

## Central Valley Regional Water Quality Control Board

**Meeting Summary**  
**FOOD SAFETY**  
**EXPERT PANEL – ROUNDTABLE MEETING**  
**7 September 2018**  
**9 a.m. to 2 p.m.**

### Attendees

<b>Panel Member</b>	<b>Title &amp; Affiliation</b>
Dr. Gabriele Ludwig	Director of Sustainability, Environmental Affairs - Almond Board of California
Dr. Barbara Petersen (by phone)	Principal Scientist, Chemical Regulation and Food Safety, Exponent
Dr. Bruce Macler	Toxicologist, U.S. Environmental Protection Agency (US EPA)
Dr. Andrew Gordus	Staff Toxicologist, California Department of Fish and Wildlife (CDFW)
Dr. Stephen Beam	Branch Chief, California Department of Food and Agriculture (CDFA)
Dr. Dave Mazzera	Department of Public Health, Food and Drug Branch
Dr. Seth Shonkoff	PSE Healthy Energy
Dr. Ken Kloc (by phone)	Office of Environmental Health Hazard Assessment
Mr. Mark Jones	Toxicologist, US Army Corps of Engineers
<b>Affiliated Parties</b>	<b>Title &amp; Affiliation</b>
Patrick Pulupa	Executive Officer, Regional Board
Clay Rodgers	Assistant Executive Officer, Regional Board
W. Dale Harvey	Supervising Engineer, Regional Board
Rebecca T. Asami	Engineering-Geologist, Regional Board
Josh Mahoney	Water Resource Control Engineer, Regional Board
Dr. William Stringfellow	Science Advisor, University of the Pacific, LBNL
Dr. Bernard Beckerman	Consultant, GSI Environmental

## Action Items

1. Central Valley Regional Water Quality Control Board (Central Valley Water Board or Regional Board) staff to investigate potentially having Chemical Abstract Service Numbers (CASRNs) for analytes added to laboratory reports.
2. Regional Board staff to consider updating monitoring and reporting programs, after getting feedback from Food Safety Expert Panel (Panel) members.
3. Central Valley Water Board staff will send the Panel a list of questions that were compiled by the Panel in January 2017. The list of questions addresses goals of the Food Safety Project and Panel.
4. Regional Board will send a draft outline of the white paper to the Panel.

## Introductions and Agenda Review

Central Valley Water Board staff opened the meeting with introductions from the Panel and reviewed the agenda.

## 2018 Sampling Events- Diversions from Sampling and Analysis Plans

Regional Board staff discussed the 2018 sampling season. During the sampling season, there were communication issues relating to sampling for some of the crops, largely resulting in Regional Board staff not learning about sampling events in a timely manner. For one commodity (apples), a control site could not be identified.

Discussion highlights from Panel members follow:

- Some Panel members felt that without control samples it would be difficult to understand what treated sample analysis means.
- Some Panel members felt that having a control sample was not as necessary, as food regulatory agencies take samples without controls on a regular basis.
- Some Panel members questioned the utility in testing every crop grown with produced water and felt that attention should be paid to crops by type, and that more attention should be paid to the irrigation water.
- Some Panel members stated that testing every crop type is important especially from a consumer perspective.

## Presentation – Project Approach and Managing Produced Water

Dr. William Stringfellow (science advisor to the Regional Board) gave a presentation on potential pathways for chemical uptake. Chemical additives/ produced water constituents may potentially enter plant biomass through the uptake of produced water from irrigation, or after accumulating in the soil. Dr. Stringfellow stated that potential hazards require a pathway to cause exposure. Environmental persistence plays a role in exposure. Things to consider are:

- Is a chemical biodegradable or labile in the environment?
- What is the rate of decay?
- What is the nature of the products formed?
- How long does it take for the chemical to leave the system?
- Is the mass in the produced water sufficient to result in accumulation over time?

Dr. Stringfellow discussed the list of additive constituents, which was presented in a previous public Food Safety Meeting. Dr. Stringfellow suggested a path for selecting chemicals of interest from the list. Some of the things to consider when selecting chemicals for the list are:

- Is the chemical stable in the environment?
- Is the chemical potentially harmful if ingested?
- Can we measure the chemical in the water?
- Should we measure the chemical in plant matter or soil matter?

Dr. Stringfellow presented a graph which summarized an analysis of the additive list, and biodegradability. According to the analysis, 36% of the additives are readily biodegradable, 25% are inorganic, 16% were not readily biodegradable, 4% were inherently biodegradable, and 19% are additives with no biodegradability data.

Discussion points and comments are summarized below:

- Panel members suggested that the focus be on the additives that are not readily biodegradable.
- Panel members discussed the value of having mass data for the additives. Mass data might be helpful when examining the potential threats of a particular chemical.
- One Panel member stated that there is an approach that can be used that relieves the need to use mass in the assessment.
- One Panel member pointed out that the oil producers can change what additives they use.
- Regional Board staff stated that oil producers are required to report which additives they use through monitoring and reporting programs.

### **Presentation- Bernard Beckerman of GSI**

Dr. Bernard Beckerman of GSI Environmental, Inc. (GSI), gave a presentation on the completion of the MOU Tasks (Tasks 1-2). Dr. Beckerman stated that GSI has been working on the list of chemicals of interest. GSI has been working on evaluating toxicity values for constituents on the additive list. GSI stated that many of the constituents have no toxicity data, and GSI is looking at potential surrogates for those constituents. GSI will also consider biodegradation and uptake. Dr. Beckerman stated that GSI should have a preliminary chemicals of interest list for review by December 2018.

Discussion points and comments are summarized below:

- A Regional Board staff member proposed that fruit sampling be stalled until the list of constituents is complete.
- Dr. Stringfellow suggested that monitoring and reporting programs have three constituents added: Quaternary Ammonium Compounds (QAC), Methylene Blue Active Substances Assay (MBAS), and continuous conductivity (EC). Dr. Stringfellow stated that continuous EC would show when there are big changes in the discharge, but if no large changes in EC are reported, quarterly monitoring will be sufficient.

- A Regional Board staff member asked Dr. Stringfellow if we should require this before the chemicals of interest list is completed.
- One Panel member suggested that the Panel conduct an intake assessment that considers the crops that have been sampled and the constituents compiled from the chemicals of interest.

## White Paper Draft Outline

Regional Board staff stated that a draft outline (outline) of the white paper has been prepared. The outline, which was shared at a public meeting of the Panel, consists of a background section and bullet points for topics that will be covered in the white paper. Regional Board staff sought direction from the Panel, regarding major topics to be covered in the white paper. Panel members suggested that the following topics be covered:

- Crop sampling reports and results
- Chemicals of Interest list
- Literature Review
- Background
- Water Quality Assessment
- Questions answered by the Food Safety Project
- Recommendations from the Panel
- Limitations of the white paper and Food Safety Project
- Recommend a process for how to take the project further (for other groups who may want to study the use of produced water to irrigate crops)

Central Valley Water Board staff committed to sending the Panel a copy of the outline and a list of questions that the Panel put together in a previous working meeting. Regional Board staff will combine Panel comments on the documents and incorporate them into the outline.

## Closing

Panel members suggested that the next meeting be a working/ roundtable meeting, as opposed to a public meeting. Regional Board staff stated that it might be possible to change the next meeting to a working meeting and that staff would consider it. Mr. Rodgers then thanked the Panel for their time and input, and then closed the meeting.