Our goal has been to secure compliance with Regulation 31 by focusing on continuous improvement, not only at Anglian Water, but by leading on this regulatory issue across the water industry.

Key actions taken to date include:

Investment in technology and new ways of working: In January 2022 we launched our Materials in Contact Improvement Programme (MIC Programme), to overhaul our systems and processes, investing in a new computerised application to support a 'right first-time' approach and a fully embedded digital solution to ensuring adherence to Regulation 31.

MIC Programme: This has focused on the end-to-end process of design and procurement to installation and commissioning of products. Taking a leadership position to provide and develop training to enable people working across the industry to support competency and understanding of Regulation 31.

Since 2022 the programme has been served full-time by a dedicated Programme Manager, three Project Managers, a change resource and a Subject Matter Expert. This is alongside the work completed directly with suppliers and contractors, and the development of the industry Regulation 31 training with the Energy and Utility Skills Register ('EUSR').

Culture change: The Executive Committee led from the front in terms of Materials in Contact two years prior to my arrival, making strides in performance and improving understanding across the business. I have built upon this with the team, by refocussing on our operational efforts and enabling the business to fully embed Materials in Contact into daily operational and capital works.

Investment in protecting customer supplies

Prior to my arrival, the business spent approximately £550,000 to rectify the issues identified at Hannington Reservoirs 1A and B, Pitsford Storage Tank B, Diddington Reservoir and Kedington Contact and Balance Tanks (as detailed in the witness statement of [redacted]). This was taken further by then physically reviewing an additional 16 storage tanks at a cost of £150,000 to confirm that no similar issues were present and to secure water supplies to our customers.

Signed [redacted]

Date: 29 January 2025

In addition to the almost £2 million spent through the Materials in Contact programme, Anglian Water also led and financed a national Materials in Contact conference in 2023, at a cost of approximately £8,000.

In addition to the financial expenditures outlined above, the investment of time and resource from Anglian Water employees has equated to approximately £500,000.

I have worked with my Executive Team to commit a further £50 million across AMP8 for the storage point programme. This was ahead of the final financial determination and not included in our AMP8 submissions to Ofwat.

Anglian Water leading and working with others to achieving greater outcomes

Collaborating across industry has seen us lead initiatives internally and externally, including:

- **Leading a national conference** in London on 20th April 2023 on Regulation 31, which brought together a cross-section of people involved in the design, installation and procurement of products in the water industry. This ensured that collaboration was not restricted to water companies, but that suppliers and contractors to the industry were fully included as part of the conference.
- **Being the first in construction and utilities** to develop a mature approach to alliancing. Anglian Water acts in partnership with external businesses such as Mott MacDonald Bentley ('MMB'), MWH Treatment, Barhale and Skanska. These alliances act as a team within an Anglian Water Department, working with partner businesses as one organisation.

Our commitment as a Purpose-driven company

We are conscious of the weight of responsibility we bear to deliver safe, clean water and recycle it effectively and to protect and enhance our environment and enrich our communities. That responsibility drove us in 2019 to become the first utility to embed our purpose into our Articles of Association, locking public interest into the fabric of our business and the decisions we make each day. This means that our directors are legally obliged to consider the impact of the Board's decisions on the

Signe[redacted]

Date: 29 January 2025

environment and on the communities we serve. This change codifies the way Anglian Water has operated for many years, and locks in the obligation for future owners and investors.

Alongside this, we have acted as lead sponsor alongside the British Standards Institution (BSI) to create a new Publicly Available Specification (PAS) for embedding purpose in organisations - PAS 808: 2022 Purpose-Driven Organisations: Worldviews, Principles and Behaviours. In 2023, we were the first company to be assessed against PAS 808 by BSI. As part of the initial pilot, BSI are taking forward our assessment and using it to develop a framework that can be used by other companies.

In 2020, we received the Queen's Award for Enterprise: Sustainable Development for the second time. In 2023/24, Business in the Community's Responsible Business Tracker score for Anglian Water increased to 87% (versus a cohort average of 48%) and we scored 100% for Purpose.

Capital investment

Our current 2020-2025 programme was our biggest to date, totalling around £6 billion of investment.

Our 2025-2030 Business Plan, returned from Ofwat at Final Determination is worth £11 billion, with significant investments set out at over £4 billion specifically in the environment, including securing water supplies. Efficiencies are either reinvested to improve our services or shared with customers, helping to keep bills down. Since privatisation our bills have risen little more than 10% in real terms, compared to an industry average increase of 40%.

The commitment from of our investors

Anglian Water's shareholders have made significant financial investment in Anglian Water Group, and by extension, in the region we serve. This year our shareholders agreed £350 million of additional investment to support the delivery of our Strategic Interconnector Grid (which will move water freely across the region from wetter to drier areas) and to accelerate work on improving our pollution and spills performance.

Signed: 

Date: 29 January 2025

Our investors consist of mostly pension funds that invest to service the retirement needs of many millions of pensioners. In 2021 our shareholders provided an equity injection of £1.165 billion into the company to reduce the level of debt. After dividend payments during AMP7, this has meant that a net equity injection of £731.4 million has been made into the company.

Our external shareholders did not receive a dividend from 2017 until 2022, choosing to prioritise instead, the long-term needs of the business and our customers.

Conclusion

Anglian Water is an industry leader in Regulation 31 oversight and compliance. This makes these offences all the more disappointing. I hope that the substantial investments outlined in this statement demonstrate how seriously we have taken this matter.

In addition to the completed remedial actions identified in relation to each asset concerned, the company is committed to delivering the MIC Programme and its full implementation. Protecting the water supply of our customers could not be more fundamental to our business. It is critical to securing long-term resilience for our region and is enshrined in our Purpose — to bring environmental and social prosperity to the region we serve through our commitment to 'Love Every Drop'.

We will continue to learn lessons if events happen, and work closely with our regulators to embed best practice. We are constantly striving to improve our systems, to predict, mitigate and, where possible, eliminate risks to water supply and environmental risks.

On behalf of all of my colleagues at Anglian Water I reiterate again our regret in this matter, and hope this statement goes some way to stressing the importance of our work in this area.

Signed: 

Date: 29 January 2025

Doing the right thing to keep our water supply safe

Materials in Contact Toolbox Talk 2021

love every drop
anglianwater

Introduction

The aim of this Toolbox Talk is to provide a refresher on key takeaways and updates of the Materials in Contact (MIC) procedure, so we continue to do the right thing by keeping our water supply safe for our customers.

Why?

We've recently had an increase in Materials in Contact (MIC) near misses. We must ensure we are focused on MIC to:

- keep the water supply safe to our customers
- stay legally compliant with Regulation 31
- prevent additional rework, time and costs

Regulation 31

It is a legal requirement that all materials and products used in contact with water from source to tap are compliant with Regulation 31, failure to comply is a Criminal Offence.

Key takeaways

- Plan ahead with MIC and complete forms early
- Make sure you and your team have the correct training
- Know your approval routes for compliance – Small Surface Area
- Know your approval routes for compliance – Large Surface Area
- Keep up to date and ask a scientist

Plan ahead with MIC and complete forms early

Make sure you and your team have the correct training

Know your approval routes for compliance – Small Surface Area

Know your approval routes for compliance – Large Surface Area

Keep up to date and ask a scientist

To prevent delays, raise MIC forms through the Water Quality (WQ) Risk Team at the earliest opportunity – email WQRiskandOptimisatio@anglianwater.co.uk

All products and materials on Part A must be signed off by the WQ Risk Team before purchase.

MIC form part A:

Any additions or changes to materials throughout schemes, need to be updated on the MIC form at the earliest opportunity and communicated to the WQ Risk Team.

MIC forms must be completed in line with our procedure, including in the case of like for like replacements.

Plan ahead with MIC and complete forms early

Make sure you and your team have the correct training

Know your approval routes for compliance – Small Surface Area

Know your approval routes for compliance – Large Surface Area

Keep up to date and ask a scientist

Anyone completing an MIC form must first complete both the MIC e-learning course and the MIC classroom course.

- **Materials in Contact e-learning course**

Can be found on Workday and must be completed every 3 years for anyone purchasing materials or working with our water assets. Are you up to date?

- **Materials in Contact classroom course**

Do you have enough trained people in your team? Contact the Water Training Team to book your place - rwater@anglianwater.co.uk

Plan ahead with MIC and complete forms early

Make sure you and your team have the correct training

Know your approval routes for compliance – Small Surface Area

Know your approval routes for compliance – Large Surface Area

Keep up to date and ask a scientist

- If an item is not listed on DWI advice sheet 8, a contact score should be documented along with the MIC form to demonstrate the item can be considered as small surface area and follow a small surface area approval route.
- We now require evidence of valid BS6920 testing for non-metallic containing KIWA approved products. KIWA approvals may be granted with testing that does not always align with our requirements for BS6920 certification.
- Small Surface Area Risk Assessments are **not** a valid alternative for approvals. Small Surface Area Exception Risk Assessments may only be considered in agreement with the risk team for items that will temporarily be in contact with water i.e. a remotely operated vehicle (ROV) or camera, or where they will not be in direct contact with water i.e. ultrasonic level probes above the waterline.
- Ensure you are aware of any required Instructions for Use (IFU) associated with the approval. It is not appropriate to use alternate cure times and 'equivalent' cure curves unless they are specifically noted as suitable under the approval listing. Cure conditions (i.e. time and temperature) must be recorded. **Remember, approvals are only valid if the IFU is followed.**

Plan ahead with MIC and complete forms early

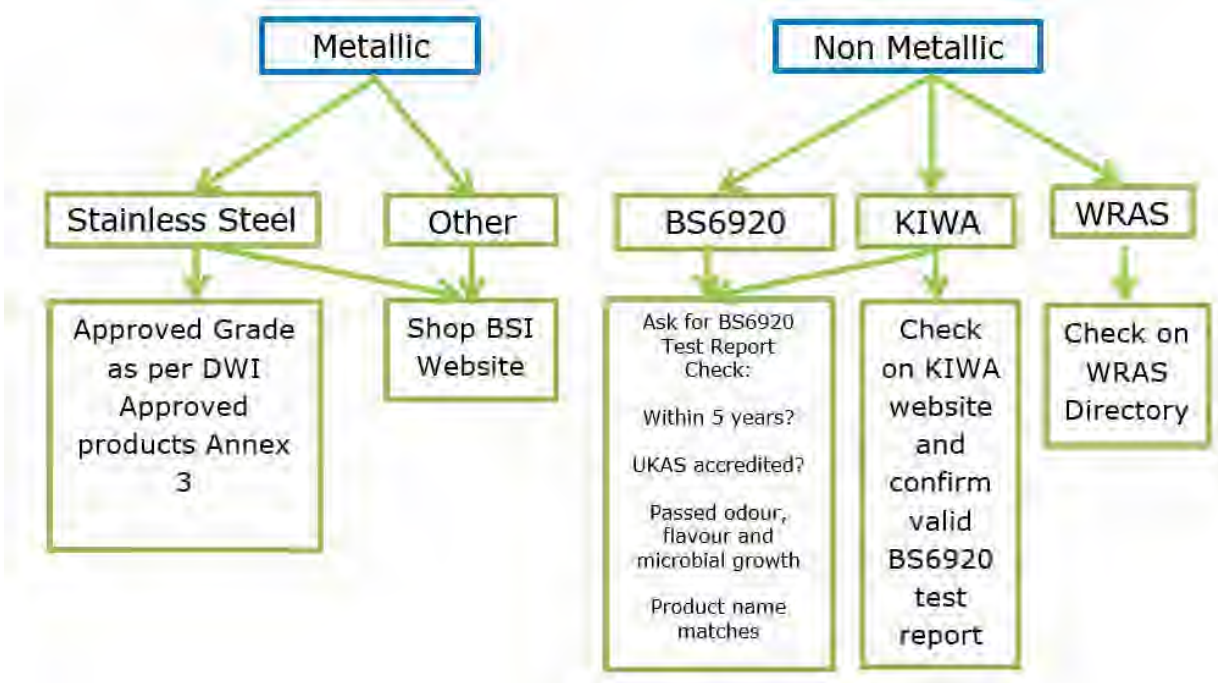
Make sure you and your team have the correct training

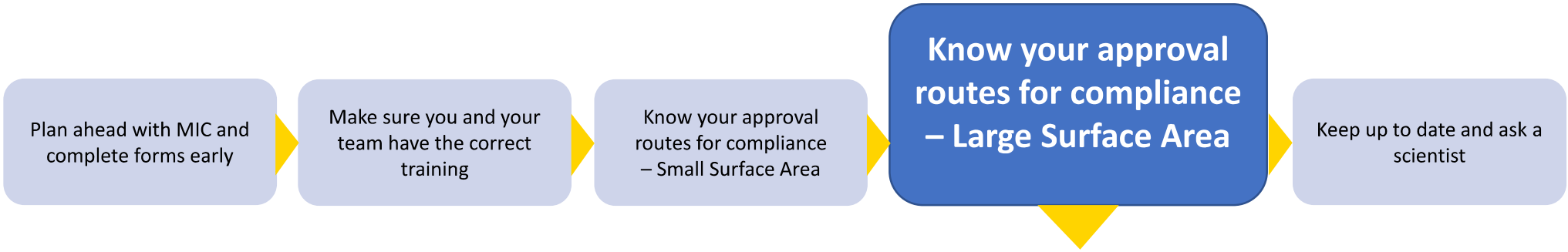
Know your approval routes for compliance – Small Surface Area

Know your approval routes for compliance – Large Surface Area

Keep up to date and ask a scientist

Small surface approval routes





- Large Surface Area items must have a live DWI approval when water is first passed through them, and cannot be introduced after expiry, even if purchased before the expiry date.
- Ion exchange resins used to produce softened water for chemical dilution/generation must now be considered as large surface area after recent DWI industry guidance. Please discuss the planned use or replacement of any ion exchange resins with your local Risk Scientist.
- Large Surface Area items made of stainless steel must have a listing by it's manufacturer on the full DWI Approved Products List with a current DWI number. Recognised grades of stainless steel, as listed on Annex 3C, cannot be used as a route of compliance for Large Surface Area items.
- Ensure you have a copy of the relevant Instructions for Use (IFU), can meet all the requirements (may include storage, installation/ application and ongoing use/ maintenance) and are using the item in the way it is intended to be used. Cure conditions (i.e. time and temperature) must be recorded. **Remember, approvals are only valid if the IFU is followed.**

Plan ahead with MIC and complete forms early

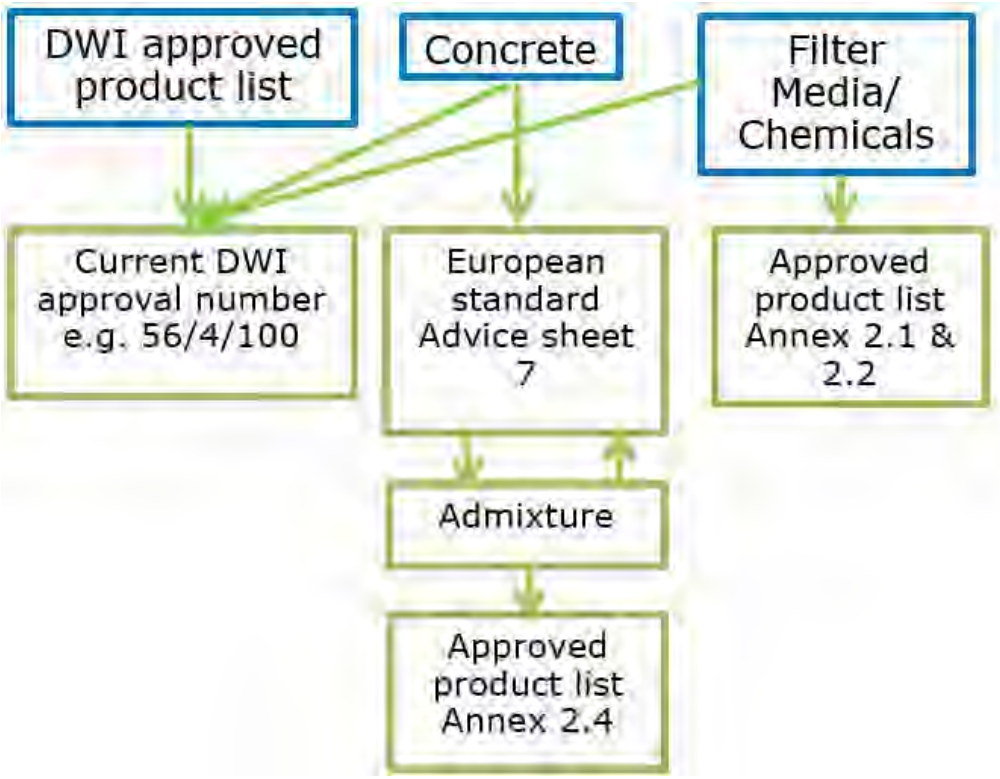
Make sure you and your team have the correct training

Know your approval routes for compliance – Small Surface Area

Know your approval routes for compliance – Large Surface Area

Keep up to date and ask a scientist

Large surface approval routes



Plan ahead with MIC and complete forms early

Make sure you and your team have the correct training

Know your approval routes for compliance – Small Surface Area

Know your approval routes for compliance – Large Surface Area

Keep up to date and ask a scientist

Read the recently updated Materials in Contact Procedure - Materials and Chemicals in Contact with Water

Recent Water Quality Updates – MIC Near Miss Booster Pumps, MIC Compliance for Booster Pump Expansion Vessels, MIC Good Catch Missing Coating, MIC Stainless Steel, MIC Near Miss Treatment Scheme Installation

Our MIC lighthouse page has been updated with useful links and content.

If in doubt, contact your local risk scientist – WQ Risk Network Map and Supply Map or email the WQ Risk Team - WQRiskandOptimisatio@anglianwater.co.uk

Always remember to do the right thing and comply with Regulation 31 to keep the water supply safe to our customers.

WAQ-MTD-9.1
METHODOLOGY FOR MATERIALS AND CHEMICALS IN CONTACT WITH WATER

TABLE OF RESPONSIBILITIES

The following tables are provided only as a guide to the major tasks and the personnel responsible for their delivery. It should not be viewed as a comprehensive list of tasks and responsibilities for these activities.

Task	Responsibility of
Ensure any materials or chemicals used in contact with treated or untreated potable water comply with Regulation 31	Manager or Engineer responsible for undertaking work (e.g. Treatment Manager)
Ensure Drinking Water Standards are notified of intent to use material and how it complies with Regulation 31	Manager or Engineer responsible for undertaking work
Ensure appropriate samples are taken following use of material.	Manager or Engineer responsible for undertaking work
Provide advice relating to Regulation 31	Drinking Water Standards Team
Ensure approval documentation is issued and records are kept	Drinking Water Standards Team
Ensure records are kept of materials used in schemes / repairs	Manager or Engineer responsible for undertaking work

PURPOSE OF METHODOLOGY

This purpose of this methodology is to ensure that all materials and chemicals used in contact with treated or untreated water intended for potable use comply with the requirements of Regulation 31, such that the quality of drinking water is not compromised by their introduction. This methodology sets out the requirements of the regulation and defines the process by which materials and chemicals are confirmed as approved and the water quality is assessed following the completion of the work.

METHODOLOGY

The approval process for materials and chemicals in contact with water is outlined in ***flowchart 1*** . If the work is unavoidably urgent, the advice of the drinking water standards team should be sought.

1. Materials and chemicals which are to be used in contact with treated or untreated water intended for potable use will comply with Regulation 31 of the ***Water Quality Regulations***. If the approval route for a material is not clear, the advice of the Drinking Water Standards team may be sought.

2. The Drinking Water Standards team must be notified well in advance of intended use using the form ***Request for Approval – materials in contact with water*** . Details of the materials to be used in the work and the route by which these are approved under Regulation 31 must be provided.

3. The Drinking Water Standards team will issue a memo confirming approval. The intended work may then proceed.

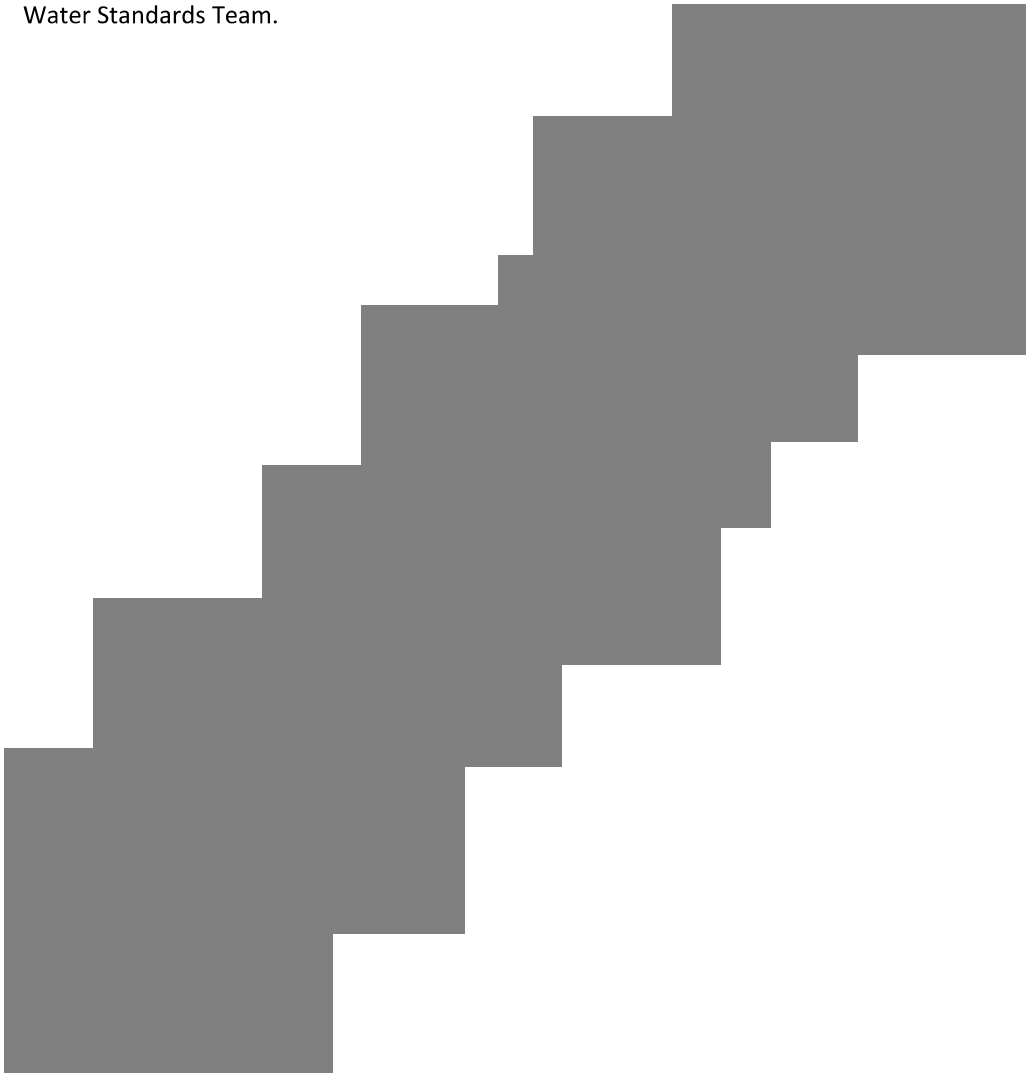
4. The person responsible for the work must confirm to the Drinking Water Standards Team that the agreed materials have been used and ensure appropriate records are kept.

5. Following completion of the work, and before the asset is returned to supply, appropriate and representative samples must be taken and analysed for the parameters listed in ***WAQ-STD-9.1, Appendix 1*** as a minimum.

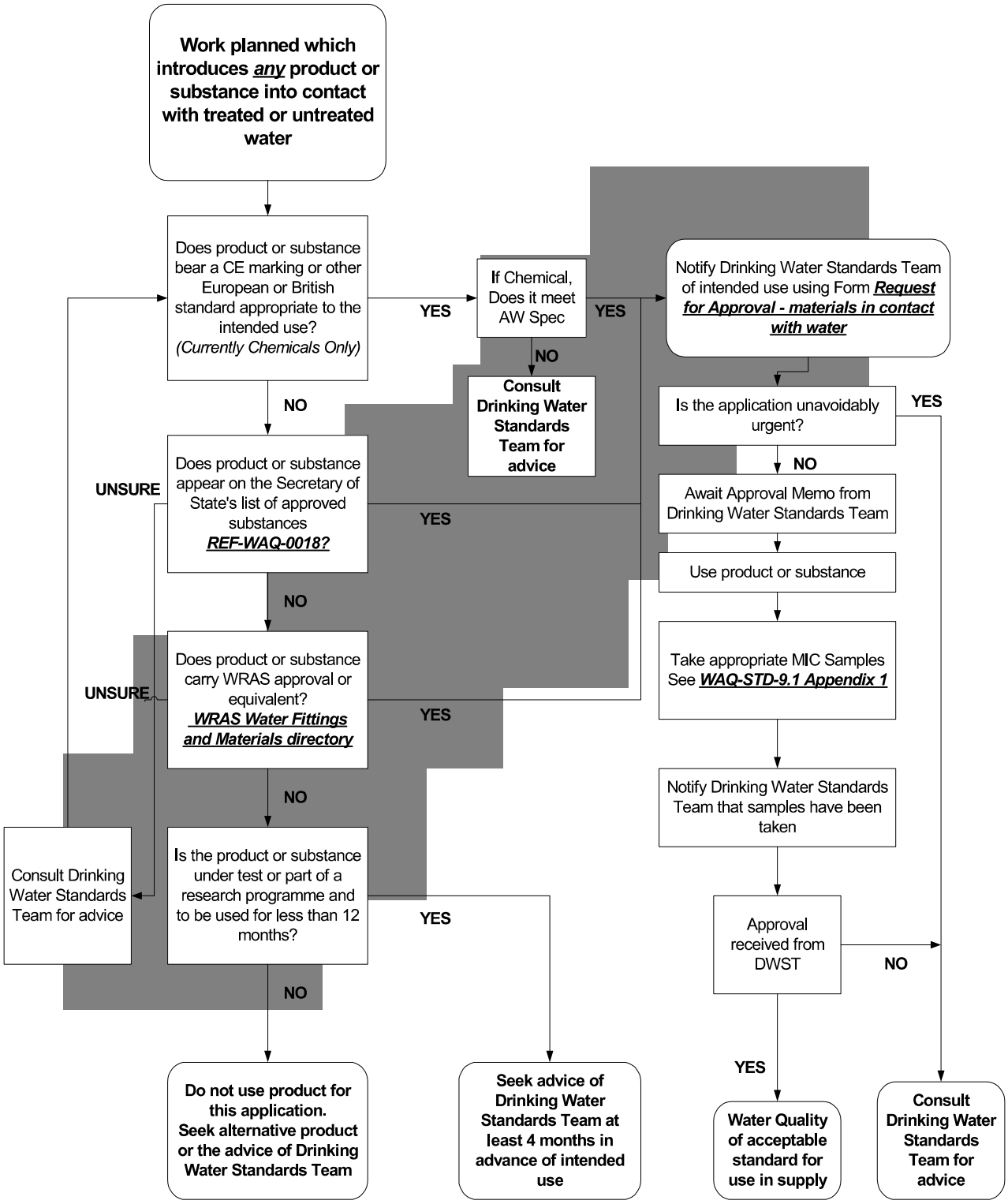
6. The Drinking Water Standards Team must be notified when the samples have been taken.

7. Once analysis of the samples is complete and the results are known, the Drinking Water Standards Team will assess the results and issue a sample clearance memo confirming whether the water quality associated with the asset is of an acceptable standard for use in supply.

8. If sample results suggest water quality is not of a sufficient standard to enable a sample clearance memo to be issued, further actions in order to achieve clearance will be agreed with the Drinking Water Standards Team.



FlowChart 1
Approval Process For Materials and Chemicals in Contact With Water



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Ensure Drinking Water Standards are notified of intent to use material and how it complies with Regulation 31	Manager or Engineer responsible for undertaking work
Ensure appropriate samples are taken following use of material.	Manager or Engineer responsible for undertaking work
Provide advice relating to Regulation 31	Drinking Water Standards Team
Ensure approval documentation is issued and records are kept	Drinking Water Standards Team
Ensure records are kept of materials used in schemes / repairs	Manager or Engineer responsible for undertaking work
Ensure audits of forms are carried out	Drinking Water Standards Team

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METHODOLOGY

The approval process for materials and chemicals in contact with water is outlined in ***flowchart 1 & 2***. If the work is unavoidably urgent, the advice of the Drinking Water Standards Team should be sought.

1. Materials and chemicals, which are to be used in contact with, treated or untreated water intended for potable use will comply with Regulation 31 of the ***Water Quality Regulations***. If the approval route for a material is not clear, the advice of the Drinking Water Standards Team may be sought.

2. The Drinking Water Standards Team must be notified well in advance of intended use using the form ***Materials in contact with water approval form*** . Details of the materials to be used in the work and the route by which these are approved under Regulation 31 must be provided.

3. The Drinking Water Standards Team will confirm approval. The intended work may then proceed.

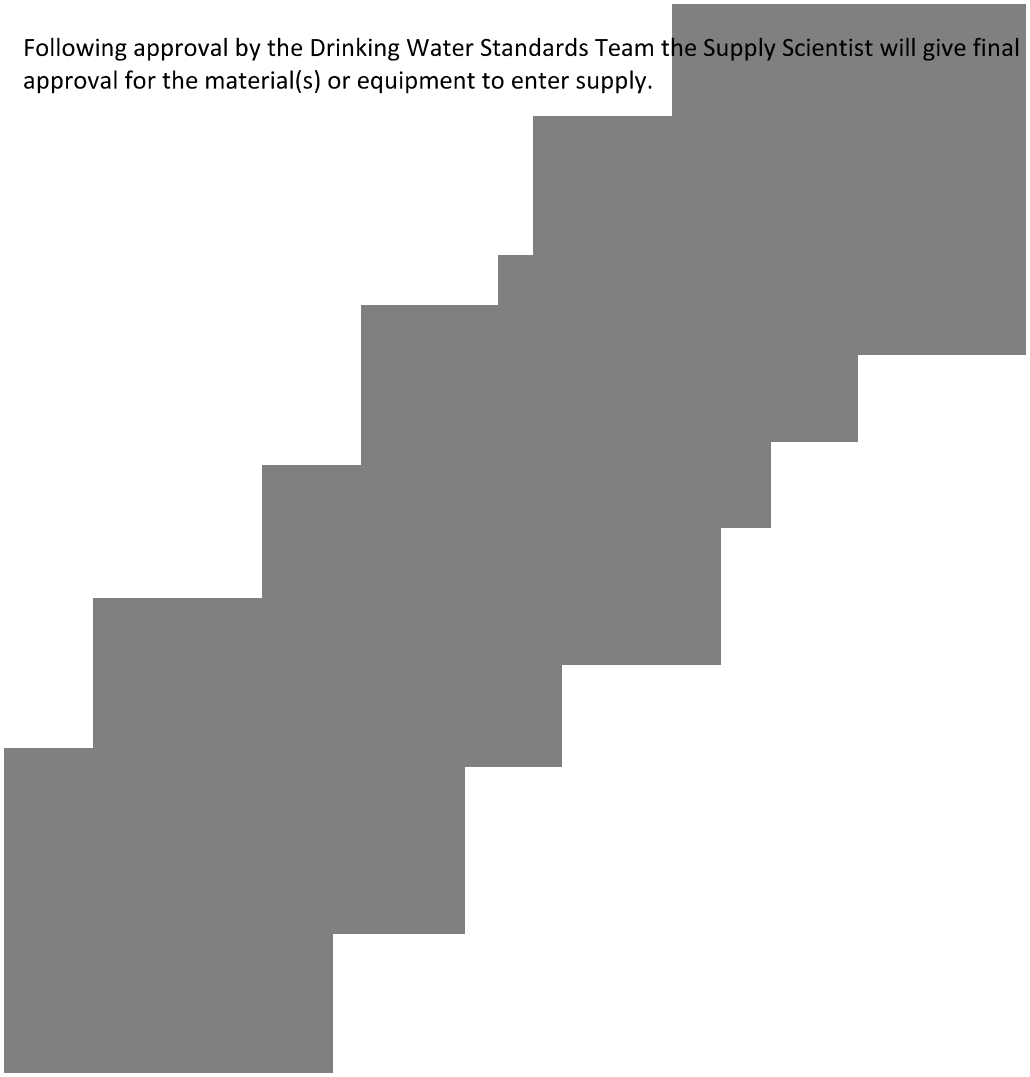
4. Following completion of the work, and before the asset is returned to supply, appropriate and representative samples must be taken and analysed for the parameters listed in ***WAQ-STD-9.1, Appendix 1*** as a minimum.

5. The person responsible for the work must confirm to the Drinking Water Standards Team that the agreed materials have been used and ensure appropriate records are kept. Submission of part B of the approval form confirms materials agreed have been used and that the appropriate analysis is complete.

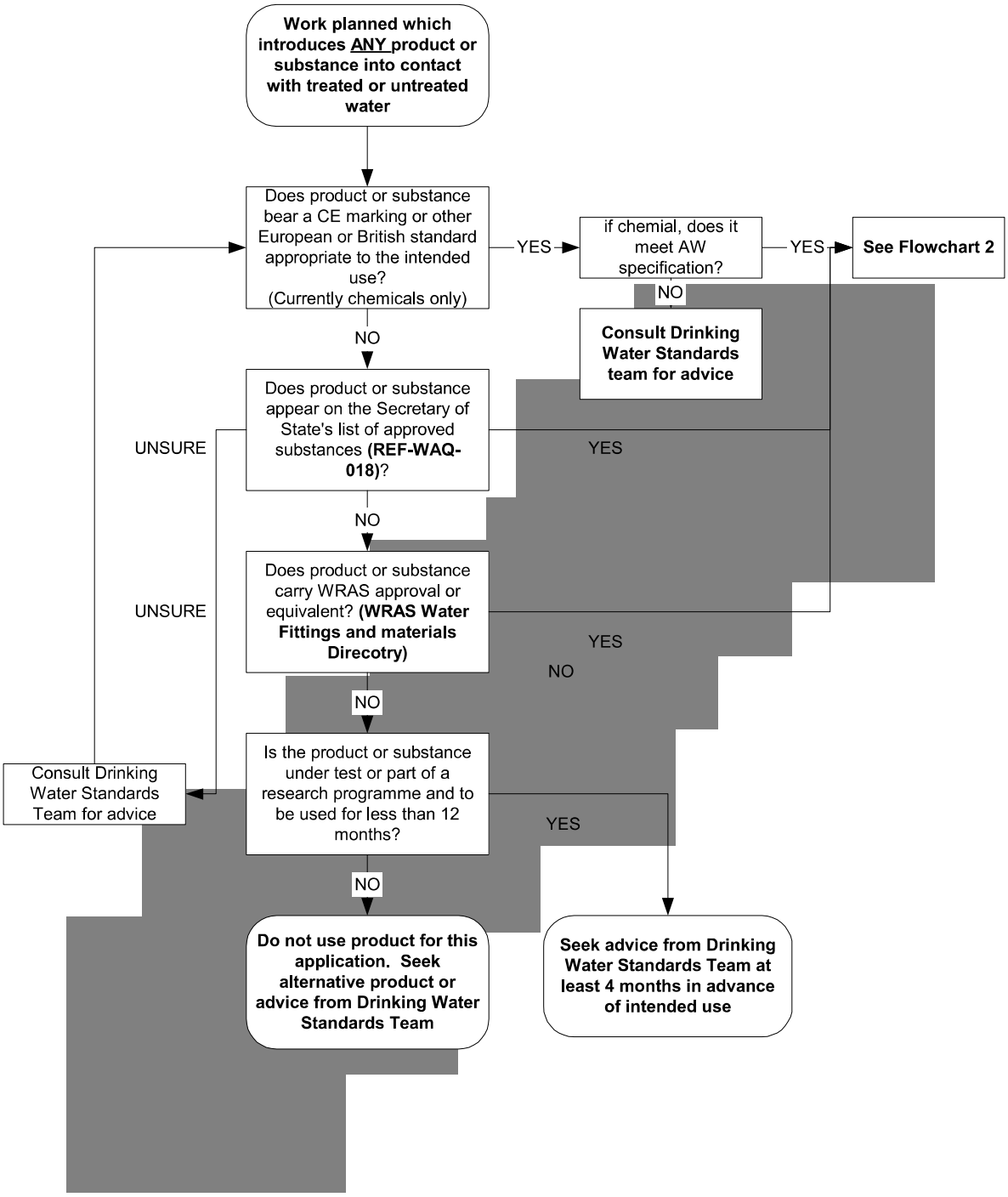
6. The Drinking Water Standards Team will assess the results and confirm whether the water quality associated with the asset is of an acceptable standard for use in supply.

7. If sample results suggest water quality is not of a sufficient standard to enable a sample confirmation to be issued, further actions in order to achieve clearance will be agreed with the Drinking Water Standards Team.

8. Following approval by the Drinking Water Standards Team the Supply Scientist will give final approval for the material(s) or equipment to enter supply.

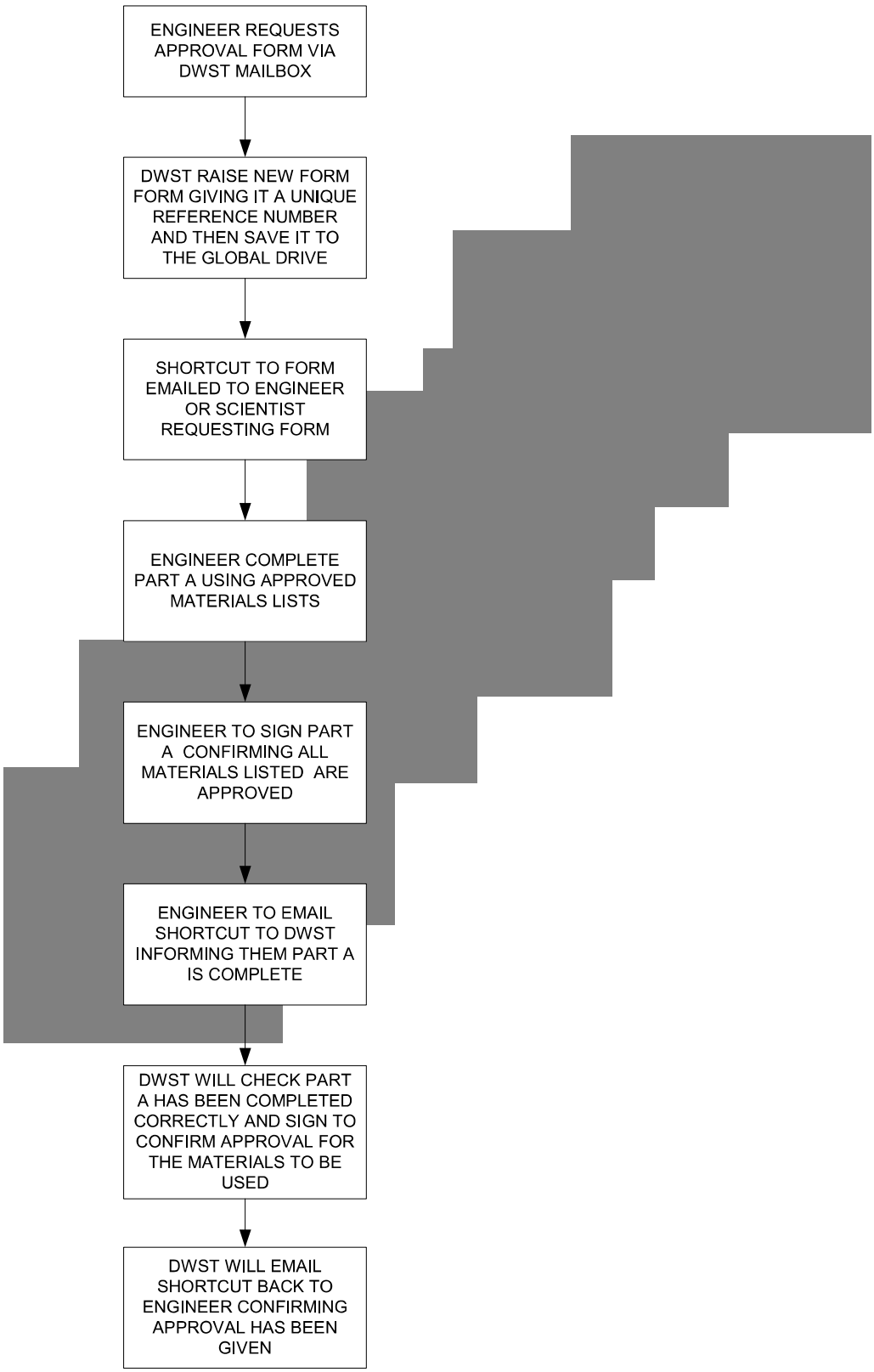


FLOWCART 1 – APPROVED PROCESS FOR MATERIALS AND CHEMICALS IN CONTACT WITH WATER

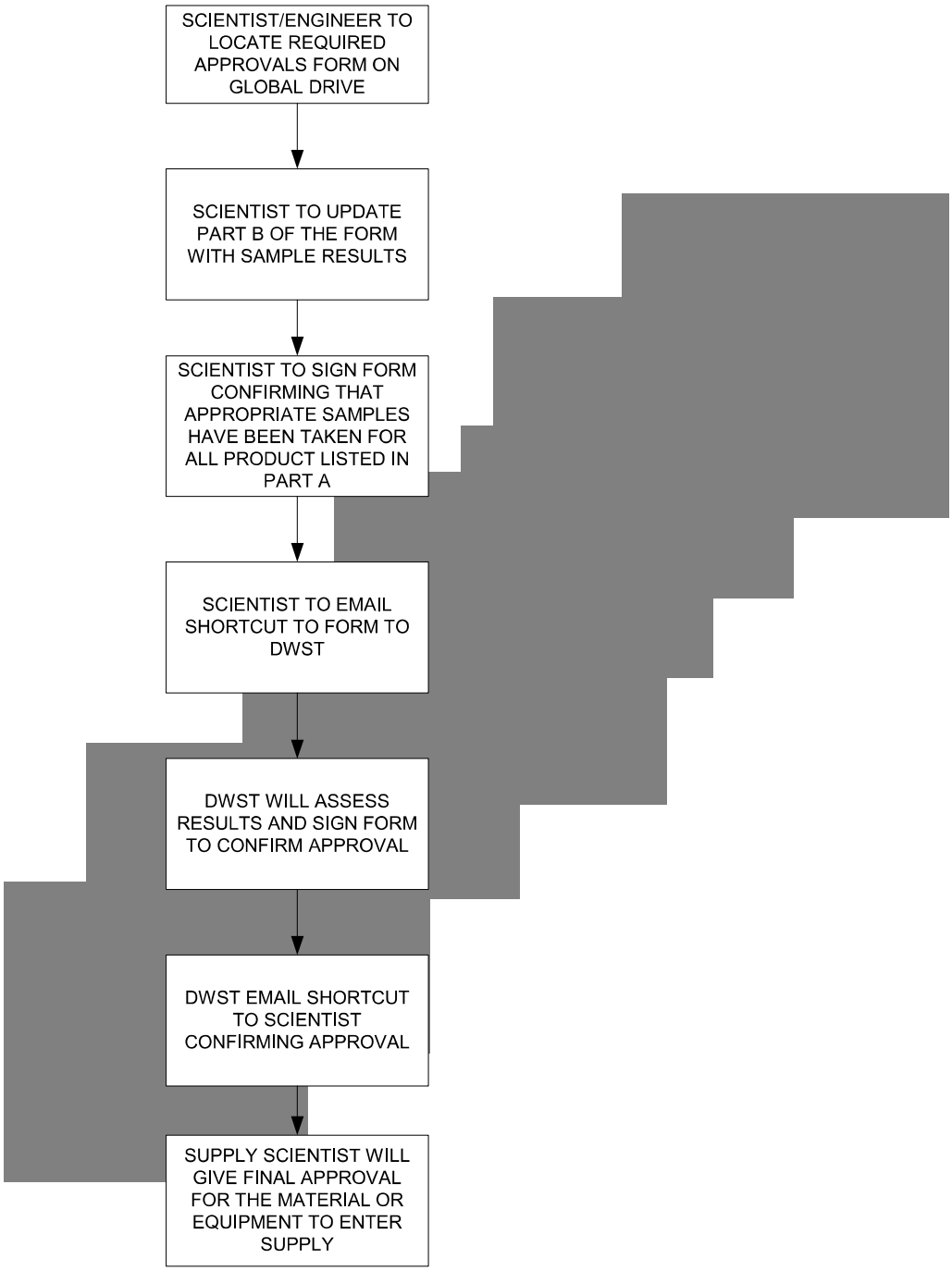


FLOWCART 2

PART A - MATERIALS



PART B - SAMPLES



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5. The person responsible for the work must confirm to the Drinking Water Standards Team that the agreed materials have been used and ensure appropriate records are kept. Submission of part B of the approval form confirms materials agreed have been used and that the appropriate analysis is complete.

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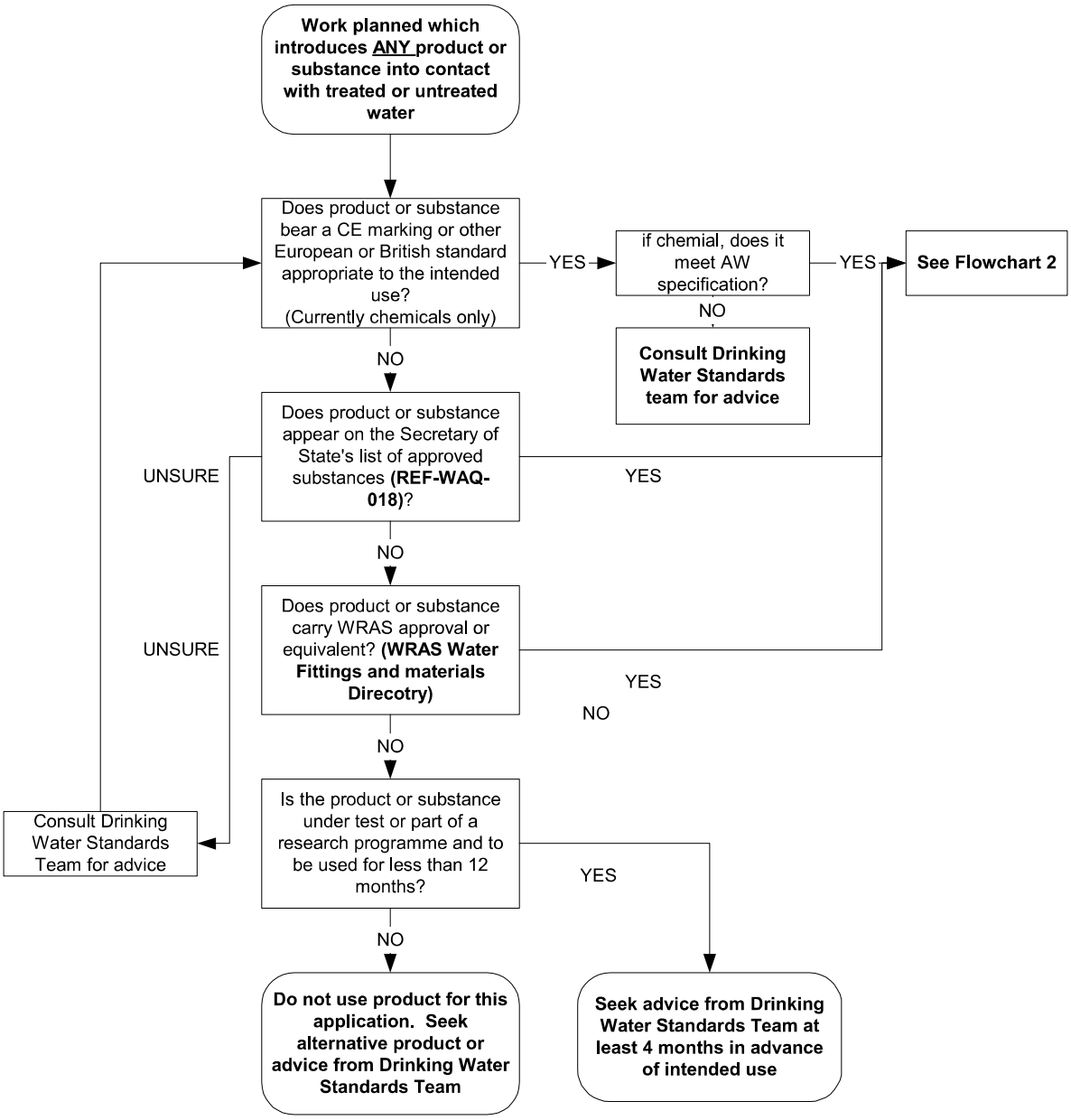
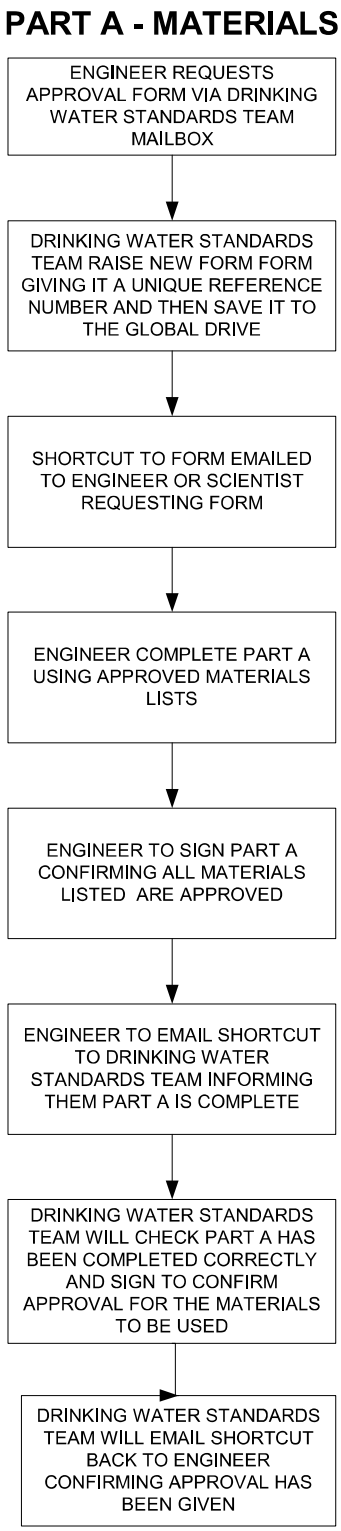


FLOWCART 2



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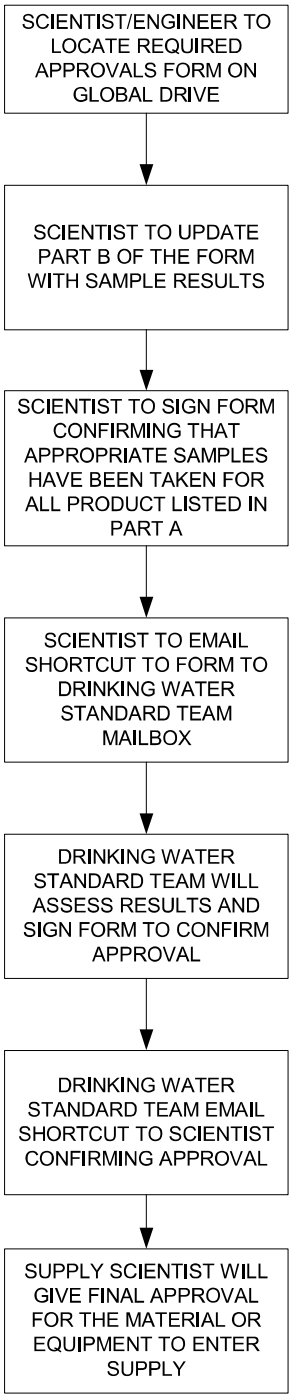

SECTION 9
MATERIALS AND CHEMICALS IN CONTACT WITH WATER

WAQ-POL-9.0 POLICY

All chemicals and materials used in contact with water must be in accordance with regulatory requirements and company procedures. All materials used in contact with water from its point of abstraction to the customer's boundary point fall under the requirements of *Regulation 31* and the scope of this standard.

STANDARDS

WAQ-STD-9.1	Standards for materials and chemicals in contact with water
Appendix 1	*Minimum analysis requirements for materials in contact approval*

METHODOLOGIES

WAQ-MTD-9.1	Methodology for materials and chemicals in contact with water

TECHNICAL GUIDANCE

WAQ-TGN-9.1	Technical guidance for materials in contact with water

FORMS
(available from the Drinking Water Standards Team on request)

Materials in contact with water approval form

WAQ-STD-9.1
STANDARDS FOR MATERIALS AND CHEMICALS IN CONTACT WITH WATER

WAQ-POL-9.1.1
Chemicals and materials in contact with water must be approved prior to use and records must be maintained

WAQ-STD	Standard	Measure	Records (Retention)
9.1.1.1	Where possible, any chemical or filter medium proposed for use with potable water must have approval for use under ***Regulation 31.3 a & b*** (these will bear an appropriate CE marking or an equivalent British Standard marking such as BS:EN).	Materials and chemicals used will be approved in accordance with Regulation 31.3.a. & b	Request for approval form Purchase agreement or order.
9.1.1.2	Where possible, materials and chemicals approved by the Drinking Water Inspectorate under ***Regulation 31.4a*** of the ***Water Quality Regulations*** must be used. Approved materials will be listed in ***REF-WAQ-0018, DWI list of approved products and processes*** which must be updated at least annually.	Materials and chemicals used will be approved in accordance with Regulation 31.4.a	Request for approval form Purchase agreement or order.
9.1.1.3	Any material proposed for use that is not included in ***REF-WAQ-0018, DWI list of approved products and processes*** must have approval under ***Regulation 31.4.b*** of the ***Water Quality Regulations***, as a product having a small or insignificant contact with the water, and be included in the current ***WRAS Water Fittings and Materials Directory*** or have otherwise been tested to the required standard for use in contact with potable water.	Materials and chemicals used will be approved in accordance with Regulation 31.4.b	Request for approval form Purchase agreement or order.

WAQ-STD	Standard	Measure	Records (Retention)
9.1.1.4	Approval for materials to be used must be confirmed prior to their use. Details must be submitted for approval in accordance with ***WAQ-MTD-9.1, Methodology for materials & chemicals in contact with water.*** Where approval is withheld an appropriate alternative must be found.	Approval for use confirmed prior to use.	Request for approval form.
9.1.1.5	Any non-approved material or chemical to be used solely for research or testing purposes may be approved for use if the Secretary of State is informed at least 3 months in advance of use. (Seek advice from the Principal Scientist - Drinking Water Standards).	Use of materials and chemicals under test will be approved in accordance with Regulation 31.4.c	Authorisation to proceed from Secretary of State Request for approval form
9.1.1.6	At the tender stage, contractors should be made aware of the information they would need to supply to gain this approval.	Procurement contracts include references regarding standards and approval.	Contract.
9.1.1.7	During the progress of the scheme, a file must be kept of all materials in contact used on the scheme, together with their relevant approval.	Record kept of materials used.	Contract Files
9.1.1.8	Procurement contracts for water treatment chemicals must include reference to compliance with the relevant 'BS:EN' specification, if applicable.	Contracts refer to approval of Chemicals and specify the 'BS:EN' number if applicable	Contract
9.1.1.9	Only approved chemicals that are listed in the AWS supply chain management agreement (located on the AWS intranet 'HAWK' site) may be used.	Orders only placed with approved suppliers Keep records of deliveries of all chemicals intended for use in contact with water	Orders, delivery notes and chemical delivery log
9.1.1.10	A list of all chemicals currently in use at all water treatment sites must be maintained and updated.	List produced and updated annually.	Water Treatment Works Plan

WAQ-POL-9.1.2
In all cases manufacturer's instructions for use documents must be adhered to when using or applying a chemical or material.

WAQ-STD	Standard	Measure	Records (Retention)

9.1.2.1	Materials must be used in accordance with the 'Manufacturer's Instructions For Use'. Any conditions that may apply to a particular material are described in the 'Method of Use Statement', and must be considered prior to use.	Materials used in accordance with manufacturer's instructions.	Method Statements

WAQ-POL-9.1.3
The risk of contamination to water quality from materials or chemicals used during construction or refurbishment of an asset must be assessed.

WAQ-STD	Standard	Measure	Records (Retention)
9.1.3.1	No water shall be put into supply from new or refurbished water treatment or supply schemes until appropriate samples of water in contact have been examined and written approval to return to supply given. In an emergency situation advice must be sought from the Principal Scientist (Drinking Water Standards)	Representative samples taken and analysed. Written approval to return to supply obtained.	Sample data. Written approval to return to supply.
9.1.3.2	Samples taken must be representative of the water in contact with the new materials to demonstrate that the materials have had no adverse effect on water quality, except for products having a small or insignificant contact with the water; advice on these should be sought from the Principal Scientist (Drinking Water Standards).	Representative samples taken and analysed. Written approval to return to supply obtained.	Sample data. Written approval to return to supply.

WAQ-STD	Standard	Measure	Records (Retention)
9.1.3.3	Each project must be assessed on its merits following these guidelines : • Any mains repair or maintenance work, including the installation of new valves, hydrants and tees, should be sampled in accordance with ***WAQ-MTD-6.9 Methodology for working on potable water mains.*** • Any new pipelines should be sampled in accordance with ***WAQ-MTD-6.7 Methodology for new mains installation.*** • Any new or refurbished water treatment plant or processes, including pumps, must be sampled and as a minimum the analysis listed in ***Appendix 1, Minimum analysis requirements for materials in contact approval*** must be undertaken.	Representative samples taken and analysed. Written approval to return to supply obtained where required.	Sample data. Written approval to return to supply.
9.1.3.4	Samples should be taken in accordance with ***WAQ-MTD-9.1, Methodology for materials & chemicals in contact with water*** and simulate the most adverse conditions likely to be met in operation. The likely operational contact time should be assessed and as a general guide the test procedure should consist of double this period. Any seasonal effect should be considered. The range of analysis should reflect the composition of the material and its use.	Representative samples taken and analysed. Written approval to return to supply obtained.	Sample data. Written approval to return to supply.

WAQ-POL-9.1.4
Due consideration must be given to the delivery and storage of chemicals and materials to prevent contamination of the water supply or deterioration in the quality of products prior to use.

WAQ-STD	Standard	Measure	Records (Retention)
9.1.4.1	Chemicals must be stored in accordance with the standards detailed in ***WAQ-STD-4.1, Standards for the operation of water treatment assets.***	A log of deliveries of chemicals must be kept.	Chemical delivery log (5 yrs)
9.1.4.2	All fittings and materials shall be stored hygienically will all reasonable measures taken to exclude vermin, debris or dirty water and in accordance with the standards detailed in ***WAQ-STD-6.3, Standards for maintenance of the distribution system.***	Provision of a designated area for the hygienic storage of fittings and materials.	Activity or site audit records
9.1.4.3	Stock levels must be set and maintained to ensure continuity of water supply and contingencies must be in place with suppliers. (See ***WAQ-POL-4.1.12).***	Details included in contingency plan.	Contingency plan.

WAQ-POL-9.1.5
Chemicals and materials used for water treatment must be from an approved supplier and a programme of testing must be in place to monitor the quality of that product.

WAQ-STD	Standard	Measure	Records (Retention)
9.1.5.1	Where there is reason to believe that an approved product or material may not meet the manufacturer's specification, the chemical must be quarantined and an investigation conducted. As a minimum, this must include : • sampling and analysis of the suspect chemical (if safe to do so) • quarantining of the suspect chemical (or return of bulk carriers to the manufacturers) • consultation with the Treatment Scientist concerning any further corrective or remedial action • recording of all actions taken reporting of any concerns regarding the suspect chemical to Supply Chain Management.	Evidence of non-conformance (e.g. return to service sample data). Batch numbers recorded on delivery.	Sample data. Log of batch details.
9.1.5.2	If the investigation shows a particular batch of chemical or materials to be non-compliant then there must be systems in place to ensure the whole batch can be withdrawn.	Evidence of non-conformance (e.g. return to service sample data). Batch numbers recorded on delivery	Sample data. Log of batch details

ANGLIAN WATER SERVICES

REQUEST FOR APPROVAL – MATERIALS IN CONTACT WITH WATER
REGULATION 31 – APPROVAL CHECKLIST

1

SITE	
LOCATION ON SITE:	
CONTRACTOR	
CONTRACT NO.	

2

TEAM MANAGER	
CONTACT DETAILS	
DATE	
PAGE NO.	____OF ____

3

REGULATION 31.4.a APPROVED MATERIALS (LARGE SURFACE AREAS)		
N.B. All materials are required to hold current DWI approval		
MANUFACTURER	MATERIAL	PLANNED USE

4

REGULATION 31.4.b MATERIALS (INSIGNIFICANT SURFACE AREAS)					
N.B. All non-metallic items require evidence of appropriate testing (e.g. BS6920 or listing in current WRAS Directory)					
MANUFACTURER	PLANNED USE	MATERIAL IN CONTACT WITH WATER	WRC REF. NO.	WRC CAT. NO.	COMMENTS

Send to Principal Scientist (Drinking Water Standards) or email to Drinking Water Standards Team mailbox

WAQ-TGN-9.1
TECHNICAL GUIDANCE FOR MATERIALS IN CONTACT WITH WATER

Small Surface Area Items
The list given in **Appendix 1** identifies items which are deemed to have a small surface area and so insignificant contact with water. These items require approval for materials under Regulation 31 (see ***WAQ-MTD-9.1***, form '**Request for Approval – materials in contact with water**'), however may not require sampling for materials in contact clearance. Advise on appropriate sampling will be given by the Treatment Scientist.

Dosing Plants
Dosing plants are not included in the requirements of Regulation 31, however materials which come into contact with water, such as motive water lines and dosing lances, require Regulation 31 approval (see ***WAQ-MTD-9.1***, form '**Request for Approval – materials in contact with water**').
Samples for clearance of dosing plants will be taken from the final water sample point on the first day of operation of the plant.

Sample Pumps, Lines and Taps
Use of the above products does not require Regulation 31 approval as they are not in contact with water intended for supply.
Sample pumps must contain a stainless steel impeller such as DABS or Lowara pumps and be of a suitable capacity.
Sample lines must be approved stainless steel (from **Appendix 2**) or MDPE from an approved supplier.
Sample taps must be chrome / brass and contain a British Standard approved tap washer.

Following installation of these products sample pump, line and tap should be chlorinated, flushed and sampled for the following parameters:-

- Coliforms
- Ecoli
- 2 day plate count
- Turbidity
- pH
- Conductivity
- Odour
- Taste (treated water sample point only, following satisfactory bacti result)

Clearance by the Treatment Scientist must be given before use.

Appendix 1 – Small Surface Area Items

	Component	Use
	Air release valves	Distribution mains
	Ball valves	Storage pts
	Differential pressure cells	Filters
*	Dosing lances	Chemical dosing
	Float switches	Level detection in chambers, tanks etc
	Flowmeter heads - electromagnetic	Flow measurement
	Flowmeter heads - mechanical	Flow measurement
	Gaskets	Pipework connections
	Gate valves	Distribution mains
	Impulse lines	
*	Injectors	Chlorine dosing
	Level instruments	Sumps, tanks, filters
	Mixers - impeller	Tank mixers with external blades
	Mixers - static	Internal mixer in pipework
	Non-return valves	Distribution mains
	O rings	
	Orifice plates	Internal component of flowmeters
*	Pipework - general, flexible	Dosing, motive water, sample lines
*	Pipework - general, rigid	Dosing, motive water, sample lines
	Pressure gauges	Tapped into distribution mains/pump pipework
	Pressure reducing valves	Distribution mains
	Probe tubing	Sumps, tanks, filters
*	Pumps - diaphragms	Dosing pumps
*	Pumps - loading valves	Dosing pumps
*	Pumps - mechanical seals	Dosing pumps, forwarding pumps
*	Pumps - non-return valves	Dosing pumps, forwarding pumps
*	Pumps - pressure relief valves	Dosing pumps, forwarding pumps
	Sample taps	Regulatory sample pts

* Items included in the installation of a new dosing plant require sample clearance as set out in ***WAQ-TGN-9.1***, however repairs to the items listed above will not require sample clearance.

Appendix 2 – Approved Grades of Stainless Steel

Grades for testing (representative alloy)	*Other grades in family*	*Applicable Standards*
1.4307 (304S11/AISI 304L) (SS 2352)	1.4301 (304S31/AISI 304) (SS 2333) 1.4306 (304S11/AISI 304L) (SS 2352) 1.4311 (304S61/AISI 304LN) (SS 2371) 1.4541 (321S31/AISI 321) (SS 2337) 1.4550 (347S31/AISI 347) (SS 2338)	BS EN 10088 BS 970:Part 1 BS 3605-2 ASTM A312/312M ASTM A403/403M ASTM A774/774M DIN 17455 DIN 17457 EN 10217-7 EN 10312 SS 219711 SS 219716
1.4404 (316S11/AISI 316L) (SS 2348)	1.4401 (316S31/AISI 316) (SS 2347) 1.4432 (316S13/AISI 316L) (SS 2353) 1.4436 (316S33/AISI 316) (SS 2343) 1.4406 (316S61/AISI 316LN) 1.4571 (320S31/AISI 316Ti) (SS 2350) 1.4434 (317LN/SS 2373) 1.4435 (SS 2353) 1.4438 (317L/SS 2367)	BS EN 10088 BS 970:Part 1 BS 3605-2 ASTM A312/312M ASTM A403/403M ASTM A774/774M DIN 17455 DIN 17457 EN 10217-7 En 10312 SS 219711 SS 219716
1.4462 (2205/ASTM S31803) (SS 2377)	1.4410 (2507/ASTM S32750) (SS 2328)	BS EN 10088 ASTM A 789/789M ASTM A 790/790M

Document number: PSW-POS-3.0	Revision number: 02	Issue date: Mar 2013

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Guidance for template completion - click here

POSWSH SECTION 3

Policies and Standards for Materials and Chemicals in Contact with Water

Author:	Job Title:	Business Unit / Team:
[redacted]	Regional Quality Manager	Water Services
Owner:	**Job Title:**	**Business Unit / Team:**
[redacted]	Director of Water Services	Water Services

Document number: PSW-POS-3.0	Revision number: 02	Issue date: Mar 2013

OUR POLICY ON MATERIALS AND CHEMICALS IN CONTACT WITH WATER

All chemicals and materials used in contact with water will be sourced and used in accordance with regulatory requirements and company procedures. All chemicals and materials used in contact with water will go through an internal verifications process prior to purchasing and use. All materials and chemicals used in contact with water from its point of abstraction to the customer's boundary fall under the requirements of *Regulation 31* and the scope of this policy.

2. POLICY & STANDARD CLAUSES

Document number: PSW-POS-3.0	Revision number: 02	Issue date: Mar 2013

PSW-POL-3.1 Our Policy on Materials and Chemicals Approval

- **From the point of abstraction to the customer's boundary only Regulation 31 approved chemicals and materials will be used in contact with water intended for public supply.**
- **All chemicals and materials in contact with water intended for public supply will be used/applied in accordance with the appropriate manufacturer's instructions for use (IFU) documents.**
- **All chemicals and materials in contact with water intended for public supply will be verified as compliant with Regulation 31 prior to purchase and use. Records of verification will be maintained.**
- **Verification that materials or chemicals introduced have not caused a deterioration in water quality will be carried out through an agreed programme of sampling. Sampling will be completed following the installation/application of any material or chemical, prior to its introduction into supply.**
- **Only chemicals listed in a current Supply Chain Management framework agreement will be used in the water treatment process. A programme of audit of framework suppliers and appropriate sampling of product quality will be in place.**

Document number: PSW-POS-3.0	Revision number: 02	Issue date: Mar 2013

This policy is delivered through compliance with the following standards:

PSW-STD-3.01	For those materials and chemicals which fall under the requirements of Regulation 31(4)(a) of the Water Supply (Water Quality) Regulations, only those listed in the 'List of Approved Products for use in Public Water Supply in the United Kingdom' (List of Approved Products) will be used.
PSW-STD-3.02	Any material that is proposed for use, that is not listed in the List of Approved Products, but has a small surface area in contact with water must be approved under Regulation 31(4)(b) of the Water Supply (Water Quality) Regulations. Compliance with Regulation 31(4)(b) will be met if the material has met the test requirements of BS6920 (2.2.1. and 2.4) within the previous five years or if it is a metallic product it conforms to a current BS EN standard.
PSW-STD-3.03	Any non-approved materials or chemicals to be used solely for research or testing purposes *may* be approved for use under Regulation 31(4)(c), if the Secretary of State is informed and gives approval at least three months in advance of use. (Advice must be sought from the Principal Scientist - Drinking Water Standards).
PSW-STD-3.04	All emergency equipment must comply with Regulation 31 of the Water Supply (Water Quality) Regulations.
PSW-STD-3.05	Details of all materials and chemicals to be used in contact with water intended for public supply must be submitted for verification in accordance with the relevant procedure, before any work is undertaken by AW employees or contractors. Verification for use must be confirmed prior to purchase and use. Where contractors are employed to carry out work (including maintenance work) there must be a formal agreement which includes for the provision of evidence to show the conformance of all materials and chemicals to be used with Regulation 31, prior to the commencement of any work.
PSW-STD-3.06	All chemicals and materials must be used in accordance with the appropriate 'Manufacturer's Instructions For Use' (IFU).
PSW-STD-3.07	During the progress of a scheme, a file must be kept of all materials and chemicals in contact with water intended for public supply used on the scheme, together with their relevant Regulation 31 approval documentation.
PSW-STD-3.08	No water shall be put into supply following installation/application of a material or chemical, at or prior to a water treatment works or at a service reservoir site, until appropriate samples of water in contact with the material or chemical have been taken, examined and written approval to return to supply has been given in accordance with *PSW-PRO-3.1, Procedure for materials & chemicals in contact with water*. In an emergency situation advice must be sought from the Principal Scientist (Drinking Water Standards).
PSW-STD-3.09	Sampling following the regeneration of granular activated carbon (GAC) or complete replacement with fresh (virgin) media must be in accordance with *PSW-*

	PRO-6.1 Procedure for the Bringing into Service of Granular Activated Carbon Filters and Adsorbers.
PSW-STD-3.10	Sampling following any mains repair or maintenance work in the distribution system, including the installation of new valves, hydrants and tees, shall be in accordance with *PSW-PRO-8.3 Procedure for working on potable water mains*.
PSW-STD-3.11	Before introduction to supply of any new pipeline sampling must be carried out in accordance with *PSW-PRO-2.3 Procedure for new mains installation*.
PSW-STD-3.12	Where there is reason to believe that a chemical or material may not meet the manufacturer's specification, an investigation must be conducted. As a minimum, this investigation must include sampling and analysis of the suspect product (if safe to do so), quarantining of the suspect product (to ensure that the whole batch can be withdrawn from use), consultation with Regional Quality concerning protection of customers supplies, any further corrective or remedial action and the recording of all actions taken. For chemicals or materials suspected of not meeting the manufacturer's specification, escalation must also be made to Supply Chain Management.
PSW-STD-3.13	A list of all treatment chemicals currently in use at each water treatment works sites must be maintained and updated.
PSW-STD-3.14	Procurement contracts for water treatment chemical must include reference to compliance with the relevant Regulation 31(4)(a).
PSW-STD-3.14a	All chemicals utilised in the water treatment process will be risk assessed for the presence of DBP precursors. Alternative formulation must be sought to reduce the presence of these precursors e.g. low bromide salt.

Document number: PSW-POS-3.0	Revision number: 02	Issue date: Mar 2013

PSW-POL-3.2 Our Policy on Delivery and Storage

- **Due consideration must be given to the delivery and storage of chemicals and materials to prevent contamination of the water supply or deterioration in the quality of products prior to use.**
- **Chemical storage facilities and procedures for delivery and receipt of chemicals must be clearly defined.**
- **In order to safeguard water quality on site the delivery of fuels and chemicals must be controlled.**
- **In order to safeguard water quality on site the storage of fuels and chemicals must be controlled.**
- **In order to safeguard water quality on site the usage of fuels and chemicals must be controlled.**

Document number: PSW-POS-3.0	Revision number: 02	Issue date: Mar 2013

These policies are delivered through compliance with the following standards:

PSW-STD-3.15	Chemicals must be stored in accordance with the standards detailed in *PSW-POS-6.0, Policies and Standards for the operation of water treatment assets*.
PSW-STD-3.16	All points for delivery of chemicals and fuel shall be clearly marked to identify the substance to be delivered, and will be secured with a padlock or other locking device whose key is different to the general site access key. These keys shall be kept in a secure location.
PSW-STD-3.17	Site keys must not be issued to suppliers.
PSW-STD-3.18	A log of deliveries of chemicals and fuel shall be kept.
PSW-STD-3.19	Chemicals shall be stored in a secure environment to minimise the possibility of damage, deterioration or contamination, taking into account any suppliers recommendations. Consideration should be given to the use of locked cages. No chemicals shall be stored in proximity to other chemicals with which they may react or contaminate.
PSW-STD-3.20	All chemical and fuel delivery and storage areas must be hard-standing and drain to an impervious area.
PSW-STD-3.21	All bulk chemicals (including containerised bulk chemicals) or fuel storage facilities (including any pumps and valves) shall be enclosed within a bund. The capacity of the bund should be sufficient to accommodate all the volume of chemical or fuel stored. The internal surfaces of the bund must be resistant to the chemical or fuel stored so as to prevent leakage. The bund shall be fitted with a level alarm to allow early warning of leakage from storage facilities.
PSW-STD-3.22	Facilities must be provided either to prevent overfilling of tanks or to ensure overflow spillages are retained in bunded areas.
PSW-STD-3.23	Gas cylinders and drums shall be individually labelled to identify whether they are empty, full or in service, and stored in appropriately labelled storage areas.
PSW-STD-3.24	All tanks, hoppers, rooms and compounds containing hazardous substances shall be labelled with warning notices. The content of all containers must be displayed on the container on a label with the appropriate standard Hazchem warning sign. These will be similar to the hazard labels found on either the container/package supplied with the substance, or the delivery vehicle, or the Health and Safety Data sheet supplied by the substance manufacturer.
PSW-STD-3.25	Regular inspections of storage facilities, bunds (including any bund level alarms) and associated pipework must be carried out as part of routine activities. An annual inspection of the integrity of storage facilities, bunds and associated pipework must be carried out to check for signs of corrosion or damage. Appropriate remedial action must be taken following the inspection.

PSW-STD-3.26	Arrangements for the delivery and storage of chemicals and fuel must be in accordance with the standards above in order to minimise risk to water quality and the environment.
PSW-STD-3.27	Storage arrangements must have regard to chemical stability and shelf life. Where chemical solutions are prepared on site, appropriate quality control procedures must be prescribed.
PSW-STD-3.28	Stock levels must be set and maintained to ensure continuity of water supply and contingencies must be in place with suppliers. (See PSW-POL-4.1.12).
PSW-STD-3.29	A minimum chemical stock shall be prescribed for each site according to risk category in accordance with *PSW-POL-6.1.*
PSW-STD-3.30	In order to safeguard water quality on site the delivery, storage and usage of fuels and chemicals must be controlled in accordance with the standards above.

Document number: PSW-POS-3.0	Revision number: 02	Issue date: Mar 2013

3. DEFINITIONS:

n/a

4. REFERENCES, ASSOCIATED RECORDS, FORMS AND TEMPLATES: (if none state none)

Name:
1. Materials in contact with water approval form.

5. APPENDIX: (if none state none)

none

ADDITIONAL INFORMATION:

N/A

GENERAL INFORMATION:

If any event occurs which could impact on Health and Safety, Water Quality, the Environment, has the potential to cause pollution or has significant public relation implications report up immediately to the OMC Duty Manager.

For any record(s) associated to this document refer to the Records Retention Database for details on storage, location and retention time.

This document is available in the following locations;

[redacted]

Document number: PSW-PRO-3.1	Revision number: 01	Issue date: May 2012

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POSWSH SECTION 3

PSW-PRO-3.1 Procedure for Materials and Chemicals in Contact with Water

Author:	Job Title:	Business Unit / Team:
[redacted]	Scientist Regulatory Standards and Planning	Regulation / Drinking Water Standards
Owner:	**Job Title:**	**Business Unit / Team:**
[redacted]	Principal Scientist Drinking Water Standards	Regulation / Drinking Water Standards

1. POLICY AND STANDARDS:

Document number: PSW-PRO-3.1	Revision number: 01	Issue date: May 2012

Policy: PSW-POL-3.1

Standard: PSW-STD-3.05, PSW-STD-3.18, PSW-STD-3.19, PSW-PRO-3.20, PSW-PRO-3.22 and PSW-STD-3.23

2. PURPOSE OF PROCEDURE:

The purpose of this procedure is to ensure that all materials and chemicals used in contact with treated or untreated water intended for potable use comply with the requirements of Regulation 31, such that the quality of drinking water is not compromised by their introduction. This procedure sets out the requirements of the regulation and defines the process by which materials and chemicals are confirmed as approved and the water quality is assessed following the completion of the work.

3. DEFINITIONS:

None

4. RESPONSIBILITIES:

Manager or Engineer responsible for undertaking work (e.g. Supply Manager) – You Will:

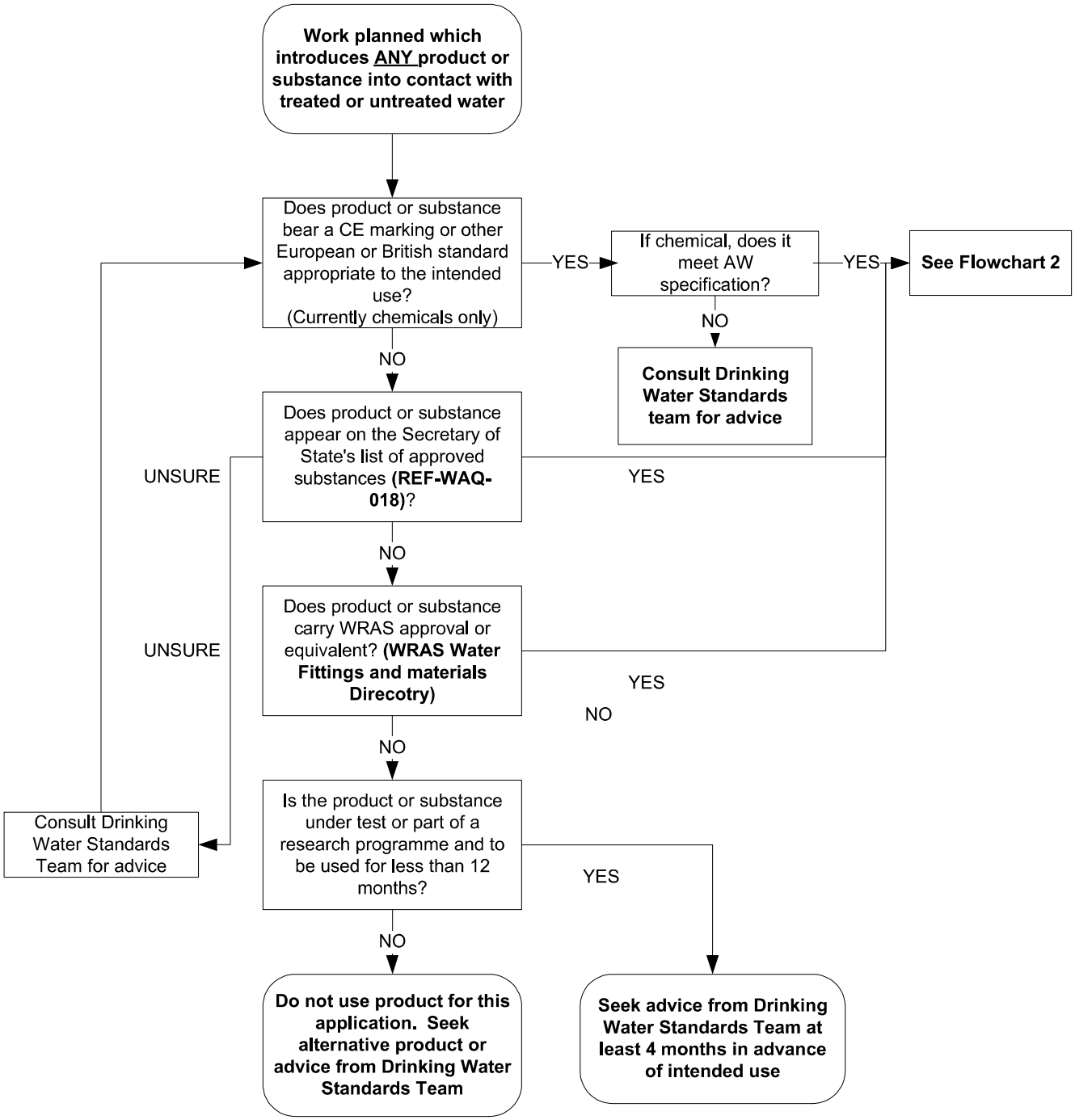
- Ensure any materials or chemicals used in contact with treated or untreated potable water comply with Regulation 31.
- Ensure Drinking Water Standards are notified of intent to use material and how it complies with Regulation 31.
- Ensure appropriate samples are taken following use of material.
- Ensure records are kept of materials used in schemes / repairs.

Drinking Water Standards Team – You Will:

- Provide advice relating to Regulation 31.
- Ensure approval documentation is issued and records are kept.
- Ensure audits of forms are carried out.

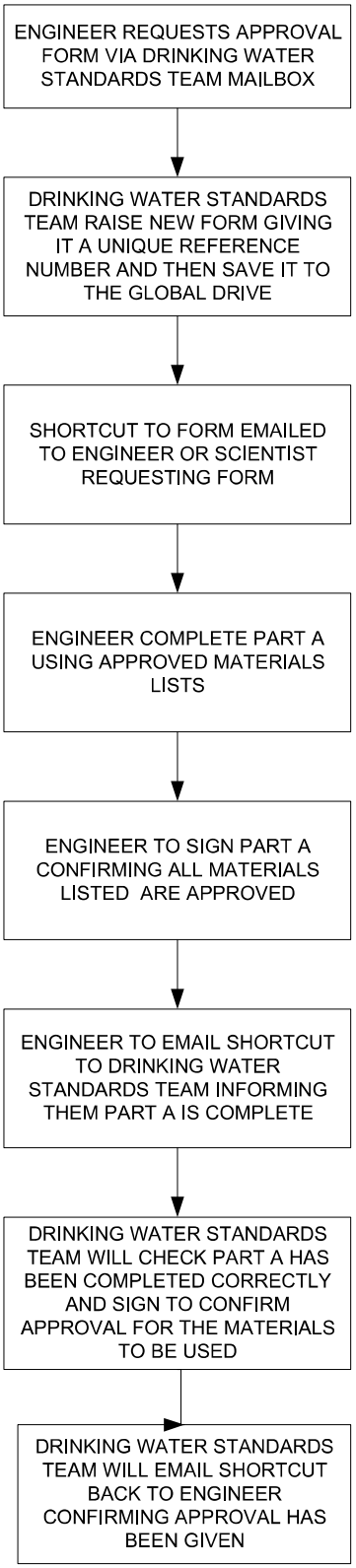
5. FLOWCHART:

FLOWCART 1 – APPROVAL PROCESS FOR MATERIALS AND CHEMICALS IN CONTACT WITH WATER

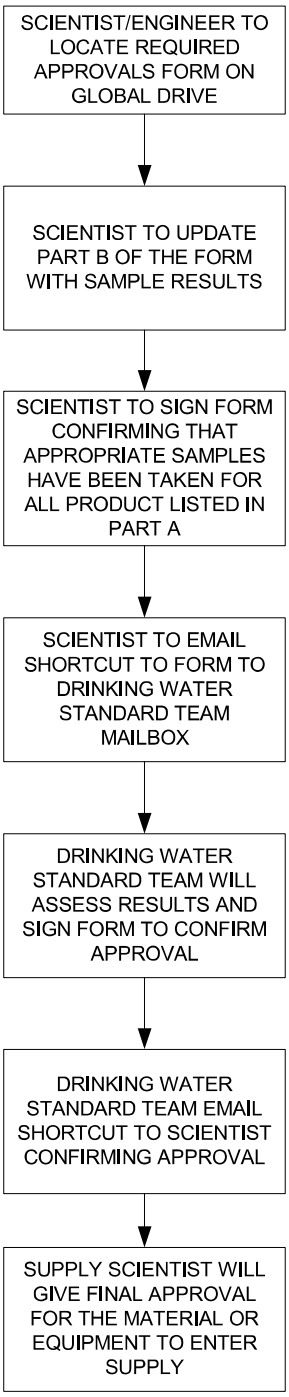


Flowchart 2

PART A - MATERIALS



PART B - SAMPLES



6. PROCEDURE:

Document number: PSW-PRO-3.1	Revision number: 01	Issue date: May 2012

The approval process for materials and chemicals in contact with water is outlined in ***flowcharts 1 and 2***. If the work is unavoidably urgent, the advice of the Drinking Water Standards Team should be sought.

1. Materials and chemicals, which are to be used in contact with treated or untreated water intended for potable use will comply with Regulation 31 of the ***Water Quality Regulations***. If the approval route for a material is not clear, the advice of the Drinking Water Standards Team may be sought.

2. The Drinking Water Standards Team must be notified well in advance of intended use using the ***Materials in contact with water approval form.*** Details of the materials to be used in the work and the route by which these are approved under Regulation 31 must be provided.

3. The Drinking Water Standards Team will confirm approval. The intended work may then proceed.

4. Following completion of the work, and before the asset is returned to supply, appropriate and representative samples must be taken and analysed for the parameters listed in Appendix 1 as a minimum.

5. The person responsible for the work must confirm to the Drinking Water Standards Team that the agreed materials have been used and ensure appropriate records are kept. Submission of part B of the approval form confirms materials agreed have been used and that the appropriate analysis is complete.

6. The Drinking Water Standards Team will assess the results and confirm whether the water quality associated with the asset is of an acceptable standard for use in supply.

7. If sample results suggest water quality is not of a sufficient standard to enable a sample confirmation to be issued, further actions in order to achieve clearance will be agreed with the Drinking Water Standards Team.

8. Following approval by the Drinking Water Standards Team the Operational Scientist will give final approval for the material(s) or equipment to enter supply.

7. REFERENCES, ASSOCIATED RECORDS, FORMS AND TEMPLATES:

None

8. APPENDIX:

Section 3 Appendix 1 Technical guidance and sampling requirements

ADDITIONAL INFORMATION:
N/A
GENERAL INFORMATION:
If any event occurs which could impact on Health and Safety, Water Quality, the Environment, has the potential to cause pollution or has significant public relation implications report up immediately to the OMC Duty Manager. For any record(s) associated to this document refer to the Records Retention Database for details on storage, location and retention time.

This document is available in the following locations;

[redacted]

Measurable name
UoM

Sample cor	Point code	Sample point name	Sample nN	Date/time
Y	W01CAJLCR	HANNINGTON NO 1 RES SIDE B	22006296	07/01/2022 07:36
			22010431	11/01/2022 08:55
			22018891	17/01/2022 17:46
			22035738	28/01/2022 07:41
			22054626	03/02/2022 12:36
			22063230	09/02/2022 14:23
			22071597	15/02/2022 11:35
			22079314	21/02/2022 08:36
			22107138	04/03/2022 07:45
			22116183	10/03/2022 09:09
			22125363	16/03/2022 13:24
			22138763	24/03/2022 07:33
			22152473	01/04/2022 09:25
			22155633	04/04/2022 07:39
			22168333	12/04/2022 11:27
			22178045	20/04/2022 08:10
			22189842	27/04/2022 09:32
			22204533	04/05/2022 07:50
			22219924	13/05/2022 09:17
			22223679	16/05/2022 13:29
			22237620	24/05/2022 07:33
			22251228	01/06/2022 07:26
			22262576	09/06/2022 09:32
			22275868	17/06/2022 08:37
			22283332	22/06/2022 11:03
			22290676	27/06/2022 07:30
			22309861	06/07/2022 09:30
			22323814	14/07/2022 11:46
			22337392	22/07/2022 07:59
			22340491	25/07/2022 08:28
			22353947	02/08/2022 13:54
			22366564	10/08/2022 06:59
			22379613	18/08/2022 09:10
			22391896	26/08/2022 07:47
			22403512	02/09/2022 13:39
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			22418716	13/09/2022 09:50
			22428258	20/09/2022 11:41
			22444303	29/09/2022 07:30
			22460147	07/10/2022 13:43
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22633923	15/11/2022 08:09
22639025	24/11/2022 14:32
22641370	30/11/2022 08:16
22655026	06/12/2022 07:36
22664946	13/12/2022 08:42
22672023	21/12/2022 16:52
22680910	28/12/2022 10:02

		Regulatory Requirement Submitted in Monthly Data Returns to DWI				
		CHLORINE FREE	CHLORINE TOTAL	CONFIRMED COLIFORMS	COLONIES 22C 3 DAYS	CONFIRMED E>COLI
liveComm	Reason co	mg/l	mg/l	No/100ml	No/ml	No/100ml
NONE	MT:LT:?:?:?	0.05	0.6	0	0	0
NONE	MT:LT:?:?:?	0.05	0.68	0	0	0
NONE	MT:LT:?:?:?	0.06	0.78	0	0	0
NONE	MT:LT:?:?:?	0.07	0.79	0	0	0
NONE	MT:LT:?:?:?	0.05	0.78	0	0	0
NONE	MT:LT:?:?:?	0.08	0.97	0	0	0
NONE	MT:LT:?:?:?	0.05	0.65	0	0	0
NONE	MT:LT:?:?:?	0.08	0.79	0	0	0
NONE	MT:LT:?:?:?	0.08	0.97	0	0	0
NONE	MT:LT:?:?:?	0.05	0.78	0	0	0
NONE	MT:LT:?:?:?	0.05	0.94	0	0	0
NONE	MT:LT:?:?:?	0.06	0.67	0	0	0
NONE	MT:LT:?:?:?	0.05	0.73	0	0	0
NONE	MT:LT:?:?:?	0.07	0.6	0	0	0
NONE	MT:LT:?:?:?	0.05	0.7	0	26	0
NONE	MT:LT:?:?:?	0.05	0.68	0	0	0
NONE	MT:LT:?:?:?	0.05	0.72	0	0	0
NONE	MT:LT:?:?:?	0.05	0.7	0	1	0
NONE	MT:LT:?:?:?	0.05	0.58	0	0	0
NONE	MT:LT:?:?:?	0.08	0.73	0	0	0
NONE	MT:LT:?:?:?	0.05	0.55	0	3	0
NONE	MT:LT:?:?:?	0.06	0.52	0	14	0
NONE	MT:LT:?:?:?	0.06	0.62	0	0	0
NONE	MT:LT:?:?:?	0.05	0.56	0	16	0
NONE	MT:LT:?:?:?	0.05	0.54	0	2	0
NONE	MT:LT:?:?:?	0.05	0.56	0	0	0
NONE	MT:LT:?:?:?	0.05	0.56	0	6	0
IND CHL	MT:LT:?:?:?	0.05	0.72	0	0	0
IND CHL	MT:LT:?:?:?	0.05	0.63	0	50	0
NONE	MT:LT:?:?:?	0.05	0.52	0	0	0
NONE	MT:LT:?:?:?	0.05	0.48	0	29	0
NONE	MT:LT:?:?:?	0.05	0.67	0	0	0
NONE	MT:LT:?:?:?	0.07	0.53	0	1	0
NONE	MT:LT:?:?:?	0.05	0.58	0	0	0
NONE	MT:LT:?:?:?	0.06	0.53	0	0	0
NONE	MT:LT:?:?:?	0.05	0.57	0	4	0
NONE	MT:LT:?:?:?	0.08	0.62	0	34	0
NONE	MT:LT:?:?:?	0.07	0.6	0	0	0
NONE	MT:LT:?:?:?	0.05	0.68	0	0	0
NONE	MT:LT:?:?:?	0.05	0.5	0	0	0
NONE	MT:LT:?:?:?	0.06	0.51	0	0	0
NONE	MT:LT:?:?:?	0.07	0.48	0	0	0

?	MT:LT:?:?:?	0.07	0.52	0	0	0
?	MT:LT:?:?:?	0.05	0.59	0	0	0
?	MT:LT:?:?:?	0.05	0.64	0	0	0
?	MT:LT:?:?:?	0.06	0.63	0	0	0
?	MT:LT:?:?:?	0.05	0.77	0	0	0
?	MT:LT:?:?:?	0.05	0.76	0	0	0
Flushed wi	MT:LT:?:?:?	0.05	0.74	0	2	0
?	MT:LT:?:?:?	0.07	0.59	0	0	0
NONE	MT:LT:?:?:?	0.05	0.68	0	0	0
Already flu	MT:LT:?:?:?	0.06	0.79	0	0	0

Not required by Regulations and not submitted to the DWI in monthly Data Returns

Flow Cytometry High Nucleic Acid %	Flow Cytometry Intact Cell Count	Flow Cytometry Low Nucleic Acid %	Flow Cytometry Total Cell Count	SAMPLE POINT FLUSH TIME	TEMPERATURE C
%	No/100µl	%	No/100µl	min	°C
43	385	57	4139		8.6
44.2	234	55.8	4677		9.8
43.1	303	56.8	4886		8.8
49.5	343	50.5	4386		5.9
49.8	423	50.2	4478		12.4
47.9	157	52	4211		8.8
50.6	292	49.4	4931		6.6
50.1	280	49.9	4922		10
					8.7
					7.1
42.3	335	57.7	5986		10.4
39.2	448	60.8	4972		12.7
37.3	425	62.7	5261		8.5
37.5	381	62.5	4475		9.2
61.2	615	38.7	5336		
42.2	950	57.6	5867		8.4
40.2	868	59.6	6316		12.2
45.7	1174	54.2	6922		12.2
64.2	886	35.5	5006		14.9
45.1	566	54.9	3497		15.2
70.9	1445	28.8	5021		15.6
58.7	1089	41.3	3276		16.7
69.2	1073	30.7	3813		16.6
68.5	1088	31.4	4922		19.8
69.5	778	30.4	3064		19.2
62.4	1064	37.6	2907		20.2
59.6	651	40.3	2615		19.1
55.1	885	44.9	4554		20.2
69	720	30.6	3818		22.5
63.8	1181	36.1	3202		24.2
					23
66.7	741	32.9	2618		22.2
					23.1
74.2	1220	25.8	2369		22.2
76.3	1029	23.5	1967		23.6
51.4	706	48.4	2498		22.9
49.2	695	50.7	3150		21.3
69.9	682	29.8	2079		20.2
63	496	36.9	2892		18.1
59.1	453	40.9	3094		17.1
47.2	449	52.8	2226		16.4
58	1558	42	4039		20.5

51.09	881	48.89	4038	5	16
62.33	461	37.54	2997	5	17.7
47.83	462	52.15	4146	5	14
47.75	734	52.23	4128	5	15.3
40.85	556	59.15	4091	5	14.4
49.9	934	50.1	6263	5	11.2
41.05	735	58.93	4784	0	9.9
41.75	464	58.2	5191	5	13
42.74	302	57.23	6069	5	8.4
43.07	325	56.93	5403	5	8.8

24th November 2017

SUPPLY PROPOSAL CONFIRMATION – The design, supply, delivery, installation, testing, and commissioning of a new chlorine contact tank for a new WTW in Kedington that is a part of the Great Wratting scheme.

PROJECT: WAT-06742 GREAT WRATTING WTW

Reference number – from SPC tracker 2016XXX

Return Date: date for return
Contact: buyers name
Buyer email details@anglianwater.co.uk

Dear Sir/Madam,

You are invited to submit your quotation for the pre-cast chlorine contact tank at our Kedington site as detailed in the accompanying specification documentation.

Your tender should fully cover the requirements and conditions of the enquiry package. Any exclusions or deviations from the scope of works must be clearly identified in your submission.

Emailed quotations are to be returned to the contact stated above by 12.00 noon on the date specified.

Please acknowledge receipt of this enquiry and confirm that you will submit a quotation by sending an email to the buyer above.

Note: it is a mandatory requirement on the @one alliance that if your quotation is successful, no work is to be carried out without a contract being in place.

Yours faithfully,

@one Intergated Procurement Team
Telephone: 01733
Mobile: insert here

A. SPECIFICATION

Please note that the terms and conditions of any existing Framework Agreement will take precedence over the following section:

Refer to attached specification and the documents listed below to provide a BUDGET quotation

MiC Required:	**YES**		**Test Certification:**	**YES**	
O & M Documentation:	**YES**		**GA Drawings:**	**YES**	
Guarantee Required:	**YES**		**Design Risk Assessments**	**YES**	
Work is to comply with the requirements of the Construction Products Regulation 2011 (CE marking)				**YES**	

New chlorine contact tank civil works to include:

- Contact and balancing tank concrete structure
- Roof slab
- Inlet bellmouths and piping including isolation valves
- Outlet bellmouth and wall pipes
- Drainage and overflow piping, flap valve at discharge outlet
- Washout chamber and pump (when required)
- Security access covers and manway access
- Handrailing and access stairs
- Internal penstocks

Drawing Number	Version	Description
WAT-06742-KEHRWW-contact tank preliminary sizing	P1	Chlorine contact tank preliminary plan layout
WAT-06742-KEHRWW-SS-LAY-SK02	P1	Kedington WTW Proposed Layout Contact Tank Option

All materials and equipment supplied, or any work undertaken that introduces any product, substance, or material in contact with treated or untreated water that is intended for potable use shall comply with the current relevant regulations and in particular Regulation 31. Anglian Water's particular requirements for compliance with Regulation 31 can be found at the following web address:

(http://anglianwater.co.uk/_assets/media/StandardTC3_(including_REG_31_Requirements).pdf)

Health & Safety

The Supplier shall provide at least 2 weeks before attending site, suitable Risk Assessments, Method Statements and Pre-construction H & S Plans for approval by the Site Manager.

The Supplier shall include for the provision of a Site Supervisor who will be responsible for ensuring all work is undertaken in accordance with the site rules and method statements provided. Evidence of competence shall be provided at least 2 weeks before commencement of work on site.

Staff working on site shall be appropriately trained in all operations required to be undertaken within the scope of works and must have attended the two day @One Alliance Safety Passport Induction Course (see Appendix A attached). Evidence of competence shall be provided on request.

All site staff should hold current CSCS cards. Supervisors shall hold the following qualifications as a minimum:

Civil –CSCS Gold Card + SMSTS or SSSTS
Mechanical-Supervisor CSCS Gold Card or ECTIB Safety Passport + SSSTS
Mechanical-Fitter ECTIB Safety Passport
Electrical-Supervisor JIB Approved Electrician card + SMSTS or SSSTS

All personnel working on Alliance sites must use PPE that complies with the attached policy.

A Pre-Start Health and Safety Meeting will be required before any work commences on site.

Site Address and contact details
Kedington WTW
Haverhill Road
Haverhill
Kedington
CB9 7TD

Site Visit details
Site visits can be arranged upon request.
[NAME OF CONTACT]: [EMAIL/WORK NUMBER]

Programme
Construction is currently planned to start onsite [MONTH/YEAR]

B. TERMS AND CONDITIONS

Will be based on the NEC3 Engineering and Construction Contract (April 2013 edition) with Anglian Water amendments.

Framework terms to apply where appropriate.

(Agree T&Cs with the commercial team and the options to be used)

REQUIREMENT	NOTES	YES / NO
Purchase Order	AW Standard Terms	
Framework Agreement number	If applicable	
Non Framework	Attach Contract	
Option A (priced contract with activity schedule)		
Option C (target price contract with activity schedule)		

C. PROPOSAL DOCUMENTATION REQUIRED

1. Complete price schedule below (refer to framework breakdowns as appropriate)

2. Advise your lead-time / programme / key milestones / long lead items / risk etc.

3. Advise sub contracted activities

4. Contractors Risk Register

5. Advise exclusions and assumptions

6. Technical queries are to be submitted via email to the buyer. However, these will not extend the tender return date

7. Confirmation of compliance with the terms and conditions detailed above

8. Confirmation of compliance with the health and safety information detailed above

9. Warranty period

10. Validity of quote

11. Delivery terms & Documentation

12. Add more questions as appropriate

D. PRICE SCHEDULE

All prices exclude VAT. Please provide a breakdown of your price in in accordance with the following: select the most appropriate spreadsheet

Ref	Item	Price (£)
	Total Of The Prices	

Cost Breakdown Structure for SPC.xls

APPENDIX A

The Alliance H&S Work Safely Induction training (Mandatory)

The @one Alliance carries out it's own "Health & Safety Work Safely" training.

This two day induction programme has been designed to provide everyone working in and with the Alliance (including subcontractors and plant hire operators), with the same comprehensive briefing on our approach to H&S and our improvement plans for AMP6.

It is mandatory for everyone in the Alliance (including subcontractors) who work on site to attend. On completing the induction attendees will be issued with an Alliance passport. In AMP6 access to any Alliance construction site will require a current passport. Should anyone exhibit poor safety behaviour in the future we may rescind their passport.

The Alliance rules that will apply are as follows:-

1. Everyone working on site must hold a passport.
2. Visitors must be escorted on site by a passport holder.
3. Delivery drivers must be escorted by a passport holder i.e. banksman
4. Drivers (e.g. earthmoving) working for more than one week on site must hold a passport

The training is provided free of charge, however you will need to cover the cost of the hours you attend, as you will be unable to book these to your work order for the Alliance.

The inductions are held at the College of West Anglia, Wisbech Campus, Ramnoth Road, Wisbech, PE13 2JE

Please confirm the names of the attendees who require H&S Work Safely Induction training, by completing the attached request (see attached links below

for site location and application form). All completed forms should be emailed to [redacted] at [redacted]@anglianwater.co.uk. If you have any queries please contact [redacted] on [redacted]

See Work Safely Induction Booking Form and Training Centre Location and Instructions attached to this enquiry

DO NOT SCALE

UNCONTROLLED COPY WHEN PRINTED

uPVC & ABS NOTES

1. ALL PIPING & FITTINGS FROM uPVC UNLESS STATED OTHERWISE.
2. PIPING TO BE SUPPORTED AT OR NEAR VALVES, ELBOWS AND TEES.
3. STRAIGHT LENGTHS TO BE SUPPORTED AT *SEE CHART* CENTRES. (MAX).
4. PIPING TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS USING APPROVED SOLVENT CEMENT.
5. EPDM FULL FACE CLOTH FINISH GASKETS TO BE USED AS STANDARD BETWEEN ALL FLANGES. 3mm TO BE ALLOWED FOR INSTALLED THICKNESS.
6. ALL NUTS & BOLTS TO BE IN ACCORDANCE WITH ISO 272; ISO 4759/1 OR EQUIVALENT, AND GALVANISED TO BS 7371 PART 6. WASHERS ARE TO BE IN ACCORDANCE WITH BS4320:1968 & GALVANISED TO BS 7371 PART 6.

SUPPORT CENTRES			
SIZE (in)	SIZE (mm)	uPVC@20°	ABS@20°
¼"	12	700	800
⅜"	16	700	800
½"	20	800	900
¾"	25	900	1000
1"	32	1000	1100
1 ¼"	40	1100	1100
1 ½"	50	1200	1200
2"	63	1400	1400
2 ½"	75	1500	1600
3"	90	1600	1700
4"	110	1800	1900
–	125	2000	1900
5"	140	2100	2000
6"	160	2200	2100
–	200	2500	2500
8"	225	2500	2500

DUCTILE IRON NOTES

1. ALL DIMENSIONS IN MILLIMETRES UNLESS STATED OTHERWISE.
2. ALL LEVELS IN METRES UNLESS STATED OTHERWISE.
3. LINEAR DIMENSIONAL TOLERANCES TO BE AS SHOWN BELOW. TOLERANCES MUST NOT BE ACCUMULATIVE.

LINEAR DIMENSION	TOLERANCE
0–500mm	± 1mm
500–2000mm	± 2mm
2000mm AND OVER	± 3mm

4. ANGULAR TOLERANCES TO BE ± 1°.
5. DUCTILE IRON PIPING & FITTINGS TO EN545 SERIES A.
6. FLANGES TO BE DIMENSIONED AND DRILLED TO BS4504 NP16.
7. UNLESS OTHERWISE STATED,THE COATINGS FOR PIPES WILL BE
   EXTERNAL: ZINC & FINISH COAT (BITUMIN OR EPOXY). INTERNAL: CEMENT MORTAR LINED (OPC). PIPE ENDS: EXTERNAL SURFACES OF SPIGOTS – ZINC & FINISH COAT (BITUMEN OR EPOXY), & INTERNAL SURFACES OF SOCKETS & FLANGE FACES – FINISH COAT (BITUMEN OR EPOXY)
8. UNLESS OTHERWISE STATED, THE COATINGS FOR FITTINGS WILL BE
   EXTERNAL: FINISH COAT (BITUMIN OR EPOXY). INTERNAL: FINISH COAT (BITUMIN OR EPOXY).
10. FLANGE ADAPTORS & COUPLINGS TO BE TIED, UNLESS STATED OTHERWISE, USING SCREWED ROD CUT FROM 1m LENGTHS.
11. EPDM FULL FACE CLOTH FINISHED GASKETS TO BE USED AS STANDARD BETWEEN ALL FLANGES. 3mm TO BE ALLOWED FOR INSTALLED THICKNESS.
12. ALL NUTS, BOLTS & THREADED BAR TO BE IN ACCORDANCE WITH ISO 272; ISO 4759/1 EQUIVALENT, & GALVANISED TO BS 7371–6–1998. WASHERS ARE TO BE IN ACCORDANCE WITH BS4320 1968 & GALVANISED TO BS 7371–6:1998. ALL CUT TIE BAR ENDS TO BE PROTECTED WITH GALVAFROID OR SIMILAR ZINC RICH PAINT, IMMEDIATELY AFTER CUTTING.
13. SPOOLS MUST BE TAGGED WITH THE DRAWING NUMBER & RELEVANT ITEM NUMBER WITH METAL TAGS WIRED TO FLANGES. SPOOLS WITHOUT FLANGES MUST HAVE THE NUMBERS PRINTED ON PIPE USING INDELIBLE PAINT.
14. PIPEWORK SHALL BE INSTALLED AS INDICATED. ANY DISCREPANCIES MUST BE REPORTED TO THE DRAWING OFFICE.
15. UNDERGROUND PIPES AND FITTINGS SHALL HAVE A BLACK EXTERNAL FINISH UNLESS OTHERWISE STATED.

STAINLESS STEEL NOTES

1. ALL DIMENSIONS IN MILLIMETRES UNLESS STATED OTHERWISE.
2. ALL LEVELS IN METRES UNLESS STATED OTHERWISE.
3. LINEAR DIMENSIONAL TOLERANCES TO BE AS SHOWN BELOW. TOLERANCES MUST NOT BE ACCUMULATIVE.

LINEAR DIMENSION	TOLERANCE
0–500mm	± 1mm
500–2000mm	± 2mm
2000mm AND OVER	± 3mm

4. ANGULAR TOLERANCES TO BE ± 1°.
5. SPIGOT END CONCENTRICITY TOLERANCES TO BE ± 1.6mm FOR A LENGTH OF 125mm TO SUIT COUPLINGS.
6. MATERIAL TO BE STAINLESS STEEL TRU–BORE TUBE, GRADE AISI 316, UNLESS STATED OTHERWISE.
7. FLANGES TO BE ACCORDING TO BS EN 1092 PART 1 2007, TABLE 13, TYPE 37, TYPE A FLAT FACE UNLESS STATED OTHERWISE & TYPE 5 FOR BLANK FLANGES.
8. BACKING FLANGES TO BE FINISHED WITH 100% SOLIDS THERMOSETTING FUSION BONDED EPOXY RESIN SCOTCHKOTE 206N APPLIED BY FLUIDISED BED METHOD. MINIMUM DRY THICKNESS 300 MICRONS.
9. WELDING OF FABRICATED PIPEWORK SHALL BE TO BS 4677 : 1984 WITH THE FOLLOWING INCLUSIONS.

WORKING PRESSURE	
UP TO 24 Bar	10% DYE PENETRANT (IN LIEU OF RADIOGRAPHY)
24 Bar AND OVER	10% RADIOGRAPHY AS BS4677:1984

10. FLANGE ADAPTORS & COUPLINGS TO BE TIED, UNLESS STATED OTHERWISE, USING SCREWED ROD CUT FROM 1m LENGTHS, FIXED THROUGH LUGS OR BACKING RINGS WELDED TO PIPE.
11. EPDM FULL FACE CLOTH FINISHED GASKETS TO BE USED AS STANDARD BETWEEN ALL FLANGES. 3mm TO BE ALLOWED FOR INSTALLED THICKNESS.
12. ALL NUTS, BOLTS & THREADED BAR TO BE IN ACCORDANCE WITH ISO 272; ISO 4759/1 EQUIVALENT, A& GALVANISED TO BS 7371–6 – 1998. WASHERS ARE TO BE IN ACCORDANCE WITH BS4320 1968 & GALVANISED TO BS 7371–6 : 1998. ALL CUT TIE BAR ENDS TO BE PROTECTED WITH GALVAFROID OR SIMILAR ZINC RICH PAINT, IMMEDIATELY AFTER CUTTING.
13. A WASHER MUST BE USED UNDER EACH COATED FLANGE BOLT HEAD AND NUT.
14. SPOOLS MUST BE TAGGED WITH THE DRAWING NUMBER & RELEVANT ITEM NUMBER WITH METAL TAGS WIRED TO FLANGES. SPOOLS WITHOUT FLANGES MUST HAVE THE NUMBERS PRINTED ON PIPE USING INDELIBLE PAINT.
15. PIPEWORK SHALL BE INSTALLED AS INDICATED.

@one ALLIANCE

FOR CONSTRUCTION

CARBON STEEL NOTES

1. ALL DIMENSIONS IN MILLIMETRES UNLESS STATED OTHERWISE.
2. ALL LEVELS IN METRES UNLESS STATED OTHERWISE.
3. LINEAR DIMENSIONAL TOLERANCES TO BE AS SHOWN BELOW. TOLERANCES MUST NOT BE ACCUMULATIVE.

LINEAR DIMENSION	TOLERANCE
0–500mm	± 1mm
500–2000mm	± 2mm
2000mm AND OVER	± 3mm

4. ANGULAR TOLERANCES TO BE ± 1°.
5. SPIGOT END CONCENTRICITY TOLERANCES TO BE ± 1.6mm FOR A LENGTH OF 125mm TO SUIT COUPLINGS.
6. MATERIAL TO BE CARBON STEEL PIPES TO API 5L GRADE B (OR EQUIVALENT). WALL THICKNESS TO BS534, HFS, ERW OR SAW
7. FLANGES TO BE ACCORDING TO BS EN 1092 PART 1 2007, TABLE 13, TYPE 1, TYPE B RAISED FACE UNLESS STATED OTHERWISE & TYPE 5 FOR BLANK FLANGES.
8. CARBON STEEL PIPEWORK TO BE FINISHED INTERNALLY & EXTERNALLY WITH 100% SOLIDS THERMOSETTING FUSION BONDED EPOXY RESIN SCOTCHKOTE 206N APPLIED BY FLUIDISED BED METHOD. MINIMUM DRY THICKNESS 300 MICRONS.
9. WELDING OF FABRICATED PIPEWORK SHALL BE AS FOLLOWS

WORKING PRESSURE	
UP TO 24 Bar	CLASS II TO BS2971 : 1991
24 Bar AND OVER	CLASS I TO BS2633 : 1987

10. FULL PENETRATION SEAM WELDS TO PIPEWORK SHALL HAVE EXTERNAL FACE GROUND FLUSH AT SPIGOT ENDS FOR INSTALLATION OF COUPLINGS AND FLANGE ADAPTORS FOR A LENGTH OF 150mm (<600ø) AND 200mm (>600ø).
11. BUTT WELD FITTINGS, WHERE USED, TO BS1640 PART 3 & 4 1966 OR EQUIVALENT
12. FLANGE ADAPTORS & COUPLINGS TO BE TIED, UNLESS STATED OTHERWISE, USING SCREWED ROD CUT FROM 1m LENGTHS, FIXED THROUGH LUGS OR BACKING RINGS WELDED TO PIPE.
13. EPDM FULL FACE CLOTH FINISHED GASKETS TO BE USED AS STANDARD BETWEEN ALL FLANGES. 3mm TO BE ALLOWED FOR INSTALLED THICKNESS.
14. ALL NUTS, BOLTS & THREADED BAR TO BE IN ACCORDANCE WITH ISO 272; ISO 4759/1 EQUIVALENT, & GALVANISED TO BS 7371–6 1998. WASHERS ARE TO BE IN ACCORDANCE WITH BS4320 1968 & GALVANISED TO BS 7371–6 : 1998. ANY CUT TIE BAR ENDS TO BE PROTECTED WITH GALVAFROID OR SIMILAR ZINC RICH PAINT, IMMEDIATELY AFTER CUTTING.
15. A WASHER MUST BE USED UNDER EACH COATED FLANGE BOLT HEAD AND NUT.
16. SPOOLS MUST BE TAGGED WITH THE DRAWING NUMBER & RELEVANT ITEM NUMBER WITH METAL TAGS WIRED TO FLANGES. SPOOLS WITHOUT FLANGES MUST HAVE THE NUMBERS PRINTED ON PIPE USING INDELIBLE PAINT.
17. PIPEWORK SHALL BE INSTALLED AS INDICATED.

ALL DISCREPANCIES MUST BE REPORTED TO THE DRAWING OFFICE

REV	DATE	DETAILS	STAT	CHK	APP
1	07.11.18	ISSUED FOR CONSTRUCTION	C	PKM	AM

REFERENCED DRAWINGS:

anglianwater @one
Thorpe Wood House, Thorpe Wood,
Peterborough, Cambs. PE3 6WT
Tel: 01733 414100 Fax: 01733 414111

PROJECT TITLE: KEDINGTON WTW

DRAWING TITLE: MATERIAL NOTES

DES'D: STD	DATE: 03.02.11	DRAWN: STD	DATE: 03.02.11	CHK'D: STD	DATE: 03.02.11	APP'D: STD	DATE: 03.02.11	A3	SCALE: NTS

DRAWING No. WAT–06742–KEHRWW–SS–DET–5990

REV. 1

STAT. C

Sikagard®-62 (A)

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : Sikagard®-62 (A)

1.2 Relevant identified uses of the substance or mixture and uses advised against

Product use : Surfaces protection

1.3 Details of the supplier of the safety data sheet

Company name of supplier	:	Sika Limited Watchmead Welwyn Garden City Hertfordshire. AL7 1BQ
Telephone	:	+44 (0)1707 394444
Telefax	:	+44 (0)1707 329129
E-mail address of person responsible for the SDS	:	EHS@uk.sika.com

1.4 Emergency telephone number

National Chemical Emergency Centre (NCEC)
24 Hour Emergency Telephone Number +44 870 190 6777

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Skin irritation, Category 2	H315: Causes skin irritation.
Eye irritation, Category 2	H319: Causes serious eye irritation.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Long-term (chronic) aquatic hazard, Category 2	H411: Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Warning

Hazard statements	:	H315	Causes skin irritation.
		H317	May cause an allergic skin reaction.
		H319	Causes serious eye irritation.
		H411	Toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P273	Avoid release to the environment.
P280	Wear protective gloves/ eye protection/ face protection.

Response:

P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P391	Collect spillage.

Hazardous components which must be listed on the label:

bis-[4-(2,3-epoxipropoxi)phenyl]propane
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.

Additional Labelling

EUH211 Warning! Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Registration number	Classification	Concentration (% w/w)
bis-[4-(2,3-epoxipropoxi)phenyl]propane	1675-54-3 216-823-5 01-2119456619-26-XXXX	Skin Irrit. 2; H315 Eye Irrit. 2; H319 Skin Sens. 1; H317 Aquatic Chronic 2; H411 --- specific concentration limit Eye Irrit. 2; H319 >= 5 % Skin Irrit. 2; H315 >= 5 % STOT RE 2; H319 >= 5 % Skin Irrit. 2; H315 >= 5 %	>= 40 - < 60
titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]	13463-67-7 236-675-5 01-2119489379-17-XXXX	Carc. 2; H351	>= 5 - < 10
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	68609-97-2 271-846-8 01-2119485289-22-XXXX	Skin Irrit. 2; H315 Skin Sens. 1; H317	>= 5 - < 10

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.

If inhaled : Move to fresh air.
Consult a physician after significant exposure.

In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.

If symptoms persist, call a physician.

In case of eye contact	:	Immediately flush eye(s) with plenty of water. Remove contact lenses. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
If swallowed	:	Do not induce vomiting without medical advice. Rinse mouth with water. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	:	Allergic reactions Excessive lachrymation Erythema Dermatitis See Section 11 for more detailed information on health effects and symptoms.
Risks	:	irritant effects sensitising effects Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment	:	Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	In case of fire, use water/water spray/water jet/carbon dioxide/sand/foam/alcohol resistant foam/chemical powder for extinction.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	No hazardous combustion products are known

5.3 Advice for firefighters

Special protective equipment	:	In the event of fire, wear self-contained breathing apparatus.

for firefighters

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.
Deny access to unprotected persons.

6.2 Environmental precautions

Environmental precautions : Do not flush into surface water or sanitary sewer system.
If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Do not breathe vapours or spray mist.
Avoid exceeding the given occupational exposure limits (see section 8).
Do not get in eyes, on skin, or on clothing.
For personal protection see section 8.
Persons with a history of skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
Smoking, eating and drinking should be prohibited in the application area.
Follow standard hygiene measures when handling chemical products

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully re-sealed and kept upright to prevent leakage. Store in accordance with local regulations.

Further information on storage stability : No decomposition if stored and applied as directed.

7.3 Specific end use(s)

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters *	Basis *
titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]	13463-67-7	TWA (inhalable dust)	10 mg/m3	GB EH40
		TWA (Respirable dust)	4 mg/m3	GB EH40

*The above mentioned values are in accordance with the legislation in effect at the date of the release of this safety data sheet.

8.2 Exposure controls

Personal protective equipment

Eye protection : Safety glasses with side-shields conforming to EN166
Eye wash bottle with pure water

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard must be worn at all times when handling chemical products. Reference number EN 374. Follow manufacturer specifications.

Suitable for short time use or protection against splashes:
Butyl rubber/nitrile rubber gloves (> 0,1 mm)
Contaminated gloves should be removed.
Suitable for permanent exposure:
Viton gloves (0.4 mm),
breakthrough time >30 min.

Skin and body protection : Protective clothing (e.g. Safety shoes acc. to EN ISO 20345, long-sleeved working clothing, long trousers). Rubber aprons and protective boots are additionaly recommended for mixing and stirring work.

Respiratory protection	:	In case of inadequate ventilation wear respiratory protection. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. organic vapor filter (Type A) A1: < 1000 ppm; A2: < 5000 ppm; A3: < 10000 ppm Ensure adequate ventilation. This can be achieved by local exhaust extraction or by general ventilation. (EN 689 - Methods for determining inhalation exposure). This applies in particular to the mixing / stirring area. In case this is not sufficent to keep the concentrations under the occupational exposure limits then respiration protection measures must be used.

Environmental exposure controls

General advice	:	Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform respective authorities.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	liquid
Appearance	:	viscous
Colour	:	various
Odour	:	epoxy-like
Boiling point/boiling range	:	No data available
Flash point	:	> 101 °C Method: closed cup
Auto-ignition temperature	:	No data available
pH	:	Not applicable substance/mixture is non-soluble (in water)

Viscosity

Viscosity, kinematic	:	> 20,5 mm2/s (40 °C)

Solubility(ies)

Water solubility	:	insoluble
Vapour pressure	:	0,01 hPa
Density	:	1,45 g/cm3 (20 °C)

9.2 Other information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

The product is chemically stable.

10.3 Possibility of hazardous reactions

Hazardous reactions : Stable under recommended storage conditions.

10.4 Conditions to avoid

Conditions to avoid : No data available

10.5 Incompatible materials

Materials to avoid : No data available

10.6 Hazardous decomposition products

No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Not classified based on available information.

Components:

bis-[4-(2,3-epoxipropoxi)phenyl]propane:

Acute oral toxicity : LD50 Oral (Rat): > 5.000 mg/kg

Acute dermal toxicity : LD50 Dermal (Rabbit): > 5.000 mg/kg

oxirane, mono[(C12-14-alkyloxy)methyl] derivs.:

Acute oral toxicity : LD50 Oral (Rat): > 5.000 mg/kg

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Causes serious eye irritation.

Respiratory or skin sensitisation

Skin sensitisation
May cause an allergic skin reaction.

Respiratory sensitisation
Not classified based on available information.

Germ cell mutagenicity
Not classified based on available information.

Carcinogenicity
Not classified based on available information.

Reproductive toxicity
Not classified based on available information.

STOT - single exposure
Not classified based on available information.

STOT - repeated exposure
Not classified based on available information.

Aspiration toxicity
Not classified based on available information.

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment	:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 12: Ecological information

12.1 Toxicity

Components:

bis-[4-(2,3-epoxipropoxi)phenyl]propane:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 2 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 1,8 mg/l Exposure time: 48 h

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment	:	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

12.6 Endocrine disrupting properties

Product:

Assessment	:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Product:

Additional ecological information	:	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product	:	The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

European Waste Catalogue	:	08 01 11* waste paint and varnish containing organic solvents or other dangerous substances
Contaminated packaging	:	15 01 10* packaging containing residues of or contaminated by dangerous substances

SECTION 14: Transport information

14.1 UN number

ADR	:	UN 3082
IMDG	:	UN 3082
IATA	:	UN 3082

14.2 UN proper shipping name

ADR	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (epoxy resin)
IMDG	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (epoxy resin)
IATA	:	Environmentally hazardous substance, liquid, n.o.s. (epoxy resin)

14.3 Transport hazard class(es)

ADR	:	9
IMDG	:	9
IATA	:	9

14.4 Packing group

ADR

Packing group	:	III
Classification Code	:	M6
Hazard Identification Number	:	90
Labels	:	9
Tunnel restriction code	:	(-)
Remarks	:	Transport in accordance with special provision 375

IMDG

Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Remarks	:	Transport in accordance with 2.10.2.7 of the IMDG-Code

IATA (Cargo)

Packing instruction (cargo aircraft)	:	964
Packing instruction (LQ)	:	Y964
Packing group	:	III
Labels	:	Miscellaneous
Remarks	:	Transport in accordance with special regulation A 197

IATA (Passenger)

Packing instruction (passenger aircraft)	:	964
Packing instruction (LQ)	:	Y964
Packing group	:	III
Labels	:	Miscellaneous

14.5 Environmental hazards

ADR
Environmentally hazardous : yes

IMDG
Marine pollutant : yes

IATA (Passenger)
Environmentally hazardous : yes

IATA (Cargo)
Environmentally hazardous : yes

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Relevant EU provisions transposed through retained EU law

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)	:	Conditions of restriction for the following entries should be considered: Number on list 3
International Chemical Weapons Convention (CWC) Schedules of Toxic Chemicals and Precursors	:	Not applicable
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	None of the components are listed (=> 0.1 %).
REACH - List of substances subject to authorisation	:	Not applicable

(Annex XIV)

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	:	Not applicable
Regulation (EU) 2019/1021 on persistent organic pollutants (recast)	:	Not applicable
Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals	:	Not applicable

REACH Information: All substances contained in our Products are
- registered by our upstream suppliers, and/or
- registered by us, and/or
- excluded from the regulation, and/or
- exempted from the registration.

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

E2 ENVIRONMENTAL HAZARDS

Volatile organic compounds	:	Law on the incentive tax for volatile organic compounds (VOCV) Volatile organic compounds (VOC) content: 0,1% w/w no VOC duties Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control) Volatile organic compounds (VOC) content: 0,1% w/w

If other regulatory information applies that is not already provided elsewhere in the Safety Data Sheet, then it is described in this subsection.

Health, safety and environmental regulation/legislation specific for the substance or mixture:	:	Environmental Protection Act 1990 & Subsidiary Regulations Health and Safety at Work Act 1974 & Subsidiary Regulations Control of Substances Hazardous to Health Regulations (COSHH) May be subject to the Control of Major Accident Hazards Regulations (COMAH), and amendments.

Other regulations:

Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this mixture by the supplier.

SECTION 16: Other information

Full text of H-Statements

H315	:	Causes skin irritation.
H317	:	May cause an allergic skin reaction.
H319	:	Causes serious eye irritation.
H351	:	Suspected of causing cancer if inhaled.
H411	:	Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Carc.	:	Carcinogenicity
Eye Irrit.	:	Eye irritation
Skin Irrit.	:	Skin irritation
Skin Sens.	:	Skin sensitisation
GB EH40	:	UK. EH40 WEL - Workplace Exposure Limits
GB EH40 / TWA	:	Long-term exposure limit (8-hour TWA reference period)
ADR	:	European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS	:	Chemical Abstracts Service
DNEL	:	Derived no-effect level
EC50	:	Half maximal effective concentration
GHS	:	Globally Harmonized System
IATA	:	International Air Transport Association
IMDG	:	International Maritime Code for Dangerous Goods
LD50	:	Median lethal dosis (the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals)
LC50	:	Median lethal concentration (concentrations of the chemical in air that kills 50% of the test animals during the observation period)
MARPOL	:	International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978
OEL	:	Occupational Exposure Limit
PBT	:	Persistent, bioaccumulative and toxic
PNEC	:	Predicted no effect concentration
REACH	:	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency
SVHC	:	Substances of Very High Concern
vPvB	:	Very persistent and very bioaccumulative

Further information

Classification of the mixture:		**Classification procedure:**
Skin Irrit. 2	H315	Calculation method
Eye Irrit. 2	H319	Calculation method
Skin Sens. 1	H317	Calculation method

Aquatic Chronic 2	H411	Calculation method

The information contained in this Safety Data Sheet corresponds to our level of knowledge at the time of publication. All warranties are excluded. Our most current General Sales Conditions shall apply. Please consult the product data sheet prior to any use and processing.

Changes as compared to previous version !

GB / EN

TEKNOLEVEL FS

1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

Product Identifier
Teknolevel FS

Details of the supplier of the data sheet

Premcrete Ltd
44 Macadam Way
West Portway
Andover
Hampshire
SP10 3XW

sales@premcrete.com
www.premcrete.com

Emergency telephone number
02380 276166
7.00am-5:00pm Mon-Fri

2. COMPOSITION INFORMATION ON INGREDIENTS

Mixture of limestone sands and aggregates, pigments and surfactants not classified as hazardous. Mixture of Portand Cements CAS 65997-15-1 and expansive cements, CAS 12004-14-7 EEC Symbol Xi, R Phrases 36/37/38, 41

3. HAZARD IDENTIFICATION

Irritant Risk of serious damage to eyes.

NOTE Contains soluble chromium (VI) controlled by the addition of a reducing agent to no more than 2ppm by dry weight of cement when mixed with water, for a period of 12 months from the date of manufacture shown on this package under the stipulated storage conditions. Use of this product after the end of this period or under different storage conditions may increase the risk of an allergic reaction. PPE must still be worn.

4. FIRST AID MEASURES

INHALATION: Remove patient from exposure, keep warm and at rest. If dry powder has been inhaled, the nose and throat should be thoroughly irrigated with water for at least 20 minutes. If distress is felt after inhalation of vapours, summon medical aid. Inhalation of free silica over a prolonged period can give rise to fibrosis of the lungs.

SKIN CONTACT: Remove contaminated clothing. After contact with skin, wash immediately with plenty of clean water (S28). Repeated contact over a prolonged period may produce an allergic reaction. Seek medical attention if irritation persists.

EYE CONTACT: SPEED IS ESSENTIAL. In case of contact with eyes, rinse immediately with plenty of clean water and seek medical advice (S26). Remove any large particles with cotton wool bud. Contact lenses should be removed. Eye wash stations should be available in areas where exposure is possible.

INGESTION: Do not induce vomiting. Wash mouth out with water and, if conscious, give plenty of water to drink. Seek medical attention.

NOTE If symptoms persist, seek medical advice.

5. FIRE-FIGHTING MEASURES

SUITABLE EXTINGUISHER MEDIA: Will not support combustion. Compatible with all standard fire fighting techniques.

EXPOSURE HAZARDS: Fire or decomposition products may contain oxides of carbon. The powder releases alkalis on contact with water and chemically hardens.

SPECIAL PROTECTIVE EQUIPMENT In a sustained fire, self contained breathing apparatus should be worn.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Ensure adequate ventilation. Wear suitable protective clothing, gloves and eyes face protection (S36/37/39). Avoid contact with eyes (S25). Do not breathe dust (S22).

SEE "EXPOSURE CONTROLS/PERSONAL PROTECTION"

ENVIRONMENTAL PRECAUTIONS: If material enters drains or sewers, dilute as much as possible with water. In case of contamination of streams, river or lakes, contact the National Rivers Authority.

CLEANING UP METHODS: Carefully sweep or vacuum up any mixed mortar and/or dry powder. Soak up polymer with sand or sawdust. Transfer to marked containers to await disposal. Wash away any residue with plenty of clean water.

SEE "DISPOSAL CONSIDERATIONS" and “STABILITY AND REACTIVITY”

7. HANDLING AND STORAGE

HANDLING: Wear suitable protective clothing, gloves and eye/face protection (S36/37/39). Eye wash stations should be available in areas where accidental exposure is possible. The normal precautions relating to handling chemicals must be observed. Use to minimise the creation of dust and ensure adequate ventilation to keep the airborne concentrations below the recommended exposure limits.

SEE “EXPOSURE CONTROLS/PERSONAL PROTECTION”

STORAGE: Store in dry frost free conditions, in original containers. Protect from high temperatures (40°C+) for prolonged periods

8. EXPOSURE CONTROL AND PROTECTION MEASURES

RESPIRATORY: Normal conditions of ventilation are usually adequate. Wear a fine particle mask or respirator, or use local exhaust ventilation as necessary when mixing in confined areas with inadequate ventilation or whenever there is any risk of the exposure limits being exceeded. This applies not only to the user, but to all people who cannot be vacated from the work area.

HAND: Use heavy duty gloves. Gloves may degrade or be damaged according to different circumstances of use. Always ensure gloves you are using are in good condition. Barrier creams may help to protect exposed areas but are not substitutes for full physical protection. They should not be applied once exposure has occurred.

EYE: Eye protection designed to protect against liquid splashes, conforming to EN 1166 Chemical Grade, should be worn when handling dry powder or when there is risk of material entering the eye. Eye protection is essential when handling alkaline material.

SKIN: Wear suitable overalls. Remove grossly contaminated clothing and wash skin with plenty of clean water. Practice good personal hygiene.

ALL PERSONAL PROTECTION EQUIPMENT MUST BE SELECTED TO MEET THE REQUIREMENTS OF THE COSHH REGULATIONS.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	fine powder
Odour	none
pH	12.5 when mixed with water
Relative density	1.02
Bulk density	1100 - 1550 kg/m3
Boiling point	N/A
Flammability	N/A
Solubility in water	insoluble
Vapour pressure	N/A

10. STABILITY AND REACTIVITY

STABLE UNDER NORMAL CONDITIONS OF STORAGE (SEE "HANDLING AND STORAGE")

CONDITIONS TO AVOID: Powder releases alkalis on contact with water and chemically hardens.

MATERIALS TO AVOID: Powder reacts vigorously with strong acids and, in the presence of moisture, will attack aluminium, lead and brass. Do not allow polymer to come into contact with metals or alloys that are liable to corrosion.

HAZARDOUS DECOMPOSITION PRODUCTS: May contain oxides of carbon.

HAZARDOUS POLYMERISATION: None known.

11. TOXOLOGICAL INFORMATION

INHALATION: Dust nuisance. Prolonged exposure to dust may cause irritation to the respiratory system. Prolonged exposure to product may cause inflammation of mucus membranes. Inhalation of free silica over a prolonged period can give rise to fibrosis of the lungs.

SKIN: In contact with water or body fluids, alkalis are released which can cause irritation of the skin. Continuous or repeated exposure over a period of time may cause burns or an allergic reaction. Levels of 1,2 benzisothiazolin-3one below 500 ppm are not likely to cause skin sensitisation.

EYE: Risk of serious damage to eyes.

INGESTION: Small amounts are unlikely to cause any significant reaction. Larger doses may result in irritation or blockage of the gastro-intestinal tract. Unlikely to result in poisoning due to the large volume of material which must be ingested. The engineering controls and personal protection equipment advised in this Safety Data Sheet are to ensure the occupational exposure limits are not exceeded. Should this happen to anyone within the affected area, there could be delayed adverse health effects.

12. ECOLOGICAL INFORMATION

Product should not be disposed of into rivers or other water courses without pre-treatment. Measures should be taken to prevent the release of dust to the environment. Appropriate additions of low concentrations to biological water treatment plants are not expected to cause any disturbances. Attention must be paid to local water treatment regulations.

AQUATIC TOXICITY RATING: LC50 aquatic toxicity rating not determined. The addition of cementitious materials to water will, however, cause the pH to rise and therefore be toxic to aquatic life in some circumstances.

13. DISPOSAL CONSIDERATIONS

The product is not classified as hazardous waste and is suitable for controlled waste site disposal. Do not allow into water courses or dispose of where ground or surface waters may be affected. Large quantities of polymer must be coagulated before disposal.

DISPOSE OF IN ACCORDANCE WITH LOCAL AND NATIONAL REGULATIONS

Further information on disposal methods and contractors is available from the National Association of Waste Disposal Contractors.

Tel: 020 7824 8882
Fax: 020 7824 8753

14. TRANSPORT INFORMATION

CONVEYANCE CLASSIFICATION: Not classified.

15. REGULATORY INFORMATION

EC HAZARD CLASSIFICATION: Xi Irritant.

RISK PHRASES: (Part B) R36/37/38: Irritating to eyes, respiratory system and skin. R41 - Risk of serious damage to eyes.

SAFETY PHRASES: S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S28 - After contact with skin, wash immediately with plenty of soap and water. S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

NOTE: Contains soluble chromium (VI) controlled by the addition of a reducing agent to no more than 2ppm by dry weight of cement when mixed with water, for a period of 12 months from the date of manufacture shown on this package under the stipulated storage conditions. Use of this product after the end of this period or under different storage conditions may increase the risk of an allergic reaction. PPE must still be worn.

OCCUPATIONAL EXPOSURE LIMITS AND STANDARDS ARE ADVISED IN PUBLICATION EH40 FROM THE HSE FOR THE PURPOSE OF REGULATION 7(1) OF THE COSHH REGULATIONS.

The above information is believed to be correct but not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the product.

Financial performance report

The financial results have been prepared in accordance with International Financial Reporting Standards (IFRS).

Financial results

The financial results are summarised in the table below:

	2021 Total £m	2020 Total £m
Revenue (excluding grants and contributions)	**1,276.2**	1,330.6
Grants and contributions	**75.6**	89.3
Operating costs	**(590.3)**	(624.6)
Charge for bad and doubtful debts	**(31.1)**	(40.7)
Other operating income	**12.5**	13.0
EBITDA[1]	**742.9**	767.6
Depreciation and amortisation	**(351.3)**	(368.5)
Operating profit	**391.6**	399.1
Finance income	**2.0**	4.8
Adjusted finance costs[2]	**(251.4)**	(329.9)
Adjusted profit before tax[1]	**142.2**	74.0
Finance costs — fair value losses on financial derivatives[2]	**(23.2)**	(30.4)
Profit before tax on a statutory basis	**119.0**	43.6
Tax charge	**(20.2)**	(120.4)
Profit/(loss) for the year	**98.8**	(76.8)

1 Financial measures or metrics used in this report that are not defined by IFRS are alternative performance measures. The Group uses such measures for performance analysis because they provide additional useful information on the performance and position of the Group. Since the Group defines its own alternative performance measures, these might not be directly comparable to other companies' alternative performance measures. These measures are not intended to be a substitute for, or superior to, IFRS measurements.

2 In order to show pre-tax performance based on management's view of an underlying basis, the fair value gains and losses on financial derivatives have been shown separately in the table because these are volatile non-cash movements that distort the actual underlying economic performance.

Revenue

Revenue, excluding grants and contributions, for the year was £1,276.2 million (2020: £1,330.6 million), a decrease of £54.4 million (4.1 per cent) on last year. The decrease in revenue is as a result of the following factors:

- The price reduction for customers following the Final Determination, £71.0 million decrease.
- The impact of Covid-19, net £23.6 million increase. Household consumption up £58.2 million and non-household consumption down £34.6 million.
- Other offsetting decreases in revenue of £7.0 million.

Grants and contributions represent the cash and asset contributions made principally by property developers and local authorities for connecting new property developments to the water and sewerage network, and for diverting existing infrastructure. Over the year these have decreased by £13.7 million to £75.6 million; although there was a strong rebound in the housing market later in the year, there was an impact in the first lockdown.

£9 million of wholesale revenue raised over and above the amount set in the Final Determination will be returned to customers through lower bills.

The money we can raise from bills, along with how much we are allowed to invest in our service, is decided every five years through Ofwat's price-setting process and set out in our Final Determination (FD). Due to the impact of Covid-19 on consumption and grants and contributions, reflected above, we raised £5.7 million of wholesale revenue over and above the amount set in the FD. This will be returned to customers in 2022/23 through lower bills.

Other operating income

Other operating income comprises primarily external income from power generation, bio-solid sales to farms, rents received and various other non-core activities; this was consistent with prior years.

Operating costs (including charge for bad and doubtful debts)

Operating costs including charges for bad and doubtful debt for the year decreased by £43.9 million (6.6 per cent) to £621.4 million. This decrease is explained in the table opposite:

	£m
March 2020 total	665.3
Non-recurring items	
2019 summer flooding costs	(3.0)
2020 restructuring costs	(5.0)
2020 Covid-19 bad debt provision	(12.0)
Funded by FD	
General inflation	4.3
Innovation Fund	4.4
Weather-related incidents	
Impact of hot summer	1.5
2020 winter flooding costs	3.0
Covid-19	
Covid-19-related materials, travel and fuel	(6.0)
Increase in energy cost/usage due to increased consumption	3.0
Impact of Covid-19 on bad debt	6.5
Management actions	
Reduction in bad debt (non-Covid-19)	(4.2)
Continuous improvement and mitigating actions	(36.4)
March 2021 total	**621.4**

The inflationary increases and Innovation Fund costs formed part of the Final Determination and are therefore offset in revenues.

The impacts of climate change are fundamental to our business and our climate-related financial disclosures can be found on pages 74—75. The past two years have seen a number of exceptional weather events, resulting in a net year-on-year increase in operating costs of £1.5 million.

Covid-19 has impacted the business in a number of areas. We have also seen a change in where we incur costs. We have seen reduced costs in relation to travel and expenditure, but these have been offset by increased spend on energy usage at our operational sites to manage increased customer demand.

The increase in bad debt charge due to Covid-19 of £6.5 million relates to the additional £1.5 million provision recorded in March 2021 in relation to the expected impact Covid-19 will have on unemployment and, in turn, our customers' ability to pay outstanding bills. This has increased from £12.0 million recorded in 2020 to £13.5 million as at March 2021. In addition, in the year, Covid-19 has resulted in increased household revenue which has an increased risk when compared to non-household revenue.

This has resulted in an increase in our bad debt charge of £5.0 million. These increases have been partially offset by a reduction in our base charge of £4.2 million.

The £36.4 million decrease in operating costs reflects significant management action in the period to mitigate an incorrect allocation between operational expenditure (opex) and capital expenditure (capex) in the PR19 Final Determination. This error was subsequently corrected by the CMA Redetermination. In the meantime, mitigation has involved taking difficult decisions, such as undertaking less optimal capital solutions while we were unable to fully optimise totex whole-life cost solutions in our investment decisions.

EBITDA

Earnings before interest, taxes, depreciation and amortisation (EBITDA) is defined as the profit from continuing operations before interest, tax, depreciation and amortisation. This has decreased by 3.2 per cent to £742.9 million, which is consistent with the effect of the regulatory price decreases outweighing the increases in consumption and decreases in operating costs.

Depreciation and amortisation

Depreciation and amortisation is down 4.7 per cent compared with last year, primarily as a result of additional depreciation on certain sludge assets in the prior year which resulted in them being fully depreciated.

Operating profit

Operating profit has decreased by 1.9 per cent to £391.6 million, which is consistent with the decrease in EBITDA partially offset by the decrease in depreciation.

Financing costs and profit before tax

Adjusted finance costs (calculated as finance costs less fair value gains and losses on financial instruments) decreased from £329.9 million in 2020 to £251.4 million in 2021. This was primarily the result of the non-cash impact of lower inflation on index-linked debt (£65.9 million) which was due to a fall in year-on-year average Retail Price Index (RPI) from 2.6 per cent to 1.2 per cent and year-on-year average Consumer Price Index (CPI) from 1.7 per cent to 0.6 per cent.

CAPITAL INVESTMENT IN OUR REGION IN 2020/21

£448m

(2019/20: £471m)

Financial performance report continued

There was a fair value loss of £23.2 million on derivative financial instruments in 2021, compared with a loss of £30.4 million in 2020. The fair value losses in the current year are all non-cash in nature and have no material effect on the underlying commercial operations of the business. The driving factors for the loss in 2021 were primarily due to increases in forward inflation expectations, partially offset by a rise in forward interest rates (decreasing the discounted present value of derivatives). During the year, forward inflation increased by circa 63 basis points and forward interest rates increased by 28 basis points across the curves.

Adjusted profit before tax (excluding fair value gains and losses on financial instruments), as shown in the table on page 34, for the year was £142.2 million, compared with £74.0 million in the prior year. This increase primarily reflects the impact of lower inflation on interest costs as mentioned.

Taxation

Our adjusted effective tax rate of 20.0 per cent is in line with the rate of corporation tax. Adjusted effective tax is calculated as tax charge for the year, £20.2 million, excluding adjustments for prior periods, £3.8 million (as per note 8) and tax on fair value of derivatives, £4.4 million (£23.2 million at 19 per cent), as a percentage of adjusted profit before tax. A breakdown of the tax charge can be found in note 8 of the financial statements. We are one of the largest private investors in infrastructure in our region, having invested more than £2 billion from 2015—2020. The Government actively encourages infrastructure investment and grants us capital allowances, which defer some of our corporation tax liabilities until a later period. Our customers directly benefit from the deferral as it helps to keep their bills lower.

Total tax paid or collected in the year to 31 March 2021, other than corporation tax, amounted to £255 million (2020: £270 million), of which £83 million was collected on behalf of the authorities for value added tax (VAT) and employee payroll taxes. All of our taxes are paid as they become due.

Current and deferred tax

The current tax credit for the year was £5.5 million (2020: £14.5 million). The deferred tax charge has decreased by £109.2 million from £134.9 million in 2020 to £25.7 million this year. The current tax credit for both years reflects receipts from other Group companies for losses surrendered to those Group companies. The tax losses arise mainly because capital allowances exceed the depreciation charged in the accounts, as well as some income not being taxable and the availability of tax relief on pension contributions paid in the year.

The deferred tax charge for this year mainly reflects capital allowances claimed in excess of the depreciation charge in the accounts; this is consistent with the prior year.

In 2020 there was a charge relating to a reversal of the corporation tax rate which was originally expected to reduce from 19 per cent to 17 per cent effective from 1 April 2020. The deferred tax balances at 31 March 2019 were therefore measured using the rate of 17%.

This reduction in corporation tax rate was reversed in March 2020 and so those deferred tax balances were remeasured using the rate of 19% and gave rise to a charge of £113.8 million in 2020.

We are one of the largest private investors in infrastructure in our region, having invested more than £2 billion from 2015—2020.

In the March 2021 Budget, it was announced that legislation will be introduced in the Finance Bill 2021 to increase the main rate of UK corporation tax from 19% to 25%, effective 1 April 2023. As substantive enactment is after the balance sheet date, deferred tax balances as at 31 March 2021 continue to be measured at a rate of 19%.

If the amended tax rate had been used, the deferred tax liability would have been £345 million higher.

Our relatively low level of cash tax reflects the fiscal incentives available to all UK companies for sustained high levels of capital investment and the interest we pay to fund that investment.

A strong start to our AMP7 Investment programme

2020/21 marks the first year in the five-year AMP7 investment programme, during which time we will invest a record £3.0 billion through our capital investment programme. This spend will help us achieve our Business Plan commitments and includes significant investments to ensure our region is resilient to the impacts of drought, climate change and population growth, alongside our largest ever programme of schemes delivering environmental protection.

Delivery against this investment programme has started strongly with gross annual capital expenditure across the appointed business of £448 million (£221 million on capital maintenance, £226 million on capital enhancement and £1 million non-appointed). This is broadly in line with management expectations and is particularly pleasing given the significant challenges posed by the ongoing pandemic throughout the year.

Financial needs and resources

In respect of financing, the Group continues to develop its funding profile to provide an economic hedge against the regulatory transition from RPI to CPIH-linked revenues, and to align financing with the Group's focus on sustainability.

During the year to 31 March 2021, Anglian Water sourced £242.6 million of new funds in term debt under its sustainable financing programme to finance ongoing capital investment. Included in this amount was £65 million from a forward-starting CPI-linked bond, transacted in 2018, with proceeds received on 3 April 2020. In addition, two forward-starting, fixed-rate notes totalling £75 million were also transacted in the year with amounts settled on 28 April 2021. As a result of this timing these amounts were not included in debt on the balance sheet at the period end.

Debt repayments in the period consisted of £1,003.4 million primarily due to settling a 4.125 per cent index-linked bond (£263.8 million) and repayment of £575 million on the syndicated and bilateral revolving credit facilities. In the prior year these general purpose facilities totalling £600 million were fully drawn to provide a short-term liquidity buffer in light of the Covid-19 uncertainty; however, these were repaid during the year as expectations on materially adverse impacts to cash flows were reduced.

Other debt amounts repaid during the period related to scheduled redemption amounts on EIB amortising debt (£65 million), principal accretion settlements on index-linked swaps and lease repayments as they fell due.

As at March 2021 Anglian Water has access to £575.0 million of undrawn facilities (March 2020: £50.0 million), to finance working capital and capital expenditure requirements. In addition, Anglian Water has access to a further £400.0 million of liquidity facilities (March 2020: £400.0 million), consisting of £279.0 million to finance debt service costs and £121.0 million to finance operating expenditure and maintenance capital expenditure in the event that the company was in an Event of Default on its debt obligations and had insufficient alternative sources of liquidity. See note 1 for further commentary over the liquidity requirements of the Group in relation to going concern.

The business generated cash from operations of £659.3 million in the year (2020: £686.0 million). The decrease primarily reflects additional pension scheme contributions, timing of supplier payments and VAT receipts.

Distributions available to the ultimate investors

There were no dividend payments in the year (2020: £67.8 million). Based on the available free cash flow there was capacity to pay a dividend of £203.6 million. The Directors have proposed to pay a final dividend of £96.3 million.

This dividend does not represent dividends paid to our ultimate shareholders; at this time there is no proposal to pay a dividend to shareholders of Anglian Water Group Limited (AWGL), the ultimate parent company. No dividends were paid to the shareholders of AWGL in the year (2020: £nil).

This decision is in combination with an equity injection of £110.0 million in April 2021 in line with our de-gearing target. In addition, the Group has implemented a new financing structure in order to enable a substantial equity injection into the company, leading to a future reduction in gearing. Through these capital injections the company continues to benefit from the strong support of shareholders, who have foregone dividends since June 2017 for the long-term benefit of the company and its customers, in line with our purpose.

Financial performance report continued

The Board has an approved dividend policy, under which dividend payments will be aligned to the performance of the business, taking into account commitments to customers and other stakeholders and ensuring that it can finance its operations. Anglian Water aims to attract long-term shareholders who support its long-term ambitions. The support of our shareholders is critical to the success of our business and to securing the investment that Anglian Water needs. Therefore, our shareholders are entitled to an appropriate return on their investment. This is delivered partly through long-term capital growth and partly through dividends.

The company's dividend policy is to identify the cash available for distribution, allowing for the business's liquidity requirements in respect of funding its operations and the capital programme, and servicing its debt for the next 18 months. When considering a dividend, the Directors will consider the Business Plan, have regard to Anglian Water's purpose and to their duties under the company's Articles of Association.

An assessment will be completed by the Board to determine if the payment or part payment of the dividend reflects and/or would compromise the long-term social, financial and operational commitments made to our stakeholders. Following this assessment and depending on the actual performance of Anglian Water, the Board can decide to increase or decrease any dividend payment from the base position. In assessing the dividend payment, the Directors review the business performance forecasts (currently to the end of the AMP period of 31 March 2025) and give consideration to the potential impact of external factors in the economy and regulatory environment on the company's forecast cash flows.

The dividend policy is also based on ensuring that there is adequate headroom in relation to all of Anglian Water's obligations to lenders, including commitments to comply with certain financial covenants. In particular, Anglian Water has committed to lenders that it will only pay dividends when key financial ratios are satisfied. Additionally, the policy sets out to ensure that key credit rating agency credit metrics required to support the capital structure as determined by the Board can be satisfied.

In its Articles of Association, the company has committed to conduct its business and operations for the benefit of members as a whole while delivering long-term value for its customers, the region and the communities it serves and seeking positive outcomes for the environment and society. In making decisions (including decisions in relation to dividend payments), Directors are required to act in the way that is considered most likely to promote the purpose of the company. In doing so, Directors must have regard (among other things) to the likely consequences of any decision in the long term, the interests of the company's employees, relationships with suppliers, customers and others and the impact of the company's operations on the community and the environment.

The Board will therefore consider if the payment or part payment of the dividend reflects or would be consistent with the long-term social, financial and operational commitments made to stakeholders, including customers, employees and pension fund holders. In considering this issue, the Board will have regard to the suite of Performance Commitments that the company has made which include targets in relation to:

- Performance for customers (including, but not limited, to CMeX and DMeX).
- Operational commitments which are of importance to customers (including, but not limited to, commitments in relation to leakage, per capita consumption, water quality, interruptions to supply, and risk of low pressure).
- Wider social and environmental commitments (including, but not limited to, commitments in relation to vulnerable customers, sustainable abstraction, and community investment).

The overall amount of the company's ordinary dividends will not exceed the free cash flow (defined as operating cash flow less interest and capital maintenance payments) generated by Anglian Water, and in practice will be limited by its current and forecast financial covenants. Special dividends may also be paid in addition to ordinary dividends, but these too are limited by specific financial covenant constraints. This policy is consistent with Condition F of the Licence. The full dividend policy is available on the Anglian Water website.

Click to see more

Liquidity

The company's objective is to maintain flexibility, diversification and continuity of funding through access to different markets and debt instruments. At 31 March 2021, the Anglian Water Services Group held cash, deposits and current asset investments of £285.9 million (2020: £1,048.1 million). The decrease in cash amounts held is primarily the result of the company repaying £575 million of its £600 million committed bank facilities that were drawn down in the prior year in light of uncertainty on impacts to cash flows related to the Covid-19 pandemic. While a degree of uncertainty still remains, the expected impacts to cash flows and ability to raise additional debt finance to service the company's capital expenditure programme has been reduced.

Anglian Water has access to £975.0 million of undrawn liquidity facilities (2020: £450.0 million), consisting of £575.0 million for general corporate purposes, £279.0 million to finance debt service costs and £121.0 million to finance operating expenditure and maintenance capital expenditure in the event that the company was in default on its debt obligations and had insufficient alternative sources of liquidity. All bank facilities and debt capital market issuance are issued pursuant to the Global Secured Medium Term Note Programme dated 30 July 2002 between the company, AWSF and Deutsche Trustee Company Ltd (as agent and trustee for itself and each of the finance parties). This agreement provides that any facilities drawn by AWSF will be passed directly on to the company upon utilisation of the facility.

Interest rates

The company's policy, as agreed by the Board, is to achieve a balanced mix of funding to inflation-linked, fixed and floating rates of interest. At the year end, taking into account interest rate swaps, 62.7 per cent (2020: 52.1 per cent) of the company's borrowings were at rates indexed to inflation, 31.2 per cent (2020: 34.0 per cent) were at fixed rates and 6.1 per cent (2020: 13.9 per cent) were at floating rates. At 31 March 2021, the proportion of inflation debt to regulated capital value was 53.4 per cent (2020: 50.0 per cent).

Pension funding

At 31 March 2021, the closed defined benefit scheme, excluding the unfunded pension liability, had an IAS 19 accounting pension surplus (before deferred tax) of £54.8 million, compared to a surplus of £171.6 million at 31 March 2020. This decrease in surplus reflects a decrease in the corporate bond rate used to discount the scheme's liabilities. During the year a deficit reduction payment of £36.5 million was made by the company, compared with £15.1 million in the prior year.

In addition the company has an unfunded pension liability of £44.8 million (2020: £41.6 million).

Annual Performance Report

Under Condition F of its Licence, Anglian Water is obliged to provide the Water Services Regulation Authority, Ofwat, with additional accounting information to that contained in the statutory financial statements. This information is presented in the Annual Performance Report, a copy of which is available on the Anglian Water Services website.

Financial performance report

The financial results have been prepared in accordance with International Financial Reporting Standards (IFRS).

Financial results

The financial results are summarised in the table below:

	2022 Total £m	2021 Total £m (restated[3])
Revenue (excluding grants and contributions)	1,299.7	1,276.2
Grants and contributions	100.1	75.6
Operating costs	(612.5)	(605.9)
Charge for bad and doubtful debts	(11.1)	(31.1)
Other operating income	12.3	12.5
EBITDA[1]	788.5	727.3
Depreciation and amortisation	(347.7)	(338.4)
Operating profit	440.8	388.9
Finance income	1.4	2.0
Finance costs[2]	(459.7)	(252.2)
Adjusted (loss)/profit before tax[1]	(17.5)	138.7
Finance costs – fair value losses on financial derivatives[2]	(115.1)	(23.2)
(Loss)/profit before tax on a statutory basis	(132.6)	115.5
Tax	(310.2)	(19.5)
(Loss)/profit after tax	(442.8)	96.0

1 As defined in note 31 financial measures or metrics used in this report that are not defined by IFRS are alternative performance measures. The Group uses such measures for performance analysis because they provide additional useful information on the performance and position of the Group. Since the Group defines its own alternative performance measures, these might not be directly comparable to other companies' alternative performance measures. These measures are not intended to be a substitute for, or superior to, IFRS measurements, and have been consistently applied within each year presented in these financial statements.

2 In order to show pre-tax performance based on management's view of an underlying basis, the fair value gains and losses on financial derivatives have been shown separately in the table because these are volatile non-cash movements that distort the actual underlying economic performance.

3 The results, financial position and cash flows for the year ended 31 March 2021 have been restated as a result of the change in accounting policy as discussed in note 1.

Revenue

Revenue, excluding grants and contributions, was £1,299.7 million (2021: £1,276.2 million), an increase of £23.5 million (1.8 per cent) on last year. The increase in revenue is as a result of the following factors:

- The price increase for customers following the regulatory pricing formula, £36.4 million increase.
- The impact of Covid-19 restrictions lifting, net £36.4 million decrease. Household consumption down £49.3 million and non-household consumption up £12.9 million as we trend back to pre-Covid-19 levels of consumption.
- £19.0 million which has been ring-fenced to fund our LITE tariff, which has supported customers through Covid-19 and is being retained to provide additional support through the cost of living crisis.
- Other offsetting increases in revenue of £4.5 million including increases in customer numbers.

Grants and contributions represent the cash and asset contributions made principally by property developers and local authorities for connecting new property developments to the water and sewerage network, and for diverting existing infrastructure. Over the year these have increased by £24.5 million to £100.1 million. This reflects additional income from High Speed 2 (HS2, the planned high-speed rail connection between London and cities in the north of England) and a strong rebound in the housing market.

The money we can raise from bills, along with how much we're allowed to invest in our service, is decided every five years through Ofwat's price-setting process and set out in our Final Determination (FD).

Other operating income

Other operating income comprises primarily external income from power generation, bio-solid sales to farms, rents received and various other non-core activities; this was consistent with prior years.

Operating costs (including charges for bad and doubtful debts)

Operating costs including charges for bad and doubtful debts for the year decreased by £13.4 million (2.1 per cent) to £623.6 million. This decrease is explained in the table below:

	Total
Prior year	621.4
Prior year Software-as-a-Service restatement	15.6
Prior year restated	637.0
Funded by FD	
Inflation	22.8
Reduction in Software-as-a-Service in the year	(6.0)
Capitalisation of replacement infrastructure assets	(16.8)
Weather related	
Additional tankering of sludge	2.0
Bad debt provision	
Improved collection	(11.9)
Release of excess Covid-19 provision	(8.1)
Other significant items	
Leakage performance strategy	8.5
Ongoing efficiency challenge	(3.9)
Total decrease	(13.4)
March 2022	623.6

Prior year Software-as-a-Service (SaaS) restatement

As disclosed in note 1, our intangible accounting policy has been amended to reflect the clarification by the International Financial Reporting Interpretations Committee (IFRIC) on the treatment of Software-as-a-Service costs, meaning certain costs that were previously capitalised have been expensed. This has resulted in a prior year increase to operating costs of £15.6 million. These costs naturally fluctuate as systems implementations change year-on-year, incurring a cost in the current year of £9.6 million, a £6.0 million reduction on the previous year.

Inflation

The inflationary increases in our cost base which formed part of the Final Determination and are therefore funded through the inflationary increases in revenues.

Capitalisation of replacement infrastructure assets

In order to improve efficiency , there was a change in the way we deliver boundary box and external meter chamber replacement. As a result of the change in delivery, from individual jobs to a scheme of work, the cost of the scheme is above our de-minimus threshold for capitalisation, resulting in the costs being treated as capital expenditure rather than operational.

Additional tankering

The impacts of climate change are fundamental to our business, and our climate-related financial disclosures can be found on pages 79-89. The past two years have seen a number of exceptional weather events. The extremely wet weather at the start of 2021 resulted in increased costs of tankering in the current year as we had to move additional quantities of sludge around the region.

Bad debt provision

The decrease in bad debt is a result of strong cash collection in the year and the reassessment of provision in our debt over 48 months old (£6.0 million), as a result of continued positive collection, in combination with a change to our write-off policy in April 2020.

In addition we estimate the impact of future macro-economic factors on our collection performance, as required by IFRS 9. The improving unemployment forecasts, offset in part by the projected cost of living crisis, has resulted in the release of £6.6 million of bad debt provision. Set against last year's increase of £1.5 million, this amounts to a net £8.1 million reduction. Further details can be found in note 2.

Leakage performance strategy

We spent an additional £8.5 million on the Leakage Recovery Project, which was part of the increased investment towards meeting leakage targets for the year, and contributed to a 6.1 per cent reduction in leakage.

Ongoing efficiency challenge

Representing management's ongoing drive to ensure strong cost control and spend being delivered efficiently.

Energy

The market cost of power has fluctuated significantly in the year. The business hedges its costs by locking in wholescale electricity rates in advance, which has mitigated increasing electricity rates in the year; however, we did see a modest increase in gas costs which were not economic to hedge. These were offset by a decrease in consumption and lower non-commodity prices. In the final few months of the year management spent a considerable time reviewing the hedging strategy and will continue to do so over the coming year.

EBITDA

Earnings before net finance costs, taxes, depreciation and amortisation (EBITDA) is defined in note 31 and is the profit from continuing operations before interest, tax, depreciation and amortisation. This has increased by 8.4 per cent to £788.5 million, which is consistent with the effect of the increase in grants and contributions income and reduction in bad debt costs described above.

Depreciation and amortisation

Depreciation and amortisation is up 2.7 per cent to £347.7 million compared with last year, primarily as a result of higher fixed asset balances, as we construct and commission assets in line with our capital investment programme.

Operating profit

Operating profit has increased by 13.3 per cent to £440.8 million, which is consistent with the increase in EBITDA, partially offset by the increase in depreciation.

Financing costs and profit before tax

Adjusted net finance costs (excluding fair value gains and losses on financial instruments), as defined in note 6 on page 178, increased from £250.2 million in 2021 to £458.3 million in 2022. This was primarily the result of the non-cash impact of higher inflation on index-linked debt which increased by £206.4 million to £255.0 million. This increase was due to an increase in year-on-year average Retail Price Index (RPI) from 1.2 per cent to 5.8 per cent and year-on-year average Consumer Price Index (CPI) from 0.6 per cent to 4.0 per cent.

We have both RPI-linked debt and CPI-linked debt to hedge the Regulated Capital Value (RCV).

There was a fair value loss of £115.1 million on derivative financial instruments in 2022, compared with a loss of £23.2 million in 2021. The fair value losses in the current year are predominantly non-cash in nature and have no material effect on the underlying commercial operations of the business. The driving factors for the loss in 2022 were primarily due to increases in forward inflation expectations, partially offset by a rise in forward interest rates (decreasing the discounted present value of derivatives). During the year, forward inflation increased by circa 138 basis points and forward interest rates increased by 54 basis points across the curves.

Following the cessation of GBP LIBOR on 31 December 2021, it was replaced by SONIA, which is now used in the valuation of the derivative portfolio. The switch from LIBOR to SONIA discounting resulted in a net decrease in the valuation of the derivative portfolio of £55.0 million. A proportion of this decrease, in relation to derivatives that are not in hedging relationships, is included in fair value losses in the current year.

Adjusted loss before tax (excluding fair value gains and losses on financial instruments), for the year was £17.5 million, compared with a £138.7 million profit in the prior year. This increase primarily reflects the impact of higher inflation on interest costs as mentioned.

Taxation

	Year ended 31 March 2022 £m	Year ended 31 March 2021 (restated) £m
Current tax:		
In respect of the current period	(13.6)	(0.1)
Adjustments in respect of prior periods	(5.1)	(5.4)
Total current tax credit	(18.7)	(5.5)
Deferred tax:		
Origination and reversal of temporary differences	(25.9)	23.4
Adjustments in respect of previous periods	1.2	1.6
Increase in corporation tax rate	353.6	–
Total deferred tax charge	328.9	25.0
Total tax charge on loss on continuing operations	310.2	19.5

We're one of the largest private investors in infrastructure in our region, having invested just over £1 billion in the past two years. The Government actively encourages infrastructure investment and grants us capital allowances, which defer some of our corporation tax liabilities until a later period. Our customers directly benefit from the deferral as it helps to keep their bills lower.

Total tax paid or collected in the year to 31 March 2022, other than corporation tax, amounted to £230 million (2021: £255 million), of which £86 million was collected on behalf of the authorities for value added tax (VAT) and employee payroll taxes. All of our taxes are paid as they become due.

Current and deferred tax

The current tax credit for the year was £18.7 million (2021: £5.5 million). The deferred tax charge has increased by £303.9 million from £25.0 million in 2021 to £328.9 million this year.

The current tax credit for both years reflects receipts from other Group companies for losses surrendered to those Group companies. The tax losses arise mainly because capital allowances exceed the depreciation charged in the accounts, as well as some income not being taxable and the availability of tax relief on pension contributions paid in the year. In this year there is also a one-off current tax credit due a transitional adjustment on the treatment of software-as-a-service (Saas).

The primary reason for the increase in the deferred tax liability is the increase in corporation tax rate from 19 per cent to 25 per cent, due to take effect from April 2023. As our deferred liability will not arise until after the new corporation tax rate comes into force in April 2023, we have to restate the liability using the increased rate of 25 per cent. This results in an increase of £353.6 million.

In advance of the corporation tax rate rise, the government has introduced capital allowance 'superdeductions' which allow companies to accelerate their tax relief on capital expenditure. This has increased the amount of losses available to surrender to other Group companies and therefore increased the current tax credit. It has also created tax losses to carry forward in the company which give rise to a deferred tax credit of £18.8 million (2021: £nil) to offset the deferred tax charge due to the rate rise.

Also reducing the deferred tax charge is an increased deferred tax credit of £21.9 million (2021: £4.4 million) relating to fair value losses. This increase in the overall deferred tax charge is a non-cash tax charge.

In addition, tax forms part of the revenue building block and therefore any future tax charges will be funded through revenues. Further, Ofwat introduced a tax true-up reconciliation in the current AMP to account for changes in tax rates.

In addition to the £310.2 million tax charge on the income statement, there is a charge of £40.7 million (2021: credit of £27.1 million) in the statement of other comprehensive income in relation to tax on actuarial losses on pension schemes, fair value gains on cash-flow hedges and the change in corporation tax mentioned above.

Distributions available to the ultimate investors

A £96.3 million prior year final dividend was paid in the period (2021: £nil), reflecting the company's dividend policy having regard to Anglian Water's purpose and duties under the company's Articles of Association.

In line with the dividend policy described below, the Directors have proposed to pay a final dividend of £169.0 million in June 2022. A deduction of £9.0 million has been made to reflect the outcome delivery incentives (ODI) penalty in the period. This decision is in combination with an equity injection of £1,165.0 million in the period and results in a net equity injection for the AMP of £899.7 million. Through these capital injections the company continues to benefit from the strong support of shareholders. It is proposed that our ultimate shareholders will, for the first time since 2017, receive a dividend: £91.8 million.

The Board has an approved dividend policy, under which dividend payments will be aligned to the performance of the business, taking into account commitments to customers and other stakeholders and ensuring that the company can finance its operations. Anglian Water aims to attract long-term shareholders who support its long-term ambitions. The support of our shareholders is critical to the success of our business and to securing the investment that Anglian Water needs. Therefore, it is appropriate that our shareholders receive a return on their investment. This is delivered partly through long-term capital growth and partly through dividends.

The company's dividend policy is to identify the cash available for distribution, allowing for the business's liquidity requirements in respect of funding its operations and the capital programme, and servicing its debt for the next 18 months. When considering a dividend, the Directors consider the Business Plan, have regard to Anglian Water's purpose and reflect their duties under the company's Articles of Association.

An assessment is completed by the Board to determine if the payment or part payment of the dividend reflects and/or would compromise the long-term social, financial and operational commitments made to our stakeholders. Following this assessment and depending on the actual performance of Anglian Water, the Board can decide to increase or decrease any dividend payment from the base position.

In assessing the dividend payment, the Directors review the business performance forecasts (currently to the end of the AMP period of 31 March 2025) and give consideration to the potential impact of external factors in the economy and regulatory environment on the company's forecast cash flows.

The dividend policy also reflects the requirement to ensure that there is adequate headroom in relation to all of Anglian Water's obligations to lenders, including commitments to comply with certain financial covenants. In particular, Anglian Water has committed to lenders that it will only pay dividends when key financial ratios are satisfied. Additionally, the policy sets out to ensure that key credit rating agency credit metrics, required to support the capital structure as determined by the Board, can be satisfied.

In its Articles of Association, the company has committed to conduct its business and operations for the benefit of members as a whole, while delivering long-term value for its customers, the region and the communities it serves and seeking positive outcomes for the environment and society. In making decisions (including decisions in relation to dividend payments), Directors are required to act in the way that is considered most likely to promote the purpose of the company. In doing so, Directors must have regard (among other things) to the likely consequences of any decision in the long term, the interests of the company's employees, relationships with suppliers, customers and others, and the impact of the company's operations on the community and the environment.