

July 1, 1944  
Sundance, Wyoming

MR 44-3

Subject: FLUORITE claims.

Locators: Frank W. and E.W. Petersen

Name and Date: Fluorite lode claims #1, #3, #4 location notices filed May 10, 1943.

Location: According to the location certificate claims #1, #3, #4, whose side lines extend approximately N-S, lie about one mile south of Bear Lodge road, where latter, "comes up out of Beaver Creek". The claims are situated on the north slope of a flat-topped ridge. From the Black Hills National Forest map of the Bear Lodge district it appears probable that the claims lie in Sec. 15, T. 52 N., R. 63 W., Crook Co., Wyoming.

#### Observations

The fluorite occurs in massive, thick-bedded, blue-grey to black, fossiliferous limestone which locally strikes nearly E-W and dips 25-30 degrees northward. This limestone, judging from its fossil content and position with respect to Deadwood sandstone (Cambrian) nearby, is probably part of the Pahasapa (Miss.) formation. The fluorite occurs in rather flat-lying lenses which, in the main, seem to dip with the bedding. At the time of inspection eight or ten small prospect pits and trenches had been dug, some with the recent aid of the U.S. Bureau of Mines. In some of these pits a thickness of 3-4 feet of massive, deep purple fluorite was observed although most exposures showed considerably less. The grade of the fluorite in a few pits is relatively high and ranges from perhaps 60-90%, especially in the central purer portion of the lenses. On both footwall and hanging wall the fluorite lenses grade into the contiguous limestone. The margins of the fluorite masses are often marked by conspicuous interbanding of 1/4-1/2 inch layers of fluorite with limestone layers of about the same dimensions. This relation suggests some replacement of limestone by fluorite along original bedding.

Locally, abundant breccia occurs in the fluorite, the fragments being, apparently, modified parts of the limestone. The matrix of the breccia is fluorite. In addition to banding both the massive fluorite and fluorite-breccia are notably vuggy and show drusy developments suggesting deposition at relatively shallow depths.

The development of breccia whose fragments are chiefly limestone, and the apparent general distribution of the fluorite masses roughly conformable to the stratification, suggests the possibility of bedding plane faulting. Such may have produced flat-lying shear planes along which the ore bearing solutions traveled. Nothing in the available exposures suggests steeply dipping fissure veins. The deposits seem to be lenticular masses, probably discontinuous, locally developed in the limestone. In places brecciation may have favored localization. The banding of fluorite and limestone and the gradational contacts of the fluorite masses with surrounding limestone, suggests a replacement origin.

#### Conclusions

In general the deposits look rather favorable for exploitation. Should exploration show a reasonable thickness and extension of some of the lenticular fluorite bodies, or a sufficient number of high grade lenses per unit of area, limited production might be obtained as the grade of the fluorite exposed seems fairly high.

Respectfully submitted,

J. C. Haff