Qualification Specification

ProQual Level 5 Award in Understanding Water Networks

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This qualification is part of ProQual's broad offer of qualifications in the Water Industry Sector.

To find out more about other qualifications in this, or any other sector, or for our latest fees; check our Fees Schedule via the QR code below

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Introduction

The Level 5 Award in Understanding of Water Networks is aimed at candidates who wish to demonstrate their knowledge and understanding of regulatory compliance requirements and best practice in Water Networks.

The awarding body for this qualification is ProQual AB. This qualification has been approved for delivery in England and Northern Ireland. The regulatory body for this qualification is Ofqual, and this qualification has been accredited onto the Regulated Qualification Framework (RQF), and has been published in Ofqual's Register of Qualifications.

Qualification Profile

Qualification Title:	ProQual Level 5 Award in Undertsanding Water Networks
Qualification Number:	603/3729/1
Level:	Level 5
Total Qualification Time (TQT):	120 Hours
Guided Learning Hours (GLH):	120 Hours
Credit Value:	12 Credits
Assessment:	Pass / Fail Internally assessed and verified by centre staff External quality assured by ProQual Verifiers
Qualification Start Date:	29/10/2018
Qualification Review Date:	31/07/2027

Learner Profile

There are no formal academic entry requirements for this qualification. Centres should carry out their own initial assessment of a candidate's initial knowledge and skills.

Qualification Structure

This qualification consists of **one** mandatory unit. Candidates must complete the mandatory unit to achieve this qualification.

Unit Number	Unit Title	Level	TQT	GLH
Mandatory Units – Candidates must complete **all** units in this group.				
Y/617/2838	Understanding Water Networks	5	120	120

Centre Requirements

Centres must be approved to deliver this qualification. If your centre is not approved to deliver this qualification, please complete and submit the **ProQual Additional Qualification Approval Form.**

Materials produced by centres to support candidates should:

- Enable them to track their achievements as they progress through the learning outcomes and assessment criteria.
- Provide information on where ProQual's policies and procedures can be viewed.
- Provide a means of enabling Internal and External Quality Assurance staff to authenticate evidence.

Certification

Candidates who achieve the requirements for this qualification will be awarded:

- A certificate listing all units achieved, and
- A certificate giving the full qualification title:

ProQual Level 5 Award in Understanding of Water Networks

Claiming certificates

Centres may claim certificates for candidates who have been registered with ProQual and who have successfully achieved the qualification. All certificates will be issued to the centre for successful candidates.

Unit certificates

If a candidate does not achieve all of the units required for a qualification, the centre may claim a unit certificate for the candidate which will list all of the units achieved.

Replacement certificates

If a replacement certificate is required a request must be made to ProQual in writing. Replacement certificates are labelled as such and are only provided when the claim has been authenticated. Refer to the Fee Schedule for details of charges for replacement.

Assessment Requirements

Each candidate is required to produce a portfolio of evidence which demonstrates their achievement of all of the learning outcomes and assessment criteria for each unit.

Evidence can include:

- Observation report by assessor
- Assignments/projects/reports
- Professional discussion
- Witness testimony
- Candidate product
- Worksheets
- Record of oral and written questioning
- Recognition of Prior Learning

Candidates must demonstrate the level of competence described in the units. Assessment is the process of measuring a candidate's skill, knowledge and understanding against the standards set in the qualification.

Centre staff assessing this qualification must be **occupationally competent** and qualified to make assessment decisions.. Assessors who are suitably qualified may hold a qualification such as, but not limited to:

- ProQual Level 3 Certificate in Teaching, Training and Assessment.
- ProQual Level 3 Award in Education and Training.
- ProQual Level 3 Award in Assessing Competence in the Work Environment. *(Suitable for assessment in the workplace only.)*
- ProQual Level 3 Award in Assessing Vocational Achievement. *(Suitable for assessment taking place in a simulated training environment only.)*

Candidate portfolios must be internally verified by centre staff who are **occupationally knowledgeable** and qualified to make quality assurance decisions. Internal verifiers who are suitably qualified may hold a qualification such as:

- ProQual Level 4 Award in the Internal QA of Assessment Processes and Practice.
- ProQual Level 4 Certificate in Leading the Internal QA of Assessment Processes and Practice.

Occupationally competent means capable of carrying out the full requirements contained within a unit. **Occupationally knowledgeable** means possessing relevant knowledge and understanding.

Enquiries, Appeals and Adjustments

Adjustments to standard assessment arrangements are made on the individual needs of candidates. ProQual's Reasonable Adjustments Policy and Special Consideration Policy sets out the steps to follow when implementing reasonable adjustments and special considerations and the service that ProQual provides for some of these arrangements.

Centres should contact ProQual for further information or queries about the contents of the policy.

All enquiries relating to assessment or other decisions should be dealt with by centres, with reference to ProQual's Enquiries and Appeals Procedures.

Units – Learning Outcomes and Assessment Criteria

Title:	Understanding Water Networks			Level:	5
Unit Number:	Y/617/2838	TQT:	120	GLH:	120

Learning Outcomes *The learner will be able to:*		Assessment Criteria *The learner can:*	
1	Understand the regulatory and legislative framework in which the water industry operates, in relation to the impact of the framework on the operation and maintenance of the water network.	1.1	Describe the legislative framework pertaining to the water industry, including the key regulators of the water network.
		1.2	Explain the impact of the legislative framework on the operation of the water network.
		1.3	Describe the role of the key regulators for the water industry and the relevant legislation in relation to water networks.
		1.4	Identify the various stakeholders who influence legislation and regulation in the water industry.
		1.5	Explain how the water industry engages with stakeholders.
		1.6	Explain how business plans in the water industry are influenced by the regulator, including the process involved in developing business plans.
2	Understand the implications of water treatment on the water quality aspects of water networks and measures required to maintain water quality within a water network.	2.1	Explain the impact of a water source on the water treatment process and the subsequent impact on water quality in the network.
		2.2	Explain the impact of water treatment processes on network operations.
		2.3	Explain how water treatment and public health are linked, including the impact of waterborne diseases and how these can be prevented.

2	*Continued*	2.4	Analyse of the causes of water quality deterioration within the network in relation to: • Microbiology. • Discolouration. • Acceptability.
		2.5	Analyse the controls available to prevent deterioration of water quality.
		2.6	Describe the role of the regulator in monitoring water quality in the network and how compliance to water quality standards are enforced.
3	Understand the implications of climate change for the water industry and the remedial measures required to address this.	3.1	Analyse the nature of climate change and its impact on: • Water and environmental industries. • Water networks.
		3.2	Analyse the content of relevant standards for adaptation to climate change and their potential application within own organisation.
		3.3	Analyse own organisation's capability in carrying out adaptation to climate change at a network level.
4	Understand the design and layout of major water network components, and the commissioning/adoption of new assets, with their impacts on water network resilience and water quality.	4.1	Explain how the major components of the network, from water treatment works to customers' taps, impact on the function, selection and maintenance requirements.
		4.2	Explain what data is required to inform the effective management of water network.
		4.3	Describe the regulatory and legislative framework for the commissioning/adoption of new assets, including: • Management of network resilience. • Management of water quality.

5	Understand the water company's operational management strategy for water network distribution practice and delivery systems.	5.1	Explain own water company's strategy for the coordination of activities across the service chain to ensure a safe, efficient and effective operational delivery of clean water.
		5.2	Explain how specific systems and processes measure performance to ensure efficient and effective operational management of the water network to meet regulatory requirements and stricter customer levels of service.
		5.3	Explain how continuity of a water supply is monitored and measured.
6	Understand best practice for management of water network assets.	6.1	Explain the principles of whole life asset management and investment appraisal.
		6.2	Explain the application of the following in the management of network assets: • Asset management plans. • Water safety plans. • Maintenance strategies
		6.3	Analyse options for water network investment projects to address risks and deficiencies in the water network asset base.
		6.4	Evaluate innovations that are available or becoming available in the management of water network assets.
		6.5	Describe supply chain management with the water industry and the options available to optimise effective management.
		6.6	Explain the water company's strategy for the evaluation of risk and its impact on operational management.

7	Understand hydraulic principles in relation to the water network.	7.1	Explain the application and importance of hydraulics for water networks.
		7.2	Explain, with examples, how to perform essential hydraulic calculations; including conversion between SI units.
		7.3	Explain fundamental hydraulic principles including: • Continuity Equation. • Hydraulic forces. • Bernoulli energy conservation. • Energy friction losses.
		7.4	Explain Pump Curves and System Curves.
		7.5	Demonstrate the appropriate application of hydraulic principles across a range of water network applications and uses.
		7.6	Explain the application and importance of hydraulics for water networks.
8	Understand best practice for leakage and demand management.	8.1	Explain why demand management is critical to the water company's sustainability, including the role leakage plays in the whole demand management strategy.
		8.2	Evaluate the range of demand management operations available including leakage management, metering and water efficiency promotion.
		8.3	Produce a leakage management strategy with regard to short and long run economic levels of leakage and external influences on the strategy.
		8.4	Analyse data and define data requirements to be able to carry out leakage calculations in accordance with current best practice.
		8.5	Evaluate the main methods of leakage control and describe their relative effectiveness as part of an overall leakage reduction strategy.

8	*Continued*	8.6	Evaluate the appropriate methods of network repair and maintenance and the options for managing this activity through contractors or direct labour.
		8.7	Discuss how innovation and emerging technology can be tested and applied for more robust and successful leak reduction initiatives.
9	Understand the importance and application of resilience within the water sector.	9.1	Explain how resilience can be applied to the operation of the water network, including through the use of scenario planning.
		9.2	Explain how a practical approach to risk and resilience can enhance the overall management of the water network.
		9.3	Identify through innovative benefit realisation, how this will lead to enhanced resilience on the water network.
		9.4	Evaluate how a robust resilience strategy can help in the overall achievement of key water network regulatory measures and enhance the customer experience of added value.
		9.5	Discuss how innovation and technology can be used to meet the aspirational aims of a resilient water infrastructure.
10	Understand the management of the customer experience within water networks.	10.1	Describe how compliance with all customer legislative standards is achieved.
		10.2	Explain how the customer experience within the water network can be monitored and how it is reported.
		10.3	Describe how the customer experience is protected during operational activity on the water network.
		10.4	Describe all the external stakeholders involved in the customer experience and the structure needed to manage engagement with these bodies.

11	Understand the causes of incidents and events in the water industry and best practice in their management and prevention.	11.1	Describe the nature of incidents/events, how they can occur and their origins.
		11.2	Describe the two different types of incident/event, their main differences and how these differences affect the response.
		11.3	Discuss some of the strategies and processes that can use to help prevent incidents/events.
		11.4	Discuss the impact of operational knowledge on the process and options used to mitigate incidents.
		11.5	Discuss factors to consider when staff and customers are involved in network incidents.
		11.6	Discuss some of the factors to consider in order to assist recovery as it is underway during an incident.
		11.7	Explain the importance of keeping accurate records/diaries during an incident, for what purposes such records may be used and by whom.
		11.8	Discuss the process of incident and near miss review and the key elements to consider.
		11.9	Discuss areas in which 'Lessons Learnt' can improve the organisation.

Additional Assessment Information

For assessment criterion 7.5 candidates must demonstrate competent application of hydraulic principles through a scenario exercise.

Appendix One – Command Verb Definitions

The table below explains what is expected from each **command verb** used in an assessment objective. Not all verbs are used in this specification, practical assessment criteria may use command verbs not provided below.

Apply	Use existing knowledge or skills in a new or different context.
Analyse	Break a larger subject into smaller parts, examine them in detail and show how these parts are related to each other. This may be supported by reference to current research or theories.
Classify	Organise information according to specific criteria.
Compare	Examine subjects in detail, giving the similarities and differences.
Evaluate	As with compare, but extended to include pros and cons of the subject. There may or may not be a conclusion or recommendation as appropriate.
Describe	Provide detailed, factual information about a subject.
Discuss	Give a detailed account of a subject, including a range of contrasting views and opinions.
Explain	As with describe, but extended to include causation and reasoning.
Identify	Select or ascertain appropriate information and details from a broader range of information or data.
Interpret	Use information or data to clarify or explain something.
Produce	Make or create something.
State	Give short, factual information about something.
Specify	State a fact or requirement clearly and in precise detail.

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