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First Annual Report

CASSIAR ASBESTOS CORPORATION LIMITED

As at September 30, 1952

First Annual Report

of

Cassiar Asbestos Corporation Limited

As of 30th September, 1952

OFFICERS AND DIRECTORS

President & Director
F. M. CONNELL, O.B.E.
Toronto

Vice-President & Director
W. HAROLD CONNELL
Spencerville

Director
A. B. MORTIMER, Q.C.
Toronto

Director
K. A. CREERY
Montreal

Director
J. M. CONNELL
Toronto

Director
J. E. KENNEDY
Toronto

Secretary
ALAN COCKERAM
Toronto

Treasurer & Director
C. R. ELLIOTT, C.A.
Toronto

Consulting Engineer
J. D. CHRISTIAN, C.B.E., B.A.Sc.

Consulting Geologist
WM. V. SMITHERINGALE, B.Sc., Ph.D.

Mine Manager
T. T. TIGERT, B.A.Sc.

Bankers
THE ROYAL BANK OF CANADA

Transfer Agents and Registrars
CROWN TRUST COMPANY, TORONTO 1

Administrative Office
1001-85 Richmond Street West, Toronto 1

Mine Office
Cassiar, B.C., Canada

Cassiar Asbestos Corporation Limited

Report of the Directors

To the Shareholders,
Cassiar Asbestos Corporation Limited.

Your directors submit herewith the First Annual Report on the operations of your Company, including financial statements prepared as at September 30, 1952, and reported on by your auditors; a report by Mr. J. D. Christian, Consulting Engineer; a report by Mr. T. T. Tigert, Mine Manager; and a Geological Report on the adit developments by Dr. Wm. V. Smitheringale, Consulting Geologist.

Your company's initial programme was to construct a mill suitable for treating the asbestos talus material with a planned production of approximately 4,000 tons of spinning grade fibre per year. On this basis it was estimated that it would require at least four years to mill out the asbestos talus ore. A mill circuit was laid out designed for this purpose, but so constructed as to readily expand into a full scale rock mill when required. For this purpose a total of $1,496,244.75 was provided through the issue of capital stock. This sum has now been expended in buildings, equipment, roads and mine development as will be noted from the balance sheet. In the meantime, tests which were being made on the fibre proved it to be an iron-free chrysotile asbestos with very good spinning qualities. It was then decided that the main orebody should be immediately investigated by driving an adit to intersect the ore zone at an average depth of 250 feet with a view to making early plans for a larger scale of operations. The results of this work are reported on by Dr. Smitheringale and are most satisfactory. In order to prepare for the larger programme pending financing arrangements outlined below, a credit was established with your bankers. By the year end your Company had drawn against this to the extent of $251,739.25 and had made other commitments amounting to $214,532.90.

In view of the substantial ore reserves estimated by Dr. Smitheringale, Mr. Christian has submitted a plan outlined in his report for placing the Company in production at a rate of 500 tons per day and he estimates the funds required to carry out this programme and meet the Company's current commitments will be $4,500,000.00. Your directors have approved this proposal and are proceeding with the programme outlined by Mr. Christian with the objective of reaching substantial production by the summer of 1954. Initial production at the rate of 150 tons per day is expected by the first of July, 1953.

In order to finance this programme, your directors have enacted By-law No. 87 increasing the capital of the Company from 2,500,000 shares, without nominal or par value, to 4,000,000 shares without nominal or par value by the creation and addition of 1,500,000 shares without nominal or par value. Subject to ratification of this By-law your directors propose to issue 1,100,000 of these shares at a price of $4.00 per share. Your directors propose to offer Rights to the shareholders to purchase 500,000 shares at the price of $4.00 per share on the basis of one share for every five now held. Conwest Exploration Company Limited will undertake to subscribe for any shares of this offering not subscribed for by the shareholders at the same price. Arrangements have been made to sell 600,000 shares to Turner-Newall Limited and Raybestos Manhattan Inc. at $4.00 per share.

By-law No. 88 increasing the number of directors from seven to nine has been enacted to create two vacancies on the present board in order to facilitate the election of a nominee of each of Turner-Newall Limited and Raybestos-Manhattan Inc. The association of Turner-Newall Limited and Raybestos-Manhattan Inc. makes available to the Company both the technical and marketing experience of these two important companies in the asbestos industry and is, in the opinion of your directors, a very important advantage in the development of your Company's mine and the processing and marketing of its production.

You will also be asked at the forthcoming Annual Meeting to ratify By-law No. 86, being a By-law changing the fiscal year end of the Company from the 31st of December to 30th of September. In the organization stages of this company the 31st of December had been selected as a suitable date for the fiscal year; however, experience has indicated that because of climatic conditions at the mine area a more suitable time for the determination of the annual accounts is the 30th of September and your directors have enacted By-law No. 86 accordingly. Your directors strongly recommend ratification of the three By-laws.

On behalf of the Board,

F. M. CONNELL,
President.

Toronto, Ontario,
December 19th, 1952.

Cassiar Asbestos Corporation Limited

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Report of Consulting Engineer

Mr. F. M. Connell, President,
Cassiar Asbestos Corporation Limited,
1001 Federal Building,
Toronto 1, Ontario.

Dear Sir:

I submit herewith my report covering developments at the mine up to 1st December, 1952, with my recommendations for a future expanding production programme. Dr. Smitheringale, our consulting geologist, has submitted a report on the ore reserves and Mr. T. T. Tigert, our manager, has reported on the construction and development programme carried out during the year. These reports are attached.

HISTORY

The property was acquired by Conwest Exploration Company Limited in the fall of 1950. A rough road was available from the Alaska Highway to the Mocassin Mines (approximately 60 miles). We immediately started pushing this road on towards the mine and were able to complete about 10 miles before freeze-up stopped the first year's operations.

The Cassiar Asbestos Corporation Limited was formed on May 17, 1951, and took over the claims from Conwest. During the 1951 season, the road was completed from the Mocassin Mines to the deposit. Two large samples of the talus material were subjected to spinning tests. These established the value and quality of the fibre. Two diamond drill holes, one 160 feet vertical and one 300 feet horizontal, were completed. The core recovery was very poor and it was impossible to use them to establish grade. There was, however, ample evidence in the sludge that the underlying deposit carried a considerable amount of fibre. Winter camps were constructed and some basic equipment, such as the Diesel Plant, was placed on order.

In early January of 1952 active work was started on the planning and construction of a small mill and ancillary shops to handle the asbestos talus material. This mill was completed and turned over for the first time on November 29, 1952. The British Columbia Government provided funds for the improvement of our road and it is our understanding that this work will continue next year. Of major interest is the adit which was driven into the footwall of the deposit and which is described in detail in Dr. Smitheringale's report. The construction and mining programmes are detailed in Mr. Tigert's report.

LOCATION

The property now consists of 40 claims and is located in the McDame Lake area of the Mining District of Liard, in the northern part of the Province of British Columbia. The mine is approximately 86 miles by road southwest of Mile 648 (Watson Lake) on the Alaska Highway. From here the distance along the highway to our Utah Camp warehouse near Whitehorse is 265 miles. The Utah Camp has a siding and spur line from the White Pass and Yukon Railway, which runs between Whitehorse, Y.T., and Skagway, Alaska (approximately 100 miles). From Skagway transportation is by Canadian Pacific Steamships to Vancouver. An alternative route exists coming southeast from Watson Lake to railhead at Dawson Creek.

GEOLOGY AND DESCRIPTION

The rocks underlying the claims are mainly sedimentary consisting of lower argillites and shales overlain by limestone, which in turn is overlain by quartzite. Intruding the sediments along the valley floor is a porphyritic granite and a basic rock which has intruded into the limestone. This latter rock now altered to serpentine, contains many veins of cross-fibre chrysotile asbestos, and takes the form of a dike varying in width from 200 - 600 feet. It strikes in a northeast direction across the mountain top.

The main asbestos showing occurs at the top of a mountain ridge, at an elevation of approximately 6,000 feet. Fibre-bearing outcrops occur over a length of 3,000 feet. Overlying this dike, and on both sides of the hill, is a saddle-like mantle of asbestos talus. This asbestos talus is the result of frost action which has penetrated the asbestos seams and freed the fibre from the rock. It varies in depth from 1 - 10 feet and has spilled over on the sides of the hill to create an area approximately 1,000′ x 1,000′ on the West side and 2,000′ x 200′ on the East side, and is conservatively estimated to contain 280,000 tons. All the evidence available suggests that this material truly represents the underlying deposit both as to grade and quality. An adit has been driven into the footwall of the dike and to date has shown a width of 251 feet of continuous ore, with an average back above the adit of 250 feet.

GRADE AND QUALITY OF FIBRE

Three separate samples of the asbestos talus on the West slope have been taken during the past 18 months. These samples were milled out in Ottawa in the laboratory of the Industrial Minerals Division of the Department of Mines and Technical Surveys and were later subjected to full-scale spinning tests by the Raybestos-Manhattan Inc., United States Asbestos Division, in Manheim, Pa.

The results of the first two tests indicated that the fibre from the talus material, while of good quality, required a slightly different milling technique to retain its length. As a result Sample No. 3 was taken on a carefully laid out grid pattern. This sample weighed 17,597 lbs. dry weight. It was milled out in Ottawa and samples were submitted to three separate spinning companies in the United States. These three companies ran extensive spinning tests against standard Canadian fibre. In all instances they reported that the Cassiar product was the equal in recovery, strength and spinning quality to a Canadian 3R.

At the time these tests were run we were interested only in the spinning grades and in arriving at an average value for the asbestos talus material. This has now been established at 8% 3R or $30.00 per ton. More recently we have become interested in high group 4 material and preliminary test work indicates that by reducing the spinning grade recovery to 7%, we can produce an additional 5% of 4K. This would raise the value of the talus in place to $38.75 per ton. As can be seen from Dr. Smitheringale's report, the adit has returned a similar recovery of the same grade. In addition to the above grades, a limited tonnage of #1 and #2 crude can be hand-picked from the talus and rock. Some 40 tons were hand-picked in this manner during the past summer.

It is of considerable importance to note that Cassiar fibre is a non-ferrous variety which has not been found elsewhere on the North American continent except in small quantities in Arizona. South Africa has been the only major producer. Non-ferrous fibre is required for electrical insulation, such as cable covering on Naval vessels, and is regarded as a strategic mineral.

PRODUCTION PLANS

It was apparent from the beginning that there was sufficient asbestos talus material in evidence to provide a mill feed for three years at an average of 250 tons per day. It was considered that such a mill could be constructed at a reasonable cost and in reasonable time. Power consumption would be low as no crushing equipment was required. The three-year period would suffice to develop sufficient tonnage in the main body to warrant the further capital expenditures required to establish the plant for a long life operation. On the strength of these assumptions, work was put in hand. Mr. Tigert's report covers this phase of the operation.

During recent months the results obtained in the adit have thrown a different light on the picture. Dr. Smitheringale's figure of 5,892,000 tons of ore in sight is ample justification for a stepped-up production programme. The current world shortage of spinning and non-ferrous fibre practically assures the marketing of these greater tonnages. There are many advantages to establishing full-scale production at the beginning of an operation. One of the major factors is that we will be able to produce Group 4 material almost as a by-product, which will considerably enhance our earnings. The indications are also that the ore from the adit will produce an even more desirable fibre which will be easier to grade and with which we can produce a consistently high-quality product.

PRODUCTION PROGRAMME

1. **Beginning July, 1953**

   The chute, which will bring the talus material from the top of the hill to a loading point at the base, will be in operation next spring. Mining will be confined to the four summer months. We expect that we will be able to move 54,000 tons off the mountain for an average daily mill feed of 150 tons per day. However, a favourable season could increase this figure to 80,000 tons or 225 tons per day of mill feed.

The talus mill will be completed and the additional equipment will be installed to handle 225 tons per shift. Our first year's production, therefore, should be on the following order:—

Crude #1 and #2	100 tons
Fibre 7% 3K Spinning	3,780 - 5,600 tons
Fibre 5% 4K	2,700 - 4,000 tons

2. Future Programme

As soon as the necessary engineering can be completed, work will commence in enlarging the mill and installing the necessary crushing equipment, power facilities, shops, houses and mining plant to handle 180,000 tons per year or 500 tons mill feed per day. All major items of plant and design will anticipate a production of double this figure. Production in this second stage would be on the order of:

Tons ore treated	180,000 tons
Crude	150 tons
Fibre 7%—3K Spinning	12,600 tons
Fibre 5%—4K	9,000 tons
Total Fibre	21,750 tons

FUNDS REQUIRED

Preliminary estimates indicate that cost of completing the 1953 programme will amount to $1,500,000 and that a further $3,171,250 will be required to complete Stage II. The funds available from production will provide the working capital.

SUMMARY AND CONCLUSIONS

1. There is ample evidence to justify Dr. Smitheringale's reserve of 5,892,000 tons. This, combined with the asbestos talus material of 280,000 tons, is sufficient to provide mill feed at 500 tons per day for 34 years.
2. The proposed increase in capacity from 150 tons per day to 500 tons per day is justified in light of our analysis of present markets.
3. Based on present market prices and estimated operating costs, the initial rate of production should result in an annual profit before taxes of approximately $800,000, which should increase to approximately $2,500,000 when production reaches 500 tons per day. The plant and equipment will be basically capable of handling double this tonnage which in time will result in a further decrease in operating costs and increase in ultimate profit.

Respectfully submitted,

J. D. CHRISTIAN,
Consulting Engineer.

Toronto, Ontario,
December 1, 1952.

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Balance Sheet as a

ASSETS

Current:		
Cash on hand		$ 480.05
Accounts receivable		14,971.82
Inventory of supplies as determined and certified by the management and valued at laid-down cost at the mine		239,605.12
Prepaid insurance and other charges		14,844.41
		$ 269,901.40
Fixed—at cost:		
Mineral claims and properties—		
Mineral claims acquired for the issue of 925,000 shares and the payment of $112,907	$ 205,407.00	
Payments made under option to purchase mineral claims	4,000.00	
	$ 209,407.00	
(Note—Additional payments aggregating $16,000 payable at the option of the company up to November 1, 1954, will be required to exercise this option in full)		
Roadways	109,000.37	
Plant and equipment	1,124,882.82	1,443,290.19
Incorporation expenses		4,217.57
Preproduction expenditures on exploration and development of properties including administrative expenses		337,607.74
		$ 2,055,016.90

AUDITORS' REPORT

To the Shareholders of
Cassiar Asbestos Corporation Limited.

We have examined the balance sheet of Cassiar Asbestos Corporation Limited as at September 30, 1952, and have obtained all the information and explanations we have required. Our examination included a general review of the accounting procedures and such tests of accounting records and other supporting evidence as we considered necessary in the circumstances.

Corporation Limited

Companies Act, Canada)

September 30, 1952

LIABILITIES

Current:		
Bank overdraft		$ 251,739.25
Accounts payable and accrued charges		214,532.90
		$ 466,272.15
Capital:		
Authorized—2,500,000 shares without nominal or par value		
Issued —2,500,000 shares—		
925,000 shares for mineral claims	$ 92,500.00	
1,575,000 shares for cash (including 1,074,993 shares issued during the period from July 11, 1951, to September 30, 1952, for $1,356,237.75)	1,496,244.75	
2,500,000 shares		1,588,744.75
		$ 2,055,016.90

On behalf of the Board:

F. M. CONNELL, Director.

C. R. ELLIOTT, Director.

In our opinion the accompanying balance sheet is properly drawn up so as to exhibit a true and correct view of the state of the affairs of the company as at September 30, 1952, according to the best of our information and the explanations given to us and as shown by the books of the company.

CLARKSON, GORDON & CO.,
Chartered Accountants.

Toronto, Canada,
November 28, 1952.

Cassiar Asbestos Corporation Limited

Geological Report

November 25th, 1952.

Mr. F. M. Connell, President,
Cassiar Asbestos Corporation Limited,
1001 - 85 Richmond Street West,
Toronto 1, Ontario.

Dear Sir:

GENERAL: The principal recent development on the property is the cross-cut tunnel at Elev. 6028: This adit, started near the north centre boundary of the LAST MC., has been driven in a N. 54°E. direction for a total distance of 439 ft. The last 251 ft. of this working have exposed well shattered serpentine carrying a good grade of asbestos fibre, both as to quality and quantity. Muck samples, taken from every round, indicate an average grade of 7.6% 3K—(Screen analysis, screen #1—6.84 oz.; screen #2—4.75 oz.; screen #3—2.76 oz.; screen #4—1.45 oz., weighted average)—plus an appreciable amount of crude fibre. The detail of these samples is set out on the following page. This screen analysis was made with the limited facilities at the mine. It does not give any indication of the Nos. 4 and 5 grades of fibre present in the rock, as the equipment did not allow proper determination of these grades, which are still economic products for our operation. I believe the classification given by these tests is a conservative estimate of the value.

ADIT ASSAYS

Date	Round	From	To	%	Grade	Screen 1	Screen 2	Screen 3	Screen 4	%	
Oct. 1	12	188′	194′	5.0	3Z	8.3	3.1	2.6	2.0		
4	13	194′	199′	5.5	3R	6.0	3.9	4.3	1.8		
5	14	199′	204′	10.5	3K	8.3	3.1	2.6	2.0		
6	15	204′	209′	6.2	3R	2.0	6.9	4.1	3.0	+ 1.6	Crude
6	16	209′	213′	6.7	3K	6.5	4.5	3.2	1.8		
8	17	213′	217′	9.4	3F	11.8	1.4	1.5	1.3		
8	18	217′	221′	8.3	3K	9.2	2.7	2.3	1.8		
9	19	221′	225′	10.0	3F	14.4	0.5	0.7	0.4		
10	20	225′	228′	12.8	3K	11.5	1.9	1.7	1.0	+ 7.4	Crude
11	21	228′	232′	8.3	3K	6.4	5.5	2.8	1.3		
12	22	232′	236′	6.3	3F	10.6	3.0	1.8	0.6		
12	23	236′	240′	7.5	3F	14.0	0.9	0.7	0.4		
13	24	240′	244′	2.95	3T	1.5	7.3	4.9	2.3		
14	25	244′	248′	9.1	3K	3.1	7.8	3.1	2.0		
15	26	248′	252′	8.3	3F	13.8	0.6	0.9	0.7		
16	27	252′	257′	10.5	3F	13.9	0.5	0.7	0.6	+ 1.1	Crude
16	28	257′	261′	7.6	3K	3.5	8.5	2.5	1.5		
17	29	261′	265′	8.1	3F	10.5	3.4	1.4	0.7		
18	30	265′	269′	8.9	3K	6.8	5.7	0.5	1.0		
18	31	269′	273′	11.7	3F	6.4	7.2	1.9	0.5	+ 1.4	Crude
19	32	273′	277′	3.9	3K	7.0	5.3	2.2	1.5		
20	33	277′	282′	5.7	3F	7.2	6.4	1.8	0.6		
21	34	282′	286′	7.7	3R	1.4	9.0	3.8	1.8		
21	35	286′	292′	8.6	3F	9.5	3.9	1.8	0.8		
22	36	292′	298′	5.0	3K	3.5	9.1	2.2	1.2	+ 2.2	Crude

Date	Round	From	To	%	Grade	Screen 1	Screen 2	Screen 3	Screen 4	%
Oct. 24	37	298′	304′	3.7	3K	5.1	7.5	2.3	1.1	
25	38	304′	310′	12.1	3K	5.5	6.5	2.2	1.8	
26	39	310′	317′	4.3	3R	1.6	9.3	3.7	1.4	
27	40	317′	324′	4.0	3T	0.7	9.0	4.4	1.9	
28	41	324′	331′	4.9	3R	2.8	8.7	3.0	1.5	
29	42	331′	338′	2.0	3T	1.0	7.0	4.4	3.6	
30	43	338′	344′	3.4	3Z	0.3	5.8	6.2	3.7	
31	44	344′	347′	4.1	3Z	0.1	7.3	5.6	3.0	
Nov. 1	45	347′	351′	4.8	3Z	0.2	7.5	5.1	3.2	
2	46	351′	358′	3.9	3Z	0.6	7.8	4.7	2.9	
3	47	358′	365′	3.8	3Z	0.4	8.2	4.4	3.0	
4	48	365′	372′	12.6	3R	3.0	7.2	4.2	1.6	
5	49	372′	379′	9.6	3F	13.8	0.8	0.9	0.5	+ 0.23% Crude
6	50	379′	386′	12.8	3K	7.8	3.6	3.0	1.6	
7	51	386′	393′	9.3	3K	4.0	6.5	4.0	1.7	+ 0.24% Crude
8	52	393′	400′	9.2	3K	6.0	5.0	3.3	1.4	+ 0.2 % Crude
9	53	400′	406′	8.7	3K	8.0	4.5	2.5	1.0	+ 1.0 % Crude
10	54	406′	412′	9.6	3R	4.5	6.4	3.2	1.9	
11	55	412′	419′	11.4	3K	6.7	5.1	2.8	1.4	+ 0.5 % Crude
12	56	419′	425′	6.3	3R	4.1	6.5	4.2	1.2	
13	57	425′	432′	11.8	3K	10.9	1.6	2.5	1.0	+ 0.4 % Crude
14	58	432′	439′	10.4	3R	5.9	4.9	3.8	1.4	+ 0.2 % Crude

ADIT COMPOSITE ASSAY

From	To	Dist.	%	Grade	Screen 1	Screen 2	Screen 3	Screen 4	
188′	317′	129′	7.5	3F	7.85	4.36	2.15	1.3	+ Some Crude
317′	365′	48′	3.7	3Z	0.92	7.84	4.52	2.67	
365′	439′	74′	10.2	3K	6.91	4.6	3.14	1.35	+ Some Crude
188′	439′	251′	7.6	3K	6.84	4.75	2.76	1.45	+ Some Crude

DETAIL OF TUNNEL:

The portal of the tunnel is cellared in footwall sediments at elev. 6028 ft.; direction N.53° 54′E.; total length 439 ft.; timbered throughout.

The first 137 ft. of tunnel, crosscut tightly folded and contorted thin bedded argillites with some thin bedded impure limestone. The attitude of these footwall sediments was not determined in detail, but generally they strike slightly west of north (N.15° - 20°W.) and dip from a few degrees East to 70°E.

The contact between these sediments and the serpentine is a faulted contact, as exposed in the tunnel. This contact strikes generally N. 345° or N. 15° W. and dips 47° N.E. This attitude correlates with the contact as mapped on the surface. I believe the evidence in the tunnel favours a thrust fault on this contact.

From 137 ft. - 172 ft. the tunnel exposes a dark sheared serpentine with a few narrow veinlets of asbestos. At 172 ft. there is a marked shear zone striking N. 50° W. dip 70°E. This zone extends to roughly 185 ft. and contains some chrysotile fibre. From 188 ft. to the face at 439 ft. (251 ft.) the serpentine is light to medium green in colour, is well fractured and contains numerous veinlets of chrysotile asbestos. The fibre content varies within limits, both as to quantity and length of fibre, but on the whole the fibre is uniform, and of good grade, as set out in the above tabulation of muck sampling.

The two main directions of fracturing in the ore section are:

(a) N. 15° - 20° W. dip 45° - 60° E. (i.e. paralleling the serpentine contact).

(b) N. 50° - 60° W. dip 65° E. to Vert.

Assuming the hanging wall has a strike approximately the same as the footwall, then the trend of the contact down the north face of the cirque, indicates the hanging wall is dipping around 65° N.E. With this assumption, there are still some 321 ft. between the present face of the tunnel and the hanging wall of the serpentine. Surface exposures support this assumption, and it is possible the major portion of this distance will expose fibre bearing serpentine of similar grade to that already exposed in the crosscut.

To date the muck samples have graded themselves into three zones or groups; this division is evident by visual examination along the walls of the crosscut. The first zone extends from 188 ft. to 317 ft. (129 ft.). This zone may be considered relatively high grade with an indicated average of 7.5%—3F fibre plus some crude. The next 48 ft. (317 ft. - 365 ft.) is relatively low grade, both as to length and quantity of fibre. The samples from this section averaged 3.7%—3Z. This so called low grade zone is followed by a second zone of relatively higher grade material—365 ft. to face 439 ft. (74 ft.), which averages 10.2%—3K plus some crude. The overall average from 188 ft. to the face—251 ft.— is 7.6% —3K plus some crude. This indicates a value of at least $30.00 per ton of rock, assuming $400.00 as the price of 3K fibre, with no credits for either the crude ore that can be hand picked, or the 4 and 5 grades, which were not determined.

From the exposures in the tunnel, the true width of the serpentine zone at the tunnel location is indicated as 500 ft. The indicated true width across a section by drill hole #1—350 ft. south of the tunnel—is around 430 ft. Contact zones of dark serpentine, low in asbestos fibre, are indicated, and may be of varying widths up to at least 50 ft. in the main ore bearing portion of the deposit.

TONNAGE ESTIMATES:

The tonnage estimate is made by assuming three blocks of ground only:

(1) **Block A**—The main block is a volume of material 700 ft. north-south, by 300 ft. east-west and 300 ft. in depth. The surface area 700 x 300 ft. lies along the surface of the hill on its western slope; the block dips into the hill at 56° N.E. The net tonnage allowed in this Block is 4,667,000 tons.

(2) **Block B**—Lying immediately north of the above block and adjoining it, there is a volume of rock made up of a rectangle 220 ft. x 300 ft. plus a triangle 110 ft. x 220 ft., which can be considered a minimum of 100 ft. thick, containing an estimated 625,000 tons.

(3) **Block C**—Along the hanging wall of Block A there is indicated on the surface, an additional 100 ft. of fibre bearing serpentine. To account for this material a volume of rock is assumed having a width of 100 ft. on the surface, wedging to nothing at the bottom of the main block, and extending for 500 ft. along the hanging wall. Tonnage in Block C is estimated at 600,000 tons.

The above three blocks, A, B, and C, are considered to be reasonably well assured. They cannot be considered proven ore in the strict sense, but by surface outcrops, two drill holes, and the 300 adit, I believe the above tonnage, i.e. (4,667,000 - 625,000 - 600,000) or 5,892,000 tons can be accepted with reasonable assurance. The crosscut is presently indicating a value of approx. $30.00 per ton (7.5% of 3K at $400.00 per ton).

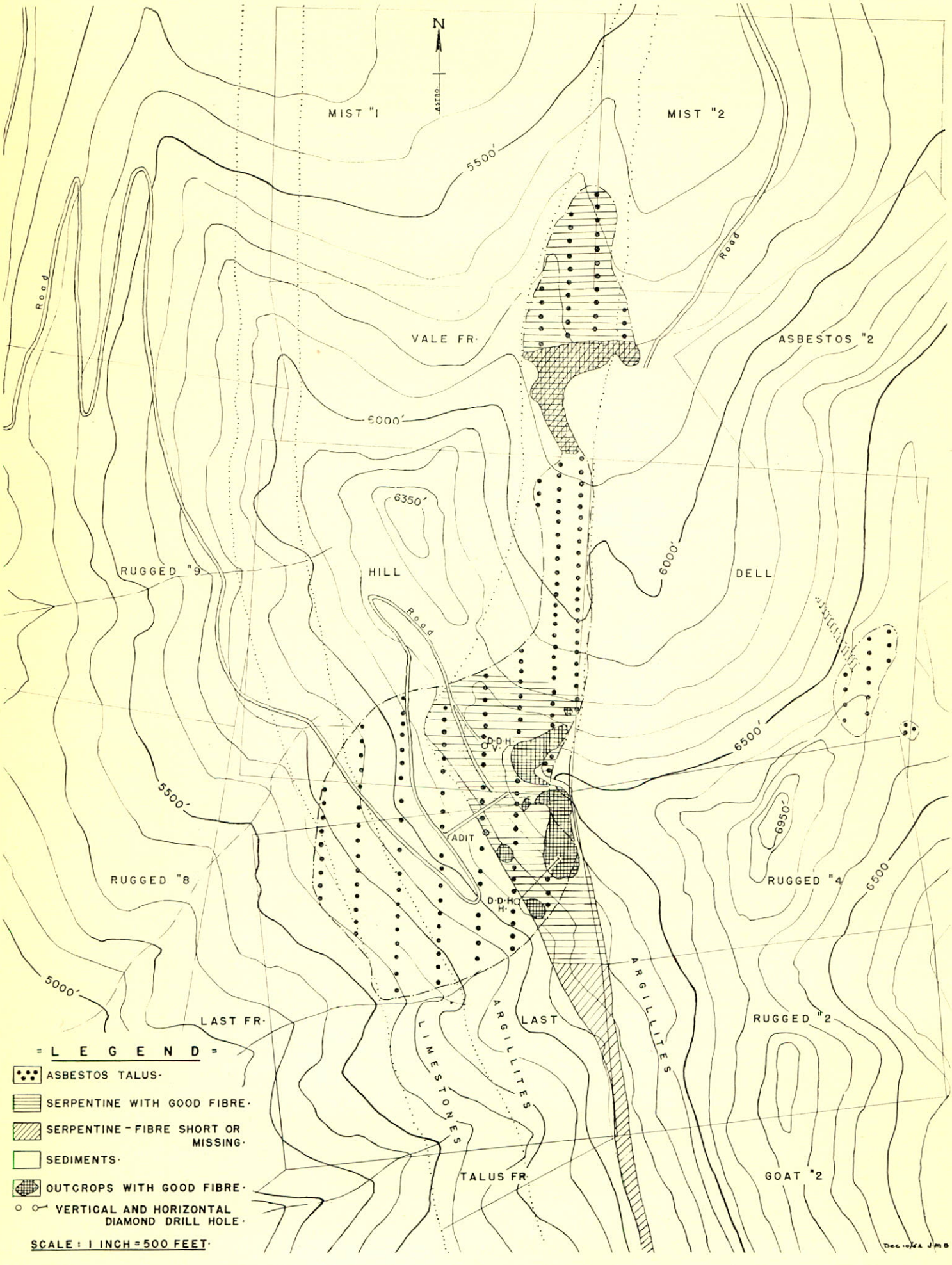
In addition to the above proven tonnage, there is a further length of 2,000 ft. of serpentine lying to the north of the developed block, which is covered with asbestos talus and throughout which asbestos bearing outcrops have been mapped. There is no reason to believe that this area will not respond to development in similar manner. It can be readily seen that the presently developed length of 700 ft. may well form only a portion of the entire orebody. Depth development below the adit level will likewise rapidly increase the total reserve figure.

SUMMARY:

In summary, I would estimate there are 5,892,000 tons of reasonably assured fibre bearing serpentine grading $30.00 per ton in spinning grade fibre in addition to which there will be a recovery of hand picked crude fibres and an amount of Group 4 and 5 fibre which has not yet been determined.

Respectfully submitted,

"WM. V. SMITHERINGALE", B.Sc., Ph.D., P.Eng.

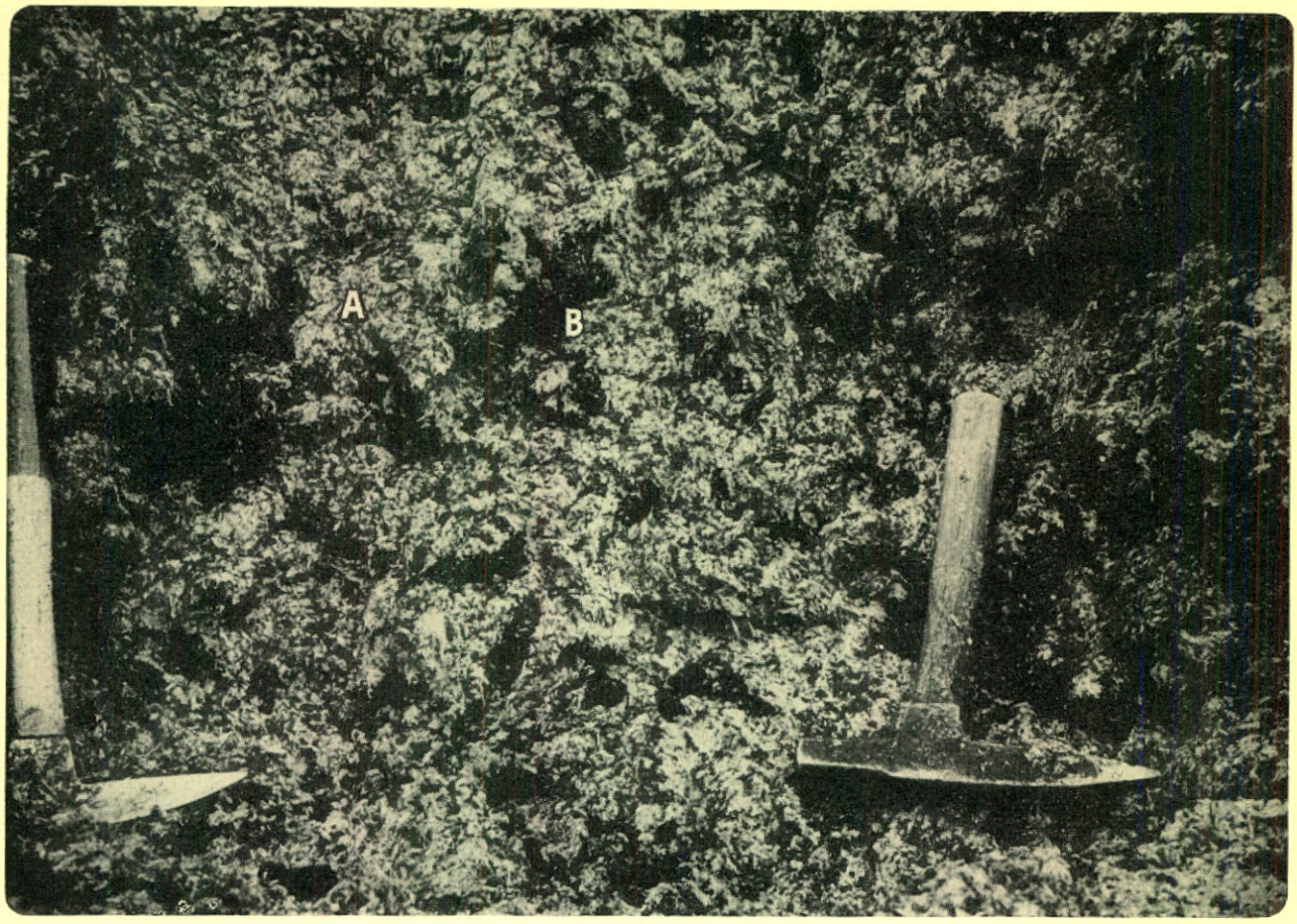

N
Astro
MIST "1
MIST "2
5500'
Road
VALE FR.
ASBESTOS "2
6000'
6350'
RUGGED "9
HILL
DELL
6500'
D.D.H.
ADIT
RUGGED "8
RUGGED "4
6950'
6500
5000'
LAST FR.
LAST
RUGGED "2
ARGILLITES
LIMESTONES
TALUS FR.
GOAT "2
= L E G E N D =
ASBESTOS TALUS.
SERPENTINE WITH GOOD FIBRE.
SERPENTINE - FIBRE SHORT OR MISSING.
SEDIMENTS.
OUTCROPS WITH GOOD FIBRE.
VERTICAL AND HORIZONTAL DIAMOND DRILL HOLE.
SCALE : 1 INCH = 500 FEET.

The following photographs taken at the company's mine, located in the McDame Lake area of the mining district of Liard in northern British Columbia, illustrate the nature of the asbestos deposit.

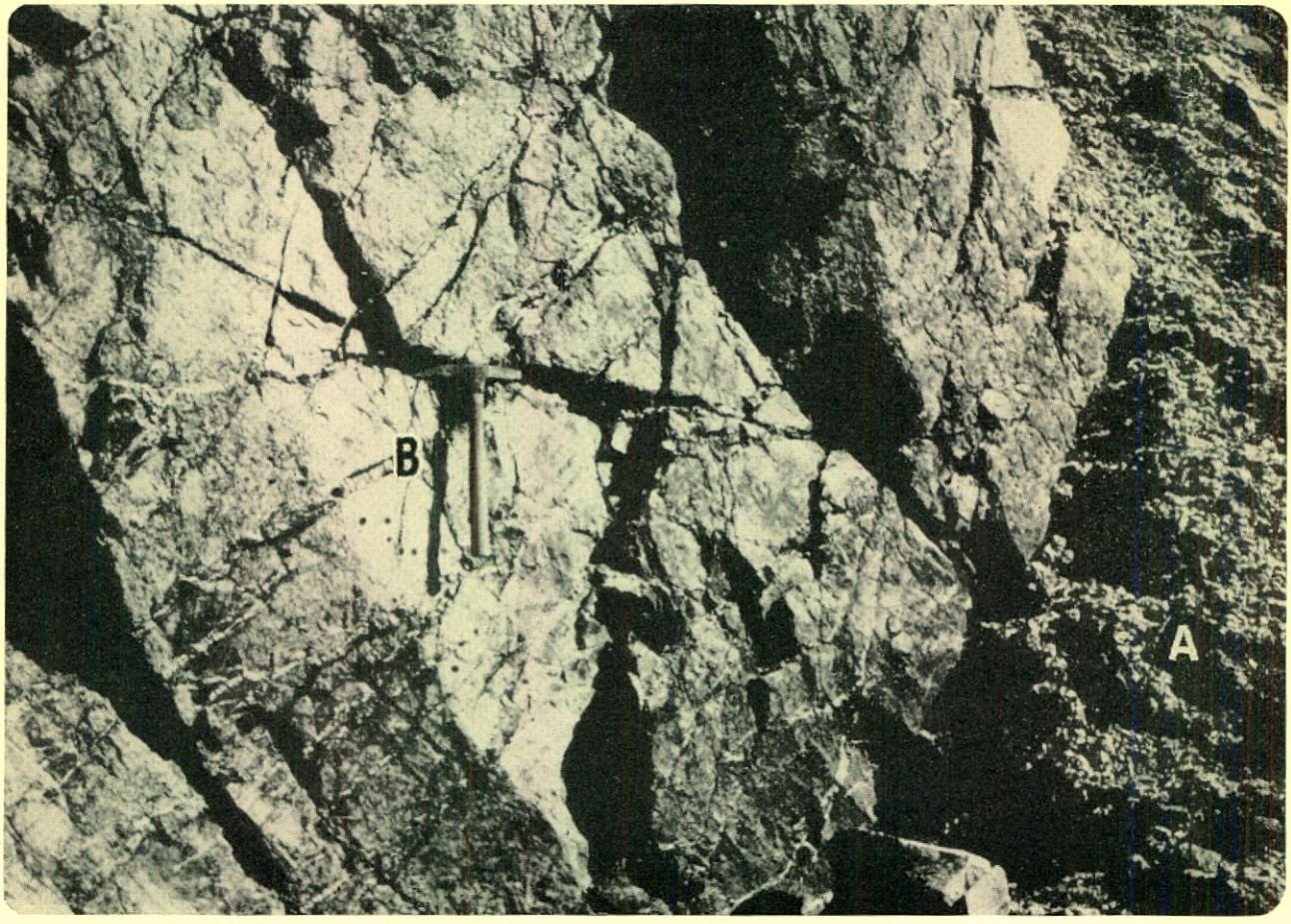
Looking east from valley floor showing asbestos talus in dotted area. Road can be seen crossing area.

Road cut through asbestos talus near top of showing, western slope of mountain.

North wall of adit approximately 225 feet from portal showing asbestos veinlets.



Detail view of asbestos talus.
A—Asbestos fibre partially opened by frost action.
B—Serpentine rock originally containing the asbestos fibre.



Outcrop of fibre-bearing serpentine about centre of deposit and vertically over adit on western slope.
A—indicates asbestos talus.
B—indictaes asbestos veinlets.

Cassiar Asbestos Corporation Limited

Report of Manager

Mr. F. M. Connell, President,
Cassiar Asbestos Corporation Limited,
1001 Federal Building,
Toronto 1, Ontario.

Dear Sir:

I submit herewith my report of operations to September 30th, 1952.

The preliminary work was confined to construction of roads, building camps and sampling of the talus ore overlying the deposit. Large samples were taken for testing purposes. On the results obtained, plans were made in January, 1952, to construct a mill to treat approximately 250 tons per day of talus ore. The general design of the mill and equipment was planned to permit expansion to a capacity of approximately 1,000 tons per day of mine ore. The plans for this initial unit were completed in April and the unit was under construction at the company's fiscal year end.

A power house has been constructed at the mill site and one 400 h.p. diesel electric power unit has been installed. Provision has been made to permit the installation of two additional units of similar size, one of which is on order and expected to be delivered early in 1953. An electrical substation equipped to distribute the power output of these units has been constructed, and transmission lines to the mill and camp site built.

MINE DEVELOPMENT

A steel chute was under construction to transport the ore from the talus deposit to a loading point near the valley floor. Additional equipment was being installed in conjunction with the chute which will be in operation in the spring of 1953.

A mining plant, including a 500 c.f.m. diesel-driven portable compressor and equipment, was installed at the mine site. Seven heavy-duty ore trucks, four tractors and a rocker shovel, together with suitable equipment, have been purchased to mine and transport the talus ore.

A crosscut adit designed to explore the serpentine formation was commenced and at the fiscal year end had been driven 188 feet, at which point asbestos ore was intersected. Dr. Smitheringale, Consulting Geologist, has reported on the results of this development.

Approximately 5,800 tons of talus ore and 190 tons of hand-picked ore for the production of crude fibre have been trucked to the mill and will be processed when the mill has been completed.

TRANSPORTATION

Your company has constructed a road from the mill site to the mine including branch roads into the cirque area and to the loading area at the bottom of the chute. With the assistance of the British Columbia Government, approximately 20 miles of road were constructed from the mill site to the Mocassin Mine road which connects with the Alaska Highway near Watson Lake, Y.T. During the summer of 1952, the B.C. Government made major improvements on the road to the highway and it is expected that this programme will be continued next year.

ACKNOWLEDGMENTS

I express my appreciation to Mr. Craigie Hood, Assistant Manager, and Mr. J. T. Ward, Office Manager, and their respective staffs, for the efficient and loyal service rendered during the period.

Respectfully submitted,

T. T. TIGERT,
Manager.

Watson Lake, Yukon Territory,
December 19th, 1952.

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