

## Request for Proposal (RFP)

### Emerging Contaminants Consumer Study

RFP Issued: April 23<sup>rd</sup>, 2020

Submission Deadline: June 19<sup>th</sup>, 2020 by 11:00am central

Budget: Total budget shall not exceed \$15,000\*

\*Maximum funding available. Researchers should attempt to submit proposals for the lowest dollar amount that is practical. Preference may be given to a lower cost proposal that still meets all the requirements/deliverables.

#### Overview

The research will perform a US consumer study with a regional balance and a sample size that is appropriate and statistically sound to determine:

- Which emerging contaminants are already known by consumers and are of the greatest concern, and
- How does messaging of a POU/POE product influence a consumer's decision to treat their water

#### Who is WQRF?

The [Water Quality Research Foundation \(WQRF\)](#), formerly the Water Quality Research Council, was formed in 1952 to serve with the guidance and assistance of the Water Quality Association (WQA) and its members as a universally recognized, independent research and education sponsorship organization. The mission of WQRF is advancing knowledge and the science of high quality, sustainable water. WQRF's vision is water quality improvement through relevant research.

Since inception, WQRF has sponsored numerous research studies which have examined a broad range of water chemistry, technology and environmental impact issues, generated essential water technology use, effectiveness and consumer information, positively impacted legislative change, and helped advance efficiencies and methodologies in product certification, evaluation and testing.

#### Background on this RFP

The Safe Drinking Water Act (SDWA) is a federal law that regulates the United States' public drinking water.<sup>1</sup> Under the SDWA, the United States Environmental Protection Agency (USEPA) has established National Primary Drinking Water Regulations (NPDWRs) which set legally enforceable levels for contaminants that are known to cause human health effects. Such levels are referred to as maximum contaminant levels (MCLs) and dictate the concentration which the regulated contaminant cannot exceed in drinking water in order to protect public health.<sup>2</sup>

Per the SDWA, the USEPA conducts national monitoring of drinking water every five years to gather occurrence data for up to thirty (30) contaminants which are not federally regulated by the NPDWRs and are suspected to pose a public health risk. This monitoring effort is known as the Unregulated Contaminant Monitoring Rule (UCMR) and helps the USEPA make the determination of whether to regulate additional contaminants under the NPDWRs.<sup>3,4</sup> The contaminants identified in the UCMR process are often contaminants of emerging concern (CECs; also known as emerging contaminants). In the context of this RFP, emerging contaminants are contaminants which are found in drinking water that pose a real or potential

human health concern and are not regulated at the federal level. Any risk that emerging contaminants may pose to human health may not yet be fully understood.<sup>5</sup> Determining the public's/the consumer's awareness of emerging contaminants will be one of the main focuses for this research request. Additional information on the research request can be found in the "Detailed Information on the Research Concept" section of this RFP. The remaining text in this section describes two emerging contaminants. This information is intended to serve as background information only and is in no way indicating that the research should solely be focused on the example emerging contaminants provided below.

The first example included in this RFP provides an overview of a grouping of emerging contaminants known as per- and polyfluoroalkyl substances (PFAS). The results of the third UCMR process has recently prompted further investigations into PFAS by the USEPA and various state agencies.

The most well-known chemicals in the PFAS family are perfluorooctanoic acid (PFOA) and perfluorooctanesulfonate (PFOS). PFOA and PFOS have been used in the production of firefighting foams along with various grease/water-resistant products such as clothing, furniture, cookware, and food packaging. The production and use of materials containing PFAS chemicals has resulted in the contaminant leaching into drinking water supplies.

Based on peer-reviewed scientific findings, the USEPA has established a non-enforceable health advisory of 70 parts per trillion (ppt) in drinking water for the sum of PFOA and PFOS. The health advisory is a level at which adverse health effects are not anticipated to occur. As the understanding of how these chemicals effect human health evolves, the USEPA will continue to evaluate if an MCL should be established.<sup>6</sup> However, in the absence of an enforceable federal MCL, several states have begun to independently set regulations for the PFAS family of chemicals. While some states have chosen to adopt the USEPA's health advisory level for their regulations, other states are setting stricter standards. For example, New Jersey adopted a drinking water contamination level of 13 ppt for PFOS, and Michigan adopted a level of 8 ppt for PFOA.<sup>7</sup>

The second example explores another emerging contaminant, microcystin-producing cyanobacteria, which was observed in 2014 in drinking water sourced from Lake Erie. In 2015, the USEPA issued health advisory levels for microcystins and cylindrospermopsin, another cyanobacterial toxin.<sup>8</sup> As is the case with PFAS chemicals, there are no MCLs for cyanobacteria or their toxins in drinking water in the U.S., meaning that it is up to the states to adopt their own drinking water standards for the contaminant, if they so wish.

Treatment solutions for unregulated contaminants in drinking water can vary greatly depending on the contaminant. Consumers may wish to install drinking water treatment systems to reduce the concentration of emerging contaminants at the point-of-entry (POE) and/or the point-of-use (POU). POE water treatment devices are whole-house systems mainly designed to reduce contaminants in water intended for activities such as showering, washing dishes, brushing teeth, etc. POU devices treat water at the point of consumption, acting as a final barrier to the contaminant(s) of concern. Activated carbon, reverse osmosis, and ultraviolet light are examples of technologies that are typically applied at the POU, but may also be applied at the POE.<sup>9</sup> It is important to note that, in the case of unregulated contaminants, it is up to the consumers to decide if they will apply treatment at the POU and/or POE.

## Detailed information on the project concept

In the context of this RFP, emerging contaminants are contaminants which are found in drinking water that pose a real or potential human health concern and are not regulated at the federal level. Some emerging contaminants have known health effects, and some emerging contaminants are discovered before there is toxicological research to confirm what concentrations cause a health effect.

The research will perform a US consumer study with a regional balance and a sample size that is appropriate and statistically sound to determine:

- Which emerging contaminants are already known by consumers and are of the greatest concern, and

- How does messaging of a POU/POE product influence a consumer's decision to treat their water

Directives from WQRF regarding the research approach:

- The nomenclature used for any given individual emerging contaminant or class of emerging contaminants may vary from state to state (e.g. "flame retardants" vs "PFAS"). Therefore, the names of the emerging contaminants included in this study should be represented by the nomenclature most popularly used in communications to the public (i.e. the contaminant name as it appears in the local news).
- It is WQRF's preference for the study to include a contaminant awareness ranking question, rather than asking the respondent about their awareness of each contaminant individually. Below is a list of contaminants of emerging concern identified by academics and scientists in the water quality field. This list is provided for illustrative purposes. Please note that this list contains a few microbial contaminants (e.g. *Legionella*) which are technically federally regulated but are not routinely monitored for in drinking water, which may warrant their inclusion in this research. Further refinement of the contaminants for inclusion in the study will be made with the researchers during the proposal vetting process.
  - Pharmaceuticals, personal care products (PPCPs)
  - 1,4-dioxane
  - Antimicrobial resistant bacteria
  - PFAS – PFOA and PFOS are two well-known examples
  - Microplastics
  - Cyanotoxins
  - Artificial sweeteners (e.g. sucralose)
  - N-nitrosamines and halo(nitro)organics (e.g. halo(nitro)phenols)
  - Manganese
  - *Naegleria fowleri*
  - Boron
  - Pathogenic mycobacteria
  - Flame retardants (not PFOA or PFOS); e.g. TCP
  - 2-methylisoborneol (MIB)
  - Pesticides/herbicides (must be unregulated at federal level to fit the scope of this RFP)
  - Perchlorate
  - Adenoviruses
  - *Legionella*
- Respondents should be asked if they already have a POU/POE device.

The intended impact of this research is to:

- Inform water treatment manufacturers of public concerns so new products can be developed to address these concerns and reduce the concentration of emerging contaminants at the point-of-use and point-of-entry (POU/POE)
- Encourage development of protocols and standards to verify water treatment product performance for removal of these emerging contaminants
- Create awareness of emerging contaminants and improve awareness of the benefits of POU/POE treatment for reducing the concentration of emerging contaminants

- Identify the emerging contaminants of which the consumer has greater awareness and concern to help prioritize future research on removal with POU/POE water treatment
- Provide insight to what messaging will motivate a target audience to use water treatment at their home to remove emerging contaminants

### Requirements for Researchers

Researchers must be well-qualified and have expertise in point-of-use/point-of-entry (POU/POE) drinking water treatment technologies. The names, qualifications and detailed curricula vitae of primary investigators involved in this project must be provided.

The researchers must have the facilities and capabilities to accomplish this project or must provide a list of the proposed partner organizations and their qualifications required to accomplish this project. Again, a list of the names, qualifications and detailed curricula vitae of primary investigators from those partner organizations should be provided.

The researchers must complete work on this project within 6-9 months of the approved start date.

### Restrictions

Please read this section carefully. Researchers are encouraged to consult with WQRF if you believe your proposal encompasses one or more of these restrictions. Proposals whose scope fall within any of these restrictions will not be funded by WQRF:

- The proposal will be scoped to prevent use of the study to promote or disparage a specific product model, company/organization or brand name. It is WQRF's policy that brands, models, and manufacturers are confidential, only the specifications of the products tested can be included in the report(s).
- The research will not be of a type ordinarily expected to be carried on by private enterprises in the ordinary course of research and development, the testing and inspection of materials or products, particularized market or consumer research or the design and construction of water treatment equipment, products or parts.
- While WQRF supports the many benefits of product validation evaluation and testing, WQRF does not fund product development-related activities, such as validation testing of new products or emerging technologies.
  - Projects that involve general validation or study broadly the benefits of certain categories of technologies relative to other categories of technologies have been funded (e.g., the benefits of softening study, the evaluation of emerging scale prevention technologies) only when they were scoped to benefit the entire industry and not to promote a specific product, benefit a specific manufacturer or develop intellectual property.
  - Consistent with this policy, WQRF bylaws require that any patents or trademarks owned by WQRF resulting from research they fund shall be made available to the public-at-large on a non-discriminatory basis.
- Researchers are prohibited from having a commercial interest in any products or technologies proposed for inclusion in the research study.

## Information on the Proposal Selection Process

All proposals submitted in response to this RFP will be reviewed by the WQRF Scientific Consultant and designated WQRF Research Task Force. The proposal review process is overseen and facilitated by WQRF staff. The Task Force is comprised of subject matter experts who volunteer their time to WQRF.

Researchers may be contacted for further information regarding their proposal throughout the selection process. It is not uncommon for the Task Force to request written responses to questions, or to request that the research team present its proposal and hold a Q&A session via a webinar. The length of the proposal selection process will vary depending on the number of proposals received, their complexity and the Task Force's availability to engage in discussions. Historically, the proposal selection process has taken 3-5 months. In instances where the proposals received are exceptionally detailed in the methodology section, the duration of the proposal selection process may be shortened.

After the Task Force has selected a proposal for its funding recommendation, the proposal is presented to the WQRF Board of Directors for review, due diligence, a decision on acceptance and approval of funding.

## Business Requirements and Responsibilities

In support of an accepted research project, WQRF ordinarily would proceed as follows:

- WQRF will provide the researcher with any background information needed, such as a list of industry and other interested parties and stakeholders.
- The WQRF Research Task Force and WQRF technical staff ordinarily will take an active role in the technical review of progress/interim reports and acceptance of the final report. They may seek input from the WQA Water Sciences Committee, particularly with respect to industry specific knowledge or operations to aid the researcher.
- WQRF will track progress and provide any necessary coordination with industry stakeholders throughout the course of the research, will supply technical input and will facilitate any support and input requested from the WQA Water Sciences Committee.
- WQRF will provide public access to an executive summary and the full report. Ordinarily, upon release or publication, the researcher will be permitted to make the report available as best determined.

The researcher will enter into a research sponsorship agreement with WQRF, the terms of which broadly will include the following commitments from the researcher:

- Undertake, manage and perform all aspects of the contracted research and any necessary support activities.
- Provide an invoicing schedule for completing the research, including a schedule of progress/interim reports and a draft final report for review by the WQRF Research Task Force, and complete the study in a timely manner according to the schedule. After completion of the final report, a 1 to 3-page executive summary document/report will be submitted to WQRF.
  - All invoices must be linked to a deliverable or scientific milestone. Typically, it is WQRF's preference that invoices and progress reports are submitted quarterly throughout the duration of the project.
  - Historically, WQRF has been able to provide 10% to 25% of the budget at the start of the project. Ten percent (10%) of the project cost must be associated with the delivery of the final report.

- Engage with WQRF, its Research Task Force and its technical staff and provide responses to WQRF questions relating to progress and coordination, as well as comments on progress/interim reports.
- Agree that all intellectual property will be owned by WQRF or perpetually licensed to it without royalty or charge:
  - Generally, WQRF will own the entire right, title, and interests, including all copyrights and other intellectual property rights, in and to all Project Intellectual Property developed by WQRF personnel. Project Intellectual Property that is jointly developed by the researcher and WQRF personnel will be jointly owned by the researcher and WQRF.
  - Generally, WQRF will reserve the intellectual property associated with the final report submitted to WQRF, including the copyright thereof, and all rights to distribute the final report. WQRF will make publicly available the research funded and knowledge gained through research, and the researcher ordinarily will be permitted to make available and publish sponsored research and use the knowledge gained to further its own research. However, no research results can be published by the researcher without prior review by WQRF.
- Publish the study in a peer-reviewed publication:
  - It is WQRF's preference that after review and acceptance of the final report, the researcher will seek to publish the study in a peer-reviewed publication. Whenever referencing or publishing the study, or information and/or data derived from the study, researchers must cite as its source to the report delivered to WQRF. The study should be submitted for peer-review publication within 6 months from the date that WQRF accepted the final report. WQRF does not commit that the research will be withheld from the public during the 6-month period.

## Confidentiality

All proposals submitted to WQRF will be treated as confidential and will not be shared beyond WQRF, its Research Task Force and its technical staff, except that WQRF may grant access to members of the WQA Water Sciences Committee and members of identified WQA committee and task forces as well as WQA staff members all of whom would act on behalf of WQRF under specific confidentiality restrictions.

## Proposal Format

Proposals shall follow the format provided in [Appendix A](#).

## Selection Criteria

Proposals will be evaluated by assessing the potential impact of the research compared to the cost. The special nature and requirements of the proposed research will also be taken into consideration along with the researcher's credibility, previous experience, qualifications and prior publications. A strong proposal will include a dissemination plan detailing how the research team will share the results of the study with the appropriate audience(s). Additional factors will be considered where applicable.

## Informative References

- Water Treatment for Dummies – WQA Special Edition: <https://www.wqa.org/dummies>
- Drinking Water Contaminants – Standards and Regulations: <https://www.epa.gov/dwstandardsregulations>

- National Primary Drinking Water Regulations: <https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations>
- National Sanitation Foundation's Emerging Contaminants in Drinking Water Survey: <http://www.nsf.org/consumer-resources/studies-surveys-infographics/consumer-survey-results/emerging-contaminants-drinking-water-survey>
- Examples of communications/health behavior research:
  - *Rethinking physical activity communication: using focus groups to understand women's goals, values, and beliefs to improve public health:* <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5437577/>
  - *Using the Theory of Planned Behavior to Guide Focus Group Development of Messages Aimed at Increasing Compliance With a Tobacco-Free Policy:* <https://www.ncbi.nlm.nih.gov/pubmed/29214815>
- Select unregulated contaminants that caused drinking water crises in the last 10 years, as identified from the ongoing WQRF-funded *Predictive Modeling of US Drinking Water Emergencies Study*:
  - 2014: cyanotoxin in Ohio, PFOS in Pennsylvania
  - 2015: PFAS in Ohio
  - 2015: PFAS/2-Butoxyethanol in New York
- See also [reference list from in text citations](#)

## Questions

The contact for this RFP is Kayla Heriaud. Questions can be directed to her at any time.

Contact info:

Kayla Heriaud  
Research Project Leader  
630-929-2599  
[kheriaud@wqrf.org](mailto:kheriaud@wqrf.org)

## Due Date

Proposals must be submitted to [Kayla Heriaud](#) no later than June 19<sup>th</sup> at 11:00 am central.

## APPENDIX A – Format

Proposals must *not* be password protected to restrict editing. Upon receipt, WQRF will add a watermark to the proposal to identify it as confidential and will password protect the document prior to its internal distribution. Proposals should include the following sections, and if necessary, other sections may be added:

Proposal Summary – The proposal summary form is available as a downloadable Word document at <http://www.wqrf.org/open-rfps.html>. This form should be completed and included as the first page of your proposal.

Abstract – Summarize the research project, plan, timeline and objectives. Explain the potential impact on the industry from the proposed research project.

Introduction and literature review – Include an overview of the research project, especially focal points which are relevant to the proposed work, objective(s), and a review of related research or publications which define what is already known about the subject matter of the research.

Detailed research plan and methodology – Describe proposed experiment(s), including any equipment and methods, which will be used to undertake the research. Be sure to address what data will be collected, all methods of data collection and how you intend to analyze, interpret, and present the results. As there is no word/page limit for the proposals, methodology should be written thoroughly. Proposals without a detailed methodology will likely be eliminated from consideration.

Deliverables – Describe the deliverable(s) that you will be providing for this work. Interim research reports, a draft of the final report, the final report, an executive summary and a presentation of the findings at a relevant conference must be included as deliverables for the research. Additional project deliverables might include raw data, hosting a workshop, etc.

Estimated timeline – This should be completed based on an as yet unidentified start date (e.g., the first interim report will be issued 3 months from the research start date). The projected start date is subject to adjustment, but estimated to fall between October 2020 and December 2020 inclusive. The timeline shall not exceed 9 months from the start date. Please include an estimated invoicing schedule along with your timeline that includes the upfront payment amounts due at the start of the project and a payment schedule based up deliverables and milestones. [Click here](#) to reference back to the specific requirements, per the *Business Requirements and Responsibilities* section.

Budget – Total budget shall not exceed \$15,000, the maximum funding available for the project. However, researchers should attempt to submit proposals for the lowest dollar amount that is practical. Preference may be given to a lower cost proposal that still best meets all the requirements/deliverables. At a minimum, the budget should be segmented by the following categories (as applicable): Salaries, Fringe Benefits, Equipment (including materials & supplies), Travel, Subcontract Fees, and Indirect Costs. Indirect costs need to be included in the budget only if this is something that the bidding organization ordinarily tracks through its financials. WQRF prefers to keep indirect costs at or below 13% of the project budget. Other categories may be included as required.

Potential conflict circumstances statement and disclosure of any additional organizations who would potentially contribute to this project – Include a statement reporting any direct or indirect facts or circumstances which could potentially create a conflict of interest. For example, if the results of proposed study could further the interests of a company with which the researcher or the research organization has a financial interest or relationship (including any contractual agreement or practice to provide testing, certification, consulting or other services (or is negotiating such an agreement), that is to be disclosed as a potential conflict circumstance. WQRF will have final authority in its sole discretion over whether a potential conflict circumstance represents a disqualifying Conflict of

Interest. Please also disclose the name(s) of any organizations who you have contacted to potentially contribute to this project (in-kind or monetary contribution).

References – List all relevant information sources cited in the proposal.

Credentials and qualifications – Include a statement of qualifications, previous experience, and related publications (including full curricula vitae) of the primary and supporting investigators.

## References

1. EPA. (2017, January 12). Safe Drinking Water Act (SDWA). Retrieved November 5, 2019, from <https://www.epa.gov/sdwa>.
2. EPA. (2017, March 8). Secondary Drinking Water Standards: Guidance for Nuisance Chemicals. Retrieved November 5, 2019, from <https://www.epa.gov/dwstandardsregulations/secondary-drinking-water-standards-guidance-nuisance-chemicals>.
3. EPA. (2018, January 24). Learn About the Unregulated Contaminant Monitoring Rule. Retrieved November 5, 2019, from <https://www.epa.gov/dwucmr/learn-about-unregulated-contaminant-monitoring-rule>.
4. EPA. (2018, May 14). Reference Concentrations for the Fourth Unregulated Contaminant Monitoring Rule (UCMR 4). Retrieved November 5, 2019, from <https://www.epa.gov/sites/production/files/2018-05/documents/ucmr4-refconc-180514.pdf>.
5. Water Quality Association. (n.d.). Emerging Contaminants. Retrieved November 5, 2019, from <https://www.wqa.org/whats-in-your-water/emerging-contaminants>.
6. EPA. (2018, July 30). PFAS Laws and Regulations. Retrieved November 5, 2019, from <https://www.epa.gov/pfas/pfas-laws-and-regulations>.
7. EPA. (2018, February). Per- and Polyfluoroalkyl Substances (PFAS). Retrieved November 5, 2019, from <https://www.asdwa.org/pfas/>.
8. EPA. (2015, June). 2015 Drinking Water Health Advisories for Two Cyanobacterial Toxins. Retrieved from [https://www.epa.gov/sites/production/files/2017-06/documents/cyanotoxins-fact\\_sheet-2015.pdf](https://www.epa.gov/sites/production/files/2017-06/documents/cyanotoxins-fact_sheet-2015.pdf).
9. Water Quality Association. (n.d.). Water Treatment Basics. Retrieved from <https://www.wqa.org/improve-your-water/water-treatment-basics>.