

Missouri
Department of
Natural Resources

DRAFT MUDDY CREEK TMDL
PUBLIC COMMENTS

Public Notice
May 5, 2010 – July 8, 2010

Muddy Creek
WBID # 0557

Mercer and Grundy Counties, Mo.

Missouri Department of Natural Resources
Water Protection Program
PO Box 176
Jefferson City, MO 65102-0176
800-361-4827 / 573-751-1300

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July 8, 2010

VIA EMAIL ONLY: john.hoke@dnr.mo.gov

Department of Natural Resources
Water Protection Program
Water Quality Monitoring and Assessment Section
P.O. Box 176
Jefferson City, MO 65102-0176

RE: Draft TMDL for Muddy Creek

Dear Mr. Hoke:

Please accept these comments on the public notice of the draft TMDL for Muddy Creek on behalf of my client the Missouri Agribusiness Association.

Comment No. 1:

EPA listed Muddy Creek as impaired for unknown pollutants. Until such time as the 303(d) list is amended to identify a pollutant, it is premature and unlawful to proceed with the development and implementation of a TMDL. EPA based the listing on very limited macroinvertebrate data. MDNR objected to the 303d listing based on poor quality of data. EPA should collect more data to identify the pollutant(s), if any, causing the impairment before drafting a TMDL.

Comment No. 2:

As described in the Introduction, the stream was not delisted from the 2004/2006 303(d) list because there was a difference in the biology below Trenton. But on page 20 it says Trenton's WWTF is now "not considered to be causing or contributing to the impairment. . . ." Therefore the stream should be delisted and the TMDL deferred until the delisting can be accomplished.

Comment No. 3:

The TMDL describes the creek as being heavily channelized and suffers from poor habitat. Since habitat impairment is not a pollutant, EPA should not be writing and implementing a TMDL for a non-pollutant. To the extent there are any pollutants causing the impairment, EPA must identify which portion of the impairment is caused by a pollutant and which portion of the impairment is caused by poor habitat or non-pollutants. Any resulting

Mr. John Hoke
July 8, 2010
Page 2

wasteload allocation or load allocation in a TMDL should only address the pollutant portion of the impairment.

Comment No. 4:

The TMDL has chose total suspended solids (TSS), total nitrogen (TN) and total phosphorous (TP) as surrogate pollutants to address the alleged impairment. There is no analysis or scientific evidence in the TMDL that ties TSS, TN or TP to any alleged impairment. Furthermore, these three surrogates are not in Missouri's water quality standards. Since the stream has been and is fully maintaining its beneficial uses, obviously these surrogate pollutants are not the cause of an impairment. Therefore, the TMDL should not be written based upon these surrogates.

Comment No. 5:

The 303(d) listing was based on macroinvertebrate sampling which now is fully compliant. There is a discussion why reference conditions for TN and TP are applicable to Muddy Creek since its maintaining beneficial uses. There is no discussion on why a TSS concentration was selected to represent a numeric target for the TMDL. There was no discussion or justification why this numeric target was chosen or how it pertains to the attainment of the beneficial uses in the stream.

Thank you for the opportunity to comment on this TMDL.

Sincerely,

NEWMAN, COMLEY & RUTH, P.C.


Robert J. Brundage
rbrundage@ncrpc.com

RJB:ccl

cc: Mo-Ag

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

Jeremiah W. (Jay) Nixon, Governor • Mark N. Templeton, Director

www.dnr.mo.gov

August 27, 2010

Mr. Robert J. Brundage
Newman, Comley & Ruth
601 Monroe Street, Suite 301
P.O. Box 537
Jefferson City, MO 65102-0537

RE: Response to Comments on the Draft Muddy Creek Total Maximum Daily Load

Dear Mr. Brundage:

The Missouri Department of Natural Resources (Department) appreciates the comments provided on behalf of the Missouri Agribusiness Association on the draft Muddy Creek Total Maximum Daily Load (TMDL). This letter responds to comments received during the public notice period for this TMDL. Please find herein the Department's response to each comment and the location of the revision (if applicable) within the final document as it will be submitted to the U.S. Environmental Protection Agency (EPA).

Comment #1: EPA listed Muddy Creek as impaired for unknown pollutants. Until such time as the 303(d) List is amended to identify a pollutant, it is premature and unlawful to proceed with the development and implementation of a TMDL. EPA based the listing on very limited macroinvertebrate data. MDNR objected to the 303(d) listing based on poor quality of data. EPA should collect more data to identify the pollutant(s), if any, causing the impairment before drafting a TMDL.

As noted in Section 2.5 of the TMDL, in addition to narrative observations of excessive algal growth and possible low dissolved oxygen conditions in Muddy Creek, water quality data indicate that on some occasions nutrient levels, particularly phosphorus, exceed EPA's recommended ecoregion nutrient criteria. In addition, habitat assessments at three out of five sampling sites scored below the minimum acceptable threshold as determined by the Department's Stream Habitat Assessment Project Procedures. It is recognized by EPA in their National Nutrient Strategy¹ and their Nutrient Criteria Technical Guidance Manual for Rivers and Streams², and widely understood in general, that excessive nutrients in a water body can result from the introduction of sediment into that water body, and can lead to potentially harmful algal blooms. Increased sedimentation can also be associated with physical changes or conditions in a water body that could impair the natural biological community. Both conditions may affect the

¹ National Strategy for the Development of Regional Nutrient Criteria (June 1998). EPA 822-R-98-002.

² Nutrient Criteria Technical Guidance Manual: Rivers and Streams (July 2000). EPA 822-B00-002.

narrative water quality criteria and can result in an impairment of the designated use for the protection of warm water aquatic life.

It is within the authority of the Department to set wasteload allocations for pollutants that cause or contribute to the impairment of a water body. According to 40 CFR 122.44(d)(1)(i), "Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality."

EPA regulations state that TMDLs can be expressed in several ways, including in terms of toxicity, which is a characteristic of one or more pollutants, or by some "other appropriate measure" [40 CFR 130.2(i)]. This flexibility in the expression of TMDLs supports reliance on a surrogate where, as in this case, there is a reasonable rationale and the TMDL is designed to ensure attainment with water quality standards. When an impairment cannot be tied to a single pollutant, EPA recommends that surrogate measures may be used when specific numeric criteria targets are not discernable. In these cases, alternate numeric environmental indicators or conditions may be used³.

Based on the best available data, the Department has determined that total nitrogen, total phosphorus and total suspended solids are appropriate pollutants to address impairment of the narrative criteria for which Muddy Creek was placed on the 303(d) List. Because there are no numeric criteria listed for these pollutants in Missouri's Water Quality Standards, numeric targets were developed for this TMDL using reference conditions based on streams in the same ecological region as Muddy Creek. Development of these reference criteria are discussed in Section 5.3 and Appendix C of the TMDL.

***Comment #2:** As described in the Introduction, the stream was not delisted from the 2004/2006 303(d) List because there was a difference in the biology below Trenton. But on page 20 it says Trenton's WWTF is now "not considered to be causing or contributing to the impairment...". Therefore the stream should be delisted and the TMDL deferred until the delisting can be accomplished.*

As noted in Section 1 of the TMDL, the Department has attempted to have Muddy Creek removed from both the 2004/2006 and the 2008 303(d) Lists based on the lack of impairment noted in the 2006-2007 biological assessment report. However, EPA has restored Muddy Creek to the 303(d) List on both occasions. The Department is again proposing that Muddy Creek be delisted and has not included the water body segment on the proposed draft 2010 303(d) List of impaired waters. However, Muddy Creek is associated with the TMDL Consent Decree⁴ and must have a TMDL submitted to and approved by EPA no later than December 31, 2010. Until such time as EPA approves

³ Report of the Federal Advisory Committee on the Total Maximum Daily Load (TMDL) Program. The National Advisory Council for Environmental Policy and Technology (NACEPT) (July 1998). EPA 100-R-98-06.

⁴ Consent Decree refers to the 2001 Consent Decree entered in the case of American Canoe Association, et al. v. Carol M. Browner, et al., No. 98-1 195-CV-W in consolidation with No. 98-4282-CV-W, February 7, 2001.

delisting of Muddy Creek, the Department is obligated to develop a TMDL for this water body. Should EPA approve delisting of this water body either prior to or after TMDL approval, implementation of TMDL load reductions would no longer be necessary.

Comment #3: The TMDL describes the creek as being heavily channelized and suffers from poor habitat. Since habitat impairment is not a pollutant, EPA should not be writing and implementing a TMDL for a non-pollutant. To the extent there are any pollutants causing the impairment, EPA must identify which portion of the impairment is caused by a pollutant and which portion of the impairment is caused by poor habitat or non-pollutants. Any resulting wasteload allocation or load allocation in a TMDL should only address the pollutant portion of the impairment.

EPA regulations state that “TMDLs shall be established for all pollutants preventing or expected to prevent attainment of water quality standards” [40 CFR 130.7(c)(1)(ii)]. As discussed previously in response to Comment #1, the pollutants identified to address the listed impairment in Muddy Creek are total nitrogen, total phosphorus and total suspended solids. Numeric targets are identified for these pollutants based on reference conditions for similar streams in the same geographic region as Muddy Creek. Habitat impairment is not identified as a pollutant in the draft Muddy Creek TMDL. Under definitions established by both EPA and the Department, habitat impairment is considered pollution, not a pollutant, and neither EPA nor the Department are required by regulation to consider pollution in the establishment of a TMDL.

Comment #4: The TMDL has chose total suspended solids (TSS), total nitrogen (TN) and total phosphorus (TP) as surrogate pollutants to address the alleged impairment. There is no analysis or scientific evidence in the TMDL that ties TSS, TN or TP to any alleged impairment. Furthermore, these three surrogates are not in Missouri’s water quality standards. Since the stream has been and is fully maintaining its beneficial uses, obviously these surrogate pollutants are not the cause of an impairment. Therefore, the TMDL should not be written based upon these surrogates.

As noted in the response to Comment #1, in addition to narrative observations of excessive algal growth in Muddy Creek, water quality data indicate that nutrient levels exceed EPA’s recommended ecoregion nutrient criteria. Habitat assessments at three out of five sampling sites were also below the minimum acceptable threshold as determined by the Department’s Stream Habitat Assessment Project Procedures. It is recognized by EPA, and widely understood in general, that excessive nutrients in a water body can be related to the introduction of sediment into that water body, and can lead to potentially harmful algal blooms. It is within the authority of the Department to set wasteload allocations for pollutants that cause or contribute to the impairment of a water body. In addition, the Department may use attainment of reference conditions as a surrogate measure of nutrient and total suspended solids targets.

Comment #5: The 303(d) listing was based on macroinvertebrate sampling which now is fully compliant. There is a discussion why reference conditions for TN and TP are applicable to Muddy Creek since it’s maintaining beneficial uses. There is no discussion on why a TSS concentration was selected to represent a numeric target for the TMDL. There was no discussion or justification why this numeric target was chosen or how it pertains to the attainment of the beneficial uses in the stream.

Mr. Robert J. Brundage
Page Four

As noted in Section 5.2 of the TMDL, the major water quality problems in the region in which Muddy Creek is located result from excessive nutrients and increased rates of sediment deposition. In addition to impacting in-stream habitat, increased sedimentation can be associated with increased levels of nutrients being introduced into a water body. Both conditions can affect the protection of warm water aquatic life designated use. Section 5.3 of the TMDL identifies total suspended solids as an appropriate measure of sediment in rivers and streams that was selected as a target because of the availability of data. This section also notes that the TSS target was derived based on a reference approach by targeting the 25th percentile base load concentration (5.75 mg/L) of total suspended solids measurements collected by the U.S. Geological Survey in the geographic region where Muddy Creek is located. For your reference, Appendix C of the TMDL provides a complete discussion of the development of total suspended solids targets for the Muddy Creek TMDL.

Thank you again for your comments. If you should have questions or would like to discuss this TMDL further, please contact me at (573) 526-1446 or by mail at the Missouri Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, Missouri 65102.

Sincerely,

WATER PROTECTION PROGRAM



John Hoke, Chief
TMDL Unit
Watershed Protection Section

JH/lsm



150 Years of Growth!

**City of Trenton
Trenton Municipal Utilities
1100 Main St
Trenton MO 64683
660-359-2281
fax: 660-359-2284
www.trentonmo.com**

July 8, 2010

Sent via email to: john.hoke@dnr.mo.gov

MO Department of Natural Resources
Water Protection Program
Water Quality Monitoring and Assessment Section
PO Box 176
Jefferson City, MO 65102-0176

Re: Comments related to Draft TMDL for Muddy Creek (Water Body ID #0557)
Grundy and Mercer County, MO

Dear Mr. Sirs:

Trenton Municipal Utilities has reviewed the draft Total Maximum Daily Load (TMDL) study for Muddy Creek in Mercer and Grundy Counties (Water Body ID #0557). After considering the draft TMDL we would like to offer the following comments.

There are a number of statements and observations within the draft TMDL that pertain to the Trenton Municipal Utilities Wastewater Treatment Plant (TMU WWTP). We have not tried to double check the analysis that attempts to quantify the overall impact of the TMU WWTP on Muddy Creek but we would agree that the TMU WWTP definitely contributes a large percentage of non-stormwater discharge to the stream. With this in mind we recognize that the TMU WWTP definitely needs to be considered in any analysis of Muddy Creek, especially for the final 5 miles or so of the stream that are downstream of our discharge points, but we have some concerns about how the potential impact of the TMDL as drafted.

- 1. Stormwater discharge from TMU WWTP (Outfall #002):** We do not believe that the TMDL should state that "... a condition will be placed in the permit requiring the facility to eliminate Outfall #002 ...". While we recognize the fact that the State of Missouri is in the process of revising regulations associated with this type of wastewater treatment facility discharge we are unclear as to the precedence for the new permit would to include such a condition. Even if this condition is include in our next permit we believe that including a statement such as this in the TMDL seems inappropriate since the permitting process may result in a different result. Additionally, there are other options being considered and suggested by entities affected by this rulemaking. From what we understand of the Voluntary Compliance Agreement proposed the Department of Natural Resources it would probably not result in permit conditions such as the one referenced above. Overall it seems that the statement above may be that may be somewhat contradictory to long term potential permit development, so we would suggest that this statement be removed from the TMDL.

2. **Operations of the TMU WWTP:** Another area of concern with the TMDL associated with the elimination of the stormwater outfalls is the following statement: "...redirect the overflow from the lagoon into the mechanical treatment plant." If our next operating permit (or other decisions) lead to the elimination of Outfall #002 there are a number of options that surely will be considered before implementing the decision. While we recognize that this option may be the preferred alternative in some cases we are unsure if this will be our best option if Outfall #002 must be eliminated from operation in the future. Until we undertake a more rigorous review of the entire system we believe that it is very premature to make assumptions about how the problem would be resolved. We are making the assumption that the Department is not trying to utilize the TMDL to establish design and operating criteria or to dictate what improvements TMU is going to be required to undertake in the future so we would suggest that this statement should be eliminated.
3. **Permit limits for the TMU WWTP:** The draft TMDL does indicate that the TMU WWTP does not currently have limits for nitrogen or total phosphorus and since those parameters are not considered to be the cause of the potential impairment no new wasteload allocations will be developed. The draft TMDL further states that the limits for suspended solids will not be revised due to the TMDL analysis. We would assume that these conclusions will be reflected in our next permit.

Please feel free to contact me at 660-359-2281 if you have any questions or need any additional information.

Sincerely,



Chad Davis, P.E.
Utility Director

Cc: Bob Hutchinson, Wastewater Treatment Plant Supervisor
Kenny Ricketts, Water and Wastewater Distribution Supervisor
Rosetta Marsh, Comptroller
Kerry Sampson, City Administrator
Board of Public Works
Steve Yonker, Burns and McDonnell (.pdf via email)
Phil Walsack, MPUA (.pdf via email)



STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

Jeremiah W. (Jay) Nixon, Governor • Mark N. Templeton, Director

www.dnr.mo.gov

August 27, 2010

Mr. Chad Davis, Utilities Director
Trenton Municipal Utilities
1100 Main Street
Trenton, MO 64683

RE: Response to Comments on the Draft Muddy Creek Total Maximum Daily Load
(Water Body ID #0557), Grundy and Mercer County, Missouri

Dear Mr. Davis:

The Missouri Department of Natural Resources (Department) appreciates the comments provided by Trenton Municipal Utilities on the draft Muddy Creek Total Maximum Daily Load (TMDL). This letter responds to comments received during the public notice period for this TMDL. Please find herein the Department's response to each comment and the location of the revision (if applicable) within the final document as it will be submitted to the U.S. Environmental Protection Agency (EPA).

Comment #1: Stormwater discharge from TMU WWTP (Outfall #002) *We do not believe that the TMDL should state that "...a condition will be placed in the permit requiring the facility to eliminate Outfall #002...". While we recognize the fact that the State of Missouri is in the process of revising regulations associated with this type of wastewater treatment facility discharge we are unclear as to the precedence for the new permit would to include such a condition. Even if this condition is included in our next permit we believe that including a statement such as this in the TMDL seems inappropriate since the permitting process may result in a different result. Additionally, there are other options being considered and suggested by entities affected by this rulemaking. From what we understand of the Voluntary Compliance Agreement proposed by the Department of Natural Resources it would probably not result in permit conditions such as the one referenced above. Overall it seems that the statement above may be that may be somewhat contradictory to long term potential permit development, so we would suggest that this statement be removed from the TMDL.*

The language referring to the elimination of Outfall #002 in the last paragraph of page 9 in Section 3.1 of the TMDL has been revised. The new language removes references to the elimination of Outfall #002 and clarifies that, as a result of changes to Department regulation, bypass discharges are no longer authorized. The revised language also states that this regulation change will be reflected in the facility's next permit renewal.

Comment #2: Operations of the TMU WWTP: *Another area of concern with the TMDL associated with the elimination of the stormwater outfalls is the following statement: "...redirect the overflow from the lagoon into the mechanical treatment plant." If our next operating permit (or other decisions) lead to the elimination of Outfall #002 there are a number of options that surely will be considered before implementing the decision. While we recognize that this option*

Mr. Chad Davis
Page Two

may be the preferred alternative in some cases we are unsure if this will be our best option if Outfall #2 must be eliminated from operation in the future. Until we undertake a more rigorous review of the entire system we believe that it is very premature to make assumptions about how the problem would be resolved. We are making the assumption that the Department is not trying to utilize the TMDL to establish design and operating criteria or to dictate what improvements TMU is going to be required to undertake in the future so we would suggest that this statement should be eliminated.

The language referring to the elimination of Outfall #002 in the last paragraph of page 9 in Section 3.1 of the TMDL has been revised. The new language removes references to redirecting the flow from Outfall #002 and clarifies that, as a result of changes to Department regulation, bypass discharges are no longer authorized. The revised language also states that this regulation change will be reflected in the facility's next permit renewal.

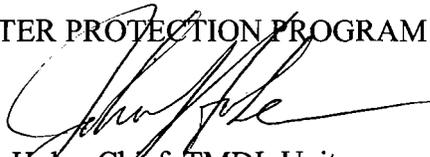
Comment #3: Permit limits for the TMU WWTP: *The draft TMDL does indicate that the TMU WWTP does not currently have limits for nitrogen or total phosphorus and since those parameters are not considered to be the cause of the potential impairment no new wasteload allocations will be developed. The draft TMDL further states that the limits for suspended solids will not be revised due to the TMDL analysis. We would assume that these conclusions will be reflected in our next permit.*

Since the Trenton Municipal Utilities WWTP is thought not to be causing or contributing to the assessed aquatic life impairment in Muddy Creek, wasteload allocations for nutrients and total suspended solids for this facility are not contained within the draft TMDL. Consequently, the TMDL does not indicate the need for new or revised effluent limits for these parameters within the facility's operating permit. However, please be aware that a lack of designated wasteload allocations within the draft TMDL does not preclude the Department from issuing a permit with reductions in nutrients or total suspended solids at any point in the future should water quality require such an action.

Thank you again for your comments on the draft TMDL. If you should have questions or would like to discuss this TMDL further, please contact me at (573) 526-1446 or by mail at the Missouri Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, Missouri 65102.

Sincerely,

WATER PROTECTION PROGRAM



John Hoke, Chief, TMDL Unit
Watershed Protection Section

JH/lsm

cc: Mike Trump, Vice-Chairman, Grundy County SWCD
John Rice, Treasurer, Grundy County SWCD
Tim Baker, Secretary, Grundy County SWCD
Paul Johnson, Board Member, Grundy County SWCD



Grundy County Soil and Water Conservation District

3415 Oklahoma Ave. Trenton, MO 64683 Phone (660) 359-5685 ext. 3 Fax (660) 359-3249

To: Missouri Department of Natural Resources
WPP/Water Quality Monitoring and Assessment Section
P.O. Box 176
Jefferson City, MO 65102-0176

Attn: John Hoke

Subject: Public Comment for the draft TMDL for: Muddy Creek near Trenton, MO in Grundy
County.
Water Body ID: 0557

The Grundy County Soil and Water Conservation District wishes to thank you for the opportunity to respond to the draft. After review of the documentation we as a group have concerns as to the accuracy of the report as it applies to Grundy County and to Muddy Creek.

The criteria used to place the aforementioned section of Muddy Creek on the 2002 303(d) list, in our opinion, appears to be very subjective. After subsequent assessments were performed in 2006 and 2007 neither study revealed any water quality impairment which violated current Missouri Water Quality Standards and that the parameters used in these calendar year studies lacked definition.

With assistance from our office and from cost-share funds, landowners of Grundy County continue to implement best management practices in this watershed area as well as county wide. Mercer County which lies upstream from Grundy has a current AgNPS SALT project directed toward the area of concern. The work of the constituents of this county and the landowners involved strive to maintain and improve our local ecology. The Board of Supervisors also feels that much of what is being called "impairment" in this body of water is being propagated by natural and historic geology and geography.

Without any violation of past or current WQS's we, The Board of Supervisors of the Grundy County Soil and Water Conservation District, request and recommend that this tributary known as Muddy Creek in the 36.5 mile segment described be removed from the 303(d) listing.

Sincerely,

Kendall Foster, Chairman

Mike Trump, vice-Chairman

John Rice, Treasurer

Tim Baker, Secretary

Paul Johnson, Board Member



STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

Jeremiah W. (Jay) Nixon, Governor • Mark N. Templeton, Director

www.dnr.mo.gov

August 27, 2010

Mr. Kendall Foster, Chairman
Grundy County Soil and Water Conservation District
3415 Oklahoma Avenue
Trenton, MO 64683

RE: Response to Comments on the Draft Muddy Creek Total Maximum Daily Load

Dear Mr. Foster:

The Missouri Department of Natural Resources (Department) appreciates the comments provided by the Grundy County Soil and Water Conservation District on the draft Muddy Creek Total Maximum Daily Load (TMDL). This letter responds to comments received during the public notice period for this TMDL. Please find herein the Department's response to each comment and the location of the revision (if applicable) within the final document as it will be submitted to the U.S. Environmental Protection Agency (EPA).

Comment #1: *The criteria used to place the aforementioned section of Muddy Creek on the 2002 303(d) list, in our opinion, appears to be very subjective. After subsequent assessments were performed in 2006 and 2007 neither study revealed any water quality impairment which violated current Missouri Water Quality Standards and that the parameters used in these calendar year studies lacked definition.*

As noted in the draft TMDL, Muddy Creek was originally placed on the 303(d) List as impaired by unknown pollutants based on a visual survey conducted by the Department in 2000. This survey concluded that, compared to other streams in the area, overall biological diversity in Muddy Creek appeared to be reduced. Muddy Creek was determined to not be meeting the general water quality criteria found in Missouri's Water Quality Standards at 10 CSR 20-7.031(3).

The Biological Assessment and Habitat Study conducted in 2006 and 2007 did not reveal an overall water quality impairment and failed to indicate an impairment of the macroinvertebrate community. However, in support of its decision to keep Muddy Creek on the 2004/2006 303(d) List, EPA noted that "there is a significant difference in the biology of the aquatic community downstream of the Trenton WWTP" and that "nutrient data indicate conditions persist that could lead to excess algal growth". Since Muddy Creek remains on the 303(d) List as impaired, the Department must develop a TMDL.

Comment #2: *With assistance from our office and from cost-share funds, landowners of Grundy County continue to implement best management practices in this watershed area as well as county wide. Mercer County which lies upstream from Grundy has a current AgNPS SALT project directed toward the area of concern. The work of the constituents of this county and the landowners involved strive to maintain and improve our local ecology. The Board of Supervisors also feels that much of what is being called "impairment" in this body of water is being propagated by natural and historic geology and geography.*



Recycled Paper

Mr. Kendall Foster
Page Two

The AgNPS SALT project in Mercer County is addressed in Section 12.2 of the TMDL. The Department commends the Soil and Water Conservation Districts of both Mercer and Grundy counties, along with local citizens and land owners, for their efforts in implementing best management practices on the land and improving water quality in Muddy Creek.

When considering whether or not conditions in Muddy Creek represent natural background conditions, it is important to note that data showing nutrient levels exceeding EPA's recommended criteria, and habitat assessments below the minimum acceptable threshold, are based on reference conditions for streams in the same ecological region as Muddy Creek. These ecological reference conditions establish baseline "natural" conditions with which to compare Muddy Creek. The data seem to indicate that, at least on some occasions, conditions in Muddy Creek represent excursions from natural reference conditions.

Comment #3: Without any violation of past or current WQS's we, The Board of Supervisors of the Grundy County Soil and Water Conservation District, request and recommend that this tributary known as Muddy Creek in the 36.5 mile segment described be removed from the 303(d) listing.

As noted in Section 1 of the TMDL, the Department has attempted to have Muddy Creek removed from both the 2004/2006 and the 2008 303(d) Lists based on the lack of impairment noted in the 2006-2007 biological assessment report. However, EPA has restored Muddy Creek to the 303(d) List on both occasions. The Department is again proposing that Muddy Creek be delisted, and it is currently not included on the proposed draft 2010 303(d) List. However, Muddy Creek is a TMDL Consent Decree¹ water that must have a TMDL submitted to and approved by EPA no later than December 31, 2010. Until such time as EPA approves delisting of Muddy Creek, the Department is obligated to develop a TMDL for this water body. Should EPA approve delisting of this water body either prior to or after TMDL approval, implementation of TMDL load reductions would no longer be necessary.

Thank you again for your comments. If you should have questions or would like to discuss this TMDL further, please contact me at (573) 526-1446 or by mail at the Missouri Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, Missouri 65102.

Sincerely,

WATER PROTECTION PROGRAM



John Hoke, Chief
TMDL Unit
Watershed Protection Section

JH/lsm

¹ Consent Decree refers to the 2001 Consent Decree entered in the case of American Canoe Association, et al. v. Carol M. Browner, et al., No. 98-1 195-CV-W in consolidation with No. 98-4282-CV-W, February 7, 2001.

Whipps, Bill

From: Hoke, John
Sent: Thursday, September 16, 2010 3:29 PM
To: Whipps, Bill
Subject: FW: Muddy Creek comments

FYI and response. If you have questions, let me know. Thanks

John Hoke
Env. Specialist IV, TMDL Unit Chief
Water Quality Monitoring & Assessment
Missouri Department of Natural Resources
Phone: (573) 526-1446 Fax: (573) 522-9920

-----Original Message-----

From: Adkins.Tabatha@epamail.epa.gov [mailto:Adkins.Tabatha@epamail.epa.gov]
Sent: Thursday, September 16, 2010 3:16 PM
To: Hoke, John
Subject: Muddy Creek comments

John,

Muddy Creek comments are below. Thanks.

TJ

Model Comments:

1. Page 20. Must provide additional supporting evidence to the statement that "... facilities are not considered to be causing or contributing to an impairment".
2. Page 21-23. Difference between these tables and tables 6, 8 and 10 implicitly implies an allocation on Iowa portion of the watershed. The TMDL should assume that WQS is met at the state line. An explicit statement needs to be included (as a footnote to the tables?) that the TMDL assumes WQS are met at the state line and the TMDL is only allocating loads (LA or WLA) to the Missouri portion of the watershed.
3. Page 57-58. What is described here is based on the old version of the TSS spreadsheet. Please describe the TSS procedure based on the new spreadsheet (v4.4, approach similar to the TN and TP).

General TMDL comments:

4. Designated Beneficial Use: Secondary contact Recreation - not listed in Table H. Please clarify (Page ii).
5. Table H and the 2008 303(d) List has Mouth to S22, T66N, R23W. The TMDL has S16, T60N, R24W to S22, T66N, R23W. Please clarify (Page ii).
6. Add MOS for TN and TP to section 9, page 24.
7. Add number of comments and how considered in section 14, page 27.
8. Appendix B, page 36, lists NFR data and TMDL allocations are in TSS. Citing NFR data without any explanation is confusing please clarify.
9. Add to appendix the info sheet on "Development of Nutrient Targets Using Ecoregion Nutrient Criteria with LDCs". Explanation in TMDL and reference on this development for nutrient targets needs to be clearer.
Page 18 references appendix B which is data tables.

10. Page 20, section 7, Last large paragraph of that section... paragraph repeatedly states that Trenton and Mercer "...are not causing or contributing to the impairment...." but page 9, 1st paragraph under the table indicates "...2007 bio assessment notes relatively high levels of nutrients downstream..." An case could be made that Trenton is contributing to an overall nutrient impairment (just maybe not the original one from 2002). Please clarify meaning/language on page 20.
11. Add statement to the LA section 8, page 20 - indicating that the TMDL does not include LAs for nonpoint sources in Iowa WQS are assumed to be meeting at the state line, etc.
12. Tables 6-11, please check values and ensure calculations are correct. Ex: Table 6 cfs(9.1)* TN value (0.855)*conversion (5.395)=41.97 (table says 42.11)
13. Need to add an appendix including the USGS gaging sites.
14. Appendix A, Table A. 2, units for ammonia KJN, NH3N and TP should be ug/L not mg/L (EPA collected data).

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Responses to EPA comments on Muddy Creek TMDL

Model Comments:

1. *Page 20. Must provide additional supporting evidence to the statement that "... facilities are not considered to be causing or contributing to an impairment".*

Additional language has been added to Section 7, page 20 to support the statement that the Mercer and Trenton WWTPs are not causing or contributing to the assessed impairment.

2. *Page 21-23. Difference between these tables and tables 6, 8 and 10 implicitly implies an allocation on Iowa portion of the watershed. The TMDL should assume that WQS is met at the state line. An explicit statement needs to be included (as a footnote to the tables?) that the TMDL assumes WQS are met at the state line and the TMDL is only allocating loads (LA or WLA) to the Missouri portion of the watershed.*

The allocation tables currently contain WLAs that are the same for the entire watershed (including the portion in Iowa) as they are for the Missouri portion of the watershed. These tables reflect the assumption that point source loads from Iowa do not cause or contribute to the impairment and that all applicable water quality standards are met at the state line.

Although the TMDL currently contains language in Section 7, paragraph 3 that explains this approach, additional language has been added. Similar language has also been added to the second paragraph of Section 8 addressing nonpoint source load allocations.

3. *Page 57-58. What is described here is based on the old version of the TSS spreadsheet. Please describe the TSS procedure based on the new spreadsheet (v4.4, approach similar to the TN and TP).*

Appendix B of the TMDL has been revised to describe the most recent procedures for developing TSS, TN, and TP load duration curves.

General TMDL comments:

4. *Designated Beneficial Use: Secondary contact Recreation – not listed in Table H. Please clarify (Page ii).*

Secondary Contact Recreation is identified as a use designation for Muddy Creek in Table H of Missouri's revised Water Quality Standards that went into effect October 2009. A footnote has been added to page *ii* of the TMDL to explain this fact and to clarify that these changes to the standards have not yet been approved by EPA.

5. *Table H and the 2008 303(d) List has Mouth to S22, T66N, R23W. The TMDL has S16, T60N, R24W to S22, T66N, R23W. Please clarify (Page ii).*

Clarification on the location of the impaired segment has been added.

6. *Add MOS for TN and TP to section 9, page 24.*

Language in Section 9 has been amended to address the implicit margin of safety for TN and TP.

7. *Add number of comments and how considered in section 14, page 27.*

Section 14 has been amended as requested.

8. *Appendix B, page 36, lists NFR data and TMDL allocations are in TSS. Citing NFR data without any explanation is confusing please clarify.*

NFR has been changed to TSS and a footnote has been added to Table B.3 in Appendix B to address this change.

9. *Add to appendix the info sheet on "Development of Nutrient Targets Using Ecoregion Nutrient Criteria with LDCs". Explanation in TMDL and reference on this development for nutrient targets needs to be clearer.*

Appendix B has been amended to address development of nutrient targets and references to this appendix have been added to Section 5.3 of the TMDL.

Page 18 references appendix B which is data tables.

This reference was correct. The text on page 18 discusses TN and TP data collected by USGS, and the reference refers the reader to Appendix B, which contains the TN and TP data. For further clarification, the reference in the text has been changed to read "Table B.3 in Appendix B".

10. *Page 20, section 7, Last large paragraph of that section...paragraph repeatedly states that Trenton and Mercer "...are not causing or contributing to the impairment...." but page 9, 1st paragraph under the table indicates "...2007 bio assessment notes relatively high levels of nutrients downstream...." An case could be made that Trenton is contributing to an overall nutrient impairment (just maybe not the original one from 2002). Please clarify meaning/language on page 20.*

The language in Section 7 referring to the impairment has been amended and clarified.

While the Department acknowledges that some TN and TP measurements recorded downstream of the Trenton WWTP exceed EPA's recommended ecoregion nutrient criteria (as noted on pages 7 and 9 of the TMDL), this fact does not in and of itself constitute a water quality impairment. Furthermore, since Missouri is still in the process of developing state nutrient criteria for streams, the Department cannot at this time identify a stream as impaired based solely on nutrient measurements and, in fact, Muddy Creek has never been identified on any Missouri 303(d) List as impaired by nutrients. It should also be noted that, as stated on page 7 of the TMDL, the biological assessment of Muddy Creek failed to identify an impairment to the macroinvertebrate community downstream of the WWTP.

11. *Add statement to the LA section 8, page 20 - indicating that the TMDL does not include LAs for nonpoint sources in Iowa WQS are assumed to be meeting at the state line, etc.*

Language to reflect this approach has been added to Section 8.

12. *Tables 6-11, please check values and ensure calculations are correct. Ex: Table 6 cfs(9.1)* TN value (0.855)*conversion (5.395)=41.97 (table says 42.11)*

Differences in load capacity calculations may occur due to rounding of flow values to one decimal place in the tables. To be consistent with other figures in Tables 6 – 11, flow has been revised to include two decimal places.

It should be noted that load capacities (TMDLs) were modeled such that allowable pollutant loads were calculated for all flow conditions by either multiplying flow by the EPA-recommended ecoregion reference concentration (and the conversion factor), or by inserting flow into the regression equation established using measured nutrient concentration data from regional streams. Which ever resulting pollutant load was higher was the load used to develop the TMDL curve. For this reason, TMDL load capacity values at higher flows tend to reflect higher pollutant concentrations than the ecoregion reference concentration, which tends to dominate TMDL loads at lower flows.

It should also be noted that the TMDL values for Tables 7, 9 and 11 reflect LAs for only the Missouri portion of the watershed that are proportionally reduced from the LAs in Tables 6, 8 and 10. Since WLAs are not proportionally reduced, the TMDL values in Tables 7, 9 and 11 do not directly reflect the product of stream flow, pollutant concentration and the conversion factor (although they do reflect the sum of WLA + LA). Language in the second paragraph of Section 8 has been revised for clarification.

13. *Need to add an appendix including the USGS gaging sites.*

A table identifying USGS gaging stations has been added to Appendix B (Table B.2).

14. *Appendix A, Table A. 2, units for ammonia KJN, NH₃N and TP should be µg/L not mg/L (EPA collected data).*

The units in Appendix A, Table A.2 for the parameters listed above have been corrected.