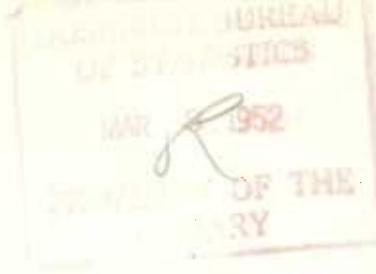


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THE FELDSPAR AND QUARTZ MINING INDUSTRY

1950

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NOTICE

The Industry and Merchandising Division of the Bureau of Statistics collects and compiles figures on (a) the primary industries in Canada — mining, forestry and fishing; (b) manufacturing; (c) construction, and (d) merchandising and services.

The following reports constitute the complete volume on Mineral Statistics of Canada. Individual reports are issued as the information becomes available; they are arranged in a form suitable for binding.

- A General Review of the Mining Industry, 25¢
- B The Gold Mining Industry, 50¢.
- C The Silver-Lead-Zinc Mining Industry, 30¢.
- D The Nickel-Copper Mining, Smelting and Refining Industry, 25¢.
- E The Miscellaneous Metal Mining Industry, 30¢.
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- S The Sand and Gravel Industry, 25¢.
- T The Stone Industry, 35¢.
- U Contract Diamond Drilling in the Mining Industry, 25¢.

THE FELDSPAR AND QUARTZ MINING INDUSTRY

1950

Owing to the very close physical association of feldspar and quartz in many Canadian deposits (pegmatites), it is difficult for some operators to make a separation of all data pertaining to the mining of each individual mineral; for this reason, the general statistics relating to employment, fuel and electricity, etc., have been combined in this report. 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.

Production during 1950 as measured by the sales of feldspar, nepheline syenite and quartz, was

valued at \$3,021,555 compared with \$2,742,703 in the preceding year.

Feldspar production came entirely from Ontario and Quebec; nepheline syenite came from Ontario only; and quartz (silica) in various forms was produced in Nova Scotia, Quebec, Ontario, Saskatchewan and British Columbia.

The industry employed 476 persons and distributed \$1,056,129 in salaries and wages. Fuel cost \$102,381 and 6,058,390 k.w.h. of electricity cost \$77,064; process supplies, containers and freight amounted to \$288,523.

TABLE 1. Principal Statistics of the Feldspar and Quartz Mining Industry, by Provinces, 1949 and 1950

	Quebec		Other provinces ¹		Canada	
	1949	1950	1949	1950	1949	1950
Number of active firms ²	16	19	15	17	31	36
Number of shipping mines	13	17	14	16	27	33
Number of employees:						
Administration.....	12	10	36	35	48	45
Workmen	183	186	211	245	394	431
Total.....	195	196	247	280	442	476
Earnings:						
Administration..... \$ 25,577	24,292	127,403	124,490	152,980	148,782	
Workmen \$ 339,576	377,445	453,712	529,902	793,288	907,347	
Total..... \$ 365,153	401,737	581,115	654,392	946,268	1,056,129	
Gross value of shipments..... \$ 868,037	387,634	1,874,666	2,133,921	2,742,703	3,021,555	
Cost of fuel and purchased electricity..... \$ 53,077	70,447	93,302	108,998	146,379	179,445	
Cost of process supplies, freight and containers \$ 156,468	193,332	162,406	95,191	328,874	288,523	
Net value of production..... \$ 658,492	623,855	1,618,958	1,929,732	2,277,450	2,553,587	

1. Includes data relating to nepheline syenite. Includes plants in Ontario, Saskatchewan, Alberta and British Columbia.

2. Small shippers whose production is recorded from consumers' returns are sometimes not included in the total.

TABLE 2. Principal Statistics of the Feldspar and Quartz Mining Industry¹, 1941-1950

Year	Number of shipping mines	Number of employees	Salaries and wages	Cost of purchased fuel and electricity at works	Cost of process supplies at works	Gross value of shipments f.o.b. works
1941	35	506	\$ 610,489	\$ 91,165	\$ 159,818	\$ 1,838,054
1942	34	533	782,903	124,100	287,928	1,998,996
1943	34	535	768,199	134,247	322,605	2,138,229
1944	41	529	772,385	166,501	241,400	2,104,030
1945	27	483	767,517	180,799	220,873	2,093,880
1946	30	517	876,034	161,208	180,207	2,168,673
1947	31	593	1,134,107	221,166	376,570	2,641,857
1948	34	562	1,184,257	214,580	340,733	3,265,065
1949	27	442	946,268	146,379	216,206	2,742,703
1950	33	476	1,056,129	179,445	173,123	3,021,555

1. Includes nepheline syenite.

TABLE 3. Number of Workmen, by Months, 1950

Month	Quebec		Ontario				Canada
	Surface	Mill	Surface		Under-ground	Mill	
			Male	Male	Male	Female	
January.....	88	66	117	4	—	36	326
February.....	87	69	115	4	—	37	327
March.....	85	73	133	4	—	31	341
April.....	69	73	143	4	—	34	337
May.....	122	79	207	4	—	39	467
June.....	134	83	202	4	—	51	490
July.....	134	86	221	6	13	53	528
August.....	131	83	192	6	11	56	495
September.....	129	80	205	6	20	54	508
October.....	112	82	190	6	19	53	476
November.....	110	73	156	6	7	44	410
December.....	97	73	165	6	7	43	407
Average.....	111	75	171	5	8	45	431

FELDSPAR

Production of feldspar, crude and ground, during 1950 was 35,548 tons valued at \$428,401 compared with 36,948 tons valued at \$428,502 in 1949. Quebec's production declined to 29,788 tons from 31,848 tons in 1949 and in Ontario the output increased to 5,760 tons from 5,100 tons.

The greater part of the production of feldspar is used in the pottery, glass, enamelware and other ceramic trades, and the remainder mainly in scouring soaps and cleansers, and for bonding of fired abrasive wheels and other shapes. Some coarsely crushed

spar, usually made from impure waste or quarry fines, is sold for stucco dash, artificial stone, chicken grit, etc. Small tonnages of specially selected crude (dental spar) are used in the manufacture of artificial teeth, and such material commands a large premium.

Most of the feldspar used is of the high-potash type, though some high-soda spar is used for blending purposes and in low-fired enamels and glazes. Practically all colours are equally acceptable for ceramic uses, but for cleanser purposes, pale shades of white to buff are demanded.

TABLE 4. Production of Feldspar, Crude and Ground, by Provinces, 1941-1950

	Quebec		Ontario		Canada	
	Tons	\$	Tons	\$	Tons	\$
1941	14,218	137,160	11,822	107,124	26,040	244,284
1942	16,802	164,588	5,468	49,353	22,270	213,941
1943	17,199	176,222	6,659	61,549	23,858	237,771
1944	17,842	177,271	5,667	50,361	23,509	227,632
1945	26,389	247,242	3,857	35,414	30,246	282,656
1946	29,758	330,981	5,485	53,696	35,243	384,677
1947	29,146	320,964	6,958	60,396	36,104	381,360
1948	42,800	464,926	12,051	99,511	54,851	564,437
1949	31,848	384,892	5,100	43,610	36,948	428,502
1950	29,788	378,782	5,760	49,619	35,548	428,401

TABLE 5. Consumption of Ground Feldspar, 1947-1950

		1947	1948	1949	1950
		Tons			
(a) By uses					
Glass		3,267	2,744	2,902	4,286
Scouring powders		4,058	3,817	3,164	2,831
Abrasives		23	42	15	9
Clay products (pottery, tile, insulators, etc.)		6,975	8,443	7,111	6,911
Enamelling		1,690	1,815	1,966	1,849
Total		16,013	16,861	15,158	15,886
(b) By provinces					
Quebec		7,289	6,846	7,227	8,921
Ontario		7,804	8,853	7,503	5,868
Alberta		920	1,162	428	1,097
Canada		16,013	16,861	15,158	15,886

TABLE 6. Imports and Exports of Feldspar, 1948-1950

	1948		1949		1950	
	Tons	\$	Tons	\$	Tons	\$
IMPORTS:						
Crude feldspar	11	309	1	31	2	59
Ground feldspar	196	4,331	227	4,524	142	3,643
EXPORTS:						
Feldspar	31,467	223,945	17,570	111,915	15,465	112,757

NEPHELINE SYENITE

Shipments of nepheline syenite during 1950 were valued at \$842,886 compared with \$623,002 in the preceding year. Exports of crude and milled nepheline syenite were 54,351 tons worth \$619,202 compared with 57,291 tons valued at \$386,954 in 1949. The American Nepheline Corporation Limited is the only firm producing this material in Canada.

Nepheline syenite is a quartz-free rock consisting essentially of nephelite and albite and of micro-line feldspar. It usually contains small amounts of iron-bearing impurities, chiefly magnetite, hematite and biotite mica, as well as such minor accessory minerals as sodalite, cancrinite, corundum, zircon,

muscovite, mica, calcite, etc. In the developed Canadian deposits, iron-bearing impurities are of coarse sizes and can be readily removed from the crude rock by magnetic means. Other objectionable minerals, notably corundum and muscovite, can be extracted by flotation methods, with the recovery of commercial grades of such products. Nepheline syenite is relatively high in alumina (24 per cent in average Canadian commercial rock) compared with straight feldspar (17 to 20 per cent), and for this reason it is used as a feldspar substitute in a number of ceramic industries, more especially in the glass trade.

TABLE 7. Production¹ of Nepheline Syenite, 1941-1950

Year	Selling value f.o.b. shipping point	Year	Selling value f.o.b. shipping point
	\$		\$
1941	227,583	1946	229,198
1942	246,893	1947	341,635
1943	292,010	1948	506,492
1944	217,989	1949	623,002
1945	275,766	1950	842,886

1. Only one or two producers in recent years; quantity not available for publication.

TABLE 8. Consumption of Ground Nepheline Syenite, 1947-1950

	1947	1948	1949	1950
(Tons)				
(a) By uses				
Glass	9,122	10,916	9,632	10,036
Pottery	205	518	1,081	1,289
Total	9,327	11,434	10,713	11,325
(b) By provinces				
Quebec	1,972	2,031	1,925	2,137
Ontario	5,987	7,734	7,193	7,427
Other	1,368	1,669	1,595	1,761
Total	9,327	11,434	10,713	11,325

QUARTZ (SILICA)

Production of quartz or siliceous material during 1950 totalled 1,730,695 tons valued at \$1,740,268 compared with 1,722,476 tons worth \$1,588,531 in 1949. Output included crude and crushed quartz, quartzite and sandstone, as well as natural silica sands and gravels.

In Nova Scotia shipments of silica were made to steel plants chiefly for use in making silica brick; the quantity and value of this material are not shown

in this review but are included in the silica-brick industry. In Quebec substantial tonnages of silica rock were crushed and screened for use in the manufacture of ferrosilicon, or further milled to produce sand for silicon carbide. In Ontario most of the shipments were for use in making silica brick, silicon carbide and ferrosilicon, and for the fluxing of nickel-copper ores. In Saskatchewan the output consisted of low-grade natural silica sands or gravels for use as flux at the Flin Flon smelter of the Hudson Bay Mining and Smelting Co., Ltd.

TABLE 9. Production of Quartz (Silica), 1941-1950

Year	Tons	\$	Year	Tons	\$
1941	2,052,878	1,366,187	1946	1,413,378	1,554,798
1942	1,738,174	1,538,162	1947	1,836,428	1,796,612
1943	1,776,749	1,608,448	1948	2,017,262	2,082,573
1944	1,740,262	1,658,409	1949	1,722,476	1,588,531
1945	1,513,628	1,535,458	1950	1,730,695	1,740,268

TABLE 10. Production of Quartz, by Provinces, 1949 and 1950

	1949		1950	
	Tons	\$	Tons	\$
PRODUCTION (SHIPMENTS)¹:				
Quebec	165,792	380,477	182,727	498,852
Ontario	1,404,140	1,020,411	1,386,833	1,027,791
Saskatchewan and Alberta	127,997	74,149	141,565	91,697
British Columbia	24,547	113,494	19,570	121,928
Canada	1,722,476	1,588,531	1,730,695	1,740,268

1. Includes both crude and crushed quartz, crushed sandstone and quartzite, and natural silica sands.

TABLE 11. Production¹ of Natural Low-Grade Silica Sand and Silica Gravel as Non-Ferrous Smelter Flux, 1948-1950

	1948		1949		1950	
	Tons	\$	Tons	\$	Tons	\$
Ontario	737,619	95,157	634,321	91,487	704,717	110,252
Saskatchewan	151,676	53,086	127,297	63,649	141,265	88,997
Canada	889,295	148,243	761,618	155,136	845,982	199,249

1. Included in totals shown in Tables 9 and 10.

TABLE 12. Imports and Exports of Silica, 1949 and 1950

	1949		1950	
	Tons	\$	Tons	\$
IMPORTS:				
Ground flint stone.....	602	15,901	939	31,081
Ganister.....	176	1,831	128	1,517
Silica sand for manufacturing.....	511,116	1,362,439	573,362	1,564,948
Silex or crystallized quartz.....	22,966	238,604	24,757	407,883
Silica fire brick.....	—	914,481	—	1,012,041
EXPORTS:				
Quartzite.....	144,302	326,091	195,430	540,940

TABLE 13. Available Statistics on the Consumption of Silica Sand and Ground Quartz, 1947 - 1949

	1947	1948	1949	(Tons of 2,000 pounds)
By industries				
Paints, pigments and varnishes.....	1,886	1,897	1,668	
Soaps and cleaning compounds.....	4,396	5,907	6,304	
Clay products.....	5,861	8,002	7,630	
Asbestos products.....	87	87	2,974	
Miscellaneous non-metallic minerals.....	6,260	5,160	1,908	
Roofing Paper.....	1,710	2,608	3,020	
Glass.....	172,859	175,594	150,914	
Artificial abrasives.....	90,716	85,061	82,820	
Fertilizers.....	69,669	—	—	
Iron castings.....	4,603	7,164	4,433	
Cooking and heating apparatus.....	2,111	1,748	1,697	
Boilers, tanks and plate work.....	65	416	170	
Farm implements.....	1,324	931	1,065	
Railway rolling stock.....	1,763	8,162	2,970	
Matches.....	471	361	1	
Sweeping compounds.....	63	4	1	
Disinfectants.....	12	34	1	
Primary iron and steel.....	51,986	85,276	98,477	
Heavy chemicals.....	30,152	20,556	18,128	
Miscellaneous chemicals.....	166	149	556	
Stone products.....	549	992	314	
Machinery.....	1,324	1,225	1,679	
Electrical apparatus.....	550	541	485	
Cement manufacturing.....	36,223	47,749	48,124	
Cement products.....	701	701	939	
Miscellaneous iron and steel.....	33	43	—	
Polishes.....	—	—	—	
Total	485,540	460,368	442,275	
By provinces				
Nova Scotia.....	6,124	2,774	2,312	
New Brunswick.....	27,694	443	494	
Quebec.....	227,896	213,971	185,752	
Ontario.....	172,907	186,040	199,466	
Manitoba.....	24,606	25,672	26,203	
Saskatchewan.....	23	15	4	
Alberta.....	22,298	26,849	22,942	
British Columbia.....	3,992	4,604	5,102	
Canada	485,540	460,368	442,275	

1. Included in miscellaneous chemicals.

List of Firms in the Feldspar and Quartz Mining Industry, 1950

Name of firm	Head office address	Location of mine or mill
Nova Scotia:		
Dominion Steel & Coal Corp. Ltd. ¹ Nairn, J. ¹	Sydney 24 Whitney Ave., Sydney	Chegoggan Point Leitches Creek
Quebec:		
Assad, Adélard ² Bigelow, Gordon ² Bigelow, Robt. ² Bon Ami Ltd. ^{2, 3} Brouillet Sand & Gravel Co. Ltd. ¹ Buckhill Minerals Ltd. ^{1, 2} Burke, Hand A. ² Canadian Carborundum Co. Ltd. ^{1, 3} Canadian Flint & Spar Co. Ltd. ^{1, 2, 3} Clement, Hormidas ² Donaldson, Gordon ^{1, 2} Haskell, M. O. ² Laccombe, Eugène ⁴ Laroque & Hébert ^{1, 2} Lachaine, Régis ² Mullin, A. W. H. ² Parcher, Earl ^{1, 2} McGill, Lawrence ⁴ St. Lawrence Alloys & Metals Ltd. ^{1, 3} Suzorite Co. Ltd. ² Wallingford, Wm., & A. O. ² Wallingford, E. Wallingford, Wm., & A. O. ^{1, 2}	Box 322, Buckingham Glen Almond Buckingham 13719 Notre Dame St. E., Montreal Rawdon 7 Brule Terrace, Toronto 3, Ontario R. R. No. 1, Thurso Box 57, Niagara Falls, Ontario Room 512, Victoria Bldg., Ottawa, Ontario Glen Almond Glen Almond Glen Almond Room 1201, Royal Bank Bldg., Montreal Buckingham Glen Almond St. Pierre de Wakefield 191 Powell Ave., Ottawa, Ontario Glen Almond Pointe-au-Chêne Beauharnois 907 Dominion Square Bldg., Montreal Gatineau Point Perkins Gatineau Point	Buckingham Derry Tp. Portland East Tp. Montreal Rawdon Buckingham Buckingham Tp. St. Canut Buckingham Derry Tp. Buckingham Portland Tp. Papineau Buckingham Wakefield Buckingham Derry Tp. Grenville Beauharnois Co. Shawinigan Falls Cantley Templeton Templeton
Ontario:		
American Nepheline Corp. ^{3, 5} Algoma Steel Corporation Ltd. ¹ Brower Bros ² Burks Falls Feldspar Syndicate Ltd. ² Bancroft Mica & Stone Products ^{2, 3} Bathurst Feldspar Mines Ltd. ² Buffalo Ankerite Gold Mines Ltd. ⁶ Canadian Flint & Spar Co. Ltd. ² Canadian Silica Corp. (Ltd.) ¹ Cameron and Aleck ² Falconbridge Nickel Mines Ltd. ¹ Freeman & Marcelio ² Jessup, Wesley ² Dominion Mines & Quarries Ltd. ^{1, 3} International Nickel Co. of Canada Ltd. ¹ Kingston Silica Mines Ltd. ^{1, 3} Laurentian Feldspar Corp. Ltd. ² Opeongo Mining Co. ²	Lakefield Sault Ste Marie Box 73, Madawaska Burks Falls Bancroft Room 508 - 21 King St. E., Toronto Box 533, South Porcupine 512 Victoria Bldg., Ottawa 100 Adelaide St. W., Toronto Box 16, Madawaska Falconbridge 96 Nelson St., Kingston Maynooth Canada Life Bldg., Toronto Copper Cliff R. R. No. 1, Kingston 104 Sparks St., Ottawa 1631 Benjamin Ave., Windsor	Methuen Tp. Deroche Tp. Madawaska Chapman Tp. Faraday Tp. Bathurst Tp. Deloro Tp. Bedford Tp. Little Current Murchison Falconbridge Loughborough Monteagle Tp. Killarney Lawson Tp. Pittsburg Tp. Perth Dickenson Tp.
Saskatchewan:		
Hudson Bay Mining & Smelting Co. ¹	Flin Flon, Manitoba	Flin Flon
Alberta:		
May, Wallace	Elkwater Lake	Elkwater
British Columbia:		
Consolidated Mining & Smelting Co. Ltd. ¹	Trail	Fairview

1. Produces silica.
2. Produces feldspar.
3. Operates a mill.
4. Produces scapolite.
5. Produces nepheline syenite.
6. Produces grinding pebbles.

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