



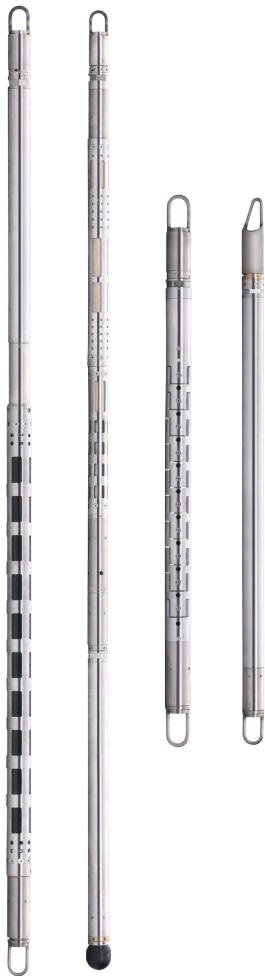
X-DIPOLE LOGGING TOOL (XDLT)

GOWell's **X-Dipole Logging Tool** is an array acoustic tool with monopole, dipole and cross-dipole acquisition capabilities. The tool is essential for collecting a full range of acoustic datasets, which contribute to petrophysical evaluation and geophysical applications.

The **X-Dipole Sonic Tool** is composed of four (4) main parts:

- 1) Electronics section
- 2) Receiver section
- 3) Acoustic isolator
- 4) Transmitter section

The tool has four (4) separate broadband acoustic transmitters—one monopole, two dipole and one stoneley transmitter. The monopole output is optimized for compressional and refracted shear measurements; whereas, the stoneley transmitter is a unique design optimized for low frequency stoneley excitation. The two dipole transmitters are co-located and optimized to maximize output energy for slow, soft rock formations.



XDLT

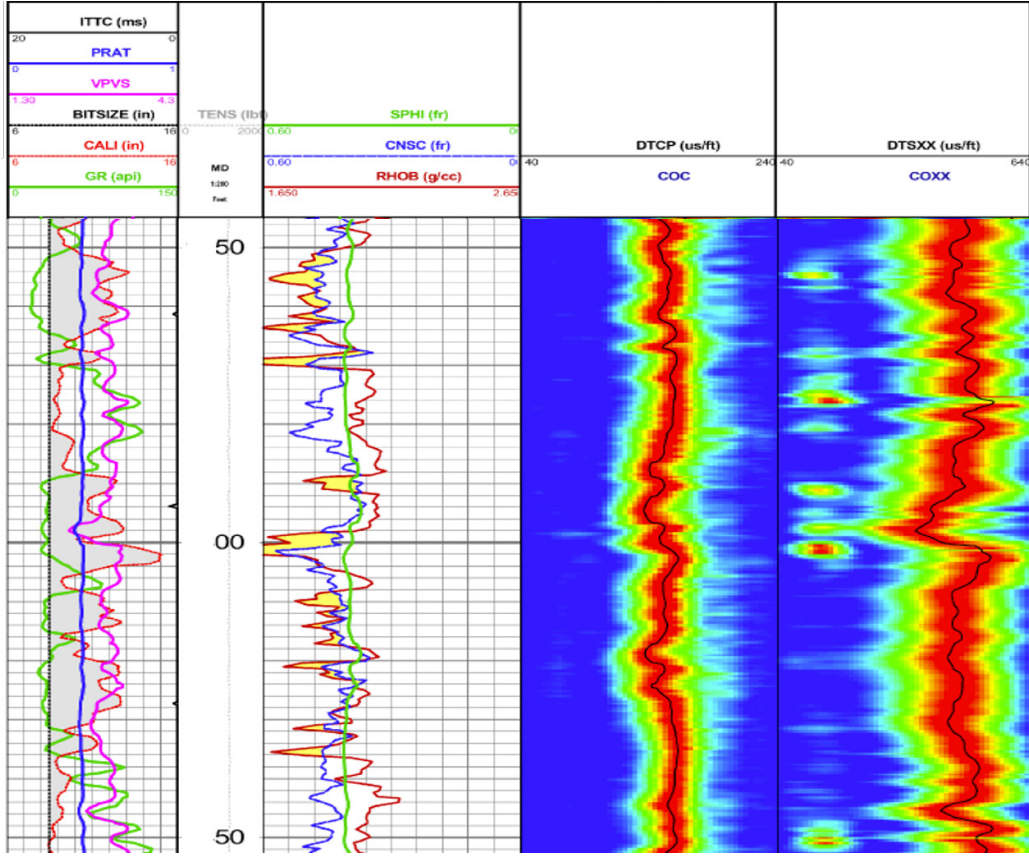
FEATURES

- Combinable with other Gallop tools
- Records the waveform of the reflected value from formations
- By measuring sonic slowness, formation porosity can be obtained
- Rock anisotropy analysis can be achieved (full waveform mode and Azimuth required)
- Transmitter section assembled with peek sleeves for increased reliability and lower maintenance required
- Ten independently linked assemblies in the isolator section are included to better attenuate the tool body signal, maintain alignment and provide increased tension & compressive strength
- Three programmable operating modes available:
 - Mode 1: Fast Logging
 - Mode 2: Non-anisotropy
 - Mode 3: Full waveform

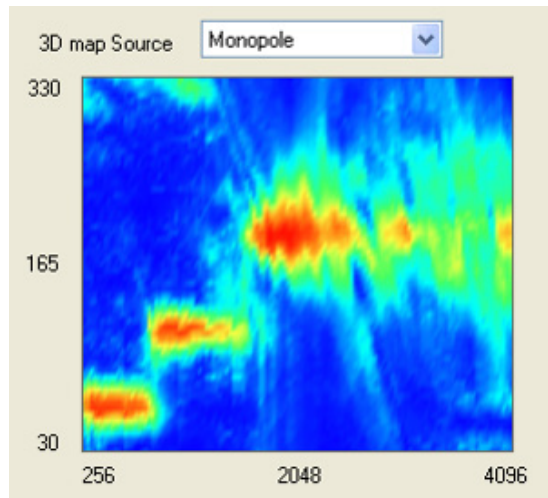
APPLICATIONS

- Gas zone detection (VP/vs)
- Fracture identification (Stoneley)
- Permeability estimation (Stoneley)
- Formation Anisotropy assessment
- Formation porosity
- Measurement of compressional and shear waves in open or cased-hole
- Synthetic Seismograms
- Lithology and clay identification

REAL-TIME QUALITY CONTROL PLOT FROM 8-1/2" OPEN-HOLE LOG



MONITOR DISPLAY





X-DIPOLE LOGGING TOOL (XDLT)

SPECIFICATIONS

	XDLT
GENERAL SPECS	
Maximum Pressure	20,000 PSI (140 MPa)
Maximum Temperature	350 °F (175°C) - 4 hours
Maximum Hole Size	18 in (455 mm)
Minimum Hole Size	4.5 in (114 mm)
Diameter	3-7/8 in (98 mm)
Length	36.42 ft (11.11 m)
Weight	888 lbs (403 kg)
Receivers	8 levels spaced at 6 in (0.15 m), 4 receivers/level 32 rx, 3 tx (1 monopole, 2 dipole)
ACQUISITION MODE	
Maximum Logging Speed (Q-Combo) @ 4spf	
*Single Inline Dipole	75 ft/min (23 m/min)
*Dual Inline Dipole	62.5 ft/min (19 m/min)
**Full Dipole	30 ft/min (9 m/min)
BOREHOLE CONDITIONS	
Borehole Fluids	Any liquid
Tool Position	Centralized
HARDWARE FEATURES	
Voltage	220 Vac, 50 Hz
Current	200 mA
Source Type	3.7 KHz/14 KHz
Working Mode	High Speed, Non-homogeneity, full mode
Sensor Type	Piezoelectric Ceramic Transducer
Sampling Rate	10, 20, 40 samples/m selectable
MEASUREMENT	
Principle	Sonic Slowness and Homogeneity Analysis
Minimum	130 us/min
Maximum	3,300 us/m
Vertical Resolution	6 in (152.4 mm)
Depth of Investigation	2 in (50.8 mm)
Accuracy	±2 us/m
Primary Curves	Delta-T Compressional, Shear, Stoneley

*Far Monopole acquired in all modes

**Additionally a near monopole is acquired for enhanced compressional slowness in hard rock environments