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

THE SALT INDUSTRY
IN
CANADA
1938



OTTAWA
1940

Price 10 cents



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

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SALT, 1938.

Commercial production of common salt or sodium chloride in Canada during 1938 totalled 440,045 short tons valued at \$1,912,913 compared with 458,957 short tons at \$1,799,465 in 1937. In 1938 salt was produced in Nova Scotia, Ontario, Manitoba and Alberta and of the total Canadian output in 1938 Ontario contributed 388,130 short tons or 88 per cent. Statistics of Canadian salt production represent the recovery of the mineral 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 used or sold in 1938 there were 170,938 short tons or 39 per cent consumed directly by the producers themselves in the manufacture of caustic soda and other chemicals. Table and dairy grades sold were recorded at 85,422 short tons, 10,174 tons were reported as sold as highway salt while the balance of production totalling 258,933 short tons included common fine, common coarse and various other grades.

The number of Canadian firms reporting primary salt production in 1938 totalled 9; capital employed by the industry amounted to \$4,270,795 of which \$2,541,432 represented the value of buildings, machinery, etc., and \$809,021 the value of land. Employees numbered 562 including 37 female workers. Salaries and wages totalled \$786,720; \$278,711 were expended for fuel and electricity and \$30,369 for chemicals and other process supplies.

The highest monthly average of employment in 1938 was that for October in which month the industry reported 487 employees including 396 male and 44 female surface workers and 47 male employees operating underground.

Imports of salt into Canada during 1938 totalled 108,131 short tons valued at \$453,765 compared with 116,460 tons and \$466,190 in 1937. Included in the 1938 imports were 39,016 tons for use of the sea and gulf fisheries; most of this particular salt came from the British West Indies and Italy. Exports of Canadian salt in 1938 totalled 11,844 short tons appraised at \$68,293. The total "apparent" consumption of salt in Canada during 1938, for all purposes, and in all forms was estimated at 536,332 short tons valued at \$2,298,385 compared with 296,328 tons at \$2,535,465 in 1918.

Statistics relating to Canadian salt production are available only since 1886 and Canadian salt production since that year to the end of 1938 totalled 7,989,487 short tons valued at \$45,564,208.

Table 1 - PRODUCTION OF SALT IN CANADA, BY GRADES, 1937 and 1938.

Grade	1 9 3 7			1 9 3 8		
	Manu-	Sold	Value of	Manu-	Sold	Value of
	factured		salt sold(x)	factured		salt sold(x)
	Tons	Tons	\$	Tons	Tons	\$
Table, dairy and pressed blocks	78,641	76,908	810,090	83,323	85,422	876,204
Common, fine	104,203	104,968	404,598	101,949	104,174	418,810
Common, coarse	22,858	23,676	182,228	32,446	30,613	253,384
Highway salt	1,969	1,969	6,229	5,778	10,174	34,689
Land salt	42	89	466	88	71	397
Other grades	45,695	46,198	190,706	44,214	38,653	158,491
Brine for chemical works (salt equivalent sold or used)	205,149	205,149	205,149	170,938	170,938	170,938
TOTAL	458,557	458,957	1,799,465	438,736	440,045	1,912,913
Value of containers ....	...	...	534,551	...	...	576,806
GRAND TOTAL	458,557	458,957	2,334,016	438,736	440,045	2,489,719

(x) Not including containers.

/ Value of brine subject to revision.

Table 2 - PRODUCTION OF SALT BY PROVINCES(x), 1929 - 1938.

Year	NOVA SCOTIA		ONTARIO		MANITOBA		SASKATCHEWAN	
	Tons	\$	Tons	\$	Tons	\$	Tons	\$
1929	27,819	157,662	302,445	1,420,424	...	...	...	...
1930	23,058	136,226	248,637	1,558,405	...	...	...	...
1931	27,718	143,761	231,329	1,760,388	...	...	...	...
1932	31,897	150,708	231,138	1,789,751	508	7,092	...	...
1933	34,278	161,889	244,107	1,755,087	1,499	18,388	231	4,510
1934	42,886	191,917	276,751	1,734,196	1,664	20,137	452	8,703
1935	38,701	161,659	320,003	1,698,508	1,538	18,765	101	2,046
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	1,637,140/	2,920	34,979	...	...

(x) In addition Alberta produced 100 tons valued at \$1,300 in 1927 and 4,045 tons at \$46,035 in 1938.

/ Value subject to revision.

Table 3 - TOTAL PRODUCTION OF SALT IN CANADA FOR YEARS SPECIFIED, 1886 - 1938.

Year	Tons	\$	Year	Tons	\$
1886	62,359	227,195	1921	164,658	1,673,685
1890	43,754	198,857	1929	330,264	1,578,086
1895	52,376	160,455	1930	271,695	1,694,631
1900	62,055	279,458	1931	259,047	1,904,149
1913	100,791	491,280	1932	263,543	1,947,551
1914	107,038	493,648	1933	280,115	1,939,874
1915	119,900	600,226	1934	321,753	1,954,953
1916	132,903	717,653	1935	360,343	1,880,978
1917	138,909	1,047,792	1936	391,316	1,773,144
1918	131,727	1,285,039	1937	458,957	1,799,465
1919	148,301	1,397,929	1938	440,045	1,912,913
1920	209,855	1,544,724			

In 1914 the average number of men employed by the Canadian salt industry totalled 253 and the amount of wages paid amounted to \$178,277; in 1918 men employed totalled 302 and wages paid aggregated \$286,781. Caustic soda and chloride of lime were manufactured for brine throughout the war of 1914-1918 at Sandwich, Ontario by the Canadian Salt Company and following cessation of hostilities Brunner, Mond Canada, Ltd., was constructing a plant at Amherstburg Ontario for the production of soda ash from brine.

Table 4 - SALT PRODUCED FOR CHEMICAL PURPOSES, 1925 - 1938.

Year	Quantity Tons (2000 lb.)	Per cent of total salt output	Year	Quantity Tons (2000 lb.)	Per cent of total salt output
1925	93,500	40	1932	96,242	37
1926	113,020	43	1933	104,740	37
1927	115,995	43	1934	124,132	39
1928	135,138	45	1935	145,433	40
1929	168,327	51	1936	165,882	42
1930	114,737	42	1937	205,149	45
1931	97,958	38	1938	170,938	39

/ Used in the manufacture of chemicals by producers of salt.

Table 5 - IMPORTS INTO CANADA and EXPORTS OF SALT, 1937 and 1938.

	1937		1938	
	Short tons	Value	Short tons	Value
		\$		\$
IMPORTS				
Salt, for use of the sea or gulf fisheries	38,643	106,703	39,016	110,808
Salt, in bulk, n.o.p.	48,186	168,998	44,691	169,039
Salt, n.o.p., in bags, barrels, etc.	29,576	189,286	24,383	172,742
Salt, table, made by an admixture of other ingredients, when containing not less than 90 per cent of pure salt	55	1,203	41	1,176
TOTAL	116,460	466,190	108,131	453,765
EXPORTS - TOTAL				
	9,329	61,522	11,844	68,293

Table 6 - PRODUCTION OF SALT IN CANADA, BY GRADES, JANUARY 1 to JUNE 30, 1938 and 1939.

	1 9 3 8			1 9 3 9		
	Manu- factured	Sold	Value of salt sold (not in- cluding containers)	Manu- factured	Sold	Value of salt sold (not in- cluding containers)
	Tons	Tons	\$	Tons	Tons	\$
Table, dairy and pressed blocks	34,938	37,261	321,916	27,682	29,101	453,494
Common, fine	30,545	31,029	145,181	36,453	35,441	210,511
Common, coarse	14,658	13,196	114,292	14,200	14,248	134,691
Highway salt	447	447	1,324	1,079	1,079	5,387
Land salt	877	879	3,023	...	...	...
Other grades	22,881	21,315	86,212	22,717	18,038	72,306
Brine for chemical works (salt equivalent sold or used)	93,113	93,113	147,161	83,612	83,612	113,324
TOTAL	197,459	197,240	819,109	185,743	181,519	989,713
Value of containers ....	...	...	223,380	...	...	199,939
GRAND TOTAL .....	...	...	1,042,489	...	...	1,189,652

Table 7 - IMPORTS INTO CANADA AND EXPORTS OF SALT, JANUARY 1 to JUNE 30, 1938 and 1939.

	1 9 3 8		1 9 3 9	
	Tons	\$	Tons	\$
IMPORTS -				
Salt for use of the sea or gulf fisheries	19,910	57,896	14,388	34,006
Salt in bulk, n.o.p.	22,722	86,864	20,339	73,283
Salt, n.o.p., in bags, barrels, etc.	5,495	42,698	6,690	53,921
Salt, table, made by an admixture of other ingredients, when containing not less than 90 per cent pure salt	28	809	5	140
EXPORTS	5,409	29,593	5,298	35,845

Table 8 - TOTAL CANADIAN IMPORTS and EXPORTS OF SALT, 1929 - 1938.

Year	EXPORTS		IMPORTS	
	Quantity	Value	Quantity	Value
	Tons	\$	Tons	\$
1929	9,359	70,762	176,566	936,820
1930	8,758	74,397	128,385	660,903
1931	6,126	55,110	130,890	751,938
1932	5,627	36,248	102,033	595,954
1933	5,335	43,461	135,620	651,237
1934	6,597	48,097	138,794	586,033
1935	9,045	51,239	128,247	526,740
1936	5,549	46,601	108,923	460,998
1937	9,329	61,522	116,460	466,190
1938	11,844	68,293	108,131	453,765

World production of salt in 1937, the last year for which data are available, was computed at 35,000,000 long tons by the Imperial Institute, London. Of this quantity, the British Empire accounted for 5,800,000 long tons or 16.6 per cent. In the order of output the United Kingdom, India and Canada were the largest Empire producers of the mineral. The leading producers among the foreign countries were the United States, Russia, China, Germany, France, Italy, Poland, Roumania, and Manchoukuo; the total figure for world output included rock salt, brine (wells) salt, and sea salt. In 1937 production in Germany totalled 3,312,128 long tons; in Great Britain 3,083,755 and in France 2,301,151.

Table 9 - AVAILABLE STATISTICS ON CONSUMPTION OF SALT, IN SPECIFIED CANADIAN INDUSTRIES, 1937 and 1938. (x)

Industries	1937		1938	
	Quantity	Cost at	Quantity	Cost at
	used	works	used	works
	Pounds	\$	Pounds	\$
Fish canning and curing (factories only)	40,634,000	208,510	38,146,100	206,797
Slaughtering and meat packing	80,296,715	460,248	72,938,200	391,772
Acids, alkalies and salts - Brine (salt content) and dry salt	475,553,413	383,549	398,870,603	332,411
Soaps and cleaning preparations	4,017,429	14,958	(a)	(a)
Dyeing, cleaning and laundry work ...	5,106,053	36,238	5,155,651	35,282
Dyeing and finishing of textiles	2,086,511	8,330	1,971,890	7,972
Artificial ice	1,998,376	7,176	1,435,067	6,212
Abrasives - artificial	676,000	2,786	406,000	1,784
Waterworks	1,600,000	...	(b)	(b)
Leather tanneries	9,480,760	39,288	(a)	(a)
Pulp and paper mills	(d)	63,787	20,686,000	68,485
Stock and poultry foods	3,454,000	22,505	(a)	(a)
Bread and other bakery products	16,919,700	150,569	(a)	(a)
Fruit and vegetable preparations	9,547,982	63,585	(a)	(a)
Biscuits, confectionery, etc.	1,551,300	13,056	1,771,000	19,043
Foods, breakfast	1,693,494	11,864	(a)	(a)
Sausage and sausage casings	655,897	6,311	(a)	(a)
Ice cream industry (c)	1,314,500	10,516	(a)	(a)
Breweries	602,351	8,355	280,544	2,809
Malt and malt products	261,119	1,370	(a)	(a)
Coffee, tea and spices	368,491	3,036	(a)	(a)
Macaroni, vermicelli, etc.	78,796	728	(a)	(a)
Ice cream cones	4,127	30	(a)	(a)
Foods, miscellaneous	823,172	8,581	(a)	(a)
Butter and cheese .....	...	156,356	(a)	(a)

(x) In addition, large quantities of salt are used on highways.

(a) Not yet complete.

(b) Not compiled in 1938.

(c) Quantities estimated.

(d) Not available.

NOTE:- In addition a relatively small quantity of salt is used in the manufacture of woollen textiles.

Table 10 - POTASH SALTS USED IN THE MANUFACTURE OF CANADIAN MIXED FERTILIZERS, 1936 and 1937.

	1936		1937	
	Tons	Cost at works \$	Tons	Cost at works \$
Kainite and potash manure salts	833	9,569	75	2,500
Muriate of potash	17,251	442,249	28,899	795,733
Sulphate of potash	2,551	88,854	3,925	142,312

NOTE - Data for 1938 not yet complete.

Table 11 - SALES OF POTASH SALTS FOR FERTILIZER PURPOSES, OTHER THAN FOR THE MANUFACTURE OF MIXED FERTILIZERS, Years ended June 30, 1937, 1938.

	1937	1938
	(Short tons)	
Muriate of potash	8,713	9,449
Sulphate of potash	476	700

Table 12 - IMPORTS INTO CANADA OF SPECIFIED POTASSIUM COMPOUNDS, 1937 and 1938.

	1937		1938	
	Pounds	\$	Pounds	\$
Potash compounds, other	489,020	74,115	391,521	75,158
Kainite, or German potash salts and mineral	1,253,100	12,468	240,400	3,850
Cream of tartar (crystals)	730,579	104,333	641,344	109,407
Potash and pearl ash	184,777	10,919	195,042	10,591
Potash, caustic	804,702	51,493	782,956	47,526
Potash, chlorate of	1,114,096	50,951	1,133,844	48,404
Saltpetre or nitrate of potash	2,512,739	75,811	2,310,365	73,030
Muriate of potash (fertilizer)	83,890,700	1,027,406	96,779,500	1,108,897
Potash, sulphate of, crude, (fertilizer)	11,002,500	155,390	12,198,600	173,859
Potash, bichromate, crude	136,454	11,603	121,531	10,435

/ 36,030,300 lb. from France.

Table 13 - APPROXIMATE WORLD PRODUCTION OF POTASH IN MARKETABLE SALTS 1937-38.
(U. S. Bureau of Mines)

	1938		1937	
	Metric tons K ₂ O	Per cent of Total	Metric tons K ₂ O	Per cent of Total
Germany	1,860,000	59.9	1,689,500	60.6
France	581,815	18.7	489,800	17.6
United States	287,532	9.3	258,090	9.2
U.S.S.R.	275,000	8.8	266,000	9.5
Poland	72,139	2.3	62,489	2.2
Palestine	24,000	0.8	18,234	0.7
Other Countries	5,000	0.2	5,000	0.2

More than 15,000,000 tons of crude potash salts averaging around 13.8 per cent K₂O were mined by German producers in 1938, the greatest mine output ever recorded in the history of the industry. From 85 to 90 per cent is processed to produce muriate, sulfate, and other of the high-grade salts to which the market has shifted. Under Government pressure to increase crop production and measures to cheapen the cost of fertilizers, consumption of potash by German farmers has expanded rapidly in recent years.

Output of crude salts from the French (Alsace) mines established a new record of 3,375,000 tons in 1938. According to the U. S. Bureau of Mines, sales were greater than ever before, but because of the increased home demand producers were unable to supply their full quota established by the International Cartel.

In the United States a senate investigation of the potash industry was started in 1936. It was instituted to determine whether unfair or illegal practices were being employed in the exploitation of potash resources and the extent of foreign ownership or control of American potash companies. The American Potash Institute reports that deliveries by member companies in the United States and its possessions in 1938 totalled 439,561 tons of potash and that 40,843 tons were exported.

The Potash Association, Inc., organized by American Potash & Chemical Corporation, United States Potash Co., and Potash Company of America, to handle their export sales, filed a statement in December (1938) with the United States Federal Trade Commission, under the Webb-Pomerene Export Act of 1918, setting forth its place of business, officers etc., and declaring its purpose to engage in exporting potash salts. This act exempts from antitrust laws associations entered into for the sole purpose of engaging in export trade "Provided such association, agreement, or act is not in restraint of trade within the United States, and is not in restraint of the export trade of any domestic competitor of such association."

According to a report by the United States Vice-Consul at Barcelona a decree was issued in November 1938 by the Ministry of Finance and economy creating a Government (Loyalist) monopoly of the Spanish potash industry extending "to the 47 provinces of the Peninsula, Balearic Islands, Canary Islands and territories of the Protectorate in North Africa". The decree provides for the management to be entrusted to the office of potash sales. This office assumes charge of the production and has the power to authorize the producing companies to sign contracts for the sale of monopolized products, provided it concerns transactions in the national market and such transactions are considered suitable in the opinion of the said office.

In the Southwestern part of Kyuquot sound, on the west coast of Vancouver Island, British Columbia, the metamorphic volcanic rocks have been peculiarly altered to rocks containing large amounts of alunite ($K_2O \ 3 \ Al_2O_3 \ 4 \ SO_3 \ 6 \ H_2O$). Alunite has attracted considerable attention as a possible source of "potash" as well as a source of alum. Production from the British Columbia deposits amounted to 30 tons of calcined alunite in 1921. Small shipments were also made during 1922, 1923 and 1925. The preparation of natro-alunite for the market consisted in crushing, grinding and roasting; the resultant product, calcined alunite, may be used as a fertilizer because of the potash content.

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 Gaultreau, 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 sylinite in the matrix of halite. The 1938 annual report of the Department of Public Works and Mines, Nova Scotia, refers to the Malagash occurrence as follows:- "There are two white seams of salt roughly parallel to each other called the Lucas and the McKay and which are being operated by the company. Approximately midway between these two seams a new zone was found in the upper levels carrying potash. This zone was not wide enough to be of commercial value but recent drilling from one seam to the other on the bottom levels has shown a considerable increase in the width of this potash zone and an increase in the potash content".

Considerable potash, in the form of pot ashes and pearl ashes, was produced during the clearing and settlement of arable and other areas in Eastern Canada. These potassium bearing products represented wood ashes obtained from the burning of hardwoods. The greater part of the production was carried on by individual pioneer settlers utilizing hardwood cut in the process of clearing their farms but there were also factories engaged exclusively in the production of pot and pearl ashes. The census of upper and lower Canada (Quebec and Ontario) conducted in 1851-2 established the fact that there were 84 potash plants in upper Canada 10 of which were located in the county of York; in lower Canada 16 factories for making potash were recorded by the same census survey.

The census of 1860-1 showed 94 factories for the production of pot and pearl ashes in lower Canada (Quebec); 58 of these reported an annual production of 5,742 barrels valued at \$113,135 and of this output 1,050 barrels valued at \$26,550 came from Richmond county, 2,625 barrels at \$27,503 from Wolfe county and 718 barrels worth \$18,810 from Shefford county. The same census recorded 73 plants in upper Canada (Ontario) of which 48 reported a production of 3,472 barrels valued at \$96,405; some of the larger potash producing counties included Stormont, Frontenac, Grenville, Northumberland and Prescott. Exports of pot ashes from Canada (upper and lower) in 1862 totalled 29,759 barrels valued at \$985,801 of which those valued at \$835,854 went to Great Britain and \$149,214 to the United States. In the same year the exports of pearl ashes from Canada totalled 8,098 barrels valued at \$250,610 of which those valued at \$208,524 were shipped to Great Britain and \$42,086 to the United States.

Table 14 - IMPORTS INTO CANADA OF SODA ASH, SODA BICARBONATE and CAUSTIC SODA, 1937 and 1938.

	1 9 3 7		1 9 3 8	
	Pounds	\$	Pounds	\$
Soda, caustic	11,808,113	281,020	6,667,057	180,106
Soda, caustic, in solution ..	1,131,155	14,788	12,565,941	182,286
Soda ash or barilla	10,103,477	113,219	2,908,364	41,831
Soda bicarbonate	12,835,249	199,011	12,456,313	185,940
Canadian imports of soda ash in 1918 totalled 91,138,000 pounds valued at \$1,973,641; caustic soda 12,360,000 pounds at \$623,023 and sal soda 11,382,000 pounds at \$174,555.				

Table 15 - IMPORTS INTO CANADA OF CHLORINE, BROMINE AND IODINE, ETC. 1937 and 1938.

	1 9 3 7		1 9 3 8	
	Pounds	\$	Pounds	\$
Chlorine, liquid or gas	7,947,320	170,936	7,721,550	165,982
Bromine	1,029	804	3,632	1,929
Iodine, crude	75,854	61,604	78,638	67,636
Bromides crude for bromine production	360	240	2,623	2,807
Tetraethyl lead compounds	4,518,567	2032,333	5,486,418	2,485,032
Canadian imports of chloride of lime in 1918 totalled 9,784,000 pounds valued at \$162,748. In which tetraethyl lead is the preponderant constituent by weight; in 1938 the entire imports came from the United States.				

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 and Cornwall and in June, 1937, commenced the erection of a caustic soda-chlorine plant at Shawinigan Falls, 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.

The output of bromine in the United States in 1938 totalled 16,162 short tons valued at \$6,610,056 compared with 10,305 tons at \$4,038,438 in 1936. The use of bromine in the form of ethylene dibromide for making tetraethyl lead compounds for antiknock motor fuels commenced in 1923. In the last three years the output of bromine in the United States has virtually doubled. Deposits of many minerals are worked out eventually, but bromine is mined from the inexhaustible reservoir of the ocean. The 1939 minerals year book of the United States Bureau of Mines states that sea water contains only 1 pound of bromine in 2,000 gallons, yet it can yield even this small quantity economically by modern processes. In recent years the bulk of the United States supply has come from the seaside plant at Kure Beach near Wilmington, N.C. At consuming works the bromine compound is treated further with an alloy of metallic sodium and lead to make the tetraethyl lead fluid that is added in varying proportions to many of the better grades of so-called "ordinary gasoline", as well as to the special high-test motor fuels. Other commercial sources of bromine in the United States include brine wells. The United States is the largest producer of bromine in the world. However the element is also recovered in several other countries from brine wells and salt-works bitterns and is an important by-product of the extensive new potash industry developed in Palestine on the shores of the Dead Sea; exports of bromine from Palestine are chiefly to the United Kingdom.

The United States Bureau of Mines reports that definite efforts have been made to expand demand for iodine, which is available in almost unlimited quantities in Chile as a by-product of nitrate manufacture. Iodine has been added to salt and to municipal water supplies as a preventive of goiter, and has important uses in photography and other industries but according to the United States Bureau of Mines the principal prospect for largely increasing consumption is its use in animal feeding. The price of crude iodine was pegged for a number of years at the equivalent of almost \$4 a pound; it was commonly assumed that Chilean nitrate producers could have sold it profitably at 25 cents a pound, but this was unnecessary as long as almost the only competition was from seaweed iodine costing \$2 or \$3 a pound. Following the development of United States production from California oil-field waters, the price was dropped until on October 10, 1936 it was down to 81 cents a pound; in 1938, however, it was revised upward to \$1.02 (world price).

Table 16 -- APPARENT CONSUMPTION x OF SALT (SODIUM CHLORIDE) IN CANADA 1913 - 1919 and 1938.

Year	Pounds	Value
		\$
1913	490,013,300	1,053,516
1914	498,415,400	1,029,300
1915	513,882,000	1,111,916
1916	567,916,000	1,410,265
1917	539,450,000/	2,135,997
1918	592,656,000	2,535,465
1919	590,180,000	2,693,485
1938	1,072,664,000	2,298,385 (a)
x Production plus imports less exports. / Estimated. (a) Subject to revision.		

Table 17 -- PRINCIPAL STATISTICS OF THE SALT INDUSTRY IN CANADA, 1936, 1937 and 1938.

	1936	1937	1938
Number of firms /	8	9	9
Capital employed	\$ 3,856,187	4,001,568	4,270,795
Number of employees -- On salary	122	127	115
On wages	384	416	447
Total	506	543	562
Salaries and wages -- Salaries	\$ 225,170	260,753	278,478
Wages	\$ 415,474	392,383	508,242
Total	\$ 640,644	653,136	786,720
Selling value of products (gross)	\$ 2,300,791	2,334,016	2,489,719
Cost of purchased process materials ...	\$ 31,195	75,947	30,369
Cost of fuel and electricity	\$ 181,502	183,117	278,711
Value of containers	\$ 527,647	534,551	576,806
Net value of sales	\$ 1,560,447	1,540,401	1,603,833

/ 6 in Ontario; 1 Nova Scotia; 1 Manitoba; 1 Alberta.

Table 18 -- WAGE-EARNERS, BY MONTHS, 1934 - 1938. (On 15th or nearest representative date)

Month	1934	1935	1936	1937	1938		
					Male	Female	
					Surface	Underground	Surface
January	357	336	340	348	338	42	31
February	360	311	301	370	368	48	30
March	365	356	362	376	360	52	29
April	379	324	379	401	372	50	30
May	408	400	380	429	366	52	30
June	398	396	396	427	343	50	30
July	389	396	413	452	365	44	30
August	412	385	413	444	367	40	31
September ...	447	391	418	451	395	44	38
October	414	357	423	437	396	47	44
November	433	392	427	456	392	45	37
December	417	383	356	371	354	44	28
AVERAGE ..	398	372	384	416	368	47	32

Table 19 -- NUMBER OF WAGE-EARNERS WHO WORKED THE NUMBER OF HOURS x SPECIFIED DURING ONE WEEK IN MONTH OF NORMAL EMPLOYMENT, 1938.

Hours	Number		Hours	Number	
	Male	Female		Male	Female
30 or less	7	...	49-50	14	...
31-43	40	2	51-54	9	...
44	51	12	55	6	...
45-47	4	6	56-64	140	...
48	128	9	65 /	38	...

x Grand total employees in week specified; male 437; female 29.

/ Total wages paid in week specified \$9,225.

Table 20 - FUEL AND ELECTRICITY USED IN THE CANADIAN SALT INDUSTRY, 1937 and 1938.

Kind	Unit of measure	1 9 3 7		1 9 3 8	
		Quantity	Cost at works \$	Quantity	Cost at works \$
Bituminous coal - Canadian	short ton	...	...	8,671	36,779
Imported	short ton	23,607	106,106	42,855	179,550
Anthracite coal	short ton	3,812	17,059	4,241	18,820
Lignite coal	short ton	7,503	25,471	6,633	21,833
Coke	short ton	26	210	...	...
Gasoline	Imp. gal.	2,918	517	4,350	704
Kerosene	Imp. gal.	250	63	...	...
Fuel oil	Imp. gal.	169,043	16,398	6,582	540
Wood	cord	...	...	...	...
Electricity purchased	K. W. H.	2,754,560	17,293	2,123,280	12,496
TOTAL .....	\$	...	183,117	...	278,711
Electricity generated for own use	K. W. H.	4,054,875	...	3,731,534	...

Table 21 - POWER INSTALLATION, 1938.

Description	Ordinarily in use		In reserve or idle	
	Number of units	Total horse power	Number of units	Total horse power
1. Steam engines and steam turbines ...	26	2,656	4	78
2. Diesel engines	3	555	1	25
3. Gasoline, gas and oil engines, other than diesel engines	2	22	2	9
4. Hydraulic turbines or water wheels .	...	...	...	...
5. Electric motors -				
(a) Operated by purchased power ...	94	799	2	41
Total 1, 2, 3, 4 and 5(a)	125	4,032	9	153
(b) Operated by power generated by the establishment	141	1,708	3	50
Boilers	9	3,800	4	600

LIST OF FIRMS IN CANADIAN SALT INDUSTRY, 1938.

<u>Name of Firm</u>	<u>Head Office</u>	<u>Location of Plant</u>
<u>NOVA SCOTIA</u> -		
Malagash Salt Co. Ltd.	196 Provost St., New Glasgow	Malagash
<u>ONTARIO</u> -		
Brunner, Mond Canada, Ltd.	Canadian Bank of Commerce Bldg., Toronto	Amherstburg
Canadian Industries Limited	P.O. Box 10, Montreal, P.Q.	Windsor
The Dominion Salt Co. Ltd.	Sarnia	Sarnia
Goderich Salt Co. Ltd.	Goderich	Goderich
Warwick Pure Salt Co. Ltd.	R. R. 5, Watford	Lambton Co.
Western Canada Flour Mills Co.Ltd.	287 MacPherson Ave., Toronto	Goderich
<u>MANITOBA</u> -		
Neepawa Salt Ltd.	P. O. Box 10, Montreal, P.Q.	Neepawa
<u>ALBERTA</u> -		
Industrial Minerals Ltd.	423 Canada Cement Bldg., Montreal, Que.	Waterways.

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