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CASSIAR ASBESTOS CORPORATION LIMITED

October 24, 1956.

Dr. W. V. Smitheringale,
Conwest Exploration Co.,
Whitehorse, Y. T.

Re: TEST WORK ON "LETAIN" GROUP SAMPLE.

Dear Bill:

Just received your letter of October 17th owing to mail delays. You will by now have received my reply to your telegram as follows: "Preliminary results on Letain by early next week will wire and follow with report regards."

As John Quigley was able to get the results of our preliminary report out in yesterday's mail to you, I did not send the telegram covering results. John's report is fairly complete but I might add the following comments:

1. As a guess, I doubt that the Letain ore exists in permafrost. Therefore, no work has been done by nature in loosening the bond between the fibre and the host rock. The result is that milling processes would follow Thetford practice more closely than Cassiar practice in obtaining a good recovery of rock free fibre.

2. Fibre is very slightly harsher than Cassiar but is strong and not materially different. Fibres in a pencil or bundle of crude are strongly bonded and in milling would require more severe opening than does Cassiar fibre.

3. The Cassiar tests on 3K and 4K are approximate and may be somewhat above average. Milling of Letain ore would result in a much higher - 200 Mesh phase than is shown in the laboratory tests. I suspect that a -200 Mesh component of 25% would represent good grade of milled fibre and would be quite acceptable to industry.

4. Cassiar prices of 3K and 4K are:

   3K - $460.00 per Ton, F.O.B. Vancouver
   4K 205.00 per Ton, F.O.B. Vancouver

On this basis the gross ore value before deducting shipping cost on fibre to Vancouver is as follows:

3K - 2.26% @ 460.00	=	$10.40
4K - 5.44% @ 205.00	=	11.16
Gross value:		$21.56

This is comparable to a 3-year average of Cassiar ore of $27.38 and to a 1956 mining season value to date of $25.56. If tonnage of reserves, accessibility, and other factors are favourable this would represent a very interesting prospect.

We have enjoyed working on this ore and only regret that we do not have a small pilot mill in the lab for more complete tests. However, I'm sure the results will serve as a guide and some useful additional information will be supplied by Monte Goudge.

Will be interested in hearing what the plans are for this prospect.

As you requested, Bill, we will send the remainder of the Caley ore to Ottawa. It should leave by Northern Freightways this coming Friday.

Best personal regards,

"A. C. BEGUIN"

Mill Superintendent.

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CASSIAR ASBESTOS CORPORATION LIMITED
LABORATORY REPORT
ON
"LETAIN" FIBRE

October 18, 1956.

Mr. A. C. Beguin.

SAMPLE RECEIVED IN LABORATORY Oct. 17, 1956.

Prior to receipt of the above sample in the laboratory, the ore was run through the 4' core Crusher and all the crushed ore recovered. Ore was then coned and quartered and a representative sample brought to the laboratory. After crushing, much of the fibre was still adhering to the serpentine rock and numerous small hard clumps had to be opened further by hand crushing methods. Fibre appears similar to Cassiar in colour and crudiness but is less readily released from the serpentine rock and requires more opening by mechanical or hand crushing methods to get the fibre to a point where it can be opened with air.

The fibre was separated from the rock by screening on the Q.S. Machine, hand crushing and further screening in the Ro-Tap Machine on +35M. In the later stages of the cleaning process Ro-Tap Fractions were air-opened because of the spicky nature of the fibre.

After cleaning by methods mentioned above the fibre sample now weighed 496.0 Gms.

From this sample of 496.0 Gms. 5 Ro-Taps were run, using the screen series - 0, 3, 6, 10, 20, 35.

Results of Ro-Taps were calculated on a Group 3 and Group 4 basis, assuming +6 Mesh material to be the Group 3 fibre (because of the spickiness of the fibre we did not use 4M in place of the 6 Mesh) and the -6M +35M Material to be the Group 4 fibre. Pan material on the above Ro-Taps was added to the initial rock content of the ore sample:

cc - Mr. J. D. Christian
Mr. N. F. Murray
Mr. T. T. Tigert
Dr. W. Smitheringale
Laboratory

RECOVERY FIGURES WERE AS FOLLOWS:

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	GROUP 3 Fibre				GROUP 4 Fibre					
	0	3	6	TOTAL	10	20	35	Total	Pan	Total Rock
					Rock from initial separation 5751.2 Gms.					
1st Rotap Portion - 100 Gms.		17.2	13.7	30.9 Gms.	27.2	27.8	11.3	66.3	2.8	2.8
2nd Rotap Portion - 100 Gms.		12.6	16.5	29.1 "	28.8	28.1	11.0	67.9	3.0	3.0
3rd Rotap Portion - 100 Gms.		11.3	17.0	28.3 "	27.7	29.4	11.6	68.7	3.0	3.0
4th Rotap Portion - 100 Gms.		8.5	19.0	27.5 "	28.2	28.9	11.6	68.7	3.8	3.8
5th Rotap Portion - 96 Gms.		5.7	19.6	25.3 "	28.4	27.7	11.6	67.7	3.0	3.0
			TOTAL	141.1 "				339.3		5751.8

Total weight of original ore sample: 6232.2 Gms.

Group 3 Recovery - $\frac{141.1 \times 100}{6232/2} = 2.26\%$

Group 4 Recovery - $\frac{339.3 \times 100}{6232.2} = 5.44\%$

Total fibre recovery 7.70%

Note: Because of the equipment and methods used in obtaining recovery figures, we feel the percentages shown are on the conservative side for the specific sample of ore brought to the laboratory.

"J. K. QUIGLEY"

Laboratory Supervisor

LETAIN GROUP 3
Laboratory Tests

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SUTER-WEBB COMBING TESTS

	Over 15/16"	15/16	13/16	11/16	9/16	7/16	5/16	3/16	1/16	Av. Lgth.	% Over 1/2"
TEST 1	-	-	0.70	1.00	6.00	8.70	18.40	15.30	49.90	.202"	7.70
TEST 2	-	-	1.20	1.20	5.40	7.40	21.90	16.50	46.40	.209"	7.80
TEST 3	-	-	0.85	0.85	6.10	11.90	25.60	15.85	38.85	.233"	7.70
*Cassiar 3K Av. Nat 29/56	0.97	1.27	1.88	1.96	3.78	9.17	12.23	20.96	47.78	.220"	9.86

BAUER-McNETT WET CLASSIFIER

	+8	-8 +14	-14 +35	-35 +200	-200	Surface area
TEST 1	65.97	8.93	7.91	5.91	11.28	2212
TEST 2	64.48	9.46	7.93	6.09	12.04	
*Cassiar 3K July 28/56	63.33	7.27	5.77	6.48	17.15	

RO-TAP 50 GMS. 1/2 HOUR

	0	3	6	10	20	35	PAN	MAPES ANALYSIS
	11.0	17.4	39.6	19.6	7.8	2.8	1.8	(Magnetic iron content) 1.8%
*Cassiar 3K 4-12 July 28/56	35.8	35.2	11.2	9.0	4.4	1.0	3.4	*Cassiar 3K Av. July/56 1.1%

* Cassiar figures inserted for comparative purposes.

"J. K. QUIGLEY"

Laboratory Supervisor.

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CASSIAR ASBESTOS CORPORATION LIMITED

November 3rd, 1956.

Dr. W. V. Smitheringale,
c/o Conwest Exploration Co. Ltd.,
P. O. Box 967,
Whitehorse, Y. T.

Dear Bill:

Just received your letter today and am dashing off to Vancouver this afternoon so will try to answer your questions before I go.

1. The 4' Cone setting is approximately 5/8" which results in 1/2" to 3/4" minimum dimension of the largest pieces.

2. The full sample of 2,200# was crushed to this size before coning and quartering. I felt that this would assure greater accuracy in sampling.

3. The sample sent to Ottawa consisted of 12 bags weighing 1,200 pound net and 1,212 pounds gross. No liners were used as original liners were in rather poor shape and we had no replacements here. The bags were sewn here as we sew our fibre bags to assure no opening in handling. Shipment was made through Northern Freightways leaving here October 12th.

4. Our method of obtaining the sample of 6,232 grams was as follows:

After crushing, coning and quartering the remainder of about 1,100 pounds was rebagged in clean Cassiar Fibre bags. I then took alternate bags (5 in number) dumped them out in an even rectangle about four inches thick on a steel plate, and with a small scoop shovel took about 55# out in an even pattern. I then dumped this out in the lab, coned and quartered to gain about one-forth of this which we used for testing. I personally feel that the sample is reasonably representative both in qualitative and quantitative respects but might say this. As the sample was prepared during a dearth of people both in the mill and Lab and as we understood you were anxious to have a preliminary report, I would be quite willing to resample thoroughly and check our results now that we are back up to strength personnel wise. If you so desire, please wire us and I shall alert the lab to be ready if you wish this done.

5. I believe that freeing of the fibre will present a problem not encountered at Cassiar. Great care will have to be used in removing fibre as soon as it is free so that free fibre will not be abused. This will mean care should be used in designing the flow and probably extra openers will be required so that stage opening can be effected. With care, I believe fibre quality can be preserved.

The fibre is really quite soft but discernibly harsher than Cassiar. I would say the fibre will qualify as a soft fibre. This aspect is somewhat difficult to assess because harshness and intense cohesion of fibrils can be sensually confused.

The quality of the opened fibre is good, but because of lack of suitable opening equipment on a small scale we found many unopened pencils of fibre in the finished fibre. In this respect, I consider adequate opener fans in the final milling stage would provide uniform opening and the final fibre should be soft. The fibre is essentially non-talcose and should spin into a high strength yarn (Canadian soft fibres from Thetford feel unctuous from talc which tends slightly to lubricate spinning fibres and lower tensile strength.)

Shorter fibres for asbestos cement grades would have excellent qualities in my opinion.

The magnetic iron content is well below the top limits (up to 2.0%) allowable in the so called "Iron-free fibres. This characteristic is limited to Cassiar, African, and one or two small United States mines' fibres.

6. Group 5 recovery at present is questionable but perhaps in plant scale practice something in the order of half of 1% might be reclaimed. Our lab is not adequately equipped to assess the short elements very accurately and the above is my opinion based on visual examination.

7. The reason for the Cassiar comparative tests shown is that we ran 3K-4K during May and August but AAA-AA-AC during June, August, September and October. All fibre produced in May has been extremely well received by industry. We have little information on July production, but assume it to be good.

As you suggest, we will send a tracer on our shipments to Ottawa. The Caley sample, shipped in UKH bags without liners and machine sewn, consisting of 67 bags, weighing 5,692 pounds gross, left here by Northern Freightways October 26th.

I will give a copy of this letter to John Quigley to keep him posted and ask him to initial it for me, as I will not be able to have it typed before my departure.

Best personal regards,

CASSIAR ASBESTOS CORPORATION LIMITED,

A. C. Beguin,
Mill Superintendent.

cc - Mr. N. F. Murray
Mr. J. K. Quigley

REPORT ON

LETAIN ASBESTOS PROSPECT

CRY LAKE AREA

-0-

October 1956

A.E. STOREY.

LETAIN ASBESTOS OPTION

Introduction:

The property is located about 100 miles east and slightly north of Telegraph Creek, B. C. The nearest topograph features are King Mountain on the Cry Lake topographic sheet, and a fairly large unnamed lake which will be referred to as 'Letain Lake' in this report. The claims are situated about 3 miles northeast of Letain Lake. The group consisted of 14 claims located in August, 1955; to this 10 other claims were located in July, 1956 as a precautionary measure only.

The general topography of the area is characterized by fairly high mountains which are separated by rather broad, flat valleys which makes for fairly easy travel. The claims are located between 5400 and 6200 feet above sea level and are about 600 to 700 feet above Letain Lake. They cover a low mountain which has a relief of about 800 to 1,000 feet (see accompanying map).

At present the only practical way of reaching the property is by air either from Watson Lake, Y.T. or Atlin, B. C., which is about 2 hours flying time. A trail does exist from Boulder Creek 12 miles away to Dease Lake; this has been used as a winter road at some time in the past to service placer workings along tributaries of the Turnagain river. The proposed Stewart road will pass within 50 miles of the property.

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A development crew was put on the property July 26, 1956 and was pulled out on September 20, 1956.

Geology:

The property is situated in a serpentine belt which is known to be more or less continuous as far north as the Cassiar Mine. The area is in the process of being mapped by the Geological Survey of Canada.

The main rock types in the property are periodotite and some dunite, both of which are almost completely altered to serpentine. A large carbonate zone exists along the northeast side of the serpentine and beyond this lies a band of schists.

Although it occurs mainly in the serpentinized peridotite, some fibre can be found in the dunite. The relative low grade of the dunite is perhaps due to the fact that it does not fracture as well as the peridotite. It is generally agreed that fracturing is a prerequisite to the formation of fibre. The fibre appears to be of an excellent quality being silky and having a high tensile strength. The overall percentage has been estimated at about 6-7%. It is thought that the fibre will make some Group 3 and a large percentage of Groups 4 and 5.

Fibre has been found in commercial quantities over a distance of about 2,200 feet. This is not continuous however, as a fairly wide band, about 500 feet, appears near the centre of the showing. This does not necessarily mean that there are two distinct ore bodies, as barren zones such as this are quite common in asbestos

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ore bodies. They can either pinch out or increase in size quite rapidly at depth. From the work done to date the ore seems to be present over a true width of approximately 300 feet and at least 300 feet in depth. The bulk of the work done to date has consisted of driving open cuts into the southwest face of the hill along which the exposure occurs. Although this work has confirmed the length, the attitude of the zone has not been conclusively established. From surface examinations it has been shown a band of gneissic rock overlies part of the mineralized zone. This gneiss dips into the hillside on the southwest side at approximately 30°. As can be seen from the accompanying cross-section little or no fibre occurs on the northeast slope except for one outcrop low down on the hillside which carries about 1.5% of short fibre not exceeding 1/8". This evidence suggests there is a definite possibility the ore zone dips into the hillside at 30 to 40°. More work, either in the form of drilling or tunnelling, will be required to prove or disprove this theory.

While examining the property copper float was observed near the north end of the claims. The copper occurs as chalcocite with magnetite in serpentine. A picked sample of float ran 2.81 Cu. Three trenches were put in to locate the copper in place. Two of these trenches were successful and a picked sample ran 4.9 cu. More chalcocite was observed farther to the south but time did not allow us to put in a trench here. The widths were 4 inches in one trench and about 2 feet in the other.

The following is a description of the open cuts put in on the property to date. It should be clearly understood that in locating

the trenches the object was to delimit the boundaries of the high grade serpentine; consequently most of the trenches were put in along presumed marginal zones. In many cases the fibre content of a trench could have been tripled easily by moving it 50 feet to visible high grade rock. This was not the object of the trenches and no attempt was made to do this.

Cut No. 1:

14' wide 21' long 30' face. The rock is highly fractured and sheared containing many slip faces. This tends to hide the fibre as the rock tends to break along these slickensided faces. The fibre length ranges from 1/8" to 1/4" and would run about 3.0 to 3.5%. Outcrops near the trench show much more fibre. Much of the loose rock and overburden contain fibre up to 1/2".

Cut No. 2:

11' wide 19' long, 21' face. This cut is in a shear or series of minor crisscrossing shear zones, the result is the fibre content appears low, about 1.4% to 2.5%. Fibre length ranges up to 1/4" and is mostly loose, having been washed out of the loose sheared rock

Cut No. 3:

16' x 30' x 40' face. This trench is in heavy, sandy overburden and the result is that only about 7' at the bottom of the 40' face shows the bedrock exposed. This face shows excellent fibre up to 3/4" and running at least 6.0%. Rock is blocky with a few minor shears.

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Cut No. 4:

14' wide x 14' long x 7' face. This cut is in heavy gravel overburden which caused frequent slides, trench was abandoned.

Cut No. 5:

11' wide x 22' long x 15' face. This cut is in highly fractured ground. A shear 3' wide cuts diagonally across the face, giving it a lower fibre content than is representative. The face however contains good fibre ranging from 1/4" to 1/2" in length and running about 5.5%. Some shorter fibre, 1/8" to 3/16", was found in the shear zone.

Cut No. 6:

11' wide x 9' long x 10' face. This trench did not show any good fibre. It was put down about 200' beyond the limit of the ore zone in an attempt to pick up an extension along the apparent strike, the results were negative.

Cut No. 7:

13' wide x 15' long x 10' face. The rock is blocky and contains good fibre ranging from 1/8" to 1/2", the average length being 1/4" or 5/16". The face would average better than 3.5%.

Cut No. 8:

12' wide x 18' long x 11' face. This trench is just about at the upper margin of the ore. The rock contains a few stringers but generally speaking it is rather barren and the cut-off of the ore

zone was established here.

Cut No. 9:

11' wide x 25' long x 15' face. The ground is blocky here. A small shear zone runs through the face lowering the value somewhat. The face however contains excellent fibre ranging from 1/8" to 3/4", the percentage runs about 5.0%.

Cut No. 10:

11' wide x 17' long x 9' face. The trench contains good fibre ranging from 1/8" to 1/2" and runs about 4.0% or more.

Cut No. 11:

10' wide x 9' long x 8' face. This trench is situated at the lower extremity of the ore zone. This trench was dug in an attempt to pick up the ore in ground where rock exposures were scarce. Although bedrock was reached it was found to be barren.

Cut No. 12:

10' wide x 8' long x 6' face. The rock exposure was not good here, only a few feet at the bottom of the face. Veins up to 5/16" were exposed but percentage was low, about 2.0%. The rock surrounding the trench however was much higher grade.

Cuts No. 16 and 17:

These were put in low on the northeast slope of the ridge, that is the side opposite to the one with the showing. The dimensions of these trenches were 11x15x8 and 9x12x7 respectively. Permafrost

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and mud caused constant slides and the trenches were abandoned.

Cut No. 18:

This was put in about 250' uphill from the last two (16, 17). This was a last attempt to reach bedrock on the northeast slope before closing down. This attempt was also unsuccessful. Dimensions of cut were 12x10x8 face.

In reading the faces of the above trenches no correction factors were used and all percentage estimates were kept at a minimum. Apart from the information desired these cuts were put in with the intention of using them as possible drill sites, therefore the faces in bedrock were scaled of any loose rock, regardless of whether or not good fibre was thrown out.

The following is a description of the trenches put in on the copper showings:

Cut No. 13:

7' x 4' x 4'. A narrow stringer about 4" wide of chalcocite was picked up. The chalcocite occurred with magnetite in serpentine.

Cut No. 14:

This cut was driven in an attempt to locate the source of copper float which littered the hillside. Dimensions were 7x8x5. Attempt was unsuccessful.

Cut No. 15:

Was driven above No. 14 and a vein about 2' wide of chalcocite

and magnetite was picked up. A picked sample ran 4.9%.

A drill hole 32' deep was put in on Trench No. 5. This hole ran over 3.0% and the fibre value was about $200.00 per ton. It should be pointed out that the longest fibre recovered was 3/8" whereas fibre up to 1/2" was seen in the sludge. In other words, the value of the rock is considerably higher than indicated by the drill hole. No further drilling was done due to mechanical breakdowns.

Remarks and Recommendations:

A representative bulk sample of 2,200 pounds was taken from the asbestos showing. This sample was shipped to Cassiar Asbestos, where it was quartered, half the sample was to be tested at Cassiar while the other half was sent to the Government laboratory in Ottawa. Final results of this test have not yet been received, however a preliminary report from Cassiar revealed that of the ore tested, 7.70% fibre was recovered. The fibre consisted of 2.26% of 3K fibre and 5.44% of 4K fibre. This report, along with the above information, would certainly indicate that the property has definite economic potentialities and more development work should be carried out.

To begin with, a proper survey should be carried out. The work to date has been done with chain and compass, consequently distances and locations are approximate, also no contours have been run. These are of prime importance in attempting to correlate structures. The accompanying maps are somewhat distorted where widths are concerned.

With regards to the type of work to be done, there are two choices, tunnelling or drilling. Although more expensive, an adit would certainly reveal more information per foot. The highly fractured and sheared nature of the rock would, however, necessitate considerable timbering and the timber is not available in the area. The property is situated about 5,500 to 6,000 feet above sea level, and no timber exists within several miles, even then it is mostly small scrub balsam which would be unsatisfactory. Drilling then would appear to be the logical choice. Although fibre recovery is a problem in asbestos drilling, it is felt that by using large core, not less than BXT, and carefully recovering the sludge, a reasonable estimate of the rock value can be made. A drilling program could be laid out this winter and much of the material could be moved in before break-up next spring.

More work could be done on the copper showings, although they give the impression that they are small and erratic. The 4.9% assay is not to be overlooked. Should further trenching reveal an interesting structure the drill could be used to advantage. At present this does not appear likely.

Radio contact should be established with either Atlin, B. C. or Watson Lake, Y. T. In a program such as the one suggested there is always an occasion where machine parts are needed on short notice. Watson Lake is particularly well suited, due to its ready communication with Whitehorse and Vancouver through C.P.

A final recommendation would be, moving the camp closer to

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the showing. The present campsite is situated at the edge of timber, over two miles from the workings. This involves almost 2 hours a day in travelling time. Moving the camp will involve oil or propane gas heating as there is no firewood beyond the present site. A list of the equipment left cached at the present camp is included with this report.

A. E. Storey.

October 1956.

Equipment cache - Letain Lake:

3	8 lb hammers
2	4 lb hammers
6	Picks
6	Shovels
6	4 ft hand drill steel
4	2 ft hand drill steel
2	Mattocks
2	4 gal cans Blazo
2	Cases of powder
2	Boxes of blasting caps
500 ft	Fuse
2	Wheelbarrows
4	Pipe wrenches
800 ft	Water hose
5	Stoves, stove pipes
1/2	Bag blacksmith coal
10	Mattresses
	Cook stove in poor shape

Kitchenware cached at Letain Lake Asbestos:

3 large pots
1 small frying pan
1 small pot
2 teapots
2 plastic basins
1 griddle
2 9" cake pans (not large enough)
1 large bowl
1 pudding dish
7 plates
1 carving knife
1 can opener
1 meat fork
1 mixing spoon
2 large frying pans
1 medium pot
2 coffee pots
2 small basins
1 roast pan
3 enamel pudding pans
4 pie pans
8 bread pans
8 cups
6 cereal bowls
1 rolling pin
1 egg beater
1 spatula