

## Minutes of the Technical Advisory Committee Meeting – March 22, 2006

CALFED-funded Project: Pyrethroid Insecticides:  
Analysis, Occurrence and Fate in the Sacramento and San Joaquin Rivers and Delta

### Principle Investigators:

Kathryn Kuivila, US Geological Survey  
David Crane, California Department of Fish and Game  
Kean Goh, California Department of Pesticide Regulation

### Other Scientists:

Michelle Hladik, US Geological Survey  
Abdou Mekebri, California Department of Fish and Game  
Carissa Ganapathy, California Department of Pesticide Regulation  
Jane White, California Department of Food and Agriculture  
Elaine Wong, California Department of Food and Agriculture

### Technical Advisory Committee:

Bill Croyle, Central Valley RWQCB (Ag Waiver Program)  
Karen Larsen, Central Valley RWQCB (Sacramento River Watershed Program)  
Jeff Miller, AquaScience (Toxicology)

### Visitors:

Paul Hand, Central Valley RWQCB  
Margie Lopez-Read, Central Valley RWQCB

## AGENDA

10:00 Brief Project Overview (new timeline)  
Update on Method Development  
Questions Raised at Last TAC Meeting  
Upcoming Laboratory Inter-calibrations  
12:00 Lunch  
Monitoring and Sampling Results – each lab presents their own findings  
Discussion - other priorities, changes, suggestions  
Next steps and next meeting  
15:00 Meeting end

- Michelle gave overview of the project, of note is the one year no cost extension that has been granted by CALFED. The public meeting will now be moved to April 2007, and the final report is now due in December 31, 2007. The project is scheduled to have another TAC meeting in February, 2007 before the public meeting. **There will also be an additional TAC meeting between turning in the draft final report (September 30, 2007) and the final report.**
- Discussed pyrethroids that have been added to our methods since the last TAC meeting. Pyrethroid use is becoming more isomer specific, labs are trying to obtain as many isomers

as possible, especially for cyhalothrin, cypermethrin and cyfluthrin. Abdou noted that Jay Gan's group at UC Riverside has been conducting toxicity testing with individual isomers.

- Issues with toxicity testing, cannot find a way to stop pyrethroids from sorbing to container walls. Jeff noted that they have only found toxicity in water samples immediately following a spray event, toxicity in sediment is more common.
- Michelle briefly went over each lab's methods to date. All labs are working on lowering the background for sediment samples. GC-ECD is the most sensitive instrument for the pyrethroids and has been pushed to its analytical limits. Could possibly lower detection limits with fancier equipment and more focused clean-up methods (that would lose other pesticides) but this would not be cost effective. CDFA has been talking to different manufacturers of solid phase extraction products to see if there are any new options available.
- If very low detection limits are necessary could do a tiered approach if results/toxicity suggest pyrethroids. Jeff notes that carboxyl esterase testing currently only works with pore waters and water overlaying sediments, they are working on adding enzymes to particles to stabilize enzymes in sediment. Don Weston is validating effects of temperature on toxicity of pyrethroids to other organisms, this may be used to pinpoint pyrethroids as toxic contaminant.
- Discussed questions/issues raised at last TAC meeting.
  - Already discussed sorption issue and adding more pyrethroids and/or isomers. Each lab group has found that the pyrethroids are stable in organic solvents so standard curve solutions can be kept from 6 months to 1 year without any significant loss; these results will be included in the final report.
  - West Nile spraying of pyrethroids. Important to differentiate between West Nile spraying and agricultural use, there may be some interest in doing selected sampling for this. Abdou noted that he can measure pyrethrins, which are used for West Nile, via LC/MS and that their detection limits are ~ 5-10x higher than the other pyrethroids.
  - CDFG and CDFA will provide a cost per sample when their methods are finished. USGS does not provide this data as they are not allowed to compete with other labs.
  - Kean has a website for the pyrethroid project
  - DPR has environmental fate reviews for some pyrethroids online, lambda-cyhalothrin will be the next one finished, then fenprothrin
- Upcoming inter-laboratory calibrations
  - Water samples: one water with suspended sediments added and another "regular" water. Samples will be spiked at two concentrations. All labs will analyze spiked and unspiked samples
  - Sediments: sediments spiked at two concentrations. Also do some real sediment samples, irrigated lands programs, 25% of samples with hits of pyrethroids so it should be relatively easy to find sediments with pyrethroids. Standard reference material (SRM) for pyrethroids? NIST and NRC do not have, do not know if there are plans to have any in the future.
  - Every lab will do replicates
  - Spiking solution will also be shared

- TAC has lost Bill Johnson as a member. Tom Mumley has taken his place at the SF Regional Board but he is unable to join the TAC. **Karen will talk to Robert Holmes about joining TAC.**
- Public meeting
  - Margie leads irrigated lands lab group and this could be a good venue to discuss methods. This meeting could also go statewide.
  - Also the IAC (Interagency Coordinating Committee) could be a venue to conduct a meeting at the agency level. **Karen will check on if this is a good possibility**
  - All labs plan to present something at the American Chemical Society (ACS) meeting in San Francisco in September. There is a special session on pyrethroids.
  - **Michelle will talk to CALFED (Donna Podger) to see what they want**
- Final Report, there is no formal format given from CALFED. Will try to get report from a similar project to determine the level of detail CALFED wants in the final report
- Each lab group presented information from some of their environmental monitoring
- The labs discussed the upcoming inter-lab calibrations at the end of the meeting
  - Water samples – each lab will get:
    - Water + clean sediment + pyrethroids
      - one sample spiked at 2-5 times reporting limit (3 L)
      - one samples spiked at 10 times reporting limit (3 L)
      - one sample not spiked with pyrethroids (1 L)
    - Real water + pyrethroids
      - one sample spiked at 2-5 times reporting limit (3 L)
      - one samples spiked at 10 times reporting limit (3 L)
      - one sample not spiked with pyrethroids (1 L)
    - Carissa will send Michelle sediments to put in water
    - Samples will be prepared by Michelle the week of May 8<sup>th</sup>
    - Carissa will get samples from Michelle on Monday and deliver to other labs
  - Sediments will be done after water, groups are gathering list of sediments with pyrethroid detections