

Borehole

50-10-07

Log Event A

Borehole Information

Farm : <u>T</u>	Tank : <u>T-110</u>	Site Number : <u>299-W10-136</u>
N-Coord : <u>43,305</u>	W-Coord : <u>75,657</u>	TOC Elevation : <u>673.20</u>
Water Level, ft : <u>88.40</u>	Date Drilled : <u>2/28/1974</u>	

Casing Record**Equipment Information**

Logging System : <u>2</u>	Detector Type : <u>HPGe</u>	Detector Efficiency: <u>35.0 %</u>
Calibration Date : <u>03/1995</u>	Calibration Reference : <u>GJPO-HAN-1</u>	

Logging Information

Log Run Number : <u>1</u>	Log Run Date : <u>4/12/1995</u>	Logging Engineer: <u>Dave Traub</u>
Start Depth, ft.: <u>91.0</u>	Counting Time, sec.: <u>200</u>	L/R : <u>R</u> Shield : <u>N</u>
Finish Depth, ft. : <u>69.4</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>0.3</u>

Log Run Number : <u>2</u>	Log Run Date : <u>4/13/1995</u>	Logging Engineer: <u>Dave Traub</u>
Start Depth, ft.: <u>69.0</u>	Counting Time, sec.: <u>197</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>0.0</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>0.3</u>

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Analysis Information

Analyst : Kos/HenwoodData Processing Reference : Data Analysis Manual Ver. 1Analysis Date : 7/7/1995**Analysis Notes :**

The borehole was double cased, and the outer casing was perforated from 0 to 20 ft and approximately 92 to 94 ft. Grout was placed into the annulus between the casings, and an unknown amount of the grout flowed into the formation through the perforations. This borehole configuration makes it impossible to determine accurate radionuclide concentrations, because the system calibrations do not have a grout correction. In addition, there is an unknown grout thickness from 0 to 20 ft and 92 to 94 ft. As a result, the reported concentrations can only be considered relative to other concentrations in the borehole.

The borehole was logged in two runs on two separate days: run 1 from 91 to 69.4 ft and run 2 from 69 to 0 ft with no depth overlap. The pre- and post-survey field verification indicated consistent peak activities for both runs, but energy calibrations differed because of gain drift in the instrumentation. Spectra were recalibrated for energy vs. channel number where necessary. Log data were collected continuously for approximately 200 seconds for each 1-ft interval. The reported concentration at a depth represent the spectra collected from 0.5 ft above and below the data point.

The total measured casing thickness is 0.4375 in. The casing correction used for all log data was 0.650, which may result in reported concentrations slightly higher than actual.

Water corrections were made at 88.9 ft.

Naturally occurring K-40, U-238, and Th-232 concentrations were calculated but probably do not reflect the lithology due to attenuations and nuclide content of the grout.

Cesium 37 was the only man-made radionuclide detected, occurring near the top of the borehole at a concentration less than 0.6 pCi/g. Two other locations near 40 ft and 83 ft are both less than 0.3 pCi/g and are probably the result of statistical fluctuations in the MDA.

Log Plot Notes:

Separate log plots show the man-made and the naturally occurring radionuclides. The natural radionuclides can be used for lithology interpretations. The headings of the plots identify the specific gamma rays used to calculate the concentrations. Uncertainty bars on the plots show the statistical uncertainties for the measurements as 95-percent confidence intervals. Open circles on the plots give the MDL. The MDL of a radionuclide represents the lowest concentration at which positive identification of a gamma-ray peak is statistically defensible.

A combination plot includes the man-made and natural radionuclides, the total gamma derived from the spectral data, and the Tank Farms gross gamma log. The gross gamma plot displays the latest available digital data. No attempt has been made to adjust the depths of the gross gamma logs to coincide with the SGLS data.