

<p>KLM Technology Group</p> <p>Project Engineering Standard</p>	 <p>Solutions, Standards and Software</p> <p>www.klmtechgroup.com</p>	<p>Page 1 of 10</p>
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<p>KLM Technology Group #03-12 Block Aronia, Jalan Sri Perkasa 2 Taman Tampoi Utama 81200 Johor Bahru Malaysia.</p>	<p>Pipeline Dewatering, Drying and Purging</p> <p>(PROJECT STANDARDS AND SPECIFICATIONS)</p>	

KLM Technology Group has developed; 1) Process Engineering Equipment Design Guidelines, 2) Equipment Design Software, 3) Project Engineering Standards and Specifications, 4) Petrochemical Manufacturing Reports and 5) Unit Operations Manuals. Each has many hours of engineering development.

KLM is providing the introduction to this guideline for free on the internet. Please go to our website to order the complete document.

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1.0 SCOPE

- 1.1 This specification covers the design and equipment to perform the dewatering and drying of the pipeline installed at the Facility.
- 1.2 The dewatering and drying shall fully comply with all relevant contractual requirements specified in the Scope of Work and Technical Specification in the Contract.

2.0 STANDARD SPECIFICATIONS

- 2.1 The dewatering and drying equipment shall conform in design, materials, and performance, except where otherwise specified, with the current issued amendments of the following prevailing on the effective date of the Contract:

2.1.1 International Standards

ASME B31.4	Liquid Transportation System for Hydrocarbons, Liquid Petroleum Gas, Anhydrous Ammonia, and Alcohols
ASME B31.8	Gas Transmission and Distribution Piping System
BS B010	Onshore Pipeline Installation
API 1110	Recommended Practice for Pressure Testing Liquid Petroleum Pipelines

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2.2 Compliance with this specification shall not relieve the Contractor of its responsibility to supply equipment suited to meet the specified service conditions and applicable regulations.

2.3 Where conflicts exist between this specification and other Drawings, standards, codes or specifications, the most stringent shall be applied.

3.0 SERVICE CONDITIONS

3.1 The dewatering and drying equipment shall be suitable for continuous operation at a location under high ambient temperature any humidity. The atmosphere at the Facility is generally dusty and corrosive and may contain traces of hydrogen sulphide.

3.2 The dewatering and drying equipment shall in all respects be suitable for continuous operations in the service conditions.

4.0 TECHNICAL REQUIREMENTS

4.1 Dewatering, drying and purging shall be carried out in accordance with the approved procedures.

4.2 The pipelines shall be dried by dry air or by a slug of kerosene and corrosion-inhibiting agent, e.g., Cronox 624 or equivalent. Nitrogen purging should follow the drying operation until commissioning. The Contractor shall present calculations for the required dew point after drying.

4.3 On receipt of approval from the Company that the specified dew point has been satisfactorily achieved, the Contractor shall close off the pipeline section, remove surplus fittings and connections and mothball the line with nitrogen at 1.5 bar.