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CANADA

DEPARTMENT OF TRADE AND COMMERCE

DOMINION BUREAU OF STATISTICS

CENSUS OF INDUSTRY

MINING, METALLURGICAL & CHEMICAL BRANCH

Report

on

THE MISCELLANEOUS NON-METALLIC MINERALS

IN CANADA, 1937

including

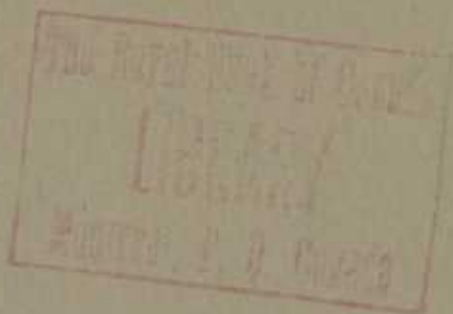
Barite
Bituminous Sands
Diatomite
Fluorspar
Garnet
Graphite
Grindstones
Lithium Minerals
Magnesitic Dolomite

Magnesium Sulphate
Natural Mineral Waters
Peat
Phosphate
Silica Brick
Sodium Carbonate
Sodium Sulphate
Strontium Minerals
Sulphur (Pyrites)



OTTAWA
1939

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OTTAWA - CANADA

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MISCELLANEOUS INDUSTRIAL OR NON-METALLIC MINERALS IN CANADA, 1937.

Canadian operators producing certain industrial minerals, and who are usually relatively few in number, have been segregated for statistical purposes into a single group designated as the Miscellaneous Non-Metal Mining Industry. Minerals or primary mineral products produced (or developed) by this industry during 1937 included: bituminous sands, diatomite, fluorspar, garnets, graphite, grindstones, lithium minerals, magnesitic-dolomite (crude and refined), magnesium sulphate, mineral waters, phosphate, silica brick, sodium carbonate, and sodium sulphate. For convenience, the sulphur content of pyrites shipped, sulphur recovered from smelter gas, and peat are recorded with the various miscellaneous minerals listed above; the value of sulphur production, however, is not included in the total for the miscellaneous non-metallic or industrial minerals as the value of this element is credited to the copper-gold-silver mining and non-ferrous smelting industries.

The total gross value of production by the industry under review amounted to \$1,687,317 in 1937 compared with \$1,593,002 in 1936. Increases in the value of shipments above those made in the preceding year were realized for all products except peat, grindstones, magnesitic-dolomite, and phosphate.

BARITE - Barite production in Canada during past years came largely from deposits in Nova Scotia, Quebec and Ontario and in recent years more particularly from deposits in the Lake Ainslie district, Nova Scotia. The last commercial shipments from Canadian deposits were made in 1933 in which year 20 tons valued at \$60 were produced and shipped at the Tionaga mine, Penhorwood township, Ontario. The mineral also occurs in British Columbia.

Ground barite is used as a heavy, white, inert filler in many products, such as paint, paper, rubber, oilcloth, linoleum, plastics, resins, and cloth. It is also used in the manufacture of glass and as a heavy medium in mud in the drilling of deep oil wells where high gas pressures are encountered. The most important single chemical product made from barite is lithopone, an intimate mixture of zinc sulphide and barium sulphate prepared by co-precipitation by double decomposition of solutions of barium sulphide and zinc sulphate; its chief use is as a white pigment.

According to the United States Bureau of Mines, crude barite, both domestic and foreign, used in the United States in the manufacture of barium products in 1937 totalled 383,982 short tons of which 148,930 tons were utilized in the manufacture of ground barite, 162,681 tons for lithopone, and 72,371 tons for barium chemicals. Crude barite is a relatively low price commodity; the average annual value of sales in the United States in the past forty years has ranged from about \$2 to \$10 per ton.

Table 1 - BARITE AND BLANC FIXE USED BY THE CANADIAN PAINTS, PIGMENTS AND VARNISHES INDUSTRY IN CANADA, 1931 - 1937.

Year	BARITE		BLANC FIXE (x)	
	Pounds	\$	Pounds	\$
1931	2,304,119	39,361	146,025	12,915
1932	2,064,303	35,138	23,353	817
1933	2,062,957	33,578	47,793	1,471
1934	2,393,330	44,690	93,918	2,481
1935	2,308,628	43,702	141,975	4,223
1936	2,533,275	41,687	97,016	3,148
1937	2,630,366	42,821	125,743	4,136

(x) Artificial barium sulphate.

Table 2 - IMPORTS OF BLANC FIXE AND BARITE INTO CANADA, 1931 - 1937.

Year	BARITE		BLANC FIXE	
	Pounds	\$	Pounds	\$
1931	3,372,600	52,712	1,596,173	34,483
1932	2,583,400	22,989	932,168	20,932
1933	3,174,700	28,255	552,801	11,390
1934	3,113,800	26,397	968,201	21,638
1935	4,278,400	33,739	1,139,106	25,759
1936	3,316,000	26,554	1,064,032	21,480
1937	4,156,600(x)	32,869	1,079,399	21,454

(x) 2,637,700 pounds from Germany, 852,700 pounds from the United States, and 492,900 pounds from the United Kingdom.

In 1937 lithopone imported into Canada totalled 22,162,600 pounds valued at \$777,752 compared with 18,859,517 pounds worth \$666,667 in 1936.

Table 3 - WORLD'S PRODUCTION OF BARIUM MINERALS, 1935, 1936 and 1937. (Taken from the Imperial Institute's publication - The Mineral Industry of the British Empire and Foreign Countries)
(Long tons)

Producing Country and Description	1935	1936	1937
<u>BRITISH EMPIRE</u>			
United Kingdom - Barytes, unground	41,881	37,250	36,875
Witherite, unground	9,409	8,751	11,882
Barytes - Ground, bleached	6,288	5,731	5,427
Ground, unbleached	20,554	21,338	19,124
Union of South Africa	556	574	561
India	5,493	5,114	15,689
Australia	2,544	2,157	3,103
<u>FOREIGN COUNTRIES</u>			
Austria	784	1,637	841
France	16,600	21,850	19,550
Germany -			
Baden	12,248	17,519	21,311
Bavaria	6,961	10,999	11,645
Prussia	321,786	385,910	404,149
Saxony	218	460	425
Thuringia	545	443	6,683
Wurtemberg	(a)	1,000	189
Greece	22,726	30,841	(a)
Italy	40,502	36,092	44,488
Norway .....	...	402	69
Portugal .....	...	10	99
Egypt	84	30	50
Cuba .....	...	256(b)	3,788
United States	194,710	244,698	322,212
French Indo-China .....	...	39	44
Japan .....	...	3,776	(a)
Korea	10,853	5,032	(a)

Barytes is also produced in Czechoslovakia, Spain, China, and U.S.S.R.

(a) Information not available.

(b) Exports.

BITUMINOUS SANDS - Commercial production of bituminous sands in Canada is confined to the province of Alberta. Large deposits of the material occur along the Athabaska river in the northern part of the province. Output during 1937 totalled 35 tons valued at \$142.

During 1937 the International Bitumen Company processed a small amount of bituminous sand at its plant at Bitumont, Alberta, with production of fuel oils and asphalt. Abasand Oils Ltd. continued construction work on separation, distillation and refining units on Horse river near McMurray.

The Department of Mines and Resources, Ottawa, has conducted a comprehensive investigation of these deposits of natural asphalt. Various industrial applications for the separated bitumen, as for example, in the manufacture of paints and varnishes and in the manufacture of certain rubber goods, are also being investigated. Results obtained have directed attention to the extent and potential economic importance of the deposits. Products that may be derived include motor fuels and other liquid hydrocarbons as well as certain solid and semi-solid bitumens.

Table 4 - PRODUCTION OF BITUMINOUS SANDS IN CANADA, 1928 - 1937.(x)

Year	Tons	Value \$	Year	Tons	Value \$
1928	94	374	1933	466	1,662
1929	989	3,956	1934	862	3,449
1930	2,067	8,268	1935	40	160
1931	1,015	4,060	1936 .....	...	...
1932	343	1,372	1937	35	142

(x) Production came entirely from the province of Alberta.

The total value of petroleum, asphalt and their products imported into Canada during 1937 amounted to \$59,012,412 compared with \$49,727,188 in 1936. Of the 1937 imports, those from the United States were appraised at \$47,570,783. Included in the imports of these materials during the year under review, were - 166,732 cwt. of asphalt valued at \$184,175; 67,837 gallons of asphaltum oil valued at \$4,099 for paving purposes, and 1,386,384,223 gallons of various crude petroleum and fuel oils valued at \$47,427,735.

DIATOMITE - Canadian production of diatomite in 1937 totalled 643 short tons valued at \$18,606 compared with 615 tons at \$13,650 in 1936. The greater part of the output of the material in 1937, as in former years, came from deposits located near Tatamagouche, Nova Scotia. Production in Ontario in 1937 came from the Muskoka area while the output credited to British Columbia represented shipments made from the Cariboo area.

A report issued by the Bureau of Mines, Ottawa, states - "Approximately 80 per cent of the diatomite now being consumed in Canada is in the form of filter-pads, about 15 per cent is used for insulation and the remainder is absorbed as a filler, concrete admixture, silver polish base, and in chemicals. Amongst the recent applications, the use of diatomite in the paint and varnish industry has demonstrated its advantages as a flattening agent and as an extender. Deposits containing medium quality diatomite are very common in some parts of Canada. Owing, however, to foreign competition and to the, at present, comparatively small Canadian demand, only the properly prepared diatomite of the highest quality can now be successfully marketed on a scale sufficiently large to warrant the operations of a property and the erection of a plant. The present price in Canada varies from \$35 to \$40 per ton for concrete admixture; \$35 to \$75 for insulation and filtration; up to \$200 in small lots of material suitable for polishes; imported insulation bricks vary from \$85 to \$140 per 1,000, according to grade and density."

Imports into Canada during 1937 of diatomaceous earth or infusorial earth (Kieselguhr), ground or unground, totalled 4,394,000 pounds valued at \$63,917 compared with 5,703,100 pounds at \$78,687 in 1936. Imports during 1937 came entirely from the United States.

Table 5 - PRODUCTION OF DIATOMITE IN CANADA, 1928 - 1937.

Year	Tons	\$	Year	Tons	\$
1928	368	8,960	1933	1,789	36,648
1929	429	10,330	1934	1,372	54,912
1930	554	13,247	1935	823	33,140
1931	1,610	32,799	1936	615	13,650
1932	1,496	29,509	1937	643	18,606

Table 6 - WORLD'S PRODUCTION OF DIATOMACEOUS EARTH, 1935 - 1937. (Taken from the Imperial Institute's publication - The Mineral Industry of the British Empire and Foreign Countries)
(Long tons)

Producing Country	1935	1936	1937
<u>BRITISH EMPIRE</u>			
Great Britain .....	...	1,096	1,141
Northern Ireland	4,893	7,466	7,168
Canada	735	549	574
Barbados	10	10	10
Australia	3,014	2,778	3,190
Union of South Africa	169	96	148
<u>FOREIGN COUNTRIES</u>			
Bulgaria .....	...	62	138
Denmark (moler)	47,200	61,000	80,000
Estonia (exports) .....	...	...	100
Finland	984	1,378	1,771
France	7,150	9,600	10,600
Germany (d)	5,827	6,112	7,407
Hungary (exports)	1,376	1,197	2,105
Italy	3,007	3,701	4,586
Norway (exports)	140	229	106
Portugal	4,413	64	109
Roumania (c)	3,080	(a)	(a)
Sweden	1,207	1,095	1,736
U.S.S.R.	1,269	(a)	(a)
Algeria	11,200	11,922	12,759
United States	72,721(b)	(a)	(a)
Chile	12	40	(a)
Korea	3,440	742	2,480
Netherlands East Indies	88	124	39

Diatomaceous earth is also produced in Spain and Japan.

(a) Information not available.

(b) Annual average production for years 1933 to 1935.

(c) Converted from cubic metres at the rate of 1 cubic metre = 2 long tons.

(d) Production of Hessen only.

Table 7 - CONSUMPTION OF INFUSORIAL EARTH BY THE CANADIAN SUGAR REFINING INDUSTRY, 1932 - 1937.

Year	Pounds	Value \$	Year	Pounds	Value \$
1932	2,577,585	73,309	1935	4,307,142	96,560
1933	2,507,469	70,191	1936	4,375,999	98,954
1934	2,562,552	69,116	1937	4,586,786	95,532

FLUORSPAR - Fluorspar production in Canada during 1937 totalled 150 short tons valued at \$2,550 compared with 75 tons at \$900 in 1936. Production of the mineral in Canada since 1929 has been confined to the Madoc area, Hastings county, Ontario. Fluorspar was formerly produced at the Rock Candy mine, in British Columbia, by the Consolidated Mining and Smelting Company of Canada, Limited; production in 1929 from this mine totalled 17,800 short tons valued at \$267,000. Following the erection of a large fertilizer plant at Trail, the recovery of by-product fluorine from phosphate rock has obviated the necessity of employing fluorspar as a source of fluorine by the Consolidated Mining and Smelting Company of Canada, Ltd.. According to the Bureau of Mines, Ottawa, the whole of such recovery is consumed in the lead refinery, but the company is considering other outlets, such as in the manufacture of sodium fluosilicate, used in the ceramic and glass industries, for laundry purposes, and as an insecticide; lead and zinc fluosilicates, also of value as grasshopper poisons; and ammonia fluosilicate, used as a detergent.

Commercial fluorspar is usually graded according to the following specifications: acid grade, lump or ground, 98 per cent CaF_2 , not over 1 per cent SiO_2 ; glass and enamel grade, ground 95 per cent CaF_2 , not more than 3 per cent SiO_2 and 0.1 per cent Fe_2O_3 ; fluxing gravel or lump grade 85 per cent CaF_2 , not more than 5 per cent SiO_2 . By far the largest use of fluorspar is in the metallurgical industries, chiefly as a flux in the production of basic open-hearth steel (fluxing gravel grade). Consumption, in short tons, of fluorspar by United States industries in 1937 was as follows: Basic openhearth steel, 138,900; electric furnace steel, 7,500; foundry, 2,500; ferro-alloys, 1,200; hydrofluoric acid and derivatives, 24,100; enamel and vitrolite, 5,900; glass, 11,600; miscellaneous, 2,600.

Fluorspar prices in the United States were reported in November, 1938, as follows: per net ton, 85 per cent CaF_2 , and not over 5 per cent SiO_2 , Kentucky and Illinois, in bulk, f.o.b. mines, washed gravel, \$18, for all rail movement. Ground fluorspar, f.o.b. Illinois mines, 95 to 98 per cent CaF_2 and not over $2\frac{1}{2}$ per cent SiO_2 , \$30 in bulk. Foreign fluorspar, gravel, 85-5, \$22.50 per gross ton, duty paid, Baltimore or Philadelphia.

Table 8 - PRODUCTION OF FLUORSPAR IN CANADA, 1928 - 1937.

Year	Short tons	Value \$	Year	Short tons	Value \$
1928 .....	...	...	1933	73	1,064
1929	17,870(a)	268,120	1934	150	2,100
1930	80	1,240	1935	75	900
1931	40	620	1936	75	900
1932	32	464	1937	150	2,550

(a) 17,800 tons valued at \$267,000 produced in British Columbia; production since 1929 entirely from Ontario mines.

Imports of fluorspar into Canada during 1937 totalled 11,444 short tons valued at \$168,082 compared with 11,194 short tons at \$95,268. Of the 1937 imports, 1,790 short tons valued at \$11,402 came from the United Kingdom, 4,058 short tons at \$77,606 from the United States, and 2,638 short tons at \$35,493 from Newfoundland.

Table 9 - FLUORSPAR USED IN THE CANADIAN GLASS INDUSTRY, 1931 - 1937.

Year	Short tons	Value \$	Year	Short tons	Value \$
1931	96	4,815	1935	98	3,357
1932	125	4,989	1936	71	2,360
1933	115	7,803	1937	91	3,008
1934	119	4,472			

Table 10 - FLUORSPAR USED IN CANADIAN STEEL FURNACES, 1930 - 1937.

Year	Short tons	Value \$	Year	Short tons	Value \$
1930	6,486	92,743	1934	4,555	55,643
1931	4,969	66,471	1935	5,859	73,047
1932	2,253	27,939	1936	7,942	88,403
1933	2,949	31,657	1937	9,039	139,181

Table 11 - WORLD'S PRODUCTION OF FLUORSPAR, 1935, 1936 and 1937. (Taken from the Imperial Institute's publication - The Mineral Industry of the British Empire and Foreign Countries)
(Long tons)

Producing Country	1 9 3 5	1 9 3 6	1 9 3 7
<u>BRITISH EMPIRE</u>			
United Kingdom	31,146	32,962	42,160
Union of South Africa	1,949	3,074	3,558
Canada	67	67	134
Australia	685	816	1,442
Newfoundland	4,000	10,424	12,000
<u>FOREIGN COUNTRIES</u>			
France	22,400	30,100	50,650
Germany -			
Anhalt	7,941	11,048	13,446
Baden	3,879	7,242	13,422
Bavaria	30,783	48,377	61,469
Prussia	24,229	35,698	30,032
Saxony	6,828	7,864	7,946
Thuringia	23,200	18,495	15,862
Italy	8,291	11,256	13,174
Norway	1,050	997	1,076
U.S.S.R.	48,300	64,000	(a)
Tunis .....	...	...	1,676
Mexico (estimated)	1,000	1,000	1,000
United States	91,000	150,000	163,000
Argentina	397	443	(a)
Korea	9,568	8,602	15,500(b)

Fluorspar is also produced in Spain and China.

(a) Information not available.

(b) Exports.

GARNETS - No commercial production of garnets has been reported in Canada for several years. In 1937 the Demigo Mining Syndicate, Toronto, conducted mining operations on a garnet deposit in Ashby township some 20 miles east of Bancroft, Ontario, and 5 tons of garnet rock were shipped to the Industrial Minerals Laboratories of the Bureau of Mines, Ottawa, for concentration tests. The Canada Garnet Company in 1937 acquired the assets of the Labelle Mining, Inc., in Joly township, near Labelle, Quebec, installing mining equipment and beginning the erection of a concentrator at the close of the year. A small amount of garnet rock was shipped for testing to the Bureau of Mines laboratories, Ottawa, by the International Garnet Syndicate, Montreal, from its property which adjoins that of the Canada Garnet Company.

Garnet is employed chiefly in the manufacture of abrasive papers and cloths while small amounts are utilized in the grinding of plate glass and other products.

No imports of garnet, described as such, were recorded in Canada during 1936 or 1937; the mineral, however, may enter in the form of abrasive paper or combined with other abrasive imports, n.o.p.. It has been reported that approximately 175 tons of graded garnet grains are imported annually into Canada.

Engineering and Mining Journal's "Metal and Mineral Markets" - New York - November, 1938, quotations for garnet were - per ton, f.o.b. New Hampshire mines; concentrate, \$30; grain, \$80 to \$140. New York: Adirondack garnet concentrates, \$35. Spanish grades, \$60, c.i.f. port of entry. Nominal.

GRAPHITE - Canadian mine production of graphite during 1937 was valued at \$125,343 compared with \$88,812 in 1936. The output in 1937 came solely from the Black Donald mine, Renfrew county, Ontario. Relatively small and intermittent shipments of graphite were also made from Quebec properties prior to 1935.

Although the Black Donald graphite flakes are too small to be suitable for crucible use, the products made are well adapted for lubricants and foundry facings. In recent years, the highest grade has been successfully employed in pencil manufacture.

Flake and crystalline (plumbago) grades are obtained mainly from Madagascar and Ceylon, respectively, countries that can lay down graphite on the North American continent at prices that render domestic production difficult. American supplies of amorphous graphite are derived mainly from Mexico and Chosen (Korea). Artificial graphite, made in the electric furnace, is now being used more and more extensively in dry battery manufacture and is also employed in liquid lubricants and electrodes.

"Canadian Chemistry and Metallurgy" - Toronto - quotation for graphite, October, 1938, was - various grades, 100 pound lots - per pound, 15 cents to 40 cents. "Metal and Mineral Markets" - New York - 1938 quotations for graphite were - per pound, f.o.b. New York. Ceylon lump, $6\frac{3}{4}$ to $7\frac{1}{4}$ cents; carbon lump, $5\frac{3}{4}$ to $6\frac{1}{2}$ cents; chip, 5 to $5\frac{3}{4}$ cents; dust, 3 to 4 cents; Madagascar flake, $5\frac{1}{2}$ to 7 cents. No. 1 flake, $9\frac{1}{2}$ to 17 cents; No. 2, 7 cents upwards. Crude amorphous graphite, f.o.b. New York, \$12 to \$23 per ton, according to grade.

Table 12 - VALUE OF MINE PRODUCTION OF GRAPHITE IN CANADA, 1928 - 1937.

Year	Value \$	Year	Value \$
1928	57,041	1933	18,367
1929	103,174	1934	71,424
1930	96,392	1935	79,781
1931	32,149	1936	88,812
1932	18,483	1937	125,543

Table 13 - IMPORTS OF GRAPHITE INTO CANADA, 1935, 1936 and 1937.

	1 9 3 5 \$	1 9 3 6 \$	1 9 3 7 \$
Plumbago, not ground or otherwise manufactured	6,559	5,166	9,545
Plumbago crucibles	38,066	38,559	62,433
Plumbago, ground, and manufactures of, n.o.p.	92,852	88,188	105,188
TOTAL GRAPHITE and ITS PRODUCTS	137,477	131,913	177,166

Table 14 - EXPORTS OF GRAPHITE FROM CANADA, 1936 and 1937.

	1 9 3 6 Cwt.	\$	1 9 3 7 Cwt.	\$
Graphite or plumbago, crude and refined	67,686	138,454	58,966	133,262
Carbon and graphite electrodes .....	...	657,361	...	721,727

Table 15 - CONSUMPTION OF GRAPHITE OR PLUMBAGO IN CANADA, BY INDUSTRIES, AS REPORTED TO THE CENSUS OF INDUSTRY, 1936 and 1937.

Industry	1 9 3 6		1 9 3 7	
	Quantity	Cost at	Quantity	Cost at
	short tons	works \$	short tons	works \$
Paints and varnishes	59	5,023	48	4,112
Polishes	55	5,796	(a)	(a)
Foundries	127	18,004	(a)	(a)
Acids and salts (x)	35	11,132	58	17,192
Prepared foundry facings	156	6,746	(a)	(a)
Total Accounted for	432	46,701		

(a) Not yet complete.

(x) In addition, electrodes valued at \$301,378 were used in 1937.

Production of graphite in Canada during the first six months of 1937 was valued at \$22,616 compared with \$63,070 in the corresponding period of 1937.

The United States Bureau of Mines, in its Foreign Minerals quarterly, states that "Graphite in Madagascar occurs in the crystalline schists and graphitic gneiss in lenticular masses and disseminated in the schists. Mining is confined to underground workings; the one is hand sorted and crushed and treated in a flotation plant which produces a high-grade concentrate; production in 1937 totalled 12,390 metric tons compared with 7,360 tons in 1936.

Graphite exports from Madagascar continued to increase from 8,046 metric tons in 1935 to 12,565 tons in 1937. The bulk of the 1936 exports were divided as follows: Great Britain, 4,210 tons; France, 1,983 tons, and the United States, 1,600 tons.

The following statistics, published by the United States Department of Commerce, show exports of graphite from Ceylon during the second quarter of 1938 with comparable figures for the first three months of the same year -

	FIRST QUARTER 1938			SECOND QUARTER 1938		
	Cwt. (112 lbs.)	Value in Rupees	Average Price Rs.	Cwt. (112 lbs.)	Value in Rupees	Average Price Rs.
Japan	13,691	153,757	11.23	4,790	50,999	10.65
United States	20,140	112,000	5.55	6,900	32,275	4.68
United Kingdom	11,435	69,017	6.03	9,140	32,534	3.56
Germany	4,870	51,826	10.64	6,827	68,104	9.97
Others	10,165	87,506	8.60	7,634	54,488	7.14
	60,301	474,106		35,291	238,400	

"Naturally, with the falling off in exports from Ceylon, stocks have been built up, though not to any great extent. The principal miners have not been seriously affected by the fall, but, as always happens when prices become too low, many small miners have ceased production. The United States is usually the chief buyer of Ceylon graphite and its purchases are almost exclusively of the amorphous grades, but during the quarter ended June 30 American purchases fell off to such extent that the United Kingdom became the principal buyer from the standpoint of quantity, while German purchases were greatest in value."

Table 16 - WORLD'S PRODUCTION OF GRAPHITE, 1935, 1936 and 1937. (Taken from the Imperial Institute's publication - The Mineral Industry of the British Empire and Foreign Countries) (Long tons)

Producing Country	1935	1936	1937
<u>BRITISH EMPIRE</u>			
Union of South Africa	65	58	61
Canada (sales)	1,591	(b)	(b)
Ceylon (exports)	13,908	13,515	17,381
India	557	388	558
Australia	44	23	14
<u>FOREIGN COUNTRIES</u>			
Austria (crude)	19,182	21,367	17,871
Czechoslovakia	1,840	2,880	5,046
Germany (crude)	21,321	23,906	23,172
Italy	5,072	5,118	5,326
Norway	2,305	2,338	2,695
Sweden	68	62	25
U.S.S.R.	82,400	(a)	(a)
Madagascar	9,621	7,280	12,192(c)
Morocco (French) .....	...	400	331
Argentina .....	...	18	(a)
Mexico	6,866	10,092	11,032
Brazil	(a)	(a)	8
Japan	1,182	1,551	(a)
Korea - Flake	4,167	5,757)	42,881(c)
Other	39,368	34,511)	

NOTE - Graphite is also produced in the United States.

(a) Information not available.

(b) Recorded by value only (1936 £17,859
(1937 £25,373

(c) Exports.

GRINDSTONES and PULPSTONES - Most of the grindstones produced in 1937 came from near Stonehaven on the Bay of Chaleur, New Brunswick, and a few from Quarry Island, Pictou county, Nova Scotia; stones produced were made up from material quarried in previous years. Production of grindstones in Canada during the year totalled 251 tons valued at \$12,407.

Output of pulpstones in 1937 totalled 87 short tons valued at \$4,875; the entire production of these stones originated in a quarry situated on the northeast end of Gabriola Island, near Nanaimo, Vancouver Island, British Columbia.

Scythestones were produced in 1937 only by the Read Stone Company, Stonehaven, New Brunswick, and by G. A. Smith of Shediac in the same province; production of these stones during the year under review totalled 74 tons valued at \$4,147.

Canadian grindstones are valued at \$50 per ton and pulpstones at \$57 per ton at the quarries. The Bureau of Mines, Ottawa, reports that there is a demand for good pulpstones, particularly for use in the large magazine grinders, but as deposits containing thick beds of the proper quality sandstone are very scarce in Canada, only about 1 per cent of the stones used in Canadian pulp mills is being produced in the Dominion. The artificial pulpstones made of silicon carbide segments and also more recently of fused alumina segments are gradually but surely replacing the natural stone.

Imports into Canada of grinding stones or blocks, manufactured by the bonding together of either natural or artificial abrasives, totalled \$16,353 in 1937. Imports in 1937 of grinding wheels, manufactured by the bonding together of either natural or artificial abrasives, amounted to \$106,232. Imports of grindstones in 1937, not mounted, and not less than 36 inches in diameter, numbered 1,587 and were valued at \$157,699 while imports of grindstones, n.o.p., in 1937 totalled 7,133 at \$11,306.

Table 17 - PRODUCTION OF GRINDSTONES, PULPSTONES and SCYTHESTONES IN CANADA, 1928 - 1937.

Year	Tons	\$	Year	Tons	\$
1928	1,855	100,960	1933	498	21,919
1929	1,947	106,354	1934	987	46,478
1930	830	62,021	1935	708	34,010
1931	621	38,103	1936	569	24,724
1932	328	15,735	1937	412	21,429

Table 18 - PRODUCTION OF NATURAL ABRASIVE STONES, BY KINDS, 1937.

	PULPSTONES		SHARPENING STONES		GRINDSTONES	
	Ton	\$	Tons	\$	Tons	\$
Nova Scotia .....	...	...	29	4,012	8	403
New Brunswick .....	...	...	45(x)	135	243	12,004
British Columbia	87	4,875	...	...	...	...
CANADA	87	4,875	74	4,147	251	12,407

(x) Crude blocks for export.

Table 19 - CONSUMPTION OF PULPSTONES BY THE CANADIAN PULP AND PAPER INDUSTRY, 1931 - 1937.

Year	Number for 2 ft. wood		Number for 2.5 ft. wood		Number for 4 ft. wood	
		Value \$		Value \$		Value \$
1931	226	72,588	225	71,760	285	337,580
1932	210	65,450	139	46,436	222	249,373
1933	321	98,475	95	31,945	199	223,635
1934	378	103,811	84	29,680	268	292,359
1935	417	116,501	52	20,297	237	243,805
1936	463	120,227	61	19,478	253	281,265
1937	392	123,598	84	21,700	280	382,084

LITHIUM MINERALS - Commercial production of Canadian lithium minerals were first recorded in 1937. These were made by the Lithium Corporation of Canada, Limited, from deposits located at Bernic Lake, near Pointe du Bois, Eastern Manitoba. The material was valued at \$1,694 and was consigned to a United States chemical plant. The Bureau of Mines, Ottawa, reports that the present supply of lithium minerals is drawn from deposits in the United States, Southwest Africa, and France. The newly discovered spodumene deposits in North Carolina are regarded as one of the world's largest potential sources of supply of lithium. The principal commercial lithium ores are amblygonite, a fluophosphate of lithium and aluminium; spodumene, a silicate of these two elements; and lepidolite or lithia mica, also a silicate. All of the above minerals occur in Canada, but there has, as yet, been only a small production, mainly of lepidolite and spodumene; the important deposits are all in Manitoba.

The Minerals Yearbook of the United States Bureau of Mines states that research indicates a possible large demand for spodumene in tableware as it imparts desirable properties when employed in both body and glaze. Lepidolite has been used principally in glass making. Amblygonite is the most readily decomposed mineral for making lithium salts but the United States Bureau of Mines laboratories have worked out methods that promise to reduce the cost of making salts from spodumene. Average values in 1937, f.o.b. United States mines, were \$37.63 per ton for amblygonite and \$25 for spodumene. Lepidolite was quoted nominally at \$20 to \$25 a ton.

Statistics relating to possible imports of lithium minerals or chemicals into Canada are not published separately.

MAGNESITIC-DOLOMITE - Production of magnesitic-dolomite (calcined) in Canada during 1937 was valued at \$677,207 compared with the all-time high record of \$768,742 in 1936.

Magnesitic-dolomite production in Canada, as an industry, is confined to Grenville and Harrington townships, Argenteuil county, Quebec. Deposits of the rock were discovered here in 1900 but it was not until 1907 that these were developed. The cutting off of the Austrian supply of magnesite during the world war greatly stimulated investigations of the Ottawa Valley deposits as a Canadian source of magnesite for the manufacture of refractory brick and furnace lining.

Important developments in the magnesitic-dolomite industry during 1937 included the change-over from open pit quarrying to underground mining by Canadian Refractories Limited, and also the installation of a modern high-temperature tunnel kiln by the same company for the making of basic brick.

Competing with magnesite as sources of magnesia products are dolomite, brucite and sea water. Interest in magnesite deposits has been greatly stimulated by the world-wide demand for magnesium metal as magnesite is now an important source of this light metal. A deposit of Precambrian dolomite containing crystals of brucite and pyroaurite disseminated through it has recently been found near Mattawa, Ontario. Brucite (hydrated magnesium oxide) is also found in small quantity as an alteration product of serpentine in the asbestos producing districts of Quebec.

Table 20 - PRODUCTION OF MAGNESITIC-DOLOMITE (CALCINED) IN CANADA, 1928 - 1937.

Year	Value \$	Year	Value \$
1928	346,990	1933	360,128
1929	491,170	1934	382,927
1930	336,162	1935	486,084
1931	295,579	1936	768,742
1932	262,860	1937	677,207

Table 21 - MAGNESITE AND DOLOMITE USED IN THE CANADIAN PRIMARY IRON AND STEEL INDUSTRY, 1931 - 1937.

	DOLOMITE		MAGNESITE	
	Short tons	Value \$	Short tons	Value \$
1931	15,773	76,317	(a)	(a)
1932	6,725	32,523	420	14,500
1933	6,874	30,557	399	14,798
1934	14,748	69,104	2,733	105,072
1935	18,394	79,914	3,891	149,987
1936	43,562	145,502	6,432	230,656
1937	53,066	181,146	8,994	326,091

(a) Information not available.

Table 22 - CALCINED MAGNESITE USED BY THE ARTIFICIAL ABRASIVES AND ABRASIVE PRODUCTS INDUSTRY IN CANADA, 1933 - 1937.

Year	Tons	Value \$	Year	Tons	Value \$
1933	(a)	16,430	1936	418	25,256
1934	104	6,370	1937	484	29,242
1935	40	2,448			

Table 23 - IMPORTS OF MAGNESITE AND MAGNESITE FIRE BRICK INTO CANADA, 1931 - 1937.

Year	Magnesite, dead burned, sintered caustic calcined or plastic magnesia		Magnesite fire brick	
	Cwt.	\$	Cwt.	\$
1931	35,741	40,628	152,435	
1932	21,302	28,626	71,077	
1933	28,053	43,229	246,855	
1934	9,439	26,740	396,915	
1935	15,296	42,644	384,141	
1936	23,454	56,515	568,565	
1937(a)	20,383	55,560	653,507	

(a) In addition, 8,222 cwt. of calcined magnesite was imported for the manufacture of insulating materials for use exclusively in the manufacture of such insulating materials.

Table 24 - EXPORTS OF MAGNESITE, CALCINED, DEAD-BURNED, ETC., FROM CANADA, 1931 - 1937.

Year	Cwt.	\$	Year	Cwt.	\$
1931	32,214	45,257	1935	31,531	43,338
1932	23,885	33,103	1936	58,554	71,193
1933	46,396	63,056	1937	40,554	49,401
1934	39,933	56,670			

Canadian Trade Journal quotation for calcined magnesite (October, 1938) was \$48 to \$60 per ton. "Metal and Mineral Markets" - New York - November, 1938, quotations for magnesite were - per ton, f.o.b. California, dead burned, \$25. Artificial periclase, 94 per cent MgO, \$65; 90 per cent, \$35. Caustic, 95 per cent MgO, white color, \$40; 85 per cent MgO, no color standard, \$37.50. Washington: dead burned grain magnesite, \$22.

Table 25 - WORLD'S PRODUCTION OF MAGNESITE, 1935, 1936 and 1937. (Taken from the Imperial Institute's publication - The Mineral Industry of the British Empire and Foreign Countries)
(Long tons)

Producing Country and Description	1935	1936	1937
<u>BRITISH EMPIRE</u>			
Union of South Africa - Crude	1,462	1,667	1,724
Canada - Crude	26,684	(d)	(d)
India - Crude	16,984	15,468	26,166
Australia - Crude	16,068	17,615	19,705
<u>FOREIGN COUNTRIES</u>			
Austria - Crude	295,569	391,494	(a)
Caustic (c)	45,042	57,621	(a)
Dead-burnt (c)	93,029	97,025	(a)
Bricks (c)	38,172	42,015	(a)
Czechoslovakia - Crude (b)	9,317	8,545	12,010
Calcined (b)	28,763	34,957	37,465
Germany (Prussia) - Crude	13,600	14,789	20,758
Greece - Crude	92,085	114,272	(a)
Caustic (c)	18,807	22,762	(a)
Dead-burnt (c)	6,162	6,552	(a)

Table 25 - WORLD'S PRODUCTION OF MAGNESITE, 1935, 1936, and 1937. (concluded)
(Long tons)

Producing Country and Description	1935	1936	1937
<u>FOREIGN COUNTRIES</u> (concluded)			
Italy - Crude	1,231	3,105	5,307
Calcined (c)	653	...	...
Norway - Crude	2,486	3,067	2,063
Calcined (c)	603	544	601
Bricks (c)	787	607	587
Yugoslavia (Serbia only) - Crude	29,286	38,392	40,531
Calcined	11,475	13,910	19,464
United States - Crude	158,173	184,928	181,640
Caustic (sales) (c)	5,401	7,141	8,956
Dead-burnt (sales) (c)	64,677	80,338	74,289
Korea - Crude	2,372	14,033	(a)
"Manchoukuo" - Crude	154,000	203,000	(a)
Turkey - Crude	1,075	2,247	316

Magnesite is also produced in the U.S.S.R.

(a) Information not available.

(b) Exports less imports.

(c) Derived from crude, and not additional.

(d) Production recorded by value only - 1936 £154,583 ... 1937 £137,086.

MAGNESIUM SULPHATE - Producers' shipments of natural magnesium sulphate or Epsom salts in Canada totalled 727 short tons valued at \$14,456 in 1937 compared with 654 tons at \$13,712 in 1936. Production in both years represented recoveries made from a deposit of the mineral occurring at Basque, British Columbia. Epsom Refineries Limited, the company operating this deposit, has remodelled and enlarged its plant at Ashcroft, British Columbia, the productive capacity being approximately 10 tons per day. Its product is marketed, principally, in the tanning and medicinal industries.

Table 26 - PRODUCTION OF NATURAL MAGNESIUM SULPHATE IN CANADA(x), 1933 - 1937.

Year	Tons	Value \$	Year	Tons	Value \$
1933	120	3,360	1936	654	13,712
1934	42	1,100	1937	727	14,456
1935	340	7,965			

(x) Produced entirely in British Columbia.

Table 27 - MAGNESIUM SULPHATE USED IN CANADIAN PHARMACEUTICAL PREPARATIONS AND TANNING, 1932 - 1937.

Year	Pharmaceutical preparations		Tanning(x)	
	Pounds	Value \$	Pounds	Value \$
1932	622,459	28,073	181,811	2,418
1933	851,355	24,629	396,424	4,467
1934	816,830	33,793	228,281	4,789
1935	826,082	22,647	759,744	12,254
1936	878,120	23,162	1,115,965	15,120
1937	919,825	23,881	992,203	16,165

(x) Data not entirely complete for years prior to 1935.

Table 28 - IMPORTS INTO CANADA OF MAGNESIUM SULPHATE (EPSOM SALTS), 1931 - 1937.

Year	Pounds	\$	Year	Pounds	\$
1931	4,120,086	43,807	1935	3,684,390	40,407
1932	4,383,115	47,679	1936	3,579,069	37,928
1933	4,269,852	49,868	1937	3,355,147(x)	33,116
1934	4,599,518	48,459			

(x) 2,553,069 pounds valued at \$17,030 from Germany and 693,204 pounds at \$14,058 from United States.

Canadian trade publications quoted (October, 1938) magnesium sulphate, B.P. bbls. $2\frac{1}{2}$ to 3 cents per pound. Technical, bags, \$35 to \$40 per ton.

MINERAL WATERS - Shipments of natural mineral waters from Canadian springs totalled 225,019 imperial gallons valued at \$20,586 in 1937 compared with 154,286 imperial gallons worth \$18,516 in the preceding year. Production during both years originated in Ontario and Quebec. Some of the more prominent Canadian mineral waters possessing special therapeutic or hygienic properties include the following: in Quebec, the Abenakis springs on the St. François river in Yamaska county; Potton Springs in Brome county and the Coulombia spring at L'Epiphanie. In Ontario, saline, sulphur and gas springs occur at Caledonia Springs and at Carlsbad Springs, near Ottawa; the waters range from alkaline to strongly saline. St. Catharines, near Niagara, is one of the oldest Canadian mineral water resorts and sulphur waters are found at the Preston mineral springs in Waterloo county. The most famous of all Canadian springs is undoubtedly the group of hot sulphur springs at Banff, Alberta. In British Columbia the Harrison Hot Springs in the Fraser Valley and the Halcyon Hot springs on Arrow Lake are noted for their curative properties.

The total number of firms reporting production of natural mineral waters in the Dominion totalled 19 in 1937, of which 16 were located in the province of Quebec and 3 in Ontario.

It is interesting to note that natural mineral waters from springs in the county of Lac St. Jean, Quebec, were utilized during both 1936 and 1937 in highway maintenance.

Table 29 - SHIPMENTS OF NATURAL MINERAL WATERS FROM CANADIAN SPRINGS, 1930 - 1937.

	QUEBEC		ONTARIO		CANADA	
	Imp. gal.	\$	Imp. gal.	\$	Imp. gal.	\$
1930	12,941	3,727	214,200	20,754	227,141	24,481
1931	19,868	4,746	197,540	8,578	217,408	13,324
1932	15,506	4,697	61,208	2,473	76,714	7,170
1933	9,024	3,094	29,794	2,347	38,818	5,441
1934	75,665	16,116	21,775	1,622	97,440	17,738
1935	126,616	15,113	19,900	1,477	146,516	16,590
1936	131,186	17,399	23,100	1,117	154,286	18,516
1937	198,319	19,697	26,700	889	225,019	20,586

Shipments of natural mineral waters from Canadian springs during the first six months of 1938 totalled 49,391 imperial gallons valued at \$6,442 compared with 45,169 gallons at \$7,142 in the corresponding period of 1937.

Imports into Canada of natural mineral waters, not in bottles, totalled 60 imperial gallons valued at \$37 in 1937 compared with 55 gallons worth \$22 in 1936. Mineral and aerated waters, n.o.p., imported during 1937 were valued at \$88,607 against \$89,505 in the preceding year.

Exports of mineral and aerated waters during 1937 were valued at \$5,097 while in 1936 similar exports amounted to \$4,057.

Table 30 - SALES OF NATURAL MINERAL WATERS(x) BY THE CANADIAN AERATED WATERS INDUSTRY, 1930 - 1937.

Years	\$	Years	\$
1930	178,348	1934	52,113
1931	140,730	1935	45,100
1932	92,066	1936	63,687
1933	77,125	1937	(a)

(x) Whether fortified or not.

(a) Not complete.

PEAT - Canadian peat output during 1937 totalled 478 short tons valued at \$2,676 compared with 1,341 tons at \$7,376 in 1936. Peat production in Canada during recent years has been confined to the provinces of Ontario and Quebec where, in the first named province, bogs were operated near Morewood, and Cad's Hill, while in Quebec the material was obtained from deposits located at St. Arsene.

According to the Bureau of Mines, Ottawa, three additional bogs were operated on a small scale during 1937, one at Linwood, one at Ste. Anne's, and one near Galt, all in Ontario. Another important development during the year was the opening of the East Luther bog near Grand Valley, Ontario. Equipment installed included an excavating unit, mounted on a scow and suction pump having a specially designed intake head, capable of handling 1,400 gallons of peat pulp per minute. The pulp is piped to a settling tank and then to a series of drying beds.

Ten bogs were operated for the production of peat moss for use as insulation material, packing, litter or fertilizer; three of these particular operations were in Quebec, three in Ontario, and one each in Manitoba, Saskatchewan, Alberta, and British Columbia. No data are available covering the production of peat moss. Imports into Canada of peat moss in 1937 totalled 336 tons valued at \$5,770; imports of other mosses, grasses and seaweed, during 1937 totalled 965 short tons worth \$120,615.

PHOSPHATE - Production of phosphate in 1937 amounted to only 100 tons valued at \$900. The mineral during the year under review was obtained entirely from deposits located in the Hull-Buckingham district of the province of Quebec and was utilized in the manufacture of chemicals.

The Department of Mines and Resources, Ottawa, reports that the only important recorded occurrences of phosphate rock in Canada are the Precambrian apatite deposits of the Ottawa-Kingston region in Ontario and Quebec, and the rather low-grade sedimentary phosphate of the Crowsnest district just west of the boundary between southern Alberta and British Columbia.

The Quebec and Ontario apatite deposits were once of considerable importance and were actively mined as a source of fertilizer phosphate, but the industry became unprofitable upon the discovery of the immense sedimentary phosphate deposits of the Southern United States about 1890. Enormous tonnages of apatite are now being produced by concentration from low-grade ores of the Murmansk region in Russia.

Although fertilizers will always continue to consume the great bulk of the world's phosphate produced, a growing future for phosphorus and its compounds appears to be assured. One of such chemicals that is rapidly coming into extensive use is tri-sodium phosphate, employed as a detergent in laundry work and as a general cleanser, as well as for preventing scale or scum in boiler-feed and washing waters, and in the tanning, photographic, sugar, and other industries.

Table 31 - PRODUCTION OF PHOSPHATE IN CANADA, 1928 - 1937.

Year	Short tons	\$	Year	Short tons	\$
1928	641	8,276	1933	2,214	5,475
1929	1,185	5,380	1934	81	683
1930	40	760	1935	186	1,103
1931 .....	...	...	1936	525	4,927
1932	1,316	12,333	1937	100	900

Table 32 - IMPORTS OF PHOSPHATE ROCK INTO CANADA, 1931 - 1937.

Year	Cwt.	\$	Year	Cwt.	\$
1931	2,834,458	619,079	1935	1,270,284	234,580
1932	1,428,657	346,907	1936	1,669,478	298,179(x)
1933	367,020	74,527	1937	2,279,410	453,599(x)
1934	635,494	165,240			

(x) Came entirely from the United States.

Imports of acid phosphate, not medicinal, totalled 405,396 pounds valued at \$23,186 in 1937 while those of soda phosphate for the same year totalled 1,358,500 pounds valued at \$55,198. Imports of phosphoric acid during 1937 totalled 238,490 pounds valued at \$11,252.

Table 33 - PHOSPHATE ROCK AND SUPERPHOSPHATE USED IN THE MANUFACTURE OF CANADIAN FERTILIZERS, 1931 - 1937.

Year	SUPERPHOSPHATE		PHOSPHATE ROCK	
	Short tons	\$	Short tons	\$
1931	51,639	595,789	48,373	395,547
1932	36,005	366,462	41,114	316,518
1933	59,443	657,123	21,961	164,614
1934	73,182	839,980	48,007	396,133
1935	86,701	986,674	74,507	610,118
1936	97,515	1,103,222	60,924	438,948
1937	137,801	1,661,243	101,704	726,572

"Metal and Mineral Markets" - New York - November, 1938 - phosphate quotations - were - per long ton, f.o.b. mines: Florida pebble, domestic, 77 to 76 per cent, \$4.35; 70 per cent, \$2.35. Tennessee, ground lime phosphate, 85 per cent, through 300 mesh, 34.30 per cent P_2O_5 , \$7.25 per short ton, bags extra.

Table 34 - WORLD'S PRODUCTION OF PHOSPHATE ROCK, 1935, 1936 and 1937. (Taken from the Imperial Institute's publication - The Mineral Industry of the British Empire and Foreign Countries)
(Long tons)

Producing Country	1935	1936	1937
BRITISH EMPIRE			
Tanganyika	191	...	102
Seychelles (exports)	9,923	23,564	9,442
Canada	166	469	89
India	102	128	166
Christmas Island	147,929	161,440	162,568
Australia	235	175	20
Nauru Island	480,950	547,400	688,900
Ocean Island	228,100	403,100	398,800
TOTAL	868,000	1,160,000	1,260,000
FOREIGN COUNTRIES			
Belgium (b)	15,531	15,836	(a)
Estonia	11,458	11,228	9,952
France	49,300	54,000	101,747
Germany	177	1,043	3,262
Poland	11,457	12,300	(a)
Roumania (e)	2,740	(a)	(a)
U.S.S.R. (d)	1,800,000	2,178,900	(a)
Algeria	594,326	523,000	621,180
Egypt	466,411	522,644	508,837
Madagascar	6,000	5,200	(a)
Morocco (French)	1,134,117	1,314,087	1,356,735
Tunis	1,470,000	1,472,000	1,757,100
Netherlands West Indies (exports)	89,276	76,897	100,229
United States	3,159,328	3,462,837	4,261,416
Formosa .....	...	210	(a)
French Indo-China	(f) 5,795	9,200	19,930
China (estimated)	8,000	8,000	8,000
Japan	89,807	111,315	(a)
Netherlands East Indies	11,371	11,831	25,754
Philippine Islands	1,169	444	(a)
Angaur Island (exports)	76,878	87,817	89,220
French Oceania	153,800	145,000	160,000
New Caledonia	9,000	2,200	...
TOTAL	9,100,000	10,000,000	(a)
WORLD'S TOTAL	10,000,000	11,000,000	(a)

For footnotes - See next page.

FOOTNOTES TO TABLE 34 -

(a) Information not available.

(b) In addition phosphatic chalk was produced as follows:-

1935 62,979 long tons

1936 58,737 long tons.

(d) Figures refer to concentrates of apatite and phosphate-rock plus the ground phosphate used directly as a fertilizer. The production of phosphate-rock before concentration was:-

	1935	1936
Apatite	1,530,700	(a)
Other phosphate-rock	1,722,700	1,734,400

(e) Converted from cubic metres at the rate of 1 cubic metre = 2 long tons.

(f) Amount ground.

POTASH - Natural potash salts are not yet mined or recovered on a commercial scale in Canada. Potash occurs in small quantities in rock salt strata at Malagash, Cumberland county, Nova Scotia, and at Gautreau, Westmorland county, New Brunswick. A search for beds of economic importance has been made and results so far obtained have been sufficiently promising to warrant future work. Potassium chloride so far opened up at Malagash occurs in a number of definite bands in the salt mass in the form of crystalline beds of pink and yellowish green sylvite in the matrix of halite. Small shipments of potash-bearing salt have been made from the Malagash deposit; this salt was employed as a fertilizer.

The principal world producers of potash minerals are Germany, France, Russia, the United States, and Poland. About 93 per cent of the potash consumed in the United States in 1937 was used in the manufacture of fertilizers and 7 per cent in the chemical industries. The chief sources of potash production in the United States were the natural brines of Searles Lake, Trona, California, where muriate of potash, borax, soda ash, and salt cake are recovered and the bedded saline deposits near Carlsbad, New Mexico.

Imports into Canada of crude muriate of potash, as a fertilizer, totalled 824,907 cwt. valued at \$1,006,842 during 1937, while those of crude sulphate of potash, for the same purpose, amounted to 110,025 cwt. valued at \$155,390. The total value of saltpetre and all other potassium compounds imported in 1937 was \$379,576.

SILICA BRICK - The production of silica brick in Canada during 1937 totalled 3,744 M valued at \$181,126 compared with 2,393 M worth \$97,285 in 1936. The manufacture of these refractories was confined, in both years, to the plants of the Dominion Steel and Coal Company, Ltd., at Sydney, Nova Scotia, and the Algoma Steel Corporation Ltd., Sault Ste. Marie, Ontario. The brick manufactured by both of these companies are processed from crushed silica rock and are utilized in furnace construction and repairs. The quantity of silica brick produced in the Dominion in 1937 was surpassed only by the output in 1929, while the value of production in 1937 was the greatest ever recorded in Canadian silica brick production.

Table 35 - PRODUCTION OF SILICA BRICK IN CANADA, 1928 - 1937.

Year	M	\$	Year	M	\$
1928	3,224	155,502	1933	636	23,185
1929	3,951	173,581	1934	2,528	85,945
1930	2,418	97,379	1935	2,461	96,194
1931	900	35,746	1936	2,393	97,285
1932	93	4,304	1937	3,744	181,126

Table 36 - IMPORTS OF SILICA BRICK(x) INTO CANADA, 1931 - 1937.

Year	\$	Year	\$
1931	234,909	1935	215,500
1932	122,952	1936	261,974(a)
1933	147,901	1937	539,253(b)
1934	210,190		

(x) Containing not less than 90 per cent silica.

(a) \$261,952 from the United States.

(b) \$527,444 from the United States.

SODIUM CARBONATE (NATURAL) - Production of natural sodium carbonate in Canada during 1937 totalled 286 short tons valued at \$2,574 compared with 192 tons at \$1,677 in 1936. Deposits of this material in the form of "natron" (sodium carbonate with 10 molecules of water) and also as brine, occur in a number of "lakes" throughout the central part of the province of British Columbia, chiefly in the Clinton mining division, around 70 Mile House, and in the neighbourhood of Kamloops. Production in Canada during recent years has come entirely from deposits in British Columbia.

It was estimated that the consumption of soda ash (normal sodium carbonate) as sold to industries in the United States during 1937 was: glass manufacture, 38 per cent; chemicals, 31; soap, 8; modified sodas, 6; pulp and paper, 4; and water softening, textiles, petroleum refining, export and miscellaneous uses, 13.

Table 37 - PRODUCTION OF SODIUM CARBONATE (NATURAL) IN CANADA, 1928 - 1937.

Year	Tons	\$	Year	Tons	\$
1928	519	4,922	1933	559	5,773
1929	600	8,100	1934	244	1,920
1930	364	4,550	1935	242	2,430
1931	712	7,351	1936	192	1,677
1932	495	5,450	1937	286	2,574

Table 38 - IMPORTS OF SODA ASH OR BARILLA INTO CANADA, 1931 - 1937.

Year	Pounds	\$	Year	Pounds	\$
1931	1,647,304	25,771	1935	2,647,572	37,995
1932	1,803,951	27,751	1936	(a) 3,184,692	43,503
1933	1,616,483	23,256	1937	(b) 10,103,477	113,219
1934	2,311,498	32,258			

(a) 2,600,080 pounds from the United States and 584,612 pounds from the United Kingdom.

(b) 10,101,867 pounds from the United States and 1,610 pounds from the United Kingdom.

Table 39 - SODIUM CARBONATE (SODA ASH) USED IN THE CANADIAN CHEMICALS AND ALLIED PRODUCTS INDUSTRIES, 1931 - 1936.

Year	Pounds	\$	Year	Pounds	\$
1931	12,439,458	201,654	1934	21,879,170	327,214
1932	11,421,879	193,422	1935	24,971,934	372,286
1933	12,221,928	191,639	1936	27,352,622	424,729

Table 40 - SODA ASH USED IN CANADIAN INDUSTRIES, AS SPECIFIED, 1931 - 1937.

Year	Pulp and Paper		Non-metallic minerals(x)		Dyeing, cleaning and laundry		Dyeing and finishing of textiles		Sugar Refineries	
	Tons	\$	Pounds	\$	Pounds	\$	Pounds	\$	Pounds	\$
1931	3,707	120,461	47,764,713	694,806	(not available)		...	...	...	...
1932	2,556	86,996	43,545,840	598,884	502,459	16,322	424,340	8,122	278,152	7,078
1933	2,628	92,818	38,336,000	505,152	556,599	17,220	310,073	6,197	173,066	4,364
1934	1,863	67,276	49,259,418	644,655	761,515	19,274	497,328	10,255	192,241	4,635
1935	2,074	74,568	47,847,466	632,715	682,033	16,282	419,909	8,014	193,966	4,578
1936	2,692	93,418	52,222,000	673,232	617,432	16,343	339,812	5,922	173,203	4,095
1937	2,696	91,989	62,582,000	817,455	795,312	25,534	324,247	5,827	190,320	4,134

(x) Includes coke and gas, glass, and petroleum refining.

"Canadian Chemistry and Metallurgy" - Toronto - quoted soda ash (October, 1938) - bags of 100 pounds, \$2.00.

SODIUM SULPHATE - NATURAL - (Glauber's Salt and Salt Cake) - Producers' shipments of natural sodium sulphate in Canada totalled 79,884 short tons valued at \$618,028 in 1937 compared with 75,598 tons at \$552,681 in 1936. The output during 1937, in both quantity and value, was the greatest ever recorded in the history of Canadian production of this mineral.

Sodium sulphate is recovered in Canada almost entirely in the province of Saskatchewan and is produced either as hydrated sodium sulphate, known as Glauber's salt, or anhydrous sodium sulphate, known to the trade as "salt cake". It occurs as crystals (Glauber's salt) or in the form of partially saturated or saturated brines in many lakes throughout western Canada. Some of the Saskatchewan properties are equipped with plants for the purification and dehydration of the crude salt. It is interesting to note that a relatively small commercial output of the mineral was recorded in the province of Alberta during 1937. The increased demand for sodium sulphate from the pulp mills and the nickel-copper smelting industry was largely responsible for the large increase in output of sodium sulphate in 1937.

According to the Bureau of Mines, Ottawa, the product from these western deposits should find a rapidly extending market, as the by-product material from the manufacture of hydrochloric acid is each year decreasing in volume owing to the manufacture of this acid synthetically.

During 1937, six firms - five in Saskatchewan and one in Alberta - reported production of natural sodium sulphate; capital employed in the industry was reported at \$912,841; fuel, purchased electricity and process supplies consumed totalled \$186,132, and \$153,181 were distributed as salaries and wages to the 122 employees.

"Canadian Chemistry and Metallurgy" - Toronto - (October, 1938) - quoted sodium sulphate (Glauber's salt), crystals, in bags, cwt., to \$1.25; carlots, \$22.00 to \$27.00 per ton; anhydrous, \$27.00 to \$35.00 per ton.

Table 41 - PRODUCTION OF NATURAL SODIUM SULPHATE(x) IN CANADA, 1928 - 1937.

Year	Short tons	\$	Year	Short tons	\$
1928	6,016	68,804	1933	50,080	485,416
1929	5,018	64,112	1934	66,821	587,966
1930	31,571	293,847	1935	44,817	343,764
1931	44,957	421,097	1936	75,598	552,681
1932	22,466	271,736	1937	79,804	617,548

(x) Produced in the province of Saskatchewan, with the exception of 80 tons valued at \$480 produced in Alberta during 1937.

Table 42 - IMPORTS INTO CANADA OF SALT CAKE (SULPHATE OF SODA), 1931 - 1937.

Year	Pounds	\$	Year	Pounds	\$
1931	17,321,652	97,215	1935	10,352,070	49,354
1932	8,865,730	51,925	1936	(x) 23,494,805	110,676
1933	5,191,036	34,371	1937	(a) 28,234,278	132,352
1934	21,154,815	123,980			

(x) Of the 1936 imports, 9,202,877 pounds came from the United States and 14,291,982 pounds from the United Kingdom.

(a) 17,755,034 pounds from the United States and 10,479,244 pounds from the United Kingdom.

Table 43 - IMPORTS INTO CANADA OF GLAUBER'S SALTS, 1931 - 1937.

Year	Pounds	\$	Year	Pounds	\$
1931	1,999,042	10,838	1935	3,167,715	26,591
1932	1,806,882	11,027	1936	(x) 2,510,103	27,521
1933	1,791,011	13,237	1937	(a) 3,402,133	24,348
1934	1,266,665	8,853			

(x) 2,037,970 pounds from Germany, 248,716 pounds from the United States, and 80,784 pounds from the United Kingdom.

(a) 3,307,638 pounds from Germany.

Imports of bisulphate of soda, or nitre cake, during 1937 totalled 2,269,512 pounds valued at \$18,918, all from the United States.

Table 44 - SALT CAKE USED IN THE MANUFACTURE OF CANADIAN WOOD PULP, 1930 - 1937.

Year	Tons	\$	Year	Tons	\$
1930	33,119	676,597	1934	34,559	655,905
1931	24,756	503,580	1935	35,350	642,801
1932	24,301	489,343	1936	41,524	711,655
1933	29,563	580,251	1937	50,584	884,437

Table 45 - SODIUM SULPHATE USED IN THE CANADIAN ACIDS, ALKALIES AND SALTS, and MEDICINAL AND PHARMACEUTICAL INDUSTRIES, 1932 - 1937.

Year	Acids, Alkalies and Salts Industry		Medicinal and Pharmaceutical Industry	
	Tons	\$	Tons	\$
1932	94	1,811(x)	...	...
1933	9,929	141,322	39	4,879
1934	26,075	368,576	51	7,278
1935	22,485	316,734	59	4,617
1936	7,220	102,176(x)	27	2,546
1937	8,006	113,054(x)	29	2,254

(x) Does not include sodium sulphate consumed direct in the smelting of nickel-copper ores.

(a) Information not available.

STRONTIUM MINERALS - Four celestite (Sr SO_4) deposits of economic interest occur in eastern Ontario but there has been no commercial production of the mineral in Canada for several years. A special report prepared by the Imperial Institute, London, refers to strontium minerals, as follows - "The reserves of strontium minerals, however, in both England and Germany appear to be limited, and it is possible that the known deposits in Canada, United States, France, Tunis, and the U.S.S.R. will be opened up and exploited to an increasing extent in the future ... Strontium minerals are used principally in the beet-sugar industry; in pyrotechnics; as fillers; as "cleansers" for removing sulphur and phosphorus from special steels; as precipitants in the purification of caustic soda; in the chemical, pharmaceutical and ceramic industries; and in certain refrigerators".

In 1936 the United Kingdom produced 5,771 long tons of celestite while during the same year, 258 long tons of strontianite were produced in Germany; celestite is also mined in France. Imports of strontium minerals into the United States in 1937 totalled 5,636,570 pounds valued at \$20,877; strontium nitrate, 609,488 pounds at \$40,240, and strontium carbonate and oxide, 44,579 pounds at \$4,610. No imports of strontium minerals into Canada were reported in either 1936 or 1937.

Strontianite was quoted by "Metal and Mineral Markets" - November, 1938 - United States - per ton, lump, in carload lots, minimum 84 to 86 per cent SrCO_3 , \$55.

SULPHUR (Pyrites) - The sulphur content of pyrites shipped and sulphur recovered from non-ferrous smelter gas (SO_2) amounted in 1937 to 130,913 short tons valued at \$1,154,992 compared with 122,132 short tons valued at \$1,033,055 in 1936. Production in both years came from the provinces of Quebec, Ontario and British Columbia. The production figures for 1937 represent an all-time high record in the output of sulphur by the Canadian mining and smelting industries. Sulphur output in Canada during the first six months of 1937 totalled 58,930 short tons compared with 62,055 tons in the corresponding period of 1937.

No iron pyrites deposits, known as such, have been mined in Canada for some years and statistics published regarding recent pyrites production refer to by-product iron pyrites recovered in the mining and concentrating of copper-gold-silver ores.

Sulphur employed in the manufacture of sulphuric acid during 1937 was recovered from salvaged smelter gas in Ontario and British Columbia. In Ontario, Canadian Industries Limited continued the operation of its acid plant at Copper Cliff, using sulphur dioxide obtained from the smelter of the International Nickel Company, while in British Columbia the Consolidated Mining and Smelting Company of Canada, Limited, manufactured sulphuric acid and other chemical products at Trail, using the by-product gases of its metallurgical plants. During 1937 an increase of 18 tons capacity per day was being installed

in the ammonia plant at Trail and further increases in the sulphur, sulphuric acid, and absorption plants were actually being built or under design that would enable the company to treat all of the smelter gases for the recovery of sulphur dioxide.

In 1937, by-product pyrites was produced at the Eustis and Aldermac mines in Quebec and at the Britannia mine in British Columbia. In April, 1938, the Aldermac Copper Corporation, Limited, announced that in accordance with certain recommendations, the sulphur pilot plant had been shut down and designs and specifications for the erection of a commercial sulphur plant, estimated to produce 100 tons of sulphur per day, were being prepared; this plant when operating would consume 250 tons of pyrite per day out of the 500 tons being produced.

"Canadian Chemistry and Metallurgy" - Toronto - quoted sulphur (September, 1938) - crude, contracts f.o.b. cars at mines - long ton, \$18 to \$20. Crude, contracts, ex-vessel, St. Lawrence and Maritime ports, long ton, \$23.50 to \$25.50; roll, 100 pounds, \$3.50. "Metal and Mineral Markets" - New York - quoted pyrites (November, 1938) - per long ton unit of sulphur, c.i.f. United States ports, guaranteed 48 per cent sulphur, Spanish, 12 to 12½ cents nominal. Sulphur, per long ton, for United States markets, \$16, f.o.b. Texas mines.

Table 46 - PRODUCTION OF PYRITES(x) IN CANADA, 1928 - 1937.

Year	Pyrites Tons	Sulphur content Tons	Value \$	Year	Pyrites Tons	Sulphur content Tons	Value \$
1928	68,836	58,589	321,033	1933 .....	...	57,373	510,299
1929	42,781	350,843	1934 .....	...	51,537	515,502
1930	37,730	314,835	1935 .....	...	67,446	634,235
1931	50,107	429,457	1936 .....	...	122,132	1,033,055
1932	53,172	470,014	1937 .....	...	130,913	1,154,992

(x) Since 1928 includes sulphur content of by-product pyrites at its sales value and estimated figures for quantity and value of sulphur in smelter gases used for acid making and also elemental sulphur produced at Trail, British Columbia, since 1933.

Table 47 - PRODUCTION IN CANADA OF PYRITES WITH SULPHUR CONTENT, including SULPHUR CONTAINED IN SULPHURIC ACID, ETC., MADE FROM SMELTER GASES, 1936 and 1937.

	PYRITES (x)			: SMELTER GAS :		TOTAL	
	Sales	Sulphur content	: Sulphur content :				SULPHUR
	Tons	Tons	Value	Tons	Value	Tons	Value
			\$		\$		\$
1936							
Quebec	86,919	43,084	282,743	...	...	43,084	282,743
Ontario .....	...	...	...	14,152	141,520	14,152	141,520
British Columbia (a)	40,293	20,084	160,672	(b) 44,812	448,120	64,896	608,792
CANADA	127,212	63,168	443,415	58,964	589,640	122,132	1,033,055
1937							
Quebec	56,760	28,534	194,496	...	...	28,534	194,496
Ontario .....	...	...	...	14,009	140,090	14,009	140,090
British Columbia	62,698	31,647	253,176	(b) 56,723	567,230	88,570	820,406
CANADA	119,458	60,181	447,672	70,732	707,320	130,913	1,154,992

(x) Recovered from copper ores.

(a) In addition, iron pyrites ore was shipped for smelting purposes.

(b) Includes elemental sulphur and sulphur in sulphuric acid and direct ammonium sulphate.

Table 48 - IMPORTS INTO CANADA OF BRIMSTONE AND SULPHUR, 1931 - 1937.

Year	Cwt.	\$	Year	Cwt.	\$
1931	2,483,842	2,281,654	1935	2,733,499	2,297,650
1932	2,099,895	2,023,085	1936	3,375,484	2,802,282
1933	2,816,202	2,529,920	1937	(a) 4,513,683	3,669,082
1934	3,153,943	2,589,311			

(a) 4,511,961 cwt. from United States.

Sulphur contained in pyrites exported from Canada during 1937 totalled 46,317 tons valued at \$251,834 of which 12,434 tons went to the United States and 30,383 tons to Japan.

Table 49 - CONSUMPTION OF SULPHUR BY SPECIFIED CANADIAN INDUSTRIES, 1935, 1936 and 1937.

Industry	1 9 3 5		1 9 3 6		1 9 3 7	
	Tons	\$	Tons	\$	Tons	\$
Wood-pulp	126,958	2,960,761	143,317	3,310,932	165,559	3,827,991
Petroleum refining	78	5,098	66	4,631	80	6,776
Acids, alkalies and salts	14,301	295,336	11,738	222,053	21,329	403,511
Matches	32	1,507	28	1,344	63	3,043
Explosives	1,576	41,098	1,902	49,427	2,377	62,075
Insecticides	845	29,821	1,038	42,920	1,023	35,077
Adhesives	67	2,187	59	1,963	70	2,336
Chemicals, miscellaneous	6	231	7	259	(a)	(a)
Rubber	1,134	47,464	1,190	51,059	(a)	(a)
Sugar	154	7,986	179	8,568	157	7,104
Fruit and vegetable preparations	26	2,131	38	3,054	(a)	(a)
Other industries (x)	190	6,947	193	6,235	(a)	(a)

(a) Data not yet complete.

(x) Starch and glucose, dyeing and finishing of textiles.

Table 50 - PRODUCTION OF MISCELLANEOUS NON-METALLIC MINERALS IN CANADA, 1936 and 1937.

Item	Unit of measure	1 9 3 6		1 9 3 7	
		Quantity	Value	Quantity	Value
Bituminous sands	Ton	...	...	35	142
Diatomite (c)	Ton	615	13,650	643	18,606
Fluorspar	Ton	75	900	150	2,550
Graphite .....	\$	...	88,812	...	125,343
Grindstones (b) (c)	Ton	569	24,724	412	21,429
Magnesium sulphate	Ton	654	13,712	727	14,456
Magnesian dolomite .....	\$	...	768,742	...	677,207
Mineral waters	Imp. gal.	154,286	18,516	225,019	20,586
Peat production	Ton	1,341	7,376	478	2,676
Phosphate (a)	Ton	525	4,927	100	900
Silica brick	M	2,393	97,285	3,744	181,126
Sodium carbonate	Ton	192	1,677	286	2,574
Sodium sulphate	Ton	75,598	552,681	79,884	618,028
TOTAL (Gross) .....	\$	...	1,593,002	...	1,687,317
Sulphur production (x)	Ton	122,132	1,033,055	130,913	1,154,992

(a) Represents apatite mined in Quebec.

(b) Includes pulpstones, etc.

(c) In preceding years included under the natural abrasives industry.

(x) Includes sulphur content of pyrites at its sales value and estimated figures for quantity and value of sulphur in smelter gases used for acid making or recovered as elemental sulphur, or in ammonium sulphate (direct). General statistics relating to production of sulphur included with those of the copper-gold mining and non-ferrous smelting industries.

Table 51 - PRINCIPAL STATISTICS RELATING TO MISCELLANEOUS NON-METAL MINING INDUSTRIES IN CANADA, 1936 and 1937 ^(a)

	1 9 3 6	1 9 3 7
Number of plants	41	53
Capital employed	2,195,621	3,050,376
Number of employees - On salary	76	78
On wages	401	452
Total	477	530
Salaries and wages - Salaries	106,761	143,820
Wages	419,437	514,903
Total	526,198	658,723
Selling value of products (gross)	1,554,628	1,697,317
Cost of fuel and electricity	296,017	321,319
Cost of process supplies used	252,427	228,953
Selling value of products (net)	1,006,184	1,136,445

(a) Statistics for 1936 and 1937 are not entirely comparable in that data relating to production of natural abrasives were included with "miscellaneous non-metallic minerals" for the first time in 1937.

Table 52 - WAGE-EARNERS, BY MONTHS, IN THE MISCELLANEOUS NON-METAL MINING INDUSTRIES IN CANADA, 1934 - 1937.

Month	1934	1935	1936	1937
January	239	161	214	320
February	255	154	219	335
March	269	205	165	343
April	243	222	379	396
May	446	328	404	447
June	498	419	473	555
July	460	429	509	562
August	431	420	429	519
September	402	418	533	520
October	340	372	507	491
November	286	378	481	512
December	283	228	452	384
AVERAGE	348	317	401	452

Table 53 - FUEL AND ELECTRICITY USED IN THE MISCELLANEOUS NON-METAL MINING INDUSTRIES IN CANADA, 1936 and 1937.

Kind	Unit of measure	1936		1937	
		Quantity	Cost	Quantity	Cost
			\$		\$
Bituminous coal - Canadian	ton	14,851	90,701	16,314	97,399
Imported	ton	1,385	6,654	2,446	12,049
Anthracite - From the United States	ton	2	30	7	103
Anthracite - Other	ton	12	180	12	180
Lignite coal	ton	26,045	63,412	5,690	14,417
Coke	ton	2	31	88	636
Gasoline (exclusive of that used in motor cars) ^(a)	Imp.gal.	60,076	13,456	75,375	16,004
Fuel oil and diesel oil	Imp.gal.	1,701,478	91,170	2,316,527	120,291
Kerosene or coal oil	Imp.gal.	954	186	1,525	300
Wood (cords of 128 cubic feet)	cord	1,143	2,541	1,895	6,189
Gas - Manufactured	M cu.ft.	...	...	14	14
- Natural	M cu.ft.	37,989	3,742	256,036	26,778
Other .....	\$	...	14	...	...
Electricity purchased	K.W.H.	3,242,068	23,900	3,990,380	27,559
TOTAL .....	\$	...	296,017	...	321,919
Electricity generated for own use	K.W.H.	2,108,997	...	1,282,840	...

(a) in 1936.

Table 54 - POWER EQUIPMENT EMPLOYED IN THE MISCELLANEOUS NON-METAL MINING INDUSTRIES, 1936 and 1937.

Kind	1936		1937	
	Number of units	Total rated horse power	Number of units	Total rated horse power
Steam engines and steam turbines	7	742	4	650
Diesel engines	5	850	6	885
Gasoline, gas and oil engines	18	460	18	557
Hydraulic turbines or water wheels	2	200	2	150
Electric motors	234	4,111	210	3,957
Boilers	7	1,010	7	950

DIRECTORY OF FIRMS IN THE MISCELLANEOUS NON-METAL MINING INDUSTRIES IN CANADA, 1937.

<u>Name of Operator and Province</u>	<u>Head Office Address</u>	<u>Plant Location</u>
<u>BITUMINOUS SANDS</u>		
<u>ALBERTA</u> -		
Abasand Oils Ltd. (a)	703 .. 330 Bay St., Toronto, Ont.	Athabaska River Dist.
International Bitumen Co. Ltd. (a)	411 Williamson Bldg., Edmonton	Athabaska River Dist.
McMurray Asphaltum & Oil Ltd.	Petrolia, Ont.	Athabaska River Dist.
(a) Active but not producing.		
<u>DIATOMITE</u>		
<u>NOVA SCOTIA</u> -		
International Diatomite Industries Ltd.	Tatamagouche	Little River, New Annan.
<u>ONTARIO</u> -		
Canadian Multi-Cell Ltd.	Martin's Siding	Martin's Siding
Muskoka Diatomite Ltd.	Room 203 .. 200 Bay St., Toronto	Gravenhurst
Tynan, J., and Cox, H. R.	Novar	Novar
<u>BRITISH COLUMBIA</u> -		
Fairey and Company	661 Taylor St., Vancouver	Cariboo Dist.
Lepetich, P.G.	Narcosli Creek P.O.	Cariboo Dist.
<u>FLUORSPAR</u>		
<u>ONTARIO</u> -		
Stoklosar, Chas. A.	Box 198, Madoc	Madoc Tp.
<u>GARNETS</u>		
<u>QUEBEC</u> -		
International Garnet Synd. (a)	Labelle	Joly Tp.
La Belle Mining Inc. (a) (b)	4203 Brebeuf St., Montreal	Joly Tp.
<u>ONTARIO</u> -		
Damigo Mining Synd. Ltd. (a)	Room 203 .. 34 King St. E., Toronto	Ashby Tp.
(a) Active but not producing.		
(b) Acquired by Canada Garnet Co. in 1937.		
<u>GRAPHITE</u>		
<u>ONTARIO</u> -		
Black Donald Graphite Co. Ltd.	Calabogie	Brougham Tp.
<u>GRINDSTONES, PULPSTONES AND SCYTHESTONES</u>		
<u>NOVA SCOTIA</u> -		
Read Stone Co. Ltd.	Sackville, N.B.	Quarry Island(Pictou)
<u>NEW BRUNSWICK</u> -		
Read Stone Co. Ltd.	Sackville	Stonehaven
Smith, E. A.	Shediac	Shediac
<u>BRITISH COLUMBIA</u> -		
J. A. and C. H. McDonald, Ltd.	1571 Main St., Vancouver	Gabriola and Hadd- ington Islands and Vancouver.

DIRECTORY OF FIRMS IN THE MISCELLANEOUS NON-METAL MINING INDUSTRIES IN CANADA, 1937. (continued)

<u>Name of Operator and Province</u>	<u>Head Office Address</u>	<u>Plant Location</u>
<u>LITHIUM ORE</u>		
<u>MANITOBA</u> - The Lithium Corp. of Canada, Ltd.	405 Avenue Bldg., Winnipeg	Bernic Lake
<u>MAGNESITIC-DOLOMITE</u>		
<u>QUEBEC</u> - International Magnesite Co. Ltd. Canadian Refractories Ltd.	Calumet 1050 Canada Cement Bldg., Montreal.	Harrington Tp. Kilmar
<u>BRITISH COLUMBIA</u> - Consolidated Mining & Smelting Co. of Canada, Ltd.(a)	Trail	Marysville
<u>MAGNESIUM SULPHATE</u>		
<u>BRITISH COLUMBIA</u> - Epsom Refineries Ltd.	295 Main St., Winnipeg, Man.	Ashcroft
<u>MINERAL WATER</u>		
<u>QUEBEC</u> - Abenakis Springs Co. Eau Minerale Etoile	Blondin Ste. Genevieve de Batiscan	Yamaska Co. Ste. Genevieve de Batiscan
Gurd, Chas., & Co. Ltd. Laboratoire Mont-Clair Lacerte, Adelard - Madame Bellemare, Josaphat La Cie d'Eau Minerale La Cie d'Embouteillage St. Laurent La Cie Embouteillage Ideal L'Eau Naturelle Purgative de Chambord Ltee.	1016 Bleury St., Montreal 935 Robillard Ave., Montreal St. Severe St. Barnabe Nord 148 Concorde St., St. Hyacinthe 65 rue St. Pierre, St. Hyacinthe 3 St. Germain St., St. Hyacinthe	Varennes Chambly Basin St. Severe St. Maurice Co. St. Hyacinthe St. Hyacinthe Co. Abenakis
Maski Bottling Works Pellerin, Albert Radnor Mineral Water Springs Richard, Gerard Source, Coulombia Vandal, Donat	Desbiens St. Justin St. Barnabe Nord St. Maurice St. Gregoire L'Epiphanie 65 rue St. Pierre, St. Hyacinthe	Chambord Maskinonge Co. St. Barnabe Nord Village Fermont St. Gregoire L'Epiphanie St. Hyacinthe Co.
<u>ONTARIO</u> - Aqua Vitae Co. Ltd. Boyd, T. Russell Deneault, F. Gurd, Chas., & Co. Ltd.	200 Albert St., Belleville Carlsbad Springs Bourget 1016 Bleury St., Montreal	Hastings Co. Carlsbad Springs Bourget Caledonia Springs
<u>PHOSPHATE</u>		
<u>QUEBEC</u> - Blackburn Bros.	Blackburn Bldg., Ottawa, Ont.	Templeton

DIRECTORY OF FIRMS IN THE MISCELLANEOUS NON-METAL MINING INDUSTRIES IN CANADA, 1937. (concluded)

<u>Name of Operator and Province</u>	<u>Head Office Address</u>	<u>Plant Location</u>
<u>SILICA BRICK</u>		
<u>NOVA SCOTIA</u> - Dominion Steel and Coal Corp. Ltd.	Sydney	Sydney
<u>ONTARIO</u> - Algoma Steel Corp. Ltd.	Sault Ste. Marie	Sault Ste. Marie
<u>SODIUM CARBONATE</u>		
<u>BRITISH COLUMBIA</u> - Davison, R. H.	Chason, via 70 Mile House	Chason
<u>SODIUM SULPHATE</u>		
<u>SASKATCHEWAN</u> - Alexander, W. R. Dominion Sodium Refineries Ltd. Horseshoe Lake Mining Co. Ltd. Midwest Chemicals Ltd. Muskiki Sulphates Ltd. (a) Natural Sodium Products Ltd. Oban Salt Co. Ltd. (a) Sodium Corporation, Ltd.	Viscount 513 Lougheed Bldg., Calgary, Alberta Ormiston Palo Chinook, Alberta Expanse Oban c-o L. I. Hockley, Indian Head	Berry Lake Sask. Ormiston Whiteshore Lake Muskiki Lake Frederick Lake Oban Alsask
<u>ALBERTA</u> - Bohannon, D. W.	Garfield	Oyen
(a) Active but not producing.		
<u>SULPHUR</u>		
<u>QUEBEC</u> - Aldermac Mines Ltd. (a) Consolidated Copper and Sulphur Co. Ltd. (a)	941 Dominion Square Bldg., Montreal Eustis	Rouyn Dist. Eustis
<u>ONTARIO</u> - International Nickel Co. of Canada, Ltd. (b)	Copper Cliff	Copper Cliff
<u>BRITISH COLUMBIA</u> - Consolidated Mining & Smelting Co. of Canada, Ltd. (b) Britannia Mining & Smelting Co. Ltd. (a)	Trail Britannia Beach	Trail Britannia Beach.
(a) Produce by-product iron pyrites. (b) Salvage sulphur from smelter gases.		

NOTE - Unless otherwise specified in this report 1 cwt. = 100 pounds and 1 ton = 2,000 pounds.

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