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J. David Aiken

University of Nebraska-Lincoln

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Aiken, J. David, "Republican Water Issues Difficult to Resolve" (2007). *Cornhusker Economics*. 328.
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CORNHUSKER ECONOMICS

UNIVERSITY OF
Nebraska
Lincoln

August 1, 2007

University of Nebraska–Lincoln Extension

Institute of Agriculture & Natural Resources
Department of Agricultural Economics
<http://www.agecon.unl.edu/Cornhuskereconomics.html>

Republican Water Issues Difficult to Resolve

In 2002 Nebraska, Kansas and Colorado settled the 1998 lawsuit over alleged violations of the Republican River Compact by Nebraska and Colorado. Nebraska was over its water allocation under the settlement for 2005, and likely was also over for 2006. The July 25, 2007 Cornhusker Economics newsletter discussed how new legislation would help the state of Nebraska and Republican Basin Natural Resource Districts (NRDs) deal with Republican River Compact settlement compliance issues. However, there was one incorrect statement in last week's newsletter that accidentally understated the difficulty of settlement compliance. This week's newsletter will examine the incorrect statement, and explore what more complicated options may be available to bring Nebraska into settlement compliance.

How is Republican compact settlement compliance determined? It is a little difficult because each state doesn't know how much water they were entitled to until several months after the irrigation season ends. In view of this, the compact settlement allows states to use a five-year average for both water supply and consumptive water use in determining whether each state is within its allocation or not. But, in a "water short" year, two-year averaging is used.

Where is Nebraska overall, regarding settlement compliance? Generally, given current NRD restrictions on ground water irrigation pumping, Nebraska should be in compliance in normal years. However in dry years we will likely be out of compliance. The Nebraska Department of Natural Resources (DNR) has estimated that dry years will occur 25 to 33 percent of the time.

Why must Nebraska use less water in dry years? Under the settlement, how much Republican Basin surface water and ground water Nebraskans are allowed to use is determined by Republican River streamflow. So if there is

Market Report	Yr Ago	4 Wks Ago	7/27/07
<u>Livestock and Products,</u>			
<u>Weekly Average</u>			
Nebraska Slaughter Steers, 35-65% Choice, Live Weight	\$80.05	\$83.49	\$90.26
Nebraska Feeder Steers, Med. & Large Frame, 550-600 lb	137.69	*	127.70
Nebraska Feeder Steers, Med. & Large Frame 750-800 lb	119.30	*	117.15
Choice Boxed Beef, 600-750 lb. Carcass	140.88	139.32	140.79
Western Corn Belt Base Hog Price Carcass, Negotiated	63.84	70.44	70.15
Feeder Pigs, National Direct 50 lbs, FOB	47.86	49.51	54.87
Pork Carcass Cutout, 185 lb. Carcass, 51-52% Lean	70.31	75.11	74.01
Slaughter Lambs, Ch. & Pr., Heavy, Woolled, South Dakota, Direct	101.00	102.50	102.50
National Carcass Lamb Cutout, FOB	230.58	255.84	254.52
<u>Crops,</u>			
<u>Daily Spot Prices</u>			
Wheat, No. 1, H.W. Imperial, bu	4.39	5.36	5.59
Corn, No. 2, Yellow Omaha, bu	2.07	3.26	3.12
Soybeans, No. 1, Yellow Omaha, bu	5.29	7.78	7.45
Grain Sorghum, No. 2, Yellow Columbus, cwt	3.18	5.36	5.11
Oats, No. 2, Heavy Minneapolis, MN , bu	2.19	2.71	2.70
<u>Hay</u>			
Alfalfa, Large Square Bales, Good to Premium, RFV 160-185 Northeast Nebraska, ton	135.00	135.00	135.00
Alfalfa, Large Rounds, Good Platte Valley, ton	87.50	92.50	85.00
Grass Hay, Large Rounds, Good Northeast Nebraska, ton	82.50	*	*
* No market.			



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less streamflow, we must use less surface water and ground water to stay within our allocation.

What can be done in dry years? Reduce or stop surface water irrigation, and reduce or stop ground water irrigation. Virtually all the water use in the Republican Basin is for irrigation.

When must Nebraska begin settlement compliance? The first year would have been 2007 if we had received normal precipitation in 2003-2006. However, compact settlement compliance is required in 2006 if we have a dry year in 2005. Under the compact, 2005, 2006 and 2007 are all “water short” years, so compact compliance officially began in 2006.

How did we do in 2006? It is difficult to say because the official compact 2006 water supply and consumptive use figures haven’t officially been approved yet. DNR officials estimate that we overused 33,000 acre-feet (AF) for 2006.

How can Nebraska come back into compliance? This is where last week’s newsletter was mistaken. In it I stated that if Nebraska overused for example, 20 percent in one year, it could cut back 20 percent in the following year and come back into compliance. This is incorrect.

Why is that statement incorrect? Because it incorrectly equates “consumptive use” with “ground water pumping.” The ground water portion of Nebraska’s consumptive water use under the compact settlement is not the total ground water pumped, but only **the amount that streamflow is reduced that year due to ground water pumping**. Stopping ground water pumping will not necessarily reduce the amount of streamflow depletion that year to make up the difference. Even if Nebraska required all Republican Basin irrigation wells to stop pumping in 2008, that probably would not reduce streamflow depletion by the 33,000 AF that we likely overused in 2006.

Why is that? The further a well is away from the stream, the longer it takes for that well’s pumping to reduce streamflow. And **streamflow depletions resulting from past ground water pumping will continue into the future indefinitely, even if all well pumping is stopped**. So (looking only at ground water) it will take decades for reduced ground water pumping to reduce annual streamflow depletions from prior years’ ground water pumping. This is called a “lag” effect because the time lag between well pumping and the corresponding streamflow depletion is so large.

So there are no quick fixes? That is correct. However, if the Republican Basin reservoirs were full of water, that stored water could be purchased from surface water irrigators and used to at least partially offset the streamflow depletion from wells.

So what can we do? We need to do something pretty dramatic to get Kansas not to throw the book at us. We will be out of compliance for 2006 and there is virtually nothing we can do to bring us quickly into compliance. So we probably need a long-term program that will convince Kansas that we are serious about getting back into compliance.

What might that be? Nebraska Governor Dave Heineman and the DNR have recommended that ground water users cut their pumping to less than half of current NRD irrigation allocations for the next three years. While that would not necessarily bring Nebraska into compliance, it would certainly show Kansas that we are serious about achieving compliance.

How would ground water irrigators cope with that type of cutback? It wouldn’t be easy, although current high corn prices do provide some financial cushion that won’t be available when corn prices return to normal. NRDs could issue bonds to purchase or lease ground water allocations, which means that the remaining irrigators could pump more. For example, if all irrigators are allocated 6 inches per irrigated acre and the NRD purchased and retired one-third of the total irrigated acres, the remaining irrigators could pump 9 inches per acre. Also, NRDs could allow farmers to trade water. For example, if irrigators are allocated 6 inches but need 9 inches to fully irrigate, some farmers could buy water from other farmers. So buyers could pump more and sellers would pump less or not at all. For example, if I have two fields and you have one, I could buy your 6 inch allocation and split it between my two fields. So you would pump zero inches of water instead of 6 inches, and I would pump 9 inches of water on my two fields instead of 6 inches.

What is likely to happen? If something along the lines of the Governor-DNR proposal isn’t implemented for the 2008 irrigation season, Kansas will likely hold us accountable for violating the settlement in 2006. And that could end up costing the state of Nebraska a lot of money.

J. David Aiken, (402) 472-1848
Professor, Water & Agricultural Law Specialist
Dept. of Agricultural Economics
University of Nebraska-Lincoln
daiken@unl.edu