

10 November 2021



**Scottish
Water**

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Dear Sue

Black Esk WTW – SR21 Letter of Commitment update

We are determined to improve water quality for customers in the Black Esk water supply zones and Scottish Water provides commitment to deliver the following actions:

- 1. Maintain the following short term measures until such time as capability improvements are delivered:**
 - a. Revised operational practices to utilise front-end caustic dosing to improve optimisation of coagulation and maximise organic carbon removal during the summer.
 - b. Review potential operational changes to increase the final water pH to reduce the corrosivity of water to distribution pipes and structures.
 - c. Ensure that filter backwash water is not returned to the head-of-works, without adequate monitoring and risk control measures for soluble manganese being in place.
 - d. Install online monitoring of manganese in the treatment process and final water by 30th June 2022.
 - e. Maintain our programme of sampling for total and soluble manganese.
 - f. Complete interim repairs to the clear water tank roof to prevent water ingress by 30th June 2022.
 - g. Notify Dumfries & Galloway Board and DWQR if the water quality event reporting triggers are breached for Total THMs or manganese in the Black Esk and Black Esk/Winterhope water supply zones.

2. Develop our preferred long term improvement option – Option 3a Maximising and enhancing performance of the existing WTW, summarised below:

- a. Improve organics removal by installing an ion exchange pre-treatment stage and integrating it with the existing coagulation, clarification and filtration stages.
- b. Improve filter performance by improving flow control and backwash performance, replacing the media and ensuring they have slow start and run to waste capability.
- c. Improve fail safe controls by installing auto shutdown on loss of coagulation, filtration, or disinfection in line with our *Auto Shutdown and Run to Waste Policy*.
- d. Improve disinfection by minimising variation of flows to disinfection through installation of dedicated backwash tank, improvements to disinfection control and monitoring system in line with our *Disinfection Policy*.
- e. Improve the ability to maintain the chlorine contact tank (CCT) by upgrading the bypass and installing appropriate systems to enable the CCT to be taken out of service whilst maintain water quality.
- f. Develop outline designs for manganese removal processes on the filter backwash water return system and full plant flow.
- g. Structural repairs to the clear water tank roof.

3. Review our preferred Option 3a against Option 4a a new WTW

The next stage of project development will assess how we will upgrade the existing WTW whilst ensuring a continuous high-quality water supply. Following this assessment we will review our preferred option against Option 4a the delivery of a new WTW of the same capability, and a ceramic filtration option, to test that upgrading the existing WTW remains the preferred option in terms of cost, carbon and timescale.

4. Scope for Network Improvements

- a. We will undertake network conditioning and flushing in line with our Sub Programme Management Approach for Discolouration.

The timetable overleaf sets out our plan to progress the development of our preferred option.

Project Stage	Duration Months		Date range for stage completion		Assumptions and activities
	Min	Max	Earliest	Latest	
Gate 70	6	9	Jan 2022	Apr 2022	Conceptual design of upgraded WTW to be developed to improve scope definition, deliverability and test risk and assumptions including manganese removal options. Refurbishment option to be tested against a New WTW based on conventional and lower carbon ceramic filtration to improve project definition and confirm option for delivery.
Gate 70 to Gate 80	12	18	Jan 2023	Oct 2023	Outline design / prepare activities
Gate 80 to 90	1	3	Feb 2023	Jan 2024	Detailed design / delivery activities
Gate 90 to Start on Site	2	6	Apr 2023	July 2024	Procurement and mobilisation
SoS Site to Gate100	24	36	Apr 2025	July 2027	Construction, testing and commissioning.

I trust the update above will improve tracking of progress and we will provide an updated letter once we reach the next delivery milestone (Gate 70).

Yours sincerely



Simon Parsons
Director of Strategic Customer Service Planning