

NOTES ON OCCURRENCE OF URANIUM IN MORRISON FORMATION NEAR GREYBULL, WYOMING

The Geological Survey of Wyoming was asked by Mr. B. J. Keyes, of Worland, Wyoming, to make a field examination of a uranium deposit which he had found near Greybull, Wyoming. The deposit is located approximately 10 miles east of Greybull, and about 3 miles south of Shell Creek on the Reeves Ranch in SE $\frac{1}{4}$ Sec. 11, T. 52N., R. 92W. Mr. Keyes, with Lloyd Heron, Tom Egger, C. E. Reeves and F. C. Reeves has filed claim notices on approximately 1,500 acres of land.

Reports in the possession of Mr. Keyes from an assay office in Denver show reports of 0.2% to 0.8% U_3O_8 . A report from the U. S. Bureau of Mines Metallurgical Division at Salt Lake City on assays on 3 samples showed 0.25% U_3O_8 in one sample. An average sample of dinosaur bone analyzed by N.R.R.I. contained 0.14% U_3O_8 (see attached letter).

The deposit lies at the north end of a large gulch approximately 40 feet deep which trends generally south. The gulch is approximately $\frac{1}{4}$ mile wide at its south end and narrows to the north. A bulldozer cut has been opened along the north and east slopes at the head of the gulch. Approximately 200 feet of cut has been opened along the east side of the gulch and 150 feet along the northeast (see sketch). The deposit is in the Morrison formation, which strikes N 45 W, and dips 8° SW at the east wall of the gulch. The deposit is on the west limb of a small anticline.

Most of the radioactive material is found in dinosaur bones at the base of a 12-foot thick lens of gray medium-grained cross-bedded sandstone. The sandstone has many small limonite streaks and spots. The sandstone lens is underlain by a layer of grayish blue claystone. Within the gulch are interlayered gray and maroon sandstones and shales. Several silicified logs approximately 1 foot in diameter project out of the face of the open cut. Black, sooty, material sometimes surrounds the logs. Several small

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seams of crystalline gypsum less than $\frac{1}{2}$ inch thick are found near the base of the sandstone layer and within the claystone.

Near the base of the lens the sandstone is weakly radioactive (approximately .06 mr/hr. in γ). Samples of bones from various parts of the cut give approximately 0.5 mr/hr. in β & γ and 0.25 mr/hr. in γ . A weathered bone specimen from $1/3$ mile south along the east side of the gulch was measured at 0.4 mr/hr. in γ . Fossil logs are not radioactive.

Little internal bone structure remains in the bones, they consist largely of black crystalline material. The external form of the fragments suggests their organic origin. Most of the bones are partially rounded and disarticulate. These facts, together with the nature of the sandstone lens, suggests that the logs and bones were transported by water, but probably only a short distance. Lack of internal bone structure suggests extensive replacement and recrystallization by an unknown uranium mineral.

In estimating the commercial potentialities of the deposit the following facts must be considered:

- (1) Most radioactivity measured was found in dinosaur bones at the base of a sandstone lens.
- (2) Assay reports show a low percentage of U_3O_8 in the bone material.
- (3) Limited workings and the scattered nature of the bones make estimation of ore reserves impossible at present.

It is recommended that prospecting be continued by bulldozer, working laterally along the sandstone lens. At present, dinosaur bones are being stockpiled at the Reeves Ranch and this procedure should be continued. As the radioactive bones seem to be restricted to the gray sandstones, work should be confined to this rock type.



Frank W. Osterwald

Date of examination: *July, 1950*
Date of report:

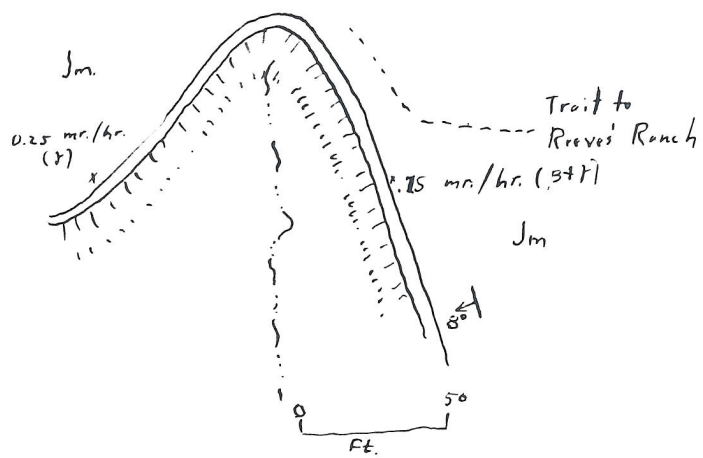


Fig. 1
Sketch of Reeves' Ranch
Uranium Deposit.



THE UNIVERSITY OF WYOMING
NATURAL RESOURCES RESEARCH INSTITUTE
LARAMIE, WYOMING

July 14, 1950

Mr. Frank Osterwald
Geology Hall
Campus

Dear Frank:

The sample of Saurian bone left here for uranium analysis yielded the following assay:

$$\text{U}_3\text{O}_8 = 0.14\%$$

You will recall that we did not select a high grade sample and I should think that this would be fairly representative of the average of the tray. This is really better than I thought from the count and I do not doubt that the bone itself will run over 0.2% U_3O_8 .

I hope I can be of further service to you from time to time.

Sincerely,

NATURAL RESOURCES RESEARCH INSTITUTE

A handwritten signature in cursive script, appearing to read "B. W. Brown".

B. W. Brown
Chemist

BWB:mmm