CATALOGUE No.
26-208
ANNUAL
C. 2

CANADA

FELDSPAR AND QUARTZ MINES

1966

Published by Authority of
The Minister of Trade and Commerce

DOMINION BUREAU OF STATISTICS
Manufacturing and Primary Industries Division

March 1969
6503-530

Price: 50 cents

PUBLICATIONS ON MINERAL STATISTICS

Dominion Bureau of Statistics
Ottawa, Canada

Catalogue number	Name of publication	Price
	Annual	
26-201	A—General Review of the Mineral Industries	$ .75
26-209	B—Gold Mining Industry	.75
26-216	C—Silver-Lead-Zinc Mines	.50
26-211	D—Nickel-Copper Mines	.50
26-210	E—Iron Mines	.50
26-219	F—Miscellaneous Metal Mines	.75
41-214	G—Smelting and Refining	.50
26-206	H—Coal Mines	1.00
26-213	I—Crude Petroleum and Natural Gas Industry	.50
26-205	J—Asbestos Mines	.50
26-208	K—Feldspar and Quartz Mines	.50
26-221	L—Gypsum Mines	.50
26-212	M—Peat Industry	.50
26-214	N—Salt Mines	.50
26-218	O—Talc and Soapstone Mines	.50
26-220	P—Miscellaneous Non-metal Mines	.75
44-204	Q—Cement Manufacturers	.50
44-215	R—Clay Products Manufacturers (from Domestic Clays)	.50
44-209	S—Lime Manufacturers	.50
26-215	T—Sand and Gravel Pits	.50
26-217	U—Stone Quarries	.50
26-207	V—Contract Drilling for the Mining Industry	.50
26-202	—Canada's Mineral Production (Preliminary Estimate)	.25
26-203	—Preliminary Report of Mineral Production	.75
26-204	—Mineral Industries: Principal Statistics	.25

Monthly

		Per copy	Per year
26-007	—Canada's Leading Minerals	.10	$1.00
26-001	—Asbestos	.10	1.00
44-001	—Cement	.10	1.00
44-005	—Products Made from Canadian Clays	.10	1.00
45-002	—Coal and Coke Statistics	.25	2.00
26-003	—Copper and Nickel Production	.10	1.00
26-004	—Gold Production	.10	1.00
26-005	—Iron Ore	.10	1.00
26-006	—Crude Petroleum and Natural Gas Production	.10	1.00
26-009	—Salt	.10	1.00
26-008	—Silver, Lead and Zinc Production	.10	1.00

A complete catalogue of publications of the Dominion Bureau of Statistics is available upon request.

The Queen's Printer, Ottawa

FELDSPAR AND QUARTZ MINES

1966

The Feldspar and Quartz Mines are part of Other Non-metal Mines – Industry 079 of the Standard Industrial Classification Manual, Catalogue No. 12-501.

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.

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

Data presented in this report under the heading of Feldspar and Quartz Mines (Tables 1-6) reflect the full implementation of the revised Standard Industrial Classification (S.I.C.) and the New Establishment Concept including an extension of the latter to cover total activities of mining establishments (see Explanatory Notes section of 1964 report). Commodity statistics reflecting total production from all sources, world figures on production, trade data, etc. are presented along the same general lines as in the earlier issues of this report.

The combination of improvements in internal procedures with the introduction of the final stage of the establishment concept in the annual Census of Mining produced changes which, for some industries, required major adjustments in industry statistical data – see Explanatory Notes, 1964 issue. However, in the case of the industry under review in this report, the changes were relatively minor. The reduction in the number of establishments which is indicated is the result of the exclusion of non-producers. These latter are no longer being included as establishments under the new definition.

SYMBOLS

The following standard symbols are used in Dominion Bureau of Statistics publications:

.. figures not available.

... figures not appropriate or not applicable.

— nil or zero.

– amount too small to be expressed.

p preliminary figures.

r revised figures.

x confidential to meet secrecy requirements of the Statistics Act.

TABLE 1. Principal Statistics, Feldspar and Quartz, Mines, 1962-66

Year	Establishments	Mining activity							Total activity				
		Production and related workers			Cost of fuel and electricity	Cost of materials and supplies	Value of production	Value added	Working owners and partners		Employees		Value added
		Number	Man-hours paid	Wages					Number	Withdrawals	Number	Salaries and wages	
	No.		'000			$'000				$'000		$'000	
1962	13	293	636	1,176	327	875	5,756	4,554	x	x	361	1,540	4,586
1963	15	268	551	1,068	343	1,033	5,728	4,351	x	x	338	1,449	4,365
1964	16	303	657	1,296	453	1,326	7,552	5,773	x	x	395	1,784	5,795
1965	15	291	670	1,348	478	1,591	8,272	6,202	x	x	381	1,882	6,205
1966	12	280	635	1,385	441	1,480	8,137	6,217	1	1	367	1,920	6,297

Note: Includes details for nepheline syenite mines.

TABLE 2. Employment and Payroll, Feldspar and Quartz Mines, 1962-66

Year	Employees										Salaries and wages				
	Production and related workers		Other		Administrative and office		Sales and distribution		Total		Production and related workers	Other	Administrative and office	Sales and distribution	Total
	Mining														
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Mining				
	number										$'000				
1962	293	–	–	–	59	9	–	–	352	9	1,176	–	364	–	1,540
1963	268	–	–	–	63	7	–	–	331	7	1,068	–	381	–	1,449
1964	303	–	–	–	79	13	–	–	382	13	1,296	–	488	–	1,784
1965	291	–	–	–	78	12	–	–	369	12	1,348	–	534	–	1,882
1966	279	1	5	–	69	13	–	–	353	14	1,385	16	519	–	1,920

Note: Includes details for nepheline syenite mines.

TABLE 3. Production and Related Workers, Feldspar and Quartz Mines, 1965 and 1966

Month	1965				1966			
	Surface	Underground	Mill	Total	Surface	Underground	Mill	Total
	number							
January	85	–	161	246	52	–	149	201
February	79	–	164	263	54	–	156	210
March	89	–	168	257	58	–	163	221
April	100	–	190	290	53	–	190	243
May	110	–	182	292	88	–	216	304
June	134	–	201	335	86	–	219	305
July	126	–	198	324	100	–	230	330
August	135	–	193	328	103	–	226	329
September	123	–	195	318	102	–	238	340
October	126	–	193	319	104	–	220	324
November	116	–	174	290	99	–	211	310
December	88	–	166	254	65	–	187	252
Averages	109	–	182	291	80	–	200	281

Note: Includes details for nepheline syenite mines.

TABLE 4. Purchased Fuel and Electricity Used, Feldspar and Quartz Mines, 1965 and 1966

Description		1965		1966	
		Quantity	Cost	Quantity	Cost
			$'000		$'000
Bituminous coal:					
(a) From Canadian mines		–	–	–	–
(b) Imported		–	–	–	–
Sub-bituminous coal (from Alberta mines only)		–	–	–	–
Anthracite coal		–	–	–	–
Lignite coal		–	–	–	–
Coke		–	–	–	–
Gasoline (including gasoline used in cars and trucks)	Imp. gal.	123,000	47	73,562	28
Fuel oil including kerosene or coal oil	"	1,155,377	182	1,349,080	176
Wood		–	–	–	–
Gas:					
(a) Liquefied petroleum gases	Imp. gal.	3,232	1	4,966	1
(b) Other manufactured gas		–	–	–	–
(c) Natural gas	M cu. ft.	10,500	4	13,000	5
Other fuel		...	–	...	–
Electricity purchased	kwh.	25,810,001	244	25,944,279	230
Steam purchased		–	–	–	–
Total fuel and electricity used		...	**478**	...	**440**
Electricity generated:					
(a) For own use		–	–	–	–
(b) For sale		–	–	–	–

Note: Includes details for nepheline syenite mines.

TABLE 5. Materials and Supplies, Feldspar and Quartz Mines, 1965 and 1966

Description	Cost	
	1965	1966
	$'000	
Ore or other semi-processed materials purchased and used in mine/mill operations	14	23
Containers, shipping materials and supplies used	230	219
Operating, maintenance and repair supplies used (excluding fuel)	1,180	962
Amount paid out to others for work done on materials owned by establishments	167	276
Totals	**1,591**	**1,480**

Note: Includes details for nepheline syenite mines.

TABLE 6. Value of Production, Feldspar and Quartz Mines, 1965 and 1966

Description	Value	
	1965	1966
	$'000	
Value of production	8,272	8,137
Amount received in payment for work done on materials and products owned by others	–	–
Total value of production and work done	**8,272**	**8,137**

Note: Includes details for nepheline syenite mines.

TABLE 7. Drilling Completed on Feldspar and Quartz Deposits, 1965 and 1966

	Footage drilled[1]	
	1965	1966
Diamond drilling for exploration (testing):		
By companies with their own equipment and personnel	–	–
By contractors	2,087	5,401
Other drilling:		
Diamond drilling for breaking rock or ore:		
By companies with their own equipment and personnel	–	–
By contractors	–	–
Drilling by percussion and other machines[2]	343,882	232,425

[1] Drilling as reported by firms classified to this industry.
[2] This is not complete as some firms do not compile these data.

TABLE 8. Specified Taxes paid by Feldspar and Quartz Mines,[1] 1965 and 1966

Nature of taxes	1965	1966
	$'000	
Dominion income taxes including taxes on non-operating revenue	66	26
Provincial taxes	36	85
Municipal taxes	92	26
Total taxes paid	**194**	**137**

[1] (a) Includes nepheline syenite mines and other mines classified to this industry.
(b) Includes corporate activities associated with operations of feldspar and quartz mines.

TABLE 9. Specified Miscellaneous Expenditures by Companies Engaged in Feldspar and Quartz Mines Operations,[1] 1966

	Dollars
	$'000
(a) Workmen's compensation	84
(b) Silicosis assessment	46
(c) Unemployment insurance	13
(d) Aggregate cost of structures, roads, machinery, equipment, etc., built by or purchased from outside contractors or suppliers and chargeable to Fixed Assets Account	310
(e) Book value of fixed assets (new structures, roads, machinery, equipment, etc., including major repairs and alterations) produced by own employees and chargeable to Fixed Assets Account	215
(f) Other capital expenditures not reported in (d) and (e)	–
(g) Cost of materials and supplies used in the production of machinery and equipment and in the construction of roads and new structures (including major repairs and alterations by own employees and chargeable to Fixed Assets Account)	116
(h) Cost of office supplies used during the year, not chargeable to Fixed Assets Account. Excludes cost of stamps and meter expenses	15

[1] (a) Includes nepheline syenite mines and other mines classified to this industry.
(b) Includes related corporate activities associated with Canadian operations of feldspar and quartz mines not allocable separately elsewhere.

FELDSPAR

Feldspar shipments in 1966 amounted to 10,924 tons valued at $254,714 compared with 10,904 tons valued at $252,868 in 1965. During the past ten years all of the feldspar shipped was mined in Quebec.

The greater of the production of feldspar is used in the pottery, glass, enamalware, 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 cleaner purposes the pale shades of white to buff are demanded.

TABLE 10. Producers' Shipments of Feldspar, Crude and Ground, All industries,[1] 1957-66

Year	Quantity	Value[2]	Year	Quantity	Value[2]
	tons	$'000		tons	$'000
1957	20,450	393	1962	9,994	222
1958	20,387	360	1963	8,608	197
1959	17,953	301	1964	9,149	212
1960	13,862	239	1965	10,904	253
1961	10,507	230	1966	10,924	255

[1] Includes shipments from other industries which produce, as a secondary activity, the commodities listed therein.
[2] Value of containers excluded.

TABLE 11. Available Data on Consumption of Feldspar, 1962-66

	1962	1963	1964	1965	1966
			tons		
By uses					
Scouring powders, cleansers	883	537	521	–	240
Clay products (pottery, tile, insulators, etc.)	5,407	5,068	5,396	5,716	5,842
Total accounted for	**6,290**	**5,605**	**5,917**	**5,716**	**6,082**
By provinces					
Quebec	2,525	787	546	288	932
Ontario	2,388	2,726	3,253	3,943	4,256
Alberta	–	30	–	–	–
British Columbia	1,377	2,062	2,118	1,485	894
Canada	**6,290**	**5,605**	**5,917**	**5,716**	**6,082**

TABLE 12. Imports and Exports of Feldspar, 1964-66

	1964		1965		1966	
	Tons	Value	Tons	Value	Tons	Value
		$'000		$'000		$'000
Imports	...	...	...	...	...	...
Exports	3,386	80	3,746	87	3,424	78

Source: Trade of Canada, "Imports by Commodities", Catalogue No. 65-007 and "Exports by Commodities", Catalogue No. 65-004.

TABLE 13. World Production of Feldspar, by Countries

(Taken from the "Minerals Yearbook" published by the United States Bureau of Mines)

Country[1]	1962	1963	1964	1965	1966
	long tons				
North America:					
Canada (shipments)	8,923	7,686	8,169	9,736[r]	9,754
United States (sold and used)	492,476	548,954	587,194	624,598	655,452
South America:					
Argentina	7,245	12,599	9,127[r]	20,962[r]	19,192
Chile	1,138	417	814	517[r]	1,174
Columbia	15,250	12,303[r]	11,426	10,629[r]	18,779
Peru	287	217	837	926	470
Uruguay	692	282	883	1,227	1,722
Europe:					
Austria	4,976	2,077	1,603	1,397	1,507
Finland	14,921	12,677[r]	14,665[r]	11,685	25,901
France[2]	170,194	170,764	193,260	217,649[r]	200,000[3]
Germany, west	269,770	273,665[r]	299,990[r]	313,281[r]	285,797
Italy	98,367	100,487	109,852[r]	90,803	135,941
Norway	54,100	76,105[r]	70,023[r]	62,986[r]	86,748
Poland	..	26,278[r]	26,300[3]	26,300[3]	28,000[3]
Portugal	3,674	396	10,994	8,165[r]	1,603
Spain	10,728	12,477[r]	16,466	25,166[r]	..
Sweden	53,348	44,920	50,959[r]	46,205[r]	36,613
U.S.S.R.[3]	195,000	205,000[r]	215,000[r]	225,000[r]	235,000
Yugoslavia	31,578	29,413	33,260	55,052[r]	40,914
Asia:					
Ceylon	56	109	4	605	412
Hong Kong	937	1,680	1,556	1,119	1,343
India	18,918	21,829[r]	23,997[r]	26,384[r]	25,593
Japan[2,4]	46,991	53,339	61,445	57,245[r]	50,845
Korea, South	4,651	11,392	13,468	15,595[r]	15,053
Pakistan	55	1,220[r]	48	..	..
Phillippines	15,325	6,564	7,924	12,095	8,479
Africa:					
Angola	—	796	493	..	..
Eritrea	425	490[3]	9,800[3]	..	1,526
Ethiopia	..	..		..	
Kenya	..	..	..	..	161
Malagasy Republic	—	[5]	[5] 1	[5]	..
Mozambique	..	..	..	49	..
Rhodesia, Southern	—	—	—	170[3,r]	..
South Africa, Replubic of	28,209	41,372	35,525	41,636	33,996
South-West Africa	465	2,197	1,893	2,281	1,178
United Arab Republic (Egypt)	—	—	4,653	4,000[3]	3,444
Oceania:					
Australia	8,513	8,842	9,012	8,726[r]	7,260
World totals[6]	**1,600,000**	**1,686,547[r]**	**1,830,641[r]**	**1,922,153[r]**	**1,933,857**

[1] Feldspar is produced in Brazil, China, Czechoslovakia and Rumania, but data are not available.
[2] Includes pegmatite.
[3] Estimate.
[4] In addition, the following quantities of aplite and other feldspathic rock were produced; 1962, 168,543 tons; 1963, 211,814 tons; 1964, 258,510 tons; 1965, 281,759 tons; 1966, 295,294 tons.
[5] Less ½ unit.
[6] Total is of listed figures only; no undisclosed data included.

NEPHELINE SYENITE

Nepheline syenite shipped by Canadian producers in 1966 amounted to 366,696 tons valued at $4,109,744 compared with 339,982 tons valued at $3,415,387 in the preceding year. All of Canada's output of nepheline syenite was mined in the Blue Mountain area, Peterborough county, Ontario.

Nepheline syenite is quartz-free crystalline rock consisting principally of nephelite (a silicate of alumina, potash, and soda), albite, and microcline feldspar. To be of commercial interest it must be amenable to treatment for the removal of iron-bearing impurities such as magnetite, biotite, hornblende, and tourmaline, so that the iron-oxide Fe_2O_3 content can be reduced to under 0.08 per cent. Finely divided iron impurities frequently cannot be removed by dry milling methods, and render otherwise promising deposits of nepheline syenite useless for commercial operation.

Specifications for glass-grade nepheline syenite call for all minus 28 mesh material, and, for pottery grade, all through 200 mesh or finer. High-intensity magnetic separation reduces the iron-oxide content from about 1.50 per cent in the feed to under 0.08 per cent in the finished product. Dry milling methods are used throughout the processing.

Nepheline syenite finds wide use in the ceramic industry where it replaces feldspar as a source of alumina and the alkalis in making glass pottery, floor and wall tile, refractory cements, whiteware and porcelain products, enamels, and varied ceramic products. The lower fusibility and greater fluxing action of nepheline syenite as compared with that of the traditional vitrifying agents enables a manufacturer to either fire the ware at lower temperature or use a reduced amount of vitrifying agent and still attain the desired properties. In glass batches, the low iron content (0.06 to 0.08 per cent Fe_2O_3) of nepheline syenite, combined with its high alumina and alkali content, makes it a desirable means of introducing alumina, especially where low iron is important.

TABLE 14. Producers' Shipments of Nepheline Syenite, All Industries,[1] 1957 - 66

Year	Quantity	Selling value[2]	Year	Quantity	Selling value[2]
	tons	$'000		tons	$'000
1957	200,016	2,754	1962	254,418	2,533
1958	201,306	2,613	1963	254,000	2,699
1959	228,722	2,931	1964	290,300	3,097
1960	240,636	2,891	1965	339,982	3,415
1961	240,320	3,572	1966	366,696	4,110

[1] Includes shipments from other industries which produce nepheline syenite as a secondary activity.
[2] Value of containers excluded.

TABLE 15. Available Data on Consumption of Ground Nepheline Syenite, 1962 - 66

	1962	1963	1964	1965	1966
			tons		
(a) By uses					
Glass and glass wool	35,864	33,838	33,858	37,825	39,956
Clay products	2,985	4,195	4,953	6,098	7,618
Mineral wool	4,109	3,424	4,336	6,664	8,726
Total accounted for	**42,958**	**41,457**	**43,147**	**50,587**	**56,300**
(b) By provinces					
Quebec	15,241	16,203	17,144	19,185	28,779
Ontario	22,399	20,464	20,680	23,415	21,489
Other	5,318	4,790	5,323	7,987	6,032
Total accounted for	**42,958**	**41,457**	**43,147**	**50,587**	**56,300**

TABLE 16. Exports of Nepheline Syenite, 1957 - 66

Year	Quantity	Value	Year	Quantity	Value
	tons	$'000		tons	$'000
1957	164,342	2,236	1962	193,658	2,211
1958	160,081	2,098	1963	203,262	2,214
1959	178,120	2,345	1964	226,971	2,630
1960	193,298	2,373	1965	247,200	2,969
1961	194,598	2,249	1966	263,624	3,098

Source: Trade of Canada, "Exports by Commodities", Catalogue No. 65-004.

QUARTZ (SILICA)

Shipments of quartz or siliceous material during 1966 amounted to 2,299,660 tons valued at $5,514,041 compared with 2,433,685 tons worth $5,123,942 shipped in the preceding year. The production included crude and crushed quartz, quartzite and sandstone, as well as natural silica sands and gravels which were used as fluxes. No shipments were made from a quartz crystal deposit near Lyndhurst, Ontario.

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 the fluxing of nickel-copper ores. In Manitoba silica flux is also used in the smelting 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 Hudson Bay Mining and Smelting Co. Ltd. Core and moulding sand which have a high silica content was included in the quartz or silica industry.

TABLE 17. Producers' Shipments of Quartz (Silica), All Industries,[1] 1957 - 66

Year	Quantity	Value[2]	Year	Quantity	Value[2]
	tons	$'000		tons	$'000
1957	2,139,246	3,185	1962	2,085,620	3,817
1958	1,453,656	2,538	1963	1,836,612	3,688
1959	2,163,546	3,437	1964	2,117,273	4,506
1960	2,260,766	3,267	1965	2,433,685	5,124
1961	2,194,054	3,153	1966	2,299,660	5,514

[1] Includes shipments from other industries which produce, quartz as a secondary activity.
[2] Value of containers is excluded.

TABLE 18. Producers Shipments of Quartz[1,2] by Provinces, All Industries, 1965 and 1966

Province	1965		1966	
	Tons	Value	Tons	Value
		$'000		$'000
Nova Scotia	—	—	8,638	40
Quebec	522,474	3,246	529,112	3,340
Ontario	1,301,583	790	1,161,057	902
Manitoba	392,320	739	393,204	970
Saskatchewan	182,349	178	183,750	150
British Columbia	34,959	171	23,899	112
Canada	**2,433,685**	**5,124**	**2,299,660**	**5,514**

[1] See footnote [1] Table 17.
[2] Includes both crude and crushed quartz, crushed sandstone and quartzite and natural silica sands.

TABLE 19. Production[1] of Natural Low-grade Silica Sand and Silica Gravel as Non-ferrous Smelter Flux, All Industries,[2] 1964-66

	1964		1965		1966	
	Tons	Value	Tons	Value	Tons	Value
		$'000		$'000		$'000
Ontario	651,493	150	681,039	150	535,604	118
Manitoba and Saskatchewan	328,023	270	397,187	330	410,225	395
Canada	**979,516**	**420**	**1,078,226**	**480**	**945,829**	**513**

[1] Included in totals shown in Tables 17 and 18.
[2] See footnote [1] Table 17.

TABLE 20. Imports and Exports of Silica and Specified Products of Silica, 1965 and 1966

	1965		1966	
	Tons	Value	Tons	Value
		$'000		$'000
Imports:				
Silica sand for manufacturing	834,780	3,452	1,013,285	3,863
Silex and crystalized quartz	5,104	395	288	395
Silica fire brick	...	1,540	...	3,773
Exports:				
Quartzite	111,533	369	156,038	530

Source: Trade of Canada, "Imports by Commodities", Catalogue No. 65-007 and "Exports by Commodities", Catalogue No. 65-004.

TABLE 21. Available Data on the Consumption of Silica Sand and Ground Quartz, 1962-66

	1962	1963	1964	1965	1966
			tons		
By industries					
Paints, pigments and varnishes	1,376	1,494	1,597	2,093	2,428
Soaps and cleaning compounds	28,467	15,059	15,297	15,431	16,175
Clay products	5,938	7,131	4,895	5,418	6,393
Refractories	2,851	899	1,291	1,259	2,259
Miscellaneous non-metallic minerals	2,066	2,830	3,371	4,608	5,413
Roofing paper	5,139	5,160	6,222	17,510	14,858
Glass	341,649	329,563	298,009	322,411	340,474
Abrasives	105,731	111,646	130,746	145,270	169,669
Iron foundries	117,486	139,192	164,589	274,353	306,526
Heating equipment	15,116	13,870	9,514	7,920	5,793
Boilers, tanks and platework	1,432	1,584	654	10,273 r	11,975
Farm implements	2,937	3,133	3,429	3,673	4,677
Railway rolling stock	3,874	3,705	9,311	8,537	7,055
Iron and steel mills	92,896	99,367	143,700	123,763	192,272
Industrial chemicals	24,210	25,446	29,787	101,302 r	112,110
Miscellaneous chemicals	1,762	2,131	2,286	2,574	2,998
Stone products	689	625	1,078	1,573	829
Cement manufacturing	115,257	142,491	134,634	297,124	363,213

TABLE 21. Available Data on the Consumption of Silica Sand and Ground Quartz, 1962 - 66 – Concluded

	1962	1963	1964	1965	1966
	tons				
By industries – Concluded					
Mineral wool	22,979	22,686	27,901	31,004	36,769
Brass and copper products	907	1,365	1,678	2,078	1,667
Gypsum products	1,608	3,909	1,062	1,525	3,373
Fabricated structural metal	1,598	1,322	603	750	2,511
Miscellaneous machinery and equipment	27,541	31,087	27,884	42,360	51,721
Motor vehicle parts	34,692	73,233	97,330	39,016	72,050
Hardware, tools and cutlery	470	278	300	825	494
Miscellaneous metal fabricating	27,318	28,506	30,782	38,650	46,468
Total accounted for	**985,989**	**1,067,712**	**1,147,949**	1,501,300[r]	**1,780,170**
By provinces					
Nova Scotia, Newfoundland	1,000	1,769	2,967	6,560	11,205
New Brunswick	2,669	2,651	2,557	3,046	3,400
Quebec	401,894	419,192	409,187	426,007[r]	651,088
Ontario	489,474	536,641	628,512	816,979	887,520
Manitoba	22,077	45,885	35,509	63,126	55,715
Saskatchewan	358	339	235	17,743	18,334
Alberta	57,595	50,893	56,028	57,038	69,298
British Columbia	10,922	10,342	12,954	110,801	83,610
Canada	**985,989**	**1,067,712**	**1,147,949**	**1,501,300**	**1,780,170**

List of Establishments classified to this Industry, 1966

Name of firm	Head office address	Location of mine or mill
Quebec:		
Baskatong Quartz Products	Suite 1520, 360 St. James St., Montreal	Baskatong Twp.
Industrial Minerals of Canada Ltd.	7 King St. E., Toronto, Ontario	St. Canut St. Donat
International Minerals & Chemicals Corp. Ltd.	4 King St. West, Toronto 1	Derry Twp., Baskatong
Lachaine, Regis	St. Pierre de Wakefield	St. Pierre de Wakefield
Montpetit, E., & Fils	133, rue Principale, Melocheville	Melocheville
Sicotte, Armand & Fils	1950 Sir Wilfred Laurier, Laflèche	Howick
Union Carbide Exploration Ltd.	123 Eglinton Ave. E., Toronto, Ontario	Melocheville
Ontario:		
Industrial Minerals of Canada Ltd.	Nephton	Nephton
International Minerals & Chemicals Corp. Ltd.	4 King St. West, Toronto 1	Blue Mountain
Union Carbide Canada Ltd.	123 Eglinton Ave. E., Toronto	Killarney and Little Current
Manitoba:		
Winnipeg Supply & Fuel Co. Ltd.	491 Portage Ave., Winnipeg	Black Island
British Columbia:		
Pacific Silica Ltd.	Box 39, Oliver	Oliver

Supplement

The following establishments classified to other industries e.g. Smelting and Refining recover the commodity indicated and are included for information purposes to support the statistical material relevant to these commodities which is presented in this report.

Nova Scotia:		
Canada Cement Co. Ltd.	Box 490, Station B, Montreal	Brookfield
Nova Scotia Sand & Gravel Ltd.	Box 322, Shubenacadie	East Hants
Quebec:		
Charette, F.	Glen Almond	Portland West
Donaldson, W.	R.R. 35, Glen Almond	Buckingham Twp.
Majeau, L.	Glen Almond	Glen Almond
Ontario:		
Acme Sand & Stone Ltd.	Box 99, Orillia	Orillia
Falconbridge Nickel Mines Ltd.	7 King St. E., Toronto	Falconbridge
International Nickel Co. of Canada Ltd.	55 Yonge St., Toronto	Mongowin Twp.
Manitoba:		
International Nickel Co. of Canada Ltd.	55 Yonge St., Toronto, Ontario	Thompson
Saskatchewan:		
Hudson Bay Mining & Smelting Co. Ltd.	333 Broadway, Winnipeg, Manitoba	Creighton