

State Department of Geology and Mineral Industries

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Rock Creek Butte Chrysotile Occurrence (asbestos)

Upper Burnt River Dist.
Baker, County

Foreword: There are several bodies of serpentine on the headwaters of Rock Creek which drains from the east flank of Rock Creek Butte. One of these contains veinlets of chrysotile asbestos in sufficient abundance to command interest. It constitutes the subject of the following paragraphs.

Location: Rock Creek Butte is situated in T. 13 S.; R. 38 E.; section 22. Rock Creek headwaters to the northeast of the butte and the serpentine occurrences are situated in the northeast quarter of the section insofar as can be determined with the information at hand. Elevation of the occurrence is just under 5000 feet. Present access is via several miles of ranch road from the Murray ranch near Unity. This follows in part the course of one of the early Oregon stage trails, but reasonably fair terrain exists for the location of a much shorter access road from either Hereford or Ironside.

Geology: Several small bodies of serpentine are exposed in the headwater section of Rock Creek. They are exposed in contact with a schist and a series of rhyolitic lavas and breccias. The schist is mapped by Lowry ⁽¹⁾ as the Mine Ridge Schist. It is composed of amphibole, mica and garnetiferous schists together with some quartzites. The age is considered to be Pre-carboniferous. The rhyolitic lavas and breccias are correlated with the Dooley Mountain series, but are considered by Lowry to be of Eocene age rather than Miocene as assigned by Gilluly for the type Dooley Mountain area. Lowry's only comment on the Rock

Creek serpentine masses is that "the rock is badly serpentinized and—and not necessarily akin to that found several miles to the southwest." The latter variety is part of an ultramafic intrusive composed of amphibolites, pyroxenites, peridotites and metagabbros. It is tentatively assigned a Triassic age in conformity with the classification of a formation of similar character in central Oregon although Lowry cites certain evidence which indicates that the intrusion of his ultramafics may have occurred in Pre-carboniferous time.

Regardless of what the age classification of the Rock Creek serpentine is, the fact remains that one of the exposed bodies contains stringers of chrysotile in locally noteworthy concentrations. This particular occurrence is an estimated 400 feet in length by 100 feet in width. It is exposed on the hillside which constitutes the southern flank of the creek. The longest dimension of the outcrop parallels the creek which itself marks the boundary of one side of the exposure. Soil and rubble covering is of negligible thickness, but is of sufficient proportions to obscure large areas of bedrock surface from view. Unobscured natural exposures of bedrock do occur however. These are very small in size and they tend to be situated almost predominately on the upstream, or west end of the serpentine body.

From such exposures as there are (including two prospect trenches) it is apparent that this chrysotile bearing serpentine differs from the other local bodies of serpentine in that it contains an abundance of a hard, fresh appearing, dark green colored rock. This is probably a peridotite, or is at least more nearly related to peridotite than to serpentine. It is in this peridotite that the chrysotile is developed, and nowhere was any chrysotile seen in the highly developed serpentine of a soft, somewhat friable and waxy appearing nature such as typifies the other serpentine occurrences in the immediate vicinity.

This asbestos fiberizes nicely and appears to be of good grade. Fiber length

ranges from very fine to one quarter inch. While stringers one half inch thick are present, these were, in all observed instances, made up of multiple occurrences of shorter fiber veinlets. Two and three sixteenth inch lengths appear in substantial frequency but no instance of single fiber length in excess of one quarter inch was observed. Some of these stringers appear strong and persist in unbroken continuity for observed distances of 4 and 5 feet. These tend to be roughly parallel and appear accordingly to be developed along dominant shear trends within the host rock. Other stringers exist, however, and these tend to cut the host rock in many directions. Locally these stringers occur in concentrations amounting to 10 percent or more of the rock, although lower grade and wholly barren areas are also in evidence. Whether or not chrysotile stringers occur in like manner throughout the entire width and breadth of the host rock is something that cannot be surmised with the evidence at hand. It is likewise unwarranted to venture any estimate of the average percent in which chrysotile occurs in the existent showings. More comprehensive statements can be made only after prevailing conditions have been revealed more fully by prospect development work.

In short, about all that can be justly said at this time is that (1) the asbestos appears to be of good quality, (2) the prevalent fiber length is shorter than is altogether desirable, but is nevertheless within the bounds of economic importance, (3) the chief apparent short-coming of the occurrence is its limited size as defined by the bounds of the host rock outcrop. In other words, even if this body of host rock was demonstrated to carry as much as a five percent chrysotile content throughout its entire

area of exposure, it would in itself be of doubtful commercial value under present conditions due to the relatively small potential tonnage available and to the attendant unfavorable working conditions.

General: (Area and ownership) This occurrence is held by four unpatented lode claims known as the Asbestos No. 1, 2, 3, and 4. These were taken in July, 1950, in the name of Carroll Locey, Kenneth Grabner and Floyd White, all of Ironside, Malheur County, Oregon.

(Economics) To be of value this occurrence will have to prove out to be of exceptionally high percentage grade, or else one or more occurrences of comparable size and grade must be found to occur nearby. In this latter respect no asbestos showings of consequence are to be seen in any of the closely associated serpentine occurrences. There is, however, a reported occurrence on the west side of the Rock Creek Butte, but to date this report rates as an unsubstantiated quantity.

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Report by: N. S. Wagner
Date of exam: July 2, & 14, 1950
Date of report: July 26, 1950
Informant: Mr. Floyd White
References: The Geology of the Northeast Quarter of the Ironside Quadrangle, Unpublished report by W. D. Lowry, 1943.