

Threlkeld

21-165-1W

21-16-1W

June 7, 1929.

Mr. John Bill
Augusta, Kansas

My dear Sir:-

In answer to your letter of June 4, will advise that I have had your log plotted up and have examined under the microscope the cuttings submitted from depths 3,015 to 3,029 in the Threlkeld well, 21-16-1W. It is apparent that the thick limestone reached at 3,540 is the Mississippi lime, and you reached the bottom of this lime at 3,900. The break to 3,000 feet is called by some of the geologists Skelton shale. It is lower Mississippian in age, and further south in Kansas this shale overlies another shale which is much older. The rock penetrated at 3,000 feet is Silurian, termed by some of the oil geologists who have been working on the subsurface of this region the Younkin formation. It consists of some white to gray dolomitic limestone, locally interbedded with beds of rounded quartz sand and locally showing more or less black crystalline limestone. The thickness of this lime increases regularly northward from north McPherson County, where it is very thin, until in Clay County it is four or five hundred feet thick. Beneath this limestone, which in your well should run a little over 100 feet thick, is a zone of light colored, fine grained shale containing in places a small amount of lime. Its normal thickness is a little less than 100 feet. It corresponds to the Silvan of Oklahoma. Below that is a cherty dolomitic limestone from 100 to 135 feet thick, which corresponds to the Viola of Oklahoma. The sand beds, 40 to 120 feet thick that correspond to Wilcox in Oklahoma, underlie this cherty limestone. I should estimate that in your well this sand should be encountered at depths of from between 3,350 and 3,400. It is possible on account of local thickening or thinning of some of the beds that the horizon might be a little higher or a little lower.

As you may know, the Geological Survey work in Kansas has been carried on for some time as best possible by the University without appropriation of funds from the legislature. We have not been able to carry on investigations which would enable us to give very much help in determining the subsurface conditions in various parts of the state. These conditions, fortunately, are to be improved, since the last legislature has allotted some funds for this work, and beginning the first of July we shall have at least one geologist who will devote his entire time to study of well cuttings. We should be glad to have you send to us a complete set of available cuttings from your well and will be glad to give you aid in identifying the formations penetrated.

Very truly,