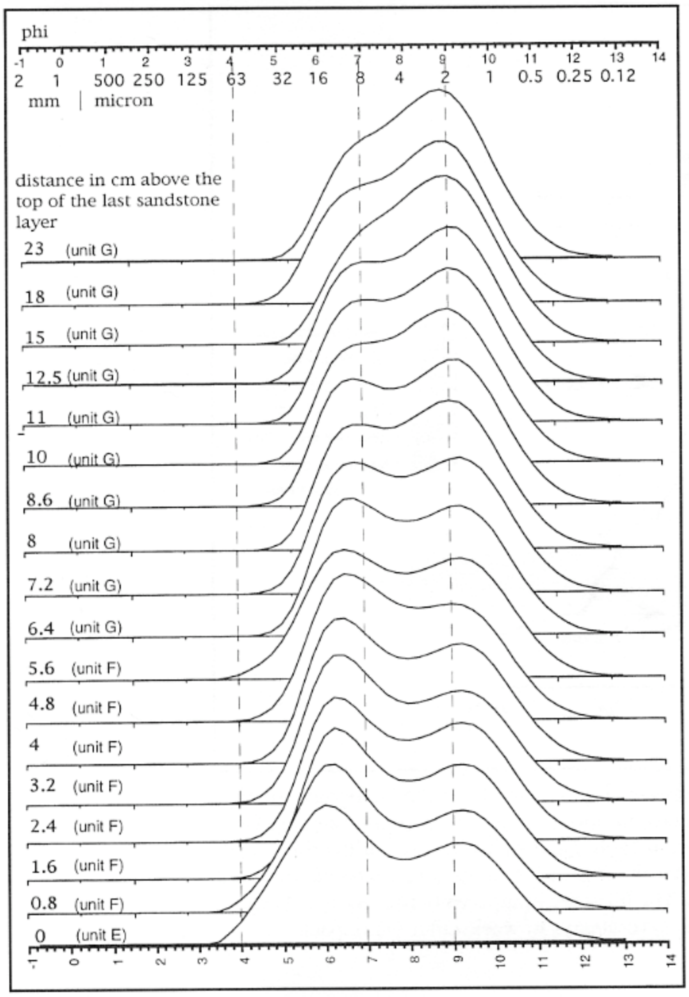

Figure 9. Brazos 1 outcrop. Detail of Units E–G (K/T sandstone complex Unit IV). Grain-size histograms are in stratigraphic order, showing the gradual shift of a bimodal distribution, with a dominating silt component, to a distribution with a dominant clay fraction.

that resuspended Corsicana Formation mudstones could have deposited units E through G. All iridium peaks found in the Brazos 1 section (Asaro et al., 1982), occur in this graded interval (units E through G, Fig. 10).

The thin, very fine sandstone (unit H) layer at 25 cm above the rippled sandstone indicates an increase of energy, with or without connection with the K/T sandstone beds. Near the top of the mudstones of unit I (Fig. 8) grain size is coarsening upward toward the transgressive surface. The settling time for the graded units E through G can be estimated using Stokes law. In Figure 10 the percentile scores of a few selected grain-size classes are plotted against stratigraphic thickness. The grain sizes with diameter >63μ (Phi 4) have settled within 1.5 cm from the base of unit E. Grain size 32μ (Phi 5) decreases to a minimum at 13 cm above the base of unit E. Assuming a homogeneous silt/clay suspension cloud of 50-m thickness (Table 1)—the minimum estimated water depth—the first 13 cm of units E through G could have been deposited in about 20 hs. The settling time of the finer tail (Phi >6) of the graded units E through G is harder to estimate. However, the fine suspended particles (Phi 8 to 9.5, 4 to 1.4μ) apparently continued to settle, as the clay fraction at the top of unit G and base of unit I (Fig. 8) dominates the size distribution. If this interval is still part of the settling phase, the fraction of 4 to 16μ might have settled between 1 week and a few months. Figure 10 shows that all of the iridium peaks occur within this graded interval.

Arroyo de Mimbral, Mexico

The K/T sandstone complex crops out in the south bank of the Arroyo de Mimbral, about 4.5 km east of the electric power lines (Fig. 11). Thirty-five m of well-bedded upper Maastrichtian (*Abathomphalus mayaroensis* Zone) Mendez Formation marls are exposed below the K/T sandstone unit. Bedding planes in the last meter below the K/T sandstone complex are barely visible.

The K/T sandstone complex in the eastern, best-exposed, part of the outcrop is depicted in Figure 11, showing the meter markings (m.mk.) that were painted on the outcrop. Unit I is deposited in four separate shallow depressions or scours along the outcrop, with a maximum width of 20 m and a depth of 1.2 m at m.mk. 28. A 2-cm-thick bentonite bed that occurs between 10 and 50 cm below the base of the depressions in the Mendez shales was never breached but runs parallel to the base of the depressions. This shows that the depth of scouring was less than 1.2 m, and that the depressions were accentuated by loading. The depressions are channel-like, and the axis of the best exposed, middle channel (m.mk. 18–38) strikes more or less north-south, as determined with the orientation of the basal scours at m.mk. 24 and 36–38. This channel is laterally infilled from the west. The lateral accreting layers are inclined to as much as 15° with respect to the overlying Unit II layers and are truncated by the overlying Unit II sandstones at m.mk. 32–38, giving the (false) impression of an angular unconformity (Hay, 1960). The different layers of the sideward shifting channel fill are composed of a variable mixture of spherules, droplets, and other splash forms (some with a glass interior; Fig. 5E, F), small subrounded microsparitic limestone clasts (Fig. 5G, H), foraminifers, terrigenous grains, and flat Mendez rip-up clasts containing Maastrichtian foraminifers. Texture and sorting differ from layer to layer. Some layers have the character of a poorly sorted debris-flow, with clasts supported in a sand matrix. Others are slightly better sorted, displaying low-angle to very low angle large-scale cross-bedding, probably due to channel-migration. Some layers are a well-sorted packstone of foraminifers, spherules, and a few detrital quartz grains. Such layers are well cemented and weather out. In some layers rip-up clasts of the Mendez dominate. These rip-up clasts are strongly deformed and commonly fused together. The boundary between the Mendez clasts is often outlined by thin stringers of spherules. The fused clasts seemingly