

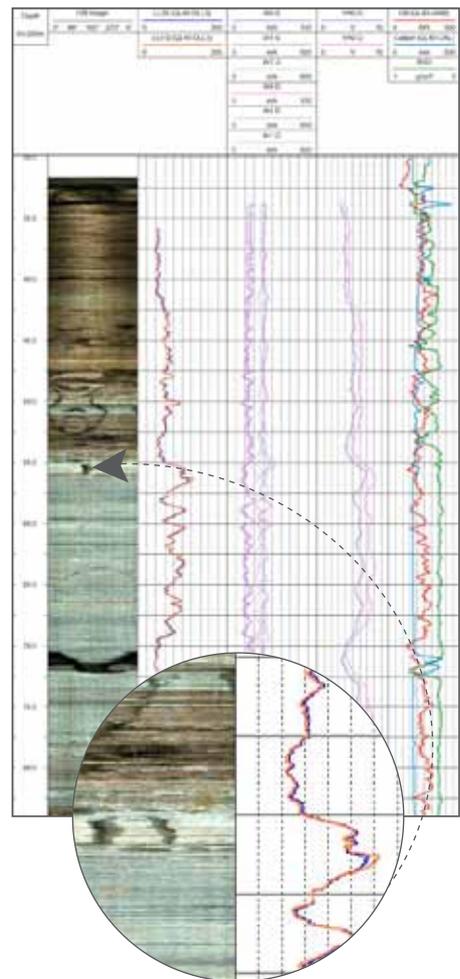
QL40.GAM natural gamma probe

The natural gamma measure the naturally occurring gamma radiation. Gamma probes are versatile, ubiquitous probe functions with a wide range of applications. Natural gamma logs can be run in any borehole environment, cased, uncased, fluid or air.

The **QL40GAM** is an in line sub. It can be combined with other logging tools of the **QL (Quick link)** product line or operated as a standalone tool. Other QL probes commonly stacked with the QL40GAM include the QL40Elog, QL40FTC-B (temperature/fluid resistivity), and the QL40CAL (3-arm caliper), but many possibilities exist owing to the flexibility of the QL (Quick Link) family of geophysical logging probe functions.

Application

- Depth correlation
- Lithology identification
- Evaluation of shale content of formations
- Locating radioactive sand or markers





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Principle of measurement

The probe contains a high sensitivity gamma sensor which measures the natural gamma radiation released from potassium sub files can be modified to output gamma in API units and / or %wt. U3O8. Typical k-factor for QLGR probes is $1-3 \times 10^{-6}$ in 4.5" water-filled open borehole

The tool is equipped with a Thallium doped Sodium Iodide (NaI(Tl)) crystal, which, when struck by a gamma ray, emits a pulse of light. This pulse of light is then amplified by a photo multiplier tube, which outputs a current pulse (see Figure 2-1). These pulses are then detected, digitized and combined with data from other subs (if present in the stack). The data is then transmitted up the wireline using a pulse coded digital data protocol.

Measurements / Features

- Sampling time in seconds
- Temperature at CPU board in °
- High tension at phot-multiplier in Vold
- Raw gamma ray counts
- Gamma ray in counts per seconds (cps) or calibrated units
- Measurement point : 0.18 m (0.71" from bottom connector

Operating Conditions

- Open and cased borehole
- Air/fluid filled
- Centralisation not necessary

Technical Specifications

- Diameter : 40 mm (1.6") w/o insulating sleeve
- Length : 1.27 m (40.5")
- Weight : 5 kg (11 lbs)
- Max. temp : 70°C (158°F)
- Max. pressure : 200 Bar (2900 PSI)
- Sensor(s) : 2.22 cm x 7.62 cm (0.875"x3.00")
Na(Th)I Scintillation Crystal & PMT
- Measurement Range : 0-100,000 CPS (doc MSI)
- Accuracy : 1% full scale
- Resolution : 0.1 CPS

The specifications are not contractual and are subject to modification without notice.



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