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CANADA
DEPARTMENT OF TRADE AND COMMERCE
DOMINION BUREAU OF STATISTICS
CENSUS OF INDUSTRY
MINING, METALLURGICAL & CHEMICAL BRANCH

THE
FELDSPAR & QUARTZ MINING INDUSTRY
IN
CANADA
1936



OTTAWA
1938

Price 10 cents

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

Dominion Statistician: R. H. Coats, LL.D., F.R.S.C., F.S.S. (Hon.)
Chief - Mining, Metallurgical and Chemical Branch: W. H. Losee, B.Sc.
Mining Statistician: R. J. McDowall, B.Sc.

THE FELDSPAR AND QUARTZ MINING INDUSTRY, 1936.

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 issued by the Mining, Metallurgical and Chemical Branch of the Dominion Bureau of Statistics at Ottawa.

The gross value of production by the Canadian feldspar and quartz mining industry totalled \$789,682 in 1936 compared with corresponding values of \$569,212 in 1935 and \$901,998 in 1929. The number of properties reported as active in 1936 totalled 34 of which 18 were located in Quebec and 12 in Ontario; one producing property was also located in each of the following provinces - Nova Scotia, Manitoba, Saskatchewan, and British Columbia. The industry reported 324 employees and distributed \$238,848 in salaries and wages. The value of fuel and purchased electricity used totalled \$56,944 while explosives, drill steel and various other process supplies consumed amounted to \$103,969. Capital employed during the year under review was recorded at \$1,400,024.

FELDSPAR

Production of feldspar in Canada during 1936 totalled 17,846 short tons valued at \$154,475 compared with 17,742 short tons at \$144,330 in 1935. The output of the mineral during both these years was confined to Quebec, Ontario and Manitoba and, of the total tonnage shipped in 1936, 8,409 tons originated in Ontario and 8,115 tons in Quebec.

Exports of feldspar from Canada showed a decided improvement having increased from 9,959 short tons valued at \$59,893 in 1935 to 14,133 short tons worth \$94,537 in 1936; of the exports in the latter year, 21 short tons valued at \$520 went to the United Kingdom and 14,042 short tons at \$92,419 to the United States.

In 1936 consumption of feldspar by Canadian industries, other than glass manufacturing, was as follows - abrasives, 36 tons; imported clay products, 1,572 tons, and cleaning preparations, 939 tons. In 1935, the last year for which complete figures are available, the total consumption of feldspar in Canada, including that for glass manufacture, was 7,016 short tons.

The expansion in feldspar production experienced in 1936 continued into the current year with the industry reporting shipments during the first six months of 1937 at 8,425 short tons valued at \$77,216 compared with 7,867 short tons worth \$66,768 during the corresponding months of 1936.

Feldspar produced in Canada is chiefly of the high potash type and, during recent years, the larger production of the mineral has been derived from pegmatites occurring in the Bathurst, Sudbury, Mattawa, Hybla and Parry Sound areas of Ontario and in the Buckingham district, Quebec. Shipments of feldspar were also made during 1936 from Lyndoch township, Renfrew county, Ontario, and from a new deposit in West Portland township, Quebec. In Manitoba, relatively small tonnages of feldspar have been shipped from a property located near Pointe du Bois in the Winnipeg river area.

A report issued by the Bureau of Mines, Ottawa, states - "Pegmatite dykes, the main source of commercial feldspar, are widely distributed throughout the Precambrian rocks of eastern and northern Canada, and the potential reserves of the mineral are very great. Development possibilities, however, in view of the comparatively low unit value of the mineral, hinge upon the two important factors of run-of-mine purity of rock and cost of transportation to grinding plant. ...The new operation of Canadian Nepheline Ltd., at Lakefield, Ontario, came into active production during 1936, producing crushed nepheline syenite, a material that has found high favour in the glass industry as a substitute for straight feldspar. The rock consists of a mixture of nepheline and potash and soda feldspars, having a considerably higher alumina content than feldspar. It contains a small amount of iron-bearing impurities, in the form of magnetite grains and flakes of muscovite and biotite micas, which have to be removed by magnetic separation to make a marketable product. Extensive deposits of the syenite occur in the nearby township of Methuen, Peterborough county, as well as in the Bancroft area, Hastings county. Canadian Nepheline Ltd. reports an exceedingly favourable reception for its products by the glass trade, both in Canada and the United States. Outside the glass trade, the product has been found to be valuable for a variety of ceramic uses and it seems likely that it may come into progressively increased demand in place of feldspar."

"In December, 1936, several drilling tests were made at the Hubert O. De Beck feldspar mine at Green Mountain, S.C., to determine the most efficient type of hammerdrill bit and drilling method for use at this particular property. The significant fact demonstrated by this test was that six-point bits not only obtained 20 per cent more footage, but also showed a 25 per cent faster drilling speed than the four point bits. However the results obtained in these tests do not necessarily apply to every mine and may not be obtainable elsewhere. The most economical drilling method for a given mine can only be determined by the trial-and-error method." (Mining and Metallurgy).

"In 1936 the United States feldspar industry registered substantial improvement over 1935. Preliminary figures obtained by the National Feldspar Association indicate a 20 per cent increase over 1935 in shipments of ground feldspar. This increase was attributable largely to improvement in demand for glass making and pottery manufacture, although manufacture of enamels showed an increase of nearly 10 per cent. Significant is the relative increase in the consumption of feldspar in glass making. Whereas only a few years ago the manufacture of glass accounted for only about 30 per cent of the total consumption of feldspar, it now takes more than all other industries combined ... during the year a new competitor for feldspar arose in the form of Canadian nepheline syenite .. ordinary feldspar seldom contains over 18 per cent alumina, and even South Dakota spar rarely exceeds about 20 per cent. Nepheline-syenite, however, carries 24 per cent alumina and

also contains a slightly higher total amount of alkalies. It is sold in Canada (1936) at \$10 a ton and is offered at \$18.38 delivered at glass works in western Pennsylvania and Ohio. Another substitute for feldspar may be available soon in the form of a by-product of certain chemical-manufacturing operations. Preliminary samples indicate the possibility of maintaining a product with the composition of a synthetic sodium-aluminum silicate with over 35 per cent alumina. Some displacement of feldspar may accompany the larger use of pyrophyllite and magnesium talc in the manufacture, particularly, of wall tile." (Paul M. Tyler, United States Bureau of Mines).

Table 1 - PRODUCTION IN CANADA, IMPORTS AND EXPORTS OF FELDSPAR, 1935 and 1936.

	1	9	3	5		1	9	3	6
	Quantity		Value			Quantity		Value	
	Tons		\$			Tons		\$	
PRODUCTION (SALES) -									
Quebec	7,002		63,075			8,115		75,703	
Ontario	8,656		75,003			8,409		70,840	
Manitoba	2,084		6,252			1,322		7,932	
TOTAL	17,742		144,330			17,846		154,475	
IMPORTS OF FELDSPAR -									
Crude only	(1 cwt.)		5			23		285	
Ground (a)	608		10,995			718		13,955	
EXPORTS OF FELDSPAR -									
TOTAL	9,959		59,893			14,133		94,537	
To - United Kingdom	31		805			21		520	
United States	9,816		56,003			14,042		92,419	

(a) All from the United States.

Table 2 - PRODUCTION OF FELDSPAR IN CANADA, JANUARY 1 to JUNE 30, 1936 and 1937.

	1	9	3	6		1	9	3	7
	Quantity		Value			Quantity		Value	
	Tons		\$			Tons		\$	
PRODUCTION (SALES) -									
Quebec	4,085		35,929			4,577		43,125	
Ontario	3,074		28,361			3,848		34,091	
Manitoba	708		2,478			...		...
TOTAL	7,867		66,768			8,425		77,216	

Table 3 - PRODUCTION OF FELDSPAR IN CANADA, BY PROVINCES, 1926 - 1936.

Years	QUEBEC		ONTARIO		MANITOBA	
	Tons	\$	Tons	\$	Tons	\$
1926	13,168	111,136	22,783	199,102	...	...
1927	12,730	104,618	17,119	154,533	...	...
1928	12,943	104,789	18,954	180,153	...	...
1929	15,790	133,492	21,737	206,979	...	...
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	1,793	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

CANADA - Current quotations (October, 1937) for crude Canadian feldspar, per short ton, ranged from \$4 to \$6, depending on quality and transportation charges.

Table 7 - WORLD'S PRODUCTION OF FELDSPAR, 1933 - 1935.

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

Producing Country	1933	1934	1935
<u>BRITISH EMPIRE</u>			
United Kingdom -			
China stone	33,462	47,993	57,160
Canada	9,516	16,341	15,841
India	677	628	702
Australia (including china stone)	2,570	2,902	3,163
<u>FOREIGN COUNTRIES</u>			
Czechoslovakia (estimated)	30,000	30,000	30,000
Finland (exports)	2,663	3,276	2,038
Germany (Bavaria only)	4,419	6,700	5,860
Italy	4,794	7,516	7,496
Norway	18,202	25,494	(a)
Roumania (b)	1,288	1,010	(a)
Sweden	32,053	33,924	47,869
Egypt	59	...	71
United States (sales)	150,633	154,188	189,550
Argentina	370	424	(a)
"Manchoukuo"	5,500	5,000	(a)
China	21,248	22,420	(a)

Feldspar is also produced in U.S.S.R. (Russia)

(a) Information not available.

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

Table 8 - WORLD'S IMPORTS OF FELDSPAR, 1933 - 1935. (Less Re-exports).

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

Importing Country	1933	1934	1935
<u>BRITISH EMPIRE</u>			
United Kingdom (b)	18,382	16,884	24,903
Canada	501	928	543
<u>FOREIGN COUNTRIES</u>			
Austria	948	734	561
Belgium-Luxemburg E.U.	5,050	6,576	7,623
Czechoslovakia	1,172	964	1,125
Denmark	623	981	1,004
Finland (total imports)	51	303	593
Germany	25,249	33,573	29,944
Latvia	108	...	106
Netherlands	3,381	2,376	9,749
Poland	3,003	(a)	(a)
Sweden	1,295	895	760
Mexico	(a)	416	(a)
United States	3,266	9,744	8,938

(a) Information not available. (b) Including china stone.

In addition to the production of feldspar recorded for 1936, there were shipments of nepheline-syenite valued at \$37,426 made from a property located in Methuen township, Ontario; these shipments represented the first commercial production of this mineral in Canada. Shipments of nepheline-syenite during the first half of 1937 were valued at \$51,087.

Table 4 - CONSUMPTION OF FELDSPAR IN CANADA, BY SPECIFIED INDUSTRIES, 1930-1936.

Year	Abrasive Products Industry		Imported clay products Industry		TOTAL - ALL NON-METALLIC MANUFACTURES INDUSTRIES (x)	
	Tons	\$	Tons	\$	Tons	\$
1930	19	370	2,254	51,211	6,406	129,316
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	(a)	(a)

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

(a) Not yet complete.

Table 5 - FELDSPAR USED IN THE MANUFACTURE OF CANADIAN SOAPS AND CLEANING PREPARATIONS, 1930-1936.

Year	Tons	\$	Year	Tons	\$
1930	1,000	29,904	1934	1,091	13,420
1931	1,001	37,460	1935	1,257	12,817
1932	956	26,647	1936	939	10,221
1933	989	13,293			

Table 6 - FELDSPAR CONSUMED IN THE MANUFACTURE OF CANADIAN IRON AND STEEL PRODUCTS, 1931 - 1935.

Year	Tons	\$	Year	Tons	\$
1931	(a)	3,386	1934	300	5,496
1932	(a)	2,799	1935	662	11,554
1933	147	2,969	1936	Data not yet complete	

(a) Quantity statistics not available.

FELDSPAR PRICES (October, 1937) -

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, 230 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. New Mexico: crude clean No. 1 potash spar, \$5.50; ground, \$9.50. (Engineering and Mining Journal's "Metal and Mineral Markets" - New York).

QUARTZ (SILICA)

Production of natural silica, including crushed quartzite, silicious fluxing sand and gravel, and crude and ground dike quartz totalled 1,046,649 short tons valued at \$597,781 in 1936 compared with 233,002 short tons worth \$424,882 in 1935. The statistics of production for these two particular years are not entirely comparable in that the production of silica sand for two of the large Ontario non-ferrous metallurgical plants was not recorded prior to 1936. Silica in one or another of the forms referred to above was produced, during 1936, in Nova Scotia, Quebec, Ontario, Manitoba, Saskatchewan and British Columbia. Silica quarried or mined during 1936 for the manufacture of ferro-silicon, glass, artificial abrasives, chemical products, sand blasting, etc., was derived from properties operated chiefly in the vicinity of Hull, Buckingham, St. Remi d'Amherst, and St. Canute in the province of Quebec; in Ontario shipments of natural silica came from deposits located near Sault Ste. Marie and Killarney. Quebec and Ontario are the two principal silica producing provinces. In 1936 the value of shipments from Quebec properties totalled \$320,634 or 53.6 per cent of the Dominion total while those in Ontario amounted to \$216,037 or 36.1 per cent.

Silica production as recorded for Nova Scotia is utilized by the primary steel industry in the manufacture of silica brick. Production in Saskatchewan represents unconsolidated low grade natural silica sand used for fluxing purposes.

Of the total 1936 silica production of 1,046,649 short tons, 890,723 short tons or 85.1 per cent represented unconsolidated low grade silicious sand utilized as smelter flux and of this quantity, 814,634 tons were consumed in Ontario smelters and 76,089 tons in Saskatchewan-Manitoba smelting operations.

Imports of silica sand in 1936 for glass manufacturing, etc., totalled 143,611 short tons valued at \$270,824 compared with 123,576 short tons worth \$282,930 in 1935. Imports of silex (washed sand or pure crushed quartz) or crystallized quartz, ground or unground, amounted to 4,056 short tons valued at \$84,393 in 1936; corresponding imports in 1935 were 3,359 short tons valued at \$75,768. Flint and ground flint stones imported in 1936 totalled 1,234 short tons worth \$23,079.

According to the Bureau of Mines, Ottawa, the price per ton for 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. 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 Toronto or Montreal. Canadian mills are now producing silica sand of different grades for steel foundries, the glass industry and for sandblasting, etc.

Table 9 - PRODUCTION IN CANADA AND IMPORTS OF QUARTZ AND SILICA PRODUCTS, 1935 and 1936.

	1	9	3	5	1	9	3	6
	Tons	Value			Tons	Value		
		\$				\$		
PRODUCTION (x) (SHIPMENTS) -								
Nova Scotia	9,640	13,978			6,764	10,819		
Quebec	51,948	226,839			78,975	320,634		
Ontario	83,034	120,005			884,585	216,037		
Manitoba	147	220			90	45		
Saskatchewan	77,177	59,069			76,089	49,458		
British Columbia	11,056	4,771			146	788		
CANADA	253,002	424,882			1,046,649	597,781		
IMPORTS -								
Ganister	2,151	8,395			4,097	8,140		
Flint and ground flint stones	2,277	24,014			1,234	23,079		
Silex or crystallized quartz, ground or unground	3,359	75,768			4,056	84,393		
Silica sand for glass, carborundum and steel and filtration plants and sand blasting (a)	123,576	282,930			143,611	270,824		
Silica fire brick, 90% / silica ....	...	215,500			...	261,974		

(x) Includes both crude and crushed quartz and quartzite, silica flux and natural silica sands. See footnote to Table 10.

(a) 108,820 tons from the United States and 14,756 tons from Belgium in 1935 and 139,071 tons from the United States and 4,449 tons from Belgium in 1936.

Table 10 - PRODUCTION (x) (USE) OF NATURAL LOW GRADE SILICA SAND AND SILICA GRAVEL FOR NON-FERROUS SMELTER FLUX, 1936.

	Tons	\$
Ontario	814,634	90,925
Saskatchewan	76,089	49,458
CANADA TOTAL	890,723	140,383

(x) Included in totals shown in Table 9; also complete data for production of this material in Ontario during previous years are not available.

Table 11 - PRODUCTION OF QUARTZ (SILICA) IN CANADA, 1926 - 1936.

Year	Ton	\$	Year	Ton	\$
1926	232,082	553,161	1932	189,132	276,147
1927	233,984	496,364	1933	185,783	297,820
1928	282,522	523,933	1934	272,563	462,265
1929	265,949	561,527	1935	233,002	424,882
1930	226,200	418,127	1936 (x) .	1,046,649	597,781
1931	195,724	305,158			

(x) See footnote to Table 9.

Table 12 - PRODUCTION OF QUARTZ (SILICA) IN CANADA, BY PROVINCES, JANUARY 1 to JUNE 30, 1936 and 1937.

Province	1	9	3	6	1	9	3	7
	Tons			\$	Tons			\$
Nova Scotia	1,410			2,256	3,222			5,542
Quebec	34,697			153,779	46,904			198,175
Ontario	32,563			48,432	533,861			260,320
Manitoba	22			22	...			...
Saskatchewan	37,166			23,759	44,820			31,374
British Columbia .....	...			...	...			...
CANADA	105,658			228,248	628,807			495,411

(x) See footnote to Table 9.

PRICES -

UNITED STATES (OCTOBER, 1937) - 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, \$20 to \$30. Glass sand, f.o.b. producing plant, \$1.25 to \$5 per ton; molding 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 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 Metallurgy" - Toronto - quotations (October, 1937) - silica sand, various grades, car lots, ton \$8 to \$9. Silica quartz 99 per cent, 110-220 grade, car lots - to \$15 per ton. The price for the lower grades of crude quartz varies greatly according to purity and purpose of use.

Table 13 - CONSUMPTION OF QUARTZ, SILICA SAND, etc., IN CANADA, BY INDUSTRIES, ACCORDING TO CENSUS OF INDUSTRY REPORTS, 1935 and 1936.

	1	9	3	5	1	9	3	6
	Quantity	Cost at	Quantity	Cost at	Quantity	Cost at	Quantity	Cost at
	Tons	\$	Tons	\$	Tons	\$	Tons	\$
SILICA SAND AND SILICA (including ground quartz) -								
Soaps and cleaning preparations	4,419	72,626	4,918	79,020				
Acids and salts	10,229	53,389	11,715	60,279				
Paints	565	24,186	739	28,522				
Refractories	389	2,667	285	1,778				
Roofing paper	1,351	5,471	1,993	10,072				
Abrasives	32,626	165,764	44,455	217,499				
Polishes	3	246	...	...		
Glass	61,858	307,677	68,176	331,844				
Enameling	25	1,000	434	5,366				
Products from imported clays	1,448	20,212	2,305	26,722				
Foundry facings and supplies	15	203	36	374				
Non-ferrous smelters (x)	97,556	66,463	890,723	140,383				
Steel foundries	20,339	105,592	23,420	121,142				
TOTAL ACCOUNTED FOR	230,823	825,496	1,049,199	1,024,001				
QUARTZ AND QUARTZITE -								
Acids and salts	3,361	9,806	2,183	6,396				
Ferro-alloys	8,829	26,284	15,777	45,661				
Non-ferrous smelters	11,056	4,771	146	788				
TOTAL ACCOUNTED FOR	23,246	40,861	18,106	52,845				

NOTE - Consumption values are costs at works.

(x) 1935 figures not complete; also the quantities reported under this industry represent low grade natural silicious sands used for fluxing purposes.

Table 14 - PRINCIPAL STATISTICS OF THE FELDSPAR AND QUARTZ MINING INDUSTRY,
1935 and 1936.

	ONTARIO(x)		QUEBEC	
	1935	1936	1935	1936
Number of firms (a)	13	16	15	18
Capital employed	\$ 367,369	661,911	784,617	738,113
Number of employees - On salary	10	14	20	17
On wages	81	122	149	171
Total	91	136	169	188
Salaries and wages - Salaries	\$ 12,106	16,788	32,279	29,310
Wages	\$ 55,567	97,192	82,840	95,558
Total	\$ 67,673	113,980	115,119	124,868
Selling value of products (gross) ;.....	\$ 279,298	393,345	289,914	396,337
Cost of fuel and purchased electricity ...	\$ 10,424	21,159	31,131	35,785
Cost of process supplies	\$ 11,026	91,339	5,431	12,630
Net value of sales	\$ 257,848	280,847	253,352	347,922

(x) Includes 1 firm operating in Nova Scotia, Manitoba, Saskatchewan and British Columbia (a total of 4) also data relating to nepheline-syenite.

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

Table 15 - NUMBER OF WAGE-EARNERS ON PAY ROLL, BY MONTHS, 1932 - 1936.

Month	1932	1933	1934	1935	1936
January	69	39	170	180	188
February	81	32	153	168	186
March	106	34	153	161	192
April	56	18	145	147	199
May	102	123	263	239	254
June	111	172	300	266	321
July	122	187	356	313	354
August	113	193	389	329	364
September	84	200	377	254	407
October	90	163	355	261	383
November	122	139	286	233	331
December	105	132	232	195	303

Table 16 - NUMBER OF WAGE-EARNERS IN MONTH OF HIGHEST EMPLOYMENT IN 1936 WHOSE
REGULAR HOURS PER WEEK WERE -

Hours	Number	Hours	Number
40 hours or less	4	54 hours	51
41 - 43 hours	12	55 hours	4
45 - 47 hours	19	56 - 59 hours	1
48 hours	105	60 hours	130
49 - 50 hours	26	60 hours plus	88
51 - 53 hours	7		

Table 17 - FUEL AND ELECTRICITY USED, 1935 and 1936.

Kind	Unit of measure	1935		1936	
		Quantity	Cost at works	Quantity	Cost at works
Bituminous coal - Canadian ..	short ton	553	\$ 3,596	956	\$ 6,288
Foreign ...	short ton	1,207	7,937	2,758	17,704
Anthracite coal - United States ...	short ton	...	...	20	260
Other	short ton	...	...	13	213
Coke	short ton	34	383	4	77
Gasoline (x)	Imp. gal.	20,456	4,745	19,508	4,346
Kerosene	Imp. gal.	658	160	865	168
Fuel oil	Imp. gal.	139,405	12,571	186,617	13,304
Wood	cord (A)	454	1,372	508	1,655
Electricity purchased	K.W.H.	489,780	10,791	738,450	12,929
TOTAL .....	\$	...	41,555	...	56,944
Electricity generated for own use	K.W.H.	936,100	...	1,056,100	...

(x) Exclusive of consumption by motor vehicles.

(A) 128 cubic feet.

Table 18 - POWER EQUIPMENT INSTALLATION, 1936.

Description	Number of units	Total horse power (Manufacturers' rating)
Steam engines and steam turbines	8	483
Diesel engines	4	790
Other internal combustion engines	24	965
Electric motors operated on purchased power ..	43	908
Electric motors operated on establishment power	70	504
Boilers	9	700

LIST OF FIRMS IN THE CANADIAN FELDSPAR AND QUARTZ MINING INDUSTRY, 1936.

Name of Firm	Head Office Address	Location of mine or mill
NOVA SCOTIA -		
Dominion Steel & Coal Corp.Ltd.(a)	Sydney	Leitches Creek
QUEBEC -		
Cameron, Wm. & Donald	Buckingham	W. Portland Tp.
Canadian Carborundum Co.Ltd.(a)(b)	Box 65, Niagara Falls, Ont.	St. Canut
Canadian Flint & Spar Co.Ltd.(b)	Box 340, Buckingham	Buckingham
Canadian Kaolin Silica Products Ltd. (a) (b)	1007 Canada Cement Bldg., Montreal	St. Remi
Evans, W. H.	Box 63, Buckingham	d'Amherst
Lapointe, C. C. (a)	Notre Dame de la Salette	Buckingham Dist.
Larocque, R. (a)	Buckingham	W. Portland Tp.
Lavolette, A.	Notre Dame de la Salette	Buckingham Dist.
Les Produits Silica Canadiens Ltd.(a)	4074 Marlowe Ave., Montreal	E. Portland Tp.
McDonnell, B. A.	Buckingham	Roberval Co.
Montpetit Fils (a)	Melocheville	Derry Tp.
Ottawa Silica & Sandstone Ltd.(a)(b)	Templeton	Melocheville
Parcher, Alfred	Glen Almond	Templeton
Pedneaud, G.	Glen Almond	Derry Tp.
		Buckingham Dist.

LIST OF FIRMS IN THE CANADIAN FELDSPAR AND QUARTZ MINING INDUSTRY, 1936 (concluded)

<u>Name of Firm</u>	<u>Head Office Address</u>	<u>Location of mine or mill</u>
<u>QUEBEC (concluded) -</u>		
Perkins Mining Co.	Gatineau Pointe	Derry Tp.
Soucy, Allen	Buckingham	Buckingham Dist.
St. Amour, Orphile	Notre Dame de la Salette	E. Portland Tp.
Stewart, Wm. (a)	Buckingham	Buckingham Dist.
Wallingford, Arthur	Gatineau Pointe	Buckingham Dist.
Wallingford & Cornu	Buckingham	Buckingham Dist.
Warwick, Wm. (a)	Glen Almond	Buckingham Dist.
Winning, Bush	Notre Dame de la Salette	Buckingham Dist.
<u>ONTARIO -</u>		
Barnes, Wm. R. (a)	243 Cumberland Ave., Hamilton	Springvale
Barr, W. J.	Westmeath	Eganville
Bathurst Feldspar Mines Ltd.	508 .. 21 King St. E., Toronto	Bathurst Tp.
Charette, S., & Son	Estaire	Burwash Tp.
Craig, T. H.	16 Victoria St., Perth	Lanark Co.
Dominion Mines & Quarries Ltd. (a) (b)	Canada Life Bldg., Toronto	Killarney
Frontenac Floor & Wall Tile Co. Ltd. (b)	Kingston	Kingston
General Refractories Ltd. (x) (a)	706 .. 100 Adelaide St. W., Toronto	Smoky Falls
Gunters Mine	Prince's Lake	Sabine Tp.
Prince & Prince	Prince's Lake	Sabine Tp.
Renfrew Minerals Ltd.	901 Royal Bank Bldg., Toronto	Quadville
Wright & Co. (a)	960 Queen St., Sault Ste. Marie	Mile 21 A.C.R.R.
<u>MANITOBA -</u>		
Feldspar Products Co. Inc.	Box 226, Warrood, Minn., U.S.A.	Pointe du Bois
<u>BRITISH COLUMBIA -</u>		
Consolidated Mining and Smelting Company of Canada, Limited	Trail	Penticton
(a) Reported shipments of silica only.		
(b) Operates a mill.		
(x) Active but not producing.		

NOTE - In addition to the firms listed, there are Canadian metallurgical companies producing low grade silica sand for their own use.

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PRODUCERS OF NEPHELINE-SYENITE, 1936.

Canadian Nepheline Ltd.	712 Canada Permanent Bldg., Toronto, Ontario	Lakefield, Ont.
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