

State Department of Geology and Mineral Industries

STATE DEPARTMENT OF GEOLOGY  
& MINERAL INDS.

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Portland 5, Oregon

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BSM

Chrysotile Asbestos Occurrence on Big Butte Creek

Greenhorn District  
Grant County

Foreword: There are several bodies of serpentine and metagabbroid rock in the country flanking Dixie Butte to the west and northwest. A deposit of chrysotile asbestos occurs in one of the bodies. Whether chrysotile is also present in other of the serpentine bodies elsewhere in the Dixie Butte area, is not known. The occurrence under discussion is situated on Big Butte Creek.

Location: Dixie Butte is a 7400 foot peak located about six miles west from the town of Bates and 4 miles south of the Middle Fork of the John Day River. One of the major headwater forks of Big Butte Creek drains in a northwest direction from this Butte. Otherwise Big Butte Creek heads from the range in an area about 2 miles west of Dixie Butte. Below the principle forks of its headwater creeks, Big Butte Creek flows in a northeasterly direction for a mile and then swings to follow a northerly course to the river. The chrysotile occurrence is situated on the west side of the creek on the forks area and between the creek and an old logging road which diagonals up the hillside a distance of two or three hundred feet vertically above the creek. The occurrence is immediately adjacent to the road and hence occurs high on the hillside relative to the creek. By legal subdivision the location is T.11 S., R.34 E., section 17 and 18. Access is by a series of old logging roads which follow up Big Butte Creek from the river.

The upper branches of these roads are at present in poor condition, being gullied and rocky in spots and locally steep.

Geology:

Dixie Butte falls within the mapped area covered by the geologic map in this Department's Bulletin No. 39, and the margin of this geologic coverage extends northwestward from the Butte though the general area in which this chrysotile occurrence is situated. Otherwise the area is geologically un-mapped and no detailed geologic setting can be offered here beyond noting that a serpentine-metagabbroid complex and schist exist as the prevailing country rock in the immediate neighborhood of the chrysotile occurrence.

The chrysotile bearing zone extends for an estimated three or four hundred feet in length in a course diagonalizing slightly down an otherwise steep hillside. This terrain is wooded with young second growth trees and scrub brush but the soil mantle is relatively thin and locally absent. Natural outcrops of bedrock are fairly abundant though small in size. No reliable estimate could be made relative to the possible width of the zone however because of float fragments of chrysotile bearing rock together with a lack of bedrock exposures along the downhill side of the occurrence. Under the limitations of exposure the occurrence can therefore be described only as a narrow belt of but a few tens of feet in width.

The chrysotile stringers appear to be quite strong and persistent in their individual extents. Widths of  $1/4$  to  $3/8$  and sometimes  $1/2$  inch appear to be the prevailing widths, but these are in most cases split stringers. Individual fiber lengths appear to run between  $1/8$  and  $1/4$  inches and rarely exceed the latter figure, although an extreme of one half inch was noted in one place. The chrysotile

fiberizes nicely. These stringers are repeated in close intervals. Grades of 10 and more percent asbestos to rock are indicated by some of the chrysotile-bearing exposures, but under the existant conditions of exposure this observation cannot be offered as having more than casual significance. It can also be stated that exposures of barren serpentine exist on each end of the chrysotile belt to the extent that the bounds of this particular deposit appear to be clearly defined in this direction within the limits of the estimated length. This serves to rate the occurrence as small from a potential tonnage standpoint unless the currently un-estimatable width factor should prove to be much greater than anticipated. On the other hand the writer's examination was confined solely to the occurrence under discussion and to the immediate environs thereof, nor had the claim owners conducted any systematic investigation of the serpentine-metagabbroid body at large. The question of whether additional reserves in the form of other chrysotile deposits may be present elsewhere in this particular serpentine-metagabbroid body cannot therefore be either ruled out or offered as a possibility at this time. The same is to be said regarding the other serpentine-metagabbroid occurrences in the area.

General: (Area and ownership) This occurrence is held by five unpatented claims known as the Asbestos Group. These claims were taken during 1950 in the names of Mr. and Mrs. T. Gail DeWitt and Ray and Walt Stithem, all of Bates, Oregon, and Mr. Gerald Stithem 210 13th Street, Auburn, Washington.

(Economics) To be of economic value this occurrence will have to

prove out to be of exceptionally high grade or else considerably larger in size than is presently indicated. Otherwise additional nearby occurrences of mineable asbestos must be discovered in order to justify the installation of any large mill. The occurrence does, however, show interesting indications of strength and grade to the extent of warranting some prospecting both on the occurrence itself and elsewhere within the bounds of the serpentine-metagabbro area at large.

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Report by: N.S. Wagner, Jan.8, 1951.  
Date of exam: September 6, 1950  
Informants: T. Gail Dewitt and Ray Stithem

Appendix: In November, or after the above examination was made, a limited amount of dozing was done on this prospect by the Asbestos Corporation of Canada. The owners report to the writer that the results of this dozing were considered as disappointing, but that the company has expressed their intention of doing more prospect work in the coming spring.

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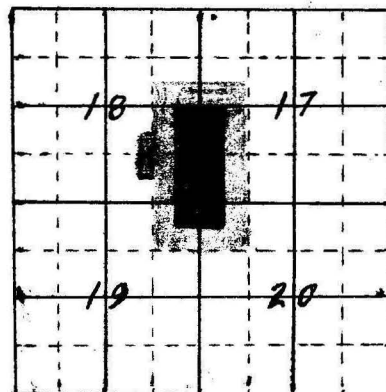
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Greenhorn Area  
Grant County  
T. 11 S., R. 34 E  
Sections 17, 18, 19, & 20

Supplemental Report #1 to original by N. S. Wagner, January 8, 1951

General: Following the issuance of the original report referred to, above, and in the late fall of 1950, the Asbestos Corporation of Canada made several dozer cuts on this occurrence for a total length of around 1000 feet. These served to extend the zone of mineralization beyond the limits described in the original report. However, the new stringer occurrences came in clusters separated by intervals of barren serpentine and peridotite with no increase in stringer width or grade and the option on the claims was allowed to lapse.

On December 20, 1951 ten additional claims were staked by Ray and Walt Stithem and Gail and Peacha DeWitt, Bates, Oregon, and were recorded as the Asbestos Group numbers 2 and 3. According to Ray Stithem these claims surround the original claims on all sides in the manner indicated on the following diagram:



The expanded group was leased to the Johns-Manville Sales Corporation, Delaware, N. J. and then examined by the Canadian Johns-Manville Company, Ltd., Exploration Division, 970 Sunlife Building, Montreal, Canada. The examination was conducted during the summer

and fall of 1952 and 1953 and included detailed geologic mapping, a magnetometer survey, six additional dozer trenches totalling 13-1400 feet and four diamond core holes totalling approximately 1000 feet. Geologist in charge of field work was J. C. Gill.

Data revealed by this work indicated a fiber zone about 400 feet wide by 1300 feet long, trending N. 45 E. situated entirely on the hillside west of the creek at an elevation of around 4400 feet. The hillside slope is approximately 25°. The country rock is serpentized peridotite with occasional inclusions of argillite and quartzite. Indications are that the serpentine continues on westward but the distance not known as the higher portions of the ridge are capped by Tertiary volcanics.

Within the fiber zone the fiber occurs in disconnected patches separated by barren country rock. Fiber width rarely exceeds 1/4 inch and is usually 1/8 inch or less. The fiber is semi-harsh and is often broken.

According to Gill the magnetometer survey served to delineate the fiberized zone in the serpentine and the volcanic-pre-Tertiary contact quite well. The core drilling results conformed to surface observations concerning fiber distribution in that it indicated the fiber at depth to occur in narrow patches separated by fairly large areas of barren serpentine.

As a result of this examination the property was turned back to the claim owners by the Johns-Manville Company.

Report by: N. S. Wagner  
March 1955  
Informant: J. C. Gill  
Released: December 1962

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Supplemental Report #2

General: Since the discontinuance of the exploration work described in Supplemental Report #1 ( March 1955) this prospect has been examined by representatives of several companies. To the best of the writer's knowledge however no additional trenching or drilling has been undertaken.

N. S. Wagner  
December 1962