



# DEPARTMENT OF THE INTERIOR

## INFORMATION SERVICE

### GEOLOGICAL SURVEY

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#### GRAPHITE DEPOSITS IN SISKIYOU COUNTY, CALIFORNIA

Results of an examination of graphite deposits of the Black Jack claims in Siskiyou County, Calif., have now been placed in open file where they may be examined by interested persons, William E. Wrather, Director of the Geological Survey reported to Secretary of the Interior Harold L. Ickes today.

The most promising ore body found was traced for 600 to 700 feet. It is five feet thick and assayed 29.45 per cent graphite. The graphite on the claims occurs mostly in thin stringers, and adjacent narrow zones of disseminated graphite in a pyroxenite facies of peridotite, near contacts with intrusions of dunite.

The investigation of the claims was by Garn A. Rynearson in 1942 as a part of the wartime search for domestic graphite sources. The memorandum report on the investigation may be seen either at the offices of the Geological Survey, Federal Works Building, Washington, D. C., or in the office of the State Geologist, California Department of Natural Resources, Ferry Building, San Francisco, Calif.

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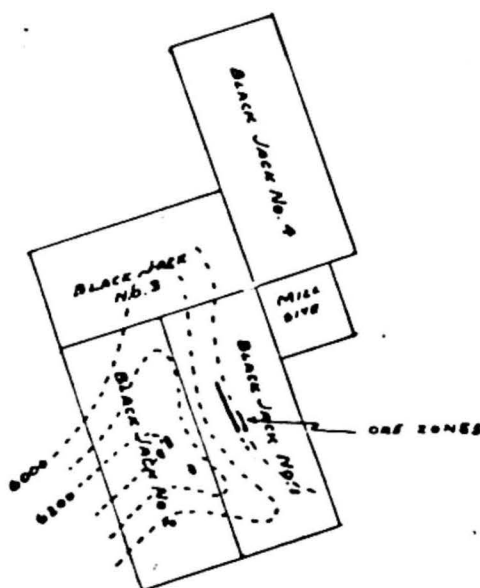
UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

GRAPHITE DEPOSITS IN SISKIYOU COUNTY, CALIFORNIA

By

Garn A. Rynearson

The graphite deposits examined are in sec. 7, T. 47 N., R. 11 W., Siskiyou County, Calif., on the summit of the Siskiyou Mts. between Elk Meadow and the northeast end of "Mill 6220" (see map of the Seiad quadrangle). Four claims, designated as the Black Jack Nos. 1, 2, 3, and 4 claims, and a five-acre mill site have been located by W. H. Cassaway, W. B. Stewart, and E. R. Stewart. Development consists of four small cuts and several shallow trenches.



Sketch map of the Black Jack claims

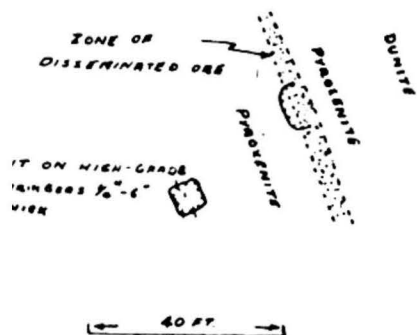
The graphite occurs in thin, vein-like stringers and as disseminated flakes in the peridotite country rock. Inasmuch as a small amount of graphite is present in a pegmatite dike at one of the prospects, and since there are no rocks of sedimentary origin within a reasonable distance from the deposits,

It is assumed that the mineralization is related to the intrusion of granitic dikes into the peridotite. One such dike, of relatively large dimensions, occurs about three-eighths of a mile east of the deposits. Several dikes are also present in the peridotite south of the deposits. It is notable that the mineralization is largely localized in a pyroxenite facies of the peridotite, or occurs near contacts between pyroxenite and dunite. Some graphite, however, does occur in the dunite. The strike and dip of the mineralized zones are roughly parallel to the foliation of the peridotite and to the pyroxenite-dunite contacts.

The best showing of ore is on the Black Jack No. 1 claim. A graphitic zone is well exposed in an open cut 8 feet long, 6 feet wide and 10 feet deep. In this cut a vein of high-grade graphite is 2 inches wide at the surface and widens to 8 inches in the bottom of the cut. The vein strikes N. 40° W. and dips 50° south. The pyroxenite on both the hanging and foot walls of the vein is impregnated with flakes of graphite. Samples cut across 2 feet on each side of the vein, but not including the vein, assayed 29.45 percent of graphitic carbon. Shallow trenches expose the impregnated zone for 150 feet N. 25° W. of the cut, and another small cut and several outcrops indicate that the zone continues an additional 200 to 300 feet southeast. The zone appears to be on or very near the contact between the pyroxenite and the overlying dunite, and there is some evidence of shearing within the zone. Another ill-defined and poorly-exposed zone of graphite-impregnated pyroxenite is present about 50 feet below the main zone.

Graphite has also been exposed on the Black Jack No. 2 claim about 500 feet southwest and about 300 feet above the zones on the Black Jack No. 1 claim. Two small cuts and several shallow trenches have been dug on a few

irregular stringers of ore and on at least two zones of disseminated ore. The following sketch shows the principal relations of one of these zones. A shallow trench on ore in another zone has sloughed and the relations are obscure. However,



there appears to be a lens of ore present which is about 10 to 12 feet long with a maximum thickness of about 18 inches. This ore is said to assay 86 percent of graphitic carbon.

Because of the lack of good exposures and the small amount of development which has been done, it is impossible to estimate the extent or the reserves of the deposits, but it

is believed that the lenses and stringers of higher grade do not persist as such for any great length or depth. A large tonnage of milling ore would be required for economic development, and difficult ore dressing problem would have to be worked out. Though some of the graphite in the disseminated ore is of commercial "flake" size, the ore is hard and the fine crushing which would probably be necessary to free the graphite might reduce the flake size considerably. Three samples of the better grade of disseminated ore were tested by Cummings and Moore of Detroit. These samples contained 40 to 50 percent of graphitic carbon, of which 50 to 65 percent was plus 65-mesh flake.

The 65-mesh size does not enter into the present commercial classification. The standard No. 1 flake (Pa. and Ala.) is established at 95 percent in 50-mesh; 15 percent in 30-mesh; 20 percent in 30-40-mesh; 60 percent in 40-50-mesh, containing 85 percent carbon. The property is now quite inaccessible. About three miles of road, from the new Forest Service road at Cook and Green Pass, would be needed to provide access to the property.