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THE TALC AND SOAPSTONE INDUSTRY, 1944

The value of crude and refined talc and soapstone sold by Canadian producers of these minerals totalled $357,249 in 1944 compared with $266,685 in 1943. Mine shipments of soapstone and talc reported in 1944 by operators in the province of Quebec amounted to 19,013 short tons valued at $204,127. Production of the higher grades of talc in Canada is confined chiefly to the province of Ontario, and in 1944 shipments totalling 13,584 tons worth $153,122 were made entirely from a deposit located near Madoc, Hastings county. In British Columbia, crude talc imported from the United States is treated in a mill at Vancouver. Canadian Wartime Metals Corporation discontinued operations on February 29, 1944 at its Lava Talc project located at the Red Mountain and Gold Dollar claims in the Golden mining division of British Columbia; approximately seven tons of sawn talc blocks were shipped to the United States for experimental purposes.

Imports of talc or soapstone into Canada during 1944 totalled 6,094 short tons valued at $130,603; this came entirely from the United States. Exports of talc from Canada in 1944 amounted to 11,920 short tons worth $157,178.

During 1944 there were 6 firms reported as active in the industry, 4 in the province of Quebec, 1 in Ontario and 1 in British Columbia. Employees numbered 113 and $133,883 were distributed in salaries and wages. Fuel and purchased electricity consumed were appraised at $27,642 and the cost of explosives and other process supplies used was reported at $40,523. The net value of sales in 1944 was estimated at $289,084 compared with $208,654 in 1943.

The following information is from a report prepared by the Bureau of Mines, Ottawa:

"Ontario supplies all of the prime white powdered talc produced, Quebec furnishing off-colour ground talc (in part made from soapstone waste), sawn dimension soapstone, and talc crayons. In recent years, the total output of ground talc of all grades has been about equally divided between these two provinces, with annual shipments averaging between 12,000 and 15,000 tons each.

"Canada is self-sufficient in respect to most of the grades of ground talc needed for its industrial requirements, and there is a considerable surplus for export. It also produces most of the sawn dimension soapstone and talc crayons used, but is dependent on imports, obtained mainly from the United States, for certain special qualities of ground talc demanded by the ceramic, paint, and cosmetic trades. Imports of such talc in 1942 and 1943 amounted to approximately one-third of the total domestic consumption of about 15,000 tons.

"Following the outbreak of war, a substantial demand for Canadian talc developed in the British market, to supply deficiencies caused by the cutting off

of imports from France, Italy, and Norway. In 1943, all forms of talc, soapstone, and pyrophyllite were placed under strict control and allocation by the British Government, with all purchases and imports to be made for Ministry of Supply account.

"In Ontario, all the output comes from the Madoc area, in Hastings county, where production commenced some 40 years ago.

"In Quebec, the entire production is obtained from the Eastern Townships, mainly from the Thetford Mines area, and there are also a mine and mill at Highwater, close to the Vermont boundary. All of Canada's output of sawn soapstone blocks comes from the Thetford Mines area.

"Owing to the critical need for additional sources of massive, steatitic talc, investigations were made during 1943 and 1944 by Wartime Metals Corporation, a Crown company, of an occurrence of such material near Red Earth Creek in Kootenay Park, British Columbia, but it was decided that the recovery of usable material was too low to justify further work. Samples of yellow steatite from a deposit at the base of Mt. Whymper, several miles south of the above occurrence, were forwarded to the United States for test, but the material proved to be too badly flawed to be usable.

"Ground talc has a wide variety of uses, but much the greater part of the output is employed in the paint, roofing, paper, rubber, and ceramic industries. It is used, also, in foundry facings, bleaching fillers for textiles, cosmetics and pharmaceuticals, soaps and cleansers, insecticides, polishes, plastics, and for rice polishing. Talc is also reported to be of value as a fertilizer.

"Ceramic uses for talc have shown the most noteworthy increase, and it is now a standard ingredient in floor and wall tile, electrical and other porcelains, porcelain enamels, dinnerware bodies, and refractories. For rubber, talc is employed mainly for the dusting of moulds and finished products. It is of value, also, as a body-reinforcing ingredient, to impart toughness and to increase tensile strength, particularly in cable insulation.

"The Canadian consumption of ground talc in 1943, as reported by users, totalled 17,201 tons, distribution, by industries, being as follows: paints, 34 per cent; roofing products, 23 per cent; rubber, 11 per cent; pulp and paper, 9 per cent; cosmetic and pharmaceutical preparations, 7 per cent; insecticides, 5 per cent; soaps and cleaners, 3 per cent; miscellaneous, 8 per cent. Consumption of soapstone furnace blocks by Canadian pulp and paper mills in the same year was 1,076 tons, equivalent to 11,956 cubic feet.

"Steatite is the mineralogical name given to compact, massive talc, having no visible grain, that can be sawn, turned, drilled, and otherwise machined into any desired form. Such material has been widely used for the production of fired shapes, used mainly as electrical insulators. There is now a large demand for steatite for use as grid spacers in high-frequency ship and tank radio transmitters, and for the cores, bushings, resistors, etc., in radio, radar, and other electronic equipment. It is used to an important extent also for carbon black and other gas burner tips. An alternative trade name for steatite is "lava talc". Because of the small amount of natural steatite available, its high cost, and excessive machining and firing losses, the aforementioned articles are now made largely by die-pressing powdered talc. Suitable talc for the purpose is required to be high-grade material, low in lime and iron, and such talc is commonly termed steatite, or steatitic talc,

irrespective of its texture. There is still a limited demand, however, for sawn steatite shapes, and suitable crude is in short supply; the chief sources are British India, Sardinia, Maryland, Montana, and California. Specifications call for compact texture, good structural strength, freedom from hair-cracks and parting lines and from gritty impurities, and a low content of lime and iron. In general, grade and suitability are determined by machinability and firing behaviour, followed by tests for electronic performace. Chemical analysis is of secondary importance.

"Soapstone, a soft greenish rock containing a high percentage of talc, is used extensively in the form of sawn blocks and bricks for lining the alkali recovery furnaces and kilns of kraft pulp and paper mills. It is also used for brick and slab liners for fireboxes, stoves, and ovens, and for switchboard panels, laboratory benches, etc. Considerable quantities of soapstone quarry and sawing waste are ground and marketed as low-grade talc to the rubber, roofing, foundry, and other trades.

"Compact, massive talc, sawn into square pencils and slices, is an important material for steelmakers' crayons. Recent shortages of suitable raw material have led to the introduction of extruded crayons compounded of ground talc with a suitable binder.

"Ground talc has a wide price range. Value is dependent upon purity (determined by freedom from lime and gritty or iron-bearing substances, slip, and colour), particle shape, and fineness of grinding, the specifications for which vary in the different consuming industries. Roofing and foundry talcs are the cheapest grades, the users being satisfied with coarser, grey or off-colour material, often soapstone powder or sawing dust, which sells at about $5 to $7 a ton f.o.b. rail. Domestic grey talc, suitable for roofing, rubber, and paper use, sold in 1944 for $8 to $11.75 a ton, according to fineness. White talc from Madoc, Ontario, was quoted at $8 to $10 for the coarser grades, $12 to $18 for finer mesh sizes, and $44 for minus 400-mesh material.

"Canadian ground talc or soapstone exported to the United States is dutiable at 17½ per cent ad valorem on material valued at not over $14 a long ton, and at 35 per cent on material valued at over $14 a ton. The duty on crude material is one-quarter cent a pound, whereas cut soapstone or talc, in the form of bricks, crayons, blanks, etc., is dutiable at one cent a pound. Talc, ground or unground, enters Canada under the British Preferential tariff at 15 per cent ad valorem, and under the Intermediate and General tariff at 25 per cent; imports from the United States are dutiable at 20 per cent.

"Pyrophyllite--Pyrophyllite (hydrous silicate of alumina) closely resembles talc in appearance and physical characteristics. It is difficult to distinguish from talc even by microscopic means and often requires chemical analysis for its identification. In the ground state it can be employed for many of the industrial uses of talc. When fired, pyrophyllite does not flux, as does talc, and it is of value in a wide range of high-grade ceramic products, including refractories.

"Commercial deposits are relatively scarce. Most of the recorded world production comes from North Carolina, where the industry has expanded rapidly in recent years. Sales of pyrophyllite in the United States in 1944 comprised 5,683 tons of crude valued at $52,343, and 60,560 tons of ground valued at $504,739, a total of 66,243 tons valued at $557,082. A new important use for the mineral is as a carrier in DDT personnel insecticidal dusts, and in agricultural insecticides

generally.

"In Canada, some rather low-grade, sericitic pyrophyllite occurs at Kyuquot Sound on the west coast of Vancouver Island. A small quantity was shipped from these deposits about 30 years ago for use in refractories and cleanser products.

"Important deposits are known in Newfoundland, and are owned and operated by Industrial Minerals Company of Newfoundland, Limited, Box 435, St. John's, which shipped about 500 tons of ground material in 1942 and 1943. In 1944, shipments declined to 140 tons.

"In 1944, pyrophyllite was quoted at $10 to $13 a ton, f.o.b. North Carolina mills, for 200-mesh and 325-mesh material, respectively.

Table 1 - PRINCIPAL STATISTICS OF THE TALC AND SOAPSTONE INDUSTRY IN CANADA, 1942-1944

		1942	1943	1944
Number of firms		10(a)	8(b)	6(c)
Capital employed	$	567,665	576,691	(d)
Number of employees--On salary		8	10	14
On wages		107	80	99
Total		115	90	113
Salaries and wages--Salaries	$	22,729	23,794	29,532
Wages	$	90,872	77,925	104,351
Total	$	113,601	101,719	133,883
Selling value of products (Gross)	$	310,824	266,685	357,249
Cost of fuel and purchased electricity	$	25,905	24,104	27,642
Cost of explosives and other process supplies	$	33,208	33,927	40,523
Selling value of products (net)	$	251,711	208,654	289,084

(a) 7 firms in Quebec and 3 in Ontario; data for 1 firm in Quebec, other than sales not available. (b) 5 firms in Quebec, 2 in Ontario and 1 in British Columbia. (c) 4 firms in Quebec, 1 in Ontario and 1 in British Columbia. (d) Data not collected in 1944.

Table 2 - WAGE-EARNERS(x), BY MONTHS, 1943 and 1944

Month	Total 1943	1944		
		Surface	Underground	Mill
January	84	47	22	21
February	80	41	25	21
March	76	46	20	24
April	71	66	19	21
May	76	47	18	25
June	78	74	18	26
July	68	60	16	26
August	77	59	18	25
September	75	49	15	34
October	79	52	15	31
November	93	55	17	33
December	88	35	14	36

(x) All male.

Table 3 - WAGE-EARNERS WORKING NUMBER OF HOURS SPECIFIED DURING ONE WEEK IN MONTH OF HIGHEST EMPLOYMENT, 1944

Number of Hours Worked	Number of wage-earners	Number of Hours Worked	Number of wage-earners
30 hours or less	4	49-50 hours	6
31-43 hours	9	51-54 hours	23
44 hours	3	55 hours	3
45-47 hours	8	56-64 hours	42
48 hours	2	65 hours and over	17
Grand total number of employees in week specified			117
Total wages paid in week specified		$	2,377

Table 4 - FUEL AND ELECTRICITY USED, 1943 and 1944

Item	Unit of measure	1943 Quantity	1943 Value	1944 Quantity	1944 Value
			$		$
Bituminous coal--Canadian	ton	...	...	...	...
Foreign.	ton	...	...	...	...
Lignite	ton	41	190	...	...
Gasoline	Imp.gal.	8,044	2,475	8,434	2,762
Kerosene	Imp.gal.	60	12	140	27
Fuel oil and diesel oil..	Imp.gal.	14,668	2,336	19,445	2,985
Wood	cord	102	750	75	510
Electricity purchased (x)	K.W.H.	1,578,590	18,341	1,841,340	21,358
TOTAL	...	...	24,104	...	27,642

(x) In addition, 156,250 K.W.H. generated for own use in 1943 and 167,850 K.W.H. in 1944.

Table 5 - POWER EQUIPMENT INSTALLATION, 1944

	Number of units	Horse power Manufacturers' rating
Diesel engines	4	343
Other gas engines	13	365
Electric motors operated by purchased power	42	1,000
Electric motors operated by own power	14	121

Table 6 - PRODUCTION OF TALC AND SOAPSTONE IN CANADA, 1930-1944

Year	Value	Year	Value
	$		$
1930	186,216	1938	144,848
1931	157,083	1939	170,066
1932	159,038	1940	229,639
1933	190,836	1941	360,809
1934	180,777	1942	310,824
1935	171,532	1943	266,685
1936	177,270	1944	357,249
1937	163,814		

Production of talc and soapstone in Canada from 1886 to the end of 1944 totalled 610,429 short tons valued at $5,752,039. The largest annual tonnage produced during these years was 34,632 in 1941, also, the greatest annual value was $360,809 in 1941.

Table 7 - PRODUCTION (SALES) IN CANADA OF TALC AND SOAPSTONE(/), 1942-1944

	1942		1943		1944	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	$	tons	$	tons	$
Soapstone (Quebec)(x)	14,369	136,529	14,204	135,469	19,013	204,127
Talc (Ontario)	15,499	174,295	11,959	131,216	13,584	153,122
TOTAL CANADA	29,868	310,824	26,163	266,685	32,597	357,249

(x) Shipments by some firms usually include a considerable quantity of material classified as talc.

(/) Includes both crude and milled grades.

Table 8 - CONSUMPTION OF TALC IN CANADA, BY INDUSTRIES, AS REPORTED IN THE ANNUAL CENSUS OF MANUFACTURES, 1943

Industry	Short tons	Cost at Works
		$
Rubber industry	1,839	34,243
Electrical apparatus	356	9,891
Paints	6,601	174,757
Soaps and cleansing preparations	550	10,556
Toilet preparations	565	24,868
Polishes	25	496
Products from imported clays	354	5,586
Prepared roofing	3,859	42,519
Pulp and paper	1,469	25,178

Table 9 - IMPORTS AND EXPORTS OF TALC, 1943 and 1944

	1943		1944	
	Pounds	$	Pounds	$
Imports - Talc or soapstone	12,899,800	130,813	12,187,100	130,603
Exports - Talc	22,729,200	146,516	23,840,000	157,178

DIRECTORY

FIRMS IN THE TALC AND SOAPSTONE INDUSTRY, 1944

Name of Firm	Head Office Address	Location of Plant or Mine
Quebec -		
Baker Mining & Milling Co. Ltd.	4010 St. Catherine St. W., Montreal	Highwater
Broughton Soapstone & Quarry Co. Ltd.	Broughton Station	Broughton Station
Fortin, Charles	Robertsonville	Thetford Tp.
Pharo, L. C. Co. Ltd.	187 St. Maurice St., Thetford Mines	Leeds Tp.
Ontario -		
Canada Talc Limited	Madoc	Huntingdon Tp.
British Columbia -		
Wartime Metals Corp. (x)	637 Craig St. W., Montreal, Que.	Kootenay National Park

(x) Active but not producing.

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