

PRELIMINARY STATEMENT
ON THE
MINERAL PRODUCTION
OF THE
PROVINCE OF QUEBEC

PROVINCE OF QUEBEC, CANADA

Department of Mines and Fisheries

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BUREAU OF MINES

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PRELIMINARY STATEMENT

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PROVINCE OF QUEBEC

During the Calendar Year

1937



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NOTE

The purpose of this preliminary statement is to present to the interested public, the figures of production at as early a date as possible after the close of the year, as statistics gain much in usefulness by an early publication. The figures are given "subject to revision", as our returns are not quite complete. The final statistics will be given, as in the past years, in the Annual Report of the Quebec Bureau of Mines for 1937, Part A, entitled "Mining Operations and Statistics", which will follow later, and in which will also be found detailed notes on the mines, inspection of mines and mining accidents.

The ton used throughout is that of 2,000 pounds except when otherwise mentioned. Values are given in Canadian funds.

QUEBEC BUREAU OF MINES.

Quebec, March 4th, 1938.

PRELIMINARY STATEMENT

ON THE

MINERAL PRODUCTION

IN THE

PROVINCE OF QUEBEC

IN 1937

The low ebb of the mineral production of Quebec during the period of depression, was reached in 1932, when the total value for that year fell to \$25,683,066. But starting with 1933 the curve took an upward turn which has been maintained year after year since then. In 1936 the total yearly value attained a record high figure of \$49,755,986 exceeding the previous peak, \$46,454,820, of the year 1929.

In 1937 we reached a new high of \$65,089,194, an increase of nearly 31 per cent as compared with the preceding year.

There has been a marked increase in the production of metals and of non-metallic mineral substances in 1937, as compared with 1936. The value of metals is 26 per cent higher, and that of the non-metals shows a gain of 39 per cent.

The value of \$9,187,926 for the Building material minerals is 36.6 per cent higher than in 1936, but nevertheless it is disappointing, as it is still far from the yearly figure of sixteen million dollars which obtains in average normal times of industrial and trade conditions.

ANNUAL VALUE OF THE QUEBEC MINERAL PRODUCTION

1926-1937

YEAR	VALUE	YEAR	VALUE
1926	\$25,740,002	1932	\$ 25,683,066
1927	29,124,110	1933	28,164,540
1928	37,325,237	1934	31,310,752
1929	46,454,820	1935	39,141,734
1930	41,158,740	1936	49,755,985
1931	36,051,366	1937	65,089,194

SUBDIVISION OF QUEBEC'S MINERAL PRODUCTION

FOR THE YEARS 1932-1937

Year	Metals	%	Non-metallic	%	Building materials	%
1932	\$13,914,089	54	\$3,671,624	14	\$8,097,343	32
1933	16,360,011	58	6,043,308	22	5,761,221	20
1934	19,258,094	61	6,579,453	21	5,473,205	18
1935	23,804,792	61	8,824,178	22	6,512,764	17
1936	30,643,787	62	12,388,178	25	6,724,020	13
1937	38,655,129	59	17,246,139	27	9,187,926	14

TABLE OF THE MINERAL PRODUCTION OF THE PROVINCE OF QUEBEC
DURING 1937

SUBSTANCES	Production in 1937		Value in 1936
	Quantities	Value	
METALLICS			
Chromite, tons.....	210	\$ 3,286	\$ 8,508
Copper, lb.....	94,653,135	12,378,737	6,287,058
Gold (in Canadian funds), ounces. . .	712,004	24,913,020	23,361,682
Lead, lb.....	1,521,182	77,732	80,126
Selenium, lb.....	210,877	364,817	298,098
Silver, ounces.....	908,432	407,713	326,872
Tellurium, lb.....	36,671	63,441	34,519
Titaniferous iron ore, tons.....	3,776	26,432	18,218
Zinc, lb.....	8,566,927	419,951	228,606
Sub-totals.....		\$38,655,129	\$30,643,787
NON-METALLICS			
Asbestos, tons.....	410,024	\$14,505,541	\$ 9,958,183
Feldspar, tons.....	12,285	105,612	75,703
Industrial lime, tons.....	145,678	815,780	630,436
Industrial limestone, tons.....	179,659	208,097	149,909
Magnesitic dolomite.....		677,207	768,742
Marl, tons.....	32,927	13,171	10,874
Mica, lb.....	999,966	122,037	63,123
Mineral paints (iron oxide, ochre), tons.....	5,617	77,640	65,630
Mineral water, gals.....	198,319	19,697	17,399
Peat, tons.....	578	17,121	7,106
Phosphate, tons.....	100	900	4,927
Pyrite, tons.....	56,760	194,496	282,743
Quartz and industrial sand, tons. . .	127,535	448,327	320,634
Talc and soapstone.....		40,513	32,769
Sub-totals.....		\$17,246,139	\$12,388,178
BUILDING MATERIALS			
Building lime, tons.....	10,256	\$ 86,658	\$ 87,341
Building limestone, tons.....	1,415,848	1,237,939	915,475
Cement, barrels.....	2,578,623	3,537,798	2,945,074
Clay products { Brick, M.....	52,637	827,097	516,248
{ Other.....		233,703	175,517
Granite, tons.....	158,366	702,025	429,281
Marble, tons.....	3,522	40,623	120,582
Sand and gravel, tons.....	8,509,950	2,472,355	1,418,231
Sand-lime brick, M.....	2,465	28,415	13,029
Sandstone, tons.....	17,705	20,843	102,056
Slate and shale, tons.....	413	470	1,186
Sub-totals.....		\$9,187,926	\$6,724,020
TOTALS.....		\$65,089,194	\$49,755,985

METALLICS

Metallic substances, as a class, are the largest contributors to Quebec's mineral production after being for many decades in the background, when the annual value of "Metals" was easily distanced by the other two classes "Non-metals" and "Building materials". In 1937 Metallics figure for \$38,655,129 in a total of \$65,089,194, an increase of 26 per cent as compared with the 1936 production.

Gold.—The production of gold of the Province of Quebec continues to grow year by year. In 1937 it was 712,004 ounces, valued at \$24,913,020 in Canadian funds, as compared with 666,905 ounces valued at \$23,361,682 in 1936. Practically all of it is extracted from Western Quebec mines. For some years past the Province of Quebec has held the rank of second to Ontario only, as a producer of gold. Twenty-four mines contributed to the production of gold in 1937, only one of which was outside of the Western Quebec mining fields of Temiscamingue and Abitibi counties.

LIST OF THE PRINCIPAL MINES WHICH PRODUCED GOLD IN 1937

Property	Ore raised Tons	Ore treated Tons	Gold shipped Fine ounces	See foot-note
Aldermac mine(3).....	132,451	131,651	1,000	(c)
Arntfield mine	65,472	65,692	6,802	(b)
Beattie mine.....	581,020	580,520	66,226	(b) (c)
Belleterre mine.....	37,820	36,494	9,017	(b)
Canadian Malartic mine.	232,436	232,326	29,794	(b)
Cournor mine.....	23,522	20,244	2,333	(b)
Lamaque mine.....	230,465	230,465	82,473	(b)
McWatters mine.....	35,425	(1) 33,636	12,074	(a) (b)
Noranda mine(3).....	2,024,470	2,024,434	273,678	(c)
Normetal mine(3).....	19,290	20,843	280	(c)
O'Brien mine.....	45,151	44,832	39,274	(a) (b)
Perron mine.....	145,235	122,398	29,037	(b)
Powell-Rouyn mine.....	30,244	29,565	4,345	(c)
Shawkey mine.....	61,665	55,602	10,364	(a) (b)
Sigma mine.....	134,305	125,407	28,264	(b)
Siscoe mine.....	200,314	178,622	73,720	(a) (b)
Stadacona mine.....	78,307	101,786	13,866	(a)
Sullivan mine.....	(2)	55,072	21,752	(a) (b)
Thompson-Cadillac mine	39,783	38,061	3,975	(a) (b)
Waite-Amulet:—				
Amulet mine(3).....	44,669	47,285	565	(c)
Waite mine(3).....	12,683	12,683	1,182	(c)
Other mines.....	1,983	
Total.....			712,004	

(a) Amalgamation; (b) cyanidation; (c) Smelter.

(1) Treated 765 tons of tailings in addition.

(2) Not available.

(3) These mines are on complex ore deposits and produce also base metals.

The following notes on the metal mines of Western Quebec have been abstracted from the periodical reports made by the Inspector of mines for the Rouyn-Harricana district, R. H. Taschereau.

One of the main features of mining in Western Quebec in 1937 was the notable activity in the mines operating on complex ore, the outstanding one of which is the Horne mine of *Noranda Mines Limited*. This mine hoists and treats 6,000 tons of ore a day, of which about 60 per cent is first treated in the concentrator to be reduced approximately 6 to 1, and 40 per cent goes direct to the Noranda smelter. This complex ore produces gold, copper, silver, selenium and tellurium. The other complex ore mines which produced in 1937 were the *Aldermac*, copper, gold and iron pyrites; *Waite* and *Amulet*, zinc, copper and gold, and *Normetal*, copper, zinc, gold and silver. The resumption of active work of the latter mines was due to better prices of the base metals in the world's market.

The year 1937 was most satisfactory for the mines working straight gold ore deposits; practically all the producing gold mines show substantial increases in output and in the scope of their operations, as compared with 1936.

The *Beattie mine* has been hoisting up to 1,750 tons a day, and its mill, which has a rated capacity of 1,500 tons a day, has treated as high as 1,700. The roasting plant which it was planned to erect, was constructed in 1937 and started to operate in October. The arsenical concentrate is now all roasted at the mine instead of being shipped to the Tacoma smelter. The *O'Brien mine* has also a roaster operating since 1935, and in 1937 its capacity was doubled. This mine is now hoisting 150 tons a day, as compared with 100 in 1936.

Among other mines which have increased their mill capacity during the year may be mentioned: *Lamaque* to 1,000 tons; *Sigma*, to 520 tons; *Stadacona*, to 300; *Canadian Malartic* to 700; *Siscoe*, to 600; *Shawkey*, to 150; *Thompson Cadillac* to 200.

Powell-Rouyn mine, in Rouyn township, is producing 250 tons a day of an ore containing 50 per cent silica. It is hauled to the Noranda smelter by trucks, which are loaded from the shaft bin.

The *Cournor mine*, in Louvicourt township, formerly operated by the Bussièrès Mining Company, remodelled the cyaniding plant, and the mill was started in August 1937. It is now treating 150 tons a day.

On the *Quebec Manitou Gold Mines'* property, in Bourlamaque township, formerly held by the Caribou Copper Corporation, a diamond drilling campaign has indicated the presence of a substantial ore body containing zinc and gold. A three compartment shaft was started in the fall of 1937 and had reached a depth of 370 feet in January 1938, with an objective of 400 feet.

Great activity prevailed in the Cadillac-Malartic region, where it is expected some new properties will reach the production stage in 1938. *Wood-Cadillac mine* has a three compartment shaft which is down over 400 feet and drifting has been started on the 250-ft. level. *Central-Cadillac* is drifting on 100-ft. and 200-ft. levels. *East-Malartic* has a 4-compartment shaft down to 300 feet, and it is reported that plans for a mill are being prepared. *Kewagama Gold Mines* has deepened the shaft on their property to 500 feet and drifting is proceeding on three levels. *Sladen-Malartic's* shaft is down 538 feet; levels are established at 200, 350 and 500 feet. A mill plant was being erected and equipped at the end of 1937, with a reported capacity of 250 tons of ore.

Alluvial gold.—A few men worked on some of the placer deposits of the County of Beauce, and a small production was reported.

Embergold Mines, Limited, continued the underground exploration for pre-glacial yellow gravels and clays in Ditton township and suspended work in October.

Copper.—The demand for copper metal was keener in 1937 than in 1936 and the prices showed appreciable improvement in the world's markets. In consequence our production of copper metal for the year amounted to 94,653,135 pounds, valued at \$12,378,737, both of which are record figures, the previous high, of 80,310,363 pounds valued at \$10,425,891 having been reached in 1930. The average price of copper for the year 1937 on the London market, was 13.078 cents a pound, whereas for the previous year, 1936, it had been 9.477 cents.

Selenium and Tellurium.—These metals are produced as by-products in the process of refining the copper anodes of the Noranda smelter. The quantity of selenium produced in 1937 was 210,877 pounds against 168,417 in 1936, and tellurium, 36,671 pounds, against 19,502 in 1936.

Zinc and Lead.—Zinc concentrate containing 8,566,927 pounds of the metal was produced and shipped by two mines, the *Tétreault mine* in Portneuf county, and the *Waite-Amulet* in Abitibi. The lead concentrate comes from the Tétreault mine. As there are no zinc nor lead smelters in Eastern Canada, the ore was shipped abroad.

NON-METALLIC MINERALS

Asbestos.—The quantity of asbestos fibre sold and shipped from Quebec mines in 1937 constitutes an all time record. It reached 410,024 tons, whereas the previous peak was in the year 1929, with 306,055 tons. The total value, of \$14,508,842 in 1937, is only slightly less than the highest, the production of 1920, which had a value of \$14,749,000, owing to the very high prices of all commodities set by the war conditions. The average

TABLE I

PRODUCTION OF ASBESTOS IN THE PROVINCE OF QUEBEC FOR 1937

GROUPING OF GRADES	SHIPMENT AND SALES		AVERAGE VALUE PER TON
	TONS	VALUE	
Crudes.....	3,845	\$ 947,667	\$246.47
Fibres.....	200,246	10,235,820	51.12
Shorts.....	205,933	3,322,054	16.13
Totals.....	410,024	\$14,505,541	\$ 35.38
Sand, gravel and stone, (waste rock only).....	3,980	\$ 3,301	\$.83
Totals.....	414,004	\$14,508,842	

Quantity of rock mined during the year 1937: 6,477,805 tons.
 Quantity of rock milled during the year 1937: 5,440,607 tons.

TABLE II

PRODUCTION OF ASBESTOS IN THE PROVINCE OF QUEBEC FOR 1936

GROUPING OF GRADES	SHIPMENTS AND SALES		AVERAGE VALUE PER TON
	TONS	VALUE	
Crudes.....	3,440	\$ 790,971	\$229.93
Fibres.....	133,288	6,483,946	48.65
Shorts.....	164,559	2,683,266	16.30
Totals.....	301,287	\$9,958,183	\$ 33.05
Sand, gravel and stone, (waste rock only).....	3,103	\$ 2,356	\$.76
Totals.....	304,390	\$9,960,539	

Quantity of rock mined during the year 1936: 4,692,004 tons.
 Quantity of rock milled during the year 1936: 3,568,992 tons.

price of asbestos fibre of all grades for the year 1920 was abnormal, nearly \$82 a ton, while in 1937 it was \$35.38; the latter is a satisfactory return considering that the price fell to \$24.72 in 1932, the lowest reached in the history of Quebec asbestos.

So asbestos mining has not only recovered its past activity, but has had a year of unprecedented prosperity. This is very gratifying, particularly if we consider that the Quebec asbestos industry is entering its 60th year of production, the first shipment of asbestos from Thetford Mines having been made in 1878, from a mine which is still prominent and in full production.

All the mines have been particularly active during the whole year. The general trend of asbestos mining, in the Thetford-Black Lake region, is to replace the open cast and cable derrick methods by underground mining, the hoisting of the rock being done by vertical shafts equipped with electric hoists. This is a consequence of the success achieved by Asbestos Corporation in the introduction of the "block caving" method of mining at the King mine inaugurated in 1932.

Magnesitic dolomite.—The value of the production of magnesitic dolomite was \$677,207, a falling off of 11 per cent as compared with 1936. It is higher, however than the average production of the last five years. Magnesitic dolomite is used mainly in the manufacture of refractory materials. The deposits from which it is extracted are situated in the townships of Grenville and Harrington.

Industrial lime and limestone.—The production of the year 1937, is valued at \$1,023,877, the highest figures as yet recorded. The increase is largely due to the progress recently achieved by the manufacture of paper-pulp, and of calcium carbide.

Silica.—The production of silica and industrial sand reached 127,535 tons, valued at \$448,327, the highest yet recorded. It exceeds the previous peak, attained in 1936, by 61 per cent in quantity and 40 per cent in value.

The main production of this substance comes from the region to the north of the Ottawa river, between Montreal and Hull. It is used largely in the ceramic industries and for the manufacture of carborundum. Moreover, since the spring of 1937, a certain quantity enters into the manufacture of ferro-silicon, which is now produced at Beauharnois.

Mica.—Owing to the improvement in the demand for this mineral, the production of mica increased from \$63,123 in 1936, to \$122,037 in 1937. Several mines which had remained closed for some years past have been reopened in consequence of the increase in prices.

Feldspar.—Feldspar production in 1937 is valued at \$105,612 as compared with \$75,703 in 1936. The increase is quite appreciable, not only in the exports of lump feldspar, but also in the figures of feldspar milled and ground in the Province of Quebec. The whole of the production comes from the Buckingham district.

Other non-metallic minerals.—There were increases in the production of other non-metallic products, viz. *soapstone, natural iron oxides and ochre, peat, marl, and mineral waters.* On the other hand shipments of *pyrite* (sulphur ore) and *apatite* were lower than in the preceding year.

BUILDING MATERIALS

The total value of building permits issued in the Province of Quebec during the year, increased from \$45,749,500 in 1936 to \$69,122,900 in 1937. As a consequence of this renewal of activity there was an increase in the value of the production of mineral building materials which was \$9,187,926 in 1937 against \$6,724,020 in 1936. Cement production, and also of the other materials which enter into the composition of concrete, was appreciably higher than during the preceding year. There was also a higher production of dimension stone and of clay products. More than 8,500,000 tons of sand and gravel was extracted from sand pits in the Province of Quebec, a quantity which has never been exceeded in any year. The bulk of this material was used in road making.
