

699-33-75 (C4974) Log Data Report

Borehole Information:

Borehole: 699-33-75 (C4974)			Site: 200-UP-1		
Coordinates (WA St Plane)		GWL¹ (ft): 235.3	GWL Date: 01/11/08		
North (m)	East (m)	Drill Date	TOC Elevation	Total Depth (ft)	Type
Unknown	Unknown	1/11/08; 1/22/08	Unknown	346	Air Rotary

Casing Information:

Casing Type	Stickup (ft)	Outer Diameter (in.)	Inside Diameter (in.)	Thickness (in.)	Top (ft)	Bottom (ft)
Welded Steel	2.0	13 ½	12 ¼	5/8	2.0	199
Threaded Steel	3.6	10 7/8	9 5/8	5/8	3.6	346

Borehole Notes:

Driller reported the casing depth. The logger measured the casing thickness employing a caliper and steel tape, rounding to the nearest 1/16-in. The zero Reference is the ground surface. The top of the ground is a gravel pad approximately 8-in. thick.

Logging occurred on two (2) separate days. On 1/11/08 the total drill depth was 199 ft, and on 1/22/08, the total drill depth was 346 ft.

Logging Equipment Information:

Logging System:	Gamma 1 L	Type:	SGLS HpGe (60%)
Effective Calibration Date:	07/09/2007	Serial No.:	47TP32211A
		Calibration Reference:	HGLP-CC-019
		Logging Procedure:	HGLP-MAN-002, Rev. 0

Spectral Gamma Logging System (SGLS) Log Run Information:

Log Run	1	2 Repeat	3	4 Repeat
Date	01/11/08	01/11/08	01/23/08	01/23/08
Logging Engineer	Pearson	Pearson	McClellan/ Pearson	McClellan/ Pearson
Start Depth (ft)	199.0	0.0	337.0	246.0
Finish Depth (ft)	0.0	20.0	198.0	232.0
Count Time (sec)	100	100	100	100
Live/Real	R	R	R	R
Shield (Y/N)	N	N	N	N
MSA Interval (ft)	1.0	1.0	1.0	1.0
ft/min	NA	NA	NA	NA
Pre-Verification	AL015CAB	AL015CAB	AL018CAB	AL018CAB
Start File	AL015000	AL015200	AL018000	AL018140
Finish File	AL015199	AL015220	AL018139	AL018154
Post-Verification	AL015CAA	AL015CAA	AL018CAA	AL018CAA
Depth Return Error (in.)	2 low	0	NA	0.5 low
Comments	No fine gain adjustments made	Repeat section	No fine gain adjustments made.	No fine gain adjustments made.

Logging Operation Notes:

Data were collected using Gamma 1, HO 68B-3574. Pre- and post-survey measurements were acquired in the Amersham KUTH-118 field verifier. A centralizer was installed on the sonde.

Analysis Notes:

Analyst:	LEGLER	Date:	2/25/08	Reference:	GJO-HGLP 1.6.3, Rev. 0
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The pre- and post-survey verification spectra met the acceptance criteria for the system but all verification files had measurements below lower control limits for the 1461 and 2614 KeV energy lines.

A casing correction factor for 5/8-in. thick steel casing was applied during analysis. A water correction factor was also applied during analysis from 253.3 ft to total logged depth of borehole.

SGLS spectra were processed in batch mode in APTEC SUPERVISOR to identify peaks and count rates. Concentrations were calculated with an EXCEL template identified as G1Ljuly07.xls using an efficiency function and corrections for casing, dead time, and water as determined by annual calibrations.

Results and Interpretations:

The only manmade radionuclide detected was Cs-137, which was detected at several depths near the MDL. Inspection of individual spectra, at those depths, indicates that these detections to be statistical fluctuations and are not considered valid.

The repeat sections indicate good agreement between naturally occurring KUT, indicating that the logging system was working properly.

List of Log Plots:

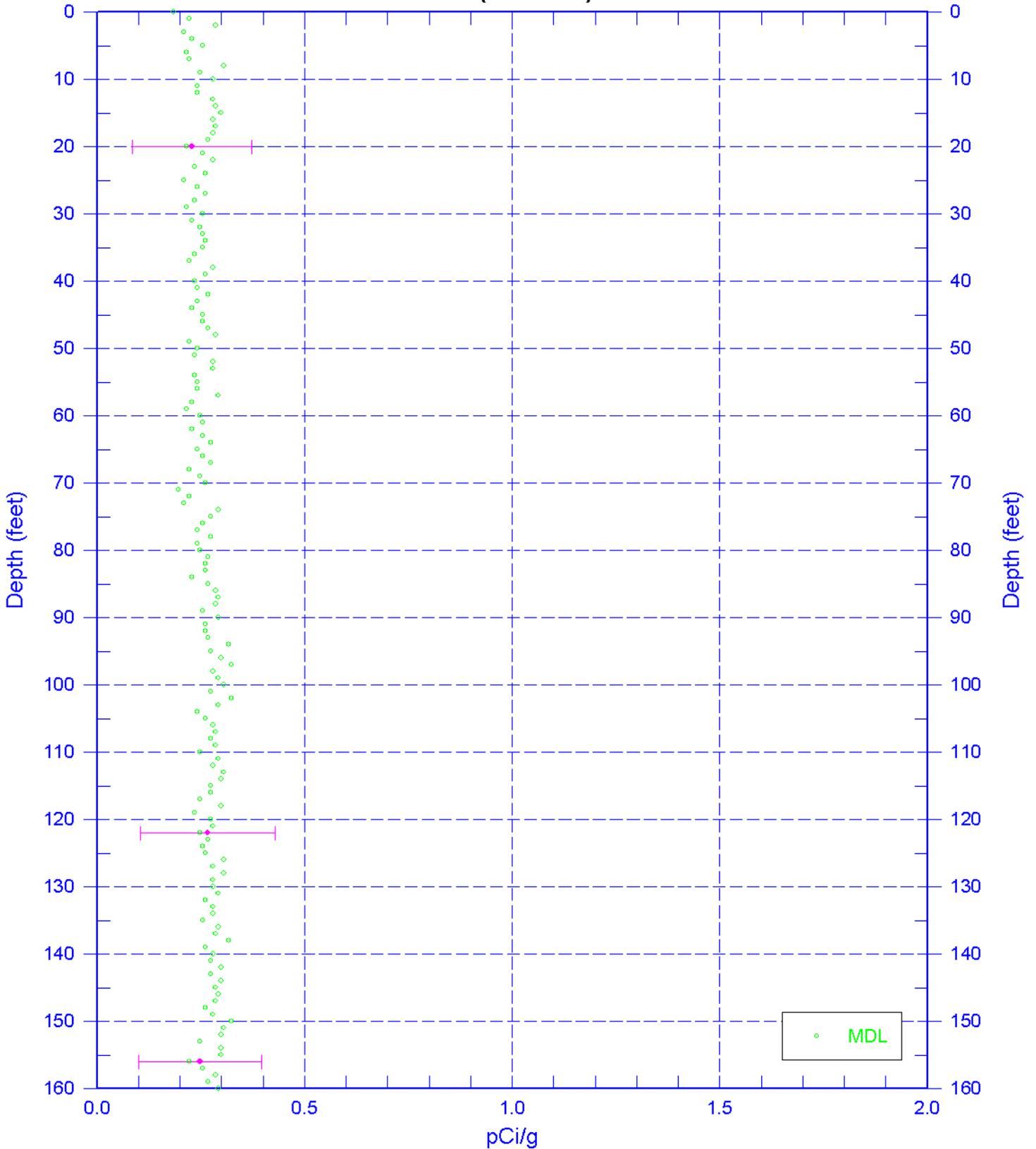
Depth Reference is Ground surface

- Man-made Radionuclides
- Natural Gamma Logs
- Combination Plot
- Combination Plot (0-350 ft)
- Total Gamma, Moisture, & Dead Time
- Repeat Section of Natural Gamma Log

¹ GWL – groundwater level

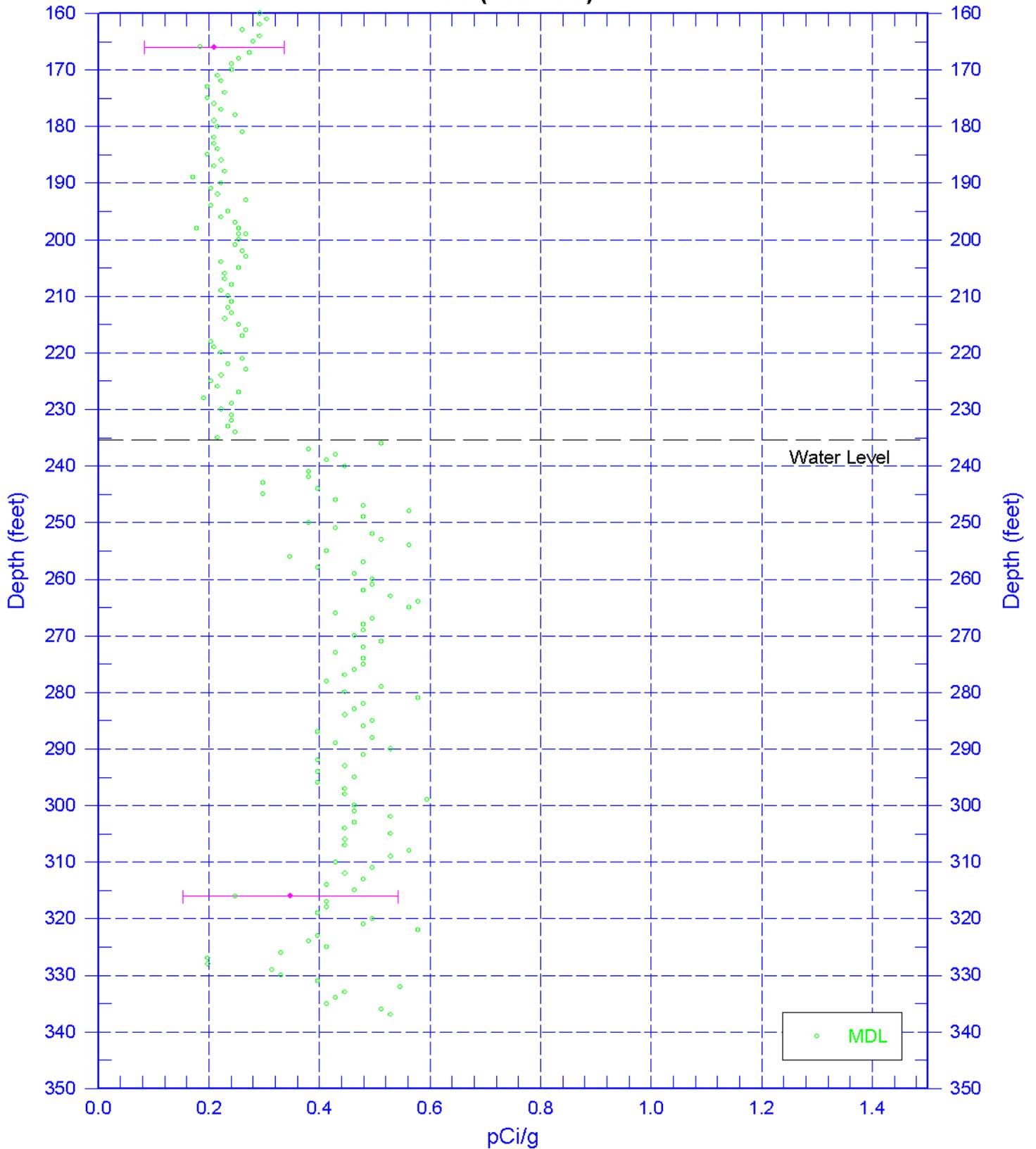
699-33-75 (C4974) Manmade Radionuclides

^{137}Cs (662 keV)

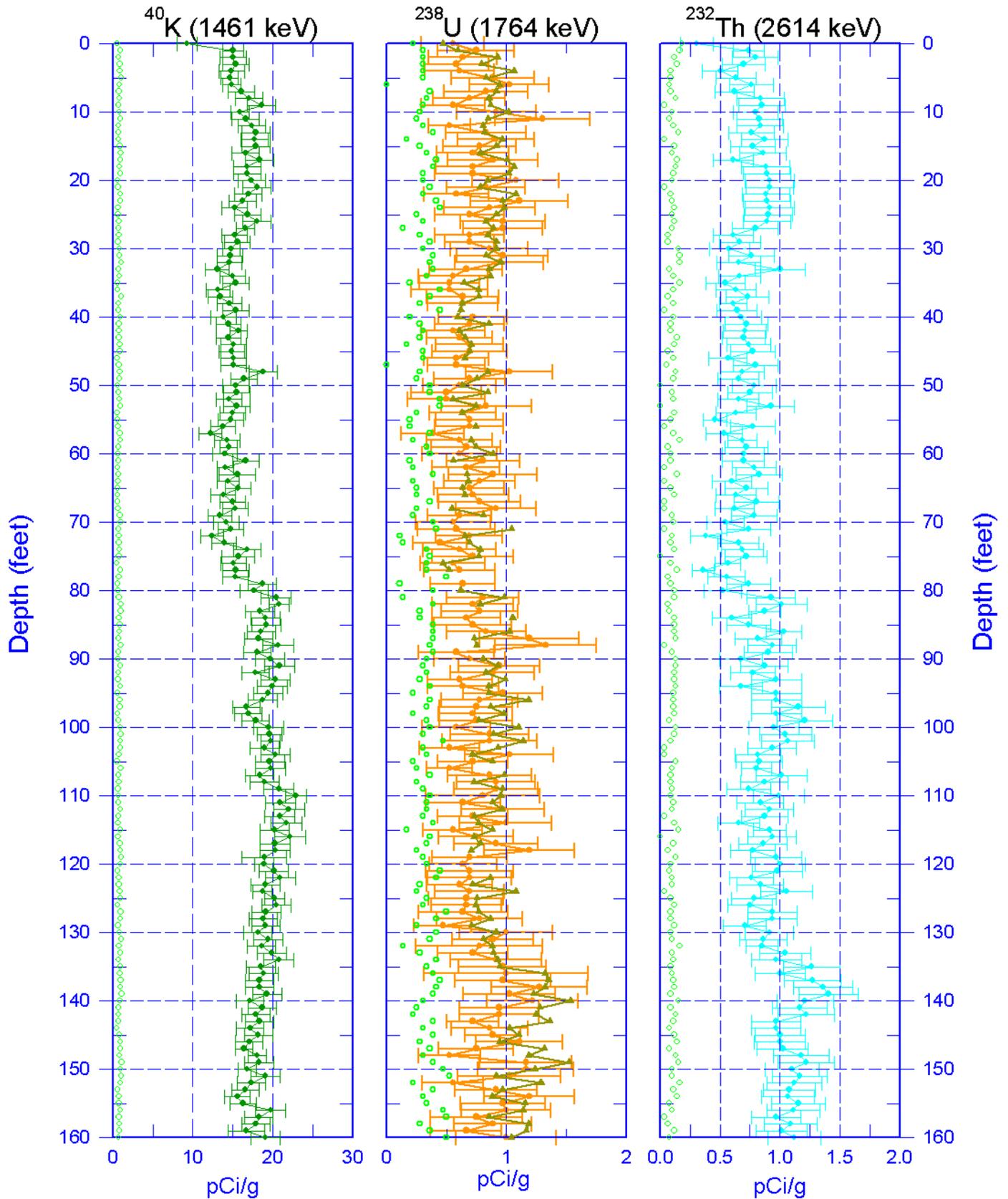


699-33-75 (C4974) Manmade Radionuclides

¹³⁷Cs (662 keV)



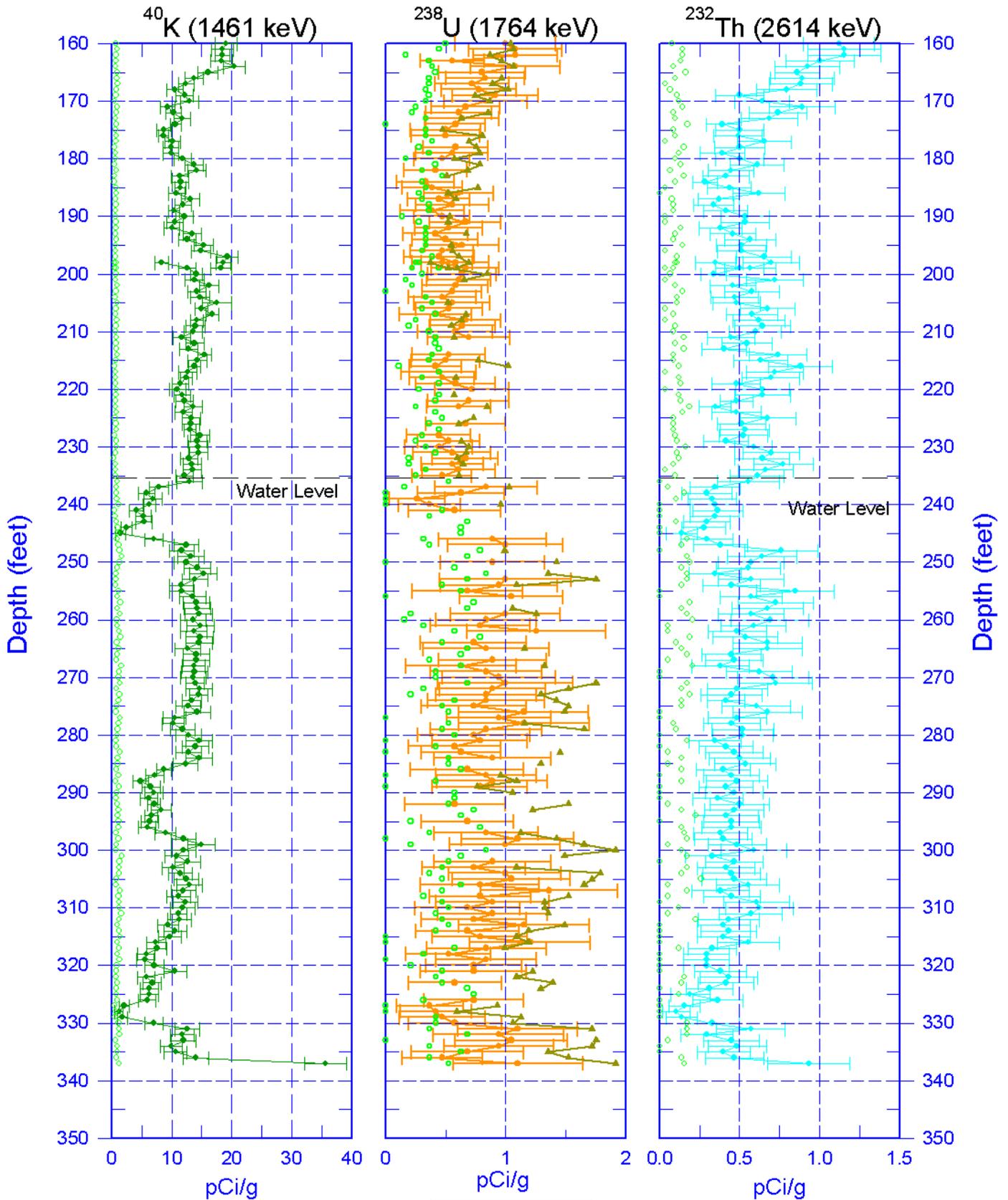
699-33-75 (C4974) Natural Gamma Logs



Zero Reference - Ground Surface



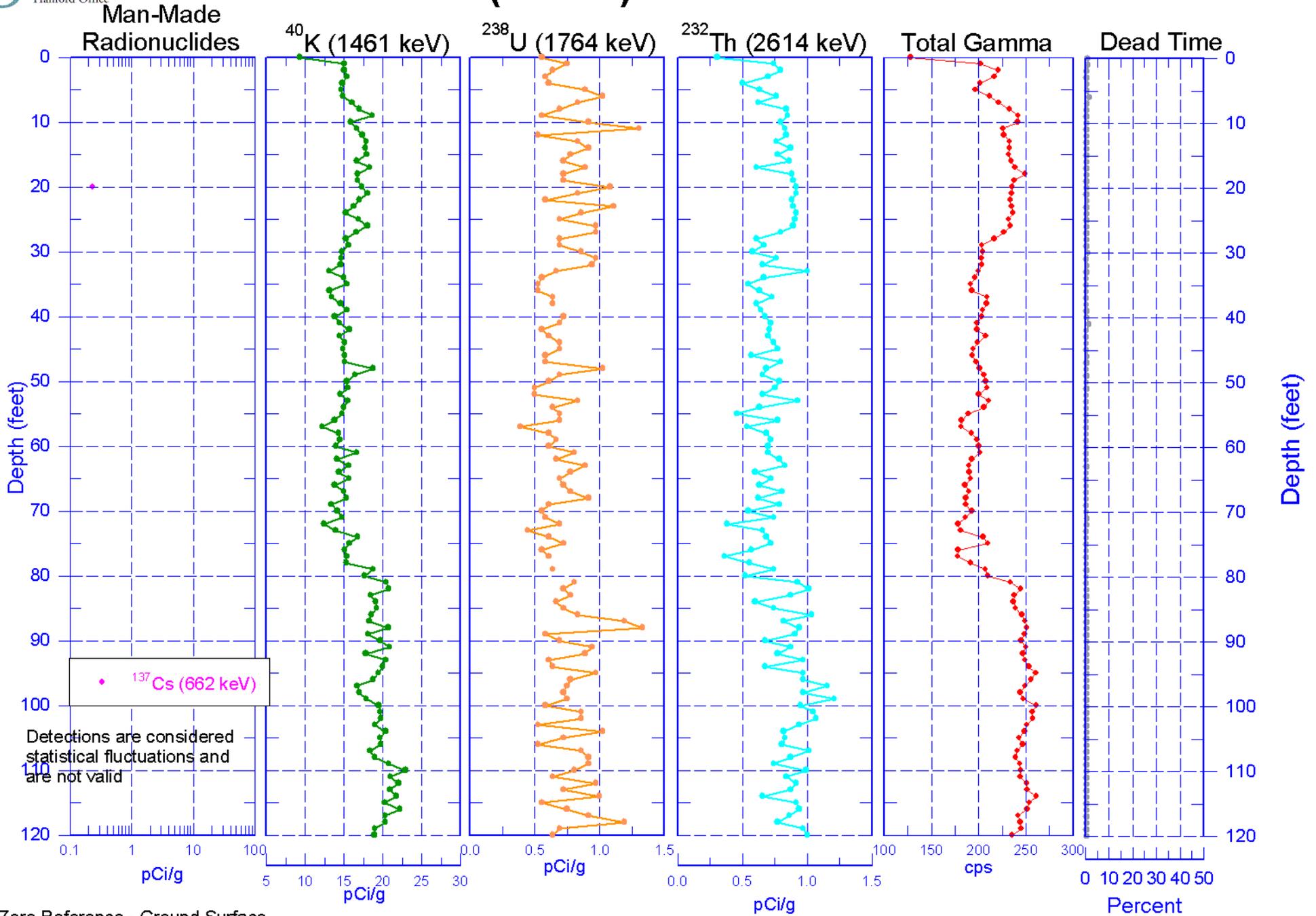
699-33-75 (C4974) Natural Gamma Logs



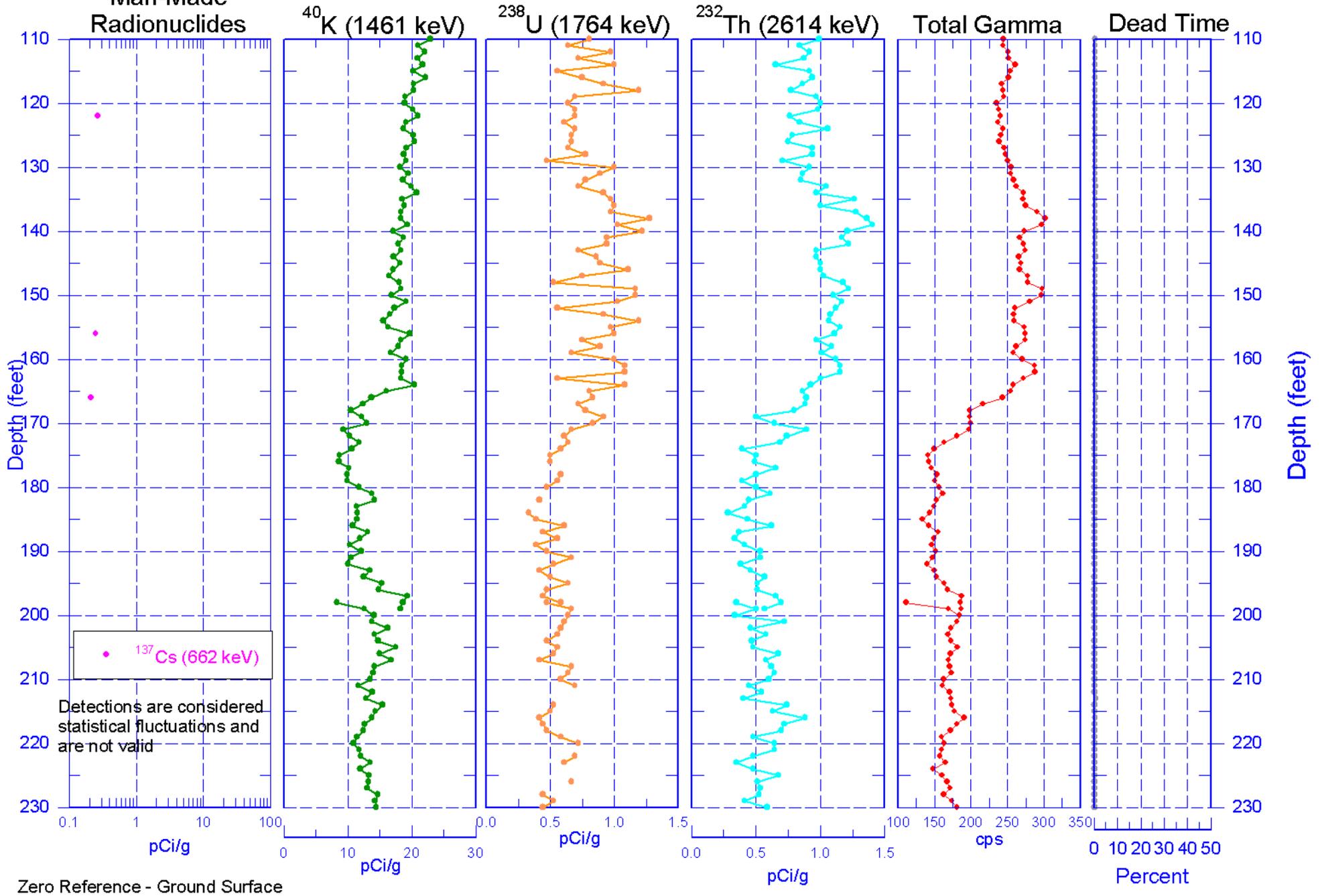
Zero Reference - Ground Surface



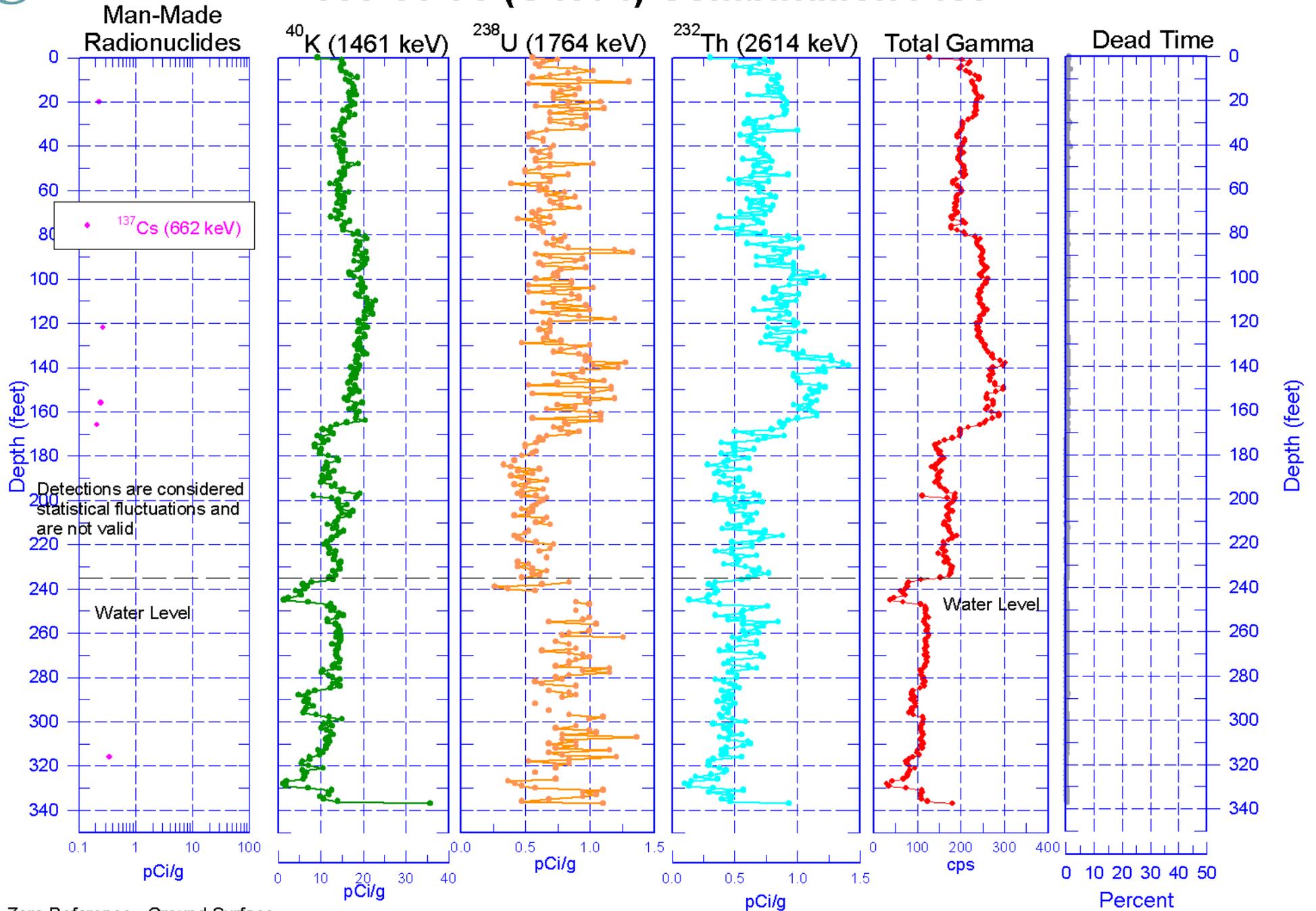
699-33-75(C4974) Combination Plot



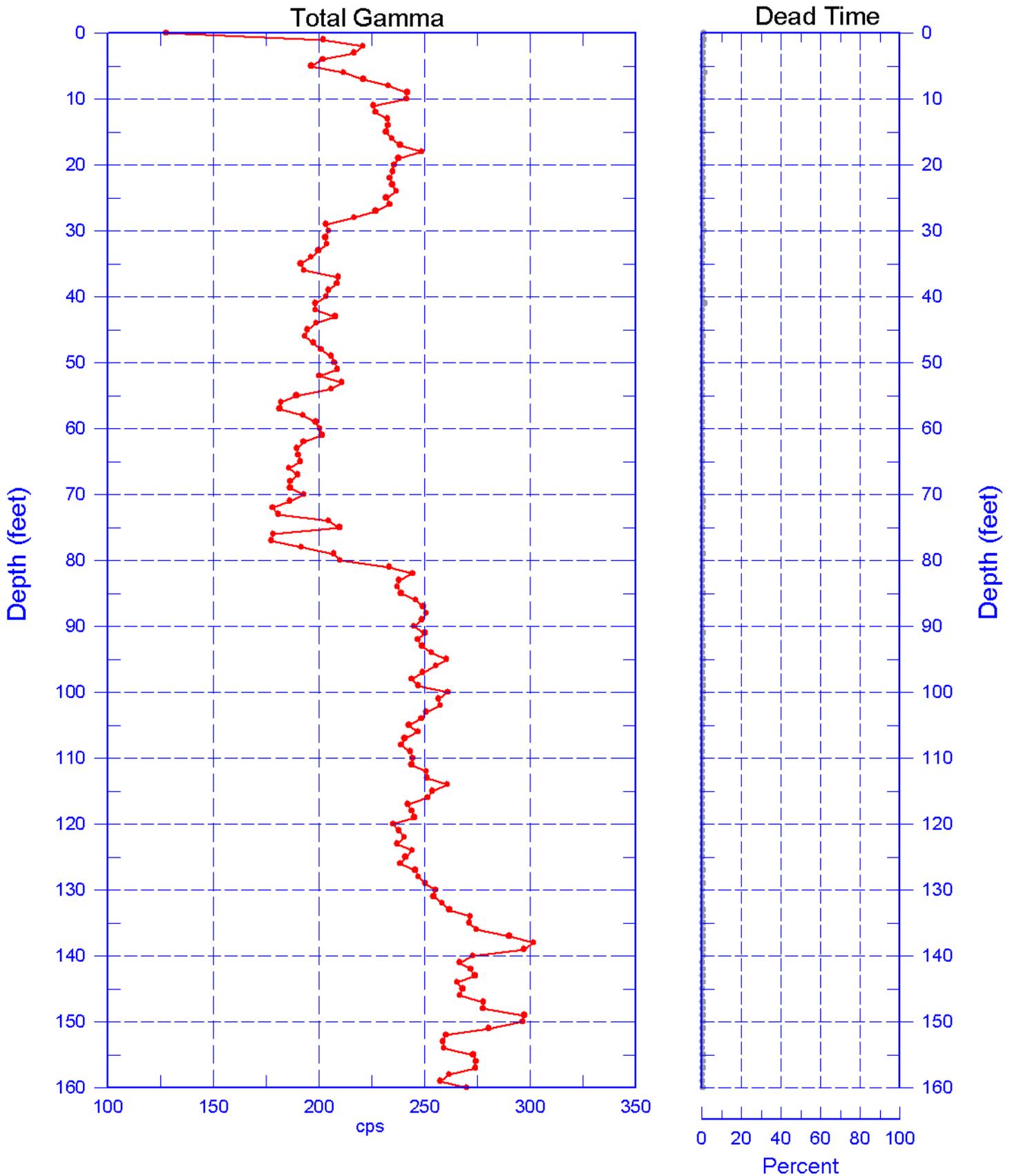
699-33-75 (C4974) Combination Plot



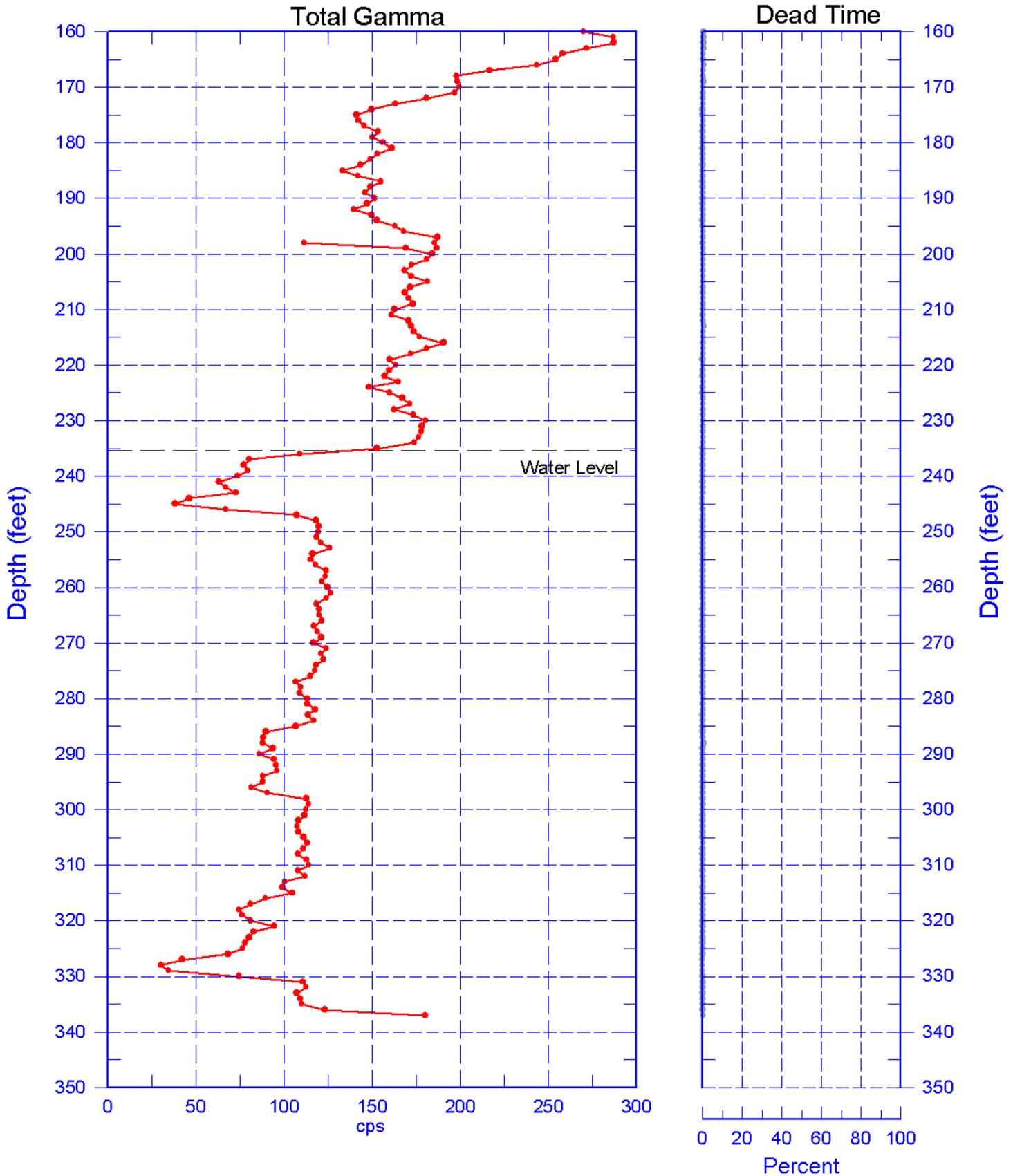
699-33-75 (C4974) Combination Plot



699-33-75 (C4974) Total Gamma & Dead Time

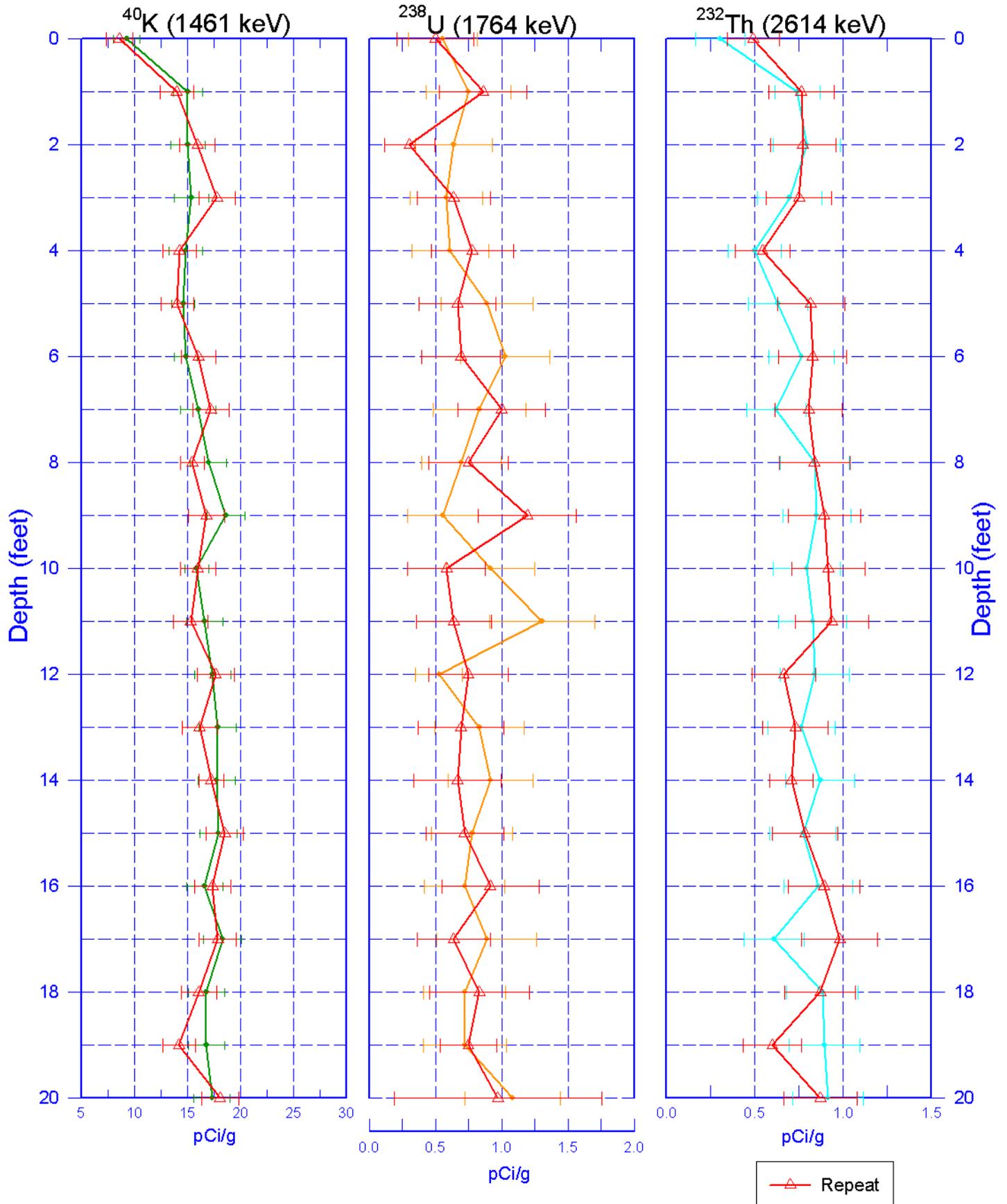


699-33-75 (C4974) Total Gamma & Dead Time



699-33-75 (C4974)

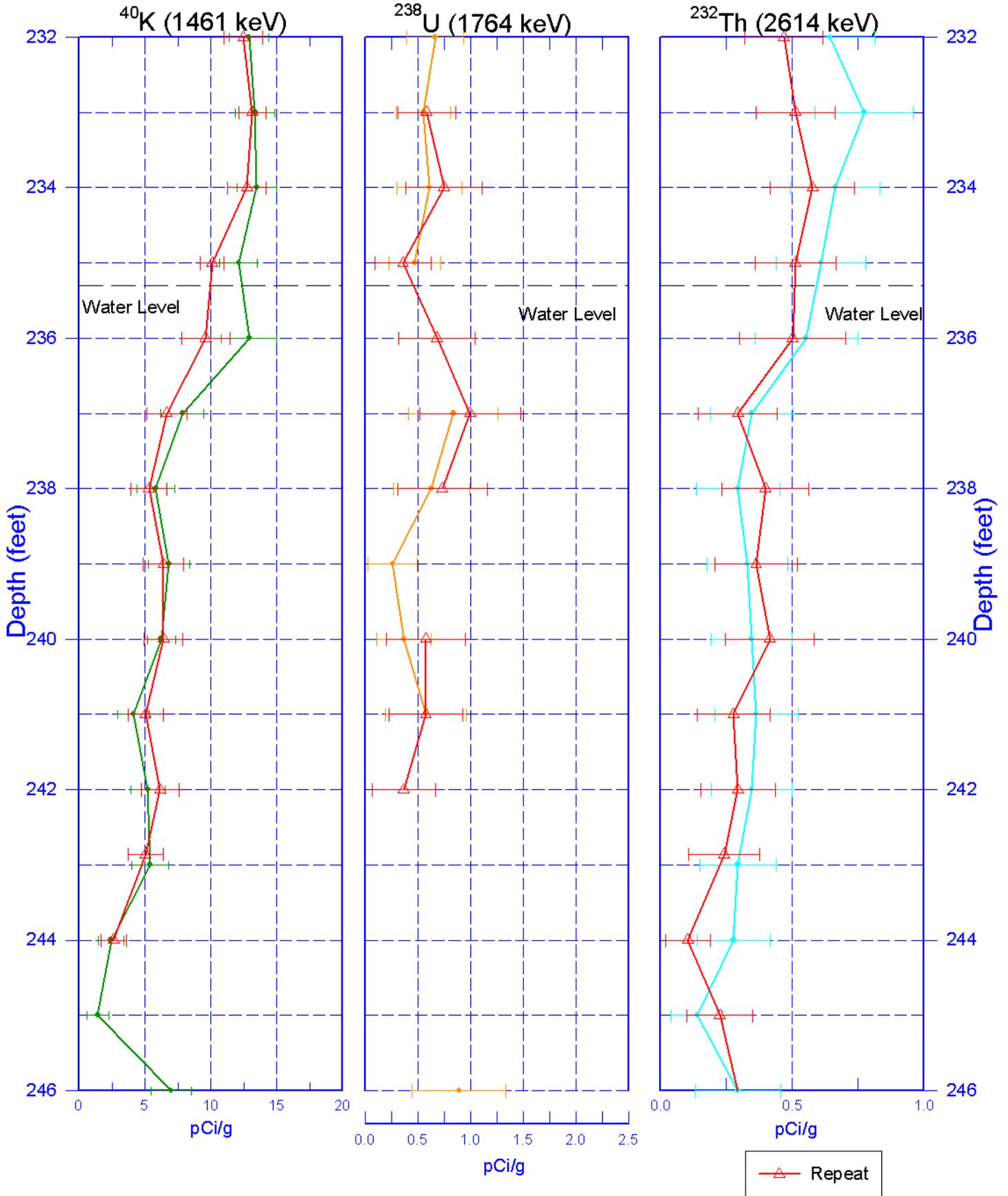
Repeat Section of Natural Gamma Logs



Zero Reference - Ground Surface

699-33-75 (C4974)

Repeat Section of Natural Gamma Logs



Zero Reference - Ground Surface