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Published by Authority of the HON. JAMES A. MacKINNON, M.P. 5-31-7-44
Minister of Trade and Commerce Price -
25 cents

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

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SALT, 1943

Production of common salt or natural sodium chloride in Canada during 1943 totalled 687,686 short tons valued at $4,379,578 compared with 653,672 short tons worth $3,844,187 in 1942. The quantity and value of the output during the year under review were the greatest ever realized by the Canadian salt industry. The mineral in 1943 was produced in Nova Scotia, Ontario, Manitoba and Alberta, and of the total production, Ontario contributed 594,889 short tons or 86.5 per cent. Statistics of production represent the recovery of salt from brine wells with the exception of Nova Scotia, where the output comes entirely from the underground mining of rock salt deposits.

Of the total salt produced in 1943, there were 346,145 short tons or 50 per cent consumed directly in the manufacture of caustic soda and other chemicals. Producers' sales of other salt in 1943 included 99,706 short tons of table and dairy grades; 167,547 short tons of common fine and 70,883 short tons of common coarse. The balance, other than that used direct for chemical manufacture, consisted of various grades, including salt for agriculture and for highway maintenance.

The number of Canadian firms reporting primary salt production in 1943 totalled 9; capital employed by the industry amounted to $5,490,594, of which $3,381,435 represented the value of buildings, machinery, etc., $284,652 the value of land and $1,262,469 operating capital. Employees numbered 682, including 105 females. Salaries and wages totalled $1,223,009; $596,252 were expended for fuel and electricity, and $134,272 for chemicals and other process supplies.

Statistics relating to Canadian salt production are available only since 1886 and salt output in the Dominion since that year and to the end of 1943 totalled 10,780,904 short tons valued at $62,293,839. Statistics relating to world production of salt have not been available since 1938.

Canadian exports of salt in 1943 totalled 8,061 short tons valued at $118,174; imports during the same period amounted to 84,788 short tons worth $589,108.

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

"At Nappan, near Amherst, Cumberland county, Nova Scotia, a well was drilled in 1931 by Imperial Oil, Limited in a search for oil and gas. The hole

reached a total depth of 4,134 feet and bottomed in anhydrite. The hole penetrated alternating beds of salt, anhydrite, dolomite, limestone, and shale, the salt constituting 45 per cent of the whole. Salt was first met at a depth of 920 feet, for a length of 20 feet, and this was followed by many other salt horizons interbedded in gypsum, anhydrite, and sand. At 2,990 feet, there followed a thickness of 500 feet of salt. The geological structures in this area were worked out in detail by Imperial Oil, Limited.

"To obtain further information on this structure the Nova Scotia Department of Mines undertook a drilling campaign in 1943. No. 1 hole, drilled one mile west of Amherst, intersected 26 feet of salt between 779 feet and 805 feet. No. 2 hole drilled 650 feet north of No. 1 intersected salt at 888 feet and was stopped in salt at 1,114 feet, giving 226 feet of salt. The results of the drilling gave ample evidence of huge deposits of salt in this district.

"In New Brunswick, a salt basin was discovered in 1921, as a result of drilling in the vicinity of Goutreau, south of Moncton, on the east side of the Petitcodiac River. The extent of the basin was further determined when New Brunswick Gas and Oilfields, Limited, in drilling at Weldon on the west side of the Petitcodiac River, penetrated over 1,500 feet of salt formation. It was the second drill hole to strike salt on that side of the river. The top of the rock salt was 1,473 feet below the surface. During 1939 still another drill hole passed through the same salt formation, the thickness, however, being only about 100 feet, indicating that the northern edge of the basin was being approached. Six drill holes have penetrated the salt so that a deposit over 1½ miles wide and 4 or more miles long is already indicated, the greatest thickness so far encountered being 1,500 feet. There are, therefore, many millions of tons of salt in this basin available for future development.

"The market for salt in Canada is steadily increasing. Domestic production is sold principally to the dairy, meat curing, and canning industries; to fisheries; to highway and transport departments for use as a soil stabilizer; to the chemical industries; and as table salt.

"The use of salt in soil stabilization for the foundations of highways and for a surface veneer for gravel roads has shown marked increase in recent years. It has been used extensively also in the development of soil-stabilized bases for runways at Canadian air fields. Sand piled each fall at regular intervals along main highways remains loose and free-flowing even in the coldest weather, when mixed with salt, thus allowing easy distribution on the icy roadway.

"According to Canadian Chemistry and Process Industries (Toronto), prices for the several grades of salt were as follows in 1943: Specially purified (99.9 per cent NaCl) from January to July, and 94 cents per 100-pound lot from July to the end of the year; salt in 280-pound barrels f.o.b. plant, $3.53 per barrel; industrial fine, in bulk car lots f.o.b. plant, $6.53 per ton; and industrial coarse $10.63 per ton."

Table 1 - PRODUCTION OF SALT IN CANADA, BY GRADES, 1942 and 1943

	1942			1943		
	Manufactured	Sold	Value of salt sold (Not including containers)	Manufactured	Sold	Value of salt sold (Not including containers)
	tons	tons	$	tons	tons	$
Table, dairy and pressed blocks ...	89,588	87,743	1,698,210	100,562	99,706	1,823,446
Common, fine	147,168	150,008	890,906	164,658	167,547	1,074,229
Common, coarse	33,794	35,271	330,322	68,106	70,883	451,462
Highway salt	996	996	5,438	269	269	1,468
Land salt	514	509	3,493	132	157	1,223
Other grades	52,239	51,597	335,037	3,044	2,979	43,208
Brine for chemical works (salt equivalent sold or used)	327,548	327,548	580,781	346,145	346,145	984,342
Total	651,847	653,672	3,844,187	682,916	687,686	4,379,378
Value of containers	...	...	748,816	...	...	809,250
GRAND TOTAL	...	...	4,593,003	...	...	5,188,628

Table 2 - PRODUCTION OF SALT, BY PROVINCES(x), 1932-1943

Year	Nova Scotia		Ontario		Manitoba		Alberta	
	Tons	$	Tons	$	Tons	$	Tons	$
1932 ...	31,897	150,708	231,138	1,789,751	508	7,092	...	...
1933 ...	34,278	161,389	244,107	1,755,087	1,499	18,388	...	...
1934 ...	42,886	191,917	276,751	1,734,196	1,664	20,137	...	...
1935 ...	38,701	161,659	320,003	1,698,508	1,538	18,765	...	...
1936 ...	38,774	183,915	350,044	1,557,078	2,498	32,151	...	...
1937 ...	47,865	216,401	407,701	1,539,599	3,391	43,465	...	...
1938 ...	44,950	194,759	388,130	1,657,140	2,920	34,979	4,045	46,035
1939 ...	47,885	213,029	370,843	2,200,189	2,453	35,838	3,319	37,526
1940 ...	42,495	220,328	412,401	2,371,780	3,076	45,731	6,742	185,430
1941 ...	54,007	307,637	477,170	2,512,166	13,051	115,367	16,617	260,995
1942 ...	50,199	317,798	558,407	2,793,328	22,706	397,101	22,360	335,960
1943 ...	47,775	245,157	594,389	3,356,870	27,523	497,227	17,499	280,124

(x) In addition, Saskatchewan produced 231 tons valued at $4,510 in 1933, 452 tons at $8,703 in 1934, and 101 tons at $2,046 in 1935.

Table 3 - TOTAL PRODUCTION OF SALT IN CANADA FOR YEARS SPECIFIED, 1886-1943

Year	Tons	$	Year	Tons	$
1886	62,359	227,195	1931	259,047	1,904,140
1890	43,754	198,857	1932	263,543	1,947,551
1900	62,055	279,458	1933	280,115	1,959,874
1913	100,791	491,280	1934	321,753	1,954,953
1914	107,038	495,648	1935	360,343	1,880,978
1915	119,900	600,228	1936	391,316	1,773,144
1916	132,903	717,653	1938	440,045	1,912,913
1917	138,909	1,047,792	1939	424,500	2,486,632
1918	131,727	1,285,033	1940	464,714	2,823,269
1919	148,301	1,397,929	1941	560,845	3,196,165
1920	209,855	1,544,724	1942	653,672	3,844,187
1921	164,658	1,673,685	1943	687,686	4,379,378
1929	330,264	1,578,086			

Table 4 - SALT PRODUCED FOR CHEMICAL PURPOSES(x), 1928-1943

Year	Quantity Tons (2000 lb.)	Per cent of total salt output	Year	Quantity Tons (2000 lb.)	Per cent of total salt output
1928 ...	135,138	45	1936 ...	165,882	42
1929 ...	168,327	51	1937 ...	205,149	45
1930 ...	114,737	42	1938 ...	170,938	39
1931 ...	97,958	38	1939 ...	187,958	44
1932 ...	96,242	37	1940 ...	224,009	48
1933 ...	104,740	37	1941 ...	258,711	46
1934 ...	124,132	39	1942 ...	327,548	50
1935 ...	145,433	40	1943 ...	346,145	50

(x) Used in the manufacture of chemicals by producers of salt.

Table 5 - AVAILABLE STATISTICS ON CONSUMPTION OF SALT, IN SPECIFIED CANADIAN INDUSTRIES, 1941 and 1942 (x)

Industries	1941 Quantity used	1941 Cost at works	1942 Quantity used	1942 Cost at works
	Pounds	$	Pounds	$
Fish canning and curing (factories only)	44,229,400	363,201	44,918,800	460,162
Slaughtering and meat packing	102,888,000	702,348	112,575,017	775,059
Acids, alkalies and salts—Brine (salt content) and dry salt	495,346,445	708,321	613,076,907	886,119
Soaps and cleaning preparations ..	5,823,762	24,311	4,363,370	22,822
Dyeing, cleaning and laundry work.	5,018,198	49,389	6,286,284	56,970
Dyeing and finishing of textiles..	3,379,482	19,898	5,564,143	25,709
Artificial ice	428,411	3,550	474,440	3,720
Abrasives—Artificial	826,000	4,280	784,000	4,172
Waterworks	1,000,000	(/)	(a)	(a)
Leather tanneries	16,212,371	84,365	16,412,227	85,305
Pulp and paper mills	28,772,000	118,015	28,606,000	132,161
Stock and poultry foods	6,258,000	46,353	8,158,000	63,376
Bread and other bakery products ..	14,444,719	170,892	15,481,319	183,393

Table 5 - AVAILABLE STATISTICS ON CONSUMPTION OF SALT, IN SPECIFIED CANADIAN INDUSTRIES, 1941 and 1942(x) - (Concluded)

Industries	1941 Quantity used	1941 Cost at works	1942 Quantity used	1942 Cost at works
	Pounds	$	Pounds	$
Fruit and vegetable preparations.	14,476,063	102,009	13,212,011	98,254
Biscuits, confectionery, etc	1,609,456	17,685	1,894,910	18,615
Foods, breakfast	1,290,819	10,211	1,386,367	10,976
Sausage and sausage casings	766,466	7,996	637,966	7,054
Ice cream industry	414,880	2,749	458,925	2,203
Breweries	721,984	7,530	1,055,986	8,977
Malt and malt products	222,150	1,236	220,500	1,278
Macaroni, vermicelli, etc.	74,259	817	115,602	1,213
Ice cream cones	6,006	195	6,394	66
Foods, miscellaneous, including coffee, tea, etc.	2,603,422	26,614	2,693,050	27,063
Butter and cheese	...	214,659	...	240,607
Starch and glucose	492,467	2,302	623,360	2,625
Animal oils and fats	270,000	1,200	364,000	1,850
Condensed milk	...	512	...	409
Cheese processed	148,534	2,283	239,263	4,573

(x) In addition, large quantities of salt are used on highways.
(/) Value not compiled.
(a) Data not available.

Table 6 - PRODUCTION IN CANADA, IMPORTS, EXPORTS AND CONSUMPTION OF SALT, 1942 and 1943

	1942 Tons	1942 Value	1943 Tons	1943 Value
		$		$
Production	653,672	3,844,187	687,686	4,379,378
Imports -				
Salt, for the use of the sea or gulf fisheries	20,865	141,050	21,037	161,255
Salt, in bulk, n.o.p.	35,295	165,762	47,687	245,913
Salt, n.o.p., in bags, barrels, etc. .	13,182	133,895	16,064	181,940
Salt, table, made by an admixture of other ingredients, when containing not less than 90 per cent of pure salt	2	141	...	...
Total	69,344	440,848	84,788	589,108
Exports	9,326	128,832	8,061	118,174
Apparent consumption of salt	713,690	4,156,203	764,413	4,850,312

Table 7 - POTASH SALTS USED IN THE MANUFACTURE OF CANADIAN MIXED FERTILIZERS, 1941 and 1942

	1941		1942	
	Tons	Cost at works	Tons	Cost at works
		$		$
Nitrate of potash	4	566	90	876
Kainite and potash manure salts ..	3,280	59,232	30,182	587,489
Muriate of potash	42,815	1,540,783	41,648	1,686,724
Sulphate of potash	2,988	134,839	4,525	196,754

Table 8 - SALES OF POTASH SALTS FOR FERTILIZER PURPOSES, OTHER THAN FOR THE MANUFACTURE OF MIXED FERTILIZERS, YEARS ENDED JUNE 30, 1942 and 1943

	1942	1943
	(short tons)	
Muriate of potash	5,419	5,376
Sulphate of potash	122	99

Complete statistics relating to world production of potash are not available for 1941 or 1942 as publication of potash production statistics by European governments virtually ceased in the summer of 1939, and no adequate data are available since.

Natural potash salts are not yet mined or recovered on an extensive commercial scale in Canada. Potash occurs in small quantities in rock salt strata at Malagash, Cumberland County, Nova Scotia, and at Gautreau, Westmorland County, New Brunswick. Potassium chloride occurs at Malagash in a number of definite bands in the salt mass in the form of crystalline beds of pink and yellowish green sylvite in the matrix of halite.

Caustic soda, chlorine and hydrochloric acid are now manufactured by Canadian Industries Limited from salt obtained from the company's wells located at Sandwich. This company operates chemical plants at Windsor, Cornwall, Shawinigan Falls and Quebec.

The Brunner, Mond Canada, Limited, located at Amherstburg, Ontario, manufactures soda ash from natural brine; calcium chloride is also recovered as a by-product by this company.

Table 9 - PRINCIPAL STATISTICS OF THE SALT INDUSTRY IN CANADA, 1941 - 1943

		1941	1942	1943
Number of firms(x)		9	9	9
Capital employed	$	5,559,307	5,687,511	5,490,594
Number of employees--On salary		148	134	135
On wages		520	541	547
Total		668	675	682
Salaries and wages - Salaries	$	361,661	337,050	366,555
Wages	$	656,991	777,524	856,454
Total	$	1,018,652	1,114,574	1,223,009
Selling value of products (gross)	$	3,852,499	4,604,005	5,188,628
Cost of purchased process materials	$	69,541	133,783	134,272
Cost of fuel and electricity	$	450,291	536,649	596,252
Value of containers	$	656,334	748,816	809,250
Net value of sales	$	2,676,533	3,184,755	3,648,854

(x) 6 in Ontario; 1 in Nova Scotia; 1 in Manitoba; 1 in Alberta.

Table 10 - CAPITAL EMPLOYED IN THE SALT INDUSTRY IN CANADA, 1943

	$
Capital employed as represented by -	
Present cash value of the land (excluding minerals)	284,652
Present value of buildings, fixtures, machinery, tools and other equipment	3,381,435
Inventory value of materials on hand, salt in process, fuel and miscellaneous supplies on hand	445,963
Inventory value of finished products on hand	116,075
Operating capital (cash, bills and accounts receivable, prepaid expenses, etc.)	1,262,469
TOTAL	5,490,594

Table 11 - WAGE-EARNERS, BY MONTHS, 1939-1943 (On last day of each month or nearest work day)

Month	1939	1940	1941	1942	1943 Male Surface	1943 Male Underground	1943 Female Surface
January	440	431	428	515	455	55	35
February	426	439	435	526	447	48	40
March	407	442	449	516	457	42	44
April	424	463	484	522	455	41	41
May	439	490	516	539	460	30	44
June	459	477	545	560	465	31	46
July	460	493	558	565	482	25	55
August	416	503	564	548	480	28	58
September	431	490	565	548	446	30	63
October	458	483	574	542	452	26	63
November	449	492	563	569	458	28	65
December	408	396	556	545	468	29	63
AVERAGE	434	466	520	541	461	34	52

Table 12 - NUMBER OF WAGE-EARNERS WHO WORKED THE NUMBER OF HOURS(x) SPECIFIED DURING ONE WEEK IN MONTH OF HIGHEST EMPLOYMENT, 1943

Hours	Number		Hours	Number	
	Male	Female		Male	Female
30 or less	30	5	49-50	29	15
31-43	54	13	51-54	62	5
44	25	6	55	43	...
45-47	24	9	56-64	108	2
48	92	4	65 and over	76	...

(x) Grand Total employees in week specified: male, 543; female, 59.
Total wages paid in week specified: male, $17,579; female, $1,130.

Table 13 - FUEL AND ELECTRICITY USED IN THE CANADIAN SALT INDUSTRY, 1942 and 1943

Kind	Unit of measure	1942		1943	
		Quantity	Cost at works	Quantity	Cost at works
			$		$
Bituminous coal--Canadian ...	short ton	29,121	166,958	10,229	63,281
Imported ...	short ton	40,599	253,367	66,007	421,213
Anthracite coal	short ton	...	...	...	...
Lignite coal	short ton	22,400	80,261	23,890	88,420
Gasoline	Imp.gal.	51,548	14,477	10,907	3,090
Kerosene	Imp.gal.	39	11	82	23
Fuel oil	Imp.gal.	15,482	1,775	343	30
Gas, natural	M cu.ft.	66	36	91	51
Electricity purchased	K.W.H.	3,610,719	19,764	3,701,270	20,144
TOTAL	...	...	536,649	...	596,252
Electricity generated for own use	K.W.H.	7,502,246	...	7,675,462	...

Table 14 - POWER EQUIPMENT (Including stand-by or emergency equipment), 1943

Description	Ordinarily in Use		In Reserve or Idle	
	Number of units	Total horse power(x)	Number of units	Total horse power(x)
1. Steam engines	18	900	...	...
2. Steam turbines	14	3,444	1	502
3. Diesel engines	...	...	...	...
4. Gasoline, gas and oil engines, other than Diesel engines	3	32	...	...
5. Hydraulic turbines or water wheels..	...	...	...	...
6. Electric motors (except those reported under item 8) -				
(a) Operated by purchased power ..	146	988	9	5
Total 1, 2, 3, 4 and 5a	181	5,364	10	507
(b) Operated by power generated by 1, 2, 3 and 4	229	2,265	19	225
7. Stationary boilers	8	4,720	8	1,635
8. Motor generator sets	2	35	...	...

(x) According to manufacturers' rating.

DIRECTORY OF CANADIAN SALT PRODUCING FIRMS, 1943

Name of Firm	Head or Executive Office	Location of Plant
NOVA SCOTIA -		
Malagash Salt Co. Limited	196 Provost St., New Glasgow	Cumberland Co.
ONTARIO -		
Brunner, Mond Canada, Ltd.	Canadian Bank of Commerce Bldg., Toronto	Essex Co.
Canadian Industries Limited	Box 10, Montreal, Que.	Essex Co.
Goderich Salt Co. Ltd.	Box 577, Goderich	Goderich
Sifto Salt Co. Ltd.	2240 Sun Life Bldg., Montreal, Que.	Sarnia
Warwick Pure Salt Co. Ltd.	R.R. 5, Watford	Lambton Co.
Western Canada Flour Mills Co. Ltd.	287 MacPherson Ave., Toronto	Goderich
MANITOBA -		
Neepawa Salt Ltd.	Box 10, Montreal, Que.	Neepawa
ALBERTA -		
Industrial Minerals Ltd.	2240 Sun Life Bldg., Montreal, Que.	Waterways

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