

GENERAL REPORT

OF THE

MINISTER OF MINES

OF THE

PROVINCE OF QUEBEC

FOR THE YEAR ENDING MARCH 31st

1948



Quebec, October, 1948.

To the Honourable
Major-General Sir Eugène Fiset, Kt., C.M.G., D.S.O., M.D.,
Lieutenant-Governor of the Province of Quebec.

Sir,

I have the honour to present to you the
report on the work done in the Department of Mines during
the fiscal year April 1st, 1947, to March 31st, 1948.

I have the honour to be, Sir,

Your obedient Servant,

ONESIME GAGNON,
Acting Minister of Mines.

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REPORT OF THE DEPARTMENT OF MINES

OF THE PROVINCE OF QUEBEC

FOR THE FISCAL YEAR ENDING MARCH 31st, 1948

To the Honourable Onésime Gagnon, P.C., K.C.,
Acting Minister of Mines,
Quebec, Que.

Sir,

In conformity with the provision of the Quebec Mining Law (R.S.Q. ch. 196, section 229), I have the honour to submit to you "the annual statement respecting Mines in this Province" during the fiscal year ending March 31st 1948.

THE MINING INDUSTRY OF THE PROVINCE

In the first half of 1947 - calendar year - the conditions were not favourable for a speedy recovery of the mineral industry. The scarcity of labour, aggravated by strikes, militated against a normal production of the mines. The gold mines were particularly affected, as the parity of the Canadian dollar with the American dollar decreed by the federal authorities reduced the price of gold to \$35 per ounce, instead of \$38.50 Canadian funds, which had been the price paid for gold sold on the American market, until July 1946.

However, toward the middle of the year, there was a marked improvement in the general economic conditions, which continued and accrued throughout the second half of the year. The settlement of strikes and the immigration into Canada of selected "displaced persons" from the occupied zones of Europe, many of whom found work in the mines, brought a relief to the labour situation. The production of the mines and quarries improved markedly and the result, by the end of 1947, was an all time record in the value of the shipments of Quebec minerals, totalling over 116 million dollars, an increase of 10 per cent over the previous high of 104 millions recorded in 1942, under the urgency of war conditions and needs.

Breaking up the 1947 grand total of \$116,042,000 into the conventional classes of Metals, Industrial Minerals and Mineral Building Materials, we find all time peaks in Industrial Minerals and Building Materials, a result which was not anticipated by the rather slow rhythm of production of the first half of the year.

The Metals represent a value of \$50,231,090 or 44 per cent of the total production; while showing a slight increase as compared with 1946, this class did not reach the 1942 level of 61 millions, which remains the record figure for metals. This was mainly due to the falling off in the production of precious metals, the value of both gold and silver showing decreases of 5 per cent.

On the other hand, the production of base metals showed substantial increases in value, due mainly to the increased market prices of copper, lead and zinc.

Average Metal Prices

in 1946 and 1947

	1946	1947
Gold per oz.	\$36.75	\$35.00
Silver per oz.	\$ 0.8365	\$ 0.72
Copper per lb.	\$ 0.1280	\$ 0.2089
Lead " "	\$ 0.0675	\$ 0.1367
Zinc " "	\$ 0.0781	\$ 0.1123

To sum up, in the calendar year 1947, returns of production of metals were received from 34 Quebec mines. Of these all 34 produced gold to the extent of 616,191 ounces fine; 30 of these operators also produced a total of 2,139,739 ounces of silver; five produced 85,121,428 pounds of copper; six mines produced 69,462,925 pounds of zinc and two produced 8,175,577 pounds of lead. As there is no zinc-lead smelter in the Province of Quebec the two last metals were shipped in concentrates to outside smelters. As to value, gold still heads the list of our metal products with \$21,566,685, and copper ranks second with \$17,356,259.

As regards the major developments of metalliferous deposits in Western Quebec, in Ungava and on the North Shore during the year, they are briefly touched upon in the report of the Mineral Deposits Branch.

The Industrial Minerals, which consist of useful minerals other than ores of metals and fuels, amounted to a value of \$39,721,253 in 1947. This is by far the highest figure ever attained by this class of mineral products, the previous record having been \$29,637,056 in 1943.

Asbestos is the principal substance of the industrial minerals of the Province. Since 1878, when the first shipments of asbestos were effected from the Johnson mine at Thetford, it has constituted one of the most important items in the list of the mineral products of Quebec. In 1947, for the sixty-ninth year, the asbestos mines and mills worked continuously all year, and the production attained the highest figures ever recorded both in tonnage and in value: 661,821 tons valued at \$33,005,748. For the past two years the value of Quebec's asbestos fibre production has exceeded that of gold. For the first six months of 1948 the shipments of asbestos fibre totalled 334,233 tons, as compared with 314,079 tons for the corresponding period of 1947, which promises another record year.

The demand for asbestos exceeds the supply. The asbestos mining companies endeavoured to speed up production, but to increase the capacity of the mills cannot be improvised and construction takes time. The increasing demand is mainly for "short" grades, which formerly found no market, and were not extracted from the asbestos "ore" rock. A large quantity of short fibre is now used in combination with plastics, because asbestos is resistant to high temperature, does not absorb moisture and has high binding qualities.

The asbestos mines were very active throughout 1947, as indicated by the figures of output. All plants were in continuous production during the entire year, most of them working at the rate of three shifts a day of 24 hours.

The mine and mill of the Flintkote Mines, Limited - the latest asbestos producer in the Thetford field - tuned up their mill in June 1946, and since then have been in continuous production. The mill has a rated daily capacity of 500 tons of rock, but by the end of the year it was treating 750 tons. The average yield of fibre for the first six months of operation was 5.9 per cent of the rock treated and the grade of the fibre varied from "Crude No. 3" down, to the bottom of the scale of the "Quebec Standard Classification". By the end of March 1948, the mill-feed had further risen to nearly 900 tons of rock a day.

Bell Asbestos Mines, Limited in 1947 carried out a programme of exploratory diamond drilling in the northern part of Thetford township on lot 3b range V and lots 13 and 15 range IV. A body of asbestos rock of commercial size and tenor is said to have been outlined on lot 15, range IV.

As regards the manufacture of asbestos products, it is interesting to note that Turner and Newall (Canada), Limited, a subsidiary of Turner and Newall of Rochdale, England, pressed

forward the construction of their Maisonneuve factory at Hochelaga Street, Montreal. It is expected that the production will commence about mid-1948. The factory site has an area of 20 acres. The modern steel-frame building has a floor space of 450,000 square feet. It will use asbestos fibre from the Thetford mine of Bell Asbestos Mines, Limited, which is a company associated with the Turner and Newall group. The new factory will manufacture asbestos textile products, brake linings, and clutch facings of various types; "85% Magnesia" and other materials for insulation of pipes, boilers, chemical equipment, and a wide range of asbestos-cement building materials.

In 1947 the factory space of the Canadian Johns-Manville plant for the manufacturing of asbestos products, at Asbestos, in Richmond county in the Province of Quebec, was enlarged to 245,000 square feet, an increase of 60 per cent of the original floor space. This plant, which was started in 1924, manufactures asbestos products, which comprise, among others: millboard, papers, shingles, roofing materials, brake linings, yarns, textiles, packings. This factory employs over 500 people.

Another asbestos products factory was built by Canadian Johns-Manville in 1947, at Port-Union, on the shore of lake Ontario, fifteen miles east of Toronto, for the manufacture of Transite pipes. Transite is a combination of cement and asbestos fibre, used to manufacture water pressure pipes, as well as other pipes and conduits, which, after shaping are given a special steam treatment for "curing". These pipes are non-corrosive and are not affected by electrolysis conditions, as proved during World War II, when virtually the entire output of Transite pipes was utilized in the construction of water and sewer lines and stacks, for cantonments, air fields, army and navy bases, and war industries.

Transite pipe has been manufactured in the United States since 1930. It has been imported into Canada for a number of years. Tests of transite pipe which has been in use in a water supply system in southwest Winnipeg for fourteen (14) years, proved to be unimpaired in strength and flow capacity.

The Transite Pipe building at Port-Union is steel framed and 700 feet in length. It is planned to manufacture pipe up to 40 inches in diameter, as well as conduits and other products. The factory is built for an output capacity of 25,000 tons of pipe, of all sizes, a year, using asbestos fibre from Quebec mines.

This industry will materially assist the ever expanding programmes of water and sewer systems of municipalities.

Brucite is the latest industrial mineral to appear in the table of mineral production. Since 1945 the Aluminum Company of Canada has been mining brucite-bearing limestone on lot 26A range XVI of Hull township, which is treated for the recovery of the content of brucite granules and magnesite, as magnesia on one hand and of hydrated lime on the other. A certain proportion of the magnesia goes to Arvida where a pilot plant has been constructed for the production of the metal magnesium. The major part of the magnesia is used for the manufacture of refractories.

Canadian Refractories, Limited, during 1947 carried into effect a programme of expansion of the processing plant at Kilmar. This included the installation of a sink-float plant for the beneficiation of the magnesitic-dolomite, and the setting up of a large modern 245-ft. kiln, for making dead-burned magnesite. The Company now works in association with the Harbison-Walker Refractories Company of the United States.

The value of Mineral Building Materials attained \$26,089,657 in 1947, the highest of all time. It exceeds by 30 per cent the previous record of \$20,038,108, in the year 1946. The main items of the 1947 list of building materials are: Cement, \$9,351,477; Stone, \$6,740,889; Sand and Gravel, \$4,677,892; Brick, \$1,018,037; Building Lime, \$526,344.

The two cement plants of Canada Cement Company, Limited, at Montreal East and at Hull, respectively, were working at full capacity all year. The shipments amounted to 5,453,407 barrels. For the first six months of 1948 the production of cement shows an increase in quantity of 31 per cent over the first six months of 1947. This points to the possibility of a new peak for the production of building materials in 1948.

On the whole we may look with confidence to a continued activity in the Quebec Mineral Industry in 1948. During the first half of the year, up to the end of June, the following increases were noted in the four main items of the list of mineral products when compared with the first six months of 1947: Gold, 24 per cent; Copper, 30 per cent; Asbestos, 6 1/3 per cent; Cement, 31 per cent.

MINERAL RIGHTS AND TITLES BRANCH

During the fiscal year ending on March 31st 1948, the number of miner's certificates - permits to prospect and to stake out mineral claims - issued was 5,119, a slight falling off from the 5,408 issued in the preceding year. The number of claims staked out, however, was slightly higher, 16,735 in 1947-48,

against 16,332 in the preceding period 1946-47. The Quebec "mineral claim" staked out in unsurveyed territory is a square of twenty chains each side, which makes it forty acres in area. Each certificate is a permit to stake out five such claims, which may be contiguous or widely separate.

As the number of miner's certificates is a gauge of the prospecting activities, it may be said that the search for new mineral deposits is now about normal, after suffering a drop off to an average annual issue of 1,300 certificates during the four years of active warfare. This lull was followed by a brisk revival of prospecting in the two following years, 1945 and 1946 during which there was an average annual issue of 8,250 "miner's certificates".

Tables I, II and III which follow, present the figures of the number of the several titles to mineral claims since 1930-31. The peak of the prospecting activity occurred in the fiscal year 1945-46, immediately after the cessation of hostilities, when 9,225 miner's certificates were issued and 26,501 mineral claims were staked out and recorded.

J.X. Mercier is the chief of this Branch of the Department of Mines.

TABLE I

Various Titles Issued by the Department of Mines

Fiscal Years 1946-47 and 1947-48

Designation of Title	1946-47	1947-48
Claims recorded, Amos	10,238	9,478
" " Noranda	2,699	2,733
" " Quebec	3,395	4,524
Total	16,332	16,735
Miner's certificates issued	5,408	5,119
Development licenses issued	3,263	921
Development licenses renewed	6,622	5,937
Mining concessions	12	14
Transfer of titles	2,166	1,448
Reports of work: days reported	2,770,973	2,087,891
Reports of work: diamond drilling, feet ...	2,509,863	1,670,188

TABLE II
Titles Issued Since 1934-35
(Fiscal Years)

Fiscal Year	Number of Miner's Certif.	Number of Claims Recorded	Number of Development Licenses(1)	Mining Concessions		Transfer of Mining Rights
				Number	Acres	
1934-35	3,395	11,397	1,680	9	3,541	987
1935-36	4,043	12,962	1,770	5	2,233	1,078
1936-37	7,099	23,823	2,398	2	990	2,400
1937-38	2,718	12,918	2,932	17	4,089	1,217
1938-39	3,221	10,337	2,777	7	2,123	830
1939-40	2,181	7,325	2,320	4	1,574	555
1940-41 (2)	965	3,015	1,538	2	1,029	334
1941-42	1,589	4,991	1,936	10	3,765	447
1942-43	1,710	4,420	2,107	4	569	463
1943-44	3,113	8,941	2,788	3	341	978
1944-45	7,303	19,547	4,219	3	726	2,358
1945-46	9,225	26,501	8,676	7	2,566	3,721
1946-47	5,408	16,332	9,885	12	4,475	2,166
1947-48	5,119	16,735	6,858	14	6,065	1,448

(1) Prior to June, 1937, these licenses were designated "Mining Licenses".

(2) Interim fiscal period of nine months, from July 1st to March 31st, owing to change in date of the commencement of the fiscal year.

TABLE III
Comparative Statement of Exploration Work Performed on
Mining Claims and Licenses During the
Calendar Years 1933 to 1947

Calendar Year	Number of Days' Work	Footage of Diamond-Drill Holes
1933	263,900	49,889 feet
1934	500,502	123,257 "
1935	543,094	146,425 "
1936	730,295	202,623 "
1937	910,088	434,903 "
1938	774,709	517,587 "
1939	549,580	299,619 "
1940	335,499	240,370 "
1941	255,352	169,110 "
1942	175,338	115,056 "
1943	40,160	25,913 "
1944	59,066	37,209 "
1945	250,846	205,991 "
1946	1,463,934	1,296,074 "
1947	3,186,453	2,753,671 "

INSPECTION OF MINES BRANCH

Report of R.H. Taschereau, chief Inspector of Mines of the Province of Quebec:

The duties of this Branch are numerous and varied, the basic ones being the following:

- (1) The inspection of mines, ore-mills, quarries and gravel pits, to ascertain that the regulations regarding sanitation conditions and the protection of workmen from accidents are strictly observed and carried out.
- (2) To report to the Department of Mines on the development and progress of the mining industry in the several mine-inspection districts.
- (3) To aid and advise in the solution of problems encountered by mine operators in the course of their work.
- (4) To see that underground plans and surface plans of mines are kept up-to-date, and that copies of such plans, and any changes in them, are sent regularly to the Department of Mines.
- (5) To investigate requests for permits regarding projected "tailings sites" and mill-sites and to report on the expediency of granting them. Also reporting on requests for permits to ship ore and concentrate out of the Province for treatment.
- (6) Carrying out the provisions of the "Unwrought Metal Sales Act".

In the performance of these duties the inspectors cooperate with other branches of the Department.

In the fiscal year under review, several staff changes were effected. M.O. Lafontaine, Inspector of Mines, was promoted to Assistant Chief Inspector. Bernard Joyal and Georges Lacaille were added to the mine inspection staff in Western Quebec. Lucien Trudel was engaged as Electrical Engineer, and Maurice Lachance as Ventilation Engineer, to carry out examinations in mines and mining plants, and provide the Inspection Branch with expert technical advice on these matters. Rosaire Demers was appointed as special agent, to assist the inspectors in following new developments in the Western Quebec area.

In the early spring of 1947, an underground fire, at the East Malartic mine, resulted in the death of twelve miners. These men were trapped in the shaft, below the 10th level, and all efforts to rescue them were of no avail. Mine rescue crews from Noranda, and from Kirkland Lake, Timmins and Sudbury in the neighbouring Province of Ontario, played a prominent and courageous role in rescue work at the time of this disaster.

Following the East Malartic fire, it was decided to establish two "central" Mine Rescue Stations in Western Quebec. The plan adopted involves the purchase of two large, and fully-equipped trucks, each of which will constitute a mine rescue station on wheels. The driver-instructors will train crews at each producing mine in the district. The scheme is financed through assessments by the Quebec Workmen's Compensation Commission on the mining industry of Western Quebec, and the administration falls under the Chief Inspector, with the Assistant Chief Inspector directly in charge. The trucks will be based at Noranda and at the Department of Mines' Buildings near Val d'Or. In addition to the "central" stations, sub-stations will be established at outlying mines.

At the close of the fiscal year 1947-48, the Inspection of Mines Branch included:

Chief Inspector of Mines	- R.H. Taschereau
Assistant Chief Inspector of Mines	- M.O. Lafontaine
Inspector of Mines (Districts No. 1 and No. 2)	- A.G. Michaud
Inspector of Mines (District No. 5)	- Jean de Péron
Inspector of Mines (District No. 6)	- Bernard Joyal
Mining Engineer (District No. 6)	- Georges Lacaille
Electrical Engineer	- Lucien Trudel
Ventilation Engineer	- Maurice Lachance
Mine Constable (District No. 6)	- E.O. Larivière
Special Agent (District No. 1)	- Arthur Paillargeon
Special Agent (District No. 6)	- Rosaire Demers
Senior Mine Rescue Superintendent (District No. 6)	- Léonard Babin
Mine Rescue Superintendent (District No. 6)	- Alphonse Couture

The six mine inspection districts of the Province are as follows:-

1.- The Eastern Townships, from the Richelieu river, eastward to and including Lévis and Dorchester counties.

2.- The counties of Gatineau, Labelle, Papineau and Argenteuil, and the area south of the fifty-sixth parallel of latitude in Pontiac county.

3.- The area comprising the counties east of Joliette, to the north of the St. Lawrence river.

4.- The area east of Lévis and Dorchester counties, to the south of the St. Lawrence river, including the peninsula of Gaspé.

5.- The city of Montreal, and the immediate surrounding area.

6.- Western Quebec, comprising the counties of Abitibi-East, Abitibi-West, Rouyn-Noranda and Témiscamingue.

The mine constables and special officers assist the inspectors in various phases of their work, and carry out other duties assigned to them by the Minister.

In the fiscal year 1947-48, 950 inspections were made of mines, quarries and gravel pits, and reports of these inspections were transmitted to the Department with information concerning developments and the safety of workmen.

In accordance with the provisions of Section 196 of the Mining Act, all compensable accidents are reported by the mine and quarry operators to the inspectors, and the latter classify these reports and forward them to the Quebec office. In the case of accidents of a very serious nature, even where no loss of life may have occurred, the inspector makes a thorough investigation and report. These reports, in both French and English, are multigraphed, and copies are forwarded to all the mine and quarry operators, and to other parties interested in mine safety work.

Orders-in-Council enacted during the fiscal year included:

1.- Permission to export concentrates.-

New Calumet Mines, Limited
Molybdenite Corporation of Canada, Limited
Golden Manitou Mines, Limited
Normetal Mining Corporation, Limited
Waite Amulet Mines, Limited

2.- Approval of Mill-site.-

East Sullivan Mines, Limited

3.- Establishment of Mine Rescue Stations in Western Quebec.-

Noranda - Rouyn-Noranda county
Val d'Or - Abitibi-East county

Under the provisions of the Unwrought Metal Sales Act, five new licenses were issued during the fiscal year. Monthly reports of transactions were received from twenty-seven license holders.

Thirty-one certificates in First Aid to the Injured, and thirteen certificates in Mine Rescue and First Aid were presented to employees of various mining companies who had successfully completed courses in these subjects.

GEOLOGICAL SURVEYS BRANCH

The principal function of this Branch, which is under the direction of I.W. Jones, is to investigate the regional geology of the Province. In performing this function, its officers - qualified geologists of university training and field-work experience - examine chosen sections of the country and prepare geological maps and reports giving the results of their investigations. Most of the mapping is done on the scale of half-a-mile to one inch, and the maps are published on the one-mile scale. The investigations on the ground are carried on during the summer and autumn months, the only seasons when the rock exposures may be seen. During the succeeding winter months, the time of the geologists is taken up with the compilation of their maps, the preparation of their reports, and the considerable research and office study connected therewith.

In the course of their work, the geologists investigate the nature, distribution, and structural relations of the rock formations in various parts of the Province. Particular attention is given to the mineral possibilities of the regions studied, so that the resulting reports and geological maps may serve as a guide to prospectors and other geologists in their search for mineral deposits. Advice is freely given to any prospectors who may be in the same region as the government geologist, and to the many prospectors and geologists who call at the government offices. It is pleasing to note that members of the pros-

pecting and mining fraternity have frequently expressed their appreciation of the value of this advice and of the information made available in the reports and maps. Much effort and expense have been saved those searching for ores, and, indeed, on several occasions the government geologist's work has led directly to the discovery of new deposits.

The geological reports and maps are also very useful to engineers in connection with projects of railway or highway building, water-power and forestry developments, and bridge and industrial-plant construction; they frequently give information to trappers and others who have occasion to travel through otherwise little-known regions; and they are often usefully consulted in colonization and agricultural developments. Very often they furnish the only descriptions available of a region, whether it be in a settled or in a remote, uninhabited section of the country.

The geological investigations undertaken by this Branch during the fiscal year under review numbered nine. This is a slight improvement over the number of parties that could be placed in the field during the preceding years, and, at the same time, there were a few more qualified assistants available. There is much room for further expansion of personnel and projects, however, if this Branch is to perform the many services it is called upon to render. As mentioned in these reports of the past few years, even with a doubling of the number of geologists in this work, it could take up to 500 years to cover - for only the first time - the nearly 85 per cent of the Province that, as yet, has not been geologically examined in any way.

The field-work ~~undertaken~~ during the summer of 1947 was as follows:-

Northern Abitibi

J.E. Gilbert examined the Capsisit Lake area, comprising about 200 square miles and lying between latitudes 49°45' and 50°00' and longitudes 76°00' and 76°15'. This area lies just north of the Bachelor Lake region which another of the Department's geological parties had covered in 1946 and where important gold, silver, zinc and lead discoveries were subsequently made.

P.E. Imbault investigated 200 square miles of territory in the vicinity of Olga and Mattagami lakes, between latitudes 49°45' - 50°00' and longitudes 77°00' - 77°15'.

R. Béland mapped and reported on the Allard River area, covering 275 square miles between latitudes 49°30' - 49°45' and longitudes 77°37' - 78°00'.

J. Claveau was in the field throughout the summer acting in an advisory capacity in connection with the work in the vicinity of Capsisit and Olga lakes.

Northern Pontiac

N.E. Gillies, under the direction of F.F. Osborne, investigated the Canimiti River area, bordering in part the Mont Laurier-Senneterre highway and lying between latitudes $47^{\circ}30'$ - $47^{\circ}45'$ and longitudes $77^{\circ}00'$ - $77^{\circ}15'$. This work constituted a continuation of the study of the geological relations between the important Abitibi mining region and the extensive Grenville region of highly metamorphosed rocks to the south.

Papineau, Labelle and Gatineau Counties

E. Aubert de la Rüe continued the mapping that has been under way over a period of years, of the Laurentian region bordering the Gatineau and Lièvre rivers north of Hull. Lying mostly in Papineau county, the McGill Township area covered in 1947 comprises 200 square miles between latitudes $46^{\circ}00'$ - $46^{\circ}15'$ and longitudes $75^{\circ}30'$ - $75^{\circ}45'$. It includes most of McGill township and parts of the townships of Wabasse, Dudley, Blake, Bigelow, Wells and Hincks.

Montcalm, Joliette and Terrebonne Counties

P.E. Côté examined the Chertsey map-area, comprising 200 square miles in the Laurentians northeast of Montreal, between latitudes $46^{\circ}00'$ - $46^{\circ}15'$ and longitudes $73^{\circ}45'$ - $74^{\circ}00'$. F.F. Osborne acted in an advisory capacity in this work as well as in the Canimiti River area, mentioned above.

St. Lawrence Lowlands

T.H. Clark continued investigating the St. Lawrence Lowlands between Montreal and Quebec, paying particular attention to the petroleum and natural gas possibilities of that region.

Mistassini Lake Region

W.G. Wahl covered 400 square miles of ground in the Témiscamie River area, southeast of Mistassini and Albanel lakes, between latitudes $51^{\circ}00'$ - $51^{\circ}15'$ and longitudes $72^{\circ}45'$ - $73^{\circ}15'$. This work was useful in the search for lead, iron and other minerals in this hitherto very little known region.

Gaspé Peninsula

H.W. McGerrigle continued investigating the geology of interior Gaspé, covering an area at the headwaters of the Grand Cascapedia river in parts of the townships of Dunière and Richard, Matane county. In addition to showing the geology of the area, the resulting map is also contoured to show the topography of this mountainous region.

Ungava Peninsula

I.W. Jones accompanied by geologists from Newfoundland, Ottawa, and from Laval, Queen's and Toronto universities visited the exploratory operations under way in the iron-bearing region of Ungava.

In addition to the duties connected with their usual field-work, Drs. McGerrigle and Claveau had occasion to ~~examine~~ several mineral prospects and reported occurrences of minerals in the Gaspé and Northern Abitibi regions, respectively. Dr. McGerrigle also spent considerable office time in ~~examining~~ and recording the nature of the rocks encountered in the various deep-drilling operations that are being conducted in the search for oil in Gaspé.

Members of the geological staff represented the Department of Mines and took part in various meetings of engineers and prospectors during the year. Dr. McGerrigle was admitted as a Fellow to the Royal Society of Canada at its meeting held in Quebec, May, 1947, he being now the fourth member of the Department's staff to receive this signal honour. Dr. Claveau presented a paper on "Northern Abitibi, Quebec - Fracture Zones and Mineral Possibilities" at the Prospectors and Developers Association at its meeting in Toronto, March, 1948. It was later printed in the April issue of the Canadian Mining Journal. This same Journal printed J.E. Gilbert's report on the Capsisit Lake area, in its December, 1947, issue. Dr. T.H. Clark, part-time member of the geological staff, presented a paper at the May, 1947, meeting of the Royal Society of Canada, on "Two Recent Landslides in Quebec", which was printed in the Transactions of that society. Dr. McGerrigle gave a talk on "An Outline of the Geology and of the Mineral Possibilities of the Province of Quebec" at a meeting of the Victoria Club in Quebec, January, 1948.

In addition to his administrative duties in connection with the various geological investigations mentioned above and

with other matters of the Department, Dr. Jones had frequent occasion to deal with requests for information concerning the geology of the Province and related subjects. He also wrote, for the Statistical Year Book of the Province, 1947, an article entitled "An Outline of the Geology of the Province of Quebec" of which reprints were made to meet the demand of educational institutions and others. Short articles were also prepared on "The Rocks of Percé" and on "The Mineral Possibilities of Gaspé" for inclusion in the book "Percé" published in 1947 by Abbé C.E. Roy.

Equipment Section

Arthur Boucher, Custodian of Equipment, reports to Dr. Jones that, during the fiscal year 1947-48, instruments and camping equipment were furnished to 22 geological and engineering parties.

The employees of this section examine each item of equipment when the different parties return from the field and, after making most of whatever repairs and adjustments which might be needed, they arrange the material in store-rooms so that any item may be readily obtainable at any time. This work is at present greatly hampered by lack of adequate space.

Under the custodian of equipment are also kept the extensive departmental collection of photographs and lantern slides. During the fiscal year under review, 1094 photographs, mostly taken by various members of the Department's technical staff, were added to the collection, which now totals 9,994 photographs.

MINERAL DEPOSITS BRANCH

Bertrand T. Denis, Chief of this Branch, reports as follows on the activities during the past fiscal year:-

The technical officers of this Branch make geological investigations of mineral occurrences, mining properties or mining districts with a view to furthering the development of the mineral industry within the Province. Technical advice is given to prospectors and to companies engaged in exploration and development.

During the summer and early autumn, seven parties were in the field, and in addition the resident geologists stationed at Rouyn and Val d'Or made examinations of mining properties

under development in each of their respective fields.

P.E. Auger continued the detailed study of an area in Témiscamingue county, centered around the Belleterre Mine in Guillet township. Sheet No. 3 of the Belleterre Map-Area was completed during the season.

P.E. Bourret, Mining Engineer in charge of Industrial Minerals Technology, examined 89 mines, quarries and prospects in the southern parts of the Province. The purpose of these visits is to advise the owners on the economic value of the deposits concerned and to furnish information regarding the development, mining and milling operations, and the marketing of their products.

H. Girard closely followed developments in the peat industry throughout the Province and at frequent intervals gave technical advice to each of the operators engaged in the production of peat. He also made systematic surveys.

R.B. Graham continued the detailed geological study of a strip of territory in Duparquet and Hébécourt townships with a view to tracing a structural zone of metallic mineralization as far as the western boundary of the Province. The area covered during the field season of 1947 was the eastern half of Hébécourt township.

W.N. Ingham, resident geologist for the eastern half of the Western Quebec Mining Belt has been installed in offices on the property of the Sampling Plant of the Quebec Department of Mines, near Val d'Or. Twenty mining properties under exploration were visited and reported upon.

W.G. Robinson, resident geologist for the western half of the Western Quebec Mining Belt completed compilations of the geology of the townships of Rouyn and Beauchastel, at a scale of one inch equals 1000 feet. These maps have been prepared in sheets covering one quarter of a township each. In addition, thirty mining properties under exploration in the district were examined and reported upon.

S.H. Ross made geological examinations of 28 mining properties under development in Western Quebec, mostly in the area to the north of the transcontinental railway.

G.W. Waddington made an investigation of moulding sand and the gypsum deposits on the Magdalen Islands. In addition,

fourteen deposits of marl in the southern part of the Province were examined and sampled.

W.W. Weber continued detailed geological surveying of parts of Duvernoy and Landrienne townships. The map area covered comprises lots 1 to 45, ranges I to III in Duvernoy, and lots 1 to 47, ranges IX and X in Landrienne.

In addition to their regular assignments for the season's work, officers of this Branch, or of the Geological Surveys Branch, may be called upon to make special examinations of mining properties or deposits. During 1947, fourteen such examinations were made.

This Branch is responsible for the acceptance of reports and maps dealing with geophysical and detailed geological surveys submitted to the Department in support of applications for credit towards assessment work requirements. During the year, 171 applications were reviewed. In addition, 80 reports, prospectuses or texts for advertisements were examined at the request of the Registrar, Quebec Securities Act. Finally, 20 engineers reports submitted in support of applications for mining concessions were studied.

The search for new mineral deposits throughout the Province was pursued by prospectors and companies engaged in mining exploration. Notable achievements were reported from widely separated fields.

One of the principal features of interest was the progress of Hollinger North Shore Limited in the exploration of iron deposits in New Quebec. The centre from which operations were conducted is at Burnt Creek (approximate position: Lat. 54° 50' N. and Long. 66° 40' W.) which is very close to the height-of-land which separates the drainage to the Atlantic ocean from the one to Ungava bay. This is 317 miles north of the Bay of Seven Islands on the North Shore of the St. Lawrence river.

During the year, effort was concentrated upon drilling deposits judged to be amenable to open pit mining methods, and by the end of the season, it was announced that on the Quebec side of the boundary nearly one hundred million tons had been blocked out as appears in the following table:

<u>Tonnage</u>	<u>Grade</u>			
	% Fe	% Mn	% P	% SiO ₂
47,117,000	61.9	0.44	0.030	6.85 (Bessemer)
40,464,000	57.6	0.59	0.106	7.80 (Non-Bessemer)
11,111,000	52.1	6.85	0.121	6.23 (Manganiferous)

Several deposits, already discovered, remain to be drilled and plans have been made for an intensive programme of exploration for the coming season.

It is pertinent to draw attention to the effort involved in obtaining the results outlined in the above table. Detailed geological mapping, and prospecting, has preceded the drilling programme; mechanical equipment of many types have been transported by plane to the site of operations - churn drills, diamond drills, rock drills, compressors, tractors, bulldozers, dozer-shovels, scrapers, light trucks, heavy trucks, dump trucks, jeeps, half-tracks, and snowmobiles, together with material for a machine shop to service and repair all this equipment; some 50 miles of road has been constructed; a landing strip was built; a base camp was set up, capable of providing living and working facilities for about 200 men. In all, \$4,500,000 has been spent on the project and much more will be required before it graduates from the exploration stage to full-scale development.

The interest aroused by the activities of the pioneer group has induced several other organizations to investigate the possibilities of the area, and four new companies, Norancon Exploration Quebec Limited, Fort Chimo Mines Limited, Quebec Labrador Development Co., Ltd., and Fenimore Iron Mines Limited, have been granted special licenses to explore the region. None of these have progressed beyond the preliminary prospecting and exploration stage.

Remarkable and significant progress was also achieved in the exploration and development of the ilmenite deposits of the Allard Lake region on the North Shore of the St. Lawrence, 27 miles north of Havre St-Pierre. Discovered in 1941 by J.A. Retty, who was in charge of a geological field party engaged in mapping for this Department, they have been under exploration by Kennco Explorations Limited, a subsidiary of Kennecott Copper Corporation.

Geological and geophysical mapping followed by diamond drilling have proved the existence of a very large tonnage of ore, perhaps the largest known deposits in the world. According to published statements, the bodies contain at least 125,000,000 tons of ilmenite, averaging around 35 per cent TiO_2 . Concurrently with the exploration programme, an intensive effort was put into research and study to find economic methods of treating the ore and marketing the products.

It has been announced that the organization is now ready to proceed with the development of the deposits. The plan entails

the construction of a railway, docking and other transport facilities, together with the erection of a plant at Sorel for the treatment of the ores in electric furnaces. The products it is planned to extract from the ores are a slag rich in titanium to be used for the manufacture of titanium white, and a high quality pig-iron.

The chief centre of activity in mining exploration in Western Quebec was the Bachelor Lake field, about 100 miles northeast of Senneterre. This locality lies in a zone of metallic mineralization along a presumed major fault structure that extends in a northeast direction for a length of 160 miles between Quévillon Lake and Waconichi lake.

Base metals as well as gold have been discovered, and two operators, Dome Explorations Limited, and O'Brien Gold Mines Ltd., both working on properties in Lesueur township, reported significant progress.

On the Dome property, a surface showing of lead and zinc sulphides rich in silver was tested by diamond drilling, with the result that continuity of the ore zone has been indicated over a length of 700 feet to depths of from 300 to 500 feet. The possible shape and dimensions of the ore-shoots have not yet been determined.

It has been announced that on the O'Brien property, stripping and diamond drilling indicate the existence of an ore-body 400 feet long averaging \$11.80 in gold per ton over a width of 7.3 feet.

Several other finds have been reported so that it is safe to assume that interest in the district will be maintained.

DIVISION OF TECHNICAL INFORMATION

AND DISTRIBUTION OF PUBLICATIONS

Jean-Paul Drolet, mining engineer, who is in charge of this Division since April 1947, submits the following report of its activities during the fiscal year ending March 31st, 1948. Jean Lapointe is the senior assistant for this Division.

A.— Requests received for information regarding mining companies and correspondence in this connection

Requests received from the interested public, for technological information; yearly reports of mining companies; information on mining, geology, mineral deposits, and ensuing correspondence 207

B.- Requests from the public for various publications of the Department of Mines 5,147

Number of copies of publications sent to the selected mailing list and also on requests from members of the staff 1,976

Mailing of notices of publications and of various communiqués of the Department 8,392

To sum up, the staff which has charge of the distribution of publications, under the direction of Eugène Brochu, mailed 20,539 separate copies of the Department of Mines publications in answer to 4,365 written requests and to 4,710 names on the regular mailing list.

In addition, 3,737 copies of various publications on mines, geology and the Mineral Industry of the province of Quebec, were supplied to 782 visitors who personally came to our office.

During the fiscal year the Division received from the printers, 35,200 copies of editions of new publications issued by the Department.

This Division also reports that it mailed or expressed 1,341 outgoing parcels, and that it received 1,922 incoming ones, which were duly delivered to the various parties for whom they were intended.

C.- In addition, the Division has carefully kept up to date the filing and classifying of plans and records of all underground workings, which operating mining companies must send yearly to the Department of Mines, in compliance with the Mining Law. Henceforth this work will be taken over by the Inspection of Mines Branch. (R.S. 1941, C.196, sec. 200).

D.- The numerous technical records, notes, statements and reports sent in to the Department of Mines by the Government mining district inspectors, resident geologists, and engineers, and also similar records supplied by engineers of mining companies, are classified, filed and indexed by this Division, so as to be easily available for reference and information.

E.- Moreover, the Division collects, compiles and classifies and indexes items of interest, concerning the mining industry and mining companies, clipped from technical periodicals and newspapers.

In addition to the functions mentioned above, the Division of technical information prepared advertisements for newspapers of the province, mining journals, and other publications relating to the mineral industry.

This publicity keeps the public informed concerning the several services rendered by the Department of Mines which prepares and publishes numerous reports and maps on the geology, the mineral deposits, and the mining industry of the Province. Such publications are the result of the field-work and research conducted by the geologists, the mining engineers and the chemists of the Department. This Division has charge of the distribution of these reports and maps, which are available to the public interested in our mineral resources; a catalogue of these publications may be obtained on request to the Department of Mines.

LABORATORIES BRANCH

Honourable Jonathan Robinson initiated and created in the Laboratories Branch a Committee of Coordination and Expansion of Mineral Research in the Province of Quebec. This is the first year of its existence.

This committee was formed in April 1947, after the interprovincial conference of Ministers of Mines, held in Winnipeg. It is composed of representatives of the chemical, metallurgical and mining industries, universities and the Department of Mines. It comes under the chairmanship of the Deputy Minister of Mines.

Upon recommendation of this committee, a detailed inventory of present and contemplated mineral research in the

laboratories of scientific and industrial establishments of the Province was prepared; also of the technical personnel and equipment engaged in this type of work.

The Laboratories branch comprises the following divisions: I.- The Department of Mines Laboratories in Quebec, in Montreal and in Thetford-Mines; II.- the Sampling and Ore Dressing plant near Val d'Or; III.- elementary popular lectures to prospectors; IV.- the University course of lectures on prospecting; V.- Department of Mines Museum; VI.- mineral displays at exhibitions.

Maurice Archambault is the director of this Branch. His assistants are: G.S. Grant, manager of the Sampling and Ore Dressing Plant; P.E. Pelletier in charge of the laboratory of spectrography and radio-crystallography; Henri Boileau is chief chemist.

I.- Laboratories

During the fiscal year 1946-47, the number of samples received at the various laboratories of the Department of Mines was 8,138; and on these 36,545 assays, analyses, and quantitative examinations were carried out. These figures include microscope, spectrograph, X-ray and Geiger Muller determinations. These operations were distributed as follows:

	LABORATORIES			TOTALS
	Quebec	Montreal	Thetford Mines	
Samples received	6,976	773	389	8,138
Assay coupons received ...	7,429	739	-	8,168
Quantitative analyses:				
Department analyses	3,079	-	1,197	4,276
Paid analyses	1,099	503	-	1,602
Assays paid by coupons ..	7,409	739	-	8,148
Qualitative determinations	15,871	-	-	15,871
Spectrographic examinations	3,313	-	-	3,313
X-Ray examinations	3,335	-	-	3,335
TOTALS	34,106	1,242	1,197	36,545

The work done at the Thetford Laboratory consists exclusively in physical tests in connection with the quality and classification of the products of the asbestos industry. The Montreal Laboratory performs routine qualitative and quantitative analyses.

The Quebec Laboratories are the most important; they comprise:

- 1.-- a division of Spectrography, Radio-crystallography and Radioactivity;
- 2.-- a division of Chemistry;
- 3.-- a division of Mineralogy and Petrography;
- 4.-- a division of Metallurgy.

Spectrography, Radio-crystallography
and Radioactivity Laboratory

The personnel of this division effected 6,540 determinations. Spectrographic analyses are made of 2,946 quantitative and 259 qualitative tests; radio-crystallography analyses total 639 quantitative and 2,696 qualitative tests.

During the year, Constance Tousignant and Fernand Claisse, two graduate physicists from Laval University were hired for this laboratory.

Notwithstanding its recent opening, the laboratory acquired a name for itself outside for the quality of its equipment and the ability of its personnel. On several occasions, specialists paid a visit to the laboratory to collect information, and industries resorted to the aid of the personnel to better their methods of analyses or have sent their technicians to complete their training within our walls.

Last September, the laboratory acquired an apparatus for X-ray diffraction for the study of minerals and metals by the Debye-Scherrer method. Powder cameras used have a large diameter, are of recent design and yield diagram with a remarkable clearness. The apparatus may also be used for the determination of parameters by the back reflection camera method.

The laboratory received an invitation from the American Society for Testing Materials to cooperate with that society for compiling new cards used in radio-crystallography.

A few radioactivity measurements were made during the year; before long, the equipment will be completed, thus permitting very accurate radioactivity measurements.

Chemistry Laboratory

The Chemistry Laboratory division comprises a pyro-analysis laboratory; a general laboratory for quantitative and qualitative analyses; a fuel and electrolysis laboratory. All these laboratories are equipped with the most modern appliances and are manned by a staff of chemists who are all graduates of recognized universities, possessing an experience of great value.

The division of chemistry did 9,514 quantitative analyses in duplicate including 3,061 general quantitative assays and 6,453 determinations of precious metals.

The present economic position of the mining industry lessened the number of analyses in comparison with last year; this permitted diversification of the work of the chemists.

Amongst the special determinations, the laboratory made a complete and geochemically precise determination of one sample of mineral water, four crude oils from Gaspesia and six typical rocks; the results of the rock analyses contributed to the survey of the geology map of an area in Duvernoy township.

A complete physical and chemical analysis of ten samples of moulding sands was also made.

Mineralogy and Petrography Laboratory

For the division of mineralogy and petrography, the laboratories secured the services of Jean Girault, a graduate of Strasbourg and Nancy Universities. He joined the staff in October 1947.

A total of 5,210 samples of rocks and minerals have been examined, requiring 15,871 mineralogical and petrographical determinations. A set of pure minerals to be used as standards has been assembled.

During the year, numerous inquiries of determinations and general information were answered viva voce or by letters.

Laboratory of Metallurgy - (Special Work)

Major metallurgical investigations carried out by this

division of the laboratories are those undertaken with a view to:

- 1.- find the best reductor and the best conditions for reducing complex iron - titanium ores;
- 2.- change ilmenite and titanium-bearing slags into rutile, nitride, carbide and sulfide of titanium by heating in presence of certain rejects from our mines;
- 3.- produce alloys of titanium and iron (ferro-titania) by heating, from a mixture of ilmenite (source of titanium) and arsenopyrite (compound of arsenic, sulfur and iron).

Besides these studies, Louis Bourgoïn continued his work to better his method for the industrial production of titanium white and pulverulent electrolytic iron from titanium-bearing iron ores of the Province.

B.J. Walsh investigated:

- 1.- the relative flottability of apatite from High Rock Mine with the help of various flotation reagents;
- 2.- the feasibility of beneficiating iron ores from the Mistassini area.

In a different field, Joseph Risi and his assistants started a systematic analytical investigation of some hundred samples of peat taken by Henri Girard from the peat deposit of Clair, Bellechasse county. The study involves the quantitative fractionations of the several peat constituents, such as substances soluble in alcohol, ether and water, reducing sugars in the aqueous extract, hemicelluloses, humic acids, cellulose, lignin, also soluble and insoluble cinders. These assays are in preparation of new research for using our peats not as fuels, but as a raw material that may at some future time enter into the industrial manufacture of different products of fermentation or pyrolytic derivatives of humic acids (waxes, alcohols, phenols, etc.).

Jean Girault worked out and perfected a new method for the measurement of one of the refractive indices (n_p) of mica-ceous minerals and applied this method to comparative optical study of suzorite mica and of a mica of close composition.

Jean Laneuville and Jean Girault have prepared an illustrative documentary tract concerning our laboratories and our Val d'Or plant.

II.- Sampling and Ore Dressing Plant

This plant is situated near the town of Val d'Or, in the county of Abitibi-East. G.S. Grant who is the manager submits the following report:

Sampling Plant:

Shipments of ore received for bulk sampling were as follows:

Shipper	Type of Ore	Lots	Weight/pounds
Formaque Gold Mines Ltd.	Gold	7	13,829
Beycourt Gold Mines Ltd.	Gold	2	34,710
TOTALS		9	48,539

Treatment Plant:

A shipment of 2,512 pounds was received from Mic-Mac Mines Limited for the recovery of gold.

Test work on 1,155 tons of copper-zinc-gold ore from East Sullivan Mines was carried out at the plant for a period of 12 weeks under the direction of Mr. M. Hertel of this firm and Mr. E.H. Bronson, consulting metallurgist. The purpose of these tests was to work out a suitable method of treatment of this ore.

Preparation of Roofing Granules:

A lot of 1,575 pounds of rhyolite was received from Wendell Gold Mines Limited for crushing and screening tests in the production of material suitable for use as Roofing Granules.

Construction:

For the treatment of East Sullivan ore and Quemont Mining Corporation ores done during the previous year extra equipment was required. This equipment was set up with great difficulty in the **existent** buildings of the plant but it was apparent that additional space was required for their efficient operation and servicing. For this purpose the construction of an extension to the Sampling Plant was undertaken. This building is 33 feet

long, 30 feet wide and 18 feet high. Sufficient space has been allowed for the installation of necessary equipment for test work on a laboratory scale if later required.

III.- Elementary Lectures to Prospectors

Contrary to past years, no elementary lectures were given to prospectors by the Department.

IV.- University Course of Lectures on Prospecting

In 1946, the Department of Mines realized the necessity for organizing a more advanced prospecting class. University course of lectures on prospecting inaugurated last year and subsidized by the Department, was repeated this year. These lectures were given by the Faculty of Science of Laval University, under the able direction of Abbé J.W. Laverdière, in charge of the Department of Geology and Mineralogy.

This year, similar lectures were organized by the Department of Mines, at the Ecole Polytechnique, Montreal.

The syllabus included chemistry, fire-assaying, mineralogy, geology and prospecting; the lectures were supplemented by field excursions and extended over five weeks. Certificates were given to students who wrote the examinations.

	Number of lectures	Number of students	Number of certificates given
Université Laval	160	20	18
Ecole Polytechnique	150	21	17

V.- Museum

In 1947, the Museum of the Department of Mines was presented with the following specimens:

A copper ore sample, from lot 1, range V, St-Denis, Que.

A copper-zinc-lead ore sample from Aldermac Copper Corporation Limited from their Moulton Hill prospect, Ascot township, Que.

Two samples of ilmenite, a core and a large block of remarkable purity, from Kennco Exploration Limited, Havre St. Pierre, Que.

VI.--Displays at Exhibitions

The Department had displays at the regional Sherbrooke and Brome exhibitions.

A show-case and a collection of different ores were offered by the Department to the Arts and Trades School of Rouyn, county of Rouyn-Noranda.

Finally, the Department of Mines made a presentation to Cannon Descottes, president of the "Société Archéologique" (grouperment pour la restauration et la protection de St-Malo, France) of a collection of the chief minerals of the Province. This collection is to be displayed in the museum of the Society, at St-Malo, France.

DRAUGHTING AND CARTOGRAPHY BRANCH

Léon Valois, P. Eng., is chief of this branch and Armand Blanchette is assistant-chief. The branch employs, in addition, nine draughtsmen and one stenographer, forming a staff of twelve.

In the course of the year under review field-maps were prepared for the field-work of all the geological parties sent out by the Department of Mines. In addition several geological maps and plans were prepared, from field-notes of geological parties of the previous field season, and were finished ready for reproduction and publication.

The Branch also does all the drawing of plans, sketches, and compilation of maps required by the various divisions of the Department of Mines.

The Branch keeps strictly up-to-date two sets of tracings on linen. On one of these, consisting of 433 separate maps of townships, on a scale of 40 chains to the inch, are plotted the outlines of all mining claims in good standing. During the fiscal year under review, the outlines of 16,735 new claims were plotted on these linen plans. The second set comprises 140 separate tracings on linen, showing the outline of groups of mining claims owned or controlled by mining companies. From all these 575 separate tracings on linen 8,636 blue prints

were struck off, to satisfy the requests received from the public interested in prospecting and mining in the Province of Quebec.

The following geological maps were prepared for reproduction during the fiscal year 1947-48 and their going through the press was closely supervised by the Branch.

Final Maps (coloured)

(a) Completed and published:

- No.- 545 - Sicotte Area
- No.- 604 - Tonnancourt-Holmes Area
- No.- 616 - Wetetnagami River Area
- No.- 617 - Part of Beauchastel Township
- No.- 618 - Desvaux Lake Area
- No.- 655 - Index Map of Geological Maps published by the Department of Mines

(b) In press:

- No.- 629 - Pontgravé-Bergeronnes Area
- No.- 638 - Simon Lake Area
- No.- 653 - Normetal Mine Area

(c) In preparation:

- No.- 661 - Upper York Area, Gaspésie
- No.- 662 - Dartmouth River Area, Gaspésie
- No.- 663 - Gaspé Area, Gaspésie
- No.- 664 - St. Jean River Area, Gaspésie
- No.- 665 - Malbaie Area, Gaspésie
- No.- 667 - Forget Lake Area
- No.- 672 - Wakeham Lake Area
- No.- 676 - Upper Romaine River Area

(d) Preliminary Maps:

- No.- 639 - Cawatose
- No.- 641 - Belleterre Area (Sheet No. II)
- No.- 642 - St-Lawrence Lowlands (two editions)
- No.- 643 - Duparquet Lake - in two colours (two editions)
- No.- 659 - Olga Lake
- No.- 660 - Belleterre Area (Sheet No. III)
- No.- 666 - Capsisit Lake
- No.- 670 - Témiscamie River

No.- 671 - Canimiti River

No.- 673 - Allard River

The draughtsmen of the Branch have also traced on linen fifty-three (53) geological plans, not for publication; twenty-four (24) plans of pieces of furniture, machine etc. were drawn, and traced on linen, as well as seventeen (17) figures to serve as illustrations to final reports.

Other work in connection with draughting such as mounting maps, various compilations and classifications are also part of the activities of the Draughting and Cartography Branch.

CIVIL ENGINEERING WORKS BRANCH

L.A. St-Pierre, P. Eng., chief of this Branch, reports as follows on the work carried out during the fiscal year 1947-48:

Construction of Mine Roads

During the fiscal year ending 31st March 1948 the length of new mine roads built in the Province was 42.13 miles, bringing to a total of 1,192.86 miles the length of mine roads built by the Department of Mines. In addition 11.88 miles of mine roads have been completed or improved during the same period.

The cost of these constructions, completions and improvements was \$825,262.70, which brings the total cost of mine roads built by this Department to date, to \$8,020,445.72.

Of this amount of \$825,262.70 expended on mine roads during the period under review, a total of \$800,000.00 was paid by the Province, the remainder of \$25,262.70 having been contributed by mining interests served by these roads.

The following is a list of new mine roads built during the fiscal year:

<u>Townships and Counties</u>	<u>Road</u>	<u>Length in Miles</u>
Roberval County	Chibougamau Road	26.26
Rouyn, Rouyn-Noranda County.	Road to New Marlon Gold Mines Limited	1.42
Beauchastel, Rouyn-Noranda County	Road to Wingait Gold Mines Limited	1.55

Seigneurie Isle-Verte, Rivière-du-Loup County ..	Road to peat bog operated by J. Alexandre Michaud	0.83
Dubuisson and Vassan, Abitibi-East County	Straightening of the road to Norbenite Malartic Mines Limited .	0.44
Stanhope, Stanstead County.	Road to quarry of Gingras et Frères	1.63
Brodeur and Devlin, Témiscamingue County	Road from the village of Belleterre to the village of Laforce ...	10.00

The roads completed and improved during the year are:

<u>Townships and Counties</u>	<u>Road</u>	<u>Length in Miles</u>
Pershing, Abitibi-East County	Completion of road to Croinor Mines Limited.	1.88
Preissac, Abitibi-East County	Completion of road from the town of Cadillac to the village of Preissac	2.00
Holland, Gaspé South County	Completion of section of York River road leading to Noranda Mines Limited claims	8.00

Moreover, the Department has spent an amount of \$30,299.05 for the maintenance of 118 miles of existing mine roads, distributed as follows:

<u>Townships and Counties</u>	<u>Road</u>	<u>Mileage Improved</u>
Tiblemont and Pershing townships, Abitibi-East County	Road from Senneterre to Croinor Pershing Mines Limited	23.00
Bonaventure County	Grand Cascapédia River road	26.00
Gaspé-South County	York River road	8.50
Roberval County	Chibougamau road	50.50

An amount of \$402.58 was spent to carry out urgent repairs to the roads leading to Excel Peat Limited, Ile-aux-Coudres, and to a section of the road to the peat bog operated by Alexandre Michaud, at Isle-Verte.

During the winter season of 1947-48, survey parties from this Branch carried out the following road locations from the notes of which plans and profiles have been set:

- (a) On the Chibougamau road, a party headed by Philippe Landry, and consisting of fifteen (15) men, started work on the 19th October, 1947, and came out of the bush on the 27th March, 1948. During this period, 42.1

miles of new road were located. Clearing parties followed this location, preparing the right-of-way for the building parties.

- (b) A party, headed by A.N. Richer, and consisting of twelve (12) men entered the bush on the 29th December, 1947, and came out on the 21st March, 1948. This party located a possible road, 38.53 miles in length, starting six (6) miles below lake Cameron on the Senneterre-Lac Madeleine road, and finishing at Bachelor lake.
- (c) A party, headed by André Lacasse, P. Eng., and consisting of six (6) men, surveyed a stretch 11.43 miles in Hébécourt township with a view of locating a road to be built during the summer of 1948, from Rapide Danseur to the Ontario border.

All plans and sketches relating to the building, improvement and maintenance of roads are prepared by the personnel of this Branch.

Drainage of Peat Bogs

The Department continued the drainage of certain peat bogs, as a measure to assist their development. In the course of the year, \$14,487.11 was expended in the drainage of the following bogs:

<u>Locality</u>	<u>Operator</u>	<u>Length of Trenches (feet)</u>
St-Fabien of Rimouski	Tourbière de St-Fabien Inc.	132,678.0
St-Ulric of Matane ..	Louis Roy: 219,072.06 = Roméo Roy: 198,723.00	417,795.06
Isle-Verte	J. Alex. Michaud	69,206.4
Ile-aux-Coudres	Excel Peat, Limited	53,919.0
Fscoumains	Oscar Dubois	285,564.0
St-Fabien of Rimouski	J. Antoine Boulanger	77,148.0
St-Alban of Portneuf.	Clovis Bourque	76,747.5

The depth of the trenches varies between three and eight feet and the width between three and six feet.

Maintenance of Winter Roads

During the winter of 1947-48, the Department of Mines has contributed an amount of \$22,568.50 for the maintenance of 410.8 miles of winter roads, as follows:

<u>County</u>	<u>Locality</u>	<u>Length in Miles</u>
Abitibi-East	Amos to Siscoe Gold Mines, Ltd.	37.3
" "	Amos to Goldvue mine via St-Maurice-de-Dalquier	30.0
" "	Siscoe Gold Mines, Ltd. to Val d'Or ...	5.25
" "	Val d'Or to Norbenite Malartic	10.5
" "	Val d'Or to Colombière	10.0
" "	Colombière to junction of highways Nos. 58 and 59	6.5

Abitibi-East	Junction of highways Nos. 58 and 59 to Senneterre	23.0
"	" Highway No. 59 at Pascalis to Pascalis R.R. station, and village of Pascalis and thence to Perron Gold Mines, Ltd.	8.2
"	" Norbenite Malartic Mine road to Cadillac.	24.3
"	" Senneterre to Croinor Pershing Mines Ltd.	30.0
Abitibi-West	La Sarre to Duparquet	22.7
"	" Duparquet to Waite-Amulet Mines Ltd.	25.8
"	" La Sarre to Normetal Mine	25.5
Rouyn-Noranda	Section of route 46 between Waite-Amulet Mine and Rouyn	6.0
"	" Rouyn to railway station at Cadillac	30.0
"	" Rouyn to the Ontario border	24.0
Témiscamingue	Belleterre to the Ontario border via Notre-Dame du Nord	77.0
Fontiac	New Calumet Mine to Bryson, - Bryson to Campbells Bay and Bryson to Portage du Fort	14.75

Mining Villages

The shortage and consequent difficulty in obtaining building materials continues to remain a deterrent against the rapid expansion of mining towns and villages in the Province. Although surprising ingenuity is being shown in improvising housing and new development projects are being implemented, the mining industry can absorb all such housing to its advantage. Notwithstanding the handicaps, towns and villages are growing apace with the industrial expansion of the Province.

During the summer of 1947, extensive ceremonies marked the 10th anniversary of the incorporation of the town of Val d'Or as a municipality. During this short time, from a primeval wilderness, Val d'Or has developed in a bustling town of 7,500 population and the hub of a fluid population of approximately 25,000 people living within a radius of 25 miles from the town. Although twelve hotels exist here, the housing question is still a thorny problem for all concerned. New building lots are still being placed on sale and real estate has become a major factor in Val d'Or's financial life. New houses are being erected as fast as materials become available and the civic authorities have implemented a long range programme of public utilities, expanding the present waterworks and sewerage systems, the laying of new streets and sidewalks and the paving of the principal streets of the town. A modern and much needed hospital is being built and will prove a boon to the population which hitherto was forced to travel consider-

able distances to more populous centres to secure medical treatment of a more complex nature.

Summing up, it may be stated that the town of Val d'Or is a typical example of the industrial growth of the Northwestern area of the Province.

As in the case of Val d'Or, the town of Noranda has also benefited by the industrial expansion of the Province, and on March 22nd, 1948, it was erected as a city. Building lots are selling at a premium and houses are being constructed at a rapid rate. To meet new requirements, the d'Youville Hospital serving the twin cities of Rouyn and Noranda has been enlarged to the satisfaction of the population of this region. Considerable civic improvements have been and are being made, such as new waterworks, sewerage, etc., to serve the continually increasing number of people electing domicile in Noranda. This town was the pioneer in embellishing and landscaping its territory and today may be held as a model in this regard to future towns in this section of the Province.

Of all the cities, towns and villages in the Western part of the Province, the city of Rouyn can be used as a gauge to the growth of the North. From very humble beginnings, Rouyn is now a flourishing city of some 18,000 population. It is the industrial and financial centre of a very wide area. Real estate is booming and new industries and homes are being built as fast as the paucity of building materials permits. New areas of the municipality are being subdivided into building lots and a comprehensive and enlightened programme of public works has been instituted by the civic authorities. This heartening expansion of the city is due in a large measure to the diversified minerals extracted and processed in this region. As in other sections of the North country, the need of more labour is keenly felt.

The shortage of adequate housing is still keenly felt in the city of Rouyn, despite the transfer to that city of materials from dismantled wartime houses from industrial areas of the Province. However, during the fiscal period under review, 68 new building lots were sold in the village of Rouyn South and \$17,319.68 was deposited in the municipal fund as a result of these operations. An amount of \$2,779.76 was credited to the consolidated fund of the Province as cadastral fees derived from the sale of these lots. The city of Rouyn spent an amount of \$5,314.65 in municipal works in the area of the village of Rouyn South during the period, mostly in extending the present waterworks system to provide facilities to the lots sold during the year.

The town of Bourlamaque may be held as a typical example of the growth of towns and villages in the mineralized belt of Western Quebec. During the period under review, the population of this town increased by 205, a total of 52 building lots were sold, of which 51 now have buildings erected on them. The civic authorities intend applying, in the near future, for permission to subdivide more land into additional building lots to meet the anticipated demands for housing.

The town of Malartic in order to meet the continued increase in population, carried out considerable municipal works during the present fiscal year. Waterworks, sewers, and streets were built in new subdivisions of the town and an amount of \$5,000.00 was reimbursed to the city authorities from the municipal fund towards the cost of these improvements. A total of 33 building lots were sold and, as a result, an amount of \$13,323.48 was deposited in the municipal fund to be applied to the cost of municipal works being carried out.

The town of Cadillac is still expanding. During the period under review nine (9) building lots were sold and a total of \$4,890.52 was deposited in the municipal fund to be applied towards the cost of municipal improvements. As a result of these transactions, an amount of \$246.71 was credited to the consolidated revenue fund of the Province as cadastral fees. New roads are being opened and preliminary work is being carried out with a view to expanding the present waterworks system.

As a result of the disastrous fire which destroyed the village of Pascalis during the summer of 1944, Perron Gold Mines Limited obtained permission from provincial authorities to subdivide a part of their mining concession into building lots to enable their employees to secure suitable accommodation in the immediate vicinity of their work. Lots have been sold and buildings have been and are being built in this townsite which has been planned in accordance with modern concepts of town-planning. As the population of this district is dependent largely for its livelihood on the Perron Gold Mines Limited, the only mine in operation in this area, development has been slow but it is anticipated that this present townsite will serve as the nucleus for an expansion which is bound to come in what is hoped to be the very near future. Existing plans provide for this expected growth and no difficulty is expected in this regard.

In the case of Normetal and Arntfield, there are no outstanding details of interest to report. As both of these

localities are dependent in each case on one single mine as the major source of revenue for their inhabitants, they have not grown apace with the other towns and villages of Western Quebec. However, if and when existing controls on the sale of gold are lifted, it is expected that both will follow the general expansion trend and will eventually develop into thriving communities.

The town of Belleterre still continues to progress. During the fiscal year, 12 new building lots were sold and an amount of \$2,157.50 was deposited in the municipal fund to be applied to municipal works.

In addition to the operations described above, preliminary studies were made of sites of future mining villages, notably in the Louvicourt area. In anticipation of the completion of the Chibougamau road, further studies were made with a view to establishing the most suitable site for a mining village in that district.

Considerable work was also done on the verification of plans and books of reference relative to new subdivisions in existing mining villages.

All plans, maps and sketches pertaining to mining villages were made by the personnel of the Civil Engineering Works Branch.

MINERAL STATISTICS DIVISION

The main function of this division is to collect, monthly and annually, figures of statistics regarding the Quebec mineral industry, to collate them and to present them in orderly tables for the information of the interested public. This entails keeping up to date a complete list of operators of mines, quarries, gravel and sand pits in the province of Quebec, sending out forms and questionnaires to all of them, and compiling the information thus obtained.

For the calendar year 1947, this division collected and compiled the customary statistics on the mineral production of the province and on the exploration and development of mining lands under claim and license. For this purpose we mailed the various proper forms to 2,965 operators or owners of mineral deposits, from whom we received 2,684 returns duly filled in. This is a proportion of 91 per cent, and this comprised the returns of all mining and quarrying operations of any importance.

Of these 2,684 returns 1,157 were from companies and owners reporting figures of production, or of shipments of products, 378 cover exploration or development work performed on mining properties not yet in production, and 1,149 were to the effect that the concerned plants were inactive during the whole year.

For the same purpose we sent 177 forms to building and road-construction contractors asking for the quantities of stone, gravel and sand employed by them during the year and also the location of the deposits of these materials; we received 145 answers to these requests.

A part of the figures resulting from the compilation of all these returns, particularly the figures of production and of labour employed, are presented in the Annual Report of the Department of Mines entitled "The Mineral Production of the Province of Quebec in 1947". The others, which are of secondary interest to the general public interested in mines, such as figures of mine operating supplies; fuel and electric power used; taxes paid, and others, are kept on records for the information of the various branches of the Department when needed and of the interested public.

In order to follow more closely the fluctuation of activities, and the production of our mineral industry, the figures of production of the principal minerals mined in the province are established monthly. For this phase of mineral statistics we collect each month, from all the producers of gold, silver, zinc, lead, asbestos, and cement, and also from the main producers of lime and clay products, the figures of their production. In 1947, we collected, each month, an average of 60 returns from these producers.

These monthly statistics are published in monthly and quarterly bulletins, of which some 300 copies are mimeographed and distributed to the press and interested individual persons.

we also collected from mine operators figures of lumber and timber used in their mining operations. From 136 special requests we received 120 returns.

Finally, we sent out a questionnaire to 966 mining companies, operating or holding mining lands in the Province, asking for the net funds received in their treasury during the year 1947, from the sale of securities (bonds or shares) issued, or from long term loans. This questionnaire, filled in, was returned by 761 companies. The compilation of these returns indicates a total of some \$14,000,000 received from the three

above sources. Nearly all the 205 companies who failed to answer were inactive, or only did limited work, and probably did no important financing during the year. A similar inquest carried out for 1946 had given a total of \$27,250,000.

Therefore, the division sent out a total of 4,950 forms, and from these received, and compiled, 4,430 returns.

DIVISION OF EDITING AND PRINTING OF PUBLICATIONS

Maurice Brunet, as editor in charge, submits the following report on the work of this division during the year 1947-48.

In the course of the fiscal year 1947-48, the following publications of the Department of Mines were issued:

The Mineral Industry of the Province of Quebec in 1946
Geological Report No. 30.- Part of the Northwestern Quarter of
Beauchastel Township, by W.G. Robin-
son.

Geological Report No. 33.- Lake Simon Map-Area, by Carl Faessler.

An Outline of the Geology of the Province of Quebec by I.W.
Jones. Reproduced from statistical
Year Book of the Province of Quebec,
1947, struck off as a "separate".

"The Mineral Industry" and the "Outline of the Geology" are printed volumes. The others were reproduced by "photo-litho". All these reports are available to the interested public in French and in English.

In addition, the following preliminary reports (P.R.) were issued, and are also available either in French or in English.

P.R. 206 -- Duparquet Lake Map-Area, West Part of Duparquet Township, Abitibi-West County, by R. Bruce Graham.

P.R. 207 -- Olga Lake Area, Abitibi-East County, by Paul E. Imbault.

P.R. 208 -- Report of the Minister of Mines for the year ending March 31st, 1947.

P.R. 209 -- Belleterre Map-Area (Sheet No. 3) Blondeau Township, Témiscamingue County, by P.E. Auger.

- P.R. 210 - Capsisit Lake Area, Abitibi-East County, by J.E. Gilbert.
- P.R. 211 - Temiscamie River Map-Area, Mistassini Territory, by William G. Wahl.
- P.R. 212 - Canimiti River Area, Pontiac County, by N.B. Gillies.
- P.R. 213 - The Allard River Area, Abitibi-East County, by René Béland.
- P.R. 214 - The Chertsey Map-Area, Montcalm, Joliette, and Terrebonne Counties, by Pierre E. Côté.
- P.R. 215 - McGill Township Area, Papineau, Labelle, and Gati-neau Counties, by E. Aubert de la Rüe.
- P.R. 216 - Hébécourt Lake Map-Area, East Part of Hébécourt Township, Abitibi-West County, by R. Bruce Graham.

The above preliminary reports were issued in mimeo-graph form, with the exception of No. 208, which was reproduced by the "photo-litho" process.

PUBLICITY AND INFORMATION

In order to keep the public informed on the progress of the development of the mineral resources of the Province, and of its mining industry, the officials of the Department of Mines prepare numerous articles, technical papers, lectures and talks, which are presented at meetings of geological, and mining societies, prospectors association, printed in technical journals and also in the daily press. The object is that the interested public may keep abreast of the progress achieved from year to year. These various contacts with the Department are in addition to the numerous government publications on the geology and the mining industry of the Province.

During the fiscal year 1947-48, the principal activities in this secondary field were as follows:-

By Hon. Jonathan Robinson, Minister of Mines:

Mining Exploration and Development in Quebec in 1947,
Article "Quebec Miner" Prospectors and Developers
Association Number, March 1948.

Highlights in the Mining Industry of Quebec, radio talk,
November 1947.

Quebec Mining in 1947, article in Montreal "Gazette",
December 1947.

Mineral Industry of Quebec in 1947, article in "The Quebec Miner", January 1948.

The Mining Industry in Quebec in 1947, review for 1947, article in "Golden Valley Directory" Val d'Or, March 1948.

Mining in the Province of Quebec in 1947. Article in "Industrial Canada" Canadian Manufacturers Association, March 1948.

L'Industrie Minière de la Province de Québec en 1947, revue de l'industrie, L'Événement Journal, Mars 1948.

Speaking of the Quebec Mining Industry, article in "The Financial Times", May 1948.

By Hon. O. Gagnon, Provincial Treasurer:

Quebec Mining Industry, speech at meeting of Montreal Bankers Association, June 1947.

By A.O. Dufresne, Deputy Minister of Mines:

The Importance to Quebec of the Precambrian Shield, address given at the meeting of the Chemical Institute of Canada, Saguenay Branch, Arvida, November 1947.

L'Ingénieur des Mines; a talk at the Ecole Supérieure des Mines, Université Laval, Quebec, March 1948.

Some Aspects of the Future of Quebec's Mineral Wealth; Junior Board of Trade, Montreal, February 1948.

By Dr. I.W. Jones, Geologist:

Outline of the Geology of the Province of Quebec, for the Statistical Year Book of the Province of Quebec for 1947.

"The Rocks of Gaspé"; "The Mineral Possibilities of Gaspé", contributions to Abbé C.E. Roy's book "Percé".

By Dr. H.W. McGerrigle, Geologist:

Outline of the Geology and Mineral Possibilities of the Province of Quebec; talk at a meeting of the Victoria Club, Quebec.

By Dr. J. Claveau, Geologist:

Fracture Zones and Mineral Possibilities in Northern Abitibi; Paper read at the meeting of the Prospectors and Developers Association at Toronto, 1948.

By Dr. T.H. Clark, Geologist:

Two Recent Landslides in Quebec, Royal Society of Canada, Section IV, 1947.

By Léon Valois, chief cartographer:

La prospection minière, illustrated talk, to Quebec Council of Knights of Columbus, January 1948.

By J.E. Gilbert, geologist:

Capsisit Lake Area, a new prospecting field in Quebec, article for Canadian Mining Journal, December 1947.

By M.O. Lafontaine, Assistant Chief Inspector of Mines:

The East Malartic Mine Fire, paper presented at meeting of National Safety Council, Chicago, October 1947.

This paper was also given at the Ecole Supérieure des Mines of Laval University for the Quebec Branch of Canadian Mining Institute, and at Thetford Mines, for the local Branch of the Institute.

By Maurice Archambault, chief of Laboratories Branch:

A series of papers read at the Université de Montréal:

Contribution à l'étude métallurgique et thermodynamique des sulfures et des oxydes.

Etude des possibilités d'utilisation intégrale d'une roche propre à la Province de Québec: la suzorite.

Transformations que l'on peut faire subir à la stéatite de Broughton.

Utilisation des déchets d'amiante.

The following papers, by members of the Laboratories staff, were presented at the meeting of the "Association

Canadienne Française pour l'Avancement des Sciences (ACFAS),
Quebec:

Etude géo-spectrographique d'une série de roches du canton
Landrienne, by Constance Tousignant.

Etude de la possibilité d'utilisation chimique des tourbes
de la Province, by J. Risi, C.E. Brunette and
D. Spence.

Contribution à l'étude du mica suzorite, by J.P. Girault.

Etude des poussières industrielles par diffraction des
rayons X, by Fernand Claisse.

Nouveau procédé pour la mesure de l'indice " n_p " dans les
micas et les chlorites, by J.P. Girault.

By W.N. Ingham and W.G. Robinson, resident geologists:

Mine Developments in Northwestern Quebec in 1947, article
in "Northern Miner", April 1948.

By W.G. Robinson, resident geologist, Noranda:

Functions of Resident Geologists, address to Kiwanis Club
of Rouyn, April 1947.

Mining Activities in Northwestern Quebec, address to Kins-
men Club of Noranda, April 1947.

The Mines of Northwestern Quebec, address to the Geologist
Club, University of Saskatchewan in May 1947.

By W.N. Ingham, resident geologist, Val d'Or:

Quebec's Flourishing Future in the Mining Industry, article
for C.F. Davis and Associations (attention E.D.
Awber), May 1947.

INCORPORATION OF MINING COMPANIES

During the Calendar Year 1947, there were fewer new
mining companies organized to operate in the Province of
Quebec than in the preceding year 1946.

The companies incorporated by Quebec charters number-
ed 41. In addition 23 companies organized in Ontario acquired

mining rights in the Province of Quebec. The total number of new mining companies organized in 1947 to operate in the province of Quebec was 64, as compared with 154 in 1946.

The falling off in the number of new mining companies, to a great measure, may be ascribed to the continuously increasing cost of the production of gold, the market price of which is set, by official decree, at \$35 per ounce. This reduces in the same proportion the profits which mining companies could legitimately expect, and therefore diverts the attention of the general public from this important branch of the mining industry. As a result it becomes more and more difficult to raise funds for prospecting and for developing new gold discoveries.

Mining Companies Incorporated by Quebec Charters in 1947

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Angus Mines, Limited	Montreal ..	Aug. 13	3,000,000	\$ 1
Arnora Gold Mines Limited	Quebec	Feb. 1	3,500,000	1
Batêge Mines Limited	Montreal ..	June 23	3,000,000	1
Belville Gold Mines Ltd..	Montreal ..	May 16	3,500,000	1
Brique de Scott Ltée (La)	St-Maxime- de-Scott .	March 6	750	100
Calumet Sand and Gravel Inc. (La Compagnie de Sable et Gravier Calu- met Inc.)	Montreal ..	Jan. 24	400	100
Canadian Cobalt and Metals Co. Ltd.	Quebec	Nov. 4	3,000,000	1
Carrières Lagacé Ltée ... (Lagacé Quarries Ltd.)	L'Abord-à- Plouffe ..	Feb. 21	(a) 1,600 400	100 100
Cie de Monuments du Saguenay Ltée (La)	Chicoutimi.	Dec. 20	200	100
Claude Lake Mines Ltd. ..	Montreal ..	June 3	3,000,000	1
Corporation Minière Marco Mining Corporation Ltd..	Montreal ..	Nov. 6	500,000	1
Fenimore Iron Mines Ltd..	Montreal ..	Aug. 29	5,000,000	1
Fisco Peat Inc.	Montreal ..	April 3	500 (a) 1,100	100 100
Gaspé Copper Mines Ltd. . Gulf Lead Mines (Quebec) Ltd.	Noranda ... Montreal ..	Sept. 2 Oct. 25	2,000,000 3,000,000	1 1
Ima Gold Mines Limited ..	Montreal ..	March 13	20,000	1
Insmill Mines Limited ...	Montreal ..	Jan. 22	3,500,000	1
Joannes Goldfields Ltd. .	Quebec	Jan. 15	3,500,000	1
Ligneris Goldfields Ltd..	Montreal ..	Feb. 14	3,500,000	1

Mining Companies Incorporated by Quebec Charters in 1947 (Cont'd)

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Lord-Sable et Gravier Ltée (Lord-Sand and Gravel Ltd.)	Montreal..	June 5	200	\$100
Manico Mining Company Ltd.	Montreal ..	July 7	3,000,000	1
Matanec Mining Corp. Ltd..	Montreal ..	July 4	3,000,000	1
Mistassini Lead Corp. Ltd.	Bourlamaque	March 21	3,000,000	1
Nemrod Mining Co. Ltd. ...	Montreal ..	May 21	3,000,000	1
New Arntfield Mines Ltd...	Arntfield .	Feb. 22	4,000,000	1
New Quebec Exploration Company Limited	Quebec	Aug. 28	5,000,000	1
Normandy Gold Mines Ltd. .	Montreal ..	Aug. 6	3,000,000	1
Northern Holdings Ltd. ...	Val d'Or ..	Aug. 21	5,000	10
Oremar Gold Mines Ltd. ...	Montreal ..	Feb. 11	3,500,000	1
Paramount Mining Corp. Ltd.	Montreal ..	Feb. 26	3,000,000	1
Pershing Amalgamated Mines Limited	Quebec	Feb. 13	3,500,000	1
Poterie Vandesca Pottery Ltée-Ltd.	Joliette ..	Feb. 27	1,000 (a) 2,000	None 100
Quebec Labrador Develop- ment Company Limited	Montreal ..	Jan. 17	5,000,000	1
Quebec Ligneris Gold Mines Limited	Montreal ..	June 12	3,000,000	1
Quebec Manganese Mines Limited	Montreal ..	July 30	3,000,000	1
Quebec Smelting and Refining Limited	Montreal ..	Nov. 26	3,000,000	1
Quemaque Gold Mines Ltd. .	Montreal ..	Feb. 12	3,000,000	1
South Shore Copper Ltd. ..	Montreal ..	Dec. 10	3,500,000	1
Standard Asbestos Mines Limited	Quebec	Aug. 28	3,000,000	1
Tingwick Mining Co. Ltd. .	Asbestos ..	March 12	1,000 (a) 250	100 100
Trans-Duverny Gold Mines Limited	Montreal ..	June 2	3,000,000	1

(a) Preferred Shares.

Mining Companies with Ontario Charters Organized in 1947
to Operate in the Province of Quebec

Company	Head Office	Date of Incorporation	Number of Shares	Par Value
Bachelor Lake Gold Mines Limited	Toronto ..	April 17	3,000,000	\$ 1
Batch-River Gold Mines Limited	Toronto ..	June 11	3,000,000	None
Dorvue Gold Mines Limited.	Toronto ..	Feb. 26	3,500,000	1
Dunterra Copper Mines Ltd.	Toronto ..	Oct. 7	3,500,000	1
Gold Uranium Exploration, Limited	Toronto ..	July 28	5,000,000	1
Herbert Mining Co., Ltd. .	Toronto ..	July 30	3,000,000	1
Hewfran Gold Mines Limited	Toronto ..	Sept. 11	3,000,000	1
Hicbar Exploration Co. Limited	Toronto ..	April 22	400	\$100
Hostee Mines Limited	Toronto ..	June 19	1,000,000	1
Kekelac Gold Mines Ltd ...	Toronto ..	March 6	4,000,000	1
LaCorne Lithium Mines Ltd.	Toronto ..	Nov. 20	2,500,000	1
Lake Surprise Mine Limited	Toronto ..	Sept. 8	3,000,000	1
Macho River Gold Mines Ltd.	Toronto ..	Aug. 25	3,000,000	1
Montserrat Gold Mines Ltd..	Toronto ..	April 8	3,000,000	1
Montzone Mines Limited ...	Toronto ..	Jan. 4	3,500,000	1
Norhack-Rouyn Mines Ltd. .	St.Catharines ...	March 6	3,500,000	1
P. and M. Exploration and Mining Co. Canada Limited	Toronto ..	May 29	2,000,000	1
Pepperess Mines Limited ..	Toronto ..	Oct. 9	3,000,000	1
Piedmont Mines Limited ...	Toronto ..	June 11	3,500,000	1
Seaboard Manganese Ltd. ..	Toronto ..	Oct. 17	3,500,000	1
Shearzona Mines Limited ..	Toronto ..	Jan. 18	3,000,000	1
Villa Lead Mining Corporation Limited	Toronto ..	Aug. 18	3,500,000	1
Wilfred Gold Mines Limited	Toronto ..	Jan. 6	3,000,000	1

COLLECTION OF DUES ON MINES

During the fiscal year ending March 31st 1948, the Department of Mines received sworn statements of production from 40 companies operating mines in the Province of Quebec. These returns present the data and vouchers required by the Quebec Mining law, (Division III, Sections 12 to 24). The dues collected from this source amounted to \$1,517,893.85.

In addition to the above dues, which is a tax on the annual net profits, there is an acreage tax of 10 cents an acre on mining concessions on which no mining operations were carried out during the year (Div.VIII, Section 50). Reports were received from 112 holders of mining concessions. A total of \$433.84 was collected from this source. The balance of holders of unproductive mining properties, to the number of 82 sent in sworn statements that at least \$200 had been spent in mining work during the year in question (Quebec Mining Act, Div. VIII, Section 50). This is a statutory condition for the remittal of the acreage tax above mentioned.

S. Drouin is in charge of the collection of dues on mines.

TABLE IV
Comparative Statement of Revenue
Collected by the Department of Mines
During the Fiscal Years 1945-46; 1946-47; 1947-48
(Prepared by Robert Samson, Chief Accountant)

	1945-1946	1946-1947	1947-1948
Miner's certificates ..	\$ 85,420.00	\$ 56,840.00	\$ 51,870.00
Development licenses ..	500,468.63	628,401.08	500,576.43
Penalties	-----	1,200.00	1,797.50
Sales of mining concessions	16,447.25	36,870.33	23,631.62
Fees for transfers of titles	37,215.00	20,155.00	14,482.00
Acreage tax on mining concessions	2,565.81	1,535.13	2,342.67
Dues on townsite lots .	15,462.89	30,879.35	18,960.46
Dues on profits of mines	1,330,679.54	896,941.31	1,007,375.40
Permits of sales of unwrought metals	18.00	20.00	12.00
Sales of maps, blue prints, etc.	4,938.55	4,094.75	2,622.75
Sales of mineral collections	421.50	578.50	687.25
Fees for assays and analyses	7,376.70	2,952.10	947.50
Sampling Plant (Rent and sundries)	1,916.00	2,040.01	343.34
Miscellaneous	782.90	1,397.35	2,283.90
Casual revenue	4,648.83	388.69	265.99
	\$2,008,361.60	\$1,684,293.60	\$1,628,198.81

THE LIBRARY

The librarian of the Department, Charles Dufault, reports as follows:

The number of new books, technical reviews and reports relating to the mining industry received during the fiscal year 1947-48 was 151. This brings to 8,310 the number of volumes now on the shelves of the library of the Department of Mines. Most of these volumes relate to the mining industry, metallurgy, and their allied sciences: mineralogy, geology, physics and chemistry.

In addition to the works purchased by the Department, many of these accessions to the library consist, as in the past, of the result of exchanges of our publications with those of the departments of mines of the Canadian federal and provincial governments, also of the United States and of some of South American countries. Moreover, at the request of the French government we have resumed the exchange of our publications, which had been suspended during the war.

From this accession of volumes to our central library in Quebec, we have to deduct 42 books which were bought at the request of the mining engineers and geologists in charge of the Department's offices at Noranda and at Val d'Or respectively. These volumes however were entered and stamped as belonging to the Department of Mines, before being sent out.

The library also subscribes to one hundred technical journals and periodicals relating to mining and allied subjects. This is an increase of six as compared with the preceding year.

The main object of the library is for the use of the staff of our Department of Mines. However, the interested public is always welcome to also make use of it, and is willingly helped by the technical staff for information regarding the mineral industry and resources of the Province.

Following a rule of the Department of Mines, the "Library Committee" holds monthly meetings to recommend the purchase of new books and to discuss matters regarding the administration of the Library.

SCHOLARSHIPS

For several years, the Department of Mines has been awarding scholarships in view of encouraging deserving young

engineers of the Province of Quebec, to carry on advanced studies in mining, geology and metallurgy, leading to the Master's and Doctor's degrees.

In order to be able to meet the greatest possible number of applications for the university year 1947-48, the amount voted by the Legislature for this purpose was increased from \$10,000.00 to \$15,000.00.

Each year, the Minister appoints a Committee to whom he assigns the duty of making a selection among the candidates to these scholarships. For the year 1947-48, the Committee on Scholarships was composed of: A.O. Dufresne, Deputy Minister of Mines, chairman; Adrien Pouliot, Dean of the Science Faculty of Laval University; Ignace Brouillet, Director of l'Ecole Polytechnique of the University of Montreal; J.U. MacEwan, professor of metallurgy at McGill University; J.W. Laverdière, Director, Department of Geology, Laval University; T.C. Denis, of the Department of Mines, and Gisèle Landreville, Secretary of the Committee.

In conformity with the practice already established, the Committee gave preference to engineering graduates pursuing more advanced studies leading to the doctor's degree; then they examined the applications received from holders of scholarships who, during the preceding year, fulfilled the conditions required for renewal, and finally, new applications from undergraduates following courses in view of obtaining the degree of mining engineer, geologist or metallurgist.

Thirty scholarships were awarded for the university year 1947-48, distributed as follows:-

Students at the School of Graduates	2
Students in the last year at the Science Faculty	16
Students in other years	<u>12</u>
 TOTAL	 30

Your obedient servant,

A.O. DUFRESNE,
Deputy Minister.

QUEBEC, October 1948.