

General

  
**Los Alamos**  
NATIONAL LABORATORY  
**memorandum**

*Risk Reduction & Environmental Stewardship Division  
Water Quality & Hydrology Group  
(RRES-WQH)*

*To/MS:* SWAT TEAM MEMBERS  
*From/MS:* Steve Veenis, RRES-WQH, MS K497  
*Phone/Fax:* 7-0013/5-9344  
*Symbol:* RRES-WQH: 02-469  
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DEC 2002

**SUBJECT: FINAL SURFACE WATER ASSESSMENT TEAM MEETING MINUTES FOR  
DECEMBER 12, 2002**

## **1.0 PURPOSE**

The Surface Water Site Assessment Team (SWAT) continues an effort to review the Laboratory's Storm Water Monitoring Program for the Multi-Sector General Permit. A Data Quality Objective (DQO) process will be used to determine the adequacy of the data collected by the Laboratory's monitoring network. The SWAT role is to provide a review of Multi-Sector General Permit (MSGP) Sector K – which includes Solid Waste Management Units (SWMUs), station locations, analytical methods, Benchmark Parameters and approved monitoring waivers and to make recommendations on how to improve the overall approach.

## **2.0 DISCUSSION**

### **2.1 No Exposure Certifications**

A list of nine conventional industrial activity sites that LANL plans to propose for a No Exposure Certification was circulated for review. LANL is preparing applications for submission to EPA. For those who are interested, a field visit will be arranged prior to the application submittal. On December 20, 2002, a field visit was conducted to assure SWAT Members that the sites selected were appropriate.

### **2.2 Role of Modeling in SWMU Runoff Decision-Making**

Most of the meeting was devoted to a discussion of the potential role of modeling in supporting decisions about the effectiveness of BMPs at SWMU runoff sites. A hydrologic modeling expert (Cathy Wilson, EES-2) attended this meeting to offer her advice. She began by demonstrating a simple hillslope erosion model that is available on-line through the Agricultural Research Service. Key inputs include the runoff volume, slope, canopy cover, and ground cover. Though the model makes some simplifying assumptions, it has been calibrated through hundreds of events.



Key points of the ensuing discussion include the following:

- Rainfall is clearly a factor in predicting erosion, but more important than the total is how it is partitioned into infiltration vs. runoff. Slope and cover are key factors affecting erodibility.
- Perhaps the most important factor is whether there is upgradient “runon potential” – e.g., large mesa-top parking lots, or flow that is channeled into culverts. It is useful to think of two categories of hillslope erosion: (1) erosion associated with identifiable channels, usually with significant run-on from above; and (2) more broadly dispersed hillside erosion, where the rain that actually falls on the slope may be the most important contributor to erosion. In the first case, the use of single-stage samplers buried in the channel would make sense, whereas in the latter case, a porous pipe laid across hillslope contours might be a more meaningful data collection device. For evaluating runoff from SWMUs, which often involved a history of releasing waste into hillslope channels, it is likely that the first category is more typical.
- Intuitively it makes sense that limiting upgradient runon and/or maintaining hillslope BMPs will serve to mitigate erosion, but the challenge is to determine exactly how to use data to support that case. It may be possible to use data such as that collected during the study conducted by Barbara Hoditschek (DOE/OB) at TA-46 supplemented by a simple modeling strategy. In particular, it would be helpful if we could achieve at least an estimated rating of hillslope channels by identifying a high-water mark. If that is not possible, we can use the area of the site plus rainfall estimates to derive total volume; then the volume times the concentration of sediment produces total yield. This can be translated into an annual load of sediment moved.
- It may be necessary to tailor the monitoring strategy to specific sites. For instance, in some cases, the only important monitoring point may be at the bottom of the hillslope, before it meets the channel at the canyon bottom.

The discussion highlighted the fact that both data and models are only tools, and that the real focus needs to be on limiting erosion through effective placement/use of BMPs, and through steps to cut off upgradient run-on whenever feasible.

The next meeting is scheduled for Wednesday, December 18, 2002, in White Rock at the RRES-WQH Conference Room. Any exceptions taken to these minutes should be brought to the attention of the Steve Veenis (667-0013), within five (5) working days of receipt.

**Participants:**

Ralph Ford-Schmid  
Barbara Hoditschek  
Kevin Hull  
Steve Veenis  
Cathy Wilson

SV/tml



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