299-E33-345 (C6226)
Log Data Report

Borehole Information:

Borehole:	299-E33-345 (C6226)			Site:	E of 299-E33-18 N 241-B Farm
Coordinates (WA St Plane)		GWL[1] (ft):	253.2	GWL Date:	02/25/08
North (m)	East (m)	Drill Date	TOC Elevation	Total Depth (ft)	Type
Not available	Not available	02/08	Not available	264	Cable

Casing Information:

Casing Type	Stickup (ft)	Outer Diameter (in.)	Inside Diameter (in.)	Thickness (in.)	Top (ft)	Bottom (ft)
Threaded steel	1.3	12 3/4	12	3/8	0	238.7
Threaded steel	3.45	10 3/4	9 3/8	11/16	0	260

Borehole Notes:

The logging engineer measured the casing diameters with a caliper and steel tape. The onsite geologist reported the casing depths.

Logging Equipment Information:

Logging System:	Gamma 4N		Type: / Serial No.:	SGLS HpGe (60%) / 45TP22010A
Effective Calibration Date:	09/20/07	Calibration Reference:	HGLP-CC-022, Rev. 1	
		Logging Procedure:	HGLP-MAN-002, Rev. 0	

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

Logging System:	Gamma 4H (with AmBe source)		Type: / Serial No.:	NMLS / H310700352
Effective Calibration Date:	11/06/07	Calibration Reference:	HGLP-CC-021	
		Logging Procedure:	HGLP-MAN-002, Rev. 0	

Spectral Gamma Logging System (SGLS) Log Run Information:

Log Run	1	2	3 Repeat	4 Repeat	8
Date	02/14/08	02/15/08	02/15/08	02/15/08	02/25/08
Logging Engineer	Spatz	Spatz	Spatz	Spatz	Spatz
Start Depth (ft)	0.0	243.0	216.0	235.0	242.0
Finish Depth (ft)	195.0	194.0	240.0	235.0	264.0
Count Time (sec)	100	100	100	1000	100
Live/Real	R	R	R	R	R
Shield (Y/N)	N	N	N	N	N
MSA Interval (ft)	1.0	1.0	1.0	None	1.0
Pre-Verification	DN971CAB	DN981CAB	DN981CAB	DN981CAB	AL024CAB
Start File	DN971000	DN981000	DN981050	DN981075	AL024000
Finish File	DN971195	DN981049	DN981074	DN981075	AL024022
Post-Verification	DN971CAA	DN981CAA	DN981CAA	DN981CAA	AL024CAA

Log Run	1	2	3 Repeat	4 Repeat	8
Depth Return Error (in.)	- 3.0	N/A	N/A	N/A	N/A
Comments	No fine gain adjustment	No fine gain adjustment	Fine gain adjustment after file -058.	No fine gain adjustment	No fine gain adjustment

Log Run	9 Repeat				
Date	02/25/08				
Logging Engineer	Spatz				
Start Depth (ft)	252.0				
Finish Depth (ft)	257.0				
Count Time (sec)	100				
Live/Real	R				
Shield (Y/N)	N				
MSA Interval (ft)	1.0				
Pre-Verification	AL024CAB				
Start File	AL024023				
Finish File	AL024028				
Post-Verification	AL024CAA				
Depth Return Error (in.)	- 2.0				
Comments	No fine gain adjustment				

Neutron Moisture Logging System (NMLS) Log Run Information:

Log Run	5	6	7 Repeat	10	11 Repeat
Date	02/15/08	02/15/08	02/15/08	02/25/08	02/25/08
Logging Engineer	Spatz	Spatz	Spatz	Spatz	Spatz
Start Depth (ft)	0.0	200.25	214.0	239.0	242.0
Finish Depth (ft)	100.0	240.0	239.0	253.25	247.0
Count Time (sec)	15	15	15	15	15
Live/Real	R	R	R	R	R
Shield (Y/N)	N	N	N	N	N
MSA Interval (ft)	0.25	0.25	0.25	0.25	0.25
Pre-Verification	DHB12CAB	DHB12CAB	DHB12CAB	DHB82CAB	DHB82CAB
Start File	DHB12000	DHB22000	DHB22160	DHB82000	DHB82058
Finish File	DHB12800	DHB22159	DHB22260	DHB82057	DHB82078
Post-Verification	DHB22CAA	DHB22CAA	DHB22CAA	DHB82CAA	DHB82CAA
Depth Return Error (in.)	N/A	N/A	- 2.0	N/A	- 3.0
Comments	None	Changed file name	None	None	None

Logging Operation Notes:

Logging was conducted with a centralizer on the sondes. Data were mostly acquired in a single casing. Exceptions include a few depth intervals below the bottom of each casing where the sonde entered an open hole. All measurements are referenced to ground surface.

Analysis Notes:

Analyst:	Henwood	Date:	02/27/08	Reference:	GJO-HGLP 1.6.3, Rev. 0

Pre- and post-run verifications for the logging systems were performed before and after each day's data acquisition. The acceptance criteria were met.

Two different sized casings were used in drilling this borehole. For log runs 1 to 4, a casing correction for a 3/8-in.-thick casing was applied to the SGLS data to 238.7 ft; from 239 to 243 no correction was applied, as this depth interval was open hole below the casing. For log run 8, from 242 to 260 ft, a casing correction for 11/16-in. thick casing was applied. From 260 ft to total depth (264 ft) no correction was applied, as the depth interval was open hole below the casing. Note: The total gamma and neutron moisture data are not corrected for casing so that the count rates do not repeat at depth overlaps where casing changes are made. Data acquired below the 253.2 ft water level were also corrected for water.

The moisture data are reported in counts per second (cps), as there is no valid calibration available for the multiple casings used in this borehole. The data reflect relative moisture content.

SGLS spectra were processed in batch mode using APTEC SUPERVISOR to identify individual energy peaks and determine count rates. Concentrations were calculated with EXCEL worksheet templates identified as G1LJuly07.xls and G4Nsept07.xls for logging systems Gamma 1L and Gamma4N, respectively, using efficiency functions and corrections for casing, dead time, and water as determined from annual calibrations.

Results and Interpretations:

Cs-137 was detected in two intervals from ground surface to 9 ft and from 12 to 20 ft. The maximum concentration was measured at approximately 18 pCi/g at 4 ft. Other detections in the borehole near the MDL are statistical fluctuations and do not exhibit full energy peaks.

Evidence of processed uranium (U-238 and U-235) exists between 230 and 240 ft. U-238 concentrations are determined by the Pa-234m energy peak at 1001 keV. U-235 is directly measured by the 185.72 keV energy peak. As determined from a spectrum (file number DN981075, log run 4) acquired for 1000 seconds, the maximum concentrations for U-238 and U-235 are approximately 74 and 3 pCi/g.

Moisture data indicate relatively high moisture from approximately 218 to 243 ft.

Repeat sections acquired for each logging system indicate good repeatability.

List of Log Plots:

Depth Reference is top of casing

Manmade Radionuclides (2 pages)
Natural Gamma Logs (2 pages)
Combination Plot (3 pages)
Combination Plot (0 to 280 ft)
Total Gamma & Moisture (0 to 280 ft)
Repeat of Manmade Radionuclides
Repeat Section of Natural Gamma Logs (216 to 240 ft)
Repeat Section of Natural Gamma Logs (252 to 257 ft)
Repeat Section for Total Gamma & Moisture (35 to 45 ft)
Repeat Section for Total Gamma & Moisture (214 to 239 ft)

[1] GWL – groundwater level

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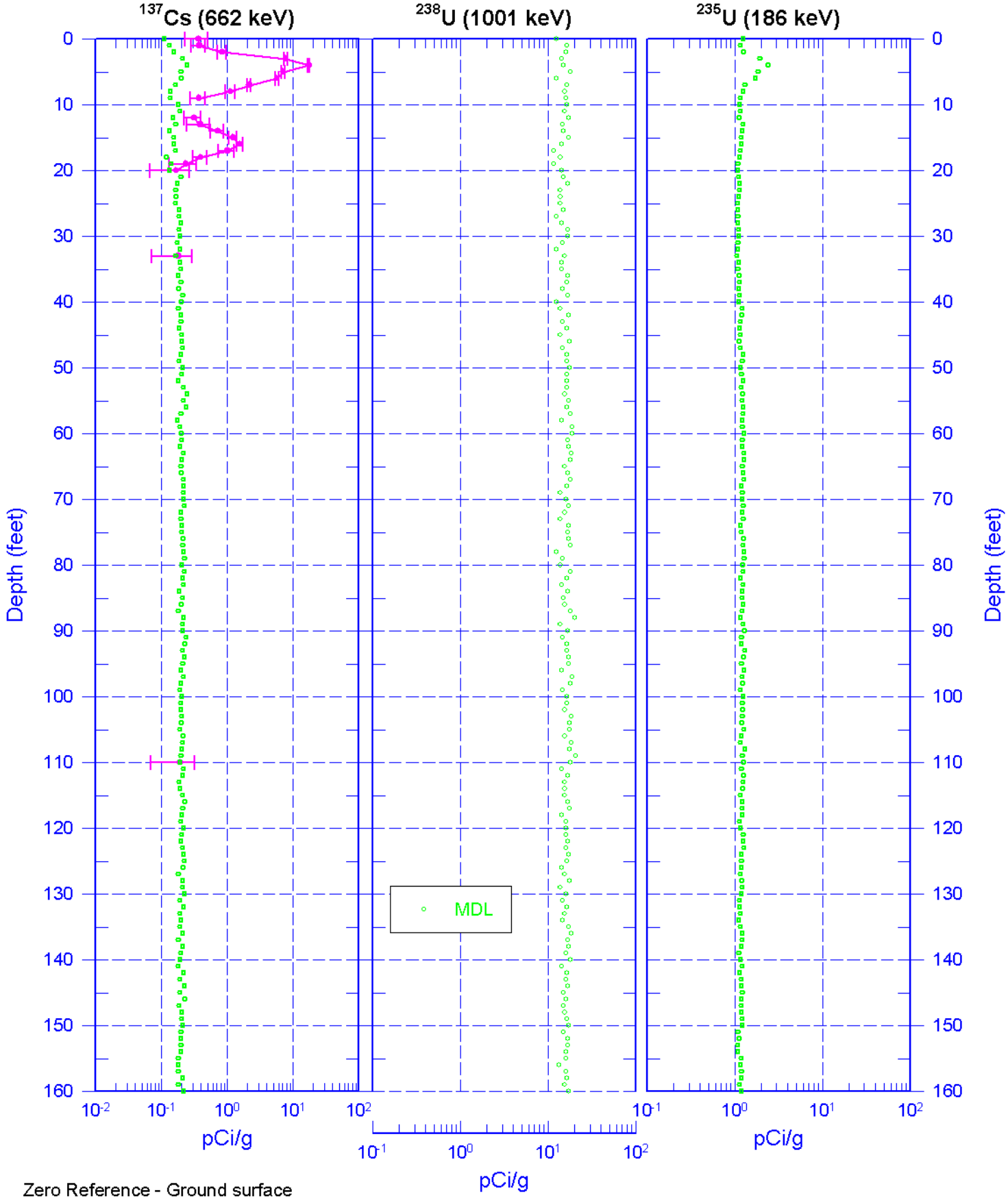
Man-Made Radionuclides



Zero Reference - Ground surface

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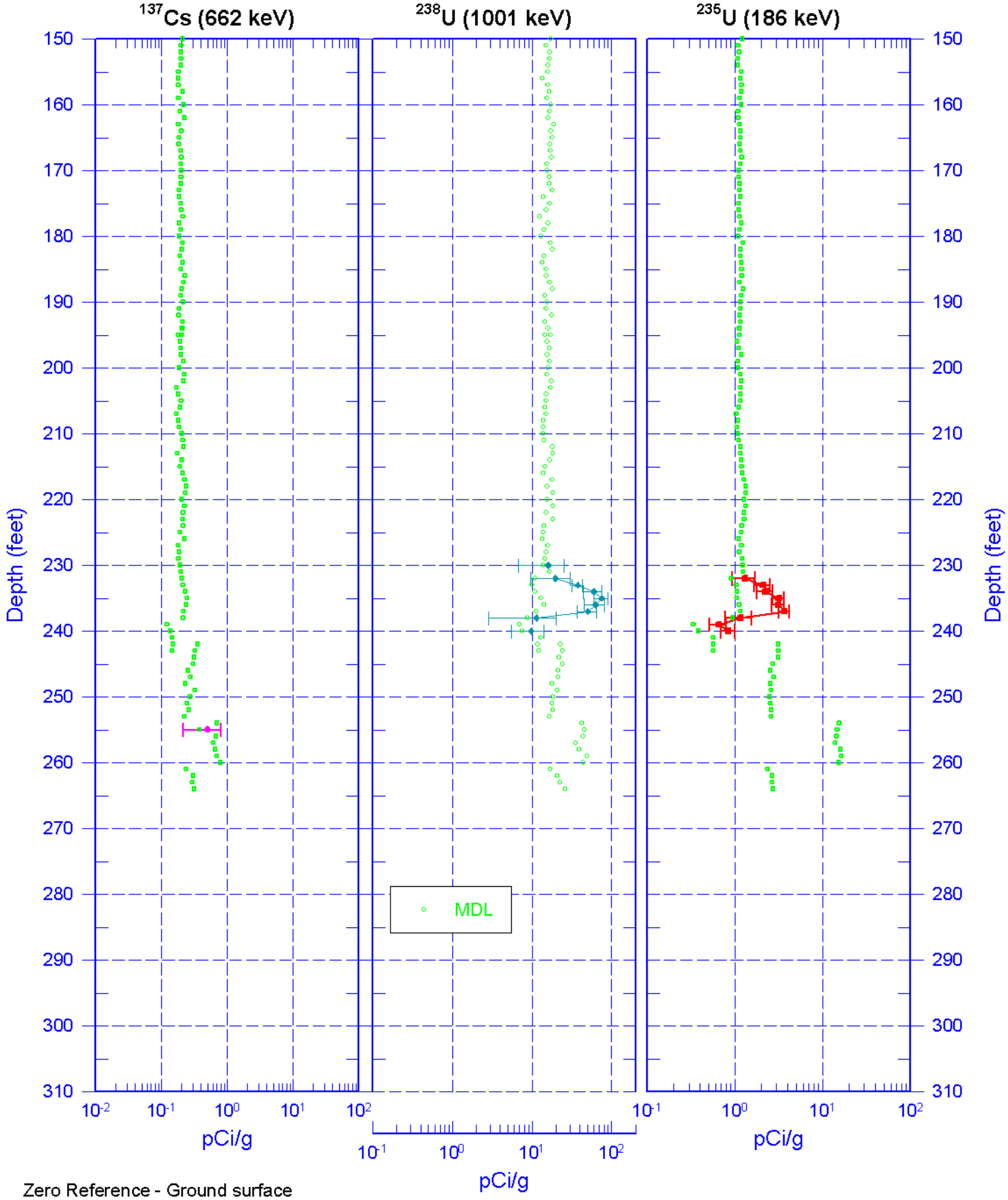
Man-Made Radionuclides



Zero Reference - Ground surface

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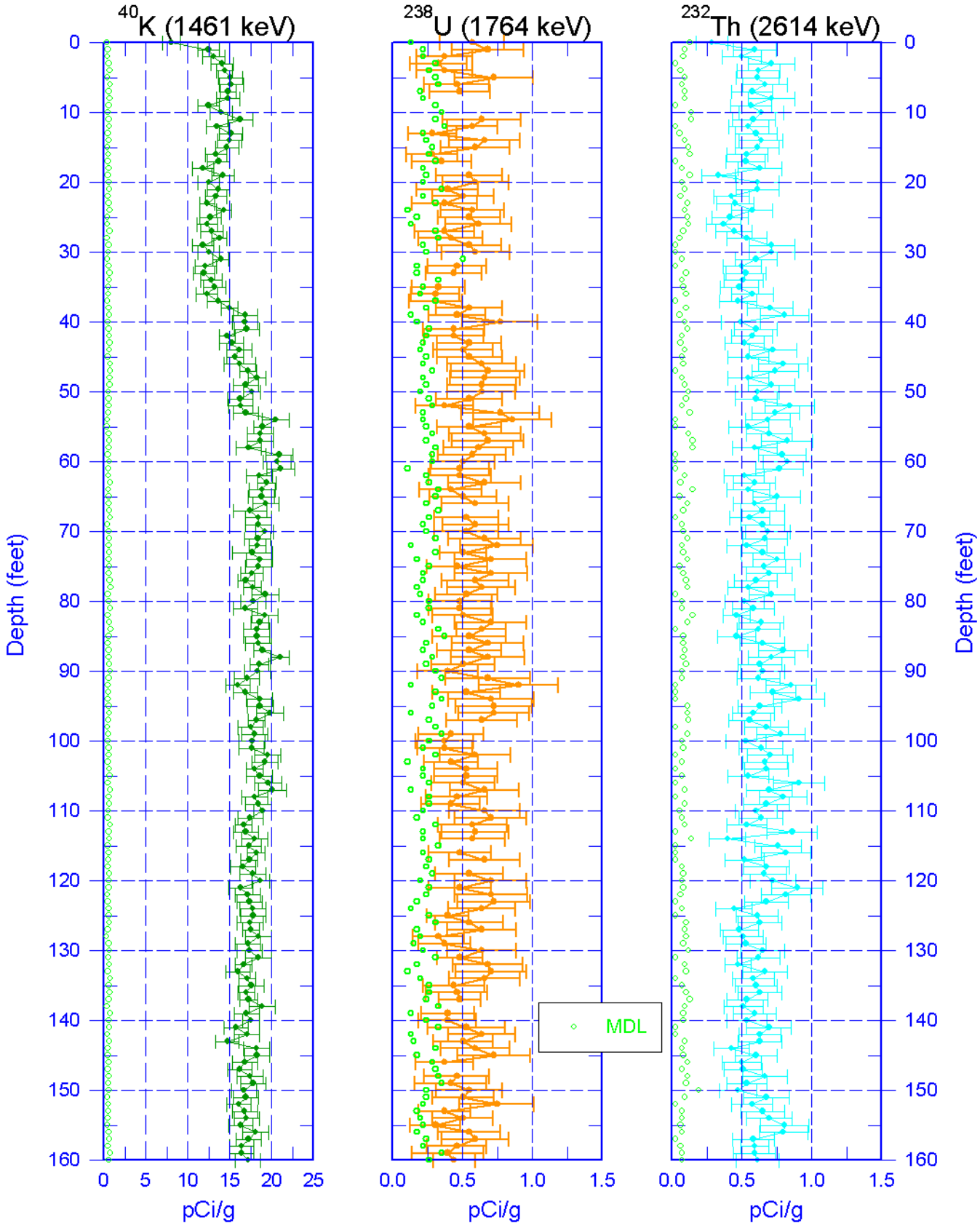
299-E33-345 (C6226)
Natural Gamma Logs



Zero Reference - Ground surface

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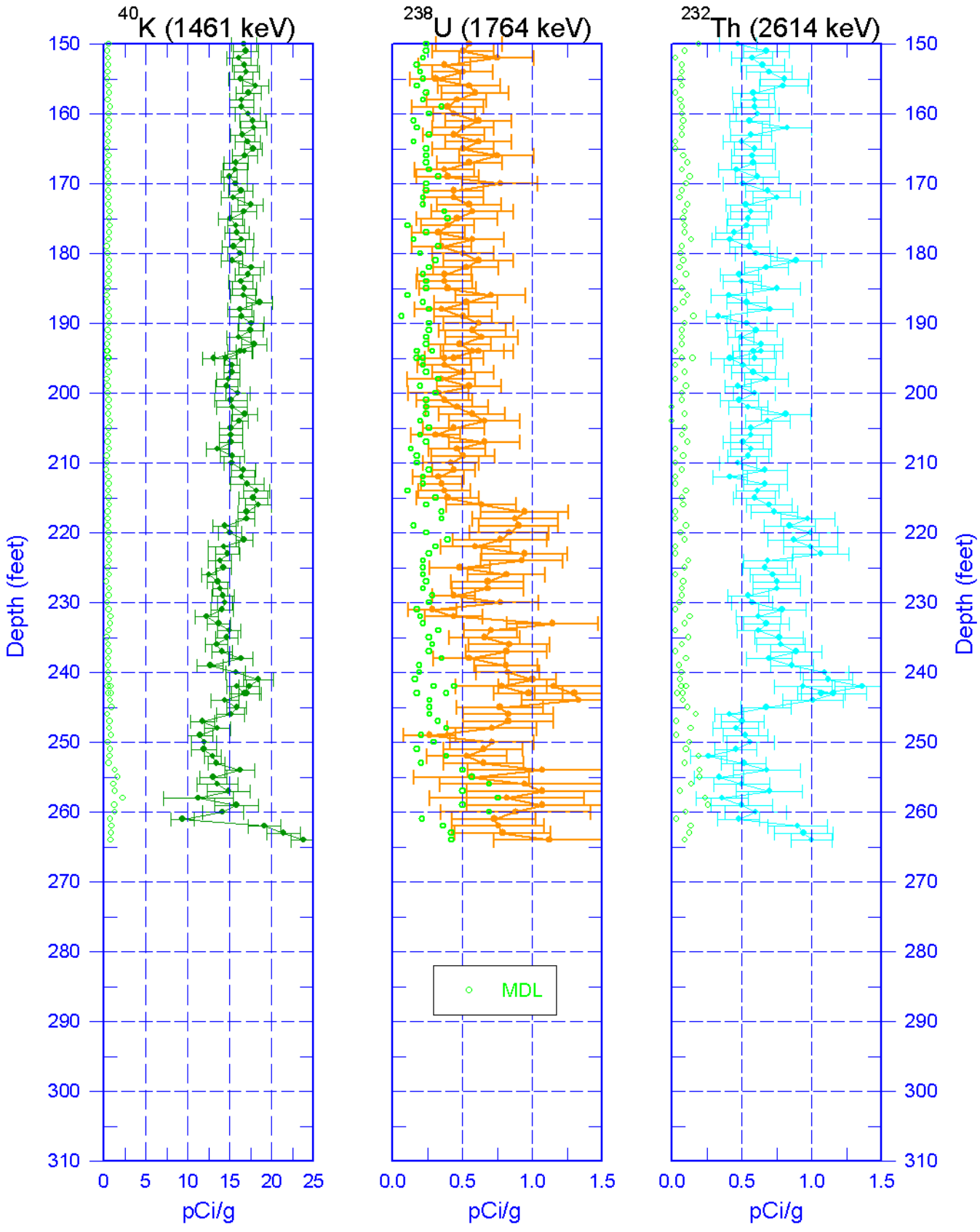
299-E33-345 (C6226)
Natural Gamma Logs



Zero Reference - Ground surface

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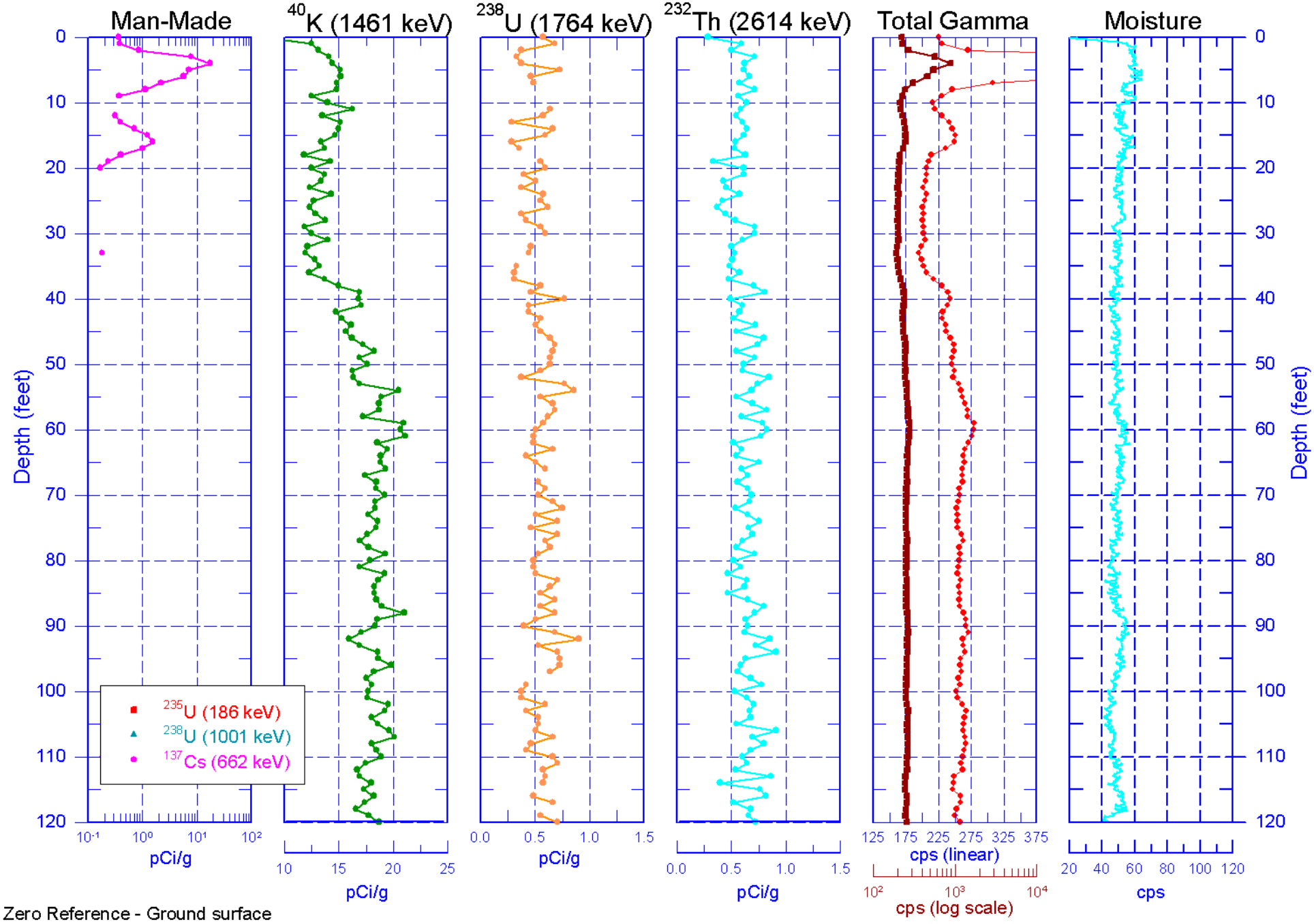
299-E33-345 (C6226) Combination Plot



Zero Reference - Ground surface

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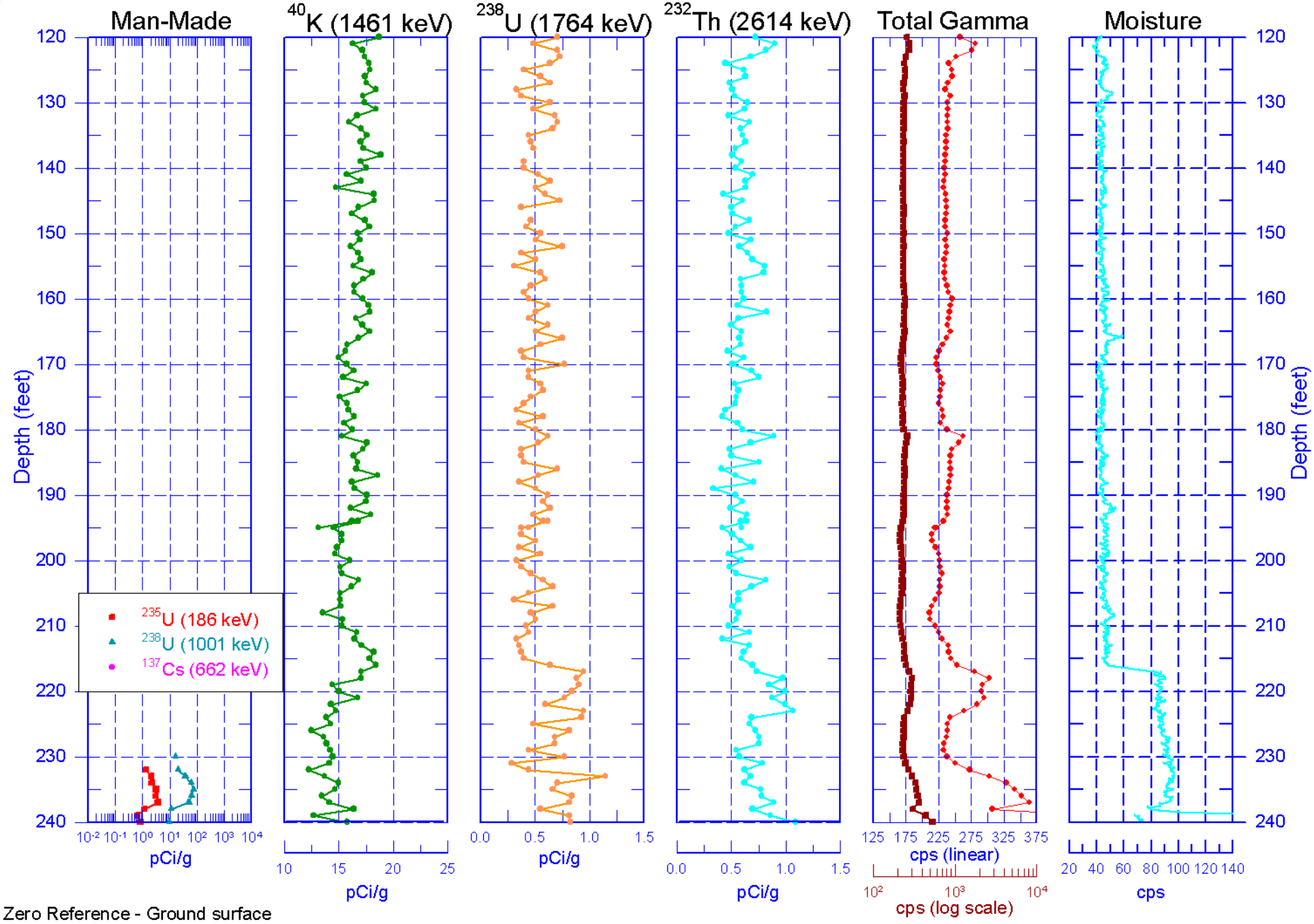
299-E33-345 (C6226) Combination Plot



Zero Reference - Ground surface

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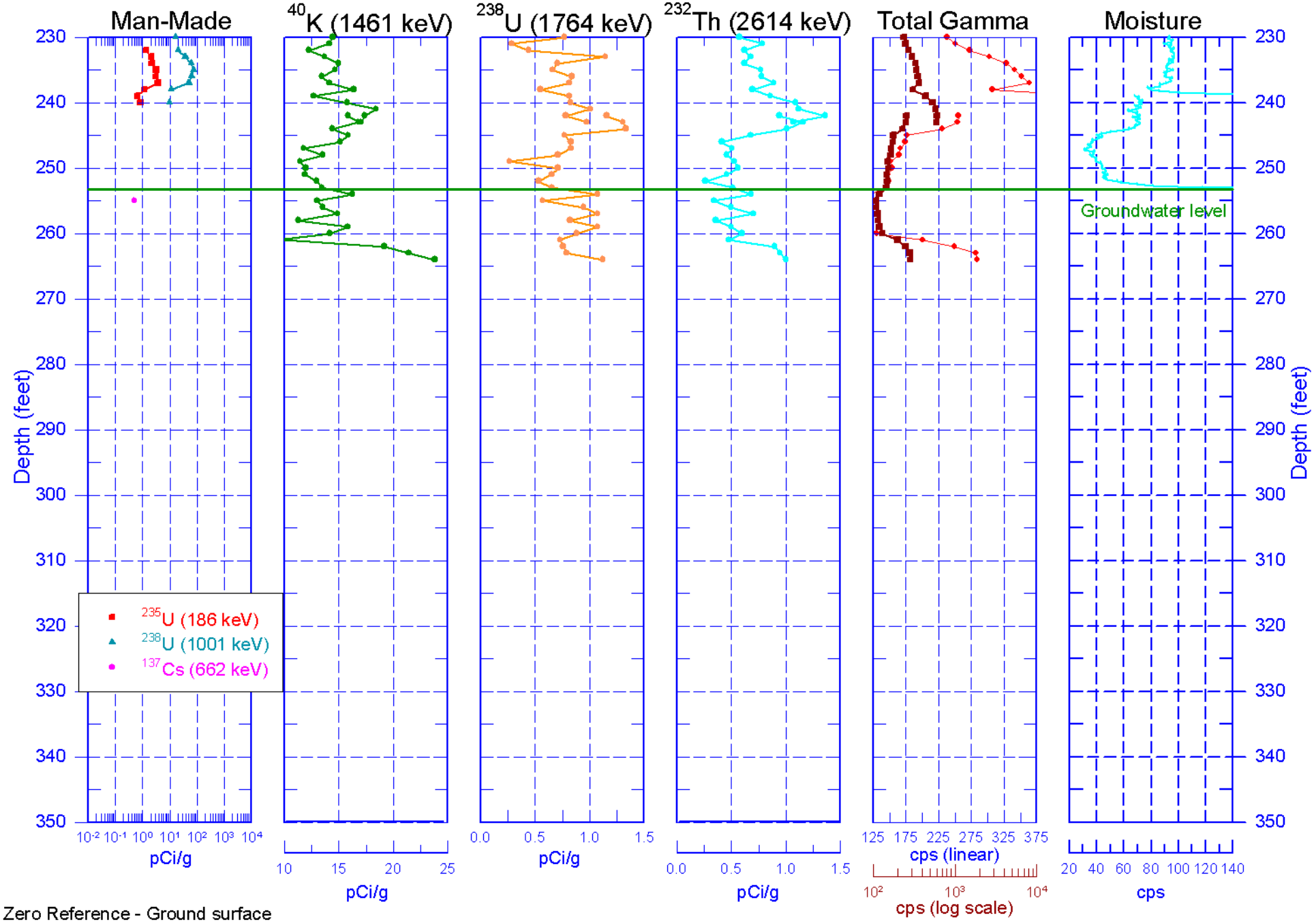
299-E33-345 (C6226) Combination Plot



Zero Reference - Ground surface

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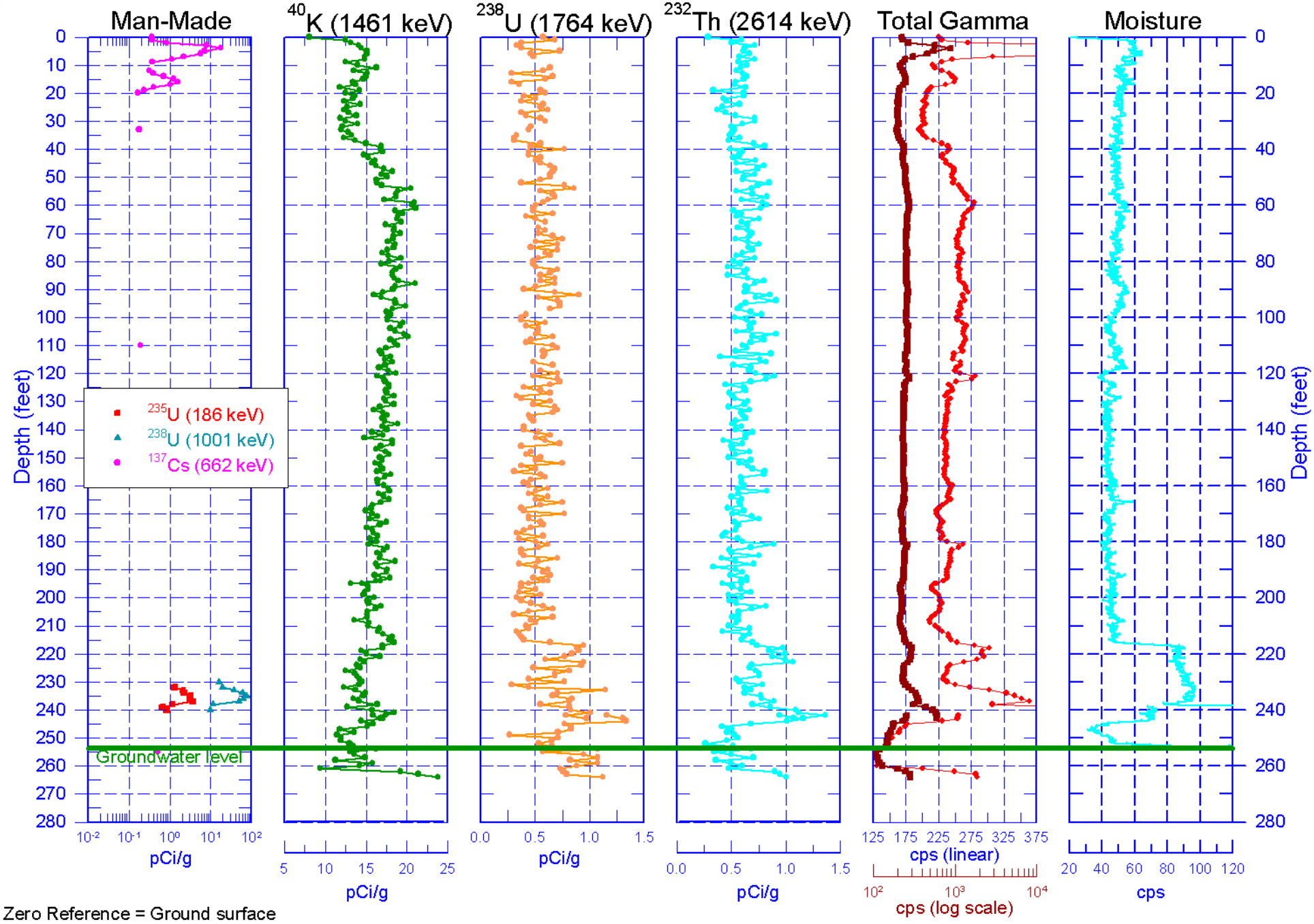
299-E33-345 (C6226) Combination Plot



Zero Reference = Ground surface

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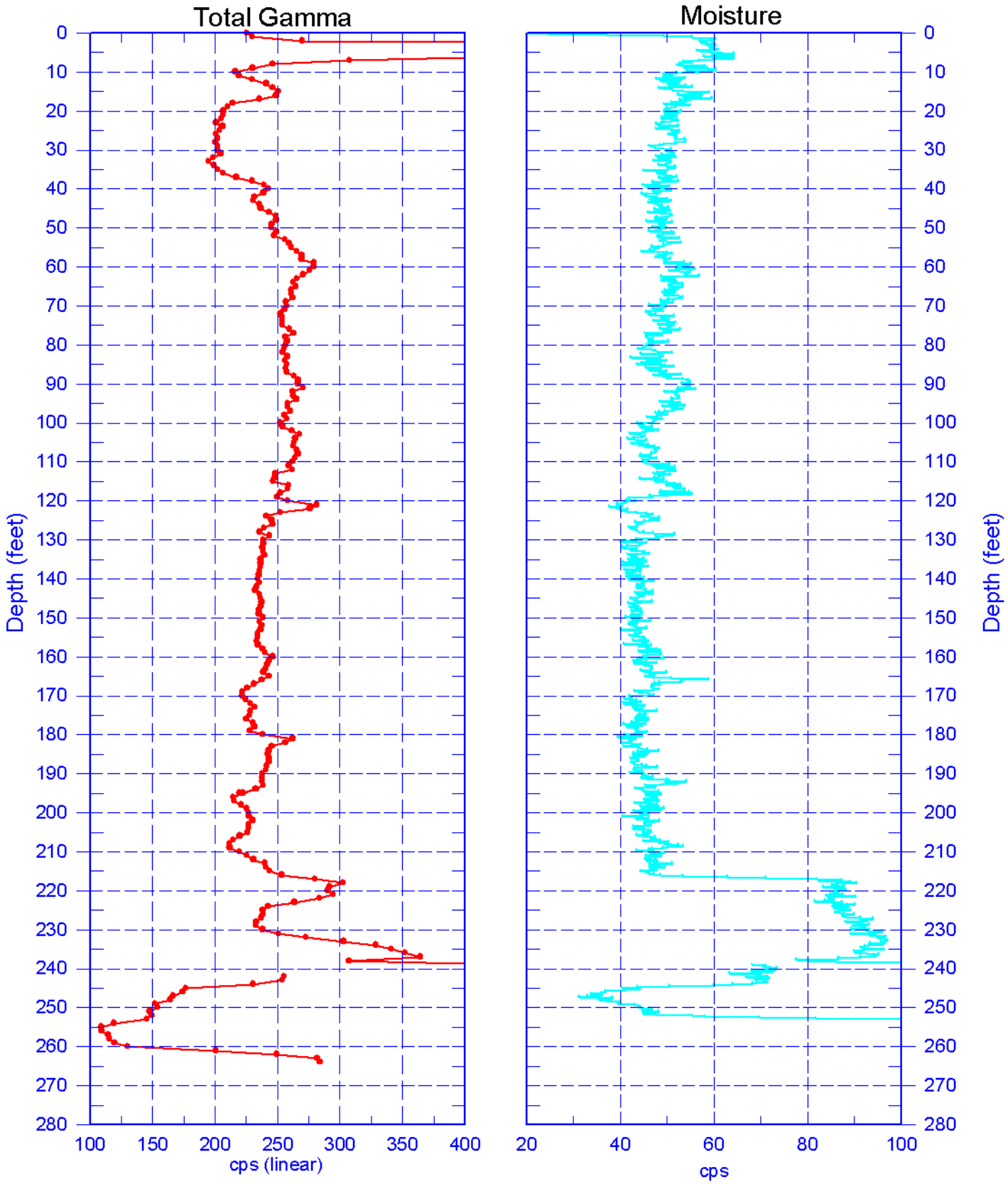
299-E33-345 (C6226)
Total Gamma & Moisture



Reference - Ground Surface

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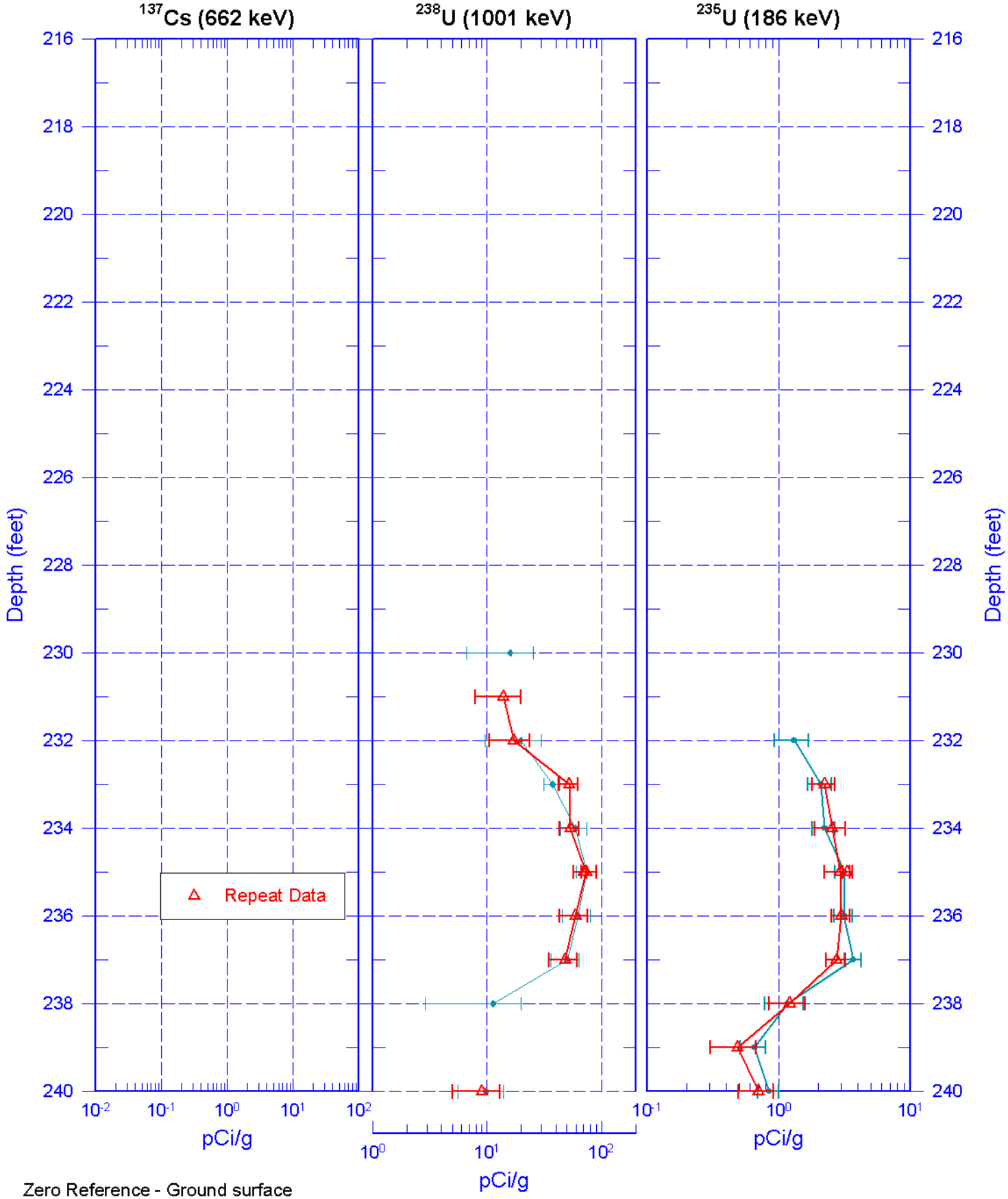
299-E33-345 (C6226)

Repeat of Manmade Radionuclides



Zero Reference - Ground surface

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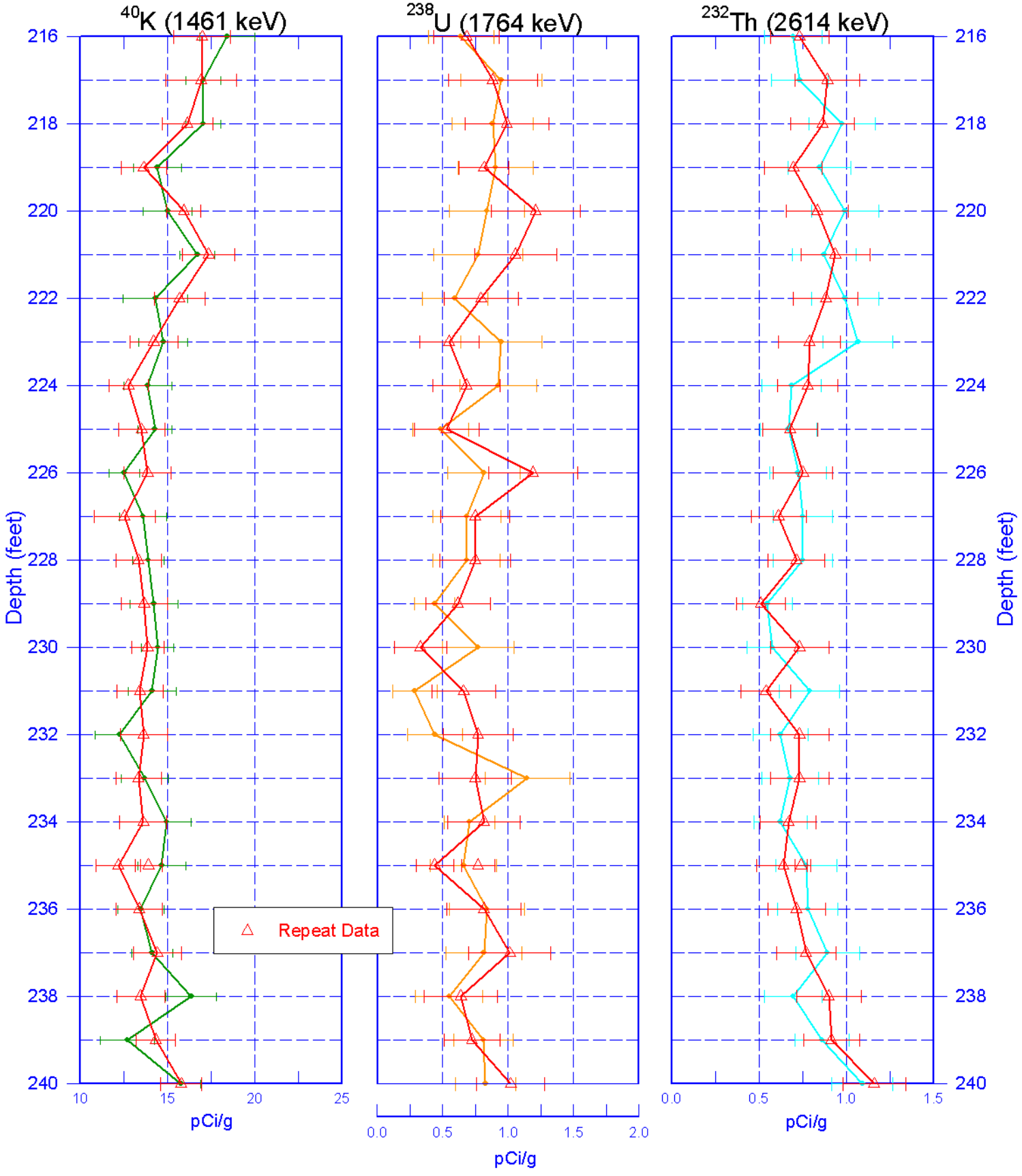
299-E33-345 (C6226)

Repeat Section of Natural Gamma Logs



Zero Reference - Ground surface

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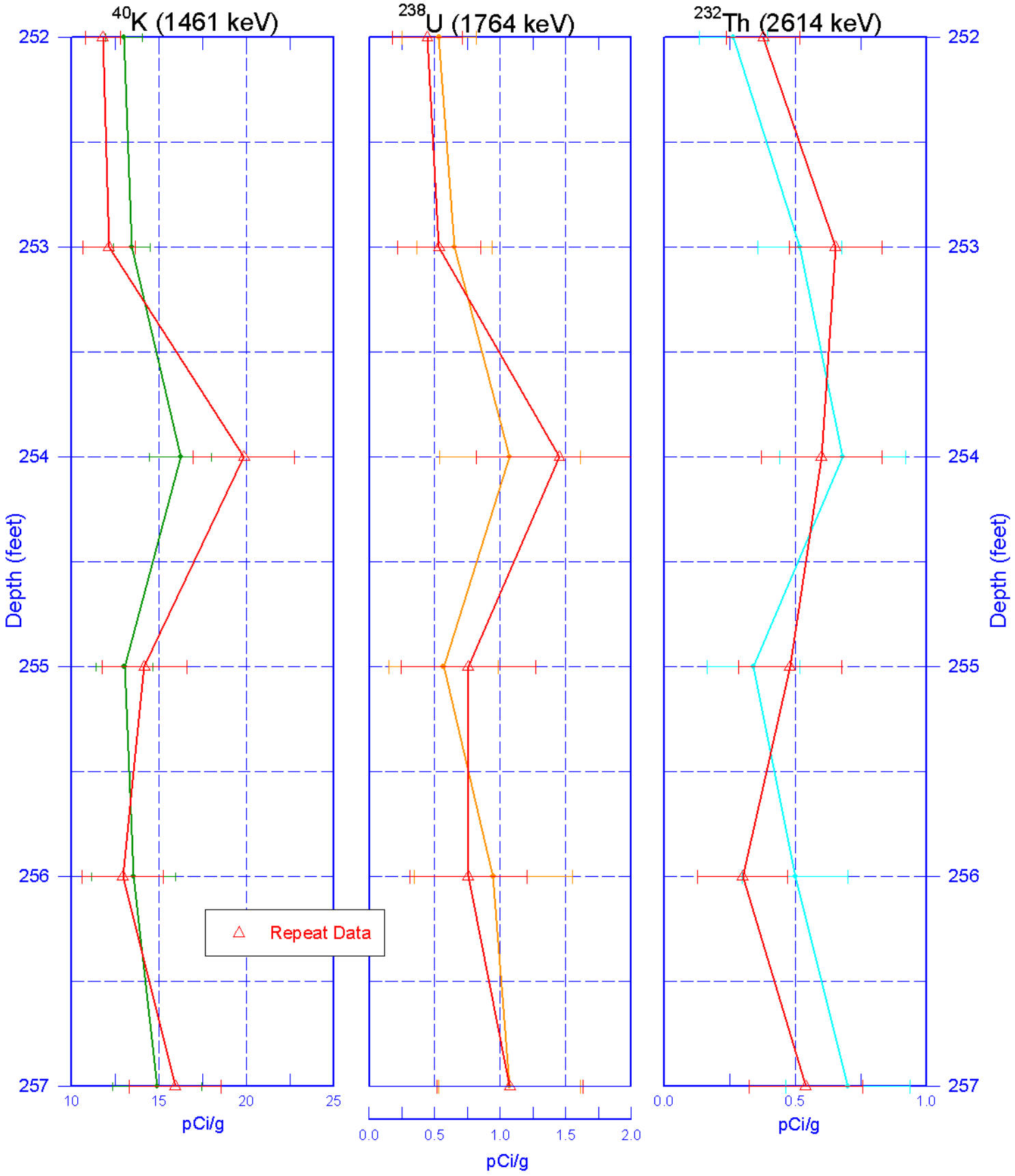
299-E33-345 (C6226)

Repeat Section of Natural Gamma Logs



Zero Reference - Ground surface

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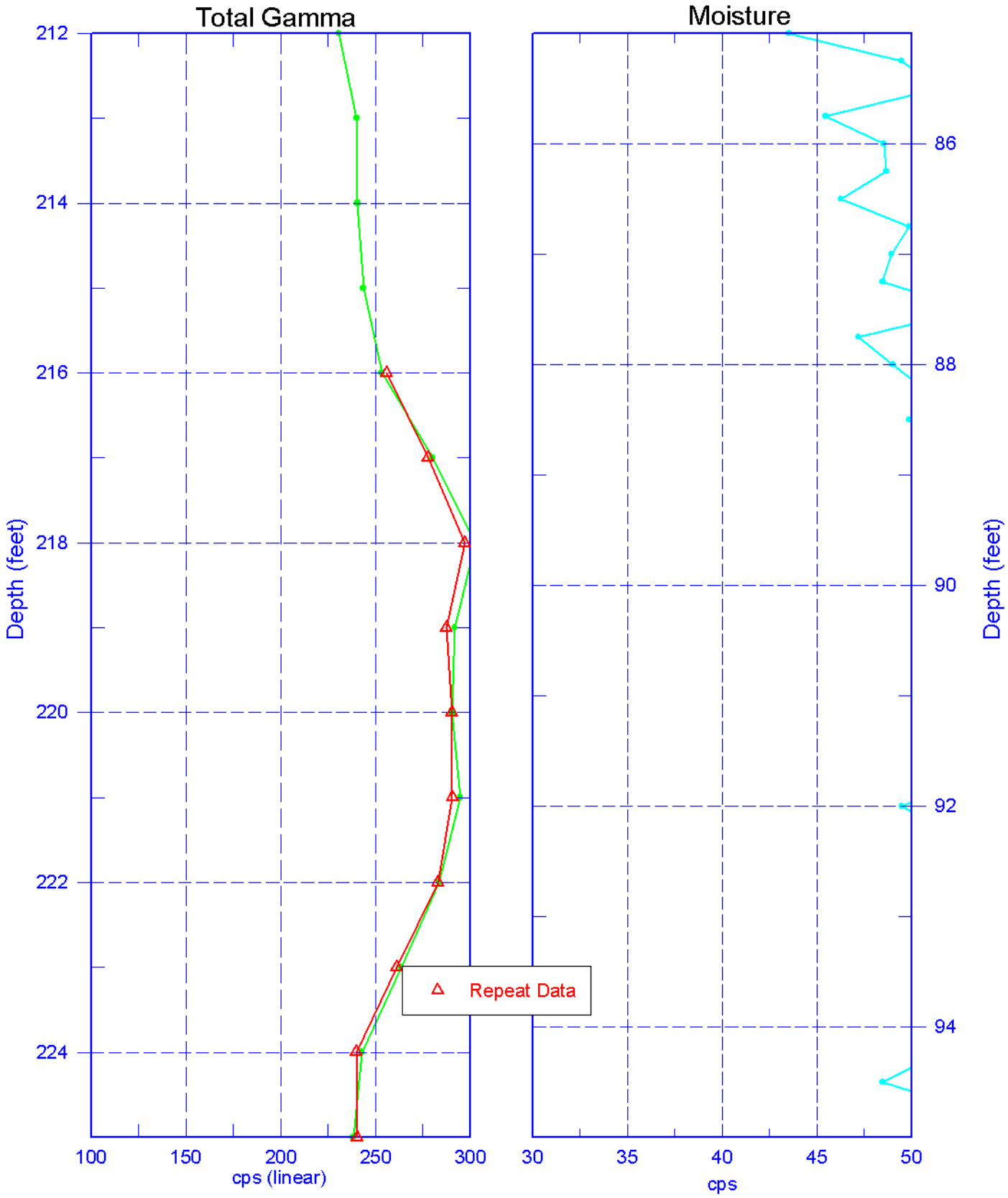
299-E33-345 (C6226)

Repeat Section for Total Gamma & Moisture



Reference - Ground surface

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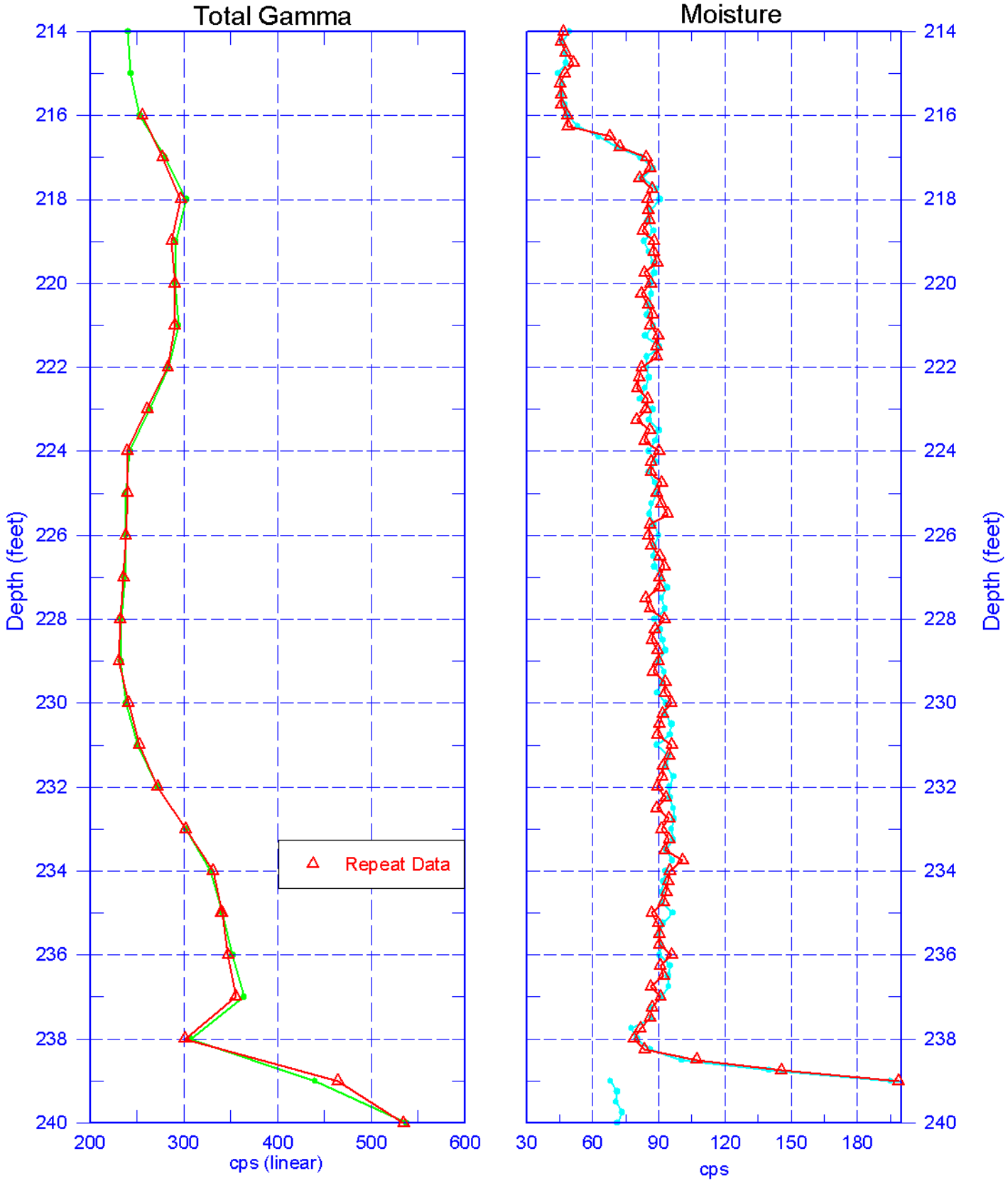
299-E33-345 (C6226)

Repeat Section for Total Gamma & Moisture



Reference - Ground surface