

MTAC Meeting Notes from April 11, 2013

Introductions were made, and an attendance list was circulated. The following were present at the meeting:

**Jim Bartolino
Ernie Carlsen
Tony Evans*
Jason Fisher
Dayna Gross
Tom Hellen
Craig Horne
Kevin Lakey
Pat McMahon
Michael McVay
Neeley Miller
Christian Petrich
Erick Powell
Jennifer Sukow
Sean Vincent
Allan Wylie**

*Present until lunch.

Gerald Flaherty, John Miley, Wendy Pabich and Pete Van Der Meulen were not present at this meeting due to incorrect meeting time posted in the Mountain Express.

Item 1 – Roles and Responsibilities.

Sean Vincent gave a presentation discussing the background work that has been done in the Wood River Valley (WRV) and outlined the roles and responsibilities for IDWR, USGS, and MTAC. Sean mentioned that the timing of the current effort is excellent because USGS has laid the groundwork for model development (Water Budget report in 2009, Hydrogeologic Framework report in 2012). Sean indicated that the model rollout is scheduled for late 2015 (end date constrained by budget).

At the end of the roles and responsibilities discussion Erick Powell asked where modeling documents will be posted online. Jim Bartolino said that modeling documents would be posted on the Idaho Department of Water Resources and the USGS websites.

Item 2 – Modeling Objectives.

Sean Vincent's presentation provided the committee with a discussion of the modeling objectives in the WRV. He discussed the reasoning for building a groundwater flow model in the WRV: the Big Wood River upstream from Magic Reservoir is fully appropriated; groundwater and surface water are hydraulically connected; we need to be able to evaluate gw/sw interaction; and a flow model is the tool of choice for planning, water resource management and conjunctive administration.

Christian Petrich suggested that it would be helpful to talk about what conjunctive administration would look like in the WRV. He suggested that a discussion of what conjunctive administration would look like in the valley would help to clarify cell size, boundary definition, time-steps, scale issues, and how to address the Camas Prairie.

Sean indicated that we are justified to separate the WRV aquifer and the Camas Prairie. He agreed there is a connection via surface water and the Camas Prairie would be a consideration in a delivery call from the Big Wood Canal Company (a call from below the WRV). Sean said that a call within the WRV would not need to consider the Camas Prairie.

Christian asked if we had anticipated on what time interval the model would evaluate injury? Allan Wylie said that it's probably going to be a monthly time discretization because data comes in monthly.

Craig Horne commented on the complexity of the WRV aquifer and asked if we would consider using a variable grid size, particularly for small model dimensions in tributaries. Allan responded that a variable grid size would be problematic for the model and at this point he would like to keep the grid size standard across the model. Jim Bartolino indicated the geometry and the lack of data in the tributaries make it very difficult to model the upper reaches of the tributaries and that we cannot model where we do not have any data.

Erick Powell thanked Sean for laying out the objectives. Erick said that based upon his previous work experience in the WRV we should consider some of the things Christian Petrich previously mentioned. In addition, Erick indicated that lots of the tributaries are decreed as dry streams and because they have been decreed dry the watermaster does not administer them. He said that in reality they are not dry. He thinks this could cause some issues for the modeling effort.

Jason Fisher said that he will try to address this issue and others raised by Christian in his model construction presentation later in the day.

Christian asked if it would be possible for IDWR to provide the MTAC with various administrative scenarios because it would help us build a more suitable model. Sean

indicated that he will discuss conjunctive administration in the WRV with IDWR staff and would share what he can with the MTAC. He followed-up by saying much of this stuff is not known yet and we may have to live with the uncertainty.

Ernie Carlsen said that some of these legal issues create so much uncertainty that it will be difficult to proceed forward without some clarification from IDWR. Sean responded by indicating that he understands the concern, but reiterated that these are administrative decisions and he can't presuppose the answer for many of these questions.

Christian followed-up by saying he recognizes this is difficult for IDWR to do, but any guidance they can provide would be helpful.

Erick echoed Christian's point and indicated it's not Brockway Engineering's goal to have dueling models. He supports the MTAC effort.

Items 3 & 4 The Wood River Valley: Previous Work and Data.

Jim Bartolino briefed the group on the previous work in the WRV. He discussed previous groundwater reports, groundwater data, surface water reports, surface water data, gain/loss measurements, stream gage data, and previous groundwater models in the WRV.

Following his presentation, Jim asked the group how we fill gaps in Metric/ET data. Allan suggested we use ET Idaho. Christian asked Jim if he has compared StreamStats with data coming from the gages that have been recently installed. Jim said no, but that he plans to do that. Mike McVay asked if we will have to use StreamStats. Jim said on some of the tributaries it will probably be necessary.

Craig Horne asked Jim how he developed aquifer parameters. Jim indicated that he started with driller logs, pulled pump test, and estimated hydraulic conductivity using specific capacity data on driller's logs.

Craig followed-up by asking if there is a chance we can examine the agricultural well turn-ons this season and revisit aquifer parameters later. Jim indicated that may be possible and that we are going to do the best we can while realizing there are going to be limitations on what we can get done.

Item 5 Lunch.

Item 6 Overview of Model Development process.

Allan gave a presentation to the group on the Model Development process. He explained that we have decided to use MODFLOW code from USGS for our model because it is free, widely accepted, and has been used since 1988. He discussed time and space discretization within the model and how to select the appropriate time interval/grid sizes. Allan also discussed the water budget and how to populate the model. Allan's presentation ended with a discussion of PEST.

Craig Horne asked Allan about hydraulic conductivity and if you can manually adjust it based upon field data within PEST. Allan said that is possible.

Item 7 Model Construction to Date.

Jason discussed his work to construct the model to date, particularly his efforts on model conceptualization, and his efforts to address data availability issues, issues related to aquifer thickness and other concerns in the tributary valleys. Initial steps in the model building process were summarized and included: defining the spatial extent of the model domain (both horizontally and vertically); construction of the uniform finite difference grid; locating sources and sinks along the model boundary; and identifying zones of similar hydraulic properties.

Erick asked if all the data Jason just showed the group is available online. Jim said it is, or will be available online soon, and that you will be able to replicate the modeling done by Jason.

Christian asked if all the data will be available in one place so he doesn't have to search for it. Sean indicated that it will be linked on the IDWR Wood River website.

Christian asked Jason what code or script he is using. Jason indicated that he is using R. Jason also said that he initially plans to use 100 meter by 100 meter model cell resolution.

Christian asked Jim how far along is the model construction. Jim indicated that Jason's presentation shows how far along the construction is and that he would like input based upon what has been done.

Christian asked Jason/Jim how far north the aquitard extends. Jim asked Jason to pull up a presentation slide with a map to show that it's just north of Gannet and south of Bellevue (close to baseline road). Jim mentioned that he feels uncertain about the extent of the aquitard. Additionally, Jim said that model will be a single layer north of the aquitard.

Christian mentioned that he has concerns with a single layer north of Bellevue. Erick responded by saying that his past research in the WRV indicates a single layer (alluvium) north of Bellevue.

Christian asked Jim if there will be any documentation of the model design decisions. Jim indicated that the modeling team will be drafting memo's documenting design decisions. These design decisions will also be discussed in the final report.

Erick mentioned to Jason that he has concerns with modeling the tributaries. Jason followed-up Erick's question by indicating he understands the concern. He said he plans to use source points in the tributaries to address limited geometry and availability of data. He will create source points based upon where he has data. If he has no data for a tributary he will put these source points where the tributaries enter the larger WRV. Jim added that this is not set in stone and that we may need to adjust locations of source points.

Christian said if IDWR doesn't plan to administer tributaries then it's o.k. not to model them, but voiced concern that someone from the valley might make a call on someone up a tributary. Sean responded to Christian by saying these same tributary issues exist on ESPA and we should be able to address them in the WRV.

Erick reiterated his concern that we would make some of these design decisions without guidance on conjunctive administration scenarios from IDWR. Sean indicates he will talk to staff at IDWR about some of the conjunctive administration issues and report back to the MTAC. Sean added that even if IDWR decided to administer up the tributaries, he thinks it could be dealt with by using source points to model the tributaries.

Jason said that the model is set to only consider cells that have a minimum thickness of two meters. Cells less than two meters thick get removed from the model domain.

Christian asked Jason how he plans on using zones or pilot points with PEST. Jason indicated that he is in a preliminary stage at this point and has not addressed that issue yet.

Item 8 – BREAK.

Item 9 Next Steps, Action Items.

The following action items were discussed:

1. Sean Vincent agreed to discuss conjunctive administration in the WRV with staff at IDWR and report back.
2. Ernie Carlsen will provide location data for IWE new gages
3. Kevin Lakey will provide USGS and IDWR with electronic data.

4. Jim will compare StreamStat and gage data and report back to the group
5. Jason is going to simulate steady state and work on 3D cross-section visualization.
6. Pat McMahon will provide pumping data from 1995 to most present.
7. Tom Hellen will provide pumping data from 1995 to present.
8. Jim Bartolino will check with the City of Bellevue to see if he can get municipal pumping data from 1995 to present.
9. Everyone will look over the design objectives and provide comments or suggestions.

Item 10 Schedule next meeting.

The committee agreed that the next meeting should be held at the Community Campus in Hailey, Idaho on June 6th from 10am until 3pm. Future meetings tentatively will be held on the first Thursday of every other month.