ENERGY & ENVIRONMENT AWARDS

Skills for a greener world

EEA Level 3 End-point Assessment for Water Industry Treatment Process Technician (Water treatment process; Wastewater treatment process)

Specification

QAN 610/6024/0
ST1291 V1.0 V1.1

Specification for

EEA End-point Assessment for Level 3 Water Treatment Process Technician

(Water treatment process; Wastewater treatment process)

QAN 610/6024/0

Updates to this specification

Since the first publication of Energy & Environment Awards Water Industry Treatment Process Technician Specification – (Water treatment technician; Wastewater treatment technician) the following updates have been made.

Version	Date first published	Section updated	Page(s)
v3.0	August 2025	Rebranded	All
v2.0	September 2023	Rebranded	All
v1.2	Jan 2023	Responsibility of invigilator	42
v1.01	Nov 2022	First published	All

Section 1: At a Glance EPA Summary

Qualification name	EEA Level 3 End-point Assessment for Water Industry Treatment Process Technician
Ofqual qualification number	610/6024/0
Standard reference	ST1291 v1.1
Assessment plan	AP01
Standard title	Water Industry Treatment Process Technician
Pathways	Water treatment process technician Wastewater treatment process technician
Level	3
Gateway pre-requisites submitted to Energy & Environment Awards	Apprentice has: • Achieved English and mathematics at level 2 • Compiled and submitted a portfolio of evidence, which the interview is based on
On-programme duration	Typically 36 months
Gateway readiness	Apprentice has met all Gateway pre-requisites. Employer completes, signs and submits Gateway Eligibility Form (GER) form to Energy & Environment Awards. See Appendix B, Supporting Documents 'Gateway Eligibility Form.'
End-point assessment duration	Typically 4 months after the Gateway

End-point assessment methods and their order	• Can be delivered in any order. • The result of one assessment method does not have to be known before an apprentice starts the next one
End-point assessment methods and component grading	Observation with questions: Fail, Pass or Distinction Interview based on a portfolio of evidence: Fail, Pass or Distinction Multiple-choice test: Fail, Pass or Distinction
Overall Grading	Fail; Pass; Merit or Distinction
Certification	Energy & Environment Awards request Apprenticeship completion certificates from the ESFA
Glossary of Terms	Appendix A, WITPT Supporting Documents

Objective

The purpose of the Water Industry Treatment Process Technician (WITPT) end-point assessment (EPA) is to test that an apprentice is fully capable of doing their job before they receive their apprenticeship certificate. It also helps to demonstrate that what an apprentice has learned can be applied in the real world.
Once the apprentice has completed the WITPT end-point assessment requirements successfully and has been certified they could take on the following job roles:

- Recycling technician
- Sewage production operator
- Treatment works controller
- Wastewater process controller
- Wastewater treatment process technician
- Water process controller
- Water process technician
- Water production operator
- Water treatment process technician

Professional recognition

This apprenticeship standard aligns with

- The Institute of Water for Registered Environmental Technician (REnvTech).

The experience gained and responsibility held by the apprentice on completion of the apprenticeship will either wholly or partially satisfy the requirements for registration at this level.

- The Institute of Water for Engineering Technician (EngTech).

The experience gained and responsibility held by the apprentice on completion of the apprenticeship will either wholly or partially satisfy the requirements for registration at this level.

- The Science Council for Registered Science Technician (RSciTech).

Upon successful completion of the apprenticeship and upon receipt of the apprenticeship certificate, individuals are eligible to apply for RSciTech through a shortened application route. Individuals also need to be a member of a professional body that is licensed by the Science Council to be awarded this status. Further information is on the Science Council's website.

Gateway Readiness

The employer must be satisfied that the apprentice is consistently working at, or above, the level of the occupational standard. Gateway pre-requisites are listed in the summary table above.

Recognition of prior learning (RPL)

Energy & Environment Awards does not recognise any apprentice prior learning (RPL) or prior achievement (RPA) for the purpose of amending the assessment requirements of any end-point assessments.

Please refer to Energy & Environment Awards RPL and RPA policy at Please refer to Energy & Environment Awards RPL and RPA policy at https://energyenvironmentawards.co.uk/policies-and-fees/

In order for Energy & Environment Awards to award an end-point assessment qualification, the apprentice must successfully complete all required assessment components with Energy & Environment Awards. This means that:

- each of the EPA components must be completed in full with Energy & Environment Awards
- where an apprentice transfers to Energy & Environment Awards from another EPAO they have to undertake the entire EPA with Energy & Environment Awards
- components of the EPA cannot be certificated in isolation
- evidence produced for the portfolio must be related to the time the apprentice is on their apprenticeship programme to demonstrate current practice
- examples used by the apprentice, during the interview, must relate to the time they were on their apprenticeship programme

This does not affect the Gateway requirements which must be met in order for an apprentice to be eligible for end-point assessment.

This does not affect any reasonable adjustments that may be granted.

Section 2: End-point Assessment Components

Component 1: Observation with Questions

Overview

In an observation with questions, an independent assessor observes an apprentice in their workplace. The apprentice completes their day-to-day duties under normal working conditions. This allows the apprentice to demonstrate the required KSBs through naturally occurring evidence. The independent assessor may ask questions both during and after the observation. To remain as unobtrusive as possible, independent assessors will ask questions during natural stops between tasks and after completion of work rather than disrupting the apprentice's flow. Simulation is not permitted during the observation.

Step-by-Step Guide

The table below provides a step-by-step guide on how the observation with questions will be carried out:

Assessors	1 independent assessor, appointed by Energy & Environment Awards.
Practical structure	The observation must take 6 hours The observation may be split into discrete sections held on the same working day Questioning may occur both during and after the observation. The time for questioning is included in the overall time There may be breaks during the observation to allow the apprentice to move from one location to another and for meal/comfort breaks During these breaks, the clock must be stopped and then restarted to ensure that the assessment duration is not reduced
Where will the	The observation will take place in the apprentice's normal place of work such as • their employer's premises

assessment take place?	• a customer's premises Questioning that occurs after the observation should take place in a quiet location free from distractions and influence
What are the tasks that will be covered?	The apprentice will undertake the following activities: maintaining site security • maintaining site standards and safety including completing a risk assessment • ensuring vital safety equipment is maintained and available for use • communicating verbally • completing documentation • managing water or wastewater treatment processes and process standards • sampling and analysis The activities will be observed in the context of the apprentice's occupational option: water or wastewater The independent assessor will ask questions about KSBs that were not observed to gather assessment evidence.
Who sets the task(s)?	Employers set the task based on Energy & Environment Awards template provided within in the Support Documents. The task must provide apprentices with the opportunity to achieve all the KSBs assessed in the observation. Tasks completed during the observation should contribute to workplace productivity and must be valid.
What resources can the apprentice use?	Equipment and resources needed for the observation must be • provided by the employer • the tools, equipment and PPE required for the job • in good and safe working condition. Work instructions/manuals must be available in hard copy or electronically

How many questions will the apprentice be asked?	The independent assessor: • will ask a minimum of six questions • may ask follow-up questions in order to seek clarification • will ask questions about KSBs that were not observed to gather assessment evidence. These questions are in addition to the minimum six questions for the observation
What will the questions focus on?	Underpinning knowledge and/or skills and behaviours where an opportunity to observe them has not occurred.
Grading	Fail, Pass or Distinction.

Observation Knowledge, Skills and Behaviours (KSBs) coverage

The observation with questions covers:

Observation Elements: Knowledge	Amplification and Guidance
K9: Process control systems. Types of equipment used for process control operations and the functions they perform, set-points, and alarm values	**Process control systems:** include HMI, control panels, PLC's **Types of equipment:** such as dissolved oxygen probes, ammonia monitors, temperature meters, flow meters, level meters, Proportional Integral and Derivative P.I.D. controllers, analytical instrument controllers such as for pH, turbidity and chlorine **Functions the equipment performs:** monitor water quality
K10: Operational and quality procedures. Escalation procedures. What they are and how to use them	**Operational procedures:** such as Water Treatment - raw water services; screening; rapid gravity filtration; slow sand filtration; sampling procedures. Wastewater treatment – screening; effluent compliance; settlement; biological treatment; sludge treatment; sampling procedures **Escalation procedures**: a knowledge of the escalation process

Observation Elements: Knowledge	Amplification and Guidance
K19: Documentation requirements for example maintenance records, asset check records	**Documentation:** such as flow charts, analysis reports, duty of care documentation, quality system records Understanding and being able to explain the importance of data flow for wider use across the business will support **distinction** requirements
K21: Communication techniques: verbal, written and electronic. Adapting style to audience	Communication should be professional with correct use of terminology
K28: **Water treatment process technician**. Water quality monitoring, sampling, and testing requirements and techniques. Equipment, resources, and materials used. Sampling points	On-site **monitoring of parameters:** such as chlorine, turbidity, metals **Sampling**: in the event of a failure where they have to take samples immediately **Techniques:** such as quality assurance for sampling, potential sources of contamination, storage and usage of equipment, representative sample **Materials:** such as approved samplers, types of sample bottles

Observation Elements: Knowledge	Amplification and Guidance
	Apprentices will need to explain the importance of doing the sampling correctly and the impact of deviating samples to support **distinction** requirements
K30: **Water treatment process technician**. Treatment processes: abstraction, clarification, coagulation, disinfection, and filtration. Water works design flows - impact of flow change on treatment process. Hydraulics principles. Objectives, parameters, variables, optimal performance measures (quality, cost, and waste) and the consequences of sub-optimal performance. Waste stream processes	Apprentices will need to have knowledge around all processes identified for K30 Apprentices will need to apply their knowledge to demonstrate at least two processes including disinfection. Where processes are not demonstrated, on-site questioning will be used to confirm knowledge **Hydraulics principles:** such as minimum/maximum flow through the works, works output, operational principles; hydraulic loading on different processes
K34: **Wastewater treatment process technician**. Treatment processes: preliminary treatment, primary treatment, secondary treatment, tertiary treatment, sludge treatment, and odour	Apprentices will need to have knowledge around all processes identified for K34

Observation Elements: Knowledge	Amplification and Guidance
management. Wastewater works design flows - impact of flow change on treatment process	Apprentices will need to apply their knowledge to demonstrate at least two processes including biological treatment. Where processes are not demonstrated, on-site questioning will be used to confirm knowledge **Wastewater works design flows -** such a full flow to treatment, storm tank capacity, premature storm discharge, operational principles; hydraulic loading on different processes
K35: **Wastewater treatment process technician**. Wastewater compliance and performance monitoring requirements: wastewater quality standards, sampling, analysis, and reporting	Apprentices will need to have knowledge on compliance and performance monitoring requirements and wastewater quality standards. Where compliance and performance monitoring requirements wastewater quality standards are not demonstrated on-site, questioning will be used to confirm knowledge On-site **monitoring of parameters**: such as Ammonia, turbidity/BOD/suspended solids, metals

Observation Elements: Knowledge	Amplification and Guidance
	Sampling: in the event of a failure where they have to take samples immediately **Techniques**: such as quality assurance for sampling, potential sources of contamination, storage and usage of equipment, representative sample **Materials**: such as approved sampling equipment Apprentices will need to explain the importance of doing the sampling correctly and the impact of deviating samples to support distinction requirements
K38: **Wastewater treatment process technician**. Risks of working on wastewater treatment site – personal hygiene risks and requirements	To include examples such as leptospirosis, needlestick injuries, ingestion of sewage / aerosols, explosive atmosphere, hydrogen sulphide, methane, working over water, working at height

Observation Elements: Skills	Amplification and Guidance
S1: Comply with (water or waste waste) industry regulations and procedures	
S9: Interrogate and interpret electronic control systems. For example, HMI or SCADA	Evaluation of data from electronic control systems in order to mitigate against potential issues will support **distinction** requirements
S10: Use data monitoring and control systems to monitor and control equipment	**Instrumentation and control equipment:** May include HMI's, control panels, sensors, analysers, pressure transmitters, level transmitters, flow transmitters, temperature transmitters, valve positioner
S11: Inspect and check safety equipment: identify and take action	**Safety equipment:** such as harnesses, gas detectors, breathing apparatus, PPE, first aid kit, eye wash bottles **Action:** procedures should be followed where there are issues. Questioning will be used if no issues arise
S13: Apply site standards for housekeeping	
S14: Conduct risk assessments: identify and document risks and hazards in the workplace. Apply control measures	**Risk assessments:** types of risk assessments such as for generic site, site specific and dynamic. Hazards such as

Observation Elements: Skills	Amplification and Guidance
	chemicals; confined spaces; working at height; working over water; isolation of equipment; control measures are how they're implemented; consequences of not carrying out risk assessments Justification of **control measures** and how they have the potential to minimise risks will support **distinction** requirements
S15: Comply with health and safety regulations and safe working practices and procedures	
S16: Follow site security procedures	
S22: Read and interpret written information. For example, work instructions, and service level agreements	
S23: Complete work records	Documentation should be filled out fully and correctly.
S26: Communicate verbally and in writing. For example, with colleagues, stakeholders, or others. Use water industry terminology where appropriate	

Observation Elements: Skills	Amplification and Guidance
S30: **Water treatment process technician**. Monitor and control water chemical dosing procedures	**Chemical dosing**: coagulation, phosphate, pH correction
S31: **Water treatment process technician**. Operate water process control equipment and instrumentation	**Control equipment and instrumentation** such as HMI's, control panels sensors, analysers, pressure transmitters, level transmitters, flow transmitters, temperature transmitters, valve positioners
S32: **Water treatment process technician**. Take water samples	Using SOP (Standard Operating Procedure) Apprentices will need to apply their knowledge to demonstrate following procedures to take water samples from the correct sampling location . Questioning may be used to confirm knowledge Apprentices will need to explain the importance of doing the sampling correctly and the impact of deviating samples to support **distinction** requirements

Observation Elements: Skills	Amplification and Guidance
S33: **Water treatment process technician**. Analyse and interpret on-site laboratory data and check against water process parameters	**Parameters:** chlorine, suspended solids, turbidity, ammonia, phosphate, pH, temperature, metals, nitrate, UV / DOC
S34: **Water treatment process technician**. Monitor and control water treatment processes and performance	**Water treatment processes:** chemical dosing, filtration and disinfection Must show evidence of control and adjustment of a process based on the monitoring e.g. filtration back wash times, adjustment of chemical dosing, disinfection The site chosen for the end-point assessment should be the most complex site in their area to allow demonstration of as many treatment processes, including disinfection, as possible. Where processes are not demonstrated, on-site questioning will be used to confirm knowledge Apprentices will need to be able to analyse the processes and performance in terms of optimisation to support **distinction** requirements

Observation Elements: Skills	Amplification and Guidance
S35: **Water treatment process technician**. Monitor and control the effectiveness of disinfection	Based on the disinfection process on site
S40: **Wastewater treatment process technician**. Operate wastewater process control equipment and instrumentation	**Control equipment and instrumentation** such as HMI's, control panels, PLC's, sensors, analysers, pressure transmitters, level transmitters, flow transmitters, temperature transmitters, valve positioners
S41: **Wastewater treatment process technician.** Take wastewater samples	Using SOP (Standard Operating Procedure)
S42: **Wastewater treatment process technician**. Analyse and interpret on-site testing data and monitoring equipment data and check against wastewater process parameters	**Parameters**: may include Biological Oxygen Demand (BOD), Chemical Oxygen Demand (COD), suspended solids, turbidity, ammonia, phosphate, pH, temperature, metals
S43: **Wastewater treatment process technician.** Monitor and maintain grit removal and screening assets	Confirm that the expected quality and quantity of rag and grit have been removed and the equipment is operating effectively.
S44: **Wastewater treatment process technician.** Monitor and control the performance of sedimentation, biological and chemical treatment operations	Must show evidence of control and adjustment of a process based on the monitoring e.g. change of mixed liquor suspended solids (MLSS), change of desludging frequency or duration / manual desludging, adjustment of chemical dosing

Observation Elements: Skills	Amplification and Guidance
S45: **Wastewater treatment process technician**. Monitor and control wastewater treatment processes and performance	**Waste water treatment processes**: such as screening, grit removal, settlement, biological treatment and sludge treatment Must show evidence of control and adjustment of a process based on the monitoring e.g. change of MLSS, change of desludging frequency or duration / manual desludging, adjustment of chemical dosing The site chosen for the end-point assessment should be the most complex site in their area to allow demonstration of as many treatment processes as possible. Where processes are not demonstrated, on-site questioning will be used to confirm knowledge Apprentices will need to be able to analyse the processes and performance in terms of optimisation to support **distinction** requirements
S47: **Wastewater treatment process technician**. Follow wastewater hygiene personal procedures	

Observation Elements: Skills	Amplification and Guidance
B1: Prioritise and promote public health, workplace health and safety, and security	Examples of typical behaviours include • consistently follows policies, procedures and standard operating practices as directed • consistently applies health and safety knowledge to work activities and has an awareness of the impact of changing circumstance • takes personal responsibility for their own and others health, safety and security, and assesses risks • seeks guidance on health and safety issues when not confident • identifies distractions and deals with them accordingly to enable tasks to be achieved safely
B3: Apply a professional approach	Examples of typical behaviours include: • timekeeping, attendance, behaviours all meet expectations required • takes action to deliver on time, recognising the impact they have on other people if they don't. where potential delays or issues are unavoidable informs others promptly

Observation Elements: Skills	Amplification and Guidance
	• listens to and acts on feedback to build on what has gone well to learn and improve • ensures other people have the information they need to make the right decision quickly and to do their job well
B4: Take ownership for work and responsibility for the quality of work and impact on others	Examples of typical behaviours include: • maintains personal accountability and ownership to resolve issues • maintains self-discipline and motivation to achieve required outputs • demonstrates understanding of internal customer concept and treats all customers with high levels of sensitivity and respect • interacts with the public in a courteous and cooperative manner • completes other required tasks within competence levels without hesitation, including additional assignments after expected/delegated work is completed • works well with a range of people

Observation Roles and Responsibilities

Role	Responsibility
Independent Assessor	Record and report assessment outcome decisions for each apprentice, following instructions and using assessment recording documentation provided by Energy & Environment Awards.
Employer/Training Provider	Provide the venue for the observation with questions which must be suitably equipped to allow the apprentice to attempt all aspects of the observation with questions Provide all necessary tools and equipment for the apprentice Ensure the apprentice has access to the resources used on a daily basis
Energy & Environment Awards	Arrange for the observation to take place, in consultation with the employer/training provider and assessor

Component 2: Interview (based on a portfolio of evidence)

Overview

The interview is based on the apprentice's portfolio of evidence. The interview will allow an independent assessor and an apprentice to have a formal two-way conversation. It will give the apprentice the opportunity to demonstrate their competency across the required KSBs.

Step-by-Step Guide

The table below provides a step by step guide on how the interview based on the portfolio of assessment will be carried out:

Assessors	1 independent assessor approved by Energy & Environment Awards
Interview (based on a portfolio) structure	**Number of questions:** At least 12 open questions. Additional follow up questions are allowed, to seek clarification **Location**: a quiet room, free from distractions and influence **Time**: 90 minutes **The interview will be:** • face to face or remote, as agreed • recorded in writing using an interview record template provided by Energy & Environment Awards • video recorded using relevant technology such as Microsoft Teams or an audio recording device • conducted under controlled conditions The apprentice will have access to their portfolio of evidence throughout the interview The apprentice will have at least two weeks' notice of the interview
What topics will be covered?	Questions will cover the following topics, a minimum of one question per topic will be asked: Core • working in the water industry • environment and sustainability

	• asset and equipment maintenance • responding to alarms • improvement and optimisation • resolving faults • responding to incidents • team working • information technology The themes will be assessed in the context of the apprentice's occupational context: water or wastewater **Water treatment process technician** • water catchment and abstraction • waste streams management • shut down, isolation and recommission of water process streams **Wastewater treatment process technician** • pumping operations • wastewater flows • shut down, isolation and recommission of wastewater process streams
When will the portfolio of evidence be submitted and referred to?	**The portfolio of evidence:** • will be reviewed by the independent assessor before the interview • can be referred to by the apprentice to illustrate their answers **Note:** the portfolio of evidence • is not directly assessed • must be submitted to Energy & Environment Awards at Gateway
Grading	Fail, Pass or Distinction

Portfolio of Evidence Requirements

The requirements are as follows:

Portfolio Mapping Document The apprentice must map their portfolio of evidence to the KSBs as this evidence will be used by the independent assessor to assess the apprentice during the interview. The portfolio mapping document must be clearly referenced and included at the front of the portfolio. For further guidance on mapping refer to: • Section 5 Practice guidance on portfolio of evidence and apprentice mapping • Appendix D, WITPT Supporting Documents 'Portfolio Mapping Document.'
How will the training provider submit the apprentice's Portfolio to Energy & Environment Awards? As part of the pre-requisite gateway requirements the apprentice must have complied and completed a portfolio of evidence The training provider must submit the portfolio of evidence to Energy & Environment Awards, either in an electronic or paper format, at the same time as the other Gateway pre-requisites

Interview Knowledge, Skills and Behaviours (KSBs) coverage

The interview based on portfolio of evidence covers:

Interview Elements: Knowledge	Amplification and Guidance
K2: Technician's role. Limits of autonomy. Different teams and functions involved in operations: how they work together	
K3: Business operation considerations: how activities may impact customers, financial constraints, ethical business practices. Customer Experience Measure (CMEX). Regulatory and legislative performance measures	**Impact of activities:** Clean water –understanding of how job impacts on the customers, including water resource and sustainability, even though they are not directly customer facing. Wastewater – impact of odour/noise /flies/lighting
K6: Planned preventative maintenance of monitoring equipment requirements. Asset health check requirements	To support **distinction** requirements apprentices should include, in their portfolio, details of how they used evidence to identify actions to reduce or potentially reduce risk of failure, or make changes to future planned preventative maintenance activities or frequencies
K8: Isolation, shutdown, and recommissioning of process streams requirements and procedures	Ensuring apprentices can put the appropriate measures in place, taking an asset out of service, monitoring whilst out of service, placing back into service and post monitoring of the asset to confirm it is performing as designed/expected.

Interview Elements: Knowledge	Amplification and Guidance
	Completing the relevant Quality Assurance, escalations, raising of further work To support **distinction** requirements apprentices will need to explain how the process needs to be adapted to maintain compliance and control risk
K11: Different types of incidents and emergency situations (internal and external): pollution, loss of process, security, weather, and accidents: their potential impact. Incident management and procedures	Apprentices should include example of at least one internal and one external incident in their portfolio. The incidents/emergency situations may be hypothetical
K13: Optimisation in the treatment process: what it means and how it can be achieved	Apprentices should include at least one example of a specific optimisation improvement suggestion in their portfolio. For example showing an improvement in quality/cost/time/safety/ impact To support **distinction** requirements apprentices should be able to evaluate the optimisation suggestion

Interview Elements: Knowledge	Amplification and Guidance
K14: Asset optimisation and performance: quality, cost, time, safety, and impact	Apprentices should include at least one example of an asset optimisation in their portfolio
K15: Fault finding and problem-solving techniques: root cause analysis and diagnostics	**Fault finding and problem-solving techniques** include sensory perception: visual, smell; trend analysis, alarms, comparison of information sources e.g. inline monitors vs manual on-site sampling and testing Apprentices should include at least two examples of identifying and resolving issues in their portfolio
K18: Information and digital technology: email, word processing, spreadsheets, presentation, remote working platforms, work and asset management systems. General Data Protection Regulation (GDPR). Cyber security	
K20: Planning, prioritising, work scheduling, and time management techniques	Apprentices will need to include evidence in their portfolio which shows how they have planned their resources for a job and had to adapt resources and behaviour to meet changing work demands

Interview Elements: Knowledge	Amplification and Guidance
	To meet **distinction** requirements, apprentices need to demonstrate how they achieve efficiencies with time or resources
K22: Team working and culture. How to work as part of a team, the importance of establishing and meeting the requirements of different roles. Negotiation and conflict management techniques	
K23: Equality, diversity, and inclusion in the workplace	Examples • acts in a fair and honest manner when dealing with colleagues and customers and tries to do the right thing • recognises regulatory standards and legal requirements and applies them in principle as well as in practice • acts in the spirit of what is intended to meet customers' needs working with others across a team
K29: Option 1. **Water treatment process technician**. Raw water and catchment management permitting and protection	

Interview Elements: Knowledge	Amplification and Guidance
K40: Option 2. **Wastewater treatment process technician**. Purpose, application, and impact of wastewater flows: volumes, permits, catchment area consent, and impact of weather conditions	

Interview Elements: Skills	Amplification and Guidance
S2: Follow alarm intervention procedures. Resolve alarm issues	**Alarms** such as those on site, passed out by control, passed on out of hours
S3: Inspect (planned) and check assets (reactive) and identify action	
S4: Follow procedures to remove assets for routine maintenance and recommission	Apprentices should include evidence for the removal of at least two assets
S5: Carry out validation or instrument checks of online equipment and identify action	

Interview Elements: Skills	Amplification and Guidance
S6: Monitor first line maintenance of process control equipment and instrumentation	Monitor and confirm that the equipment is suitable for use e.g. calibration of in line monitors, calibration of laboratory equipment
S7: Identify issues. Apply fault-finding and problem-solving techniques: identify root cause. Resolve faults	See K15
S8: Consider, identify, and promote areas for improvement for example, in relation to quality, cost, time, safety, and impact	
S12: Identify and instigate incident escalation procedures	Apprentices will need to be able to talk about how they would identify and instigate incident escalation procedures
S17: Follow procedures for emergency situations	Apprentices will need to be able to talk about how they would follow procedures for a given emergency situation
S18: Comply with environmental and sustainability regulations and requirements. For example, safe disposal of waste, re-cycling or re-use of materials, and efficient use of resources	
S19: Apply principles of sustainable development. For example, in choice of materials	Such as: • considers use of resources

Interview Elements: Skills	Amplification and Guidance
	• recycles waste materials • disposes of waste material following safe practices • able to talk about how they could apply principles of sustainability
S20: Conduct and assess impact of activity for example, environmental, cost, reputation, safety, and health. Apply control measures	Apprentices will need to be able to talk about how they • conduct and assess the impact of activity • apply control measures in response to an incident
S21: Identify and escalate issues	See S12
S24: Use information technology. Follow cyber security procedures. Comply with GDPR	
S25: Plan tasks. Identify and organise resources to complete work tasks	See K20
S27: Liaise with, negotiate with, and handle conflict in individual or group environments	Apprentices will need to be able to talk about how they liaise, negotiate, handle conflict in individual and group situations
S28: Option 1. **Water treatment process technician**. Select raw water source or blend of sources	Sources could include rivers, lakes, boreholes, upland and lowland

Interview Elements: Skills	Amplification and Guidance
	Apprentices will need to include in their portfolio one example of how they select their source and any options for blending
S29: Option 1. **Water treatment process technician.** Monitor and control water abstraction	Sources could include rivers, lakes, boreholes, Apprentices will need to include one example in their portfolio
S36: Option 1. **Water treatment process technician**. Monitor and control waste stream processes and performance	Apprentices will need to include at least one example in their portfolio
S37: Option 1. **Water treatment process technician**. Apply procedures to shut-down, isolate, and re-commission water process streams	Apprentices will need to include at least one example in their portfolio of taking a process or stream out of service, isolating it and then returning it to service
S38: Option 2. **Wastewater treatment process technician.** Monitor and control incoming flows	Apprentices will need to include at least one example in their portfolio
S39: Option 2. **Wastewater treatment process technician**. Control internal pumping station operations	Apprentices will need to include at least one example in their portfolio
S46: Option 2. **Wastewater treatment process technician**. Apply procedures to shut-down, isolate and re-commission wastewater process streams	Apprentices will need to include at least one example in their portfolio of taking a process or stream out of service, isolating it and then returning it to service

Interview Elements: Behaviours	Amplification and Guidance
B2: Prioritise and promote the environment and sustainability	Examples of typical behaviours include • considers use of resources • recycles waste materials • disposes of waste material following safe practice
B5: Team-focus to meet work goals: support others	Examples of typical behaviours include • develops positive relationships with individuals to support specific issues • works well with a range of people • takes personal responsibility for their own and others health, safety and security, and assesses risks • understands how they contribute to team and company results and how their decisions and the way they work impact on costs and other teams • takes action to deliver on time, recognising the impact they have on other people if they don't. Where potential delays or issues are unavoidable informs others promptly. • ensures other people have the information they need to make the right decision quickly and to do their job well

Interview Elements: Behaviours	Amplification and Guidance
B6: Respond and adapt to work demands	• Examples of typical behaviours include • consistently follows policies, procedures and standard operating practices as directed • consistently applies health and safety knowledge to work activities and has an awareness of the impact of changing circumstance such as weather, new team members/people on site • takes personal responsibility for their own and others health, safety and security, and assesses risks • seeks guidance on health and safety issues when not confident • identifies distractions and deals with them accordingly to enable tasks to be achieved safely • maintains composure in unfamiliar situations and adverse conditions, acting in a calm and confident manner • is rarely intimidated by others • knows the limitation of one's own experience and when/where to refer for support

Interview Elements: Behaviours	Amplification and Guidance
B7: Committed to continued professional development to maintain and enhance competence in own area of practice	Examples of typical behaviours include • applies knowledge gained to work-related tasks with little or no support • keeps up to date with industry development • willingly participates in training to maintain or enhance current knowledge of principles, procedures, methods, and/or technology • understands the importance of maintaining competence and records progress • attempts to improve performance following constructive feedback • follows policies set by supervisor without reminder

Interview Roles and Responsibilities

Role	Responsibility
Independent Assessor	Record and report assessment outcome decisions for each apprentice, following instructions and using assessment recording documentation provided by Energy & Environment Awards.
Employer/Training Provider	Ensure that the portfolio of evidence has been submitted to Energy & Environment Awards at Gateway. Ensure the interview based on the portfolio is scheduled with Energy & Environment Awards for a date and time which allow the apprentice to be well prepared Ensure the apprentice has access to their portfolio before and on the day of the interview
Energy & Environment Awards	Arrange for the interview to take place, in consultation with the employer/training provider and independent assessor.

Component 3: Multiple-choice Test

Overview

The multiple-choice test is paper based. Apprentices have 90 minutes to complete the test. It consists of 50 questions. 40 questions cover the core knowledge, and 10 questions cover the option knowledge, relevant to the apprentice's option..

The multiple-choice questions will have four possible answers. One answer will be correct.

The test is closed which means that the apprentice cannot refer to reference books or materials

The Pass mark is 35 correct answers.

The Distinction mark is 43 correct answers.

For this paper:

- a (scientific) calculator is required
- access to the internet or intranet is NOT allowed

Apprentices must take the test in a quiet space, free from distractions and influence, in the presence of an invigilator.

Multiple-choice Test Coverage

The table below lists each of the knowledge elements, assessed in the knowledge test, with additional amplification and guidance, where appropriate, from Energy & Environment Awards on the range and depth expected. Energy & Environment Awards has worked with employers and subject matter experts to develop the amplification and guidance.

Number of Questions	Knowledge	Amplification and Guidance
5	**K1 Core** Overview of water and wastewater industries Regulators and stakeholders (roles and powers): • Drinking Water Inspectorate (DWI) • Water Services Regulation Authority (OFWAT) • Consumer Council for Water (CCWater) • Environment Agency (EA) • Health, Safety Executive (HSE) • Department for Environment Food and Rural Affairs (Defra)	Overview of water and wastewater industries: An overview of water and wastewater industries i.e. how the water companies are permitted to operate, are governed and regulated, legislative requirements, licences required to be a water company

Number of Questions	Knowledge	Amplification and Guidance
3	**K4 Core** Water and wastewater science Liquids, gases, and solid states commonly found in water industry Elements, molecules, compounds, and ions The pH scale, acids, and alkalinity Physical, chemical, and biological process definition Dissolved oxygen in treatment and processes	**Water and wastewater science** to include: equipment for measuring distance, area, volume and flow; how to perform a pH test, properties of gases, liquids and solids
3	**K5 Core** Maths commonly used in the water and wastewater industries S.I units Calculations Standard form Measurement of distance, area, volume and flow, and unit conversion Simple transposition of formula	**Maths commonly used:** fractions, decimals, percentages, averages, ratios and proportions, measurement (*area*, circumference, temperature, pH), rounding, estimating and conversions **Calculations:** areas; volumes; concentrations, retention times, chemical dosing, loading rates, unit conversions, simple calculations related to changing chemical requirements, chlorine contact time and CT, attenuation

Number of Questions	Knowledge	Amplification and Guidance
	Routine flow and hydraulics theories, principles, and calculations	**Routine flow and hydraulics theories, principles, and calculations:** basic calculations for flow, velocity, attenuation, pipe runs; hydraulic design with consideration of e.g. flow rates, gradients; determining gradients, depths; pH scale, acids, bases and alkalinity; composition of air and its relationship to the water industry
2	**K7 Core** Energy performance monitoring methods Energy consumption reduction guidelines Tariff management	
4	**K12 Core** Chemical awareness Transport, acceptance and use of chemicals Agreement of Dangerous Goods transported by Road regulation (ADR) Chemical delivery requirements Chemical control methods	

Number of Questions	Knowledge	Amplification and Guidance
17	**K16 Core** Health and Safety at Work Act – responsibilities Management of health and safety at work regulations Control of Substances Hazardous to Health (CoSHH) Risks and hazards Risk assessments and controlling risk Control methods for harmful substances and chemicals,, effluents, and sludge Health and safety signage Personal Protective Equipment (PPE) Working in confined spaces: safety equipment and lifting equipment Harnesses, gas detectors and respiratory apparatus. Manual handling The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) Asbestos awareness Lone working	

Number of Questions	Knowledge	Amplification and Guidance
	Working at height Working time directive First aid Emergency procedures Drug and alcohol awareness Permits to work Storage of tools, equipment, and materials ATEX compliance (safety requirements of the workplace and equipment used in explosive atmosphere) Dangerous Substances and Explosive Atmospheres Regulations (DSEAR) Pressure System Safety Regulations (PSSR) Provision of Work Equipment Regulations (PUWER) Lifting Operations and Lifting Equipment Regulations (LOLER) Safe isolation of plant and equipment (lockout, tagout)	
6	**K17 Core** Environment and sustainability	

Number of Questions	Knowledge	Amplification and Guidance
	Environmental Protection Act Types of pollution and control measures Environmental permitting and discharge consents Operator Self Monitoring (OSM): sampling requirements Monitoring emissions to air, land, and water (MCERTS) Principles of sustainable development Waste management and waste streams Invasive species and Duty of Care in the Environmental aspect	
1	**K24 Water treatment process technician** Water Supply (Water Quality) Regulations Consequences of non-compliance	
2	**K25 Water treatment process technician** National water hygiene: • importance of water • water as a carrier of disease • potential contamination and its consequences	

Number of Questions	Knowledge	Amplification and Guidance
	• preventing contamination	
2	**K26 Water treatment process technician** Water quality requirements Drinking water safety plans Water quality parameters and the role of water quality alarms Water quality incident investigation requirements Water quality records Consequences of failure	
1	**K27 Water treatment process technician** DWI asset and site security requirements: water storage alarms	
1	**K31 Water treatment process technician** Plant shutdown and re-start procedures: • planned • reactive Impact and causes of shutdown	

Number of Questions	Knowledge	Amplification and Guidance
2	**K32 Water treatment process technician** Distribution system protection: disinfection chemical treatment flow valve operation controls	How the water distribution system is protected after the water leaves the water treatment works i.e. what protection measures are in place to safeguard public health and the network infrastructure. The main ones will be chlorine residual and booster pumping stations in the network (disinfection), chemical dosing to reduce lead or other metals, pressure management valves, procedures for valving operations to protect the network.
1	**K33 Water treatment process technician** Treated water storage point objectives and requirements	**Water storage points:** Service reservoirs – may include operations & procedures, security, integrity of the assets, monitoring parameters, operating range, sampling requirements
1	**K36 Wastewater treatment process technician** Nature and sources of wastewater effluent and its impact on the environment	Domestic and industrial
4	**K37 Wastewater treatment process technician**	Composition of different types of effluent

Number of Questions	Knowledge	Amplification and Guidance
	Chemical, biological, microbiological, and physical characteristics of wastewater effluent and trade effluents	How the composition changes though the different stages of the treatment process
5	**K39 Wastewater treatment process technician** Configuration, operation, and performance requirements of types of sewerage systems and pumping stations: • inter-stage pumping stations • detention tanks • combined sewer overflow screens (CSO) Pumps and associated ancillary equipment used	Knowledge of the assets and infrastructure of the sewerage network and sewage pumping stations and their potential impact on the waste water treatment process

Multiple-choice Test Roles and Responsibilities

Role	Responsibility
Invigilator	Approved by Energy & Environment Awards. Attend induction training as directed by Energy & Environment Awards.
Employer/Training provider	Ensure that the test is scheduled with Energy & Environment Awards for a date and time which allow the apprentice to be well prepared
Energy & Environment Awards	Arrange for the test to take place, in consultation with the employer/lead provider Mark multiple-choice test answers accurately according to the mark scheme and procedures

Section 3: Grading and Grading Criteria

Component 1: Observation with Questions

A Fail will be awarded if an apprentice has not achieved **all** the Pass criteria.

To gain a Pass, an apprentice must successfully achieve **all** the descriptors for each KSB, as shown below.

To achieve a Distinction an apprentice must successfully achieve **all** the Pass descriptors and **all** the distinction descriptors.

Observation KSBs	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
(Core) Work preparation S22	Reads and interprets written information correctly to establish task requirements	
(Core) Work environment S13 S14 S15 S16 B1	Identifies and documents risks and hazards and applies control measures in-line with company procedures	Justifies how control measures have the potential to minimise risks

Observation KSBs	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
	Prioritises and promotes public health, workplace health and safety, and security by complying with health and safety regulations, safe working practices and procedures, following site security procedures and applying site standards for housekeeping to ensure the working environment is safe for themselves and others	
(Core) Safety equipment S11	Inspects and checks safety equipment against requirements, identifying and acting in line with procedures where there are issues	
(Core) Communication K21 S26 B3	Applies a professional approach using verbal, written and electronic communication techniques suitable for the context, adapting style and use	

Observation KSBs	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
	of terminology to suit the audience. Uses sector and industry terminology correctly	
(Core) Documentation K19 S23	Completes work records required for tasks in full and correctly	Explains the importance of data gathering and flow of documentation for wider use across the business. For example, performance commitments (outcome delivery incentives)
(Water treatment process technician) Water treatment and process standards K9 K10 K30 S1 S9 S10 S30 S31 S34 S35 B4	Takes responsibility to complete processes within limits of authority in compliance with industry regulations and company operational and quality procedures, escalating issues outside of limits of authority Interrogates and interprets electronic control systems correctly	Evaluates data from electronic control systems to mitigate against potential issues Analyses water treatment processes and performance approach in terms of optimisation

Observation KSBs	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
	Monitors and controls water chemical dosing in line with company procedures Operates water process control equipment and instrumentation in line with company's or manufacturer's instructions Uses data monitoring and control systems to monitor and control water treatment processes and performance within company tolerances, responding in line with company procedures Monitors and controls the effectiveness of disinfection following procedures to achieve performance in line with water supply regulations	

Observation KSBs	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
(Water treatment process technician) Water sampling and analysis K28 S32 S33	Takes representative water samples in line with company procedures. Analyses and interprets on-site laboratory data and water quality monitoring instrumentation accurately, checking against water process parameters and taking action in line with company procedures for example recording, escalation, validation	Explains the importance of completing water sampling correctly and the impact of deviating samples
(Wastewater treatment process technician) Wastewater treatment and process standards K9 K10 K34 S1 S9 S10 S40 S43 S44 S45 B4	Takes responsibility to complete processes within limits of authority in compliance with industry regulations and company operational and quality procedures, escalating issues outside of limits of authority Interrogates and interprets electronic control systems accurately	Evaluates data from electronic control systems to mitigate against potential issues Analyses wastewater treatment processes and performance in terms of optimisation

Observation KSBs	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
	Operates wastewater process control equipment and instrumentation in line with company's or manufacturer's instructions Monitors and maintains grit removal and screening assets in line with company policies (permits) Monitors and controls in the performance of sedimentation, biological and chemical treatment operations line with company procedures Uses data monitoring and control systems to monitor and control wastewater treatment processes and performance within company	

Observation KSBs	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
	tolerances, responding in line with company procedures	
(Wastewater treatment process technician) Wastewater monitoring and sampling and analysis K35 S41 S42	Takes representative wastewater samples in line with company procedures. Analyses and interprets on-site testing equipment data and monitoring equipment correctly, checking against wastewater process parameters and taking action in line with company procedures for example recording, escalation, validation	Explains the importance of completing wastewater sampling correctly and the impact of deviating samples
(Wastewater treatment process technician) Risks of working in wastewater K38	Follows wastewater hygiene personal company procedures for example, correct use of personal protective equipment	

Observation KSBs	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
S47		

Component 2: Interview based on a portfolio of evidence

A Fail will be awarded if an apprentice has not achieved **all** the Pass criteria.

To gain a Pass, an apprentice must successfully achieve **all** the descriptors for each KSB, as shown below.

To achieve a Distinction an apprentice must successfully achieve **all** the Pass descriptors and **all** the distinction descriptors.

Interview KSBs	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
(Core) Working in the water industry K2 K3 S21	Explains their role, identifying how they work with different teams and functions involved in operations Explains business operation considerations	
(Core) Environmental and sustainability S18 S19	Describes how they comply with environmental and sustainability regulations and procedures and apply the principles of sustainable	Evaluates the actual or potential value of a specific sustainable development approach

Interview KSBs	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
B2	development in line with regulations and company procedures Describes how they prioritise and promote the environment and sustainability in the workplace	
(Core) Asset and equipment maintenance K6 S3 S4 S5 S6	Describes how they inspect and check assets in line with manufacturer's or company's procedures, identifying action required to address immediate issues Describes how they monitor first line maintenance of process control equipment and instrumentation in line with manufacturer's or company's requirements	Explains how they have identified action for future planned preventative maintenance, based on evidence, to reduce or potentially reduce risk of future failure

Interview KSBs	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
	Describes how they follow procedures to safely remove assets for routine maintenance and recommission Describes how they carry out validation or instrument checks of online equipment in line with manufacturer's or company's requirements, identifying action to resolve issues	
(Core) Improvement and optimisation K13 S8	Describes how they consider, identify, and promote areas for treatment process and asset optimisation improvement for example, in relation to quality, cost, time, safety, and impact	Evaluates the actual or potential value of a specific optimisation improvement suggestion
(Core) Responding to alarms S2	Describes how they follow alarm intervention procedures and resolve alarm issues for example, nuisance alarms	

Interview KSBs	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
(Core) Resolving faults K15 S7	Describes how they apply fault- finding and problem-solving techniques, identifying the root cause of issues and resolving faults in line with procedures	
(Core) Responding to incidents K11 S12 S17 S20	Describes how they identify control measures to mitigate potential issues and instigate incident escalation procedures Describes how they follow procedures for a given incident or emergency situation Describes how they conduct and assess the impact of activity and apply control measures	

Interview KSBs	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
(Core) Team working K20 K22 K23 S25 S27 B5 B6 B7	Describes how they plan and organise work and resources using appropriate techniques and respond and adapt to meet work demands Describes how they liaise, negotiate, and handle conflict in individual and or group environments to achieve desired outcomes Describes how they support others to meet the team's work goals using team working techniques and taking account of equality, diversity and inclusion Describes CPD they have undertaken and future plans for CPD, explaining how they keep up to date with industry and individual development.	Describes how they achieve efficiencies in the use of time or resources

Interview KSBs	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
	Explains what the impact of their CPD has been and how it has benefited others and the business	
(Core) Information technology K18 S24	Describes how they use information technology for different purposes (email, word processing, spreadsheets, presentation, remote working platforms, work and asset management systems). Explains measures they take to comply with general data protection regulations (GDPR) and cyber security and why it is important	
(Water treatment process technician) Water	Describes how they select raw water source or blend of sources, managing and protecting catchment in line with licences, parameters,	

Interview KSBs	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
catchment and abstraction K29 S28 S29	other users, and procedures. Explains the impact of breach of catchment management permits on the business Describes how they monitor and control water abstraction in line with procedures	
(Water treatment process technician) Waste streams management S36	Describes how they monitor and control waste stream processes and performance to achieve compliance	
(Water treatment process technician) Shut down, isolation and recommission of water process streams	Describes how they apply procedures to shut-down, isolate, and re-commission water process streams in line with procedures and impact on asset optimisation and performance	Explains how the process needs to be adapted during shutdown to maintain compliance and control risk

Interview KSBs	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
K8 K14 S37		
(Wastewater treatment process technician) Pumping operations S39	Describes how they control internal pumping operations to meet operational requirements	
(Wastewater treatment process technician) Wastewater flows K40 S38	Describes how they monitor and control incoming wastewater flows in line with permits and parameters. Explains the impact of breach of permits on the business	

Interview KSBs	Pass Apprentices must meet all of the following pass descriptors statements	Distinction Apprentices must meet all the pass descriptors and all the following distinction descriptors statements
(Wastewater treatment process technician) Shut down, isolation and recommission of wastewater process streams S46	Describes how they apply procedures to shut-down, isolate, and re-commission wastewater process streams in line with procedures and impact on asset optimisation and performance	Explains how the process needs to be adapted during shutdown to maintain compliance and control risk

Component 3: Multiple-choice Test

The following grade boundaries apply to the multiple-choice test:

Grade	Minimum mark	Maximum mark
Fail	0	34
Pass	35	42
Distinction	43	50

Overall grading

All assessment methods are weighted equally in their contribution to the overall EPA grade. Grades from individual assessment methods will be combined in the following way to determine the grade of the overall EPA as a whole.

Observation with questions	Interview based on a portfolio of evidence	Multiple-choice test	Overall grading
Fail	Any grade	Any grade	Fail
Any grade	Fail	Any grade	Fail
Any grade	Any grade	Fail	Fail
Pass	Pass	Pass	Pass
Pass	Pass	Distinction	Pass
Pass	Distinction	Pass	Pass
Distinction	Pass	Pass	Pass
Distinction	Distinction	Pass	Merit
Distinction	Pass	Distinction	Merit
Pass	Distinction	Distinction	Merit
Distinction	Distinction	Distinction	Distinction

Any grade = fail, pass or distinction

Section 4: Resits and retakes

Apprentices who fail one or more EPA components can re-sit or re-take the failed component at the employer's discretion. The apprentice's employer needs to agree that a re-sit or re-take is appropriate. A re-sit does not need further learning, but a re-take does. Apprentices should have a supportive action plan to prepare for a re-sit or a re-take.

The employer and Energy & Environment Awards agree the timescale for a re-sit or re-take. Failed EPA components must be re-sat or re-taken within the 4 month end-point assessment period, otherwise the EPA will need to be re-sat or re-taken in full.

Re-sits and re-takes are not offered to apprentices wishing to move from pass to a higher grade.

An apprentice will get a maximum EPA grade of pass for a re-sit or re-take, unless Energy & Environment Awards determines there are exceptional circumstances.

Energy & Environment Awards resit and re-take policy can be found at: https://energyenvironmentawards.co.uk/policies-and-fees/

Section 5: Practice Guidance

Preparing for the Observation with Questions

A template is provided in Appendix E to help ensure that the activities assessed during the observation will give complete coverage of the standard. The table below provides a step by step guide on to help prepare and deliver a practice observation with questions:

Structure	**Duration**: 6 hours including the questioning time May be split into discrete sections held on the same working day Breaks are allowed to enable movement between locations and for meal/comfort breaks. Breaks are not included in the assessment time You have the discretion to increase the time by up to 10% to allow the apprentice to complete a task or respond to a question **Location**: workplace, over one or more sites, under normal working conditions **Activities**: day-to-day activities. The activities are listed in Section 2. Simulation is not permitted during the observation
Resources	Equipment and resources needed for the observation must be in good and safe working condition Work instructions/manuals relating to the equipment/service for reference purposes. These can be electronic and/or hard copy Quiet room for questioning after the observation Document to record assessment of observation (see Supporting Documents, Appendix F) Bank of open-ended questions
Questions	Develop open-ended questions which focus on

	• the KSBs assessed in the observation • the Pass / Distinction grading criteria Ask questions both during and after the observation Ask at least six open ended questions Ask additional questions for KSBs not observed to gather assessment evidence. These questions should be kept to a minimum Ask follow-up questions if clarification is required
Delivery of the practice observation	A tutor or supervisor should adopt the role of assessor Assess apprentices in relation to the Apprenticeship Standard option they are completing (Water treatment process technician, Wastewater treatment process technician) Record the assessment of how the apprentice performed using the Observation template (see Supporting Documents, Appendix F)

Starting the practice observation	At the start of the practice observation the person in the role of the assessor should:
	• introduce themselves as an assessor
	• confirm their role
	• provide information on the format of the day, including the timescales
	• ask the apprentice to
	  ○ give their full name
	  ○ their date of birth
	  ○ their employer name
	  ○ confirm they are prepared and can continue with the observation
	  ○ show their identification
	• state that an unsafe act/task which contravenes Health and Safety, will mean the observation is halted

	• confirm that
	  ○ notes will be taken
	  ○ feedback will not be given during the observation

After the practice observation	Provide feedback to the apprentice with guidance on what to do to improve their performance

Preparing for the Interview

The practice interview should take place between the apprentice and a person acting the role of the independent assessor. The apprentice should draw on evidence in their portfolio during the discussion.

Guidance on Portfolio of Evidence

The portfolio is not assessed. It serves two purposes:

- The assessor reviews it before the interview to help focus and contextualise their questions
- A carefully prepared portfolio supports the apprentice through the interview

Quality vs quantity

The apprentice should be supported in selecting and mapping evidence for the portfolio.

In theory one comprehensive job-write up could cover all the required KSBs. In practice, this is more likely to be several job write-ups plus a few smaller pieces of evidence targeting specific elements of the standard.

Choose the best pieces of evidence for each KSB covered by the interview. An assessor will look for one suitable piece of evidence for each KSB. To be confident of meeting the standard, apprentices should aim to have two pieces of evidence mapped to each KSB.

Examples of acceptable evidence:

- workplace documentation and records
- workplace policies and procedures, annotated by the apprentice to say how they use them in practice and when they have had to use them
- witness statements signed and dated by coaches/trainers

- annotated photographs/diagrams
- video clips (maximum total duration 20 minutes); the apprentice must be in view and identifiable
- job write-ups by the apprentice.

The above is not a definitive list. The apprentice can include other relevant evidence sources.

Evidence must be:

- produced by the learner (authentic)
- relevant to the standard (K,S or B) that it is mapped to
- produced during the time the apprentice is in training.

What to include in the portfolio

The portfolio of evidence:

- must contain a portfolio mapping document where evidence is mapped against the KSBs. A template has been produced to help apprentices with collecting and mapping their evidence. A copy of the template is included in the appendices
- must contain evidence related to the KSBs that will be assessed by the interview
- will typically contain ten quality discrete pieces of evidence
- will be available, during the interview, allowing the apprentice to refer to it.

What the apprentice can do

The apprentice should:

- get familiar with the structure of their portfolio
- get to know the KSBs covered by the interview
- get to know the grading criteria, including distinction grading, for the interview
- ensure there is evidence to cover every KSB in the interview
- practise mapping evidence and completing the portfolio mapping document.

The role of the training provider

Training providers are expected to support the apprentice in preparing their portfolio by:

- clarifying responsibility for supporting the apprentice to select and map evidence for the portfolio, including employer coaches/mentors where applicable
- advising on which pieces of evidence to select to ensure that when looked at as a whole, they provide coverage of all the required elements of the standard assessed in the interview
- supporting the mapping of evidence and production of a portfolio mapping document
- authenticating evidence as valid
- signing off the portfolio
- submitting the portfolio to Energy & Environment Awards as part of Gateway.

What to expect in the practice interview

The practice interview provides the apprentice with the opportunity to practice discussing their KSBs gained throughout their on-programme by referring to the evidence from their portfolio using the mapping document.

Step by Step Guide

The table below provides a step by step guide on how we recommend the practice interview based on the portfolio of evidence should be carried out:

Assessors	**Number of assessors**: 1 – The interview must be conducted by a subject matter expert who takes on the role of an Independent Assessor.
Structure	**Duration:** 90 minutes You have the discretion to increase the time of the interview by up to 10%, to allow the apprentice to complete their last answer **Location:** Employer's premises or a suitable venue for example a training provider's premises. The EPA interview is likely to be carried out remotely, i.e. that the assessor and apprentice are in different locations. Energy & Environment Awards would recommend that method of delivery this is mirrored in the practice interview **Number of questions:** A minimum of 12 open questions. Additional follow up questions are allowed, to seek clarification
Resources	Quiet room for interview Document to record assessment of interview (see Supporting Documents, Appendix F) Bank of open-ended questions Apprentice's portfolio
What should the apprentice do to prepare for the interview?	• Compile a portfolio and map the evidence using the mapping document (see Supporting Documents, Appendix D) • Practice answers to potential questions focussing on the topics listed below

	• Familiarise themselves with their portfolio so they can discuss, refer to and illustrate their answers with evidence recorded in their portfolio
Questions	Develop open-ended questions which focus on • working in the water industry • environment and sustainability • asset and equipment maintenance • responding to alarms • improvement and optimisation • resolving faults • responding to incidents • team working • information technology • water treatment process technician: water catchment and abstraction; waste streams management; shut down, isolation and recommission of water process streams • wastewater treatment process technician: pumping operations; wastewater flows; shut down, isolation and recommission of wastewater process streams
Delivery of the practice interview	A tutor or supervisor should adopt the role of assessor Schedule before the live end-point interview and with enough time to provide feedback to the apprentice. We recommend a period of two weeks or more, depending on the circumstances Assess apprentices in relation to the Apprenticeship Standard option they are completing (Water treatment process technician, Wastewater treatment process technician) Clarify points or discuss in more detail any evidence presented in the portfolio Record the depth and breadth of the apprentice's responses using the Interview template (see Supporting Documents, Appendix G)

Starting the practice interview	At the start of the practice interview the person in the role of the assessor should:
	• introduce themselves as an assessor
	• confirm their role
	• provide information on the format of the interview, including the timescales
	• ask the apprentice to
	  ○ give their full name
	  ○ their date of birth
	  ○ their employer name
	  ○ show their identification
	  ○ confirm they are prepared and can continue with the interview
	  ○ confirm that the portfolio evidence relates to the KSB's that will be assessed during the interview
	  ○ switch off their mobile
	• confirm that notes will be taken
	If the practice interview is being done remotely, the assessor should ask the apprentice to
	• confirm their location and that no one else is present in the room
	• pan the camera 360º

After the practice interview	Provide feedback to the apprentice with guidance on what to do to improve their performance

Preparing for the Multiple-choice Test

While on-programme, the employer and or training provider should brief the apprentice on the areas to be assessed by the multiple-choice test, as detailed in Section 2. It is good practice to identify the areas within the learning programme where the relevant knowledge is delivered and ensuring that apprentices are aware that elements from each of these criteria might come up in the test.

The multiple-choice test is aligned to the standard rather than a specific job role that the apprentice may be doing. The questions have been written to reflect the relevant Water Industry Treatment Process Technician core and pathway as a whole and are not focussed on specific plant, machinery, or employer-specific processes.

In readiness for end-point assessment, the apprentice should complete a practice test, which is signposted in the appendices. This should be undertaken in advance of the live multiple-choice test, with enough time to mark the assessment, and provide feedback to the apprentice.

For maximum effect, ensure the test is taken in exam conditions similar to those that will be experienced in a live test.

Section 6: Authenticity and security of apprentice work

The apprentices must be advised by their training provider and employer that copying of any work (whether it is from another apprentice or from internal, external documents or source) and presenting it as their own will be deemed as malpractice and will lead to their work being disqualified. Apprentices must not share their work or allow any person to copy their work as this is not allowed and would also be deemed as malpractice.

In signing off the portfolio, training providers and employers must be satisfied that the evidence in the portfolio is:

- **adequate**: evidence must cover all relevant KSBs within the assessment plan. Adequate does not mean a large quantity of evidence. The evidence should focus on quality rather than quantity
- **authentic**: apprentices must be able to confirm and talk about the evidence that they submit with the independent assessor, appointed by Energy & Environment Awards. It is vitally important apprentices only submit evidence relating to them
- **appropriate**: all evidence must be relevant to the KSBs assessed during the technical interview
- **recent and up to date**: all evidence must be linked to KSBs must be recent and current which demonstrate the apprentice's competence. The independent assessors, appointed by Energy & Environment Awards will assess current competencies, and the apprentice must map the evidence to demonstrate the relevant work to the KSB. Apprentices must gather the evidence during their on-programme training