

Developing risk assessment approaches for watch list parameters under the recast Drinking Water Directive

Introduction

The Centre of Expertise for Waters (CREW) wishes to commission a **capacity building** project within CREW's **Water Quality and Health** theme and aligned to the recast **Drinking Water Directive**, which is being incorporated into Scottish legislation in 2023.

Aim & key questions

The overall aim of this project is to develop a catchment-based risk assessment approach for recast Drinking Water Directive watch list parameters (Beta-estradiol, Nonylphenol) and PFAS to inform monitoring requirements for drinking water supplies¹ in Scotland.

The key questions to be addressed are:

1. How do we go about developing a robust, science-led approach to risk assessment for each of the named parameters in the recast Drinking Water Directive watch list?
2. Can this approach be documented and used as a toolkit for substances that may be added to the list in future?

Background & knowledge gap

The recast Drinking Water Directive (rDWD) will be incorporated into Scottish legislation in early 2023. This introduces the concept of a “watch list” for two emerging environmental contaminants plus a new standard for the sum of 20 listed per- and polyfluoroalkyl substances (PFAS). There is currently very little information about the likely occurrence of these compounds in Scottish water sources. It is neither desirable nor feasible to sample every catchment and water supply, therefore a targeted approach to monitoring is required based on risk assessment. It is likely that further substances will be added to the watch list in future years, making a “toolkit” approach to risk assessment helpful.

The recast Drinking Water Directive introduces a watch list of parameters that are known to pose a risk to human health and for which there is currently no parametric value. PFAS is included as a new parameter, for which there is a prescribed concentration or value (PCV), but there is a poor understanding of its presence in the environment and therefore risk to water supplies. A better understanding is required of what monitoring approaches² should be taken (for both public and private water supplies) to establish the presence of watch list chemicals and PFAS in the environment.

Relevant reports and data

The Drinking Water Inspectorate published research in 2021 on the [likelihood of three endocrine disrupting substances reaching drinking water](#) and the possibility of PFAS exceeding the proposed standard. A CREW scoping study in 2019 [assessed the risks to private water supplies from the presence of PFAS](#). This project will review any relevant data made available by Scottish Water and SEPA.

¹ Both public and private water supplies have risk assessment requirements in legislation. Due to the large variation in available information, the primary focus will be on public water supplies.

² Includes consideration of location/availability of accredited analytical laboratories.

Anticipated impacts

The project will contribute to developing a toolkit for introducing additional watch list substances via a science-led risk-based approach. The outputs will support the development of risk assessments for watch list parameters and PFAS to ensure appropriate monitoring programmes are developed to deliver a robust data source on the occurrence in the water environment of these substances.

The project will play a part in developing a long-term understanding of PFAS and endocrine disruptor occurrences in the environment with a view to minimise and prevent occurrence of these chemicals in drinking water supplies.

Deliverables

The project will:

- Produce a review of literature relating to environmental occurrence of each substance listed.
- Develop substance-specific risk assessments to inform a monitoring programme. A checklist approach is envisaged, supported by spatial datasets (e.g., GIS layers) if available.
- Document the approach and how it might be adapted in more general terms for introducing additional watch list substances.
- Provide recommendations for work needed (e.g., sample survey, gaps in data, guidance for sampling) to improve approach.
- Develop guidance initially for regulators of how best to minimise and prevent occurrence of these chemicals in drinking water supplies.

The deliverables will be presented via:

- A final report of 20-30 pages, excluding annexes and the bibliography.
- Cover image(s) with associated photo credits.
- Communications and impact plan – supported by CREW's Impact Officer.
- A plain English summary of aims and results (up to 1 page).
- A website summary (200 words).
- Project Steering Group meetings (throughout the project lifecycle).

Anticipated timescale

The project will commence in February 2023 with the project outputs signed off by the CREW Director by December 2023.

Funding

The maximum amount of funding available inclusive of VAT (where applicable) is **£75,000**.

This includes an associated costs (excluding sub-contractor) budget of £1,410 to cover start-up and end project steering group room and equipment hire, and travel and subsistence.

Further information for applicants

Project management

Day-to-day communication will be between the research/review team (the contractor) and a CREW Project Manager and is likely to involve short catchups as agreed.

Project steering group

CREW project steering groups (PSGs) generally include representatives of Scottish Government and its delivery partners plus a CREW representative. The PSG for CRW2022_01 will include representatives from DWQR, SEPA, Scottish Water, and CREW.

Submitting a proposal

Please send a completed application form ([available here](#)) addressing the project requirements. A copy of expectations and the award criteria are provided below for reference.

Proposals need to be submitted to the Research Support Officer – Centres of Expertise (Regan.Tammi@hutton.ac.uk) for evaluation **by noon on Wednesday 18th January 2023**. We aim to notify the successful bidder by **Friday 10th February 2023** and we may request a pre-contract meeting.

Please contact the Research Support Officer Regan.Tammi@hutton.ac.uk if you would like any clarification on any of the above. You should highlight any potential conflicts of interest in your proposal. For queries about what may constitute a potential conflict of interest please contact the CREW Deputy Manager (Nikki.Dodd@hutton.ac.uk).

Expectations

No.	Criteria	Descriptor
1	Duration	The proposed duration will align closely to the details provided in the anticipated timescales section of the specification.
2	Staff time and effort	The proposed allocation of staff time and effort is appropriate and includes all deliverables. The proposal must also provide a commitment that named staff members will be available to work on the contract if the bid is successful.
3	Project costs	The estimated breakdown of project costs is realistic and inclusive of all deliverables.

Award criteria

No.	Criteria	Descriptor
1	Understanding the project ask and policy background	The proposal should include an introduction which demonstrates a clear understanding of the project requirements. This should include an understanding of the policy background and the supporting role of this project; the need for this research; the project aim; and how the proposal will address this aim.
2	Proposed methodology	The proposal should demonstrate a high quality and workable methodology, including: <ul style="list-style-type: none"> • how the evidence will be identified, reviewed and assessed • consulting relevant stakeholders and/or experts where appropriate to address the key questions and produce the deliverables in the timescales required. It should explain the suitability, robustness and limitations of the proposed methodology.
3	Milestones	The project milestones are logical, practical and include all deliverables.
4	Project Management	The staff, resources and expertise are appropriate for conducting the proposed project. The proposal should name the project lead and outline their project management experience.
5	General and specific topic expertise and experience	The proposal should provide details of individual staff members who will work on this project and demonstrate how they will meet the project requirements, specifically: <ul style="list-style-type: none"> - general research experience and expertise; - specific experience and expertise on the topic of contaminants in water.
6	General communication and deliverables	The proposal should describe the approach to producing the deliverables, which will be published on the CREW website. It should detail who will take lead responsibility for report-writing and overall report quality. It should provide examples of previous literature reviews, risk assessments and guidance documents in which they have been involved.
7	Quality assurance	The proposal should provide details of quality assurance procedures to demonstrate how the contract will be continuously delivered to a high standard. It should specifically address issues of quality control at different stages of the project, including evidence gathering, analysis and report writing. It should include a timetable for delivery of tasks, project milestones and allocation of staff and staff time against each task, covering the duration of the contract.
8	Risk	The proposal should provide a risk assessment matrix detailing any risks identified in relation to the delivery of this contract, and proposed mitigation measures to minimise their probability and impact, focused particularly on risk to completion on time.