

PROBE APPLICATIONS CHART

Log Measurement (Probes)

NUCLEAR					ELECTRICAL					ACOUSTIC					STRUCTURE					FLUID PROPERTIES					CASING				
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NUCLEAR					ELECTRICAL																								

Chart Key:

- A** No restrictions on hole
- B** Open hole
- C** Cased hole
- D** Water filled hole
- E** 1500mm diameter minimum

- KEY PROBE**
- 1 Natural Gamma (optional on many probes)
 - 2 CCL (optional on many probes)
 - 3 3-Arm Caliper
 - 4 Vertically
 - 5 Borehole Geometry
 - 6 Magnetic Susceptibility

- 7 4-Arm Dipmeter
- 8 Dual Neutron
- 9 Dual Focused Induction
- 10 Electric Log
- 11 Formation Density
- 12 Full Waveform Sonic
- 13 Density Gamma

- 14 Gyro
- 15 Density Guardlog
- 16 Focused Electric (Guardlog)
- 17 High-Resolution Acoustic Televiewer (HRAT)
- 18 Heat-Pulse Flowmeter
- 19 Impeller Flowmeter
- 20 Induced Polarisation

- 21 Neutron
- 22 High-Resolution Optical Televiewer (HI-OPTV)
- 23 PS Logger
- 24 Spectral Gamma
- 25 Temperature Conductivity
- 26 Full Waveform Triple Sonic
- 27 Micro-Resistivity Imager

- 28 Water Quality
- 29 RGeo-eye Camera
- 30 Borehole NMR
- 31 Sonar Caliper

Information Required

PROBE RESPONSES FOR OPEN AND CASED BOREHOLES

Probes	Log Measurement	Resulting Data				
		Open Hole		Metal Cased	Plastic Cased	
		Dry	Fluid Filled		Unperforated	Perforated
Common to/optional on many probes	Natural Gamma	Calibrated	Calibrated Δ	Qualitative Φ	Qualitative Φ	Qualitative Φ
	CCL	Not Valid	Not Valid	Calibrated *Φ	Not Valid	Not Valid
	Temperature	Calibrated	Calibrated Δ	Calibrated Φ	Calibrated Φ	Calibrated Φ
3-Arm Caliper	3-Arm Caliper	Calibrated	Calibrated Δ	Calibrated *Φ	Calibrated *Φ	Calibrated *Φ
Borehole Geometry	X-Y Caliper	Calibrated	Calibrated Δ	Calibrated *Φ	Calibrated *Φ	Calibrated *Φ
	Inclination	Calibrated	Calibrated Δ	Calibrated Φ	Calibrated Φ	Calibrated Φ
	Azimuth	Calibrated	Calibrated Δ	Not Valid	Calibrated Φ	Calibrated Φ
Verticality	Inclination	Calibrated	Calibrated Δ	Calibrated Φ	Calibrated Φ	Calibrated Φ
	Azimuth	Calibrated	Calibrated Δ	Not Valid	Calibrated Φ	Calibrated Φ
Gyro	Inclination	Calibrated	Calibrated Δ	Calibrated Φ	Calibrated Φ	Calibrated Φ
	Azimuth	Calibrated	Calibrated Δ	Not Valid	Calibrated Φ	Calibrated Φ
Electric Log	16" Normal Resistivity	Not Valid	Calibrated Δ	Not Valid	Not Valid	Qualitative Δ
	64" Normal Resistivity	Not Valid	Calibrated Δ	Not Valid	Not Valid	Qualitative Δ
	Single Point Resistance	Not Valid	Calibrated Δ	Not Valid	Not Valid	Qualitative Δ
	Self Potential	Not Valid	Calibrated Δ	Not Valid	Not Valid	Qualitative Δ
Focussed Electric (Guardlog)	Focussed Resistivity	Not Valid	Calibrated Δ	Not Valid	Not Valid	Qualitative Δ
Dual Focussed Induction	Deep Formation Conductivity	Calibrated	Calibrated Δ	Not Valid	Calibrated Δ	Calibrated Δ
	Shallow Formation Conductivity	Calibrated	Calibrated Δ	Not Valid	Calibrated Φ	Calibrated Φ
Magnetic Susceptibility	Magnetic Susceptibility	Calibrated	Calibrated Δ	Not Valid	Calibrated Φ	Calibrated Φ
Induced Polarisation	Chargeability	Calibrated	Calibrated Δ	Not Valid	Not Valid	Qualitative Δ
	Formation Resistance	Calibrated	Calibrated Δ	Not Valid	Not Valid	Qualitative Δ
Temperature Conductivity	Temperature	Calibrated	Calibrated Δ	Calibrated Φ	Calibrated Φ	Calibrated Φ
	Conductivity	Not Valid	Calibrated Δ	Calibrated Δ	Calibrated Δ	Calibrated Δ
Impellor Flowmeter	Flow	Not Valid	Qualitative ‡	Qualitative *‡	Qualitative *‡	Qualitative ‡
	Cable Velocity	Calibrated	Calibrated	Calibrated Φ	Calibrated Φ	Calibrated Φ
Heat-Pulse Flowmeter	Flow	Not Valid	Qualitative ‡	Qualitative *‡	Qualitative *‡	Qualitative ‡
High Resolution Acoustic Televiewer (HRAT)®	Amplitude Image	Not Valid	Calibrated Δ	Calibrated *Δ	Calibrated *Δ	Calibrated *Δ
	Travel-Time Image	Not Valid	Calibrated Δ	Calibrated *Δ	Calibrated *Δ	Calibrated *Δ
	Inclination	Calibrated	Calibrated Δ	Calibrated Φ	Calibrated Φ	Calibrated Φ
	Azimuth	Calibrated	Calibrated Δ	Not Valid	Calibrated Φ	Calibrated Φ
High Resolution Optical Televiewer (Hi-OPTV)®	Borehole Image	Calibrated	Calibrated ‡	Calibrated *‡	Calibrated *‡	Calibrated *‡
	Inclination	Calibrated	Calibrated Δ	Calibrated Φ	Calibrated Φ	Calibrated Φ
	Azimuth	Calibrated	Calibrated Δ	Not Valid	Calibrated Φ	Calibrated Φ
PS Logger®	P-Wave Waveform	Not Valid	Calibrated Δ	Calibrated *Δ	Calibrated †Δ	Qualitative Δ
	S-Wave Waveform (left & right)	Not Valid	Calibrated Δ	Calibrated *Δ	Calibrated †Δ	Not Valid
	P-Wave Velocity	Not Valid	Calibrated Δ	Calibrated *Δ	Calibrated †Δ	Qualitative Δ
	S-Wave Velocity	Not Valid	Calibrated Δ	Calibrated *Δ	Calibrated †Δ	Not Valid

KEY:

* CASING INFORMATION ONLY

† CASING MUST BE GROUTED

‡ WATER FILLED NOT MUD

Δ WATER OR MUD FILLED

Φ DRY, WATER OR MUD FILLED

• BOREHOLE DIAMETER 1500MM MINIMUM

PROBE RESPONSES FOR OPEN AND CASED BOREHOLES

Probes	Log Measurement	Resulting Data				
		Open Hole		Metal Cased	Plastic Cased	
		Dry	Fluid Filled		Unperforated	Perforated
Full Waveform Sonic	Waveforms (Near Far)	Not Valid	Calibrated Δ	Calibrated Δ	Calibrated Δ	Qualitative Δ
	P-Wave Velocity	Not Valid	Calibrated Δ	Calibrated Δ	Calibrated Δ	Qualitative Δ
	S-Wave Velocity (if S-wave exists)	Not Valid	Calibrated Δ	Calibrated Δ	Calibrated Δ	Not Valid
	Cement Bond Log	Not Valid	Not Valid	Calibrated Δ	Qualitative Δ	Not Valid
Full Waveform Triple Sonic	Waveforms (Near Mid Far)	Not Valid	Calibrated Δ	Calibrated Δ	Calibrated Δ	Qualitative Δ
	P-Wave Velocity	Not Valid	Calibrated Δ	Calibrated Δ	Calibrated Δ	Qualitative Δ
	S-Wave Velocity (if S-wave exists)	Not Valid	Calibrated Δ	Calibrated Δ	Calibrated Δ	Not Valid
Formation Density	Formation Density	Qualitative	Calibrated Δ	Qualitative Δ	Qualitative Δ	Qualitative Δ
	High Resolution Density HRD	Qualitative	Calibrated Δ	Qualitative Δ	Qualitative Δ	Qualitative Δ
	Bed Resolution Density BRD	Qualitative	Calibrated Δ	Qualitative Δ	Qualitative Δ	Qualitative Δ
Dual Neutron	Compensated Porosity	Qualitative	Calibrated Δ	Qualitative Δ	Qualitative Δ	Qualitative Δ
	Raw Long Spaced Neutron	Qualitative	Calibrated Δ	Qualitative Δ	Qualitative Δ	Qualitative Δ
	Raw Short Spaced Neutron	Qualitative	Calibrated Δ	Qualitative Δ	Qualitative Δ	Qualitative Δ
	Count Ratio	Qualitative	Calibrated Δ	Qualitative Δ	Qualitative Δ	Qualitative Δ
Density Gamma	Long Spacing Density LSD	Qualitative	Qualitative Δ	Qualitative Δ	Qualitative Δ	Qualitative Δ
	High-Resolution Density HRD	Qualitative	Qualitative Δ	Qualitative Δ	Qualitative Δ	Qualitative Δ
	Inclination	Calibrated	Calibrated Δ	Calibrated Φ	Calibrated Φ	Calibrated Φ
Spectral Gamma	Uranium	Calibrated	Calibrated Δ	Qualitative Φ	Calibrated Φ	Calibrated Φ
	Thorium	Calibrated	Calibrated Δ	Qualitative Φ	Calibrated Φ	Calibrated Φ
	Potassium	Calibrated	Calibrated Δ	Qualitative Φ	Calibrated Φ	Calibrated Φ
	Gross Gamma	Calibrated	Calibrated Δ	Qualitative Φ	Calibrated Φ	Calibrated Φ
	Channel Count Rates	Calibrated	Calibrated Δ	Qualitative Φ	Calibrated Φ	Calibrated Φ
Borehole NMR	Total Porosity	Qualitative	Calibrated Δ	Not Valid	Calibrated Δ	Calibrated Δ
	Clay Bound Fluid Volume	Not Valid	Calibrated Δ	Not Valid	Calibrated Δ	Calibrated Δ
	Capillary Bound Fluid Volume	Not Valid	Calibrated Δ	Not Valid	Calibrated Δ	Calibrated Δ
	Mobile Fluid Volume	Not Valid	Calibrated Δ	Not Valid	Calibrated Δ	Calibrated Δ
	Hydraulic Conductivity	Not Valid	Calibrated Δ	Not Valid	Calibrated Δ	Calibrated Δ
	Transmissivity	Not Valid	Calibrated Δ	Not Valid	Calibrated Δ	Calibrated Δ
RGeo-eye® Camera	Borehole Image	Calibrated	Calibrated $\ddagger$	Calibrated $\ddagger$	Calibrated $\ddagger$	Calibrated $\ddagger$
	Inclination	Calibrated	Calibrated Δ	Calibrated Φ	Calibrated Φ	Calibrated Φ
Sonar Caliper	Spatial Diameter	Not Valid	Calibrated $\bullet$	Calibrated $\bullet$	Calibrated $\bullet$	Calibrated $\bullet$
	Orientation	Calibrated	Calibrated	Not Valid	Calibrated	Calibrated
	Spatial Volume	Not Valid	Calibrated $\bullet$	Qualitative $\bullet$	Calibrated $\bullet$	Calibrated $\bullet$

KEY:

* CASING INFORMATION ONLY

† CASING MUST BE GROUTED

‡ WATER FILLED NOT MUD

Δ WATER OR MUD FILLED

Φ DRY, WATER OR MUD FILLED

$\bullet$ BOREHOLE DIAMETER 1500MM MINIMUM

COMMON CORING DRILL BIT SIZES

Size	Metric		Imperial	
	Hole Diameter	Core Diameter	Hole Diameter	Core Diameter
AQ	48.0mm	27.0mm	1.890"	1.062"
BQ	60.0mm	36.5mm	2.360"	1.432"
NQ	75.7mm	47.6mm	2.980"	1.875"
HQ	96.0mm	63.5mm	3.782"	2.500"
PQ	122.6mm	85.0mm	4.827"	3.345"
Geobor S	146.0mm	102.0mm	5.750"	4.010"

! NOTE: CORE DIAMETER IS VITAL TO KNOW IF PROBES ARE TO BE INSERTED THROUGH THE DRILL STRING

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