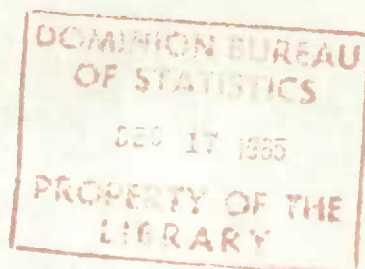


CATALOGUE No.

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ANNUAL



SILVER-LEAD-ZINC MINES

1962

Formerly The Silver-Lead-Zinc Mining Industry

Published by Authority of
The Minister of Trade and Commerce

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EXPLANATORY NOTES

Establishment

The reporting unit in the Census of Manufactures is the **establishment**. Beginning with the 1961 Census, the establishment is defined as follows:

The smallest unit which is a separate operating entity capable of reporting all the following:

- Materials and supplies used,
- Goods purchased for resale as such,
- Fuel and power consumed,
- Number of employees and their pay,
- Inventories,
- Shipments or sales.

The establishment is to be distinguished from smaller subdivisions or departments which do not have records which permit them to report all items required of an establishment. Prior to 1961, some establishments were required to submit two or more separate reports when they were engaged in operations which were classifiable to different industries. Beginning with 1961, separate reports for such operations will be required only in cases where accounting records can provide all the elements of principal statistics enumerated above. Special reporting arrangements were made with respondents when the acceptance of combined reports would have seriously

affected the statistics for particular industries or areas. Where continuity of industry statistics was affected by this change in reporting procedures, adjustments to the data were made back to 1957 in order to maintain comparability of the series for recent years.

A mining establishment is typically a mine, mine/mill, quarry, pit or bog principally engaged in mining operations. Prior to 1961, the Census of Mines, Quarries and Oil Wells attempted to cover the mining activities of all establishments, whether or not they were principally engaged in mining operations. Beginning with the 1961 Census, establishments (accounting entities) which are not primarily engaged in mining are no longer included as mining establishments in the basic industry statistics. Again adjustments to the industry statistics were made to reflect the removal of such reporting units for the period 1957-1960. These reporting units are now listed as establishments in other Bureau industry surveys, such as Wholesale Trade, Construction, etc. In order, however, to maintain complete coverage of certain commodity items produced mainly in mining establishments, many non-mining establishments are now surveyed for commodity information only and the latter are included in the appropriate tables of industry reports.

SYMBOLS

The following standard symbols are used in Dominion Bureau of Statistics publications:

- .. figures not available.
- ... figures not appropriate or not applicable.
- nil or zero.
- amount too small to be expressed.
- * preliminary figures.
- † revised figures.

SILVER-LEAD-ZINC MINES

1962

Formerly The Silver-Lead-Zinc Mining Industry

Part (a) of this report includes statistics for industry 056—Silver-Lead-Zinc Mines and part (b) includes data for industry 055—Silver-Cobalt Mines of the Standard Industrial Classification Manual (Catalogue No. 12-501).

Definition of the Industry—General statistical data contained in this report pertain only to the mining of silver-cobalt and silver-lead-zinc ores. However, the output figures for specific metals represent the total production from all sources.

Silver mining is not a distinct mining industry in Canada inasmuch as the silver-bearing minerals usually occur in association with other metals of

economic value—with lead and zinc; with copper, nickel and arsenic; with lode and placer free gold; in copper-gold and nickel-copper ores. Silver-lead-zinc mining is a very important industry in British Columbia and in the Yukon Territory. In eastern Canada lead and zinc ores have been mined in Ontario, Quebec, Nova Scotia, Newfoundland and New Brunswick.

It should be noted that, in addition to its recovery from silver-lead-zinc ores, zinc is produced in large quantities from copper-gold-silver ores mined in Quebec, Manitoba, Saskatchewan and British Columbia.

A. SILVER-LEAD-ZINC MINES

During 1962 there were 55 firms which did some work on 59 properties. There were 25 producers or shippers. The average employment in the industry numbered 4,532 persons to whom \$23,545,985 were paid in salaries and wages. Fuel cost \$1,561,544 and 191,228,930 kwh. of electricity were purchased for \$1,424,053. Process supplies cost \$7,947,054

and freight plus treatment charges amounted to \$41,421,682.

For statistical purposes some firms are classified as silver-lead-zinc mines in a given year and later transferred to copper-gold-silver mining as the major portion of the value of their output was derived from copper and gold.

TABLE 1 A. Principal Statistics for the Silver-Lead-Zinc Mines, Significant Years 1921-59

Basis: Standard Industrial Classification in use prior to 1960

Year	Estab- lish- ments	Em- ployees	Salaries and wages	Cost of fuel and electricity at works	Cost of process supplies	Gross selling value of products (f.o.b. works)	Net value of production ¹
	number				dollars		
1921	72	781	966,171	90,953	..	2,177,053	..
1929	168	4,153	6,482,392	793,139	..	22,748,089	..
1931	40	1,299	2,149,921	485,106	..	6,351,975	..
1933	43	1,100	1,501,012	284,277	..	7,569,867	..
1937	130	2,220	3,914,643	845,898	1,940,177	28,528,967	22,740,582
1939	83	1,646	2,803,057	667,661	1,619,385	18,254,851	13,555,609
1941	64	1,666	3,452,199	610,168	689,284	24,277,977	20,653,212
1944	20	2,769	5,810,290	860,231	1,752,087	21,291,957	16,802,759
1946	31	2,451	5,987,111	780,136	2,636,735	48,342,501	39,292,606
1949	101	5,438	15,676,043	1,989,632	7,181,113	100,349,929	67,108,165
1951	144	9,324	30,380,859	3,090,958	10,382,057	185,692,981	131,909,215
1954	124	6,386	24,847,011	3,488,018	9,927,474	136,256,758	78,077,960
1957	83	5,844	26,256,837	2,992,834	11,360,204	115,961,445	59,485,349
1958	67	4,485	20,763,855	2,208,845	9,092,759	98,152,340	46,166,133
1959	52	4,241	19,843,990	1,992,494	6,244,399	101,873,270	53,554,292

¹ The gross value from which the value of fuel, purchased electricity, process supplies, freight and treatment charges have been deducted.

TABLE 1 B. Principal Statistics for the Silver-Lead-Zinc Mines, 1957-62

Basis: Revised Standard Industrial Classification and New Establishment Concept

Year	Estab- lish- ments	Em- ployees	Salaries and wages	Cost of fuel and electricity at works	Cost of process supplies	Gross selling value of products (f.o.b. works)	Net value of production ¹
	number				dollars		
1957	83	5,844	26,256,837	2,992,834	11,360,204	115,961,445	59,485,349
1958	67	4,485	20,763,855	2,208,845	9,092,759	98,152,340	46,166,138
1959	52	4,241	19,843,990	1,992,494	6,244,399	101,873,270	53,554,292
1960	47	4,215	21,304,035	2,245,901	8,517,725	111,986,518	61,377,333
1961	68	4,352	22,098,610	2,446,827	6,628,804	111,037,882	61,422,497
1962	59	4,532	23,545,985	2,790,474	7,947,054	111,258,068	59,098,858

¹ The gross value from which the value of fuel, purchased electricity, process supplies, freight and treatment charges have been deducted.

TABLE 2. Ore Mined and Milled by the Silver-Lead-Zinc Mines, 1961 and 1962

	Newfoundland Nova Scotia New Brunswick	Quebec and Ontario	British Columbia	Yukon and Northwest Territories	Canada
	tons				
1961					
Ore mined	394,247	1,044,760	4,245,912	187,384	5,872,303
Ore milled	395,804	1,057,519	4,218,596	187,167	5,859,086
Concentrates produced:					
Lead	44,084	8,911	191,692	12,588	257,275
Zinc	67,085	91,127	346,002	12,249	516,463
Precipitates and other	—	12	607	44	663
Copper	9,148	32,202	—	—	41,350
1962					
Ore mined	556,315	1,165,329	4,327,002	185,877	6,234,523
Ore milled	560,479	1,160,167	4,321,058	185,862	6,227,566
Concentrates produced:					
Lead	50,703	9,339	229,525	12,335	301,902
Zinc	74,154	90,088	396,873	11,904	573,019
Precipitates and other	—	—	438	—	438
Copper, copper-lead	12,107	40,275	—	—	52,382

TABLE 3. Destination of Shipments from Silver-Lead-Zinc Mines, 1961 and 1962

	Tons shipped	Gross value f.o.b. shipping points	Total metal content (without deductions)			
			Gold	Silver	Lead	Zinc
		\$	troy ounces		pounds	
1961						
To Canadian smelters:						
Lead ore	65	9,459	8	5,317	70,192	7,858
Lead concentrates	229,702	29,313,710	889	5,874,110	297,783,123	14,614,627
Zinc concentrates ¹	329,252	33,301,590	202	858,407	31,874,571	331,308,923
Gold concentrates and ore	8,504	37,348	1,070	2,030	23,228	23,835
Copper concentrates ²	32,202	5,123,755	5,284	455,636	—	—
Silver-lead ore	152	13,195	21	12,095	11,326	6,713
Total Canadian	599,877	67,799,057	7,474	7,207,595	329,762,440	345,961,956
To foreign smelters:						
Lead concentrates	92,111	18,815,683	8,648	8,427,981	113,083,471	13,984,134
Zinc concentrates ¹	184,302	20,447,685	1,849	852,583	4,848,261	209,734,412
Tin concentrates	607	744,177	—	—	—	1,213,708 ³
Copper concentrates ⁴	9,301	1,856,205	3,122	473,774	1,194,300	1,138,386
Gold ore	831	312,859	6,289	112,586	55,980	57,807
Silver-lead ore	204	58,472	5	37,191	257,663	—
Tailings	21	6,395	182	264	13	21
Precipitates	56	997,349	6,429	807,721	33,052	—
Total foreign	287,433	43,238,825	26,524	10,712,100	119,472,740	224,914,760
Total shipments	887,310	111,037,882	33,998	17,919,695	449,235,180	570,876,716
Other operating revenue .....	...	134,355	...	...	...	...
Gross revenue .....	...	111,172,237	...	...	...	...
Value of process supplies, etc ⁵ .....	...	49,749,740	...	...	...	...
Net value added by processing .....	...	61,422,497	...	...	...	...
1962						
To Canadian smelters:						
Lead ore	651	5,204	4	4,646	11,234	8,048
Lead concentrates	194,640	22,181,270	905	4,261,003	241,006,339	11,907,732
Zinc concentrates ¹	395,567	38,561,253	613	1,155,677	41,333,220	390,738,872
Copper concentrates ⁶	40,275	6,316,347	4,397	406,165	—	—
Silver-lead ore	1,010	219,485	3,295	98,327	31,261	45,599
Tailings	210	918	—	889	—	—
Total Canadian	632,353	67,284,477	9,214	5,926,707	282,382,054	402,700,251
To foreign smelters:						
Lead concentrates	105,876	19,431,083	9,577	9,008,314	118,722,649	18,265,587
Zinc concentrates ¹	180,459	20,762,719	1,834	662,983	6,238,216	201,893,026
Tin concentrates	556	771,795	—	—	—	1,112,653 ³
Copper concentrates ⁷	8,400	1,925,578	2,688	407,965	1,108,738	1,024,743
Silver-lead ore	15	3,162	—	2,141	16,880	—
Precipitates	62	1,079,254	5,972	717,426	—	—
Total foreign	295,368	43,973,591	20,071	10,798,829	126,086,483	221,183,356
Total shipments	927,721	111,258,068	29,285	16,725,536	408,468,537	623,883,607
Cost of freight .....	...	7,941,756	...	...	...	...
Cost of fuel and purchased electricity .....	...	2,790,474	...	...	...	...
Smelter charges .....	...	33,479,926	...	...	...	...
Cost of process supplies .....	...	7,947,054	...	...	...	...
Net value of shipments .....	...	59,098,858	...	...	...	...
Other operating revenue .....	...	64,832	...	...	...	...

¹ Does not include any zinc concentrates produced from copper-gold-zinc ores in Quebec, Manitoba, Saskatchewan or British Columbia.

² Copper content, in pounds, was 16,392,701.

³ Tin content in pounds.

⁴ Copper content, in pounds, was 5,083,482.

⁵ Includes freight on ore shipments, smelter charges, purchased electricity and fuel.

⁶ Copper content, in pounds, was 19,717,338.

⁷ Copper content, in pounds, was 4,569,346.

Note: In addition to the metals contained in shipments listed in Table 3, there are considerable quantities of lead and silver contained in ores shipped from certain gold mines in British Columbia. Cadmium bismuth, antimony, tin and sulphur are also recovered from the silver-lead-zinc ores produced in this industry.

TABLE 4. Employees and Earnings in the Silver-Lead-Zinc Mines, 1957-62

Year	Administrative		Workmen		Total employees	Total man-hours worked	Earnings		Total earnings
	Male	Female	Male	Female			Adminis- trative	Workmen	
	number						dollars		
1957	905	83	4,782	74	5,844	12,279,530	4,921,808	21,335,029	26,256,837
1958	728	69	3,630	58	4,485	9,376,231	4,430,151	16,333,704	20,763,855
1959	696	69	3,425	51	4,241	8,304,986	4,538,988	15,305,002	19,843,990
1960	635	52	3,478	50	4,215	8,984,756	4,198,509	17,105,526	21,304,035
1961	681	53	3,570	48	4,352	9,234,040	4,393,362	17,705,248	22,098,610
1962	693	53	3,738	48	4,532	9,601,866	4,646,078	18,899,907	23,545,985

TABLE 5. Workmen, by Months, in the Silver-Lead-Zinc Mines, 1961 and 1962

Month	1961	1962					
	Total	Mine			Mill		Total
		Surface		Underground	Male	Female	
		Male	Female	Male			
		number					
January	3,505	1,088	39	1,973	585	4	3,689
February	3,515	1,076	41	1,950	588	4	3,659
March	3,468	1,022	39	1,843	677	4	3,585
April	3,477	1,065	43	1,961	583	4	3,656
May	3,571	1,172	44	1,993	613	4	3,826
June	3,637	1,275	50	1,977	635	4	3,941
July	3,716	1,304	53	1,982	644	4	3,987
August	3,733	1,232	45	1,985	641	3	3,906
September	3,696	1,204	42	1,979	607	3	3,835
October	3,745	1,191	41	2,016	608	3	3,859
November	3,739	1,115	40	1,996	591	4	3,746
December	3,588	1,081	38	1,973	594	4	3,690
Averages	3,618	1,154	44	1,972	612	4	3,786
Man-hours of labour	7,681,398						8,013,955

TABLE 6. Fuel and Electricity Used in the Silver-Lead-Zinc Mines, 1962

Kind	Quantity	Cost at plant
		\$
Bituminous coal (a) From Canadian mines short ton	8,999	224,202
(b) Imported "	2,015	34,405
Sub-bituminous coal (from Alberta mines only) "	13,615	130,810
Anthracite coal "	8	288
Lignite coal.....	—	—
Coke (for fuel only)	—	—
Gasoline (includes gasoline used in cars and trucks) Imp. gal.	264,435	108,066
Kerosene or coal oil..... "	1,890	592
Fuel oil..... "	4,410,137	859,984
Wood (cords of 128 cubic feet of piled wood)..... cord	40	200
Gas (a) Liquefied petroleum gases (propane, etc)..... Imp. gal.	23,961	7,874
(b) Other manufactured gas	—	—
(c) Natural gas	—	—
Other fuel.....	—	—
Electricity purchased for motors and lighting kwh.	171,098,723	1,364,716
Electricity purchased for other purposes "	20,130,207	59,337
Total (cost only) .....	...	2,790,474
Electricity generated (a) For own use..... kwh.	168,100,797	
(b) For sale	194,655	3,751

TABLE 7. Drilling Completed on Silver-Lead-Zinc Deposits, 1960-62

	Footage drilled		
	1960	1961	1962
Diamond drilling for exploration and testing:			
By mining companies with their own personnel and equipment	72,434	52,607	45,359
By diamond drilling contractors	158,755	290,459	436,467
Other diamond drilling:			
Blast hole diamond drilling:			
By mining companies with their own personnel and equipment	362,816	350,240	426,920
By diamond drilling contractors	—	—	54,727
Drilling by percussion or other machines ¹	6,515,819	8,767,937	10,569,036

¹ Not complete as records are unobtainable at certain mines.

TABLE 8. Taxes Paid by the Silver-Lead-Zinc Mining and Smelting Companies, 1960-62

Tax paid	1960	1961	1962
	dollars		
Dominion income tax	11,315,107	12,008,687	10,728,843
Provincial tax	2,795,896	2,444,861	5,715,248
Municipal tax	1,148,260	1,276,905	1,296,153

TABLE 9. Cost of Prospecting by Canadian "Silver-Lead-Zinc Mines" Companies, 1960-62

Province in which prospecting ¹ was conducted	By New- foundland, Nova Scotia, New Brunswick companies ²	By Quebec companies ²	By Ontario companies ²	By British Columbia companies ²	By Yukon and Northwest Territories companies ²	Total
	dollars					
1960						
Newfoundland	352,409	—	—	1,685	—	354,094
Nova Scotia	—	—	—	17,057	—	17,057
New Brunswick	20,153	2,867	1,450	645,125	—	669,595
Quebec	56,496	2,827,151	15,737	168,757	—	3,068,141
Ontario	—	16,371	13,672	68,993	—	99,036
Manitoba	—	—	—	11,691	—	11,691
Saskatchewan	—	—	—	20,323	—	20,323
Alberta	—	—	—	64,643	—	64,643
British Columbia	—	—	—	845,280	—	845,280
Northwest Territories	—	—	—	269,222	102,315	371,537
Yukon	—	—	—	45,491	35,659	81,150
Totals	429,058	2,846,389	30,859	2,158,267	137,974	5,602,547
1961						
Newfoundland	453,721	—	—	22,584	—	476,305
Nova Scotia	—	—	—	48,404	—	48,404
New Brunswick	24,328	340	—	101,149	—	125,817
Quebec	45,680	4,946,653	—	109,171	—	5,101,504
Ontario	—	11,725	15,216	80,478	—	107,419
Manitoba	—	—	—	20,000	—	20,000
Saskatchewan	—	—	—	8,920	—	8,920
Alberta	—	—	—	10,655	—	10,655
British Columbia	—	—	—	696,468	—	696,468
Northwest Territories	—	—	—	146,504	147,833	294,337
Yukon	—	—	—	49,983	111,943	161,926
Totals	523,729	4,958,718	15,216	1,294,316	259,776	7,051,755

See footnotes at end of table.

**TABLE 9. Cost of Prospecting by Canadian "Silver-Lead-Zinc Mines" Companies,
1960-62 - Concluded**

Province in which prospecting ¹ was conducted	By New- foundland, Nova Scotia, New Brunswick companies ²	By Quebec companies ²	By Ontario companies ²	By British Columbia companies ²	By Yukon and Northwest Territories companies ²	Total
	dollars					
1962						
Newfoundland	522,111	13,211	—	457	—	535,779
Nova Scotia	31,984	1,657	—	52,902	—	86,543
New Brunswick	16,202	14,701	—	131,939	—	162,842
Quebec	11,522	6,542,048	—	150,158	21,500	6,725,228
Ontario	—	111,807	3,827	138,544	99,000	353,178
Manitoba	—	17,173	—	24,864	16,526	58,563
Saskatchewan	—	28,255	—	35,367	5,000	68,622
Alberta	—	—	—	161,000	—	161,000
British Columbia	—	146,824	—	788,678	50,000	985,502
Northwest Territories	—	15,201	—	92,631	55,312	163,144
Yukon	—	20,489	—	77,619	108,779	206,887
Totals	581,819	6,911,366	3,827	1,654,159	356,117	9,507,288

¹ Prospecting includes the search for new mineral deposits on the surface and preliminary exploration.

² Province in which the companies' principal operations are conducted.

Note: No indication is made of the kind of minerals sought.

TABLE 10. Specified Expenditures by the Silver-Lead-Zinc Mining and Smelting Companies, 1962

	1962
	\$
(a) Workmen's compensation	749,522
(b) Silicosis assessment	352,834
(c) Unemployment insurance	674,206
(d) Aggregate cost of structures, roads, machinery, equipment, etc., built by or purchased from outside contractors or suppliers and chargeable to Fixed Assets Account	6,934,915
(e) Book value of fixed assets (new structures, roads, machinery, equipment, etc., including major repairs and alterations) produced by own employees and chargeable to Fixed Assets Account	1,513,490
(f) Other capital expenditures not reported in (d) and (e)	348,084
(g) Cost of materials and supplies used in the production of machinery and equipment and in the construction of roads and new structures (including major repairs and alterations by own em- ployees and chargeable to Fixed Assets Account)	261,397
(h) Cost of all other goods, materials and supplies (including office, medical, laboratory, cafeteria and store supplies) purchased and not chargeable to Fixed Assets Account	16,018,359

TABLE 11. Estimated Capital and Repair Expenditures, 1957-64

	Capital expenditures			Repair expenditures			Capital and repair expenditures		
	Con- struction	Machinery	Total	Con- struction	Machinery	Total	Con- struction	Machinery	Total
	thousands of dollars								
1957	6,121	6,260	12,381	1,272	2,650	3,922	7,393	8,910	16,303
1958	1,547	402	1,949	745	4,706	5,451	2,292	5,108	7,400
1959	1,573	944	2,517	622	1,712	2,334	2,195	2,656	4,851
1960	3,907	1,484	5,391	753	3,680	4,433	4,660	5,164	9,824
1961	7,617	8,355	15,972	1,006	3,922	4,928	8,623	12,277	20,900
1962	10,429	4,168	14,597	1,005	4,312	5,317	11,434	8,480	19,914
1963 ^p	16,660	12,665	29,325	886	4,603	5,489	17,546	17,268	34,814
1964 estimate	14,218	5,385	19,603	820	4,696	5,516	15,038	10,081	25,119

SILVER

Statistics on silver production are computed as follows: (a) recoverable silver in ores, concentrates and matte shipped for export; (b) silver in crude gold bullion produced; (c) silver in blister and anode copper made at Canadian smelters; (d) silver in base bullion made by the Consolidated Mining and Smelting Company of Canada Limited, at Trail, British Columbia, which is the only lead smelter in Canada; (e) silver bullion produced from the treatment of cobalt-silver ores by the Cobalt Refinery Ltd., at Cobalt, Ontario.

Silver production in 1962 amounted to 30,422,972 troy ounces valued at \$35,442,761 compared with 31,381,977 troy ounces worth \$29,580,651 in the preceding year.

Ontario produced over 9.3 million troy ounces; Yukon moved up into second place with 6.5 million ounces; British Columbia was in third place with 6.2 million ounces.

TABLE 12. Production of Silver (All Forms) from Canadian Ores, 1953 - 62

Year	Ounces	Value	Year	Ounces	Value
		\$			\$
1953	28,299,335	23,774,271	1958	31,163,470	27,053,007
1954	31,117,949	25,907,870	1959	31,923,969	28,022,860
1955	27,984,204	24,676,472	1960	34,016,829	30,244,363
1956	28,431,847	25,497,681	1961	31,381,977	29,580,651
1957	28,823,298	25,182,915	1962	30,422,972	35,442,761

TABLE 13. Production of Silver (All Forms) by Months, 1961 and 1962

Month	1961	1962	Month	1961	1962
	troy ounces			troy ounces	
January	2,597,485	2,551,394	August	2,240,105	2,408,070
February	2,605,595	2,065,971	September	2,389,225	2,836,669
March	2,972,546	2,532,930	October	3,070,234	2,737,110
April	2,516,521	2,272,855	November	2,659,863	2,502,287
May	2,570,788	2,217,612	December	2,455,589	2,765,480
June	2,893,800	2,683,932			
July	2,410,226	2,848,662	Totals	31,381,977	30,422,972

TABLE 14. Silver Production according to Nature of Ores, by Provinces, 1962

Province	Crude placer gold	Auriferous quartz ores	Copper-gold-silver ores	Nickel-copper ores	Silver-lead-zinc ores	Silver-cobalt and other ores	Total
				ounces			
Newfoundland	—	—	—	—	1,181,648	—	1,181,648
Nova Scotia	—	—	—	—	724,245	—	724,245
New Brunswick	—	—	25,684	—	152,837	—	178,521
Quebec	15	113,452	2,839,020 ¹	—	1,650,532	—	4,603,019
Ontario	—	397,200	2,123,269	1,757,848	397,538	4,707,590	9,383,445
Manitoba	—	6,452	819,656	21,771	—	—	847,879
Saskatchewan	—	—	762,215	—	—	—	762,215
Alberta	17	—	—	—	—	—	17
British Columbia	471	24,971	160,038	—	6,001,457	—	6,186,937
Yukon	11,496	—	2,613	—	6,468,135	—	6,482,244
Northwest Territories	—	72,802	—	—	—	—	72,802
Totals	11,999	614,877	6,732,495	1,779,619	16,576,392	4,707,590	30,422,972

¹ Contains a small quantity recovered from gold ores.

TABLE 15. Production of Silver, by Provinces and by Point of Computation, 1961 and 1962

	1961		1962	
	Quantity	Value	Quantity	Value
	ounces	\$	ounces	\$
Newfoundland:				
In ores and concentrates exported	1,145,105	1,079,376	1,181,648	1,376,620
Nova Scotia:				
In gold bullion and concentrates	—	—	724,245	843,745
New Brunswick:				
In ores and concentrates exported	—	—	178,521	207,977
Quebec:				
In anode copper	2,801,623	2,640,810	2,826,542	3,292,921
In gold bullion made and in concentrates exported	1,514,221	1,427,305	1,776,477	2,069,596
Totals	4,315,844	4,068,115	4,603,019	5,362,517
Ontario:				
In silver recovered in Canada from cobalt ores	4,680,536	4,411,873	4,707,590	5,484,342
In gold bullion	397,729	374,899	334,756	448,241
In blister copper	3,553,413	3,349,447	4,017,089	4,679,909
In ores, concentrates, residues, matte, etc., exported	238,724	225,021	274,010	319,221
Totals	8,870,402	8,361,240	9,383,445	10,931,713
Manitoba:				
In blister copper	420,344	396,216	445,153	518,603
In gold bullion (gold mines) and in ores exported	347,199	327,270	402,726	469,176
Totals	767,543	723,486	847,879	987,779
Saskatchewan:				
In blister copper	876,450	826,142	762,215	887,980
Alberta:				
In alluvial gold	17	16	17	20
British Columbia:				
In alluvial gold	431	406	471	549
In gold bullion	19,094	17,998	23,317	27,164
In base bullion and in ores, etc., exported	8,372,115	7,891,556	6,163,149	7,180,069
Totals	8,391,640	7,909,960	6,186,937	7,207,782
Northwest Territories:				
In gold bullion, placer gold, and exports	77,890	73,419	72,802	84,814
Yukon:				
In alluvial gold	13,556	12,778	11,496	13,393
In silver-lead ores to smelters	6,923,530	6,526,119	6,470,748	7,538,421
Totals	6,937,086	6,538,897	6,482,244	7,551,814
Canada	31,381,977	29,580,651	30,422,972	35,442,761

Note: For 1961 silver was valued at 94.261 cents per troy ounce, the average price of domestic sales; for 1962 the corresponding price was \$1.165.

TABLE 16. Source of Silver Production, by Percentages, 1958-62

Source	1958	1959	1960	1961	1962
In silver-cobalt ores	19.39	20.85	21.04	14.92	15.47
In base bullion ¹	40.84	22.70	23.58	25.50	19.91
In gold ores (bullion and placer)	2.32	2.02	2.05	2.17	2.15
In blister and anode copper ²	23.77	24.04	23.52	24.38	26.46
In matte, copper ores and silver-lead ores, etc., exported (other than silver-cobalt ores)	13.68	30.39	29.81	33.03	36.01
Totals	100.0	100.0	100.0	100.0	100.0

¹ Includes some silver bullion from silver-lead ores.² From copper-gold-silver and nickel copper ores.

TABLE 17. Estimated Consumption of Fine Silver in Canada, for Industrial Purposes, 1960-62

Used for	1960	1961	1962
	troy ounces		
Coinage	7,481,617	5,141,894	10,882,071
Silverware	1,645,647	1,392,825	1,499,891
Photography	1,410,166	1,558,576	1,618,650
Wire and rod	46,257	42,390	18,536
Brazing and lead-silver alloys	129,946	229,834	275,844
Miscellaneous ¹	1,028,431	1,248,564	1,124,350
Totals accounted for	11,742,064	9,614,083	15,419,342

¹ Includes sheet, anodes for electroplating and silver used in manufacture of electrical equipment and jewellery.

TABLE 18. Imports and Exports of Silver and Silver Products, 1961 and 1962

	1961		1962	
	Quantity	Value	Quantity	Value
	troy ounces	\$	troy ounces	\$
Imports:				
Silver, unmanufactured	12,278,469	11,585,948	15,182,336	17,658,069
Silver, manufactures of, n.o.p. ....	...	786,119	...	797,241
Toilet articles of which the most important component in value is sterling silver .....	...	24,941	...	25,225
Totals account for .....	...	12,397,008	...	18,480,535
Exports:				
Silver contained in ore, concentrates, etc.	10,352,700	9,454,289	8,801,332	9,104,528
Silver bullion	10,783,414	10,093,541	9,445,094	10,941,526
Silver manufacturers .....	...	...	...	...
Silver and goldware .....	...	176,587	...	203,846
Totals accounted for .....	...	19,724,417	...	20,249,900

TABLE 19. Silver Production of the World
(From the Annual Report of the American Bureau of Metal Statistics)

Country	1958	1959	1960	1961	1962
			fine ounces		
North America:					
United States	36,800,000	23,000,000	36,800,000	34,900,000	45,167,000
Canada	31,163,470	31,923,969	34,016,829	31,168,415	30,654,429
Mexico	47,591,259	44,074,274	44,525,435	40,341,466	41,249,399
Totals, North America, as reported	115,554,729	98,998,243	115,342,264	106,409,881	117,070,828
Central America and West Indies	3,910,737	3,967,869	4,135,039	4,477,860	4,000,000
South America:					
Argentina	1,543,200	1,549,600	1,671,838	1,430,675	1,318,150
Bolivia (exports)	6,051,284	4,503,766	4,887,113	3,900,206	3,760,381
Brazil	185,313	225,146	252,914	260,415	2,184,271
Chile	1,775,709	2,010,790	1,679,062	2,156,718	
Colombia	105,163	102,678	134,333	127,549	131,599
Ecuador	84,522	162,608	126,419	101,192	127,739
Peru	25,917,755	27,224,588	30,754,786	33,581,222	36,015,845
Totals, South America, as reported	35,662,946	35,779,176	39,506,465	41,557,977	
Europe:					
Austria .....	...	64,300	58,192	58,192	68,480
Finland	560,760	522,727	390,365	456,144	380,495
France	669,749	831,078	778,030	868,050	690,261
Germany, Federal Republic of	2,112,304	1,897,730	1,842,077	1,879,790	
Italy	1,334,225	1,060,693	943,956	973,116	945,660
Norway .....	...	...	...	...	...
Portugal	45,783	52,173	52,245	55,000	48,258
Spain	1,774,850	2,206,698	1,739,677	1,800,000	
Sweden	2,944,233	3,098,070	2,659,448	2,825,246	336,777
United Kingdom	20,553	13,655	7,097	7,000	
Yugoslavia	3,751,616	2,827,271	3,024,768	3,454,003	3,750,844
Totals, Europe, as reported	13,214,073	12,574,395	11,495,855	12,376,541	
Oceania:					
Australia (commonwealth)	16,270,000	15,076,000	15,198,923	14,300,000	17,250,000
Fiji	17,670	23,652	31,319	37,712	
New Guinea ¹	24,512	36,000	33,037	30,699	
New Zealand	1,944	4,873	1,353	804	416
Totals, Oceania, as reported	16,314,126	15,140,525	15,264,632	14,369,215	
Asia:					
Burma	1,487,264	1,728,351	1,984,263	1,743,128	
India	109,824	124,774	132,718	179,144	
Japan	8,351,477	9,477,595	10,419,911	12,159,580	14,753,088
Korea, Republic of	247,782	241,892	329,641	460,411	460,420
Philippines	497,987	504,085	1,133,343	812,793	675,570
Taiwan (Formosa)	51,747	60,974	54,850	77,301	
Totals, Asia, as reported	10,746,081	12,137,671	14,054,726	15,432,357	
Africa:					
Algeria	225,000	400,000	300,000	300,000	
Ghana (exports)	45,762	16,839	14,160	7,027	3,187
Katanga, State of	3,793,787	4,758,310	4,305,014	2,645,206	1,189,577
Kenya	44,146	46,420	33,865	37,836	46,307
Morocco	2,411,000	1,234,303	1,097,183	907,905	858,469
Northern Rhodesia ²	556,523	948,459	698,127	744,084	697,054
Republic of South Africa	1,795,384	2,020,780	2,226,204	2,288,279	2,549,206
Southern Rhodesia	264,630	328,947	392,026	106,801	83,500
South West Africa	1,799,414	1,996,955	1,004,920	1,833,437	1,253,200
Tanganyika (exports)	737,802	536,407	614,279	64,144	101,597
Tunisia	135,191	43,306	34,401	69,766	24,325
Totals, Africa, as reported	11,808,639	12,330,726	10,720,179	9,004,485	
Russia ³	25,000,000	25,000,000	25,000,000	25,000,000	
Total world, as reported	232,211,331	215,928,605	235,519,160	228,628,316	
Estimated world totals⁴	239,000,000	221,900,000	240,200,000	231,800,000	

¹ Year ended May 31, of year following that stated.² Recovered from an accumulation of refinery slimes.³ Conjectural.⁴ This estimate includes the following countries which also produce silver and from which definite figures are not available: Bulgaria, Mozambique, Panama and Turkey.

LEAD

Lead production is calculated as the lead in base bullion made from Canadian ores at the smelter of Consolidated Mining & Smelting Co. of Canada Ltd., at Trail, British Columbia, plus the recoverable lead content in ores and concentrates exported. The value is computed on the basis of the average price, in Canadian dollars, for refined lead.

The silver-lead-zinc mines of British Columbia produce the major portion of the nation's lead. Some of the lead-silver ores from the Yukon territory were smelted at Trail in British Columbia and part were exported to foreign smelters. In eastern Canada

most of the lead concentrates were shipped to foreign smelters for treatment.

Production of lead, in all forms, during 1962 amounted to 215,329 short tons valued at \$42,721,341 compared with 230,435 tons valued at \$47,054,765 in the preceding year. The price of lead was 10.25 cents in January but declined to 9.5 cents in August. It rose in November to 10 cents.

Refined lead output, which included some lead recovered from imported ores, amounted to 152,217 tons in 1962 compared with 171,833 tons in 1961.

TABLE 20. Production¹ of New Lead, 1953-62

Year	Tons	Value	Average price per pound (Canadian funds)	Year	Tons	Value	Average price per pound (Canadian funds)
		\$	¢			\$	¢
1953	193,706	50,076,822	12.93	1958	186,680	42,413,805	11.36
1954	218,495	58,250,831	12.33	1959	186,696	39,616,835	10.61
1955	202,762	58,314,500	14.38	1960	205,650	43,926,888	10.68
1956	188,854	58,582,651	15.51	1961	230,435	47,054,765	10.21
1957	181,484	50,670,407	13.96	1962	215,329	42,721,341	9.92

¹ Primary lead in base bullion produced, plus recoverable lead in ores exported.

TABLE 21. Production of Lead, by Months, 1961 and 1962

Month	Lead (all forms)		Refined lead ¹	
	1961	1962	1961	1962
	tons (2,000 pounds)			
January	22,645	18,732	15,649	13,092
February	20,739	16,327	14,449	12,566
March	20,932	17,163	16,450	14,013
April	18,169	17,811	15,736	12,199
May	16,755	18,578	15,978	13,663
June	19,919	20,216	15,742	11,638
July	18,406	19,784	12,446	13,834
August	19,334	17,250	13,902	13,664
September	18,938	14,670	13,445	8,646
October	19,526	20,498	13,113	14,323
November	17,341	16,353	12,825	13,491
December	17,731	17,947	12,098	11,088
Totals	230,435	215,329	171,833	152,217

¹ Includes lead refined from foreign ores.

TABLE 22. Production of Lead (All Forms)¹ by Provinces 1960-62

Province	1960		1961		1962	
	Pounds	Value	Pounds	Value	Pounds	Value
		\$		\$		\$
Newfoundland	48,043,926	5,131,091	43,936,710	4,435,938	50,660,572	5,025,529
New Brunswick	—	—	—	—	3,758,717	372,865
Quebec	5,338,901	570,195	6,784,464	692,694	9,432,012	935,656
Ontario	1,661,896	177,490	1,670,535	170,562	2,287,087	226,879
Manitoba	2,074,660	221,574	6,107,331	623,558	7,584,246	752,357
British Columbia	333,894,197	35,659,900	385,600,537	39,369,815	335,282,537	33,260,028
Yukon	20,286,871	2,166,638	16,769,815	1,712,198	16,290,125	1,615,980
Totals	411,300,451	43,926,888	460,869,392	47,054,765	430,658,673	42,721,341

¹ Primary lead in base bullion produced, plus recoverable lead in ores exported.

TABLE 23. Imports and Exports of Lead, 1961-62

	1961		1962	
	Tons	Value	Tons	Value
		\$		\$
Imports:				
Lead in pig and block	1,121	238,064	578	111,115
Lead, old and scrap	93	16,189	46	8,175
Lead in bars and sheets	63	17,848	68	23,348
Lead acetate	61	18,723	48	15,734
Lead nitrate	104	26,741	92	22,297
Lead manufactures n.o.p. ....	...	335,826	...	290,597
Lead tetraethyl, compounds of .....	..	..	...	...
Lead capsules for bottles .....	...	45,675	...	76,373
Lead pigments:				
Litharge	511	155,184	771	204,418
Dry white lead	384	100,221	87	28,110
Dry red lead and orange mineral	234	60,376	173	40,995
Exports:				
Lead, scrap	2,506	272,391	1,780	215,125
Lead, contained in ore	70,967	9,131,987	59,495	7,855,245
Lead pigs, blocks, shot	117,637	18,189,953	125,802	17,726,724
White lead .....	..	..	..	..
Lead manufactures, n.o.p. ....	..	..	..	..
Lead pipe .....	..	..	..	..
Lead fabricated materials, n.e.s.	446	139,902	2,396	542,660

TABLE 24. Consumption of Refined Lead by Principal End-uses, 1961-62

Used for or in the production of	1961		1962	
	Primary lead	Secondary lead ¹	Primary lead	Secondary lead ¹
	short tons			
Antimonial lead	1,072	14,422	575	16,760
Batteries and battery oxides	16,427	339	15,568	456
Cable covering	4,204	1,868	4,026	2,578
Chemical uses, n.e.s. (white lead, red lead, litharge, tetraethyl lead, etc.)	13,442	1,649	14,215	1,631
Copper alloys (brass, bronze, etc.)	245	91	214	116
Lead alloys:				
Solders	1,637	1,339	1,575	2,384
Other (including babbitts, type metal, etc.)	566	1,957	329	2,557
Semi-finished products (pipe, sheets, traps, bends, block for caulking, ammunition, foil and collapsible tubes, etc.)	9,155	1,730	8,503	3,485
Other	2,017	1,258	971	1,342
Totals accounted for	48,765	24,653	45,976	31,309

¹ Includes all remelt scrap lead and scrap lead used to make antimonial lead.

TABLE 25. World Production of Lead on Mine Basis, 1958-62

(From the Annual Report of the American Bureau of Metal Statistics)

Country	1958	1959	1960	1961	1962
tons (2,000 pounds)					
United States ¹	267,377	255,586	246,669	261,921	237,386
Canada ^{1,2}	186,680	186,696	205,650	230,435	211,270
Greenland	11,582	11,633	7,635	10,104	891
Guatemala	8,788	6,381	5,918	12,972	13,000
Mexico	222,580	210,187	210,176	199,876	213,072
Totals, North America	697,007	670,483	676,048	715,308	675,619
Argentina	33,000	33,800	26,000	29,700	31,700
Bolivia ³	25,149	24,293	23,610	22,378	20,504
Chile	2,848	2,560	2,694	1,879	2,000
Peru	147,887	126,934	145,096	150,352	137,865
Totals, South America	208,884	187,587	197,400	204,309	192,069
Austria	6,012	5,906	5,758	6,592	5,855
Finland	2,479	2,126	1,755	3,439	3,161
France	13,700	17,400	19,107	20,062	15,102
Germany, Federal Republic of	67,146	57,928	54,998	54,630	55,118
Greece	10,398	10,513	19,707	14,550	14,550
Italy ⁴	61,470	54,901	52,144	49,219	43,206
Spain ¹	74,134	74,314	77,583	83,777	74,309
Sweden	45,084	51,257	58,753	68,453	74,726
United Kingdom ¹	4,814	2,632	1,549	1,655	447
Yugoslavia	99,034	101,908	100,553	106,571	112,429
Totals, Europe	384,271	378,885	391,907	408,948	398,904
Burma ⁴	19,611	22,341	19,820	17,905	19,669
India ⁴	3,734	4,362	4,130	4,039	3,140
Japan	40,448	39,844	43,576	51,014	58,679
Korea, Republic of	1,343	256	1,012	1,014	1,000
Philippines	1,415	391	134	111	90
Totals, Asia	66,551	67,194	68,672	74,083	82,578
Algeria	11,095	11,291	11,529	10,031	9,957
Congo, Republic of	3,611	5,448	4,741	3,628	3,500
Morocco	102,409	100,834	104,263	97,299	99,853
Northern Rhodesia ⁴	14,196	16,128	16,160	16,953	16,848
South West Africa ¹	83,858	77,551	68,973	77,683	83,081
Tunisia	24,814	19,997	19,753	18,554	15,806
Totals, Africa	239,983	231,249	225,419	224,148	229,045
Australia ¹	347,880	336,819	325,034	281,389	392,463
Russia ^{5,6}	341,700	358,200	385,800	413,400	438,000
Bulgaria	77,900	88,700	92,600	88,000	90,000
Czechoslovakia ⁵	6,600	7,000	7,200	7,200	7,200
Germany East ⁵	6,600	7,700	7,700	7,700	7,700
Poland ^{5,6}	39,400	42,700	43,800	43,900	41,800
Rumania ^{5,6}	13,200	13,200	13,500	13,500	13,500
China ⁵	52,000	72,000	75,000	80,000	80,000
Korea, North ⁵	20,000	21,000	25,000	27,500	27,500
Soviet Sphere totals	558,500	610,500	650,600	681,200	705,700
World totals, as reported⁷	2,503,076	2,482,717	2,535,080	2,589,385	2,676,377

¹ Calculated as recoverable.² Base bullion from domestic ores, plus recoverable content of ores exported.³ Exports.⁴ Same as pig lead production.⁵ Conjectural.⁶ Smelter production.⁷ In addition there is production in Honduras, Brazil, Ecuador, Ireland, Norway, Iran, Thailand, Turkey, Nigeria, Tanganyika, Republic of South Africa and United Arab Republic; the total of all these countries is estimated to be about 40,000 tons in 1962.

ZINC

Zinc production is calculated as the refined zinc recovered from domestic ores at Canadian smelters, plus the recoverable zinc in ores and concentrates shipped for export. The quantity arrived at in this way is valued at the average price, in Canadian dollars, for Grade A electrolytic zinc.

New zinc in all forms produced in 1962 amounted to 463,145 short tons valued at \$112,080,981 compared with 268,007 tons valued at \$104,749,879 in 1961. Refined zinc output, including zinc refined from foreign ores, amounted to 280,159 tons in 1962 and 268,007 tons in 1961.

Zinc concentrates from Buchans Mines in Newfoundland were exported for treatment. In Quebec

zinc concentrates were produced from ores classified as copper-gold-silver, of the Vauze, Sullico, Solbec, Quemont, Normetal, and Waite Amulet Mines. Other zinc producers were classified as lead-zinc mines. Ontario shippers included, Geco and Willroy.

The zinc concentrates produced in eastern Canada were exported for treatment. The Hudson Bay Mining and Smelting Company's refinery at Flin Flon, Manitoba, treated ores from the Flin Flon mines. A large portion of the zinc ores mined in British Columbia were treated in the smelter at Trail. Ores from the Mayo district in the Yukon were sent to Trail, British Columbia, and to smelters in the United States.

TABLE 26. Production¹ of Zinc from All Types of Canadian Ores, 1953-62

Year	Tons	Value	Average price per pound (Canadian funds)	Year	Tons	Value	Average price per pound (Canadian funds)
		\$	¢			\$	¢
1953.....	401,762	96,101,386	11.96	1958.....	425,099	92,501,496	10.88
1954.....	376,491	90,207,285	11.98	1959.....	396,008	96,942,663	12.24
1955.....	433,357	118,306,466	13.65	1960.....	406,873	108,635,003	13.35
1956.....	422,632	125,437,344	14.84	1961.....	416,004	104,749,879	12.59
1957.....	413,741	100,042,533	12.09	1962.....	463,145	112,080,981	12.10

¹ Refined zinc made in Canada, plus recoverable zinc in ores, etc., exported.

TABLE 27. Production of Zinc, by Months, 1961 and 1962

Month	Primary zinc in all forms		Refined zinc ¹	
	1961	1962	1961	1962
	tons (2,000 pounds)			
January	35,552	38,096	22,848	22,943
February	30,199	32,223	21,073	21,881
March	33,202	35,759	23,190	23,853
April	31,096	37,483	22,166	23,676
May	34,437	41,305	22,543	24,689
June	32,903	41,217	22,168	24,048
July	33,681	40,781	22,147	23,504
August	35,731	45,693	22,046	23,867
September	38,726	38,719	21,659	23,405
October	37,914	43,236	22,665	23,943
November	36,466	33,946	22,211	21,629
December	36,097	34,687	23,291	22,721
Totals	416,004	463,145	268,007	280,159

¹ Includes zinc refined from foreign ores.

TABLE 28. Production of Zinc (All Forms)¹ by Provinces, 1960-62

Province	1960		1961		1962	
	Pounds	Value	Pounds	Value	Pounds	Value
		\$		\$		\$
Newfoundland	68,415,856	9,133,517	69,277,362	8,722,020	65,081,560	7,874,869
Nova Scotia	—	—	—	—	1,513,140	183,090
New Brunswick	—	—	—	—	4,996,488	604,575
Quebec	99,614,995	13,298,602	108,010,062	13,598,467	141,473,544	17,118,299
Ontario	90,459,368	12,076,326	103,874,146	13,077,755	126,264,684	15,278,027
Manitoba	48,780,938	6,512,255	93,017,677	11,710,925	99,840,226	12,080,667
Saskatchewan	85,405,095	11,401,580	56,719,653	7,141,004	61,799,241	7,477,708
British Columbia	407,666,190	54,423,436	388,972,266	48,971,608	413,431,339	50,025,192
Yukon	13,402,899	1,789,287	12,137,418	1,528,100	11,888,876	1,438,554
Totals	813,745,341	108,635,003	832,008,584	104,749,879	926,289,098	112,080,981

¹ Refined zinc, plus recoverable zinc in ores etc., exported.**TABLE 29. Imports and Exports of Zinc, 1961 and 1962**

	1961		1962	
	Tons	Value	Tons	Value
		\$		\$
Imports:				
Zinc dust and granules	864	256,244	889	263,866
Zinc in blocks, pigs, slabs, anodes	771	199,651	710	187,341
Zinc in bars, rods, plates, sheets	869	470,338	765	426,222
Zinc slugs for dry batteries .....	...	201,601	...	199,241
Zinc white (zinc oxide)	2,239	455,097	2,736	576,795
Zinc sulphate	904	77,897	1,501	147,984
Zinc chloride	191	38,604	218	46,012
Zinc, manufactures of, n.o.p. ....	...	2,685,775	...	3,319,067
Lithopone	630	91,250	734	120,156
Zinc dross and zinc scrap	127	15,479	345	24,889
Exports:				
Zinc, manufactures of	498	206,800	468	765,724
Zinc contained in ore concentrates	199,322	16,387,259	242,457	19,228,728
Zinc, scrap, dross and ashes	3,545	319,453	5,492	553,152
Zinc, blocks, pigs, slabs	208,272	42,036,754	210,723	40,775,571
Zinc oxide	556	136,854	1,751	425,414

TABLE 30. Consumption of Refined Zinc, by End-uses, 1961-62

Used for or in the production of	1961		1962	
	Primary zinc	Secondary zinc	Primary zinc	Secondary zinc
	short tons			
Copper alloys (brass, bronze, etc.)	7,229	229	6,516	100
Galvanizing:				
Electro	690	36	695	60
Hot dip	34,127	637	35,898	402
Zinc diecast alloy	9,921	—	10,534	—
Other (including rolled and ribbon zinc, zinc oxide, etc.)	8,911	1,973	11,677	2,192
Totals accounted for	60,878	2,875	65,320	2,754

TABLE 31. World Production of Zinc Ore, by Countries, 1958-62
 (From the Annual Report of the American Bureau of Metal Statistics)
 In tons of 2,000 pounds of zinc content, either by assay or estimated as recoverable

Country	1958	1959	1960	1961	1962
United States ^{1,2}	412,005	425,303	435,427	464,390	505,648
Canada ^{1,3}	425,099	396,008	430,049	443,099	501,937
Greenland	10,465	9,227	11,155	7,498	2,402
Guatemala	5,278	—	11,070	8,746	8,500
Mexico ⁴	247,031	290,936	299,192	296,489	276,328
Totals, North America	1,099,878	1,121,474	1,186,893	1,220,222	1,294,815
Argentina ⁵	36,300	44,200	31,500	33,300	36,400
Bolivia ⁶	15,677	3,740	4,439	5,878	4,020
Peru ⁵	149,093	157,738	196,344	191,656	176,911
Totals, South America	201,070	205,678	232,283	230,834	217,331
Austria ⁵	6,463	6,522	7,250	6,651	7,264
Finland	51,823	59,591	46,327	51,175	57,508
France ⁵	13,800	15,528	19,073	17,196	17,747
Germany West ⁷	94,136	90,565	95,158	96,188	95,683
Greece ¹	15,717	13,014	15,621	19,342	20,062
Italy ¹	128,964	122,833	122,264	134,642	124,532
Norway ⁵	10,015	10,907	11,394	10,284	12,566
Spain ⁵	87,174	94,950	83,866	97,964	83,417
Sweden ⁵	74,185	82,783	77,492	82,893	69,856
Yugoslavia	66,159	66,881	62,150	66,008	67,366
Totals, Europe	548,439	563,574	540,595	582,343	556,001
Burma	12,170	12,038	11,128	7,865	9,036
India	4,399	5,994	5,880	5,637	6,073
Japan ⁵	157,599	156,898	172,768	185,472	212,034
Philippines	—	6	5,487	3,652	4,916
Totals, Asia	174,168	174,936	195,263	202,626	232,059
Algeria ⁵	36,724	41,980	44,240	48,171	45,913
Katanga, State of ⁵	125,645	77,130	120,217	109,692	102,454
Morocco, Southern zone ⁵	54,953	69,373	54,199	44,951	38,594
Northern Rhodesia ¹	34,232	41,848	44,317	45,073	45,658
South West Africa ¹	15,897	12,395	13,119	14,906	25,201
Tunisia ⁵	4,566	3,656	4,212	3,709	4,709
Totals, Africa	272,017	246,387	280,304	266,502	262,529
Australia ¹	247,472	234,051	273,043	271,135	287,320
Free World total as reported	2,543,044	2,546,100	2,708,381	2,773,662	2,850,055
Russia ⁸	402,300	413,400	441,000	446,400	451,900
Poland	135,000	142,500	158,800	153,800	160,000
Bulgaria	55,000	61,300	64,700	61,300	65,000
China	50,000	72,000	88,000	90,000	90,000
Korea, North	83,000	83,000	83,000	83,000	83,000
Soviet Sphere totals, as reported⁹	725,300	772,200	835,500	834,500	849,900
World total, as reported¹⁰	3,268,344	3,318,300	3,543,881	3,608,162	3,699,955

¹ Calculated as recoverable.

² U.S. Bureau of Mines.

³ Dominion Bureau of Statistics.

⁴ Metal content by assay of ore and concentrates exported in that form plus smelter production.

⁵ Calculated as zinc content by assay.

⁶ Exports.

⁷ In addition, production from pyrites, estimated in recent years to be about 32,000 tons.

⁸ Smelter production.

⁹ In addition, there is production in East Germany, and other Eastern Europe; the total of all these countries is estimated to be about 16,000 tons in 1962.

¹⁰ In addition there is production in Honduras, Chile, Ireland, Thailand and Turkey; the total of all these countries is estimated to be about 8,000 tons in 1961.

CADMIUM

Cadmium is recovered from the silver-lead-zinc ores treated by the smelter of the Consolidated Mining and Smelting Company of Canada Limited, Trail, British Columbia, and from the copper-gold-zinc ores processed at the smelter of the Hudson Bay Mining and Smelting Company Limited, Flin

Flon, Manitoba. Production in 1962 was 2,604,973 pounds compared with 2,221,950 pounds in the preceding year. These figures include recoverable cadmium in exported concentrates, but do not include cadmium recovered in Canada from foreign ores.

TABLE 32. Production of Cadmium (Recoverable), from Canadian Ores, 1952 -62

Year	From copper-gold- silver-zinc ores	From silver-lead- zinc ores	Total	
			Quantity	Value
		pounds		\$
1952	205,911	742,676	948,587	2,085,891
1953	157,997	960,288	1,118,285	2,236,570
1954	154,596	932,184	1,086,780	1,847,526
1955	191,691	1,727,390	1,919,081	3,262,439
1956	208,327	2,131,094	2,339,421	3,977,016
1957	286,044	2,082,086	2,368,130	4,025,821
1958	355,602	1,400,448	1,756,050	2,669,195
1959	334,029	1,826,334	2,160,363	2,765,265
1960	466,200	1,891,297	2,357,497	3,347,646
1961	307,757	1,914,193 ^f	2,221,950 ^f	3,555,128 ^f
1962	383,788	2,221,185	2,604,973	4,730,957

TABLE 33. Production, Exports and Domestic Consumption of Cadmium Metal, 1952 -62

Year	Production ¹	To domestic consumers ²	Exports ³
	tons (2,000 pounds)		
1952	410	116	310
1953	489	133	485
1954	529	113	392
1955	857	174	694
1956	966	144	827
1957	1,009	117	844
1958	817	172	607
1959	1,264	496	828
1960	1,119	368	680
1961	1,117	747	327
1962	1,218	282	962

¹ Includes cadmium recovered from foreign ores.

² Producers' shipments to domestic consumers.

³ Producers' shipments for export.

B. SILVER-COBALT MINES

The silver-cobalt mining industry is centered in the Temiskaming district in Ontario. Mining started in the Cobalt area early in this century when the silver discovery was made during the construction of a railway.

The average number of persons employed in the industry was 611 to whom \$2,517,012 were paid as salaries and wages. Fuel cost \$124,216 and 21,382,059 kwh. of electricity were purchased for \$181,125. Process supplies used were valued at \$292,566.

TABLE 34 A. Principal Statistics of the Silver-Cobalt Mines, Significant Years, 1921 - 59

Basis: Standard Industrial Classification in use prior to 1960

Year	Estab-lish-ments ¹	Em-ployees	Salaries and wages	Cost of fuel and electricity at plant	Cost at plant of process supplies	Gross value of products	Net value added ²
	number				dollars		
1921	39	1,224	1,739,706	448,897	..	6,316,812	..
1929	32	1,149	1,532,333	407,952	..	3,918,316	..
1931	26	786	1,149,689	227,467	..	1,925,593	..
1933	14	242	322,281	83,565	..	1,071,602	..
1937	25	300	394,386	90,134	116,455	853,386	540,762
1939	43	323	412,728	63,486	105,500	890,128	653,032
1941	14	182	229,984	40,875	59,761	788,815	662,443
1944	11	165	260,575	48,323	35,809	422,860	323,260
1946	11	247	404,012	58,712	48,932	325,846	207,483
1949	18	264	607,782	82,735	127,661	822,881	503,572
1951	20	514	1,406,783	148,661	299,084	4,539,842	3,640,343
1954	15	808	2,614,266	273,024	466,390	5,294,499	4,103,256
1957	12	598	2,209,805	256,694	353,026	4,314,088	3,105,688
1958	12	570	2,115,670	241,027	320,403	4,792,545	3,633,390
1959	11	486	1,647,687	185,883	229,554	5,006,541	4,118,972

¹ Includes lessees shipping from dumps.

² Gross value less the value of fuel, electricity, process supplies, freight and treatment charges.

TABLE 34 B. Principal Statistics of the Silver-Cobalt Mines, 1957 - 62

Basis: Revised Standard Industrial Classification and New Establishment Concept

Year	Estab-lish-ments	Em-ployees	Salaries and wages	Cost of fuel and electricity at plant	Cost at plant of process supplies	Gross value of products	Net value added ¹
	number				dollars		
1957	12	598	2,209,805	256,694	353,026	4,314,088	3,105,688
1958	12	570	2,115,670	241,027	320,403	4,792,545	3,633,390
1959	11	486	1,647,687	185,883	229,554	5,006,541	4,118,972
1960	7	520	2,077,281	253,243	297,067	5,643,143	4,526,714
1961	20	560	2,216,805	295,788	375,186	4,515,717	3,424,158
1962	21	611	2,517,012	305,341	292,566	6,107,978	5,011,493

¹ Gross value less the value of fuel, electricity, process supplies, freight and treatment charges.

TABLE 35. Summary¹ of Operations of Silver-Cobalt Mines and Mills, 1960 - 62

	1960	1961	1962
		tons	
Ore mined	220,753	233,781	230,412
Ore salvaged from surface ²	31,952	48,936	4,209
Ore and tailings treated (milled) ³	262,924	281,140	233,242
Concentrates produced	5,755	6,080	5,737

¹ Partly estimated as data are unobtainable from some small shippers.

² Complete data not available.

³ Does not include crude ore shipped.

TABLE 36. Mines and Mill Shipments of Canadian Silver-Cobalt Ores and Concentrates, 1961 and 1962

	Gross weight	Metal content			
		Silver	Cobalt	Nickel	Copper
	tons	ounces	pounds		
1961					
To Canadian smelters	5,157	1,255,293	105,582	27,934	233,237
To foreign plants	1,181	3,400,499	100,204	16,680	16,703
Totals	6,338	4,655,792	205,786	44,614	249,940
1962					
To Canadian smelters	5,665	2,443,730	157,649	40,230	176,302
To foreign plants	734	2,582,552	67,698	14,798	9,406
Totals	6,399	5,026,282	225,347	55,028	185,708

TABLE 37. Employees and Earnings in the Silver-Cobalt Mines, 1957-62

Year	Administrative		Workmen		Total employees	Man-hours worked	Earnings		Total earnings
	Male	Female	Male	Female			Admin-istrative	Workmen	
	number						dollars		
1957	80	6	509	3	598	1,345,546	397,066	1,812,739	2,209,805
1958	73	5	488	4	570	1,304,033	380,569	1,735,101	2,115,670
1959	67	4	409	6	486	1,082,824	334,091	1,313,596	1,647,687
1960	82	5	447	6	520	1,186,773	336,534	1,740,747	2,077,281
1961	76	3	475	6	560	1,147,662	407,185	1,809,620	2,216,805
1962	85	6	515	5	611	1,297,556	398,006	2,119,006	2,517,012

TABLE 38. Workmen on the Payroll at End of the Month in the Silver-Cobalt Mines, 1961 and 1962

Month	1961					1962				
	Mine			Mill	Total	Mine			Mill	Total
	Surface		Under-ground			Surface		Under-ground		
	Male	Female	Male	Male		Male	Female	Male	Male	
number										
January	130	6	299	55	490	134	6	253	65	458
February	131	6	304	55	496	135	5	264	50	454
March	130	6	265	44	445	140	5	278	48	471
April	126	6	270	44	446	143	5	303	51	502
May	124	6	268	57	455	139	4	275	59	477
June	138	6	268	56	468	146	4	280	60	490
July	160	6	282	56	504	206	4	309	72	591
August	168	6	271	57	502	158	4	305	74	541
September	166	6	266	62	500	161	4	315	74	504
October	166	6	278	72	522	207	4	296	74	581
November	148	6	241	72	467	212	5	295	74	586
December	150	6	242	66	464	179	5	311	74	569
Averages	147	6	272	56	481	160	5	298	57	520
Man-hours of labour	988,629					1,135,326				

TABLE 39. Fuel and Electricity Used in the Silver-Cobalt Mines, 1962

Kind	Quantity	Cost at plant
		\$
Bituminous coal (a) From Canadian mines	—	—
(b) Imported short ton	710	20,172
Sub-bituminous coal (from Alberta mines only)	—	—
Anthracite coal short ton	8	258
Lignite coal.....	—	—
Coke (for fuel only)	—	—
Gasoline (includes gasoline used in cars and trucks) Imp. gal.	37,551	15,942
Kerosene or coal oil.....	—	—
Fuel oil and diesel fuel..... Imp. gal.	210,667	42,710
Wood (cords of 128 cubic feet of piled wood).....	—	—
Gas (a) Liquefied petroleum gases (propane, etc.) Imp. gal.	1,960	881
(b) Other manufactured gas	—	—
(c) Natural gas	—	—
Other fuel.....	—	44,253
Electricity purchased for power and lighting kwh.	21,382,059	181,125
Electricity purchased for other purposes	—	—
Total .....	...	305,341
Electricity generated (a) For own use kwh.	385,000	...
(b) For sale	—	—

TABLE 40. Specified Miscellaneous Expenditures by the Silver-Cobalt Mines, 1962

	1962
(a) Workmen's compensation.....	64,253
(b) Silicosis assessment.....	25,444
(c) Unemployment insurance.....	25,425
(d) Aggregate cost of structures, roads, machinery, equipment, etc., built by or purchased from outside contractors or suppliers and chargeable to Fixed Assets Account	352,813
(e) Book value of fixed assets (new structures, roads, machinery, equipment, etc., including major repairs and alterations) produced by own employees and chargeable to Fixed Assets Account	314,666
(f) Other capital expenditures not reported in (d) and (e)	23,445
(g) Cost of materials and supplies used in the production of machinery and equipment and in the construction of roads and new structures (including major repairs and alterations by own employees and chargeable to Fixed Assets Account).....	8,821
(h) Cost of all other goods, materials and supplies (including office, medical, laboratory, cafeteria and store supplies) purchased and not chargeable to Fixed Assets Account.....	1,016,058

COBALT

A large portion of the cobalt output is produced at Port Colborne, Ontario, by the International Nickel Company of Canada, as electrolytic cobalt and cobalt oxide. This cobalt originates in the nickel-copper ores of the Sudbury area. The cobalt in the ores of the Falconbridge Nickel Mines Ltd. is contained in the nickel-copper matte which that firm ships to Norway. Cobalt was recovered from the

nickel-copper ores from Lynn Lake, Manitoba, by Sherritt-Gordon Mines Ltd. at the firm's refinery in Alberta.

Some of the silver-cobalt ores from the Cobalt and Gowganda areas are processed at Cobalt Refinery Ltd., Cobalt, Ontario.

Arsenic

Data on arsenious oxide formerly included in this bulletin are now given in the report on the Miscellaneous Non-metal Mining Industry.

TABLE 41. Production of Cobalt from Canadian Ores, 1953-62

Year	Quantity	Value	Year	Quantity	Value
	pounds	\$		pounds	\$
1953	1,602,545	4,013,077	1958	2,710,429	5,308,293
1954	2,252,965	5,912,997	1959	3,150,027	5,954,916
1955	3,318,637	8,563,700	1960	3,568,811	6,763,016
1956	3,516,670	9,065,493	1961	3,182,897	4,751,543
1957	3,922,649	7,784,423	1962	3,481,922	6,345,205

TABLE 42. Production of Cobalt from Canadian Ores, Imports and Exports, 1961 and 1962

	1961		1962	
	Quantity	Value	Quantity	Value
	pounds	\$	pounds	\$
Production: (In terms of metallic cobalt and cobalt in oxides and salts sold and in ores exported)	3,182,897	4,751,543	3,481,922	6,345,205
Imports:				
Cobalt ore	—	—	—	—
Oxide of cobalt	28,364	34,824	40,936	47,770
Exports:				
Cobalt contained in ore	603,931	1,039,073	542,565	919,083
Cobalt metallic				
Cobalt alloys				
Cobalt oxides and cobalt salts	1,521,000	2,106,608	1,629,900	2,313,206

TABLE 43. World Production of Cobalt

(From the Annual Report of the American Bureau of Metal Statistics)

Country	1958	1959	1960	1961	1962
			pounds		
Canada ¹	2,710,429	3,150,027	3,568,811	3,236,323	3,481,922
Northern Rhodesia ²	2,062,000	4,814,000	3,860,000	3,402,000	1,896,000
Katanga, State of	14,332,105	18,586,983	18,348,886	18,356,000	21,230,000
Morocco ³	2,204,600	2,660,952	2,802,047	2,844,000	3,166,000
United States ³	4,844,083	2,993,709	..	..	..

¹ Metal recovered from smelter products, plus cobalt contained in cobalt residues exported.

² Cobalt content of alloys.

³ Content of ore.

Operators of Silver-Lead-Zinc Mines, 1962

Name of operator	Head office address	Location of mine
Newfoundland:		
American Smelting & Refining Co.	120 Broadway, New York	Buchans
Nova Scotia:		
Magnet Cove Barium Corp'n.....	Walton, Hants Co.	Pembroke
Milado Mines (1957) Ltd.....	405-25 Adelaide St. W., Toronto, Ontario...	Bathurst
New Brunswick:		
Combined Metal Mines Ltd.	330 Bay St., Toronto, Ontario	Bathurst
Fab Metal Mines Ltd.	405-25 Adelaide St. W., Toronto, Ontario...	Bathurst
Heath Steele Mines Ltd.....	Box 400, Newcastle	Newcastle
Stratmat Ltd.	3527 Stanley Ave., Niagara Falls, Ontario	Woodstock
Sturgeon River Mines Ltd.	330 Bay St., Toronto, Ontario	Gloucester
Quebec:		
Caesar Minerals Ltd.	121 Richmond St. W., Toronto, Ontario	Roguemaure
Coniagus Mines Ltd.....	330 Bay St., Toronto, Ontario	Lesueur Twp.
Consolidated Pershcourt Mining Ltd.....	159 Craig St. W., Montreal	Barraute Twp.
Federal Metals Corporation	507 Place d'Armes, Montreal	Grand Cascapedia
Galinee Mattagami Mines Ltd.....	44 King St. W., Toronto, Ontario	Galinee
Ghislau Mining Corp., Ltd.	6847 St. Hubert St., Montreal	Montauban-les-Mines
Grand Manitou Mines Ltd.	159 Craig St. W., Montreal	Nominique
Kusten Mines Ltd.....	320 Bay St., Toronto, Ontario	Galinee
Les Mines Dumagami Ltée.....	C.P. 490, Malartic	Abitibi
Les Mines Roy & Ross Inc.....	296 St. Germain, Rimouski	St. Fabien
Les Mines Talon Inc.	7466 Christophe Colomb, Montreal 10	Cap Desrosiers
Manitou Barvue Mines Ltd.	407-25 Adelaide St. W., Toronto, Ontario ..	Bourlamaque Twp.
Mattagami Lake Mines Ltd.	44 King St. W., Toronto, Ontario	Galinee Twp.
Mattagami Syndicate	225-12 Richmond St. E., Toronto, Ontario..	Mattagami Lake
New Calumet Mines Ltd.	355 St. James St. W., Montreal.....	Calumet
New Insko Mines Ltd.....	355 St. James St. W., Montreal.....	Dufresnay Twp.
Newlund Mines Ltd.	2402-44 King St. W., Toronto, Ontario	Lake Quebec
Orchan Mines Ltd.....	Noranda	Mattagami
Paramaque Mines Ltd.	405-25 Adelaide St. W., Toronto, Ontario ..	Bourlamaque
Parquet Mines Ltd.	50 Richmond St. W., Toronto, Ontario.....	Duparquet Twp.
Radiore Uranium Mines Ltd.	2200 Yonge St., Toronto 11, Ontario	Mattagami
Rio Tinto Canadian Exploration Ltd.....	1201-121 Richmond St. W., Toronto, Ontario	Poirier
Sanctae Rosaelis Mining Corp.	250-113th rue, Val d'Or	Clermont
Satellite Metal Mines Ltd.	908-330 Bay St., Toronto, Ontario	Montauban-les-Mines
Southern Exploration Development Corpora- tion.	614 St. James St. W., Montreal 3	Richmond Gulf
Vendome Mines Ltd.	102-680 Sherbrooke St. W., Montreal	Barraute
Ontario:		
Giant Yellowknife Gold Mines Ltd.	25 King St. W., Toronto	Sudbury
Willroy Mines Ltd.....	25 Adelaide St. W., Toronto	Manitouwadge
Zenmac Metal Mines Ltd.....	120 Eglinton Ave. E., Toronto	Schreiber

Operators of Silver-Lead-Zinc Mines, 1962 - Continued

Name of operator	Head office address	Location of mine
British Columbia:		
Arishenkoff, M.M.	Shoreacres	Ymir
Caledonia Mines Ltd.	Box 470, Kaslo	Kaslo
Canadian Exploration Ltd.	1030 W., Georgia St., Vancouver	Salmo
Carter, Logan & Holmes	821 -10th St., Nelson	Nelson
Carnegie Mining Corp. Ltd.	26 Adelaide St. W., Toronto Ontario	Slocan
Consolidated Mining & Smelting Co. of Canada Ltd., The	Trail	Kimberley, Riedel and Salmo
De Kock, L.C.	Nelson	Rosebud Lake
Dolly Varden Mines Ltd.	617-837 West Hastings St. Vancouver 1 ...	Alice Arm
Endersby, A.	Fruitvale	Salmo
Fox, G.D.	Trail	Trail
Giant Western Mines Ltd.	Slocan	Slocan
K-Belle Enterprise Co.	Linden, Alberta	Salmo
Kleman, S.J.	Greenwood	Greenwood
Laughton, T.G.	Nelson	Ainsworth
Loma Minerals Ltd.	Calgary, Alberta	Silverton
London Pride Silver Mines Ltd.	611-850 West Hastings St., Vancouver 1 ...	Slocan
Lone Bachelor Mines Ltd.	416-25 Adelaide St. W., Toronto, Ontario ..	New Denver
Lucky Four Leasers	6-490 Baker St., Nelson	New Denver
Lucky Jim Mine	San Antonio, Texas, U.S.A.	Law Creek
McWilliams & Riesterer	Vancouver	Nicola
Mills, Frank	Silverton	Slocan
Mastodon-Highland Bell Mines Ltd.	1200 W. Pender St., Vancouver	Revelstoke
Muller, E.	Helix, Oregon, U.S.A.	Kaslo
Nesbitt, B.I.	809-525 Seymour St., Vancouver	Eagle Ace
New Ainsworth Base Metals Ltd.	Vancouver	Kaslo
New Jersey Zinc Exploration Co. (Canada) Ltd.	905-525 Seymour St., Vancouver	Merritt
Norcross, D.H.	R.R. 2, Nelson	Ainsworth
Norex Mines	Oliver	Oliver
Northwest Mining Partnership	Kellogg, Idaho, U.S.A.	Kootenay
Ottawa Silver Mines Ltd.	19 North Bernard, Spokane Wash. U.S.A. ...	Slocan
Pearson J.K.	Calgary, Alberta	Slocan
Perepolkin, Fried & De Rosa	Hills	Sandon
Pho & Heichert	New Denver	New Denver
Piskulski, S.	Terrace	Terrace
Petersen, E.H.	Sandon	Slocan
Reeves MacDonald Mines Ltd.	837 W., Hastings St., Vancouver	Nelson
Sheep Creek Mines Ltd.	6-490 Baker St., Nelson	Toby Creek
Sheritt Lee Mines Ltd.	Vancouver	Beaverdell
Silbak Premier Mines Ltd.	844 W., Hastings St., Vancouver	Stewart
Silver King Mines Ltd.	Slocan	Slocan
Silver Scandie Mines Ltd.	Osoyoos	Beaverdell
Standard Bryllium Corp.	Kaslo	Kaslo
Tarnowski, M.	Silverton	Silverton
Violamac Mines Ltd.	416-25 Adelaide St. W., Toronto, Ontario ..	Slocan
Yale Lead & Zinc Mines Ltd.	25 Adelaide St. W., Toronto, Ontario	Ainsworth

Operators of Silver-Lead-Zinc Mines, 1962 - Concluded

Name of operator	Head office address	Location of mine
North West Territories:		
Bankeno Mines Ltd.	600-250 University Ave., Toronto 1, Ontario.	Arctic Islands
Pine Point Mines Ltd.	Trail	Pine Point
Snowdrift Base Metal Mines Ltd.	902-11 Adelaide St. W., Toronto, Ontario ..	Indian Mountain Lake
Yukon:		
Canal Metal Mines Ltd.	405-25 Adelaide St. W., Toronto, Ontario ..	Stormy Mountain
Ketzakey Silver Mines Ltd.	10029-148th St. Edmonton, Alberta	Ross River
Newconex Canadian Exploration Ltd.	1702-8 King St. E., Toronto 1, Ontario	Yukon
O'Neill, J.B.	Keno City	Keno
Peso Silver Mines Ltd.	202-633 Hornby St., Vancouver, British Columbia.	Mayo
Tintina Silver Mines Ltd.	1001-85 Richmond St. W., Toronto, Ontario ..	Watson Lake
United Keno Hill Mines Ltd.	7 King St. E., Toronto, Ontario	Mayo

Operators of Silver-Cobalt Mines, 1962

Name of operator	Head office address	Location of mine
Ontario:		
Agnico Mines Ltd.	25 Adelaide St. W., Toronto	Coleman Twp.
Alsof Mines Ltd.	2001-80 King St. W., Toronto 1	Mickle Twp.
Argentium Silver Mines Ltd.	904 Yonge St., Toronto 5	Whitson Twp.
Chitaroni Minerals Ltd.	19 Prospect Ave., Cobalt	Brady Lake
Deer Horn Mines Ltd.	100 Adelaide St. W., Toronto	Coleman Twp.
Glen Lake Silver Mines Ltd.	100 Adelaide St. W., Toronto	Coleman Twp.
Harrison Minerals Ltd.	145 Yonge St., Toronto	Buck Twp.
Keeley Frontier Mines Ltd.	67 Yonge St., Toronto	Silver Centre
Langis Silver & Cobalt Mining Co., Ltd.	25 Adelaide St. W., Toronto	Casey & Harris Twps.
Mayfair Mines Ltd.	331 Bay St., Toronto	Coleman Twp.
McAllister, R.	Box 283, Cobalt	Coleman Twp.
McIntyre Porcupine Mines Ltd. (Castle Div.)	25 King St. W., Toronto	O'Brien
Mentor Exploration & Development Co., Ltd.	100 Adelaide St. W., Toronto	Coleman Twp.
Patricia Silver Mines Ltd.	702-100 Adelaide St. W., Toronto	Coleman Twp.
Professor Silver Mines, Ltd.	360 Bay St., Toronto	Gillies Limit
Reid Stewart Lease	Cobalt	Coleman Twp.
Richardson, F.	Cobalt	Coleman Twp.
Rix-Athabasca Uranium Mines, Ltd.	335 Bay St., Toronto	Coleman Twp.
Shaynee Consolidated Mines, Ltd.	62 Richmond St. W. Toronto	Montreal River
Silver Claim Lake Mines Ltd.	Rexdale P.O., Toronto	Nicol Twp.
Silver Miller Mines Ltd.	357 Bay St. W., Toronto	Coleman Twp.
Silvermaque Mining, Ltd.	80 Richmond St. W., Toronto	Gillies Limit
Sinclair Miller Mines Ltd.	392 Bay St., Toronto	Mosher Bay
Siscoe Metals of Ontario Ltd.	300 Dominion Square Bldg., Montreal 2, Quebec.	O'Brien

Nota: In addition to the names listed, there were some small shippers.

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