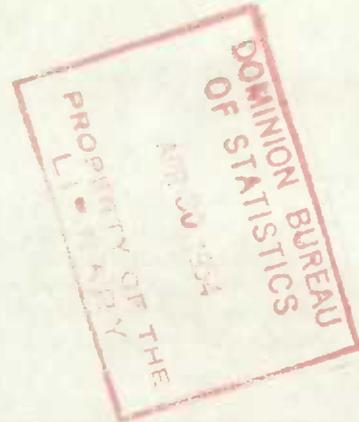


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CANADA



THE SILVER-LEAD-ZINC MINING INDUSTRY 1952

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NOTICE

The annual reports prepared by the Industry and Merchandising Division of the Bureau of Statistics are divided into 3 volumes, as follows: **Volume I** – The Primary Industries, including mining, forestry and fisheries; **Volume II** – Manufacturing; **Volume III** – Merchandising and Services. The volumes are made up of parts, and the parts in turn are subdivided according to the industries which they comprise.

Volume I consists of the following parts:

- Part I – Mineral Statistics
- Part II – Forestry Statistics – Operations in the Woods
- Part III – Fisheries Statistics

Part I includes the following reports which constitute the complete series on Mineral Statistics of Canada. Individual reports are issued as the information becomes available; they are arranged in a form suitable for binding.

- A – General Review of the Mining Industry, 50¢
- B – The Gold Mining Industry, 50¢
- C – The Silver-Lead-Zinc Mining Industry, 25¢
- D – The Nickel-Copper Mining, Smelting and Refining Industry, 25¢
- E – The Miscellaneous Metal Mining Industry, 25¢
- F – The Non-ferrous Smelting and Refining Industry, 25¢
- G – The Coal Mining Industry, \$1.00
- H – The Crude Petroleum and Natural Gas Industry, 25¢
- I – The Asbestos Mining Industry, 25¢
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- P – The Cement Manufacturing Industry, 25¢
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- S – The Sand and Gravel Industry, 25¢
- T – The Stone Industry, 25¢
- U – Contract Drilling in the Mining Industry, 25¢

THE SILVER-LEAD-ZINC MINING INDUSTRY

1952

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; and at Great

Bear Lake, Northwest Territories, with pitchblende. Silver-lead-zinc mining is a very important industry in British Columbia and, to a lesser extent, in the Yukon Territory. In Eastern Canada, lead and zinc ores have been mined in Ontario, Quebec, Nova Scotia and Newfoundland.

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 and Saskatchewan.

(a) The Silver-Lead-Zinc Mining Industry

During 1952 there were 171 firms engaged in mining, exploring or developing silver-lead-zinc ores; in this group there were 71 producers. Employees numbered 10,330 to whom \$37,643,614 were distributed as salaries and wages. Fuel cost \$2,425,786 and 145,529,154 k.w.h. of electricity was purchased for \$1,991,607.

The gross value of production by the industry totalled \$165,126,784 which, after deducting the

cost of fuel, electricity, process supplies, freight and treatment charges, showed a net value of \$104,937,002.

Some firms which were formerly classed as copper-gold-silver mines were reclassified in 1952 to the silver-lead-zinc group since lead or zinc now accounts for the major portion of their total value of production.

TABLE 1. Principal Statistics of the Silver-Lead-Zinc Mining Industry, 1943-1952

Year	Number of active operators ¹	Number of employees	Salaries and wages	Cost of fuel and electricity	Cost of process supplies	Freight and smelter charges	Gross value of shipments	Net ² value of shipments
			\$	\$	\$	\$	\$	\$
1943	31	3,097	6,423,724	986,519	2,044,367	2,109,352	27,072,882	21,932,644
1944	20	2,769	5,810,290	860,231	1,752,087	1,876,880	21,291,957	16,302,759
1945	19	2,485	5,473,582	816,972	1,426,479	1,990,810	27,101,464	22,867,203
1946	33	2,451	5,987,111	780,136	2,636,735	5,663,024	48,342,501	39,292,606
1947	60	3,240	8,304,915	1,029,361	3,050,784	14,182,272	78,124,588	59,862,251
1948	77	4,040	11,421,086	1,454,697	4,031,193	17,437,338	108,917,205	85,993,977
1949	101	5,438	15,676,043	1,989,632	7,181,113	24,071,019	100,349,929	67,108,165
1950	112	5,939	17,632,755	2,321,422	6,465,099	28,088,100	122,718,491	85,845,870
1951	144	9,324	30,380,859	3,090,958	10,382,057	40,310,741	185,692,981	131,909,215
1952								
Newfoundland	2	975	3,202,393	407,047	452,167	5,560,466	16,527,046	10,107,366
Nova Scotia and New Brunswick	2	314	1,042,421	140,830	287,355	798,763	2,380,992	1,154,044
Quebec	57	2,530	8,569,278	984,090	2,659,108	12,310,066	31,056,637	15,103,373
Ontario	13	103	320,526	46,925	88,923	89,171	316,089	91,070
British Columbia	87	5,848	21,410,911	2,232,193	6,225,952	25,316,474	106,319,199	72,544,580
Yukon and Northwest Territories	10	560	3,098,085	606,308	479,111	1,504,833	8,526,821	5,936,569
Total 1952	171	10,330	37,643,614	4,417,393	10,192,616	45,579,773	165,126,784	104,937,002

1. Usually includes a number of small shippers from whom no particulars are received relating to wages, etc.
2. The value of fuel, purchased electricity, process supplies, freight and smelter charges have been deducted.

TABLE 2. Ore Mined and Milled in the Silver-Lead-Zinc Mining Industry, 1951 and 1952

	Newfoundland and Nova Scotia	Quebec and Ontario	British Columbia	Yukon and Northwest Territories	Canada
	Tons				
1951					
Ore mined	324,000	1,413,334	4,493,137	87,074	6,317,545
Ore milled	324,000	1,382,760	4,370,095	86,993	6,163,848
Concentrates produced:					
Lead	28,221	18,711	193,167	8,792	248,891
Zinc	58,910	117,563	361,847	5,480	543,800
Pitchblende-silver	—	—	—	—	1
Precipitates	—	27	448	—	475
Copper	12,424	32,676	31,159	—	76,259
1952					
Ore mined	458,027	1,622,778	4,544,820	133,829	6,759,454
Ore milled	458,027	1,595,810	4,407,126	138,282	6,599,245
Concentrates produced:					
Lead	30,783	26,251	203,002	12,768	272,804
Zinc concentrates ¹	73,809	127,478	348,732	11,392	561,411
Pitchblende-silver	—	—	—	—	1
Precipitates and other	—	400	—	—	400
Copper	16,895	31,520	7,301	—	55,716

1. Data not available for publication.

TABLE 3. Destination of Shipments from Silver-Lead-Zinc Mines, 1951 and 1952

	Tons shipped	Gross value, f.o.b. shipping points	Total metal content (without deductions)			
			Gold	Silver	Lead	Zinc
		\$	Fine ounces	Fine ounces	Pounds	Pounds
1951						
To Canadian smelters:						
Lead ore	6,739	684,413	676	236,977	2,429,376	1,132,495
Lead concentrates	225,347	63,491,920	8,908	10,199,596	268,721,173	33,915,097
Zinc concentrates ¹	358,111	57,479,857	2,308	1,351,321	34,357,185	330,403,347
Copper ore	130	4,837	5	554	14,325 ²	—
Copper concentrates	32,410	4,484,905	4,632	446,169	14,048,970 ²	—
Pyrite	9,318	54,621	—	—	—	9,131,640 ³
Bullion, gold	1	271,810	6,890	19,634	—	—
Bullion, tin	173	226,479	—	—	—	—
Residues, slags, tailings	16	1,877	—	196	10,402	2,356
Total Canadian	632,245	126,700,719	23,419	12,254,447	305,518,136	365,453,295
To foreign smelters:						
Lead concentrates	39,689	8,894,098	7,593	944,468	38,717,725	10,242,121
Zinc concentrates ⁴	208,539	40,686,332	4,904	241,301	3,967,154	224,612,416
Copper concentrates ⁵	45,021	7,356,244	14,897	414,489	1,865,409	1,747,910
Gravity concentrates	151	100,483	2,934	11,315	44,585	68,069
Pyrite	100,630	606,636	—	—	—	98,617,346 ³
Silver concentrates, bullion	278	333,676	200	347,540	—	—
Precipitates	475	1,014,793	9,159	502,665	—	—
Total foreign	394,783	58,992,262	39,687	2,461,778	44,594,873	236,670,516
Total shipments	1,027,028	185,692,981	63,106	14,716,225	350,113,009	602,123,811
Cost of freight	—	8,257,083	—	—	—	—
Cost of fuel and purchased electricity ..	—	3,090,958	—	—	—	—
Smelter charges	—	32,053,668	—	—	—	—
Cost of process supplies	—	10,382,057	—	—	—	—
Net value of shipments	—	131,909,215	—	—	—	—

TABLE 3. Destination of Shipments from Silver-Lead-Zinc Mines, 1951 and 1952 - Concluded

	Tons shipped	Gross value, f.o.b. shippingpoints \$	Total metal content (without deductions)			
			Gold	Silver	Lead	Zinc
			Fine ounces	Fine ounces	Pounds	Pounds
1952						
To Canadian smelters:						
Lead ore	5,079	529,511	627	211,972	2,472,074	714,217
Lead concentrates	216,908	50,156,578	12,076	11,313,754	276,536,989	29,718,317
Zinc ore	875	52,022	14	36,135	116,403	190,417
Zinc concentrates ⁴	341,275	59,538,197	899	1,405,493	43,230,513	346,809,621
Silver ore	69	13,483	1	15,535	—	—
Copper concentrates ⁵	30,079	4,120,251	4,111	411,697	12,631,492 ²	—
Pyrite	5,902	42,530	—	—	—	5,951,144 ³
Bullion, gold	1	88,037	2,431	706	—	—
Bullion, tin	106	241,131	—	—	—	—
Residues, slags, tailings	—	101,263	2,712	7,506	—	—
Total Canadian	600,294	114,883,003	22,871	13,402,798	322,355,979	377,432,572
To foreign smelters:						
Lead ore	120	26,029	3	10,703	162,265	22,841
Lead concentrates	48,648	9,081,850	12,214	1,161,310	52,332,488	8,302,626
Zinc concentrates ⁴	236,482	36,606,176	7,964	564,553	7,231,357	251,372,153
Gold-silver concentrates	376	81,641	2,158	7,842	—	—
Copper concentrates ⁶	19,253	2,987,778	9,783	573,317	2,099,498	3,403,402
Silver concentrates, bullion	13	307,424	—	372,209	—	—
Gravity concentrates	135	85,389	2,335	10,755	45,623	63,526
Pyrite	33,915	460,526	—	—	—	33,276,754 ³
Precipitates	23	606,968	7,907	410,103	—	—
Total foreign	338,965	50,243,781	40,364	3,110,792	61,871,231	263,164,548
Total shipments	939,259	165,126,784	65,235	16,513,590	384,227,210	640,597,120
Cost of freight	—	9,619,131	—	—	—	—
Cost of fuel and purchased electricity ..	—	4,417,393	—	—	—	—
Smelter charges	—	35,960,642	—	—	—	—
Cost of process supplies	—	10,192,616	—	—	—	—
Net value of shipments	—	104,937,002	—	—	—	—

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.

1. Does not include any zinc concentrates produced from copper-gold-zinc ores in Quebec, Manitoba, Saskatchewan or British Columbia.
2. Represents copper content, in pounds.
3. Represents sulphur content, in pounds.
4. Does not include zinc concentrates from copper-gold-zinc ores.
5. The copper content of these concentrates was 21,484,853 pounds.
6. Copper content of these concentrates was 7,909,770 pounds.

TABLE 4. Employees and Earnings in the Silver-Lead-Zinc Mining Industry, 1943-1952

Year	Administrative		Workmen		Total employees	Total man-hours worked	Earnings		Total earnings
	Male	Female	Male	Female			Adminis-trative	Workmen	
	Number		Number				\$	\$	
1943	359	48	2,646	44	3,097	940,099	5,483,625	6,423,724	
1944	318	56	2,336	59	2,769	920,827	4,889,463	5,810,290	
1945	309	57	2,068	51	2,485	935,838	4,537,744	5,473,582	
1946	336	63	2,030	22	2,451	1,047,121	4,939,990	5,987,111	
1947	326	36	2,847	31	3,240	1,446,827	6,858,088	8,304,915	
1948	497	44	3,452	47	4,040	1,880,694	9,540,392	11,421,086	
1949	616	44	4,704	74	5,438	2,473,762	13,202,281	15,676,043	
1950	653	52	5,185	49	5,939	2,747,691	14,885,064	17,632,755	
1951	1,117	103	7,968	136	9,324	20,647,209	4,749,068	30,380,859	
1952	1,220	110	8,884	117	10,330	23,421,755	5,830,281	31,813,333	

TABLE 5. Number of Workmen, by Months, in the Silver-Lead-Zinc Mining Industry, 1951 and 1952

Month	1951	1952					Total
	Total	Mine			Mill		
		Surface		Underground	Male	Female	
		Male	Female				
January	7,359	3,317	80	3,892	1,158	12	8,459
February	7,368	3,424	85	3,936	1,150	14	8,609
March	7,406	3,481	90	4,064	1,163	13	8,811
April	7,577	3,534	100	4,113	1,212	11	8,970
May	7,855	3,790	115	4,087	1,266	13	9,271
June	7,951	4,008	113	4,005	1,213	12	9,351
July	8,361	4,126	117	4,076	1,231	13	9,563
August	8,522	4,141	115	4,003	1,204	11	9,474
September	8,460	3,998	103	4,084	1,197	12	9,394
October	8,849	3,858	104	4,149	1,150	11	9,272
November	8,941	3,446	94	4,014	1,152	9	8,715
December	8,784	3,084	86	3,773	1,129	8	8,080
Average	8,104	3,678	103	4,018	1,118	14	9,001

TABLE 6. Drilling Completed on Silver-Lead-Zinc Deposits, 1950-1952

	Footage drilled		
	1950	1951	1952
Diamond drilling for exploration and testing:			
By mining companies with their own personnel and equipment...	30,952	60,312	128,739
By diamond drilling contractors	406,042	637,593	745,973
Other diamond drilling:			
Blast hole diamond drilling:			
By mining companies with their own personnel and equipment	926,447	704,753	502,874
By diamond drilling contractors	80	8,290	20,443
Drilling by percussion or other machines ¹	4,027,432	7,021,807	8,548,404

1. Not complete as records are unobtainable at certain mines.

TABLE 7. Taxes Paid by Concerns in the Silver-Lead-Zinc Mining and Smelting Industry, 1950-1952

Tax paid	1950	1951	1952
	\$	\$	\$
Dominion income tax	14,799,757	30,276,906	21,353,199
Provincial tax	3,437,391	6,586,378	3,248,984
Municipal tax	475,831	616,518	748,332

TABLE 8. Cost of Prospecting by Canadian Silver-Lead-Zinc Mining Companies

Province in which prospecting ¹ was conducted	By New- foundland, Nova Scotia companies ²	By Quebec companies ²	By Ontario companies ²	By British Columbia companies ²	By Yukon and Northwest Territories companies ²	Total
Dollars						
1946						
Nova Scotia	—	—	—	1,564	—	1,564
New Brunswick	—	—	—	43	—	43
Quebec	—	36,788	—	26,732	—	63,520
Ontario	—	—	—	22,353	—	22,353
Manitoba	—	—	—	24,067	—	24,067
Saskatchewan	—	—	—	21,245	—	21,245
British Columbia	—	—	—	127,858	—	127,858
Northwest Territories	—	—	—	38,718	—	38,718
Yukon	—	—	—	—	—	—
Total	—	36,788	—	262,580	—	299,368
1947						
Nova Scotia	—	—	—	2,402	—	2,402
New Brunswick	—	—	—	—	—	—
Quebec	—	140,593	—	19,275	—	159,868
Ontario	—	4,920	3,808	16,229	—	24,957
Manitoba	—	—	—	9,507	—	9,507
Saskatchewan	—	—	—	16,333	—	16,333
British Columbia	—	—	—	85,247	—	85,247
Northwest Territories	—	—	—	29,268	—	29,268
Yukon	—	—	—	—	1,327	1,327
Total	—	145,513	3,808	178,261	1,327	328,909
1948						
Nova Scotia	—	—	—	3,069	—	3,069
New Brunswick	—	—	—	—	—	—
Quebec	—	62,096	—	29,225	—	91,321
Ontario	—	6,448	—	23,794	—	30,242
Manitoba	—	—	—	20,336	—	20,336
Saskatchewan	—	—	—	22,653	—	22,653
British Columbia	—	—	—	237,462	—	237,462
Northwest Territories	—	—	—	27,560	—	27,560
Yukon	—	—	—	—	16,361	16,361
Total	—	68,544	—	364,099	16,361	449,004
1949						
Newfoundland	214,081	—	—	—	—	214,081
Nova Scotia	—	—	—	2,146	—	2,146
New Brunswick	—	—	—	—	—	—
Quebec	—	127,009	—	19,437	1,300	147,746
Ontario	—	7,019	73,212	14,593	—	94,824
Manitoba	—	—	—	19,295	—	19,295
Saskatchewan	—	—	—	25,249	—	25,249
British Columbia	—	114,470	—	285,581	—	400,051
Northwest Territories	—	—	—	48,220	—	48,220
Yukon	—	—	—	—	654	654
Total	214,081	248,498	73,212	414,521	1,954	952,266
1950						
Newfoundland	104,030	—	—	—	—	104,030
Nova Scotia	—	—	—	—	—	—
New Brunswick	—	904	—	—	—	904
Quebec	—	177,481	—	—	—	177,481
Ontario	—	6,332	6,464	—	1,547	14,343
Manitoba	—	—	—	1,203	—	1,203
Saskatchewan	—	—	—	13,898	—	13,898
British Columbia	—	—	—	158,276	—	158,276
Northwest Territories	—	—	—	—	—	—
Yukon	—	—	—	48,594	56,593	105,187
Total	104,030	184,717	6,464	221,971	58,140	575,322

TABLE 8. Cost of Prospecting by Canadian Silver-Lead-Zinc Mining Companies — Concluded

Province in which prospecting ¹ was conducted	By New- foundland, Nova Scotia companies ²	By Quebec companies ²	By Ontario companies ²	By British Columbia companies ²	By Yukon and Northwest Territories companies ²	Total
Dollars						
1951						
Newfoundland.....	118,826	—	—	—	—	118,826
Nova Scotia	—	4,592	—	—	—	4,592
New Brunswick	—	750	—	74	—	824
Quebec	—	149,420	—	71	—	149,491
Ontario	—	5,507	36,788	11,444	300	54,039
Manitoba	—	—	—	2,587	—	2,587
Saskatchewan.....	—	—	—	5,777	—	5,277
British Columbia	—	2,080	—	409,411	7,500	418,991
Northwest Territories	—	—	—	32,031	18,659	50,690
Yukon	—	—	—	1,684	160,743	162,427
Total	118,826	162,349	36,788	463,079	187,202	968,244
1952						
Newfoundland.....	104,474	52,000	—	—	—	156,474
Nova Scotia	—	—	—	—	—	—
New Brunswick	—	—	—	—	—	—
Quebec	—	599,786	3,090	2,855	—	605,731
Ontario	—	24,118	65,630	3,979	—	93,727
Manitoba	—	—	—	1,386	3,461	4,847
Saskatchewan.....	—	—	—	28,293	830	29,123
British Columbia	—	27,000	—	473,019	—	500,019
Northwest Territories	—	15,000	—	30,225	338,144	383,369
Yukon	—	149,000	—	556	345,509	495,065
Total	104,474	866,904	68,720	540,313	687,944	2,268,355

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.

TABLE 9. Specified Expenditures by the Silver-Lead-Zinc Mining and Smelting Industry

	1945	1946	1947	1948
Workmen's compensation	245,207	204,827	393,063	555,134
Silicosis assessment	139,538	172,652	197,286	243,660
Unemployment insurance	80,242	85,646	100,435	138,469
Aggregate cost of all supplies purchased	2,543,495	3,602,677	4,677,037	5,685,801
Aggregate cost of plant and equipment purchased	458,840	1,555,278	1,251,465	2,073,420
Cost of buildings, machinery and equipment erected or installed during year	161,368	1,684,633	2,683,906	2,931,290
	1949	1950	1951	1952
Workmen's compensation	662,435	858,760	1,075,654	1,250,725
Silicosis assessment	236,292	196,563	281,952	298,708
Unemployment insurance	208,727	266,540	579,677	407,049
Aggregate cost of all supplies purchased	11,542,936	11,501,365	25,961,024	20,700,368
Aggregate cost of plant and equipment purchased	3,160,097	3,859,055	17,818,447	12,184,469
Cost of buildings, machinery and equipment erected or installed during year	4,030,444	5,204,141	13,772,121	25,309,843

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 Deloro Smelting and Refining Company Ltd., at Deloro, Ontario.

Silver production in 1952 amounted to 25,222,227 troy ounces valued at \$21,065,603 compared with 23,125,825 troy ounces valued at \$21,865,467 in 1951. British Columbia continued as the leading producing province with 7,784,964 ounces. Ontario was in second position with 6,491,124 ounces followed by Quebec with 4,536,247 ounces. Yukon increased its production to 4,028,551 ounces. The base metal mines of Manitoba, Saskatchewan, Nova Scotia and Newfoundland contributed over 2.3 million ounces. There was some silver in the gold recovered in Northwest Territories, Alberta and Nova Scotia.

TABLE 10. Production of Silver (In All Forms) from Canadian Ores, 1943-1952

Year	Ounces	Average price in cents per troy ounce	Year	Ounces	Average price in cents per troy ounce
1943	17,344,569	45.25	1948.....	16,109,982	75.0
1944	13,627,109	43.0	1949.....	17,641,493	74.25
1945	12,942,906	47.0	1950.....	23,221,431	80.82
1946	12,544,100	83.65	1951.....	23,125,825	94.55
1947	12,504,018	72.0	1952.....	25,222,227	83.52

TABLE 11. Production of Silver (All Forms) by Months, 1951 and 1952

Month	1951	1952	Month	1951	1952
	Ounces			Ounces	
January	2,023,846	1,803,848	July	1,831,554	1,831,089
February.....	1,630,537	2,022,126	August.....	2,038,937	2,214,798
March	1,789,375	2,085,986	September	1,926,070	1,817,435
April	1,498,505	2,521,864	October	2,017,221	1,857,118
May	1,882,891	2,274,279	November	2,019,253	2,421,617
June	2,431,662	1,907,137	December.....	2,035,974	2,464,930
			Total	23,125,825	25,222,227

TABLE 12. Silver Production According to Nature of Ores, by Provinces, 1952

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	—	—	—	—	638,524	—	638,524
Nova Scotia	—	7	—	—	91,879	—	91,886
Quebec	1	168,577	1,577,010 ¹	—	2,790,659	—	4,536,247
Ontario	—	408,731	2,917	1,231,047	3,348	4,845,081	6,491,124
Manitoba	—	13,623	398,526	—	—	—	412,149
Saskatchewan	—	—	1,179,514	—	—	—	1,179,514
Alberta	10	—	—	—	—	—	10
British Columbia	2,253	38,360	273,806	—	7,470,545	—	7,784,964
Northwest Territories	—	59,191	—	—	—	67	59,258
Yukon	16,315	—	—	—	4,012,236	—	4,028,551
Canada	18,579	688,489	3,431,773	1,231,047	15,007,191	4,845,148	25,222,227

1. Contains a small quantity recovered from gold ores.

TABLE 13. Production of Silver, by Provinces and by Point of Computation, 1951 and 1952

	1951		1952	
	Quantity	Value	Quantity	Value
	Ounces	\$	Ounces	\$
Newfoundland:				
In ores and concentrates exported	534, 519	505, 388	638, 524	533, 295
Nova Scotia:				
In gold bullion and concentrates	1	1	91, 886	76, 743
Quebec:				
In anode copper.....	1, 951, 200	1, 844, 860	1, 969, 297	1, 644, 757
In gold bullion made, and in concentrates exported	2, 203, 090	2, 083, 021	2, 566, 950	2, 143, 916
Total	4, 154, 290	3, 927, 881	4, 536, 247	3, 788, 673
Ontario:				
In silver recovered in Canada from cobalt ores	2, 952, 477	2, 791, 567	4, 723, 409	3, 944, 991
In gold bullion.....	420, 145	397, 247	406, 695	339, 672
In blister copper	1, 069, 706	1, 011, 407	1, 161, 946	970, 457
In ores, concentrates, residues, matte, etc., exported.....	77, 766	73, 528	199, 074	166, 267
Total	4, 520, 094	4, 273, 749	6, 491, 124	5, 421, 387
Manitoba:				
In blister copper	596, 594	564, 080	398, 526	332, 849
In gold bullion (gold mines) and in ores exported	16, 547	15, 645	13, 623	11, 378
Total	613, 141	579, 725	412, 149	344, 227
Saskatchewan:				
In blister copper	1, 454, 341	1, 375, 079	1, 179, 514	985, 130
In gold bullion and in crude alluvial gold	—	—	—	—
Total	1, 454, 341	1, 375, 079	1, 179, 514	985, 130
Alberta:				
In alluvial gold	9	8	10	8
British Columbia:				
In alluvial gold	3, 030	2, 865	2, 253	1, 882
In gold bullion.....	27, 261	25, 775	27, 093	22, 628
In base bullion and in ores, etc., exported.....	8, 312, 123	7, 859, 112	7, 755, 618	6, 477, 492
Total	8, 342, 414	7, 887, 752	7, 784, 964	6, 502, 002
Northwest Territories:				
In gold bullion, placer gold and pitchblende ¹	64, 228	60, 728	59, 258	49, 492
Yukon:				
In alluvial gold	16, 721	15, 810	16, 315	13, 626
In silver-lead ores to smelters	3, 426, 067	3, 239, 346	4, 012, 236	3, 351, 020
Total	3, 442, 788	3, 255, 156	4, 028, 551	3, 364, 646
Canada	23, 125, 825	21, 865, 467	25, 222, 227	21, 065, 603

Note. For 1952 silver was valued at 83.52 cents per fine ounce, the average price of domestic sales; for 1951 the corresponding price was 94.55 cents.

1. Complete data relating to recovery of silver from pitchblende ores are not available since 1942.

TABLE 14. Source of Silver Production, by Percentages, 1948-1952

Source	1948	1949	1950	1951	1952
	Per cent				
In silver-cobalt ores	6.08	5.41	12.68	12.80	19.21
In base bullion ¹	41.04	52.81	53.05	51.89	48.01
In gold ores (bullion and placer)	3.82	3.84	3.06	3.21	2.83
In blister and anode copper ²	27.46	27.00	22.04	21.88	18.66
In matte, copper ores and silver-lead ores, etc., exported (other than silver-cobalt ores)	21.60	10.94	9.17	10.22	11.29
	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 15. Estimated Consumption of Fine Silver in Canada for Industrial Purposes, 1943-1952

Year	In anodes for plating	In making sterling silver and other silver alloys (except lead-silver alloys)	In making silver nitrate	In lead-silver alloys	Miscellaneous	Total
	Ounces					
1943.....	800,000	1,620,000	890,000	350,000	300,000	3,960,000
1944.....	900,000	2,650,000	890,000	180,000	360,000	4,980,000
1945.....	960,000	3,740,000	1,040,000	130,000	410,000	6,280,000
1946.....	1,301,000	3,490,000	937,000	40,000	404,000	6,172,000
1947.....	1,155,000	1,384,000	874,000	37,000	253,000	3,703,000
1948.....	1,365,000	1,800,000	956,000	5,000	248,000	4,374,000
1949.....	2,463,000	2,903,000	969,000	2,500	196,000	6,533,500
1950.....	1,166,000	2,708,000	1,025,000	5,000	304,000	5,208,000
1951.....	907,000	2,134,000	1,166,000	3,000	279,000	2,569,000
1952.....	1,116,500	1,181,000	1,083,000	26,000	379,500	3,786,000

Note. Amounts used for coinage not included in above figures.

TABLE 16. Imports and Exports of Silver and Silver Products, 1951 and 1952

	1951		1952	
	Quantity	Value	Quantity	Value
	Ounces	\$	Ounces	\$
Imports:				
Silver, unmanufactured	1,050,299	848,176	145,898	128,210
Silver, manufactures of, n.o.p.	—	822,232	—	566,824
Toilet articles of which the most important component, in value, is sterling silver	—	22,707	—	20,307
Coin, foreign, except gold	—	—	—	320
Total	—	1,693,115	—	715,661
Exports:				
Silver contained in ore, concentrates, etc.	2,413,288	2,059,949	3,546,448	2,830,376
Silver bullion	15,381,276	14,419,658	14,928,515	12,617,803
Silver manufactures	—	179,648	—	87,289
Total	—	16,659,255	—	15,535,468

TABLE 17. Silver production of the World, 1949-1952

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

Country	1949	1950	1951	1952
	Fine ounces			
North America:				
United States	34,559,000	42,068,000	39,967,000	40,245,000
Canada	17,641,493	23,221,431	23,125,825	25,177,862
Mexico	49,453,741	49,140,311	43,796,723	50,352,398
Total North America	101,654,234	114,429,742	106,889,548	115,775,260
Central America and West Indies	4,200,000	4,280,000	4,180,000	4,331,000
South America:				
Argentina	1,249,421	1,253,879	1,253,879	962,948
Bolivia	6,623,052	6,566,766	7,156,590	7,065,413
Chile	799,667	742,472	983,469	1,246,327
Colombia	106,687	116,114	130,028	
Ecuador	279,247	255,705
Peru	10,609,733	14,758,403	17,378,747	17,070,043
Other South America	50,000			
Total South America	19,717,807			
Europe:				
Czechoslovakia	—			
Finland	168,016	115,933	157,278	150,076
France	570,888	549,669	546,550	353,650
Great Britain	13,996	18,153		
Italy	793,526	894,901	869,690	1,055,902
Norway	135,033	110,307	89,184	112,525
Spain (refined)	514,090	823,812	735,914	
Sweden	1,140,682	1,275,680	1,145,890	
Yugoslavia	1,917,748	2,386,784	3,031,938	2,576,983
Australia	9,849,213	10,677,456	10,792,032	11,268,000
New Guinea				
New Zealand	232,599	199,701	133,291	51,016
Fiji	29,755	37,736	24,869	
Asia:				
Burma	—	1,804	280,720	242,307
Formosa	4,836	2,098		
India	11,275	15,676	14,612	
Japan	2,887,265	3,964,572	4,609,924	5,288,707
Korea: South	18,930			
Saudi Arabia	81,295	124,287	109,912	
Africa:				
Algeria	32,472			
Belgian Congo	4,549,225	4,468,953	3,795,179	4,727,143
French Morocco	736,203	482,261		382,617
Gold Coast (exports)	38,887	43,317	52,542	44,116
Rhodesia	84,495	85,549	79,731	81,356
South West Africa	552,298	826,953	759,667	1,064,335
Transvaal, Cape Colony and Natal	1,159,375	1,119,135	1,162,586	1,176,384
Tunisia	68,319	73,947	61,119	
Other Africa	31,000	34,300		
Total Africa	7,252,274			
Total World, as reported	151,193,462			

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. Lead-silver ores from the Yukon territory are smelted at Trail in British Columbia. Part of the lead concentrates from the lead-zinc mines of Quebec was ex-

ported for treatment and part was shipped to the Trail smelter for processing. Concentrates from Newfoundland and Nova Scotia were exported for treatment.

Production of lead in 1952 amounted to 168,842 tons valued at \$54,671,021 compared with 158,231 tons valued at \$58,229,146 in 1951. The price range during the year was from 13.5 cents to 19.5 cents per pound, the average being 16.2 cents.

Output of refined lead only, including some recovered from imported ores, amounted to 182,943 tons in 1952 compared with 162,000 tons in 1951.

TABLE 18. Production¹ of New Lead, 1943-1952

Year	Tons	\$	Average price per pound (Canadian funds)	Year	Tons	\$	Average price per pound (Canadian funds)
			¢				¢
1943	222,030	16,670,041	3.754	1948	167,251	60,344,146	18.04
1944	152,291	13,706,199	4.500	1949	159,775	50,488,879	15.8
1945	173,497	17,349,723	5.00	1950	165,697	47,886,452	14.45
1946	176,987	23,893,230	6.75	1951	158,231	58,229,146	18.4
1947	161,668	44,200,124	13.67	1952	168,842	54,671,021	16.19

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

TABLE 19. Production of Lead, by Months, 1951 and 1952

Month	Lead (all forms)		Refined lead ¹	
	1951	1952	1951	1952
	Tons			
January	16,139	15,272	15,073	13,460
February	12,030	11,072	13,617	12,922
March	12,663	15,523	14,878	14,771
April	10,087	14,547	14,092	14,571
May	11,154	13,770	14,369	16,593
June	13,845	11,172	14,041	16,692
July	11,044	11,460	6,394	11,207
August	13,831	13,605	14,784	11,590
September	11,928	14,488	13,956	17,161
October	15,089	16,641	13,484	18,271
November	14,821	12,885	13,343	17,545
December	15,600	18,407	13,969	18,160
Total	158,231	168,842	162,000	182,943

1. Includes lead refined from foreign ores.

TABLE 20. Production, Imports and Exports of Lead, 1950-1952

	1950		1951		1952	
	Pounds	Value	Pounds	Value	Pounds	Value
		\$		\$		\$
Production:						
Newfoundland	35,836,124	5,178,320	32,888,189	6,051,427	36,118,414	5,847,571
Nova Scotia	—	—	—	—	1,556,645	252,021
Quebec	15,352,770	2,218,475	15,512,623	2,854,323	21,039,859	3,406,353
Ontario	—	—	—	—	1,803,455	291,979
British Columbia	267,319,716	38,627,700	255,528,868	47,017,311	258,769,430	41,894,771
Yukon	12,885,518	1,861,957	12,533,071	2,306,085	18,368,643	2,973,883
Northwest Territories	—	—	—	—	27,445	4,443
Total	331,394,128	47,886,452	316,462,751	58,229,146	337,683,891	54,671,021
Imports:						
Pig and block	2,473,080	294,935	1,454,786	356,926	709,836	127,066
Old and scrap	502,329	48,042	10,525	2,061	259,389	45,873
Bars and sheets	38,118	7,040	3,744	1,411	4,433	1,988
Lead pipe	—	—	—	—	1,431	583
Acetate of lead	200,349	32,034	244,647	51,478	96,718	18,581
Nitrate of lead	143,241	23,225	132,126	30,180	128,736	23,122
Other manufactures	—	211,175	—	214,325	—	214,325
Shots and bullets	6,671	1,873	4,753	2,077	2,341	1,367
Lead tetraethyl, compounds of ..	23,208,600	8,817,224	22,608,868	8,996,288	23,737,931	9,270,084
Lead capsules for bottles	—	31,770	—	209,469	—	141,186
Lead pigments:						
Litharge	1,268,000	232,842	907,800	217,243	1,172,500	231,159
Dry white lead	176,309	25,159	247,000	36,369	23,779	4,240
White lead, ground in oil	1,460	349	2,260	569	600	154
Dry red lead and orange mineral ..	180,367	31,935	174,466	42,114	151,401	27,844
Total	—	9,757,503	—	10,160,510	—	10,107,572
Exports:						
Lead, scrap	3,589,100	302,971	2,842,200	400,706	10,426,100	1,163,151
Lead, contained in ore	38,551,300	5,560,510	39,296,600	6,765,963	47,934,200	6,897,640
Pig lead	230,335,800	32,241,459	211,472,200	38,123,412	259,480,900	41,614,984
White lead	2,073,600	309,110	5,769,200	1,074,890	842,300	153,518
Lead manufactures, n.o.p.	—	60,805	—	68,761	—	41,584
Lead pipe	191,300	33,188	140,000	33,638	97,600	25,312
Total	—	38,508,043	—	46,467,370	—	49,896,189

TABLE 21. Production, Imports, Exports and Domestic Consumption of Refined Lead, 1943-1952

Year	Production in Canada	Domestic consumption	Exports	Imports	Stock ¹ at end of period
	Tons of 2,000 pounds				
1943	223,871	53,090	154,473	10	34,131
1944	143,556	51,671	102,879	10	26,325
1945	163,142	62,263	107,291	8	19,900
1946	165,744	62,784	102,000	6	21,230
1947	162,000	64,131	118,214	—	9,134
1948	160,025	59,542	108,302	53	3,866
1949	146,149	51,281	99,010	2,154	10,959
1950	170,023	54,723	115,864	1,237	11,061
1951	162,000	60,348	104,893	1,227	10,365
1952	182,943	53,439	129,740	521	10,281

1. Producers' and consumers' stocks

TABLE 22. Consumption of Refined Lead by Principal End Uses, 1948-1952

Use	1948	1949	1950	1951	1952
	Tons				
Solders and alloys ¹	15,642	12,135	10,480	9,466	13,274
White lead, red lead and litharge	9,386	5,026	6,183	8,289	7,438
Storage batteries ²	18,482	18,095	21,832	23,373	11,527
Poil and collapsible tubes	400	196	43	81	3
Ammunition	342	675	564	1,318	3,006
Iron and steel	1,774	1,511	1,531	1,982	363
Cable covering	12,247	12,622	12,758	14,269	15,959
Miscellaneous	1,269	1,021	1,332	1,570	1,869
Total	59,542	51,281	54,723	60,348	53,439

1. Does not include lead in antimonial lead for storage batteries.

2. Includes new lead and lead content of antimonial lead.

TABLE 23. World production of Lead on Mine basis, 1949-1952

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

Country	1949	1950	1951	1952
	Tons of 2,000 pounds			
United States ¹	409,908	430,827	388,164	384,097
Canada ^{1,2}	159,775	165,697	158,231	167,673
Mexico ²	257,585	247,069	221,967	243,667
Total North America	827,268	843,593	768,362	795,437
Argentina	19,882	25,400	26,500	19,900
Bolivia	29,048	34,396	33,105	32,262
Chile	3,151	4,400	4,500	4,500
Peru	72,043	71,554	90,774	95,778
Total South America	124,124	135,750	154,879	152,440
Austria	4,737	4,894	4,985	5,763
Czechoslovakia	3	3	3	3
France	11,033	12,115	11,690	13,024
Finland	149	150	150	200
Germany ⁴	45,134	49,533	55,522	56,875
Great Britain ⁵	2,379	3,381	4,585	4,394
Greece	2,261	2,543	5,348	3,500
Italy	38,545	42,230	42,620	44,293
Poland	19,700	20,000	20,000	22,500
Romania ⁵	3	3	3	3
Spain	32,463	41,753	43,188	45,622
Sweden	26,345	24,992	21,708	22,700
Yugoslavia	79,526	94,837	86,807	87,048
Total Europe	262,263	296,428	296,603	305,919
Barma	254	12	5,474	2,949
China, inc. Hong Kong	6	6	6	6
India ⁵	664	702	962	1,268
Japan	10,066	12,011	14,187	19,482
Korea	158	150	150	150
Total Asia	11,142	12,875	20,773	23,849
Algeria	1,236	1,544	3,269	4,592
Belgian Congo	198	—	—	—
French Equatorial Africa	806	2,000	2,760	3,916
French Morocco	40,956	53,136	75,104	92,444
Rhodesia ⁵	15,619	15,327	15,646	14,112
South West Africa ¹	35,248	29,802	37,636	50,324
Tunisia	19,585	21,236	23,347	25,651
Total Africa	113,648	123,045	157,762	191,039
Australia ¹	224,261	231,971	238,578	247,719
Russia	99,200	123,000	141,500	170,000
Total ⁷	1,661,906	1,766,662	1,778,457	1,886,403

1. Calculated as recoverable.

2. Base bullion from domestic ores plus recoverable content of ores exported.

3. Unknown.

4. Production — Federal Republic of Germany.

5. Entered the same as pig lead production.

6. Unknown, but probably small.

7. A.B.M.S. totals are exclusive of any estimate for the Soviet Zone of Germany, 1945-1952; North Korea 1945-1952.

Besides the productions tabulated above there are small productions in Ecuador, Guatemala, Bulgaria, Hungary, Norway, Portugal and several other countries.

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.

Production of new zinc during 1952 amounted to 371,802 tons compared with 341,112 tons in 1951. Zinc concentrates from Buchans Mines in Newfoundland, and from Mindamar Metals in Nova Scotia were exported for treatment. In Quebec, zinc concentrates were produced from ores, classified as

copper-gold-silver, of the East Sullivan, Quemont and Waite Amulet mines. Other zinc producers were classified as lead-zinc mines.

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

TABLE 24 Production¹ of Zinc from All Types of Canadian Ores, 1943-1952

Year	Tons	\$	Average price per pound (Canadian funds)	Year	Tons	\$	Average price per pound (Canadian funds)
			¢				¢
1943.....	305,377	24,430,174	4.00	1948.....	234,164	65,237,956	13.93
1944.....	275,412	23,685,405	4.30	1949.....	288,262	76,372,147	13.25
1945.....	258,607	33,308,556	6.44	1950.....	313,227	98,040,145	15.65
1946.....	235,310	36,755,450	7.81	1951.....	341,112	135,762,643	19.90
1947.....	207,863	46,686,010	11.23	1952.....	371,802	129,833,285	17.46

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

TABLE 25. Production of Zinc, by Months, 1951 and 1952

Month	Primary zinc in all forms		Refined zinc ¹	
	1951	1952	1951	1952
	Tons of 2,000 pounds			
January.....	26,706	30,224	18,194	19,242
February.....	26,197	27,855	16,660	17,411
March.....	27,006	29,231	18,088	18,953
April.....	26,613	29,841	17,434	18,415
May.....	26,861	32,109	18,066	18,786
June.....	28,135	32,085	18,172	18,728
July.....	28,789	34,702	18,182	19,411
August.....	31,328	32,584	18,302	18,924
September.....	29,205	30,202	17,906	18,230
October.....	30,012	32,078	18,736	19,754
November.....	29,962	28,752	18,633	16,114
December.....	30,299	32,139	20,205	18,232
Total.....	341,112	371,802	218,578	222,200

1. Includes zinc refined from foreign ores.

TABLE 26. Zinc Production According to Types of Ores, by Provinces, 1951 and 1952

Year and Province	Recovered from copper-gold-silver ores	Recovered from silver-lead-zinc and other ores	Total
Tons of 2,000 pounds			
1951			
Newfoundland.....	—	28,469	28,469
Quebec	33,702	52,661	86,363
Manitoba	15,111	—	15,111
Saskatchewan	39,574	—	39,574
British Columbia	—	168,756	168,756
Yukon	—	2,839	2,839
Total Canada	83,386	252,726	341,112
1952			
Newfoundland.....	—	30,517	30,517
Nova Scotia	—	4,408	4,408
Quebec	35,623	59,276	94,899
Ontario	—	372	372
Manitoba	15,093	—	15,093
Saskatchewan.....	46,690	—	46,690
British Columbia	12,167	162,121	174,288
Yukon	—	5,535	5,535
Total Canada	109,573	262,229	371,802

TABLE 27. Production, Imports and Exports of Zinc, 1951 and 1952

	1951		1952	
	Tons	Value \$	Tons	Value \$
Production:				
Newfoundland	28,469	11,330,799	30,517	10,656,475
Nova Scotia	—	—	4,408	1,539,298
Quebec	86,363	34,372,439	94,899	33,138,567
Ontario	—	—	372	130,063
Manitoba	15,111	6,013,982	15,093	5,270,306
Saskatchewan.....	39,574	15,750,548	46,690	16,304,364
British Columbia	168,756	67,164,754	174,288	60,861,359
Yukon	2,839	1,130,121	5,535	1,932,853
Total	341,112	135,762,643	371,802	129,833,285
Imports:				
Zinc dust	222	121,993	242	113,957
Zinc in blocks, pigs, bars and rods, and zinc plates, n.o.p.	55	2,950	521	194,032
Zinc in sheets and strips, and zinc plates for marine boilers	1,635	1,063,228	759	421,759
Zinc slugs for dry batteries	—	407,005	—	332,612
Zinc white (zinc oxide)	665	220,021	727	226,247
Zinc sulphate.....	1,177	189,449	1,004	143,394
Zinc chloride	205	51,132	95	22,171
Zinc, manufactures of, n.o.p.	—	2,003,771	—	1,777,968
Lithopone	6,911	1,189,717	3,155	481,466
Total	—	5,249,266	—	3,713,606
Exports:				
Zinc, manufactures of.....	—	781,175	—	419,996
Zinc contained in ore	154,593	27,153,095	181,754	34,491,726
Zinc, scrap, dross and ashes	4,510	1,091,970	3,627	481,752
Zinc spelter	146,132	55,423,769	166,864	61,309,973
Total	—	84,450,009	—	96,703,447

TABLE 28. Production, Imports, Exports and Domestic Consumption of Refined Zinc, 1943-1952

Year	Production	Domestic consumption	Exports	Imports	Stocks ¹ at end of period
	Tons of 2,000 pounds				
1943.....	206,510	80,599	129,315	13	26,100
1944.....	168,518	67,359	95,985	4	33,220
1945.....	183,317	55,663	121,969	—	37,700
1946.....	185,683	54,969	151,885	—	23,265
1947.....	178,264	51,065	127,036	—	21,275
1948.....	196,575	46,899	147,454	—	13,849
1949.....	206,045	45,669	159,353	—	12,101
1950.....	204,367	54,370	148,205	—	13,048
1951.....	218,578	61,023	152,661	—	18,742
1952.....	222,200	51,581	166,864	—	25,116

1. Producers' and consumers' stocks.

TABLE 29. Consumption of Refined Zinc, by End Uses, 1950-1952

Use	1950	1951	1952
	Tons		
Brasses.....	6,523	10,812	11,983
Galvanizing.....	23,711	24,314	23,091
Die castings.....	4,025	2,856	7,909
Zinc oxide.....	9,692	9,796	5,189
Dry batteries.....	2,315	2,783	1,257
Secondary smelters.....	7,660	9,563	1
Miscellaneous.....	444	899	2,152
Total	54,370	61,023	51,581

1. Distributed into other uses.

TABLE 30. World Production of Zinc Ore, by Countries

(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	1949	1950	1951	1952
United States ^{1,2}	593,203	623,375	681,189	661,023
Canada ^{1,3}	288,264	313,227	341,112	366,775
Mexico ⁴	214,829	207,256	205,575	229,078
Total North America	1,096,296	1,143,858	1,227,876	1,256,876
Argentina ⁴	12,038	13,998	17,058	16,971
Bolivia ¹	19,432	21,572	33,659	39,262
Peru ⁴	79,406	96,896	111,504	133,028
Total South America	110,876	132,466	162,221	189,261
Austria ⁴	2,970	3,274	3,698	4,696
France ⁴	12,085	11,162	11,489	13,203
Germany ⁵	63,734	76,389	80,398	88,933
Greece ¹	1,868	3,510	9,298	5,100
Italy ¹	68,050	78,166	94,086	103,002
Norway ⁴	7,286	5,216	6,028	6,173
Poland ⁶	94,000	95,000	95,000	105,000
Spain ⁴	54,979	69,803	79,298	84,635
Sweden ⁴	38,755	40,918	42,238	51,987
Yugoslavia.....	48,521	41,990	43,453	52,679
Other Europe ⁷	2,500	2,100	2,400	3,000
Total Europe	394,748	427,528	467,386	518,408

TABLE 30. World Production of Zinc Ore, by Countries — Concluded

(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	1949	1950	1951	1952
India	—	300	1, 176	2, 255
Indo China ⁴	—	—	—	—
Japan ⁴	48, 797	57, 355	71, 010	95, 292
Other Asia	200	200	200	200
Total Asia	49, 997	57, 855	72, 386	97, 847
Algeria ⁴	7, 565	7, 911	10, 434	12, 657
Belgian Congo ⁴	61, 089	82, 458	97, 780	109, 070
French Equatorial Africa ⁴	49	685	571	369
French Morocco ⁴	3, 138	11, 003	21, 445	31, 466
Northern Rhodesia ⁸	25, 592	25, 442	25, 301	25, 637
Southwest Africa ¹	11, 511	9, 288	11, 110	14, 001
Tunisia ⁴	3, 678	3, 232	3, 911	3, 905
Total Africa	112, 622	140, 019	170, 552	197, 105
Australia ¹	168, 654	186, 284	179, 507	185, 557
Russia	122, 000	142, 000	163, 000	205, 000
Total, as reported	2, 054, 193	2, 229, 983	2, 442, 928	2, 650, 054

1. Calculated as recoverable.

2. U.S. Bureau of Mines.

3. Dominion Bureau of Statistics.

4. Calculated as zinc content by assay.

5. Federal Republic of Germany starting 1949.

6. Smelter production.

7. No estimates have been made for Soviet Zone of Germany.

8. Entered the same as slab zinc production.

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 1952 was 948,587 pounds compared with 1,326,920 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 31. Production of Cadmium in all forms from Canadian Ores, 1943-1952

Year	From copper-gold-silver-zinc ores	From silver-lead-zinc ores	Total
1943	187, 938	598, 673	786, 611
1944	140, 560	386, 410	526, 970
1945	135, 632	510, 432	646, 064
1946	166, 333	636, 315	802, 648
1947	172, 896	545, 638	718, 534
1948	148, 864	617, 226	766, 090
1949	181, 092	665, 449	846, 541
1950	141, 456	706, 950	848, 406
1951	147, 168	1, 179, 752	1, 326, 920
1952	205, 911	742, 676	948, 587

TABLE 32. Production, Exports and Domestic Consumption of Cadmium Metal, 1943-1952

Year	Production	Domestic consumption	Exports
	Tons of 2,000 pounds		
1943	393	168	286
1944	263	108	192
1945	323	87	175
1946	401	96	296
1947	359	72	309
1948	383	92	275
1949	423	113	279
1950	419 ¹	116	349
1951	633 ¹	146	460
1952	410 ¹	116	310

1. Includes cadmium recovered from foreign ores.

(b) The Silver-Cobalt Mining Industry

Mining activity in the Temiskaming district continued through 1952.

distributed \$2,161,894 in wages and salaries. Fuel cost \$131,430 and 18,937,626 k.w.h. of electricity were purchased for \$148,279. Process supplies were valued at \$474,083.

The industry employed 696 persons in 1952 and

TABLE 33. Principal Statistics of the Silver-Cobalt Mining Industry, 1943-1952

Year	Number of active operators ¹	Number of operating mines ²	Number of employees	Salaries and wages	Cost of fuel and electricity	Net value of bullion ore, concentrates or residues sold
				\$	\$	\$
1943	20	21	221	290,654	74,691	578,861 ³
1944	10	11	165	260,575	48,323	323,260 ³
1945	7	8	166	247,203	49,553	82,508
1946	11	11	247	404,012	58,712	207,483
1947	12	12	183	359,963	62,148	253,363
1948	17	12	172	413,095	100,779	321,415
1949	18	9	264	607,782	82,735	503,572
1950	20	11	364	883,281	99,966	2,308,213
1951	20	13	514	1,406,783	148,661	3,640,348
1952	19	13	696	2,161,894	279,709	3,556,975

1. Includes lessees shipping from dumps.

2. Includes properties on which operations were of a salvage nature only.

3. Includes value of ores consigned to the United States Government stock pile at Deloro, Ontario.

TABLE 34. Summary¹ of Operations of Silver-Cobalt Mines and Mills, 1950-1952

	1950	1951	1952
Number of mines in operation ²	11	13	13
Ore mined..... tons	68,437	129,077	179,534
Ore salvaged from surface ³ tons	8,922	2,247	22,395
Ore and tailings treated (milled) ⁴ tons	122,834	176,568	343,400
Concentrates produced..... tons	1,801	2,877	16,088
Gross value of bullion, ore, concentrates and residues sold..... \$	2,940,146	4,539,842	4,770,635
Cost of freight..... \$	20,542	50,861	70,830
Smelter charges..... \$	305,462	400,888	389,038
Cost of fuel and purchased electricity used..... \$	99,966	148,661	279,709
Cost of process supplies used..... \$	205,963	299,084	474,083
Net value of sales..... \$	2,308,213	3,640,348	3,556,975

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

2. All mines located in northern Ontario, and includes properties on which the operations consisted only in salvaging of ore from dumps, etc.

3. Complete data not available.

4. Does not include crude ore shipped.

TABLE 35. Mine and Mill Shipments of Canadian Silver-Cobalt Ores and Concentrates, 1951 and 1952

	Gross weight	Metal content			
		Silver	Cobalt	Nickel	Copper
	Tons	Ounces	Pounds	Pounds	Pounds
1951					
To Canadian smelters and to the government stockpile at Doloro, Ontario	4,218	4,582,255	320,842	38,602	48,141
To foreign plants	138	15,033	27,710	11,946	1,979
Total	4,356	4,597,288	348,552	50,548	50,120
1952					
To Canadian smelters and to the government stockpile at Doloro, Ontario	6,457	4,510,313	647,960	37,613	91,640
To foreign plants	100	128,413	10,329	1,861	456
Total	6,557	4,638,726	658,289	39,474	92,096

TABLE 36. Employees and Earnings in the Silver-Cobalt Mining Industry, 1943-1952

Year	Administrative		Workmen		Total employees	Man-hours worked	Earnings		Total earnings
	Male	Female	Male	Female			Administrative	Workmen	
	Numbers						\$	\$	
1943	34	6	180	1	221	Not available	56,570	234,084	290,654
1944	20	4	140	1	165		43,960	216,615	260,575
1945	14	5	146	1	166		42,267	204,936	247,203
1946	20	3	223	1	247		59,085	344,927	404,012
1947	21	3	158	1	183		75,807	284,156	359,963
1948	22	3	145	2	172		66,509	346,586	413,095
1949	28	2	231	3	264		87,598	520,184	607,782
1950	44	3	314	3	364		745,691	760,002	883,281
1951	64	4	441	5	514		1,221,781	1,178,162	1,406,783
1952	71	5	613	7	696		1,605,890	242,036	1,919,858

TABLE 37. Number of Workmen on Payroll at End of Month in the Silver-Cobalt Mining Industry, 1951 and 1952

Month	1951					1952				
	Mine			Mill	Total	Mine			Mill	Total
	Surface		Under-ground			Surface		Under-ground		
	Male	Female	Male	Male	Male	Female	Male	Male		
January	99	5	230	78	412	123	7	303	114	547
February	98	5	224	84	411	125	7	321	114	567
March	105	5	238	86	434	130	7	324	118	579
April	110	5	254	94	463	163	6	324	113	606
May	121	6	248	65	440	161	6	321	119	607
June	125	5	256	70	456	196	6	326	122	650
July	120	6	242	78	446	196	6	326	119	647
August	122	5	216	76	419	192	6	321	130	649
September	118	5	245	77	445	163	7	322	132	624
October	112	6	273	82	473	154	7	329	162	652
November	118	6	296	79	499	153	8	343	164	668
December	119	6	314	74	513	147	8	342	155	652
Average	115	5	256	70	446	161	7	321	131	620

Cobalt

Ores from the Cobalt area were treated by Deloro Smelting and Refining Co. Ltd., which produced metallic cobalt and cobalt compounds at Deloro, Ontario. Some of the ores from this area were exported to the United States. For the past six years the International Nickel Company of Canada Ltd.,

has been producing cobalt oxide at Port Colborne from the nickel-copper ores of the Sudbury district. Falconbridge Nickel Mines Ltd., recovers cobalt at its nickel refinery in Norway from matte produced at its Falconbridge smelter near Sudbury.

Arsenic

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

TABLE 38. Production of Cobalt from Canadian Ores, 1943-1952

Year	Pounds	Year	Pounds
1943.....	175,961 ¹	1948.....	1,544,852
1944.....	36,283 ¹	1949.....	619,065
1945.....	109,123	1950.....	583,806
1946.....	73,900	1951.....	951,607
1947.....	572,673	1952.....	1,421,923

1. Exclusive of cobalt in ores placed on United States Government stock pile at Deloro, Ontario, but includes metal in ores reshipped from this stock pile.

TABLE 39. Production of Cobalt from Canadian Ores, Imports and Exports, 1951 and 1952

	1951		1952	
	Quantity Pounds	\$	Quantity Pounds	\$
PRODUCTION: (In terms of metallic cobalt and cobalt in oxides and salts sold, and in ores exported).....	951,607	1,999,612	1,421,923	3,226,903
IMPORTS: Cobalt ore.....	3,687,800	760,510	14,943,400	2,318,419
Oxide of cobalt.....	—	—	—	—
EXPORTS: Cobalt contained in ore.....	35,300	46,754	—	—
Cobalt, metallic.....	192,260	375,383	315,500	674,758
Cobalt alloys.....	730	7,308	20,445	98,118
Cobalt oxides and cobalt salts.....	659,486	1,172,343	785,976	1,636,193

TABLE 40. World Production of Cobalt, 1948-1952

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

Country	1948	1949	1950	1951	1952
	Pounds				
Canada ¹	1,544,852	619,065	583,806	951,607	1,363,251
Northern Rhodesia ²	868,300	1,146,500	1,473,900	1,568,972	1,037,120
Belgian Congo ²	9,530,486	9,706,854	11,349,281	12,599,289	15,432,200
French Morocco ³	612,000	548,900	930,300	1,596,130	2,200,191
United States ³	687,464	521,656	809,328	902,629	1,363,251

1. Metal recovered from smelter products plus cobalt contained in cobalt residues exported. In 1948 shipments made from stock-piled ores.

2. Cobalt content of alloys.

3. Content of ore.

4. Not yet available.

Principal Operators in the Silver-Lead-Zinc Mining Industry, 1952

Name of operator	Head office address	Location of mine
Newfoundland:		
Buchans Mining Co. Ltd.	Water St., St. John's	Buchans
Independent Mining Corp. Ltd.	15 Toronto St., Toronto, Ontario	Corner Brook
Nova Scotia:		
Mina-Nova Mines Ltd.	217 Bay St., Toronto, Ontario	Boisdale Hills
Mindamar Metals Corp. Ltd.	50 King St. W., Toronto, Ontario	Stirling
Minda-Scotia Mines Ltd.	217 Bay St., Toronto, Ontario	Middle Stewiacke
New Brunswick:		
Keymet Mines Ltd.	330 Bay St., Toronto, Ontario	Petit Rocher
Quebec:		
Anacon Lead Mines Limited	330 Bay St., Toronto, Ontario	Montauban les Mines
Ascot Metals Corporation Ltd.	P.O. Box 492, Sherbrooke	Moulton Hill
Barvue Mines Ltd.	330 Bay St., Toronto, Ontario	Barraute Twp.
Barel Duc Mines Ltd.	330 Bay St., Toronto, Ontario	Barraute Twp.
Bar Metals Mines Ltd.	Box 1028, Val d'Or	Piedmont Twp.
Bargis Mines Ltd.	21 Dundas Square, Toronto, Ont.	Barraute Twp.
Barvallee Mines Ltd.	437 Ouest, rue St. Jacques, Montreal	Piedmont Twp.
Beaupre Base Metal Mines Ltd.	1596 Danforth Ave., Toronto, Ont.	Perron Twp.
Belvedere Copper Corp.	266 St. Jacques, Ouest, Montreal	Ascot
Belville Zinc & Copper Mines Ltd.	Box 1058, Val d'Or	Senneville
Celta Development & Mining Co. Ltd.	465 St. John, Montreal	Piedmont
Chatelet Mines Ltd.	McWatters	Carpentier Twp.
Claude Lake Mines Ltd.	Ste. Anne des Monts	Duchesnay
Chateau Mines Ltd.	222 Hospital St., Montreal	Notre Dame des Anges
Cour Bar Mines Ltd.	7 King St. W., Toronto, Ontario	Barraute
Consolidated Candego Mines Ltd.	1121 Sherbrooke St. W., Montreal	Boisbulsson Twp.
Consolidated Astoria Mines Ltd.	62 Richmond St. W., Toronto, Ont.	Levy Twp.
Crangold Mines Ltd.	185 Bay St., Toronto, Ont.	Beauchastel Twp.
Cran-Kor Mines Ltd.	185 Bay St., Toronto, Ont.	Beauchastel Twp.
D'Eldona Gold Mines Ltd.	310 Temple Bldg., Toronto, Ont.	Noranda
Dackie Mining Corp.	900-3rd Ave., Val d'Or	Gastagnier
Empire Oil & Minerals Inc.	400 St. James St. W., Montreal	Bachelor Lake
Federal Metals Corp.	1604 Aldred Bldg., Montreal	Bonaventure
Frebert Mines Ltd.	330 Bay St., Toronto, Ontario	Barraute Twp.
Golden Manitou Mines Ltd.	330 Bay St., Toronto, Ontario	Bourlamaque Twp.
Grondines Mines Ltd.	330 Bay St., Toronto, Ontario	Portneuf
Guynne Quebec Prospecting Syndicate ...	Box 698, Val d'Or	Guynne Twp.
Gulf Lead Mines Ltd.	330 Bay St., Toronto, Ontario	Hudson Bay
Harrison Drilling & Exploration Co. Ltd. ...	Box 28, Noranda	Rouyn Twp.
Lacasse & Poitras	139, rue de Montmorency, Québec	Ascot
Lennox Mines Co.	John St., Napanee, Ontario	Gaspé
Lachance Mines Ltd.	161 Notre Dame St. S., Thetford Mines	Thetford Mines
MacDonald Mines Ltd.	1121 Sherbrooke St. W., Montreal	Dufresnoy Twp.
Mogador Mines Ltd.	Royal Bank Bldg., Montreal	Barraute
Montauban Mines, Ltd.	330 Bay St., Toronto, Ontario	Portneuf
Montbar Mines Ltd.	Royal Bank Bldg., Montreal	Barraute
New Calumet Mines Ltd.	355 St. James St., Montreal	Calumet
New Norzone Mines Ltd.	330 Bay St., Toronto, Ontario	Montbeillard Twp.
Normetal Mining Corp. Ltd.	44 King St. W., Toronto, Ontario	Desmeloizes Twp.
Norzinc Mines Ltd.	392 Bay St., Toronto, Ontario	Northfield
Obaska Lake Mines Ltd.	25 King St. W., Toronto	Louvicourt Twp.
Parquet Mines Ltd.	7 King St. W., Toronto, Ontario	Duparquet Twp.
Pershcourt Goldfields Ltd.	24 King St. West, Toronto, Ontario	Barraute Twp.
Preston East Dome Mines Ltd.	10 Adelaide St. E., Toronto	Lamorandiere Twp.
Roymont Mines Ltd.	Royal Bank Bldg., Montreal	Barraute Twp.
Southbar Mines Ltd.	100 Adelaide St. W., Toronto, Ont.	Barraute Twp.
Strategic Metals Ltd.	620 Cathcart St., Montreal	Duvernay
Stratmat Ltd.	620 Cathcart St., Montreal	Chibougamau
Stanton Lead Mines Ltd.	67 Yonge St., Toronto, Ont.	Christie Twp.
Suffield Metals Corporation Ltd.	P.O. Box 492, Sherbrooke	Ascot
Tache Lake Mines Ltd.	132 St. James St. W., Montreal	Roy Twp.
United Lead & Zinc Mines Ltd.	330 Bay St., Toronto, Ont.	Montauban Twp.
Val d'Or Consolidated Mines Ltd.	111, Côte de la Montagne, Québec	Chazel
Vermont Zinc Mines Ltd.	7 King St. W., Toronto, Ont.	Carpentier Twp.
Western Ashley Minerals Ltd.	62 Richmond St. W., Toronto, Ontario	Montauban
West Wasa Mines Ltd.	480 Brookdale Ave., Toronto, Ont.	Beauchastel Twp.

Principal Operators in the Silver-Lead-Zinc Mining Industry, 1952 - Continued

Name of operator	Head office address	Location of mine
Ontario:		
Burco Consolidated Mines Ltd.	67 Yonge St., Toronto	Coleman
Coulle Lead & Zinc	67 Yonge St., Toronto	Tashota
Draper Lake Frontenac Lead-Zinc Mines..	20 Temperance St., Toronto	Loughborough Twp.
Ex-Mother Lode Mines Ltd.	Box 1058, Val d'Or, Quebec	Tudhope
Geneva Lake Mines Ltd.	357 Bay St., Toronto	Hess Twp.
Headvue Mines Ltd.	67 Yonge St., Toronto	Kowkash
Jardun Mines Ltd.	649 Albert St. E., Sault Ste. Marie	Jarvis Twp.
Matarrow Lead Mines Ltd.	50 King St. W., Toronto	Matachewan
Ontario Pyrites Co. Ltd.	25 King St. W., Toronto	Sudbury
New Delhi Mines Ltd.	330 Bay St., Toronto	Temagami
Stanton Lead Mines Ltd.	67 Yonge St., Toronto	Fitzroy Twp.
Sudbury Midzone Mines Ltd.	Dominion Bank Bldg., Toronto	Sudbury Basin
Zenmac Metal Mines Ltd.	192 Bay St., Toronto	Schreiber
Zinc Lake Mines Ltd.	80 Richmond St. W., Toronto	Kelly Twp.
British Columbia:		
American Standard Mines Ltd.	826 Vancouver Block, Vancouver	Hazelton
American Zinc, Lead Smelting Co.	927 Old National Bank, Spokane, Wash., U.S.A	Nelson
Abco Mining Corp.	425 Baker St., Nelson	Nelson
Armstrong, Armstrong & Tremblay	669 Martin St., Penticton	Okanagan
Ainslo Mining Co. Ltd.	490 Baker St., Nelson	Ainsworth
Atlin-Ruffner Mines (B.C.) Ltd.	302 Bay St., Toronto, Ontario	Atlin
Berens River Mines Ltd.	173 Portage Ave., Winnipeg, Manitoba	Kamloops
Base Metals Mining Corp. Ltd.	62 Richmond St., Toronto, Ontario	Golden, Kaslo
B.C. Metal Mines Ltd.	445 Richards St., Vancouver	Kaslo
Beverly Mines Ltd.	1325 Marine Bldg., Vancouver	Golden
Bluebird Slocan Mines Ltd.	850 W. Hastings St., Vancouver	Slocan
Britannia Mining & Smelting Co. Ltd.	Britannia Beach	Britannia Beach
Burgess Bros. & Lundgren	Ymir	Ymir
Canadian Exploration Limited	Royal Bank Bldg., Vancouver	Salmo
Carnegie Mines of B.C. Ltd.	1160 Peel St., Montreal, Que.	Slocan
Cooper, J.A.	Ainsworth, B.C.	Ainsworth
Cesoretti, Domenic	Nelson	Ymir
Cody-Reco Mines Ltd.	11 King St. W., Toronto, Ontario	Slocan
Columbia Lead and Zinc Mines Ltd.	850 W. Hastings St., Vancouver	Revelstoke
Copper Ridge Silver Mines Ltd.	525 Seymour St., Vancouver	Telkwa
Crowe, Warren	Waneta	Rossland
Consolidated Mining & Smelting Co. of Canada Ltd., The	Trail	Kimberley
Cronin Babine Mines Limited	52 Jarvis St., Toronto, Ontario	Omineca
Dundee Mine	Ymir	Nelson
Emerald Glacier Mines Ltd.	360 St. James St. W., Montreal, Quebec	Nelson
Estella Mines Ltd.	916 Vancouver Block, Vancouver	H. Steel
Godfrey, E.G., & Godfrey, J.S.	P.O. Box 322, Northport, Washington, U.S.A	Trail
Gray, J.J.	77 High Park Blvd., Toronto, Ontario	Ainsworth
Garland, L.N.	Retallack	Ainsworth
Giant Mascot Mines Ltd.	908 Royal Bank Bldg., Vancouver	Spillimachien
Graham Bousquet Gold Mines Ltd.	85 Richmond St. W., Toronto, Ont.	Lynn Creek
Green & Stearns	La Quinta, California, U.S.A.	Pilot Bay
Guichon Mine Ltd.	751 Granville, Vancouver	Ainsworth
Hardex Mines Ltd.	Slocan City	Slocan
Harrison Drilling & Exploration	Box 28, Noranda, Quebec	Slocan
Hamil Silver-Lead Mines Ltd.	470 Granville St., Vancouver	Ainsworth
Hawes Bros.	Ainsworth	Ainsworth
Hedley Yuniman Gold Fields Ltd.	45 Kingsway, Vancouver	Osoyoos
Highland-Bell Limited	844 West Hastings St., Vancouver	Greenwood
Hudson Bay Exploration and Development Co. Ltd.	500 Royal Bank Bldg., Winnipeg, Manitoba	Atlin
International Lead & Zinc Mines Ltd.	837 W. Hastings St., Vancouver	Nelson
Jackson Basin Mining Co. Ltd.	525 Seymour St., Vancouver	Retallack
Kelowna Mines Hedley Ltd.	Hedley	Sandon
Kaslo Base Metals, Ltd.	441 Seymour St., Vancouver	Ainsworth
Kontiki Lead & Zinc Mines Ltd.	330 Bay St., Toronto, Ontario	Nelson
Kootenay Belle Gold Mines Ltd.	916 Stock Exchange Bldg., Vancouver	Slocan, Ainsworth
Kootenay Exploration Ltd.	425 Baker St., Nelson	Kinbasket Lake
Kootenay Base Metals Ltd.	525 Seymour St., Vancouver	Fort Steele
Laib, K.K., A. Johnson & H. Hawkins	Bayonne	Nelson
Lardeau Lead & Zinc Mines Ltd.	744 W. Hastings St., Vancouver	Ainsworth
Linda Silver Lead Ltd.	Box 242, Smithers	Smithers
Maple Leaf Gold Mining Co. Inc.	317 Kuhn Bldg., Spokane, Wash., U.S.A.	Ymir

Principal Operators in the Silver-Lead-Zinc Mining Industry, 1952 - Concluded

Name of operator	Head office address	Location of mine
British Columbia— continued:		
Marmot Lead & Zinc Mines Ltd.	330 Bay St., Toronto, Ontario	Marmot River
Mastodon Zinc Mines Ltd.	330 Bay St., Toronto, Ontario	Revelstoke
McArthur, W.E., & Sons	Government St., Greenwood	Yale
McLeish & McCulloch	Box 517, Kaslo	Ainsworth
Meyer & Sterna	Ainsworth	Ainsworth
Mills, Pengelly & Cooper	Silverton	Slocan
Mills, Frank	Silverton	Slocan
Monterey Mining Co. Ltd.	321 Yarrow Bldg., Victoria	Lardeau
New Jersey Zinc Explorations Ltd.	525 Seymour St., Vancouver	Nelson
Newton, W.E., Newton, L.V., Bromley, E.P., & Bromley, W.F.	1274 Main St., Penticton	Ainsworth
New Arlington Mines Ltd.	Box 387, Nelson	Nelson
New Santiago Mines Ltd.	207 W. Hastings St., Vancouver	New Denver
Northland Mines Ltd.	553 Granville St., Vancouver	Kamloops
Noonday Mines Ltd.	P.O. Box 83, Nelson	Slocan
Northern Exploration Ltd.	425 Baker St., Nelson	Ainsworth
Pacific Mining Services Ltd.	844 W. Hastings St., Vancouver	Nelson
Petersen, E.H.	Sandon	Slocan
Pioneer Gold Mines of B.C. Ltd.	525 Seymour St., Vancouver	Ainsworth
Reeves MacDonald Mines Ltd.	413 Granville St., Vancouver	Nelson
Retallock Mines Limited	916 Stock Exchange Bldg., Vancouver	Ainsworth
Robinson, W.	Ainsworth	Ainsworth
Rossland Mining Co. Ltd.	Royal Bank Bldg., Vancouver	Rossland
Samson Mines, Ltd.	Revelstoke	Revelstoke
Seymour Mining Corp. Ltd.	826 Vancouver Block, Vancouver	Kamloops
St. Eugene Mining Corp. Limited	25 King St. W., Toronto 1, Ontario	Moyie
Scranton Consolidated Mining Co. Inc.	444 Pacific Bldg., Portland, Oregon, U.S.A	Ainsworth
Sheep Creek Gold Mines Ltd.	413 Granville St., Vancouver	Slocan
Silbak Premier Mines Ltd.	718 Granville St., Vancouver	Skeena
Sil-Van Consolidated Mining & Milling Ltd.	602 W. Hastings St., Vancouver	Omineca
Silver Bounty Mines Ltd.	633 Hornby St., Vancouver	Greenwood
Silver Ridge Mining Co. Ltd.	373 Baker St., Nelson	Slocan
Silver Standard Mines Ltd.	602 West Hastings St., Vancouver	Omineca
Silver Tip Gold Mines Ltd.	210 Pemberton Bldg., Victoria	Portland Canal
Silver Hoard Mines Ltd.	44 King St. W., Toronto	Slocan
Sunshine Lardeau Mines Ltd.	525 West Pender St., Vancouver	Revelstoke
Surprise Mine	Houser	Revelstoke
Society Girl Mine	470 Granville St., Vancouver	Fort Steele
Talmor Mines Ltd.	Box 390, Nelson	Nelson
Timmons, K.C.	Boswell, B.C.	Sanca
Torbrit Silver Mines Ltd.	44 King St. W., Toronto 1, Ontario	Portland Canal
Turk, James, F. Patullo & D. Cezaretti	Ymir	Ymir
Tulsequah Mines Ltd.	Trail	Tulsequah
Utica Mines (1937) Ltd.	413 Granville St., Vancouver	Ainsworth
Van Roi Mines (1947) Ltd.	Silverton	Slocan
Violamac Mines (B.C.) Ltd.	67 Yonge St., Toronto, Ontario	Slocan
Vancouver Island Base Metals Ltd.	850 W. Hastings St., Vancouver	Duncan
Vigilante Mine	Ainsworth	Ainsworth
Wanke, E.A., & C. Johnson	Box 61, Greenwood	Greenwood
War Horse Mine	Marysville	Fort Steel
Western Exploration Co. Ltd.	Silverton	Slocan
Western Mines Ltd.	1768 E. Hastings St., Vancouver	Ainsworth
Woodbury Mines Ltd.	850 W. Hastings St., Vancouver	Ainsworth
Yale Lead & Zinc Mines Ltd.	330 Bay St., Toronto, Ontario	Ainsworth
Yankee Dundee Mines Ltd.	445 Richards St., Vancouver	Ymir
Yellowknife Bear Mines Ltd.	320 Bay St., Toronto	Revelstoke
Northwest Territories:		
American Yellowknife Mines Ltd.	Star Building, Toronto	Yellowknife
Joe Indian Mountain Metal Mines Ltd.	302 Bay St., Toronto, Ontario	Indian Mountain
Pine Point Mines Ltd.	c/o Con Mine, Yellowknife	Slave Lake
Yukon:		
Belle Keno Mines Ltd.	330 Bay St., Toronto, Ontario	Mayo
Consolidated Yukeno Mines Ltd.	100 Adelaide St. W., Toronto, Ontario	Mayo
Brewis Red Lake Mines	145 Yonge St., Toronto, Ontario	Keno
Mount Keno Mines Ltd.	11 King St. W., Toronto, Ontario	Mayo
MacKeno Mines Ltd.	100 Adelaide St. W., Toronto, Ontario	Mayo
Mayo Mines Ltd.	85 Richmond St. W., Toronto, Ontario	Keno Hill
United Keno Hill Mines Ltd.	85 Richmond St. W., Toronto, Ontario	Mayo

List of Operators in the Silver-Cobalt Mining Industry, 1952

Name of operator	Head office address	Location of mine
Quebec:		
Quebec Cobalt and Exploration Ltd.	88 Metcalfe St., Ottawa, Ontario	Basin of Pekans
Ontario:		
Castle-Trethewey Mines Ltd.	25 King St. West, Toronto	O'Brien
Cobalt Badger Silver Mines Ltd.	22 Toronto St. W., Toronto	Coleman Twp.
Cobalt Lode Silver Mines Ltd.	100 Adelaide St. W., Toronto	Coleman Twp.
Consolidated Silver Banner Mines Ltd. ..	15 King St. W., Toronto	Coleman Twp.
Cordon Cobalt Mines Ltd.	129 Adelaide St. W., Toronto	Coleman Twp.
Cross Lake Lease	Cobalt	Coleman Twp.
Harrison-Hebbert Mines Ltd.	145 Yonge St., Toronto	Bucke Twp.
Hellens Mining & Reduction Co. Ltd.	100 Adelaide St. W., Toronto	Coleman Twp.
Keylode Cobalt Silver Mines Ltd.	100 Adelaide St. W., Toronto	Cobalt
Mayfair Mines Ltd.	331 Bay St., Toronto	Coleman Twp.
New Morrison Mines Ltd.	44 King St. W., Toronto	O'Brien
McAllister, R.C.	Box 283, Cobalt	Coleman Twp.
Mensilvo Mines Ltd.	73 King St. W., Toronto	Coleman Twp.
Nippissing Mining Co. Ltd., The	302 Bay St., Toronto	Cobalt
Penn-Cobalt Silver Mines Ltd.	100 Adelaide St. W., Toronto	Coleman Twp.
Roy Silver Mines Ltd.	357 Bay St., Toronto	Farr Twp.
Shag Silver Mines Ltd.	Cobalt	Coleman Twp.
Silanco Mining & Refining Co. Ltd.	100 Adelaide St. W., Toronto	Coleman, Bucke
Silver Miller Mines Ltd.	66 King St. W., Toronto	Coleman Twp.
Siscoe Metals of Ontario Ltd.	Cornwall, Ontario	Nicol Twp.
United Cobalt Mines Ltd.	145 Yonge St., Toronto	Coleman Twp.

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



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