Bear River Basin Advisory Group
Lincoln County Library, Kemmerer WY
Meeting Record
July 10, 2000

Introduction - The meeting opened on Monday, July 10, 2000, at 6:10 p.m. at the Lincoln County Library in Kemmerer, Wyoming. Copies of the agenda were dispersed and reviewed. The attendance sign-in list was circulated at this time.

Future Meetings & Locations - It was noted that future meetings are to be held on Sept. 11 in Cokeville and Nov. 6 in Evanston. Meetings will begin at 6pm.

Northeast / Powder Tongue and Green River Basin Planning Process- Jon Wade reported on the status of the NE Wyoming, Powder /Tongue, and Green River Basin Planning Processes. The planning team is in the process of reviewing draft technical memos as part of the Green River Basin Planning effort. The Consultants for the Green River Basin are in the process of completing and revising the memos, models, and graphic reports contained in the Green River Basin Plan. The Green River BAG will be meeting on August 8th in Lyman. The NE and Powder /Tongue Basin Advisory Groups have nominated and chosen their members and seem to have good coverage for all sectors and geographical areas. They will be meeting the second week of every other month on Wednesday and Thursday nights.

Consultant Update / Bear River Water Use in the Basin - Clarence Kemp, of Forsgren Associates, was introduced. Mr. Kemp's presentation included information on water use in the Bear River Basin. He broke down the use of water into categories including agricultural, environmental, industrial, recreational and municipal. The largest use of water in the basin is agricultural, with greater than 95 % of the total. Municipal use represents a small percent of the consumptive water use in the basin.

> Mr. Kemp's discussion on agricultural water use in the basin focused on crop consumptive use. Crop consumptive demand is determined by the acreage, the type of crop, the average temperature, and daylight hours. The irrigation water requirement (IWR) is determined by the crop demand less the effective precipitation. The actual consumptive use depends on water availability. When looking at water availability, we assess our sources, which include direct river diversions, supplemental reservoir supply, and ground water supply. The surface water available to meet crop demands is equal to the river diversions minus the conveyance loss, minus the application loss. The conveyance loss depends on the length of a canal, and the soil making up the canal. The application loss depends on the irrigation method. The ground water available to meet crop demands is equal to the pumped amount less the application loss. Mr. Kemp then presented some statistics for the group to examine.
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> The next part of the presentation focused on groundwater in the Bear River Basin. The consultant team is interested in gathering information concerning the geology and hydrogeology of the basin. Information pertinent to the plan includes the structural geology, availability and locations of springs and wells, quality of groundwater, yield potential, and sensitivity to contamination. Determination of long-term yields is difficult to embrace due to the size of the

basin. The majority of the wells in the basin are in the Evanston area, there are several springs that occur in the Twin Creek area, and there are quite a few wells in the Cokeville area also. The basin is located in the Overthrust geological area, which is very complex, so it is difficult to make broad assumptions as to what kind of water amounts are available in each area.

Water quality is important to consider when examining ground water use. Wells are classed in terms of appropriate use for the given water quality parameters for a well. Class one wells are domestic use, class two wells are agricultural use, class three wells are for watering livestock, and class four wells are industrial use. Several things are used to determine the class of a well: chlorides, fluorides, irons, sulfates, but especially the total dissolved solids or TDS level.

Mr. Kemp went on to discuss about ground water development potential. He explained that the potential would be the difference between the basin's current use, and what could be used without having a negative effect on the aquifer itself. When looking at long-term yield, they are trying to discover what development can be made where the recharge is roughly equivalent to what is being taken out of the aquifer. The recharge can be through precipitation, return flows, direct recharge through rivers or reservoirs, or seepage from adjacent aquifers. The Bear River alluvial aquifer is easily recharged from surface water. As a result it doesn't have the same limitations that a bedrock type aquifer would have. One problem that does occur is that the water may be subject to restrictions by the interstate compact. Truman Julian felt that the number of reported springs was low. Mr. Kemp indicated that there have been other studies compiled on the springs in the area, but it was probable that many springs in the basin had not been documented. Truman also asked about the high level of contamination in Twin Creek. Mr. Kemp said that it is not necessarily man made contamination, but more from natural events. Ralph Stahley brought up the question of the estimated numbers being one year, or an average of several years because, he said, there are springs that flow high in cool, wet years and very low in hot, dry years. Mr. Kemp agreed and discussed the fact that there would be a great amount of discrepancy from a cool, wet year to a hot dry year.

Mr. Kemp went on to discuss surface water availability and the surface water model. He stated that dry years occur about three years in every 10, and wet years occur only about one year in 10. He explained the model and how to interpret the numbers. He also gave some statistics on specific dams and diversions in the basin. The modeling was performed by reach, and the handout on water availability showed where these reaches are. He stated that it would be difficult to show the entire river because of the size of the basin; so breaking it down into these reaches allows them to show where the water is available and when.

Bob Swanson, USGS, indicated that there may be a problem with the Idaho "Border" gage being frozen in winter, and they might not have proper readings. Truman Julian said that there may be an economic decline because of the water shortage currently underway, and that we may need to be storing for the ability to "promise" a certain amount of water. Mr. Kemp agreed that storage could be important to Wyoming's economic future. He also stated that there are options other than storage, such as, changing irrigation rights for other uses, or changing state water law for people to be able to "lease" their water rights in water emergency situations, etc. Ralph Stahley brought up the fact that in the 1940's through the 1960's, many stock ponds were built that helped with water storage (in a much smaller amount than the group was discussing, but that the small amounts added up because of the high number of these ponds). He wondered how many were filed at the state's office in the last twenty years. Sue Lowry said they still record them but there are not as many as there were in those earlier years.

Break from 7:40 to 7:50

Wyoming's Water Conservation Program, Ron Vore, Wyoming State Engineers Office- Mr. Vore began the presentation with an update on the Water Conservation program in Wyoming. The intent of the effort is to look at the aspects of water management and conservation and gather public information to promote voluntary conservation efforts. The objectives are to:

1) Address water conservation practices in place for agriculture, municipalities, industry, and fish and wildlife
2) Investigate conservation strategies most beneficial to irrigation districts, canal companies, municipalities, industry, and environmental concerns
3) Evaluate methods and types of water conservation measures that are being used around the state
4) Analyze the ramifications of the implementation of water conservation measures
5) Evaluate the impacts of water conservation measures to surface and ground water supplies
6) Identify the sources of assistance that could be used to help implement water conservation practices
7) Research water law and regulations in Wyoming and other western states for options in providing incentives for the wise use of water.

Current efforts by Mr. Vore include:

1) Researching and reviewing information that is available around the state
2) Conducting Public outreach
3) Producing a conservation component for the state water plan

Mr. Vore continued with an overview of conservation practices. He talked about lower basin reaches first. He further stated that the greatest loss of water is in conveyance, and some practices that might reduce loss are:

1) Lining ditches and canals
2) Promoting irrigation systems
3) Designing irrigation systems with low pressure
4) Installing valves, irrigation planning, and soil amendments.

He then talked about the upper basin reach conservation concepts. He stated that water conservation is making multiple uses of the water resource. Water conservation in upper basin areas refers to water impoundments such as stock ponds, beaver dams, etc. that basically delay the spring runoff and stretch the use of that water.

Mr. Vore then discussed the impoundment of the spring runoff which impacts water quality, dissipates energy, diversifies plant communities, and provides water for livestock. He said that impoundments support streams; creating stream bank storage, return flows, and stream bank stability. Regulated release also helps with stream bank stability, and it doesn't just include the regulation of a dam, but can be through diversions also. Dynamic equilibrium, according to Mr. Vore, is a point in the stream's life when, after many years, it reaches maximum stream flow and never gets any higher. Some indicators of a stream that has reached dynamic equilibrium is that they have:

1) No headcuts
2) No bedscrapes
3) There is little sedimentation
4) It has a concave profile

Mr. Vore listed some other points for consideration:

1) Irrigation, livestock water, municipal and industrial demands continue to be primary uses of the water resource
2) Conservation acceptance has been and continues to be incentive driven
3) Community change brings an emerging public interest in water use.

The challenge will be to balance the consumptive use and non-consumptive uses of water. Incentives need to be developed for water management and conservation. Mr. Vore went on to describe a booklet he produced, called "Water Management and Conservation Assistance Program Directory" which gives an introduction to conservation, lists what programs are available, and who to contact. Mr. Vore also mentioned a review of water law he conducted. After looking at a number of states and their specific statutes on water law, it was concluded that many states have implemented some statutes and incentives for conservation.

Wyoming Water Law Proposed Statue Changes – Sue Lowry presented legislative proposals relative to changes in Wyoming's water law intended to enhance water use efficiency and allow for greater flexibility by water users. Handouts on the proposals were passed out to the group. It was indicated that these were only proposals at this time. She presented first, the proposed salvage water legislation giving an example of a water holder who through conveyance efficiency improvements realizes a water savings. The thought would be that this water user should be able to benefit from this savings. Wyoming currently does not have a statutory definition for salvage water, which could allow for the change of use and administrative protection of this water to a downstream point.

Ms. Lowry then presented the temporary change in use proposal and gave an example of a water right holder having the ability to temporarily change the water right to a different use under a leasing agreement. Finally, Ms. Lowry discussed a dry year leasing proposal and privately held instream flows. Neither of these later two proposals are scheduled for legislative action this session.

There was much discussion after Ms. Lowry's presentation. It was brought up that many people have a hard time with the "changes" these proposals bring about because they basically feel that consumptive use is more important than non-consumptive use. Ms. Lowry and Mr. Vore responded by explaining that certain things such as no injury tests, and impertinence to the land must be met before any changes could be made. An attendee asked about public participation in the decision making process of such changes. Ms. Lowry said that it would be advertised, and the individual water right holders would be notified. She reminded the group that this was still in it's beginning stages, and that nothing would be permanent until legislation was passed.

Meeting adjourned – 9:05 p.m.