Stoller
Hanford Office

established 1959

HGLP-LDR-069

299-W11-86 (C5101)
Log Data Report

Borehole Information:

Borehole:	299-W11-86 (C5101)		Site:	200-ZP-1	
Coordinates (WA St Plane)		GWL[1] (ft) :	292.1	GWL Date:	08/03/06
North (m)	East (m)	Drill Date	TOC Elevation	Total Depth (ft)	Type
Not available	Not available	Jun-Aug 2006	Not available	491	Cable tool

Casing Information:

Casing Type	Stickup (ft)	Outer Diameter (in.)	Inside Diameter (in.)	Thickness (in.)	Top (ft)	Bottom (ft)
Threaded Steel	0.5	13.5	12.25	0.625	0.5	159.7
Threaded Steel	4.85	11 13/16	10 5/16	0.75	4.85	491

Borehole Notes:

A thick layer of new gravel was spread on the ground surface to stabilize the work area.

The borehole was drilled in two stages. The first stage was completed to 160 ft with 13-inch casing and logged in June 2006. The second stage was completed and logged to 491 ft in August 2006, with 11-inch casing inside the 13-inch casing.

Zero reference is ground surface.

Groundwater level was obtained form the Well Construction Summary Report.

Logging Equipment Information:

Logging System:	Gamma 4 E		Type:	HPGe (70%) SN: 34TP40587A
Effective Calibration Date:	05/08/06	Calibration Reference:	DOE-EM/GJ 1199-2006	
		Logging Procedure:	GJO-HGLP 1.6.5, Rev 1	

Logging System:	Gamma 1 N		Type:	HPGe (60%) SN:45TP22010A
Effective Calibration Date:	04/05/06	Calibration Reference:	DOE-EM/GJ 1183-2006	
		Logging Procedure:	GJO-HGLP 1.6.5, Rev 1	

Spectral Gamma Logging System (SGLS) Log Run Information:

Log Run	1	2 Repeat	3	4 Repeat	
Date	06/09/06	06/09/06	08/07/06	08/07/06	
Logging Engineer	McClellan	McClellan	Spatz	Spatz	
Start Depth (ft)	159.0	16.0	158.0	160.0	
Finish Depth (ft)	0.0	0.0	491.0	210.0	
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	DEC91CAB	DEC91CAB	AN040CAB	AN040CAB	

Log Run	1	2 Repeat	3	4 Repeat	
Start File	DEC91000	DEC91162	AN040000	AN040334	
Finish File	DEC91161	DEC91178	AN040333	AN040384	
Post-Verification	DEC91CAA	DEC91CAA	AN0404CAA	AN0404CAA	
Depth Return Error (in.)	1.5 low	1 high	3.5 low	0	
Comments	No fine gain adj	Repeat section	No fine gain adj	Repeat section, fine gain adj at beginning of run	

Logging Operation Notes:

The borehole was logged on two occasions as each casing string was completed. A centralizer was used on all runs.

Analysis Notes:

Analyst:	McCain	Date:	04/30/07	Reference:	GJO-HGLP 1.6.3, Rev. 0

Pre-run and post-run verifications for the logging systems were performed before and after each day's data acquisition. The acceptance criteria were met. However, the post-run verification spectrum on Aug 7 (AN040CAA) exhibited anomalous peak spreading. Net count rates from the 609, 1461, and 2615 keV peaks are well within acceptance criteria, and verification spectra collected the following day at 299-W15-82 met acceptance criteria with no anomalies. Furthermore, examination of spectra in log run 4 show no evidence of peak spreading, and the repeat log data agree very well. Therefore, the log data are accepted.

Results and Interpretations:

No significant contamination was detected in this borehole. A few isolated occurrences of Cs-137 near the MDL are the result of statistical fluctuations.

Natural gamma (KUT) shows evidence of stratigraphic variability.

The KUT repeat log data exhibit very good repeatability.

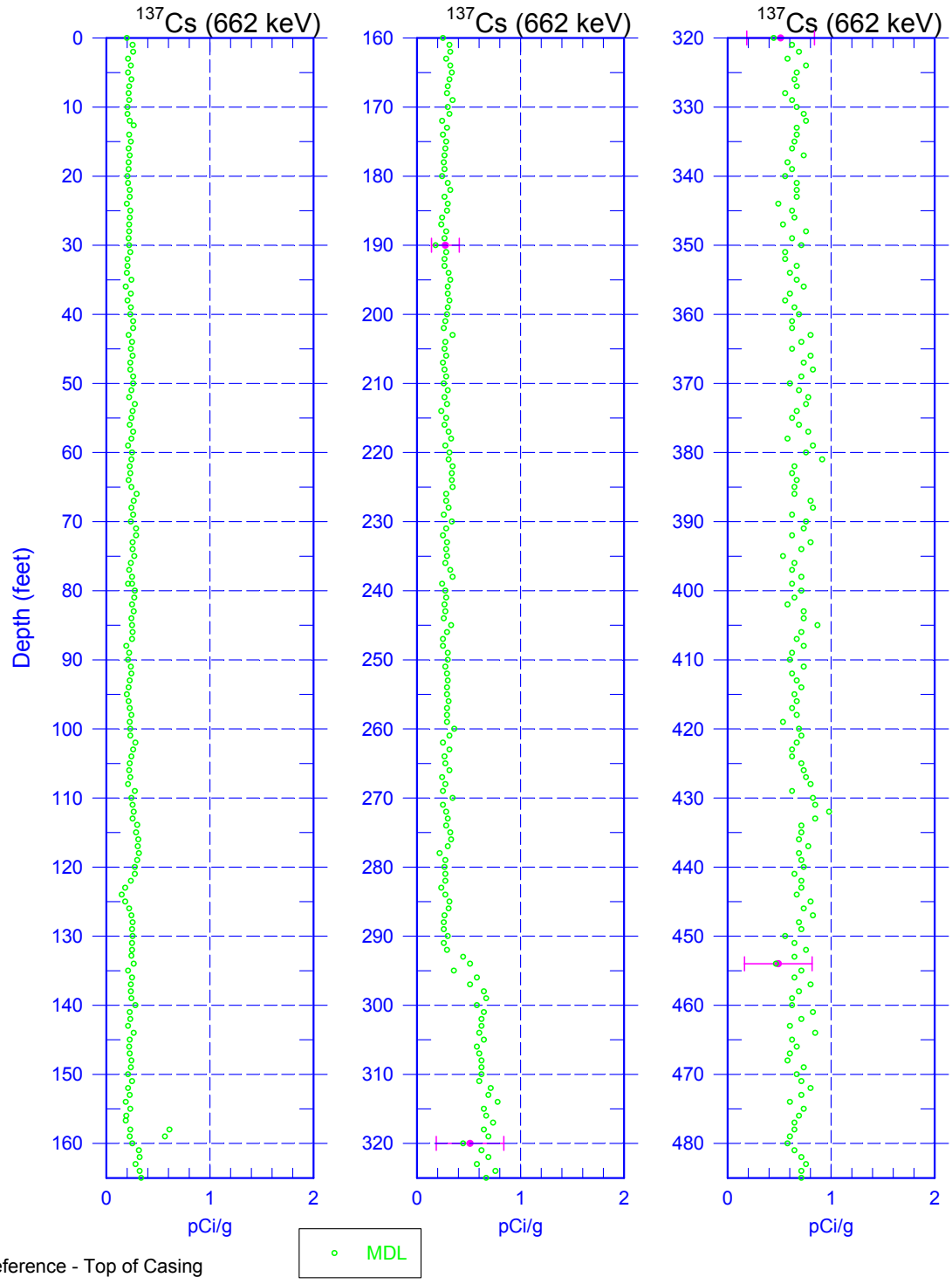
List of Log Plots:

Depth Reference is ground surface
Depth Scale - 20 ft/inch except for repeat logs

Man-made Radionuclides (1 page)
Natural Gamma Logs (4 pages)
Combination Plot (5 pages)
Combination Plot (0-500 ft)
Total Gamma, & Dead Time (2 pages)
Repeat Section of Natural Gamma Logs (2 pages)

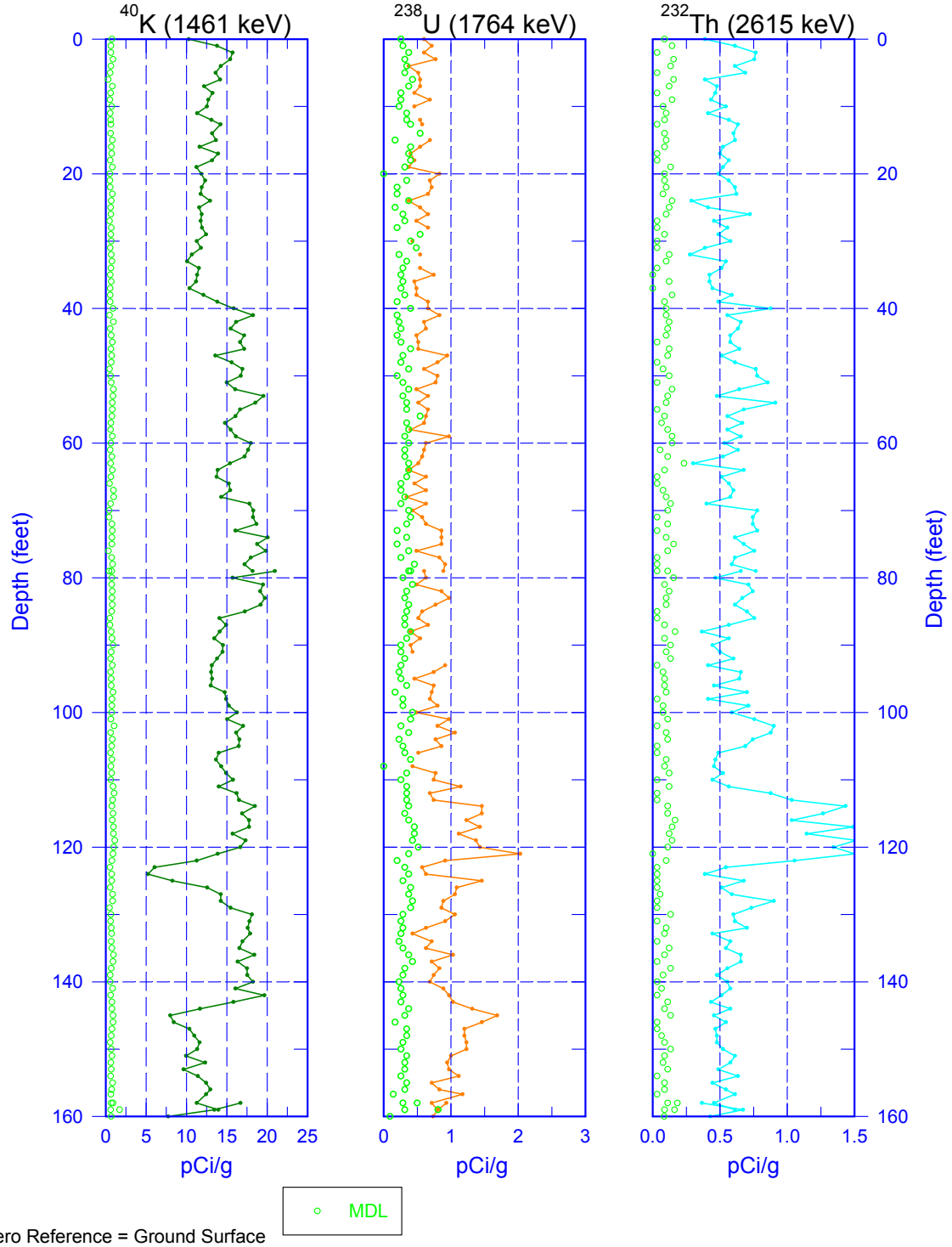
[1] GWL – groundwater level

299-W11-86 (C5101)
Manmade Radionuclides



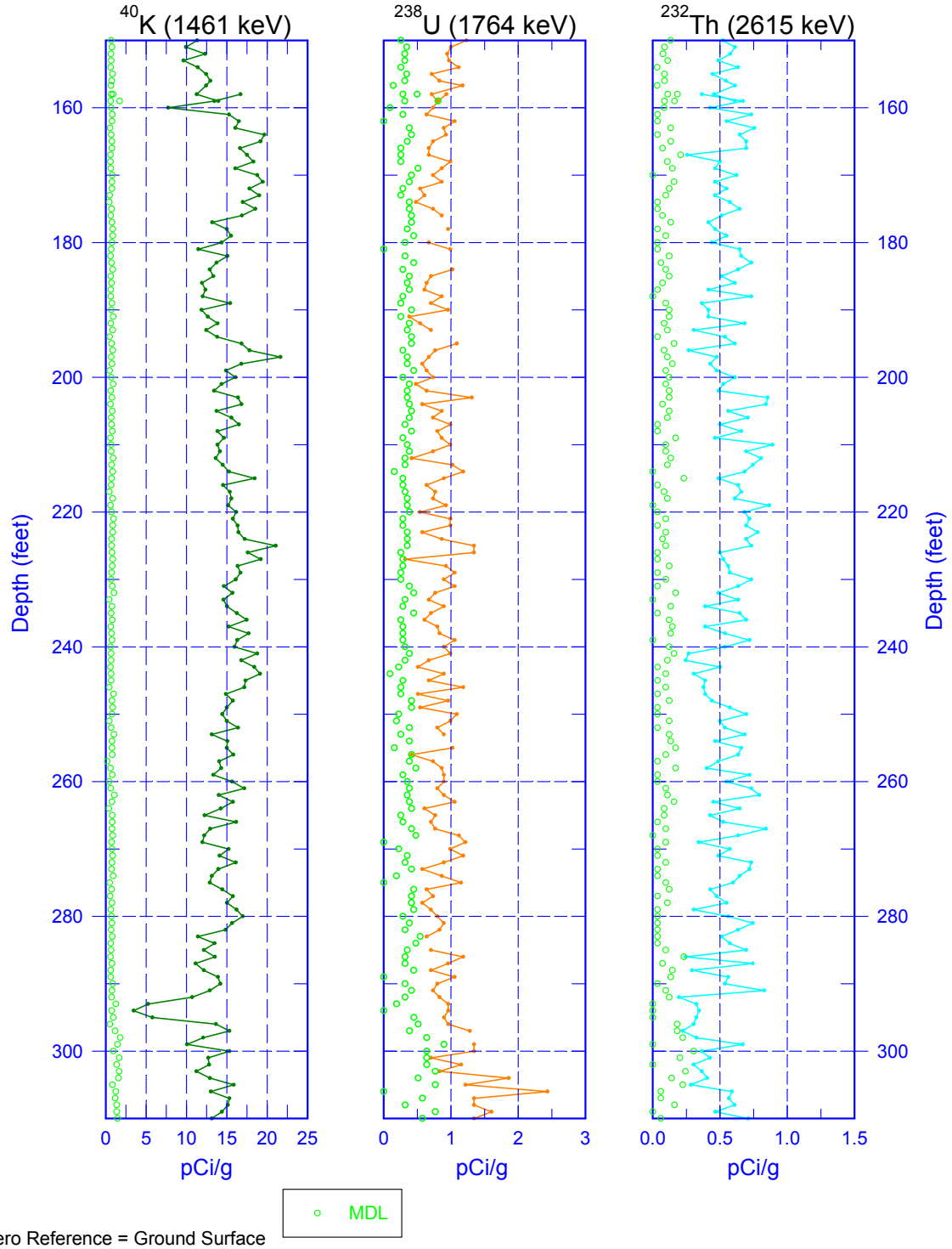
Reference - Top of Casing

299-W11-86 (C5101)
Natural Gamma Logs



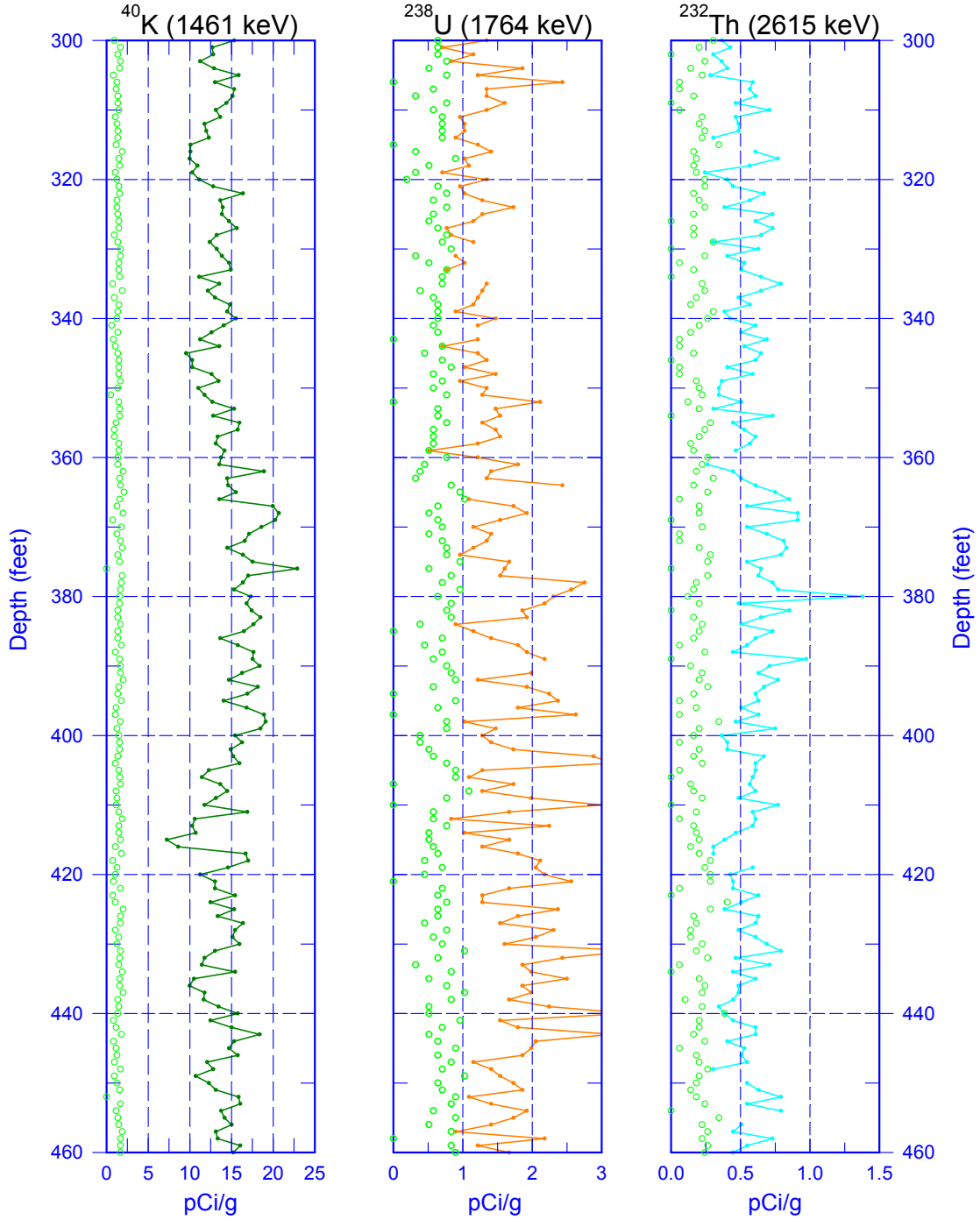
Zero Reference = Ground Surface

299-W11-86 (C5101)
Natural Gamma Logs



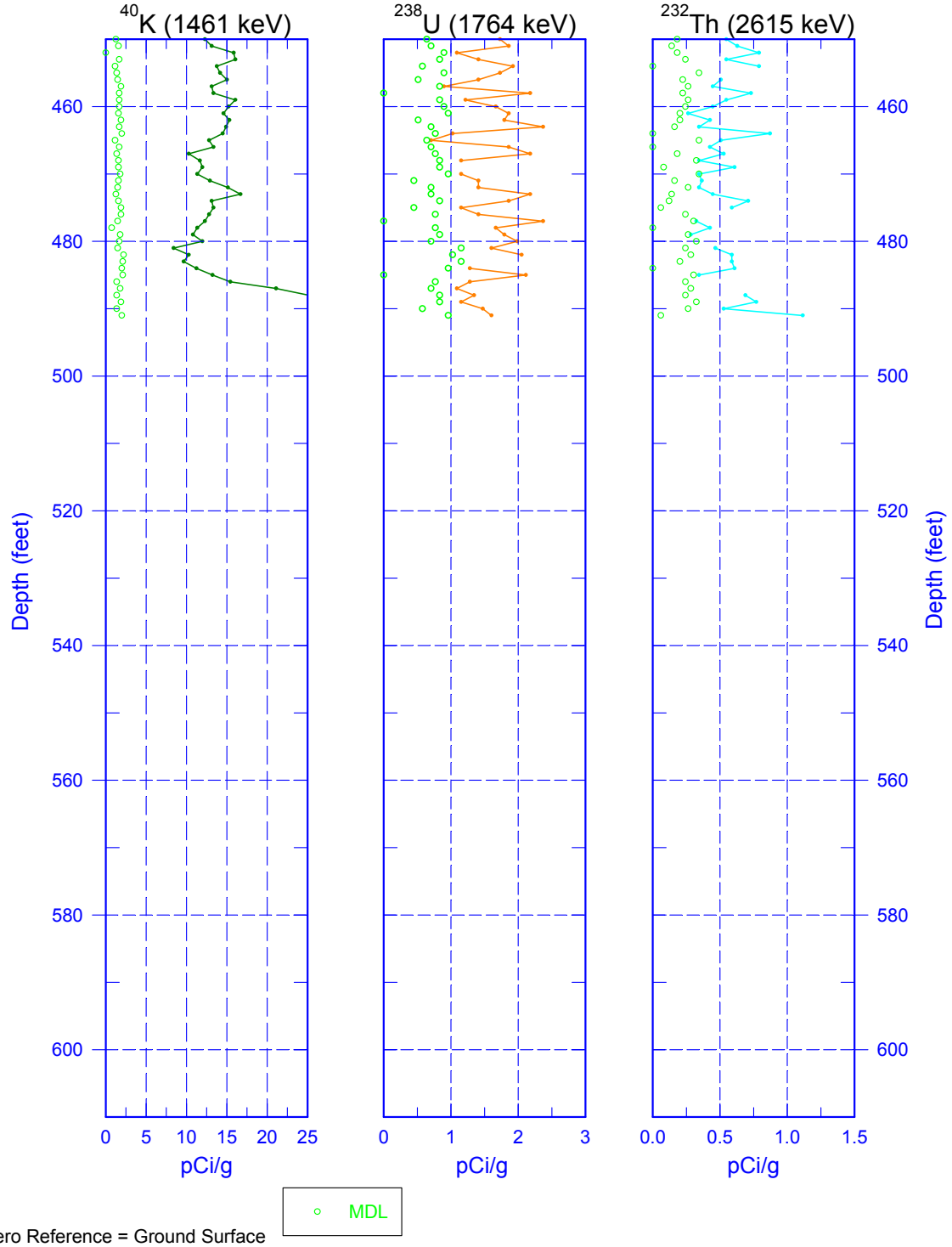
Zero Reference = Ground Surface

299-W11-86 (C5101)
Natural Gamma Logs



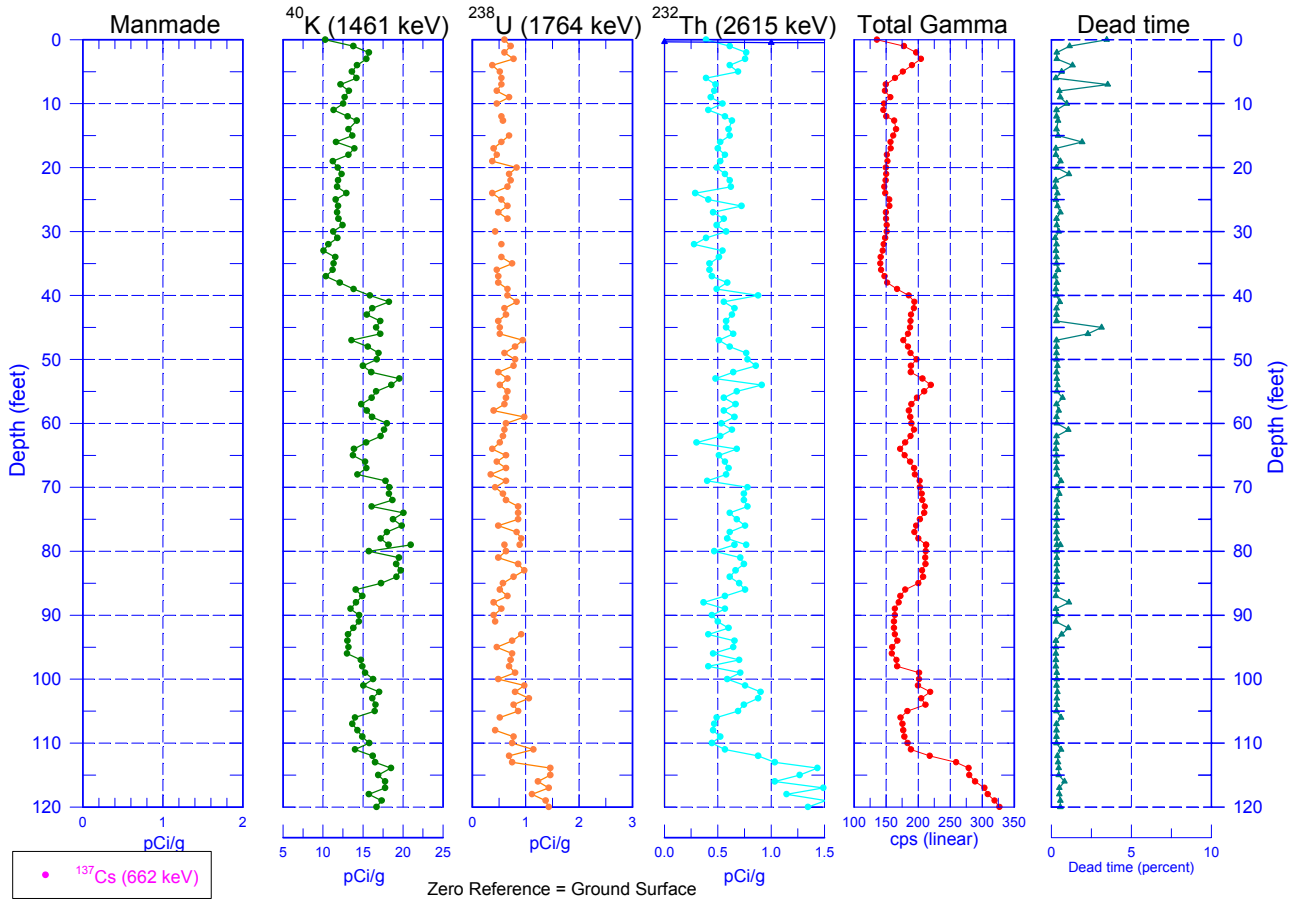
Zero Reference = Ground Surface

299-W11-86 (C5101)
Natural Gamma Logs

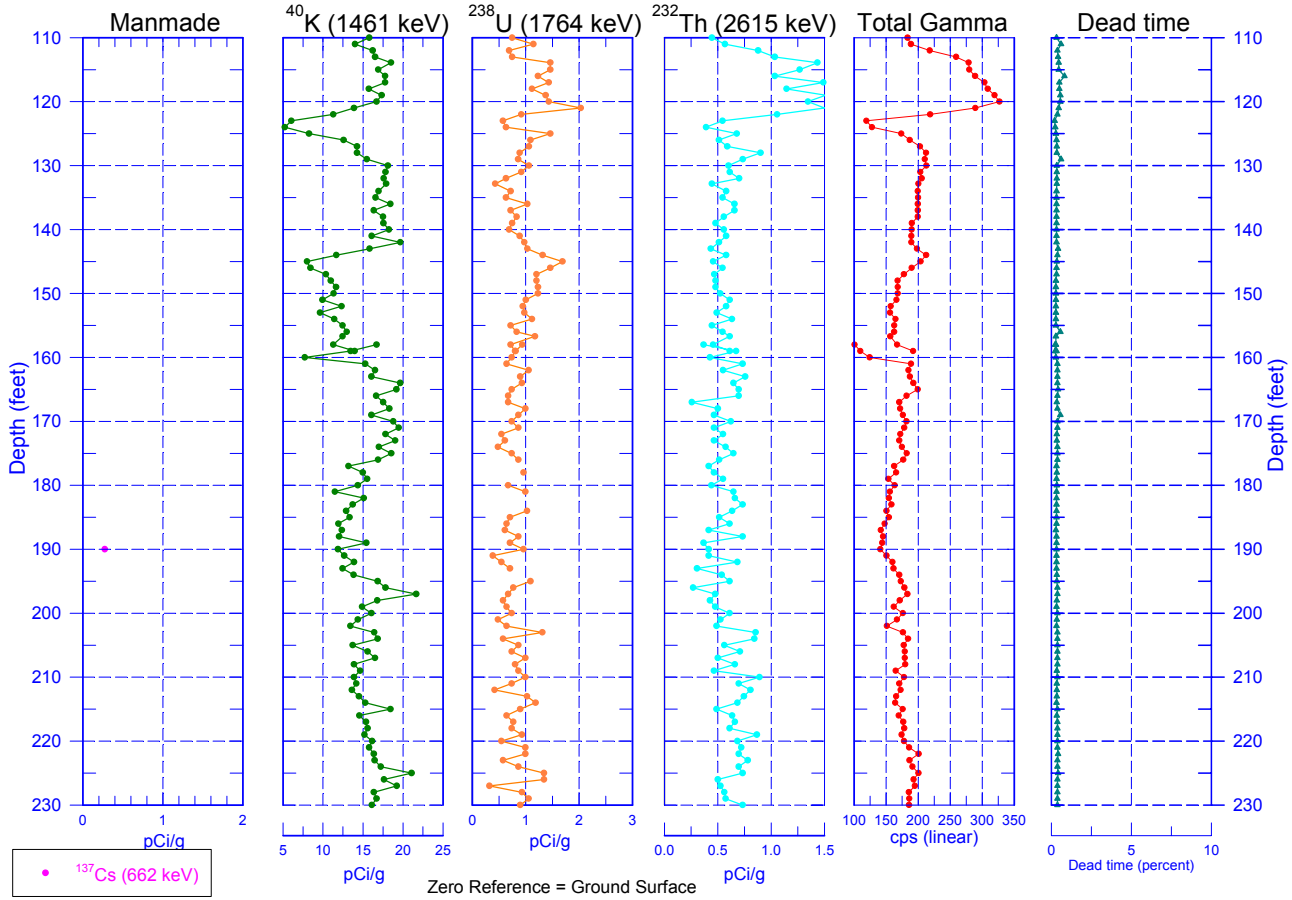


Zero Reference = Ground Surface

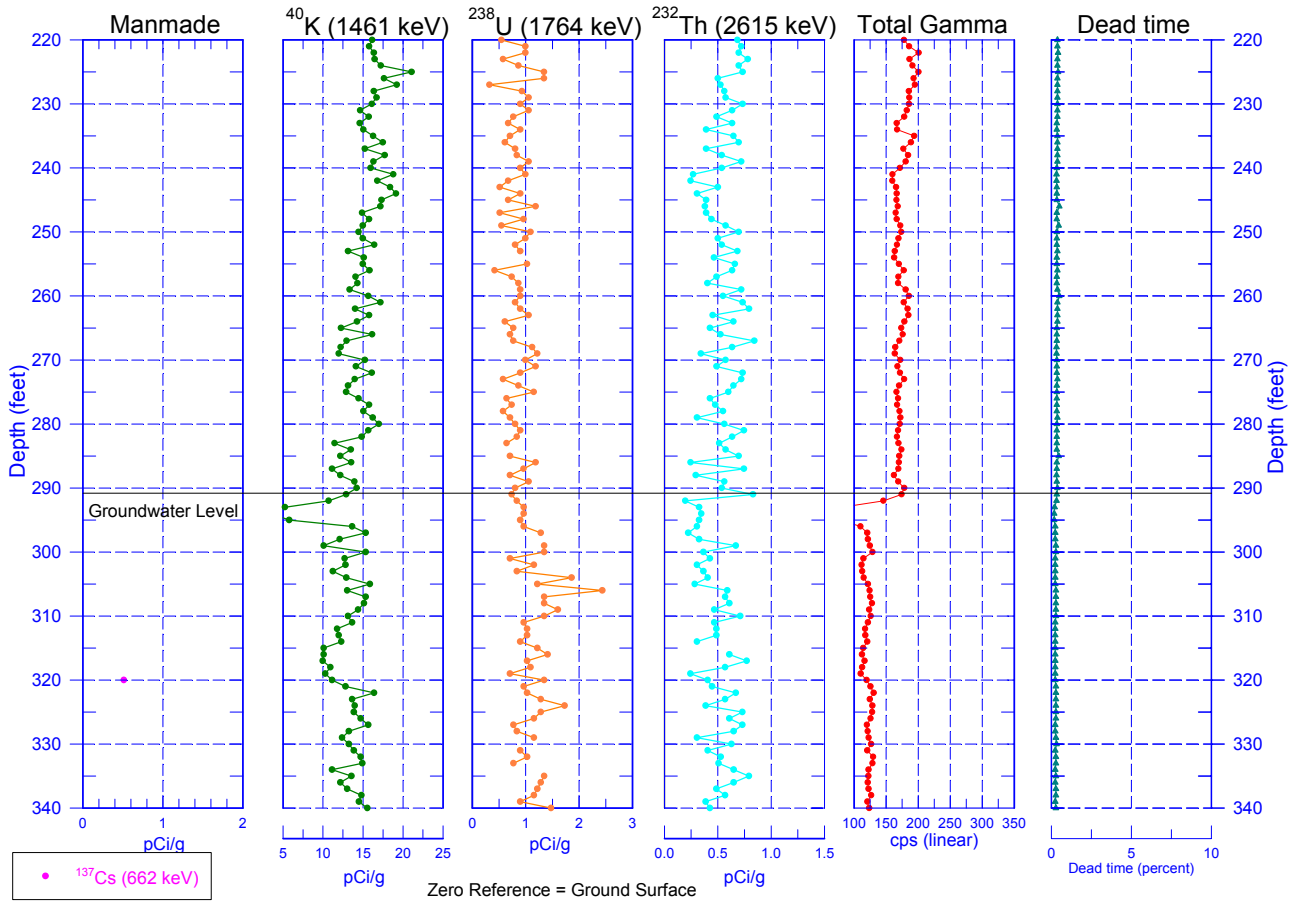
299-W11-86 (C5101) Combination Plot



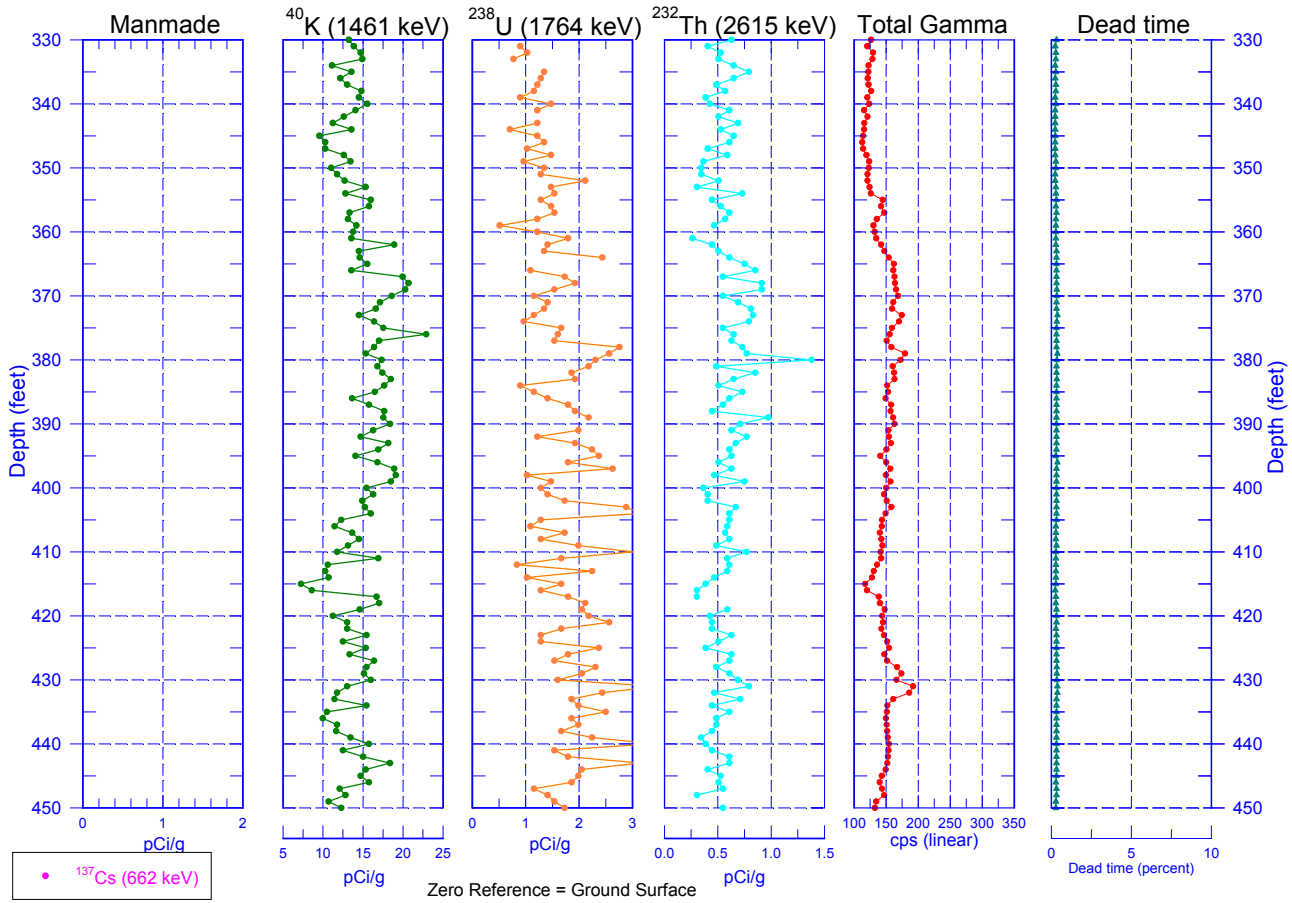
299-W11-86 (C5101) Combination Plot



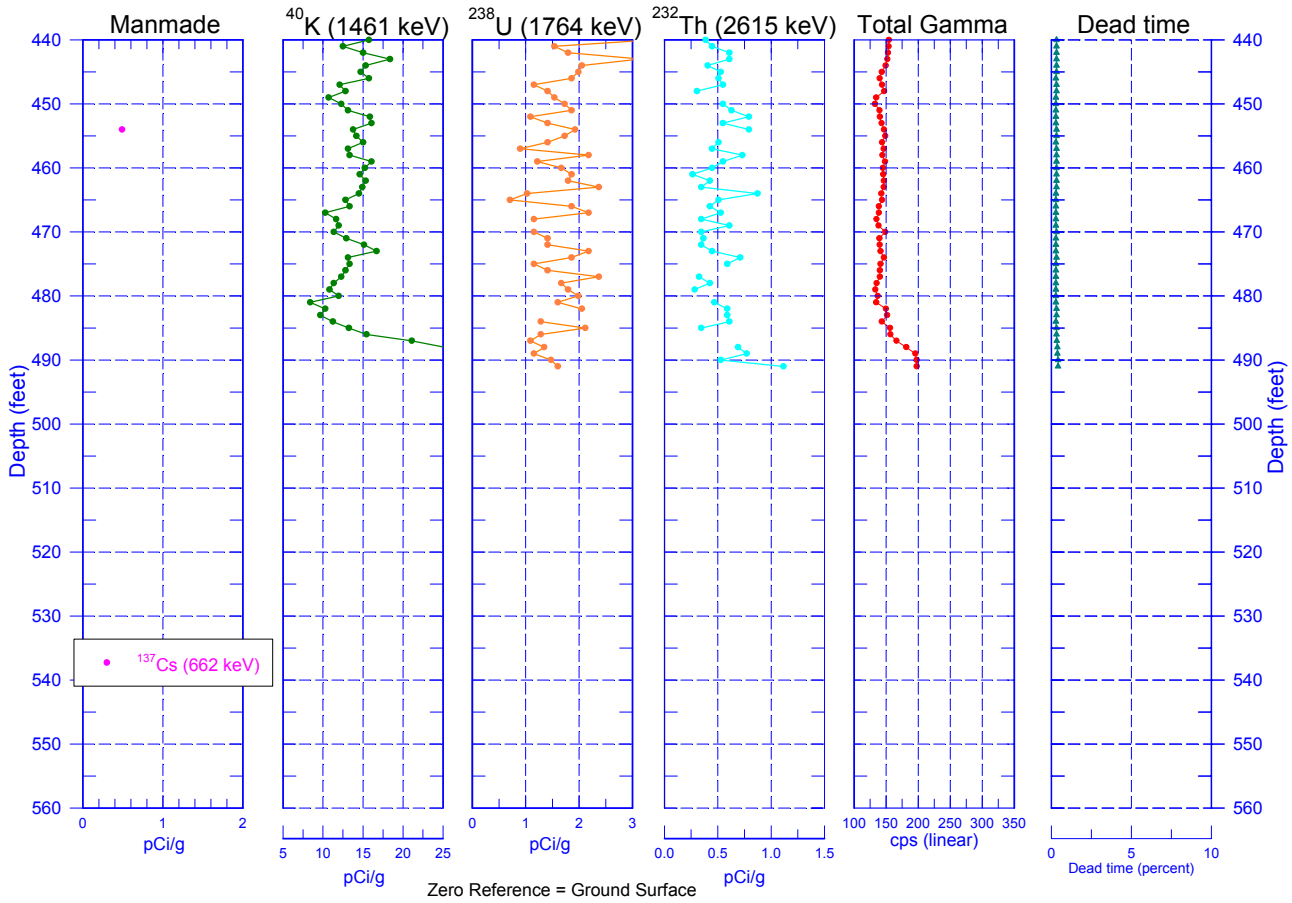
299-W11-86 (C5101) Combination Plot



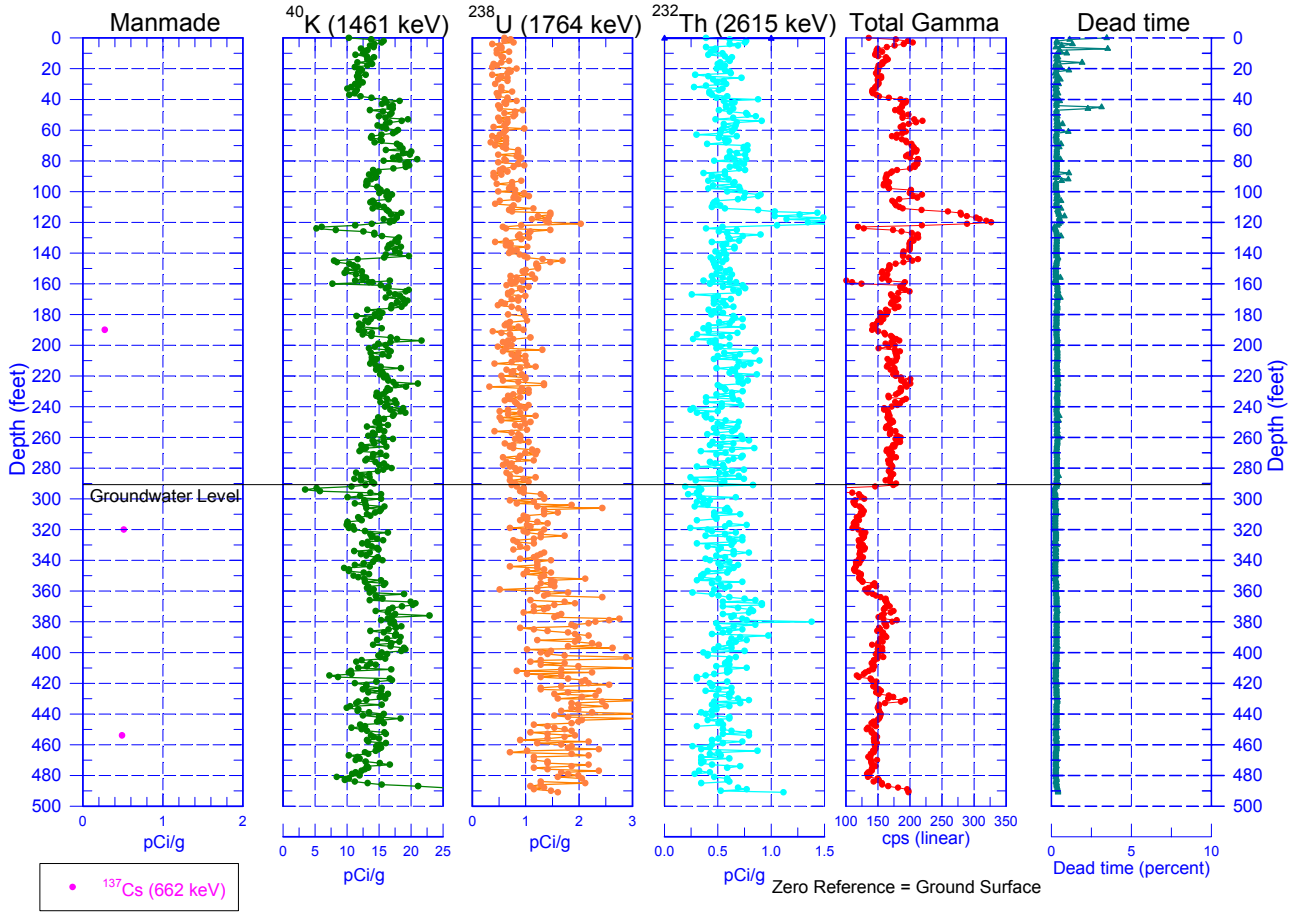
299-W11-86 (C5101) Combination Plot



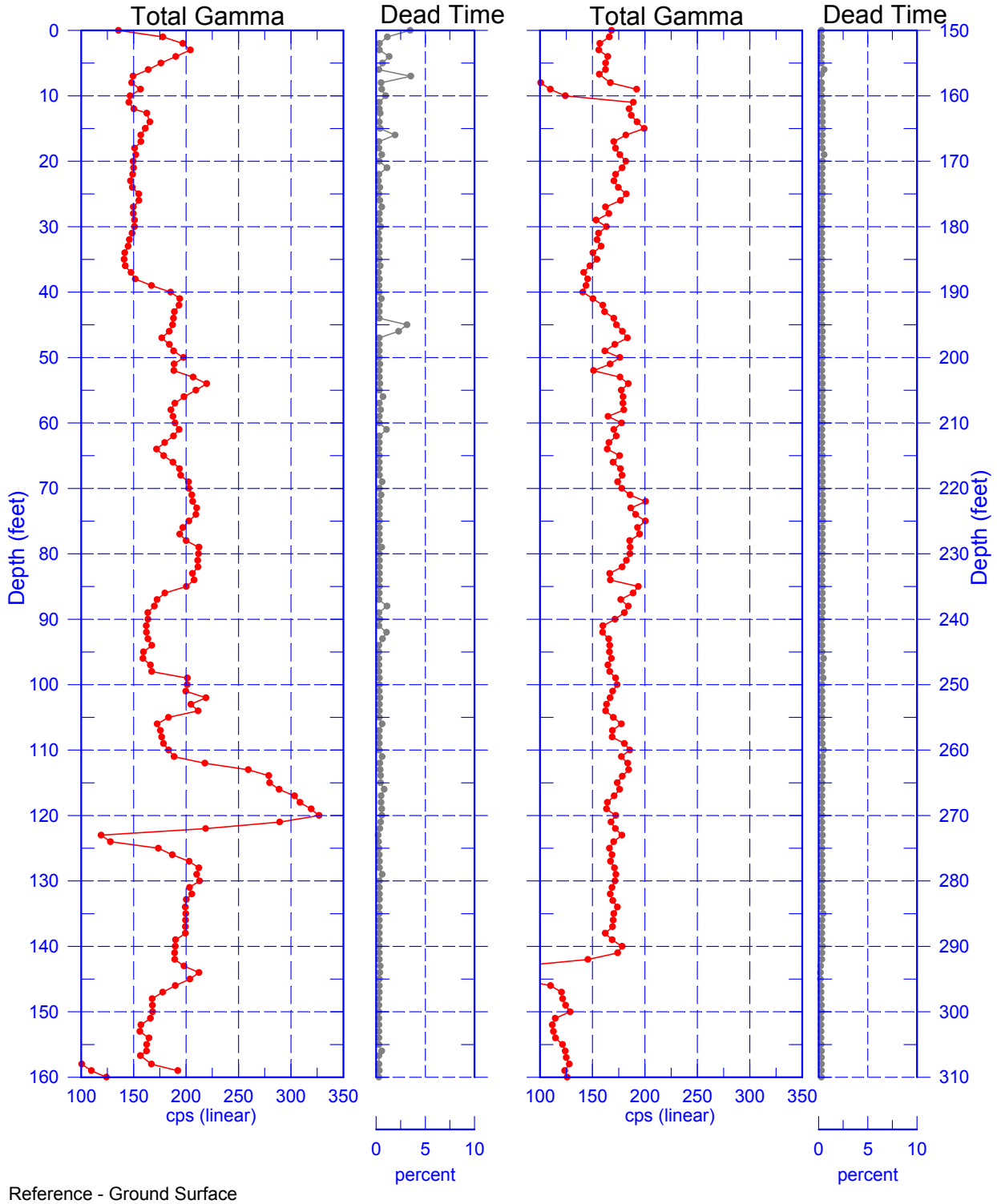
299-W11-86 (C5101) Combination Plot



299-W11-86 (C5101) Combination Plot

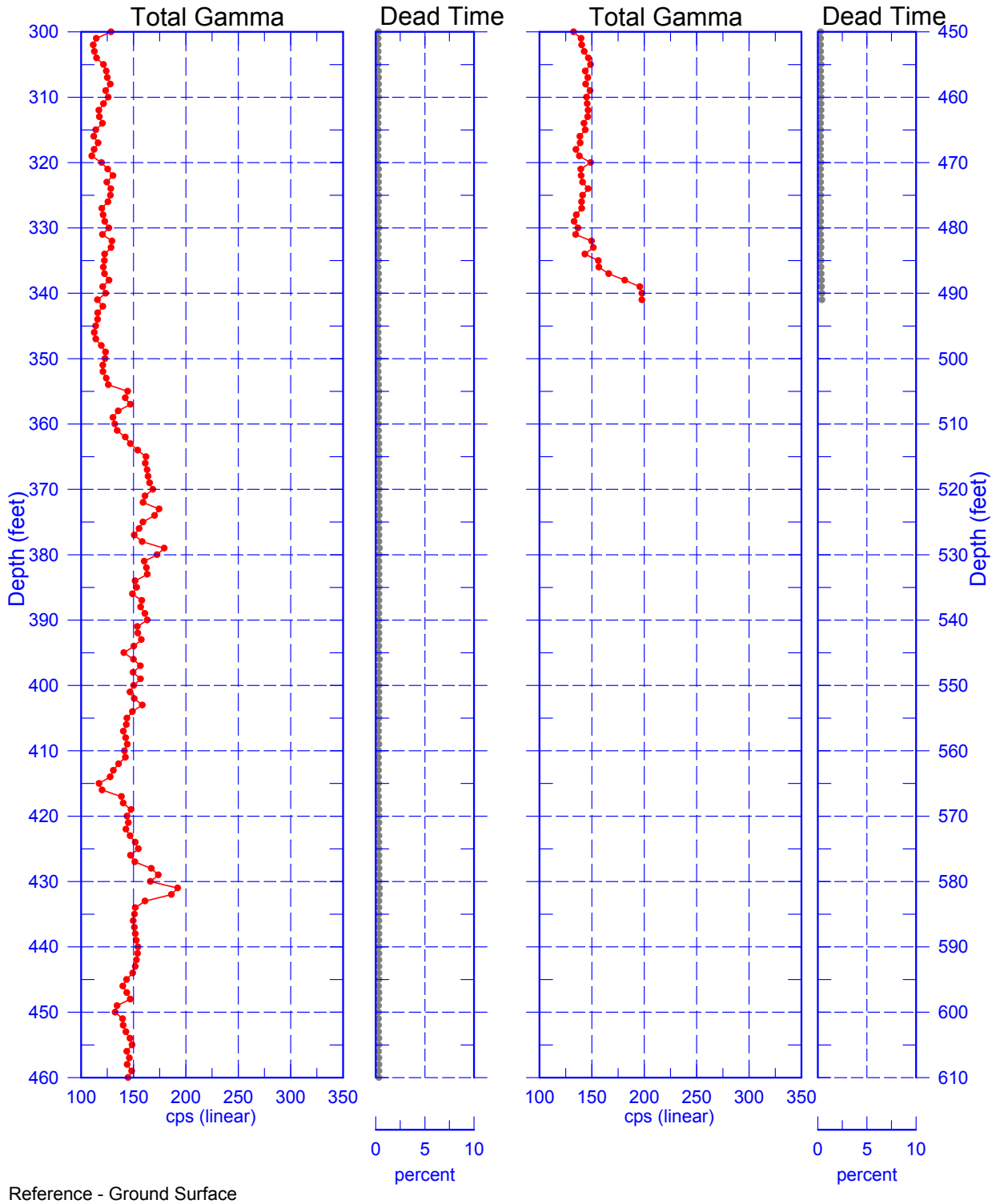


299-W11-86 (C5101)
Total Gamma & Dead Time



Reference - Ground Surface

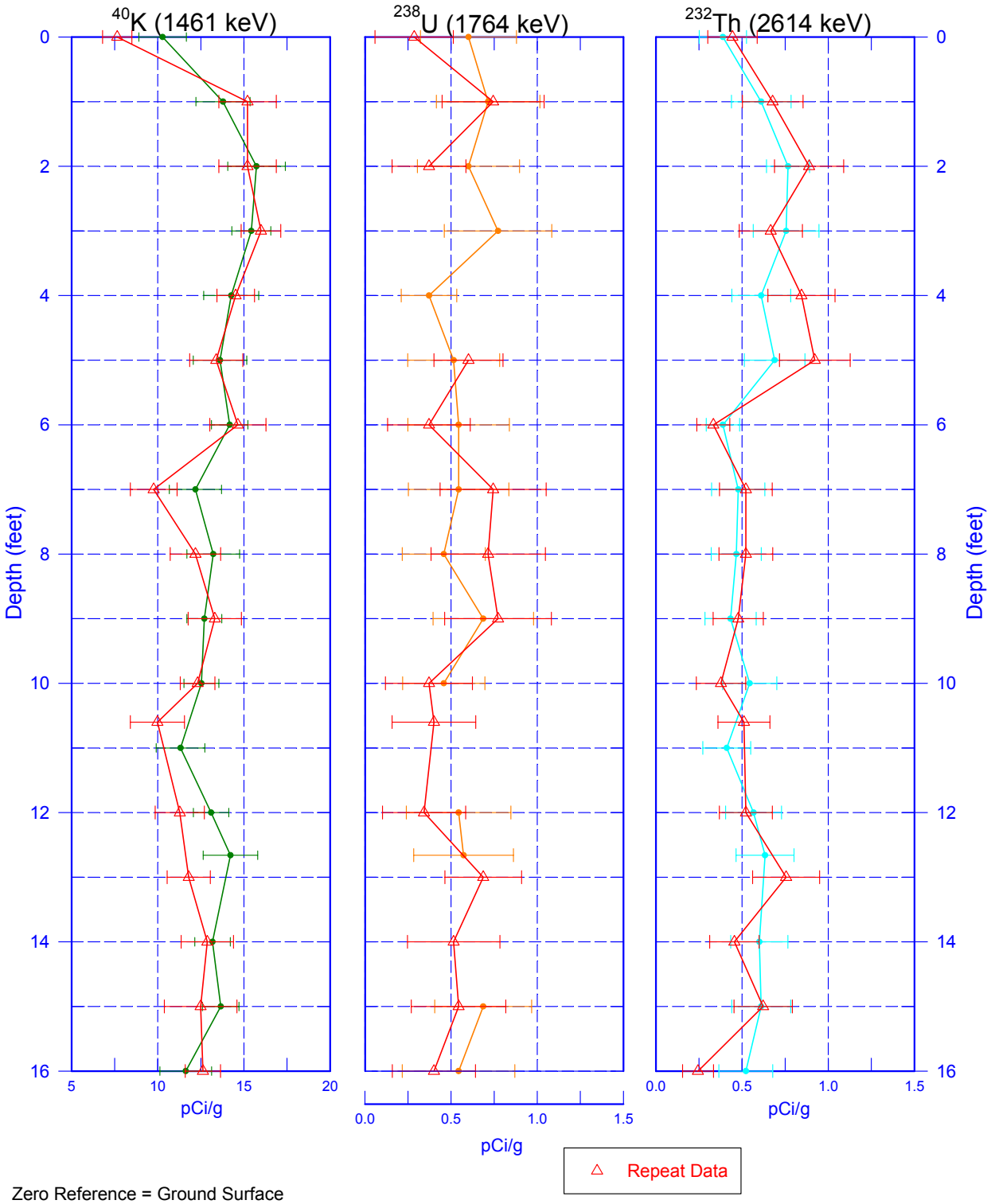
299-W11-86 (C5101)
Total Gamma & Dead Time



Reference - Ground Surface

299-W11-86 (C5101)

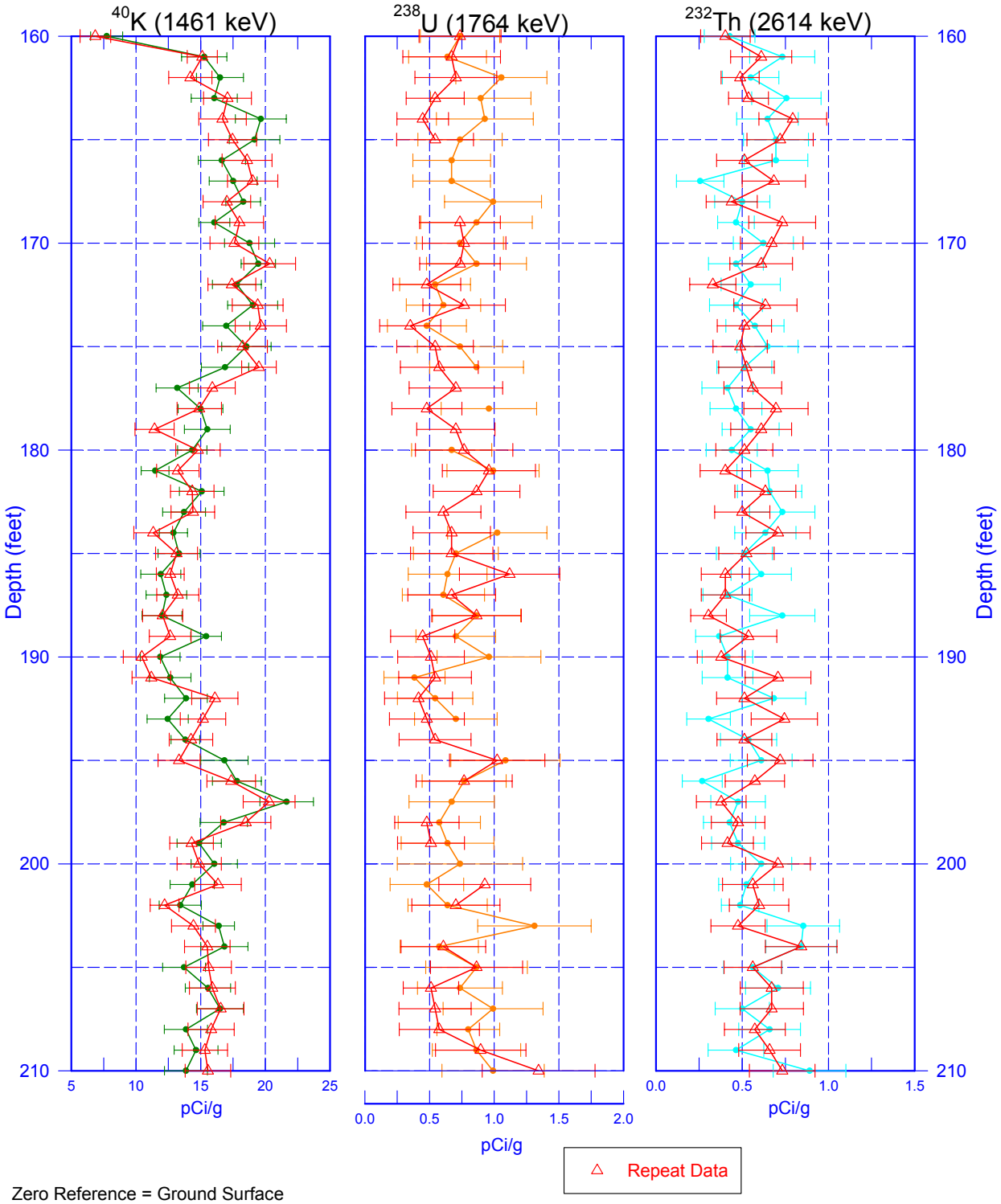
Repeat Section of Natural Gamma Logs



Zero Reference = Ground Surface

299-W11-86 (C5101)

Repeat Section of Natural Gamma Logs



Zero Reference = Ground Surface