

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

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SAND AND GRAVEL, 1935.

Finally revised statistics issued by the Mining, Metallurgical and Chemical Branch of the Dominion Bureau of Statistics at Ottawa show a production of 21,213,489 short tons of sand and gravel with a value of \$6,389,440 in 1935 as compared with 14,854,159 short tons worth \$4,035,477 in 1934. Output during both years comprised washed or screened and bank or pit-run material and included a variety of grades for moulding, building, roadwork and other purposes; in 1935 the tonnage of washed or screened products amounted to 42.8 per cent of the total sand and gravel production for the year.

Shipments of sand and gravel for railway ballast and more particularly for concrete and highway construction were largely responsible for the 45 per cent increase in the total tonnage of these materials produced as compared with the output in 1934. Shipments of sand and gravel were reported in 1935 from all provinces with the exception of Prince Edward Island and increases in output over the preceding year were recorded for all provinces other than Saskatchewan. Of the total Canadian output in 1935, Ontario contributed 41.3 per cent; Quebec, 24.8 per cent; New Brunswick, 8.5 per cent; Nova Scotia, 6.7 per cent; and British Columbia, 6.5 per cent.

The number of operators reporting production of sand and gravel during 1935 totalled 1,398 as compared with 794 in 1934 and of the 1935 producers, 23 confined their operations to the production of railway ballast. The industry as a whole reported a capital investment of \$4,849,702 in 1935; the number of employees totalled 3,015 and salaries and wages paid amounted to \$2,479,418. Employment in 1935 realized a 57.8 per cent increase over 1934 while salaries and wages paid represented an increase of 100.5 per cent. Fuel and electricity consumed during 1935 amounted to \$110,300, of which \$52,847 was for coal and \$57,992 for electricity; consumption of process supplies totalled \$5,763.

Imports of silica sand in 1935 for glass and carborundum manufacture, and for use in steel foundries, filtration plants, and sand blasting totalled 123,575 short tons valued at \$282,930 while imports of sand and gravel n.o.p., totalled 98,624 tons valued at \$81,763. Exports of sand and gravel in 1935 amounted to 100,157 tons worth \$21,446, all of which went to the United States.

For several years past the Mines Branch, Department of Mines, Ottawa, has been conducting a general investigation into "Natural Bonded Moulding Sands of Canada" with particular reference to available data concerning all known deposits. Outstanding features shown by this investigation are the large number of deposits from which supplies have been used for local foundries and the probability of replacing some imported materials with Canadian sands.

Table 1 - PRODUCTION IN CANADA, IMPORTS AND EXPORTS OF SAND AND GRAVEL, 1934 and 1935.

	Washed or screened Tons	Bank or pit-run Tons	TOTAL VALUE \$
<u>1934</u>			
<u>PRODUCTION (x)</u>			
<u>SAND -</u>			
Moulding sand	1,951	11,278	13,415
Building sand and sand for concrete, roadwork, etc.	360,576	3,260,055	209,002
Core sand	405	3,030	2,345
Other sand (including blast sands, engine sands, etc.)	2,072	44,012	10,046
<u>SAND AND GRAVEL -</u>			
Sand and gravel for railway ballast	95,566	1,359,052	266,292
Sand and gravel for concrete, road-building, etc.	4,723,770	7,694,638	3,411,751
Crushed gravel	79,578	152,176	122,626
TOTAL	5,263,918	9,590,241	4,035,477
<u>IMPORTS -</u>			
		<u>Tons</u>	<u>\$</u>
Sand, silica, for glass and carborundum manufacture, etc.		96,165	226,188
Sand and gravel, n.o.p.		61,136	56,900
Silex or crystallized quartz, ground or unground		2,323	53,430
Ganister		616	2,663
TOTAL .....		...	339,181
<u>EXPORTS -</u>			
Sand and gravel		88,011	17,079
<u>1935</u>			
<u>PRODUCTION (x)</u>			
<u>SAND -</u>			
Moulding sand	1,504	11,709	14,674
Building sand and sand for concrete, roadwork, etc.	545,402	242,010	264,435
Core sand	135	1,247	1,464
Other sand (including blast sands, engine sands, etc.)	4,014	38,686	9,145
<u>SAND AND GRAVEL -</u>			
Sand and gravel for railway ballast	42,484	2,224,711	415,092
Sand and gravel for concrete, road-building, etc.	8,232,084	9,298,963	5,357,331
Crushed gravel	243,841	326,699	327,299
TOTAL	9,069,464	12,144,025	6,389,440
<u>IMPORTS -</u>			
		<u>Tons</u>	<u>\$</u>
Sand, silica, for glass and carborundum manufacture, etc. (a)		123,575	282,930
Sand and gravel, n.o.p.		98,624	81,763
Silex or crystallized quartz, ground or unground		3,359	75,768
Ganister		2,151	8,395
TOTAL .....		...	448,856
<u>EXPORTS</u>			
Sand and gravel		100,157	21,446

(x) Does not include production of natural silica sand or of silica sand manufactured from quartz or silica rock; production of these are recorded under quartz.

(a) Of the 1935 imports 108,820 tons came from the United States.

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Table 2 - PRODUCTION (x) OF SAND AND GRAVEL IN CANADA, 1926-1935.

Year	Tons	\$	Year	Tons	\$
1926	17,112,798	4,941,434	1931	21,748,586	6,651,165
1927	22,952,819	6,055,601	1932	14,469,942	4,480,596
1928	28,102,917	5,809,431	1933	11,738,823	4,464,285
1929	27,846,945	7,317,814	1934	14,854,159	4,035,477
1930	28,547,511	8,344,913	1935	21,213,489	6,389,440

(x) Does not include production of natural silica sand or of silica sand manufactured from quartz or silica rock; production of these are recorded under quartz. Also does not include sand used for back filling at mines.

Table 3 - PRODUCTION OF SAND AND GRAVEL, BY PROVINCES, 1931 - 1935.

Province	1931	1932	1933	1934	1935
Nova Scotia	Tons 403,858	423,487	282,228	256,572	1,423,557
	\$ 198,757	136,677	126,031	114,597	685,973
New Brunswick	Tons 183,475	569,150	496,961	568,064	1,813,206
	\$ 18,149	447,239	331,497	322,238	845,981
Quebec	Tons 7,657,964	3,458,128	3,356,232	3,672,582	5,268,987
	\$ 1,952,959	893,896	942,429	980,454	1,442,468
Ontario	Tons 7,465,017	6,994,447	5,967,994	7,880,959	8,770,117
	\$ 2,562,477	1,971,239	2,517,230	1,821,689	2,211,406
Manitoba	Tons 871,986	440,309	288,214	334,026	1,399,659
	\$ 294,178	188,974	108,828	95,426	404,730
Saskatchewan	Tons 1,388,594	362,841	104,400	533,575	502,732
	\$ 396,707	66,942	19,731	169,033	171,170
Alberta	Tons 1,050,988	734,067	281,122	650,232	653,511
	\$ 313,616	250,025	85,577	196,898	146,092
British Columbia ..	Tons 2,726,704	1,487,513	961,672	958,149	1,381,720
	\$ 914,322	525,604	332,962	335,142	481,620

Table 4 - PRODUCTION OF SAND FOR BUILDING AND CONCRETE, ROADS, ETC., AND SAND AND GRAVEL FOR RAILWAY BALLAST AND FOR CONCRETE, ROADS, ETC., 1931 - 1935.

Year	S A N D		S A N D A N D G R A V E L			
	For building		For railway		For concrete,	
	concrete, roads, etc.		ballast		roads, etc.	
	Tons	\$	Tons	\$	Tons	\$
1931	3,189,428	1,069,210	3,593,451	459,531	14,352,283	4,784,298
1932	2,368,304	745,091	2,097,224	324,648	9,604,113	3,181,105
1933	775,412	218,559	561,538	110,449	9,957,832	3,907,911
1934	686,631	209,002	1,454,618	266,292	12,418,408	3,411,751
1935	787,412	264,435	2,267,195	415,092	17,531,047	5,357,331

Table 5 - PRINCIPAL STATISTICS OF THE SAND AND GRAVEL INDUSTRY IN CANADA (x), 1933 - 1935.

	1933	1934	1935
Number of firms	696	794	1,398
Capital employed	\$ 6,203,113	4,377,551	4,849,702
Number of employees - On salary	61	60	69
On wages	2,665	1,851	2,946
Total	2,726	1,911	3,015
Salaries and wages - Salaries	\$ 106,761	75,745	89,547
Wages	\$ 1,062,318	1,161,074	2,389,871
Total	\$ 1,169,079	1,236,819	2,479,418

Table 5 - PRINCIPAL STATISTICS OF THE SAND AND GRAVEL INDUSTRY IN CANADA(x), 1933 - 1935.
(concluded)

	1933	1934	1935
Cost of fuel and electricity	129,410	155,194	110,300
Cost of process supplies used	(a)	(a)	5,763
Selling value of sand and gravel produced			
by railway companies	122,620	269,280	460,972
Selling value of sand and gravel produced			
by other operators	4,341,665	5,766,197	5,928,468
Total selling value of sand and gravel produced	4,464,285	4,035,477	6,389,440

(x) Includes data relating to sand production by dredgers and railways.

(a) Data not available.

Table 6 - CAPITAL EMPLOYED, NUMBER OF EMPLOYEES, SALARIES AND WAGES PAID, AND FUEL AND ELECTRICITY CONSUMED, BY PROVINCES, 1935.

Province	No. of operators	Capital employed	No. of employees	Salaries and wages paid	Cost of fuel and electricity used
		\$		\$	\$
Nova Scotia	7	(a)	357	503,191	(a)
New Brunswick	6	30,000	842	758,131	(a)
Quebec	778	204,789	1,177	756,360	14,043
Ontario	553	3,062,968	298	197,605	70,923
Manitoba	14	809,798	101	96,082	7,829
Saskatchewan	5	(a)	100	61,599	(a)
Alberta	9	5,000	64	42,834	(a)
British Columbia ..	26	737,147	76	63,616	17,505

(a) Complete data not available.

Table 7 - AVERAGE NUMBER OF WAGE-EARNERS, BY MONTHS, 1932, 1933, 1934 and 1935.

Month	1932	1933	1934	1935
January	310	112	122	122
February	306	108	122	116
March	301	131	387	138
April	771	402	596	1,088
May	3,130	5,646	3,128	6,117
June	3,713	6,172	3,895	6,664
July	3,737	6,275	4,167	6,754
August	3,816	6,381	4,219	6,806
September	3,388	3,087	2,418	4,988
October	715	762	940	1,483
November	500	586	400	544
December	329	363	316	406

Table 8 - FUEL AND ELECTRICITY USED, 1934 and 1935.

	Unit of measure	1934		1935	
		Quantity	Value	Quantity	Value
			\$		\$
Anthracite coal	short ton	...	...	390	2,015
Bituminous coal - Canadian	short ton	3,007	15,792	3,578	21,589
Foreign	short ton	11,481	63,728	4,739	29,243
Coke	short ton	4	35	3	30
Gasoline (exclusive of motor vehicles)	Imp. gal.	64,933	12,832	65,971	14,801
Kerosene	Imp. gal.	107	21	3,736	578
Fuel oil	Imp. gal.	...	...	2,410	253
Wood	cord	7	39	53	181
Natural gas	M cu. ft.	50	30	5,535	2,227
Other fuel	xxx	...	909	...	1,391
Electricity purchased	K. W. H.	2,447,727	61,808	2,005,582	37,992
TOTAL	xxxxx	...	155,194	...	110,300
Electricity generated for own use	K. W. H.	150,000	...	...	...

Table 9 - POWER EQUIPMENT INSTALLATION in 1935.

	Number of Units	Horse power
Steam engines and steam turbines	17	821
Gasoline, gas and oil engines	31	1,641
Hydraulic turbines or water wheels	7	240
Electric motors operated by purchased power	203	7,198
Electric motors operated by establishments' power	1	20
Boilers	11	442

Table 10 - SILICA SAND CONSUMED IN SPECIFIED CANADIAN INDUSTRIES, 1934 and 1935.

Industry	Item	1934		1935	
		Tons	\$	Tons	\$
Glass Industry	Silica sand	65,306	300,834	61,858	307,677
Acids, Alkalies and Salts ..	Silica	12,945	55,330	10,229	53,389
Artificial Abrasives	Silica sand	29,991	150,869	32,626	165,764
Products from Imported Clay. Flint		1,266	19,709	1,079	16,078
(c) Castings and Forgings...	Moulding sand	43,709	168,982	(b)	(b)
(c) Primary Iron and Steel..	Moulding sand	14,199	73,424	(b)	(b)
(c) Other iron and steel industries	Moulding sand	23,733	78,170	(b)	(b)
Brass and copper Industry ..	Moulding sand	3,108	14,499	(b)	(b)
Paints, Pigments and Varnishes	Silica (a)	483	22,613	565	24,186
Soaps and Cleaning Powders..	Silica sand	4,831	72,371	4,419	72,626

(a) Includes any siliceous or infusorial earth used.

(b) Data not yet complete for 1935.

(c) Includes all sands.

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