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CANADA

DEPARTMENT OF TRADE AND COMMERCE

DOMINION BUREAU OF STATISTICS

Report

on

THE MISCELLANEOUS NON-METALLIC MINERALS

IN CANADA, 1934

including

Actinolite
Barytes
Bituminous Sands
Fluorspar
Graphite
Magnesitic Dolomite
Magnesium Sulphate
Bog Manganese

Natural Mineral Waters
Peat
Phosphate
Silica Brick
Sodium Carbonate
Sodium Sulphate
Sulphur

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DEPARTMENT OF TRADE AND COMMERCE
DOMINION BUREAU OF STATISTICS
MINING, METALLURGICAL AND CHEMICAL BRANCH
OTTAWA - CANADA

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MISCELLANEOUS NON-METALLIC MINERALS IN CANADA, 1934.

The Mining, Metallurgical and Chemical Branch of the Dominion Bureau of Statistics at Ottawa reports that finally revised 1934 statistics show a total combined value of \$1,678,482 for the Canadian production (sales) of miscellaneous non-metallic minerals including actinolite, barytes, bituminous sands, fluorspar, graphite, magnesitic-dolomite (magnesite), magnesium sulphate, mineral waters, peat, phosphate, silica brick, sodium carbonate, sodium sulphate and sulphur. The total value of these sales in 1934 represents an increase of 17.9 per cent over the corresponding total of \$1,423,679 in 1933. Especially noteworthy were the increases recorded in the value of sales for graphite and sodium sulphate, the value in 1934 for the first product represents a gain of 289 per cent over 1933 while that for the latter realized a 21 per cent increase. Other non-metal shipments to show increases in value included magnesitic-dolomite, natural mineral waters, and silica brick.

ACTINOLITE - Actinolite production in Canada has been restricted to the townships of Elzevir and Kaladar in Hastings and Addington counties of Ontario. In 1934 actinolite shipments amounted to 30 tons with a value of \$365; the mineral in 1934 was mined near Kaladar, Ontario, by the Actinolite Mining Company; the product of this company is marketed in the ground state and contains a relatively high percentage of added mica flake. Actinolite is used chiefly in the manufacture of roofing materials.

BARYTES - Barytes 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. No shipments were reported in Canada during 1934. The Department of Mines, Ottawa, state that "the much stricter specifications of modern industry render it improbable that there will develop any important market for run-of-mine ore, and future development will require the provision of some type of cleaning and grinding equipment to prepare the barite in the form and of the purity required by modern industry; there being no lithopone or barium chemicals industry in Canada, no demand exists at present for crude ore; there seems little prospect, therefore, of any immediate revival of this industry." In this regard it is interesting to note that Canada Night Hawk Mines Ltd. recently reported the milling of crude barytes at its property located near Connaught, Ontario; the product was not shipped and the property was later reported as inactive.

"The Mineral Industry" refers to barytes as follows: "New processes have been suggested for the purification of crude barytes by this process, barytes and salt are heated together in a tank-type furnace and the melt is discharged into water. The purified and finely divided barytes, most of which is minus 300 mesh, is recovered from the resulting brine by settling. Flotation of barytes has been accomplished successfully by the United States Bureau of Mines and several other research organizations. As acid-bleaching methods are expensive, the flotation process

may provide a means of producing a fairly good product that will sell at prices considerably lower than those now demanded for high-grade water-ground and bleached material."

BARYTES AND BLANC FIXE USED BY THE CANADIAN PAINTS, PIGMENTS AND VARNISHES INDUSTRY
IN CANADA, 1931 - 1934.

Year	B A R Y T E S		BLANC FIXE	
	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

IMPORTS OF BLANC FIXE AND BARYTES INTO CANADA, 1931 - 1934.

Year	B A R Y T E S		BLANC FIXE	
	Pounds	\$	Pounds	\$
1931	3,372,600	32,712	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

Of the 1934 barytes imports 1,523,500 pounds came from Germany, 1,011,400 pounds from the United States and 49,000 pounds from the United Kingdom.

August, 1935, quotations in Canada for barytes No. 1 white, car lots to \$34.50 per ton; off color, car lots to \$28.00 per ton. Blanc fixe, dry, car lots, to \$70.00 per ton; less car lots to \$80.00 per ton; pulp, car lots to \$40.00 per ton, less car lots, to \$50.00 per ton. Barytes, United States August quotations, f.o.b. mines, California crude, \$6 per ton; Missouri, per ton, water ground and floated, bleached, \$23, car lots, f.o.b. works. Crude ore minimum 95 per cent BaSO₄, less than 1 per cent iron, \$5.50; 1 per cent iron and 93 per cent BaSO₄, \$5; 90 per cent BaSO₄, \$4.50 f.o.b. mines.

WORLD'S PRODUCTION OF BARIUM MINERALS

(Taken from the Imperial Institute's publication "The Mineral Industry of the British Empire and Foreign Countries"

(Long tons)

Producing Country and Description	1931	1932	1933
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BRITISH EMPIRE

United Kingdom -			
Barytes, unground	24,507	35,713	39,943
Witherite, unground	7,356	6,258	5,111
Barytes and witherite -			
Ground, bleached	1,077	1,881	7,623
Ground, unbleached	12,640	12,787	13,943
Irish Free State	574	...	...
Canada (sales)	14	...	18
India	5,654	2,957	5,651
Australia	1,567	2,005	2,090

WORLD'S PRODUCTION OF BARIUM MINERALS (concluded)
(Long tons)

Producing Country and Description	1 9 3 1	1 9 3 2	1 9 3 3
<u>FOREIGN COUNTRIES</u>			
Austria	86	271	1,014
Belgium (b)	120	...	(a)
France	11,100	10,200	(a)
Germany -			
Bavaria	7,711	5,761	(a)
Prussia	157,947	100,553	141,199
Saxony	2,494	2,408	(a)
Italy	23,942	21,516	23,074
Portugal	79	...	...
Spain	8,404	(d) 8,612	(d) 4,193
Algeria	935	876	10
United States	188,330	119,261	130,716
Korea	5,266	6,465	4,891
Brazil	578	(a)	(a)

Note - 3,875 tons of barytes were recorded as produced in U.S.S.R. (Russia) during the year ended September, 1928; later figures are not available.

- (a) Information not available.
- (b) Converted from cubic metres at the rate of 1 cubic metre = 2 tons.
- (d) In addition 40 cubic metres were produced in quarries during 1932, and 75 cubic metres during 1933.

BITUMINOUS SANDS - Production of bituminous sands in Canada in 1934 amounted to 862 tons valued at \$3,449 as compared with an output of 466 tons at \$1,662 in 1933. The material as produced in Canada comes entirely from the Fort McMurray district of Northern Alberta. The following information relating to these sands has been taken from an article by J. M. McClave and which recently appeared in the "Canadian Mining Journal" - "The Alberta sands were noted by Peter Pond in 1788 and by Sir Alexander Mackenzie in 1793. They have been exhaustively studied and mapped, with some shafting and core-drilling by S. C. Ells of the Dominion Mines Branch, the most complete of whose excellent reports is Mines Branch No. 632 the mining of these sands presents no serious problem; it can be done by power shovels or drag line, though the simplest and cheapest method will doubtless be by shale planers ... The real problem has been the extraction of oil from the sands after mining. There are three ways in which oil can be recovered (a) by distillation, (b) by solution with organic solvents, and (c) by digestion with warm water Designs are now being prepared for the first commercial unit (warm water method), to be installed on an oil-sand deposit near Waterways (Fort McMurray) This first plant will be followed as soon as it has proved itself by other and larger units, all portable, until a total capacity of about 3,000 tons (2,100 barrels) per day is reached The oil content of the Alberta sands has been estimated at some 100 billion barrels."

The total value of petroleum, asphalt and their products imported into Canada in 1934 amounted to \$41,326,516 as compared with a value of \$31,046,337 in 1933. Included in the 1934 imports were 100,305 cwt. of solid asphalt valued at \$114,951 and 1,072,327,455 gallons of crude petroleum in its natural state .7900 specific gravity or heavier at 60 deg. temperature; this was appraised at \$31,907,176.

FLUORSPAR - Canadian mine shipments of fluorspar in 1934 amounted to 150 tons valued at \$2,100 as compared with 73 tons worth \$1,064 in 1933 and 32 tons at \$464 in 1932. Production in all of these years came from the Madoc area, Hastings county, Ontario. The mineral has also been commercially mined in British Columbia by the Consolidated Mining and Smelting Company of Canada, Ltd.

Fluorspar is used chiefly as a flux in the steel industry while considerable quantities are also consumed in the manufacture of glass, enamel and vitrolite, hydro-fluoric acid and derivatives, foundry castings and cement.

Imports of fluorspar into Canada in 1934 amounted to 144,396 cwt. valued at \$56,628 as compared with 44,388 cwt. at \$21,165 and of the 1933 imports 22,443 cwt. came from the United Kingdom, 6,160 cwt. from the United States and 1,942 cwt. from Germany.

FLUORSPAR USED IN THE CANADIAN GLASS INDUSTRY, 1930 - 1934.

Year	short ton	\$
1930	179	6,458
1931	96	4,815
1932	125	4,989
1933	115	7,803
1934	119	4,472

FLUORSPAR USED IN CANADIAN STEEL FURNACES, 1930 - 1934.

Year	short ton	\$
1930	6,486	92,743
1931	4,969	66,471
1932	2,253	27,939
1933	2,949	31,657
1934	4,555	55,643

August, 1935, Canadian quotations for fluorspar ranged up to \$33.00 per ton according to grade. United States 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, \$13 for all rail movement, \$14 for barge movement. Ground fluorspar, f.o.b. Illinois mines, 95 to 98 per cent CaF_2 and not over 2½ per cent SiO_2 , \$35 in bulk; \$37 in bags or barrels; foreign fluorspar, gravel, 85-5, \$21 to \$21.50 per gross ton, duty paid, Baltimore or Philadelphia.

WORLD'S PRODUCTION OF FLUORSPAR

(Taken from the Imperial Institute's publication "The Mineral Industry of the British Empire and Foreign Countries")
(Long tons)

Producing Country	1931	1932	1933
<u>BRITISH EMPIRE</u>			
United Kingdom	19,922	15,427	28,058
Union of South Africa	2,163	1,197	463

WORLD'S PRODUCTION OF FLUORSPAR (concluded)
(Long tons)

Producing Country	1 9 3 1	1 9 3 2	1 9 3 3
<u>BRITISH EMPIRE (concluded)</u>			
Canada	36	29	65
Australia	533	1,260	985
<u>FOREIGN COUNTRIES</u>			
France	24,300	(a)	(a)
Germany -			
Bavaria	26,357	21,569	(a)
Prussia	12,639	7,671	10,485
Saxony	6,827	1,274	(a)
Italy	5,800	6,348	(a)
Norway	620	562	499
Spain	5,922	(b) 6,402	(b) 3,130
United States	49,000	15,000	53,000
Mexico	(a)	151	(a)
Argentina .....	...	10	197
China (estimated)	7,000	7,000	7,000
Korea	2,500	7,457	8,933

Note - 5,463 long tons of fluorspar were produced in U.S.S.R. (Russia) during year ended September, 1928 - later figures are not available.

(a) Information not available.

(b) In addition 160 cubic metres were produced from quarries during 1932 and 120 cubic metres during 1933.

GRAPHITE - In 1934 production of Canadian graphite was valued at \$71,424 as compared with \$18,367 in 1933; this represents an increase in value of 289 per cent. Production in 1934, as for several years past, came chiefly from the Black Donald mine, Renfrew county, Ontario; relatively small shipments were also made from the province of Quebec. Steady operations were maintained throughout the year at the Black Donald mine and various grades of refined graphite were shipped; it is interesting to note that the product of this company is now reported as being successfully employed in the manufacture of pencils.

Recent trends in industrial consumption of graphite indicate that the use of Madagascar flake is increasing for the manufacture of crucibles; Ceylon graphite was at one time used almost exclusively for this purpose. The reported success in milling of the Ceylon and Canadian mineral for pencils may eventually prove of considerable economic importance to producers in these countries; Mexican graphite was employed largely for pencil manufacture during past years.

Artificial or manufactured graphite is now being employed in the manufacture of electrodes, dry batteries, lubricants, and various other products.

The world consumption of graphite has been estimated at approximately 20 per cent for crucibles, 40 per cent for foundry work, 15 per cent for paints, 7 per cent for electrical conductors, 7 per cent for lubricants, 5 per cent for electric batteries, 4 per cent for crayons and 2 per cent for miscellaneous purposes.

VALUE OF PRODUCTION OF GRAPHITE IN CANADA, 1925 - 1934.

Year	Value \$	Year	Value \$
1925	158,763	1930	96,392
1926	194,860	1931	32,149
1927	111,656	1932	18,483
1928	57,041	1933	18,367
1929	103,174	1934	71,424

IMPORTS OF GRAPHITE INTO CANADA, 1932 - 1934.

	1 9 3 2 \$	1 9 3 3 \$	1 9 3 4 \$
Plumbago, not ground or otherwise manufactured	1,869	4,729	2,989
Plumbago crucibles	29,909	26,521	36,363
Plumbago, ground, and manufactures of, n.o.p..	70,565	69,003	103,652
Total Graphite and Its Products	102,343	100,253	143,004

EXPORTS OF GRAPHITE FROM CANADA, 1933 and 1934.

	1 9 3 3 Cwt.	\$	1 9 3 4 Cwt.	\$
Graphite or plumbago, crude and refined	19,734	40,115	38,699	90,129
Carbon and graphite electrodes .....	...	305,607	...	564,432

Imports of carbon electrodes over three inches in circumference or outside measurement and not exceeding thirty-five inches in circumference or outside measurement; carbons of a class not produced in Canada, when imported for use in the manufacture of dry batteries and dry cells, were valued at \$301,820 in 1934 as compared with \$169,154 in 1933. The value of imports of carbons or carbon electrodes over 35 inches totalled \$63,290 in 1934 as against \$67,581 in 1933.

GRAPHITE USED IN CANADIAN PAINTS, PIGMENTS AND VARNISHES INDUSTRY, 1931 - 1934.

Year	Pounds	\$
1931	184,742	6,761
1932	87,960	3,837
1933	93,740	3,706
1934	110,582	4,643

GRAPHITE USED IN CANADIAN POLISHES AND DRESSINGS INDUSTRY, 1931 - 1934.

Year	Pounds	\$
1931	119,297	6,794
1932	118,027	5,838
1933	114,541	6,224
1934	121,694	6,853

PLUMBAGO USED IN CANADIAN IRON AND STEEL (AND THEIR PRODUCTS) INDUSTRY, 1931 - 1933

Year	Pounds	\$
1930	388,353	26,228
1931	248,294	17,194
1932	142,176	10,755
1933	223,504	12,235

CARBON ELECTRODES USED IN CANADIAN ELECTRICAL APPARATUS AND SUPPLIES INDUSTRY, 1931-1934.

Year	Value \$
1931	59,327
1932	53,529
1933	43,323
1934	47,700

Canadian quotations for graphite, August, 1935 - 100 pound lots - ranged from 15 cents to 40 cents per pound. United States - per pound, f.o.b. New York, Ceylon lump $6\frac{1}{2}$ to $7\frac{1}{2}$ cents; carbon lump, 4 to 6 cents; chip, 5 to 6 cents; dust, 3 to 4 cents. Madagascar flake, 6 to $7\frac{1}{2}$ cents. No. 1 flake, $9\frac{1}{2}$ to 17 cents. Crude amorphous graphite, \$12 to \$23 per ton according to grade.

Canadian production of graphite during the first six months of 1935 was valued at \$39,087 as compared with a value of \$32,879 in the corresponding period of 1934; the output in 1935 came entirely from the province of Ontario.

WORLD'S PRODUCTION OF GRAPHITE

(Taken from the Imperial Institute's publication "The Mineral Industry of the British Empire and Foreign Countries")
(Long tons)

Producing Country	1 9 3 1	1 9 3 2	1 9 3 3
<u>BRITISH EMPIRE</u>			
Union of South Africa	43	49	58
Canada (sales)	489	309	362
Ceylon (exports)	6,721	6,100	9,559
India	7	5	...
Australia	60	70	30
<u>FOREIGN COUNTRIES</u>			
Austria (crude)	11,869	10,431	14,537
Czechoslovakia	1,801	907	120
Germany (crude)	23,199	20,479	19,443
Italy	3,986	2,898	3,149
Norway	(c) 868	661	1,951
Madagascar	4,613	2,691	(a)
Morocco (French zone) .....	...	236	(a)
Mexico	3,073	2,013	2,643
Brazil (exports)	9	...	1
Japan	290	487	865
Korea	13,000	16,548	22,318

NOTE - Graphite is also produced in U.S.S.R. (RUSSIA) and the United States, but figures are not available.

(a) Information not available.

(c) Crude.

MAGNESITIC-DOLOMITE (MAGNESITE) -- Production of calcined and dead-burnt magnesitic-dolomite in Canada during 1934 amounted in value to \$382,927 as compared with \$360,128 in 1933 or an increase of 6.3 per cent. The production of these materials in Canada is confined to Argenteuil county, Quebec, the deposits occurring some sixty miles west of Montreal and north of the Ottawa river. Steady operations were maintained during 1934 in this area by the International Magnesite Company, Ltd., and Canadian Refractories Ltd. The latter company crush and grind the crude rock to about 100 mesh after which it is burnt in rotary kilns to an inert state.

PRODUCTION OF MAGNESITIC-DOLOMITE IN CANADA, 1925 - 1934.

Year	Value \$	Year	Value \$
1925	122,325	1930	336,162
1926	137,431	1931	295,579
1927	230,309	1932	262,860
1928	346,990	1933	360,128
1929	491,170	1934	382,927

"Deposits of earthy hydromagnesite occur in British Columbia near Atlin and Clinton, and large deposits of silicious magnesite occur in the vicinity of Cranbrook. The reported successful application of flotation methods to the removing of silica and other impurities from magnesite is a development of importance as regards the silicious magnesite deposits.

"The deposits of magnesitic-dolomite in Argenteuil county, Quebec, are ample to supply magnesia products for domestic requirements for many years and also to support a large export trade. No other deposits of magnesitic-dolomite or of commercial magnesite are known to occur in the eastern part of North America."... (1)

Magnesia products are utilized principally in manufacture of refractories such as the lining for steel furnaces; it is also used to a lesser extent as a refractory cement. Floors and floor tiles are made from caustic-calcined magnesia and a new development in the industry is the production of refractory brick from dead-burned Canadian magnesitic-dolomite.

"... Supplementary to the efforts to produce basic refractory materials from Grenville (Quebec) magnesitic-dolomite, which was mentioned last year as an outstanding Canadian achievement, a plastic refractory has been developed which is claimed to be superior to all other basic refractory plastics for use in metallurgy and kraft smelters It has also been reported by the manufacturers that the basic refractory brick made from Grenville magnesitic dolomite in addition to the good account it has been giving of itself for metallurgical purposes, has been proving itself highly resistant to the attack of coals having a rather corrosive action." (2)

IMPORTS OF MAGNESITE AND MAGNESITE FIRE BRICK INTO CANADA, 1931 - 1934.

Year	Magnesite, dead burned, sintered		Magnesite fire brick
	caustic calcined or plastic magnesia		
	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	396,664

(1) Extract - Bulletin 760 - Department of Mines, Ottawa.

(2) Extract - Journal of Canadian Ceramics Society, 1935.

Canadian quotations for calcined magnesite, August, 1935, ranged \$40-\$50 per ton. United States - 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. Washington - dead-burned grain magnesite, \$22.

WORLD'S PRODUCTION OF MAGNESITE

(Taken from the Imperial Institute's publication "The Mineral Industry of the British Empire and Foreign Countries")

(Long tons)

Producing Country and Description	1931	1932	1933
<u>BRITISH EMPIRE</u>			
Southern Rhodesia - Crude .....	...	13	...
Union of South Africa - Crude	1,336	1,396	1,471
Canada - Crude	23,963	2,788	(a)
Caustic and dead-burnt (c)	10,188	7,939	(a)
India - Crude	5,333	13,864	15,206
Australia - Crude	3,475	5,391	9,720
<u>FOREIGN COUNTRIES</u>			
Austria - Crude	176,606	132,286	161,736
Caustic (c)	34,211	30,412	23,462
Dead-burnt (c)	38,186	28,298	63,260
Bricks (c)	23,441	15,283	24,970
Czechoslovakia - Calcined (b)	14,569	13,014	18,988
Greece - Crude	49,200	43,993)	
Caustic (c)	12,764	9,047)	(a)
Dead-burnt (c)	1,886	1,605)	
Italy - Crude	3,415	453	(a)
Norway - Crude	1,555	1,290	1,975
Calcined (c)	450	512	579
Bricks (c)	290	537	483
U.S.S.R. (Russia) (years ended Sept. 30) -			
Crude	242,000)		
Caustic (c)	13,665)	(a)	(a)
Dead-burnt (c)	51,700)		
Bricks (c)	29,904)		
Yugoslavia (Serbia only) - Crude	22,826	16,084	14,371
Calcined	8,875	7,633	5,561
United States - Crude	65,716	34,341	96,596
Caustic (sales) (c)	5,268	3,013	7,269
Dead-burnt (sales) (c)	25,206	13,246	38,940
"Manchoukiao" - Crude	35,465	54,511	70,249
Turkey - Crude	2,162	305	936

(a) Information not available.

(b) Exports less imports.

(c) Derived from crude shown, and not additional.

MAGNESIUM SULPHATE (EPSOM SALTS- NATURAL) - Production of natural magnesium sulphate in Canada during 1934 totalled 42 tons valued at \$1,100 as compared with an output of 120 tons worth \$3,360 in 1933. Production for back years represents salts recovered from Basque Lake, British Columbia, and which were treated in an experimental plant at Ashcroft, B.C. The mineral also occurs in association with sodium sulphate in deposits in Saskatchewan. Magnesium sulphate has a medicinal value under the name

of Epsom salts and it is used in the finishing of cotton fabrics and for weighting paper, silk and leather.

It is interesting to note that a new works for the manufacture of Epsom salts at Mithapur, near Port Okha, Kathiawad, India, was opened in May, 1935.

Canadian quotations, August, 1935, for magnesium sulphate B.P. barrels, ranged $2\frac{1}{2}$ cents to 3 cents per pound; technical, bags, per ton, \$25.

MAGNESIUM SULPHATE USED IN CANADIAN MEDICINAL AND PHARMACEUTICAL PREPARATIONS, 1931-1933.

<u>Years</u>	<u>Pounds</u>	<u>\$</u>
1931	553,291	21,252
1932	622,459	28,073
1933	851,355	24,629

IMPORTS INTO CANADA OF MAGNESIUM SULPHATE (EPSOM SALTS) 1931 - 1934.

<u>Years</u>	<u>Pounds</u>	<u>\$</u>
1931	4,120,086	43,807
1932	4,383,115	47,679
1933	4,269,852	49,868
1934	4,599,518	48,459

EPSOM SALTS USED IN THE CANADIAN TANNING INDUSTRY(x), 1931 - 1933.

<u>Years</u>	<u>Pounds</u>	<u>\$</u>
1931	158,040	1,858
1932	181,811	2,418
1933	396,424	4,467

(x) Not necessarily complete.

MANGANESE BOG - Bog manganese consists mainly of oxide of manganese and water with usually some oxide of iron and often silica, alumina and baryta. Shipments of bog manganese from Dawson Settlement, Albert County, New Brunswick, during 1931 amounted to 77 tons valued at \$462. Some development work in 1934 was reported on a bog manganese deposit located at North Renous, New Brunswick, and a trial shipment of the material may be made in 1935. No commercial shipments of bog manganese have been made since 1931. The mineral is utilized chiefly in the ceramic industry.

MINERAL WATERS - Shipments of natural mineral waters from Canadian springs totalled 97,440 imperial gallons valued at \$17,738 in 1934 compared with 38,818 imperial gallons worth \$5,441 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. Francois 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.

SALES OF NATURAL MINERAL WATERS(x) BY THE CANADIAN AERATED WATERS INDUSTRY, 1930-1933.

<u>Years</u>	<u>\$</u>
1930	178,348
1931	140,730
1932	92,066
1933	77,125

(x) Whether fortified or not.

Imports of natural mineral waters, not in bottles, into Canada in 1934 totalled 30 gallons valued at \$24 as compared with 45 gallons worth \$40 in 1933. Mineral and aerated waters, n.o.p., imported in 1934 were appraised at \$86,808 as against \$75,242 in the preceding year.

Exports of mineral and aerated waters were valued at \$5,322 in 1934 as compared with a value of \$5,572 in 1933.

PEAT - The production in Canada of peat for fuel during 1934 totalled 1,878 tons valued at \$7,343 as compared with 1,131 tons worth \$3,449 in 1933. The shipments during 1934 were made from bogs located at Alfred, Chesterville and Morewood in the province of Ontario. Shipments of peat in Canada during the first six months of 1935 amounted to 82 tons valued at \$420; these were made entirely in the province of Ontario.

Bulletin No. 614, issued (1924) by the Mines Branch, Department of Mines, Ottawa, refers to peat as follows: "The fuel content of Canadian bogs investigated is estimated at 199,452,000 tons of 25 per cent moisture fuel. This reduced to the dry state is equivalent to 149,509,000 tons ... Owing to the high absorptive quality of peat, an excellent stable litter can be produced from peat moss. Large quantities of peat litter are manufactured in Europe. Peat dust is an excellent packing and preservative material for fresh fruits, vegetables, etc. Peat mixed with sewage and burned in a rotating furnace has been used to produce a valuable fertilizer In Germany textile materials are manufactured, into the composition of which peat fibres largely enter. Peat fibre has been used for the production of paper, cardboard, etc., and during the war sphagnum moss bandages were used in the military hospitals to replace absorbent cotton, and proved to be of special value owing to their antiseptic qualities ... The heating value of good moisture-free peat ranges from 7,000 to 10,000 B. Th. U. per pound. The calorific value of dry peat from Canadian bogs varies usually from 8,000 to 9,500 B.Th.U. per pound, and is in that respect about on a par with that from European bogs generally ... Generally speaking two tons of peat fuel are required to produce the same heating value as one ton of anthracite."

Imports of peat moss into Canada in 1934 totalled 5,298 cwt. valued at \$4,577 as compared with 5,209 cwt. at \$4,700 in 1933.

PHOSPHATE - Shipments of Canadian mined phosphate during 1934 totalled 81 tons valued at \$683 as compared with 2,214 tons worth \$5,475 in 1933. The 1934 output consisted only of apatite mined in the province of Quebec whereas the production in 1933 included rock or sedimentary phosphate mined at Fernie and Crowsnest, British Columbia, by the Consolidated Mining and Smelting Company of Canada, Ltd. The apatite production in Quebec was utilized in an electro-chemical plant while the sedimentary phosphate of British Columbia was employed in the manufacture of fertilizer at Trail,

British Columbia, The Crowsnest phosphate property of Consolidated Mining and Smelting Company remained inactive throughout 1934.

"The Mineral Industry" reports: "The world's production of phosphate rock in 1934 amounted to approximately 9,000,000 metric tons, an increase of 7 per cent over the 1933 figure. In 1934, Algeria, Egypt, Morocco and Tunisia produced approximately 46 per cent of the world's phosphate; the United States produced approximately 32 per cent; and Russia produced approximately 9 per cent The laboratory work of the Bureau of Chemistry and Soils, United States Department of Agriculture, on the preparation of calcined phosphate by heating silica-containing phosphate rock in the presence of water vapor was continued in 1934; as shown by pot tests, the plant-food value of the phosphorous in properly prepared calcined phosphate is as high as that of the phosphorous in superphosphate and dicalcium phosphate..."

United States quotations, September, 1935, for phosphate per long ton, f.o.b. mines: Florida pebble, for export 77 to 76 per cent, \$7.25; 75 per cent, \$6.50; 68 per cent, \$4.50. Tennessee, ground lime phosphate, 85 per cent through 300 mesh, 34.30 per cent P_2O_5 , \$8.25 per short ton, bags extra.

PRODUCTION OF PHOSPHATE IN CANADA, 1925 - 1934.

Years	short tons	\$	Years	short tons	\$
1925	16	189	1930	40	760
1926	40	800	1931 .....	...	...
1927	151	1,717	1932	1,316	12,333
1928	641	8,276	1933	2,214	5,475
1929	1,185	5,380	1934	81	683

IMPORTS OF PHOSPHATE ROCK INTO CANADA, 1931 - 1934.

Years	Cwt.	\$
1931	2,834,458	619,079
1932	1,428,657	346,907
1933	367,020	74,527
1934	635,494	165,240

Imports of acid phosphate (not medicinal) totalled 2,513,502 pounds valued at \$172,279 as compared with 2,480,351 pounds worth \$192,213 in 1933.

Imports of soda phosphate in 1934 totalled 7,972,710 pounds valued at \$195,751 as compared with 5,897,653 pounds at \$156,204 in 1933.

PHOSPHATE ROCK AND SUPERPHOSPHATE USED IN THE MANUFACTURE OF CANADIAN FERTILIZERS, 1931 - 1934.

Years	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	59,700(x)	795,700	48,017	396,133

(x) Subject to revision.

SILICA BRICK - Production of silica brick in Canada during 1934 totalled 2,528 thousand valued at \$85,945 as compared with 636 thousand worth \$23,185 in 1933. The output in 1934 as for 1933 came from the plants of the Dominion Steel and Coal Corporation, Sydney, Nova Scotia, and the Algoma Steel Corporation, Sault Ste. Marie, Ontario. The brick manufactured by both of these companies are processed from crushed silica rock and are utilized as a refractory in furnace construction.

PRODUCTION OF SILICA BRICK IN CANADA, 1925 - 1934.

Years	M	\$	Years	M	\$
1925	Not available		1930	2,418	97,379
1926	2,665	130,702	1931	900	35,746
1927	1,791	79,527	1932	93	4,304
1928	3,224	155,502	1933	636	23,185
1929	3,951	173,581	1934	2,528	85,945

IMPORTS OF SILICA BRICK(x) INTO CANADA, 1931 - 1934.

Years	\$
1931	234,909
1932	122,952
1933	147,901
1934	210,190

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

SODIUM CARBONATE (NATURAL) - Sales in 1934 of natural sodium carbonate produced from Canadian deposits totalled 244 tons valued at \$1,920 compared with 559 tons worth \$5,773 in 1933. The 1934 shipments were made from the property of the B. C. Sodium Syndicate located on a small lake near Cherry Creek in the Kamloops mining division of British Columbia. The British Columbia Department of Mines reported that experimental work on this product and also on a sodium-sulphate deposit in an adjoining lake was continued in 1934 and considerable interest has been attracted to the possibilities of erecting a soda ash and sulphate plant at this point. Equipment is being enlarged and an increase in production was expected in 1935.

Sodium carbonate, or soda ash, has many industrial uses, being employed in the manufacture of glass, soap, and in the purification of oils, etc.

PRODUCTION OF SODIUM CARBONATE (NATURAL) IN CANADA, 1925 - 1934.

Year	tons	\$	Years	tons	\$
1925	1,120	8,140	1930	364	4,550
1926	595	5,370	1931	712	7,351
1927	805	9,995	1932	495	5,450
1928	519	4,922	1933	559	5,773
1929	600	8,100	1934	244	1,920

IMPORTS OF SODA ASH OR BARILLA INTO CANADA, 1931 - 1934.

<u>Years</u>	<u>Pounds</u>	<u>\$</u>
1931	1,647,304	25,771
1932	1,803,951	27,751
1933	1,616,483	23,256
1934	2,311,498	32,258

IMPORTS OF BICARBONATE OF SODA INTO CANADA, 1931 - 1934.

<u>Years</u>	<u>Pounds</u>	<u>\$</u>
1931	10,931,335	188,268
1932	10,592,208	196,841
1933	11,716,431	211,065
1934	11,918,011	205,058

BICARBONATE OF SODA AND SODIUM CARBONATE (SODA ASH) USED IN THE CANADIAN CHEMICALS AND ALLIED PRODUCTS INDUSTRIES, 1931 - 1933.

<u>Years</u>	<u>BICARBONATE OF SODA</u>		<u>SODA ASH</u>	
	<u>Pounds</u>	<u>\$</u>	<u>Pounds</u>	<u>\$</u>
1931	2,969,198	75,334	12,439,458	201,654
1932	2,973,707	94,941	11,421,879	193,422
1933	949,430	27,663	12,221,928	191,639

SODA ASH USED IN CANADIAN MANUFACTURES(x) OF NON-METALLIC MINERALS IN CANADA, 1931-1934.

<u>Years</u>	<u>Pounds</u>	<u>\$</u>
1931	47,763,713	694,806
1932	43,545,840	598,884
1933	38,336,000	505,152
1934	49,260,000	644,655

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

SODIUM SULPHATE (NATURAL - Glauber Salts and Salt Cake) - Natural sodium sulphate occurs in deposits of considerable magnitude in Western Canada. In 1934, as for some years past, the entire Canadian production came from the province of Saskatchewan. The output in 1934 totalled 66,821 tons valued at \$587,986 as compared with 50,080 tons worth \$485,416 in 1933 and the quantity and value of the 1934 production represents all time high records for this particular industry.

Sodium sulphate finds its principal use in the pulp and paper industry for the manufacture of "kraft paper" by the sulphate process, in the manufacture of glass, in the dyes industry, in the smelting of nickel-copper ores, and as one of the raw materials in the manufacture of sodium carbonate.

A recent report by the Department of Mines, Ottawa, states that: "There are several new developments in Western Canada in the sodium sulphate industry, a company is erecting a dehydrating plant near Oban, Saskatchewan, and plan to use material obtained from Whiteshore Lake; at the central part of Whiteshore lake another company

has erected a 50 ton dehydrating plant using a direct rotary drier and Alberta interests have taken up leases on Muskiki lake, 60 miles west of Saskatoon, Saskatchewan, they propose using a modification of the solution and crystallization process The investigation of Western Canada sodium sulphate deposits was started by the Mines Branch in 1921 and over 120,000,000 tons of hydrous salts were proven up in the few deposits examined in detail."

PRODUCTION OF NATURAL SODIUM SULPHATE IN CANADA, 1925 - 1934.

Year	short tons	\$	Year	short tons	\$
1925	3,876	19,380	1930	31,571	293,847
1926	6,775	13,550	1931	44,957	421,097
1927	5,659	11,319	1932	22,466	271,736
1928	6,016	68,804	1933	50,080	485,416
1929	5,018	64,112	1934	66,821	587,986

IMPORTS INTO CANADA OF SALT CAKE (SULPHATE OF SODA) 1931 - 1934.

Years	Pounds	\$
1931	17,321,652	97,215
1932	8,865,730	51,925
(x) 1933	5,191,036	34,371
1934	21,154,815	123,980

(x) Of the 1933 imports 3,138,248 pounds came from the United Kingdom, 1,598,441 pounds from the United States and 454,347 pounds from Germany.

IMPORTS INTO CANADA OF GLAUBER SALTS, 1931 - 1934.

Years	Pounds	\$
1931	1,999,042	10,838
1932	1,806,882	11,027
1933	1,791,011	13,237
1934	1,266,665	8,853

SALT CAKE USED IN THE MANUFACTURE OF CANADIAN WOOD-PAPER PULP, 1930 - 1934.

Years	Tons	\$
1930	33,119	676,597
1931	24,756	503,560
1932	24,301	489,343
1933	29,563	580,251
1934	34,559	655,905

SALT CAKE USED IN THE CANADIAN ACIDS, ALKALIES AND SALTS INDUSTRY, 1931 - 1933.

<u>Years</u>	<u>Tons</u>	<u>\$</u>
1931	15,602	221,748
1932	94	1,811
(x) 1933	9,968	146,201

(x) Includes 39 tons valued at \$4,879 used in medicinal and pharmaceutical preparations.

NOTE - In addition to the consumption listed above, there is a relatively large quantity of natural sodium sulphate employed in the manufacture of nitre cake for use in the nickel-copper mining and smelting industry.

SULPHUR - The sulphur content of pyrites shipped and sulphur recovered from non-ferrous smelter gas amounted in 1934 to 51,537 tons valued at \$515,502 as compared with 57,373 tons worth \$510,299 in 1933. Production during both years came from the provinces of Quebec, Ontario and British Columbia.

Sulphur employed in the manufacture of sulphuric acid was recovered from salvaged smelter gas in Ontario and British Columbia. In the former province, Canadian Industries Limited continued the operation of its acid plant at Copper Cliff, Ontario, using sulphur gases from the International Nickel Company's smelter, while in British Columbia the Consolidated Mining and Smelting Company of Canada, Ltd., manufactured sulphuric acid through the treatment of by-product gases at the Trail metallurgical plants; this company announced early in 1935 that the new sulphur dioxide recovery process, recently developed, was about ready for the next step, which will consist of building a commercial plant and that plans and estimates for this unit were being prepared.

In Boischatel township, Quebec, Aldermac Mines Limited produced both copper and iron pyrites concentrates, the copper concentrates going to the Noranda smelter and the sulphur concentrates to the chemical industry. Iron pyrites concentrates continued to be produced at Eustis, Quebec, by the Consolidated Copper and Sulphur Co. Ltd.; these were exported to the United States. At Britannia Beach in British Columbia the Britannia Mining and Smelting Company Limited shipped pyrites concentrates to a Canadian plant for the manufacture of sulphuric acid.

"Canadian Chemistry and Metallurgy" gives the following information relating to the recovery of sulphur dioxide in England: "The Billingham process now uses a liquor containing a mixture of salts in their large-scale experiment. This solution will absorb 6 per cent of its weight of sulphur dioxide from 6.5 per cent of gas with 98 per cent absorption of the sulphur dioxide in the gas, and on heating to 100 deg. C. it yields practically pure sulphur dioxide ... The process has other possibilities beside the production of sulphur from metallurgical gases. In the first place sulphur from anhydrite becomes a practical possibility, as the I.G. and I.C.I. have both produced sulphur dioxide from anydrite by heating with clay and carbon. The second probable development would be in the method of handling pyrites. Ore may be split into its important constituents at the mine or at importing centres. All these possibilities deserve attention and are of interest to Canadian mining; but from the national viewpoint, this research is most significant to the smelter and paper industries."

It is interesting to note that a Canadian chemical works is now using sulphite liquor obtained from a Canadian pulp and paper plant and it is believed that this latter plant is the first of its kind to evaporate sulphite liquor commercially in Canada.

PRODUCTION OF SULPHUR IN CANADA, 1932 - 1934.

Years	Sulphur content of pyrites shipped(x)		Sulphur content of smelter gases		Total Sulphur Content	
	short tons	\$	short tons	\$	short tons	\$
1932	25,956	197,854	27,216	272,160	53,172	470,014
1933	28,178	218,349	29,195	291,950	57,373	510,299
1934	5,501	55,142	46,036	460,360	51,537	515,502

(x) Recovered from copper ores.

Production of sulphur from the same sources as listed in the above table totalled 28,555 short tons valued at \$289,746 during the first six months of 1935 as compared with 27,252 short tons worth \$245,263 for the corresponding period of 1934.

The Imperial Institute, London, reports the world production (excluding Russia) of pyrites (including cupreous pyrites) at 6,000,000 long tons in 1933. Of this quantity the British Empire produced 281,000 long tons, Spain, 2,183,866 long tons, Japan, 888,865 long tons, Norway, 850,921 long tons, Italy, 712,271 long tons, and Portugal, 207,333 long tons.

Italy and the United States are the largest producers of native or elemental sulphur.

IMPORTS INTO CANADA OF BRIMSTONE AND SULPHUR, 1931 - 1934.

Years	Cwt.	\$
1931	2,483,842	2,281,654
1932	2,099,895	2,023,085
1933	2,816,202	2,529,920
1934	3,153,943	2,589,311

Of the 1934 imports of sulphur, 3,151,952 cwt. came from the United States.

SULPHUR USED IN THE MANUFACTURE OF CANADIAN WOOD-PAPER PULP, 1931 - 1934.

Years	Tons	\$
1931	129,402	3,118,471
1932	105,521	2,495,137
1933	121,400	2,828,686
1934	127,541	2,932,928

SULPHUR(x) USED IN CANADIAN CHEMICALS AND ALLIED PRODUCTS INDUSTRIES, 1931 - 1933.

Years	Pounds	\$
1931	32,823,534	371,413
1932	21,207,500	228,805
1933	26,703,964	300,564

(x) Does not include use of sulphur recovered from smelter gases.

Canadian quotations for sulphur, August, 1935 - Sulphur ground, 100 pounds \$2.50 - \$2.75; car lots, Montreal, per ton, \$27.00 to \$28.00; roll 100 pounds, \$3.50 to \$3.75. Pyrites per long ton unit of sulphur, c.i.f. United States ports, guaranteed 48 per cent sulphur, Spanish, 12 to 12½ cents, nominal.

PRODUCTION OF MISCELLANEOUS NON-METALLIC MINERALS IN CANADA, 1933 and 1934.

Item	Unit of measure	1933		1934	
		Quantity	Value	Quantity	Value
			\$		\$
Actinolite.....	ton	...	...	30	365
Barytes	ton	20	60	...	...
Bituminous sands	ton	466	1,662	862	3,449
Fluorspar	ton	73	1,064	150	2,100
Graphite	xx	...	18,367	...	71,424
Magnesitic dolomite	xxx	...	360,128	...	382,927
Magnesium sulphate	ton	120	3,360	42	1,100
Mineral waters	Imp.gal.	38,818	5,441	97,440	17,738
Peat	ton	1,131	3,449	1,878	7,343
Phosphate (a)	ton	2,214	5,475	81	683
Silica brick	M	636	23,185	2,528	85,945
Sodium carbonate	ton	559	5,773	244	1,920
Sodium sulphate	ton	50,080	485,416	66,821	587,986
Sulphur(x)	ton	57,373	510,299	51,537	515,502
TOTAL	xx	...	1,423,679	...	1,678,482

(a) In 1934 represents apatite mined in Quebec while production in 1933 includes both Quebec apatite and sedimentary rock phosphate mined in British Columbia.

(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.

PRINCIPAL STATISTICS RELATING TO MISCELLANEOUS NON-METAL MINING INDUSTRIES IN CANADA, 1933 and 1934.

	1933	1934
Number of plants	40	53
Capital employed	\$ 4,202,736	\$ 3,291,842
Number of employees - On salary	44	45
On wages	253	348
Total	297	393
Salaries and wages - Salaries	\$ 62,364	\$ 79,333
Wages	\$ 179,635	\$ 292,429
Total	\$ 241,999	\$ 371,762
Cost of fuel and electricity	\$ 176,512	\$ 240,224
Selling value of products	\$ 1,423,679	\$ 1,678,482

WAGE-EARNERS, BY MONTHS, 1932, 1933 and 1934.

Month	1932	1933	1934
January	89	89	239
February	87	94	253
March	98	117	269
April	166	156	243
May	229	175	446
June	226	234	498
July	197	344	460
August	151	378	431
September	157	369	402
October	175	363	340
November	165	322	286
December	91	318	283
AVERAGE	147	253	348

FUEL AND ELECTRICITY USED IN THE MISCELLANEOUS NON-METAL MINING INDUSTRIES IN CANADA, 1933 and 1934.

Kind	Unit of measure	1933		1934	
		Quantity	Cost	Quantity	Cost
Bituminous coal - Canadian	tons	6,780	\$ 44,077	8,904	\$ 48,957
Imported	tons	259	1,152	631	2,845
Anthracite	tons	...	...	21	232
Lignite coal	tons	10,732	32,340	22,331	59,660
Gasoline (exclusive of that used in motor cars)	Imp.gal.	43,996	7,076	25,487	5,741
Fuel oil and diesel oil	Imp.gal.	1,500,104	89,689	1,611,003	96,578
Kerosene or coal oil	Imp.gal.	270	59	...	...
Wood (cords of 128 cubic feet)	cords	459	1,406	1,154	4,243
Gas - Manufactured	M cu.ft.	...	...	37,245	3,501
Other fuel	xx	...	...	...	27
Electricity purchased	K.W.H.	62,875	713	1,927,711	18,440
TOTAL	xxx	...	176,512	...	240,224
Electricity generated for own use	K.W.H.	1,375,426	...	1,323,750	...

POWER EQUIPMENT EMPLOYED IN THE MISCELLANEOUS NON-METAL MINING INDUSTRIES, 1933 and 1934.

Kind	1933		1934	
	Number of units	Total horse power	Number of units	Total horse power
Steam engines and steam turbines	5	647	5	670
Diesel engines	3	825	3	700
Gasoline, gas and oil engines	6	84	10	666
Hydraulic turbines or water wheels	2	200	2	200
Electric motors	129	2,925	133	3,224
Boilers	12	801	9	875

NOTE - Prices quoted in this report have been taken from "Metal and Mineral Markets" - New York, and "Canadian Chemistry and Metallurgy" - Toronto.

DIRECTORY OF FIRMS IN THE MISCELLANEOUS NON-METAL MINING INDUSTRIES IN CANADA,
1934.

Name of Operator and Province

Office Address

ACTINOLITE

ONTARIO -

The Actinolite Mining Co.

1429 Chomedy St., Montreal, P.Q.

BARYTES

ONTARIO -

Canada Night Hawk Mines Ltd.(x)

Room 305, 372 Bay St., Toronto

BITUMINOUS SANDS

ALBERTA -

Absand Oils Ltd.

3703 Northern Ontario Bldg., Toronto, Ont.

Bituminous Sand Extraction Co.Ltd.(a)

507 MacLean Block, Calgary

McMurray Asphaltum & Oil Ltd.

Petrolia, Ont.

FLUORSPAR

ONTARIO -

Stocklosar, Chas. A.

Box 198, Madoc

GRAPHITE

QUEBEC -

Canadian Graphite Corp.(x)

1193 Phillips Place, Montreal

ONTARIO -

Black Donald Graphite Co. Ltd.

Calabogie

MAGNESITIC DOLOMITE

QUEBEC -

International Magnesite Co. Ltd.

Calumet

Canadian Refractories Ltd.

1050 Canada Cement Bldg., Montreal

MAGNESIUM SULPHATE

BRITISH COLUMBIA -

Epsom Refineries Ltd.

395 Main St., Winnipeg, Man.

MANGANESE BOG

NEW BRUNSWICK -

Singleton, Clarence (a)

North Renous

MINERAL WATERS (NATURAL)

QUEBEC -

Abenakis Springs Co.

Blondin

Bellemarre, Josaphat

St. Maurice

Eau Minerale Etoile

Ste. Genevieve de Batiscan

Fernet, J. G.

Berthierville, R.R. 2

Gelinas, Ezilda

St. Severe

Gurd, Chas., & Co. Ltd.

1016 Bleury St., Montreal

La Cie Embouteillage d'Eau

3 St. Germain St., St. Hyacinthe

La Cie Embouteillage St. Laurent

64 St. Pierre St., St. Hyacinthe

La Cie d'Eau Minerale

148 Concorde St., St. Hyacinthe

Maski Bottling Works

Maskinonge

Pellerin, Albert

St. Barnabe Nord

Radnor Mineral Water Springs

St. Maurice

DIRECTORY OF FIRMS IN THE MISCELLANEOUS NON-METAL MINING INDUSTRIES IN CANADA,
1934 (continued)

Name of Operator and Province

Office Address

MINERAL WATERS (NATURAL) - concluded

QUEBEC - concluded

Richard, Girard
Source, Coulombia

St. Gregoire
L'Epiphanie

ONTARIO -

Boyd, T. R.
Deneault, F.
Gurd, Chas., & Co. Ltd.

Carlsbad Springs
Bourget
1016 Bleury St., Montreal, P.Q.

PHOSPHATE

QUEBEC -

Mageau, Donat
McGlashan, R. J.
St. Amour, Abie

Notre Dame de la Salette
Hull
Notre Dame de la Salette

SILICA BRICK

NOVA SCOTIA -

Dominion Steel and Coal Corp. Ltd.

Sydney

ONTARIO -

Algoma Steel Corp. Ltd.

Sault Ste. Marie

SODIUM CARBONATE

BRITISH COLUMBIA -

B. C. Sodium Syndicate
Bishop, James A.(a)

Kamloops
Clinton

SODIUM SULPHATE

SASKATCHEWAN -

Alexander, W. R.
Dominion Sodium Refineries, Ltd.
Eastcrest Holding and Development Co.
Horseshoe Lake Mining Co. Ltd.
Midwest Chemical Co.
Muskiki Sulphates Ltd.
Natural Sodium Products Ltd.
Saskasal Ltd.
Sodium Corporation Ltd.
Sodium Sulphate Co. of Sask. Ltd.
White Shore Salts & Chemicals Co. Ltd.

831 D. North, Saskatoon
513 Lougheed Bldg., Calgary, Alberta
Calgary, Alberta.
Ormiston
Palo
Muskiki Lake
409, Walter Scott Bldg., Moose Jaw
513 Westman Chambers, Regina
302 Bay St., Toronto, Ont.
1753 Rose St., Regina
1371 George St., North Battleford

SULPHUR

QUEBEC -

Aldermac Mines Ltd.(b)
Consolidated Copper and Sulphur Co.Ltd.(b)

941 Dominion Square Bldg., Montreal
Eustis

ONTARIO -

International Nickel Co. of Canada,Ltd.(c) Copper Cliff



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DIRECTORY OF FIRMS IN THE MISCELLANEOUS NON-METAL MINING INDUSTRIES IN CANADA,
1934 (concluded)

Name of Operator and Province

Office Address

SULPHUR (concluded)

BRITISH COLUMBIA -

Consolidated Mining & Smelting Co.
of Canada, Ltd.(c)

Trail, B.C.

Britannia Mining & Smelting Co.
Ltd. (a)

Britannia Beach, B.C.

- - - - -

- (x) Company now inactive.
- (a) Active but no shipments made.
- (b) Pyrites.
- (c) Salvaged smelter gas.