



Figure 10. A displaced slab of the Overbrook Sandstone at Stop 2 shows the abundance of trace fossils in Unit 2 (Fig. 7). Lip balm tube is 2.5 in. long.

The Overbrook Sandstone has diagnostic facies that reveal the depositional setting and lithologic character of the bars. Throughout its exposed extent, the Overbrook has a coarsening-upward textural profile, and it is composed of two or three main facies. Only two are present at City Lake spillway. The lower facies, called the *transition zone*, consists of thin ripple-bedded layers of sandstone, shale, and siltstone (Fig. 11). These sediments probably were deposited in water at least 50–100 ft. They are highly bioturbated, and the only indicator of current is ripple bedding, which attests to the low depositional energy at these depths. Stratigraphically higher in the bar sequence, the Overbrook lithology becomes increasingly dominated by sandstone with mostly planar, medium-bedded layers (Fig. 12). This is the *lower bar* (or *bar margin*) facies, and these sediments probably were deposited in water <50 ft deep. An *upper bar* (or *central bar*) facies (characterized by high-angle cross-bedding) is not present at City Lake spillway.

The textural profile of the Overbrook Sandstone and underlying unnamed shale at City Lake is represented by a surface gamma-ray (GR) profile in Figure 13 (left side of the figure). The profile clearly shows a coarsening-upward GR response, from a shale baseline of ~140 counts/sec (cts/sec). Sandstone tended to have a GR response of <90 cts/sec and “clean” sandstone had a GR response of <60 cts/sec. The GR values of 90–120 cts/sec for about the 180–212-ft interval indicate the presence of interbedded sandstone, shale, and silty strata that defines the transition zone.

Cuttings from the Goldsmith & Perkins No. 1 Herman Smith well (located ~4 mi northwest of Stop 2, and the Beach & Talbot No. 1 Pruitt BB well (located ~3 mi northwest of Stop 2) (see Appendixes 2 and 3; map inside front cover) indicate that the Overbrook Sandstone Member varies in

thickness. However, in general, the coarsening-upward characteristics of the interval persist.

The surface GR profile of the Overbrook Sandstone and underlying shale correlates very well with subsurface GR log of the same stratigraphic interval in the Samson Resources No. 1 Patzkowsky well (Fig. 13). This well is ~5 mi north-northwest of City Lake, and the thickness and quality of sandstone in the well is comparable to that in the measured section here at Stop 2 (Fig. 7). This comparison demonstrates that subsurface well logs can be used to interpret the character of specific facies in order to visualize a sandstone and shale sequence in the subsurface.



Figure 11. A close-up view of interbedded sandstones, siltstones, and shales in Unit 2 (Fig. 7) at Stop 2, shows their thin-bedded character. Geologic pick for scale.



Figure 12. Thin- to medium-bedded, planar-bedded sandstone of Unit 3 (Fig. 7) at Stop 2. Deposition was in shallower water than for Unit 2. Geologic pick for scale.