

# Teddington Direct River Abstraction Pilot Plant Factsheet

**The Teddington Direct River Abstraction project works in two parts: the first tops up reservoirs with water from the River Thames. The second part replaces the water taken from the river with recycled water from our proposed new Tertiary Treatment Plant to be located at Mogden Sewage Treatment Works (STW).**

**As part of our work, we established a pilot plant study to evaluate different treatment stages and technologies to help inform and refine the design of the Tertiary Treatment Plant.**

The Tertiary Treatment Plant will form a key part of our vital drought resilience project for London. This is where we would treat the water through an extra step of cleaning called tertiary treatment. We'd then top up the Thames with this recycled water when abstracting river water upstream.

We understand that water quality is one of the key concerns raised by local communities. Importantly, the water treated and discharged through the tertiary treatment process would not deteriorate water quality in the River Thames, as it would be treated to meet strict environmental permit requirements. There are stringent regulations that will be applied to the project.

We're proposing to use treatment technologies including Moving Bed Biofilm Reactor (MBBR) within our tertiary treatment process. This biological technology targets the removal of ammonia and supports the removal of other pollutants in the filtration stage.

The pilot plant study was not a replica of the proposed Tertiary Treatment Plant. Instead, it was set up to test a range of technologies to help inform and refine the final design.

The Tertiary Treatment Plant design and construction will form part of our planning application through the Development Consent Order (DCO) process. However, the DCO process does not issue the environmental permit we would need to operate the project. This permit would still need to be sought from the Environment Agency as the responsible body for setting water quality standards and regulating what can be put back into the river. The pilot plant data does not secure the permit we will need from the Environment Agency to operate the project.

Thames Water will not be able to obtain a permit unless the conditions set by the Environment Agency are met. The project is not assessed against Drinking Water standards because we're not putting drinking water into the river.





### What were the objectives of the pilot plant study?

- Provide performance data to help inform the design of the Tertiary Treatment Plant and our future environmental permit application.
- Act as a high-level learning exercise at this stage in development of the project to help refine the design and test MBBR and other technologies.
- Better understand the current final effluent characteristics to enable the design to be as effective as possible.

### When did the pilot plant study take place?

Testing started in September 2024, and was extended to cover a range of seasons, flows and parameters. Testing finished in December 2025.

### Conclusions

- The trial improved understanding of the source water characteristics and screening requirements, leading to an update of the concept design.
- The performance of the MBBR has provided confidence in the biological treatment stage.

- Chemical dosing and tertiary solids removal can be optimised for the full scale plant through detailed design and commissioning to meet required targets.

The pilot plant study also demonstrated substantial removal of several other compounds such as metals at ambient pH conditions. The data we've collected is providing valuable insight into how the concept design for the Tertiary Treatment Plant should be further refined and optimised.

The primary purpose of the pilot plant study was to inform the design of the Tertiary Treatment Plant. The pilot plant data is therefore not indicative of what would be released back into the river when the project is operational.

### What are the next steps?

During the pilot plant study, we identified several opportunities to improve the design, both in terms of the equipment required and optimising the operational processes.

These helpful learnings will now be used to refine the Tertiary Treatment Plant design.



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