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May 17, 2012

**M E M O R A N D U M**

To: Board of Directors - YJWCD  
From: Scott Balcomb and Scott Grosscup  
Re: Yellow Jacket Water Conservancy District – Water Storage Feasibility

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Dear Directors:

At the next meeting of the Yellow Jacket Water Conservancy District (“YJWCD”), on May 24, 2012, Craig Ullman from Applegate Group, Inc., and Ray Tenney from the Colorado River Water Conservation District (“CRWCD”) will present the Draft Phase I Report on the feasibility of reservoir storage projects. This study project began with the idea that the water rights for the YJWCD and CRWCD could be used to meet or off-set water needs of oil and gas development. More recently, however, the YJWCD has started to re-evaluate the needs of its constituency. This will lead to changes in the report as it moves into the next stages.

The Draft Phase I Report concludes that of the reservoir sites studied, three sites provide the best locations for a water storage project. These include Sawmill, Strawberry Creek and Tom Little reservoir locations. It also recommends evaluation of how to best use the YJWCD’s water rights to their greatest potential, and provides suggestions, should the rights survive the present appeal before the Colorado Supreme Court. The Report relies upon a number of models developed by other consulting groups and state agencies that look at future municipal, agricultural and industrial demands. Demands can vary depending upon the inputs and assumptions used.

As you evaluate the report, remember that the CRWCD is a partner in the study. The CRWCD agreed to act as the fiscal agent for purposes of allocating the funds so long

as storage locations for its rights would also be considered. It, like the Basin Round Table and Colorado Water Conservation Board, are interested in continued evaluation of storage sites for any number of purposes – whether it be for recovery of endangered species, meeting existing needs, or to off-set or meet future anticipated needs.

We have advised the CRWCD and Applegate Group of the YJWCD's present process of re-evaluating the needs of its constituency. This process is likely to result in a much smaller reservoir(s) to meet irrigation, domestic, and some additional industrial needs (excluding major oil shale development). These reduced needs will also require consideration of several variables in the next phase of the study.

*Irrigation efficiencies.* The present model developed in connection with the State of Colorado that was used to identify a present shortage of 1,100 acre feet for agricultural irrigation considers an irrigation efficiency that is greater than present practices. Thus, if efficiencies could be improved, irrigators may be able to do more with less water. It may be possible that irrigation improvements could be less costly overall than construction of a 5,000 or 10,000 acre foot reservoir and still obtain the same result. Increased headgate efficiencies will reduce the amount diverted from the stream and may also allow for increased environmental flows. However, improvements in irrigation efficiencies do come with some costs and they often find resistance from established irrigators.

*Irrigation Reservoir.* The size of a reservoir used primarily for irrigation or municipal storage will also determine the ultimate cost. A reservoir with a small "dead pool" or "conservation pool" will be less expensive than one that is to be a recreational amenity for the community. This needs to be considered when evaluating the reservoir storage size.

An alternative may also be to consider smaller reservoirs that could meet the irrigation demand. Such reservoirs could be located at locations that could not store the amount of water considered by the reservoir sites identified in the Phase I Report. Or it may be possible to enlarge an existing reservoir.

*Yellow Jacket Water Rights.* The Board may also want to consider how the various models use the YJWCD's water rights in calculating the legal supply of water for the storage structures that were studied in Phase I. Consistent with the Board's settlement direction at the last meeting, it may wish to consider directing its consultants to not study the YJWCD's water rights for use in oil shale development. The physical sites may continue to be evaluated using other decreed or un-decreed water rights, or for other uses that the YJWCD wishes to serve.