RUST GEOTECH INC.

Spectral Gamma-Ray Borehole
Log Data Report

Log Event A

Borehole 41-12-09

Borehole Information

Farm : SX
Tank : SX-112
Site Number : 299-W23-115
N-Coord : 35,234
W-Coord : 75,915
TOC Elevation : 661.19
Water Level, ft :
Date Drilled : 3/27/1962

Casing Record

Type : Steel-welded
Thickness : 0.280
ID, in. : 6
Top Depth, ft. : 0
Bottom Depth, ft. : 75

Equipment Information

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

Logging Information

Log Run Number : 1
Log Run Date : 7/10/1995
Logging Engineer: Bob Spatz
Start Depth, ft.: 75.5
Counting Time, sec.: 100
L/R : L
Shield : N
Finish Depth, ft. : 0.0
MSA Interval, ft. : 0.5
Log Speed, ft/min.: n/a

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Analysis Information

Analyst : D.C. Stromswold

Data Processing Reference : Data Analysis Manual Ver. 1 Analysis Date : 11/22/1995

Analysis Notes :

Borehole 41-12-09 was logged in a single run in a move-stop-acqiure mode that collected spectra for 100 seconds every 0.5 ft. Gain drifts necessitated two different energy calibrations during data processing to maintain proper radionuclide identification. The data were collected with gain stabilization, but the stabilizer was not able to compensate completely for the drift.

The absence of overlap logging precluded determination of repeatablity.

Verification spectra collected before and after the run showed that the tool was operating correctly.

Correction factors for 0.25-in.-thick steel casing were used during data processing.

Cs-137 was the only man-made radionuclide identified, occurring from the surface to about 24 ft, with isolated occurrences near the minimum detection limit to near TD. The maximum measured concentration was about 15 pCi/g near 2.5 ft.

The total gamma log indicates several lithology changes below about 63 ft.

See the Tank Summary Data Report for SX-112 for additional log analysis.

Log Plot Notes:

Three log plots are provided. One shows the Cs-137 concentrations. Another shows the naturally occurring radionuclides (K-40, U-238, and Th-232), which can be used for lithology interpretations. A combination plot includes logs of Cs-137, natural gamma, total gamma derived from the spectral data, and data from the WHC Tank Farms gross gamma logging system. The headings of the Cs-137 and natural gamma 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 minimum detectable activity (MDA). The MDA of a radionuclide represents the lowest concentraton at which positive identification of a gamma-ray peak is statistically defensible. If the reported concentration is slightly above the MDA, the 95-percent confidence interval may extend below the MDA value and detection is not ensured with 95-percent certainty.

The Tank Farms gross gamma plot is the latest available from WHC. No attempt has been made to adjust the plot for depth discrepancies.