

# Appendix B

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**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 2015, 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 November 1, 2014, 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 groundwater uses in each of the state's river basins and shall issue a report that describes the results of the evaluation by January 1, 2015, 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.nebraska.gov/>.

**Proof of publication**

**AFFIDAVIT**

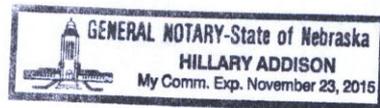
State of Nebraska, County of Douglas, ss:

Kiley Petersen, being duly sworn, deposes and says that 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 17 day of September, 2014, 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 132,416 Daily and 165,454 Sunday, in 2014.

(Signed) 

Title: Account Executive

Subscribed in my presence and sworn to before me this 17 day of September, 2014.



  
Notary Public

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Affidavit \_\_\_\_\_

Paid By \_\_\_\_\_

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DEPARTMENT OF  
NATURAL RESOURCES

Information was provided by the National Park Service regarding relevant data concerning the social, economic, and environmental impacts of additional hydrologically connected surface water and groundwater uses on resources that are dependent on streamflow or groundwater levels, but are not protected by appropriations or regulations, in the Lower Niobrara River Basin. The letter received from the National Park Service, dated October 22, 2014, is below. No other comments by interested parties were received.



# United States Department of the Interior

NATIONAL PARK SERVICE  
Missouri National Recreational River  
508 E. 2<sup>nd</sup> Street  
Yankton, SD 57078

IN REPLY REFER TO:

1.B (MNRR)

October 22, 2014

Jesse Bradley  
Division Head, Integrated Management & Planning Division  
Department of Natural Resources  
301 Centennial Mall South  
P.O. Box 94676  
Lincoln, Nebraska 68509-4676

## **Re: 2015 Annual Evaluation of Availability of Hydrologically Connected Water Supplies**

Dear Sir,

The National Park Service (NPS) hereby submits comments on the 2015 Annual Evaluation of Availability of Hydrologically Connected Water Supplies. Pursuant to the requirements of Section 46-713(1)(c), the Nebraska Department of Natural Resources (Department) is required to include relevant information 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. The NPS is submitting these comments on behalf of the streamflow dependent resources of the Niobrara River that are not otherwise protected by state regulation.

The Niobrara River flows through two NPS units in the Lower Niobrara River Basin. Congress designated the lower 25 miles of the Niobrara River, including the Verdigre Creek tributary, as part of the Missouri National Recreational River. Congress also designated 76 miles of the Niobrara River in central Nebraska as the Niobrara National Scenic River. The outstandingly remarkable values of the Niobrara River that caused it to be designated as part of the national wild and scenic river system are dependent upon streamflow.

The NPS is concerned by the length of time that has passed since an evaluation of the availability of water supplies has been conducted for the Lower Niobrara River Basin and the Department's own determination that the basin was fully appropriated. New water right applications and registered wells are added every year, despite the fact that current water supplies are unable to satisfy existing uses. In addition, the annual evaluations lack basic information and appropriate detail to provide transparency in the evaluation process. We appreciate the efforts the Department has taken to improve the methods used to evaluate

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water supplies in each basin, but we believe that additional improvements are necessary to effectively manage the water resources of the Niobrara River basin. We respectfully request that the Department consider the following comments in preparation of the 2015 Annual Evaluation of Hydrologically Connected Water Supplies.

- 1. The Department Needs to be Responsive to all Applicable Federal Laws.** The Department must make a final determination that a basin, sub-basin, or reach is fully appropriated if certain criteria are met, including the potential reduction in the flow of a river or stream sufficient to cause noncompliance with an interstate compact or decree, other formal state contract or agreement, **or applicable state or federal laws** (emphasis added). The NPS is concerned that the Department has only considered interstate compacts and federal laws associated with endangered species. We believe that the Department must also consider the NPS Organic Act of 1916, the Wild and Scenic Rivers Act (WSRA) of 1968 and the Niobrara Scenic River Designation Act of 1991. As a segment of the Wild and Scenic Rivers System, the designated portions of the Niobrara River (including Verdigre Creek) are subject to the legislative mandates contained in both the NPS Organic Act (Organic Act) and the WSRA. Therefore, the Department must consider these federal laws when considering potential impacts.
- 2. Integrated Management Plan for the Lower Niobrara River Basin.** NPS is concerned by the amount of time that has passed since the last evaluation of the Lower Niobrara River Basin above Spencer Dam and the lack of an integrated management plan for the portion of the Lower Niobrara River Basin located within the Middle Niobrara Natural Resources District. The Department is not required to perform an annual evaluation for four years following a status change in a basin. However, Nebraska Revised Statutes 46-715(1)(a) does require Natural Resource Districts encompassing a basin, sub-basin or reach that has been designated as fully appropriated by the Department to develop an integrated management plan. The integrated management plan “shall be completed, adopted, and take effect within three years after such designation or final determination” unless the department and the natural resources districts jointly agree to an additional two year extension. The statutes do not contain an exception for a status change. Nearly seven years have passed since the basin was first designated as fully appropriated and no integrated management plan has been developed for the Middle Niobrara Natural Resources District. NPS urges the Department to work with the Middle Niobrara Natural Resources Districts to develop an integrated management plan for this portion of the Lower Niobrara River Basin.
- 3. Lower Niobrara River Basin is Fully Appropriated.** NPS believes that although there may have been concerns with the methods used at the time, the Department was basically correct in their determination that the Lower Niobrara River Basin above Spencer Dam was fully appropriated. A basin is fully appropriated if current uses of hydrologically connected water supplies are insufficient to meet existing needs. In 2007, approximately 400 junior water users in the basin were issued closing notices. Since that time, additional administration of the basin has occurred and several hundred closing notices have been issued. Therefore, water supplies are

insufficient to meet existing needs and the Niobrara River basin above Spencer Dam is fully appropriated.

- 4. Inconsistencies Between Administrative Boundaries, Databases and Annual Reports.** NPS is concerned by the lack of spatial information and appropriate detail for water rights that is consistent with the administrative boundaries used by the Department. For example, the surface water rights database can only be searched by the entire river basin or by township and range. But water supplies, demands and depletions are determined for sub-basins and reaches. The surface water rights database should include sufficient spatial information and detail to identify the location of a water right within each sub-basin or reach as identified and administered by the Department.

Part of the concern with the lack of spatial information associated with water rights are discrepancies between the Department's surface water rights database and the annual evaluations of available water supplies. For example, an attempt to plot surface water points of diversion for the Lower Niobrara River Basin below Spencer Dam by township, range and section results in a total of 276 surface water rights with a priority date of December 31, 2012 or earlier. However, the 2014 Annual Evaluation of Availability of Hydrologically Connected Water Supplies (2014 Annual Report) states that there were 267 active surface water rights in the Lower Niobrara River Basin below Spencer Dam as of December 31, 2012. Since spatial information is not included in the surface water rights database, and the annual report does not list the surface water rights used in the analysis, the source of this discrepancy cannot be determined.

Similarly, there are discrepancies between the Department's registered well database and the 2014 Annual Report. An analysis of the Department's well database using ArcGIS suggests that there were 2,832 registered wells in the Lower Niobrara River Basin prior to December 31, 2012, but the 2014 Annual Report states that there were 2,738 registered wells at that time. The surface water rights database, the registered well database, and the annual reports need to contain sufficient information to allow a determination of the number of permits and wells and the amount of water that has been appropriated within the administrative boundaries used by the Department.

- 5. Reported Well Development is Inconsistent with Hydrologically Connected Area.** An additional concern with the 2014 Annual Report is the reported number of wells in the Lower Niobrara River Basin. The area delineated as the 10/50 area for the Lower Niobrara River Basin below Spencer Dam shown on Figure 6-6 in the 2014 Report extends beyond the surface water basin boundary. However, Figure 6-3 depicting current well development includes only those wells within the surface water basin boundary. All wells within the 10/50 area should be shown on the figure (or a new figure should be included) and the total number of wells in the 10/50 area should be reported. In addition, the Department needs to be clear that the total number of wells in hydrologic connection with the river are used in calculating basin water supplies, in determining the status of the basin and in quantifying current and future streamflow depletions.

- 6. Inconsistent Application of Numerical Model.** The Department has developed new methods and tools for evaluating water supplies. The new tools include a groundwater model known as the Central Nebraska Model (CENEB model) that encompasses portions of the Niobrara River, Elkhorn River and Loup River basins. The CENEB model boundary, based on the earlier Elkhorn-Loup Model, was expanded to include the Niobrara River basin below the Mirage Flats project. The CENEB model was completed in 2013. The Department used this model to evaluate the Loup River and upper Elkhorn River sub-basins as part of the 2014 Annual Evaluation of Hydrologically Connected Water Supplies (2014 Annual Report). However, the Department chose to use an analytical technique (Jenkins stream depletion methodology) to evaluate groundwater depletions in the Lower Niobrara River, stating on page 79 of the 2014 Annual Report that “No sufficient numeric groundwater model is available in the Lower Niobrara River Basin to determine the 10/50 area.” NPS is concerned by the statement that the CENEB model is not sufficient to evaluate the Lower Niobrara River Basin and requests that the Department revise the methodology and recalibrate the CENEB model to allow for higher confidence in its application and/or provide a more thorough explanation of why the model is insufficient in its predictive capability.
- 7. Insufficient Information to Apply Stream Depletion Methodology.** The Department chose to use the Jenkins stream depletion methodology to evaluate groundwater depletions in the Lower Niobrara River Basin. NPS suggests that when the Department applies the stream depletion methodology in a basin, values used for each of the parameters in the stream depletion equation should be included for that particular basin or sub-basin so that the analysis can be replicated.
- 8. Hydrologically Connected Area Needs Revision.** Figure 6-6 of the 2014 Report suggests that the Department used the boundary of the Ogallala aquifer to delineate the boundary of the 10/50 area. Areas where the Ogallala aquifer (also referred to as the principal aquifer) is considered absent are excluded from the 10/50 area. This is in contradiction with information contained in U.S. Geological Survey and Soil Conservation reports that indicate the presence of quaternary deposits capable of yielding large amounts of water to wells along the lower Niobrara River (Miller and Appel, 1997<sup>1</sup>; Newport and Krieger, 1959<sup>2</sup>).

A description of quaternary deposits found in Boyd County states “*The highest water yields are obtained from the relatively thick Quaternary deposits in the old valley fill of the intermediate plain between the Keya Paha and Niobrara Rivers. Well yields averaging 600 gallons per minute and a few of more than 1000 gallons per minute are obtainable*” (Indra, 1979<sup>3</sup>). This area is currently excluded from the 10/50 area.

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<sup>1</sup> Miller, J.A. and Appel, C.L. 1997. Ground Water Atlas of the United States; Kansas, Missouri and Nebraska. U.S. Geological Survey Hydrologic Atlas 730-D.

<sup>2</sup> Newport, T.G. and Krieger, R.A. 1959. Ground-water resources of the Lower Niobrara River and Ponca Creek basins, Nebraska and South Dakota. U.S. Geological Survey Water Supply Paper 1460-G.

<sup>3</sup> Indra, O. 1979. Soil Survey of Boyd County, Nebraska. U.S. Department of Agriculture Soil Conservation Service.

The presence of at least 74 high-capacity wells in the Lower Niobrara River Basin below Spencer Dam where the Ogallala is considered absent is further evidence for the existence of a secondary aquifer or aquifers that should be considered in evaluating the basin status, basin water supplies and stream depletions. Application of the stream depletion methodology with values for hydraulic properties obtained from the Department's website suggests that wells in this area will deplete streamflow by more than 10% of the amount of water pumped in 50 years. Therefore, the boundary of the 10/50 area needs to be revised, all high capacity wells need to be included, and existing and future stream flow depletions need to be recalculated.

- 9. Failed to Recognize Public Interest Demand for Instream Flows.** The Nebraska Legislature has determined that instream flows are in the public interest. Specifically, Nebraska Revised Statutes 46-2,107 states:

*The Legislature finds that the maintenance, conservation, management, storage, and timely release of the waters of the natural streams within the State of Nebraska are in the public interest and are practices essential to the well-being of present and future generations. In furtherance of these practices, the public interest demands the recognition of instream uses for fish, recreation, and wildlife.*

NPS also has responsibilities for protecting the public interest. NPS was given authority by Congress to manage and preserve areas within the National Park System in such manner and by such means as will leave them unimpaired for the enjoyment of future generations. We believe the Department needs to consider the instream flow needs of the Niobrara River necessary to maintain fish, recreation, and wildlife of the Niobrara National Scenic River and the Missouri National Recreational River, as tiered to the enabling legislation for these two areas. At a minimum, NPS recommends that the Department incorporates information related to instream flow needs of the Niobrara River contained in recent reports prepared for the Nebraska Game and Parks Commission<sup>4,5,6</sup>.

- 10. Method Used to Calculate Current Water Supplies is Insufficient.** The 2014 Report states that the current water supply is estimated using the previous 20 years of flows available for junior irrigation rights. The Department needs to also consider other uses in addition to irrigation requirements. NPS analysis of discharge data since 1991 suggests that flows in the Lower Niobrara River Basin are insufficient to meet existing irrigation and hydropower demands during July and August more than 80% of the time. In addition, the Department needs to consider

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<sup>4</sup> Shultz, S. Economic and Social Values of Recreational Floating on the Niobrara National Scenic River, Final Report. July 2009.

<sup>5</sup> Whittaker, D., and Shelby, B. Flows and Recreational Floating on the Niobrara National Scenic River, Nebraska. April 2008.

<sup>6</sup> Parasiewicz, p., Pegg, M., Rogers, J., Behmer, A., and Eldridge, A. Developing Environmental Flows for Fish and Wildlife, A Mesohabitat Study on the Niobrara River.

instream flows necessary to satisfy the public interest. The calculation of water supply, demand and depletion needs to consider all consumptive and non-consumptive uses of water, including the amount of water required to meet the public interest.

- 11. Reported Irrigated Acreage May Not Represent Actual Irrigated Acreage.** The method used by the Department to calculate acres irrigated by wells relies on data from a 1995 study and a 2002 Census of Agriculture report to determine the average irrigated acre per well. The current number of registered wells is then multiplied by the average irrigated acre per well to estimate irrigated acreage in a basin. NPS suggests that this method needs to be revisited to provide assurance that reported acreage is an accurate representation of actual irrigated acreage in a basin.

The Niobrara National Scenic River and the portion of the Niobrara River within the Missouri National Recreational River are dependent on sufficient streamflow to maintain the economic, recreational and environmental values of these wild and scenic river reaches. We believe that the Department was correct in designating the sub-basin above Spencer Dam as fully appropriated in April, 2008, and that additional streamflow depletions will negatively affect the outstandingly remarkable values of the Niobrara River that contributed to the national significance determination that lead to the river being included as a component of the National Wild and Scenic Rivers System.

We appreciate the opportunity to provide these comments and remain committed to working in a cooperative manner with the State of Nebraska to seek ways to preserve and protect the Niobrara River in accordance with its designation as a unit of the National Park System. Should you have any questions regarding our concerns on these issues, please contact Hydrologist John Macy by calling 605-665-0209, Ext. 23 or by email at [John\\_macy@nps.gov](mailto:John_macy@nps.gov), or Hydrologist Jennifer Back at the NPS Water Resources Division by calling 970-225-3533 or by email at [Jennifer\\_Back@nps.gov](mailto:Jennifer_Back@nps.gov). Thank you for your attention to these matters.

Sincerely,



Richard A. Clark  
Superintendent

CC:           Macy: NPS-MNRR  
              Thede: NPS-NIOB  
              Washington & Santiago: NPS-MWRO  
              Harvey, Hansen, Back, Fahmy: NPS-WRD