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CENSUS OF INDUSTRY

MINING, METALLURGICAL & CHEMICAL BRANCH

THE FELDSPAR & QUARTZ MINING INDUSTRY IN CANADA 1941

(including data relating to Nepheline-Syenite)

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THE FELDSPAR AND QUARTZ MINING INDUSTRY, 1941

Owing to the very close physical association of these minerals in many Canadian deposits (pegmatites), it has been found difficult for some operators to make a separation of all data pertaining to the mining of each individual mineral and, for this reason, the general statistics relating to capital, employment, fuel and electricity, etc., have been combined in this bulletin by the Mining, Metallurgical and Chemical Branch of the Dominion Bureau of Statistics at Ottawa. Since 1936, corresponding statistics relating to the production of nepheline-syenite have been included with those pertaining to the commercial production of feldspar and quartz.

During 1941 the gross value of production by the industry and including the value of feldspar, quartz and nepheline-syenite sold totalled $1,838,054 compared with corresponding values of $1,508,999 in 1940 and $1,352,671 in 1939. In 1941 commercial shipments of feldspar were made only from properties located in Ontario and Quebec; quartz in various forms was produced in Nova Scotia, Quebec, Ontario, Saskatchewan and British Columbia, while production of nepheline-syenite was confined to the province of Ontario.

The number of firms reported as active in the industry in 1941 totalled 38, capital employed was recorded at $2,514,582, employees numbered 506, salaries and wages paid amounted to $610,489 and the value of fuel, electricity and process supplies totalled $250,985. The net value of all products sold was estimated at $1,587,071 compared with $1,294,482 in 1940.

FELDSPAR

Production (sales) of feldspar, crude and ground, during 1941 totalled 26,040 short tons valued at $244,284 compared with 21,455 short tons worth $187,625 in 1940. Of the 1941 production, 14,218 short tons valued at $137,160 were mined in the province of Quebec, and 11,822 short tons at $107,124 in Ontario.

Feldspar mining in Quebec is centered chiefly in the Buckingham district of the Ottawa Valley, while in Ontario the mineral is obtained principally in the Kingston-Perth area and the Nipissing district. Grinding mills are operated at Kingston, Ontario and Buckingham, Quebec.

The following abstracts are from a report prepared by the Bureau of Mines, Ottawa:

"Feldspar has been mined in Canada since 1890. Most of the production has been of high-potash grade, and "No. 1 Canadian" has long been a standard in the ceramic industry as denoting prime quality for porcelain products. Some soda spar also is mined, and is sold for blending and for use in scouring preparations and soaps of the "Bon Ami" type.

"Most of the production comes from adjacent sections of western Quebec and Eastern Ontario, generally in the Ottawa region, with lesser amounts from mines in Ontario as far west as the Parry Sound and Sudbury districts. Formerly, a considerable part of the supply came from a number of small, scattered, and often intermittent operations, but in recent years most of it has come from a few of the larger deposits, the production being about equally divided between Ontario and Quebec.

"World production of feldspar in 1937 (1938-41 not available) amounted to about 500,000 tons, including china stone, a variety of granite used in place of pure feldspar. Canada was sixth on the list, with about four per cent of the total.

"Material for Canadian use is ground in mills operated by the following concerns:

Canadian Flint and Spar Company, Buckingham, Quebec
Frontenac, Floor and Wall Tile Company, Kingston, Ont.
Bon Ami Company, Montreal East, Quebec.

"The first two companies grind ceramic material while the Bon Ami product is used in making scouring compounds. Canadian Flint & Spar Company expanded its grinding capacity in 1941 by the addition of a second Hardinge mill and air separator.

"Owing to shortage of cargo space, shipments of crude and ground feldspar to Great Britain ceased in 1941. The first shipments from Canada to that country were made in 1940, following the cessation of Scandinavian supplies to the British market.

"All of the feldspar used in industry is crushed or finely-ground material, usually prepared either in mills operated by producers of the crude mineral or in merchant mills supplied from independent mines. Some manufacturers of ceramic products mine and grind spar for their own use. Specially selected "dental spar", is used in the manufacture of artificial teeth.

"By far the greater part of the feldspar production is used in the ceramic industries, of which the glass trade is the largest consumer, followed by pottery, enamel, and sanitary ware industries. In the United States, these industries used 98 per cent of total sales in 1940. Minor amounts are used in the manufacture of soaps and cleansers, abrasive wheels, and artificial teeth.

"Domestic feldspar prices in 1941 were the same as in 1940. Crude No. 1 grade, both potash and soda spar, was quoted at $5.50-$6.00, f.o.b. rail, for domestic mills and export. Ground spar, 200-mesh, sold at $16-$18, and granular glass spar at $12, both f.o.b. mill."

FELDSPAR PRICES (October, 1939 to June, 1942) - UNITED STATES - Per ton, f.o.b. North Carolina, potash feldspar, 200 mesh, white, $17 in bulk; soda feldspar, $19. F.O.B. Maine, potash feldspar, white, 200 mesh, $17, in bulk. Granular glass spar, white, 20 mesh, F.O.B. North Carolina, $12.50 in bulk; semi granular, $11.75; soda feldspar, 200 mesh, white, $19. Virginia: No. 1, 250 mesh, $18; 200 mesh, $17; No. 17 glassmakers', $11.75; No. 18, $12.50. Enamelers, $14 to $16. Quotations on Spruce Pine, N.C., or Keene, N.H., basis. (Engineering and Mining Journal's "Metal and Mineral Markets" - New York).

Table 1 - PRODUCTION OF FELDSPAR IN CANADA, BY PROVINCES, 1930 - 1941

	QUEBEC		ONTARIO		MANITOBA	
	Tons	$	Tons	$	Tons	$
1930	17,074	163,802	9,722	104,667	...	...
1931	10,381	86,842	7,962	100,119	...	...
1932	3,390	39,062	3,657	42,920	...	...
1933	6,183	59,283	4,387	45,350	88	484
1934	9,207	78,853	7,302	61,665	1,795	6,763
1935	7,002	63,075	8,656	75,003	2,084	6,252
1936	8,115	75,703	8,409	70,840	1,322	7,932
1937	12,285	105,612	9,061	72,610	...	...
1938	5,874	62,878	8,106	65,964	78	451
1939	5,399	60,923	7,061	51,056	40	330
1940	8,548	89,004	12,907	98,619	...	...
1941	14,218	157,160	11,822	107,124	...	...

Table 2 - CONSUMPTION OF FELDSPAR IN CANADA, BY SPECIFIED INDUSTRIES, 1930 - 1940

Year	Artificial Abrasive Industry		Imported Clay Products Industry		TOTAL - ALL NON-METALLIC MANUFACTURES INDUSTRIES (x)	
	Tons	$	Tons	$	Tons	$
1930	19	370	2,254	51,211	6,406	129,516
1931	8	190	1,885	34,394	5,405	93,175
1932	6	173	1,406	28,043	5,093	89,818
1933	6	115	861	16,297	5,762	98,393
1934	25	688	1,488	30,577	9,738	130,842
1935	34	939	1,135	21,977	5,097	84,878
1936	36	999	1,572	28,521	5,730	105,121
1937	53	1,506	2,428	46,028	5,979	108,072
1938	41	1,129	1,890	35,979	3,567	62,291
1939	45	1,368	2,021	38,840	3,028	55,230
1940	68	2,056	3,305	70,788	4,073	83,838

(x) Includes feldspar consumed in the manufacture of glass.

NOTE: Feldspar used in Canada in 1939 in the manufacture of glass totalled 609 tons valued at $9,727 and in 1940, 330 tons at $5,744.

Table 3 - FELDSPAR USED IN THE MANUFACTURE OF CANADIAN SOAPS AND CLEANING PREPARATIONS, 1931 - 1940

Year	Tons	$	Year	Tons	$
1931	1,001	37,460	1936	939	10,221
1932	956	26,647	1937	1,119	13,329
1933	989	13,293	1938	1,008	11,212
1934	1,091	13,420	1939	1,146	12,413
1935	1,257	12,817	1940	1,085	11,427

Table 4 - FELDSPAR CONSUMED IN THE MANUFACTURE OF CANADIAN IRON AND STEEL PRODUCTS, 1931 - 1940

Year	Tons	$	Year	Tons	$
1931	(a)	3,386	1936	369	6,503
1932	(a)	2,799	1937	441	7,385
1933	147	2,969	1938	390	5,215
1934	300	5,496	1939	468	8,242
1935	662	11,554	1940	542	9,774

(a) Quantity statistics not available.

NEPHELINE-SYENITE

Production of nepheline-syenite in Canada during 1941 was valued at $227,583 compared with $117,849 in 1940. Commercial shipments of the mineral in 1941 were made only by the American Nepheline Corporation; the deposits worked by this Company are located on Lot. 14, Concession 9, Methuen Township, Peterborough County, Ontario; milling operations are conducted in a plant located at Lakefield, Ontario and were continuous throughout the year under review.

The following abstracts are from a report prepared by the Bureau of Mines, Ottawa:

"Nepheline syenite is a quartz-free crystalline rock consisting essentially of the mineral nephelite, a silicate of alumina, potash, and soda, and albite and microcline feldspar. It often contains also varying amounts of iron-bearing minerals in the form chiefly of black mica and magnetite, together with such accessory minerals as zircon, corundum, calcite, scapolite, etc. It has no free silica and is high in alumina (20 to 30 per cent in average commercial rock) as compared with straight feldspar (17 to 20 per cent) and it has thus found favour with the ceramic industries, particularly in the glass trade. For ceramic use the crude rock must be freed of its iron-bearing constituents, removal of which can often be readily effected by a relatively cheap process of magnetic separation at about 20-mesh size.

"The known occurrences of nepheline syenite in Canada lie mainly in Ontario, the most extensively developed deposits being in Peterborough, Hastings, and Haliburton counties. Production began in 1936 with the opening of a quarry by Canadian Nepheline, Limited at the west end of Blue Mountain in Methuen township, Peterborough county. This company at the same time erected a small plant at Lakefield, the nearest rail point 27 miles distant, for crushing and cleaning the rock. Production for supplying the domestic glass trade has been continuous since then. In 1937-38 production of crude rock was greatly expanded by the formation of a subsidiary, American Nepheline Corporation, which erected a large crushing and processing plant at Rochester, New York, to take care of United States requirements. Present capacity of the Lakefield mill is 45 tons of finished product a day, and the Rochester plant is designed for about 200 tons of feed a day. The main product made in both plants is a granular, minus 20-mesh material, containing about 24 per cent of alumina, and only 0.07 per cent of ferric oxide (Fe_2O_3). The Lakefield mill supplies cleaned material to the mill of Frontenac Floor and Wall Tile Company, Kingston, Ontario, for fine grinding for general ceramic use, and similar fine syenite is being produced at the Rochester plant. In 1940, Canadian Nepheline Limited was merged with American Nepheline Corporation, and is now the latter company's Canadian branch.

"A second important nepheline syenite area lies in the Bancroft-Gooderham district, Hastings and Haliburton counties, about 30 miles northeast of the Methuen deposit. Production began in 1937 and has since been continued intermittently by several operators.

"Frobisher Exploration Company, Limited, a subsidiary of Ventures Limited (which holds the controlling interest in American Nepheline Corporation), conducted an intensively geological and diamond drilling program in 1941 on the nepheline syenite occurrences in the Bancroft area. In connection with this work, a process was developed in the laboratories of the Bureau of Mines, Ottawa, for the production of alumina from the nepheline syenite deposits, having as by-products, potash and soda ash. Canada has been obtaining

its bauxite, the ore of aluminium, from the Guianas in South America, and in event that these supplies are cut off, the nepheline syenite could be used to replace the bauxite as a source of aluminium. Nepheline Products, Limited, with office at Lakefield, Ontario, was incorporated in 1941 as a subsidiary of Ventures Limited to attend to outlets for nepheline syenite other than in the ceramic trade.

"Aside from Russia, the output of which is unknown, Canada is the only producer of nepheline syenite. Russia recovers large tonnages of apatite (phosphate) from apatite-nephelite rock, large bodies of which occur in the Kola Peninsula.

"Nepheline syenite continues to be used chiefly in the glass trade, where it is preferred to straight feldspar because of its higher content of alumina. Research has been proceeding steadily on applications for nepheline syenite in other branches of ceramics, and it has been found of advantage owing to its higher fluxing action, as a body ingredient in a variety of products, including pottery, semivitreous ware, sanitary and electrical porcelain, floor and wall tile, and structural clay products, as well as in enamels.

"Glass grade nepheline syenite for sale in Canada remained at the 1940 price of $11.75 per ton, bulk, in carload lots, f.o.b. Lakefield, with ground, 200-mesh, ceramic grade quoted at $16.50. Grade B (dust) sold for $13.00, l.c.l. American prices also remained unchanged, at $12.00 for glass grade, and $15.50 for ceramic grade, all bulk, in carload lots, f.o.b. Rochester, New York."

Table 5 - PRODUCTION OF NEPHELINE-SYENITE IN CANADA (x), 1936 - 1941

Year	Quantities	Value
		$
1936	(a)	37,428 (b)
1937	(a)	121,481
1938	(a)	142,757
1939	(a)	140,148
1940	(a)	117,849
1941	(a)	227,583

(x) Produced in Ontario only.
(a) Quantity not published.
(b) First commercial production in Canada.

Nepheline-syenite used in Canada in the manufacture of glass totalled 5,472 tons valued at $58,629 in 1939 and 4,255 tons at $39,619 in 1940.

QUARTZ (SILICA)

The production of natural silica or quartz in Canada during 1941 totalled 2,052,878 short tons valued at $1,566,187 compared with 1,858,302 tons at $1,203,527 in 1940. Output of primary silica products by the Canadian Quartz Mining industry includes crude and crushed dyke quartz, quartzite, and natural silica sands and gravels. The mineral in one or more of the forms thus defined was produced during 1941 in Nova Scotia, Quebec, Ontario, Saskatchewan and British Columbia. Shipments of silica in Nova Scotia were made to steel plants largely for the making of silica brick. In Quebec, high grade silica sands were produced for the manufacture of glass and chemicals while a considerable tonnage of these same sands was sold for sand-blasting and various other purposes; in the same province relatively large quantities of crushed quartzite were mined and milled for the manufacture of silicon carbide and other products. The greater part of the tonnage of silica shipped in Ontario during 1941 represented material intended for use in the production of silica brick and ferro-silicon and for the fluxing of nickel-copper ores. Quartz production as recorded for Saskatchewan represented low-grade natural silica sands or gravels shipped as flux to the Flin Flon Smelter of the Hudson Bay Mining and Smelting Co. Ltd. Production in British Columbia in 1941 consisted of quartz shipped to the Trail smelter from the Gypo and Ballarat deposits located near Penticton. The principal new silica producer in Canada during the year under review was J. B. Symington who shipped a relatively large tonnage of quartzite from Bar River, Ontario to the Chromium Mining and Smelting Company Limited, Sault Ste. Marie, Ontario.

The price per ton of the several grades of silica varies greatly depending on its purity and on the purpose for which it is to be used. Silica, on the whole, is a comparatively low-priced commodity, and therefore the location of a deposit with respect to markets is of great importance. According to a report issued by the Bureau of Mines, Ottawa, the larger markets for silica are in the provinces of Quebec and Ontario, and any new deposits being opened up should be within economic reach of either Montreal or Toronto.

QUARTZ CRYSTAL

(United States Bureau of Mines)

"Modern mechanized warfare depends upon instantaneous two-way radio communication, which to be effective must rely upon accurately ground wafers of crystal, two in each circuit; dozens are needed for a single tank or airplane. Brazil remains the only known commercial source of quartz suitable for radio-frequency control, and radio quartz crystal has been classified as a strategic mineral by the Army and Navy Munitions Board.

"Quartz crystals of commercial size, found near Hot Springs, Ark., almost without exception show twinning, and crystal plates made from them do not have piezoelectric properties unless the twinned portion is cut away--a costly process. Cracks and inclusions of other minerals and of air render most domestic crystals and fragments subject to rejection, even before examination for piezoelectric properties.

"In Brazil, the annual production of quartz crystal jumped to over 1,000 short tons in 1940 from about 250 tons in 1937. One-fourth of the output is consumed as piezoelectric (radio) quartz, and the remainder is used as optical, instrument, or fusing quartz. Before 1941 Japan's purchases were the backbone of the Brazilian crystal industry. The United States had comparatively small peacetime requirements and bought only high-grade material.

"In 1941 the Governments of the United States and Great Britain agreed to buy all stocks of Brazilian quartz crystals remaining after their nationals had made purchases for private industry. The Brazilian Department of Mineral Production, Ministry of Agriculture, introduced export control through licenses and levied a 10 per cent tax based upon export prices. Exports may clear only through the ports of Rio de Janeiro and Salvador.

"A schedule of prices for the various grades of crystal as of April 1941 has been reported. For example, "A" (piezoelectric)-grade crystals weighing 1.5 to 2.0 kilograms with growth faces were quoted at 250,000 milreis a kilogram (about $6, United States currency, a pound). Owing to tremendous increases in demand and slight revision in specifications for oscillator plates, many of the manufacturers began to use smaller crystals down to 200 grams each. Prices of larger crystals advanced as much as threefold during the year, but even at the peak these represented only a minor factor in the cost of the final product."

No commercial production of quartz crystals has ever been officially reported in Canada. Imported crystals, however, are now being cut and dressed in the Dominion.

"The Mineral Industry" reported exports of Brazilian quartz crystals as follows: 1938, 747 metric tons; 1939, 678 tons. Of 646 tons exported during the first eight months of 1940, 343 tons went to Great Britain, 223 tons to Japan and only 42 tons to the United States. Germany is known to have received ten tons and may have secured part or all of 23 tons to Italy and 5 tons to Netherlands.

Sales of fragments for the production of fused quartz amounts to about half of the sales for electrical and optical work.

Table 6 - PRODUCTION IN CANADA OF QUARTZ, 1940 and 1941

	1940		1941	
	Short tons	Value	Short tons	Value
		$		$
PRODUCTION(x)(SHIPMENTS) -				
Nova Scotia	8,755	15,670	11,477	24,100
Quebec	109,090	521,891	147,518	588,946
Ontario	1,581,567	810,285	1,745,244	899,687
Saskatchewan	159,090	55,681	148,208	51,875
British Columbia	...	...	651	1,579
CANADA	1,858,502	1,205,527	2,052,878	1,566,187

(x) Includes both crude and crushed quartz and quartzite, silica flux and natural silica sands.

Table 7 - PRODUCTION(x) (USE) OF NATURAL LOW GRADE SILICA SAND AND SILICA GRAVEL AS NON-FERROUS SMELTER FLUX 1939 - 1941

	1939		1940		1941	
	Tons	$	Tons	$	Tons	$
Ontario	1,195,558	418,445	1,403,268	491,144	1,553,392	536,687
Saskatchewan	134,192	46,967	159,090	55,681	148,208	51,873
CANADA TOTAL	1,329,750	465,412	1,562,358	546,825	1,681,600	588,560

(x) Included in totals shown in Tables 6 and 8, also complete data for production of this material in Ontario previous to 1936 are not available.

Table 8 - PRODUCTION OF QUARTZ (SILICA) IN CANADA, 1928 - 1941

Year	Ton	$	Year	Ton	$
1928	282,522	523,953	1935	235,002	424,882
1929	265,949	561,527	1936 (x)	1,046,649	597,781
1930	226,200	416,127	1937 (x)	1,577,448	1,129,011
1931	195,724	303,156	1938 (x)	1,590,011	961,617
1932	189,152	276,147	1939 (x)	1,582,935	1,100,214
1933	185,783	297,320	1940 (x)	1,858,502	1,205,527
1934	272,563	482,265	1941 (x)	2,052,878	1,566,187

(x) See footnote to Table 7.

PRICES - UNITED STATES (May, 1941 to June, 1942) - Silica, per ton, water ground and floated, in bags, f.o.b. Illinois: 325 mesh, $21 to $40 for 92 to 99½ per cent grades. Dry ground, air floated, 325 mesh, 92 to 99½ per cent silica, $18 to $30. Glass sand, f.o.b. producing plant, $1.25 to $5 per ton; moulding sand, 50 cents to $3.50; blast sand, $1.75 to $6. California: $5 for quartz and $2.50 for sand. Quartz rock crystals for fusing, all sizes, $100 to $150 per ton; prisms for piezo-electrical and optical use command premium. (Engineering and Mining Journal's "Metal and Mineral Markets" - New York).

"Canadian Chemistry and Process Industries" - Toronto - quotations (March, 1941) - silica sand, various grades, carlots, ton $8 to $9.50. Silica quartz 99 per cent, 110-220 grade, carlots - to $15 per ton. The price for the lower grades of crude quartz varies greatly according to purity and purpose of use.

Table 9 - CONSUMPTION OF QUARTZ, SILICA SAND, ETC., IN CANADA, BY INDUSTRIES, ACCORDING TO CENSUS OF INDUSTRY REPORTS, 1940 and 1941

Industry	1940 Quantity	1940 Cost at works	1941 Quantity	1941 Cost at works
	Short tons	$	Short tons	$
Silica Sand and Silica (including ground quartz) -				
Soaps and cleaning preparations	4,873	81,894	...	(x)
Acids and salts	19,256	90,545	...	(x)
Paints	825	26,309	...	(x)
Refractories	690	4,869	...	(x)
Roofing paper	1,833	10,251	...	(x)
Abrasives (silica sand)	45,982	221,925	...	(x)
Abrasives (quartz)	139	5,577	...	(x)
Glass	78,955	459,540	...	(x)
Enamelling materials	485	7,245	...	(x)
Products from imported clays	5,426	53,690	...	(x)
Foundry facings and supplies	72	954	...	(x)
Non-ferrous smelters (A)	1,562,358	546,825	1,882,231	580,139
Steel industry	41,232	302,171	...	(x)
Ferro-alloys	115,868	272,953	...	(x)
TOTAL ACCOUNTED FOR	1,875,990	2,064,758	...	...

NOTE: Consumption values are costs at works.

(A) The quantities reported under this industry usually represent low grade natural siliceous sands used for fluxing purposes. In addition to the quantities shown, a relatively large quantity of quartz and quartzite is consumed in the manufacture of silica brick.

(x) Data not yet complete for 1941.

Table 10 - PRINCIPAL STATISTICS OF THE FELDSPAR AND QUARTZ MINING INDUSTRY, 1940 and 1941

	Ontario (x)(b) 1940	Ontario 1941	Quebec 1940	Quebec 1941
Number of firms (a)	17	18	27	20
Capital employed $	604,687	650,405	1,569,571	1,664,177
Number of employees - On salary	14	17	19	15
On wages	176	207	191	267
Total	190	224	210	282
Salaries and wages - Salaries $	22,508	25,210	18,137	26,927
Wages $	189,583	253,443	147,026	304,909
Total $	212,091	278,653	165,163	331,836
Selling value of products (gross) $	1,098,104	1,311,946	410,895	526,108
Cost of fuel and purchased electricity $	40,380	42,709	35,754	48,456
Cost of process supplies $	88,521	97,954	49,362	61,864
Net value of sales $	969,203	1,171,293	325,279	415,788

(x) In 1940 includes 1 firm operating in Nova Scotia and 1 in Saskatchewan (a total of 2). In 1941 includes 1 firm in Nova Scotia, 1 in British Columbia and 1 in Saskatchewan.

(a) Small shippers from whom reports were unobtainable and whose production is recorded from consumers' returns are sometimes not included in the total.

(b) Includes data relating to production of nepheline-syenite.

Table 11 - NUMBER OF WAGE-EARNERS ON PAY ROLL, BY MONTHS, 1938 - 1941

Month	1938	1939	1940	1941 Quebec	1941 Ontario	1941 CANADA(x)
January	279	209	284	119	171	290
February	292	211	289	145	152	297
March	280	221	338	162	174	336
April	271	210	327	223	209	432
May	362	314	379	307	227	553
June	382	331	409	314	246	579
July	415	367	400	334	254	587
August	429	397	451	342	243	604
September	368	374	428	322	210	551
October	318	402	430	301	217	537
November	299	356	375	329	205	549
December	222	313	301	316	146	477

(x) Includes a few employees in some months in Nova Scotia. Complete data relating to quartz production in British Columbia in 1941 are not available.

Table 12 - WAGE-EARNERS WORKING THE HOURS SPECIFIED DURING ONE WEEK IN MONTH OF NORMAL EMPLOYMENT, 1941

Hours	Number	Hours	Number
30 hours or less	31	49 - 50 hours	25
31 - 43 hours	35	51 - 54 hours	53
44 hours	6	55 hours	12
45 - 47 hours	9	56 - 64 hours	246
48 hours	155	65 hours and over	75
		Grand Total Employees in week specified	647
		Total wages paid in week specified ..... $	15,337

Table 13 - FUEL AND ELECTRICITY USED, 1941(b)

Kind	Unit of measure	CANADA Quantity	CANADA Cost at works	Ontario (a) Quantity	Ontario (a) Cost at works	Quebec Quantity	Quebec Cost at works
			$		$		$
Bituminous coal -							
Canadian	short ton	1,128	9,026	2	10	1,126	9,016
Foreign	short ton	4,290	29,194	4,223	28,290	67	904
Anthracite coal -							
United States	short ton	521	5,055	...	...	521	5,055
Other	short ton	...	...	...	...	...	...
Coke	short ton	...	...	...	...	...	...
Gasoline	Imp. gal.	54,050	14,147	30,350	6,839	23,700	7,308
Kerosene	Imp. gal.	1,950	465	1,385	281	565	184
Fuel oil	Imp. gal.	85,442	12,872	23,798	2,941	61,644	9,931
Wood	cord (f)	737	2,361	419	1,446	318	915
Gas(a) - Manufactured	M cu. ft.	...	...	...	...	...	...
Other	...	...	15	...	11	...	4
Electricity purchased	K. W. H.	1,846,671	20,050	393,456	2,891	1,453,215	17,159
TOTAL	$	...	91,165	...	42,709	...	48,456
Electricity generated for own use	K. W. H.	990,943	...	117,943	...	873,000	...

(f) 128 cubic feet.
(a) Includes data for 1 property in Nova Scotia.
(b) Data relating to production of silica flux by smelting companies are included with those of the non-ferrous smelting and refining industry.

Table 14 - POWER EQUIPMENT INSTALLATION, 1941

Description	QUEBEC Number	QUEBEC Horse power	ONTARIO (x) Number	ONTARIO (x) Horse power
Ordinarily in Use				
Steam engines and steam turbines	1	150	6	458
Diesel engines	4	670	2	257
Other internal combustion engines	4	216	15	690
Electric motors operated by purchased power	45	905	20	129
Electric motors operated by establishment power..	102	888	5	19
Stationary boilers	3	225	5	505
In Reserve or Idle				
Steam engines and steam turbines	...	...	...	...
Diesel engines	2	475	...	...
Other internal combustion engines	3	7	...	...
Electric motors operated by purchased power	2	35	...	...
Electric motors operated by establishment power..	...	...	...	...
Stationary boilers	...	...	1	50

(x) Includes 1 property in Nova Scotia.

LIST OF FIRMS IN THE CANADIAN FELDSPAR AND QUARTZ MINING INDUSTRY, 1941

(a) - shipped silica only
(b) - operate a milling plant
(c) - shipped scapolite
(d) - shipped garnet sand
(e) - shipped grinding pebbles
(f) - also shipped kaolin
(x) - active but no production

Name of Firm	Head Office Address	Location of mine or mill
NOVA SCOTIA -		
Nairn, J. S. (a)	Sydney (24 Whitney Ave.)	Leitches Creek
QUEBEC -		
Bigelow, Gordon and Parcher, A.	Glen Almond	Derry Tp.
Barthel, J. D.	Buckingham	Buckingham Dist.
Bon Ami Limited (x)	13719 Notre Dame St. E., Montreal	Buckingham Tp.
Brady, James P. (a)	Masson	Buckingham Tp.
Canada China Clay & Silica Ltd. (a)(b)(f)	Royal Bank Building, Toronto, Ont.	Amherst Tp.
Canadian Carborundum Company Ltd. (a)(b)	Box 57, Niagara Falls, Ont.	St. Canut
Canadian Flint & Spar Co. Ltd. (b)	Victoria Building, Ottawa, Ont.	Buckingham
Crang, J. K. Corp.	24 Adelaide St. E., Toronto, Ont.	Derry Tp.
Grenat Canada Ltd. (d)(b)	4203 Brébeuf, Montreal	Labelle
Importing Corporation Ltd. (x)	1451 Notre Dame St. W., Montreal	Buckingham Dist.
Lafrance, O. (a)	Angers	Buckingham Tp.
Lauzon, Claude	Glen Almond	Glen Almond
Montpetit, Euclyde (a)	Melochville	Melochville
Morin, A. H.	Box 3, Buckingham	Buckingham Tp.
Newton, A. A. (a)	Buckingham	Buckingham Tp.
Osborne, W. R. (e)	Mattawa	Cermaie
Ottawa Silica & Sandstone Ltd. (a)(b)	East Templeton	East Templeton
Parcher, Maggie (x)	Glen Almond	Derry Tp.
Perkins Mining Co.	Gatineau Point	Derry Tp.
Stewart, Wm.	Buckingham	Portland Tp.
United Mining Industries Ltd.	1451 Notre Dame St. W., Montreal	Buckingham Tp.
Wallingford, Arthur	Gatineau Point	Various
Winning, B.	Notre Dame de la Salette	Portland W. Tp.
Warwick, Wm.	Glen Almond	Glen Almond
ONTARIO -		
Bathurst Feldspar Mines Ltd.	room 508 .. 21 King St. E., Toronto	Lanark Co.
Burks Falls Prospecting Synd.	c/o T. B. Tough, Burks Falls	Ryerson Tp.
Cameron, Donald A.	Madawaska	Murchison Tp.
Craig, T. H.	Perth	Bathurst Tp.
Dominion Mines & Quarries Ltd. (a)(b)	Canada Life Bldg., Toronto	Killarney
Evans, W. H.	Perth	Bathurst Tp.
Federal Feldspar Co.	c/o E. H. Storms, 146 Front St., Toronto	Bedford Tp.
Frontenac Floor & Wall Tile Co. Ltd. (b)	Kingston	Kingston
Gole, John G.	room 54 .. 18 Toronto St., Toronto	Nipissing Dist.
Magnetawan Feldspar Mining Synd. Ltd.	64 Kent Road, Toronto	South Magnetawan
Orser, S. H.	Verona	...
Symington, J. B. (a)	557 Queen St. E., Sault Ste. Marie	Bar River
Wright & Co. (a)	960 Queen St., Sault Ste. Marie	Algoma Central R.R.
BRITISH COLUMBIA -		
Consolidated Mining & Smelting Co. of Canada Ltd. (a)	Trail	Penticton

NEPHELINE SYENITE

ONTARIO -		
American Nepheline Corp. (b)	Lakefield, Ont.	Methuen Tp.
Frobisher Exploration Co. Ltd. (x)	25 King St. W., Toronto	Hastings Co.

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