

# GM 14359

REPORT ON THE WESTERN HALF, ASBESTOS HILL PROJECT

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Énergie et Ressources  
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Québec 

REPORT ON  
THE WESTERN HALF  
OF  
EXPLORATION LICENSE #159  
NEW QUEBEC  
BY  
ASBESTOS CORPORATION LIMITED  
THETFORD MINES, QUEBEC  
OCTOBER 8, 1963

GM 14359

CONTENTS

	<u>Page</u>
INTRODUCTION . . . . .	1
SUMMARY . . . . .	1
RECOMMENDATIONS . . . . .	2
LOCATION . . . . .	2
FIELD METHOD . . . . .	2
GEOLOGY . . . . .	3
ROCK TYPES . . . . .	4
Ultrabasic Rocks . . . . .	4
Gneisses, Schists and Slates . . . . .	4
Quartzite and Dolomite . . . . .	5
Meta-Volcanics . . . . .	5
ECONOMICS . . . . .	5
(1) Main Asbestos Showing . . . . .	6
(2) Asbestos Showing East of West Branch of Deception River . . . . .	6
(3) Asbestos Showing One Mile East of West Boundary . . . . .	7
CONCLUSION . . . . .	7

ENCLOSURES:

Geology of Western Portion, Lic. #159.

- (1) Main Asbestos Showing.
- (2) Asbestos Showing East of West Branch of Deception River.
- (3) Asbestos Showing One Mile East of West Boundary

REPORT ON  
THE WESTERN HALF  
OF  
EXPLORATION LICENSE #159  
NEW QUEBEC

INTRODUCTION

The western half, of Mineral Exploration License #159, was further prospected and mapped during the summer of 1963. This work was undertaken in compliance with work recommended by Dr. E. G. Robinson in his Geological Report, License Area #159, New Quebec, 1962.

The purpose of this work was to prospect in detail the ultrabasic rocks in the area for possible occurrences of chrysotile asbestos and also to investigate the economic potential of the already known occurrences.

SUMMARY

The area prospected is underlain by metamorphosed volcanic and sedimentary rocks intruded by a sill complex of meta-gabbro and ultrabasic rocks. The sill complex is overlain by the metamorphosed volcanics and overlies, for the most part, the metamorphosed sediments. These rocks form part of a major regional syncline that trends east - west.

The serpentized components of the ultrabasic rocks are generally well exposed either in outcrop or as frost heaved rubble.

Chrysotile asbestos is found in relatively narrow bands of serpentized rock which resist weathering and is adjacent to pyroxenite.

Three chrysotile asbestos showings located in the southern part of the area are considered to have no present economic potential.

2a.

73°50'

Mineral Exploration License #145

Mineral Exploration License #159



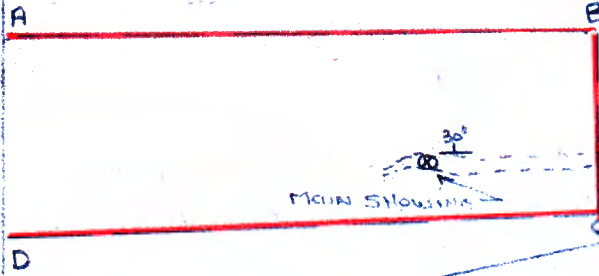
WEST BRANCH DECEPTIONS RIVER

A 61°48'28" N  
73°50' W

B 61°48'28" N  
73°44'30" W

C 61°47'26" N  
73°44'30" W

D 61°47'26" N  
73°50' W



SKETCH MAP

Showing Area Recommended Retained

Scale 1" = 1 mile

--- Ultrabasic Rocks

### RECOMMENDATIONS

If the costs are not excessive, an area containing the main asbestos showing should be retained. This area as outlined on the accompanying map covers three square miles and ties onto the east boundary of License Area #159. Retaining this ground would ensure future ownership, as far as competition is concerned, as well as having a possible economic potential at a later date.

The remainder of the area need not be retained.

### LOCATION

The area prospected consists of approximately forty square miles lying immediately east of the area covered by Mineral Exploration License #145. The centre of the area is some eight miles east of Asbestos Hill. It is defined by latitudes  $61^{\circ}53'30''$  and  $61^{\circ}46'50''$  and longitudes  $73^{\circ}50'$  and  $73^{\circ}37'$ .

### FIELD METHOD

Field work was conducted by a geologist, A. W. Dean, and an assistant, D. Croteau, serviced weekly from Asbestos Hill by a Bell G-2 Helicopter.

Mapping was done by the pace and compass method using air photos and a topographic base map (1" = 1300') as control. Rivers and streams proved especially useful for "tie-in" points.

A preliminary geological map by L. Gélinas<sup>1</sup> was used to out-

<sup>1</sup> Preliminary Geological Map #14141 (1" = 1 mile), by L. Gélinas of the Quebec Department of Natural Resources.

line areas of ultrabasic rocks for detailed prospecting. Detailed work was carried out along the strike of the ultrabasic rocks, together with traverses across the strike, at approximately every three hundred feet. The frost heaved rubble is considered to be practically in place and was noted in mapping between areas of definite outcrop.

Any asbestos occurrences were mapped employing a base line for control.

In the extreme west a Magcrometer was used to a limited extent to trace the continuation of ultrabasic rocks where obscured by overburden. No positive results were obtained.

#### GEOLOGY

The area is underlain by metamorphosed volcanic and sedimentary rocks intruded by a sill-complex of meta-gabbro and ultrabasic rocks. These rocks are Precambrian in age and form parts of two synclinal basins that overlie basement gneissic rocks. The major and more obvious syncline strikes east and is open at both ends within the mapped area. The western portion is narrow and appears to be overturned to the south whereas to the east, the syncline is relatively wide and has not been overturned. A second, poorly defined syncline, lies to the northwest.

The ultrabasic and meta-gabbro sill-complex has been intruded at or near the base of the meta-basaltic rocks which constitute the core of the synclines.

Metamorphosed sediments are the lowest of the basin rocks and overlie quartz-feldspar gneisses.

An east-west longitudinal fault of great extent (Gélinas) runs parallel to the southern boundary of the concession.

## ROCK TYPES

### ULTRABASIC ROCKS

The ultrabasic rocks consist mainly of serpentized dunites, pyroxenites and serpentized pyroxenite. They are generally well exposed, apart from the extreme southwestern part of the area. They constitute the lower member of the sill-complex.

Serpentized dunite is aphanitic, light green to dark green and generally weathers to a yellow brown and is frequently broken down to disc-like chips. Where occurring in great widths, as along the north limb of the major syncline, random veins and dykes of fresh dark pyroxenite are found. Small veins of picrolite, carbonate and magnetite are common.

Serpentized pyroxenite is aphanitic, dark green and weathers brownish red. It is found near, within, or adjacent to massive pyroxenite. It is recognized by many cleavage flashes of remnant pyroxene.

Serpentized peridotite is thought to be the host rock of a minor asbestos showing on the north limb of the major syncline. The rock is aphanitic, dark green and contains what appears to be a few remnant pyroxene.

Pyroxenite is generally blocky with serpentized pyroxenite bands from one inch to two feet wide, running parallel to the walls of the sill. The main constituent of the rock is probably enstatite.

Talc and talc carbonate rocks occur as small masses within the serpentized rocks where an apparent shear or fault exists. It is generally grey in colour and very schistose.

### GNEISSES, SCHISTS AND SLATES

Quartz-feldspar gneisses form the basement rocks and are exposed mainly along the north boundary. They are granular with a distinct parting due to foliation and dip slightly to the south.

Slates and graphitic schists outcrop along the south boundary in close proximity and beneath ultrabasic rocks. The slates are dark with intense local folding. The graphitic schists appear within the slates.



Biotite-muscovite schists exist in the north immediately overlying the gneissic basement. They generally strike east-west and dip slightly to the south.

#### QUARTZITE AND DOLOMITE

Quartzite occurs in places as lenses within the biotite-muscovite schists.

Dolomite forms lenses within the chlorite schists and most of them are several hundred feet long. The rock is crystalline, weathers brown and often contains random quartz stringers.

#### META-VOLCANICS

Chlorite schists are schistose volcanics found mainly along the south boundary striking east-west and dipping to the north. Secondary quartz veins running parallel to the direction of schistosity are common.

Dark meta-basalts form the core of the synclinal basins. They are slightly schistose, dark green, fine grained and generally massive. They consist mainly of chlorite and actinolite.

Grey meta-basalt is closely associated with and a part of the meta-basalts. It is extremely hard, massive and consists mainly of light coloured feldspar and whitish secondary clinozoisite.

Amphibolites occur in the north part of the area. They are fine to coarse grained and consist mainly of green hornblende.

Meta-gabbro is the top member of the intrusive sill-complex and is chemically and physically similar to the meta-basalts. It is distinguishable only by grain size.

Pegmatitic meta-gabbro occurs within the meta-gabbro unit. It is very coarse grained, some hornblende crystals being five inches or more long.

#### ECONOMICS

Asbestos fibre is the only mineral of economic interest in the area. Three showings occur in the area and were examined in detail. Only one is significant, and was previously drilled by Murray Mining Corporation Ltd. in 1960. Sketch maps of the showings accompany this report.

### MAIN ASBESTOS SHOWING

This showing, previously known as the Deception River Showing, is located on the south limb of the major syncline, three quarters of a mile west of the west branch of the Deception River. It consists of an asbestos zone of sub-ore grade in serpentized dunite that outcrops intermittently along an east-west strike for one thousand feet. On surface, the zone is from twenty to fifty feet wide and dips 30° to the north. Surface fibre readings indicated values less than \$10.00 per ton over short widths. A north-south cross fold is evident at its west end.

Two diamond drill holes<sup>2</sup> drilled south at 45° and some three hundred fifty feet apart encountered fibre bearing rock with an average width of one hundred forty feet. Laboratory results indicated an average rock value of \$4.40 per ton, with an average fibre value of \$160.00 per ton. The best intersection was \$7.70 over a core length of forty feet.

Rubble with trace fibre occurs in places along strike for twelve hundred feet west of the main showing. Serpentized ultrabasic rocks between this point and the west boundary do not outcrop on surface. A Magrometer was used to trace the continuation of ultrabasic rocks, but no positive results were obtained.

### ASBESTOS SHOWING EAST OF WEST BRANCH OF DECEPTION RIVER

This showing was previously known and consists of two separate outcrops of serpentized dunite, with minor amounts of cross fibre some three hundred feet apart. The serpentized dunite strikes east and dips

<sup>2</sup>Drilling on Deception River Showing, by E. Neczkar of Murray Mining Corporation Limited, November 1st, 1960.


60° to 70° north. Calculated surface readings of the best fibrous zones observed were: \$4.50 over eight feet, \$2.30 over seven feet and \$8.00 over four feet.

ASBESTOS SHOWING ONE MILE EAST OF WEST BOUNDARY

This showing is new and is located on the north limb of the major syncline. It consists of minor amounts of cross fibre found in a few places in serpentinized pyroxenite or peridotite that can be traced over a strike length of twelve hundred feet. The serpentinized rocks strike east and appear to dip 60° north. The best surface reading gave \$1.55 over four feet.

CONCLUSION

Three chrysotile asbestos showings occur in the western half of License Area #159. All are considered to have no present economic potential.

  
A. W. DEAN, GEOLOGIST

October 8th, 1963

COPIE

Dr Grenier

N.T.S. 35-H

Quebec, April 29, 1964

Mr. I.C. Campbell,  
Secretary-Treasurer,  
Hudson Strait Asbestos Limited,  
P.O. Box 9,  
Thetford Mines,  
P. Q. -

Mineral Exploration License No. 159

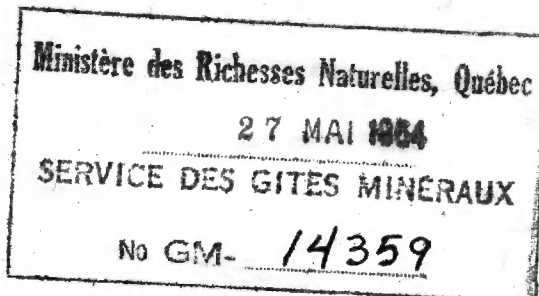
Dear Sir:-

This is to acknowledge receipt of your letter of April the 27th addressed to the Minister to which you attached, in accordance with paragraph 5 of the license, a geological report, drawings, and a statement of the amounts spent in carrying out work.

Yours very truly

B.T. Denis  
Associate Deputy Minister

BTD/jr



# HUDSON STRAIT ASBESTOS LIMITED

P.O. Box 9,  
Thetford Mines, P.Q.,  
27th April 1964

The Honourable Minister of Natural Resources,  
Parliament Buildings,  
QUEBEC, P.Q.

Re: MINERAL EXPLORATION LICENSE No. 159

Dear Sir:

We are writing pursuant to the terms and conditions of Mineral Exploration License No. 159, and in particular the provisions of paragraph 5 thereof.

Under agreement dated March 10th, 1964 between this Company, Asbestos Corporation Limited, Murray Mining Corporation Limited (N.P.L.) and Keewa Quebec Mines Limited (N.P.L.), Hudson Strait Asbestos Limited acquired the assets of Murray Mining Corporation Limited and Keewa Quebec Mines Limited, and in particular their rights under the said Mineral Exploration License No. 159.

Accordingly we are enclosing for filing in accordance with the terms of the said Mineral Exploration License, the following documents:

- (a) Geological Report on the western half of the lands covered by the said license, dated October 8, 1963;
- (b) Drawings relating to the work performed during the calendar year 1963, as per the attached list;
- (c) A statement of the amount spent in carrying out work on the said property during the calendar year 1963, as certified by this Company's Auditors, Messrs. Price Waterhouse & Co.

*Filed in  
Technical  
Division*

In addition, we have already filed with your Department copies of Canadian Bechtel Limited Feasibility Report and Cost Estimates, as per our letter of October 8th, 1963 which was duly acknowledged by the Deputy Minister on October 10th, 1963.

Yours very truly,  
HUDSON STRAIT ASBESTOS LIMITED

*I.C. Campbell*  
Secretary-Treasurer

ICC:rcd Ministère des Richesses Naturelles, Québec  
encs.

27 MAI 1964
SERVICE DES GITES MINÉRAUX
No GM- 14359

✓

ASBESTOS HILL PROJECT  
 LIST OF DRAWINGS RELATING TO WORK PERFORMED  
 ON  
MINERAL EXPLORATION LICENSE # 159 IN 1963

<u>DRAWING NO.</u>	<u>TITLE</u>
10-2-3	Pumping Station
10-2-4	Sewage Treatment Plant
10-5-24	Permafrost Dam - Sections
10-10-11	Water Intake & Raw Water Pumping Station
10-10-32	General Layout of Sewage Treatment
10-10-40	Plant Area, Townsite & Road to Damsite
10-10-41	Plant Area & Townsite (1" = 200')
10-10-50	Plant Area - Grading Plan
20-1-3	General Arr'gt. of Prim. & Sec. Crush. Bldg.
20-14-1	Primary & Secondary Crushing Flow Sheet
30-1-40	Mod. Prod. Plant - 2nd Floor & Mezzanine
30-1-41	Mod. Prod. Plant - 1st Floor
30-2-2	North Elevation on Line (N) H. & E.
30-2-3	East Elevation on Line (I)
30-2-4	South Elevation on Line (A)
30-2-5	West Elevation on Line (25)
30-8-2	Main One Line Diagram
31-1-6	General Layout for Dryer & Tertiary Crusher
31-1-100	Prim. Sec. & Tert. Crush. & Dryer Flow Sheet
31-8-2	550 V. Power Distrib. One Line Diagram
32-1-21	General Layout 1st Floor Plan
32-1-22	General Layout 2nd Floor Plan
32-1-23	General Layout 3rd Floor Plan
32-1-24	General Layout 4th Floor Plan
32-1-25	General Layout 5th Floor Plan
32-1-26	General Layout 6th Floor Plan
32-1-27	General Layout 7th Floor Plan
32-1-28	General Layout 8th, 9th & Mezzanine
32-1-29	General Layout 10th floor plan
32-1-30	Typical Longitudinal Section of Mill
32-1-100	Mill Flow Sheet
32-8-11	One Line Diagram 550 V. Floors 1 to 4
32-8-12	One Line Diagram 550 V. Floors 5 & 6
32-8-13	One Line Diagram 550 V. Floors 7 to 10
32-8-14	One Line Diagram 550 V. Floors 8 & 9

<u>DRAWING NO.</u>	<u>TITLE</u>
32-12-1	Belt Conveyors - Data Chart
33-1-12	Layout of Shops & Garage "L"
33-1-13	Floor Plan of Mezzanine - Part over Shop Store
33-8-2	One Line Diagram 550 Volts Power Distribution
35-1-6	Office Layout - Plan
35-1-21	Main Change & Lunch Room Area
40-1-16	Revised Dry Rock Storage
50-11-1	Power Plant Equipment Arr'gt. (1 of 4)
50-11-2	Power Plant Equipment Arr'gt. (2 of 4)
50-11-3	Power Plant Equipment Arr'gt. (3 of 4)
50-11-4	Power Plant Equipment Arr'gt. (4 of 4)
60-1-3	Town Plan
61-16-1	Floor Plan (Service Center)
62-16-I	Floor & Foundations Plan (Hospital)
63-16-1	Floor Plans (Cafeteria & Laundry)
64-16-1	School & Auditorium Floor Plans
64-16-10	Comm. Center. Floor Plans
65-16-1	Apt. Bldg. Type A Floor Plans
65-16-10	Apt. Bldg. Type B Floor Plans
66-16-1	Staff House Floor & Foundation Plan
66-16-10	Men's Res. Floor & Foundation Plans
66-16-20	Women's Res. Floor & Foundation Plan
74-4-1	Plate Girder Bridge - Murray River
80-1-5	Cell Type Dock
80-1-6	Dock Location
80-1-31	Deception Bay Harbour & Wharf Facilities

/rcd