

Technical Working Group - Combined Water Quality and Hydrology TWGs

Pebble Project

November 18, 2008

Captain Cook Hotel Meeting Room

Draft Minutes Recorded by Charlotte MacCay/Pebble Partnership (PLP)

I. PRESENT:

Andrea Meyer (ADNR)
Tom Crafford (ADNR)
Charlotte MacCay (PLP)
Ken Taylor (PLP)
Scott Maclean (ADF&G)
Jason Mouw (ADF&G)
Cindi Godsey (EPA)
Phil North (EPA)
Lynn Kent (ADEC)
Pete McGee (ADEC)
Jim Vohden (ADNR)
Julie McKim (USACE)
Doug Limpinsel (NOAA)
Cecil Rich (ADF&G)
Rod Smith (WMC)
Matt Macander (ABR)
Shawn Florio (HDR)
Mark Rains (3PP)
Hugh McCreadie (WMC)
Jamie Cathcart (KP)
Loretta Ford (PLP)

Public:

Doug Wachob (Nature Conservancy)
Carol Ann Woody (FRC)
Kendra Zamzow (CSP2)
Tim Troll (Nature Conservancy)

MEETING PURPOSE

- Define the terms baseline, characterization, and preterm monitoring for use in the TWGs
- Identify agenda items and information needed for a subsequent meeting to address initiation of pre-term monitoring programs

CHARACTERIZATION/MONITORING

(PLP) PLP would like to clarify the types of data it is collecting to better facilitate future discussions. The data collected to date has been collected for site characterization. It is meant to be used to write the Affected Environment Section of the NEPA (EIS) document. Because NEPA calls this “baseline information” PLP has also been referring to this data as baseline data. This has led to some confusion. To scientists, baseline means something quantifiable that can be used for comparison with data collected during operations to see if there have been any impacts. That was not the intent of the data we have collected to date. Although PLP hopes that some of this data will be useful for monitoring purposes as well. PLP is finishing up the characterization data and moving into monitoring data, data to be used for comparison purposes with data collected after operations begin, but this term is causing confusion as well. Some people interpret monitoring data to be the data collected during operations.

(PLP) PLP would also like to clarify that we are asking for speculative input at this time. We are aware that you do not have the data from the studies done to date to learn from them how the studies are working. We fully expect that as that data becomes available, and the agencies review it, that the agencies may have new input or want to change their mind about previous recommendations. There is nothing binding about any of the recommendations you make, you can always refine your input based on data as it becomes available. PLP is trying to establish open dialogue and set studies up as best as possible.

HYDROLOGY ISSUES

(Agency) Needs for the pre-term monitoring meeting include:

- A model to predict the water balance
- Climate change to be considered within the model response
- Understanding of groundwater/surface water interchange
- Meteorological statistics overview and a correlation between precipitation and flow

(Agency) The above data is relevant to both the water quality and hydrology groups.

(Agency) A more in-depth water quality balance presentation would be helpful.

(PLP) WMC could re-present their presentation they gave today at a slower pace allowing for discussion with each slide if it would help the group. The presentation will also be available on CD to review.

(Agency) The Water Balance model cannot be a black box.

(Agency) Several agencies indicated that going through the presentation with WMC at the next meeting would be helpful. Agencies would like to have the following information available 2 weeks prior to the meeting to review and discuss (a 5-10 page bulleted format would be helpful):

- Rationale
- Objectives
- Input parameters
- Assumptions
- Methodologies
- Results

- Iliamna precipitation relationship to groundwater discharge, runoff, and site-evaporation on a monthly basis

(WMC) WMC confirmed that the water balance model included groundwater/surface water interchange. It was explained that climate change has not been incorporated into the model yet as we are not yet running it for predictions, but the model is set up to incorporate climate change.

(Agency) Any description of the groundwater/surface water interchange would be helpful to review.

(Agency) It is important to run the model without climate change first to understand the direct changes and then to incorporate climate change scenarios afterwards.

(Agency) It would be helpful to have a meteorologist come to a meeting to discuss regional trends, perhaps at a meeting subsequent to the water balance model review meeting.

(Agency) It would be helpful to discuss the gaining and losing stretches in relation to the geology.

(PLP) Would the TWGs like to have the snow survey team present for a meeting? – yes at the same time as the meteorologist to discuss climate change. The Snow study consultant will also try to attend the water balance model meetings as he may have some helpful insights to that discussion.

(Agency) It would be helpful to see a hydrograph to evaluate the delays in runoff that were mentioned in the agency presentation. The intent is to discuss estimating residence times in certain areas without conducting tracer studies.

(WMC/HDR) hydrographs are available, but they are not as helpful as the mod-flow model to make those estimates. Mod-flow model is not the same as the water balance model and can be a topic of discussion for another future meeting. The water balance model is suggested as a preface to understanding the mod-flow model.

(Agency) I imagine the model does not take into account natural faults in the bedrock and may not show if low pH or contact water is going to move to the surface.

(WMC) You can put in preferential pathways later on.

WATER QUALITY DATA ISSUES

(Agency) PLP will be releasing the water quality data at the end of this month. Before the next meeting we could review the data to discuss how it is being presented while adding clarity to the presentation.

(Agency) DEC could give a presentation at one of the meetings on the use of hardness in metals calculations. This is critical for some of the metals.

(PLP) A meeting will need to be held to discuss natural background site specific criteria. There are many elements that are naturally elevated above the state criteria.

(Agency) The discussion of natural background site specific criteria also needs to extend to groundwater quality. The standards are the same. Seeps discharging from the project could need to have criteria established for them. There is the potential for sub-surface discharge from injection wells if they are used at the project.

(Agency) The guidance for natural background criteria have not yet been approved by EPA although it is anticipated they will be approved by the time the project goes to permitting.

(Agency) There is a spreadsheet model that PLP should run first before pursuing the natural background criteria. The spreadsheet will determine if the criteria need to be seasonal. It is on the DEC website. If the attachments are problematic, contact Pete and he will assist.

(Agency) Seasonal criteria can be based on precipitation, flow, or other determinants.

(Agency) There is also a spreadsheet for determining hardness dependent water quality criteria.

(Agency) There hasn't been any reference to having collected radiological data (there are about 3-4 parameters) – PLP needs to consider adding this to their list of analytes. There may be some radiological constituents in the deeper wells. The standards are listed in the state water quality criteria.

(Agency) A comparison of recent WQ data to that from sampling events in the early 1990's would be of interest for evaluating inter-annual variation.

ACTION ITEMS

- Resend Cyanide data comparison to the TWG members PLP
- Send out a 5-10 page review of the water balance 2 weeks prior to next meeting WMC/PLP
- Correlation of Iliamna precipitation/site precipitation WMC/Hoefler/PLP
- Correlation of groundwater/surface water interchange WMC/PLP
- Hydrographs to evaluate delays in runoff as seen in the presentation WMC
- Present charts/maps that show known gaining and losing stretches within the rivers HDR/WMC/PLP
- 2009 Study Plan needs to address changes in stations so that information is part of a formal record. PLP
- Spatial trending graphs for naturally elevated elements 2 weeks prior to a meeting to discuss natural background site specific criteria PLP
- Temporal trending graphs for naturally elevated elements 2 weeks prior to a meeting to discuss natural background site specific criteria PLP
- Tetra Tech consultants Jerry Diamond and Dr. Brucher would be helpful to have at the water quality meeting.

NEXT MEETING

- Joint Water Quality and Hydrology TWG meeting on January 7, with a follow-up meeting on January 8th to review the available WQ data.