

Borehole

41-04-08

Log Event A

Borehole Information

Farm : <u>SX</u>	Tank : <u>SX-104</u>	Site Number : <u>299-W23-225</u>
N-Coord : <u>35,427</u>	W-Coord : <u>75,704</u>	TOC Elevation : <u>663.0</u>
Water Level, ft :	Date Drilled : <u>4/4/1978</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>125</u>	

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 Information

Log Run Number : <u>1</u>	Log Run Date : <u>5/18/1995</u>	Logging Engineer: <u>Bob Spatz</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>62.0</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>5/19/1995</u>	Logging Engineer: <u>Bob Spatz</u>
Start Depth, ft.: <u>122.5</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>61.0</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>

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Analysis Information

Analyst : S.E. KosData Processing Reference : Data Analysis Manual Ver. 1Analysis Date : 7/18/1995**Analysis Notes :**

Borehole 41-04-08 was completed with a 6-in. diameter, carbon steel casing that was placed to a depth of 125 ft, which is about 25 ft deeper than most of the other boreholes in the SX Farm. The wall thickness of the casing is 5/16 in. (.313 in.). The casing correction used for data analysis was .333 in.; therefore, the reported activities may be slightly higher than actual.

Cs-137 was the only man-made radionuclide identified. It occurs at ground surface at an activity of about 6 pCi/g. The maximum subsurface activity of 4.5 pCi/g. occurs at 2.5 ft. Cs-137 also occurs intermittently throughout the borehole at or slightly above the MDA.

In cases where a peak has a very low activity, such as with Th-232, the MDA value shown on the log plot may be 0 pCi/g. This is the result of a calculation mistake in the spectrum analysis program and should be ignored. The mistake was corrected by the software manufacturer, but the log data were not reprocessed, because the error has little significance to the assessment of the tank.

Log Plot Notes:

Three log plots are provided. The Cs-137 activity is plotted alone to provide details of concentration and distribution. The error of calculated Cs-137 activity is shown by error bars representing the 95 percent confidence interval. The calculated MDA is shown on the log plots by open circles.

A plot of the naturally occurring radionuclides potassium, uranium, and thorium (KUT) is provided to allow correlation of lithologically related features between the boreholes. These log plots are provided on two pages. The activities of the KUT data are typical for Hanford sediments. The log plots also show the MDA as well as the estimated error.

A combination plot incorporates the Cs-137 and KUT data with total gamma count rate derived from the spectral gamma data and the WHC gross gamma data acquired with the Tank Farm gross gamma logging systems. The composite plot allows correlation of Cs-137 occurrence with lithologic features. The combination plot is also provided on two pages to cover the entire depth range of the borehole.