

Skills for a greener world

EUIAS EPA Supporting Documents for

Level 3 Water Industry Network Technician (Water distribution network technician; Water leakage technician; Wastewater network technician) QAN 610/1604/4













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Updates to the supporting documents

Since the first publication of the EUIAS Water Industry Network Technician Supporting Documents – Water distribution network technician; Water leakage technician; Wastewater network technician, the following updates have been made.

Version	Date first published	Section updated	Page(s)
V2.0	June 2023	Rebranded	All
V1.0	Nov 2022	First published	All





Appendix A: Glossary

Amplification – provides more detail on how individual knowledge, skills or behaviours statements should be interpreted. Where the KSB statements, themselves are deemed self-explanatory, no amplification is provided. Assessment may include questions on anything identified in the amplification

Behaviours (as part of KSBs) – specific mindsets, attitudes or approaches identified as part of the apprenticeship standard that must be evidenced during endpoint assessment

Elements – are the knowledge, skills and behaviours and what is needed to competently undertake the duties required for an occupational standard

Gateway - the stage of the apprenticeship where the apprentice, employer and training provider determine whether the apprentice is ready to undertake end-point assessment

Guidance – is only provided where it is required to support interpretation of the KSB statements

Knowledge (as part of KSBs) – specific information, technical detail, and 'knowhow' identified as part of the apprenticeship standard that must be evidenced during end-point assessment

Pathways – a specialist route within an apprenticeship standard that builds on the occupational competence for a new entrant to the occupation

Skills (as part of KSBs) – the practical application of knowledge identified as part of the apprenticeship standard that must be evidenced during end-point assessment

Standard – An occupational standard is a description of an occupation. It contains occupational profile, and describes KSBs needed for someone to be competent in the occupation's duties. Occupational standards are developed by employers for occupations that meet the Institute for Apprenticeships and Technical Education current occupation criteria

Topic - is a collection of elements grouped into a theme e.g. Health and Safety



Appendix B: Gateway Eligibility Form

(Standard Version: ST1292 version 1.0; Assessment Plan Version: AP01

Apprentice's name:	Apprentice's job title:
Name of Employer:	Name of Training provider:
Employer representatives present:	Training provider representatives present:
Apprenticeship start date:	Apprenticeship on-programme end date:
Gateway meeting date:	
Has the apprentice taken any part of the end-point assessment for this apprenticeship standard with any other End Point Assessment Organisation?	Y / N
If "Yes" please give details:	

Apprentice's details

Eligibility requirements:

The apprentice must confirm their achievement of the following:

Eligibility requirement	Achieved by the apprentice? Y/N	Evidence (Scans of certificates MUST be included)
Achieved Level 2 English or higher		
Achieved Level 2 Maths or higher		
Satisfactory completion of the formal training plan agreed with apprentice by the employer		
Compiled and submitted a competent portfolio of evidence on which the interview will be based		



Gateway Eligibility Declaration

- 1. The apprentice, the employer and the training provider must sign this form to confirm that they understand and agree to the following:
- 2. The apprentice has completed the required on-programme elements of the apprenticeship and is ready for end-point assessment with EUIAS.
- 3. EUIAS has been informed about any reasonable adjustment and/or special considerations requests.
- 4. The apprentice will only submit their own work as part of end-point assessment.
- 5. All parties agree that end-point assessment evidence may be recorded and stored by EUIAS for quality assurance purposes.
- 6. The apprentice has been on-programme for a minimum duration of 365 days.
- 7. The apprentice has achieved English and maths Level 2 or higher as detailed in this document.
- 8. The apprentice satisfactorily completed a formal training plan agreed by the employer.
- 9. The apprentice has compiled and submitted a competent work log of evidence, on which the technical interview will be based.
- 10. The apprentice, if successful, gives permission for EUIAS to request the apprenticeship. certificate from the ESFA who issue the certificate on behalf of the Secretary of State.
- 11. The apprentice has been directed to the EUIAS Appeals Policy and Complaints Policy.
- 12. The employer/training provider has given the EUIAS at least three months' notice of requesting this EPA for this apprentice.
- 13. If the Gateway Eligibility Report is not completed in full, meeting all requirements, and submitted to EUIAS, the end-point assessment cannot take place.



Signed on behalf of the employer (print name	ne :):	Signature:	Date:
Signed on behalf of th training provider (prin name):	ne It	Signature:	Date:
Apprentice's name (p	orint):	Signature:	Date:
EUIAS use only:			
EUIAS Sign off:			
Comments/actions:			



Appendix C: Practice Knowledge Tests

EUIAS Level 3 End-point Assessment for Water Industry Network Technician Supporting Documents QAN: 610/1604/4– ST1292AP0# 2.0 © 2023 Energy & Utility Skills



Level: 3

Water Industry Network Technician Pathway: Water Distribution Network Paper Code: PRACTICE PAPER

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The Pass mark is 35 correct answers.
A mark of 43 or more is a Distinction.
The duration of this examination is 1 hour 30 minutes.
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You must use a pencil to complete the answer sheet - pens must NOT be used.
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For this paper the use of a scientific calculator (non-programmable) is permitted.

For each question, fill in ONE answer ONLY.

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Possik	ble Answers	
a)	The Office for Health Improvement and Disparities (OHID)	
b)	World Health Organization (WHO)	
c)	Drinking Water Inspectorate (DWI)	
d)	Health, Safety Executive (HSE)	

Ques	stion 2	
Befor	re filling with potable water, bowsers	should be flushed and disinfected using:
Poss	ible Answers	
a)	sodium bisulphite	
b)	chlorine solution	
c)	boiled water	
d)	Trichlorophenol (TCP)	

Ques	tion 3		
A cor are th	A contact tank has undergone routine maintenance. Prior to return to service, what are the standards that need to be met?		
Poss	ible Answers		
a)	No coliform bacteria; chlorine residual within pre-set targets		
b)	No coliform bacteria; chlorine residual above pre-set targets		
c)	Chlorine residual within pre-set targets; pH within pre-set targets		
d)	No coliform bacteria; pH within pre-set targets		



How many litres of water are in a 100 m length of 100 mm diameter pipe?

Poss	Possible Answers	
a)	78 litres	
b)	785 litres	
c)	3,141 litres	
d)	31,415 litres	

Ques	stion 5	
Appro main	Approximately how long would it take to turn over 6m ³ volume of water, in a water main, at 4 l/s?	
Possible Answers		
a)	15 minutes	
b)	20 minutes	
c)	25 minutes	
d)	30 minutes	

Ques	tion 6	
Whic	h ONE of the following is an SI unit?	
Poss	Possible Answers	
a)	Ton	
b)	Kilogram	
c)	Mile	
d)	Minute	



Ques	tion 7	
Whicl	Which ONE of the following statements must employees comply with?	
Poss	Possible Answers	
a)	Use equipment in accordance with training and instruction	
b)	Report anyone who is late for work	
c)	Never share tools and equipment	
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Question 8	
An employee has to carry out a work activity which involves a substance that can be hazardous to health. What should they do?	
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Possible Answers		
a)	take charge of first-aid arrangements	
b)	provide the necessary protection such as boots or gloves	
c)	have a duty of care for those who may be affected by their actions	
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Question 10According to COSHH, what does this symbol tell you about a substance?Possible Answersa)The substance is hazardous to the environmentb)The substance is toxicc)The substance is corrosived)The substance is an irritant

Question 11	
Which ONE of the following is the most common cause of workplace injury?	
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a)	Falling from height
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Question 12	
Which ONE of the following is NOT required to be included in a site drainage plan?	
Possible Answers	
a)	Where the drains are situated
b)	What the drains discharge into
c)	The drain size and material the drain is made of
d)	The types of drains: surface water, foul water or combined



Which organisation is responsible for identifying potential hazards to workers, in businesses, and developing best practices to reduce or eliminate those hazards?

Possible Answers

a)	The Environment Agency (EA)
b)	Health, Safety Executive (HSE)
c)	Department for Environment, Food and Rural Affairs (Defra)
d)	Water Services Regulation Authority (OFWAT)

Question 14	
Why is phosphate added to the drinking water distribution system?	
Possible Answers	
a)	To change the pH in the distribution network
b)	To minimise iron in the distribution network
c)	To minimise manganese in the distribution network
d)	To help prevent leaching of lead into the water supply

Question 15		
Which ONE of the following is considered an aesthetic parameter for assessing drinking water quality?		
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a)	Enterococci	
b)	Lead	
c)	Colour	
d)	рН	



According to The Water Supply (Water Quality) Regulations, which water quality parameter has a Prescribed Concentration or Value (PCV) of 'Acceptable to consumers and no abnormal change'?

Possible Answers	
a)	Aluminium
b)	Coliforms
c)	рН
d)	Taste and Odour

Ques	Question 17		
Accor	According to the UK's Waste Hierarchy, what should be prioritised before		
Possible Answers			
a)	Re-use		
b)	Recovery		
c)	Disposal		
d)	Salvage		

Ques	Question 18	
Which ONE of the following statements can be used to describe one of the key principles of sustainable development?		
Possible Answers		
a)	Balancing current needs without compromising the needs of future generations	
b)	Prioritising the needs of future generations over our own	
c)	Prioritising our current needs over that of future generations	
d)	Prioritising environmental performance now over future profit	



Question 19	
Without water, the average human can only live for about three:	
Possible Answers	
a)	months
b)	weeks
c)	days
d)	hours

Question 20	
Which organisation is responsible for conservation and ecology in England?	
Possible Answers	
a)	Drinking Water Inspectorate (DWI)
b)	The Environment Agency (EA)
c)	Consumer Council for Water (CCWater)
d)	Water Services Regulation Authority (OFWAT)

Question 21	
Which body would investigate and handle complaints made against licensed water suppliers or companies?	
Possible Answers	
a)	Health, Safety Executive (HSE)
b)	Drinking Water Inspectorate (DWI)
c)	Consumer Council for Water (CCWater)
d)	HM Revenue and Customs (HMRC)



Which organisation ensures companies are licensed to deliver water and sewerage services in England and Wales, and is responsible for the legal framework under which they operate?

Possible Answers	
a)	Water Services Regulation Authority (OFWAT)
b)	The Department for Environment, Food & Rural Affairs (Defra)
c)	Drinking Water Inspectorate (DWI)
d)	Consumer Council for Water (CCWater)

Ques	Question 23	
There leak i	There is a leak at a private rental property. Who is responsible for ensuring the leak is repaired?	
Possible Answers		
a)	Tenant	
b)	Property owner	
c)	Water undertaker	
d)	Insurance company	

Ques	Question 24	
What should a technician do if a customer is not at home and they are unable to gain access to the rear of the property?		
Possible Answers		
a)	Obtain the necessary consent from law enforcement agencies to go onto the property	
b)	Enter customer's property through a neighbouring property	
c)	Leave the site without carrying out any work	
d)	Post a 'customer calling card' through the letterbox	



Question 25A water supply is interrupted by a burst strategic main pipe. What is the maximum
time to pass before a water company must restore the supply?Postive Answersa)24 hoursa)24 hoursb)36 hoursc)48 hoursd)72 hours

Ques	Question 26	
Ident	Identify one component of the C-MeX score.	
Possible Answers		
a)	The net promoter score	
b)	Feedback from a regular qualitative satisfaction survey	
c)	A customer experience satisfaction survey of customers selected at random	
d)	A quantitive measure of water company performance against a set of metrics	

Ques	Question 27	
Which ONE of the following water industry target standards will apply to a water- only company?		
Possible Answers		
a)	Properties at risk of flooding (DG5)	
b)	Billing of metered customers (DG8)	
c)	Number of external flooding incidents per year	
d)	Total pollution incidents	



Ques	Question 28	
What type of water quality are coliforms used as an indicator of?		
Possible Answers		
a)	Colour	
b)	Chemical concentration	
c)	Taste and odour	
d)	Faecal pollution	

Ques	Question 29	
In an emergency, the casualties that should be prioritised are those:		
Possible Answers		
a)	who are unconscious	
b)	who appear in most pain	
c)	with first aid training	
d)	who work in your team	

Ques	Question 30	
In wh (GSS	In which ONE of the following situations must a Guaranteed Standard Scheme (GSS) payment be made to a customer reporting low water pressure?	
Poss	Possible Answers	
a)	When the pressure falls below 10 metres static head due to a drought	
b)	When a PRV (Pressure-Reducing Valve) fails and the water pressure drops to 10 metres static head at the highest point in the DMA (District Metered Area)	
c)	If the water pressure in the communication pipe falls below 7 metres static head twice, within a 28-day period, each occasion lasting more than one hour	
d)	If the water pressure in the DMA falls below 7 metres static head and the customer makes a claim 4 months after the incident	



What does Section 81 of New Roads and Street Works Act 1991 cover?

Poss	Possible Answers	
a)	The duty of a water company to maintain assets on the public highway such as manhole covers	
b)	The duty of a water company to notify a highway authority within ten days of completing a reinstatement	
c)	The time and duration of any work on the public highway which restricts the flow of traffic	
d)	The correct signage, lighting and guarding required for various types of work being carried out on the public highway	

Ques	Question 32	
Which ONE of the following workplace incidents is NOT reportable under Reporting of Injuries, Diseases and Dangerous Occurrences (RIDDOR)?		
Possible Answers		
a)	Significant damage to a worker's eye	
b)	Accident to a member of the public resulting in an injury	
c)	Hypothermia as a result of working in an enclosed space	
d)	A cut to an employee's hand requiring medical attention by a site first aider	

Ques	Question 33	
What	What colour is an asbestos main?	
Poss	Possible Answers	
a)	Grey white	
b)	Blue	
c)	Brown	
d)	Yellow	

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Question 34	
Which ONE of the following would be considered a confined space?	
Possible Answers	
a)	A small office processing customer complaints
b)	A deep manhole chamber
c)	Operating a valve on the public highway
d)	Sewage clean-up in a customer's garden

Ques	Question 35	
What is the minimum depth of sump hole needed to prevent water quality issues?		
Possible Answers		
a)	50 mm	
b)	100 mm	
c)	150 mm	
d)	200 mm	

Ques	Question 36	
In the UK, at which depth is excavation support required?		
Possible Answers		
a)	2 metres	
b)	1.75 metres	
c)	1.5 metres	
d)	There is no specified depth	



Ques	Question 37	
Whicl proce	Which staff members should be familiar with their company's emergency procedures?	
Poss	ible Answers	
a)	Those with an emergency response role	
b)	Senior management	
c)	All managers	
d)	All staff	

Ques	Question 38	
How should small fittings designed for use on the water network be stored?		
Possible Answers		
a)	In a container on the floor of a company vehicle	
b)	Bagged and on a shelf	
c)	In the van's glovebox	
d)	Close to tools used on wastewater assets	

Ques	Question 39	
Level	Level of risk is calculated by:	
Possible Answers		
a)	Number of elements of the tasks plus Number of people involved in the task	
b)	Number of tasks multiplied by time of day using the 24hr clock	
c)	Consequence multiplied by Likelihood	
d)	Consequence multiplied by the cost of the job	



When do the Pressure System Safety Regulations (PSSR) apply for systems and equipment using steam?

Possible Answers

When steam is expected to exceed 0.5 bar above atmospheric pressure
When steam is expected to exceed 1 bar above atmospheric pressure
When steam is expected to exceed 1.5 bar above atmospheric pressure
When steam is at any pressure

Ques	Question 41	
What backflow protection is required for fluid category 5 contamination risks?		
Possible Answers		
a)	Reduced Pressure Zone (RPZ)	
b)	Double check valve	
c)	Air gap	
d)	Pipe interrupter	

Ques	Question 42	
A solution with a pH of 12.8 would be considered:		
Possible Answers		
a)	a strong alkali	
b)	neutral	
c)	a weak acid	
d)	a strong acid	



Ques	Question 43	
In liqu	In liquid form, pure water is	
Possible Answers		
a)	an element	
b)	a solution	
c)	mostly ions	
d)	mostly molecules	

Ques	Question 44	
What is the maximum time a water sample can sit before being analysed?		
Possible Answers		
a)	1 hour	
b)	12 hours	
c)	1 day	
d)	2 days	

Ques	Question 45	
Drinking Water Safety Plans are:		
Possible Answers		
a)	guidelines issued by the Drinking Water Inspectorate (DWI)	
b)	guidelines issued by the Environment Agency (EA)	
c)	a system for monitoring water quality in a large aquatic area	
d)	a system assessment of possible risks to water quality and how they will be controlled	



Question 46		
A water quality alarm:		
Possible Answers		
a)	automatically analyses customer complaints	
b)	indicates when a parameter is not within a specified limit	
c)	prevents re-contamination during storage	
d)	is only needed in treatment works	

Ques	Question 47		
What as?	What would a pollution incident that has no environmental impact be categorised as?		
Possible Answers			
a)	Category 1		
b)	Category 2		
c)	Category 3		
d)	Category 4		

Question 48			
A control valve located on the inlet to a servicer reservoir begins to close as the water risers in the reservoir. What effect does this have to the inlet main?			
Possible Answers			
a)	Increase the pressure as the valve closes		
b)	Decrease the pressure as the valve closes		
c)	Increases the flow as the valve closes		
d)	Increases the head loss as the valve closes		



Question 49A charber is being pumped out so maintenance can be carried out on an air valve.
Why is it important to maintain a water level below the bottom flange of the
installation?Possible Answersa)To maximise system performanceb)To prevent potential ingress into the water mainc)To prevent blocking the view to the pipeworkd)To prevent hands from getting wet

Question 50			
A wa	A water tower must:		
Possible Answers			
a)	have a booster station on the outlet		
b)	be greater than 15 metres in height		
c)	have secure access hatches that stop ingress of rain water		
d)	be located at the end of the network		

End of Questions



Answers

Question	Answer	Question	Answer	Question	Answer
1	С	18	A	35	С
2	В	19	С	36	D
3	А	20	В	37	D
4	В	21	С	38	В
5	С	22	A	39	С
6	В	23	В	40	D
7	A	24	D	41	С
8	В	25	С	42	A
9	С	26	С	43	D
10	В	27	В	44	С
11	С	28	D	45	D
12	С	29	A	46	В
13	В	30	С	47	D
14	D	31	A	48	А
15	С	32	D	49	В
16	D	33	А	50	С
17	А	34	В		



Level: 3 Water Industry Network Technician Pathway: Water Leakage Paper Code: PRACTICE PAPER

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1 (A) (B) (C) (

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a)	Re-use	
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c)	Disposal	
d)	Salvage	

Question 18	
According to OFWAT, which ONE of the following statements is a key principle of sustainable development?	
Possible Answers	
a)	Minimising the impact on the environment now and in the future
b)	Prioritising the needs of future generations over our own
c)	Prioritising our current needs over that of future generations
d)	Prioritising environmental performance now over future profit


Ques	Question 19	
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Question 21	
Which body would investigate and handle complaints made against licensed water suppliers or companies?	
Possible Answers	
a)	Health, Safety Executive (HSE)
b)	Drinking Water Inspectorate (DWI)
c)	Consumer Council for Water (CCWater)
d)	HM Revenue and Customs (HMRC)



Which organisation ensures companies are licensed to deliver water and sewerage services in England and Wales, and is responsible for the legal framework under which they operate?

Possible Answers	
a)	Water Services Regulation Authority (OFWAT)
b)	The Department for Environment, Food & Rural Affairs (Defra)
c)	Drinking Water Inspectorate (DWI)
d)	Consumer Council for Water (CCWater)

Question 23		
The term 'hunting' displays itself by continuous opening and closing of the main valve. What causes this condition?		
Possible Answers		
a)	A blocked outlet	
b)	A broken pilot spring	
c)	A stuck speed / control valve	
d)	A split diaphragm	

Ques	Question 24	
What should a technician do if a customer is not at home and they are unable to gain access to the rear of the property?		
Possible Answers		
a)	Obtain the necessary consent from law enforcement agencies to go onto the property	
b)	Enter customer's property through a neighbouring property	
c)	Leave the site without carrying out any work	
d)	Post a 'customer calling card' through the letterbox	



Question 25A water supply is interrupted by a burst strategic main pipe. What is the maximum
time to pass before a water company must restore the supply?Postive Answersa)24 hoursa)24 hoursb)36 hoursc)48 hoursd)72 hours

Question 26	
Identify one component of the C-MeX score.	
Possible Answers	
a)	The net promoter score
b)	Feedback from a regular qualitative satisfaction survey
c)	A customer experience satisfaction survey of customers selected at random
d)	A quantitive measure of water company performance against a set of metrics

Question 27	
Which ONE of the following water industry target standards will apply to a water- only company?	
Possible Answers	
a)	Properties at risk of flooding (DG5)
b)	Billing of metered customers (DG8)
c)	Number of external flooding incidents per year
d)	Total pollution incidents



Question 28	
What type of water quality are coliforms used as an indicator of?	
Possible Answers	
a)	Colour
b)	Chemical concentration
c)	Taste and odour
d)	Faecal pollution

Question 29	
In an emergency, the casualties that should be prioritised are those:	
Possible Answers	
a)	who are unconscious
b)	who appear in most pain
c)	with first aid training
d)	who work in your team

Question 30	
In which ONE of the following situations must a Guaranteed Standard Scheme	
(GSS	ayment be made to a customer reporting low water pressure?
Possible Answers	
a)	When the pressure falls below 10 metres head due to a drought
b)	When a PRV (Pressure-Reducing Valve) fails and the water pressure drops to 10 metres head at the highest point in the DMA (District Metered Area)
c)	If the water pressure in the communication pipe falls below 7 metres static head twice, within a 28-day period, each occasion lasting more than one hour
d)	If the water pressure in the DMA falls below 7 metres head and the customer makes a claim 4 months after the incident



What does Section 81 of New Roads and Street Works Act 1991 cover?

Poss	Possible Answers	
a)	The duty of a water company to maintain assets on the public highway such as manhole covers	
b)	The duty of a water company to notify a highway authority within ten days of completing a reinstatement	
c)	The time and duration of any work on the public highway which restricts the flow of traffic	
d)	The correct signage, lighting and guarding required for various types of work being carried out on the public highway	

Ques	Question 32	
Which ONE of the following workplace incidents is NOT reportable under Reporting of Injuries, Diseases and Dangerous Occurrences (RIDDOR)?		
Possible Answers		
a)	Significant damage to a worker's eye	
b)	Accident to a member of the public resulting in an injury	
c)	Hypothermia as a result of working in an enclosed space	
d)	A cut to an employee's hand requiring medical attention by a site first aider	

Ques	Question 33	
What	colour is an asbestos main?	
Poss	Possible Answers	
a)	Grey white	
b)	Blue	
c)	Brown	
d)	Yellow	

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Ques	Question 34	
Which ONE of the following would be considered a confined space?		
Possible Answers		
a)	A small office processing customer complaints	
b)	A deep manhole chamber	
c)	Operating a valve on the public highway	
d)	Sewage clean-up in a customer's garden	

Ques	Question 35	
In the	In the UK, at which depth is excavation support required?	
Poss	Possible Answers	
a)	2 metres	
b)	1.75 metres	
c)	1.5 metres	
d)	There is no specified depth	

Ques	Question 36	
A major service of a Pressure Reducing Valve (PRV) is undertaken. The valve is bypassed. Identify two major network problems that this can cause.		
Possible Answers		
a)	Flooding and PRV hunting	
b)	Water taste and water colour complaints	
c)	Flat lining meter and bursts	
d)	High pressure and discolouration	



Ques	Question 37	
Whicl proce	Which staff members should be familiar with their company's emergency procedures?	
Poss	ible Answers	
a)	Those with an emergency response role	
b)	Senior management	
c)	All managers	
d)	All staff	

Ques	Question 38	
How	How should small fittings designed for use on the water network be stored?	
Poss	Possible Answers	
a)	In a container on the floor of a company vehicle	
b)	Bagged and on a shelf	
c)	In the van's glovebox	
d)	Close to tools used on wastewater assets	

Question 39		
Level	Level of risk is calculated by:	
Poss	Possible Answers	
a)	Number of elements of the tasks plus Number of people involved in the task	
b)	Number of tasks multiplied by time of day using the 24hr clock	
c)	Consequence multiplied by Likelihood	
d)	Consequence multiplied by the cost of the job	



When do the Pressure System Safety Regulations (PSSR) apply for systems and equipment using steam?

Possible Answers

a)	When steam is expected to exceed 0.5 bar above atmospheric pressure
b)	When steam is expected to exceed 1 bar above atmospheric pressure
c)	When steam is expected to exceed 1.5 bar above atmospheric pressure
d)	When steam is at any pressure

Ques	Question 41	
A pre	A pressure sustaining valve can:	
Poss	Possible Answers	
a)	be used as an air relieve valve	
b)	be used as a pressure relieve val	/e
c)	be used as a washout	
d)	be used ball valve	

Ques	Question 42	
What is the minimum water pressure customers should receive in the communication pipe serving their home?		
Possible Answers		
a)	17 meters static head (1.7 bar)	
b)	10 meters static head (1 bar)	
c)	7 metres static head (0.7 bar)	
d)	5 meters static head (0.5 bar)	



Ques	Question 43	
A water quality alarm:		
Possible Answers		
a)	automatically analyses customer complaints	
b)	indicates when a parameter is not within a specified limit	
c)	prevents re-contamination during storage	
d)	is only needed in treatment works	

Ques	Question 44		
What	What is the maximum time a water sample can sit before being analysed?		
Possible Answers			
a)	1 hour		
b)	12 hours		
c)	1 day		
d)	2 days		

Ques	Question 45		
Drink	Drinking Water Safety Plans are:		
Possible Answers			
a)	guidelines issued by the Drinking Water Inspectorate (DWI)		
b)	guidelines issued by the Environment Agency (EA)		
c)	a system for monitoring water quality in a large aquatic area		
d)	a system assessment of possible risks to water quality and how they will be controlled		



Ques	Question 46		
What as?	would a pollution incident that has no environmental impact be categorised		
Possible Answers			
a)	Category 1		
b)	Category 2		
c)	Category 3		
d)	Category 4		

Ques	Question 47		
A cor water	A control valve located on the inlet to a servicer reservoir begins to close as the water risers in the reservoir. What effect does this have to the inlet main?		
Possible Answers			
a)	Increase the pressure as the valve closes		
b)	Decrease the pressure as the valve closes		
c)	Increases the flow as the valve closes		
d)	Increases the head loss as the valve closes		

Ques	Question 48		
A cha Why i instal	A chamber is being pumped out so maintenance can be carried out on an air valve. Why is it important to maintain a water level below the bottom flange of the installation?		
Possible Answers			
a)	To maximise system performance		
b)	To prevent potential ingress into the water main		
c)	To prevent blocking the view to the pipework		
d)	To prevent hands from getting wet		



Ques	Question 49		
A wat	A water tower must:		
Poss	ible Answers		
a)	have a booster station on the outlet		
b)	be greater than 15 metres in height		
c)	have secure access hatches that stop ingress of rain water		
d)	be located at the end of the network		

Ques	Question 50		
What	is the minimum depth of sump hole needed to prevent water quality issues?		
Possible Answers			
a)	50 mm		
b)	100 mm		
c)	150 mm		
d)	200 mm		

End of Questions



Answers

Question	Answer	Question	Answer	Question	Answer
1	С	18	А	35	D
2	В	19	С	36	D
3	A	20	В	37	D
4	В	21	С	38	В
5	С	22	А	39	С
6	В	23	С	40	D
7	A	24	D	41	В
8	В	25	В	42	С
9	С	26	С	43	В
10	В	27	В	44	С
11	С	28	D	45	D
12	С	29	А	46	D
13	В	30	С	47	А
14	D	31	А	48	В
15	С	32	D	49	С
16	D	33	А	50	С
17	А	34	В		



Level: 3

Water Industry Network Technician Pathway: Wastewater Network Paper Code: PRACTICE PAPER

This examination consists of 50 multiple-choice questions.
The Pass mark is 35 correct answers.
A mark of 43 or more is a Distinction.
The duration of this examination is 1 hour 30 minutes.
You are NOT allowed any assistance to complete the answers.
You must use a pencil to complete the answer sheet - pens must NOT be used.
When completed, please leave the examination answer sheet and question paper on the desk.

For this paper the use of a scientific calculator (non-programmable) is permitted.

For each question, fill in ONE answer ONLY.

If you make a mistake, ensure you erase it thoroughly.

You must mark your choice of answer by shading in ONE answer circle only. Please mark each choice like this:

ANSWER COMPLETED CORRECTLY

Examples of how NOT to mark your examination answer sheet. These will not be recorded.



This paper must be returned to EUIAS with the apprentice answer sheets.



You may use this page for rough work

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Questi	Question 1		
Which improv	Which organisation has powers to require water companies to make the necessary improvements to the quality of tap water?		
Possik	ble Answers		
a)	The Office for Health Improvement and Disparities (OHID)		
b)	World Health Organization (WHO)		
c)	Drinking Water Inspectorate (DWI)		
d)	Health, Safety Executive (HSE)		

Ques	Question 2		
Which calculation can help a Wastewater Networks Operator calculate the velocity (v) of storm water flowing through a closed sewer?			
Possible Answers			
a)	Hazen-Williams equation		
b)	Continuity equation		
c)	Mogden formula		
d)	Venturi Flow calculation		

Ques	Question 3		
Whicl	Which formula is used to calculate flow rate?		
Poss	Possible Answers		
a)	A = Qv		
b)	Q = Av		
c)	V =Qa		
d)	Q = ABk		

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How many litres of water are in a 100 m length of 100 mm diameter pipe?

Poss	Possible Answers	
a)	78 litres	
b)	785 litres	
c)	3,141 litres	
d)	31,415 litres	

Question 5		
Approximately how long would it take to turn over 6m ³ volume of water, in a water main, at 4 l/s?		
Possible Answers		
a)	15 minutes	
b)	20 minutes	
c)	25 minutes	
d)	30 minutes	

Question 6		
Whic	Which ONE of the following is an SI unit?	
Possible Answers		
a)	Ton	
b)	Kilogram	
c)	Mile	
d)	Minute	



Question 7	
The equipment that is used for measuring wastewater flow is:	
Possible Answers	
a)	a flume and an ultrasonic flow meter
b)	positive displacement and electromagnetic meters
c)	push-rod or track CCTV
d)	CAT and Genny

Question 8	
An employee has to carry out a work activity which involves a substance that can be hazardous to health. What should they do?	
Possible Answers	
a)	Carry on with the work regardless
b)	Carry out the work, providing they have been suitably trained and have the necessary information from the COSHH assessment
c)	Carry out the work using their own initiative to decide the sensible safety precautions
d)	Refuse to carry out the work

Ques	Question 9	
According to the Health and Safety Executive (HSE), all workers must take care of their own Health and Safety as well as:		
Possible Answers		
a)	take charge of first-aid arrangements	
b)	provide the necessary protection such as boots or gloves	
c)	have a duty of care for those who may be affected by their actions	
d)	work with a safety representative to ensure everyone is protected from harm in the workplace	



Ques	Question 10	
Which ONE of the following statements must employees comply with?		
Possible Answers		
a)	Use equipment in accordance with training and instruction	
b)	Report anyone who is late for work	
c)	Never share tools and equipment	
d)	Keep a copy of all Health and Safety information provided	

Ques	Question 11	
Acco	According to COSHH, what does this symbol tell you about a substance?	
Poss	Possible Answers	
a)	The substance is hazardous to the environment	~
b)	The substance is toxic	A. J.
c)	The substance is corrosive	2 Cart
d)	The substance is an irritant	$\mathbf{\vee}$

Ques	Question 12	
Which ONE of the following is the most common cause of workplace injury?		
Possible Answers		
a)	Falling from height	
b)	Attacks by animals	
c)	Manual handling injuries	
d)	Electric shocks	



During a chemical delivery on site, the drainage grid within the bunded delivery area should:

Possible Answers

a)	be uncovered to allow any spillages to flow freely down the drain to the outflow
b)	be covered with rags and sandbags to contain any spillages within the bunded area
c)	be covered with a proprietary 'bung' to contain any spillages within the bunded area
d)	have its cover removed to allow any spillages to flow freely away

Question 14	
Which o	organisation is responsible for identifying potential hazards to workers, in
businesses, and, developing best practices to reduce or eliminate those hazards?	
Possible Answers	
a) TI	he Environment Agency (EA)
b) H	lealth, Safety Executive (HSE)
c) D	Department for Environment, Food and Rural Affairs (Defra)
d) W	Vater Services Regulation Authority (OFWAT)

Ques	Question 15	
The le	The level of risk is calculated by:	
Possible Answers		
a)	(Number of elements of the tasks) plus (Number of people involved in the task)	
b)	(Number of tasks) multiplied by (Time of day using the 24hr clock)	
c)	(Consequence) multiplied by (Likelihood)	
d)	(Consequence) multiplied by the (Cost of the job)	



Which ONE of the following is considered an aesthetic parameter for assessing drinking water quality?

Possible Answers	
a)	Enterococci
b)	Lead
c)	Colour
d)	рН

Ques	Question 17	
Appro	Approximately what percentage of wastewater in the sewer network is pure water?	
Poss	ible Answers	
a)	99.9% - 99.99%	
b)	90% - 95%	
c)	85% - 90%	
d)	1-5%	

Ques	Question 18	
Accoi recyc	rding to the UK's Waste Hierarchy, what should be prioritised before ling?	
Poss	ible Answers	
a)	Re-use	
b)	Recovery	
c)	Disposal	
d)	Salvage	



According to OFWAT, which ONE of the following statements is a key principle of sustainable development?

Possible Answers

a)	Minimising the impact on the environment now and in the future
b)	Prioritising the needs of future generations over our own
c)	Prioritising our current needs over that of future generations
d)	Prioritising environmental performance now over future profit

Ques	Question 20	
Whic	h organisation is responsible for conservation and ecology in England?	
Poss	ible Answers	
a)	Drinking Water Inspectorate (DWI)	
b)	The Environment Agency (EA)	
c)	Consumer Council for Water (CCWater)	
d)	Water Services Regulation Authority (OFWAT)	

Que	Question 21	
Whi sup	Which body would investigate and handle complaints made against licensed water suppliers or companies?	
Pos	sible Answers	
a)	Health, Safety Executive (HSE)	
b)	Drinking Water Inspectorate (DWI)	
c)	Consumer Council for Water (CCWater)	
d)	HM Revenue and Customs (HMRC)	



Which organisation ensures companies are licensed to deliver water and sewerage services in England and Wales, and is responsible for the legal framework under which they operate?

Possible Answers	
a)	Water Services Regulation Authority (OFWAT)
b)	The Department for Environment, Food & Rural Affairs (Defra)
c)	Drinking Water Inspectorate (DWI)
d)	Consumer Council for Water (CCWater)

Ques	Question 23	
In liqu	uid form, pure water is	
Poss	ible Answers	
a)	an element	
b)	a solution	
c)	mostly ions	
d)	mostly molecules	

Question 24	
What	should a technician do if a customer is not at home and they are unable to
gain a	access to the rear of the property?
Possible Answers	
a)	Obtain the necessary consent from law enforcement agencies to go onto the property
b)	Enter customer's property through a neighbouring property
c)	Leave the site without carrying out any work
d)	Post a 'customer calling card' through the letterbox



Identify one component of the C-MeX score.

Possible Answersa)The net promoter scoreb)Feedback from a regular qualitative satisfaction surveyc)A customer experience satisfaction survey of customers selected at randomd)A quantitive measure of water company performance against a set of
metrics

Question 26		
Whic air, w	Which regulatory act, makes provision for the improved control of pollution to the air, water and land, by regulating the management of waste and the control of	
emiss Poss	emissions? Possible Answers	
a)	The Environmental Protection Act 1990	
b)	The Environment Agency Act 1990	
c)	The Control of Pollutions Act 1991	
d)	The Waste Disposal Act 1991	

Ques	Question 27	
Whicl	h ONE of the following is a reducing agent?	
Poss	ible Answers	
a)	Chlorine	
b)	Sodium	
c)	Oxygen	
d)	Fluorine	



Ques	Question 28	
What	What type of water quality are coliforms used as an indicator of?	
Poss	Possible Answers	
a)	Colour	
b)	Chemical concentration	
c)	Taste and odour	
d)	Faecal pollution	

Question 29		
In an	In an emergency, the casualties that should be prioritised are those:	
Poss	Possible Answers	
a)	who are unconscious	
b)	who appear in most pain	
c)	with first aid training	
d)	who work in your team	

Question 30	
When would a Guaranteed Standards Scheme (GSS) payment be made to a customer for external flooding from a public sewer?	
Possible Answers	
a)	Every time the external flooding is proven to be the water company's responsibility
b)	If the flooding has not been cleaned up to the satisfaction of the customer
c)	Every time a water company attends external flooding
d)	If the customer has been materially affected



What does Section 81 of New Roads and Street Works Act 1991 cover?

Poss	Possible Answers	
a)	The duty of a water company to maintain assets on the public highway such as manhole covers	
b)	The duty of a water company to notify a highway authority within ten days of completing a reinstatement	
c)	The time and duration of any work on the public highway which restricts the flow of traffic	
d)	The correct signage, lighting and guarding required for various types of work being carried out on the public highway	

Question 32	
Which ONE of the following workplace incidents is NOT reportable under Reporting of Injuries, Diseases and Dangerous Occurrences (RIDDOR)?	
Possible Answers	
a)	Significant damage to a worker's eye
b)	Accident to a member of the public resulting in an injury
c)	Hypothermia as a result of working in an enclosed space
d)	A cut to an employee's hand requiring medical attention by a site first aider

Ques	Question 33	
What	What colour is an asbestos main?	
Possible Answers		
a)	Grey white	
b)	Blue	
c)	Brown	
d)	Yellow	

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Question 34	
Which ONE of the following would be considered a confined space?	
Possible Answers	
a)	A small office processing customer complaints
b)	A deep manhole chamber
c)	Operating a valve on the public highway
d)	Sewage clean-up in a customer's garden

Question 35	
Who is responsible for checking an operator's harness, lifeline and tripod prior to entry into a confined space?	
Possible Answers	
The Health & Safety Executive	
The Operator's Team Leader	
The Operator	
The Health and Safety Manager	

Question 36	
In the UK, at which depth is excavation support required?	
Possible Answers	
a)	2 metres
b)	1.75 metres
c)	1.5 metres
d)	There is no specified depth



Question 37	
Which staff members should be familiar with their company's emergency procedures?	
Possible Answers	
a)	Those with an emergency response role
b)	Senior managers
c)	All managers
d)	All staff

Question 38	
How should small fittings designed for use on the water network be stored?	
Possible Answers	
a)	In a container on the floor of a company vehicle
b)	Bagged and on a shelf
c)	In the van's glovebox
d)	Close to tools used on wastewater assets

Question 39	
The site area that is likely to be covered by the Dangerous Substances and Explosive Atmospheres Regulations (DSEAR) is the:	
Possible Answers	
a)	anaerobic sludge digestor for biogas generation
b)	chlorine gas store
c)	large underground trunk main
d)	customer Service Centre



When do the Pressure System Safety Regulations (PSSR) apply for systems and equipment using steam?

Possible Answers

a)	When steam is expected to exceed 0.5 bar above atmospheric pressure
b)	When steam is expected to exceed 1 bar above atmospheric pressure
c)	When steam is expected to exceed 1.5 bar above atmospheric pressure
d)	When steam is at any pressure

Ques	Question 41	
What is the main cause of blocked pumps at sewage pumping stations?		
Possible Answers		
a)	Fat, oil and grease	
b)	Rags	
c)	Grit	
d)	High flows	

Ques	Question 42			
Whic	Which gas is associated with the smell of rotten eggs?			
Possible Answers				
a)	Carbon Dioxide			
b)	Ammonia			
c)	Hydrogen Sulphide			
d)	Methane			



Question 43In sewers, hydrogen sulphide gas is generated from the microbial breakdown of orgative matter in sewage. What type of process is this?Possible Answersa)Physicalb)Biologicalc)Chemicald)Radiological

Ques	Question 44				
How	How often should an operator check their personal gas monitor?				
Poss	sible Answers				
a)	Weekly				
b)	Monthly				
c)	Annually				
d)	Before entering a confined space				

Question 45				
What	What is the main purpose of an interceptor trap?			
Possible Answers				
a)	To provide jetting access to the highway lateral			
b)	To collect silt and debris before it enters the public sewer			
c)	To prevent odours and gases from the main sewer venting into properties			
d)	To demark the boundary between private drain and transferred sewer			



Who is responsible for a 'main river' which is culverted under private land?

Possible Answers		
a)	The Environment Agency	
b)	The land owner	
c)	The local council	
d)	The Drinking Water Inspectorate	

Ques	Question 47			
What	What is the main function of a pipebridge?			
Poss	Possible Answers			
a)	It takes surface water from sewers and allows it to soak into the surrounding ground			
b)	It allows a sewer to run over rivers, highway overpasses, deep ravines			
c)	It allows a sewer to flow under a pond or detention tank			
d)	It operates during a storm to divert excess flow to a nearby watercourse			

Question 48				
Which sewer construction material is at high risk of damage due to high-powered jetting?				
Possible Answers				
a)	PVC (polyvinyl chloride) plastic			
b)	ABS (acrylonitrile butadiene styrene) plastic			
c)	Concrete			
d)	Vitrified clay			



Ques	Question 49			
Whicl	Which ONE of the following materials is no longer used in sewer construction?			
Poss	Possible Answers			
a)	PVC (polyvinyl chloride) plastic			
b)	Brick			
c)	ABS (acrylonitrile butadiene styrene) plastic			
d)	Concrete			

Ques	Question 50				
Wher water	When are sewer pumping stations permitted to discharge into a nearby watercourse?				
Poss	Possible Answers				
	When the water company provides 3 days' notice to the Environment				
a)	Agency				
b)	During heavy rain				
c)	When the station is being serviced				
d)	During very dry weather				

End of Questions



Answers

Question	Answer	Question	Answer	Question	Answer
1	С	18	А	35	С
2	A	19	А	36	D
3	В	20	В	37	D
4	В	21	С	38	В
5	С	22	A	39	А
6	В	23	D	40	D
7	А	24	D	41	В
8	В	25	С	42	С
9	С	26	А	43	В
10	A	27	В	44	D
11	В	28	D	45	С
12	С	29	А	46	А
13	С	30	D	47	В
14	В	31	А	48	D
15	С	32	D	49	В
16	С	33	А	50	В
17	А	34	В		



Appendix D - Portfolio Mapping Document

Introduction

Throughout the on-programme part of the apprenticeship, the apprentice will need to keep compile a portfolio of evidence to support the requirements of the interview. The evidence within the portfolio will need to be mapped to the KSB requirements using the mapping document overleaf.

The independent assessor will use the mapping document to review the evidence in their portfolio in preparation for the interview. The independent assessor will not assess the portfolio.

The portfolio mapping document below consists of

- 2 pages covering mapping for core requirements
- 2 pages covering mapping for the water distribution network technician option
- 1 page covering mapping for the water leakage technician
- 1 page covering mapping for the wastewater network technician option

Apprentices should use the mapping for the core and the option they are following.

Apprentice's next steps

- 1. Complete all the details on the first page and include employer details of where relevant competencies from their experience at work was gained
- Ensure each piece of evidence signed off by their tutor/supervisor/mentor and training provider. The apprentice can use a number of different types of evidence to demonstrate their competence as described in Section 6 of the Specification – 'What to include in the portfolio'. For further guidance, the apprentice must seek advice from their tutor/supervisor/mentor and training provider
- 3. Map evidence to the criteria in the following pages using a referencing system indicating where the evidence for the criteria is located in the portfolio e.g., work based evidence Job 1 (J1) page 5 paragraph 2. This will allow the independent assessor to locate the section or specific piece of evidence being discussed and referred to during the interview
- 4. Place the portfolio mapping document at the front of the portfolio of evidence.

The apprentice's training provider must make arrangements for EUIAS to have access to the apprentice's portfolio including the portfolio mapping document at Gateway. For those using e-portfolios such as ONEFILE or SMARTASSESSOR, the reference used must simply be the file or folder name you used when uploading the evidence to such systems.



Portfolio Mapping Document Mapping Sign off on Portfolio Completion:

Apprentice Name (Print)	Apprentice Signature	Training Provider (Company)	Training Provider Signatory	Date of Sign Off

GROUP 1: (Core) Working in the water industry

Ref.	Apprenticeship Standard Criteria		PORTFOLIO EVIDENCE REFERENCE (Apprentice Input)			
			2	3		
К2	Technician's role. Limits of autonomy. Different teams and functions involved in operations: how they work together					

GROUP 2: (Core) The environment and sustainability

		PORTFOLIO EVIDENCE				
Rof	Appronticoshin Standard Critoria		REFERENCE (Apprentice			
1.01.	Apprentices inplotandard officina	Input)				
		1	2	3		
00	Conduct and assess impact of activity for example,					
56	environmental, cost, reputation, safety, and health.					
	Apply control measures					
	Comply with environmental and sustainability					
S 7	regulations and requirements. For example, safe					
07	disposal of waste, re-cycling or re-use of materials,					
	and efficient use of resources					
S8	Apply principles of sustainable development. For					
	example, in choice of materials					
D2	Prioritise and promote the environment, and					
DZ	sustainability					

GROUP 3: (Core) Collection evidence

Ref.	Apprenticeship Standard Criteria		PORTFOLIO EVIDENCE REFERENCE (Apprentice Input)			
			1	2	3	
S10	Collect mitigation data or evidence					



Ref.	Apprenticeship Standard Criteria		PORTFOLIO EVIDENCE REFERENCE (Apprentice Input)			
	the second second second	1	2	3		
K14	Fault finding and problem-solving techniques: root					
	cause analysis and diagnostics. Optimisation					
S12	Identify issues. Apply fault-finding and problem-					
	solving techniques: identify root cause. Resolve					
	faults					
S13	Consider, identify, and promote areas for					
	improvement. For example, in relation to quality,					
	cost, time, safety, and impact					

GROUP 4: (Core) Fault-finding and problem solving: making recommendations

GROUP 5: (Core) Team working

Ref.	Apprenticeship Standard Criteria		PORTFOLIO EVIDENCE			
			REFERENCE (Apprentice Input)			
		1	2	3		
К19	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					
K20	Equality, diversity, and inclusion in the workplace					
	Identify and organise resources to complete tasks.					
S18	For example, equipment, traffic management, and					
	personnel					
S19	Prioritise work activities					
S23	Liaise with, negotiate with, and handle conflict in					
	individual or group environments					
B5	Team-focus to meet work goals: support others					
B6	Respond and adapt to work demands					
В7	Committed to continued professional development to		7			
	maintain and enhance competence in own area of		r			
	practice					



Ref.	Apprenticeship Standard Criteria		PORTFOLIO EVIDENCE			
			REFERENCE (Apprentice Input)			
			2	3		
K15	Information and digital technology: email, word					
	processing, spreadsheets, presentation, remote					
	working platforms, and work and asset management					
	systems. General Data Protection Regulation					
	(GDPR). Cyber security					
S14	Use information technology. Follow cyber security					
	requirements. Comply with GDPR					




		PORTFOLIO EVIDENCE				
Ref.	. Apprenticeship Standard Criteria		REFERENCE (Apprentice Input)			
		1	2	3		
	Leakage monitoring methods and equipment: leak					
K32	noise correlators, ground microphones, listening					
NJ2	stick, acoustic loggers, and step test. 'Reactive' use					
	of flow meter data (telemetry or nightlines)					
	Select and use leakage detection tools and methods					
634	to identify source of leakage. For example, step					
334	testing, acoustic and electronic, data logging ground					
	microphones, and correlators					

GROUP 7: (Water distribution network technician) Detecting leakage

GROUP 8: (Water distribution network technician) Pressure and flow measurement

		PORTFOLIO EVIDENCE			
Ref.	Ref. Apprenticeship Standard Criteria		NCE (Apprer	ntice Input)	
			2	3	
K31	Water distribution network technician. Pressure				
management. Low Pressure Register (DG2).					
\$25	Read and interpret technical data for example, flows				
525	and pressures				
S26	Install pressure gauges				
S27	Conduct flow and pressure measurements				
S32	Set up temporary loggers (flow and pressure)				

GROUP 9: (Water distribution network technician) Water sampling

Ref.	Ref. Apprenticeship Standard Criteria		PORTFOLIO EVIDENCE REFERENCE (Apprentice Input			
		1	2	3		
K28	Water quality monitoring, sampling, and testing requirements and techniques. Equipment,					
	resources, and materials used. Sampling points					
S31	Sample for chemical and micro-biological analysis					

GROUP 10: (Water distribution network technician) Network optimisation

Ref.	Ref. Apprenticeship Standard Criteria		PORTFOLIO EVIDENCE REFERENCE (Apprentice Input)			
		1	2	3		
S33	Carry out network optimisation activity. For					
	example, PRV, PSV, and air valve maintenance					

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Ref.	Apprenticeship Standard Criteria		PORTFOLIO EVIDENCE REFERENCE (Apprentice Input)			
		1	2	3		
K27	Types of maintenance: planned preventative					
N27	maintenance, and reactive. Calibration requirements					
	Select and use equipment to complete planned					
636	preventative maintenance. For example, conduct					
330	high velocity mains cleansing and low turnover					
	flushing					

GROUP 11: (Water distribution network technician) Network maintenance

GROUP 12: (Water distribution network technician) Water fittings regulations

Ref.	Apprenticeship Standard Criteria	PORTFOLIO EVIDENCE			
		REFERENCE (Apprentice Input)			
		1	2	3	
	Apply and enforce water fittings regulations to				
S24	customer installations for example, rainwater				
	harvest systems and solar panels				



				DENCE
Ref.	Apprenticeship Standard Criteria	REFERE	NCE (Apprer	ntice Input)
		1	2	3
	Leakage detection operations. Sources of leakage.			
K36	High users. Unaccounted for properties. Change of			
1.00	use of buildings. Theft investigation. Customer side			
	leakage. Determining pipe ownership			
	Leakage performance monitoring methods and			
	equipment: leak noise correlators, ground			
K27	microphones, listening stick, acoustic loggers, and			
NJ7	dynamic pressure modelling. Data logging			
	operations. 'Proactive' use of flow meter data			
	(telemetry or nightlines)			
S13	Conduct targeted DMA (district metered area)			
545	survey			
S15	Access, download, and interpret data from pressure			
545	and flow loggers			

GROUP 7: (Water leakage technician) Monitoring leakage performance

GROUP 8: (Water leakage technician) Contributing to leakage trials

Ref.	Apprenticeship Standard Criteria		PORTFOLIO EVIDENCE REFERENCE (Apprentice Input)			
				1	2	3
K38	New leakage technology trials					
S46	Test and assess application of in	novativ	e leakage			
540	equipment					

GROUP 9: (Water leakage technician) Maintenance of meters or loggers

		PORTFOLIO EVIDENCE		
Ref.	Ref. Apprenticeship Standard Criteria		ICE (Apprer	ntice Input)
		1	2	3
K13	Types of maintenance: planned preventative			
N4 3	maintenance, and reactive. Calibration requirements			
S17	Apply maintenance practices to meters and loggers.			
547	Identify and arrange repairs			



Ref.	Apprenticeship Standard Criteria	PORTFOLIO EVIDENCE REFERENCE (Apprentice Input)			
		1	2	3	
K41	Valve and hydrant operations				
S38	Conduct step testing using valves				

GROUP 10: (Water leakage technician) Step testing



Ref.	Apprenticeship Standard Criteria	PORTFOLIO EVIDENCE REFERENCE (Apprentice Input)			
		1	2	3	
K45	Regulatory pollution reporting requirements and				
	individuals limits of authority. Flooding reporting				
	(DG5)				

GROUP 7: (Wastewater network technician) Responding to pollution incidents

GROUP 8: (Wastewater network technician) Maintenance

Ref.	Apprenticeship Standard Criteria		PORTFOLIO EVIDENCE REFERENCE (Apprentice Input)			
		1	2	3		
K52	Types of maintenance: planned preventative					
11.52	maintenance, and reactive					
K53	Combined sewer overflows operation and					
1100	maintenance requirements					

GROUP 9: (Wastewater network technician) Reacting to alarm

Ref.	Apprenticeship Standard Criteria	PORTFOLIO EVIDENCE REFERENCE (Apprentice Input)			
		1	2	3	
S55	Follow alarm response procedures				

GROUP 10: (Wastewater network technician) Specialist techniques

Ref.	Apprenticeship Standard Criteria	PORTFOLIO EVIDENCE REFERENCE (Apprentice Input)			
		1	2	3	
K55	Water jetting operations.				
K57	Sonde equipment for location of blockages or				
N37	defects.				
\$50	Use dye testing to trace and investigate cross or				
550	illegal connections.				
S52	Use sonde equipment.				



Appendix E: Observation with Questions Planning Sheet

Instructions

The practical observation must be designed to meet the requirements of the WINT standard and appropriate pathway (wastewater network/water network/water leakage).

- The apprentice is observed in their workplace. The apprentice completes their day-to-day duties under normal working conditions. This allows the apprentice to demonstrate the KSBs through naturally occurring evidence. Simulation is not permitted during the observation
- The observation with questions must take six hours. The observation may be split into discrete sections held on the same working day
- Equipment and resources needed for the observation must be in good and safe working condition.

The activities should be designed to assess a broad range of the skills, knowledge and behaviours developed over the period of the apprenticeship. However as a minimum the practical assessment will need to cover the activities listed overleaf.

The activities will need to be able to provide the evidence identified in the checklist on pages 4-7.

The activities for observation have been planned by

Full Name:	Date:
7	

Option:

Comments:



Equipment required:	Resources required:
Tools required:	Consumables required:



The following activities **should** be observed:

Activity	Description of planned activity				
Core activities					
A. Liaise with customers					
B. Survey and arrange street works' and traffic management requirements					
C. Maintain health and safety					
D. Maintain asset security					
E. Maintain network digital data and documentation					
Water distribution netw	vork technician activities				
F. Conduct valve operations in public access area					
G. Test water quality					
Water leakage technic	an activities				
H. Carry out leakage detection in public access area - validating the result and identifying action required					
Wastewater network technician activities					
I. Remove mains blockages in public access area					
J. Conduct asset inspection					



KSBs	Coverage check list: tick to confirm the planned activities provide the required coverage	Activity (A,B,C, D,E,F,G
		,H,I,J)
Work environment K8 K12 S2 S3 S4 S5	 Identifies and documents risks and hazards and applies control measures in-line with company procedures 	
B1	 Prioritises and promotes public health, workplace health and safety, and security by complying with regulations, working practices and procedures, to ensure the working environment is safe for themselves and others and secure 	
	Sets out signing, lighting and guarding in compliance with NRSWA requirements	
	Conducts vehicle checks in line with company procedures	
Work preparation	Traces and locates network services required for the task	
59511517	Checks tools and equipment are safe for use	
	Completes maintenance of tools and equipment including checking calibration records and calibration where required	
	Reads and interprets written information correctly to establish task requirements	
Procedures K4 S1 S21 B4	 Takes responsibility to complete tasks within limits of authority in compliance with industry regulations and company operational and quality procedures, identifying and escalating issues outside of limits of authority 	
Communicatio n and customer service	 Applies a professional approach using verbal, written and electronic communication techniques suitable for the context, adapting style and use of terminology to suit the audience 	



KSBs	Coverage check list: tick to confirm the planned activities provide the required coverage		
K16 K17	Uses sector and industry terminology correctly		
520 522 B3	 Provides advice and guidance to customers to meet their needs 		
Documentation K5 K18	□ Interprets digital mapping systems to understand asset location and configuration required for the task		
010010	 Updates digital mapping systems for example, enters corrective action updates identified during the task 		
	Completes digital work documentation required for tasks - entering and recording data and information correctly and in full		



Water Distribution Network Technician

KSBs	Cov the	verage check list: tick to confirm the task(s) provide required coverage	Activity (A,B,C, D,E,F,G ,H,I,J)
Valve		Identifies different valve types correctly	
operations K30 S28 S29 S35		Operates multiple valves, hydrants, and washouts including isolating and recharging of mains to achieve task requirements in line with company's procedures and DG3 requirements	
		Follows hygiene practices in line with industry and company's procedures	
		Inspects and checks network assets confirming operability, integrity, and status – identifying action required	
Test water quality S30		Selects and uses water quality testing equipment to test for water quality parameters in line with company's procedure to ensure water quality compliance	



Water Leakage Technician

KSBs	Co\ req	verage check list: tick to confirm the task(s) provide the uired coverage	Activity (A,B,C, D,E,F,G ,H,I,J)
Leakage detection S37 S39 S40 S41		Installs pressure gauges safely in line with manufacturers and company procedures. (S37)	
		Follows hygiene practices in line with industry and company procedures	
542 544		Sets up temporary loggers in line with manufacturers and company procedures	
		Selects and uses leakage detection equipment and methods suitable for the network assets to detect source of leakage and validates the result for example, velocity check and filtering	
		Reads and interprets technical data correctly for example, from pressure gauges and temporary loggers, identifying units of measurement	
		Selects and uses specific leakage detection equipment and methods to identify leakage pin-point	



Wastewater Network Technician

KSBs	Cov req	verage check list: tick to confirm the task(s) provide the uired coverage	Activity (A,B,C, D,E,F,G ,H,I,J)
Remove mains blockages K54 S53		Selects and uses blockage removal equipment appropriate for the task in line with company's procedures. (K54, S53)	
Asset inspection		Traces or locates drain or sewer required for the task. (S48)	
к56 S48 S49 S51 S54		Completes inspection – visual and using digital equipment – to check assets, identifying any issues and action required.	
		Uses digital inspection equipment in line with manufacturer's instructions for use. (K56, S49, S51)	
		Selects equipment appropriate for the task and applies first line maintenance techniques in line with company's procedures. (S54)	



Appendix F: Practice Observation with Questions Template

Name of Apprentice	
Location(s) of Practice Observation	
Name of Assessor	
Date of Practice Observation	
Start Time	
End Time	
Assessor additional comments	
	Grade

		Grade
Please indicate the apprentice's practic	e observation grade	
(F/P/D):		

Please Note:

To achieve a Pass, the Apprentice must achieve all the pass descriptors.

To achieve a Distinction, the Apprentice must achieve all the pass descriptors plus all the distinction descriptors.

Fail: the apprentice does not demonstrate the pass descriptors.



Important points

The following activities should be observed:

Liaise with customers

Survey and arrange street works and traffic management requirements

Maintain health and safety

Maintain asset security

Maintain network digital data and documentation

Conduct valve operations in public access area (Water distribution network technician activities)

Test water quality (Water distribution network technician activities)

Carry out leakage detection in public access area - validating the result and identifying action required (Water leakage technician activities)

Remove mains blockages in public access area (Wastewater network technician activities)

Conduct asset inspection (Wastewater network technician activities)

The assessor must ask questions about KSBs that were not observed to gather assessment evidence. These questions are in addition to the set number of questions for the observation and should be kept to a minimum.

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Work environment

To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors	P (Y/N)	To achieve a DISTINCTION the ap achieve ALL the pass descriptors a distinction descriptors	prentice must and all of the following	D (Y/N)
Identifies and documents risks and hazards and	y/n	N/A		
applies control measures in-line with company				
procedures. (S2)	v/n			
Prioritises and promotes public health, workplace	y/11			
health and safety, and security by complying with				
regulations, working practices and procedures, to				
ensure the working environment is safe for	y/n			
themselves and others and secure. (K12, S3, B1)				
Sets out signing, lighting and guarding in compliance	v/n			
with NRSWA requirements. (K8, S4)	<i>J</i> ,			
Conducts vehicle checks in line with company				
procedures. (S5)				
Questions				
Develop some open ended questions				
Comments: (what was observed)		Summary of response to question	on(s):	
		Audio recording		
		reference/timeline		

K8 New Roads and Street Works Act (NRSWA) - signing, lighting, and guarding. K12 Asset security requirements and procedures.

S2 Complete risk assessments: identify and document risks and hazards in the workplace. Apply control measures.



S3 Comply with health and safety regulations, and safe working and security practices and procedures.

- **S4** Set out and remove signing, lighting, and guarding. **S5** Conduct vehicle checks.
- **B1** Prioritise and promote public health, workplace health and safety, and security.

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Work preparation

To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors	P (Y/N)	To achieve a DISTINCTION the achieve ALL the pass descriptors following distinction descriptors	apprentice must s and all of the	D (Y/N)
Traces and locates network services required for the task. (S9) Checks tools and equipment are safe for use. Completes maintenance of tools and equipment including checking calibration records and calibration	y/n y/n y/n	N/A		
where required. (S11) Reads and interprets written information correctly to establish task requirements. (S17)	y/n			
Questions Develop some open ended questions				
Comments: (what was observed)		Summary of response to ques	tion(s):	
		Audio recording reference/timeline		

S9 Trace and locate network services.

S11 Check technician tools and equipment. Conduct maintenance for example, calibration.

S17 Read and interpret written information. For example, work instructions, and service level agreements.



Procedures

To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors	P (Y/N)	To achieve a DISTINCTION the a achieve ALL the pass descriptors following distinction descriptors	apprentice must s and all of the	D (Y/N)
Takes responsibility to complete tasks within limits of authority in compliance with industry regulations and	y/n	N/A		
company operational and quality procedures,				
identifying and escalating issues outside of limits of				
authority. (K4, S1, S21, B4)				
Questions				
Develop some open ended questions				
Comments: (what was observed)		Summary of response to quest	tion(s):	
7		Audio recording		
		reference/timeline		

K4 Operational and quality systems and procedures. Escalation procedures. What they are and how to use them.

S1 Comply with (water or wastewater) industry regulations and procedures.

S21 Identify and escalate issues.

B4 Take ownership for work and responsibility for the quality of work and impact on others.



To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors	P (Y/N)	To achieve a DISTINCTION the a achieve ALL the pass descriptors following distinction descriptors	apprentice must s and all of the	D (Y/N)
Applies a professional approach using verbal, written and electronic communication techniques suitable for the context, adapting style and use of terminology to suit the audience. Uses sector and industry terminology correctly. (K16, S20, B3) Provides advice and guidance to customers to meet their needs. (K17, S22)	y/n y/n y/n	Provides additional information to example, provides leaflets to sup digital interaction. (K17, S22)	o add value for port advice, promotes	y/n
Develop some open ended questions				
Comments: (what was observed)		Summary of response to quest	tion(s):	
		Audio recording		
		reference/timeline		

Communication and customer service

K16 Communication techniques: verbal, written and electronic. Adapting style to audience.

K17 Customer service techniques. Priority customers.

S20 Communicate verbally and in writing. For example, with colleagues, customers, and stakeholders. Use water industry terminology where appropriate.

S22 Provide advice and guidance to customers.

B3 Apply a professional approach.

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Documentation

To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors	P (Y/N)	To achieve a DISTINCTION the apprentice must achieve ALL the pass descriptors and all of the following distinction descriptors	D (Y/N)
Interprets digital mapping systems to understand asset location and configuration required for the task. Updates digital mapping systems for example, enters corrective action updates identified during the task. (K5, S15) Completes digital work documentation required for tasks - entering and recording data and information correctly and in full. (K18, S16)	y/n y/n y/n	Explains the importance of updating mapping systems and correct mapping records in relation to the potential impact on the network and customers. (K5)	y/n
Develop some open ended questions			
Comments: (what was observed)		Summary of response to question(s):	
		Audio recording reference/timeline	

K5 Digital documentation requirements (data logging) for example, maintenance records, and asset check records.

K18 Documentation requirements for example maintenance records, asset check records.

S15 Interpret digital mapping systems and update.

S16 Complete work documentation: enter and record data and information using digital technology for example, hand-held devices.



To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors	P (Y/N)	To achieve a DISTINCTION the a achieve ALL the pass descriptors following distinction descriptors	pprentice must and all of the	D (Y/N)
Identifies different valve types correctly.	y/n	Explains the importance of valve	and hydrant	y/n
Operates multiple valves, hydrants, and washouts	y/n	operations in maintaining a calm r	network and the	
including isolating and recharging of mains to achieve		impact of pressure transients on o	company assets and	
task requirements in line with company's procedures		customers. (K30)		
and DG3 requirements. (K30, S28)				
Follows hygiene practices in line with industry and				
company's procedures. (S29)	y/n			
Inspects and checks network assets confirming				
operability, integrity, and status – identifying action	y/n			
required. (S35)				
Questions				
Develop some open ended questions				
Comments: (what was observed)		Summary of response to quest	ion(s):	
		Audio recording		
		reference/timeline		

(WATER DISTRIBUTION NETWORK TECHNICIAN) Valve operations

K30 Valve and hydrant operations. Interruption to supply (DG3).

S28 Identify different valve types. Operate multiple valves, hydrants and washouts including isolation and recharging of mains.

S29 Follow hygiene practices for example, disinfect equipment.

S35. Inspect and check network assets for example, air values, PRV, critical values, fire hydrant. Identify action.

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(WATER DISTRIBUTION NETWORK TECHNICIAN) Test water quality

To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors	P (Y/N)	To achieve a DISTINCTION the apprentice must achieve ALL the pass descriptors and all of the following distinction descriptors	D (Y/N)
Selects and uses water quality testing equipment to	y/n	N/A	
test for water quality parameters in line with company's			
procedure to ensure water quality comp <mark>liance. (S30)</mark>			
Questions			
Develop some open ended questions			
Comments: (what was observed)		Summary of response to question(s):	
		Audio recording	
		reference/timeline	

\$30 Select and use water quality testing equipment to test for water quality for example, chlorine, turbidity, taste, odour, and clarity.



To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors	P (Y/N)	To achieve a DISTINCTION the apprentice must achieve ALL the pass descriptors and all of the following distinction descriptors	D (Y/N)
Installs pressure gauges safely in line with	y/n	Use of selected equipment achieves task efficiencies;	y/n
manufacturers and company procedures. (S37)		for example, mitigates against potential errors (right	
Follows hygiene practices in line with industry and	y/n	first time), applies advanced equipment features and	
company procedures. (S39)		functionality. (S42)	
Sets up temporary loggers in line with manufacturers	y/n		
and company procedures. (S40)	y/n		
Selects and uses leakage detection equipment and			
methods suitable for the network assets to detect			
source of leakage and validates the result for example,	y/n		
velocity check and filtering. (S41)			
Selects and uses specific leakage detection equipment	y/n		
and methods to identify leakage pin-point. (S42)			
Reads and interprets technical data correctly for			
example, from pressure gauges and temporary			
loggers, identifying units of measurement. (S44)			

(WATER LEAKAGE TECHNICIAN) Leakage detection

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To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors	P (Y/N)	To achieve a DISTINCTION the apprentice must achieve ALL the pass descriptors and all of the following distinction descriptors	D (Y/N)
Questions Develop some open ended questions			
Comments: (what was observed)		Summary of response to question(s):	
		Audio recording reference/timeline	

S37 Install pressure gauges.

S39 Follow hygiene practices for example, disinfect equipment.

S40. Set up temporary loggers (flow and pressure).

S41 Select and use initial leakage detection equipment and methods. For example, acoustic and electronic, data logging, ground microphones, and correlators.

S42 Use specific leakage detection equipment and methods to identify leakage pin-point for example, network or customer side.

S44 Read and interpret technical data for example, flows and pressures.



(WASTEWATER NETWORK TECHNICIAN) Remove mains blockages

To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors	P (Y/N)	To achieve a DISTINCTION the apprentice must achieve ALL the pass descriptors and all of the following distinction descriptors	D (Y/N)
Selects and uses blockage removal equipment	y/n	Use of selected equipment achieves task efficiencies;	y/n
appropriate for the task in line with company's		for example, mitigates against potential errors (right	
procedures. (K54, S53)		first time), applies advanced equipment features and	
		functionality. (S53)	
Questions			•
Develop some open ended questions			
Comments: (what was observed)		Summary of response to question(s):	
		Audio recording	
7		reference/timeline	

K54 Fat, oil, grease, and un-flushables procedures.

S53 Select and use blockage removal equipment for example, rods and jetting equipment.



(WASTEWATER NETWORK TECHNICIAN) Asset inspection

P (Y/N)	To achieve a DISTINCTION the a achieve ALL the pass descriptors following distinction descriptors	apprentice must s and all of the	D (Y/N)
y/n	N/A		
y/n			
y/n			
y/n			
	Summary of response to quest	tion(s):	
	Audio recording		
	reference/timeline		
	P (Y/N) y/n y/n y/n	P (Y/N) To achieve a DISTINCTION the achieve ALL the pass descriptors following distinction descriptors y/n N/A y/n N/A y/n Y/n y/n Summary of response to quest Audio recording reference/timeline	P To achieve a DISTINCTION the apprentice must achieve ALL the pass descriptors and all of the following distinction descriptors y/n N/A y/n N/A y/n Y/n y/n Summary of response to question(s): Audio recording reference/timeline Audio recording reference/timeline

K56 Investigatory equipment operations for example, CCTV operations. S48 Trace or locate drain or sewer.

S49 Complete visual inspection to check assets for example, combined sewer overflow, non-return valves, flow control devices, and storage tanks. Identify action.

S51 Use digital inspection equipment for example, CCTV to check assets. Identify action.

S54. Select and use equipment to apply first line maintenance techniques for example, replace seals, lubricate, de-silt, and de-scale.



Appendix G: Practice Interview Template

Name of Apprentice	
Location(s) of Practice Interview	
Name of Assessor	
Date of Practice Interview	
Start Time	
End Time	
Assessor additional comments	
	Grade

		Grade
Please indicate the apprentice's practic	e observation grade	
(F/P/D):		

Please Note:

To achieve a Pass, the Apprentice must achieve all the pass descriptors.

To achieve a Distinction, the Apprentice must achieve all the pass descriptors plus all the distinction descriptors.

Fail: the apprentice does not demonstrate the pass descriptors.



(Core) Working in the water industry

Pass Apprentices must descriptors	achieve ALL the following pass	Achieved Y/N*	Distinction Apprentice must achieve ALL the pass descriptors and ALL of the following distinction descriptors	Achieved Y/N*
Explains their role different teams ar (K2)	e, identifying how they work with nd functions involved in operations	y/n	N/A	
Questions Develop some op	en ended questions			
Timeline	Portfolio			
reference:	reference:			
Comments				

K2 Technician's role. Limits of autonomy. Different teams and functions involved in operations: how they work together.



(Core) The environment and sustainability

Pass Apprentices mus descriptors	t achieve ALL the following pass	Achieved Y/N*	Distinction Apprentices must achieve ALL the pass descriptors and ALL of the following distinction descriptors	Achieved Y/N*
Describes how th and apply contro	ney assess the impact of activity I measures. (S6)	y/n	N/A	
Describes how they comply with environment and sustainability regulations and procedures and apply the principles of sustainable development in line with regulations and company procedures. (S7, S8)		y/n		
Describes how th environment and (B2)	ney prioritise and promote the I sustainability in the workplace.	y/n		
Questions				
Develop some open ended questions				
Timeline	Portfolio			
reference:	reference:			



Pass Apprentices must achieve ALL the following pass descriptors	Achieved Y/N*	Distinction Apprentices must achieve ALL the pass descriptors and ALL of the following distinction descriptors	Achieved Y/N*
Comments			

S6 Conduct and assess impact of activity for example, environmental, cost, reputation, safety, and health. Apply control measures.

S7 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.

S8 Apply principles of sustainable development. For example, in choice of materials.

B2 Prioritise and promote the environment, and sustainability.



(Core) Collecting evidence

Pass Apprentices mus descriptors	st achieve ALL the following pass	Achieved Y/N*	Distinction Apprentices must achieve ALL the pass descriptors and ALL of the following distinction descriptors	Achieved Y/N*
Describes how t evidence to sup	hey collect mitigation data or port investigations. (S10)	y/n	N/A	
Questions Develop some o	open ended questions			
Timeline reference:	Portfolio reference:			
Comments	n data ar ovidanca			



(Core) Information technology

Pass Apprentices mu descriptors	ist achieve ALL the fo	ollowing pass	Achieved Y/N*	Distinction Apprentices must achieve ALL the pass descriptors and ALL of the following distinction descriptors	Achieved Y/N*
Describes how different purpos remote working management sy	they use information ses (email, word, exce platforms, work and ystems). (S14)	technology for el, presentation, asset	y/n	N/A	
Explains the importance of protecting data in line with legal and employer requirements. Explains measures they take to comply with general data protection regulations (GDPR) and cyber security and why it is important. (K15)		y/n			
Questions					
Develop some	open ended question:	ns			
Timeline reference:	Por	rtfolio erence:			



Pass Apprentices must achieve ALL the following pass descriptors	Achieved Y/N*	Distinction Apprentices must achieve ALL the pass descriptors and ALL of the following distinction descriptors	Achieved Y/N*
Comments			

K15 Information and digital technology: email, word processing, spreadsheets, presentation, remote working platforms, and work and asset management systems. General Data Protection Regulation (GDPR). Cyber security.

S14 Use information technology. Follow cyber security requirements. Comply with GDPR.

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(Core) Fault-finding and problem solving making recommendations

Pass Apprentices must achieve ALL descriptors	the following pass	Achieved Y/N*	Distinction Apprentices must ach and ALL of the followi	nieve ALL the pass descriptors ing distinction descriptors	Achieved Y/N*
Describes how they apply fault solving techniques, identifying issues and resolving faults in lin procedures. (K14, S12) Describes how they consider, in areas for improvement for exar quality, cost, time, safety, and i	-finding and problem- the root cause of ne with dentify, and promote nple, in relation to mpact. (S13)	y/n y/n	Evaluates the actual of improvement suggest	or potential value of a specific tion. (S13)	y/n
Questions			Questions		
Develop some open ended que	estions		Develop some open e	ended questions	
Timeline reference:	Portfolio reference:		Timeline reference:	Portfolio reference:	
Comments					

K14 Fault finding and problem-solving techniques: root cause analysis and diagnostics. Optimisation.

S12 Identify issues. Apply fault-finding and problem-solving techniques: identify root cause. Resolve faults.

S13 Consider, identify, and promote areas for improvement. For example, in relation to quality, cost, time, safety, and impact.



(Core) Team working

Pass Apprentices must achieve ALL the following pass descriptors	Achieved Y/N*	Distinction Apprentices must achieve ALL the pass descriptors and ALL of the following distinction descriptors	Achieved Y/N*
Describes how they prioritise work activities and identify and organise resources to meet task requirements. (S18, S19)	y/n	Describes how they achieve efficiencies in the use of time or resources. (S19)	y/n
Describes how they respond and adapt to meet work demands. (B6)	y/n		
Describes how they liaise, negotiate, and handle conflict in individual and group environments to achieve desired outcomes. (S23)	y/n		
Describes how they support others to meet the team's work goals using team working techniques and taking account of equality, diversity and inclusion. (K19, K20)	y/n		
Describes CPD they have undertaken and future plans for CPD, explaining how they keep up to date with industry and individual development. Explains	y/n		


Pass Apprentices must achieve ALL the following pass descriptors			Achieved S Y/N*	Distinction Apprentices mu and ALL of the	ust achieve ALL t following distinct	he pass descriptor ion descriptors	Achieved s Y/N*
what the impact of their CPD has been and how it has benefited others and the business. (B7)			it				
Questions Develop some open ended questions				Questions Develop some	open ended que:	stions	
Timeline reference:		Portfolio reference:		Timeline reference:		Portfolio reference:	
Comments							

K19 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.

K20 Equality, diversity, and inclusion in the workplace.

S18 Identify and organise resources to complete tasks. For example, equipment, traffic management, and personnel.

S19 Prioritise work activities.

S23 Liaise with, negotiate with, and handle conflict in individual or group environments.

B5 Team-focus to meet work goals: support others.

B6 Respond and adapt to work demands.

B7 Committed to continued professional development to maintain and enhance competence in own area of practice.



(WATER DISTRIBUTION NETWORK TECHNICIAN) Detecting leakage

Pass Apprentices must achieve descriptors	ALL the following pass	Achieved Y/N*	Distinction Apprentices must achieve ALL the pass descriptors and ALL of the following distinction descriptors	Achieved Y/N*
Describes how they select leakage detection tools an source of leakage for diffe (K32, S34)	t and use different nd methods to identify the erent leakage situations.	y/n	N/A	
Questions Develop some open ende	d questions			
Timeline reference:	Portfolio reference:			
Comments K32 Leakage monitoring method	ls and equipment: leak noise con	relators, grour	nd microphones, listening stick, acoustic loggers, and step test. 'R	eactive' use

of flow meter data (telemetry or nightlines). **S34** Select and use leakage detection tools and methods to identify source of leakage. For example, step testing, acoustic and electronic, data logging ground

S34 Select and use leakage detection tools and methods to identify source of leakage. For example, step testing, acoustic and electronic, data logging ground microphones, and correlators.



(WATER DISTRIBUTION NETWORK TECHNICIAN) Pressure and flow measurement

Pass Apprentices mu descriptors	ist achieve ALL the foll	owing pass	Achieved Y/N*	Distinction Apprentices mu and ALL of the	ist achieve ALL t following distinct	he pass descripto ion descriptors	Achieved rs Y/N*
Describes how they install pressure gauges safely in line with manufacturers' and company procedures. (S26)			y/n	Evaluates why to the water ind	meeting DG2 red lustry. (K31)	quirements is critic	cal y/n
Describes how they set up temporary loggers following manufacturers' or employer's guidelines to find out if there is a pressure or flow issue. (S32)			y/n				
Describes how they conduct flow and pressure measurements, reading and interpreting technical data correctly identifying units of measurement and confirming level of service. (K31, S25, S27)			y/n				
Questions				Questions			
Develop some open ended questions			Develop some	open ended que	stions		
Timeline	Portf	olio		Timeline		Portfolio	
reference:	refer	ence:		reference:		reference:	



Pass Apprentices must achieve ALL the following pass descriptors	Achieved Y/N*	Distinction Apprentices must achieve ALL the pass descriptors and ALL of the following distinction descriptors	Achieved Y/N*					
Comments	Comments							
K31 Pressure management. Low Pressure Register (DG2).								
S25 Read and interpret technical data for example, flows and pres	ssures.							
S26 Install pressure gauges.								

S27 Conduct flow and pressure measurements.

S32 Set up temporary loggers (flow and pressure).



(WATER DISTRIBUTION NETWORK TECHNICIAN) Water sampling

Pass Apprentices must achie descriptors	eve ALL the following pass	Achieved Y/N*	Distinction Apprentices must achieve ALL the pass descriptors and ALL of the following distinction descriptors	Achieved Y/N*
Describes how they se equipment to test for cl analysis in line with con non-compliant samples selection and transport	lect and use sampling nemical and micro-biological mpany procedure avoiding s for example, correct tap ration. (K28, S31)	y/n	N/A	
Questions Develop some open ended questions				
Timeline reference:	Portfolio reference:			
Comments K28 Water quality monitoring	, sampling, and testing requirements	s and techniqu	les. Equipment, resources, and materials used. Sampling points.	

S31 Sample for chemical and micro-biological analysis.



(WATER DISTRIBUTION NETWORK TECHNICIAN) Network optimisation

Pass Apprentices must achieve ALL the following pass descriptors			Achieved Y/N*	Distinction Apprentices must achieve ALL the pass descriptors and ALL of the following distinction descriptors	Achieved Y/N*
Describes how they complete maintenance activity in line with company procedure to maintain or achieve network optimisation and maintain water quality. (S33)			y y/n	N/A	
Questions Develop some	open ended que	stions			
Timeline reference:		Portfolio reference:			
Comments					

S33 Carry out network optimisation activity. For example, PRV, PSV, and air valve maintenance.



(WATER DISTRIBUTION NETWORK TECHNICIAN) Network maintenance

Pass Apprentices must achieve ALL the following pass descriptors			Achieved Y/N*	Distinction Apprentices m and ALL of the	ust achieve ALL t following distinct	he pass descripto ion descriptors	Achieved rs Y/N*
Describes how they select equipment appropriate for the task and use equipment safely to complete planned preventative maintenance in line with company procedures; ensuring equipment is in calibration date. (K27, S36)			e y/n ie	Justifies use of approach over effectiveness,	Justifies use of planned preventative maintenance approach over others for example, cost, effectiveness, impact on water quality. (K27, S36)		e y/n
Questions				Questions	Questions		
Develop some o	open ended que	stions		Develop some	Develop some open ended questions		
Timeline reference:		Portfolio reference:		TimelinePortfolioreference:reference:			
Comments				1	1		

K27 Types of maintenance: planned preventative maintenance, and reactive. Calibration requirements.

S36 Select and use equipment to complete planned preventative maintenance. For example, conduct high velocity mains cleansing and low turnover flushing.



(WATER DISTRIBUTION NETWORK TECHNICIAN) Water fittings regulations

Pass Apprentices must achieve ALI descriptors	₋ the following pass	Achieved Y/N*	Distinction Apprentices must achieve ALL the pass descriptors and ALL of the following distinction descriptors	Achieved Y/N*
Describes how they apply and	enforce water fittings	y/n	N/A	
regulations for customer insta	liations for different		y/n	
situations. (S24)				
Questions				
Develop some open ended qu	lestions			
Timeline	Portfolio			
reference:	reference:			
Comments				

S24 Apply and enforce water fittings regulations to customer installations for example, rainwater harvest systems and solar panels.



(WATER LEAKAGE TECHNICIAN) Monitoring leakage performance

Pass Apprentices mu descriptors	ist achieve ALL th	ne following pass	Achieved Y/N*	Distinction Apprentices mu and ALL of the	ust achieve ALL t following distinct	he pass descriptor ion descriptors	Achieved s Y/N*
Describes how they conduct targeted DMA surveys using leakage performance monitoring methods and equipment suitable for the network assets to detect source of leakage. (K36, K37, S43)			ys y/n and ect	Evaluates data improve networ and infrastructu	to justify potentian rk performance th are improvement.	al approaches to prough optimisation (S45)	y/n
Describes how they access, download, and interpret data from pressure and flow loggers to make evidence based judgements about for example, high consumption users, meter faults, and usage trends. (S45)			y/n Ind				
Questions				Questions			
Develop some open ended questions				Develop some	open ended que	stions	
Timeline		Portfolio		Timeline		Portfolio	
reference:		reference:		reference:		reference:	



Pass Apprentices must achieve ALL the following pass descriptors	Achieved Y/N*	Distinction Apprentices must achieve ALL the pass descriptors and ALL of the following distinction descriptors	Achieved Y/N*
Comments			

K36 Leakage detection operations. Sources of leakage. High users. Unaccounted for properties. Change of use of buildings. Theft investigation. Customer side leakage. Determining pipe ownership.

K37 Leakage performance monitoring methods and equipment: leak noise correlators, ground microphones, listening stick, acoustic loggers, and dynamic pressure modelling. Data logging operations. 'Proactive' use of flow meter data (telemetry or nightlines).

S43 Conduct targeted DMA (district metered area) survey.

S45 Access, download, and interpret data from pressure and flow loggers.



(WATER LEAKAGE TECHNICIAN) Contributing to leakage trials

Pass Apprentices must achieve ALL descriptors	the following pass	Achieved Y/N*	Distinction Apprentices must achieve ALL the pass descriptors and ALL of the following distinction descriptors	Achieved Y/N*
Describes how they test and a of innovative leakage equipme benefits over existing equipme (K38, S46)	ssess the application nt to identify its nt or technology.	y/n	N/A	
Questions Develop some open ended qu	estions			
Timeline reference:	Portfolio reference:			
Comments				

K38 New leakage technology trials.

S46 Test and assess application of innovative leakage equipment.



(WATER LEAKAGE TECHNICIAN) Maintenance of meters or loggers

Pass Apprentices must achieve ALL the following pass descriptors			Distinction Apprentices must achieve ALL the pass descriptors and ALL of the following distinction descriptors	Achieved Y/N*		
Describes how they apply ma meters and loggers in line wit instructions and company pro equipment is in calibration da arranging repairs in line with (K43, S47)	intenance practices t n manufacturer's cedures - ensuring æ, identifying and company procedures	o y/n	N/A			
Questions						
Develop some open ended q	lestions					
Timeline	Portfolio					
reference:	reference:					
Comments						

K43 Types of maintenance: planned preventative maintenance, and reactive. Calibration requirements.

S47 Apply maintenance practices to meters and loggers. Identify and arrange repairs.



(WATER LEAKAGE TECHNICIAN) Step testing

Pass Apprentices must achieve ALL the following pass descriptors		Achieved Y/N*	Distinction Apprentices must achieve ALL the pass descriptors and ALL of the following distinction descriptors		Achieved Y/N*	
Describes how they conduct step testing using valves in line with company procedures. (K41, S38)		y/n	Justifies how their step testing plan mitigated risks and ensured planned outcome for example, stakeholder and customer engagement, contingencies, network returned to normal operating status. (S38)		y/n	
Questions Develop some open ended questions			Questions Develop some op	pen ended questions		
Timeline reference:	Portfolio reference:		Timeline reference:	Portfo refere	olio ence:	
Comments			·			

K41 Valve and hydrant operations.

S38 Conduct step testing using valves.



(WASTEWATER NETWORK TECHNICIAN) Responding to pollution incidents

Pass Apprentices must achieve ALL the following pass descriptors		Achieved Y/N*	Distinction Apprentices must achieve ALL the pass descriptors and ALL of the following distinction descriptors		Achieved Y/N*
Describes regulatory pollution reporting requirements and individual's limits of authority and flooding reporting in line with industry procedures. (K45)		y/n	Evaluates the importance of meeting regulatory requirements. (K45)		y/n
Questions Develop some open ended questions			Questions Develop some open e	ended questions	
Timeline reference:	Portfolio reference:		Timeline reference:	Portfolio reference:	
Comments			· · · · ·		

K45 Regulatory pollution reporting requirements and individuals limits of authority. Flooding reporting (DG5).



(WASTEWATER NETWORK TECHNICIAN) Maintenance

Pass Apprentices must achieve ALL the following pass descriptors		Achieved Y/N*	Distinction Apprentices must achieve ALL the pass descriptors and ALL of the following distinction descriptors		Achieved ors Y/N*		
Explains different types of maintenance practices. (K52) Explains the requirements for combined sewer overflows operation and maintenance in line company's procedures. (K53)		y/n y/n	Justifies use of planned preventative maintenance approach over others for example, cost, effectiveness, impact on whole-life asset costs. (K52)			e y/n	
Questions			Questions				
Develop some open ended questions			Develop some	Develop some open ended questions			
Timeline reference:		Portfolio reference:	ortfolio ference:			Portfolio reference:	
Comments		<u> </u>		1			

K52 Types of maintenance: planned preventative maintenance, and reactive.

K53 Combined sewer overflows operation and maintenance requirements...



(WASTEWATER NETWORK TECHNICIAN) Reacting to alarms

Pass Apprentices must achieve ALL the following pass descriptors		Achieved Y/N*	Distinction Apprentices must achieve ALL the pass descriptors and ALL of the following distinction descriptors	Achieved Y/N*
Describes regulatory pollution reporting requirements and individual's limits of authority and flooding reporting in line with industry procedures. (K45)		y/n	N/A	
Questions Develop some open ended questions				
Timeline reference:	Portfolio reference:			
Comments	· · · · ·			

S55 Follow alarm response procedures.



(WASTEWATER NETWORK TECHNICIAN) Specialist techniques

Pass Apprentices mu descriptors	ust achieve ALL the following pass	Achieved Y/N*	Distinction Apprentices must achieve ALL the pass descriptors and ALL of the following distinction descriptors	Achieved Y/N*
Explains the circumstances when water jetting operations would be required and considerations for use. (K55)		y/n	N/An	
Describes how they use sonde equipment for blockage or defect location in line with company's procedures. (K57, S50)		y/n		
Describes how they use dye testing to trace and investigate cross or illegal connections in line with company's procedures. (S50)		y/n		
Questions				
Develop some open ended questions				
Timeline	Portfolio			
reference:	reference:			



Pass Apprentices must achieve ALL the following pass descriptors	Achieved Y/N*	Distinction Apprentices must achieve ALL the pass descriptors and ALL of the following distinction descriptors	Achieved Y/N*
Comments K55 Water jetting operations.			

K57 Sonde equipment for location of blockages or defects.

S50 Use dye testing to trace and investigate cross or illegal connections.

S52 Use sonde equipment.



Additional follow up questions	Apprentice Response			
	Timeline reference:	Portfolio reference:		
	Timeline reference:	Portfolio reference:		
	Timeline reference:	Portfolio reference:		



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