

Appendix A

NOTICE TO PUBLIC
RELATING TO ANNUAL REPORT
REQUIRED PURSUANT TO Neb. Rev. Stat. § 46-713

The Nebraska Department of Natural Resources (“Department”) hereby provides notice that the Department, in accordance with Section 46-713(1)(c), shall include in the annual report required to be issued by January 1 of 2009, for informational purposes only, a summary of relevant data provided by any interested party concerning the social, economic, and environmental impacts of additional hydrologically connected surface water and ground water uses on resources that are dependent on streamflow or ground water levels but are not protected by appropriations or regulations. Anyone wishing to provide relevant data must submit such relevant data by July 1, 2008, to the Department. The address for the Department of Natural Resources is 301 Centennial Mall South, P.O. Box 94676, Lincoln, Nebraska, 68509-4676, Attention: Jesse Bradley. FAX: (402) 471-2900.

The Department must complete an evaluation of the expected long-term availability of hydrologically connected water supplies for both existing and new surface water uses and existing and new ground water uses in each of the state’s river basins and shall issue a report that describes the results of the evaluation by January 1, 2009, pursuant to Neb. Rev. Stat. § 46-713 (Reissue 2004). Based on the information reviewed in the evaluation process, the Department shall arrive at a preliminary conclusion for each river basin, subbasin, and reach evaluated as to whether such river basin, subbasin, or reach presently is fully appropriated without the initiation of additional uses.

For further information regarding the Department, and its activities, please refer to the Department’s web site, at <http://www.dnr.state.ne.us>.

**NEBRASKA DEPARTMENT OF NATURAL RESOURCES
NOTICE TO PUBLIC
OPPORTUNITY TO PROVIDE INFORMATION RELATED TO ANNUAL REPORT ON FULLY APPROPRIATED STATUS OF RIVER BASINS, SUBBASINS, REACHES**

The Nebraska Department of Natural Resources ("Department") hereby provides notice that the Department, in accordance with Neb. Rev. Stat. Section 46-713(1)(c), shall include in the annual report required to be issued by January 1 of 2009, for informational purposes only, a summary of relevant data provided by any interested party concerning the social, economic, and environmental impacts of additional hydrologically connected surface water and ground water uses on resources that are dependent on streamflow or ground water levels but are not protected by appropriations or regulations in the evaluated basins. Anyone wishing to provide relevant data must submit such relevant data by July 1, 2008, to the Department. The address for the Department of Natural Resources is 301 Centennial Mall South, P.O. Box 94676, Lincoln, Nebraska, 68509-4676, Attention: Jesse Bradley, FAX: (402) 471-2900.

The Department must complete an evaluation of the expected long-term availability of hydrologically connected water supplies for both existing and new surface water uses and existing and new ground water uses in each of the state's river basins that are not currently considered to be overappropriated or fully appropriated and shall issue a report that describes the results of the

evaluation by January 1, 2009, pursuant to Neb. Rev. Stat. § 46-713. Based on the information reviewed in the evaluation process, the Department shall arrive at a preliminary conclusion for each river basin, subbasin, and reach evaluated as to whether such river basin, subbasin, or reach presently is fully appropriated without the initiation of additional uses.

For further information regarding the Department and its activities, please refer to the Department's website, at <http://www.dnr.ne.gov>.

Proof of publication

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MAY 13 2008

DEPARTMENT OF NATURAL RESOURCES

AFFIDAVIT

State of Nebraska, County of Douglas, ss:

Joyce Sawatzki being duly sworn, deposes and says that he/she is an employee of The Omaha World-Herald, a legal daily newspaper printed and published in the county of Douglas and State of Nebraska, and of general circulation in the Counties of Douglas, and Sarpy and State of Nebraska, and that the attached printed notice was published in the said newspaper on the 11 day of May 2008, and that said newspaper is a legal newspaper under the statutes of the State of Nebraska. The above facts are within my personal knowledge. The Omaha World-Herald has an average circulation of 182,437 Daily and 227,515 Sunday, in 2008.

(Signed) Joyce Sawatzki

Title: Account Executive

Subscribed in my presence and sworn to before me this 12 day of May, 2008.

**MIRANDA KAY SMITH
General Notary
State of Nebraska
My Commission Expires Jan 18, 2012**

Miranda Kay Smith
Notary Public

Printer's Fee \$ _____
Affidavit _____
Paid By _____

No information was provided by interested parties regarding relevant data concerning the social, economic, and environmental impacts of additional hydrologically connected surface water and ground water uses on resources that are dependent on streamflow or ground water levels but are not protected by appropriations or regulations.

Excerpts from Testimony Received from the Four Public Hearings on the Preliminary Determination that the Lower Platte River Basin is Fully Appropriated

Many concerns were voiced on various aspects of the preliminary determination that the Lower Platte River Basin is fully appropriated during the four public hearings held on the matter. This section summarizes some of these concerns and provides clarification and further explanation on the Department's rules, methods, and overall approach used to determine if a basin is fully appropriated.

1. Concern: The Department did not use the best available data, science, and methods to complete the annual evaluation.

The Department makes every attempt to use all relevant data and the best currently available tools to complete its annual evaluation. The Department annually requests any information from the public and the local natural resource districts that would be relevant to the methods employed in the annual evaluation.

This year, the report incorporated a newly developed tool, the Elkhorn-Loup Model (ELM), to analyze the future effects of groundwater pumping in the Loup River Basin and Elkhorn River Basin upstream of approximately Norfolk. The ELM was developed through a joint effort with eight local natural resource districts and the United States Geological Survey (USGS). The USGS published the results of this study prior to the annual analysis by the Department of hydrologically connected water supplies, making ELM the best available tool for the annual determination. The Department relied upon the methods and simulations developed by the USGS for the analysis, presented as representative of average climatic conditions. The results of these simulations were used to calculate the increase in stream depletions due to current groundwater uses after 25-years.

Testimony provided to the Department at a hearing, indicated that an erroneous method was used by the USGS to calculate groundwater pumping under average climatic conditions (the model simulation used by the Department to project future effects of current ground water uses 25-years into the future). The Department

further investigated this concern and concurred with the testimony that the simulation was erroneous.

Additionally, efforts are being made by the Department and local natural resource districts to expand the data and tools available for use in the Departments annual evaluation. While these studies have not been completed, they are anticipated to provide additional information that will improve upon methods or data currently used in the Departments annual evaluation.

2. Concern: The Department did not consider increasing ground water levels or streamflows in its annual evaluation.

Ground water levels were considered in the annual evaluation. An extensive collection of groundwater level data from over 60 years of data collection covering the area of the ELM study were utilized by the USGS to calibrate the ELM. The purpose of calibrating a ground water model is to match the the model's output with the historical ground water levels and ground water discharge to streams. If the model matches these historical ground water level and ground water discharge measurements it is said to be calibrated and our confidence in the predictive ability of the model is increased. The ELM is calibrated to changes in groundwater levels between 1940 and 2005.

Additionally, relying on ground water levels to determine when stream flows will be affected by ground water pumping, must be done cautiously. Changes in ground water levels may take long periods of time to be realized at the stream depending on the characteristics of the aquifer and the distance the well is from the stream. When extensive ground water pumping has led to conditions of substantially reduced stream flows, recovering these streamflows can require dramatic pumping reductions or may not even be possible in shorter time frames (Frenchman Unit Draft Appraisal Report, 2007).

Streamflows are directly used by the Department to determine the available supply within a given basin. The Department's method of evaluation uses the previous 20-years of

streamflow data to determine the current water supply available. If streamflow supplies increase the evaluation will take into account that increased water supply.

3. Concern: Only wells within the hydrologically connected area (10/50) should have been used for determining the lag impacts of current well development.

The Department used all wells within the entire hydrologically connected area (the area where aquifers are present and are connected to streamflows) to determine future lag impacts of current well development. This is consistent with all prior evaluations. Testimony presented to the Department indicated that a literal interpretation of 457 N.A.C. 001.02A would require that only the wells within the 10/50 area should be used to determine lag impacts. Such a literal interpretation would not be consistent with Nebraska Revised Statutes 46-713(3), which simply specifies the Department to consider “*then-current uses* of hydrologically connected surface water and ground water in the river basin, sub-basin, or reach” (emphasis added). Therefore, all depletions to a stream reach due to any then-current groundwater uses must be considered.

The 10/50 area is intended as a management area. To understand the difference this approach would make to the results of the annual evaluation, the Department used the area covered by the Elkhorn-Loup Model to determine the significance of wells outside of the 10/50 area. The results of that analysis indicated that less than 1% of the future lag impacts, which are estimated to occur in 25-years, result from wells outside of the 10/50 area. Therefore, there would be very little gain in managing the uses outside of this 10/50 area.

Additionally, concerns were expressed regarding the calculated lag effects from approximately 120 wells located downstream of the Louisville gage. The Department evaluated the effects of this specific group of wells and determined that future lag impacts 25-years into the future caused by these wells totaled 0.2 cfs. This difference in lag impacts did not have an effect on the calculated number of days available to meet the 65/85 rule.

4. Concern: The most junior surface water appropriation was not used to determine the number of days necessary to meet the requirements of the 65/85 rule.

The Department recognizes that 457 N.A.C. 001.01A could be interpreted literally to mean the absolute most junior surface water irrigation right in the basin (determined by priority date), no matter where the point of diversion is located. However, the Department has never applied the regulation so literally. In fact, such a literal interpretation of this rule would not meet the requirements of Nebraska Revised Statutes 46-713(3) and 3(a) which states “ A river basin, subbasin, or reach shall be deemed fully appropriated if the department determines... that the then current uses of hydrologically connected surface water and ground water in the river basin, subbasin, or reach cause or will in the reasonably foreseeable future cause (a) the surface water supply to be insufficient to sustain over the long term the beneficial or useful purposes for which existing natural-flow or storage appropriations were granted....”

Instead, the Department interprets its regulation to mean the most junior surface water appropriations that are subject to administration i.e. closed by a call from a senior water right. In the Lower Platte River Basin several such junior surface water appropriations exist. To proceed through the evaluation more efficiently the Department evaluates the most junior surface water appropriation with the greatest water need (based on crop irrigation requirements for corn). The Department could evaluate each most junior surface water appropriation individually but if the most junior surface water appropriation with the greatest water need is able to satisfy the requirement then evaluating the rest of the most junior surface water appropriations would only be a redundant process.

5. Concern: The Department should not use not a 10% downtime and 80% irrigation efficiency in determining the number of days necessary to satisfy the 65/85 rule as it causes an overestimation of the number of days necessary to satisfy the 65/85 rule.

The Department uses the 65/85 rule as a measure of what water supplies are necessary to sustain over the long term the beneficial or useful purposes for which existing natural flow irrigation appropriations were granted. The Department's 65/85 rule sets an acceptable level of reduction in streamflow supply that can occur prior to implementation of a joint planning effort between the Department and the local natural resource districts. Application of the 65/85 rule requires a number of assumptions. These assumptions were determined prior to the first annual evaluation by the Department (2006). The 65/85 rule is intended to be triggered by a change in water supply through an increase of use, a decrease in streamflow through reduced precipitation, or both. It is important to consistently apply these assumptions to ensure that the number of days available to meet the 65/85 rule is not sensitive to the assumptions.

6. Concern: Municipal well fields are not properly considered during the annual evaluation

In the annual evaluation, the Department is required to determine if a basin is fully appropriated based on present water uses and on predicted future impacts of those water uses. The Department has always estimated future impacts from all high capacity well development in the same way, including municipal well fields, and that is based on the water use requirements of a fully irrigated corn crop at that location.

An exception to this methodology was used to assess the future impacts of the new MUD west well field and the Lincoln Water Supply well field. The reason for this exception is that the Department was provided information specific to the well fields and the level of streamflow depletion that is expected to occur in 25-years. The analysis provided to the Department projects that the MUD well field will incur a 160 cfs depletion when at full permitted capacity but the average annual depletion would be limited to 80 cfs. The Department utilized the 160cfs rate as it is more likely that the well field will be at or near full capacity during the July-August portion of the irrigation season when water supplies are most critical in the Lower Platte River Basin.

Additionally, the information reviewed by the Department for the Lincoln Water Supply well field indicates that the well field will incur a depletion of 212 cfs when at full permitted capacity. The Department evaluated the current depletion by determining the average daily use for July and August for the previous three years. The difference between the current July and August use and the depletion the well field will incur when at maximum capacity served as the future impact estimated by the Department and was incorporated into the evaluation. This type of site specific information is not available for other municipal well fields at this time.

7. Concern: A fully appropriated determination would cause substantial economic impacts and stifle future development in the basin

The Departments annual evaluation is only intended to analyze the water supply relative to “then-current” water uses within each basin. The purpose is to prevent economic impacts to those then-current users that might result from overdevelopment of the water supply. However, when a basin is determined to be fully appropriated the required planning process must include clear goals and objectives with the purpose of sustaining a balance between water uses and water supplies so that the *economic viability*, social and environmental health, safety, and welfare of the river basin can be achieved and maintained for both the near term and long term.

8. Concern: Certain areas within the Lower Platte River Basin were not included within the hydrologically connected area.

The Department received testimony requesting that certain geographic areas be reexamined to determine if they warranted inclusion into the hydrologically connected area. The Department reevaluated the scientific basis for the preliminary determination and determined that certain geographic areas should be included in the hydrologically connected area which were not included in the preliminary determination. These geographic areas were in the Papio-Missouri River Natural Resources District and the Lower Platte South Natural Resources District.