Geophysics International

CASE HISTORY - BARNETT SHALE FAULT DETECTION

Petro-Sonde Survey - Oil and Gas Division

LOCATION: Johnson County, Central Texas; U.S.A.

TOPOGRAPHIC CONTROL: U.S.G.S. Topographic map.

OBJECTIVE OF THE PETRO-SONDE SURVEY: To delineate faults within Barnett Shale

GEOLOGY: Barnett Shale deposits within the Ft. Worth Basin produce primarily gas from fracture porosity. Strata in the Johnson county area dip and thicken to the northeast in response to the Central Texas uplift bordering the Ft. Worth Basin to the southwest. Faulting is common in the area and generally trends NW-SE. To minimize the risk of encountering a fault operators will often orient horizontal wells parallel to the NW -SE fault trend.

INFORMATION AVAILABLE: Several existing wells in the area for calibration of tool.

PETRO-SONDE SURVEY STRATEGY: 1) Calibrate on existing wells in the area to establish the electrotelluric signals associated with the Barnett Shale. 2) Traverse northwest from drillsite and take readings of the Barnett Shale on 300' spacing to detect any faults along proposed lateral running SE to NW.

CONCLUSIONS AND COMMENTS: After establishing the relative resistivity patterns associated with the Barnett Shale, the traverse was continued to the northwest which revealed a fault between Petro-Sonde stations #3 and #4. Customer was excited about the low cost of survey compared to seismic and the speed with which it could be performed.

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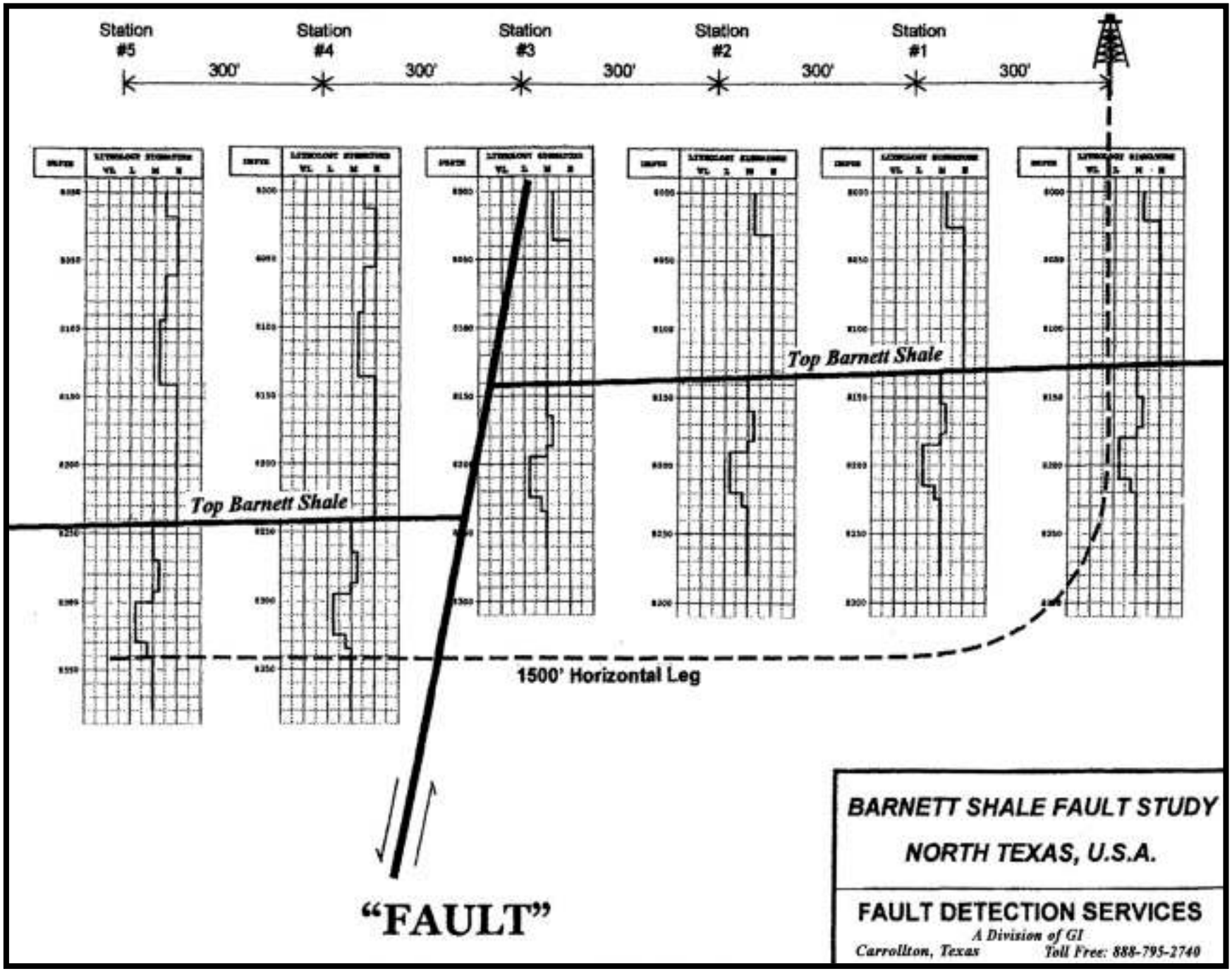
Station #5
300'
Station #4
300'
Station #3
300'
Station #2
300'
Station #1
300'
Top Barnett Shale
Top Barnett Shale
1500' Horizontal Leg
"FAULT"
BARNETT SHALE FAULT STUDY
NORTH TEXAS, U.S.A.
FAULT DETECTION SERVICES
A Division of GI
Carrollton, Texas
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