

Appendix J. Comments on Draft Report.

From: <Amaro.Laurie@epamail.epa.gov>
To: <kgoh@cdpr.ca.gov>
Date: 2/27/03 8:38AM
Subject: Comments from USGS

Hi Kean:

Attached are comments on the report entitled, "Forest Herbicide Residues in Surface Water and Plants in the Tribal Territory of the Lower Klamath River Watershed of California" from Edward Lee, Senior Chemist at USGS. Please consider his comments as you develop the final report. Thank you for the opportunity to comment on the report.

Laurie Martinez Amaro
Pesticide Program
US Environmental Protection Agency
San Francisco
415.947.4212

Edward A Lee <ealee@usgs.gov>

To: Raymond Chavira/R9/USEPA/US@EPA
02/24/2003 11:56 AM
Subject: Re: Review of paper

Ray,

Attached is word file of review, hard copy will be mailed tomorrow.
Sorry for the delay.
(See attached file: USEPAresponse-Chavira.doc)

Regards

Edward Lee
Senior Chemist
Organic Geochemistry Research Laboratory
USGS
785-832-3561
ealee@usgs.gov

Note: DPR responses are presented in bold font.

February 17, 2003

Mr. Raymond Chavira
Office of Pesticides
USEPA
Region IX
75 Hawthorne Street
San Francisco, CA 94105

Dear Mr. Chavira,

Thank you for the opportunity to review the study report "Forest herbicide residues in surface water and plants in tribal territory of the Lower Klamath River Watershed of California."

I found the study report very interesting and informative. The report is of a completely different type of paper than the technical papers for review and publication that I have seen. It was found to be well written and easy to follow and well documented from a technical standpoint. A great deal of effort was obviously put forth by all parties involved in conducting the study.

A. Overall setup of the study

I found the overall setup of the study to be well thought out and generally good considering the diverse groups of people that were involved. I would like to have seen some sampling performed on the streams, if there was flow, between the application events for degradates of the herbicides. Analyzing for degradates of the compounds in the original runoff samples might have been informative as to the fate of the compounds involved.

The analytical laboratory did not have methods for degradates of 2,4-D or triclopyr. Water samples collected by the Yurok Environmental Program in the spring of 2002 was analyzed for atrazine and it's breakdown products DEA, ACET, and DACT. None of the compounds were detected including atrazine.

B. Sampling methods and times:

Water sampling methods were good but probably should have been based upon volumes of water involved or related to in some way to determine the quantity of the herbicides involved. Was there any information on stream flows at the time or a history available? Sample handling, shipping, and chain of custody appeared to be sufficient to protect the integrity of the analytes.

Most of the creeks or streams sampled did not have gauging stations. The volume of water in the creeks is extremely variable, especially during storm events.

C. Analytical methods and procedures:

Analytical methods used to determine the compounds were well established with very good QA/QC. Minimum detection limits for water were low (0.05-0.10 ppb) with the exception of glyphosate at 2.0 ppb. A method with MDL of 0.10 ppb for glyphosate is now available. These numbers are consistent with current technology. MDLs for plant tissue were also consistent with current methods.

D. Remarks.

This report documents the basic parameters that it was designed to address as listed in the objectives of the study protocols. The levels of herbicides in runoff water were all below levels that have been established for drinking water. Plant residue parameters are not as clearly defined by regulation but appear to be low also.

Water runoff samples that contained appreciable amounts of herbicides appear to be related to the degree of slope of the terrain. Sites E, J, and L fit into this category, all with a high degree of slope. Could the slope be an indicator of the amount of vegetation on the surface? Is the slope of the terrain a factor for the application of the herbicides?

Is there any information available from others sources about times for dissipation of herbicides in plants, if so it should be included or references cited.

There was obvious great attention to detail in gathering the rainfall event data and corresponding data for application site descriptions.

The study demonstrated a very comprehensive approach to the parameters, water, plant, drift and runoff with very good attention to detail.

Not finding atrazine in runoff water samples would not seem consistent with other published data. That herbicide is quite prevalent in runoff from crop applications. Perhaps it had formed a degradate.

The study includes large amount of data that is well organized making for easy interpretation.