

Water Treatment Technician

Unit W TTC03 Water Quality Monitoring for Process Control

This training specification has been developed from the water process technician standard. The specification details the **minimum** training specification, as agreed by industry employers, to deliver the skills and knowledge required to carry out water quality monitoring for process control in the water industry.

The specification details the critical requirement of the activity to carry out the work outlined and does not preclude employers from adding to the skills and knowledge detailed by the specification in their own training programmes.

All work must be carried out to approved procedures and practices and in accordance with statutory health, safety and environmental requirements.

What does this specification look like?

Water treatment technicians need to be able to:

- WQMP1 Identify the water quality requirements for the supply of potable water
- WQMP2 Identify the correct type and use of analytical equipment for water quality testing
- WQMP3 Apply the procedures and methodology in the taking, preparation and analysis of samples required including water and associated chemicals
- WQMP4 Analyse data provided by monitoring equipment, laboratory analysis and observation to interpret performance of the water process

What do I need to take this module?

Candidates to be **assessed** as competent in this area should have successfully completed the modules shown below or have evidence demonstrating an equivalent level of competence.

1. Completion of all health and safety training requirements related to this module activity
2. Completion of the process specific modules and legislation modules

Performance Criteria

To achieve this unit, you will need to be able to:

General Requirements

- P1. Identify the work area to be accessed using company documentation, systems and work instructions
- P2. Select, inspect and wear required PPE in line with company procedures
- P3. Carry out a site specific risk assessment of the work area, identifying the hazards and control measures required
- P4. Maintain accurate and up to date records
- P5. Report information and data to the designated person

Task Specific – Water Treatment Processes – Water Quality Monitoring for Process Control

- P6. Carry out key calibration or instrument checks of on-line and laboratory equipment using the results to identify issues with their performance
- P7. Take representative samples of water from key points within the treatment process, safely using appropriate sampling equipment
- P8. Carry out bench top analysis of samples for process performance monitoring, record and interpret the results
- P9. Review and analyse the performance of the water process by using laboratory, site and network quality reports
- P10. Obtain, review and interpret water quality trends on SCADA and telemetry systems, suggesting appropriate actions where intervention may be required
- P11. Understand the need for accurate recording and reporting of process performance, in line with company procedures

Knowledge and Understanding

To achieve this unit, you will need to know and understand:

General Requirements

- K1. The principles of Health, Safety and Environmental legislation when working with water treatment processes
- K2. The organisation's safety rules, policies and procedures when working with water treatment processes
- K3. The hazards associated with working with water treatment processes and the correct

way to respond to them

- K4. How to select, inspect and use PPE when working with water treatment processes
- K5. How to carry out a site specific risk assessment and identify workplace hazards
- K6. How to respond in the event of an emergency situation in the workplace environment
- K7. How to leave the work area in a safe and secure condition
- K8. The company recording and reporting process

Task Specific – Water Treatment Processes – Water Quality Monitoring for Process Control

- K9. The legal requirements for water quality performance in line with water quality legislation, including:
 - a) The need for accurate and precise analysis of water process
 - b) The maximum prescribed concentration values of key parameters
 - c) Procedures for reporting anomalies
- K10. The need for accurate and precise recording and reporting
- K11. The basic scientific principles of key analytical instruments
- K12. The range of water quality sampling and testing required throughout the water treatment process
- K13. Communications, reporting and record keeping associated with water quality and sampling
- K14. The appropriate location and installation of online water quality instrumentation for process monitoring
- K15. The care and maintenance of bench top and online water quality monitoring equipment including calibration records
- K16. The risks associated with incomplete or inaccurate analysis or results
- K17. Contingency plans associated with the water treatment works when process parameters are exceeded

How will it be assessed?

To achieve this unit, you will need to be able to provide evidence of the performance criteria and the knowledge and understanding requirements listed above.

Assessment types:

1. External assessment – an external accrediting body will assess against a national minimum standard
2. Internal assessment process – a company led on-going assessment against requirements
3. End-point assessment – see assessment plan for further details here (will be Energy & Utility Skills defined)

What type of evidence will be expected?

To achieve this unit, you will need to be able to provide evidence of the performance criteria and the knowledge and understanding requirements listed above.

Evidence types:

1. On-going local assessments
 - a) Assessment plan, review, feedback, standard assessment sheets
2. Knowledge based learning
 - a) Classroom, exams, assignments, Q&A sessions, e-learning modules
3. Evidence portfolios
 - a) Learning logs, photos, observation sheets

Assessment types and process

