



GEOPHYSICAL LOGGING PROBES

Filtered Gamma Total Gamma (Geiger Mueller)

FGRS/TGGS

MEASUREMENT PRINCIPLE

Both gamma probes measure naturally occurring radioactivity. The most common naturally occurring radioactivity is associated with K^{40} , Th^{232} and $U^{232-238}$ which are associated with certain rocks (eg clays/shales) making the gamma curves an excellent lithological identifier tool.

The filtered gamma probe uses a scintillation system consisting of a sodium iodide crystal and a photomultiplier tube to measure gamma radiation. Additionally thin layers of lead, copper and brass are wrapped around the scintillation system. The purposes of the metal layers is to reduce the effect of the low energy gamma rays. Additionally, electronic thresholds can be set to further investigate certain areas of the gamma energy spectrum.

The total gamma (GM) probe measures gamma radiation through Geiger Mueller detectors. This probe is most commonly used in high grade uranium deposits where saturation of a scintillation detection system is common.

Ideally suited for:

- Uranium exploration and mining.
- High grade uranium exploration & mining – Total Gamma (GM).

Operations & Calibration:

- Minimum borehole diameter of 50mm.
- Air and/or fluid filled borehole.
- Open borehole and/or cased borehole.

Typically recorded in an uphole logging direction at logging speeds of 3 – 5 m/min. (Downhole logging can be recorded for QA purposes).

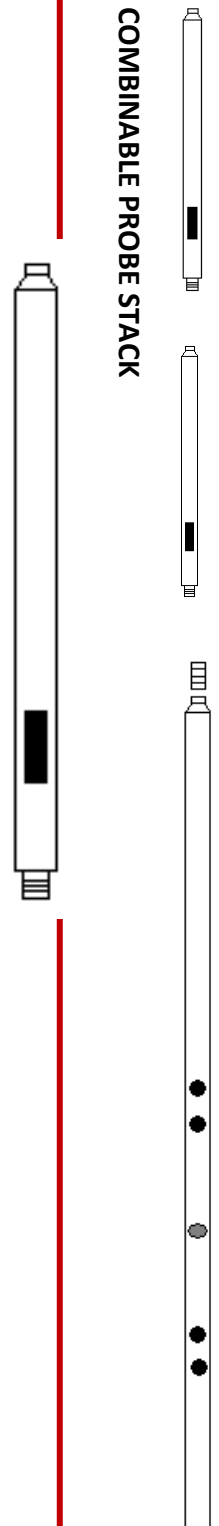
Final curve units can be counts per second, uranium grade in %eU₃O₈ or ppm_eU₃O₈

Calibration via Adelaide Models – AM1, AM2, AM3 & AM7.

Probes can be stacked to the top and the bottom of the probe. Typical combinations are: Gamma, dual laterolog, dual induction conductivity, magnetic deviation.

SINGLE PROBE

COMBINABLE PROBE STACK



PHYSICAL SPECIFICATIONS

	FGRS	TGGS
Weight	8.0kg	5.0kg
Length	0.90m	0.7m
Diameter	45mm	38mm
Crystal size	25mm x 50mm	3 x GM detectors
Additional	Pb, Cu, Brass Shields	
Maximum Pressure	20 MPa	20 MPa
Maximum Temperature	80°C	80°C

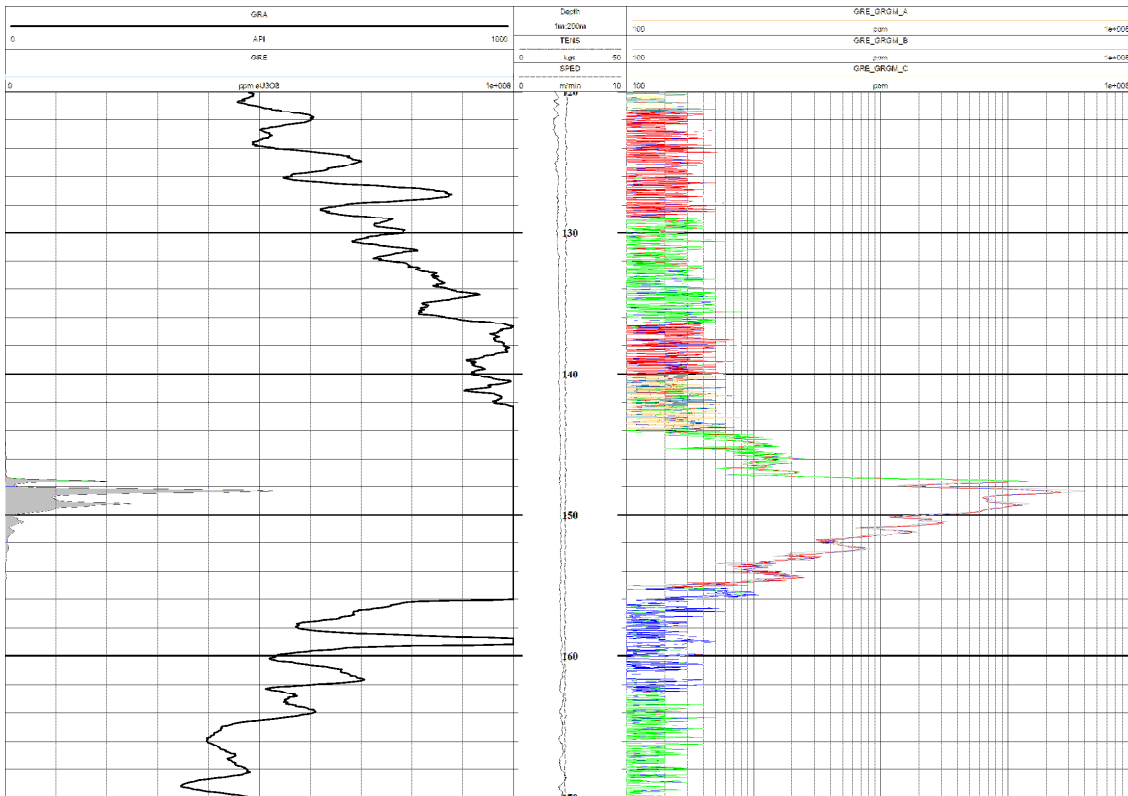




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