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January, 1940.

Cities Service #2 Samuelson,
C NE, 36-11S-17W,
Elevation 1923'.

Pennsylvanian conglomerate 3412-3418'
3412-3418 Stained chert in clay shale.

Decorah 3418-3422'
3418-3422 Green and moroon shales.

Arbuckle Top 3422' Penetration 78' Sub-sea, minus 1499'
3422-3440 Dolomite, brown to pink, fine to medium. Although the samples are rotary, the chert sequence is clear enough to identify the dolomite as Upper Miller. There has been considerable solution but the dolomite is believed to be solid and not appreciably compacted. There is considerable oil-stain.

3440-3450 Dolomite, medium crystalline, mainly pink. This much weathered section is highly stained and is probably considerably dissolved. Some of the dolomite shows oil-stain. The cherts are Lower Miller, notably the top zone of that member.

3450-3470 Dolomite relatively scarce. Abundant Decorah shale, more than seems likely to wash down from the 4' section between 3418-22'. Also considerable chert of Viola type which shows the porous type of weathering characteristic of material which has not been transported. No material of this sort was seen in the conglomerate. This is probably a cavern filled with slumped Decorah and Viola.

3470-3473 Abundant oolitic Arbuckle chert of Purcell type. most of it is covered with a tripolitic patina suggestive of weathering in air. This concentration of chert is interpreted as residuum on the floor of a cavern.

3473-3500 Dolomite, white to light brown, medium to coarse, relatively unweathered. Dolomites and cherts check with those of the basal Purcell in the deep tests in the Shutts area.

This test might have made a small well from the dolomite from 3422-40'. The nearby areas are favorable although there is always the hazard of a greater degree of solution than is shown in this test.