Science Panel Meeting
For *Ceriodaphnia dubia* Quality Assurance Study

Draft Minutes of Meeting #5
Held remotely on Tuesday April 12, 2022, 11:00 AM to 12:30 PM PDT

List of Participants:
Facilitators:
Alvina Mehinto, Ken Schiff (SCCWRP)

Expert Science Panel:
Toxicologist, Government -Teresa Norberg-King (US Environmental Protection Agency)
Toxicologist, Academic - Robert Brent (James Madison University)
Toxicologist, Industry - Howard Bailey (Nautilus Environmental, Canada)
Quality Assurance - Leana Van der Vliet (Environment and Climate Change, Canada)
Biostatistician - John Bailer (Miami University)

There were 38 attendees in the webcast.

1- Opening Remarks and Review of the Agenda (5 min)

Alvina Mehinto began the meeting at 11:02 with roundtable introductions of the Expert Science Panel. Public attendees were encouraged to submit questions and comments through the question and answer feature on the webcast.

2- Perspectives from Stakeholders

Each meeting, SCCWRP attempts to get each stakeholder committee sector to present to the Panel. This meeting included two presentations from the private and the public laboratory sectors.

Private laboratories – Peter Arth (Enthalpy)

Peter Arth presented the private laboratory perspectives on the current study and wanted the Panel to pay attention to four important issues:

- Commercial laboratories would like the opportunity to comment on the Study Workplan once it is developed by the Science Panel to share their expertise and ensure success of the study.
- Commercial laboratories prefer to minimize the number of samples needed to ensure success and receive compensation for the samples tested. He would like to see the selection criteria for the subset of laboratories used to conduct the detailed testing following the baseline testing phase. He encouraged supplemental data collection during the split sample testing to ensure all of the labs have complete data sets.
- Despite the need to ensure timely results, there is an inherent risk in moving too quickly. Panel recommendations for testing modifications may have substantial operational impacts on commercial laboratories, so delaying even a couple of months could be beneficial. Implementing the recommended guidelines by laboratories may also take significant amounts of time.

- Utilizing both negative controls and spiked positive samples would allow for assessments of organism performance and organism response.

Public laboratories - Joshua Westfall (Los Angeles County Sanitation Districts)

Josh Westfall presented the public laboratory perspectives on the current study

Josh emphasized the need for sanitation agencies to have comparability across laboratories; two samples with split samples should have similar results. Numerical effluent limitations and threats of third-party lawsuits highlight the need for consistent results.

The Panel asked some clarifying questions.

3- Proposed Testing Plan (45 min)

This agenda item allowed the Panel will discuss the proposed plan for lab testing and standardization of lab techniques, then make their final recommendation(s) on how to move forward.

Alvina presented an overview of the preliminary study design discussed at the previous stakeholder meeting two weeks prior. She began by describing the three phases of the overall study and pointing out progress to date. She finished with the current need to create a written study design for split sample testing. She was looking for feedback from the Panel to ensure the proposed study workflow is appropriate and will answer the study questions.

The first item Alvina presented were the study questions:

- Does standardizing lab practices improve consistency and comparability in *C. dubia* test results?
- Which lab practice should be standardized to reduce intra- and inter-laboratory variability?

After discussion, the Panel agreed these were the right general questions. Issues discussed by the Panel included flexibility vs standardization, setting targets for acceptable variability, the need to compare negative control variability as well as positive control response among laboratories.

Alvina worked with the Panel to begin defining the acceptable variability as an outcome of the study. She offered several potential options for Panel consideration. Several measurements of variability were considered and how to measure them, including utilizing more frequent Performance Evaluation samples. Ultimately, the Panel decided coefficients of variation (CV) for control performance as well as CV for spiked sample responses were a good start for assessing variability, but not the only factors for evaluation.

Alvina presented the conceptual study design and workflow. To answer the first question, she described a two-phase split sample testing program. In the first phase, all state accredited laboratories would conduct baseline testing of blind samples utilizing their current lab practices. This would be followed by confirmation testing in the second phase. Confirmation testing would have all state accredited laboratories testing blind split samples using standardized lab practices to assess improvements in variability.

To answer the second question, Alvina described a study design where standardization of a subset of lab practices would occur. This would occur following baseline testing, but before the confirmation testing, and would be the basis on which to standardize the confirmation testing phase. Alvina described three options on how to select the lab practices for standardization.

The Panel had extensive discussion on this conceptual design. The issues discussed included timing, level of detail, sample selection for split sample testing. Ultimately, the Panel agreed: 1) the conceptual design was appropriate, 2) the baseline testing should get started soon, 3) the evaluation should be staged, with a focus on baseline testing first, and selecting lab practices for standardization after baseline testing results are available.

Alvina next discussed what type of samples should be used in the split sample baseline testing. The Panel suggested using whole water samples instead of the concentrated ampules typically used Performance Evaluation samples used by US EPA, a sample that is stable over time, a sample that is easily measured to verify concentrations (i.e., conductivity). Ultimately, Panel members suggested a salt such as sodium chloride as the potential toxicant to be used for positive control.

4- Public Comments (10 min)

No comments were received from the public.

5- Next Steps and Closing Remarks (5 min)

Alvina summarized the Panel's decision making from the day:

- We are at the stage of collecting uniform data to evaluate variability within and across laboratories
- The study questions and conceptual study design are appropriate
- CV for negative and positive controls are appropriate measures of variability, but we should remain open to other measures of variability during the study
- Staged testing is important for making decisions as we work through the conceptual design.
- SCCWRP should get started on drafting the baseline testing details
- A salt is likely the best toxicant to be used for the positive control in the baseline testing

The Panel wanted to ensure that future proficiency testing remains as potential recommendation for evaluating variability in accredited laboratories, both individually and collectively.

Alvina proposed the next steps be:

- SCCWRP produce a written laboratory testing plan for review by the Stakeholder Committee and Expert Panel.
- SCCWRP initiate baseline testing logistics and coordination
- Aim for July to ship the first batch of baseline samples for testing

The Panel emphasized their desire for SCCWRP to write the lab testing document for baseline testing only. Alvina agreed to send the Panel historical data on reference toxicant responses from the laboratories.