Certificate No:
TAD00001KH

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Miscellaneous

with type designation(s)
Wellbore Sensor Housing Assembly, Model: PT3614

Issued to
NGB Corporation dba Stellar Technology
Amherst, NY, USA

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 :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Issued at **Houston** on **2024-10-14**
This Certificate is valid until **2029-10-13**.
DNV local unit: **Houston Offshore Services**

Approval Engineer: **Marco Romero**

for **DNV**

Sowkarthika Seetharaman
Head of Section

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 300,000 USD.

Product description

This device mounts in the wellbore stream and monitors the wellbore medium – specifically drilling mud pressure and temperature. Scope of Type Approval Certificate is limited to ability of housing items to withstand pressure and does not consider performance of sensor, including electrical and electromechanical functions.

Design codes/standards used as references

API 6A “Specification for Wellhead and Christmas Tree Equipment” 21st Edition
API 17TR8 “High-pressure High-temperature Design Guidelines” 3rd Edition

Application/Limitation

Description	: Value
Nominal Bore Sizes	: 3-1/16 & 4-1/16 inches
Working Pressure	: 20,000 psi
Test Pressure	: 30,000 psi
Product Specification Level	: PSL 3
Service	: Internal H_2S
API 6A Temperature Rating	: PX (-20°F TO 350°F)
Designation of Systems	: Well Monitoring Systems

Type Approval documentation

Tests carried out

Design validation testing has been carried out under NOV ER-03172 Rev. 01. Permission granted to Stellar to use NOV Engineering Report registered under NPS Correspondence Journal 3.

Marking of product

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

1. Serial No. which relates the equipment to certificates and manufacturing documentation.
2. Manufacturer’s name or trademark
3. Additional Marking at Manufacturer’s discretion.

Periodical assessment

Periodical assessments for type approvals will be required after two years (+/- 90 days) and after three-and-a-half years (+/- 90 days) in accordance with DNV-CP-0338 *September 2021*, Section 4.

Other comments/conditions

1. Procedures related to testing, welding, NDT, etc. are to be reviewed/approved by DNV’s local surveyor.
2. When DNV 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’s Offshore Standard DNV-OS-E101.

End of Certificate.