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**CANADA**

**DEPARTMENT OF TRADE AND COMMERCE**

**DOMINION BUREAU OF STATISTICS**

**+ + + *Census of Industry* + + +**

**MINING, METALLURGICAL & CHEMICAL STATISTICS**

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**THE**

**NICKEL-COPPER MINING, SMELTING**

**AND REFINING INDUSTRY**

**IN**

**CANADA**

**1945**

(including data on total production of Copper  
from all types of Canadian ores)



OTTAWA  
1947

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### THE NICKEL-COPPER MINING, SMELTING AND REFINING INDUSTRY IN CANADA, 1945

Statistics relating to the nickel-copper mining, smelting and refining industry, as shown in this report, include those pertaining to the mining of copper-nickel ores, the smelting of these ores in Canada and the production in the Dominion of refined copper, nickel, etc., by the firms constituting this industry.

In addition to production of nickel, copper and the platinum metals, there is an important recovery from these ores of the associated metals - silver, gold, selenium and tellurium; sulphur for the manufacture of sulphuric acid is also salvaged in the gaseous state from waste smelter gases. The total gross value of the various primary products of this industry, considered as a whole, was estimated at \$112,780,854 in 1945 compared with \$121,493,774 in 1944.

Two companies operated both mines and metallurgical plants in the Sudbury area in 1945. The International Nickel Co. of Canada, Limited, conducts smelting operations at Copper Cliff and Coniston, Ontario, while the Falconbridge Nickel Mines, Ltd., smelt their ores at the Falconbridge mine located a few miles east of the town of Sudbury. This last-named company treats its matte in a refinery located at Kristiansand, Norway. Matte produced by the Falconbridge Nickel Mines Ltd. was treated during the war in the Canadian plants of the International Nickel Co. of Canada, Limited, but shipments to Norway were resumed in July of 1945.

The relatively small amount of nickel oxide sometimes produced at Deloro, Ontario, is recovered from silver-cobalt-nickel-arsenic ores mined in northern Ontario. Smelter matter made by the International Nickel Co. of Canada, Limited, is treated in plants located at Clydach, Wales; Huntington, West Virginia; and at Port Colborne and Copper Cliff, Ontario. Converter copper made by the International Nickel Co. is electrolytically refined at Copper Cliff, and refined nickel is produced by the company at Port Colborne. In 1945 the International Nickel Company of Canada Limited shipped ore from the Garson, Creighton, Levack, Frood, Stobie and Murray mines.

The Ontario Nickel Mines Ltd. operated their property at Moose Lake from June 1 to October 27, 1945. The ore was shipped to the International Nickel Co. of Canada Ltd., at Copper Cliff, for treatment. Labor shortage prevented Nickel Offsets Ltd. from doing underground work during the year.

In 1945 the industry, as a whole, provided employment for 12,756 persons and distributed \$26,492,396 in salaries and wages. Fuel and electricity cost \$11,329,125 and explosives, chemicals, drill steel and other process supplies cost \$15,621,975. Female wage-earners in 1945 numbered 525 compared with 792 in 1944. There was a rapid dwindling in the number of female employees after the cessation of hostilities. The industry reported that \$42,226 were spent on prospecting for new mineral deposits in 1945.

Copper recovered from the nickel-copper ores of Ontario totalled 119,725 tons in 1945 compared with 140,395 tons in 1944. Production in 1945 of nickel in all forms from these same ores amounted to 122,537 tons against the previous year's production of 137,295 tons.

In 1945 a considerable tonnage of blister copper produced in Manitoba was treated at the Copper Cliff refinery of the International Nickel Co. of Canada Ltd.; some scrap copper was also refined at Copper Cliff.

The annual financial report of the International Nickel Company of Canada Limited carries the following information with regard to operations in 1945:

"The cessation of hostilities in the summer of 1945, followed by the cancellation of war contracts, caused a sharp decline in deliveries of our metals and an accumulation of nickel stocks. As all of our plants were equipped for sufficient output to fulfil the maximum war-time demands of the United Nations, it became necessary to inaugurate a program of curtailment of operations. This was commenced in August and by the year-end the production of nickel was down to about 50 per cent of the expanded capacity.

This Report was prepared by A. R. Deir, Mining Statistician.



"The war years imposed an extraordinarily heavy drain on the ore reserves of the Company and the annual tonnage of ore mined greatly exceeded that of any pre-war year. The ore mined in 1943, 1944 and 1945 was 12,105,545 short tons, 12,117,567 short tons and 10,136,350 short tons respectively. This compares with an average yearly output of 5,321,634 short tons for the three pre-war years, 1936, 1937 and 1938.

"It has, nevertheless, been possible through our extensive diamond drilling and exploration program to make progress in replenishment of proven ore reserves. In spite of the tremendous tonnage of ore removed from the mines during the war years, the proven ore reserves at the end of 1945 stood at 217,373,000 short tons containing 6,866,000 tons of nickel-copper, compared with 212,368,000 short tons at the end of 1938 containing 6,806,000 tons of nickel-copper.

"Process improvement designed to increase efficiency of operations has been demonstrated satisfactorily in a pilot plant. Work has already commenced on an addition to the Copper Cliff smelter to provide for this betterment."

The following is quoted from the annual financial report of the Falconbridge Nickel Mines Limited:

"Both the tonnage of ore treated and of metals produced declined substantially from the all time peak established in 1944. During the first quarter of 1945 operations were at a level only slightly reduced from the last quarter of 1944, but during the second quarter the shortage of labor became so acute, particularly underground, that it was necessary to close the smaller of the two furnaces at the end of June, due to the shortage of hoisted ore.

"Following the cessation of hostilities in Europe, receipt of favourable news concerning the Company's Norwegian refinery led to diversion of part of our matte production to our refinery at Kristiansand. The first shipment left Falconbridge about the end of July and beginning in late November the total matte production was earmarked for Kristiansand.

"Applying the established dilution factor, the Falconbridge Mines reserves as of 31st December, 1945, stand at 7,935,500 tons at 1.62% nickel and 0.85% copper. Reserves of Outside Holdings (interpretation of diamond drilling results) show 5,746,500 tons at 1.87% nickel and 1.04% copper."

Table 1 - Principal Statistics of the Nickel-Copper Mining, Smelting and Refining Industry in Canada, 1943-1945 (x)

	1943	1944	1945
Number of firms .....	6(a)	5(a)	4(a)
Number of mines .....	10	9	8
Number of smelters .....	3	3	3
Number of copper refineries .....	1	1	1
Number of nickel refineries .....	1	1	1
Capital employed .....	\$ 167,097,138	(c)	(c)
Number of employees: On salary .....	1,230	1,282	1,254
On wages .....	13,420	14,175	11,502
Total .....	14,650	15,457	12,756
Salaries and wages: Salaries .....	\$ 3,414,557	3,661,427	3,603,371
Wages .....	\$ 26,781,415	25,556,018	22,889,025
Total .....	\$ 30,195,972	29,217,445	26,492,396
Fuel and purchased electricity used .....	\$ 12,649,118	12,795,637	11,329,125
Process supplies used .....	\$ 17,872,418	18,449,774	15,621,975
Estimated gross value of matte exported and Canadian refinery products (b) .....	\$ 128,583,784	121,493,774	112,780,854
Value of production (net) .....	\$ 97,931,927	90,130,255	85,791,717

(x) Does not include data for mines, power plants, etc., operated by subsidiary company.

(a) All in Ontario.

(b) Includes value of customs material.

(c) Not recorded in 1944 and 1945.

Table 2 - Wage-Earners, By Sex and Months, Entire Industry, 1943-1945

Month	1	9	4	3	1	9	4	4	1	9	4	5
	Male			Female	Male			Female	Male			Female
January .....	13,381			511	14,006			770	13,152			715
February .....	13,379			527	14,048			779	13,032			712
March .....	13,210			599	13,843			754	12,508			702
April .....	12,844			628	13,447			740	11,975			689
May .....	12,690			648	13,171			782	11,865			665
June .....	12,844			668	13,186			791	11,850			636
July .....	12,648			673	13,095			814	11,623			598
August .....	12,510			688	13,012			828	10,395			543
September .....	12,167			708	12,731			835	9,231			364
October .....	12,159			695	12,771			822	9,308			367
November .....	12,521			670	13,319			799	8,270			298
December .....	12,978			676	13,543			788	8,502			1
Average .	12,778			641	13,383			792	10,977			525

Table 3 - Wage-Earners, By Months, in Nickel-Copper Mines Only, 1945 (x)

Month	M i n e			M i l l	
	Surface		Underground	Male	Female
	Male	Female			
January .....	2,408	38	4,239	266	73
February .....	2,419	33	4,190	266	77
March .....	2,401	34	3,897	262	75
April .....	2,399	29	3,606	266	76
May .....	2,411	27	3,462	260	71
June .....	2,488	29	3,323	255	68
July .....	2,434	26	3,239	258	58
August .....	2,049	35	2,859	219	46
September .....	1,796	9	2,350	187	9
October .....	1,729	4	2,311	187	9
November .....	1,457	4	2,098	154	9
December .....	1,453	...	2,114	147	...
Average .....	2,120	22	3,141	228	48

(x) Included in Table 2.

Table 4 - Wage-Earners, By Months, in Nickel-Copper Smelters and Refineries Only, 1945 (x)

Month	Male	Female	Month	Male	Female
January .....	6,239	604	July .....	5,692	514
February .....	6,157	602	August .....	5,268	462
March .....	5,948	593	September .....	4,898	346
April .....	5,704	584	October .....	5,081	354
May .....	5,732	567	November .....	4,561	285
June .....	5,784	539	December .....	4,788	1
			Average .....	5,488	455

(x) Included in Table 2.

Table 5 - Number of Wage-Earners Who Worked the Number of Hours Specified, During One Week in Month of Highest Employment, 1945 (Entire Industry)

Hours per Week	Male	Female	Hours per Week	Male	Female
30 hours or less .....	180	10	51-54 hours .....	546	1
31-43 hours .....	292	51	55 hours .....	17	...
44 hours .....	131	4	56-64 hours .....	859	2
45-47 hours .....	728	41	65 hours and over .....	92	...
48 hours .....	10,370	599	Total .....	13,276	710
49-50 hours .....	61	2	Total wages paid in week to employees specified \$	515,161	20,874



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Table 6 - Total Employees and Salaries and Wages Paid By Nickel-Copper Mines, Smelters and Refineries, 1945

	Salaried Employees				Wage-Earners			
	Male	Female	Total	Total	Male	Female	Total	Total
	No.	No.	No.	salaries	No.	No.	No.	wages
				\$				\$
Mines .....	396	42	438	1,329,091	5,489	70	5,559	11,679,065
Smelters and refineries .....	642	174	816	2,274,280	5,488	455	5,943	11,208,960
Total .....	1,038	216	1,254	3,603,371	10,977	525	11,502	22,888,025

Table 7 - Fuel and Electricity Used For Light and Power, Entire Industry, 1944 and 1945

Kind	Unit of measure	1 9 4 4		1 9 4 5	
		Quantity	Cost at works	Quantity	Cost at works
			\$		\$
Bituminous coal: Canadian .....	short ton	3,327	27,381	...	...
Imported .....	short ton	53,876	439,219	59,163	499,967
Anthracite coal: United States ...	short ton	184	2,739	114	1
Other .....	short ton	...	...	...	...
Coke .....	short ton	317	4,272	690	8,933
Gasoline .....	Imp. gal.	110,653	27,666	79,484	20,758
Kerosene .....	Imp. gal.	5,530	1,162	5,296	1,116
Fuel oil and diesel oil .....	Imp. gal.	1,425,579	150,285	1,076,105	114,342
Wood .....	cord	404	3,142	133	1,244
Electricity purchased .....	K.W.H.	710,727,596	2,144,255	642,126,162	1,791,198
Total .....	...	...	2,800,121	...	2,439,245
Electricity generated for own use .	K.W.H.	8,854,270	...	8,399,500	...
Electricity generated for sale ....	K.W.H.	596,077	3,134	...	...

Table 8 - Fuel and Electricity Used For Light and Power, By Mines Only, 1944 and 1945 (x)

Kind	Unit of measure	1 9 4 4		1 9 4 5	
		Quantity	Cost at works	Quantity	Cost at works
			\$		\$
Bituminous coal: Canadian .....	short ton	2,296	18,893	...	...
Imported .....	short ton	20,996	177,574	22,713	198,336
Anthracite coal: United States ...	short ton	127	1,890	78	1,152
Other .....	short ton	...	...	...	...
Coke .....	short ton	40	520	75	1,088
Gasoline .....	Imp. gal.	62,246	14,809	36,492	10,447
Kerosene .....	Imp. gal.	3,176	667	2,717	572
Fuel oil and diesel oil .....	Imp. gal.	1,226,686	129,494	1,054,337	112,264
Wood .....	cord	271	1,897	...	...
Electricity purchased .....	K.W.H.	166,328,143	544,174	143,645,962	439,123
Total .....	...	...	889,918	...	762,982
Electricity generated for own use .	K.W.H.	10,720	...	...	...

(x) Included in Table 7.

Table 9 - Fuel and Electricity Used For Metallurgical Purposes, Entire Industry, 1944 and 1945

Kind	Unit of measure	1 9 4 4		1 9 4 5	
		Quantity	Cost at works	Quantity	Cost at works
			\$		\$
Bituminous coal: Canadian .....	short ton	...	...	...	...
Imported .....	short ton	552,625	4,474,224	477,493	3,962,052
Anthracite coal: United States ...	short ton	...	...	...	...
Charcoal .....	pound	1,186,600	19,811	1,056,870	18,702
Coke .....	short ton	277,051	3,511,073	242,681	3,113,807
Gasoline .....	Imp. gal.	25,733	6,953	29,790	7,358
Kerosene .....	Imp. gal.	6,770	1,401	5,980	1,256
Fuel oil and diesel oil .....	Imp. gal.	17,048,827	1,086,038	15,397,360	975,196
Wood .....	cord	35	276	9	60
Gas: Natural .....	M cu. ft.	519	387	437	430
Electricity purchased .....	K.W.H.	276,861,389	895,353	252,630,449	811,019
Total .....	...	...	9,995,516	...	8,889,880

Table 10 - Power Equipment (Including Stand-By or Emergency Equipment) Entire Industry, 1945

Description	Ordinarily in Use		In Reserve or Idle	
	Number of units	Total horse power (x)	Number of units	Total horse power (x)
Steam engines .....	20	920	2	2,574
Steam turbines .....	1	3,350	...	...
Diesel engines .....	1	60	...	...
Gasoline, gas and oil engines, other than Diesel engines .....	1	60	...	...
Electric motors (except motor-generator sets)				
(a) Operated by purchased power .....	4,408	149,322	651	44,852
Total .....	4,431	153,712	653	47,426
(b) Operated by above primary units .....	336	4,079	32	1,655
Stationary boilers .....	22	9,035	3	725
Motor-generator sets .....	147	70,919	22	13,401

(x) According to manufacturers' rating.

Table 11 - Output From Ontario Nickel-Copper Mines and Smelters, 1943-1945 (Short tons)

	1943	1944	1945
Ore shipped from mines .....	12,920,917	12,955,208	10,854,735
Ore treated (x) .....	12,912,332	12,966,679	10,865,722
Converter copper produced in Ontario from Ontario ores(a)	130,905	133,879	114,899
Nickel produced in Ontario (b) .....	106,069	104,677	94,832
Matte exported (c) .....	56,833	48,287	41,319
Nickel content of matte exported .....	37,911	32,618	27,706
Copper content of matte exported (a) .....	7,532	6,516	5,479

(x) Represents the tonnage of crude ore smelted together with the tonnage of ore milled.

(a) Copper content, including copper content of Ontario ores purchased, less reverts.

(b) Includes nickel content of salts and oxides produced from nickel-copper ores only.

(c) Less a relatively small tonnage of matte returned to Canada for retreatment.

Table 12 - Production of Nickel (x) From Canadian Ores, 1926-1945

Year	Pounds	Value	Year	Pounds	Value
		\$			\$
1926 .....	65,714,294	14,374,163	1936 .....	169,739,393	43,876,525
1927 .....	66,798,717	15,262,171	1937 .....	224,905,046	59,507,176
1928 .....	96,755,578	22,318,907	1938 .....	210,572,738	53,914,494
1929 .....	110,275,912	27,115,461	1939 .....	226,105,865	50,920,305
1930 .....	103,768,957	24,455,133	1940 .....	245,557,871	59,822,591
1931 .....	65,666,320	15,267,453	1941 .....	282,258,235	68,656,795
1932 .....	30,327,968	7,179,862	1942 .....	285,211,803	69,998,427
1933 .....	83,264,658	20,130,480	1943 .....	288,018,615	71,575,322
1934 .....	128,687,340	32,139,425	1944 .....	274,598,629	69,204,152
1935 .....	138,516,240	35,345,103	1945 .....	245,130,983	61,982,133

(x) Usually includes a relatively small quantity of nickel recovered annually from silver-cobalt ores; Canadian nickel production comes entirely from Ontario ores with the exception of 1937 when a relatively small tonnage of nickel ore was exported from a property in British Columbia.



Table 13 - Production of New Nickel in Canada, By Months (in all forms), 1944-1946

Month	1 9 4 4	1 9 4 5	1 9 4 6 (x)
	(Pounds)		
January .....	23,546,809	23,667,393	13,823,097
February .....	22,383,335	20,635,189	12,450,169
March .....	25,290,263	23,412,858	15,677,068
April .....	23,161,864	21,567,624	18,479,626
May .....	24,024,759	23,382,373	14,733,775
June .....	20,374,755	22,546,414	15,188,844
July .....	23,411,947	23,790,534	16,240,647
August .....	23,848,093	21,896,415	15,437,106
September .....	22,710,286	16,434,819	15,960,785
October .....	21,819,119	17,170,277	17,218,750
November .....	22,259,195	15,416,996	17,467,701
December .....	21,768,204	15,210,091	16,988,037
Total - Calendar Year .	274,598,629	245,130,983	189,665,605

(x) Subject to revision.

Table 14 - Imports Into Canada and Exports of Nickel, 1944 and 1945

	1 9 4 4		1 9 4 5	
	Quantity	Value	Quantity	Value
	lb.	\$	lb.	\$
<b>Imports -</b>				
Nickel and nickel silver in ingots .....	16,029	4,355	25,277	7,342
Nickel rods for wire (90% nickel) .....	12,882	8,853	12,558	8,978
Nickel in bars and rods, strips and sheets	753,147	391,353	1,357,478	697,664
Nickel silver bars, rods and strips .....	3,709	1,739	49,813	14,397
Nickel chromium in bars .....	63,213	54,973	79,403	72,865
Nickel, manufactures of, not plated .....	...	33,411	...	27,101
Nickel-plated household hollow-ware .....	...	...	...	661
Nickel household hollow-ware .....	...	...	...	652,275
Nickel-plated ware, n.o.p. ....	...	424,247	...	...
Total Nickel and Its Products .....	...	918,931	...	1,481,283
<b>Exports: Total Metal in All Forms .....</b>	265,197,100	68,400,654	216,443,300	54,778,226

Table 15 - Production in Canada, Consumption and Exports of Nickel, 1935-1945

Year	Production in Canada (All forms, includ- ing content in oxide and in matte exported)	Consumption of refined nickel in Canada	Exports		
			Nickel contained in matte or speiss	Nickel in oxide	Refined nickel
			(Tons of 2,000 pounds)		
1935 .....	69,258	500	29,233	1,317	40,814
1936 .....	84,870	500	30,812	2,661	53,346
1937 .....	112,453	900	40,404	2,554	68,427
1938 .....	105,286	657	44,324	1,842	52,686
1939 .....	113,053	635	47,051	2,425	67,914
1940 .....	122,779	1,509	38,484	3,864	82,168
1941 .....	141,129	3,464	42,616	7,240	87,739
1942 .....	142,606	4,509	41,263	9,224	88,308
1943 .....	144,009	3,440	36,415	3,892	95,240
1944 .....	137,299	2,350	33,848	1,242	97,509
1945 .....	122,565	2,410	28,295	1,758	78,163



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Table 16 - Nickel Production By Principal Countries, 1940-1944 (American Bureau of Metal Statistics)

	1940	1941	1942	1943	1944
	(Tons of 2,000 pounds)				
Canada (a) .....	122,779	141,129	142,606	144,009	137,299
New Caledonia (b) .....	9,900	9,000	6,982	7,110	7,411
Burma (c) .....	1,000	1,000	...	...	...
Greece (d) .....	1,500	...	...	...	...
Norway .....	1,100	1,000	1,004	636	583
United States (e) .....	550	620	600	640	990
Cuba (f) .....	...	...	...	2,700	5,100
Germany .....	891	843	705	1,049	...

(a) Production in all forms from Canadian ores, as reported by the Dominion Bureau of Statistics.

(b) Estimated content of ore and matte exported.

(c) Nickel content of speiss obtained as a by-product.

(d) Nickel and cobalt content.

(e) By-product in electrolytic refining of copper.

(f) Nickel content of oxide.

Table 17 - Total Production of New Copper in Canada, By Provinces and Method of Computation, 1944 and 1945

	1944		1945	
	Pounds	Value	Pounds	Value
<b>By Provinces -</b>				
Quebec .....	108,055,172	12,966,620	102,685,069	12,886,976
Ontario .....	285,307,278	33,845,632	239,450,875	29,771,633
Manitoba .....	43,878,639	5,265,437	41,126,155	5,161,332
Saskatchewan .....	73,514,499	8,821,740	65,900,701	8,270,538
British Columbia .....	36,302,628	4,356,315	25,751,252	3,231,782
Northwest Territories .....	11,902	1,428	...	...
<b>Total .....</b>	<b>547,070,118</b>	<b>65,257,172</b>	<b>474,914,052</b>	<b>59,322,261</b>
<b>By Sources (f) -</b>				
In blister and anode copper produced..	493,946,346	59,273,337	437,459,705	54,901,192
In ores, concentrates and copper matte exported (x) .....	40,090,591	4,810,849	26,495,439	3,325,177
In nickel-copper matte exported .....	13,033,181	1,172,986	10,958,908	1,095,892
<b>Total .....</b>	<b>547,070,118</b>	<b>65,257,172</b>	<b>474,914,052</b>	<b>59,322,161</b>

(f) Where computed.

(x) Contains a relatively small quantity of copper contained in gold and silver ores shipped to Canadian smelters.

Table 18 - Production of New Copper in Canada (f), By Months, 1944-1946

Month	1944	1945	1946 (x)
	(Pounds)		
January .....	48,877,850	44,098,887	32,021,065
February .....	45,836,837	39,649,050	27,698,802
March .....	48,203,812	45,638,927	32,343,606
April .....	44,989,445	42,680,662	31,886,954
May .....	47,578,287	40,903,706	30,993,228
June .....	47,082,930	44,097,021	30,885,633
July .....	44,975,986	42,119,787	31,008,539
August .....	44,743,580	39,228,972	29,947,283
September .....	43,106,124	34,797,140	28,846,510
October .....	42,039,927	34,953,070	30,232,466
November .....	43,811,150	32,035,764	35,414,858
December .....	45,824,190	34,711,066	30,327,699
<b>Total - Calendar Year .</b>	<b>547,070,118</b>	<b>474,914,052</b>	<b>371,606,643</b>

(x) Subject to revision.

(f) From all types of ores.

Table 19 - Production of Copper From Ontario Ores Only, 1926-1945

Year	Pounds	Value	Year	Pounds	Value
		\$			\$
1926 .....	41,312,867	4,828,964	1936 .....	287,914,078	26,898,920
1927 .....	45,341,295	4,946,533	1937 .....	322,039,208	41,716,364
1928 .....	66,607,510	8,770,149	1938 .....	309,030,106	30,405,500
1929 .....	88,879,853	14,622,572	1939 .....	328,429,665	32,637,305
1930 .....	127,718,871	15,187,259	1940 .....	347,931,013	34,742,229
1931 .....	112,882,625	9,096,463	1941 .....	333,829,767	33,192,644
1932 .....	77,055,413	4,407,928	1942 .....	308,282,414	30,625,404
1933 .....	145,504,720	10,118,847	1943 .....	277,840,560(a)	32,232,027
1934 .....	205,059,539	14,822,704	1944 .....	285,307,278(b)	33,845,632
1935 .....	252,027,928	19,295,965	1945 .....	239,450,875	29,771,633

Note: Almost entirely from nickel ores.

(a) Includes 276,032,919 pounds recovered from nickel-copper ores only.

(b) Includes 280,790,592 pounds recovered from nickel-copper ores only.

Table 20 - Production of Copper in Canada, According to Origin of Ores and By Provinces, 1944 and 1945

Table 25 - Production of copper in Canada, according to origin of ores and by provinces, 1944 and 1945				
Province	From copper-gold-silver ores	From nickel-copper ores	From gold and other ores	Total
(Pounds)				
<u>1944</u>				
Quebec .....	107,150,904	...	904,268	108,055,172
Ontario .....	4,508,996	280,790,592	7,690	285,307,278
Manitoba .....	43,878,639	...	...	43,878,639
Saskatchewan .....	73,514,499	...	...	73,514,499
British Columbia .....	35,997,974	...	304,654	36,302,628
Northwest Territories ...	...	...	11,902	11,902
Canada ...	265,051,012	280,790,592	1,228,514	547,070,118
<u>1945</u>				
Quebec .....	101,940,882	...	744,187	102,685,069
Ontario .....	...	239,450,083	792	239,450,875
Manitoba .....	41,126,155	...	...	41,126,155
Saskatchewan .....	65,900,701	...	...	65,900,701
British Columbia .....	25,613,355	...	137,897	25,751,252
Northwest Territories ...	...	...	...	...
Canada ...	234,581,093	239,450,083	882,876	474,914,052

Table 21 - Production (x) of Refined Copper in Canada For Years Specified

Year	Tons	Year	Tons
1915 .....	...	1938 .....	227,240
1916 (/) .....	483	1939 .....	231,684
1917 .....	3,901	1940 .....	261,878
1918 .....	3,809	1941 .....	278,224
1919 .....	3,467	1942 .....	268,447
1935 .....	173,290	1943 .....	251,495
1936 .....	191,595	1944 .....	256,244
1937 .....	215,080	1945 .....	228,861

(x) From all sources.

(/) First electrolytic copper produced commercially in Canada.



Table 22 - Production of Refined Copper in Canada, By Months, 1945 and 1946

Month	Primary	Secondary (Pounds)	Total
<u>1 9 4 5</u>			
January .....	41,271,226	142,189	41,413,415
February .....	37,192,258	192,256	37,384,514
March .....	41,114,888	126,587	41,241,475
April .....	38,537,238	140,187	38,677,425
May .....	40,757,490	114,140	40,871,630
June .....	42,450,572	80,107	42,530,679
July .....	38,729,995	452,728	39,182,723
August .....	38,482,394	154,205	38,636,599
September .....	36,130,840	326,237	36,457,077
October .....	39,158,697	308,411	39,467,108
November .....	30,862,925	178,237	31,041,162
December .....	30,434,351	383,518	30,817,862
Total - Calendar Year ....	455,122,924	2,598,802	457,721,726
<u>1 9 4 6 (x)</u>			
January .....	28,312,786	220,000	28,532,786
February .....	25,898,975	318,642	26,217,617
March .....	26,315,804	306,570	26,622,374
April .....	30,422,754	258,000	30,680,754
May .....	28,683,168	104,000	28,787,168
June .....	26,036,039	349,139	26,385,178
July .....	28,226,190	300,638	28,526,828
August .....	27,687,899	149,339	27,837,238
September .....	28,747,592	191,111	28,938,703
October .....	29,365,778	945,171	30,310,949
November .....	28,429,645	1,144,190	29,573,835
December .....	25,216,787	278,330	25,495,117
Total - Calendar Year ....	333,343,417	4,565,130	337,908,547

(x) Subject to revision.

Table 23 - Imports and Exports of Copper, 1944 and 1945

	1 9 4 4		1 9 4 5	
	Pounds		Pounds	
<u>Imports</u>				
Copper in blocks, pigs and ingots .....	4,500	762	100	23
Copper, scrap .....	26,700	2,604	98,900	8,957
Copper in bars or rods for the manufacture of trolley, telegraph and telephone wires, electric wires and electric cables .....	578,400	87,325	2,526,700	383,611
Copper bars or rods, n.o.p. ....	193,300	41,581	202,400	43,625
Copper in strips, sheets or plates .....	165,400	49,657	163,100	43,883
Copper tubing, not manufactured .....	375,731	133,802	605,163	201,857
Copper rollers .....	...	1,289	...	45,320
Copper wire, n.o.p. ....	90,248	49,850	275,902	110,181
Copper wire cloth, woven .....	...	475	...	1,274
Copper manufactures, n.o.p. ....	...	274,771	...	346,990
Copper sub-acetate .....	440	140	400	124
Copper sulphate (blue vitriol) .....	8,259,600	491,473	6,518,854	417,808
Total .....	...	1,133,729	...	1,603,653
<u>Exports</u>				
Copper, fine, contained in ore, matte, regulus, etc. ....	55,978,500	3,918,495	38,589,200	2,701,244
Copper blister .....	...	...	...	...
Copper, old and scrap .....	1,927,400	116,899	2,875,700	231,505
Copper in ingots, bars, cakes, slabs and billets	270,466,200	29,049,257	258,698,600	32,098,264
Copper in rods, strips, sheets, plates and tubing	36,126,900	4,193,044	14,561,700	1,956,339
Copper wire and cable, insulated .....	...	2,200,550	...	3,067,192
Copper wire, bare .....	...	1,018,940	...	740,220
Copper wire, screen .....	...	8,332	...	10,912
Copper manufactures, n.o.p. ....	...	38,426	...	53,948
Total .....	...	40,543,943	...	40,859,624



Table 24 - Production of Primary Copper in Canada, Exports and Imports, 1935-1945

Table 24 - Production of Primary Copper in Canada, Exports and Imports, 1935-1945					
Year	Production in Canada	Exports			Imports
		Copper in ore, matte, etc.	Blister copper	Refined copper	Refined copper
(Tons of 2,000 pounds)					
1935 .....	209,499	19,351	36,678	121,768	19
1936 .....	210,514	22,760	...	155,430	95
1937 .....	265,014	36,934	5,442	148,071	8
1938 .....	285,625	54,903	15,264	181,764	6
1939 .....	304,413	60,750	15,556	165,819	3
1940 .....	327,797	52,601	15,874	154,502	6
1941 .....	321,558	47,769	11,962	126,424	...
1942 .....	301,831	34,047	6,455	98,617	...
1943 .....	287,595	36,210	4,274	64,333	...
1944 .....	273,535	27,989	...	135,233	2
1945 .....	237,457	19,295	...	129,349	...

Note: Primary copper represents blister copper produced in Canada plus recoverable copper in ores exported.

Table 25 - Production of Refined Copper in Canada, Consumption, Imports and Exports, 1935-1945

Table 25 - Production of refined copper in Canada, consumption, imports and exports, 1935-1945					
Year	Production in Canada	Domestic consump- tion	Exports	Imports	Stocks at end of period
(Tons of 2,000 pounds)					
1935 .....	173,290	43,000	121,768	19	Not
1936 .....	191,595	52,000	155,430	95	avail-
1937 .....	215,080	58,000	148,071	8	able
1938 .....	227,240	54,000	181,764	6	
1939 .....	231,684	57,000	165,819	3	15,418 (October 31)
1940 .....	261,878	107,000	154,502	6	17,572
1941 .....	278,224	142,000	126,424	...	18,312
1942 .....	268,447	183,000	98,617	...	21,446
1943 .....	251,495	176,000	64,333	...	27,710
1944 .....	256,244	122,000	135,233	2	26,600
1945 .....	228,861	90,000	129,349	...	16,760

Table 26 - World Production of Copper 1940, 1944 and 1945, By Countries According to Origin of the Ore  
(American Bureau of Metal Statistics)

Country	1940 1944 1945		
	(Tons of 2,000 pounds)		
United States .....	892,266	1,006,653	805,174
Mexico .....	45,003	47,589	67,784
Canada .....	327,797	273,535	238,142
Cuba .....	11,574	6,256	9,053
Newfoundland .....	8,500	5,500	5,200
Bolivia .....	7,341	6,800	6,721
Chile .....	400,180	549,305	518,304
Peru .....	48,463	35,703	23,375
Ecuador .....	1,560	4,065	4,216
Total America .....	1,742,684	1,935,406	1,687,969
Finland .....	16,806	17,462	16,510
Italy .....	5,000	...	...
Germany .....	26,162	23,148	...
Norway .....	17,118	15,900	5,000
Spain and Portugal .....	15,000	12,900	10,200
Sweden .....	10,461	17,863	20,700
Yugoslavia .....	47,346	...	...
India, including Burma .....	11,500		
Turkey .....	9,661	12,076	10,800
Philippines .....	10,080		
Belgian Congo .....	164,054	182,413	176,600
Rhodesia .....	291,534	246,498	215,572
Other Africa .....	18,800	24,800	25,800
Total Africa .....	474,388	453,711	417,972

Table 27 - Production of Metals of the Platinum Group From Ontario Copper-Nickel Ores, 1939-1945(a)

Year	Platinum (x)		Palladium (f)	
	Fine ounces	\$	Fine ounces	\$
1939 .....	148,877	5,221,712	135,402	4,199,622
1940 .....	108,464	4,239,424	91,522	3,520,746
1941 .....	124,257	4,747,860	97,432	3,396,304
1942 .....	285,188	10,897,033	222,573	8,279,221
1943 .....	219,706	8,458,681	126,004	5,233,068
1944 .....	157,523	6,064,635	42,929	1,960,085
1945 .....	208,234	8,017,010	458,674	18,671,074

(x) In addition, a relatively small quantity of alluvial platinum is usually recovered annually in British Columbia; such recovery in 1943 totalled 7 ounces valued at \$270; nil in 1944.

(f) Includes other platinum metals except platinum and represents the entire Canadian production.

(a) Prior to 1945 the figures reported were the refined metals recovered and the contents of concentrates sold each year. The figures for 1945 represent the metal content of platinum metals concentrates produced, together with adjustment of previous figures to this basis for the years 1938 through 1944.

Table 28 - Production of Selenium and Tellurium From Nickel-Copper Ores, 1939-1945

Year	Selenium		Tellurium	
	Pounds	Value	Pounds	Value
1939 .....	126,930	224,539	...	...
1940 .....	136,350	260,429	3,491	5,607
1941 .....	142,498	272,171	11,453	18,394
1942 .....	76,000	145,920	9,500	15,200
1943 .....	82,000	143,500	8,600	15,050
1944 .....	65,000	117,000	9,900	17,325
1945 .....	168,000	322,560	...	...

Table 29 - Production of Gold and Silver From Nickel-Copper Ores, 1939-1945

Year	Gold		Silver	
	Fine ounces	Value	Fine ounces	Value (x)
1939 .....	77,094	2,786,177	2,496,632	1,010,886
1940 .....	90,863	3,498,225	2,803,052	1,072,167
1941 .....	77,960	3,001,460	2,633,815	1,007,698
1942 .....	70,861	2,728,148	2,238,177	943,839
1943 .....	55,776	2,147,376	1,648,888	746,122
1944 .....	55,286	2,128,472	1,828,978	786,461
1945 (a) .....	91,369	3,528,102	1,735,143	815,417

(x) Estimated.

(a) Includes 26,589 oz. of gold and 84,614 oz. of silver recovered from platinum metals concentrates in foreign plants in previous years and not previously recorded.

Table 30 - Dividends Paid By Specified Nickel-Copper Mining Companies, 1945

	Dividends 1945	Total Dividends Paid to End 1945
International Nickel Co. of Canada Ltd. only (f) ...	26,521,917	386,582,801
Falconbridge Nickel Mines Ltd. ....	501,386	9,638,620

(f) Letters patent granted July 25, 1916.

Table 31 - Specified Taxes Paid By the Nickel-Copper Mining, Smelting and Refining Industry, 1944 and 1945 (x)

	1944	1945
	\$	\$
Dominion income tax, including tax on non-operating revenue ..	5,517,038	4,629,005
Dominion excess profits tax .....	6,810,830	5,725,099
Total provincial taxes .....	999,048	763,989
Total municipal taxes .....	290,357	296,412
Grand Total Taxes Paid .....	13,617,273	11,414,505

(x) Includes data relating only to companies who conducted both mining and smelting operations.

Table 32 - Miscellaneous Expenditures By the Nickel-Copper Mining, Smelting and Refining Industry, 1943-1945

	1943	1944	1945
	\$	\$	\$
Workmen's compensation .....	296,284	377,501	337,219
Silicosis assessment .....	40,660	69,878	71,740
Unemployment insurance .....	175,389	182,478	157,917
Aggregate cost of all supplies purchased .....	28,445,891	28,378,357	24,639,521
Aggregate cost of plant and equipment purchased	5,018,845	4,017,231	2,497,049

(x) Includes data relating only to companies who conduct both mining and smelting operations.

DIRECTORYFIRMS IN THE NICKEL-COPPER MINING, SMELTING AND REFINING INDUSTRY IN CANADA, 1945Note: (x) Active but not producing.

Name of Firm	Head Office Address	Location of Canadian Plant
<u>Ontario -</u>		
Falconbridge Nickel Mines, Ltd.	304 Bay St., Toronto	Falconbridge Tp.
International Nickel Company of Canada, Limited	Copper Cliff	Mines: Tps. of Levack, Snider, McKim and Garson Smelters: Copper Cliff and Coniston Nickel refinery: Port Colborne Copper refinery: Copper Cliff
Nickel Offsets Ltd. (x)	Room 1701 - 372 Bay St., Toronto	Foy Tp.
North Range Nickel Mines Ltd. (x)	suite 501 - 67 Yonge St., Toronto	Bowell Tp.
Ontario Nickel Mines Ltd.	room 305 - 350 Bay St., Toronto	Moose Lake





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