PROBES
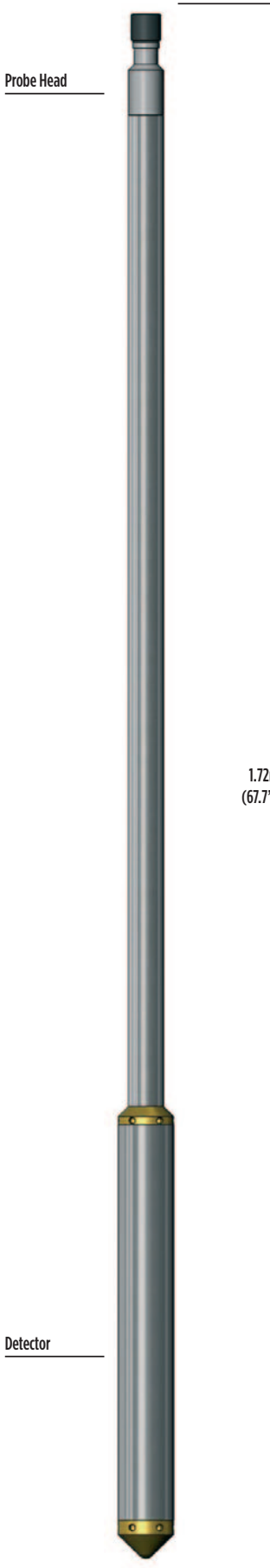## SPECTRAL GAMMA

The Spectral Gamma probe analyses the energy spectrum of gamma radiation from naturally occurring or man-made isotopes in the formation surrounding a borehole.

The probe corrects for temperature drift in real-time by matching the acquired spectrum to the base spectra of the main natural emitters (potassium, uranium and thorium) determined during the tool master calibration. Available outputs are full-spectrum (static mode only) and continuous log measurements of elemental concentrations. Borehole corrections are available for casing thickness, borehole diameter, formation density and mud/fluid radioactivity for both centralized and side-walled tool positions.

Principle of Measurement:

Gamma photons produced by the decay of naturally occurring potassium, uranium, thorium and/or unstable man-made isotopes in the formation are detected by a large-volume gamma scintillation counter and converted to electrical pulses. The amplitude of the pulses depends on the photon energy. An analyzer within the probe separates the pulses into channels according to their amplitudes. Count-rates from groups of channels are converted in real-time by the surface software to concentrations of the originating elements using predetermined algorithms.

Probe Head

1.72m
(67.7")

Detector

Spectral Gamma Probe

SPECIFICATION:

Features
Large-volume scintillation detector for high sensitivity

Temperature compensation ensures freedom from drift

Measurements
Uranium (ppm)

Thorium (ppm)

Potassium (%)

Gross Gamma

Full spectrum display 100keV – 3MeV

Applications
Minerals / Water / Engineering

Shale/Clay typing

Correlation in complex situations

Mineral detection

Radioactive waste pollution measurement
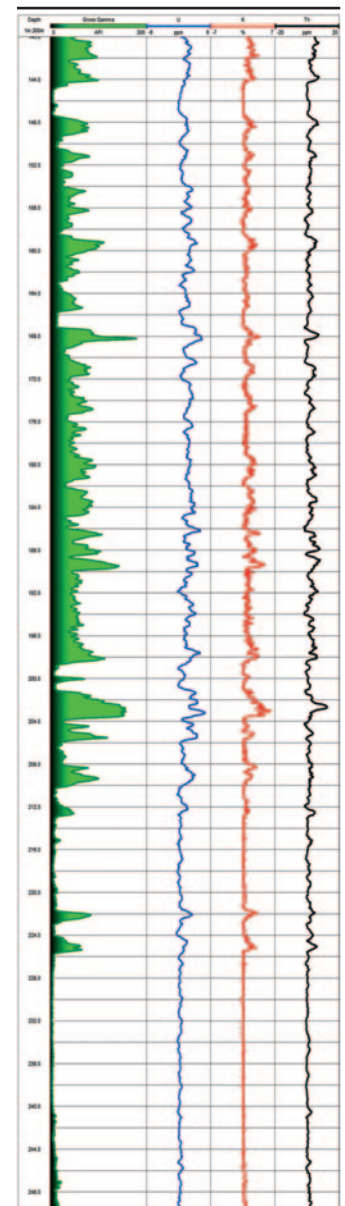
Lithology determination

Operating Conditions
Borehole type:	open/cased, water/air filled
Recommended Logging Speed:	1m/min

Specifications
Diameter:	48mm
Length:	1.72m (for both types)
Weight:	7kg (60mm version)
Temperature:	0-70°C
Max. pressure:	20MPa
Detector:	NaI(Ti) scintillator
Detector Size:	38mm x 150mm
Energy range:	100keV to 3MeV

Part Numbers
I012998	Spectral Gamma probe

Example of logging data

www.robertson-geo.com