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March 26, 2007

Mr. Dennis E. Breitzman, Area Manager
Bureau of Reclamation, Dakota Area Office
P.O. Box 1017
Bismarck, ND 58502

Subject: Comments on the Red River Valley Water Supply Project (RRVWSP) Supplemental Draft Environmental Impact Statement (SDEIS)

Dear Mr. Breitzman:

The following are my written comments to supplement the oral comments I provided at the Public Hearing in Bismarck, ND on February 27, 2007 by Arden E. Mathison, 1815 Harmon Avenue, Bismarck, ND 58501.

Thank you for the opportunity to provide comments on the SDEIS for the RRVWSP. My name is Arden Mathison and I represent myself as a citizen of North Dakota. I am a retired Professional Engineer and former US Bureau of Reclamation employee, having worked about 29 years on the Garrison Diversion Unit. Most of my relatives live in the RRV, in fact, seven generations of our family have called the RRV home.

I thank the USBR and GDCD for considering and addressing the comments I provided a year ago on the DEIS. However, I am very disappointed that supplying water to the James River via the New Rockford Canal is not within the scope of study for the RRVWSP. I have learned some new definitions of the word "reasonable" this past year. I have also learned the definition of "ADAPTIVE MANAGEMENT"- Impact Mitigation Team on p.228-229. Adaptive Management is an interesting concept, and only time will tell how successful it will be, especially here in ND where there are either floods or droughts, but during the rest of the time everything is considered normal. I am concerned about Adaptive Management - how it is staffed and how responsive it is to the public. In some respects, Adaptive Management appears to be another form of government without having the benefit and responsibility of elective office holders.

Today, I would like to recommend a feature be added to the GDU Import to **Sheyenne River Alternative**. The feature would consist of a one mile pipeline from the outlet of the biota treatment plant to deliver **treated Missouri River MR&I water** to the **Upper Sheyenne River** as needed. This feature would utilize the currently unused 15 mile reach of the McClusky Canal from MP 59 to 75. The one mile pipeline would bypass the existing two plugs at MP58 & MP59.

This feature would:

1. Provide the opportunity and operational flexibility to supply treated MR&I water to the upper Sheyenne River as needed in Sheridan, Wells, Eddy, Benson, Nelson, and Griggs Counties, and the southern portions of the Spirit Lake Reservation.

2. Maintain and freshen the water quality throughout the water delivery system from Lake Audubon to Lake Ashtabula, and especially the Upper Sheyenne River and McClusky Canal between MP 40 and MP58, downstream of the Painted Woods Creek Outlet. Water has been released from the McClusky Canal into Turtle Creek and Painted Woods Creek for the past twenty years to freshen and improve the water quality in the McClusky Canal and Chain of Lakes. The flow of water in Turtle Creek and Painted Woods Creek has enhanced the environment in McLean and northern Burleigh Counties, and has been appreciated by the landowners adjacent to these two creeks. It also provides water for wetlands on thousands of acres of GDU Wildlife Development Areas and Painted Woods Lake, mostly in McLean County.
3. Enhance the aquatic environment, riparian habitat, existing small lakes, and wetlands in and adjacent to the upper Sheyenne River, and Lonetree WMA. There are seven small dams/dikes and reservoirs/impoundments on the Upper Sheyenne River. Four of these impoundments are located in the LWMA and have gone dry during extended drought periods. Maintaining fresher water in the river channel and existing reservoirs would be like keeping the "pump primed" and reduce the amount salt deposits and concentration of dissolved minerals and contaminants associated with stagnant water, and in turn improve the quality of the inflow to Lake Ashtabula. This upper Sheyenne River flow augmentation would allow more high quality natural runoff water, especially from spring snowmelt and spring rains, to flow into Lake Ashtabula. In turn, this would help improve the quality of the water delivered to the lower Sheyenne River, Red River, and eventually to Canada.
4. Provide a controlled isolated pool of treated water in the McClusky Canal between MP59 and MP74 to test, demonstrate, monitor, sample and inspect the effectiveness of the biota treatment plant. It may be best to only maintain about 2 or 3 feet of water flow depth in this section of canal instead of the canal full depth of 17 feet. Shallow canal water depth will reduce water loss to canal seepage and resultant seepage on some adjacent private farmland. A buried pipeline 15 miles long in the bottom of the McClusky Canal from MP 59 to MP74 would eliminate canal seepage and evaporation losses. However, it would likely be costly and an unnecessary expenditure of Federal funds.
5. Provide a way to deliver treated MR&I water to the RRV while the main 129 mile long pipeline is under construction. Pending funding levels, the Biota Treatment Plant and the 129 mile pipeline construction will probably require at least 10 years or more to complete.
6. Provide a second "backup" outlet to deliver water to Lake Ashtabula in case the main pipeline breaks, has to be shutdown, and taken out of service for repairs. This would be especially important during high water demand periods. As currently envisioned, the SDEIS modeling results indicate that the preferred pipeline was unable to meet a full water supply to the RRV 37 months out of 876 months of historic record.

7. Provide the opportunity to reduce the power costs by not having to lift all the treated water 160 feet over the high ground along the main pipeline route.
8. Provide greater utilization of the Biota Treatment Plant for longer periods of time without increasing its capacity.
9. Pending additional study, may allow reducing the pipe diameter and costs of the 129 mile long main pipeline.

I am enclosing a copy of two USBR memorandums dated August 14 and 20, 1969 related to tailwater studies for the Sheyenne River below the Lonetree Damsite and near the Harvey, ND USGS Gaging Station. The Sheyenne River has a bankfull capacity of 250 to 350 cfs in this reach. The MR&I outlet from Lonetree Dam was planned to release 20 cfs of "sweetening" water (about 7,300 ac-ft/yr) into the Sheyenne River 6 months of each year for 50 of the next 100 years to maintain good quality water. Mr. John W. Keys III, the recently retired Commissioner of Reclamation, did the tailwater studies in 1969 when he was at the Bismarck Office. (These two documents were submitted at the 2/27/07 SDEIS Hearing in Bismarck).

A second recommendation I would like to make is for the USBR to review and study the potential of installing high capacity groundwater wells in the Painted Woods Aquifer (PWA), located along the McClusky Canal, MP42 to MP52. These wells could serve as the "water supply intake" in lieu of the currently planned intake at MP 58 in Hofer Lake on the McClusky Canal. The McClusky Canal, MP 42 to MP 52, is located in the PWA, and has lowered the water table and made Old John's Lake a dry lake bed. The Painted Woods Creek outlet at MP40 allows the natural groundwater to discharge from the PWA directly into the McClusky Canal, and then to flow into Painted Woods Creek, and eventually into the Missouri River near Painted Woods Lake.

A well field system of high capacity groundwater wells may have the capability to provide the full 122 cfs capacity for the RRVWSP GDU Import to Sheyenne River Alternative. These wells may provide a less costly alternative "Biota Treatment" method than is currently planned. For example, if the wells would yield an average of 4 cfs each, it would require about 30 wells spaced about ¼ mile apart along 9 miles of the McClusky Canal ROW in the PWA. I think the PWA still has about 25 to 50 feet of saturated thickness. The Geologic drill hole logs and reports would contain this information. If a high capacity well system in the PWA would turn out to be a viable option, it may reduce the cost of Biota Treatment considerably.

I assume it best to avoid installing wells in the 1 mile of PWA in the vicinity of Old John's Lake where the PWA groundwater is likely still saline. If I remember correctly, the other 9 miles of PWA contains fairly good quality groundwater. I do not remember if the water quality is stratified or not.

Regardless of the past groundwater quality data and records, and because the McClusky

Canal has provided an outlet for groundwater discharge from the PWA for over 30 years, a more current groundwater quality sampling and monitoring program would be necessary. This could be part of the more detailed study that would be required before using high capacity wells in the PWA to obtain Missouri river water for the RRVWSP.

The PWA discharge was measured at about 10 cfs in 1986 or '87, and is likely to be fairly constant, with some seasonal variability. The PWA is comprised of fairly clean and coarse sands and gravels, typical of glacial outwash materials. The PWA is relatively narrow, but has fairly thick deposits of sands and gravels. The USBR 48 hour well tests, conducted prior to construction of the McClusky Canal, indicated high yields and the aquifer may support high yielding wells, especially with 10 miles of McClusky Canal water serving as a source of constant recharge for the well field. If the saturated thickness is not deep enough for vertical wells, it may be better to install a network of "horizontal wells".

It is worth noting that during construction of the McClusky Canal in the area of PWA, the contractor(s) used large pumps to pump both groundwater and surface water from excavated canal sections rather than install high capacity wells. Much of the water that was removed was discharged down Painted Woods Creek prior to the completion and creation of New John's Lake and other portions of the McClusky Canal.

Old Johns Lake was a closed basin and evaporation sink and is located along the McClusky Canal near MP50. The soils along the shoreline of Old Johns Lake were initially too saline to support grass seed germination. Grasses were eventually reseeded and germinated, and now there is relatively good grass cover in the bed of Old John's Lake.

The SDEIS seems to lack a clear description of conditions related to a severe drought like those experienced in the 1930's. Many people I have visited with wonder why the Red River Valley needs more water, especially with all the flooding and wet conditions they have experienced in the RRV during the past 14 years.

Therefore, on behalf of all the citizens of North Dakota who endured all the mental anguish and hardships of the horrendous drought disaster from 1929-1936, I am respectfully submitting the testimonies of about 65 people in an 81 page Report of a Public Hearing on the Missouri River Diversion Project that the Corps of Engineers held at Devils Lake, ND on October 27, 1936. I request the Report and the documents submitted at the 1936 Hearing be included in an Appendix to the Final Environmental Impact Statement for the RRVWSP. If a better quality print is required, I assume the original 1936 Hearing Report and Documents are available at the Corps of Engineers Office in Omaha, NE. It is possible better quality copies are also available in the North Dakota archives at the Heritage Center, or State Water Commission Office. The Bureau of Reclamation Office in Bismarck had at least two copies of the 1936 Report when I retired in 1994. (Two copies of this Report were submitted at the SDEIS Public Hearing in Bismarck on 2/27/07).

I will highlight the 1930's drought conditions, by citing a few pertinent excerpts from the 1936 Hearing Report. They are first hand accounts of drought conditions and the need for water in North Dakota, and especially the Sheyenne and Red River Basins that could be supplied with water from the preferred RRVWSP Alternative.

On pages 15 & 16, Mr. E.H. Mattingly stated how dry the Arrowwood NWR reservoirs and James River were.

P. 17 the State Hospital at Jamestown was not able to irrigate their large gardens at the State Hospital, because the James River was dry.

P. 18- the dry Sheyenne River, caused dying trees and empty wells.

P. 19- the conditions of the nearly dry reservoirs in the Sheyenne River at Valley City.

P. 21- the Red River at Fargo being dry during the summer months for 4 years, except for sewage releases, and the Red River being completely dry for 80 miles south of Fargo. Fargo had a population of 30,000 people in 1936. Need for successful livestock and agriculture to support the City.

P.22 the need for fire Protection and the need for fire insurance to protect homes and property.

P. 25 – about 40, 000 people moved from ND, SD, and MT to Seattle during the drought, plus many other people moved elsewhere because of the drought.

P. 35 – 38 - Federal Relief money was costing \$3 million per month in ND.

P. 36 Mandan Indian farmers 125 years ago had drought related problems + book by Mr. Cabman, "The American Indian".

P. 36 + - Fort Berthold concerns about the two different proposed dams and reservoirs and drought impacts on the Indian people.

P. 44 the dying trees around Devils Lake due to low water levels in Devils Lake.

P. 47 Fire Insurance and Fire Protection needs.

P. 52 Charles Hobbs – property values, excessive Chloride from wells and springs in lower Sheyenne River Valley, They identified a Minimum flow of **200 cfs on Sheyenne** and **112 cfs on the James Rivers** would be required for a sufficient water supply for the cities and towns. (Note: This predated sewage treatment facilities).

P. 53 & 54 - American Crystal Sugar was recirculating its sewage to flood and wash the sugar beets, the Red River was dry, Red Lake River nearly dry, and plans were to get water from **the Lake of the Woods**. (It turns out they did not go to the Lake of the Woods for water because GDU was coming, so they waited, and are still waiting).

P. 60 Sewage water was the only flow in the Sheyenne and James Rivers. The State Health Dept. estimated a need for 450 cfs flow to dilute sewage. There was only 0.5 cfs flow in the Sheyenne and James Rivers. (This predated sewage treatment facilities).

P. 65 Brice McBride Hydraulic Engineer with US Biological Survey(now the FWS) – new reservoirs on Souris and James Rivers on the refuges will not provide sufficient water, and other water is needed to be brought in. He also observed that "**niggardliness**" had developed over the constant flows from upstream reservoirs to downstream reservoirs and there was increased competition for water in between reservoirs.

P.66 Tiffany Flats, a large slough east of New Rockford, was dry.

P. 70 **The Sheyenne River and lakes southwest of Harvey were dry while in earlier wetter years they would catch lots of fish. (Some of this area is now within the Lonetree Wildlife Management Area)**

P. 73 The dams were dry on the upper Sheyenne River.

P. 79 & 80 - WPA & CCC reports and Great Plains Drought Committee Report(s) to the President. (Available at the Library of Congress along with numerous photographs of drought conditions.)

Mr. S.W. Thompson stated that thousands more people would have come to Devils Lake for the Hearing, if they had the money in their pockets to make the trip. (This definitely would have been the situation my Dad and Granddad faced).

I wish you success as you proceed with the RRVWSP efforts, and hopefully before long there will be treated Missouri River MR&I water flowing in the Sheyenne and Red Rivers to serve the needs of the water users and provide drought proofing for the Red River Valley. I leave you with this, I am positive my Dad and Granddad would have told you, **“THERE MUST BE A CHEAPER WAY TO GET WATER?”**

Now, I would like to conclude with a few additional detailed comments regarding the SDEIS:

Noticeable by their absence in the SDEIS is any discussion of Lonetree WMA, Upper Sheyenne River, James River, Jamestown Reservoir, NAWS, and the Southwest Pipeline. A brief summary or description of each of these features and how they have been performing, or relate to the RRVWSP would be helpful to the readers. A brief summary of the Southwest Pipeline construction, operation, and administration would provide a good comparison for the RRVWSP Final EIS, especially those features that are similar.

Page 3 of the Executive Summary SDEIS shows a picture of a water truck – is it intended as an alternative? During a drought there will be many grain, sugar beet, and potato trucks sitting idle in the RRV that could haul water, or even ice during the winter. Some readers may think that would be an acceptable and affordable way to provide water to the RRV, especially during a drought emergency.

Page 325 SDEIS – Need Clarification of the very low flow for 37 months.

Page 343 – Apply for a water permit – why? GDU already has a permit for the project. Is it intended to apply for a perfected water permit once the RRVWSP facilities are in place and operational.

Some pictures are somewhat misleading – the low flow below Baldhill Dam would still be low flow even with the the RRVWSP in operation. The Red River in Fargo would still be “dry” because the Sheyenne River enters the Red River downstream of Fargo, as do the releases from the sewage treatment system. The 80 miles of the Red River upstream of Fargo would not have any flow to speak of during a severe drought, except for releases from sewage facilities between Fargo and Wahpeton. I do not say this to scare people, but to point out that it would be the case. Adequately treated sewage water

is a very valuable resource. Ethanol plants, and golf courses are some examples of water users who know how valuable treated sewage water can be. Considerable numbers of people do not recognize sewage water as being of any value. Historically, about 70% of the M&I water returns to its source as treated sewage water and is of beneficial use downstream, except for coastal cities and towns.

It is interesting to note that it has been recently announced that Fargo may enter into a contract to sell and deliver water from their sewage system to an Ethanol plant being planned for construction near Casselton, ND. This helps demonstrate the need and demand for MR&I water in ND, and yes even for treated sewage water.

If possible, I would like for you to make two minor corrections in the February 2, 2006 RRVWSP Transcript of Public Hearing in Bismarck, ND at the Best Western Doublewood Inn. On page 29, on line 5, change the word in my oral testimony from "impacted" to "compacted". Then also on page 29, line 10, change the year from "1998" to "1988". The hearing officer, was Mr. Mark Anderson and the Court Reporter was from Emineth & Associates, Bismarck, ND.

Since the Public Hearing on the RRVWSP SDEIS in Bismarck, ND on February 27, 2007, I have had several conversations and requests for information from me concerning the oral testimony I presented. There appears to be considerable interest in obtaining treated MR&I water into the Upper Sheyenne River as an additional feature of the preferred RRVWSP Alternative. I have furnished them some information and suggested to these people that they may want to provide their own comments on the RRVWSP SDEIS and to express their own interests themselves.

If you have any questions or need any clarification of my comments, please contact me. I think you have my E-mail address and telephone number. Thank you, and I wish you the best as you proceed toward the Final EIS. It is my hope you will be able to keep the Final EIS shorter than the 541 page SDEIS – just joking, of course.

Sincerely,



Arden E. Mathison
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