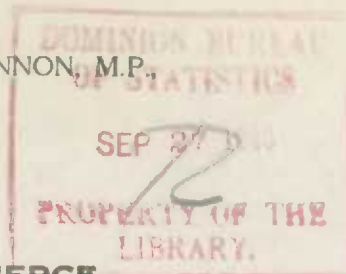


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CANADA
DEPARTMENT OF TRADE AND COMMERCE
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CENSUS OF INDUSTRY
MINING, METALLURGICAL & CHEMICAL BRANCH

THE
GYPSUM INDUSTRY
IN
CANADA
1942

including: 1. The Gypsum Mining Industry
2. The Gypsum Products Industry



OTTAWA
1943

Price 25 cents

171-308

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THE GYPSUM INDUSTRY, 1942

PART I - PRIMARY PRODUCTION - THE GYPSUM MINING AND QUARRYING INDUSTRY

Production (producers' sales and consumption) of gypsum in Canada during 1942 totalled 566,166 short tons valued at \$1,254,122 compared with 1,503,406 short tons at \$2,248,423 in 1941. The tonnage in both years represents various grades of crude gypsum and anhydrite shipped from quarries or mines together with the tonnage of calcined gypsum used in or shipped from quarries or "primary" plants. The quantity of the mineral produced in 1942 was 64.5 per cent less than in the preceding year due chiefly to a shortage of shipping on the Atlantic coast.

Of the 1942 output, Nova Scotia properties contributed 324,216 tons valued at \$512,762; Ontario, 82,799 tons at \$304,170; New Brunswick, 36,623 tons at \$111,316; Manitoba, 29,218 tons at \$179,780, and British Columbia, 23,313 tons worth \$146,154.

The quantity of crude gypsum mined in 1942 totalled 794,836 tons while the tonnage of anhydrite mined (all in Nova Scotia) amounted to 2,240 tons. Crude gypsum calcined in primary or quarry plants totalled 183,896 tons.

The following are the average prices per short ton for mine shipments made during 1942: Crude Lump, \$1.69; crushed crude, \$2.30; ground crude, \$7.52, and calcined, \$13.95.

In 1942 the number of firms reporting production was 7 and the gypsum quarries and mines in operation totalled 13. Some of the Canadian gypsum mining companies confine their operations in the Dominion to the production and sale of crude gypsum or anhydrite, while others, in addition to marketing various grades of crude gypsum, produce a calcine for sale or for consumption in their own gypsum products plants. Gypsum is exported from Canada almost entirely in the crude form.

Capital employed by Canadian gypsum mining companies totalled \$4,398,531 in 1942; employees aggregated 510; salaries and wages paid amounted to \$657,620 and the total value of fuel, purchased electricity and process supplies used was computed at \$244,139.

Gypsum mining operations in Nova Scotia during 1942 are summarized as follows: Victoria Gypsum Company Limited operated its property at Little Narrows, Victoria County, from May 4 until October 31; shipments were confined to the mineral in the crude lump form. No mining operations were conducted in Nova Scotia during 1942 by Gypsum, Lime & Alabastine, Canada, Limited. At Windsor, the manufacturing plant of the Windsor Plaster Company Limited was in continuous operation throughout the year; gypsum for this plant came from the Mesher quarry which was active for nine months in the year. Both the quarry and mill of the Canadian Gypsum Company Limited, located at Wentworth, were operated during the entire year. Production at this property included both anhydrite and gypsum and the minerals were shipped in the crushed state. The National Gypsum (Canada) Ltd. made shipments in 1942 from quarries located at Walton and Dingwall, but only milling operations were conducted at its Belle Marche property in Inverness County. Shipments of crude lump gypsum, for export, were made by the Connecticut Plaster Company; the quarry of this company

Gypsum

is located at Cheverie.

Gypsum production in New Brunswick in 1942 came entirely from Hillborough where the quarry and manufacturing plant of the Canadian Gypsum Company were in steady production throughout the year. Both surface and underground mining operations are carried on at this property and various gypsum products are manufactured by the company.

In Ontario, gypsum mining during 1942 was confined to Haltonand county. Two companies operated in this area, Gypsum, Lime & Alabastine, Canada, Limited, at Caledonia, and the Canadian Gypsum Company Limited at Hagersville. These companies, in addition to conducting both surface and underground mining, produced an extensive variety of gypsum products. Operations by these firms were continuous throughout the year.

Gypsum was mined in Manitoba during 1942 at Gypsumville by Gypsum, Lime & Alabastine, Canada, Limited, and at Amaranth by Western Gypsum Products Limited. These companies also operated manufacturing plants in the city of Winnipeg.

The production of gypsum in British Columbia in 1942 came entirely from the Falkland deposits where the property of Gypsum, Lime & Alabastine, Canada, Limited was operated from January to December. The manufacturing plant of the company, located at New Westminster, was in steady production during the year under review.

The following information is from a report on gypsum prepared by the Bureau of Mines, Ottawa:

"Gypsum is marketed in the crude lump form, ground as "land plaster" and "Terra alba", or ground and calcined, as plaster of Paris or wall plaster. Each year an increasing portion of the calcined material enters into the manufacture of wallboard, gypsum blocks, insulating material, acoustic plaster, etc. Anhydrite is used mainly as a fertilizer for the peanut crop in the Atlantic seaboard states of the southern United States.

"The use of anhydrite for the manufacture of sulphuric acid, ammonium sulphate, cement and special plasters is increasing, and, normally, there is a good opportunity for the Canadian material in this market. Canada has extensive deposits, favourably situated for commercial development, the material from which has been proved by tests carried out by the Department of Mines and Resources to be of excellent grade. Prior to 1937 the small Canadian production was exported principally for use as a fertilizer for the peanut crop, but it is possible that an industry will eventually be started in this country in which the anhydrite may be used for the manufacture of sulphur or sulphur compounds and of special plasters, similar to those being marketed in England.

"The use of gypsum products in the building trades has made rapid progress because of their lightness, durability, fire-resisting, insulating, and acoustic properties; and tiles, wallboards, blocks, and special insulating and acoustic plasters have been developed. It is probable that production of gypsum for domestic use will continue to decline during the war. As most of the crude gypsum is shipped to the United States for the manufacture of gypsum products, industrial conditions in that country will continue to have an important bearing on the industry.

"Crude gypsum is a low-priced commodity, and its selling price f.o.b. quarry is dependent largely upon the quantity produced and the production facilities

available. For export, contracts are generally made with the producer for the year's requirements of the purchaser and these contracts are generally made early in each year. The price of crude gypsum as quoted by the Canadian Chemistry and Process Industries remained at \$2.50 to \$3.50 per ton f.o.b. mine throughout 1942.

"A large tonnage of by-product gypsum is obtained from the production of phosphate fertilizers at the plant of Consolidated Mining & Smelting Company, at Tadoussac, British Columbia, and efforts to find an outlet for this material are being continued."

Table 1 - PRINCIPAL STATISTICS OF THE GYPSUM MINING INDUSTRY IN CANADA, 1939-1942

		Nova Scotia	New Brunswick, Ontario, Manitoba British Columbia	TOTAL CANADA
Number of firms.....	1939	7	3(a)	10
	1940	6	3(a)	9
	1941	6	2(a)	8
	1942	5	2(b)	7
Capital employed	1939	\$4,370,893	2,436,014	6,806,907
	1940	\$2,406,561	2,242,101	4,648,662
	1941	\$2,812,465	2,363,356	5,175,821
	1942	\$1,913,131	2,473,400	4,386,531
Number of employees..	On salary -			
	1939	23	37	60
	1940	33	24	57
	1941	34	14	48
	1942	28	27	55
	On wages -			
	1939	440	208	648
	1940	389	248	637
Salaries and wages ..	Salaries -			
	1939	\$ 53,680	59,235	112,915
	1940	\$ 60,374	51,048	111,422
	1941	\$ 62,083	28,852	90,935
	1942	\$ 53,314	53,163	106,477
	Wages -			
	1939	\$ 402,134	177,109	579,243
	1940	\$ 369,090	237,154	606,244
1941	\$ 333,350	315,717	649,067	
1942	\$ 231,431	319,712	551,143	
Fuel and electricity..	Cost -			
	1939	\$ 30,394	103,094	133,488
	1940	\$ 76,224	118,740	194,964
	1941	\$ 73,734	142,730	216,464
1942	\$ 56,831	141,351	198,182	
Value of process supplies used -	1939	\$ 85,156	29,665	114,821
	1940	\$ 124,008	29,370	153,378
	1941	\$ 129,375	22,569	151,944
	1942	\$ 34,784	30,673	65,457
Selling value of products (gross)-	1939	\$1,340,830	594,297	1,935,127
	1940	\$1,302,547	763,586	2,066,133
	1941	\$1,517,297	731,131	2,248,428
	1942	\$ 512,762	741,420	1,254,182

(a) Includes 2 companies also operating in Nova Scotia.
 (b) Includes 1 company also operating in Nova Scotia.

Table 2 - FUEL AND ELECTRICITY USED IN THE GYPSUM MINING INDUSTRY, 1942, WITH TOTALS FOR 1939, 1940 and 1941

	Unit of measure	Nova Scotia		New Brunswick, Ontario, Manitoba, British Columbia		C A N A D A	
		Quantity	Cost at works \$	Quantity	Cost at works \$	Quantity	Cost at works \$
Coal - Bituminous - Canadian	ton	584	4,622	7,852	55,074	3,418	59,696
Bituminous - Imported	ton	...	...	3,000	22,125	3,000	22,125
Lignite	ton	...	...	946	3,719	946	3,719
Coke	ton	...	...	340	3,732	340	3,732
Gasoline	Imp.gal.	42,513	3,801	11,200	3,093	53,713	12,894
Kerosene	Imp.gal.	212	42	33	11	245	53
Fuel oil and diesel oil	Imp.gal.	80,313	8,636	3,677	499	84,496	9,135
Wood	cord	...	...	61	306	61	306
Gas - Manufactured	M cu. ft.	...	...	...	...	...	...
Natural	M cu. ft.	...	...	5,483	2,196	5,483	2,196
Other fuel	xxx	...	...	...	...	...	...
Electricity purchased	K. W. H.	790,400	13,670	11,232,463	51,090	12,022,863	64,760
TOTAL 1942	xxx	...	36,831	...	141,951	...	178,682
TOTAL 1941	xxx	...	73,784	...	148,780	...	222,564
TOTAL 1940	xxx	...	76,224	...	113,740	...	194,964
TOTAL 1939	xxx	...	90,394	...	103,094	...	193,488
Electricity generated for own use - 1940	K.W.H.	100,000	...	415,505	...	515,505	...
1939	K.W.H.	379,086	...	395,372	...	774,358	...
1941	K.W.H.	134,000	...	137,135	...	331,135	...
1942	K.W.H.	319,483	...	1,147,356	...	1,467,344	...

NOTE: 1 ton = 2,000 pounds.

1942

1941

1940

1939

Table 3 - NUMBER OF WAGE-EARNERS ON PAYROLL OR TIME RECORD ON THE LAST DAY OF EACH MONTH OR NEAREST WORK DAY, 1940-1942

Month	1940		1941		1942			
	Mine	Mill	Mine	Mill	Mine		Mill	
					Surface	Under-ground *	Male	Female
January	201	107	210	128	117	77	171	2
February	214	106	205	125	151	79	162	2
March	225	135	232	142	133	83	199	2
April	317	134	413	213	137	83	213	2
May	551	192	481	197	254	82	220	4
June	484	192	523	224	256	75	236	4
July	647	192	586	218	263	82	222	4
August	710	243	433	236	259	79	223	4
September	700	218	505	228	195	73	181	5
October	614	234	445	220	115	73	165	4
November	436	172	423	229	103	83	193	3
December	345	159	368	170	70	37	133	3

* Underground work confined to New Brunswick, Ontario and Manitoba.

Table 4 - NUMBER OF WAGE-EARNERS WHO WORKED THE NUMBER OF HOURS SPECIFIED, DURING ONE WEEK IN MONTH OF HIGHEST EMPLOYMENT, 1942

Hours	No.	Hours	No.
30 or less	48	40-50	32
31-43	63	51-54	105
44	27	55	21
45-47	16	56-64	138
48	133	65 (x)	39

(x) Grand total employees in week specified, 687 including 3 females.
Total wages paid in week specified, \$17,041.

Table 5 - POWER EQUIPMENT INSTALLATION, 1942

Description	Ordinarily in Use		In Reserve or Idle	
	Number of units	Total h.p. (manufacturer's rating)	Number of units	Total h.p. (manufacturer's rating)
1. Steam engines and steam turbines	7	1,270	4	130
2. Diesel engines	12	2,078	2	326
3. Gasoline, gas and oil engines, other than diesel engines	33	1,773	23	1,134
4. Hydraulic turbines or water wheels .....	...	...	...	...
5. Electric motors -				
(a) Operated by purchased power	170	5,727	20	370
TOTAL 1, 2, 3, 4 and 5(a)	223	10,350	49	2,530
(b) Operated by power generated by the establishment	42	1,016	15	430
Stationary boilers	6	770	4	355
Motor generator sets	11	514	1	322

Table 6 - PRODUCTION IN CANADA, OF GYPSUM, 1941 and 1942

	1941		1942	
	Quantity Tons	Value \$	Quantity Tons	Value \$
SHIPMENTS BY GRADES -				
Grade (1) - Lump or mine run	39,773	52,156	13,176	22,240
Crushed	1,396,364	1,541,431	492,578	523,093
Fine ground	277	2,061	246	1,849
Calcined gypsum, sold and used (2)	156,989	652,780	150,166	707,000
TOTAL	1,593,409	2,248,428	566,166	1,254,182
SHIPMENTS BY PROVINCES -				
Nova Scotia	1,395,172	1,517,237	394,216	512,762
New Brunswick	53,172	150,530	36,623	111,316
Ontario	90,530	276,459	82,796	304,170
Manitoba	27,601	162,822	23,213	173,730
British Columbia	23,862	141,320	23,313	146,154
TOTAL	1,593,406	2,248,428	566,166	1,254,182
Total gypsum mined and quarried (1)	1,560,440	...	797,122	...
Total gypsum calcined (2)	197,413	...	183,296	...

(1) Includes some anhydrite quarried in Nova Scotia.

(2) Does not include gypsum calcined in manufacturing plants located in Montreal and Calgary, but includes calcine used in manufacturing plants operated in direct conjunction with the mines--the value of calcine used is its value as a process material.

Table 7 - PRODUCTION (SALES) OF CRUDE AND CALCINED GYPSUM IN CANADA, 1914-1942

Year	Tons	Value \$	Year	Tons	Value \$
1914	516,930	1,156,237	1929	1,211,689	3,345,696
1915	474,315	854,929	1930	1,070,968	2,812,738
1916	342,315	736,522	1931	863,752	2,111,517
1917	336,332	801,384	1932	438,629	1,080,379
1918	152,287	323,006	1933	332,736	675,322
1919	299,065	1,215,237	1934	461,237	863,776
1920	429,144	1,893,991	1935	541,364	932,205
1921	336,550	1,735,538	1936	822,822	1,278,971
1922	552,265	2,160,898	1937	1,047,187	1,540,483
1923	578,301	2,245,100	1938	1,003,799	1,502,265
1924	646,016	2,200,103	1939	1,421,354	1,935,127
1925	740,323	2,389,391	1940	1,448,788	2,065,933
1926	883,722	2,770,813	1941	1,593,406	2,248,428
1927	1,063,117	3,251,015	1942	566,166	1,254,182
1928	1,246,363	3,745,648			

Table 8 - CONSUMPTION OF GYPSUM IN CANADIAN CEMENT INDUSTRY, 1932-1942

Year	Tons	Year	Tons
1932	27,538	1938	51,375
1933	13,319	1939	31,432
1934	19,172	1940	38,303
1935	21,611	1941	49,031
1936	25,447	1942	49,316
1937	33,691		

PART II - SECONDARY PRODUCTION - THE GYPSUM PRODUCTS INDUSTRY, 1942

Nine Canadian factories, operated by four companies, manufactured gypsum products having a factory selling value of \$4,822,262 during 1942. This output was 4.9 per cent over the 1941 total of \$4,601,093 and 17.4 per cent over the 1940 value of \$4,110,735. The main products were gypsum wallboard, gypsum hardwall plaster, gypsum tile and gypsum blocks.

Capital employed in these nine manufacturing plants amounted to \$3,414,258 in 1942, including \$1,578,655 as the value of buildings and equipment, \$614,502 as the value of inventories at the year-end, and \$1,221,101 as cash, bills receivable, etc. The average number of employees in 1942 was 412, to whom \$554,665 was paid in salaries and wages. Expenditures for fuel and electricity amounted to \$217,007 while materials used in manufacturing processes cost \$2,251,434.

Table 9 - PRINCIPAL STATISTICS OF THE GYPSUM PRODUCTS INDUSTRY, 1941 and 1942

	1 9 4 1	1 9 4 2
Number of establishments	9	9
Capital employed	\$ 3,431,838	3,414,258
Number of employees	374	412
Salaries and wages	\$ 464,776	554,665
Cost of fuel and electricity	\$ 191,685	217,007
Cost of materials at works	\$ 1,941,052	2,251,434
Selling value of products at works	\$ 4,601,093	4,822,262

NOTE: Profits or losses cannot be calculated from above figures as data are not available for general expense items, such as, interest, rent, depreciation, taxes, insurance, advertising, etc.

Table 10 - EMPLOYEES, SALARIES AND WAGES, 1941 and 1942

	1 9 4 1	1 9 4 2
Employees - On salaries ... Male	No. 25	45
Female	No. 4	5
On wages	No. 345	360
Female	No. ...	2
Total Employees	No. 374	412
Salaries	\$ 66,430	94,038
Wages	\$ 398,346	460,629
TOTAL SALARIES AND WAGES	\$ 464,776	554,665

Table 11 - WAGE-EARNERS, BY MONTHS, 1941 and 1942

Month	Number of wage-earners		Month	Number of wage-earners	
	1941	1942		1941	1942
January	314	341	July	362	379
February	300	363	August	365	398
March	293	345	September	354	389
April	328	325	October	362	359
May	371	342	November	358	373
June	381	354	December	337	392
			AVERAGE	345	362

Table 12 - HOURS WORKED PER WEEK BY WAGE-EARNERS, 1941 and 1942 (In one week of month of highest employment; overtime included)

	Number of Wage-Earners	
	1941	1942
30 hours or less	14	19
31-43 hours	9	26
44 hours	36	26
45-47 hours	14	32
48 hours	22	14
49-50 hours	21	29
51-54 hours	46	29
55 hours	8	9
56-64 hours	106	107
65 hours or over	124	113
TOTAL	400	404
Total wages paid in selected week	\$ 9,670	11,472

Table 13 - FUEL AND ELECTRICITY USED, 1941 and 1942

Kind	Unit of measure	1941		1942	
		Quantity	Cost at works	Quantity	Cost at works
			\$		\$
Coal - Bituminous - Canadian	ton	405	2,813	322	3,013
Imported	ton	6,087	38,985	6,048	41,532
Lignite	ton	4,556	17,537	7,309	28,796
Coke	ton	244	2,521	501	6,089
Gasoline	Imp. gal.	11,160	3,031	8,728	2,717
Fuel oil	Imp. gal.	1,571,537	32,435	1,371,023	35,354
Wood	cord	200	842	881	3,009
Gas - Natural	M cu.ft.	5,589	1,502	6,002	1,476
Electricity purchased	K. W. H.	6,511,550	41,954	7,013,450	46,271
TOTAL .....	...	...	191,685	...	217,007
Electricity generated for own use	K. W. H.	335,339	...	668,729	...

Table 14 - POWER EQUIPMENT, 1941 and 1942

	Ordinarily In Use		In Reserve or Idle	
	Number of units	Total rated horse power	Number of units	Total rated horse power
<u>1941</u>				
Steam engines and turbines	2	30	3	140
Gasoline, gas and oil engines	1	40	...	...
Total primary equipment	3	70	3	140
Electric motors run by purchased power	278	4,407	27	440
TOTAL	279	4,477	30	580
Electric motors run by power generated by above primary units	27	250	1	10
Stationary boilers	3	1,372	2	110
<u>1942</u>				
Steam engines and turbines .....	...	...	4	155
Diesel engines	2	30	...	...
Gasoline, gas and oil engines	1	40	...	...
Total primary equipment	3	100	4	155
Electric motors run by purchased power	256	4,037	20	303
TOTAL	259	4,137	24	458
Electric motors run by power generated by above primary units	27	250	1	10
Stationary boilers	3	622	3	250
Motor generator sets	1	3	...	...

Table 15 - MATERIALS USED IN THE GYPSUM PRODUCTS INDUSTRY, 1941 and 1942

Material	Unit of measure	1941		1942	
		Quantity	Cost at works	Quantity	Cost at works
Gypsum, crude	ton	30,378	112,158	20,742	78,490
Gypsum, calcined (plaster of Paris)	ton	157,433	628,325	149,835	705,541
Paper	ton	13,106	718,914	14,240	363,457
Starch or paste	ton	487	42,310	499	31,436
Hair	ton	122	23,293	73	18,036
Retarder	ton	236	23,330	203	13,043
Sawdust or shavings	ton	751	5,481	165	2,259
Containers, etc. ....	...	...	124,660	...	108,537
All other materials .....	...	...	262,581	...	420,561
TOTAL .....	...	...	1,941,052	...	2,251,484

Table 16 - OUTPUT OF THE GYPSUM PRODUCTS INDUSTRY, 1941 and 1942

Products	Unit of measure	1941		1942	
		Quantity	Selling value at works	Quantity	Selling value at works
Gypsum wallboard	sq. ft.	154,760,145	3,255,613	164,410,695	3,843,253
Gypsum hard wall plasters	ton	30,216	1,043,264	51,475	692,533
All other products (x) .....	...	...	301,611	...	222,181
TOTAL .....	...	...	4,601,095	...	4,622,362

(x) Includes gypsum tile and blocks, etc.

LIST OF FIRMS IN THE GYPSUM PRODUCTS INDUSTRY, 1942

Name of Firm	Head Office Address	Plant Location
Windsor Plaster Co. Ltd.	Windsor, N.S.	Windsor, N.S.
Canadian Gypsum Co. Ltd.	1321 Bay Street, Toronto, Ont.	Hillsborough, N.S. Hagersville, Ont.
Gypsum, Lime and Alabastine, Canada, Limited	Paris, Ont.	Montreal, Que. Caledonia, Ont. Winnipeg, Man. Calgary, Alta. New Westminster, B.C.
Western Gypsum Products Ltd.	505 McArthur Bldg., Winnipeg, Man.	Winnipeg, Man.

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