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DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
GEOLOGY HALL
UNIVERSITY OF WYOMING
LARAMIE, WYOMING

MR 54-1

GEOLOGICAL SURVEY OF WYOMING

May 5, 1954

AIRMAIL

MEMORANDUM

To: H. A. Tourtelot and N. M. Denson

From: J. David Love

Subject: Notes on uranium deposits in the Badwater area, Fremont County, Wyoming.

On April 23 I visited some of the uranium occurrences in the Badwater area and made a few notes that may be of interest. All localities are on the published De Pass topographic map.

Kermac No. 1. - This claim is located in the SE $\frac{1}{4}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec 3, T. 39 N., R. 92 W. The mineralization is located in the lower 10 to 20 feet of a 50-foot exposure of the upper Eocene (?) Tepee Trail (?) formation which was deposited in a valley cut in brown pre-Cambrian granite. The mineralization is in the lowest exposures in this locality, and as no extensive physical exploration had been done up to the date of the examination, there was no way of knowing how much deeper the mineralization goes. Mineralization occurs abundantly in pale green bentonitic plastic claystone and green bentonitic coarse-grained arkosic sandstone. Maximum radioactivity noted on the surface was 3 mr/hr. Background was so high in the vicinity of the shallow discovery trench that mineralized specimens did not give a higher count than sandstone and claystone in which no mineralization was visible. The uranium mineral is pale yellowish green, highly fluorescent and was identified by L. B. Riley of the Denver Laboratory, U. S. G. S., as meta-autunite I (Report No. TDM-188). Chemical analysis (Serial No. 203459) of this specimen contained 0.59% eU and 0.80% U. Curt Kaiser and A. L. Alford of Shoshoni have leased the claim from Kerr McGee Oil Industries, Navajo Division, and plan to strip mine the deposit in the near future. It looks to me as if they may be able to make a little money from this property if there is any depth to the mineralization.

Fox claim. - This claim is located in the SE $\frac{1}{4}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 34, T. 40 N., R. 92 W., in reddish-brown coarse-grained granite directly adjacent to the overlap contact of the Tepee Trail (?) formation on the granite. The level of radioactivity in the granite is less than 1 mr/hr maximum. Some slight yellow fluorescence is visible but no mineralization was noted. Physical exploration is confined to two pits, each less than 4 feet deep, in fractured weathered granite. Fluorescence is commonly on fracture surfaces and it may be that the radioactivity is from uranium introduced into the granite along fracture planes. This locality does not appear to be very promising.

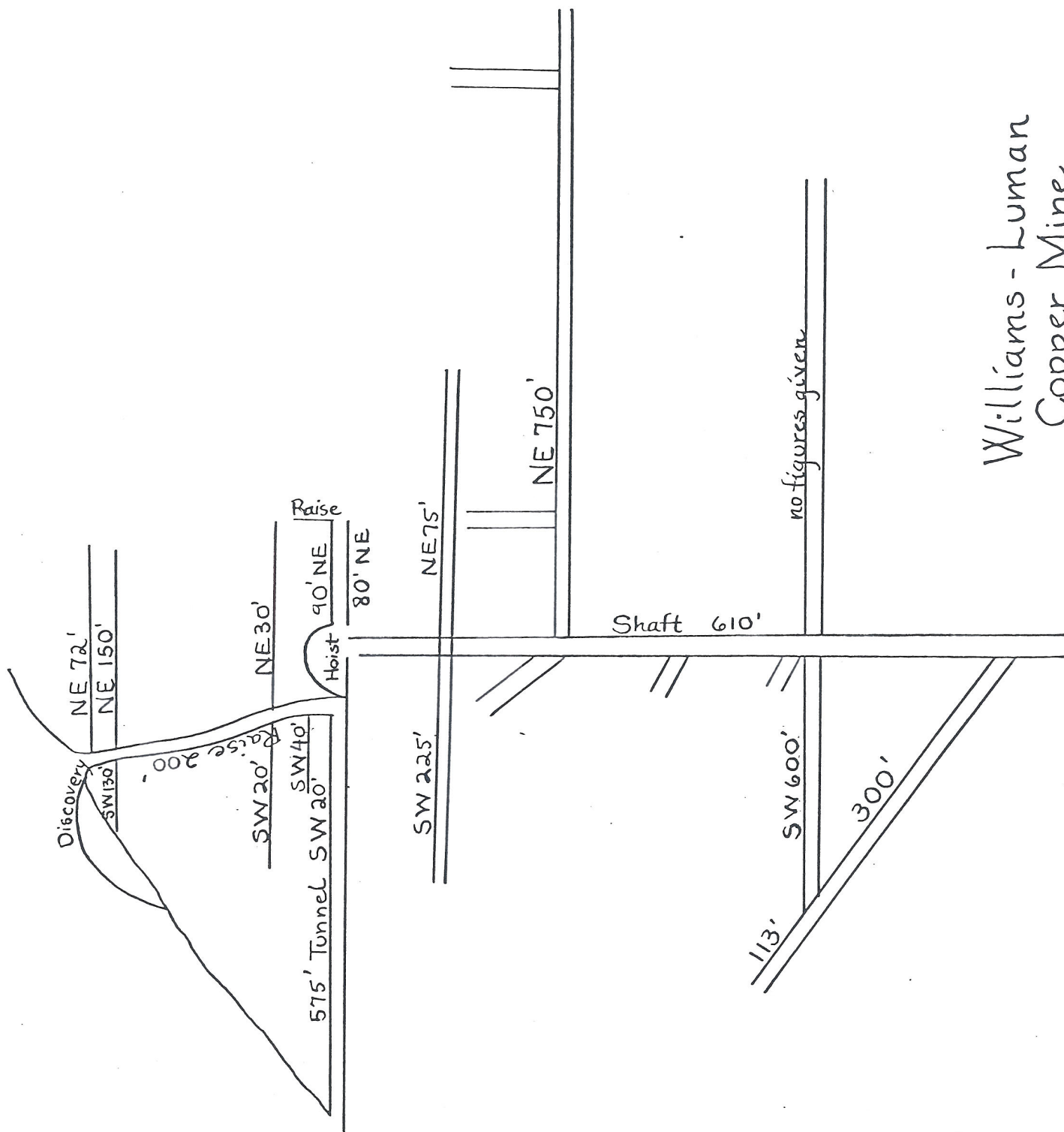
Hesitation Claim No. 1. - This claim is owned by Mr. C. R. Shelley and Harry Napier of Shoshoni. It is on government land and is located in the NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 27, T. 40 N., R. 92 W. A 15-foot shaft was sunk 2 feet east of the old road from Shoshoni to the De Pass Mine on Copper Mountain. The highest radioactivity is in the center of the road. A Scintillator shows 0.5 to 1.5 mr/hr average count over a 15-foot circle around the shaft. The host rock is a boulder conglomerate with a bentonitic claystone matrix in the upper part of the Tepee Trail (?) formation. The boulders are chiefly of pink coarse-grained granite, black basic pre-Cambrian rocks, and Flathead quartzite of Cambrian age. A yellow non-fluorescent uranium mineral is present in the claystone and sandstone matrix between the boulders; in places this mineral coats the boulders, and in many instances impregnates granite boulders that appear to be fresh and impervious. The mineral has not been identified but looks like uranophane or metatyuyamunite. The only physical exploration is the 15-foot shaft. Mineralization appears sporadically along the sides of the shaft from top to bottom. More detailed work will have to be done in order to determine the thickness of the boulder conglomerate. It forms a narrow ridge between steep valleys cut in pre-Cambrian granite. The potentialities of this deposit are not known, but there appears to be a fair amount of mineralization in the shaft.

De Pass Copper Mine. - Attached is a detailed report on the De Pass copper mine, the main adit of which is located in the NE $\frac{1}{4}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 14, T. 40 N., R. 92 W. A black highly radioactive shiny mineral that appears to be uraninite is present on the mine dump. Mr. C. R. Shelley stated that he sent a sample to the A. E. C. and its New York laboratory reported the mineral to be uraninite. I took samples for our laboratory to examine. If this proves to be uraninite, it will be the second occurrence verified in Wyoming (the other is at Lusk). Mr. Shelley, who is the current leasee, says the radioactive zone was encountered several hundred feet in along the main horizontal adit, and

that it was more than 3 feet wide. The portal of the shaft caved in shortly before my visit so I was not able to verify this observation.

Mac Claim. - This locality is in the NW $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 2, T. 39 N., R. 92 W. Mineralization occurs in coarse-grained arkosic gray sandstone with a clayey matrix in the Tepee Trail (?) formation. The most radioactive spot is about 3 feet above the overlap contact of this formation on brown coarse-grained granite, about 50 feet west of a small reservoir. There is an abundant black earthy soft mineral in the sandstone and sparse small pockets of a brilliant green fluorescent crystalline mineral that is probably schroeckingerite. A scintillation counter shows a maximum of 3 mr/hr in the vicinity of most mineralization. No physical exploration has been done on the most radioactive part of this deposit so the extent, thickness, grade, tonnage, and potentialities are not known at present.

J. David Love



Williams-Luman
Copper Mine
Depass, Wyo.