

- ing common; some surfaces slickensided; includes pimple-like, iron-cemented concretions (~1 mm in diameter); iron staining common; lower contact concealed ..... ~25.0
2. Covered interval; assumed to be shale ..... ~270.0
1. Sandstone, grayish orange (10YR7/4) to grayish orange pink (5YR7/2), very fine grained, quartzose, well sorted, subrounded, moderately friable, good porosity; irregular-bedded, medium-

to thick-bedded, some laminations, some small-scale cross-stratification, weathers blocky; some soft-sediment deformation; some crinkled bedding; weathers knobby, with abundant pits; some surfaces have pimple-like, iron-cemented concretions (1–2 mm in diameter); some incipient boxwork in places; contains numerous healed fractures ..... ~9.0

**Total**     ~344.0



Figure 21. The uppermost sandstone of the Rod Club Sandstone Member of the Springer Formation (Unit 3, Fig. 19) is exposed in the eroded spillway just south of the ranch pond. The beds strike N. 85° W. and dip S. 5° W. at 55°. South is to the left in the photograph. Jointing in the rocks gives a false impression that the dip is to the north. Geologic pick for scale.



Figure 22. The lower part of the lowest unnamed shale member of the Springer Formation (Unit 4, Fig. 19) is exposed in the gully below the spillway. Note the resistant ironstone layer (marked by the geologic pick). Unit 4 at this stop is equivalent to the lower covered part of Unit 1 (Fig. 7) at Stop 2, the unnamed shale exposed along the creek below the spillway for City Lake dam.

## STOP 5

### ROD CLUB SANDSTONE MEMBER OF THE SPRINGER FORMATION (Caddo Anticline Section)

*Location: NE¼NW¼SW¼NW¼ sec. 16, T. 3 S., R. 1 E.,  
Carter County (Springer 7.5' quadrangle)*

This stop is on private property.  
Please contact Robert Kelley, 818 Wood-N-Creek,  
Ardmore, Oklahoma, phone (580) 223-1862  
for permission to visit the outcrops.

**Directions:** From Stop 4, drive 1 mi west on State Highway 53; turn south (left) onto a county road, and drive 2.25 mi. Park, cross the fence, and climb the ridge east of the road. Examine the outcrops on the southwest-facing slope (southwest limb of the Caddo anticline).

Numerous beds of the Rod Club crop out at this stop (Fig. 23). The beds are exposed intermittently, but they stand vertically and provide good three-dimensional views (Fig. 24). Facies of the Rod Club at this stop differ from those at Stops 1 and 4. Here, the beds tend to be thin- to medium-bedded, parallel-bedded, and ferruginous, and they are separated more commonly by shale interbeds. However, similarities to the facies at Stops 1 and 4—such as grain size, sorting, soft-sediment deformation features, and Liesegang banding—are also abundant. There are dewatering structures in Unit 9 (Fig. 23). Unit 6 (Figs. 23, 25) has pitted surfaces and abundant soft-sediment deformation features. It tends to be more friable than Unit 4 and does not form a high, resistant outcrop as Unit 4 does. Small imprints of wood fragments can be seen in the poorly exposed Unit 3 (Figs. 23, 26).

Sandstone in the Rod Club interval at this stop on the Caddo anticline is interpreted to be a series of turbidite deposits. The more resistant upper beds (Units 4, 6, 8, and 10) in the Rod Club Formation are tabular in nature and only a few feet thick; they do not vary significantly in thickness or character for hundreds of feet along strike. These beds probably were deposited in a sparsely channelized lower (distal) turbidite fan. The lower sandstone in the Rod Club Formation (Unit 2) is moderately friable