UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

JUN 14 2011

REPLY TO THE ATTENTION OF:

WW-16J

Paul Aasen, Commissioner
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Dear Mr. Aasen:

The U.S. Environmental Protection Agency has conducted a complete review of the final Rabbit River Turbidity Total Maximum Daily Load (TMDL), including supporting documentation. Rabbit River lies within the Bois de Sioux watershed in the Red River Basin of the North and is located entirely in the Red River Valley Ecoregion. The impaired reach of the Rabbit River addressed in this decision runs from the Wilkin County line to the Bois de Sioux River and is indentified as assessment unit 09020101-502. The TMDL addresses impairments of aquatic life due to excessive turbidity.

Based on this review, EPA has determined that the Rabbit River Turbidity TMDL meets the requirements of Section 303(d) of the Clean Water Act, 33 U.S.C. Section 1313(D), and EPA's implementing regulations at 40 CFR Part 130. Therefore, EPA hereby approves one TMDL for turbidity for Rabbit River, assessment unit 09020101-52. The statutory and regulatory requirements, and the TMDL's compliance with these requirements, are described in the enclosed decision document.

We wish to acknowledge Minnesota's effort in submitting this TMDL and look forward to future TMDL submissions by the State of Minnesota. If you have any questions please contact Mr. Peter Swenson, Chief of the Watersheds and Wetlands Branch, at 312-886-0236.

Sincerely,

Tinka G. Hyde
Director, Water Division

Enclosure

cc: Jack Frederick, MPCA
Dave L. Johnson, MPCA

Approval Date: JUN 14 2011

DECISION DOCUMENT FOR THE APPROVAL OF THE RABBIT RIVER TURBIDITY TOTAL MAXIMUM DAILY LOAD REPORT

Section 303(d) of the Clean Water Act (CWA) and United States Environmental Protection Agency's (EPA) implementing regulations at 40 CFR Part 130 describe the statutory and regulatory requirements for approvable total maximum daily loads (TMDLs). Additional information is generally necessary for EPA to determine if a submitted TMDL fulfills the legal requirements for approval under Section 303(d) of the CWA and EPA regulations, and should be included in the submittal package. Use of the verb "must" below denotes information that is required to be submitted because it relates to elements of the TMDL required by the CWA and by regulation. Use of the term "should" below denotes information that is generally necessary for EPA to determine if a submitted TMDL is approvable.

1. Identification of Water body, Pollutant of Concern, Pollutant Sources, and Priority Ranking

The TMDL submittal should identify the water body as it appears on the State's/Tribe's 303(d) list, the pollutant for which the TMDL is being established, and the priority ranking of the water body. The TMDL submittal should include an identification of the point and nonpoint sources of the pollutant of concern, including location of the source(s) and the quantity of the loading, e.g., lbs/per day. The TMDL should provide the identification numbers of the National Pollutant Discharge Elimination System (NPDES) permits within the water body. Where it is possible to separate natural background from nonpoint sources, the TMDL should include a description of the natural background. This information is necessary for EPA's review of the load and wasteload allocations, which are required by regulation.

The TMDL submittal should also contain a description of any important assumptions made in developing the TMDL, such as: (1) the assumed distribution of land use (e.g., urban, forested, agriculture); (2) population characteristics, wildlife resources, and other relevant information affecting the characterization of the pollutant of concern and its allocation to sources; (3) present and future growth trends, if taken into consideration in preparing the TMDL; and (4) an explanation and analytical basis for expressing the TMDL through surrogate measures, if applicable. Surrogate measures are parameters such as percent fines and turbidity for sediment impairments; chlorophyl a and phosphorus loadings for excess algae; length of riparian buffer; or number of acres of best management practices.

EPA Assessment:

Identification of Water Body

The June 2010 Rabbit River Turbidity Total Maximum Daily Load Report (TMDL report) pgs. 4-5 and 7-10, Table 2 and Figure 3, and Figures 27 and 37 in the Appendix to the TMDL report[1] provide information identifying the Rabbit River, its location and impairment being addressed by this TMDL.

[1] The report included as an appendix to the TMDL report is the *Development of the Soil and Water Assessment Tool (SWAT) to Assess Water Quality in the Bois de Sioux and Mustinak River Watersheds Final Report* prepared by the Energy & Environmental Research Center, University of North Dakota, prepared for MPCA. The purpose of the project presented

The Rabbit River lies within the Bois de Sioux watershed. Most of the Bois de Sioux watershed lies within the physiographic region known as the Glacial Lake Plain, which is part of the historic Glacial Lake Agassiz. The watershed is located entirely in the Red River Valley Ecoregion. In 1996 the Minnesota Pollution Control Agency (MPCA) identified the Rabbit River as having impaired aquatic life due to excessive turbidity. The impaired portion of the Rabbit River addressed by this TMDL runs from the Wilkin County line to the Bois de Sioux River for a total of 22.24 miles in length and has been identified by MPCA as assessment unit 09020101-502 (June 2010 TMDL report pgs. 4 and 7 and Minnesota 2008 IR Category 5[2]).

EPA finds that the State has identified the impaired water body addressed by this TMDL as the water body appears on Minnesota's 303(d) list.

Pollutant of Concern and use of Surrogate Measure

Rabbit River has been identified by the State as impaired due to exceedances of Minnesota's water quality standard for turbidity. Since turbidity is a dimensionless unit, nephelometric turbidity units (NTU), the State is using a surrogate, total suspended solids (TSS), as the TMDL target.

Using a multiple regression analysis,[3] the State defined a relationship between TSS and turbidity using 230 paired turbidity and TSS measurements from streams in the Lake Agassiz Plain.[4] Figure 4 in the TMDL report depicts the relationship of turbidity to total suspended solids for the 230 paired data points. The r^2 for the relationship is 0.916, indicating a good correlation between TSS and turbidity.[5]

EPA finds that the State has identified a pollutant for which the TMDL is being established. EPA agrees that TSS is an appropriate surrogate. Minnesota has demonstrated that the surrogate selected, TSS, has a relationship with the State's numeric water quality standard for turbidity through the regression analysis depicted in Figure 4 of the TMDL report.

Priority Ranking

Minnesota has consistently included turbidity impaired waters on its 303(d) lists. Section 303(d)(1)(A) of the Clean Water Act requires States to establish a priority ranking for the impaired waters, taking

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in this Final Report was to assess factors that contribute to water quality impairments identified within the Bois de Sioux and the Mustinka River watersheds. Figures 27 and 37 in this Final Report, in addition to showing the impaired portion of the Rabbit River, show a portion of the Bois de Sioux River that is also impaired for turbidity. The Rabbit River TMDL report and this decision do not address the Bois de Sioux River turbidity impairment.

[2] http://www.pca.state.mn.us/index.php/view-document.html?gid=8281

[3] A multiple regression analysis measures the effects of different factors on some outcome at the same time by providing information about the relationship between an independent variable and a dependent variable. The analysis can be used to find an equation that best predicts a Y variable as a linear function of an X variable. (Applied Regression Analysis and Other Multivariable Methods. Kleinbaum, David G. and Kupper, Lawrence L., Duxbury Press, Boston, MA. pgs. 131-157)

[4] Data was collected March into October 2007, on 13 different rivers in the Lake Agassiz Plain, including the Rabbit River. (June 2010 TMDL report pgs. 29-32)

[5] r^2 is the square of the correlation coefficient between the outcomes and their predicted values. It is a statistical measure of how well the regression line approximates the real data points. The better the regression fits the real data points, the closer the value of r^2 is to the value 1. (Applied Regression Analysis and Other Multivariable Methods. Kleinbaum, David G. and Kupper, Lawrence L., Duxbury Press, Boston, MA. pgs. 131-157)

into account the severity of the pollution and the designated uses of the impaired waters. The target schedule on Minnesota's 303(d) list reflects the State's priority ranking. In establishing the priority ranking, i.e., the target schedule for developing TMDLs, the State considers factors such as the severity of the impairment, available monitoring data and targeted monitoring schedule, designated use of the water body, and available resources. Minnesota's 2008 Integrated Report (IR) targeted the Rabbit River for a TMDL by 2009.[6]

EPA finds that although the State did not include detailed information in the TMDL report on the priority ranking of the Rabbit River, the State does include a statement on page 7 of the TMDL report that the Rabbit River is a priority in the Red River basin. Additionally, information on the priority ranking for the Rabbit River in the State's 2008 IR and associated assessment methodology provide information that can be used to explain the priority ranking.

Sources of the Pollutant of Concern

The Executive Summary in the TMDL report states that the primary sources contributing to the turbidity impairment are agricultural land soil erosion and stream bank erosion "in part caused by the extensive hydrological modification that has taken place across the watershed." The TMDL report also states that turbidity impairments can be correlated to higher flows.

Page 11 of the TMDL report states that the Bois de Sioux watershed's hydrology has been significantly altered by drainage and ditching.

Page 12 of the TMDL report states "it is widely accepted" that sediment loading in such settings as the Rabbit River originates from eroded soil and from erosion of stream bank sediment.

Pages 14 – 16 of the TMDL report discuss point sources specific to the Rabbit River watershed. Potential point sources are identified as municipal wastewater treatment facilities (WWTF), industrial storm water and construction activities. There are no communities subject to municipal separate storm sewer (MS4) permit requirements nor is the State aware of any concentrated animal feeding operations subject to NDPES permitting in the watershed.

Page 16 of the TMDL report broadly identifies potential nonpoint sources as soil erosion from stream channels and upland areas, storm water runoff not requiring a NPDES permit and runoff from agricultural lands.

Point Sources

There is one municipal WWTF, City of Campbell WWTF, which discharges to the Rabbit River. The City of Campbell operates a pond system pursuant to a NPDES and State Disposal System (SDS) permit, MNG 580130. The permit includes a calendar monthly average discharge limit of 45 mg/l and a maximum calendar weekly average of 65 mg/l for TSS. The WWTF is provided two discharge windows between April 1 and June 30 and September 1 and December 15. The facility can discharge up to 0.0341 million gallons per day during the discharge windows. In recent years the City has had

[6] http://www.pca.state.mn.us/index.php/view-document.html?gid=8281

one bypass event which occurred on June 2, 2007 through the discharge structure following the secondary pond. TSS concentration during the bypass event (75 mg/l) exceeded the permitted effluent limit (45 mg/l). (See 10-08-2009 MPCA response to EPA comments.)

The State also determined that industrial storm water and construction storm water could be potential point sources although, the state estimates that these sources are each less than one percent of the TMDL. According to page 20 of the TMDL report, based upon review of construction storm water permit applications over the past 4 ½ years, approximately 0.01% of the acreage in the watershed was subject to construction. The State estimated that industrial storm water was contributed from 0.01% of the land area within the watershed. Although the State didn't provide a narrative discussion to support their estimate for industrial storm water, upon consideration of land cover and use information in Figure 3 and Table 3 in the TMDL report and Figure 6 and Table 2 in the Appendix of the TMDL report, EPA believes the State's estimate for industrial storm water is reasonable.

Nonpoint Sources
Page 16 of the TMDL report concludes that in the Rabbit River watershed sediment contributions from nonpoint sources are the result of soil erosion and stream bank erosion.

As discussed in the TMDL report and in the Appendix to the TMDL report, the Rabbit River is located in the Bois de Sioux watershed. The portion of the Bois de Sioux watershed containing the Rabbit River lies mostly in the Lake Agassiz Plain in the Red River Valley ecoregion. This ecoregion, specifically the Lake Agassiz Plain, is characterized by thick beds of clay and silt; row crop agriculture has replaced native tall grass prairies; and natural storage capacity is decreasing with the loss of wetlands, all of which contributes to the creation of a landscape prone to sediment erosion.

To better understand the sources of turbidity impairments in the Bois de Sioux watershed hydrologic models developed with the Soil and Water Assessment Tool (SWAT) were used. SWAT is a hydrologic model developed by the US Department of Agriculture, Agriculture Research Service, and is used to predict the impact of land management practices on water, sediment and agriculture chemical yields in watersheds over long periods of time. For purposes of this TMDL, the TMDL report provides predictions and estimates from SWAT for flow and sediment. According to the Appendix to the TMDL report, SWAT can be used to, among other things, determine what the loading of constituents at a particular location within the watershed are, where major contributors of sediment loadings are located and what changes in flow or loading are expected after changes in land management practices occur. For modeling purposes, SWAT uses topography and the location of waterways to subdivide a watershed into a number of subbasins. These subbasins and divisions within the subbasins are assumed to be spatially uniform in terms of soils, land use and topography. The hydrologic cycle drives the model simulations. Based on estimates of runoff and the physical characteristics of the landscape, SWAT calculates the amount of sediment and nutrient loading to the main channel in each subbasin. The movement of water, sediment and nutrients through the channel network of the watershed to the outlet of the channel is also predicted. (See section 3.1 of the Appendix to the TMDL report for a more detailed description of SWAT.)

SWAT modeling for purposes of supporting this TMDL project considered long-term simulations, i.e., 20-30 years, of sediment loading and water transport within the Bois de Sioux watershed. (See page 3 of Appendix to TMDL report.) The Appendix to the TMDL report provides estimates for overland erosion from subbasins including those impacting the impaired portion of the Rabbit River. Estimated average and net sediment loadings in the impaired portion of the Rabbit River are also included in the Appendix to the TMDL report. These estimates indicate that both deposition and sediment transport are occurring within the impaired portions of the Rabbit River (see Figures 27 -29 of Appendix to the TMDL report).

Figure 30 of the Appendix also demonstrates that there is a correlation between the sediment loading and flow thereby supporting the State's conclusions in the TMDL report that increased rates of sediment erosion and loading are exhibited during high flows and turbidity impairments are correlated to high flows.

Additional support for the State's conclusion that overland erosion is a contributing source to the turbidity impairment in the Rabbit River is provided by the various SWAT simulations discussed in the Appendix. The various simulations evaluate how changes in land management effect sediment loading and overland erosion contributions within the subbasins and the channel network. SWAT indicates reductions in overland erosion and sediment loading are possible with implementation of various land management practices. Therefore, output from SWAT simulations support the State's conclusions that current soil erosion is contributing to the current sediment load in the Rabbit River.

Although the State's discussion of nonpoint sources in the TMDL report is fairly brief and broad, the information contained in the Appendix does provide information on subbasins that have likely nonpoint sources of sediment. This information does support conclusions by the State that nonpoint sources, as briefly described in the TMDL report, do contribute to the turbidity impairment and that the establishment of a load allocation for nonpoint sources is necessary.

The State indicated in its response to comments received during the public notice of the draft TMDL that more detailed information on specific sources and controls for these sources would be further studied during the development of the implementation plan, which will occur after the TMDL is approved.

EPA finds that the State has identified point and nonpoint sources of the pollutant of concern including the specific location of the point source discharging to the Rabbit River and a general description of likely locations of nonpoint sources. EPA also finds that Table 4 of the TMDL report provides information regarding the current maximum TSS contribution from the Campbell WWTF, as allowed by its existing NPDES permit. The State also provided information in its response to EPA comments (see 10-8-2009 email) to determine the TSS contribution from the Campbell WWTF during a bypass event. EPA finds that the information in Figures 27 – 29 and Tables 16 and 18 in the Appendix to the TMDL report provides estimates of existing overland erosion as tons/ha and average sediment loading and net sediment loading, both as tons of sediment, to the Rabbit River. This information in the Appendix to the TMDL report can be used to estimate existing nonpoint source sediment contributions.

Other Assumptions made in Development of the TMDL

The State relied on output from SWAT to support development of this TMDL. As stated on page 17 of the TMDL report, flow records for the Rabbit River used to establish this TMDL were derived from SWAT simulations. Therefore, it is important that the inputs used in SWAT and the assumptions made by the State are explained and acceptable to EPA. Additionally, implementation of this TMDL should consider these assumptions and inputs. If at a future date, the State determines that an assumption or input was incorrect such that the loading capacity and associated allocations are affected, the State should revise the TMDL appropriately.

SWAT modeling conducted for this project focused on long-term simulations of flow and sediment loading, i.e., 20 to 30 years. Assumptions and information, mostly presented in the Appendix to the TMDL report, used in the SWAT simulations are discussed below. EPA finds that the State has adequately provided a description of the inputs and assumptions used in SWAT for the development of the Rabbit River TMDL.

U.S. Geological Survey (USGS) 8-digit hydrologic unit code (HUC) 09020101 defines the drainage area of the Bois de Sioux watershed as 1140 square miles. The actual drainage area of the Bois de Sioux watershed used in SWAT simulations was 589 square miles. The portion of the 1140 square mile drainage area upstream of the USGS gage located just below White River Dam was considered upstream flow, thereby leaving the modeled drainage area of 589 square miles. For TMDL development the State only considered the portion of these 589 square miles which lies within Minnesota, i.e., 322 square miles. Figure 2 on page 4 of the Appendix to the TMDL report displays the portion of the drainage area of the Bois de Sioux watershed used in the SWAT model.

As described in the Appendix to the TMDL report, topography data inputs for SWAT came from the USGS 2006 National Elevation Dataset (NED). For purposes of this application of SWAT, NED was modified by JOR Engineering to better reflect manmade roads and ditches within the watershed. Specific details of these modifications related to manmade roads and ditches were not included in the TMDL report. Although the TMDL report on pages 5 and 10 makes reference to land cover from National Land Cover Dataset 2001, the 2006 National Agricultural Statistics Service (NASS) Cropland Data Layer was used to represent land use in SWAT. The NASS Cropland Data Layer was updated with information from the Minnesota Farm Service Agency regarding the location of conservation practices within the watershed. Soil data came from the Soil Survey Geographic (SSURGO) dataset from the US Department of Agriculture, Natural Resources Conservation Service. Conservation Technology Information Center (CTIC) provided county level data on tillage practices as of 2004. Table 4 in the Appendix to the TMDL report provides the name and location of the five weather stations used to provide precipitation and temperature data. The period of record for climate data was January 1, 1970 to August 31, 2007.

The SWAT model was calibrated using observed flow data from a USGS gaging station (station ID USGS 05051300) located on the Bois de Sioux River west of Doran, Minnesota. The USGS gage located on the Rabbit River near Campbell was not used because USGS lists the data from this gage as either poor or fair. On page 20 of the Appendix to the TMDL report, it is concluded that since the

USGS gage at Doran captures most of the flow from the portion of the Bois de Sioux watershed being modeled, including all the flow from the Rabbit River, using the flow data from the USGS gage at Doran for model calibration is acceptable. The period of record used for model calibration was January 1, 1993 to August 31, 2007. Although earlier years of flow record were available, according to Section 4.2.1 in the Appendix to the TMDL report, the reliability of the gage data for earlier years (October 1989 through 1992) is questionable due to extremely low or no flow in the Bois de Sioux River.

Table 6 in the Appendix to the TMDL report provides a list of parameters adjusted to calibrate the SWAT model for this project. The hydrograph of predicted versus observed flows can be found in Figure 10 in the Appendix to the TMDL report. Table 7 in the Appendix to the TMDL report provides calibration statistics, i.e., efficiency coefficients and volume deviations, for flow. Results of these calibration statistics, as noted in Section 4.2 of the Appendix to the TMDL report, indicate that although the model was found to slightly over predict flow, predicted flow was within an acceptable range of observed flow.

According to the Appendix to the TMDL report, SWAT was calibrated for sediment using sediment data from two MPCA water quality stations, one located on the Bois de Sioux River southwest of Doran, Station MNPCA S000-553, and the other on the Rabbit River northwest of Campbell, Station MNPCA S001-029. Figures 12 and 13 in the Appendix to the TMDL report display the comparison of SWAT predicted suspended sediment versus measured TSS concentrations for the Rabbit River and the Bois de Sioux River, respectively. As the Appendix discusses, SWAT predicted sediment fairly well for low to mid range flows, however, based on the calibration information it was concluded that SWAT under predicted some of the higher measured TSS concentrations. SWAT predicted suspended sediment was also compared to published sediment load estimates. This comparison did not demonstrate any trends regarding over prediction or under prediction by SWAT. Upon consideration of both calibration assessments, no adjustments were made to SWAT sediment outputs.

Future Growth

The State did not provide a specific allocation for future growth. As discussed on page 23 of the TMDL report, the State considered the fact that population figures extrapolated from the U.S. Census Bureau and the Minnesota State Demographic Center for the watershed indicate a decline in population within the watershed. MPCA enforcement actions regarding the bypass events at the City of Campbell WWTF are expected to result in a facility upgrade. Upon consideration of the population trends and pending improvements at the WWTF, the State did determine that a WLA for future growth with respect to point sources was not needed.

The TMDL report did not provide any discussion regarding future growth of nonpoint sources.

EPA finds the State's decision not to include any allocations for future growth reasonable. The discussion on page 23 of the TMDL report provides sufficient information outlining this decision by the State.

2. Description of the Applicable Water Quality Standards and Numeric Water Quality Target

The TMDL submittal must include a description of the applicable State/Tribal water quality standard, including the designated use(s) of the water body, the applicable numeric or narrative water quality criterion, and the antidegradation policy. (40 CFR §130.7(c)(1)).
EPA needs this information to review the loading capacity determination, and load and wasteload allocations, which are required by regulation.

The TMDL submittal must identify a numeric water quality target(s) – a quantitative value used to measure whether or not the applicable water quality standard is attained. Generally, the pollutant of concern and the numeric water quality target are, respectively, the chemical causing the impairment and the numeric criteria for that chemical (e.g., chromium) contained in the water quality standard. The TMDL expresses the relationship between any necessary reduction of the pollutant of concern and the attainment of the numeric water quality target. Occasionally, the pollutant of concern is different from the pollutant that is the subject of the numeric water quality target (e.g., when the pollutant of concern is phosphorus and the numeric water quality target is expressed as Dissolved Oxygen (DO) criteria). In such cases, the TMDL submittal should explain the linkage between the pollutant of concern and the chosen numeric water quality target.

EPA Assessment:

Numeric and Narrative Water Quality Standards
The State uses turbidity as an indicator to assess whether a water body is attaining the aquatic life designated use as set forth in Minnesota Rules 7050.0222, subpart 4. Minnesota Rules state, "The quality of surface waters shall be such to permit the propagation and maintenance of a healthy community of cool or warm water sport or commercial fish and associated aquatic life, and their habitats."

Page 12 of the TMDL report states that the impaired reach of the Rabbit River is classified as a 2B and 3B water. According to Minnesota Rule 7050.0470, subpart 3A, portions of the Rabbit River are also classified as 2C waters. The most protective class of these three classes is 2B, therefore, the State established the TMDL to attain water quality standards applicable to class 2B waters.

The turbidity water quality standard found in Minnesota Rule 7050.0222 for a 2B water is 25 NTU.

Numeric TMDL Target
As discussed earlier in this decision, turbidity is dimensionless and cannot be converted into a daily load. As discussed on page 12 of the TMDL report, turbidity in water is caused by, among other things, suspended sediment. As previously discussed in this decision, the State is using TSS as a surrogate measure for turbidity. Using a regression technique a relationship between turbidity and TSS was developed. A good correlation was found to exist, i.e., $r^2 = 0.916$. In the relationship established between TSS and turbidity, the State found 47 mg/l is the TSS equivalent of the turbidity 25 NTU

water quality standard. Therefore, the State has established 47 mg/l TSS as the numeric TMDL target for the Rabbit River.

EPA finds that the State adequately described its water quality standards, relevant criteria, and numeric water quality target. EPA agrees that a TSS concentration is an appropriate numeric water quality target for this TMDL. Based on the results of the regression analysis, EPA finds the TMDL target of 47 mg/l TSS acceptable.

3. Loading Capacity - Linking Water Quality and Pollutant Sources

A TMDL must identify the loading capacity of a water body for the applicable pollutant. EPA regulations define loading capacity as the greatest amount of a pollutant that a water can receive without violating water quality standards (40 CFR §130.2(f)). The TMDL submittal should describe the method used to establish the cause-and-effect relationship between the numeric target and the identified pollutant sources. In many instances, this method will be a water quality model. The TMDL submittal should contain documentation supporting the TMDL analysis, including the basis for any assumptions; a discussion of strengths and weaknesses in the analytical process; and results from any water quality modeling. EPA needs this information to review the loading capacity determination, and load and wasteload allocations, which are required by regulation.

TMDLs must take into account critical conditions for steam flow, loading, and water quality parameters as part of the analysis of loading capacity. (40 CFR §130.7(c)(1)). TMDLs should define applicable critical conditions and describe their approach to estimating both point and nonpoint source loadings under such critical conditions. In particular, the TMDL should discuss the approach used to compute and allocate nonpoint source loadings, e.g., meteorological conditions and land use distribution.

EPA Assessment:

Loading Capacity

As discussed on pages 17 through 23 of the TMDL report, the State used a load duration curve to establish the loading capacity for the Rabbit River TMDL.

As discussed on page 17 of the TMDL report and as described in EPA guidance,[7] the load duration curve method accounts for the variable nature of water quality associated with different stream flow rates. This method provides a visual display of the relationship between stream flow and loading capacity. An underlying premise of using this method is the existence of a correlation of water quality impairments to flow conditions, when flow plays a primary role as a pollutant transport mechanism to the impaired water body. As discussed in the TMDL report on pages 5 and 23 and as shown in Figure 30 of the Appendix to the TMDL report, a correlation between sediment loading and flow exists in the Bois de Sioux watershed. Sediment loading was demonstrated to increase with increases in flow. Therefore, EPA finds that the load duration curve is an appropriate method

[7] *An Approach to Using Load Duration Curves in the Development of TMDLs*, EPA 841-07-006, August 2007.

for the State to use for development of the Rabbit River TMDL. This approach provides an opportunity for the State to account for the water quality of the Rabbit River as associated with different stream flow rates and provides a loading capacity that covers the full range of flow conditions associated with the Rabbit River.

As discussed on pages 17-19 of the TMDL report, the State developed a flow duration curve. The flow duration curve describes the percentage of time during which specific flows are equaled or exceeded. The flow duration analysis looked at the cumulative frequency of historic flow data between 1974 and 2007 (see Figure 5 in TMDL report). As discussed earlier in this decision, flow data used to develop this TMDL was derived through SWAT simulations. Figure 5 in the TMDL report is the flow duration curve for the Rabbit River.

The State divided the flow duration curve into five zones to present hydrologic conditions, i.e., wet versus dry. The five zones are: high flows (0-10%); moist conditions (10-40%); mid-range flows (40-60%); dry conditions (60-90%); and low flows (90-100%). As stated on page 17 of the TMDL report, the State can use these flow zones to identify patterns and conditions associated with impairments. The use of the five zones by the State is consistent with EPA guidance.[8]

The flow duration curve developed by the State is the foundation for the load duration curve. The state developed the load duration curve by multiplying the flow duration curve with the numeric TMDL target, 47 mg/l TSS. The resulting load duration curve can be found in Figure 6 of the TMDL report. This resulting load duration curve defines a range for the loading capacity as a function of flow. At a given flow interval the load duration curve provides the corresponding loading capacity that the Rabbit River can carry.

As described in EPA guidance,[9] the loading capacity for the Rabbit River is the curve itself. Using the load duration curve, the total maximum daily load on any given day can be determined by the flow on the particular day of interest. For purposes of identify a discrete numerical value for the loading capacity, the State has identified the mid-point of each flow zone as the loading capacity associated with that flow zone. Tables 5 and 6 in the TMDL report present the loading capacities for each flow zone. Table 1 of this decision also identifies these loading capacities as approved by EPA.

Critical Conditions

Page 23 of the TMDL report states that turbidity levels are worse following storm events during the spring and summer months and that these critical conditions are fully captured by the load duration curve method used to develop the Rabbit River TMDL. EPA finds that the State's consideration of 20+ years of flow data and use of the load duration curve approach does adequately account for critical conditions within the Rabbit River. The State has demonstrated that there is a correlation between sediment loading and flow. Data indicates that exceedances occur during all flow conditions during which data was available, with many exceedances occurring during storm and

[8] *Id.*
[9] *Id.*

higher flow events. Use of the load duration curve approach allows the state to establish a loading capacity for the full range of flow conditions.

4. Wasteload Allocations (WLAs)

EPA regulations require that a TMDL include wasteload allocations, which identify the portion of the loading capacity allocated to individual existing and future point source(s) (40 CFR §130.2(h), 40 CFR §130.2(i)). In preparing the wasteload allocations, it is not necessary that each individual point source be assigned a portion of the allocation of pollutant loading capacity. When the source is a minor discharger of the pollutant of concern or if the source is contained within an aggregated general permit, an aggregated wasteload allocation can be assigned to the group of dischargers.

EPA Assessment:

EPA finds that the wasteload allocations are adequately specified in the TMDL at a level sufficient, when combined with the load allocations, to attain and maintain water quality standards. The State has identified three types of point sources within the Rabbit River watershed that can contribute to the turbidity impairment; City of Campbell WWTF, construction stormwater and industrial stormwater.

A WLA of 0.05 tons/day of TSS was established for the City of Campbell WWTF except during low flow conditions. As discussed further below, during low flow conditions the WLA for the City of Campbell is expressed by the equation Qx45 mg/l TSS, where Q is flow contribution from a given source.

An aggregate WLA of 0.01 tons/day was established for construction and industrial stormwater sources during high flow conditions and a WLA not to equal or exceed 0.01 tons/day during all other flow conditions.

Table 6 in the TMDL report presents the established wasteload allocations and pages 15-17 and 20 of the TMDL report discuss how these wasteload allocations were established. Table 1 in this decision presents the WLAs established by the State of Minnesota and approved by EPA.

As discussed in the TMDL report, the WLA for the City of Campbell WWTF was calculated using the permit limit for TSS, 45 mg/l, and the design flow, 0.0341 million gallons per day (mgd). Although the WLA of 0.05 tons/day was established as a daily load, discharge from the WWTF is still subject to the two discharge windows set forth in its permit. As shown in Figure 6 and Table 6 in the TMDL report, the loading capacity in the low flow zone is 0.01 tons/day. As discussed in the Appendix to the TMDL report on page 20, during periods of low precipitation little to low flow has been documented in the watershed streams. Since flow is considered in establishment of the loading capacity it is reasonable to expect this small loading capacity during such low flow conditions. During such low flow conditions the State believes the Rabbit River to be mostly fed

by groundwater, which the State does not believe to be a contributing source of TSS (see page 22 of TMDL report). Additionally, as noted on pages 15 and 20 in the TMDL report, the City of Campbell is not likely to have discharges during low flow events since the facility's permit authorize two discharge windows, April 1 – June 30 and September 1 – December 15, both of which tend to be time periods associated with higher flow conditions.

The State provided one aggregate WLA for industrial and construction stormwater sources. Although EPA recommends that individual WLAs be established, EPA recognizes that it may be more practical for some types of sources, such as the construction and industrial stormwater sources in the Rabbit River watershed, to establish an aggregate WLA. Construction sites usually are not permanent locations so it would be difficult to issue a specific wasteload allocation to any one construction site. The state permitting authority will need to ensure that these sources are issued permits or implement general permit conditions in a manner that is consistent with the gross WLA approved in this decision (see Table 1 of this decision and Table 6 in TMDL report).

Page 15 of the TMDL report states "*Industrial stormwater activities are considered in compliance with the provisions of the TMDL if an Industrial General Permit or a General Sand and Gravel permit (MNG49) is issued under the NPDES program and all Best Management Practices (BMPs) are properly selected, installed and maintained as required under the permit.*" Page 16 of the TMDL report states "*Construction stormwater activities are considered in compliance with provisions of the TMDL if they obtain a Construction General Permit under the NPDES program and properly select, install and maintain all BMPs required under the permit, or meet local construction stormwater requirements if they are more restrictive than requirements of the State General Permit.*" EPA does not agree with these statements. Industrial and construction stormwater sources are not in compliance with the WLAs established in this TMDL solely by obtaining and meeting the conditions in a general permit. Because the Rabbit River TMDL has established a WLA for these sources, the State and these sources will need to ensure that whatever management practices the sources undertake will meet the WLA of no more than 0.01 tons/day for high flow conditions and <0.01 tons/day for all other flow conditions. BMPs developed pursuant to a stormwater permit are designed to meet a "maximum extent practicable" standard, which does not always impose as stringent management practices that are needed to attain water quality standards. TMDL WLAs are developed to attain water quality standards, therefore, implementation actions must be planned to attain water quality standards, which may be more stringent than a maximum extent practicable standard as set forth in a general permit. Although EPA finds that the WLA for construction and industrial stormwater sources is reasonable and will attain water quality standards when implemented with load allocations and other WLAs established in the TMDL, EPA does not agree with or find the above quoted statements regarding how construction and industrial sources will implement the WLAs adequate.

5. Load Allocations (LAs)

EPA regulations require that a TMDL include LAs, which identify the portion of the loading capacity attributed to existing and future nonpoint sources and to natural background. Load

allocations may range from reasonably accurate estimates to gross allotments (40 CFR §130.2(g)). Where possible, load allocations should be described separately for natural background and nonpoint sources.

EPA Assessment:

The established and approved load allocation for each of the five flow conditions can be found in Table 6 in the TMDL report and in Table 1 in this decision. The state established a gross load allocation for all nonpoint sources instead of individual load allocations for each nonpoint source. EPA finds that the gross load allocation specified in Table 6 in the TMDL report and in Table 1 of this decision is adequate and at a level sufficient, when combined with the wasteload allocations, to attain and maintain water quality standards. 40 CFR §130.2 allows for the establishment of gross load allocations, therefore EPA finds it acceptable that the state did not provide individual load allocations.

Using the load duration curve approach, the State initially calculated the load capacity for the Rabbit River. Once the loading capacity was calculated a 10% explicit margin of safety (MOS) was calculated. Then, WLAs were calculated as described in the prior section of this decision. Both the WLA and MOS were subtracted from the loading capacity and the remaining allocation was established as load allocation for nonpoint sources. The only exception to this approach of establishing load allocations was for low flow conditions. Similar to the WLA for low flow conditions, the load allocation for low flow conditions is the equation Q x 45 mg/l TSS, where Q is the flow contribution from a given source.

The information presented in Figure 30 in the Appendix to the TMDL report shows that sediment loading decreases as flow decreases and that the that the Rabbit River is groundwater fed during low flow conditions. EPA finds it acceptable that the State uses an equation as the load allocation for low flow conditions

6. Margin of Safety (MOS)

The statute and regulations require that a TMDL include a margin of safety to account for any lack of knowledge concerning the relationship between load and wasteload allocations and water quality (CWA §303(d)(1)(C), 40 CFR §130.7(c)(1)). EPA's 1991 TMDL Guidance explains that the margin of safety may be implicit, i.e., incorporated into the TMDL through conservative assumptions in the analysis, or explicit, i.e., expressed in the TMDL as loadings set aside for the margin of safety. If the margin of safety is implicit, the conservative assumptions in the analysis that account for the margin of safety must be described. If the margin of safety is explicit, the loading set aside for the margin of safety must be identified.

EPA Assessment:

The State has established a 10% explicit MOS for all flow conditions except low flow. For low flow conditions the TMDL was established with an implicit MOS. Table 6 in the TMDL report and Table 1 in this decision present the approved MOS for the Rabbit River.

EPA finds that the MOS established in the Rabbit River TMDL is adequate to account for any lack of knowledge concerning the relationship between the allocations and the applicable water quality standard.

The State calculated a loading capacity using the TMDL target and SWAT simulated flows. As previously discussed in this decision and as discussed in the TMDL report on pages 13-14, the State has demonstrated that a good correlation exists between the TMDL target and the turbidity water quality standard thereby indicating minimal uncertainty that when the TSS target is met, water quality standards will also be attained.

Since the state used the load duration curve approach to calculate the loading capacity the resulting capacities and allocations are a direct function of flow. Variations in flow can present uncertainty and since the load duration curve is a direct function of flow, uncertainty can be present in the allocations derived from the load duration curve. The flows used in development of this TMDL were flows predicted by SWAT. As discussed in Section 4.2 of the Appendix to the TMDL report, the calibration statistics for SWAT indicate predicted flows are acceptable when compared to observed flows thus minimizing the uncertainty associated with flow variability. Additionally, use of multiple years of data also helps to minimize variability. The State used simulated flows from 1974 to 2007 which provided a 30-year flow record. Use of 30 years of data is commonly used by the USGS to designate a long-term flow record because 30 years is thought to be representative of trends and of the effects land use, water use and climate change has on flow.[10]

Another factor considered by EPA in its determination that the MOS established by the State is adequate was the fact that the State used a slightly more stringent TSS target, 45 mg/l, than the TMDL target, 47 mg/l, to calculate the WLAs and the equation for allocations during low flow conditions.

7. Seasonal Variation

The statute and regulations require that a TMDL be established with consideration of seasonal variations. The TMDL must describe the method chosen for including seasonal variations. (CWA §303(d)(1)(C), 40 CFR §130.7(c)(1)).

[10] http://water.usgs.gov/nsip/history1.html

EPA Assessment:

EPA finds that the State's use of the load duration curve approach adequately accounts for seasonal variations. As previously discussed in this decision, the State used a 30-year simulated flow record to develop the load duration curve for the Rabbit River. Use of multi-years of flow data accounts for annual and inter-annual climate-related and water quality variability. Seasonal patterns and trends can be observed by use of the long-term flow record and development of flow duration curves.

8. Reasonable Assurances

When a TMDL is developed for waters impaired by point sources only, the issuance of a NPDES permit(s) provides the reasonable assurance that the wasteload allocations contained in the TMDL will be achieved. This is because 40 CFR §122.44(d)(1)(vii)(B) requires that effluent limits in permits be consistent with "the assumptions and requirements of any available wasteload allocation" in an approved TMDL.

When a TMDL is developed for waters impaired by both point and nonpoint sources, and the wasteload allocation is based on an assumption that nonpoint source load reductions will occur, EPA's 1991 TMDL Guidance states that the TMDL should provide reasonable assurances that nonpoint source control measures will achieve expected load reductions in order for the TMDL to be approvable. This information is necessary for EPA to determine that the TMDL, including the load and wasteload allocations, has been established at a level necessary to implement water quality standards.

EPA's August 1997 TMDL Guidance also directs Regions to work with States to achieve TMDL load allocations in waters impaired only by nonpoint sources. However, EPA cannot disapprove a TMDL for nonpoint source-only impaired waters, which do not have a demonstration of reasonable assurance that LAs will be achieved, because such a showing is not required by current regulations.

EPA Assessment:

The State concluded in the TMDL report that a primary contributing source to the turbidity impairment appears to be agricultural land soil erosion and stream bank erosion in part caused by the extensive hydrological modifications that have taken place across the watershed. The State also concluded that the degree of turbidity impairment can most often be correlated to higher flows. Table 5 in the TMDL report shows percent reductions needed to move toward attainment of water quality standards for the five flow conditions considered in the TMDL. Information provided on pages 24-25 of the TMDL report and information from the Appendix to the TMDL report provides the following reasonable assurances that implementation will occur and result in sediment load reductions in the Rabbit River.

- Water management plans already in place include the Red River Basin Water Quality Plan, County Comprehensive Local Water Plans and the Bois de Sioux Watershed District

Watershed Management Plan. These plans include actions to reduce sediment loads within the watershed. The TMDL report notes that the Bois de Sioux Watershed District has been awarded the Red River Basin Commission's 2010 project award for outstanding watershed management projects.

- Local soil and water conservation districts have identified specific BMPs and structural controls that they support and promote, which will reduce sedimentation and erosion in critical areas of the watershed. Controls and BMPs include: crop residue management, grass waterways, shelter belts, filter strips, buffer strips, side inlet control structures, sediment basin, grade control structures, stream bank stabilization practices and channel restoration activities.
- Potential funding sources for implementation actions include the Minnesota Clean Water Legacy Act, EPA grants, Clean Water Partnership grants, Natural Resource Conservation Service programs and Conservation Reserve Enhancement Program. An additional funding source for future TMDL implementation efforts and water quality monitoring activities is the Minnesota Clean Water Land and Legacy Amendment.[11]
- The Flood Damage Reduction (FDR) process sponsors flood control projects that results in reduced flows during high flow periods and consequently will reduce turbidity in rivers in the watershed.
- The North Ottawa Impoundment Project is located within a subwatershed of the Rabbit River. Agricultural lands in the lower part of this subwatershed are severely affected by flooding, with crop loss occurring on about a biannual basis. The primary purpose of the project is to provide flood control. In addition to flood control, the impoundment will provide erosion and sediment control, stream flow maintenance, and will improve water quality, wildlife habitat, and recreational opportunities.[12]

The Clean Water Legacy Act (CWLA) is a statute passed in Minnesota in 2006 for the purposes of protecting, restoring, and preserving Minnesota's waters. The CWLA provides the process to be used in Minnesota to develop TMDL implementation plans, which detail the restoration activities needed to achieve the allocations in the TMDL. The TMDL implementation plans are required by the State to obtain funding from the Clean Water Fund. These plans are generally developed by third party groups, but may be developed by MPCA. The Act discusses how MPCA and the involved public agencies and private entities will coordinate efforts regarding land use, land management, water management, etc. Cooperation is also expected between agencies and other entities regarding planning efforts, and various local authorities and responsibilities. These efforts are expected to include informal and formal agreements and joint utilization of technical, educational, and financial resources. These cooperative efforts and coordination activities are to be

[11] As of July 1, 2009, the Minnesota Clean Water, Land and Legacy Amendment increased the sales and use tax rate on taxable sales until the year 2034. 33% of the additional proceeds from the tax rate increase are dedicated to funding protection, enhancement and restoration efforts of lakes, rivers, streams and groundwater. These dedicated funds supplement traditional sources of funding. <http://www.dnr.state.mn.us/news/features/amendment.html>

[12] http://www.frontiernet.net/~bdswd/news.htm

included in the implementation plans. MPCA expects the implementation plans to be developed within a year of TMDL approval. MPCA reviews and approves all plans.

The CWLA also provides details on public and stakeholder participation in development and implementation of TMDLs and implementation plans , and how the funding will be used. The implementation plans are required to contain ranges of cost estimates for both point and nonpoint source load reductions, as well as for monitoring efforts to determine effectiveness of implementation efforts. MPCA has developed guidance on what is required in the implementation plans (Implementation Plan Review Combined Checklist and Comment, MPCA). To be eligible for CWLA funding, plans must include cost estimates, general timelines for implementation, and interim milestones and measures. The Minnesota Board of Soil and Water Resources administers the Clean Water Fund, and has developed a detailed grants policy explaining what is required to be eligible to receive Clean Water Fund money (FY '11 Clean Water Fund Competitive Grants Policy; Minnesota Board of Soil and Water Resources, 2011).

EPA finds that the Rabbit River turbidity TMDL provides reasonable assurances that the allocations will be achieved.

9. Monitoring Plan to Track TMDL Effectiveness

EPA's 1991 document, Guidance for Water Quality-Based Decisions: The TMDL Process (EPA 440/4-91-001) recommends a monitoring plan to track the effectiveness of a TMDL.

EPA Assessment:

Page 24-26 of the TMDL report identifies ongoing monitoring efforts in the Rabbit River watershed that are expected to continue. The State explains that these existing monitoring efforts along with any project specific monitoring will be used to track progress toward attainment of allocations as best management practices are implemented within the watershed. The State anticipates that a systematic monitoring program, including sample locations, schedules and responsible parties, will be included in the implementation plan to be completed by the Bois de Sioux Watershed District[13] within one year of EPA's approval.

EPA finds that the TMDL report adequately identifies future monitoring planned to track the effectiveness of the TMDL, although EPA is not approving any recommendations for monitoring contained in this TMDL Report or any other aspect of Minnesota's monitoring program through this decision.

[13] Bois de Sioux Watershed District has the lead on development of the implementation plan. According to the *Implementation Strategy* section of the TMDL report, other units of local government will assist Bois de Sioux Watershed District with the development of the implementation plan.

10. Implementation

EPA policy[14] encourages Regions to work in partnership with States/Tribes to achieve nonpoint source load allocations established for 303(d) listed waters impaired by nonpoint sources. Regions may assist States/Tribes in developing implementation plans that include reasonable assurances that nonpoint source load allocations established in TMDLs for waters impaired solely or primarily by nonpoint sources will in fact be achieved. In addition, EPA policy recognizes that other relevant watershed management processes may be used in the TMDL process. EPA is not required to and does not approve TMDL implementation plans.

EPA Assessment:

Although EPA is taking no action on implementation discussions included in the TMDL report, EPA does note that the State recognizes the need for an implementation plan, has made a commitment to develop a plan and include more information about specific sources within the watershed.

Pages 25-26 of the TMDL report states that the Bois de Sioux Watershed District, with the help of other local units of government, will complete an implementation plan within one year of EPA's approval of the Rabbit River TMDL. As presented in the TMDL report, the overall intent of the implementation plan is to identify specific best management practices that will reduce sediment load to the Rabbit River and the associated costs to implement these practices. The focus of the implementation plan will be to "spatially identify the sources of the sediment loading" with the intent on initially addressing the most critical contributions of sediment load to the Rabbit River. As discussed on pages 24-25 of the TMDL report, the State identifies SWAT hypothetical scenarios of land management created during TMDL development as a mechanism to help direct implementation efforts.

EPA considered Table 5 in the TMDL as information that can be used to help direct implementation. Table 5 provides a comparison of the 90 percentile daily load to the loading capacity at the mid-point of each flow zone thereby quantifying the level of reductions needed to make progress toward attainment and water quality standards.

EPA considered the State's response to public comments as a commitment by the State that an implementation plan will be developed. The State's response to comments also indicated to EPA that the State understands that more information is needed regarding specific nonpoint sources in order to successfully target implementation and to attain water quality standards.

[14] Perciasepe, B., EPA, Office of Water, *New Policies for Establishing and Implementing Total Maximum Daily Loads (TMDLs)*, August 8, 1997.

11. Public Participation

EPA policy is that there should be full and meaningful public participation in the TMDL development process. The TMDL regulations require that each State/Tribe must subject calculations to establish TMDLs to public review consistent with its own continuing planning process (40 CFR §130.7(c)(1)(ii)). In guidance, EPA has explained that final TMDLs submitted to EPA for review and approval should describe the State's/Tribe's public participation process, including a summary of significant comments and the State's/Tribe's responses to those comments.

Provision of inadequate public participation may be a basis for disapproving a TMDL. If EPA determines that a State/Tribe has not provided adequate public participation, EPA may defer its approval action until adequate public participation has been provided for, either by the State/Tribe or by EPA.

EPA Assessment:

The State has engaged the general public and specific stakeholders in the development of the TMDL since July 2005. According to the Public Participation section of the TMDL report, the first in a series of meetings with the general public and stakeholders was held on July 27, 2005. This first meeting was open to state and local government units and the general public. As presented in the TMDL Report, three subsequent meetings were held with local stakeholders in October 2006, December 2007 and March 2008. According to MPCA's website[15] a final meeting with stakeholders and the general public was held on April 30, 2009.

In June 2010, MPCA released a Notice of Availability announcing the draft Rabbit River TMDL for review and comment by the public. The public notice period began on June 21, 2010 and ended on July 21, 2010. The State received two comment letters, one from Minnesota Department of Natural Resources (DNR), Division of Ecological Resources and the other from the Minnesota Corn Growers Association. The State provided responses to both comment letters. No changes were made to the TMDL report in response to these public comments.

Both commentors raised concern with the level of detail and identification of specific sources and causes of impairment contained in the TMDL report. Although the State's response was that implementation is not a required element of the TMDL and did not provide any additional details in its responses, the State did explain that additional information will be collected, existing SWAT work updated, and more specificity about sources and causes will be provided in the implementation plan. Although EPA agrees that detailed implementation strategies are not a required element of a TMDL, EPA does expect states to include information sufficient to identify sources contributing to the impairment and recommended implementation actions for addressing the impairments. Although the main part of the TMDL report does not include much detail on sources or recommended implementation actions the Appendix to the TMDL report provided helpful

[15] http://www.pca.state.mn.us/index.php/water/water-types-and-programs/minnesotas-impaired-waters-and-tmdls/tmdl-projects/red-river-basin-tmdl-projects/project-rabbit-river-turbidity.html

information on nonpoint sources contributing sediment to the Rabbit River and results of various implementation scenarios to address these nonpoint sediment sources. EPA relied on the information and assumptions contained in the Appendix to the TMDL to determine that the State did provide adequate information to support the presence of nonpoint sediment sources, their contributions and load allocation. EPA disagrees with one comment made by MPCA in its response to DNR. MPCA stated on page 3 of its response "MPCA is required by EPA to estimate the cost of restoration and protection activities within a watershed necessary to achieve water quality standards." Cost information as described by MPCA in its response and on page 25 of the TMDL report is not a required element of a TMDL. EPA encourages states to include as detailed as possible implementation actions in its TMDLs and this information may include costs, but costs are not required. Additionally, because the cost information contained on page 25 of the TMDL is so general and since specific control measures are not discussed in the TMDL report, EPA did not rely on this information in EPA's approval of the Rabbit River TMDL.

EPA finds that the State of Minnesota's public participation process satisfies the requirement that calculations to establish TMDLs shall be subject to public review in accordance with State procedures, thus satisfying the requirement at 40 CFR §130.7(c)(1)(ii). The State provided an adequate opportunity for the public to be involved not only in the review and comment of the draft TMDL but in the development of the TMDL. The State adequately responded to all the comments received during the public notice and comment period.

12. Submittal Letter

A submittal letter should be included with the TMDL, and should specify whether the TMDL is being submitted for a technical review or final review and approval. Each final TMDL submitted to EPA should be accompanied by a submittal letter that explicitly states that the submittal is a final TMDL submitted under Section 303(d) of the Clean Water Act for EPA review and approval. This clearly establishes the State's/Tribe's intent to submit, and EPA's duty to review, the TMDL under the statute. The submittal letter, whether for technical review or final review and approval, should contain such identifying information as the name and location of the water body, and the pollutant(s) of concern.

EPA Assessment:
MPCA's September 15, 2010 correspondence signed by Paul Eger, Commissioner, addressed to Tinka Hyde, Water Division Director, EPA, Region 5, states that the Rabbit River turbidity TMDL and supporting documentation and information are submitted under Section 303(d) of the Clean Water Act for EPA approval.

Conclusion

After a full and complete review, EPA finds that the Rabbit River turbidity TMDL satisfies all the required elements of an approvable TMDL. This approval is for one (1) TMDL addressing the impaired aquatic life use caused by excessive turbidity in the Rabbit River. The table below identifies the impaired portion of the Rabbit River being addressed by this TMDL along with the approved TMDL and associated load and wasteload allocations.

EPA's approval of this TMDL does not extend to those waters that are within Indian Country, as defined in 18 U.S.C. Section 1151. EPA is taking no action to approve or disapprove TMDLs for those waters at this time. EPA, or eligible Indian Tribe as appropriate, will retain responsibilities under the CWA Section 303(d) for those waters.

Table 1: Approved TMDL for Rabbit River

Water Body Name	**Description**	**Assessment Unit Identification Number**			**Affected Use**	**Pollutant**
Rabbit River	Wilkin County line to Bois de Sioux River	09020101-502			Aquatic Life	Turbidity
		Flow Zones				
		High	Moist	Mid	Dry	Low
		tons/day				
TMDL/loading capacity		31.47	3.98	1.28	0.17	0.01
Wasteload Allocations						
Campbell WWTF		0.05	0.05	0.05	0.05	(Q)x(45 mg/l TSS)
Construction and Industrial Storm Water		0.01	<0.01	<0.01	<0.01	<0.01
Load Allocation		28.26	3.52	1.09	0.093	(Q)x(45 mg/l TSS)
Margin of Safety		3.15	0.4	0.13	0.017	Implicit

Where Q = flow contribution from a given source