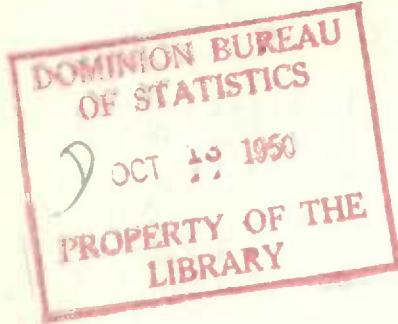


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DOMINION BUREAU OF STATISTICS - DEPARTMENT OF TRADE AND COMMERCE  
CANADA



THE FELDSPAR & QUARTZ MINING INDUSTRY  
1949

(Including data relating to Nepheline-Syenite)

Published by Authority of the Rt. Hon. C. D. Howe,  
*Minister of Trade and Commerce*

Prepared in the Mining, Metallurgical and Chemical Section,  
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Dominion Bureau of Statistics, Ottawa

## NOTICE

It has been the practice of the Bureau of Statistics, since 1920, to issue an annual printed report on the Mineral Production of Canada. This report was comprised to a large extent of the data which had already been issued in bulletin form as statistics for each industry were completed. The final report was necessarily late in being issued, and its main use was for library purposes and for historical research. It also had the advantage of having complete statistics of the Canadian Mining Industry for a year in one volume.

Such a procedure necessitated the preparation of new manuscript, duplication of proof-reading, and extra costs in type-setting and printing. In order to avoid this extra cost, a system has been devised whereby libraries and other similar organizations may file the separate reports in a ring binder as issued, and if they so desire, may have them bound in a volume when the series for the year is complete.

The reports have been paged in such a manner that when bound they will correspond to the chapters of the annual printed report hitherto issued, but which will now be discontinued.

The following reports will constitute the complete volume on Mineral Statistics of Canada:

- A General Review of the Mining Industry
- B The Gold Mining Industry
- C The Silver-Lead-Zinc Mining Industry
- D The Nickel-Copper Mining, Smelting and Refining Industry
- E The Miscellaneous Metal Mining Industry
- F The Non-ferrous Smelting and Refining Industry
- G The Coal Mining Industry
- H The Natural Gas and Crude Petroleum Industry
- I The Asbestos Mining Industry
- J The Feldspar and Quartz Mining Industry
- K The Gypsum Industry
- L The Peat Industry
- M The Salt Industry
- N The Talc and Soapstone Industry
- O The Miscellaneous Industrial or Non-metallic Minerals Mining Industry
- P The Cement Manufacturing Industry
- Q The Clay and Clay Products Industry
- R The Lime Industry
- S The Sand and Gravel Industry
- T The Stone Industry
- U Contract Diamond Drilling in the Mining Industry
- V Appendix — Explanatory notes on the method of computing the quantities and values of the Mineral Production of Canada

# THE FELDSPAR & QUARTZ MINING INDUSTRY

1949

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 1949 as measured by the sales of feldspar, nepheline syenite and quartz, was

valued at \$2,742,703 compared with \$3,265,065 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 442 persons and distributed \$946,268 in salaries and wages. Fuel cost \$78,935 and 5,636,521 k.w.h. of electricity cost \$67,444; process supplies, containers and freight amounted to \$318,874.

TABLE 1. Principal Statistics of the Feldspar and Quartz Mining Industry, by Provinces, 1948 and 1949

	Quebec		Other Provinces <sup>1,2</sup>	
	1948	1949	1948	1949
Number of active firms <sup>3</sup> .....	18	16	18	15
Number of shipping mines.....	16	13	18	14
Number of employees:				
Administration.....	17	12	38	36
Workmen.....	236	183	271	211
Total.....	253	195	309	247
Salaries and wages:				
Salaries.....	\$ 40,958	25,577	116,794	127,403
Wages.....	\$ 452,181	339,576	574,324	453,712
Total.....	\$ 493,139	365,153	691,118	581,115
Selling value of products (gross).....	\$ 1,342,977	668,037	1,922,088	1,874,666
Cost of fuel and purchased electricity .....	\$ 74,547	53,077	140,033	93,302
Cost of process supplies, freight and containers.....	\$ 53,578	156,488	287,155	162,406
Net value of sales.....	\$ 1,103,919	658,492	1,494,240	1,618,958

1. Includes data relating to nepheline syenite.

2. Includes plants in Ontario, Saskatchewan and British Columbia.

3. 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 Industry<sup>1</sup>, 1940-1949

Year	Number of shipping mines	Average number of employees	Total salaries and wages	Cost of purchased fuel and electricity at works	Cost of process supplies	Gross value of shipments f.o.b. works
1940.....	41	400	\$ 377,254	\$ 76,134	\$ 138,383	\$ 1,506,999
1941.....	35	506	610,489	91,165	159,818	1,838,054
1942.....	34	533	782,903	124,100	287,928	1,998,220
1943.....	34	535	768,199	134,247	322,605	2,138,120
1944.....	41	529	772,385	166,501	241,400	2,104,020
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

1. Includes nepheline syenite.

TABLE 3. Number of Workmen, by Months, 1949

Month	Quebec				Ontario				Canada total
	Surface		Mill	Surface		Underground	Mill		
	Male	Female	Male	Male	Female	Male	Male		
January.....	76	—	88	134	—	8	23	347	
February.....	77	1	83	116	—	8	27	329	
March.....	78	1	88	125	—	8	26	341	
April.....	89	1	87	202	1	8	25	428	
May.....	113	1	94	196	1	8	34	462	
June.....	118	1	98	187	1	8	34	463	
July.....	104	—	100	166	1	8	32	427	
August.....	104	1	107	192	1	8	33	462	
September.....	104	1	101	179	1	8	36	445	
October.....	83	—	84	135	—	8	29	354	
November.....	75	—	78	128	—	8	28	332	
December.....	67	—	64	125	—	8	28	307	
Average.....	93	1	89	156	1	8	30	394	

## FELDSPAR

Production of feldspar, crude and ground, during 1949 was 36,948 tons valued at \$428,502 compared with 54,851 tons valued at \$564,437 in 1948. Quebec's production declined to 31,848 tons from 42,800 tons in 1948, and in Ontario the output dropped to 5,100 tons from 12,051 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.

## THE FELDSPAR AND QUARTZ MINING INDUSTRY

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TABLE 4. Production of Feldspar, Crude and Ground, by Provinces, 1940-1949

Year	Quebec		Ontario	
	Tons	\$	Tons	\$
1940.....	8,548	89,004	12,907	98,619
1941.....	14,218	137,160	11,822	107,124
1942.....	16,802	164,588	5,468	49,353
1943.....	17,199	176,222	6,659	61,549
1944.....	17,842	177,271	5,667	50,361
1945.....	26,389	247,242	3,857	35,414
1946.....	29,758	330,981	5,485	53,696
1947.....	29,146	320,964	6,958	60,396
1948.....	42,800	464,926	12,051	99,511
1949.....	31,848	384,892	5,100	43,610

TABLE 5. Consumption of Ground Feldspar, 1944-1948

	1944	1945	1946	1947	1948
(Tons)					
(a) By Uses					
Glass.....	2,382	2,740	2,701	3,267	2,744
Scouring powders.....	4,617	4,847	4,099	4,058	3,817
Abrasives.....	75	60	15	23	42
Clay products (pottery, tile, insulators, etc.).....	2,625	2,347	4,800	6,975	8,443
Enamelling.....	1,372	2,684	1,499	1,690	1,815
Miscellaneous.....	102	266	—	—	—
Total .....	11,173	12,944	13,114	16,013	16,861
(b) By Provinces					
Quebec.....	6,388	6,815	6,886	7,289	6,846
Ontario.....	4,485	5,769	5,849	7,802	8,853
Alberta.....	300	360	379	920	1,162
Other.....	—	—	—	2	—
Canada.....	11,173	12,944	13,114	16,013	16,861

TABLE 6. Imports and Exports of Feldspar, 1948 and 1949

	1948		1949	
	Tons	\$	Tons	\$
<b>IMPORTS:</b>				
Crude feldspar.....	11	309	1	31
Ground feldspar.....	198	4,331	227	4,524
<b>EXPORTS:</b>				
Feldspar.....	31,467	223,945	17,570	111,915

## NEPHELINE SYENITE

Shipments of nepheline syenite during 1949 were valued at \$623,002 compared with \$506,462 in the preceding year. Exports of crude and milled nepheline syenite were 57,291 tons worth \$386,954 compared with 61,107 tons valued at \$327,518 in 1948. 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. Production<sup>1</sup> of Nepheline Syenite, 1940-1949

Year	Value	Year	Value
	\$		\$
1940.....	117,849	1945.....	275,766
1941.....	227,583	1946.....	229,198
1942.....	246,893	1947.....	341,635
1943.....	292,010	1948.....	506,462
1944.....	217,989	1949.....	623,002

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

TABLE 8. Consumption of Ground Nepheline Syenite, 1945-1948

	1945	1946	1947	1948
	(Tons)			
<b>(a) BY USES</b>				
Glass.....	7,778	5,584	9,122	10,916
Pottery.....	324	219	205	518
<b>Total</b> .....	<b>8,102</b>	<b>5,803</b>	<b>9,327</b>	<b>11,434</b>
<b>(b) BY PROVINCES</b>				
Quebec .....	1,570	1,192	1,972	2,031
Ontario .....	4,991	3,973	5,987	7,734
Other .....	1,541	638	1,368	1,669
<b>Total</b> .....	<b>8,102</b>	<b>5,803</b>	<b>9,327</b>	<b>11,434</b>

## QUARTS (SILICA)

Production of quartz or siliceous material during 1949 totalled 1,722,476 tons valued at \$1,588,331 compared with 2,017,262 tons worth \$2,082,573 in 1948. 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.

The output of fine ground quartzite or silica sand was about 82,000 tons.

TABLE 9. Production of Quartz (Silica), 1940-1949

Year	Tons	\$	Year	Tons	\$
1940.....	1,858,302	1,203,527	1945.....	1,513,628	1,535,458
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	1,588,331

TABLE 10. Production of Quartz, by Provinces, 1948-and 1949

	1948		1949	
	Short tons	Value	Short tons	Value
<b>PRODUCTION (SHIPMENTS)<sup>1</sup>:</b>				
Nova Scotia.....	7,651	52,863	—	—
Quebec .....	331,055	767,118	165,792	380,477
Ontario.....	1,496,652	1,019,997	1,404,140	1,020,411
Saskatchewan and Alberta .....	151,676	53,086	127,997	74,149
British Columbia .....	30,228	189,509	24,547	113,494
<b>Canada .....</b>	<b>2,017,262</b>	<b>2,082,573</b>	<b>1,722,476</b>	<b>1,588,331</b>

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

TABLE 11. Production<sup>1</sup> of Natural Low-Grade Silica Sand and Silica Gravel as Non-Ferrous Smelter Flux, 1947-1949

	1947		1948		1949	
	Tons	\$	Tons	\$	Tons	\$
Ontario.....	714,588	98,562	737,619	95,157	634,321	91,487
Saskatchewan .....	124,332	43,513	151,676	53,086	127,297	63,649
<b>Canada .....</b>	<b>838,920</b>	<b>142,075</b>	<b>889,295</b>	<b>148,243</b>	<b>761,618</b>	<b>155,136</b>

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

## MINERAL STATISTICS FOR CANADA

TABLE 12. Imports and Exports of Silica, 1948 and 1949

	1948		1949	
	Quantity	\$	Quantity	\$
	Tons		Tons	
<b>IMPORTS:</b>				
Ground flint stone.....	739	25,749	602	15,901
Ganister .....	230	1,312	176	1,831
Silica sand for manufacturing .....	584,019	1,446,624	511,116	1,362,439
Silex or crystallized quartz .....	17,473	168,827	22,966	238,604
Silica fire brick.....	—	1,211,511	—	914,481
<b>EXPORTS:</b>				
Quartzite .....	228,100	494,284	144,302	326,091

TABLE 13. Available Statistics on the Consumption of Silica Sand and Ground Quartz

	1946	1947	1948	(Tons of 2,000 pounds)
<b>BY INDUSTRIES</b>				
Paints, pigments and varnishes.....	1,959	1,886	1,897	
Soaps and cleaning compounds.....	5,256	4,396	5,907	
Clay products .....	4,554	5,861	8,002	
Asbestos products.....	4,354	87	87	
Miscellaneous non-metallic minerals .....	5,147	6,260	5,160	
Roofing paper.....	1,193	1,710	2,608	
Glass .....	123,910	172,859	175,594	
Artificial abrasives .....	83,910	90,716	85,061	
Fertilizers.....	44,077	69,669	—	
Iron castings.....	3,764	4,603	7,164	
Cooking and heating apparatus.....	2,048	2,111	1,748	
Boilers, tanks and plate work .....	116	65	416	
Farm implements.....	28	1,324	931	
Railway rolling stock.....	1,454	1,763	6,162	
Matches .....	356	471	361	
Sweeping compounds.....	3	63	4	
Disinfectants .....	9	12	34	
Primary iron and steel.....	61,220	51,986	85,276	
Heavy chemicals.....	19,305	30,152	20,556	
Miscellaneous chemicals .....	151	166	149	
Stone products.....	1,464	549	992	
Machinery.....	1,544	1,324	1,225	
Electrical apparatus .....	350	550	541	
Cement manufacturing .....	31,222	36,223	47,749	
Cement products .....	—	701	701	
Miscellaneous iron and steel .....	—	33	43	
Polishes .....	4	—	—	
<b>Total .....</b>	<b>397,398</b>	<b>485,540</b>	<b>460,368</b>	
<b>BY PROVINCES</b>				
Nova Scotia .....	2,659	6,124	2,774	
New Brunswick.....	20,356	27,694	443	
Quebec .....	193,504	227,896	213,971	
Ontario .....	139,898	172,907	186,049	
Manitoba .....	19,717	24,606	25,671	
Saskatchewan.....	368	23	13	
Alberta .....	16,572	22,298	26,849	
British Columbia.....	4,324	3,992	4,604	
<b>Canada .....</b>	<b>397,398</b>	<b>485,540</b>	<b>460,368</b>	

## THE FELDSPAR AND QUARTZ MINING INDUSTRY

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## Directory of Feldspar and Quartz Mining Industry, 1949

Name of Firm	Head Office Address	Location of Mine or Mill
<b>Nova Scotia:</b>		
Dominion Steel & Coal Corp. Ltd. <sup>1</sup>	Sydney.....	Chegoggan Point
Nairn, J. <sup>1</sup>	24 Whitney Ave., Sydney.....	Leitches Creek
<b>Quebec:</b>		
Bigelow, Gordon <sup>2</sup>	Glen Almond .....	Derry Tp.
Bigelow, Robt. <sup>2</sup>	Buckingham.....	Portland East Tp.
Bon Ami Ltd. <sup>2,3</sup>	13719 Notre Dame St. E., Montreal.....	Montreal
Broulet Sand & Gravel Co. Ltd. <sup>1</sup>	Rawdon .....	Rawdon
Burke, Hand A. <sup>2</sup>	R.R.# 1 Thurso.....	Buckingham Tp.
Canadian Carborundum Co. Ltd. <sup>1,3</sup>	Box 57, Niagara Falls, Ontario .....	St. Canut
Canadian Flint & Spar Co. Ltd. <sup>1,2,3</sup>	Room 512 Victoria Bldg., Ottawa, Ontario .....	Buckingham
Consumers Industrial Minerals Ltd. <sup>2</sup>	8661 Drolet St., Montreal .....	Montcalm Co.
Clement, Hormidas <sup>2</sup>	Glen Almond .....	Derry Tp.
Feldspar Products Ltd. <sup>2</sup>	1224 St. Catherine St., Montreal .....	Papineau
Gratton, A. M. <sup>2</sup>	11 Main St., Buckingham .....	Portland East
Hart, Rodrique <sup>2</sup>	Gatineau Mills .....	Portland East
Hill, Wm. and Teasdale <sup>2</sup>	Glen Almond .....	Derry Tp.
Laroque & Hebert <sup>1,2</sup>	Glen Almond .....	Buckingham
Lachaine, Regis <sup>2</sup>	St. Pierre de Wakefield .....	Wakefield
Law, S. H. <sup>1,2</sup>	Room 28, 14 Toronto St., Toronto, Ontario.....	Derry Tp.
McGill, Lawrence <sup>4</sup>	Pointe-au-Chene .....	Grenville
St. Lawrence Alloys & Metals Ltd. <sup>1,3</sup>	Beauharnois .....	Beauharnois Co.
Subsirite Co. Ltd. <sup>2</sup>	907 Dominion Square Bldg., Montreal .....	Shawinigan Falls
Wellington, Wm. & A. Q. <sup>2</sup>	Gatineau Point .....	Cantley
Wellington, J.	Perkins .....	Templeton
<b>Ontario:</b>		
American Nepheline Corp. <sup>3,5</sup>	Lakefield .....	Methuen Tp.
Bancroft Mica & Stone Products <sup>2,3</sup>	Bancroft .....	Faraday Tp.
Bathurst Feldspar Mines Ltd. <sup>2</sup>	Room 508 - 21 King St. E., Toronto.....	Bathurst Tp.
Buffalo Ankerite Gold Mines Ltd. <sup>6</sup>	Box 533, South Porcupine .....	Deloro Tp.
Canadian Flint & Spar Co. Ltd. <sup>2</sup>	512 Victoria Bldg., Ottawa .....	Bedford Tp.
Canadian Silica Corp. (Ltd.) <sup>1</sup>	100 Adelaide St. W., Toronto .....	Little Current
Cameron and Aleck <sup>2</sup>	Box 16 Madawaska .....	Murchison
Falconbridge Nickel Mines Ltd.	Falconbridge .....	Falconbridge
Jessup, Wesley	Maynooth .....	Monteagle Tp.
Dominion Mines & Quarries Ltd. <sup>1,3</sup>	Canada Life Bldg., Toronto .....	Killarney
International Nickel Co. of Canada Ltd. <sup>1</sup>	Copper Cliff .....	Lawson Tp.
Kingston Silica Mines Ltd. <sup>1,3</sup>	R.R. No. 1, Kingston .....	Pittsburg Tp.
Laurentian Feldspar Corp. Ltd. <sup>2</sup>	104 Sparks St., Ottawa .....	Perth
Opeongo Mining Co. <sup>2</sup>	1631 Benjamin Ave., Windsor .....	Dickenson Tp.
Shaw, E. <sup>2</sup>	Parry Sound .....	Parry Sound
Vardy, D. C. <sup>2</sup>	Box 70, Bancroft .....	Monteagle Tp.
Wright and Co. <sup>1,3</sup>	960 Queen St., Sault Ste. Marie .....	Deroche Tp.
<b>Saskatchewan:</b>		
Hudson Bay Mining & Smelting Co. <sup>1</sup>	Flin Flon, Manitoba .....	Flin Flon
<b>Alberta:</b>		
May, Wallace .....	Elkwater Lake .....	Elkwater
<b>British Columbia:</b>		
Consolidated Mining & Smelting Co. Ltd. <sup>1</sup>	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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