General

Los Alamos
NATIONAL LABORATORY
EST.1943

To/MS: SWAT TEAM MEMBERS
From/MS: Steve Veenis, ENV-WQH, MS K497 SV
Phone/Fax: 7-0013/5-9344
Symbol: ENV-WQH: 06-073
Date: April 24, 2006

memorandum

Environmental Stewardship Division (ENV-DO)
Water Quality & Hydrology Group (ENV-WQH)

SUBJECT: FINAL SURFACE WATER ASSESSMENT TEAM MEETING MINUTES FOR JANUARY 18, 2006

1.0 PURPOSE

The Surface Water Site Assessment Team (SWAT) consisting of staff members from LANL, DOE, DOE-OB and NMED is tasked with providing a review the Laboratory's Storm Water Management Program for the Federal Facilities Compliance Agreement (FFCA) Docket No. CWA-06-2005-1701 and Administrative Order Docket No. CWA-05-2005-1734. The SWAT role is to provide a review of storm water issues and to build consensus on recommendations associated with Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs). Items of discussion will include but are not limited to; monitoring locations, potential pollutants, action levels, corrective actions, BMP effectiveness studies and permitting concerns.

2.0 REVIEW OF NOVEMBER 9th, 2005 DRAFT MEETING MINUTES

Steve Veenis (SV) asked the group if there were any comments on the November 9th SWAT meeting minutes. Several people commented that they had not had time to review the meeting minutes. SV requested that people review the meeting minutes and provide any comments to him by January 27, 2006. SV will then finalize the meeting minutes and distribute to SWAT members (Action: ALL)

3.0 PRELIMINARY PCB DATA FOUND IN DOE/OB STORM WATER SAMPLES FOR 2005

Ralph Ford Schmid (RFS) passed out four handouts detailing results from PCB data collected by DOE/OB from site specific and gage stations at Los Alamos National Laboratory during 2005. All PCB data were analyzed using the congener method (1668A). RFS described the layout of the raw data on the first three handouts and then asked the group to focus on the last handout (handout 4), which provided a summary of the data. RFS said that the data indicates elevated levels of PCBs in Los Alamos Canyon. Site-specific locations such as LA-SMA 5.3, LA-SMA 5.4 and LA-SMA 5.7 as well as LA-SMA 6.6 (E030) show elevated levels of PCBs. The levels decrease at LA-SMA 5.5 (E042) but are still orders of magnitude above the standard as they leave LANL. Results from LA-SMA 0.5 (E110) indicate that PCBs from Los Alamos and Pueblo Canyons may be reaching the Rio Grande. Data from Pueblo Canyon, station PU-SMA 4.1 located about 4 miles upstream of the Pueblo/Los Alamos confluence, had elevated

levels of PCBs. These levels decreased as flows moved east but at PU-SMA 0.3 (E060) near the confluence with Los Alamos Canyon, they were still orders of magnitude greater than the standard. The congener data for Pueblo canyon displayed elevated concentrations of the lower congeners and the data are similar to data collected during the post Cerro Grande Fire samples collected in 2001. The PCB signature observed during these two studies is unique to Pueblo Canyon. In summary, RFS said that although elevated levels of PCBs are moving in other canyons such as Sandia and Mortandad, the Los Alamos watershed (Pueblo & Los Alamos Canyons) appears to be responsible for the bulk of the PCBs that reach the Rio Grande from LANL. Surface water flows from these canyons reaches the Rio Grande anywhere from 4-8 times per year. Flows from other canyons reach the Rio Grande less frequently.

SV asked RFS to describe how to use storm water sample collection as a method of determining the sources of PCBs. RFS replied that site-specific sampling should be conducted upstream of SWMUs to determine if the source of PCBs is from run-on. In some cases the source may be from Los Alamos County land. SV asked if DOE-OB would support run-on sampling. RFS said that the DOE-OB would support run-on sampling and that they are proposing to conduct some run-on sampling in 2006 as part of the SWQB TMDL study.

Barbara Hoditschek (BH) asked if the source of PCBs could be from the canyon sediments. RFS said that the source could be the canyon sediments but additional soil/sediment samples in the canyons may need to be collected to be sure. Gene Turner (GT) asked how PCBs could be removed from the canyons. RFS, John Young (JY) and Dave Englert (DE) replied that in some cases the canyon sediments would have to be removed and that some of this was done following the Cerro Grande fire (Example: DP Garden Plot at the confluence of DP and Los Alamos Canyon).

SV asked if there are PCB data identified in the ER Project's Los Alamos/Pueblo Canyon Surface Aggregate Report (LAPSAR). JY said that originally they were not included but were added later at the NMED's request. RFS said that they conducted additional sampling in support of this but have not received the results of the data. SV commented that finding and stabilizing sources of PCBs in the canyons may be difficult. RFS replied that the riparian work in Pueblo to stabilize the sediment packages may be the best approach to management of dispersed sources of PCBs in the canyons. SV said that watershed treatments such as the Los Alamos weir may be effective and that Bruce Gallaher (BG) and Greg Kuyumjian (GK) are looking at the data to determine effectiveness.

JY suggested that the Laboratory may need to add temporary monitoring stations between gage stations to pin point sources. SV responded that the Laboratory is proposing to install a new gage station at the current location of LA-SMA-5.5 to distinguish sources from the town site from those on DP mesa.

GK suggested that we may need to follow the actual flow of storm water down a canyon and sample it along the way to see how concentrations of potential contaminants change along the canyon. The current sampling configuration may not be sampling the same water during storms. RFS responded that the DOE-OB has tried this approach but have not had a lot of success. For example, they tried to sample Pueblo in this way but did not get same water with samplers spaced down the canyon. DE reported that they tried to follow a storm down the canyon and sampled at various intervals but he is not sure if they ever sent the samples to the analytical laboratory. SV suggested that the group may want to spend some time thinking about how to accomplish this type of sampling.

RFS closed the discussion about 2005 DOE-OB PCB data by saying that four samples analyzed from the Rio Grande during peak snowmelt did not exceed the State Human Health Water Quality Standard for PCBs. Mike Saladen (MS) asked RFS to write up a summary of the data and recommendations and provide to the team at the next SWAT meeting (Action: RFS)

4.0 PRELIMIARY METALS/RAD/SSC DATA FOUND IN DOE-OB STORM WATER SAMPLES FOR 2005

BH reported that during the 2005 sampling season, DOE-OB installed 20 samplers in seven canyons. The samplers were located in close proximity to samplers installed by the Water Quality and Hydrology Group for FFCA/AO sampling. Storm water was analyzed to determine concentrations of metals, radionuclides and suspended sediment concentrations (SSC). Radionuclide and metal values greater than water Screening Action Levels (wSAL) were observed at locations in DP, Canyon de Valle, Sandia, Los Alamos, and Mortandad canyons. Values for SSC were variable with values greater than wSAL having high SSC and others with low SSC. BH reported that the BMPs installed at LA-SMA-6.4 and 6.5 were effective in stabilizing sediments. The PCB sources could be from sources upstream of the SWMUs.

SV responded that the ER SWMU working group should be made aware that the PCB problem may be coming from Los Alamos County land. RFS suggested that the SWAT take a field trip to evaluate the sites in Los Alamos Canyon. A member of ER should be invited on the field trip so that potential sources can be discussed. BH added that a number of single stage samplers could be installed in Los Alamos Canyon to determine if the problem is in the channel or on the slope. BH will provide the members of the SWAT with electronic copies of the data tables so that they can be compared to Laboratory data. SV asked that the SWAT think about ways to conduct run-on sampling so that the sources of PCBs can be identified.

MS asked BH to write up a summary of the data and recommendations and provide to the team at the next SWAT meeting (Action: BH)

5.0 LANL/DOE-OB STORM WATER DATA EVALUATION WORKING MEETING FOR SWAT 2004-2005

FFCA/AO data is currently evaluated by comparing to existing wSALs. The Laboratory would like the SWAT to assist in developing additional ways to evaluate data collected under the FFCA/AO. SV asked if the SWAT members had any ideas about what type of evaluation would be useful. BH suggested that a few members of the SWAT should form a technical group. Technical group members should be familiar with the sites and BMPs. The group should start with an analysis of data collected within Los Alamos Canyon. The group should evaluate the data to determine if BMPs are helping to reduce run-on and/or runoff. If the BMPs are not working then the group should suggest a new approach to BMPs, source term identification or to recommend clean up. JY added that the HWB could make ER clean up but would rather have the SWAT make the recommendations. MS suggested that an ER representative should be invited to participate on the technical group. JY stated that the FFCA/AO data should be used for this and the SWAT should help to reduce the burden on the Laboratory.

BH said that she would like to have a set of maps that displayed the SWMUs, stream channels, sample locations to use when evaluating the data. She suggested that we use SSC to determine BMP effectiveness. Cathy Smith (CS) informed the group that the Laboratory has already initiated development of a set of maps like BH described to assist with analysis. Kevin Buckley (KB) added that the maps should be ready to present to the SWAT by the next meeting.

SV stated that this work will be very helpful and that the Laboratory is moving towards monitoring on an SMA basis rather than at individual SWMU/AOC locations. One problem with this approach is that it does not currently match up well with the ER approach. However, the data from FFCA/AO monitoring will be going into their reports. BH suggested that if the BMPs are not working, a clean up may need to be considered and recommendations made to the ER Project. SV asked the group what they would suggest for sites, such as the hillsides, where there were not adequate BMPs and clean up would be extremely difficult and expensive. BH replied that the regulator may not let the Laboratory get out of cleaning up a site. BH suggested that the best way to address the hillside locations may be to manage run-on from Los Alamos County land.

CS asked if the technical group could meet soon because some of the results of the technical group are needed to finish the sampling plans due on March 31st 2006.

Rich Powell (RP) commented that the Individual Permit will most likely have effluent limits and data greater than these will be violations. RP wondered how the Laboratory planned on handling these violations. SV replied that based on conversations with EPA the Individual Permit may or may not have effluent limits. RP thinks that the Individual Permit will have effluent limits because with out them the EPA would not have a mechanism for enforcement. SV suggested that instead of effluent limits the EPA would write an Individual Permit based upon water quality standards. He hoped that EPA would not write a permit that would find the Laboratory out of compliance immediately. RP suggested that they may write the permit like this so it drives a mandatory clean up. SV stated that because RP is the State of New Mexico representative for the Individual Permit, the Laboratory will working with him to develop an acceptable outcome.

RFS asked if effluent limits could be based upon water quality standards. RP replied that they could be based on standards or be based on best professional judgment (BPJ) or the constituents in the SWMU. The end result is to try and measure the impacts of runoff on water quality. RP suggested that constituents such as Al and Se will not have effluent limits. He encouraged the Laboratory to conduct background sampling to help establish background levels for these constituents.

SV asked the group for volunteers to comprise the Technical Group; the following individuals volunteered: Cathy Smith, Ralph Ford Schmid, Barbara Hoditschek, Gene Turner, a Hazardous Waste Bureau representative, and the appropriate ER Canyons team leader.

6.0 2006 MONITORING EFFORTS – IMPLEMENTATION OF YEAR 3 OF FFCA/AO REQUIRMENTS

CS explained that the Laboratory has installed many BMPs at SWMUs/AOCs and in SMAs. The analytical data shows mixed results that may be due to the high intensity storms that occurred during 2005. Sites where wSAL exceedances were not observed during 2005 will be recommended for reduced monitoring in FY06 per the FFCA/AO. At three SMAs, flow has not been observed for eight quarters and has met the requirements for no further monitoring according to the FFCA. There are ten (10) 2004 locations where there were no wSAL exceedances observed in 2005. However, Al and Mg were not included in the analysis because the Laboratory considers these to be related to background. Therefore, these sites may be candidates for reduced monitoring. The soil COPC data for these 10 sites will be evaluated to confirm if observed values are from background. CS described the various exceedances at SMA locations. This information is available in the December 2005 FFCA wSAL exceedance report.

BH asked CS if we had collected SSC from the Area G sampling stations and if so what were the values. CS replied that the Laboratory had and the values were low. RFS asked were the sampler was located. CS responded that the sampler locations are detailed in the 2005 Storm Water Monitoring Plan.

RFS informed the group that the DOE-OB PCB data should be reviewed to insure that there are not high PCB congener values at the 10 sites with no wSAL exceedances before the Laboratory removes the sites from the sampling plan. CS said that the data collected by the DOE-OB would be compared to the Laboratory's data and hoped that the proposed technical group would be able to help with this analysis.

CS wanted the group to know that there may be issues associated with Gross Alpha. She has started to calculate adjusted gross alpha concentrations for the sites but thinks that a large portion of the Gross Alpha is due to natural background levels.

KB reported that in 2006, the Laboratory will be sample 236 SWMUs/AOCs with 117 SMAs. In 2007, 35 additional SMA locations will be installed to cover the remaining 58 Sites.

SV asked RP if the Laboratory would be able to complete the FFCA/AO before the Individual Permit is issued. RP responded that he did not know when EPA intended to issue the Individual Permit.

7.0 POTENTIAL IMPACTS OF THE NEW MSGP 2006 TO THE FFCA

SV informed the group that the 2006 MSGP was open for public comment (due February 16th) and that the Laboratory anticipates the new permit may have impacts to the FFCA/AO. However, since the FY06 Sampling Plans and 2006 FFCA SWMU SWPPP are due March 31st, LANL will need to move forward according to existing MSGP/FFCA/AO requirements.

RP responded that the EPA will be having a public meeting in Albuquerque sometime in February.

8.0 REVIEW OF SOP 2.01 RE-EVALUATIONS CONDUCTED IN 2005

SV reported that the rescoring of erosion potential for several sites has started and changes in the scores may cause the list of sites covered by the FFCA/AO to change (up and/or down). For example, the Laboratory would like to remove all of the sites that score less than 40 from the FFCA/AO. The Laboratory will ask the SWAT for their evaluation regarding rescoring. RFS responded that he thinks the SWAT should evaluate a sub-set of the sites that have been rescored to determine if the change is accurate. BH recommended that they focus on what factors caused the scores to change.

SV asked what the SWAT thought about Sites where the re-score was below 40 but the site-specific sampling had detected wSAL exceedances. RFS thought that reviewing the scores would help the SWAT to understand what was going on.

RFS asked if the crews conducting the re-scores are taking into account the presence of BMPs. SV replied that only permanent BMPs are considered during the evaluation not temporary BMPs. BH said that she is most interested in determining why the scores are changing.

SV asked the SWAT if the scores were still meaningful to the permitting process given that in the past some have made comments that the scores were not a relevant measure of storm water quality runoff leaving a Site. RP asked if EPA was considering permitting all Sites at the Laboratory. SV replied that conversations with EPA indicate that all Sites may be included in the Individual Permit. RP feels that the EPA has a valid concern, and may feel that not all potential sources would be covered if they don't include all of the Sites in the Individual Permit. EPA may have to cover all sites in the Individual Permit to be able to defend the protectiveness of the permit during public meetings, according to RP.

RFS asked SV if he had any ideas on how to approach the re-score. SV replied that he was open to suggestions. RFS asked that after the Sites are rescored, that the SWAT be allowed to review. RFS asked if the Laboratory could consider re-scoring all of the sites with erosion scores less than 40. SV replied that there were 1200 Sites with erosion scores less than 40. Given the current work load at LANL, we would have to prioritize this effort. The FFCA/AO is focused on sites with erosion scores greater than 40, the NMED suggested that the Individual Permit may focus on all sites and the Laboratory is trying to determine how collect representative samples from all Sites.

9.0 WATERSHED SCALE PROJECTS FOR FY06

SV would like the SWAT's participation in planning and evaluating watershed scale projects. GK will be leading the Pueblo Canyon willow evaluation and may suggest additional locations for planting. GK and BG will be looking at data related to the Los Alamos weir and writing a paper to determine if the structure has had a beneficial impact on water quality. The Laboratory will be looking into enhancement of the wetlands in Sandia Canyon. RFS would

like to participate in the development of a storm water management plan for upper Sandia Canyon.

The next SWAT meeting will be on the 22nd of February.

10.0 ACTION ITEMS FOR NEXT SWAT MEETING

New Action Items (January 18, 2006)

- RFS to write up a summary of the DOE-OB 2005 PCB data and recommendations and provide to the team at the next SWAT meeting **(Ralph Ford Schmid)**
- BH to write up a summary of the DOE-OB 2005 site specific sampling data and recommendations and provide to the team at the next SWAT meeting **(Barbara Hoditschek)**
- Initial Decision Analysis Working Group meeting to discuss site-specific sampling results **(Cathy Smith)**

Meeting Participants:
Bruce Gallaher (BG)
Barbara Hoditschek (BH)
Ralph Ford Schmid (RFS)
Dave Englert (DE)
Rich Powell (RP)
Jennifer Ickes (JI)
Dave Cobrain(DC)
John Young (JY)
Steve Veenis (SV)
Mike Saladen (MS)
Cathy Smith (CS)
Kevin Buckely (KB)
Jeff Walterscheid (JW)
Greg Kuyumjian (GK)
Elmer Alcon (AE)
Gene Turner (GT)

SV/tml

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Phil Wardwell, LC-ESH, MS A187
Elmer Alcon, Shaw Environmental, MS M892
ENV-WQH File, MS K497