HIGH-RESOLUTION SEISMIC PROFILES IN SARDIS LAKE
PANOLA COUNTY, MISSISSIPPI

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The Seistec high-resolution seismic profiling system has been used extensively in inland waterways, lakes and reservoirs in Europe, but seldom in the United States. This boomer sourced, line-in-cone receiver system was recently used in Sardis Lake to acquire highly detailed shallow subbottom data regarding the lake's stratigraphy. The objectives of the investigation were to identify sedimentation accumulated since impoundment in 1939, investigate lineaments of the local fluvial systems, and fine-tune technical aspects of the system for work in Mississippi. Data were acquired from a grid of nine seismic lines oriented along the long axis of the lake (northeast) and at approximately 90° to this axis. Preliminary analyses indicate that a well preserved bottom topography is present representing the pre-1939 Little Tallahatchie River channel. Flood plain and apparent elevated terrace deposits associated with the Tallahatchie River were also identified. A discontinuous bed up to one meter thick is interpreted to be sedimentation accumulated since 1939. This bed is absent over some bottom highs and in some channels. The reason for the discontinuous distribution is presently unclear.

Seistec Profiles