



Wolverine
Oilfield Technologies

LNDC

LITHO NEUTRON DENSITY CALIPER

Our LNDC (Litho Neutron Density Caliper) Tool offers measurements of formation density, porosity, borehole caliper, and formation imaging that help to determine lithology, reservoir properties, and wellbore stability. When used with other formation evaluation measurements, such as gamma ray and resistivity, as a "triple combo" service, it will help to analyze the geological structure, evaluate oil/water saturation and identify type of hydrocarbons, reserves in place, and total recoverable hydrocarbons.

FEATURES

- 4 3/4" COLLAR
- POROSITY AND DENSITY IN ONE 13.5 FOOT COLLAR
- REAL TIME MEASUREMENTS
 - Bulk density
 - Photoelectric factor (PEF)
 - Azimuthal density (16 sectors)
 - Apparent and corrected neutron porosity
 - Average caliper
 - Neutron/density measurements are corrected for environmental effects



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HIGHLY ACCURATE MEASUREMENTS OF CORRECTED NEUTRON POROSITY, FORMATION DENSITY, LITHOLOGY & BOREHOLE DIAMETER

When run in combination with a resistivity tool and Gamma Ray this 'triple combo' provides a comprehensive array of measurements to determine formation lithology and fluids

NEUTRON Measurement:

Source	14 Curie Am-Be
Operating Range	0 – 100% porosity
Porosity Accuracy	+/- 0.5 p.u. under 10 p.u.; +/- 5% from 10-40 p.u.
Porosity Repeatability	+/- 1 p.u. at 20 p.u. at 180 ft/hr, 6" samples

DENSITY Measurement:

Source	1.5 Curie Cs-137
Operating Range	1.5-3.1 g/cc
Density Accuracy	+/- 0.015 g/cc
Density Repeatability	+/- 0.01 g/cc at 2.2 g/cc at 180 ft/hr, 6" samples

PEF Measurement:

Source	1.5 Curie Cs-137
Operating Range	1-7 b/e
PEF Accuracy	+/- 0.25 B/e
PEF Repeatability	+/- 0.25 B/e at 3 B/e at 180 ft/hr, 6" samples

CALIPER/STANDOFF Measurement:

Capability	Azimuthal capability while rotating
Operating Range	0 – 2.0" of standoff
Standoff Accuracy	+/- 0.1" @ 1" standoff

Wolverine Oilfield Technologies is a subsidiary of NewTech Services Holding Limited, an international oilfield services company founded in 2009.

NewTech Services Holding Limited develops technology and expertise within 4 Business Divisions: Drilling Services, Completion Systems, Integrated Project Management and Capital Equipment.

NewTech Services Holding Limited supplies technology products and services to the oil and gas exploration and production industry in Russia and CIS, Europe, Middle East, North and South America.

Wolverine Oilfield Technologies is a subsidiary of NewTech Services Holding Limited specializing in drilling technology products such as MWD/LWD/RSS.

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