Certificate no.:
TAD00001SK

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Hoisting, Rotation and Pipehandling Equipment

with type designation(s)
Water Course for NOV Top Drive HPS-03

issued to
National Oilwell Varco Norway AS
KRISTIANSAND S, **Norway**

is found to comply with
DNV-OS-E101 – Drilling facilities, Edition July 2024
DNV statutory interpretations DNV-SI-0166 – Verification for compliance with Norwegian shelf regulations, Edition July 2021

Application:

See page 2.

Issued at **Høvik** on **2026-01-26**
This Certificate is valid until **2031-01-25**. for **DNV**
DNV local unit: **Oslo Drilling Systems & Lifting Appliances**

Approval Engineer: **Jan H. Hansen**

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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

Reference Standards

- ASME B31.3, Process Piping, 2024 Edition
- API Spec 6A, Specification for Wellhead and Tree Equipment, Edition 21 with Errata 6, October 2024
- API Std 6X, Design Calculations for Pressure-Containing Equipment,2nd Edition, February 2019
- API Spec 8C, Drilling and Production Hoisting Equipment (PSL 1 and PSL2), Edition 6, July 2025
- API Spec 20A, Carbon Steel, Alloy Steel, Stainless Steel, and Nickel Base Alloy Castings for Use in the Petroleum and Natural Gas Industry, Third Edition, July 2024.

Product description

This TA is valid for a 5" water course connected to the NOV Top Drive HPS-03 series. The 5" water course transfers mud, from a connected mud hose, through the top-drive and further down, inside the drill string to allow for well control.

Limitations for 5" Water Course

Parameter	Value	Value
S-pipe, outer diameter	139.7 mm	5.5 inch
S-pipe, nominal wall thickness	20 mm	0.79 inch
Maximum Allowable Working Pressure	517 bar	7500 psi
Design temperature	-20°C /+45°C	-4°F/+113°F
Corrosion/ erosion allowance	2.5 mm	0.10 inch
Material, welded steel gooseneck	ASTM A519 AISI 4130 QT	-
Material, casted steel gooseneck	G18NiMoCr3-6 QT	-
API 8C PSL level	PSL 1 1)	-
Fluid service	Standard	-
Gooseneck and union couplings	See comments	-
Limiting external loads at gooseneck interface	See comments	-

Notes:

1) PSL 2 defined units shall meet the stricter requirements to materials, welding and quality control as described in API 8C, chapter 6, 7 and 8 respectively.

Test- and fabrication procedures

- Charpy impact testing shall as minimum comply with DNV-OS-E101, Ch.2, Sec.2, 2.6.
- Pressure testing shall as minimum comply with DNV-OS-E101, Ch.2, Sec., 8, 3.3.
- NDE/NDT shall as minimum comply with DNV-OS-E101, Ch.2, Sec.8,3.1.
- Qualification of welders, and welding, shall as minimum comply with DNV-OS-E101, Ch.2, Sec.8, 2.3 and 2.4

Comments

- The nickel alloy steel casting G18NiMoCr3-6 (EN-10340 material number 1.6759) used for alternative casted goosenecks, shall meet all requirements to production, heat treatment and testing as found in links to other relevant standards listed in DNV-OS-E101, Ch.2 Section 2.4 'Steel casting'.
- The drawings listed in this Type Approval for the 5" Water Course are all part of the expired DNV Type Approval Certificate No. TAD00000TX. This expired TAC contains a complete NOV Top Drive with alternative water courses.
- The welded-on male and female hammer unions are to be delivered with DNV product certificates based on separate DNV Type Approval(s) issued to NOV.
- External design loads, at the interface between the gooseneck and the attached mud hose, have not been listed in NOV's design report. Typical loads are weight loads from different hose configurations, including rig accelerations, vertical and horizontal. Total stress from pressure and external loads in the gooseneck shall be within allowable design stress in API Standard 6X 'Design Calculations for Pressure-containing Equipment. It is

understood, and used as basis for this TA, that the pipe support close to the hose interface, will take most of the external loads from the mud hose.

Marking of product

For traceability, the following minimum marking is to be carried out on each product:

- Manufacturers Name or Mark
- Part No.
- Serial No.
- Size
- Pressure Rating
- Temperature Rating
- PSL 1
- NV TAD00001SK

Periodical Retention Survey

For retention of this Type Approval Certificate, DNV AS's representative shall carry out surveys every second year in accordance with DNV Type Approval Scheme DNV-CP-0338.

END OF CERTIFICATE