

Betsy Herbert, Ph.D.  
150 Thayer Rd.  
Santa Cruz, CA 94306  
2/28/05

Roger W. Briggs, Executive Officer  
California Regional Water Quality Control Board  
Central Coast Region  
895 Aerovista Place, Suite 1  
San Luis Obispo, CA 93401

Dear Mr. Briggs:

I am responding to your request for comments on proposed monitoring and reporting program for regulated timber harvest operations, in your letter dated February 1, 2005.

My comments generally reflect my perspective, which addresses protection of drinking water as a beneficial use of water. I defer to other experts with regard to other beneficial uses.

My first comments address the first section in your cover letter, which lists the questions you are trying to answer with your monitoring and reporting program (MRP).

Regarding implementation/effectiveness and forensic monitoring, I suggest that you remove the term "visual" from the following statements:

"The questions we are trying to answer through ~~visual~~ implementation monitoring are:"

"The question we are trying to answer through ~~visual~~ effectiveness monitoring is:"

"The questions we are trying to answer through ~~visual~~ forensic monitoring are:"

The reason that I suggest this change is that, I believe you are asking questions about implementation, effectiveness, and forensic monitoring, not about visual monitoring, which is a method of monitoring.

The following comments address Section 1 of the MRP. Regarding "B. Implementation/Effectiveness Monitoring." Here, you must specify the actual measurements that will be done with visual monitoring, and describe how they can be verified or compared to future and baseline data. A subjective visual judgment on the part of the discharger, without any verifiable measurements, would be completely ineffective.

In my opinion, any "visual monitoring point" must require some sort of quantifiable or mappable measurement. For example, if roads are to be a visible monitoring point, then total existing road length should be mapped and calculated, and road density should also be calculated. Road density is often used as an indicator of watershed health. Photographs should also be taken, showing the condition of the road. I believe the initial round of photographs

should be taken during the PHI under the direction of the RWQCB staff person, and/or county representative.

Visual monitoring of stream water quality is not effective, for the same reasons as I previously explained. Samples should be taken with turbidimeters. Actual NTUs should be automatically measured and recorded.

Finally, with regard to effectiveness monitoring, I believe all THPs need to be monitored for turbidity to determine if BMPs are working to protect the waters of the state. As the program starts up, you need to monitor even those THPs rated as low-risk, because you will need to know if your risk-assessment factors are useful and justifiable. I do believe, however, that high risk THPs need to be monitored more intensely. High-risk plans would be those with the following characteristics:

- Winter operations
- High road densities (> 3 mi. per sq. mi.)
- Steep slopes and high erosion ratings
- Watersheds listed as impaired under the Clean Water Act
- Watersheds that supply surface water to community water providers

In my view, your section on forensic monitoring is basically flawed. In particular:

*"If timber activities cause a discharge (sediment, soil, other organic material, etc.) into waters of the state, the Discharger shall measure instream turbidity (using grab samples in the closest Class I or II watercourses downstream of the discharge."*

First, this statement is backwards, because all timber activities can be expected to cause some discharge into waters of the state. The question is, how much? If there is a spike in the turbidity measurement, then one might want to go out and look for the cause of the spike. Water treatment plant personnel routinely do this, if their raw water comes from local streams. They measure turbidity continuously with a turbidimeter at the intake to the treatment plant. When there is a spike in the turbidity readings, which may require them to shut their plant down, they go out and look for the cause (Herbert 2004).

I strongly suggest that the RWQCB work with all water treatment plants in the area to share their existing, continuous water quality data. These readings would serve as a dependable source of continuous data that could be coordinated, when applicable, with water quality monitoring at the individual THP level within the water supply watershed. You may also find that Source Water Assessments, conducted for all community water utilities by 2003 are useful for identifying expected problem spots. The assessments provide a topo map of each drainage to a public water supply, showing water intakes and potential contaminant sources. Timber operations are often identified as potential contaminant sources in rural watersheds. Source water assessments are required under the Safe Drinking Water Act, and are public information.

Second, regarding your recommended monitoring of water quality in Class I and II streams, this may not be the most appropriate way to determine the impacts of

roads. MacDonald discusses in detail several methods of monitoring to assess forest harvest and road building impacts on streams. He states:

The primary concern associated with road building and maintenance is the increased rate of erosion. Often this is best monitored in the smaller ephemeral channels that directly drain the road prism because the relative effects are much greater than in the higher order downstream channels. . . (MacDonald 1991:53).

In Section II, regarding data logging and reporting, I generally believe it is naive to expect the discharger to do all the data collection, logging and reporting, unless there is some way to corroborate these readings with other independently collected readings, such as from water treatment plants. At the watershed scale, students, who are not employed by the discharger, could be used to collect baseline data.

In summary, I believe this monitoring plan needs fundamental improvements. It does not reflect much of the credible local documentation or statewide scientific evidence that has been submitted to the Central Coast RWQCB over the past two years. This evidence was offered in good faith, in order to assist your staff in creating a workable plan to protect the waters of the state. Such a plan would require actual, comparable, verifiable measurements, baseline data, and proper enforcement. In my view, this plan as it stands, satisfies none of these requirements.

Sincerely,

*Betsy Herbert, Ph.D.*

#### **Works Cited**

Herbert, Elizabeth. 2004. Forest Management by West Coast Water Utilities: Influences and Consequences. Ph. D. dissertation, University of California, Santa Cruz.

MacDonald, Lee H., A. W. Smart, and R. C. Wissmar. 1991. Monitoring Guidelines to Evaluate Effects of Forestry Activities on Streams in the Pacific Northwest and Alaska. Center for Streamside Studies/US EPA, Seattle.