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SMELTING AND REFINING 1961

(Formerly Smelting and Refining Industry)

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EXPLANATORY NOTES

This report is one in a series of about 140 publications which present the results of the 1961 Census of Manufactures. Most reports in this series refer to specific industries, but there are summary reports for Canada and the provinces and for major industry groups. Implementation of the new definition of the establishment in the 1961 Census has resulted in certain changes and necessitated some adjustments to the statistics for previous years in order to maintain comparability of the data. (See following note on "Establishment".)

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, sales or value of production.

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 manufacturing establishment is typically a factory, mill or plant principally engaged in manufacturing operations. Prior to 1961, the Census of Manufactures attempted to cover the manufacturing activities of all establishments, whether or not they were principally engaged in manufacturing operations. Beginning with the 1961 Census, establishments

(accounting entities) which are not primarily engaged in manufacturing are no longer included as manufacturing 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 manufacturing establishments, many non-manufacturing establishments are now surveyed for commodity shipments only and the latter are included in those tables of industry reports showing shipments of certain commodities "from all industries".

Many firms have more than one manufacturing establishment. Such firms are requested to submit a separate Census of Manufactures report for each manufacturing establishment which can meet the reporting requirements described earlier.

Prior to 1961, the main emphasis in the Census of Manufactures was on manufacturing activity whereas, beginning with 1961, each establishment reports on the total operations carried out within its accounting boundaries (except income from investments such as rent, interest and dividends). However, data on different activities (manufacturing, selling, construction by own labour force etc.) are requested separately. The 1961 statistics in this report are confined to manufacturing activity in order to maintain comparability with previous years. In the 1962 reports it is planned to show both 1961 and 1962 data on the "total activity" basis in addition to the data on manufacturing operations.

Standard Industrial Classification

The revised Standard Industrial Classification which was introduced with the 1960 Census of Manufactures provides for a breakdown of the universe into 140 industries arranged in 20 major groups compared with 135 industries in 17 major groups in the old classification which was used in the compilations for the years 1949 to 1959 inclusive. Full details are contained in the Standard Industrial Classification Manual, Catalogue No. 12-501, which is available from either the Queen's Printer or the Dominion Bureau of Statistics. Reporting establishments are classified or allotted to specific industries on the basis of the value of principal products made or shipped.

SYMBOLS

The interpretation of the symbols used in the tables throughout this publication is as follows:

- .. figures not available.
- ... figures not appropriate or not applicable.
- nil or zero.

SMELTING AND REFINING

1961

Data presented in this report under the heading of Smelting and Refining (Tables 1 B-4 inclusive) reflect implementation of the revised Standard Industrial Classification (S.I.C.) and the new Establishment Concept which are being used by the Dominion Bureau of Statistics in its compilation of 1961 industry statistics—see items "Establishment" and "Standard Industrial Classification" in the Explanatory Notes section of this report. For statistical purposes the industry titled Smelting and Refining covers establishments primarily engaged in the smelting of non-ferrous ores or concentrates and in the refining of metals recovered therefrom. The smelting of imported ores is included. Secondary smelters, which treat scrap metals only are not included. For statistical purposes this industry includes as well the operations involving the smelting of titaniferous ores (e.g. ilmenite and the production of titania slag and pig iron).

From the Technical and Historical viewpoint the smelting of non-ferrous ores in Canada is generally considered as being part of the mining industry and the operations relating thereto are regularly included in the reports on the mineral production of Canada for the convenience of users. However, national and international industry classification systems treat this industry as part of the manufacturing universe for statistical purposes; for this reason data pertaining to this industry form part of manufacturing industry statistics.

In many instances, adoption of the new Standard Industrial Classification in 1960 effected a radical shifting of manufacturing establishments as between industry groupings. Where this occurred an attempt was made to recompile 1957, 1958 and 1959 data on the revised Standard Industrial Classification basis for purposes of comparability and the revised data were presented in a separate table in the appropriate industry reports. In the case of the Smelting and Refining Industry, changes brought about by implementation of the new Standard Industrial Classification were nil and, as a consequence, had no effect on the comparability of the statistics presented for this industry before the change to the new Standard Industrial Classification. It should be noted that some of the changes incorporating the new Establishment Concept were prematurely introduced into some of the 1960 statistics (Tables 1-4) shown in the 1960 report for this industry. On this account, the 1960 figures shown in Tables 1-4 of the 1960 report for this industry are not comparable with previous years.

Changes in reporting procedures as a result of the implementation of the new Establishment Concept, particularly in the matter of combinations, had a significant effect on the statistics for this industry. Prior to 1961, some firms in this industry filed separate reports covering divisional operations within the establishment. These were filed in the relevant industry according to the nature of the activity,

e.g. chemical operations in the chemical industry and quarrying operation in the stone industry. Starting in 1961, such divisional operations were consolidated for statistical purposes and since the principal activity of this "establishment" was smelting and refining, a single report covering the combined activities of these divisions, was filed in this industry.

The overall effect of these changes on this industry is reflected in the series of statistics presented in Table 1 A and Table 1 B. The former presents the statistics for this industry on the basis of the old Standard Industrial Classification in use prior to 1960 while the latter presents the statistics on the basis of the new Standard Industrial Classification and incorporating as well the changes due to the implementation of the new Establishment Concept.

It should be noted that in addition to accommodating changes resulting from the implementation of the new Standard Industrial Classification and the New Establishment Concept, the totals shown under Gross Value of Production in Table 1 B reflect changes introduced to compensate for variations in the reporting of output figures. For the most part, establishments in this industry report their output on the basis of value of production; however, some firms report on the basis of value of shipments. A value of production can be readily computed from value of shipments by taking into account changes in inventory and where necessary such corrections were made in re-compiling the data presented in Table 1 B.

Details on the consumption of purchased fuel and electricity by this industry which are carried in Table 4 of this report appear to indicate an unusual decline in the demand for electricity by this industry when compared with previous years. It will be noted, however, that overall consumption which takes into account both "purchased" and "made for own use" remains on a comparable level. The apparent decline in purchased electricity, therefore, has been taken up by a corresponding increase in "made for own use". This switch from one category to the other reflects one of the effects of the implementation of the new Establishment Concept in 1961, namely, the inclusion of certain power generating operations as part of the establishment reported to this industry. Certain power requirements reported as "purchased" prior to 1961 are now being treated as "made for own use" in accordance with the new Establishment Concept. The effect of this particular change in concept is, of course, reflected as well in the re-compiled figures for fuel and electricity shown in Table 1 B.

It should be noted that in the current presentation of the data for this industry the figures in Tables 1 A and 1 B for "Cost at plant of materials used" reflect the inclusion of cost of ores previously omitted under this heading.

TABLE 1 A. Principal Statistics of the Smelting and Refining Industry, 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 at plant of materials used (including process supplies and ores)	Gross value of production ¹	Net ² value of production
	number				dollars		
1921	14	3,682	4,406,957	..	..	23,732,277	..
1929	10	9,119	13,772,393	6,208,733	..	109,854,468	..
1931	14	7,860	13,245,327	6,053,398	..	98,565,755	..
1933	14	6,360	8,403,181	7,809,936	..	100,561,297	..
1937	13	11,570	17,990,947	14,607,421	201,862,965	318,278,251	101,807,865
1939	13	12,449	19,372,119	15,891,301	166,653,361	262,602,495	80,057,833
1941	13	16,014	27,482,689	26,771,807	232,814,167	379,322,270	119,736,294
1944	16	23,927	44,536,901	36,907,623	313,996,140	474,206,801	123,303,038
1946	15	14,546	30,648,361	22,287,572	212,865,030	304,718,524	69,565,922
1949	16	19,150	55,133,065	37,004,311	380,275,977	599,188,135	181,907,847
1951	17	22,814	75,474,505	44,684,200	553,658,940	861,315,930	262,972,789
1954	22	26,048	102,595,970	55,225,387	515,315,655	922,578,998	352,037,956
1957	23	29,613	134,775,206	59,474,791	770,004,696	1,280,145,652	450,666,165
1958	25	26,959	131,081,250	63,522,398	693,796,744	1,135,770,506	378,451,364
1959	24	27,746	137,227,215	62,320,376	815,787,699	1,307,996,841	429,888,766

¹ The gross value of production should not be interpreted as the ultimate sales value of finished metals only, as it represents the combined figure for smelters and refineries, and the usual duplication occurs when the product of one plant is shipped to, and becomes the material for, another plant. For example, blister copper is given a value at the smelter since it is the final product for that works; it is then shipped to the refinery for which it is the principal material, where values are placed on the refined products.

² Gross value of production less fuel, electricity, process supplies and cost of ores.

Note: Data for 1941-54 in this report do not include those relating to Eldorado Mining and Refining Ltd., which mines and refines pitchblende products.

TABLE 1 B. Principal Statistics: Smelting and Refining, 1957 - 61

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 at plant of materials used (including process supplies and ores)	Gross value of production	Net value of production
	number				dollars		
1957	22	30,088	137,058,403	42,734,783	749,037,795	1,265,324,737	473,552,159
1958	24	27,361	133,065,591	43,867,569	666,720,963	1,132,701,559	422,113,027
1959	23	28,172	139,319,623	47,340,635	788,217,652	1,283,937,955	448,379,668
1960	22	30,024	155,415,083	50,786,918	896,613,061	1,506,008,207	558,608,228
1961	24	29,290	155,948,335	49,000,322	891,950,994	1,471,048,021	530,096,705

Note: See footnotes 1 and 2 to Table 1 A.

TABLE 2. Employees and their Earnings: Smelting and Refining

	1961
Administrative and office employees:	
Male	No. 5,135
Female	" 647
Total	" 5,782
Production and related workers:	
Male	" 23,463
Female	" 45
Total	" 23,508
Total employees	" 29,290
Earnings:	
Administrative and office employees	\$ 37,416,242
Production and related workers	\$ 118,532,093
Total earnings	\$ 155,948,335
Man-hours worked (all employees)	No. 61,265,958

TABLE 3. Number of Workmen, by Months, 1961 (Administrative and office employees not included)

Month	Male	Female	Total
		number	
January	23, 178	44	23, 222
February	23, 145	45	23, 190
March	23, 220	45	23, 265
April	23, 280	44	23, 324
May	23, 663	45	23, 708
June	24, 368	46	24, 414
July	23, 881	46	23, 927
August	24, 106	45	24, 151
September	23, 753	44	23, 797
October	23, 257	45	23, 302
November	22, 953	44	22, 997
December	22, 761	44	22, 805
Averages	23, 463	45	23, 508
<i>Man-hours worked</i>			<i>48, 249, 636</i>

TABLE 4. Fuel and Electricity Used; Smelting and Refining, 1961

Kind	Quantity	Cost at plant
		\$
Bituminous coal (a) From Canadian mines short ton	511,014	6,418,164
(b) Imported "	327,849	4,036,924
Sub-bituminous coal (from Alberta mines only) "	1,933	16,817
Anthracite coal short ton	152,744	1,918,245
Lignite coal	—	—
Coke (for fuel only) short ton	281,444	6,021,222
Gasoline, (includes goaoline used in cars and trucks)..... Imp. gal.	834,980	234,964
Kerosene or coal oil "	31,907	9,353
Fuel oil "	61,277,202	5,264,939
Wood (cords of 128 cubic feet of piled wood) cord	1,127	45,364
Gas (a) Liquefied petroleum gases (propane, etc.) Imp. gal.	185,030	43,696
(b) Other manufactured gas	—	—
(c) Natural gas M cu. ft.	10,455,801	3,171,362
Other fuel.....	...	20,572
Electricity purchased for power and lighting kwh.	2,224,154,681	10,654,718
Electricity purchased for other purposes "	3,164,908,924	11,143,982
Totals (cost only).....	...	49,000,322
Electricity generated for own use kwh.	14,365,293,963	...

TABLE 5. Average Annual Metal Prices, in Canadian Dollars, 1952 - 61

Year	Gold	Silver	Copper	Lead	Zinc
	Troy oz.	Troy oz.	Pound	Pound	Pound
	dollars				
1952	34.27	0.8352	0.2854	0.1619	0.1746
1953	34.42	0.8401	0.2994	0.1293	0.1196
1954	34.07	0.8326	0.2916	0.1333	0.1198
1955	34.52	0.8818	0.3687	0.1438	0.1365
1956	34.45	0.8968	0.4141	0.1551	0.1484
1957	33.55	0.8737	0.2895	0.1396	0.1209
1958	33.98	0.8681	0.2542	0.1136	0.1088
1959	33.57	0.8778	0.2961	0.1061	0.1224
1960	33.95	0.8891	0.3029	0.1068	0.1335
1961	35.46	0.9426	0.2919	0.1021	0.1259

TABLE 6. Production of New Gold and Silver, 1957 - 61 (From all types of ores)

Year	Gold		Silver	
	Fine ounces	Value	Fine ounces	Value
		\$		\$
1957	4,433,894	148,757,143	28,823,298	25,182,915
1958	4,571,347	155,334,370	31,163,470	27,053,007
1959	4,483,416	150,508,275	31,923,969	28,022,860
1960	4,628,911	157,151,527	34,016,829	30,244,363
1961	4,473,699	158,637,366	31,381,977	29,580,651

TABLE 7. Source of Canadian Gold Production, 1957 - 61

Source	1957	1958	1959	1960	1961
	per cent				
In alluvial gold	1.72	1.57	1.63	1.75	1.55
In crude gold bullion produced at mines	83.98	84.06	84.47	83.18	83.08
In base bullion produced at lead smelters	0.32	0.20	0.21	0.26	0.22
In blister copper	12.40	12.64	12.52	12.82	13.25
In ores, matte, slags, etc., exported	1.58	1.53	1.17	1.99	1.90

TABLE 8. Source of Canadian Silver Production, 1957-61

Source	1957	1958	1959	1960	1961
	per cent				
In silver-cobalt ores	14.98	19.39	20.85	21.04	14.92
In base bullion ¹	39.29	40.84	22.70	23.58	25.50
In gold bullion and placer	2.31	2.32	2.02	2.05	2.17
In blister and anode copper	20.56	23.77	24.04	23.52	24.38
In matte, copper ores and silver-lead ores, etc., exported (other than silver-cobalt ores)	22.86	13.68	30.39	29.81	33.03

¹ Includes silver bullion from silver-lead ores.

TABLE 9. Production of Copper, 1957-61 (From all types of ores)

Year	Copper in all forms ¹		Refined copper ²
	Tons	Value	Tons
		\$	
1957	359,109	206,897,988	323,540
1958	345,114	174,430,930	329,239
1959	395,269	233,102,813	365,366
1960	439,262	264,846,637	417,029
1961	434,088	255,157,626	406,359

¹ Blister copper plus recoverable copper in concentrates and matte exported.

² Does not include a small tonnage recovered from scrap in secondary smelters.

TABLE 10. Production of Copper, by Sources, 1960 and 1961

Source	1960		1961	
	Tons	Value	Tons	Value
		\$		\$
In blister and anode copper produced ¹	397,957	241,072,178	396,866	231,690,694
In ores, concentrates and any copper matte exported	21,079	12,721,172	23,200	13,499,310
In nickel-copper matte exported	20,226	11,043,287	19,022	9,967,622
Totals	439,262	264,836,637	434,088	255,157,626

¹ Includes a quantity of copper contained in gold-silver, and nickel-copper ores shipped to Canadian smelters.

TABLE 11. Production¹ of Nickel, 1957-61

Year	Tons	Value
		\$
1957	187,958	258,977,309
1958	139,559	194,142,019
1959	186,555	257,008,801
1960	214,506	295,640,279
1961	232,991	351,261,720

¹ Includes nickel in matte exported, refined nickel produced in Canada and nickel in oxides and salts sold or produced.

TABLE 12. Production of Lead, 1957-61

Year	Lead in all forms ¹		Refined lead ²
	Tons	Value	Tons
		\$	
1957	181,484	50,670,407	142,935
1958	186,680	42,413,805	132,987
1959	186,696	39,616,835	135,296
1960	205,650	43,926,888	158,510
1961	230,435	47,054,765	171,833

¹ Lead content of base bullion produced from Canadian ores plus recoverable lead in ores exported.

² Includes some lead refined from foreign ores; does not include a small tonnage recovered from scrap in secondary smelters.

TABLE 13. Production of Zinc, 1957-61

Year	Zinc in all forms ¹		Refined zinc ²
	Tons	Value	Tons
		\$	
1957	413,741	100,042,533	247,316
1958	425,099	92,501,496	252,093
1959	396,008	96,942,663	255,306
1960	406,873	108,635,003	260,968
1961	416,004	104,749,879	268,007

¹ Refined zinc produced in Canada plus recoverable zinc in ores exported.

² Includes some refined zinc from foreign ores; does not include a small tonnage recovered from scrap in secondary smelters.

TABLE 14. Production¹ of Bismuth and Cadmium, 1957-61

Year	Bismuth		Cadmium	
	Pounds	Value	Pounds	Value
		\$		\$
1957	319,941	584,917	2,368,130	4,025,821
1958	412,797	771,267	1,756,050	2,669,195
1959	334,736	590,212	2,160,363	2,765,265
1960	423,827	762,048	2,357,497	3,347,646
1961	478,118	957,625	1,357,874	2,172,598

¹ Includes refined metal and recoverable metal in concentrates shipped.

TABLE 15. Production of Selenium and Tellurium, 1957-61

Year	Selenium		Tellurium	
	Pounds	Value	Pounds	Value
		\$		\$
1957	321,392	3,535,312	31,524	55,167
1958	306,990	2,302,426	38,250	65,025
1959	368,107	2,576,749	13,023	27,999
1960	521,638	3,651,466	44,682	156,388
1961	430,612	2,798,978	77,609	376,404

TABLE 16. Production (Shipments) of New Aluminum and Magnesium, 1957-61

Year	Aluminum ¹	Magnesium	
	Tons	Pounds	Value
			\$
1957	556,715	16,770,371	5,254,896
1958	634,102	13,591,705	4,064,825
1959	593,630	12,204,448	3,179,515
1960	762,012	14,577,138	4,313,987
1961	663,173	15,270,618	4,307,570

¹ All from imported ores.

TABLE 17. Production of New Antimony and Tin, 1937-61

Year	Antimony ¹		Tin ²	
	Pounds	Value	Pounds	Value
		\$		\$
1957	1,360,731	370,442	709,102	580,342
1958	858,633	284,208	795,496	625,260
1959	1,657,797	540,276	747,443	630,094
1960	1,651,786	538,482	621,718	522,243
1961	1,331,297	469,948	1,119,350	727,578

¹ Content of antimonial lead, Doré slag and flue dust.² Tin content of concentrates and lead-tin alloy.

TABLE 18. Production (Shipments) of Molybdenum Concentrates and Tungsten Concentrates, 1957-61

Year	Molybdenite concentrates and molybdic oxide			Tungsten concentrates		
	Gross weight	Mo. content	Value	Gross weight	WO ³ content	Value
	tons		\$	tons		\$
1957	633	392	1,166,557	1,492	961	5,279,275
1958	744	444	1,152,838	511	345	1,898,455
1959 .....	..	374	940,596	—	—	—
1960 .....	..	384	1,015,380	—	—	—
1961 .....	..	386	1,092,201	—	—	—

TABLE 19. Production of Cobalt and Arsenic, 1957-61

Year	Cobalt ¹		Arsenious oxide ^{2,3}	
	Pounds	Value	Tons	Value
		\$		\$
1957	3,922,649	7,784,423	1,849	137,112
1958	2,436,064	4,866,267	1,162	94,542
1959	3,150,027	5,954,916	789	63,786
1960	3,568,811	6,763,016	862	70,400
1961	3,182,897	4,751,543	210	16,772

¹ Content in metal and oxide produced in Canada and in ores exported.² Refined white arsenic produced in Canada plus arsenic content of crude arsenic exported. Excludes arsenic in ores exported from British Columbia as it is not paid for.³ Includes some arsenic recovered from foreign ores.

TABLE 20. Platinum Metal¹ Producers' Shipments, 1957-61

Year	Platinum palladium and other platinum metals	
	Troy ounces	Value
		\$
1957	416,147	25,731,333
1958	300,458	14,321,443
1959	332,095	16,932,438
1960	483,604	28,873,508
1961	418,278	24,534,349

¹ Figures represent the metal content of concentrates produced from nickel-copper ores. Included are metals recovered from alluvial deposits.

TABLE 21. Production of Titanium Dioxide and Iron (Remelt), 1957-61

Year	Titanium dioxide, etc.		Iron (remelt)	
	Tons	Value	Tons	Value
		\$		\$
1957	186,422	9,740,570	187,529	10,083,434
1958 .....	...	6,583,921	...	5,120,620
1959 .....	...	8,507,149	...	7,187,434
1960 .....	...	12,947,000	...	10,972,979
1961 .....	...	16,723,743	...	14,720,064

TABLE 22. Capacities of Canadian Copper Smelting and Refining Works, 1961

Company	Blast furnaces		Reverberatories		Converters
	Number	Annual capacity — Tons of ore and concentrates	Number	Annual capacity — Tons of ore and concentrates	Number
Falconbridge Nickel Mines, Ltd.	3	590,000	—	—	6
Hudson Bay Mining and Smelting Co., Ltd. ..	—	—	1	575,000	3
Noranda Mines Ltd.	—	—	3	1,600,000	5
International Nickel Co. of Canada, Ltd.:					
Copper Cliff	2	430,000	9	4,000,000	20
Coniston	4	800,000	—	—	5
Thompson	—	—	..	600,000	..
Gaspe Copper Mines Ltd.	—	—	1	174,000	2
Annual capacity					
short tons					
Electrolytic copper refineries:					
Canadian Copper Refiners, Ltd.				276,000	
International Nickel Co. of Canada, Ltd. ..				168,000	

TABLE 23. Lead Smelting Capacity of Canada, 1961

Company	Number of blast furnaces	Annual capacity tons of charge
Consolidated Mining & Smelting Company of Canada, Limited, Trail, British Columbia	4	623,000

TABLE 24. Capacity of Electrolytic Zinc Plants in Canada, 1961

Company	Estimated annual capacity for cathode zinc short tons
Consolidated Mining & Smelting Company of Canada, Ltd.	200,000
Hudson Bay Mining & Smelting Co., Ltd.	84,000

Directory of Firms: Smelting and Refining, 1961

Name of firm	Head or executive office address	Location of plant
Quebec:		
Aluminum Company of Canada Ltd.	1700 Sun Life Bldg., Montreal	Arvida, Shawinigan Falls, Isle Maligne Beauharnois
Canadian British Aluminum Co., Ltd.	Baie Comeau	Baie Comeau
Canadian Copper Refiners Ltd.	1700 Bank of Nova Scotia Bldg., Toronto, Ontario	Montreal East
Gaspé Copper Mines Ltd.	44 King St., W., Toronto, Ontario	Murdochville
Noranda Mines Limited	1709 Bank of Nova Scotia Bldg., Toronto, Ontario	Noranda
Quebec Iron and Titanium Corp.	Sorel	Sorel
Ontario:		
Cobalt Refinery	Cobalt	Cobalt
Deloro Smelting & Refining Co., Ltd.	Bellefonte	Deloro
Dominion Magnesium Ltd.	320 Bay St., Toronto	Haley
Falconbridge Nickel Mines Ltd.	44 King St. West, Toronto	Falconbridge
International Nickel Co. of Canada, Limited ...	Copper Cliff	Copper Cliff, Coniston, Port Colborne
Eldorado Mining & Refining Ltd.	Box 379, Ottawa.....	Port Hope
Manitoba:		
Hudson Bay Mining and Smelting Co., Limited	500 Royal Bank Bldg., Winnipeg ..	Flin Flon
International Nickel Co., of Canada Limited ...	Copper Cliff, Ontario	Thompson
Alberta:		
Sherritt-Gordon Mines Ltd.	25 King St. W., Toronto, Ontario ..	Fort Saskatchewan
British Columbia:		
Consolidated Mining & Smelting Co. of Canada Limited	Trail	Trail
Aluminum Company of Canada Ltd.	1700 Sun Life Bldg., Montreal, Quebec	Kitimat

Note: Information relating to operations of the Eldorado Mining and Refining Co. at Port Hope, Ontario, is excluded for the years 1941-1954.

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