Title	**Demonstrate knowledge of basic hydraulic theory for rural fluid systems**		
Level	**3**	**Credits**	**2**

Purpose	This unit standard is for people wishing to enter the dairy engineering sector and involves basic knowledge of hydraulic theory for rural fluid systems. People credited with this unit standard are able to demonstrate knowledge of basic hydraulic theory for rural fluid systems.

Classification	Mechanical Engineering > Dairy Systems Engineering

Available grade	Achieved

Explanatory notes

1 Reference
The International System of Units (SI), 8th edition (France: Bureau International des Poids et Mesures, 2006). Available at http://www.bipm.org/utils/common/pdf/si_brochure_8_en.pdf.

2 Assessment
Candidates are encouraged to refer to and use relevant literature and texts such as training manuals, relevant industry codes of practice, and standards.

Outcomes and evidence requirements

Outcome 1

Demonstrate knowledge of basic hydraulic theory for rural fluid systems.

Evidence requirements

1.1 The basic properties of fluids are defined.

Range properties include - density, specific gravity, viscosity, compressibility, boiling point, vapour pressure, flowrate.

1.2 International units of measurement for the basic properties of fluids are stated.

Range properties include - density, specific gravity, viscosity, compressibility, boiling point, vapour pressure, flowrate.

1.3 Atmospheric, gauge, and absolute pressures are defined and their effect on hydraulic systems explained.

1.4 The effect on the properties of water when its temperature is changed is described by tabulating typical figures for water.

Range properties include – density, vapour pressure, viscosity.

1.5 The effect on the properties of water when subjected to external factors is described.

Range external factors may include but not limited to - boiling water under high suction, boiling water at lower than normal boiling temperatures. Properties include – density, viscosity, and change in volume.

1.6 Properties of common dairy farming fluids are compared with the properties of water.

Range properties include - density, viscosity.

1.7 Basic formulas are used and variables are transposed to calculate pressure and flow rates of water.

Planned review date	31 December 2020

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	15 October 2015	N/A

Consent and Moderation Requirements (CMR) reference	CMR 0013

This CMR can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.

Please note
Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMR). The CMR also includes useful information about special requirements for organisations wishing

to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

Comments on this unit standard

Please contact the Competenz qualifications@competenz.org.nz if you wish to suggest changes to the content of this unit standard.