



Borehole

22-02-01

Log Event A

Borehole Information

Farm : <u>BY</u>	Tank : <u>BY-102</u>	Site Number : <u>299-E33-101</u>
N-Coord : <u>46,038</u>	W-Coord : <u>53,225</u>	TOC Elevation : <u>648.75</u>
Water Level, ft :	Date Drilled : <u>7/10/1970</u>	

Casing Record

Type : <u>Steel-welded</u>	Thickness : <u>0.280</u>	ID, in. : <u>6</u>
Top Depth, ft. : <u>0</u>	Bottom Depth, ft. : <u>100</u>	

Borehole Notes:

The drilling log for borehole 22-02-01 indicates the borehole was not perforated, cemented, or modified significantly. The driller noted there was no radioactivity detected in the borehole.

Equipment Information

Logging System : <u>1</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 Procedure : <u>P-GJPO-1783</u>

Log Run Information

Log Run Number : <u>1</u>	Log Run Date : <u>7/24/1995</u>	Logging Engineer: <u>Pearson/Widdop</u>
Start Depth, ft.: <u>98.9</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>42.0</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>
Log Run Number : <u>2</u>	Log Run Date : <u>7/25/1995</u>	Logging Engineer: <u>Mike Widdop</u>
Start Depth, ft.: <u>32.0</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>42.0</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>
Log Run Number : <u>3</u>	Log Run Date : <u>7/24/1995</u>	Logging Engineer: <u>Steve Kos</u>
Start Depth, ft.: <u>0.0</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>32.0</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>



Borehole

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Log Event A

Analysis Information

Analyst : P.D. Henwood

Data Processing Reference : P-GJPO-1787

Analysis Date : 1/23/1996

Analysis Notes :

This borehole was logged in three log runs. The pre- and post-survey field verification spectra showed consistent activities, indicating the logging system operated properly during data collection. Energy calibrations differed because of gain drift in the instrumentation. Gain drifts during data collection necessitated energy versus channel number recalibrations during processing of the data to maintain proper peak identification. A depth overlap, where data were collected on separate days at the same depth, occurred in this borehole at 32 ft. The calculated concentrations were within the statistical uncertainty of the measurements, indicating very good repeatability.

The casing thickness is 5/16 (0.3125) inch. Casing-correction factors for a 0.33-in.-thick steel casing were applied during analysis, which results in an almost negligible over-estimation of the radionuclide concentrations.

Cs-137 and Co-60 were the only man-made radionuclides identified in this borehole. The presence of Cs-137 was measured almost continuously from the ground surface to about 62 ft, intermittently from 62 to 94 ft, and continuously from 95 ft to TD. Co-60 was measured from 82 ft to TD.

Additional information and interpretations of log data are included in the main body of the Tank Summary Data Report for tank BY-102.

Log Plot Notes:

Separate log plots show the man-made (e.g., Cs-137 and Co-60) and the naturally occurring radionuclides (K-40, U-238, and Th-232). The natural radionuclides can be used for lithology interpretations. The headings of the plots identify the specific gamma rays used to calculate the concentrations.

A combination plot includes both the man-made and natural radionuclides, in addition to the total gamma derived from the spectral data and the Westinghouse Hanford Company (WHC) Tank Farms gross gamma log. The gross gamma plot displays the latest available digital data from WHC with no attempt to adjust the depths to coincide with the SGLS data.

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 detection level (MDL). The MDL of a radionuclide represents the lowest concentration at which positive identification of a gamma-ray peak is statistically defensible.