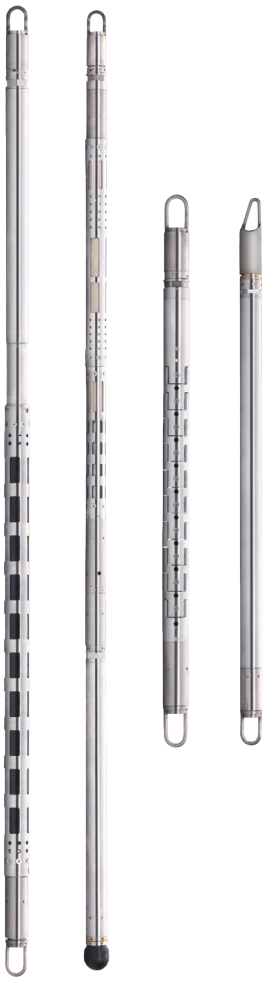
X-DIPOLE LOGGING TOOL (XDLT)

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—two monopole (near and far) and two dipole transmitters. The near monopole output is optimized for compressional and refracted shear measurements; whereas, the far monopole acquires compressional, refracted shear and stoneley arrivals. 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
- 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 modesavailable:
  - Mode 1: Fast Logging
  - Mode 2: Non-anisothropy
  - Mode 3: Full waveform

APPLICATIONS

- Gas zone detection (Vp/Vs)
- Fracture identification (Stoneley)
- Permeability estimation (Stoneley)
- Shear Sonic Anisotropy assessment
- Formation porosity
- Measurement of compressional and shear waves in open or cased-hole
- Synthetic Seismograms
- Lithology and clay identification
- Advanced Geomechanics

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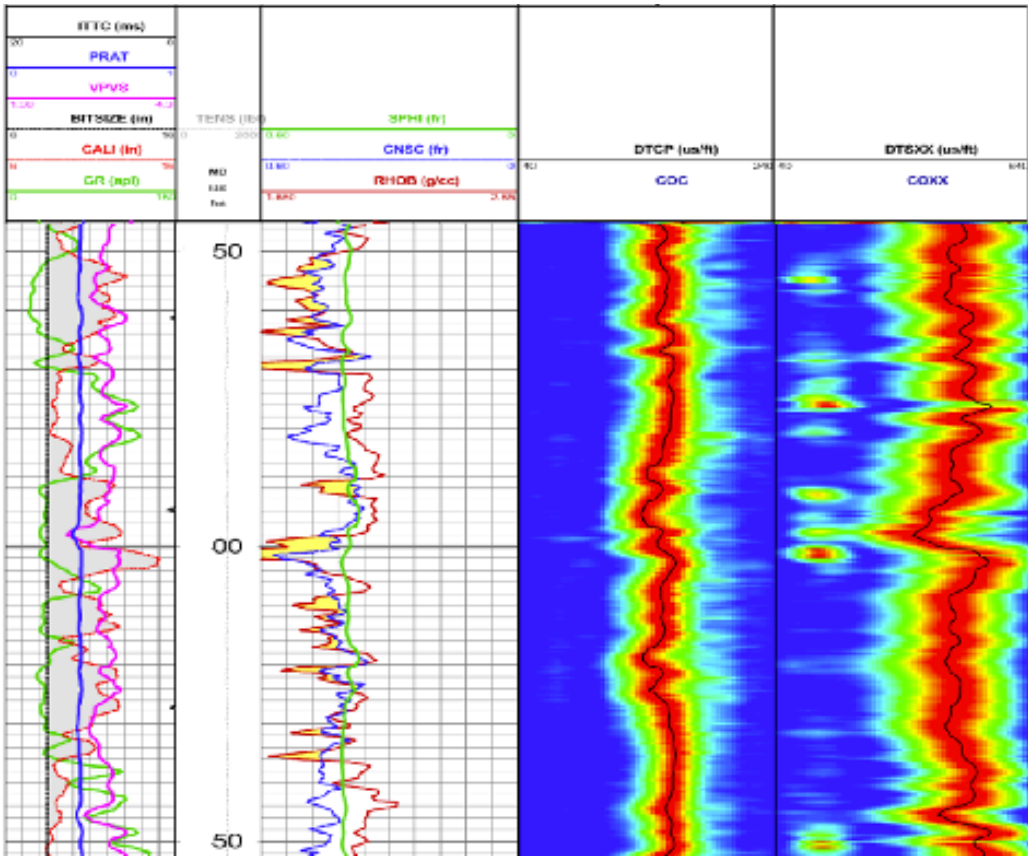
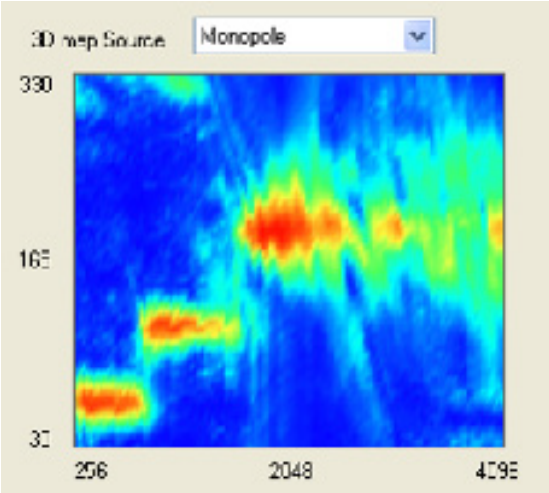
REAL-TIME QUALITY CONTROL PLOT FROM 8-1/2" OPEN-HOLE LOG



MONITOR DISPLAY



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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)
Tool OD (Max)	3-7/8 in (98 mm)
Tool length (with caps)	35.96 f (10.96 m)
Tool weight (with caps)	677 lbs (307 kg)
Receivers	8 levels spaced at 6 in (152.4mm), 4 receivers/level, total 32 rx, 4 tx (2 monopole - near, far; 2 dipole - XX, YY)
ACQUISITION MODE	
Maximum Logging Speed (Q-Combo) @ 4spf	
*Single Inline Dipole	36 ft/min (11m/min, 660m/h)
*Dual Inline Dipole	29.5 ft/min (9m/min, 540m/h)
**Full Dipole	16.4 ft/min (5m/min, 300m/h)
BOREHOLE CONDITIONS	
Borehole Fluids	Salt: Yes Fresh: Yes Oil: Yes Air: No
Tool Position	Centralized: Yes Eccentralized: No
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/m
Maximum	3,300 us/m
Vertical Resolution	6 in (152.4 mm)
Depth of Investigation	2 in (50.8 mm)
Accuracy	±2 us/ft
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**