reduced partly through improvements in stoping conditions and partly through the increase in tonnages handled. Approximately 75% of the ore broken is delivered direct to mine cars, 20% is handled by drag line scrapers and mucking machines and about 5% is hand mucked, the latter being principally in connection with salvage operations in the old workings.

The equipment in the coarse crushing plant was increased with the installation of a third No. 8 gyratory crusher.

Milling operations continued at a high state of efficiency notwithstanding substantial increases in the daily tonnage handled and greater variations in the metal content of the feed.

Storage facilities for tailings were improved.

Further protection was afforded the power supply by increasing the boiler capacity at the concentrator and the installation of a third steam turbine generator of 1,500 K.V.A. capacity.

Housing facilities were extended at McDougall and Camp Chapman mainly through financial assistance to employees wishing to build.

Rossland Mines and Miscellaneous Properties:

Very little development work was accomplished in the Rossland Mines during the year and consisted mainly in exploration in the vicinity of the Mayflower ore shoot, Le Roi southwest ground, and the completion of the diamond drilling campaign in the west ground. No new ore of a commercial grade was indicated.

Shipments amounted to 15,416 tons, of which 769 tons came from the Le Roi and Poorman dumps.

The Rossland Kootenay properties, comprising the Nickel Plate, Great Western and Columbia Kootenay Mines, were taken over during the year and some exploratory work is being

carried on from adjoining Centre Star workings. The outlook, however, for important new ore bodies is not very promising.

Development work was continued at the Highland Mine, Ainsworth, for a few months, but no new discoveries were made. A small quantity of concentrating ore was shipped to Tadanac.

The Hunter V. Mine, Ymir, was brought to production during the year, ore bins repaired and aerial tramway renewed, following which a satisfactory operation was had, resulting in the shipment of 5,344 tons of fluxing ore to Tadanac.

Diamond drilling and a small amount of underground work was performed on the Molly Group, Lost Creek, which was purchased early in the year. Values are in molybdenum and while no quantity of high grade ore was developed, concentrating material was indicated.

The Gypo Group or silica property at Oliver was operated when necessary to cover the requirements of the acid plant at Tadanac.

Leases which were in effect on the No. One, Ottawa, Lucky Thought and Richmond Eureka were unproductive. That of the Molly Gibson resulted in a small shipment. Diamond drilling on company account in exploration of the Molly Gibson vein at depth, while indicating the continuity of the vein, failed to locate an ore shoot.

The Rock Candy Mine fluor spar property and the Silver King Mine, Nelson, were not operated.

Controlled Properties:

At the Coast Copper development comprised the continuation of the winze to the 1,200 foot level, with crosscutting to and drifting on the vein on the 1,200 and 1,000 foot levels, and a small amount of diamond drilling. The work on the 1,000 foot level checked closely conditions found in the unproductive section of the vein on the 800 foot or adit level; the drift on the 1,200 in the same section of the vein has shown mineralization of commercial importance and improved the outlook for deeper exploration; neither drift has reached the south section of the vein in which the principal ore shoots on the 800 level have been developed.

Transportation facilities were further improved in the construction, with Government assistance, of a road between Alice and Kathleen Lakes.

No new ore was developed at the Sunloch.

Properties under Option:

A continuation of the diamond drilling on the Gracie and Arnold Group, Erie, while indicating wide zones of mineraliza-

tion, failed to locate commercial ore. Other claims in the vicinity with fair surface showings were optioned and drilled, but results were also disappointing.

Drilling of the Copland Property, Rock Creek, was continued and while some gold-copper ore of a commercial grade was indicated, the formation in which it occurred seemed to be badly disturbed and continuity of the ore body was lacking.

The Estella Group on Tracy Creek, East Kootenay, was optioned and some diamond drilling done in an endeavor to locate the ore shoots at depth; results were disappointing. A limited amount of underground work accomplished, however, gave more satisfactory results and the outlook is more hopeful. Values are in zinc, lead and silver.

An option was taken on the Golden King Group, Upper Squamish, and underground development undertaken on a vein which on the surface carried high gold values. Drifting under that section, however, gave disappointing results.

Options were also taken on the Rafuse and McKinnon Groups in the same district. These carried fair surface showings of gold-copper ores, but diamond drilling under them failed to indicate values or quantities of commercial importance.

The Lucky Jim Group, Adams River, Vancouver Island, was also diamond drilled with disappointing results. The surface showings carried appreciable values in gold and copper.

An option was taken on the Independence Group, Coquihalla, but surface exploration for extensions of the ore zones and a more detailed examination of the underground workings were disappointing in the grade of ore exposed.

The control of stock in the George Gold Copper property, in the Bear River section of the Portland Canal country, was optioned and diamond drilling undertaken. Work was interrupted by an early snowfall before the diamond drill holes under way had reached their objectives. Operating conditions on these claims are extremely difficult and substantial tonnages will have to be indicated to justify the necessary outlay. Diamond drilling will be resumed as soon as snow conditions permit.

An arrangement was made with the Big Missouri Mining Company to continue the development of the Big Missouri Group in the Salmon River District of the Portland Canal and to take over their option to purchase. The Buena Vista Mining Company was organized as a holding company, the Consolidated Mining and Smelting Company owning 53% of the stock and the Big Missouri Company, 47%. The property carries a variety of ore, values being in gold, silver, copper, lead and zinc. Development work was started in late September and no definite

results are expected for several months. Transportation facilities between the Premier road and the mine were improved by widening the trail, the Government paying one-half the cost.

Options were taken on the Baldwin Groups of claims in the White-water District, some 65 miles from Hanceville in the Clinton Mining Division. They carry some prominent surface showings with values in gold, silver and copper. A fairly large expenditure will be necessary for their preliminary exploration as large tonnages must be indicated to justify operating equipment and transportation.

An option was also taken on the Emerald Group and adjoining claims on Sibola Mountain near Emerald Lake, approximately 75 miles south and west of Houston on the Grand Trunk Pacific. These carry prominent surface showings of silver-lead ores and preparations are being made for their exploration the coming season.

Surface exploration was undertaken on the Sands property not far from the Engineer Mine, Taku Arm, Atlin District; values were in gold, but were not found in commercial quantities over mineable widths.

An hydraulic operation was also carried on on some placer leases on Boulder Creek in the Atlin District. No definite results are expected before the fall of 1928 when the pay ground should be reached.

Some exploratory work was also done on an old channel on Antler Creek, Cariboo, on account of the Carry option, and while some fairly coarse gold was encountered, no quantity of commercial gravel was indicated.

In the Yukon Territory further development on the Erickson property, McKay Hill, Beaver District, produced encouraging results. A diamond drill will be taken in this season and some deeper exploration undertaken. The ores are lead-zinc with comparatively low silver values.

The Hill-Tivey property, East Clearwater Lake, Ontario, was optioned and preparations made for its development. Values are in gold in a very persistent, though narrow, vein. A shaft will be sunk and exploratory work undertaken from the 150 and 300 foot levels.

In the Province of Quebec work was continued on the McDonald Group, Flavrian Lake, Duprat Township, and on the Company's locations in Montbray and Hebecourt. No ore of commercial importance was indicated and operations were suspended.

An option was also taken on the O'Donovan zinc-lead property near Burbidge on the Maniwaki Branch of the C.P.R.

Surface trenching and diamond drilling failed to indicate a commercial body of ore.

Phosphate:

Further work was done in tracing the beds containing phosphate and 50 leases obtained. Some 885 tons were shipped to Tadanac from outcrops near Crow's Nest and the manufacture of superphosphate on a small scale undertaken.

General Exploration:

Exploratory parties and prospectors for the Company covered substantial areas in British Columbia, the Peace River Block, the Great Slave Lake District, Manitoba, Saskatchewan, Ontario, Quebec and Newfoundland. Several locations were made and much valuable information collected.

Examining Engineers, in addition to keeping in touch with our prospectors, investigated properties and new discoveries throughout the Dominion, as well as in Newfoundland. Options were taken on the more meritorious, although prices and terms were invariably high. Preliminary development has been disappointing in most cases; a few, however, hold possibilities of becoming small producers.

Labor and Mine Supplies:

There was an abundant supply of labor for all operations. Wages for the year were maintained at nearly the same level as 1926, notwithstanding lower prices for metals.

Prices of explosives and general mine supplies showed a slight reduction over 1926. Powder and steel products were about 3% lower.

The following Engineers were in charge of the various operations of the Company and were zealous and efficient in the performance of their duties:

Major A. B. Ritchie, Assistant Manager of Mines.

Mr. E. G. Montgomery, General Superintendent, Sullivan Mine.

Mr. Wm. Lindsay, Asst. Superintendent, Sullivan Mine.

Mr. Frank Fortier, Superintendent Upper Sullivan Mine.

Mr. F. S. Peters, Superintendent Rossland Properties.

Mr. L. W. Oughtred, Superintendent Kootenay Lake Properties.

Mr. Dan Matheson, Superintendent Hunter V Mine.

Mr. C. A. Seaton, Superintendent Coast Copper Company.

Mr. M. M. O'Brien, Superintendent Coast Properties.

Mr. Leonard Telfer }
Mr. W. D. Burgess } Phosphate Investigation.

Exploration and examination work, in addition to having supervision from the above gentlemen in their respective districts, were more particularly in charge of the following engineers:

Mr. Geo. H. Kilburn, Coast Section of British Columbia.
Mr. J. K. Cram, Yukon and Atlin Districts.
Mr. R. B. Shelledy, Okanagan and Cariboo Districts.
Mr. Emil Bronlund, Peace River District.
Mr. W. L. McDonald, Great Slave Lake District.
Mr. P. F. Osler, Manitoba and Western Ontario.
Mr. H. O. Dyer, Ontario.
Mr. R. M. Macaulay, Quebec.
Mr. J. Wightman, Maritime Provinces and Newfoundland.

Yours truly,

W. M. ARCHIBALD,

Manager of Mines.

Comptroller's Report

TRAIL, B.C., February 10, 1928.

To the General Manager:

Dear Sir:—

Operations for 1927 show a net profit, before provision for income taxes, of \$13,139,957.92, after charging to Profit & Loss \$546,877.16, expended in mine development, writing off for plant depreciation \$1,565,835.20, for mine depletion \$535,249.61, and also \$62,993.74 to fire insurance reserve.

The recession in market prices for silver, lead and zinc continued during 1927. Costs were lowered considerably, and output increased, so that the effect of the heavy reduction in prices was almost altogether offset.

Adequate reserves have been made from profits for both Dominion and Provincial Income Taxes. The appropriation for this purpose in 1927 is \$1,388,989.30.

A further appropriation to Capital Reserve of \$3,590,506.77 was made, this being the amount of Capital Expenditure in 1927 excluding investments in other Companies. Also \$1,000,000 was added to the Contingent Reserve.

The net credit for interest and dividends in 1927 showed a considerable increase over 1926. It rose from \$337,912.04 to \$674,586.12. Our Bond investments increased from \$12,695,691.55 to \$13,575,501.34 in the year. At the close of the year there was \$1,629,339.70 cash in the bank, which gives a total of cash items of \$15,204,841.04. Against these items is the dividend of \$3,180,393.75 payable on January 15, 1928.

Except for a small quantity of lead bullion exported early in the year, there were no surplus unfinished products exported.

Metal stocks are about normal at \$4,309,160.58 though somewhat lower than last year.

The fire insurance reserve was increased \$62,993.74 from profits, and more of our own risk was assumed. There was again no fire loss. An Inspection department has been inaugurated and progress already has been made in reducing the risk from fire.

There was a considerable decrease in customs ore business in the year. The decrease is from \$4,349,581.83 in 1926 to \$3,421,206.29 in 1927. Lower market prices are chiefly

responsible for this, but the shippers of several important milling tonnages started construction of mills for ore treatment at the shipping point, and discontinued shipments to Tadanac pending their completion. This will result probably in an increase in 1928.

It is interesting to note that current smelting rates on customs lead ores are lower than those which prevailed in 1913, notwithstanding the higher prices of labor and material.

There was considerable activity in the building of houses by the workmen under the Company's housing scheme, and the acute scarcity of houses has been considerably relieved. There have been no defaults in payments on these houses.

Following is the metal production, and the tonnage treated, at the Kimberley and Tadanac Plants, together from 1894 to date, and for the year 1927:

	Tons Ore Treated	Gold Produced Ounces	Silver Produced Ounces
1894 to date.....	12,590,450	2,164,416	61,690,374
1927.....	1,405,872	29,490	7,179,607

	Lead Produced Pounds	Copper Produced Pounds	Zinc Produced Pounds
1894 to date.....	1,769,198,895	142,735,018	709,891,987
1927.....	291,043,120	18,522,742	147,054,623

Average metal quotations for the present as compared with the previous fiscal year are as follow:

	1926	1927
London Lead.....	£31.075	£24.192
New York Silver.....	62.107c	56.370c
New York Electrolytic Copper.....	13.795c	12.920c
London Zinc.....	£34.105	£28.513

Yours truly,

T. W. BINGAY,

Comptroller.

Sales Manager's Report

To the President:

Dear Sir:—

The World production of Lead and Zinc during 1927 exceeded the record figures of 1926 by approximately 4% and 7%, respectively.

Consumption also increased over the preceding year but not to an extent sufficient to absorb fully the increase in production, with the result that prices began to yield early in the year and continued in their downward trend almost without interruption until the close.

The London price for Spot Lead at the first of the year was £28.11.3, and at the 31st December £22.16.3, a decline of £5.15.0. Zinc opened at £32.15.0 and closed the year at £26.5.0, a decline of £6.10.0, each metal showing a market loss of approximately 20%.

Economic conditions were generally satisfactory and the demand for metals continued strong throughout the year, which enabled us to close with unfilled orders largely in excess of stocks. Europe used larger quantities and our sales in the Orient were quite up to expectations. Another encouraging feature was the regular and healthy increase in Canadian consumption.

It is difficult to predict the course of the Markets for the coming year. Over the first two months of 1928, both Lead and Zinc have shown a tendency to follow the 1927 trend but on the other hand, as European trade conditions continue to improve and as there are no signs of a retrograde movement on this side of the water, the outlook is at least favorable for some improvement.

We have pleasure in expressing appreciation of the very satisfactory manner in which our foreign business was handled by Messrs. Henry Gardner and Company, Limited, London, representing the Company in Europe, and Messrs. A. Cameron and Company, Limited, Kobe, Yokohama and Shanghai, in charge of sales in the Orient.

We also wish to again acknowledge the loyal support and efficient service rendered by the staffs in our Vancouver, Toronto and Montreal offices.

Sales for 1927 were as follow:—

		Pounds
Lead, refined.....	287,756,000	
Lead, in bullion.....	<u>5,358,000</u>	293,114,000
Zinc, refined.....		147,210,000
Copper, refined.....		18,394,000

Respectfully submitted,

W. S. RUGH,

Manager of Sales.

Montreal, March 5, 1928.

The West Kootenay Power and Light Company, Limited

THIRTIETH ANNUAL REPORT OF GENERAL MANAGER

For the Twelve Months Ending December 31,
1927

ROSSLAND, B.C., Feb. 9, 1928.

To the President and Directors,
West Kootenay Power & Light Company Limited:

Gentlemen:—

The Company's Gross Consolidated Revenue for the year ending December 31, 1927, was \$1,923,701.75.

The Revenue Producing Load for the 12 months ending December 31, 1926, was 62,789.2 H.P., and for the year ending December 31, 1927, was 72,992.5 H.P., showing an increase over the year 1926 of 10,203.3 H.P. This increase was practically all consumed by the Consolidated Mining & Smelting Company of Canada, Limited, at Tadanac.

Penticton, Kelowna and Southern Okanagan Extension:

The business in this particular section of the country was approximately the same as for the year ending December 31, 1926, but the conditions are such that we may look for increased business in the Kelowna District.

Copper Mount in Extension:

The Granby Consolidated Mining, Smelting & Power Co. operated continuously throughout the year at Allenby, and our revenue from this source is approximately the same as for the year ending December 31, 1926. I might state, however,

that we were called upon to make a substantial reduction in power to the above Company in order to assist them to carry on, due to the low price of copper. If the power consumed had been at the same rate throughout the year as that charged during the year 1926 our revenue from this source would have shown a substantial increase.

No. 3 Plant, South Slocan:

In my report for the year ending December 31, 1926, I stated that due to water conditions in the river it was impossible to start placing coffer dams for the unwatering of Head Race and Power House Site proper until December 1, 1926, and at the stage the work had reached by the end of December, 1926, showed we would have no difficulty whatever in completing both the upper and lower coffer dams before the rise of the river started, which is generally around the first of April. This statement proved correct. Upper coffer dam in head race was completed and head race unwatered January 29, 1927. Lower coffer dam, required for the unwatering of power house site, was completed and site unwatered April 22, 1927. Actual rock excavation was started on this date, i.e., for the power house site. Rock excavation had advanced to such a stage that we were able to start concrete work for the floors of the draft tubes October 5. As at December 31, 1927, the work had progressed to a point that concrete work, as far as the down and upstream structure of the power house was concerned, was completed to power house floor elevation. By this you will understand that all draft tube liners were installed and the spiral casings for No. 1, 2 and 3 Units completed.

Rock Excavation:

Rock excavation for Intake was 90% completed as at December 31, 1927, and rock excavation for Tail Race was 85% completed at this date. Weather conditions, starting from September 1 to December 31, 1927, were such that it greatly interfered with our operations, this due to the heavy precipitation in rain which took place during September, October and part of November, and then turned into snow and heavy frosts during December. However, the progress which we have made up to December 31, 1927, is such that we will be able to remove the lower coffer dam, which was used for unwatering the power house site and tail race during the low water stage, we expect by April 1, 1928.

Operating:

Your No. 1 and 2 Generating Stations and all distributing lines have been maintained in their usual high operating condition.

No. 1 and No. 4 Lines have been reinforced during the past summer, in order to take care of the increased load at Tadanac. The conductors on the original two lines were made up of 90,000 c.m. cable per conductor. This copper was taken down and replaced by a conductor of 300,000 c.m. capacity. Since the re-stringing of these lines, we were able to cut down the loss between Generating Stations and Tadanac, and, therefore, were able to increase the quantity of power delivered at this point.

I have much pleasure in stating that the Company is fortunate in having a most efficient and loyal staff. It is in a large measure due to their efforts that we have been as usual able to put up service to the satisfaction of all our customers.

LORNE A. CAMPBELL,
Vice President and General Manager.

The West Kootenay Power

Consolidated Profit and Loss Account
 Amalgamating Accounts of West Kootenay Power
 Companies, viz.: Cascade Water, Power & Light
 Company, Rossland Water & Light Company,
 Northport Power Company

To Operating Expenses.....	\$522,685.96	
“ Interest on Bonds.....	160,633.49	
“ Interest Account.....	13,591.61	
“ Depreciation.....	507,232.72	
“ Balance.....	719,557.97	
		<u>\$1,923,701.75</u>

Balance Sheet

LIABILITIES

Share Capital \$15,000,000.00		
Issued 46,120 Common Shares at \$100 each	\$4,612,000.00	
Issued 5,000 Preferred Shares at \$100 each	500,000.00	\$5,112,000.00
Bonds Issued.....	\$3,550,000.00	
Less redeemed.....	899,079.52	2,650,920.48
Accounts Payable.....		126,779.70
Accrued Liabilities.....		68,078.66
Amount reserved for Bond Interest, Sinking Funds and Preferred Dividend		
Reserve Account.....		762,832.17
Profit and Loss Account.....		1,045,417.76
Balance 31st Dec., 1926.....	\$466,339.30	
Profit for the year.....	719,557.97	
		<u>\$1,185,897.27</u>
Contribution to Sinking Funds. \$105,479.51		
Dividends (Preferred)..... 35,000.00	140,479.51	
		<u>\$9,766,028.77</u>

Light Company, Limited

Year Ending December 31, 1927
 Light Company, Limited, with its Subsidiary
 Light Co. Ltd., South Kootenay Water Power
 Company, and
 Kootenay Water Power Company, and
 Light Company

By Gross Revenue..... \$1,923,701.75

\$1,923,701.75

at December, 1927

ASSETS

Plant, Transmission Lines, Buildings and Real Estate.....	\$9,214,574.66	
Autos, Mdse., Meters, Instruments, Fixtures and Furniture.....	268,139.97	\$9,482,714.63
Cash on hand.....		36,320.63
Accounts Receivable.....	\$38,701.62	
Accounts Receivable Suspense Account.....	197,986.81	236,688.43
Prepaid Operating Charges.....		7,131.96
Sundry Investments.....		1,460.55
Trustees' Sinking Fund Accounts.....		1,712.57

I have audited the books and accounts of the West Kootenay Power & Light Company, Limited, and Subsidiary Companies for the year ending December 31, 1927, and have obtained all the information and explanations I have required, and certify that the above Balance Sheet and Profit and Loss Account present in my opinion a true and correct view of the Companies' affairs at the said date as shown by the Books of the Companies. Inventories have been certified to by the Accountant of the Companies.

THOS. S. GILMOUR, C.A.,
 Auditor

Rossland, B.C., Feb. 9, 1928.

\$9,766,028.77

