

# **Technical Specification**

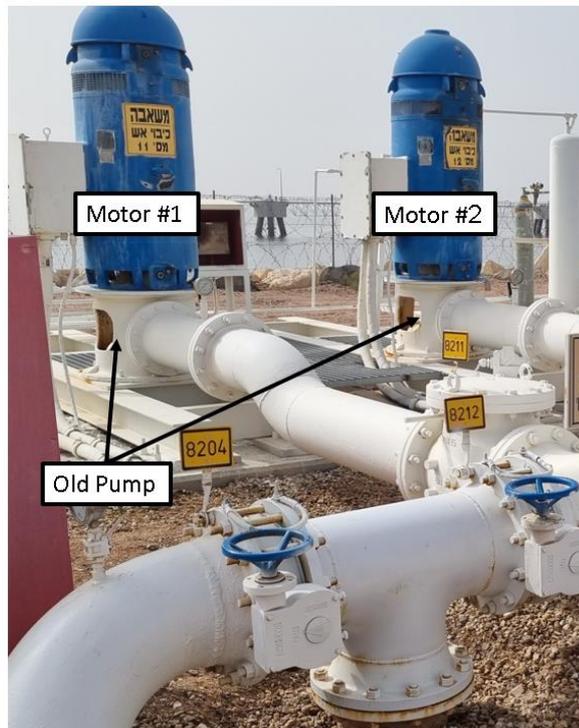
**For:**

## **Sea Water Vertical Turbine Pump**

**Ver: 4**  
**Date: 08.09.2022**

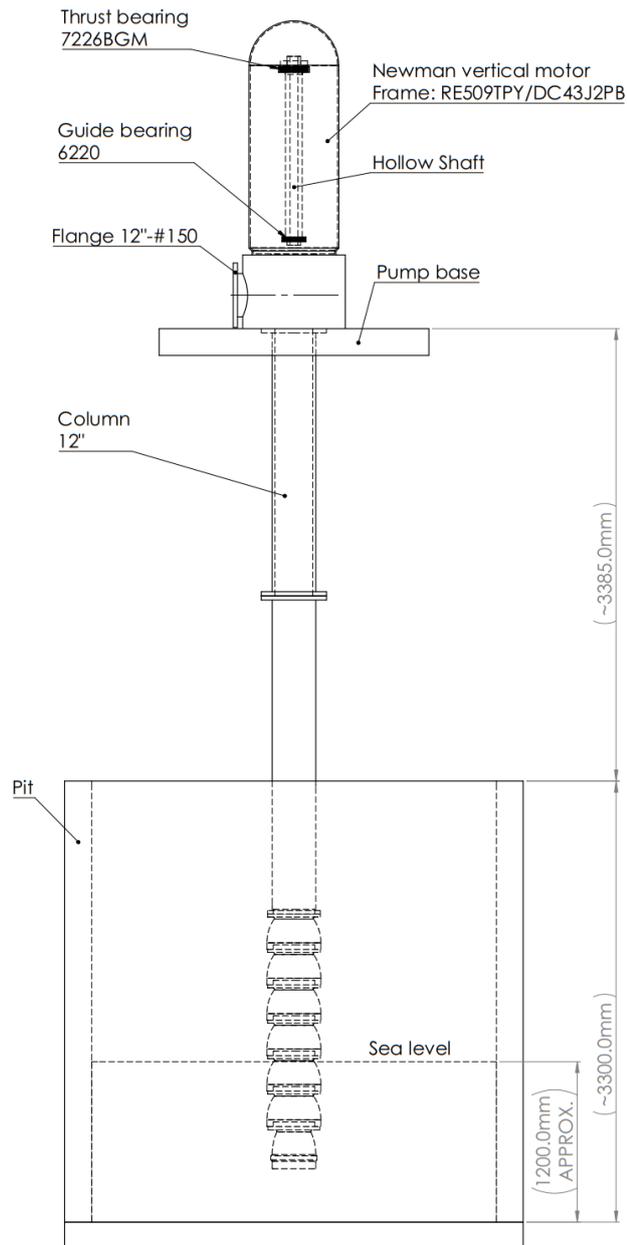
1. General

- 1.1. This specification covers the design, fabrication, testing and delivery of wet pit, vertically suspended, multi stage, and single-casing diffuser pumps for Europe Asia Pipeline Co. (EAPC).
- 1.2. The order specification covers 2 (two) identical vertical pumps for sea water service to be install submerge in a wet pit. The 2 pumps will be with same operating condition and will installed in parallel configuration. This pumps will replace 2 existing pump installed in EAPC facility. See picture 1.



**Picture 1 – Current installation**

- 1.3. The vendor will supply only the Pump paired with the existing motor. The existing electric motor is a hollow shaft motor with a thrust bearing allowing a hydraulic axial thrust of 3750 kg (7087 kg at shut-off) shown in picture 1.
- 1.4. The weight of the existing pump turbine is 950 kg.
- 1.5. The maximum external diameter of the pump will allow installation in the existing bowl (diameter 385 mm).
- 1.6. Existing shaft diameter 2 3/16 inch, using a left and right threaded nut.
- 1.7. The vendor will design, manufacture and supply the coupling-shaft device between the pump and the motor.
- 1.8. The vendor will have a local representative who will take measurements for production and supplying any needed devices to connect to the existing motor and supervise the installation
- 1.9. Picture 2 describe general dimension for installation. It is the vendor's responsibility to perform accurate measurements on site through the local representative.



**Picture 2 – General dimension**

## 2. Site Conditions

- 2.1. EAPC Terminal near the Gulf of Eilat.
- 2.2. Ambient Installation: Seashore, outdoors, salt spray in air and sand storm.
- 2.3. Air Temperature: 5 – 55 °C.
- 2.4. Humidity: up to 90%
- 2.5. Fluid: Red sea water. Density: 1028 kg/m<sup>3</sup>.

## 3. Pump

- 3.1. The pumps will be designed, manufactured, inspected, tested and prepared for shipment in accordance with the latest edition of Standard API610.
- 3.2. Pump Type: wet pit, vertically suspended, single-casing diffuser pump with discharge through column - Type VS1.

- 3.3. Outlet configuration: above ground discharge.
  - 3.4. Stuffing box type: Packing.
  - 3.5. Shaft diameter: 2-3/16".
  - 3.6. Type of Impeller: Semi-open impeller.
  - 3.7. Operating condition: 600 m<sup>3</sup>/hr @ 100m. The working point will be as close as possible to the BEP.
  - 3.8. Continuous operation at 50 °C ambient temperature.
  - 3.9. Outlet diameter: RF Flange 12" #150 (ASME B16.5)
  - 3.10. Pump construction and materials shall be suitable for handling the liquid and site condition mentioned above.
  - 3.11. Lubrication: by pump liquid.
  - 3.12. The manufacturer will design, fit and manufacture the coupling-shaft arrangement between the pump and the motor.
  - 3.13. Direction of rotation: clockwise.
  - 3.14. The pump will supply with basket strainer.
  - 3.15. Lifting points will be installed at the pump base.
  - 3.16. Protection Marking: IP 65.
  - 3.17. Warranty: at least 3 years.
  - 3.18. Availability of spare parts: At least 10 years.
  - 3.19. The design, inspection, testing and preparation for shipment will as defined in standard API610.
4. Motor data for existing motor
    - 4.1. Manufacturer: Newman.
    - 4.2. Frame: RE509TPY/DC43J2PB.
    - 4.3. Motor RPM: 1475.
    - 4.4. Motor Power: 350 hp.
    - 4.5. Volts: 400.
    - 4.6. Frequency- 50Hz.
    - 4.7. With Thrust bearing.
    - 4.8. Service factor - 1.15.
5. Spare parts
    - 5.1. Recommended list of spare parts will be sent with the pump as well as list of specific tools which are required for maintenance and repairs.
6. Documentation
    - 6.1. Pump: As defined in standard API610.
    - 6.2. All data, drawings and maintenance dimension shall be in SI system of measurements.
    - 6.3. Drawing of the coupling-shaft arrangement between the pump and the motor.
7. Painting
    - 7.1. The assembly will be coated in accordance with manufacturer standard and to meet site conditions as noted above.
    - 7.2. Color: bright color. The manufacturer will recommend.
8. Scope of delivery
    - 8.1. Each pumping unit to include:

8.1.1. Vertical turbine pump bowl assembly as per above specification inclusive suction strainer of SS.

8.1.2. The purchase will consist of 2 pumps without motors.

Eur1 certificate **or** US Certificate of Origin will be required.