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THE ASBESTOS MINING INDUSTRY IN CANADA, 1948

The asbestos industry recorded a new high in 1948 with production (shipments) of 716,769 tons valued at $42,231,475, compared with 661,821 short tons worth $33,005,748 in 1947. The province of Quebec is credited with the total production.

The 11 firms engaged in asbestos mining during 1948 employed 4,959 persons who received $12,136,615 in salaries and wages. Fuel and electricity cost $2,085,673, and process supplies, plus containers, cost $5,771,229.

In 1948 the shipments of asbestos included 977 tons of crudes valued at $594,594; 241,953 tons of milled fibres worth $25,943,710 and 473,839 tons of shorts and refuse valued at $15,693,171.

The following statement concerning asbestos mining in Canada has been abstracted from a review prepared by the Bureau of Mines, Ottawa:

"Asbestos of commerce consists mostly of the three varieties known as chrysotile, amosite, and crocidolite or blue asbestos, chrysotile being by far the most important and most widely used. Three other varieties, namely fibrous actinolite, fibrous tremolite, and anthophyllite, have only a limited field of usefulness.

"The asbestos produced in Canada is practically all of the chrysotile variety and comes almost entirely from areas of serpentinized rock in the Eastern Townships, Quebec, where the producing centres are Thetford Mines, Black Lake, East Broughton, Vimy Ridge, Asbestos and St. Remi de Tingwick. The Canadian deposits are the largest known in the world. Small deposits of Chrysotile asbestos are known in other parts of Quebec and also in Ontario and British Columbia, and several of them have been worked from time to time.

"No amosite or crocidolite has been found in Canada, but there are numerous deposits of fibrous tremolite, fibrous actinolite, and anthophyllite, which varieties are commercially termed amphibole asbestos. The fibres of these varieties are harsher and weaker than those of chrysotile and there is little demand for them at present. None of these deposits is being worked, although formerly fibrous actinolite was quarried near the village of Actinolite, Hastings County, Ontario, for use in the making of roofing materials. Asbestos deposits reported as having been found in recent years in Manitoba and in northern and western Ontario are of the amphibole varieties. The amphibole fibres are too harsh and brittle to be spun, but they have a higher resistance to acids than has chrysotile,

Note. This report was prepared by A. R. Deir, Mining Statistician.

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and it is possible that material from some of the deposits is suitable for use in acid filters and for other purposes where long harsh fibres are required.

"Production has been continuous from the Thetford area since 1878 and reserves of asbestos-bearing rock are huge. Core-drilling to depths greater than 1,700 feet has revealed the presence of fibre comparable in quantity and quality with that in the present workings. Most of the output consists of vein fibre obtained from veins $\frac{1}{4}$ to $\frac{1}{2}$ inch in width, though veins exceeding 5 inches in width occur. The fibres run crosswise of the vein and thus the width of the vein determines the length of fibre. Slip fibre, occurring in fault planes, is obtained largely in the East Broughton area.

"The asbestos-bearing rock is mined in open pits and underground. The block-caving method of underground mining is coming into general use. This method was put into operation at the King mine of Asbestos Corporation in 1934. Johnson's Company is now using the same method, and Bell Asbestos Mines and Canadian Johns-Manville are sinking shafts preparatory to recovering rock by block-caving operations.

"Asbestos is used for a great variety of purposes, the principal products being: cloth, brake linings, clutch facings, packings, insulation, mill-board, siding, shingles, roofing, tile and pipes."

Price quotations of asbestos, December 1948, were: crude No. 1, $960-$1,050 per ton; crude No. 2, $492-$550; spinning fibres, $232-$475; shingle fibres, $95.50-$141; paper stock, $78.50-$88; waste, $58; shorts, $27-$52.

Canadian Chrysotile Asbestos Classification--(List of Standard Grades set up by the Committee on Uniform Classification and Grading of Asbestos Mines Products. This committee was formed in 1931 at the instigation of the Minister of Mines of the Province of Quebec, and the list of grades has been revised from time to time. Latest revision December 1942).

The asbestos mines products are divided into two classes: "Crude Asbestos" and "Milled Asbestos", respectively, defined as follows:

"Crude Asbestos" consists of the hand-selected cross-vein material essentially in its native or unfiberized form.

"Milled Asbestos" consists of all grades produced by mechanical treatment of asbestos ore.

"Crude Asbestos" and "Milled Asbestos" are sub-divided into groups designated and defined below.

Classification of the "Milled Asbestos" grades, in groups Nos. 3 to 7, inclusive, unless otherwise specified is based on the Quebec Standard Testing Machine.

"Shipping Test" is the average for each carload or smaller shipment, of tests representative samples taken at the time of shipping.

"Guaranteed Minimum Shipping Test" is that below which the actual shipping test shall not fall.

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Group No. 1 Crude No. 1 Consists basically of crude ¾ inch staple and longer
Group No. 2 Crude No. 2 Consists basically of crude 3/8 inch staple up to ¾ inch
Crude run-of-mine Consists basically of unsorted crudes
Crudes sundry Consists of crudes other than above specified

Group No.	Standard Designation of Grades	Guaranteed Minimum Shipping Test			
	3F	7	7	1.5	0.5
	3K	4	7	4	1
	3R	2	8	4	2
	3T	1	9	4	2
	3Z	0	8	6	2
Group No. 4					
	4H	0	5	8	3
	4K	0	4	9	3
	4M	0	4	8	4
	4R	0	3	9	4
	4T	0	2	10	4
	4Z	0	1.5	9.5	5
Group No. 5	5D	0	0.5	10.5	5
	5K	0	0	12	4
	5M	0	0	11	5
	5R	0	0	10	6
Group No. 6	6D	0	0	7	9
Group No. 7	The affix "F" designates "Floats" in all subsections of Group No. 7				
	7D	0	0	5	11
	7F	0	0	4	12
	7H	0	0	3	13
	7K	0	0	2	14
	7M	0	0	1	15
	7R	0	0	0	16
	7T	0	0	0	16

Group No. 8	8S	Under 75 pounds per cubic foot loose measure.
Group No. 9	9T	Over 75 pounds per cubic foot loose measure

Table 1 - PRINCIPAL STATISTICS OF THE ASBESTOS MINING INDUSTRY IN CANADA, 1946-1948

		1946	1947	1948
Number of firms		11	9	11
Number of employees:	Administrative	465	488	528
	Workmen	4,082	4,397	4,431
	Total	4,547	4,885	4,959
Salaries and wages:	Salaries $	998,539	1,234,624	1,569,991
	Wages $	6,773,382	7,930,826	10,566,624
	Total $	7,771,921	9,165,450	12,136,615
Selling value of products (a)	$	25,245,579	33,015,965	42,278,721
Cost of purchased fuel and electricity	$	1,759,462	2,031,045	2,085,673
Cost of process supplies (b)	$	1,670,496	2,650,382	3,068,607
Cost of containers	$	1,545,934	2,143,038	2,702,622
Net value of sales	$	20,269,687	26,191,500	34,421,819

(a) Includes value of sand and gravel.
(b) Explosives, drill steel, etc.

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Table 2 - SHIPMENTS OF ASBESTOS BY CANADIAN MINES, BY GRADES, 1946-1948

	1946		1947		1948	
	Tons	$	Tons	$	Tons	$
Crudes	742	535,204	958	503,137	977	594,594
Fibres	228,234	17,181,400	222,196	20,221,444	241,953	25,943,710
Shorts	329,205	7,724,237	438,667	12,281,167	473,839	15,693,171
	558,181	25,240,562	661,821	33,005,748	716,769	42,231,475
Sand, gravel and stone (waste rock only) (*)	6,337	5,017	9,610	10,217	44,165	47,248

(*) This production is included under the Sand and Gravel Industry. Sand included with shorts in 1948.

Table 3 - SHIPMENTS OF ASBESTOS BY CANADIAN MINES, 1939-1948

Year	Tons	Selling value at works	Year	Tons	Selling value at works
		$			$
1939	364,472	15,859,212	1944	419,265	20,619,516
1940	346,805	15,619,865	1945	466,896	22,805,157
1941	477,846	21,468,840	1946	558,181	25,240,562
1942	439,459	22,633,283	1947	661,821	33,005,748
1943	467,196	23,169,505	1948	716,769	42,231,475

Table 4 - TONNAGE OF ASBESTOS ROCK MINED AND MILLED, 1946-1948

	1946	1947	1948
		(Tons)	
Rock mined	9,127,359	9,837,045	10,759,016
Rock milled	7,027,483	7,740,828	7,894,461

Table 5 - SHIPMENTS OF ASBESTOS BY CANADIAN MINES, BY MONTHS, 1948

Month	Short tons	Month	Short tons
January	46,633	August	64,185
February	50,127	September	68,424
March	62,524	October	66,264
April	61,590	November	67,426
May	60,681	December	58,459
June	53,975		
July	56,481	TOTAL	716,769

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Table 6 - NUMBER OF WORKMEN, BY MONTHS, 1947 and 1948 (Administration and Office Employees Not Included)

Month	Mine			Mill	
	Surface		Underground		
	Male	Female	Male	Male	Female
1947					
January	1,830	33	403	1,874	2
February	1,842	32	431	1,896	2
March	1,860	32	430	1,877	2
April	1,886	32	474	1,874	2
May	1,914	33	490	1,894	2
June	1,949	33	509	1,876	2
July	1,987	33	526	1,915	2
August	1,952	26	581	1,903	2
September	1,955	27	560	1,925	2
October	1,985	25	630	1,961	2
November	1,986	32	616	1,987	2
December	1,905	31	611	1,966	2
AVERAGE	1,924	31	528	1,912	2
1948					
January	1,755	28	586	1,960	2
February	1,740	28	615	1,961	2
March	1,744	28	616	1,975	2
April	1,857	28	608	1,867	2
May	1,895	28	613	1,876	2
June	1,941	28	629	1,866	2
July	1,954	28	619	1,863	2
August	1,984	21	660	1,899	2
September	1,938	21	660	1,877	2
October	1,930	21	679	1,873	2
November	1,864	21	691	1,877	2
December	1,818	21	682	1,861	2
AVERAGE	1,870	25	638	1,896	2

Table 7 - FUEL AND ELECTRICITY USED, 1947 and 1948

Kind	Unit of measure	1947		1948	
		Quantity	Value	Quantity	Value
			$		$
Bituminous coal -					
From Canadian mines ..	short ton	...	...	3,937	44,108
Imported	short ton	37,850	385,076	30,733	364,490
Anthracite coal -					
From United States ...	short ton	22,778	233,005	22,557	237,240
Coke	short ton	150	2,100	...	...
Gasoline	Imp.gal.	237,221	77,922	224,120	79,865
Kerosene or coal oil ..	Imp.gal.	9,738	1,741	9,225	2,178
Fuel oil and diesel oil	Imp.gal.	189,877	40,470	320,298	75,879
Wood	cords	...	...	72	520
Electricity purchased, including service charges	K.W.H.	169,720,467	1,290,731	175,679,821	1,281,393
TOTAL	...		... 2,031,045		... 2,085,673

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Table 8 - POWER EQUIPMENT, 1948

	Ordinarily in Use		In Reserve or Idle	
	Number of units	Total horse power	Number of units	Total horse power
Steam engines	...	...	1	100
Steam turbines	...	...	...	...
Diesel engines	11	1,231	...	...
Gasoline, gas and oil engines, other than Diesel engines	25	2,098	1	100
Electric motors--Operated by purchased power	1,807	74,457	78	3,870
TOTAL	1,843	77,786	80	4,070
Stationary boilers	5	340	...	...
Motor-generator sets	19	5,016	3	335

Table 9 - TAXES PAID BY THE ASBESTOS MINING INDUSTRY, 1947 and 1948

	1947	1948
	$	$
Dominion income tax, including tax on non-operating revenue	1,286,270	2,276,904
Dominion excess profits tax	1,008,476	294,707
Provincial taxes -		
Mining taxes paid on net profits from production, including portion paid to municipality	380,855	621,779
Corporation income tax where levied in addition to mining tax	1,111	3,802
Taxes paid on capital and places of business	13,596	27,781
Acreage taxes	218	1,313
Total Provincial	395,780	654,675
Municipal taxes -		
Based on property valuation	220,562	260,105
GRAND TOTAL TAXES PAID	2,911,088	3,486,391

Table 10 - SPECIFIED MISCELLANEOUS EXPENDITURES BY THE ASBESTOS MINING INDUSTRY, 1946-1948

	1946	1947	1948
	$	$	$
Workmen's compensation	450,248	516,892	629,706
Unemployment insurance	55,237	61,206	72,611
Aggregate cost of all supplies purchased	4,557,898	5,537,967	4,403,735
Aggregate cost of plant and equipment purchased	2,279,382	1,528,018	2,214,179
Cost of buildings, machinery and equipment erected or installed during the year	2,635,758	2,529,932	3,936,471

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Table 11 - IMPORTS INTO CANADA AND EXPORTS OF ASBESTOS AND ASBESTOS PRODUCTS, 1947 and 1948

	1947		1948	
	Tons	$	Tons	$
Imports				
Asbestos clutch facings for automobiles, motor vehicles and chassis	...	244,205	...	218,202
Asbestos brake linings for automobiles, motor vehicles and chassis..	...	584,530	...	649,896
Asbestos brake linings and clutch facings, n.o.p.	...	93,929	...	83,724
Asbestos in any form other than crude, and all manufactures of, n.o.p.	...	2,620,342	...	2,692,065
Asbestos packing	124	137,295	89	108,092
TOTAL	...	3,680,301	...	3,751,979
Exports				
Asbestos (crude)	953	445,150	872	557,127
Asbestos milled fibres	223,693	20,275,533	237,077	25,552,254
Asbestos waste, refuse and shorts ..	412,250	11,570,606	452,493	15,289,675
Asbestos manufactures, including asbestos roofing	...	677,974	...	580,159
TOTAL	...	32,969,263	...	41,979,215

DIRECTORY OF FIRMS IN THE CANADIAN ASBESTOS MINING INDUSTRY, 1948

Name of Firm	Head Office or General Office	Location of Mine
Quebec -		
Asbestos Producers Corporation (*)	1410 Stanley St., Montreal, Quebec	Coleraine
Asbestos Corporation Ltd.	Thetford Mines, Quebec	Thetford Mines, Black Lake, Coleraine
Asbestos Crude & Fibre Mines Ltd. (*)	1410 Stanley St., Montreal, Quebec	Coleraine
Bell Asbestos Mines Ltd.	Thetford Mines, Quebec	Thetford Tp.
Canadian Johns-Manville Co. Ltd.	Sun Life Building, Montreal, Quebec	Asbestos
Flintkote Mines Ltd.	Thetford Mines, Quebec	Thetford Mines
Johnson's Company	Thetford Mines, Quebec	Thetford Mines Coleraine
International Asbestos Co. Ltd. (*)	66 Wellington St. North, Sherbrooke, Quebec	St. Adrien de Ham
Nicolet Asbestos Mines Ltd.	820 Transportation Building, Montreal, Quebec	Norbestos
Potash Company of America (*)	321 First National Bank Bldg., Denver, Colorado, U.S.A.	Ireland Tp. Coleraine Tp.
Quebec Asbestos Corp. Ltd.	East Broughton Station, Quebec	East Broughton Station
Standard Asbestos Mines, Ltd. (*)	111 Mountain Hill, Quebec	Beauceville
United Asbestos Corp. Ltd.(*)	132 St. James St. W., Montreal	Black Lake
Windsor Mine (*)	50 Falardeau St., Thetford Mines	Coleraine

(*) Carried on exploration or development work only.

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