RUST GEOTECH INC.

Spectral Gamma-Ray Borehole
Log Data Report

Borehole # 41-06-11

Log Event A

Borehole Information

Farm : SX	**Tank :** SX-106	**Site Number :** 299-W23-58
N-Coord : 35,501	**W-Coord :** 75,900	**TOC Elevation :** 661.71
Water Level, ft :	**Date Drilled :** 9/13/1954	

Casing Record

Type : Steel-welded	**Thickness :** 0.313	**ID, in. :** 8
Top Depth, ft. : 0	**Bottom Depth, ft. :** 101	

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 :** 5/30/1995	**Logging Engineer:** Bob Spatz
Start Depth, ft.: 0.0	**Counting Time, sec.:** 100	**L/R :** L **Shield :** N
Finish Depth, ft. : 7.5	**MSA Interval, ft. :** 0.5	**Log Speed, ft/min.:** n/a

Log Run Number : 2	**Log Run Date :** 5/31/1995	**Logging Engineer:** Bob Spatz
Start Depth, ft.: 6.5	**Counting Time, sec.:** 100	**L/R :** L **Shield :** N
Finish Depth, ft. : 96.0	**MSA Interval, ft. :** 0.5	**Log Speed, ft/min.:** n/a

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Analysis Information

Analyst : P.D. Henwood

Data Processing Reference : Data Analysis Manual Ver. 1 Analysis Date : 9/6/1995

Analysis Notes :

This borehole was drilled in 1954 to a depth of 101 ft. The borehole was perforated from 10 to 99 ft, but there is no report of grout being placed outside the borehole casing.

A review of historical gross gamma log data indicated no elevated gamma activity throughout the borehole. A lithology change is indicated at about 85 ft.

This borehole was logged with a spectral gamma ray logging system in two runs: run 1 from 0 to 7.5 ft and run 2 from 6.5 to 96 ft, with a 1-ft depth overlap. The data showed reasonably good agreement at the overlap. The pre- and post-survey field verification spectra showed consistent activities, but energy calibrations differed because of gain drift in the instrumentation. Spectra were recalibrated to adjust for energy versus channel number where appropriate.

Log data were corrected for casing attenuation using a correction for a 0.25-in.-thick casing.

Cs-137 was the only man-made radionuclide detected in the borehole. The highest reported concentration was at the surface with other sporadic locations indicating some Cs-137 at less than 1 pCi/g.

The natural gamma logs indicate possible lithology changes at 56 and 83 ft in depth.

Log Plot Notes:

Three log plots are provided. The Cs-137 concentrations are provided in a separate log plot to document the relative concentrations and shape of the distribution. The error of the concentration determination is shown by error bars, which represent the 95-percent confidence interval. The calculated MDA is shown on the plots as open circles. If the calculated concentration is less than the MDA, it is considered a non-detect and the concentration is not reported.

A plot of naturally occurring radionuclides is also provided (see discussion above regarding error bars and the MDA) to permit correlation of these data with geologic information. On the Th-232 plot, the MDA value is shown as zero at some depth locations. This zero value was a result of an anomaly in the commercial spectrum analysis software that has been corrected by the vendor. Because the MDA calculation at these few points is not significant relative to the intended use of the thorium plot, the data were not reprocessed and corrected. Therefore, these MDA data points on the plot should be ignored.

A combination plot is included with Cs-137, naturally occurring radionuclides, total gamma data derived from the spectral data, and the latest available WHC Tank Farms gross gamma data. The plots allow the user to determine the influence of various radionuclides on the total gamma inventory.