DNV·GL

Certificate No:
TAD00000UV

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Mud and Cementing Equipment

with type designation(s)
Series 2500 Supreme Centrifugal Pumps

Issued to
National Oilwell
McAlester OK, USA

is found to comply with
DNVGL-OS-E101 – Drilling plant, Edition January 2018
DNVGL-OS-E201 – Oil and gas processing systems, Edition January 2017
DNVGL-SI-0166 – Verification for compliance with Norwegian shelf regulations, Edition July 2015

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL when accompanied by a DNV GL Product Certificate (PC).

Issued at **Houston, TX** on **2018-01-26**
This Certificate is valid until **2023-01-25**.
DNV GL local station: **Certification & Inspection Services**

Approval Engineer: **Mark Miser**

for **DNV GL**

Per Jørgen Tviberg
Team Lead

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

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Job Id: **262.1-014946-2**
Certificate No: **TAD00000UV**

Product description

Centrifugal pumps for mixing/transfer of drilling and mud or cement slurry. This Type Approval does not include the driving members.

Series 2500 Supreme Centrifugal Pump Models: 3x2x13, 4x3x13, 5x4x14, 6x5x11, 6x5x14, 8x6x11, 8x6x14, and 10x8x14

Application/Limitation

Design Parameter	Value	(Equivalent)
Maximum Design Temperature	: 121 °C	(250 °F)
Minimum Design Temperature	: -18 °C	(0 °F)

NOTE: Maximum discharge head, capacity, and rpm are provided in Catalogue No. 0001-0567-90, Rev B.

Type Approval documentation

Marking of product

Marking shall:

1. Be reviewed and approved by the DNV GL local surveyor.
2. Identify & differentiate each production unite (e.g., serial number).
3. Establish traceability to product design and fabrication documentation.
4. Additional marking at the manufacturer's option is acceptable.

Periodical assessment

For retention of the Type Approval, DNV GL's surveyor shall perform a retention survey every second year in accordance with DNV GL Type Approval Scheme DNVGL-CP-0338, October 2015 Edition.

Other conditions/comments

- Fabrication records are to be maintained in accordance with DNVGL-OS-E101 Ch.3 Sec. 3.
- When DNV GL Product Certification is required, each product is to be surveyed during fabrication in accordance with the requirements for Category I equipment as defined in DNV GL's Offshore Standard DNVGL-OS-E101.

End of Certificate