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ASBESTOS, QUE.
October 15, 1938.

Mr. W. R. Seigle, Chairman
Mr. S. A. Williams, V.P.
Mr. A. R. Fisher, VP.
Mr. C. H. Shoemaker, V.P.

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ASBESTOS MINES & PROSPECTS IN CANADA

The daily paper LE MEGANTIC of Beauceville, Que., published the attached information in French in their issue of September 8, 1938, this being co-incident with the holding of the Catholic Syndicate Congress at Thetford Mines which is not far from Beauceville.

The write-ups have been translated from the French and believe that they provide some very interesting information in connection with mining districts covered, which you will note are all in the vicinity of Thetford Mines.

H. K. Sherry,
Vice President

HKS:I
CC:
Mr. R. A. Denovan
Mr. C. D. Borrer

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ASBESTOS MINES AND PROSPECTS IN CANADA

Quebec

Asbestos Corporation Limited

Locality: Thetford Mines, Black Lake, Coleraine, Robertson and East Broughton (Quebec)
President and Managing Director: R. W. Steele
Vice Presidents: C. W. Colby, M.A., D. Ph. and Kenneth T. Dawes.
Directors: W. A. Arbuckle, C. W. Colby, M.A., D. Ph., Geo. R. Cottrelle, Kenneth T. Dawes, J.C. H. Dussault, C.R., A. H. Paradis, J.L. Ralston, C. R., H.P. Thornhill.
Manager: J. G. Ross.
Sales Manager: A. L. Penhale.
Sales Director: J. A. Marcotte.
Secretary-Treasurer: J. T. McCallum.
General Superintendent: George Dick.
Chief Engineer: Geo. F. Jenkins.
Head Office: Canada Cement Building, Montreal.
Mine Office: Thetford Mines.
Constituted: In conformity with the laws of the Dominion of Canada, 1926.
Mining Land Held: Property or leased, approximately 30,000 acres.

This corporation succeeded, in 1926, the Asbestos Corporation of Canada, Limited, formerly Amalgamated Asbestos Corporation, Limited, and re-united, under one direction, the properties then worked under the following names: mines, King, Beaver, British Canadian, Fraser, Vimy Ridge, Consolidated, Federal, Belmina, Kitchener, Maple Leaf, Asbestos, Broughton, Asbestos Fibre, Black Lake, Black Lake Asbestos, and Chrome and Pennington.

Among the above, the mines King, Beaver, British Canadian, Vimy Ridge are functioning actively. A new mill constructed recently on the Beaver property will treat the rock taken from the Beaver and Consolidated properties, replacing those which are actually found on these two properties.

This company is the largest raw asbestos producer of Canada, if not the universe, a yearly production of 120,000 tons being obtained.

KING MINE

Locality: Thetford Mines (Quebec) A special working on lot 26, ranges 5 & 6, canton of Thetford.
Superintendent: E. L. Rainboth.
Engineer: Harold McNaughton.
Employees: About 525
Mill Production: 200 tons of rock per hour.

The principal excavation, 1200 feet long by 1000 feet wide by 400 feet deep has been worked for about 50 years, the work having commenced in 1879 on a crest close to the southern extremity of the actual workshop.

The production is between 4000 and 7000 tons of rock per day.

The rock is hoisted by means of 8 cable windlasses, two steel towers and six of wood. The buckets, with a capacity of 5 to 10 tons as they are raised, are dumped into reservoirs where the ore and the refuse occupy separate compartments. Cars are loaded from the bottom of hoppers fitted with sluices operated by compressed air. The cars are moved by electric locomotives to a chute to the primary crushers. The primary crusher and the dryers are found in a building, from which the dry rock is transported to a reservoir warehouse with a capacity of 25,000 tons. The rock is taken from the reservoir on a belt to a hopper feeding into the mill. This building has four storeys and is 186' by 68'.

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It is constructed of steel and brick. The machines are in two separate groups, each producing from 80 to 100 tons of rock per hour, giving a total of 200 tons of rock per hour. The sand coming from the mill and the wasterock from the mine are taken across the river Becancour. The mills are situated on the main line of the Quebec Central and are served by a direct lateral line. The finished fibre is stored in sheds on each side of the railway, and a large dust reservoir is adjacent to the mill. The machine shop is well fitted for repair and construction work. Underground work has been started and 5000 feet of galleries and supports have been made, and seven working spaces opened to a 300 foot level.

BEAVER MINE

Locality: Thetford Mines (Quebec)
Superintendent: Sydney Bateman.
Engineer: G. F. Brink
Mining Land: 500 acres, comprising lots 51 and 52 Range C, Coleraine, and lot 55, Range XI, Ireland. The neighboring lot of the Consolidated and the Bennett-Martin lot will be, in the future, worked in conjunction with the Beaver mine.
Employees: About 275.
Mill Production: 100 tons of rock per hour.

The ground worked comprises the southern part of the asbestos fibre zone of Thetford, to the point where asbestos is found. The new mill is larger than that of the King mine, being 24 feet longer, 10 feet wider, and has 5 storeys. The crushing building, constructed on the site of the old mill, is well-lighted. The storage reservoir is found between the crusher building and the dryers and the mill itself, and the transport by inclined belt is short. The mill is of steel and brick. It is situated close to the main line of the Quebec Central.

Loading by hand and hoisting by cable has been replaced by loading with a Bucyrus electric shovel with a capacity of 1½ yards into ten ton steel cars.

The cars are taken from the mine to the mine to the bottom of an inclined haulage way by electric trolley locomotives from where they are taken up along an inclined plane of 22 degrees of double compartments for a distance of 1100 feet.

The cars are dumped by means of electric dumpers into slides leading to 36 X 40" jaw crushers in each group. Each primary crusher is followed by a pair of 56" rolls, after which the rock passed through a King hammer crusher, from there by a conveyor belt to a series of three dryers (stack) each one 50' high by 7' diameter.

The dry rock is taken to a storage bin of 25,000 tons from which it is taken as required to the mill and is automatically weighed as it goes over the conveyor belt.

One group of machines have just been installed in the mill. The ore feed passes over a Niagara classifying screen, then to the crushers: King hammer crushers, Williams Hammer crushers, and two 2-phase Jumbo fiberisers. After each crushing the fibre is taken by suction by Sheldon aspirators functioning in tandem , by direct electric control. The lifted fibre from the flat shaking screens, following each grinding, is gathered in collectors, of which some are vertical, others horizontal. From the collectors the fibre is taken on belts to the classifiers. After classifying it is recleaned and bagged for shipment.

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All the motors of the crushing mill are controlled from a single group of hand starters, the same as all the motors of the mill.

BRITISH-CANADIAN QUARRY

Locality: Black Lake, (Quebec)
Superintendent: A. D. Porcheron
Engineer: M. J . Hessel
Employees: Average 195
Mill Productions: 90 tons of rock per hour.

This property, situated in block A, township of Coleraine was formerly worked by the British Canadian Asbestos Company which succeeded the American Asbestos Company. The land worked at one time by the companies Glasgow and Montreal, United Manhattan, Dominion and Standard, is now worked with this property.

A tunnel goes from the mill, situated on the principal line of the Quebec Central, to a hill on one side of the road. With its two principal branch lines the tunnel is more than 2 miles long by 12 or 14 feet in breadth. The cars, 8 ton, are hauled by electric locomotives. Close to the upper end of the tunnels they work from the surface to 300 feet deep. This method of extraction furnishes the most economical rock for crushing of the district. They do not sort the raw fibre and very little of the barren rock. Like the King and Beaver mines, a large storage reservoir is used for the dry rock. Mill production is 70 to 90 tons of rock per hour. Treatment is effected by cyclone crushers and a large part of the production consists of shingle fibre.

VIMY RIDGE MINE

Locality: Coleraine
Superintendent: Telesphore Roy
Engineer: O. H. Adams.
Employees: 125
Maximum Mill Productions: 60 tons of rock per hour.

Formerly worked by the Bennett-Martin Asbestos and Chrome Company, this pit is 7 miles north of Coleraine, a station on the Quebec Central, and is connected to the main line by a company line.

In 1927 the mill was remodelled and provided with a system of cylinders to produce shingle fibre, to which this asbestos adapts itself particularly well. In 1930 crushing equipment was divided into two groups.

The nature of the fibrous rock of this mine differs from the other mines of Thetford in that it is stratified horizontally. Fibre 2" in length is found, and in places just 20% of the face of the pit is composed of asbestos. It is harder and more difficult to crush than the other fibres of the district. A mile to the east, at the mine Edith, on the southern slope of the Silver mountain, the fibre resembles that of Thetford.

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BELL ASBESTOS MINES LIMITED

Locality: Thetford Mines, Quebec.
Mining Land:- Southeast half of lot 27, range V, township of Thetford.
President and Managing Director: O. C. Smith
Vice-President: H. A. Smith
Secretary-Treasurer: Geo. W. Smith
Mill Production: 75 tons of rock per hour.

The actual members of the personnel are sons of the late Hon.Geo. R. Smith, for several years managing director of the company, who was instrumental in the development of the industry.

This company, formerly Keasbey & Mattison, is one of the eldest in the district, and also one of the most successful. The mine is located close to the Thetford Mines station on the Quebec Central, on lot 27, range V, township of Thetford.

The average employees is 300 men.

The pit is from 220 to 240 feet deep, 1200 feet long, and 600 feet wide. It is situated west of the King mine and north of the Johnson mine. Vertical holes 40 feet deep are drilled. In certain parts of the mine the rock is separated, the treatable mineral and the waste rock being loaded separately into buckets which are hoisted by means of cables and dumped into cars. At other points the rock is loaded by steam shovel. At the bottom of the mine the cars are assembled by steam locomotives at the bottom of an incline. The tunnel for the cars leaves the bottom of the mine at an extreme angle north-west, passes under the Quebec Central railroad and Notre Dame street, and finally emerges about 500 feet from the mill, which is found north of the mine. This tunnel is 1100 feet long and at an angle of from 9.86 to 11.22 per cent. The interior is covered with cement for the major part of its length. It is 12 feet wide and 15 feet deep. When the cars are assembled they are attached to a hoisting cable at the foot of the mine at the entrance to the tunnel. An electric windlass draws the train to the summit of the way, 400 feet above the entrance, from which the cars are attached to a steam locomotive and taken to the crushing mill or to the dump. The mill rock is dumped into twin chutes leading to two 36 by 24" Canadian Ingersoll-Rand jaw crushers. These reduce the rock to a maximum dimension of 5 or 6 inches and discharge it on a 36" separation conveyor belt. On a return belt, on which another separation is made, the material is returned to recover the fibre hidden by the rock on the first belt. The mineral goes next to two direct heated rotary dryers. These are 40 feet long with a diameter of 66", and are fired with coke. After the drying, the mineral goes by conveyor belt to a rotary screen where the fines are lifted, the refuse going to a Symons cone crusher. The discharge of the crusher and the fines from the rotary screen are sent to a cement reservoir with a capacity of 6000 tons, and a length of 225 feet. The mineral is distributed over this length by a conveyor belt. The bottom of the reservoir is fitted with grilles under which a conveyor belt passes. An automatic feed and a movable vibrator discharging on to a feeding belt can be placed under any desired chute. The vibrator is run by a motor and the feed can be stopped from three different places in the mill. The feeding belt, when coming from the storage reservoir, passes over an automatic scale fitted with an indicator showing the feed per hour. The maximum mill production is 75 tons of rock per hour, and three 8-hour shifts are worked.

The treating mill operates in two distinct and independent groups. The primary crushers are Williams hammer type, fitted with geared grill discharge, of special construction designed by the mill engineers. The remaining crushers are cyclones. The horizontal shaking screens at slow speed serve to lift the sand and spread the rock and fibre. Direct passage collectors are used and the classifying and cleaning is done in the horizontal shaking screens. An average recovery of 8% is obtained, although at times it is higher. Eleven

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different grades of fibre are produced, the longest being the shingle fibre. The waste is taken to a 1600 ton steel reservoir, from which it is loaded into cars and taken to the dump by steam locomotive. The mill is completely independent from the locomotive repair shop.

THE JOHNSON COMPANY

Locality: Thetford Mines and Black Lake (Quebec)
President: Dr. J. A. Johnston
Vice-President and managing director: Andrew S. Johnson
Directors: S. J. Johnson, L. A. MacKenzie, J. H. Mooney
Secretary: A. M. Robinson
Head Office: Thetford Mines
Constituted: In accordance with the laws of the province of Quebec, in 1885.
Authorized Capital: $25,000, entirely free.
Mining land held:- More than 1000 acres in Thetford Mines and Black Lake. The main pit is found in the northeast part of lot 27, range VI, township of Thetford.
Employees: At the Thetford Pit and mill, 300. At Black Lake, 200.

This company was the pioneer of the asbestos industry, work having commenced in 1878. Since 1926 the work has been done by the founder, the late Mr. A. S. Johnson. The actual managing director, Mr. A. S. Johnson, Jr., succeeded his father. The secretary, Mr. A. M. Robinson, joined the company 43 years ago, and several employees have worked with the company for 40 or 50 years. This company produces a large proportion of the raw asbestos exported from Canada. The treatment is effected by two mills, one at Thetford, the other at Black Lake. The one at Thetford is the larger. A section of the new mill, erected on the Thetford Property, was put in operation in September 1930. The Thetford pit is on the northwest limit line and touches the Bell mine. It also touches the King mine on the northeast. It is rectangular, being 800 feet long, 500 feet wide and 220 feet deep.

The hoisting by six cable derricks has been replaced by loading and hoisting by inclined cable way.

The rock is loaded by hand shovels into 2½ ton steel buckets. These are hoisted by two electric cranes, Orton, and dumped into steel cars of 7 tons, and hauled by a gas-electric Vulcan locomotive to the bottom of an inclined way. The haulage on the inclined way can meet at meeting places on the incline, which at the lower part is on a 5% grade and the upper 700 feet on an angle of 21 degrees. The two-car trains are dumped at the top of the incline automatically. The hoisting is done by a Canadian Ingersoll-Rand windlass, 7' diameter, double drum, operated by a 450 H.P. motor controlled from a distance. The windlass is installed in a separate building.

Crushing Mill The primary crusher equipment is located in a steel building covered with corrugated asbestos sheets. The mineral is dumped on to a Polius "live grizzlie", run by a 15 H.P. motor, from which it is fed to a Kennedy Van Saun No. 36 gyratory crusher, with a capacity of 500 tons per hour, and crushed from 36 to 5".

The screens lead directly to the dryers, and the product of the No. 36 crusher is recrushed in a pair of Kennedy Van Saun No. 38 gyratory crushers.

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Dryers. Four rotary dryers, each 5 feet diameter by 40 feet long, are operated by four separate motors. Two are fired by hand and two by Kennedy Van Saun Feeder, using fine coal. The dust and dirt are captured by suction, gathered in collectors, and placed on a belt which takes it to the dump.

Dry Rock Storage. The dry rock is taken by rubber belt to a storage bin, with a capacity of 35,000 tons. A passage way allows trial loads of rock to go directly to the mill.

Treating Mill. The mill is of steel framework, with brick walls and cement foundations. The floors are wood, of slow-burning construction. The crushers in the basement are installed on cement bases.

The equipment is installed in one section of the mill. The mineral, coming to the mill on a conveyor belt from the dry rock storage, is automatically weighed and dumped into bins.

The material coming from the bins falls on a pair of horizontal shaking screens from which the fibre is lifted, the sand going to the waste and the refuse to the next crusher. The waste from the bins goes to a pair of Kennedy Van Saun No. 37 gyratory crushers. The second phase of the crushing is done in a Williams hammer crusher, followed by two phases of Jumbo crushing.

The fibre is lifted from all the screens by Sheldon aspirators, acting direct, and deposited in direct passage vertical collectors.

The fibre is classified in the graders quickly, and mixed in the screw conveyors. Bagging is done by plunger type apparatus.

The crushers and elevators are equipped with dust hood collectors. The dust from the hoods is taken by a conveyor to be treated again.

The electric control apparatus is installed in a separate building, control being by hand.

The production of the crushers installed in this mill is 100 tons of rock per hour.

BLACK LAKE MINE

Superintendent: William Hutchison
Mill Production: 50 tons of rock per hour.

The mine is next to that of the British Canadian, of Asbestos Corporation Limited, close to the Black Lake station, on the Quebec Central. The rock is hoisted from a pit 250 feet by 120 feet and 100 feet deep, by means of five cable derricks, the buckets being loaded by hand.

Hauled by steam locomotives to a hopper, the rock is crushed in a jaw crusher, from which it goes to a pair of rotary dryers, then to a small storage bin.

Treatment of the rock is done by cylinders and Jumbos. The fibre is taken by truck for a distance of a mile to the railroad for shipment.

Taken from: "Le Megantic"
Sept. 8, 1938.

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