

# NVADER

## Newsco Vertical Azimuth Deviation Electronic Recorder

### NVADER

*Our solution to inefficient and costly conventional survey systems*

*“The NVADER brings MWD monitoring into a new era with survey on demand, unmanned surveys, and remote access capabilities.*

*This tool reduces drilling costs by dramatically reducing survey times and by eliminating the expense of an on-site Directional Driller.”*

#### *Our Challenge*

Conventional vertical survey tools waste drilling time waiting on lengthy surveys, and MWD monitoring can require a costly MWD operator and/or directional driller to correct the well.

#### *Our Solution*

Our goal in developing this tool, now in continuous use since 2005, was to help our clients save money by reducing lost time incurred by conventional survey tools. These goals were fivefold: On-site operation by the company’s driller; fast, real-time surveys on demand; high flow rates with high percentage LCM; durable and reliable operation; and remote monitoring and control.



#### NVADER Specifications

Survey time @1.5 sec DR	2 1/2 minutes
Battery life	≈1200 surveys on demand (low warning indicator)
Collars for retrieval	58 mm (2 1/4”) minimum
Inclination	0° - 180°, 0.1° accuracy
Azimuth	0° - 360°, 1° accuracy
Dip angle	0° - 90°, 0.1° accuracy
Data storage	3264 surveys
Flow rates	0.5 m <sup>3</sup> - 4.0 m <sup>3</sup> (132 gpm - 1000 gpm)
Data rate	1.5 seconds
Gamma and tool faces	Fully capable
Remote operation	Fully compatible with WITS
Wireline retrievable	Yes
LCM	Designed for high tolerance to LCM
Operating temperature	302 °F (150 °C)

#### NVADER Performance Record

Drilled to 4420 metres (14,500')

All collar sizes

PDC & Tri cone bits

All mud types

> 60,000 run hours

≈ 3 million feet drilled

More than 1000 wells drilled

**NEWSCO**

The Leader in Innovative Drilling Solutions

**On-site operation by the company's driller:**

The primary benefit of this equipment is to eliminate the expense of an on-site MWD operator or directional driller. The equipment is easy to operate from the rig floor through a daylight-viewable, high-resolution, touch-screen monitor with memory. We will deliver the tool to your site, set it up, and train your personnel how to operate the system, so your operators can make minor corrections to vertical deviations before they drift so far that they require the need for an off-site directional drilling service. Tool-faces operation is available only when needed and on a 24-hour basis allowing operation over the course of the well to further reduce costs. Correction runs can be done with on-site equipment when adjustable motors are utilized, eliminating the need for costly transport of additional equipment to the rig site. Also, your personnel can move the equipment from site to site to perform multiple jobs, eliminating mobilization and demobilization costs. Newsco technicians will come to the rig to replace batteries for safety reasons and to check the equipment to ensure it is in good condition to continue in service.

**Real-time surveys on demand:**

Surveys are fast with our tool—approximately two minutes compared to an average of 5-7 minutes with conventional tools. This means that additional hours of drilling time can be packed into a day. This is a huge increase in efficiency and cost savings. In addition, surveying while circulating helps keep the well bore in better condition. The tool also stores the surveys in its on-board memory. This records down-hole parameters (inclination, azimuth, dip angle, and gamma) to provide a more detailed report to the client once on surface and allows drilling to continue even if communication with the surface terminal is temporarily lost.

**High flow rates with high-**

**percentage LCM:** The NVADER's powerful bottom end is not prone to clogging and does not require pipe screens. Typically, the mud pump will fail before our tool will clog. *"If you can pump it, we can pulse it."*

**Durable and reliable operation:**

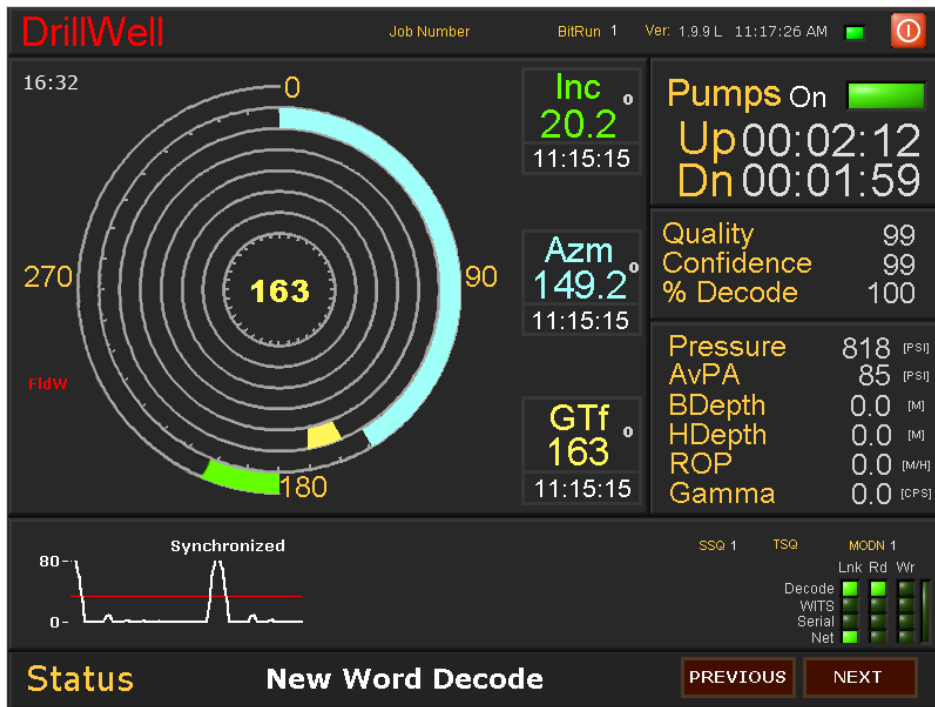
This is a rugged and reliable system. It has proven itself in some of the harshest environments on the planet: the Peruvian jungle, British Columbia, Saskatchewan, upper and lower USA, and off shore. It has operated reliably on more than 1000 wells, some as deep as 4420 meters (14,500 feet). The entire tool is wireline retrievable and reseatable if problems occur down hole.

**Remote monitoring and control:**

When linked with the Remote Terminal, Newsco personnel can operate the NVADER from our location in Calgary, Alberta, Canada, as if he were standing on the drilling platform. And we can do this from any location in the world.

**Applications**

- Tight boundary drilling
- Critical well-bore placement (e.g. pad drilling)
- Coil-tubing surveys
- Proactive equipment when concerned with deviation
- Correction runs
- To KOP before directional
- To TD after directional
- Directional drilling
- Build and holds
- Any time quicker surveys will save time and money



Remote Terminal Display



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