



## United States Department of the Interior

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August 1, 2011

John Hoke  
Missouri Department of Natural Resources  
Water Protection Program  
P.O. Box 176  
Jefferson City, Missouri 65102-0176

Dear Mr. Hoke:

The U.S. Fish and Wildlife Service (Service) has reviewed the Regulatory Impact Report (RIR) for the proposed Amendments to 10 CSR 20-7.031, Missouri Water Quality Standards. The following comments are provided under the authority of the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.), and the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1544).

The Service has an interest and authority in the Federal Trust species (i.e., threatened and endangered species, migratory birds, and interjurisdictional fish species) that inhabit and use the waters of the state of Missouri. As the principal federal agency responsible for administering the Endangered Species Act (ESA), we are dependent on partnerships with key resource agencies like the Missouri Department of Natural Resources (MDNR) to implement priority actions to conserve imperiled species.

The Service commends the MDNR, for the proposal to create an "Exceptional Aquatic Community" (EAC) use that identifies stream segments with a high diversity of aquatic life. The Service recommends developing numeric standards for this new designated use. Federally listed threatened and endangered species are known to occupy several streams envisioned for the EAC. We believe the incorporation of numerical standards into the EAC use is essential to conserve federally listed aquatic species and to comply with the provisions of the ESA. The Service will be providing to MDNR specific information on

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the existing use of streams by threatened and endangered species in association with the EAC use designation. In addition to collaborating with MDNR on the specific information above, the Service is interested in working with MDNR to develop numeric standards for streams that provide habitat for listed species.

The Service has concerns associated with the proposal to create a “Modified Aquatic Community” (MAC) use. The proposed rule change (2)(E) states that a designated use that is not an existing use may be removed, as long as a use attainability analysis (UAA) can demonstrate the lack of this use. In that same section, (2)(I), it is stated that the UAA protocol for Aquatic Life Protection has yet to be developed. Without this UAA protocol in place, it is impossible for the Service to determine if it is adequate to assess the presence of aquatic species. This rule change also alludes to the conditions in 40 CFR131.10(g) that must be met in order for a designated use to be removed. These conditions, such as “hydrologic modification”, are broadly written and open to interpretation. Without specificity on how the MAC will be used, the Service cannot be sure that injury to Trust species and their habitat will not occur.

The proposal in the RIR to use the 1:100,000 scale, NHD would apply default use designations (such as whole body contact) to an additional 84,845 miles of stream. The Service is concerned that wastewater treatment plants may discharge disinfection by-products such as chlorine that has the potential to adversely affect listed aquatic species residing in the receiving waterbody, or waterbodies downstream. Due to the potential detrimental impacts of elevated chlorine levels to many aquatic organisms, the Service recommends that MDNR thoroughly evaluate the environmental consequences of permitting the discharge of these chemicals in the context of the water quality standards.

The Service appreciates the commitment by MDNR to improve water quality conditions for federally listed threatened and endangered species through proposed amendments like the Exceptional Aquatic Community use designation. We would like to meet with MDNR to provide information on federally listed aquatic species, develop numerical standards for the EAC use, and to discuss our other comments on the RIR. We are interested in working collaboratively with MDNR to advance important components to the standards pertaining to endangered species. In doing so, we believe these key issues can be resolved prior to your submission of the standards to the Environmental Protection Agency (EPA). The review and approval of water quality standards by EPA constitutes a federal action subject to the consultation (section 7) provisions of ESA, the consultation regulations at 50 CFR, Part 402, and a Memorandum of Agreement between the Service and EPA.

We appreciate the opportunity to submit our comments on the RIR. Please contact Scott Hamilton at (573) 234-2132, ext. 122, if you have any questions concerning our comments and to schedule the meeting discussed above.

Sincerely,

A handwritten signature in black ink, appearing to read "Charles M. Scott". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Charles M. Scott  
Field Supervisor

cc: Karen Bataille, MDC Resource Science

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August 11, 2011

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WATER PROTECTION PROGRAM

John Hoke  
Missouri Department of Natural Resources  
Water Protection Program  
P.O. Box 176  
Jefferson City, MO 65102-0176

Dear Mr. Hoke:

Thank you for the opportunity to review and comment on the proposed water quality standard revisions. Having started this process during our tenure at the department, we appreciate the enormity of this undertaking and commend you and the Water Protection Program staff involved. We certainly agree expansion of the "fishable/swimmable" designation for many of the currently unclassified waters is probably necessary to meet the requirements of the federal clean water law. Hopefully this will allow many communities or business entities to better plan for or even avoid some of the massive environmental costs they have encountered in recent years.

After reviewing the documents we did have a few comments and observations for your consideration.

1. The proposed standards allow for the use of aquatic life use attainability analyses (UAA's) to move waterbodies into and out of the aquatic community designations. It would appear that this uncertainty will be a never ending "do loop" changing the designations. How does this provide any certainty in planning for the regulated community and the public? Also, who would be responsible for conducting and funding the UAA's (e.g., the department, regulated communities, special interests, etc.)?
2. One of the issues regarding dissolved oxygen (DO) levels a few years ago was that some streams, especially in north Missouri, even under natural conditions could not meet the current dissolved oxygen levels. At that time, program staff were considering adopting regional DO levels. Will the proposed DO levels address this issue or would this issue be addressed as a "modified aquatic community" designation (Section (1)(G)1.D of the proposed standards)?

John Hoke  
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3. The Regulatory Impact Report (RIR) discusses nonpoint source contributions (Section 3.j.) in several sections of the document as it relates to agriculture and urban areas, however the discussion does not include any impact of failing on-site systems on water quality, especially in Missouri's lakes. Has the program looked at this impact on water quality?
  
4. Section 3.j. of the RIR also references the Agriculture Nonpoint Source Special Area Land Treatment (SALT) program to target selected watersheds. However, we were of the understanding that the SALT program was terminated a couple of years ago and the SALT practices are now included for all the soil and water conservation districts.
  
5. Funding Issues - Section 5.a. of the RIR states that the department currently spends approximately \$3.3 million on water quality monitoring. With the proposed increase of 84,845 miles of designated waters, the monitoring effort costs are projected to increase to \$11.2 million. We recognize that while this issue is not directly related to the revisions of the water quality standards, the funding necessary to meet such a huge increase in monitoring costs could keep Missouri open to third party lawsuits. This is significant considering the program's current funding constraints and the past struggles just to fund the existing monitoring program. Without the associated increase in monitoring DNR efforts to determine any improved water quality from the increased stream mileage of "fishable/swimmable" designation will be severely limited.

This concludes our comments. Thank you and all the program staff involved for your dedication to improving the water quality of Missouri's rivers and lakes.

Sincerely,



Doyle Childers



Earl Pabst

Dan Schuette

Mr. John Hoke  
Missouri Department of Natural Resources  
Water Protection Program  
P.O. Box 176  
Jefferson City, MO 65102-0176

Re: Missouri Coalition for the Environment Comments on the Regulatory Impact Report for Proposed Draft Amendments to 10 CSR 20-7.031 Water Quality Standards

Dear Mr. Hoke:

The Missouri Coalition for the Environment (MCE) is submitting this letter to comment on the Regulatory Impact Report for Proposed Draft Amendments to 10 CSR 20-7.031 Water Quality Standards. MCE is an environmental advocacy organization with offices in St. Louis County. MCE's members have advocated for the protection of rivers, wetlands, and floodplains throughout the State of Missouri. MCE's members frequently pursue various activities which involve Missouri's waters. Thus, MCE has an interest in this RIR and the proposed draft rulemaking.

MCE is particularly concerned with the Missouri Department of Natural Resources' (the Department) proposed draft rulemaking which purports to extend Clean Water Act (CWA) Section 101(a) use designations to currently unclassified waters. Enacted in 1972, the CWA established as a national goal that, wherever attainable, water quality in the United States must provide for "protection and propagation of fish, shellfish, and wild life and ... recreation in or on the water." 33 U.S.C. § 1251(a)(2). This is usually known as the CWA's "fishable/swimmable" standard. To make sure that waters reach this "fishable/swimmable" goal, the CWA requires the states to enact water quality standards for all navigable waters which "protect the public health and welfare, enhance the quality of the water, and serve the purposes of this act." 33 U.S.C. § 1313(c)(2)(A). Missouri is required to review and revise, if necessary, its water quality standards at least once every three years in a "triennial review." 33 U.S.C. § 1313(c)(1).

Since 1972, nearly 40 years, Missouri has failed to comply with this most basic protection provided by the CWA. Unfortunately, the proposed draft rulemaking continues Missouri's legacy of failure to comply with the CWA. In addition to the fact that the proposed draft rule is inadequate to comply with the CWA, the RIR has many errors, inaccuracies, and omissions. MCE urges the Missouri Clean Water Commission to reject both the RIR and the proposed draft rule and require MDNR to propose a rule and accompanying RIR that complies with the CWA.

MCE offers the following comments on the RIR and associated proposed draft rule.

**Section 1 of the RIR inaccurately describes the fishable/swimmable designations of proposed draft rulemaking as complying with the CWA and addressing MCE's lawsuit against the United States Environmental Protection Agency (USEPA).**

On August 4, 2010, MCE filed a lawsuit against USEPA for failing to implement and enforce the CWA in Missouri. MCE's lawsuit asks the court to require USEPA to assign default fishable/swimmable uses to all waters of the United States within the borders of Missouri.<sup>1</sup> In Section 1.a) of the RIR, MDNR states that "This action also addresses a Missouri Coalition for the Environment lawsuit against EPA to

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<sup>1</sup> Missouri Coalition for the Environment Foundation v. Lisa P. Jackson, Administrator of the United States Environmental Protection Agency and the United States Environmental Protection Agency; Case No. 10-cv-04169-NKL (W.D. Mo.)

establish “fishable/swimmable” use designations in the state.”<sup>2</sup> While MCE appreciates that the proposed draft rule would extend fishable/swimmable use designations to a larger number of waters within Missouri, it fails to apply the designation to all waters of the United States. MDNR admits this much later in the RIR.<sup>3</sup> The USEPA and the U.S. Army Corps of Engineers recently released “Draft Guidance on Identifying Water Protected by the Clean Water Act.”<sup>4</sup> With this clear, new guidance there is no confusion as to what waters must be protected by default fishable/swimmable designated uses. These waters extend far beyond those proposed for designated uses by MDNR. Thus, the MDNR’s statement that their proposed draft rule will address the MCE’s lawsuit is patently false and misleading. MCE requests that MDNR remove this statement from the RIR.

**MDNR’s proposal to assign fishable/swimmable designations to all perennial rivers and streams and intermittent streams with permanent pools and all waters spatially represented by the 1:100,000 scale National Hydrology Dataset (NHD) does not meet the requirements of section 101(a) of the CWA.**

Of significant concern is MDNR’s assertion in the RIR that the proposed draft rule “the department is proposing to apply “fishable/swimmable” use designations to currently unclassified waters as required by Section 101(a) of the federal Clean Water Act (CWA)”<sup>5</sup> In fact, the proposed draft rule does not come close to designating fishable/swimmable uses for all unclassified waters and certainly does not comply with section 101(a) of the CWA.

In its January 15, 2009 presentation on the NHD to the state’s Water Classification Workgroup (<http://www.dnr.mo.gov/env/wpp/docs/011509-hoke-nhd100k.pdf>), MDNR noted that currently 24,566 stream miles are classified. MDNR states in the RIR that the proposed draft rule using the 1:100,000 NHD would apply fishable/swimmable designations to an additional 84,845 miles of stream, bringing the stream miles protected to 109,870 miles.<sup>6</sup> At the February 19, 2009 workgroup meeting, MCE presented evidence from field surveys that there are many more miles of stream that support aquatic life that are not shown on even the higher-resolution 1:24,000 NHD map, which documents 183,600 stream miles in Missouri (<http://www.dnr.mo.gov/env/wpp/docs/021909-sherburne-small-streams.pdf>). Therefore, at a minimum, the proposed draft rule leaves unprotected 73,730 miles of unclassified streams, with many thousands of miles more of ephemeral and intermittent streams that support aquatic life and recreational uses but that do not appear on the 1:24,000 NHD map also denied required protections by being arbitrarily excluded from this rulemaking. Per the recent guidance from the United States Army Corps of Engineers and the USEPA, the wetlands and impoundments along these flows, should also be protected because they have a significant nexus to navigable waters and are in no way isolated water bodies.<sup>7</sup> Classifying all waters of the United States or all waters of the state would ensure protection of tens, perhaps hundreds, of thousands of additional stream miles that are entitled to fishable/swimmable protections.

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<sup>2</sup> RIR at 2.

<sup>3</sup> RIR at 28. The RIR states that “If, due to inaction, EPA takes action to promulgate “fishable/swimmable” use designations in Missouri, it is probable that the spatial extent of waters covered by the rule would be greater than what is contained in the proposed rule.”

<sup>4</sup> “Draft Guidance on Identifying Waters Protected by the Clean Water Act” available at [http://www.usace.army.mil/CECW/Documents/cecwo/reg/nwp/cwa\\_wous\\_guide.pdf](http://www.usace.army.mil/CECW/Documents/cecwo/reg/nwp/cwa_wous_guide.pdf)

<sup>5</sup> RIR at 2.

<sup>6</sup> RIR at 9.

<sup>7</sup> “Draft Guidance on Identifying Waters Protected by the Clean Water Act” available at [http://www.usace.army.mil/CECW/Documents/cecwo/reg/nwp/cwa\\_wous\\_guide.pdf](http://www.usace.army.mil/CECW/Documents/cecwo/reg/nwp/cwa_wous_guide.pdf). See summary of key points, p 5.

In addition, it is not clear if the proposed draft rule will apply fishable/swimmable designated uses and water quality criteria to the lakes on the 1:100,000 NHD map. Subsection (2)(A) of the RIR clearly refers to certain streams and flowing waters but there is no equivalent language referencing lakes. MCE has reviewed the 1:100,000 NHD dataset from MDNR, and lakes appeared to be absent from the dataset. It would be a huge loophole for the rule to omit lakes. Missouri has only a few natural lakes, which are primarily oxbow lakes located along major rivers such as the Missouri and Mississippi Rivers. However, Missouri does have a significant number of man-made impoundments that are used for drinking water and recreation and that contain aquatic life. These impoundments are typically formed by the damming of flowing waters and range in size from a few acres to thousands of acres. This lack of compliance with the Federal standards is not out of character for DNR. What is troubling are the implications that follow from avoiding giving equal protections to lakes as to streams. Lakes can collect high concentrations of discharge effluent and become highly toxic and dangerous for recreational uses, especially when they are not protected by numeric whole body contact water quality criteria. Certainly lakes in fact constitute permanent pools along perennial, intermittent, and seasonal flows that must be included in the rule in order to achieve compliance with the Clean Water Act Section 101(a), but they are more than that. They are places where our families boat, swim, and fish, and their quality is essential to public health and to our recreational economy. MCE requests that MDNR clarify that it intends to apply fishable/swimmable designated uses to lakes on the 1:100,000 NHD map. Without protection of all lakes in Missouri, the proposed draft rule falls significantly short of the protections required by section 101(a) of the Federal CWA.

Although MDNR did find time to delete all of the lakes from the 1:100,000 dataset (7,298 lakes, 533,974 total acres), they did not have time to fix the flows on the map they selected (without workgroup support or endorsement), a map that is glaringly and significantly imbalanced. A glance at the map shows inconsistent coverage across the state, with waters appearing sparser and farther apart in the northwestern and southwestern corners of Missouri. This lack of coverage is not because there are fewer waters in these areas or less density of waters but because these maps were drawn at a very low resolution by mapmakers using archaic methods and inconsistent techniques. Please refer to the attached 1:24,000 and 1:100,000 scale maps which show quite clearly that the 1:24,000 NHD maps portray a much more consistent picture of the stream networks across the state. Designating water quality strictly on the basis of this incomplete map will leave many waters vulnerable to upstream pollution. It will result in arbitrary protections which may be convenient but make no scientific sense on the land in terms of maintaining the physical, chemical, and hydrological integrity of Missouri's waters.

Why DNR has selected this particularly out-of-date and inadequate delineation is difficult to understand, especially in light of the excellent work done by MoRAP to analyze and compile a highly inclusive 1:24,000 resolution streamflow dataset. Although many dischargers prefer the 1:100,000 NHD, MDNR is aware that this map provides significantly less protection than the best available data. In the RIR, MDNR claims that their modified 100k NHD dataset is appropriate for assigning fishable/swimmable designated uses in Missouri, directly contradicting their own conclusions and data from the workgroup process. No matter what, designating water quality standards strictly on the basis of a map will never satisfy the rebuttable presumption, and as the unclassified water workgroup, including MDNR and USEPA, determined, it is most appropriate and simple to create a rule based on default fishable/swimmable protections for all waters in Missouri. Any map abstraction will result in arbitrary water quality standards, lines in space which may be convenient for bureaucrats in Jefferson City, but which make no scientific sense when assessed in terms of maintaining the physical, chemical, and hydrological integrity of Missouri's waters.

In an apparent misinterpretation of the Clean Water Act, MDNR has excluded any protections for wetlands from this rulemaking, while still maintaining that the proposed rule somehow achieves the requirements of Section 101(a). In a review of section 404 permits on public notice from the St. Louis District of the USACE, we found there to be repeated instances where both wetlands and headwater streams were identified as jurisdictional waters, despite the fact that they did not appear on the 1:100,000 or 1:24,000 datasets. There should be consistent implementation of the rebuttable presumption across our national, regional, and state agencies and permitting programs, with all waters of the United States that are subject to 404/401 permitting also being waters of the United States subject to NPDES permitting.

Every healthy Midwestern watershed is home to a thriving riparian network with myriad wetlands. These wetlands and floodplains are the first line of defense against flooding and nutrient loading. According to a 2008 report by the Environmental Law Institute<sup>8</sup>

*Originally, the State of Missouri was comprised of 4.84 million acres of wetlands, or about 11 percent of the state's land area. Studies conducted in the 1990s estimated the state's wetland acreage at approximately 643,000 acres, less than two percent of the state's land area. Various state activities are underway in order to protect and regulate the state's remaining wetland acreage.*

In Missouri, we have lost 87% of our wetlands, to the obvious detriment of our flood storage capacity and the water quality in our springs, rivers, lakes and streams. This degraded hydrologic system affects not only our state, but the entire Mississippi River Basin. Wetland destruction, and the consequent loss of nutrient filtration provided by wetlands, are core contributing factors to the perseverance of the Gulf of Mexico Dead Zone according to a report by the National Academies of Science<sup>9</sup>:

*With respect to navigable, interstate rivers such as the Mississippi, however, Congress's constitutional authority to regulate to protect water quality is uncontested. Moreover, the connection of upstream waters to the Mississippi River has been used to justify CWA jurisdiction over many tributaries and, more controversially, upstream wetlands. Indeed, in the 2006 Rapanos Supreme Court decision, concurring Justice Kennedy argued for precisely this approach, noting in particular the importance of wetlands to Mississippi River and Gulf of Mexico water quality issues. "Important public interests are served by the Clean Water Act in general and by the protection of wetlands in particular. To give just one example, "... nutrient-rich runoff from the Mississippi River has created a hypoxic, or oxygen-depleted, 'dead zone' in the Gulf of Mexico that at times approaches the size of Massachusetts and New Jersey.... Scientific evidence indicates that wetlands play a critical role in controlling and filtering runoff" (126 S. Ct. at 2246-47 [citations omitted]).*

According to the EPA<sup>10</sup>, wetlands provide between 1 and 1.5 million gallons of floodwater storage per acre in their soils alone. If the 4.2 million acres of lost wetlands were still present, we would have relieved the flooding of this past spring by 4.2 to 6.3 trillion gallons in Missouri alone. Additionally, these wetlands would have also functioned as filters, absorbing and digesting

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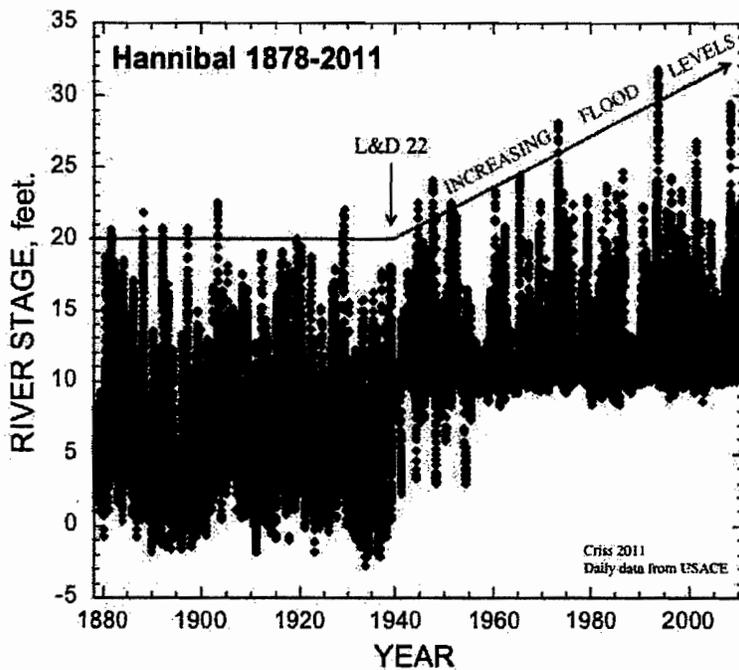
<sup>8</sup> "State Wetland Protection Status, Trends, & Model Approaches," Environmental Law Institute, March 2008.

<sup>9</sup> "Mississippi River Water Quality and the Clean Water Act: Progress, Challenges and Opportunities," National Academies of Science, Water Science and Technology Board, National Academies Press, 2008. Available at [http://www.nap.edu/openbook.php?record\\_id=12051&page=74](http://www.nap.edu/openbook.php?record_id=12051&page=74).

<sup>10</sup> "Functions and Values of Wetlands," USEPA, 2001. Available at [http://www.epa.gov/owow/wetlands/facts/fun\\_val.pdf](http://www.epa.gov/owow/wetlands/facts/fun_val.pdf)

bacteria and nutrients, cleaning our surface and ground waters. The resulting healthier springs, streams, rivers and lakes would foster a strong recreational economy and would be a regional attractions. However, the fact is that we have lost the vast majority of our wetlands, we aren't getting them back fast enough, we might even be losing them faster than we are restoring them, and our floods are getting worse and more frequent .

It seems obvious then that an RIR of any merit should, therefore, take into account the effect of not protecting waters such as wetlands and headwaters streams in terms of flood damage, health problems caused by degraded water quality, increased water treatment costs to remove problematic chemicals and dangerous nitrates, increased costs to producers relying on clean water for livestock watering, and the increased costs of having to add more and more waters to the 303(d) list. Here is some interesting information regarding the value of wetland functions from the a USGS website:



### Flood Storage and Stormflow Modification

*Wetlands associated with lakes and streams store floodwaters by spreading water out over a large flat area. This temporary storage of water decreases runoff velocity, reduces flood peaks, and distributes stormflows over longer time periods, causing tributary and main channels to peak at different times. Wetlands with available storage capacity or those located in depressions with narrow outlets may store and release water over an extended period of time. In drainage basins with flat terrain*

*that contains many depressions (for example, the prairie potholes and playa lake regions), lakes and wetlands store large volumes of snowmelt and (or) runoff. These wetlands have no natural outlets, and therefore this water is retained and does not contribute to local or regional flooding.*

*A strong correlation exists between the size of flood peaks and basin storage (percentage of basin area occupied by lakes and wetlands) in many drainage basins throughout the United States (Tice, 1968; Hains, 1973; Novitzki, 1979, 1989; Leibowitz and others, 1992). Novitzki (1979, 1989) found that basins with 30 percent or more areal coverage by lakes and wetlands have flood peaks that are 60 to 80 percent lower than the peaks in basins with no lake or wetland area. Wetlands can provide cost-effective flood control, and in some instances their protection has been recognized as less costly than flood-control measures such as reservoirs or dikes (Carter and*

others, 1979). Loss of wetlands can result in severe and costly flood damage in low-lying areas of a basin.

### **Maintenance of Water Quality.**

*Ground water and surface water transport sediments, nutrients, trace metals, and organic materials. Wetlands can trap, precipitate, transform, recycle, and export many of these waterborne constituents, and water leaving the wetland can differ markedly from that entering (Mitsch and Gosselink, 1993; Elder, 1987). Wetlands can maintain good quality water and improve degraded water.*

*Water-quality modification can affect an entire drainage basin or it may affect only an individual wetland. Water chemistry in basins that contain a large proportion of wetlands is usually different from that in basins with fewer wetlands. Basins with more wetlands tend to have water with lower specific conductance and lower concentrations of chloride, lead, inorganic nitrogen, suspended solids, and total and dissolved phosphorus than basins with fewer wetlands. Generally, wetlands are more effective at removing suspended solids, total phosphorus, and ammonia during high-flow periods and more effective at removing nitrates at low-flow periods (Johnston and others, 1990). Novitzki (1979) reported that streams in a Wisconsin basin, which contained 40 percent wetland and lake area, had sediment loads that were 90 percent lower than in a comparable basin with no wetlands.<sup>11</sup>*

Since wetlands play such a vital role in statewide water quality, and because they have become so nearly completely destroyed, we propose that wetlands be offered specific protections intended to increase their presence throughout our watersheds, while preserving the wetlands that we still have left. Restoration of wetlands is a water quality tool that can be used to help offset impacts from both non-point source pollution and permitted discharges.

Preserved wetlands help maintain water quality at current levels, and any reduction in wetland functions in a watershed will inevitably result in reduced water quality. For this reason, it is absolutely critical that wetlands be protected by anti-degradation regulations and given the benefit of an alternatives analysis. These protections are only afforded to classified waters, a group of waters that does not appear to include wetlands on any map that MDNR has provided for review.

Nutrients and dead zones are, and will continue to be, a difficult and critical issue in Missouri and the United States in general. We must shape our regulations to evaluate and maximize the benefits of wetland services in terms of absorbing and mitigating nutrient runoff from both urban and agricultural land use areas. MDNR needs to place a value on these benefits that will validate water quality investments and provide the tools necessary to restore water quality by restoring our wetlands.

The proposed draft rule establishes further hurdles for protecting recreational uses and aquatic life. Subsection (2)(A) covers “all perennial rivers and streams and intermittent streams with permanent pools.” The fact that MDNR retains Tables G and H, and would have to manually add to the tables any currently unlisted streams and lakes not on the 1:100,000 NHD map, means that effectively any additions would have to involve the same sort of classification process that is currently so difficult.

In addition, every map has omissions; they are, after all, merely drawings based on interpretations. For example, the current classified streams map omits about 35 miles of the Osage River as it approaches its

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<sup>11</sup> Website cited at <http://water.usgs.gov/nwsum/WSP2425/hydrology.html>

confluence with the Lake of the Ozarks--an oversight, no doubt. Oversights such as this are typical on any map, as we noted previously regarding the inconsistent stream coverage and omitted lakes, wetlands, and headwaters of the modified 1:100,000 scale map provided by MDNR.

Further, since MDNR has no “class” for intermittent streams without permanent pools, including those that may have flow and permanent pools during most of the year but dry up during summer months, there is no possibility of getting them classified and having uses designated. Likewise, there are no designated uses for those ephemeral streams that fall into the apparently pointless Class G and no readily available means for getting them onto the list of waters in Tables G and H.

Not only does the proposed draft rule language fail to comply with the Federal CWA, it does not comply with state law. Section 644.011 RSMo. clearly puts forth the state’s policy for protecting waters of the state:

“...it is hereby declared to be the public policy of this state to conserve the waters of the state and to protect, maintain, and improve the quality thereof for public water supplies and for domestic, agricultural, industrial, recreational and other legitimate beneficial uses and for the propagation of wildlife, fish and aquatic life;...”

Waters of the state is also clearly defined in statute as “all rivers, streams, lakes, and other bodies of surface and subsurface waters lying within or forming part of the boundaries of the state which are not entirely confined or located completely upon lands owned, leased or otherwise controlled by a single person or by two or more persons jointly or as tenants in common and includes waters of the United States lying within the state.”<sup>12</sup> The proposed draft rule’s intent to assign “fishable/swimmable” designated uses to only those streams on the 1:100,000 NHD map falls well short of protecting waters of the state and, therefore, doesn’t comply with the 644.011 RSMo.

**In Section 1 of the RIR MDNR incorrectly claims that the proposed draft rule extends fishable/swimmable designated uses and water quality criteria to all Missouri waters that appear on the 1:100,000 NHD map.**

As drafted, the rule fails to set water quality standards for all waters represented on the 1:100,000 NHD map. Although the draft rule assigns uses to these waters, it does not apply the specific criteria that protect those uses to the same waters.<sup>13</sup> Rather, specific criteria apply only to “classified waters”<sup>14</sup> and maximum chronic toxicity criteria apply only “to waters designated for the indicated uses give in Tables G and H.”<sup>15</sup> This reading seems consistent with MDNR’s statement in the RIR that “no change is anticipated or additional effluent limits required due to default designations of aquatic community protection uses.”<sup>16</sup> Apparently MDNR has created a rule that will, it admits, have no effect whatsoever, because it still relies on a list of waters with designated uses. The draft proposed rule from Water Classification Workgroup on July 16, 2009 contained language that would have correctly coupled specific criteria with their corresponding uses,<sup>17</sup> but that language was not carried into the final proposed rule. The bottom line is that MDNR proposes to designate in word only uses for this limited subset of waters and yet proposes no efforts to meaningfully apply the standards that will keep fish swimming in them and

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<sup>12</sup> 644.016(26) RSMo.

<sup>13</sup> Proposed draft rule at 10 CSR 20-7.031 (5) and (5)(A).

<sup>14</sup> Id at 10 CSR 20-7.031 (5).

<sup>15</sup> Id at 10 CSR 20-7.031 (5)(A).

<sup>16</sup> RIR at 17.

<sup>17</sup> Available at <http://www.dnr.mo.gov/env/wpp/docs/criteria071609.pdf>.

restrain upstream dischargers from degrading the same waters. Designating uses is not a magic wand that will keep streams healthy upon the designation. Without the accompanying limits on quantities of pollutants that those designations require such designations in word but not in deed will perpetuate the degradation of our state's waters.

Further weakening MDNR's claims, the draft rule seems to require a water body to be both on the 1:100,000 NHD map and Tables G and H in order to receive fishable/swimmable designated uses. Subsection (2)(C) states "The Department shall maintain a geospatial dataset and associated list of waters that receive use designations per subsection (2)(A) and (2)(B) of this rule (and including Tables G and H)." Since the draft rule makes few alterations to Tables G and H, it appears that most of the waters on the 1:100,000 NHD map will not receive fishable/swimmable designated uses.

**Missouri's "classification" system for protecting waters of the state is cumbersome and inaccurate and should be abolished in favor of a system of default use designations.**

These problems demonstrate the necessity of dissolving MDNR's waterbody classification system which has become ineffective and confusing. As far back as October 2009, MCE formally recommended deleting the classification system.<sup>18</sup> MCE thoroughly analyzed the rule and even provided MDNR with rule language to delete the classification system. Missouri's classification system defines bodies of water based on physical characteristics without any connection to its uses or quality. The physical characteristics are overly general and unnecessary in light of the stringent scientific criteria already enumerated in the department's rules. As a result, the classification system is ineffectual, and is in fact referenced only a few times in other areas of the department's rules. As stated in MCE's letter of October 15, 2009, other states manage their waterbodies without classification systems and refer to designated uses as a means to describe and protect their waters. MCE again requests that Missouri's classification system be scrapped.

**In Section 1 of the RIR, MDNR's reference to an aquatic life use attainability analysis (UAA) protocol to be developed by MDNR and stakeholders is inappropriate and illegal under administrative rulemaking laws.**

Section (2)(I) states that "UAA's intended for aquatic life protection shall be performed in accordance with methods and procedures found in "Missouri Aquatic Life Protection Use Attainability Analyses: Water body Survey and Assessment Protocol" to be developed by the Department and adopted by the Missouri Clean Water Commission." The inclusion in the proposed draft rule of a reference to document that does not currently exist is illegal under Missouri law. The state statutes governing administrative rulemaking procedures require that "the reference in the agency rules shall fully identify the incorporated material by publisher, address, and date in order to specify how a copy of the material may be obtained, and shall state that the reference rule, regulation, standard or guideline does not include any later amendments or additions."<sup>19</sup> Additionally, MDNR cannot propose a rule that references a document that does not exist. Administrative rulemaking statutes allow references to guidance documents but "a proposed rule may incorporate by reference only if the material so incorporated is retained at the headquarters of the state agency and made available to any interested person at a cost not to exceed the actual cost of the reproduction of a copy."<sup>20</sup> MDNR cannot develop via the workgroup process a document as extensive and detailed as a UAA protocol which must thoroughly describe scientific

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<sup>18</sup> Washington University Interdisciplinary Environmental Clinic letter on behalf of the Missouri Coalition for the Environment to Philip A. Schroeder, Missouri Department of Natural Resources, October 15, 2009.

<sup>19</sup> 536.031.4 RSMo.

<sup>20</sup> 536.021.2(3) RSMo.

methods in time to meet its rulemaking schedule. Without an actual document, the RIR violates the statutory requirements for an RIR.

Also of concern is the description in the RIR that the aquatic life UAA protocol will be used to move waters into aquatic community designations. Without an actual document to review, it is impossible for the public to gauge the usefulness or lack thereof of the protocol. Will it be something that an average citizen can use to get waters on or flowing through their property classified and protected? Will it be so onerous that only highly-paid consultants will be able to conduct the study required to protect waters that contain aquatic life? The public can only speculate. MDNR previously published stream classification guidance<sup>21</sup> that would have required the average citizen to spend thousands of dollars to classify a water body for aquatic life protection. Any protocol that requires such difficult and expensive measures is offensive and completely contrary to the intent of the federal CWA which presumes fishable/swimmable uses rather than requiring a complicated demonstration that they exist. The opt-out, rather than opt-in, structure of the federal CWA protections was a deliberate policy choice by Congress that Missouri must follow. Requiring citizens to prove that fish live in water suggests that the 'natural' use of waters is to accept pollution discharges and that fishing, swimming, and recreation are somehow 'unnatural'. This turns common sense on its head. This portion of the proposed draft rule and RIR is completely contrary to the public interest. MCE requests that section (2)(I) be deleted from the proposed draft rule and that all references to the aquatic life UAA protocol be deleted from the RIR.

**Section 2 of the RIR fails to provide sufficient peer-reviewed scientific data to support its claims that the proposed draft rule complies with CWA Section 101(a) use designations.**

MDNR provides a minimal amount of scientific data on its website and fails to link the data with its decision to arbitrarily use the 1:100,000 NHD as the stopping point for CWA Section 101(a) use designations. MDNR has provided no data whatsoever that recreational uses do not occur on waters beyond the 1:100,000 NHD map. This again turns the rebuttable presumption of fishable/swimmable uses on its head. MDNR is presuming that these uses don't exist when in fact the law requires that MDNR presume that they do exist. In any case, the scientific data provided by MDNR serves only to show that waters on the 1:100,000 NHD map support aquatic life, not that waters beyond these reaches do not. MDNR's scientific data includes a report submitted by MCE and presented at the February 19, 2009 meeting. MCE's report shows the extent to which significant waters in Missouri reach far beyond the 1:100,000 NHD map. For some reason, there is no discussion of this report within the RIR.

The true extent of waters in Missouri cannot be readily identified by any existing map. American Rivers and the Sierra Club published a report based on peer reviewed scientific data showing how many headwater streams are left off even the 1:24,000 USGS topographic map.<sup>22</sup> In addition, the report demonstrated the value of headwater streams for nutrient and sediment control, water filtering, and organic matter storage and transformation. Smaller streams feed our larger waters. Because they are smaller they have less capacity for diluting and mitigating pollutants from discharges. Biological diversity (aquatic life) is documented in headwater streams. The report cites peer-reviewed scientific studies which support the fact that aquatic life protections must be applied to all headwater streams. MDNR is arbitrarily proposing to leave those headwater

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<sup>21</sup> "Final Guidance for Water Body Classification", Missouri Department of Natural Resources, Water Protection Program, March 2, 2005.

<sup>22</sup> "Where Rivers are Born: The Scientific Imperative for Defending Small Streams and Wetlands"; American Rivers and the Sierra Club, February 2007, p 8. Available at <http://www.americanrivers.org/assets/pdfs/reports-and-publications/WhereRiversAreBorn1d811.pdf>

streams unprotected, which will affect all of our waters. We submit this report to the MDNR for its consideration and inclusion in the RIR.

In summary, section 2 of the RIR provides little, if any, peer-reviewed scientific data supporting its attempt to comply with section 101(a) of the federal CWA. The RIR, therefore, does not comply with statutory requirements.

**Section 2 of the RIR mischaracterizes the stakeholder workgroup process and its results.**

MDNR claims that the proposal to apply fishable/swimmable designated uses using the 1:100,000 NHD map was the result of the workgroup process. It was not. MCE and other public interest groups attended all of the workgroup meetings though our participation as well as that of these other groups is not documented in the RIR. The representatives identified in the RIR are from agriculture, industry and municipalities. No mention is made of environmental, conservation, or recreational organizations in the RIR despite these organizations' time and resource commitments to the meetings. The final agreement of the workgroup was represented in the draft rule language presented to the Missouri Clean Water Commission on March 3, 2010. The workgroup's proposal applied fishable/swimmable designated uses to all waters of the state, not just to waters on the 1:100,000 NHD map. In fact, there is no documentation or discussion in the RIR explaining how the workgroup's original proposal was watered down to the MDNR's current proposal. If as MDNR states in the RIR, the 1:100,000 NHD map proposal was developed in discussions with agricultural, industry and municipal representatives, then it was done in the absence of public input and without transparency.

MDNR refers to the information on the Water Classification Workgroup webpage for additional documentation on the development of the draft rule and the RIR. Unfortunately, the workgroup webpage is incomplete. The webpage identifies five workgroup meetings. It fails to list the April 16, 2009, and October 28, 2009, meetings. Meeting notes are absent from all but one of the meetings identified. It is nearly impossible for the public to determine how the proposed draft rule language was developed. Omitting this key information appears to be an effort to rewrite history; fortunately these meetings are well documented by others.

**Section 3 of the RIR incorrectly states that the proposed draft rule language applying aquatic life designated use would not affect discharges to waters on the 1:100,000 NHD map.**

Section (3) states that "because current facility operating permit procedures protect aquatic communities to the chronic toxicity level, no change is anticipated or additional effluent limitations required due to default designation of aquatic community protection uses."<sup>23</sup> As demonstrated repeatedly by viewing NPDES permits issued by MDNR, MDNR does not routinely require chronic effluent limits for ammonia nor water quality-based effluent limits for biochemical oxygen demand (BOD). If MDNR establishes fishable/swimmable designated uses, then it must follow through and require chronic effluent limits in NPDES permits. The RIR does not acknowledge the persons affected by the proposed draft rule and it must be revised to do so.

**Section 4 of the RIR does not accurately identify either the substantial benefits or the economic costs of the proposed draft rule.**

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<sup>23</sup> RIR at 9.

Section 4 of the RIR attempts to describe the environmental and economic costs and benefits of the proposed rule in two respects. First, the scope of economic cost appears to be limited to only point site specific wastewater discharges. Second, MDNR does not consider the costs and benefits for implementation of the aquatic life designated use and associated water quality criteria. The RIR notes that 1,342 facilities will be affected by the proposed rule, but MDNR's analysis ignores the great majority of permits including general, storm water, and CAFO permits. MCE analyzed a MDNR geographic information system "GIS" layer and identified 4,481 outfalls representing 3,087 site-specific permits, 13,007 storm water outfalls and 1,063 animal feeding operation outfalls. Thus, by our count, MDNR failed in its analysis to account for 14,423 outfalls, **13,001 of which discharge to unclassified waters**. Many of these discharges will now be required to comply with new monitoring requirements and effluent limits to ensure compliance with fishable/swimmable designated uses and the associated water quality criteria. Given this significant oversight, the RIR doesn't adequately consider costs to these facilities or the benefits to our aquatic ecosystems, recreational waters, and drinking water supplies and should be re-drafted to include these costs and benefits.

Moreover, the RIR fails to identify the substantial benefits of such a rule. To meet the statutory requirements for the RIR, the MDNR must at a minimum determine the value of general benefits of implementing the rule. Human health has a value in avoided doctor and hospital visits. Recreational and aquatic life uses have tourism value. Protection and preservation of wetlands have value in terms of flood water storage and water quality.<sup>24</sup>

**Section 5(a) of the RIR does not adequately consider the additional costs to MDNR for permit reviews.**

Per section 4 of the RIR, the proposed rule will establish fishable/swimmable designated uses for waters that receive discharges from 1,342 facilities. As previously noted, MCE believes the number of affected permits affected by the proposed rule to be greater than MDNR represents. Section 5 of the RIR does not adequately consider that permit writers will spend additional time reviewing permit applications and drafting permits that now must contain additional monitoring and water quality based effluent limits. For disinfection requirements alone, MDNR will need to review engineering plans and construction permit applications for facility upgrades. MDNR should also consider the additional time needed to review operating permits, engineering plans and construction permits for facility upgrades that will be needed to comply with aquatic life criteria. General and storm water permit templates will also need additional development time to ensure compliance with aquatic life criteria. In some cases, facilities may no longer be eligible for general permits. These facilities will apply for individual permits which require more MDNR resources to issue. In sum, the costs to the MDNR will be substantial to issue NPDES limits that comply with the proposed rule. These costs must be included in the RIR.

**Section 6(a) of the RIR fails to consider the costs and benefits of inaction.**

MDNR considers the consequence of inaction to be the imposition by the USEPA of fishable/swimmable designated uses on waters of the United States within Missouri. The RIR admits that spatial extent of the water of the United States is greater than that contained in the proposed rule. If that is true, and MCE believes that it is, then MDNR should be able to calculate the difference in costs and benefits between their proposed rule and the imposition of a rule by USEPA. Without this analysis, the RIR fails to comply with statutory requirements.

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<sup>24</sup> William J. Mitsch and James G. Gosselink 2000. "The Value of Wetlands: Importance of Scale and Landscape Setting." *Ecological Economics* 35 (200) 25-33.

**Section (7) of the RIR misrepresents the stakeholder process.**

Section 7(a) again mischaracterizes the stakeholder process. The environmental and conservation organizations that participated in the stakeholder process voiced significant objection to any proposal that did not apply fishable/swimmable designated uses to all waters of the state.

**Section 8(a) of the RIR lacks any substantive scientific evidence or support for the MDNR's decision to pursue fishable/swimmable designated uses for only those waters on the 1:100,000 NHD map.**

Section 8(a) fails to provide any support or evidence or reasons for MDNR's decision that 1:100,000 NHD map option is more appropriate than the 1:24,000 NHD map, the waters of the U.S. approach or "waters of the state" approach. MDNR states that aquatic life is less abundant on the 1:24,000 NHD map streams than on 1:100,000 NHD streams and thus the 1:100,000 NHD map should be used for default protections.<sup>25</sup> But that is not the standard. This is an MDNR perversion of the CWA which requires protection of aquatic life, not just protection of abundant life or aquatic life that MDNR deems worthy of protection or protection of aquatic life that is most convenient. The CWA makes no distinction. Later in Section 8(a) MDNR states the "the uncertainty to which aquatic communities exist on the 1:24,000 scale NHD waters weighed strongly against using the linework as a default designation."<sup>26</sup> MDNR provides no data or scientific justification for this statement. In the same paragraph MDNR admits that aquatic life exists in waters beyond the 1:100,000 NHD then immediately declines to provide protection to these waters. This is not justified by science in any way.

MDNR attempts to justify its decision by stating that "all permitted facilities discharge within 2 miles of the 1:100,000 scale NHD dataset and no significant difference in cost exists for any facility between the 1:24,000 or 1:100,000 scale NHD." However, no analysis is included in the RIR or its supporting documents that demonstrates this claim. Indeed, if it were true, why not simply adopt the 1:24,000 NHD dataset? It isn't true, and is simply a post hoc attempt to rationalize a decision that is completely arbitrary.

Since February 2009, MDNR has insisted that all site-specific permit discharges were within two miles of streams shown on the 1:100,000 NHD map. MDNR has also stated that the proposed rule will cause all of those dischargers to disinfect since 10 CSR 20-7.015(8)(B)(4)(A) requires disinfection of "discharges within two (2) miles upstream of areas" designated for Whole Body Contact. We have been highly skeptical of this claim, since we know of no stream database complete enough to substantiate it (many streams receiving discharges are not on even the 1:24,000 USGS map; hence it would be quite difficult to measure instream distances). In addition, a cursory review of a publicly available GIS database disclosed several facilities clearly over two miles upstream of the nearest 100K water. We guessed, given the facility coverage claimed by DNR for the 100K map, that MDNR had made use of a particularly easy but invalid method to attain their results: buffers around the 100K flowlines. For those reasons, we wanted to see MDNR's methodology.

Upon reviewing the methodology, we quickly determined that our suspicions were confirmed. MDNR's buffer method identifies facilities within two miles of 100K waters "as the crow flies"--that is, a straight-line distance. Effluent, however, flows down streams, and except in the case of

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<sup>25</sup> RIR at 35.

<sup>26</sup> *Id.*

some ditches, this is never a straight line. Indeed, without exception, the actual distance traveled by a discharge (not already on a 100K water) downstream to the nearest 100K water will always be greater than the straight-line distance, often much greater. Dischargers that are within 2 miles as the crow flies but not within 2 stream miles would, therefore, not be required to disinfect. In fact, they will shoulder no extra burdens at all as a result of the proposed rule. To say, or even to imply, otherwise is disingenuous, to say the least.

We should note that the methodology that MDNR used is easily discernible as invalid (that is, its use of “within two mile straight-line buffers” bears no relation to the requirements for disinfection in the state's effluent regulations); we claim no special abilities in discovering its inadequacy. If MDNR’s use of this invalid methodology had been merely the result of error, there have been multiple opportunities for MDNR (including its presentation to the workgroup and the development of the RIR) to catch and rectify the error, even though the inaccurate results produced served its interests. Whether error or deception, MDNR's continued trumpeting of its fallacious claims necessarily calls into question MDNR's reliability as servant of Missouri citizens in developing standards that protect the state's waters.

Further, even though disinfection would be included in permits for facilities within 2 stream miles of 100K waters, aquatic life uses still would not be sufficiently protected on those waters. MDNR claims that, since its analysis finds that 90% of outfalls are within 1/2 mile of 100K waters, there would be little decay of ammonia or dilution of other toxics before those discharges reached the nearest 100K stream, and hence those permit limits would be geared to 100K standards. In fact, though, permit limits so calculated would necessarily be less stringent than those for discharges going directly to 100K waters. Again, however, we believe the 90% figure to be quite inaccurate, since these are “as-the-crow-flies” miles as well. Thus, as a result of the lower-than-advertised protections, MDNR’s claim in the RIR that “no change is anticipated or additional effluent limitations required due to default designation of aquatic community protection uses” would likely be true, though not for the reasons provided. (RIR at 9.)

As noted earlier, MDNR failed to include all permits in its scope of rulemaking by ignoring the great majority of outfalls--general stormwater and CAFO—many of which which tend to be more dispersed into rural areas and likely farther from 100K streams. MCE believes that Section (8) fails to state any reasonable reason why MDNR decided to protect a subset of waters of the state instead of all of them. No matter where a discharge may be located within a watershed, the pollution it contributes to a tributary will find its way into our river system and contribute to water quality degradation.

Finally, the last paragraph of Section 8(a) attributes the decision to limit fishable/swimmable uses to waters on the 1:100,000 NHD map to the stakeholder group.<sup>27</sup> As noted earlier, MCE attended all of the stakeholder workgroup meetings. The stakeholder group supported assigning fishable/swimmable uses to all waters of the state - not to any map-based scheme. Any claim to the contrary is false. MDNR presented the stakeholder workgroup’s proposal to the Missouri CWC on March 3, 2010 and unilaterally withdrew it two months later. It then announced the current rule approximately one year after it withdrew the workgroup’s rule, but without holding any workgroup meetings in the meantime. The proposed rule limiting fishable/swimmable protections only to waters on the 1:100,000 NHD map was developed outside of any stakeholder, public, or transparent process.

#### **Section 9(a) references inappropriate permitting procedures.**

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<sup>27</sup> *Id.*

Section (a) of the RIR states “Some of these permits will contain schedules of compliance of up to eight years to design, build and operate a disinfection system.” This length of time for compliance is not allowed. Schedules of compliance cannot extend beyond the amount of time needed to actually comply with the new or revised water quality standards.<sup>28</sup> Five years is a reasonable time for action already delayed 40 years. The RIR must be amended to reflect this.

**Section 12(a) demonstrates that MDNR’s proposal to use the 1:100,000 NHD map to assign fishable/swimmable uses is flawed.**

MDNR correctly states “Under the CWA, “fishable/swimmable” uses must be extended to all waters of the United States, the extent of which has been the subject of controversy and litigation for over a decade.” MDNR obviously knows that under the CWA it must protect waters of the United States. The CWA has been “on the books” since the early 1970’s, and compliance with its terms is not a matter of debate. MDNR has not provided and cannot provide any logical reason why it is proposing to protect significantly fewer waters than are required by law. The cost to and objections from dischargers seem to be the only reasons for MDNR’s scaled-back proposal. The costs to citizens for drinking water treatment, lost recreational opportunities, lost economic opportunities, and degradation of our natural heritage is not even considered.

The USEPA and the U.S. Army Corp of Engineers have published draft guidance on identifying waters protected by the CWA. The draft guidance does not make any mention of the water of the US being limited to those on the 1:100,000 NHD map. Nor do any of the court cases cited by MDNR. MCE requests that MDNR return to its original proposal to apply fishable/swimmable designated uses to waters of the state or, at a minimum, to the federally required waters of the United States.

**Section 14(a) uses an inappropriate interpretation of the CWA to justify MDNR’s proposed rule.**

MDNR again admits that its proposed rule protects fewer waters than required by the CWA. The RIR states that fishable/swimmable uses must apply to all waters of the United States.<sup>29</sup> MDNR justification for proposing fishable/swimmable uses to only those waters on the 1:100,000 NHD map is that the attainability of these uses under more spatially extensive approaches is unknown. Again MDNR turns the fishable/swimmable presumption on its head. Under the CWA waters are presumed to have fishable/swimmable uses, and it is not at MDNR’s discretion to presume otherwise. The CWA requires that UAAs be conducted to prove that designated uses are not attainable.<sup>30</sup> MDNR has made no such demonstration and provides no scientific evidence or data suggesting that fishable/swimmable uses are not attainable beyond the 1:100,000 NHD map. Lacking any scientific or legal support for its proposal, MDNR should return to its original proposal to protect all waters of the state.

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<sup>28</sup> “Compliance Schedules for Water Quality-Based Effluent Limitations in NPDES Permits”, USEPA Memorandum from James A. Hanlon, Office of Wastewater Management to Alexis Strauss, Director, Water Division, USEPA Region 9, May 10, 2007, available at [http://www.epa.gov/npdes/pubs/memo\\_complianceschedules\\_may07.pdf](http://www.epa.gov/npdes/pubs/memo_complianceschedules_may07.pdf).

<sup>29</sup> *Id.* at 52.

<sup>30</sup> 40 C.F.R. § 131.10(g), (j). An existing use may not be removed unless “the State can demonstrate that attaining the designated use is not feasible ... .” *Id.* § 131.10(g). The same standard applies for waters that are not assigned the fishable/swimmable standard. *Id.* § 131.10(j)(1).

**As described in Section 1(b) of the RIR, the term and definition “modified aquatic community” is not used anywhere in the rule and should be removed.**

Section 1(b) of the RIR references a new term and definition – modified aquatic community - that is not used anywhere in the rule. The proposed draft rule defines modified aquatic community as follows:

“An aquatic community that may have physical, chemical, or biological conditions preventing the attainment of a natural aquatic community. This category applies to waters that have been demonstrated to lack support for a warm-water, cool-water, or cold-water aquatic community through a Use Attainability Analysis conducted according to subsections (2)(E) – (G) and (2)(I) of this rule.”

Apparently, MDNR intends to use this definition to classify waters that are downgraded in use through the aquatic life UAA protocol. The definition refers to section (2)(I) of the proposed draft rule that references the aquatic life UAA protocol. As we stated earlier, MDNR doesn't have a published UAA protocol available. It simply doesn't exist for the public to review. Until MDNR can tell the public how it intends to utilize this definition, it should withdraw the proposed rule language defining modified aquatic community.

**No peer reviewed scientific data is cited in Section (2)(b) of the RIR to support the definition of modified aquatic community.**

The state statute governing the RIR requires that scientific data be used to support proposed rule revisions. MDNR has proposed a new term and definition for modified aquatic community. However, MDNR has not provided any basis for the term or its definition. Presumably, MDNR will have some scientific data to support the aquatic life UAA protocol it has proposed to develop. Since the modified aquatic community definition will be used in conjunction with the protocol, MDNR should remove the term and definition from the proposed draft rule until the public can review how the term and definition will be used and what effect it will have on Missouri's waters.

In summary, the RIR contains many errors, misstatements and inaccuracies. MCE requests that the MDNR make substantial changes to the RIR and proposed draft rule based on our concerns documented in this letter. MCE appreciates the opportunity to comment on the RIR.

Sincerely,



Lorin Crandall  
Clean Water Program Director  
Missouri Coalition for the Environment

## Missouri Clean Water Campaign of the Sierra Club's Water Sentinels

On

### Water Quality Standards proposed rule, the Regulatory Impact Report

While no doubt those who discharge pollutants (within effluent limits as prescribed by EPA and as contained in individual discharge permits) into Missouri's waters will have much to relay on COSTS, I wish to focus on the BENEFITS.

First and foremost, Missouri anglers contribute over one billion dollars to Missouri's economy, according to an MDC report:

#### **Fishing**

Total expenditures . . . . .	\$1,093,206,000
Trip-related . . . . .	\$457,963,000
Equipment and other . . . . .	\$635,243,000
Average per angler . . . . .	\$1,003
Average trip expenditure per day . . . . .	\$28

However, this amount represents stream, river, lake, pond and reservoir fishing. Since many anglers fish all types of waters, it is difficult to attribute a specific amount to streams, but, from all research, it appears that about 1/4<sup>th</sup> of Missouri anglers fish almost solely in streams and another 1/4<sup>th</sup> fish streams, lakes and reservoirs (the big rivers – Mississippi and Missouri – do not seem to attract stream and lake/reservoir anglers).. The amount contributed to the economy by those who fish only streams is \$25,240,000, with an additional \$25 million contributed by those who fish streams, lakes, and reservoirs.

Smallmouth, GoggleEye (Rock Bass), and some species of bluegill require cool, clean water for spawning and living. Given the vast amount of resources contributed by those who pursue these fish, it can readily be seen that protection of water quality is very cost-effective.

Secondly, in the Ozarks, broadly defined as south of I-44 (but extending northward to I-70 in some areas) there are a number of so-called Losing streams – in which 30% or more (in some cases, ALL) of the stream flow goes underground and becomes drinking water for a number of communities and residents. Pure, clean drinking water has benefits well into the billions – as much as \$10 billion. Protection of surface waters in Ozarks streams is essential and reaps many benefits, including the lack of need for much treatment to provide potable water..



Thirdly, the number of persons involved in the Stream Team program is over 50,000. Each volunteer spends at least 20 hours monitoring Missouri's waterways. Since both DNR and MDC calculate the value of such volunteers, the amount contributed is significant – at least 7-8 Million. However, since new volunteers are added daily, it is likely that 50,000 is an outdated number. MDC and DNR staffers that coordinate Stream Teams can provide up-to-date information, both as to the number of volunteers and the value of such volunteers to the State of Missouri.

Please include these amounts in the “benefits”.

Thanks,

Ken Midkiff  
Chair, Missouri Clean Water Campaign  
July 20, 2011



Ozark Fly Fishers, Inc  
P.O. Box 440181  
Saint Louis, MO 63144-4181

August 9, 2011

Mr. John Hoke  
Missouri Department of Natural Resources  
Water Protection Program  
P.O. Box 176  
Jefferson City, MO 65102-0176

Re: Request for Comments on the MO-DNR Public Notice of the Regulatory Impact Report in Preparation of an Amendment to 10CSR 20-7.031 Water Quality Standards.

Dear Mr Hoke;

Please accept these comments on the Regulatory Impact Report for the proposed amendments to 10 CSR 20-7.031 Water Quality Standards as submitted by Ozark Fly Fishers Inc. Among our stated objectives is to practice conservation of natural resources and to support efforts for environmental quality and pollution control. We were happy to have been allowed to participate in the working group that discussed these issues. As an organization of nearly 300 members, most of whom are Missouri residents and land owners, we are interested in the health and safety of all Missouri water resources.

The identification of waters to be protected in the state of Missouri was the subject of months of discussion by the working group on this subject. Several methods of measurement were analyzed and presentations by DNR staff aided in this evaluation. Problems exist with any scale of map identification of water based upon topography. The final consensus of the working group was to propose that "all waters of the state" best described the appropriate designation for those suitable for fishing and swimming as a default unless proved otherwise. This would also eliminate the need for the use of the complicated tables which do more to confuse identification than to clarify it. The proposal would then also eliminate the need for the confusing stream classification system.

Ozark Fly Fishers, Inc .is registered with DNR as Stream Team #31. In that capacity we regularly conduct water quality monitoring on a number of small streams and lakes providing valuable data to the state. Team members are volunteers that invest in personal training under the direction of DNR to maintain a level of expertise and demonstrated skills to validate the quality of the data submitted. It is with the same dedication that we voluntarily participated in the working group for two years to assist in establishing

standards that will meet the provisions of the Clean Water Act and provide future protection of the water resources of our state. It appears that the recommendations of the working group were ignored in the proposed Regulatory Impact Report for the Proposed Draft Amendments to 10 CSR 20-7.031 Water Quality Standards.

With reference to:

**(2) Designation of Use.**

**(I) UAAs intended for aquatic life protection shall be performed in accordance with methods and procedures found in “Missouri Aquatic life Protection Use Attainability Analyses: Water Body Survey and Assessment Protocol” to be developed by the Department and adopted by the Missouri Clean Water Commission.**

This is reference to something that does not currently exist and as such is not acceptable as a proposed rule. It is a “trust me” statement. Missouri is pathetically behind drafting and implementing regulations to comply with the Clean Water Act. Implementing a rule based upon potential future documentation of a process is without merit.

The existing DNR’s Use Attainability Analysis for recreational uses is questionable as an effective tool in protecting aquatic life uses. While this and a Aquatic Life UAA may be ways to quantify stream conditions there is some question as to the financial and functional effectiveness of relying on such metrics.

We appreciate the opportunity to offer comments on the proposed rules. We also support DNR in moving forward rapidly to attain a better level of compliance with the Clean Water Act that will assure the future of water quality resources in the state of Missouri for all uses by its citizens.

Sincerely,

Robert L. Temper  
Stream Team Chairman  
Ozark Fly Fishers, Inc.





Public Comments  
for  
Regulatory Impact Report  
Mississippi River Decision  
Submitted To  
Missouri Department of Natural Resources  
Water Protection Program



**Metropolitan  
St. Louis Sewer  
District**

2350 Market Street  
St. Louis, MO 63103-2555  
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2011 AUG 11 PM 1:23  
WATER PROTECTION PROGRAM

August 8, 2011

Mr. John Hoke  
Water Protection Program  
Missouri Department of Natural Resources  
P O Box 176  
Jefferson City MO 65102-0176

Dear Mr. Hoke:

Please find enclosed supplemental information for your consideration. The document titled "Supplemental Information for the Mississippi River Whole Body Contact Recreational Use Attainability Analysis" has been prepared by Geosyntec Consultants for the Metropolitan St. Louis Sewer District (MSD). This document is submitted in response to the Missouri Department of Natural Resources' ("MDNR") Recommendation Regarding Whole Body Contact Recreation Use Designation for the Mississippi River dated March 10, 2011 which was listed as a reference document for the Regulatory Impact Report (RIR) on the proposed changes to Missouri's Water Quality Standards (10 CSR 20-7.031). This supplemental information is factual in nature and has been professionally assembled to support the information on the record addressing the 28.6 mile Mississippi River segment.

The District provides the enclosed supplemental information to assist MDNR in making a final determination on the recreational uses and appropriate bacteria criterion for the Mississippi River in the St. Louis area. This report also points out the draft Tetra Tech report used in the evaluation by MDNR is not a credible document. The report cites on every page "**Draft – Do Not Cite or Quote**". MSD notes this should not be relied on by MDNR in making its decision since it is draft and the author specifically restricts the document's use. MSD will also submit a letter addressing some of the critical information contained in the Tetra Tech report that is inaccurate and speculative. As you know, this determination is a critical issue for MSD and its ratepayers. MSD believes this information along with information already in the record conclusively supports the scientific finding that the UAA factors 3 (human caused conditions) and 4 (hydrologic modifications) justify not designating the UAA segment for Whole Body Contact Recreation.

Please consider the enclosed document as (1) a response to the MDNR request for additional information regarding the 28.6 mile Mississippi River segment and (2) a portion of MSD's comments on the RIR, which is currently open for public comment. We will also be submitting a separate comment letter on the RIR before the August 12, 2011 deadline. If you have any questions or require additional information, please contact John Lodderhose at 314-436-8714.

Sincerely,

Jeffrey Theerman, P.E.  
Executive Director  
Metropolitan St. Louis Sewer District



**Metropolitan  
St. Louis Sewer  
District**

2350 Market Street  
St. Louis, MO 63103-2555  
(314) 768-6200

August 11, 2011

Mr. John Hoke  
Water Quality Monitoring and Assessment Section Chief  
Missouri Department of Natural Resources  
Water Protection Program  
P O Box 176  
Jefferson City MO 65102



Dear Mr. Hoke:

Please find enclosed the amended Page D2 for the document titled "Supplemental Information for the Mississippi River Whole Body Contact Recreational Use Attainability Analysis" prepared by Geosyntec Consultants for the Metropolitan St. Louis Sewer District on August 8, 2011. This amendment was prepared based upon your recommendations to clarify *E. coli* baseline loading and reduction estimates for various levels of potential combined sewer overflow (CSO) controls. The August 8, 2011 submittal separated the CSO contributions from River des Peres and its tributaries for the baseline condition; however, these sources were combined to prepare estimates of potential CSO load reductions. The revised table consistently combines loads from River des Peres and its tributaries in the loading estimates. This submittal also includes all referenced documents and data from the supplemental information report for addition to the administrative record.

We sincerely appreciate the Department's efforts related to this important water quality standards decision. If you have any questions or require additional information, please contact John Lodderhose at 314-436-8714.

Sincerely,

Jeffrey Theerman, PE  
Executive Director  
Metropolitan St. Louis Sewer District

*Stormwater*

Area	Sq. Miles	<i>E. coli</i> loading (#/year)
Tributary area for LTCP loading	106.9	$1.68 \times 10^{16}$
Other areas not in LTCP stormwater loading	316.9	$4.98 \times 10^{16}$
Total area	423.8	$6.66 \times 10^{16}$

Notes: *E. coli* loadings are based on values presented in MSD's Long Term Control Plan (LTCP). For non-LTCP areas, the loading rate was assumed equal to LTCP areas, but the total loading was adjusted based on contributing area (i.e.,  $316.6/106.9 \cdot 1.68 \times 10^{16} = 4.98 \times 10^{16}$ ).

*Combined Sewer Overflows (CSOs)*

Water Body	<i>E. coli</i> loading (#/year)		
	CSO loading without LTCP controls	CSO loading with LTCP controls	CSO loading with LTCP plus Mississippi River controls
River des Peres & tributaries	$5.50 \times 10^{16}$	$1.053 \times 10^{16}$	$1.053 \times 10^{16}$
Maline Creek	$1.45 \times 10^{15}$	$3.30 \times 10^{14}$	$3.30 \times 10^{14}$
Mississippi River	$6.30 \times 10^{16}$	$6.30 \times 10^{16}$	$1.40 \times 10^{16}$
Total	$1.19 \times 10^{17}$	$7.39 \times 10^{16}$	$2.49 \times 10^{16}$

Notes: *E. coli* loadings are based on values presented in MSD's LTCP. Mississippi River controls presume adding controls to CSOs that outfall directly to the Mississippi River to the same level of control being provided under the LTCP to MSD's urban streams (i.e., four overflow events or less in a typical year).

*E. coli Density Calculations*

Loading scenario	Annual <i>E. coli</i> geometric mean density (#/100 mL)	Contribution (#/100 mL)
Baseline (upstream plus stormwater)	89	89
Baseline + WWTPs without big river disinfection	156	67
Baseline + WWTPs disinfection to 1,134	92	3
Baseline + WWTPs disinfection to 206	90	1
Baseline + CSO loading without LTCP controls	98	9
Baseline + CSO loading with LTCP controls	95	6
Baseline + CSO loading with LTCP plus Mississippi River controls	90	1

Notes: Supporting data are provided in Appendix E



**Metropolitan  
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2350 Market Street  
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August 12, 2011

Mr. John Hoke  
Water Quality Monitoring and Assessment Section Chief  
Missouri Department of Natural Resources  
Water Protection Program  
P O Box 176  
Jefferson City MO 65102

**Subject:** Public Notice Comments regarding draft Mississippi River bacteria criteria published within Regulatory Impact Report In Preparation of an Amendment to 10 CSR 20-7.031 Water Quality Standards (June 12, 2011 – August 12, 2011)

Dear Mr. Hoke:

The St. Louis Metropolitan Sewer District (MSD) appreciates this opportunity to provide comments on the *Regulatory Impact Report In Preparation of an Amendment to 10 CSR 20-7.031 Water Quality Standards (June 12, 2011 – August 12, 2011)*, specifically related to potential revisions to Mississippi River bacteria criteria. The Department drafted the proposed rule accompanying the Regulatory Impact Report (RIR) “to capture the worst case scenario in terms of cost for the Regulatory Impact Report” and is accepting additional data and information to help inform the final proposed rule. Therefore, MSD provided additional data and information to the Department in a supplemental data report dated August 8, 2011, which helps form the basis for comments provided here.

MSD’s comments on this section of the RIR include several relevant facts which must be considered as part of this rulemaking. Among them are the facts that the proposed rule will have severe economic impact with no environmental benefit. MSD estimates that additional Mississippi River combined sewer overflow (CSO) control costs resulting from the proposed rule could reach \$2.1 billion. Presuming additional Mississippi River CSO controls with the same level of protection under MSD’s approved CSO LTCP (i.e., four overflow events or less in a typical year), MSD estimates this additional \$2.1 billion in expenditures would double the cost of MSD’s CSO improvements. The proposed rule presents an enormous burden on 1.4 million residents of the City and County of St. Louis and the 25,000 industrial, commercial, and institutional facilities served by the District. Additionally, the draft Tetra Tech report used in the evaluation of the UAA for this segment by MDNR is not a credible document. The report cites on every page “Draft – Do Not Cite or Quote”. MSD notes this should not be relied on by MDNR in making its

decision or this proposed rule since it is draft and the author specifically restricts the document's use.

The most critical of these comments is that the Mississippi River Use Attainability Analysis (UAA) and supplemental data report provide sufficient evidence to rebut the presumption of whole body contact recreation (WBCR) in the UAA segment. Further MSD believes this information along with information already in the record conclusively supports the scientific finding that the UAA factors 3 (human caused conditions) and 4 (hydrologic modifications) justify not designating the UAA segment for Whole Body Contact Recreation. Due to the detrimental impact of this proposed rule the Metropolitan St. Louis Sewer District request that the MDNR not change the bacteria criteria for the 28.6 mile segment of the Mississippi River to support the WBCR-Category B use and that any reference to such a change be removed from this proposed rule.

MSD requests that this letter and attached documents be included in the administrative record for the referenced rulemakings. If you have any questions or require additional information, please contact John Lodderhose at 314-436-8714.

Sincerely,



Jeffrey Theerman, PE  
Executive Director  
Metropolitan St. Louis Sewer District

- Enclosures: (1) Public Notice Comments regarding draft Mississippi River bacteria criteria published within Regulatory Impact Report in Preparation of an Amendment to 10 CSR 20-7.031 Water Quality Standards
- (2) 1 DVD of footnote references

**ATTACHMENT**  
**RESPONSE TO REGULATORY IMPACT REPORT IN PREPARATION OF AN AMENDMENT**  
**TO 10 CSR 20-7.031 WATER QUALITY STANDARDS**

**1. Description of the environmental conditions or standards being prescribed.**

The Department's Regulatory Impact Report (RIR) was based upon a potential rulemaking to reflect secondary contact recreation (SCR) as the designated use for the 28.6-mile segment of the Mississippi River from North Riverfront Park to the confluence with the Meramec River (hereinafter referred to as use attainability analysis (UAA) segment), with the added provision that bacteria criteria sufficient to support the whole body contact recreation (WBCR) Category B use be applied to the water body. The RIR suggests that this rule change may be necessary to meet the requirements of the federal Clean Water Act (CWA) for this segment. However, as discussed in the RIR, "[t]he department has drafted the rule in this way in order to capture the worst case scenario in terms of cost for the Regulatory Impact Report" and is accepting additional data and information that may change the preliminary draft. The St. Louis Metropolitan Sewer District (MSD) appreciates this opportunity and notes that additional data and information were provided to the Department on August 8, 2011 in a separate report entitled "Supplemental Information for the Mississippi River Whole Body Contact Recreation Use Attainability Analysis" (hereinafter referred to as the Supplemental Data Report). MSD's Supplemental Data Report confirmed the findings of the 2005 Mississippi River UAA and 2007 Supplemental UAA Report - WBCR is not an existing or attainable use in the UAA segment based on 40 CFR 131.10(g) UAA factors 3 (human caused conditions) and 4 (hydrologic modifications).

As part of Supplemental Data Report, Geosyntec Consultants and MSD conducted additional interviews with representatives of the U.S. Army Corps of Engineers (USACE), the U.S. Coast Guard (USCG), the St. Louis Port Authority, Missouri Department of Transportation (MoDOT), and the U.S. Department of Transportation, Maritime Administration (MARAD). Interviewees unanimously find the UAA segment to be incompatible with WBCR because of dense barge traffic and dangerous river hydraulics. In fact, Chief Warrant Officer (CWO) Scott Coder (Chief of Waterways, USCG, Section Upper Mississippi River) noted that the UAA segment is the most dangerous section of river within his sector, which consists of 11 states. CWO Coder equated performing recreational activities on the UAA segment to "riding a tricycle on the freeway."

USACE data presented in the supplemental data report also show the UAA segment to be the busiest and most congested inland port area in the country. In terms of total tonnage of commodities shipped, the Port of Metropolitan St. Louis is the third busiest inland port in the contiguous United States; only the Port of Huntington-Tristate and Port of Pittsburgh are busier in terms of total tonnage of commodities shipped. However, in terms of annual tonnage by port mile and wharf density, the UAA segment is more congested than either the Port of Huntington-Tristate or the Port of Pittsburgh. Also, on average, 1.5 times more commodity tonnage transits the Upper Mississippi River waterway as through the Ohio River waterway, which is inclusive of the Huntington-Tristate and Pittsburgh ports.

Barge traffic within the UAA segment is currently too busy and congested to support WBCR. In addition, industry experts, including federal, state, and local authorities, as well as private shipping company representatives, anticipate traffic conditions will only increase in the future. This is in part due to the expansion of the Panama Canal, which is to be completed in 2014. The canal expansion project is expected to drive substantial growth in the shipment of containers via barges on the Mississippi River. Given that the Port of Metropolitan St. Louis is the northernmost, year-round, ice-free port on the Mississippi River, intermodal (i.e., barge to truck or rail) facilities in the Port will play a critical role in the movement of products to market. Therefore, this development will increase the overall amount of barge traffic and hazards to recreational users. Aside from the canal expansion project, industry representatives noted recent and expected increases in the volume of several commodities within the UAA segment (e.g., crude oil, coal, and dry distillers grain). Growth is also evident from several ongoing and proposed riverfront improvement projects (e.g., the on-going \$20 million South Dock reconstruction and expansion project at the Municipal River Terminal (RM 181.6)).

Per the Department's request, MSD explored potential structural and operational modifications as a means of making the UAA segment more compatible with WBCR. Theoretically, hydraulic conditions more suitable for WBCR could be attained through the construction of a lock and dam system downstream of or within the UAA segment. However, under such a scenario the Port of Metropolitan St. Louis risks shutting down during colder periods due to ice blockages and increased dredging and maintenance costs due to sedimentation from the Missouri River. These issues aside, John Peukert, Project Manager, USACE, St. Louis District stated that construction of a new lock and dam system would (1) be economically infeasible at an estimated cost of \$1.2 billion, (2) would unlikely be permitted through the National Environmental Policy Act (NEPA) process, and (3) do nothing to alleviate barge traffic in the UAA segment.

A waterway, similar to the Chain of Rocks Canal, to convey barge and towboat traffic around the metropolitan St. Louis area was also evaluated to address MDNR's information request. Under this scenario, the benefit of such a waterway would be to divert transiting barge and towboat traffic out of a significant portion of the UAA segment to reduce impacts to potential WBCR uses. In order to avoid the more-densely populated areas of the metropolitan St. Louis area and to limit excavation depths, the waterway would likely be constructed on east side of the Mississippi River within the historic floodplain. As such, the waterway would be required to be significantly longer than the 8.4 mile Chain of Rocks Canal. The cost for simply the excavation of the waterway channel would be substantial. Costs associated with environmental matters, land acquisition, roadway improvements, bridge construction, and flood control works also need to be considered. Costs associated with decommissioning or relocating existing infrastructure associated with existing river-based operations (e.g., fleeting operations) within the UAA segment would also be significant. The construction of such a canal is also expected to require the construction of an additional lock and dam system. Given all of these cost considerations and the aforementioned USACE estimate of \$1.2 billion for a lock and dam system, this scenario would likely cost several billion dollars. Agency representatives stated that both waterway modification scenarios are economically infeasible and likely not permitted through the National Environmental Policy Act (NEPA) process.

Potential operational modifications examined in the Supplemental Data Report were also found to be infeasible. The primary operational modification recommended by the Department for review is the exclusion of barge traffic during periods of highest potential recreation (e.g., summer weekends). Barge and towboats in the Port of Metropolitan St. Louis area operate 24-hours per day, seven days per week. The potential costs of barge delays with this operational modification is challenging to determine given the confidentiality of this private business information, but industry representatives indicate it would be devastating. Additionally, the USCG is the only agency authorized to manage vessel traffic, and they are unwilling and unable to shut down barge traffic for recreational uses. Operational modifications based on the physical separation of recreation and barge traffic was also considered, but found to be infeasible due to safety concerns. This idea was explored in the 1980s and early 1990s as part of the attempted development of a marina in the downtown St. Louis area. However, the USACE permit application for this project was ultimately withdrawn due to the inability to demonstrate that safety concerns could be addressed, despite the potential use of river walls and buoys.

Based on information provided in the Mississippi River UAA process and the recent Supplemental Data Report, there is no cause or reason to provide water quality measures commensurate with WBCR in the UAA segment. This approach would cause severe economic impact with no environmental benefit. As demonstrated in the Mississippi River UAA, UAA Factors 3 (human caused conditions) and 4 (hydrologic modifications) provide the regulatory rationale for rebutting the presumption of WBCR. Applying WBCR protections would have zero benefit to recreational uses, because physical factors (e.g., hydraulics and barge traffic) prevent attainment of the use – not water quality. However, WBCR protections would have potentially enormous financial impacts for the citizens of the St. Louis region. MSD estimates that additional Mississippi River combined sewer overflow (CSO) control costs could reach \$2.1 billion if these potential regulation changes are adopted. MSD anticipates spending in excess of \$6 billion of capital expenditures over next several decades.<sup>1</sup> Due to indebtedness limitation issues, the additional expenditures would have to be fully funded through rate increases (i.e., pay-as-you-go), which could result in an additional 50 percent rate increase above the 200-300 percent increase required to implement the anticipated capital investments. Finally, pursuing costly additional Mississippi River controls would divert funds from more worthy environmental initiatives, such as, other critical infrastructure repairs and nutrient reduction efforts. Therefore, MSD requests the Department maintain the current water quality standards related to the Mississippi River recreational uses and water quality criteria during Missouri's upcoming triennial review rulemaking.

## **2. Report on the peer-reviewed scientific data used to commence the rulemaking process.**

MDNR references the *Mississippi River Data - December 2007 Draft* prepared by Tetra Tech as a reference document for this RIR. The draft report specifically states, "Draft – Do Not Cite or Quote" on every page of the main body and appendices. MSD requests that the Department strike this draft report as an RIR Reference Document and specifically make MDNR's UAA decision without the use of this draft report. In addition, MSD was never

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<sup>1</sup> Metropolitan St. Louis Sewer District. *Combined Sewer Overflow Long-Term Control Plan Update Report*, Revised February 2011.

provided an opportunity to review or provide comments on the December 2007 draft Tetra Tech report after engaging in the UAA stakeholder process and providing numerous comments to a preceding draft report (October 2007). Finally, MSD is concerned that significant flaws and mischaracterizations found in the draft Tetra Tech reports may have unduly influenced the Department.

In particular, MSD notes the December 2007 draft Tetra Tech report did not distinguish areas inside from outside the UAA segment. Whereas areas inside the UAA segment are incompatible with WBCR, areas outside the UAA segment are more suitable for WBCR (e.g., lake-like features to the north, backwater areas to the south, less barge congestion). For instance, the draft December 2007 Tetra Tech report gives the false impression that WBCR is attainable in the UAA segment by prominently displaying a beach-like area located outside the UAA segment. Similarly, the draft December 2007 Tetra Tech report incorrectly notes 17 separate occurrences of swimming based on citizen interviews from MSD's 2007 supplemental data collection effort. However, none of the citizen interviews provide evidence of WBCR use within the UAA segment. These and other concerns regarding the draft Tetra Tech report will be provided to the Department in a separate document.

**3. Description of the persons who will most likely be affected by the proposed rule, including persons that will bear the costs of the proposed rule and persons that will benefit from the proposed rule.**

The RIR notes the following persons will be affected by the draft rule: "[d]omestic sewage treatment facilities and collection system operated and maintained by the Metropolitan St. Louis Sewer District (MSD)." MSD notes that the affected persons is more accurately characterized as the 1.4 million residents of the City and County of St. Louis and the 25,000 industrial, commercial, and institutional facilities served by the District (i.e., MSD ratepayers). Ratepayers will ultimately bear any potential costs associated with the proposed rule. MSD also notes that potential anticipated costs are more closely approximated by \$2.1 billion. A more detailed discussion of potential costs is provided for in MSD's 2011 Supplemental Data Report. In addition to the MSD service area, the necessary upstream controls needed to meet WBCR criteria within the UAA segment would significantly impact at least one WWTP in Illinois, CSOs from collection systems in numerous communities in Illinois, and stormwater runoff from thousands of square miles of land in Missouri and Illinois.

**4. Description of the environmental and economic costs and benefits of the proposed rule.**

*Environmental Benefit*

The RIR suggests that environmental benefits from the proposed rule would only be marginal and may not be justified. MSD notes there is sufficient evidence to **conclusively** state the proposed rule is not justified. The Mississippi River UAA efforts have consistently demonstrated that physical factors alone (e.g., hydraulics and barge traffic) prevent the attainment of WBCR. Therefore, the proposed rule would have no benefit to recreational activity in the Mississippi River UAA segment. Additionally, were WBCR actually an attainable use, MSD estimates that potential added controls to meet the proposed rule would only result in approximately 0.22 less incidents of gastrointestinal illness per 1,000 swimmers (1 less GI per 4,545 swimmers). In terms of cost-benefit comparison, the

potential added CSO control costs translate to \$420 million per *E. coli* colony/100 mL or \$9.6 billion per decreased GI/1,000 swimmers. However, to clarify, this potential rate reduction should not be construed as implying the existence of 1,000 swimmers. The UAA segment is not used for WBCR, as physical factors preclude this use in the UAA segment, there would be no health benefits from the potential rule change.

#### *Environmental Cost*

The RIR notes that environmental costs from the potential rule change may come through the discharge of disinfection by-products when chlorination is used as the disinfection process. MSD agrees with this assessment, but adds that there will be greater environmental costs in terms of lost opportunities. MSD is already financially challenged to meet current regulatory obligations. The additional financial strain from the proposed rule could severely hinder MSD's ability to address other environmental issues (e.g., infrastructure repairs and nutrients).

#### *Economic Benefit*

The RIR suggests it is difficult to quantify economic benefits from the potential rule change because "actual usage of this segment of the Mississippi River is not known with great certainty, ..." MSD disagrees with this statement and notes that the Mississippi River UAA conclusively shows WBCR usage to be extremely rare. People are choosing not to recreate in the UAA segment for reasons unrelated to bacteria water quality (e.g., hydraulics, barge traffic, limited access, steep and rocky shoreline, submerged and floating debris, poor water clarity). The potential rule change does not address any of the physical factors that prevent people from recreating in the UAA segment. Therefore, the potential rule change will not provide any recreationally-based economic benefits.

#### *Economic Cost*

MSD is planning on spending in excess of \$6 billion for capital expenditures, with over \$2 billion of which is committed to infrastructure construction and improvement projects related to MSD's approved CSO long-term control plan (LTCP). The potential rule change may necessitate additional improvements at the two main wastewater treatment plants (Bissell Point and Lemay Wastewater Treatment Facilities) and additional controls for CSOs directly discharge to the Mississippi River. Presuming additional Mississippi River CSO controls with the same level of protection under MSD's approved CSO LTCP (i.e., four overflow events or less in a typical year), MSD estimates a potential added \$2.1 billion in expenditures, which would double the cost of MSD's CSO improvements. All of these expenditures will impact the water quality reaching the Mississippi River. Further, due to indebtedness limitation imposed by State law, this potential added expenditure would be fully funded through rate increases (i.e., pay-as-you-go), which could result in a 50 percent rate increase above the 200-300 percent increase required to construct planned infrastructure investments. It is unclear what costs would be incurred for upstream sources, but a USGS report shows that the majority of bacteria loading in the UAA segment originates from the Missouri River. In addition to the MSD service area, the necessary upstream controls needed to meet WBCR criteria within the UAA segment would significantly impact at least one WWTP in Illinois, CSOs from collection systems in numerous communities in Illinois, and stormwater runoff from thousands of square miles of land in Missouri and Illinois. The economic costs potentially incurred by upstream sources is unclear but could

exceed MSD's potential cost since a USGS report shows that the majority of bacteria loading in the UAA segment originates from upstream sources.<sup>2</sup>

**5. Probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rule and any anticipated effect on state revenue.**

The Department failed to consider costs associated with the potential 303(d) listing of the UAA segment. Given that the likelihood of a 303(d) listing is significantly greater with the proposed rule, the Department should provide consideration for costs associated with developing a potential total maximum daily load (TMDL).

**6. Comparison of the probable costs and benefits of the proposed rule to the probable costs and benefits of inaction, which includes both economic and environmental costs and benefits.**

The RIR suggests that inaction would compel USEPA to prepare and publish regulations equivalent to the draft rule accompanying the RIR; therefore, there would be no difference in costs and benefits. The RIR also notes that the presentation of additional data and information to the Department regarding use attainability would not constitute inaction.

On August 8, 2011, MSD presented the Supplemental Data Report to the Department that included additional information supporting the lack of WBCR attainment in the UAA segment. Additional data and analyses presented in this report confirm findings presented in the 2005 UAA and 2007 Report; WBCR is not an existing or attainable use in the UAA segment. The evidence is clear that a lack of accessibility, dangerous hydraulics and shoreline conditions, and dense barge traffic contribute to what is the most incompatible and treacherous segment of the Mississippi River for would-be recreational users. This finding is corroborated by the USCG, which considers this the most dangerous segment in the Upper Mississippi River sector. MDNR also notes in the June 2011 RIR that WBCR is not "a safe use of the river in this segment given its physical constraints and high barge traffic and considering safer alternatives for recreation are nearby." To MSD's knowledge, a more convincing and comprehensive case has never before been made for a recreational UAA in the United States. Therefore, MSD has provided sufficient information to MDNR and USEPA to support maintaining Missouri's current Mississippi River water quality standards.

**7. Determination of whether there are less costly or less intrusive methods for achieving the proposed rule.**

The RIR interprets factor 7 as to whether or not there are less costly methods for rebutting the presumption that WBCR can be attained in the UAA segment than complying with 40 CFR 131.10(g). Based on this interpretation, MSD agrees that a UAA is required to rebut the presumption of WBCR attainment. However, MSD adds that a UAA has already been performed on this segment, which demonstrates that factors 3 (human caused conditions)

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<sup>2</sup> Wilkison, D.H., Davis, J.V., 2010. Occurrence and sources of *Escherichia coli* in metropolitan St. Louis streams. October 2004 through September 2007; U.S. Geological Survey Scientific Investigations Report 2010-5150, 57 p. <http://www.dnr.mo.gov/env/wpp/rules/rir/ms-river-decision-USGS-ecoli-study.pdf>

and 4 (hydrologic modifications) prevent attainment of WBCR. Therefore, MSD requests the Department use this as a basis for maintaining the current water quality standards.

**8. Description of any alternative method for achieving the purpose of the proposed rule that were seriously considered by the Department and the reasons why they were rejected in favor of the proposed rule.**

In response to factor 8, the RIR states that a UAA is required to rebut the presumption that WBCR can be attained in this segment of the Mississippi River and that methods chosen to assess attainment were conducted using factors found in federal regulation at 40 CFR 131.10(g). MSD agrees with this response, but adds that the Mississippi River UAA and Supplemental Data Report demonstrate that factors 3 (human caused conditions) and 4 (hydrologic modifications) prevent attainment of WBCR. Therefore, MSD requests the Department use this as a basis for maintaining the current water quality standards.

**9. Analysis of both short-term and long-term consequences of the proposed rule.**

MSD generally concurs with the Department's response to factor 9, but requests the Department add the 303(d) listing of the UAA segment and development of a TMDL as potential short-term and long-term consequences of the potential rule change.

**10. Explanation of the risks to human health, public welfare or the environment addressed by the proposed rule.**

MSD agrees that physical risks of whole body contact recreation unique to this segment far exceed any risk due to bacteria. However, MSD adds that bacteria reductions from the proposed rule will not result in any meaningful reductions in risk of gastrointestinal illness rates. The UAA segment is not used for WBCR due to physical factors (e.g., hydraulics and barge traffic); therefore, the proposed rule will not improve human health, public welfare or the environment. However, MSD estimates the potential controls resulting from a water quality standards change would only result in 0.22 less incidents of gastrointestinal illness per 1,000 swimmers (1 less GI per 4,545 swimmers) irrespective of the fact that the UAA segment is not used for WBCR. Again in terms of cost-benefit comparison, the potential added CSO control costs translate to \$420 million per *E. coli* colony/100 mL or \$9.6 billion per decreased GI/1,000 swimmers.

**11. Identification of the sources of scientific information used in evaluating the risk and a summary of such information.**

The RIR notes that the Department is anticipating additional data and information from MSD regarding barge traffic and fleeting volumes in the segment and how place, time or manner restrictions on commercial barge or boat traffic (with complementary restrictions on recreational use) may impact local and regional socio-economics. On August 8, 2011, MSD provided this additional information to the Department in a supplemental data report. The supplemental data show that the Port of Metropolitan St. Louis is the third busiest inland port in the country in terms of commodity tonnage shipped to, from, or within the port. However, in terms of barge traffic, this segment is likely the most congested inland port in the country. Additionally, evidence shows that barge and fleeting activity will only be

increasing in the coming years. MSD was not able to ascertain a cost estimate for placing restrictions on commercial barge and boat traffic, but interviews with the USCG and USACE indicated such restrictions would not be possible, regardless of cost.

**12. Description and impact statement of any uncertainties and assumptions made in conducting the analysis on the resulting estimate.**

MSD agrees that uncertainties concerning the UAA process and procedures are minimal. MSD notes that the data collection effort scope for the UAA conducted on this segment was developed by a USEPA-led stakeholder process that included MDNR, MSD, Missouri Coalition for the Environment, Washington University Interdisciplinary Environmental Clinic, and USEPA's designated consultants. UAAs are dependent on State determination. The stakeholder group process was not a procedure required by the guidance or regulations, but MSD participated and expended additional monies on data requested in order to insure an accurate scientific determination. The data collection effort included numerous interviews from multiple groups, agencies, and citizens, morphologic and hydraulic characterizations conducted at seven locations over two flow regimes, over 80,000 photographs, and an extensive barge traffic analysis. To MSD's knowledge, this UAA represents the most comprehensive data collection effort ever conducted for a recreational UAA in the country.

**13. Description of any significant countervailing risks that may be caused by the proposed rule.**

The RIR notes that countervailing risks from the proposed rule may come through the discharge of disinfection by-products when chlorination is used as the disinfection process. MSD agrees with this assessment, but adds that there may be other environmental costs in terms of lost opportunities to address other issues. MSD is already financially challenged to meet current regulatory obligations. The additional financial strain from the proposed rule could severely hinder MSD's ability to address other more pressing environmental issues (e.g., infrastructure repairs and nutrients).

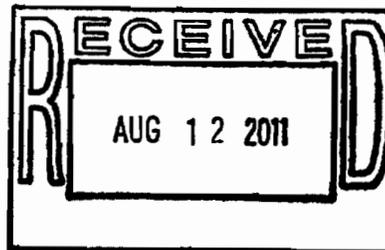
**14. Identification of at least one, if any, alternative regulatory approaches that will produce comparable human health, public welfare or environmental outcomes.**

The RIR identified designating the Mississippi River for WBCR as an alternative to designating the segment for SCR and applying WBCR-Category B bacteria criteria. From a regulatory standpoint, there is little to no difference between this suggestion and the potential rule accompanying the RIR. MSD requests the Department maintain the current water quality standards for the UAA segment as an alternative regulatory approach. As documented in the Mississippi River UAA and supplemental data report, physical factors alone (e.g., hydraulics and barge traffic) prevent the attainment of WBCR. Therefore, there is no meaningful difference between the alternative regulatory approach proposed by MDNR and the potential rule accompanying the RIR in terms of human health, public welfare or environmental outcomes.



**Metropolitan  
St. Louis Sewer  
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August 11, 2011

Mr. John Hoke  
Water Quality Monitoring and Assessment Section Chief  
Missouri Department of Natural Resources  
Water Protection Program  
P O Box 176  
Jefferson City MO 65102

**Subject:** Comments on the draft December 2007 Tetra Tech report entitled "Mississippi River Data"

Dear Mr. Hoke:

With this letter the St. Louis Metropolitan Sewer District (MSD) is (1) providing comments on the draft December 2007 Tetra Tech report entitled "Mississippi River Data" (hereinafter referred to as the draft Tetra Tech report) and (2) requesting the Missouri Department of Natural Resources (MDNR) strike this report as a Regulatory Impact Report (RIR) Reference Document. MSD is concerned that significant flaws and mischaracterizations found in the draft Tetra Tech report may have unduly influenced the Department and the U.S. Environmental Protection Agency (USEPA). Furthermore, USEPA never provided MSD an opportunity to review or comment on the draft Tetra Tech report after engaging in the Mississippi River use attainability analysis (UAA) stakeholder process. MSD discovered the draft Tetra Tech report in December 2010 after requesting the Mississippi River UAA administrative record from MDNR and USEPA. In addition to report inaccuracies and USEPA's failure to solicit review, the draft Tetra Tech report specifically states, "**Draft – Do Not Cite or Quote**" on every page of the main body and appendices. This document should not be relied on by MDNR in making its decision or this proposed rule since it is draft and the author specifically restricts the document's use. For these reasons MSD requests that MDNR strike this report as an RIR Reference Document and specifically make MDNR's UAA decision without use of this draft report.

***Descriptions of sandbars in the draft Tetra Tech report are misleading***

The draft Tetra Tech report characterizes areas outside of the subject UAA segment (i.e., upstream, downstream, and Illinois side segments), thus the information results in the false impression that beach areas and sand bars are prevalent throughout the UAA segment at issue. For example, the draft Tetra Tech report prominently includes images of sandbars located outside the subject UAA segment (Figure 1). Additionally, Tetra Tech's characterization of several survey sites as "beach area" or "beachy" is not descriptive of the shoreline in the UAA segment and thus is inappropriate and misleading. "Beach area" has a connotation of sandy

beaches with gentle slopes, which does not represent actual conditions. Survey sites within the UAA segment are better characterized as steep and rocky with submerged obstacles and debris (e.g., sunken logs and riprap), irregular surfaces, and sudden drop-offs (Figure 2).

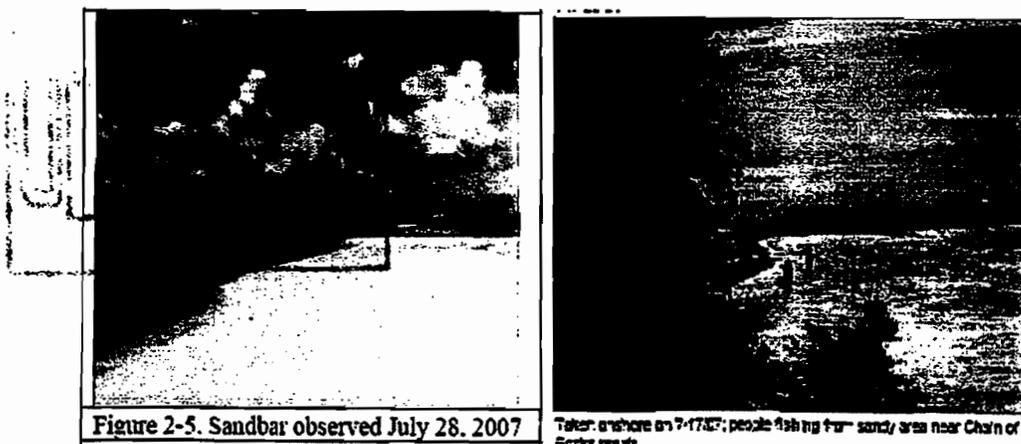


Figure 1. Shore Areas Located Outside the UAA Segment but are Included in the Draft Tetra Tech Report (Left photo was taken on the Illinois shore at the downstream most extent of the UAA segment. Right photo was taken on the Illinois shore north of the UAA segment.)



Figure 2. Representative Shore Areas Inside the UAA Segment

***Tetra Tech falsely characterizes public comments regarding waterskiing***

The draft Tetra Tech report falsely depicts waterskiing as occurring throughout the entire UAA segment in draft Tetra Tech report Figures 2-1 through 2-4. The basis for this depiction is a website reporting on the planned (i.e., not yet occurred) attempt of two Australians brothers to waterski the entire Mississippi River from Minneapolis to the Gulf of Mexico for charity. It is unclear whether the brothers accomplished this feat, but even so, the suggestion that waterskiing

occurs throughout the entire UAA segment based on this charity event is misleading and inappropriate.

Additionally, the draft Tetra Tech report falsely depicts an additional four reports of waterskiing near downtown St. Louis in draft Tetra Tech report Figures 2-1 and 2-2. Far too little information was provided by Tetra Tech to clearly understand the area and events in question. The depictions of waterskiing are based on public testimony collected in 2005 regarding Mississippi River waterbody ID 1707. At that time, the vast majority of waterbody ID 1707 was outside the subject UAA segment. Comments from two of the four reports are too unclear to depict as occurring in the subject UAA segment, much less near downtown St. Louis. One comment clearly refers to a New Year's Day (i.e., outside the recreational season) charity event, and as such, should not be depicted in the draft Tetra Tech report. Finally, the fourth comment does not provide enough detail to determine whether it is referring to the same New Year's Day charity event or not.

#### ***Tetra Tech falsely depicts non-citizen interview comments***

The draft Tetra Tech report's presentation of non-citizen interviews falsely depicts whole body contact recreation (WBCR) in the subject UAA segment. Four of the eight rows in Table 2-4 of the draft Tetra Tech report depict comments that are either outside the UAA segment or outside the recreational season (i.e., Chain of Rocks, Mosenthein Island (IL east and west side), and Polar Bear event by Arch). Additionally, Tetra Tech inappropriately grouped both primary and secondary contact activities for comments related to the downtown area (i.e., wading and jet skiing are grouped with swimming and waterskiing).

#### ***Tetra Tech falsely reports evidence of swimming***

The draft Tetra Tech report incorrectly identifies 17 citizen reported instances swimming based on MEC Water Resources' (currently Geosyntec Consultants) data collection efforts (draft Tetra Tech report Table 2-5). These efforts identified zero citizen reported instances of swimming in the UAA segment. It is unclear how the number of swimming reports was derived. Evidence of WBCR use was primarily limited to Chouteau Island and the Chain of Rocks, which are areas outside the UAA segment, and previously identified by MSD as supporting WBCR activities.

Additionally, the draft Tetra Tech report incorrectly states that public use comments collected by USEPA Region VII report that "2 to 4 people swim in the study area each year." This factual error is repeated in Table 2-2 and again in Appendix A. The basis for this statement is unclear. The only evidence of swimming comes from sketchy notes from a single telephone interview, which do not support this assertion.

#### ***Missouri River barge industry comparison is misleading***

In the draft Tetra Tech report, misleading comparisons are made between barge and towboat traffic on the Missouri and Mississippi Rivers. This comparison was added to the December 2007 draft report and not presented in the October 2007 draft version. The report incorrectly suggests that the barge industry is significantly more active on the Missouri River compared to the St. Louis segment of the Mississippi River. The study reports as its basis that 83.8 percent more barge and vessel trips were logged on the Missouri River than on the Port of Metropolitan St. Louis portion of the Mississippi River. However, this statistic ignores the type, volume, and density of barge industry operations, which are critical factors in evaluating the impact on recreation. These calculations were based on 2005 US Army Corps of Engineers (USACE) vessel trip data for the 70-mile Port of Metropolitan St. Louis and the 375-mile Missouri River waterway between its mouth (RM 0) and Kansas City (RM 374.8). Given the significant

difference in the lengths of these two waterway segments and the fact that the USACE data for ports and waterways are characterized differently, a more appropriate comparison would be a waterway-to-waterway comparison.

The UAA segment is located within the Upper Mississippi River waterway defined by the USACE as being from RM 0 to RM 195. USACE data for three waterway-based parameters for the Missouri River and Upper Mississippi River waterways are presented in Table 1: the annual number of vessel trips on the waterways, the total commodity tonnage moved on the waterways, and the total commodity tonnage transiting “through” the waterways.<sup>1,2,3</sup> Analysis of these data show that while the annual number of trips on the Missouri River waterway was variable over the analyzed period of time, the generally higher annual number of trips on the Upper Mississippi River waterway was stable at an average of 125,000 vessel trips. Analysis of the total commodity tonnage data shows that an average of approximately 17 times more commodity tonnage was moved on the Upper Mississippi River. The “through” traffic commodity data demonstrates that on average 2,500 times more tons of commodities transited through the length of the Upper Mississippi River waterway.

Additionally, Missouri River barge and towboat traffic is dominated by the sand and gravel industry, which presents a much lower and isolated risk to recreational users compared to the docking, fleeting, and transiting movements present within the UAA segment. Table 2 presents an analysis of 2005 to 2009 USACE commodity data for this Missouri segment demonstrating the dominance by the sand and gravel industry.<sup>4</sup>

**Table 1. Missouri River (RM 0 to RM 374.8) and Upper Mississippi River (RM 0 to 195) Waterway Data Comparison**

Year	All Traffic Directions/All Vessel Types (Trips)		Total Tonnage—All Directions (Short Tons)	Commodity Traffic	Total Tonnage—Through Traffic (Short Tons)	Commodity
	Upper Mississippi River	Missouri River	Upper Mississippi River	Missouri River	Upper Mississippi River	Missouri River
2005	119,557	92,668	102,194,900	7,608,207	56,980,703	12,464
2006	131,565	213,917	110,243,075	7,930,996	58,899,504	24,328
2007	132,139	85,885	109,832,639	6,387,265	58,877,774	30,666
2008	119,195	29,853	98,665,056	5,373,608	49,909,751	22,443
2009	124,853	28,003	104,314,000	4,744,903	53,187,974	42,346

<sup>1</sup> The USACE defines “through” as “movements transiting a waterway, or stretch thereof, as defined in the project description of individual tables, and having origins and destinations outside of the defined area.”

<sup>2</sup> <http://www.iwr.usace.army.mil/ndc/wcsc/pdf/wcusmvgc09.pdf>

<sup>3</sup> [http://www.ndc.iwr.usace.army.mil/wcsc/webpub09/Part2\\_WWYs\\_tonsbyTT\\_Dr\\_Yr\\_commCY2009-2005.HTM](http://www.ndc.iwr.usace.army.mil/wcsc/webpub09/Part2_WWYs_tonsbyTT_Dr_Yr_commCY2009-2005.HTM)

<sup>4</sup> [http://www.ndc.iwr.usace.army.mil/wcsc/webpub09/Part2\\_WWYs\\_Trips\\_VessType\\_Dir\\_YR\\_Draft\\_CY2009\\_CY2005.HTM](http://www.ndc.iwr.usace.army.mil/wcsc/webpub09/Part2_WWYs_Trips_VessType_Dir_YR_Draft_CY2009_CY2005.HTM)

<sup>4</sup> [http://www.ndc.iwr.usace.army.mil/wcsc/webpub09/Part2\\_WWYs\\_tonsbyTT\\_Dr\\_Yr\\_commCY2009-2005.HTM](http://www.ndc.iwr.usace.army.mil/wcsc/webpub09/Part2_WWYs_tonsbyTT_Dr_Yr_commCY2009-2005.HTM) (Sheet 90)

**Table 2. USACE Commodity Data for the Missouri River (RM 0 to RM 374.8)**

	<b>All Traffic Directions on Missouri River between RM 0 and 374.8</b>				
	<b>2009</b>	<b>2008</b>	<b>2007</b>	<b>2006</b>	<b>2005</b>
All Commodities (Short Tons)	4,744,903	5,373,608	6,387,265	7,930,996	7,608,207
Sand & Gravel (Short Tons)	4,387,041	5,118,176	5,983,275	7,679,202	7,241,541
<b>Sand &amp; Gravel as Percentage of All Commodities</b>	<b>92%</b>	<b>95%</b>	<b>94%</b>	<b>97%</b>	<b>95%</b>

Further analysis of the USACE commodity data for the Missouri River waterway shows that the majority of the sand and gravel related traffic (ranging from 71 percent in 2005 to 83 percent in 2009) was classified as “intra-waterway.” The USACE defines intra-waterway as “[s]hipments and receipts within the limits of a river, waterway or canal...”<sup>5</sup> Therefore, much of the reported barge and towboat traffic in the Missouri River waterway is related to nearby sand and gravel dredging operations, which is a commercial use that only has isolated recreational use impacts. The recently completed Environmental Impact Statement (EIS) for commercial dredging on the Missouri River states that commercial “[d]redging typically occurs no more than 7–10 miles upstream of a company’s sand plant and typically no more than 3–9 miles downstream.”<sup>6</sup> The EIS states that “[t]his range is dictated by the travel times to move loaded barges to the plant, offload, and return to the dredging site, and by the associated fuel costs.”<sup>7</sup> With only sixteen active dredging operations on the Missouri River waterway, the isolated impacts of these operations do little to impact the present recreational uses of the Missouri River.<sup>8</sup>

With respect to fleeting areas, the draft Tetra Tech report acknowledges that “[t]he density of fleeting sites on the Mississippi River is significantly greater than that of the Missouri River.” Specifically, Tetra Tech reported that the density of fleeting areas in the UAA segment is nearly four times greater than in the comparative segment (RM 345.3 to 378.3) of the Missouri River. The draft Tetra Tech report further asserts that “many of the [91,267 barge trips reported within the St. Louis area in the 2007 Report] likely occur in the ‘fleeting area,’ which is approximately RM 170.4–179.6.” The boundaries of the purported “fleeting area” presented here seem to have been arbitrarily defined based on visual observations of mapped fleeting areas. As demonstrated in Figures 7.2 through 7.6 of the draft Tetra Tech report, fleeting areas are congested on both river banks between approximately RM 170 and 180; however, a significant number of fleeting areas, docks, and berthing areas are also located downstream and upstream of RM 170 and 180 within the UAA segment. Additionally, there are several additional projects for river-based facilities are either proposed or underway upstream of RM 180 within the UAA segment. In summary, these findings demonstrate that by comparison, barge and towboat activity within the Port of Metropolitan St. Louis and the UAA segment is vastly denser than the Missouri River from its mouth to Kansas City.

<sup>5</sup> <http://www.ndc.iwr.usace.army.mil/wcsc/webpub09/pdfs/Terminology.pdf>

<sup>6</sup> USACE, 2011. “Missouri River Commercial Dredging Final Environmental Impact Statement.” Prepared by Cardno Entrix. <http://www.nwk.usace.army.mil/regulatory/Dredging/MO/Modredging.htm>

<sup>7</sup> *Ibid.*

<sup>8</sup> The number of existing dredging operations was estimated from Figure 2.2-1 and Table 2.2-4 of the EIS.

## ***River velocity data and characterizations are flawed***

### **Data Collection and Methodology**

Tetra Tech's field collection effort was insufficient for characterizing hazardous hydraulic conditions in the UAA segment. Only ten individual points were used to characterize velocities within a 28-mile river segment. Tetra Tech's purported justification for a limited data collection effort was a cross-sectional velocity profile collected by the US Geologic Survey (USGS). The draft Tetra Tech report states that, "These velocity magnitude profiles indicate similar velocities within a given area and lower velocity magnitudes along the shoreline areas (see also Figures F-1, F-2, and F-3)". While the figures provided show that velocities decrease at near-shore areas, these single transects do not illustrate the longitudinal variation in velocity, nor are they provided at a resolution to evaluate lateral variation. Figure F-3 of the draft Tetra Tech report also depicts a blanking distance (i.e., distance below surface with no measurements) of approximately four feet. Therefore, shallow velocities (i.e., those most likely to be encountered while swimming) are not even characterized. We recommend that additional data be provided within the report if used to support this data collection decision.

The 2007 study conducted by Geosyntec Consultants illustrates the need for collecting multiple velocity data points within a given area to assess near-shore conditions. The relative percent difference between adjacent measurements ranged from 25 to 50% at points approximately 5 to 10 feet apart. Therefore, near-shore velocity may be 1.5 feet per second (fps) at a given point, but the velocity only 5 feet laterally or 10 feet longitudinally may range from 1.9 to 2.5 fps. This marked variability in river velocity presents hazards to would-be near-shore recreators and was not characterized by Tetra Tech's insufficient data collection effort.

Aside from data insufficiency issues, MSD has concerns regarding the specific data collection methodologies employed by Tetra Tech. For instance, it is unclear whether the Swoffer Instruments Model 2100 point velocity meter used by Tetra Tech is approved for use by USGS (i.e., the principal Federal agency responsible for the collection, analysis, interpretation, and dissemination of hydrologic data). Additionally, Tetra Tech stated that 20 second velocity collection intervals were used during each of the 10 discrete measurements performed at each site and depth. It is unclear whether a 20 second time interval meets the manufacturer's recommendations, but is likely insufficient.

Tetra Tech's stated field protocols also throw into doubt the validity of their data. Tetra Tech stated in the October 31, 2007 UAA stakeholder meeting that velocity measurements were made by holding the meter over the side of the boat at a specific depth. Tetra Tech also noted the rod used to suspend the meter was held against the side of the boat in an effort to prevent movement of the device. The boat was either anchored or at many sites, grounded on the river bottom prior to data collection. MSD has concerns that the boat may have disturbed flow patterns and velocity regimes if grounded and data were collected on the shore side. Velocity data should be collected from the *front* of the boat (as the boat is oriented upstream) to minimize impacts of velocity from the hull of the boat. MSD is also concerned that velocity measurements at anchored sites may have been influenced by boat movement. Although anchored, the boat may have moved laterally during data collection. Also, wave action induced by passing tows could have influenced measurements. The draft Tetra Tech report provided no information as to if or how these influences were avoided.

Furthermore, the draft Tetra Tech report inappropriately compared velocity data to swimming safety criteria from areas too shallow for swimming. Missouri's depth criterion for WBCR is 1.0

meter (3.28 feet). Five of the ten velocity measurement points were in areas with depths ranging from 0.75 to 3.1 feet.

In addition to questionable velocity data, the draft Tetra Tech report depth data may be suspect. Depth data are critical for comparison to the WBCR depth criterion and understanding the influence that the river bottom had on velocity measurements. According to Tetra Tech's stakeholder meeting presentation, the boat's depth finder was used for depth measurements, which is typically located at the back of the boat attached to the transom. Therefore, these depth data may not be representative of the depths at the measured point velocity, particularly if velocities were collected on one side of the boat or at the front.

Lastly, MSD again is concerned about the draft report's use of the phrase "beach area" when describing the velocity study locations. "Beach area" has a connotation of sandy beaches with gentle slopes, which does not represent actual conditions

### Data Interpretation

The draft Tetra Tech report inappropriately identified the Hyra (1978) "physical" criterion of 3 fps as the limit for swimming feasibility.<sup>9</sup> The "safety" criterion proposed by Hyra (1978) of 2 fps for swimming is the appropriate criterion. Hyra (1978) distinguished between "physical" and "safety" criteria in the following statement:

"Regarding physical criteria, recreation activities have certain physical or absolute limits or requirements which must be met (i.e., a boat requires a certain minimum of depth of water to float). In the case of safety criteria there are no absolutes; however, it can generally be stated that certain depths or velocities may be unsafe for the average participant. Safety criteria may also be considered the preferred physical limitation."

The draft Tetra Tech report also failed to use the appropriate wading safety criterion. The wading feasibility analysis discussed in the draft Tetra Tech report is based on Hyra (1978), which limits considerations to only depth and velocity. The Hyra (1978) wading criterion is based on a depth and velocity product number of ten. Subsequent studies (e.g., Karvonen *et al.* (2000)) demonstrate that the Hyra (1978) criteria are not sufficiently protective under certain conditions (i.e., poor wading conditions).<sup>10</sup> Factors not considered by Hyra (1978) are critical to safe wading conditions (e.g., slope and surface conditions). The product number of ten is appropriate in good to normal conditions, but not in conditions found in the UAA segment. Based on the Karvonen *et al.* (2000) study and conditions found in the Mississippi River, the more appropriate product number for wading feasibility is four.

### ***Load duration curves are inappropriately used***

The draft Tetra Tech report inappropriately used load duration curves to assess compliance with water quality criteria. A load duration curve is a tool used for developing total maximum daily loads (TMDL) and for identifying types of loading sources (e.g., whether or not a loading is dominated by point or nonpoint sources). It is not appropriate to use a load duration curve for assessing compliance with bacteria criteria. Nor is it appropriate to plot "geometric mean loads"

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<sup>9</sup> Hyra, R., 1978. *Methods of Assessing Instream Flows for Recreation*. Cooperative Instream Flow Service Group, Fort Collins, CO.

<sup>10</sup> Karvonen, T., A. Hepojoki, H.K. Huhta, and A. Louhio, 2000. *The Use of Physical Models in Dam-Break Analysis*. RESCDAM Final Report, Helsinki University of Technology, Helsinki, Finland.

on a load duration curve. Interpreted correctly, the load duration curve presented as Figure 5-18 in the draft Tetra Tech report indicates that bacteria loading in the UAA segment is primarily attributed to high flow conditions and upstream sources.

***MSD requests that MDNR strike the draft Tetra Tech report as a RIR Reference Document and make UAA decision without use of this draft report***

MSD has found significant cause to suggest that USEPA and MDNR have been unduly influenced by Tetra Tech's December 2007 draft "Mississippi River Data" report. The draft Tetra Tech report, which both USEPA and MDNR have relied upon, includes serious mischaracterizations of the UAA segment. Most significantly, the draft Tetra Tech report did not distinguish between areas inside and outside the UAA segment. As documented in multiple reports, the UAA segment is truly unique relative to areas just outside the segment. Whereas the UAA segment is truly incompatible with WBCR, this is not the case outside the segment. In not making this distinction, the draft Tetra Tech report gives the false and misleading impression that WBCR is an existing and attainable use, when in fact it is not. In addition to the report inaccuracies, the report specifically states, "Draft – Do Not Cite or Quote" on every page of the main body and appendices. Based on the draft status of the Tetra Tech report, MSD requests that the Department strike this report as an RIR Reference Document and specifically make MDNR's UAA decision without use of this report.

Please consider this correspondence as a portion of MSD's comments on the RIR, which is currently open for public comment. These documents should also be included within the state's administrative record. If you have any questions or require additional information, please contact John Lodderhose at 314-436-8714.

Sincerely,



Jeffrey Theerman, P.E.  
Executive Director  
Metropolitan St. Louis Sewer District

**Hoke, John**

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**From:** r m bush [stlriverkeeper@sbcglobal.net]  
**Sent:** Monday, June 13, 2011 10:15 AM  
**To:** Hoke, John  
**Subject:** Mississippi River propped designation as an SCR water body between North Riverfront park and the Meramec River

The portion of the Mississippi River noted above is also a portion of the river we, the St. Louis Confluence Riverkeeper organization, consider an "area of jurisdiction" that we attempt to help maintain and if possible improve as to water quality. We do this by monitoring the river, testing the waters, education, and more.

A SCR designation seems reasonable at this time. The recent settlement of a law suit involving the local sewer company, Metropolitan Sewer District, will hopefully lead someday to a WBC designation.

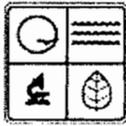
While we are aware that numerous tributary streams empty into the Mississippi River along the noticed portion, in particular the River des Peres, the effect of the MSD combined sewer outlet problems are so huge that their repair becomes primary and mandatory.

Please add us to any mailing/contact list regarding this and related issues.

Capt. Mike Bush  
St. Louis Confluence Riverkeeper  
8816 Manchester Rd. #301  
St. Louis, MO 63144  
314-567-3900  
Toll Free: 877-567-3955  
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<stlriverkeeper.org>

"Loving Our Rivers"





Missouri  
Department of  
Natural Resources

Public Comments  
for  
Regulatory Impact Report  
Site Specific Criteria  
Submitted To  
Missouri Department of Natural Resources  
Water Protection Program

# NEWMAN, COMLEY & RUTH P.C.

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August 12, 2011

**VIA E-MAIL: [john.hoke@dnr.mo.gov](mailto:john.hoke@dnr.mo.gov)**  
**and U.S. Mail**

Missouri Department of Natural Resources  
Attention: John Hoke  
Water Protection Program  
P.O. Box 176  
Jefferson City, Missouri 65102-0176

Re: Comments on Regulatory Impact Report for 10 CSR 20-7.031

To Whom It May Concern:

I am writing you on behalf of the Missouri Agribusiness Association (Mo-Ag) who previously filed a petition with the Clean Water Commission requesting revisions to the chloride and sulfate water quality standards. Mo-Ag appreciates the Department incorporating the requested changes to the water quality standards. However, the Department overlooked one section of the rule that should have deleted.

The petition and draft rule included in the petition intended to replace and supplant the existing standards on sulfates and chlorides. The current rule describes a sulfate plus chloride standard in Subsection (L) included below. The petition, based on the Iowa sulfate and chloride standard, intended that this section be replaced by separate and independent criteria for sulfates and chlorides.

(L) Sulfate and Chloride Limit for Protection of Aquatic Life.

1. Streams with 7Q10 low flow of less than one (1) cubic foot per second. The concentration of chloride plus sulfate shall not exceed one thousand milligrams per liter (1,000 mg/L). Table A2 includes additional chloride and sulfate criteria.

2. Class P1, L1, L2, and L3 waters and streams with 7Q10 low flow of more than one (1) cubic foot per second. The total chloride plus sulfate concentration shall not exceed the estimated natural background concentration by more than twenty percent (20%) at the 60Q10 low flow.

Therefore, Mo-Ag requests that subsection "(L) Sulfide and Chloride Limit for Protection of

Aquatic Life” be deleted from the standards. In addition, please delete the reference to subsection (L) in Table A2 of the draft rule.

Sincerely,

NEWMAN, COMLEY & RUTH P.C.

By:



Robert J. Brundage

[rbrundage@ncrpc.com](mailto:rbrundage@ncrpc.com)

RJB:jag

C: Mo-Ag



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Phone (573) 686-8003 Fax (573) 686-8695

John Hoke  
Missouri Department of Natural Resources  
Water Protection Program  
P.O. Box 176  
Jefferson City, MO 65102-0176  
[john.hoke@dnr.mo.gov](mailto:john.hoke@dnr.mo.gov)

RECEIVED

AUG 15 2011

WATER PROTECTION PROGRAM

VIA E-MAIL AND U.S. MAIL

August 12, 2011

Dear Mr. Hoke,

This comment letter is submitted by the City of Poplar Bluff, Missouri (the "City") to provide comments to the Missouri Department of Natural Resources (the "Department") Regulatory Impact Report ("RIR") for the rulemaking amendment to the State's water quality standards, 10 CSR 20-7.031.

Through these comments, the City requests to modify the dissolved oxygen criterion applied to Pike Creek and Main Ditch to the levels indicated in the findings and recommendations of the "Preliminary Aquatic Life Use and Site-Specific Dissolved Oxygen Criteria Findings for Main Ditch" submitted to the Department by Geosyntec Consultants on behalf of the City (the "dissolved oxygen study") and that such modification be incorporated in to the rulemaking amendment to the State's water quality standards, 10 CSR 20-7.031. The City incorporates Geosyntec Consultants' dissolved oxygen study by reference.

The dissolved oxygen study was conducted pursuant to the established process defined in 10 CSR 20-7.031(1)(W) and consisted of a multi-year study aimed at identifying appropriate aquatic life uses and dissolved oxygen criteria for the Pike Creek (Missouri Water Body ID: 2815) and Main Ditch (Missouri Water Body ID: 2814). Data were collected under a Quality Assurance Project Plan that was based on a sampling framework developed in coordination with representatives from the Department, U.S. Environmental Protection Agency Region VII ("EPA"), and the City's engineers and consultants.

In addition to seeking modification of the dissolved oxygen criterion applied to Pike Creek and Main Ditch to the levels indicated in the study, the City requests that the "limited warm-water fishery" aquatic life use be explicitly applied to Pike Creek and Main Ditch as site-specific water quality criteria for these streams pursuant to 10 CSR 20-7.031(4)(S). If incorporated into this rulemaking, the modifications to the dissolved oxygen levels and the application of a modified aquatic community use to Pike Creek and Main Ditch will improve water quality, will protect beneficial uses in the receiving streams, and will allow the City to install affordable wastewater treatment technology.

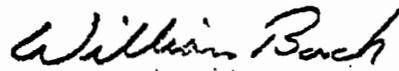
Incorporation of the recommended modifications to dissolved oxygen levels for Pike Creek and Main Ditch and application of the limited warm-water fishery aquatic life use would permit the City to improve effluent and water quality from its current condition. Historical investigations by the Department and results documented in the dissolved oxygen study for Pike Creek and Main Ditch indicate that these water bodies simply cannot attain current water quality standards as defined in 40 CFR 131.10(g) even with the implementation of the highest level of treatment technology.

Imposing the unattainable dissolved oxygen standard currently established in 10 CSR 20-7.031 for Main Ditch and Pike Creek will result in substantial and widespread social and economic impacts for the residents of Poplar Bluff. The City is a small rural community with a population of 17,045 people, with roughly 30% of those individuals below the poverty level. The median household income of City residents is \$25,651 and the median family income is \$36,407 – both below the State household median of \$46,005. The City has aggressively increased rates by 30% over the past two years and continues to implement a host of new regulatory requirements under the Clean Water Law. Implementing infrastructure that will not achieve the current unattainable dissolved oxygen standard will subject City residents to a 90% rate increase, which is well beyond the limits of affordability. This is hardly responsible to the City's residents and will not improve water quality. Therefore, modifying the dissolved oxygen levels in these streams to an attainable standard and applying the "limited warm-water fishery" aquatic life use is the appropriate approach to protect water quality and ensure affordability for the residents of Poplar Bluff.

The City requests that the Department and Clean Water Commission incorporate the recommendations of the dissolved oxygen study into this rulemaking modifying 10 CSR 20-7.031. The modification of dissolved oxygen levels at Pike Creek and Main Ditch and the explicit application of the limited warm-water fishery aquatic life use to these streams will improve effluent quality (and thus in-stream water quality) and protect existing beneficial uses without causing widespread social and economic impacts to City ratepayers.

For the Department's convenience, and pursuant to RSMo Section 640.015, attached hereto as Attachment A are draft answers to a Regulatory Impact Report for the City's proposal. Please call me at (573) 686-8003 with any questions. Thank you for considering this request.

Best Regards,



William Bach, General Manager

Cc: Aimee Davenport, Lathrop & Gage LLP

## **ATTACHMENT A**

## **Draft Regulatory Impact Report Answers for Poplar Bluff Proposed Rulemaking**

### **Describe the environmental condition or standards being applied.**

Pursuant to 10 CSR 20-7.031(4)(S), the City of Poplar Bluff ('City') is seeking a proposed rule by the Missouri Department of Natural Resources ('Department') to modify the dissolved oxygen criterion currently applied to Pike Creek (Missouri Water Body ID: 2815) and Main Ditch (Missouri Water Body ID: 2814). This modification is supported by results from the Use Attainability Analysis ('UAA') process defined in 10 CSR 20-7.031(1)(W). In doing so, the Department would recommend that the "limited warm-water fishery" aquatic life use be explicitly applied to these streams. The proposed rule will be protective of existing beneficial uses in the receiving stream, will improve water quality, and will allow the City of Poplar Bluff ('City') to install affordable wastewater treatment technology. Sections 640.015 RSMo provides that "all rulemakings that prescribe environmental conditions or standard promulgated by the Department of Natural Resources . . . shall . . . be based on the Regulatory Impact Report . . . ." Because the proposed rulemaking prescribes environmental conditions or standards, the City provides this Draft Regulatory Impact Report ('RIR') to the Department for the Department's use and for public notice of the proposed rulemaking.

#### **(1) A report on the peer-reviewed scientific data used to commence the rulemaking process.**

The City references and the Department can rely on data from the UAA, a multi-year study aimed at identifying appropriate aquatic life uses and dissolved oxygen criteria for the streams. Data were collected under a Quality Assurance Project Plan that was based on a sampling framework developed in coordination with representatives from the Department, the U.S. Environmental Protection Agency Region VII ('EPA'), and the City's engineers and consultants. An initial report ('Report') titled, "Preliminary Aquatic Life Use and Site-Specific Dissolved Oxygen Criteria Findings for Main Ditch" has been submitted to the Department ('Report'), and is incorporated to this RIR by reference. The Report provides scientific evidence supporting the proposed rule.

#### **(2) A description of persons who will most likely be affected by the proposed rule, including persons that will bear the costs of the proposed rule and persons that will benefit from the proposed rule.**

Residents and wastewater utility ratepayers in the City are expected to be most affected as they will bear the majority of costs required to modify the existing wastewater treatment plant to meet the proposed rule. Absent the proposed rule, however, residents and ratepayers would be required to fund construction of a new, more expensive, wastewater treatment facility. Construction of a new wastewater treatment facility would cause substantial and widespread impacts social and economic impacts in the City. Therefore, residents and ratepayers will ultimately benefit from the proposed rule.

#### **(3) A description of the environmental and economic costs and benefits of the proposed rule.**

Following implementation of the proposed rule, effluent quality, and thus in-stream water quality, will improve over its current condition. The Report indicates that the economic cost of complying with the proposed rule will be less than the cost of meeting current requirements.

#### **(4) The probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rule and any anticipated effect on state revenue.**

No additional costs to either the Department or any other agency are expected as a result of implementation and enforcement of the proposed rule. No effect on state revenue is expected.

- (5) A comparison of the probable costs and benefits of the proposed rule to the probable costs and benefits of inaction, which includes both economic and environmental costs and benefits.**

The Report indicates that the economic cost of complying with the new rule is a benefit to residents and ratepayers because it will be less than the cost needed to comply with existing requirements (i.e., inaction). As a result of the new rule, effluent and water quality may be of lower quality than if existing requirements were to remain in place. However, the new rule will cause effluent and water quality to improve from its current condition, will be protective of existing beneficial uses, and prevent widespread social and economic impacts to residents and ratepayers in the City.

- (6) A determination of whether there are less costly or less intrusive methods for achieving the proposed rule.**

The City is not aware of a less costly or intrusive method for achieving the proposed rule.

- (7) A description of any alternative method for achieving the purpose of the proposed rule that were seriously considered by the Department and the reasons why they were rejected in favor of the proposed rule.**

The Department considered recommending that the Missouri Clean Water Commission grant a variance (644.061 RsMO 1986) from water quality standards. This alternative was rejected, however, because variances are granted in situations where it is expected that the water quality standards are attainable and that the grantee will, after a period of time, be able to come into compliance with existing requirements. Historical investigations by the Department and results documented in the recent Report indicate that current water quality standards are not attainable as defined by 40 CFR 131.10(g). Therefore, the proposed rule is the most appropriate regulatory approach.

- (8) An analysis of both short-term and long-term consequences of the proposed rule.**

The short- and long-term consequences of the proposed rule are that water quality will improve from its current condition, existing beneficial uses will be protected and substantial and widespread social and economic impacts will be prevented.

- (9) An explanation of the risks to human health, public welfare, or the environment addressed by the proposed rule.**

The City is not aware of any risks to human health, public welfare, or the environment that are posed by the new rule.

- (10) The identification of the sources of scientific information used in evaluating the risk and a summary of such information.**

Not applicable.

- (11) A description and impact statement of any uncertainties and assumptions made in conducting the analysis on the resulting risk estimate.**

Not applicable.

**(12) A description of any significant countervailing risks that may be caused by the proposed rule.**

The City is not aware of any countervailing risks.

**(13) The identification of at least one, if any, alternative regulatory approaches that will produce comparable human health, public welfare, or environmental outcomes.**

The City is not aware of any alternative regulatory approaches that would produce comparable outcomes.

August 2, 2011

Mr. John Hoke  
Water Quality Monitoring and Assessment Section Chief  
Missouri Department of Natural Resources  
P.O. Box 176  
Jefferson City, MO 65102

**Subject: Transmittal of Aquatic Life Use and Site-Specific Dissolved Oxygen  
Criteria Findings for Main Ditch in Butler County**

Dear Mr. Hoke:

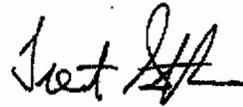
On behalf of the City of Poplar Bluff, Missouri (City) and in coordination with Smith & Company Engineers, Geosyntec is pleased to provide you with our report documenting a multi-year study of dissolved oxygen (DO) regimes and aquatic life beneficial uses for Main Ditch in Butler County. We express our appreciation to resource agency experts from the Missouri Departments of Conservation and Natural Resources, and the U.S. Environmental Protection Agency, for their ongoing contributions to a consensus-based evaluation process. Resources invested by the City and agencies have improved our understanding of DO and aquatic life uses in Mississippi Alluvial Plain ditches located in southeastern Missouri.

This document supports alternative summer season DO criteria of 3.3 mg/L as a daily average and 2.0 mg/L as a mean daily minimum. These alternative criteria are intended to support the highest aquatic life use attainable in Pike Creek and a 14-mile segment of Main Ditch downstream of the Poplar Bluff Wastewater Treatment Plant. In proposing these criteria, the City requests that alternative DO standards be applied to the Limited Warm-Water Fishery (LWWF) use currently prescribed to Main Ditch. This document provides regulatory documentation pursuant to establishing ambient-based criteria (63 FR 36742, July 1998) as justified by the Use Attainability Analysis (40 CFR 131.10(g)) framework. The City requests the Missouri Clean Water Commission adopt these site-specific, ambient-based criteria under 10 CSR 20-7.031(4)(S) and formally recognize Main Ditch as a LWWF or Modified Aquatic Community use during this water quality standards rulemaking.

Mr. John Hoke  
08/02/2011  
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On behalf the City, thank you for considering this submittal as part of the upcoming Water Quality Standards rulemaking. Please contact me if you have any questions or would like to discuss these issues further.

Sincerely,

A handwritten signature in black ink, appearing to read "Trent Stober".

Trent Stober, P.E.  
Principal

Attachment

Copies to:  
Bill Bach, City of Poplar Bluff, Missouri  
Aimee Davenport, Lathrop and Gage, LLP  
Greg Bell, Smith & Company Engineers  
John Delashmit, US EPA Region 7  
Karen Bataille, Missouri Department of  
Conservation



August 11, 2011

Mr. John Hoke  
Water Quality Monitoring and Assessment Section Chief  
Missouri Department of Natural Resources  
Water Protection Program  
P.O. Box 176  
Jefferson City, MO 65102

**Subject:** Public Notice Comments regarding Losing Stream Bacteria Criteria published within  
*Regulatory Impact Report In Preparation of an Amendment to 10 CSR 20-7.031*  
*Water Quality Standards (June 12, 2011 – August 12, 2011)*

Dear Mr. Hoke:

During the recent 2010 303(d) listing cycle, the City of Springfield ('City') became aware that the bacteria criterion applied to losing streams (*E. coli* = 126 colonies per 100 milliliters (col./100 mL) was expressed as an instantaneous maximum as cited in 10 CSR 20-7.031(4)(C). This water quality criterion expression resulted in inclusion of Wilsons Creek (a losing stream) on Missouri's impaired waters list (i.e., 303(d) list), although Wilsons Creek data were not reviewed in these terms during the development of Missouri's 2006/2008 303(d) list. In the revised rule accompanying the Regulatory Impact Report (RIR) dated May 3, 2011, the Missouri Department of Natural Resources (MNDR) is further clarifying this expectation at 10 CSR 20-7.031(5)(C)5. as follows:

*"The E. coli count shall not exceed one hundred twenty-six (126) per one hundred milliliters (100 mL) of water at any time in losing streams."*

The City is concerned that application of this bacteria criterion as an instantaneous maximum will cause unnecessary and scientifically unjustified impairment decisions (i.e., 303(d) listings) and Total Maximum Daily Load (TMDL) studies. Our comments supporting this concern are itemized below. The City specifically requests elimination of 10 CSR 20-7.031(5)(C)5. Rather, we suggest that losing streams should be protected with the *E. coli* criterion applicable to

**DEPARTMENT OF ENVIRONMENTAL SERVICES**

840 Boonville Avenue, P.O. Box 8368 Springfield, Missouri 65801-8368  
phone: (417) 864-1919 fax: (417) 864-1929  
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John Hoke  
August 11, 2011  
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Whole Body Contact Recreation – Category A (WBCR-A), which is assigned to Missouri's most heavily used recreational waters.

**Comment 1:** The scientific basis for expressing the bacteria criterion as an instantaneous maximum is not clear and does not appear to be linked to Federal water quality criteria guidance.

The *E. coli* water quality criterion applied to losing streams is apparently derived from the criterion applied to the WBCR-A beneficial use. This WBCR criterion is expressed as a geometric mean of 126 col./100 mL in Table A and was derived by the U.S. Environmental Protection (USEPA) to protect full-body immersion and swimming uses. The lowest single sample maximum offered by USEPA in the 1986 criteria document (and subsequent 2003 implementation guidance) is 235 col./100 mL and is suggested for closure decisions at frequently used beaches. By applying the 126 col./100 mL criterion as an instantaneous maximum, MDNR is targeting a much lower risk level than suggested by USEPA to protect beaches. This application has questionable merit since losing streams have frequently dry stream beds and are used much less frequently for swimming than are public beaches. For perspective, the City offers that attaining a maximum *E. coli* of 126 col./100 mL is equivalent to a geometric mean of 39 col./100 mL by default calculation from USEPA guidance - *a value three times lower than what is applied to protect our most heavily used recreational waters*. In addition, Missouri does not apply bacteria criteria to the 'Groundwater' or 'Drinking Water Supply' beneficial uses (see 10 CSR 20-7.031 Table A). Therefore, the losing stream criterion is also not justified by groundwater protection.

**Comment #2:** The bacteria criterion applied to losing streams in the proposed rule does not protect a beneficial or designated use and is not specified as a general or narrative criterion.

The City understands that the Clean Water Act was authored to maintain and protect beneficial uses (e.g., fishable and swimmable goals). Historically, USEPA and delegated States have measured attainment of beneficial uses with chemical, physical, or biological criteria surrogates. Examples of these surrogates include chronic lead or dissolved oxygen minima criteria. In the case of swimming goals, bacteria indicator criteria such as *E. coli* are implemented to assess use attainment. In this context, it is not clear what beneficial use listed in state regulations is being protected by the 126 col./100 mL criterion for losing streams. Exceptions to use-criteria linkages in the Clean Water Act include narrative or 'general' criteria that broadly apply to all waters. However, Missouri's narrative criteria included as 10 CSR 20-

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7.031(3) or a narrative criteria implementation policy does not clearly address bacteria criteria to level currently applied to losing streams. As 'losing streams' are not a beneficial use, the City questions the validity or applicability of assigning bacteria criteria to streams or reaches identified by MDNR as 'losing.'

**Comment 3:** A maximum bacteria criterion of 126 col./100 mL is likely to result in unnecessary impairment decisions (i.e., 303(d) listings) and TMDLs.

As mentioned above, justification is lacking for applying a bacteria criterion to losing streams based on swimming or groundwater beneficial uses. Furthermore, a maximum criterion value of 126 col./100 mL is likely not met in many of Missouri's highest quality Ozark streams, even without known or substantive point sources. To illustrate this point, we reviewed *E. coli* data from USGS stations at Bull Creek near Walnut Shade (07053810) and North Fork River near Tecumseh (07057500). Both stations were used as reference streams for developing the Wilson Creek and Pearson Creeks' TMDL targets. Samples collected from the Bull Creek and North Fork stations since 2003 exceeded the losing stream criterion of 126 col./100 mL 20.8% and 13.8% of the time, respectively (Table 1).

**TABLE 1.** Summary of *E. coli* Data from USGS Reference Stream Stations (2003 – 2010).

USGS Water Quality Station	Date Range	Count	Max <i>E. coli</i> (col./100 mL)	Count >126 col./100 mL
Bull Creek nr. Walnut Shade	10/11/06 – 9/3/2008	24	2,900	5 (20.8%)
North Fork River nr. Tecumseh	1/21/2003-7/27/2010	58	7,900	8 (13.8%)

Therefore, application the bacteria criterion as a maximum value (instead of a geometric mean) will apparently result in additional losing stream 303(d) listings since these high quality Ozark streams do not achieve this criterion. In this context, the City questions if resources needed to complete and implement resulting TMDL studies are proportional to the actual risks or uses associated with losing stream environments.

In summary, the City specifically requests elimination of 10 CSR 20-7.031(5)(C)5. Rather, we suggest that losing streams should be protected with the *E. coli* criterion applicable to Whole Body Contact Recreation – Category A (WBCR-A), which is assigned to Missouri's most heavily used recreational waters. In doing so, MDNR is likely to prevent unnecessary impairment listings and TMDLs, while applying resource protection measures supported by Federal

John Hoke  
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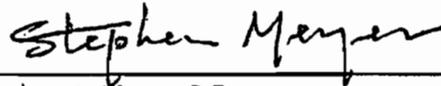
guidance and science-based risk assessments. We thank the Department for this opportunity to provide comments during the public notice period associated with the *Regulatory Impact Report In Preparation of an Amendment to 10 CSR 20-7.031 Water Quality Standards (June 12, 2011 – August 12, 2011)*.

Sincerely,



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Greg Burris  
City Manager



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Stephen A. Meyer, P.E.  
Director of Environmental Services



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Phil Broyles, P.E.  
Director of Public Works

cc: Trent Stober, Geosyntec  
John Madras, DNR-Director of Water Protection Program, Water Protection & Soil Conservation  
Jan Millington, Law  
Ed Malter, Clean Water Services  
Todd Wagner, Stormwater Services



August 10, 2011

RECEIVED  
AUGUST 11 PM 1:12  
NATIONAL POLLUTANT DISCHARGE

Mr. John Hoke  
Missouri Department of Natural Resources  
Water Protection Program  
P.O. Box 176  
Jefferson City, Missouri, 65102-0176

**Subject: Comment Letter for the Missouri Department of Natural Resources Regulatory Impact Report In Preparation for Proposing An Amendment to 10 CSR 20-7.031, Missouri Water Quality Standards**

Dear: Mr. Hoke

**INTRODUCTION**

The Missouri Department of Natural Resources (MDNR) has placed a Regulatory Impact Report (RIR) on Public Notice in preparation for proposing an amendment to 10 CSR 20-7.031, Missouri's Water Quality Standards. The purpose of RIR is to evaluate economic and environmental costs and benefits of the proposed rule. The Empire District Electric Company (Empire) strongly supports MDNR's proposed adoption of hardness-based chloride and sulfate criteria, which were developed over the last several years by the US Environmental Protection Agency (USEPA) and the State of Iowa. These criteria represent the latest understanding of aquatic life toxicity resulting from chloride and sulfate exposure. Empire also respectfully requests elimination of the current 1,000 mg/L sulfate plus criterion and background-based large stream criteria provision as, in light of this new information, these criteria are also no longer valid. After performing diligent literature reviews and performing multiple acute and chronic toxicity tests, Empire has found no data or other scientific information supporting these criteria. Therefore, we believe that Missouri should solely rely on the hardness-based sulfate and chloride criteria included in the proposed rule. To support this request, Empire has included a summary of the extensive studies of site-specific factors that influence chloride and sulfate toxicity in discharges from the Asbury Power plant and present comparison's to MDNR's proposed hardness-based criteria below. Specific comments to the RIR factors are also provided as an attachment.

**FACILITY AND PROJECT BACKGROUND**

Empire owns and operates the Asbury Power Plant and substation located in Jasper County, Missouri, in Township 30 North, Range 33 West, Section 17. The Plant complex is located north of the town of Asbury, Missouri, approximately two miles east and one mile north of the intersection of Highway 171 and County Road H. The Asbury Power Plant is located in the Blackberry Creek and Spring River watersheds. The Plant has four permitted outfalls that discharge to Blackberry Creek (Missouri Water Body ID 03184) and its unclassified tributaries. Empire's National Pollutant Discharge Elimination System (NPDES) permit (MO-0095362) also includes in-stream monitoring requirements at upstream and downstream segments of Blackberry Creek. In-stream and outfall monitoring data demonstrate significant challenges with meeting Missouri's sulfate plus chloride criterion of 1,000 mg/L.

Compliance with Missouri's current chloride criteria (Acute = 860 mg/L; Chronic = 230 mg/L) is also of concern. The cooling water (Outfalls #001) contributes to high baseflow sulfate and chloride levels within Blackberry Creek and dominates this intermittent stream during low flow conditions. The Missouri Clean Water Commission (MCWC) granted Empire an extended variance from Missouri's chloride plus sulfate criterion at the September 8, 2010 MCWC meeting. Empire performed several studies prior to and since the variance was issued. These studies, listed below, include evaluations of various discharge and treatment alternatives, in stream biological monitoring, and acute and chronic toxicity testing.

Adequate water supplies are of critical concern to support the population and industry in the Tri-State Area of southeastern Kansas, southwestern Missouri and northwestern Oklahoma, which includes the Asbury Power Plant site. The US Geologic Survey (USGS) developed a sophisticated groundwater model and evaluated water availability in the Ozark Aquifer System during the next 50 Years with increased groundwater use in the Tri-State Area (Czarnecki, et. al 2009). The Ozark aquifer is the primary source of water for many municipalities and industrial facilities in southeastern Kansas, southwestern Missouri and northwestern Oklahoma. Water levels have declined as much as 400 to 500 feet in some parts of the Ozark aquifer since 1960. The USGS model used to simulate groundwater withdrawals at future rates greater than actual 2006 rates resulted in simulated dewatering of the aquifer near some municipalities. Increased or overuse of critical groundwater supplies pose a real threat to the population and industry of the area including the Asbury Power Plant. Increased water use by the Asbury Plant through additional well installation or changes to plant operation may not be justified in order to achieve questionable environmental benefit.

#### **ALTERNATIVES ANALYSIS**

In 2006, Geosyntec Consultants (then MEC Water Resources, Inc.) performed an evaluation with Empire to determine if the existing water quality criterion can be met with various discharge scenarios (i.e., intermittent discharges, alternate discharge locations, etc.) and treatment processes. The analysis of the various discharge and treatment alternatives found that the technical feasibility, costs, and secondary impacts of the options evaluated were prohibitive. The most viable alternative included installation of additional groundwater wells to increase cooling water discharges, which would essentially dilute the dissolved solids in the current discharge. Flow augmentation to meet the 1000 mg/l S + CL- criteria will require at least one or two additional wells with blending/regulating system(s) estimated to cost \$600,000 per well. Projected cooling water discharge would increase 0.6 - 1.4 million gallons per day (MGD) a discharge increase of 80-200%. In addition to the increased depletion of the aquifer the high capital costs as well as operating expenses would be passed on to Empires customers and shareholders. In addition, greater groundwater withdrawal may increase intrusion of saline groundwater into the Empire well field, which could mitigate the benefit of providing additional diluting water.

#### **MACROINVERTEBRATE SURVEYS**

In 2007 and 2009, Geosyntec conducted benthic macroinvertebrate and water chemistry surveys to identify the level of aquatic life use currently attained downstream of the Asbury discharge. This investigation determined that the Blackberry Creek macroinvertebrate community was comparable to other similar-sized, high-quality (reference and high quality conservation opportunity area) streams in

the area despite relatively high levels of instream sulfate and chloride. These results suggest that the beneficial use was being attained and that development of site-specific criteria may be appropriate because the aquatic life beneficial use is attained at sulfate and chloride levels in excess of Missouri's statewide criteria.

#### **ACUTE AND CHRONIC WHOLE EFFLUENT TOXICITY TESTING**

Since Whole Effluent Toxicity (WET) testing has been incorporated into the Empire Asbury NPDES permit, the facility has regularly passed acute toxicity tests using on a chloride sensitive species (*Ceriodaphnia dubia*) and fathead minnows (*Pimephales promelas*). Geosyntec has also performed several series of acute and chronic WET tests to further evaluate the effects of the Asbury's effluent on these standard WET testing organisms. A thorough summary of the WET testing results and comparisons to MDNR's current and proposed criteria is presented below.

#### **TOXICITY TESTING RESULTS**

Despite having concentrations of chloride and sulfate that exceeded state water quality criteria, Empire's effluent regularly passes single effluent, acute WET tests at their downstream Blackberry Creek monitoring point. Table 1 provides a summary of WET testing that has been performed from 2007-2009. These 48-hour, static, non-renewal tests used standard test organisms (*Pimephales promelas* and *Ceriodaphnia dubia*) and measured mortality as the endpoint. In addition, several series of standard 7-day chronic toxicity tests were conducted using *Ceriodaphnia dubia* and fathead minnows during 2008-2009. All samples tested contained chloride and sulfate concentrations that exceeded the state water quality criteria. No acute toxicity and only limited chronic effects (1 set of *Ceriodaphnia dubia* tests) was documented despite the presence of chloride and chloride plus sulfate concentrations that exceeded 300 and 2,000 mg/L, respectively.

**Table 1: Summary of Whole Effluent Toxicity Testing 2007-2009**

Date	Site	C. dubia		Chloride (mg/L)	Sulfate (mg/L)	Cl+SO <sub>4</sub> (mg/L)	Hardness (mg/L)
		Survival	Reproduction				
4/27/2007	Highway H	Pass		NM	NM	NM	628
2/5/2008	Outfall #002	Pass		370	1880	2250	1266
2/5/2008	upstream	Pass		NM	NM	NM	604
3/10/2008	Outfall #002	Pass	Fail	336	1977	2313	1440
3/10/2008	Outfall #001	Pass	Fail	525	940	1465	1590
3/10/2008	Upstream	Pass	Pass	NM	NM	NM	700
7/7/2008	Outfall #002	Pass	Pass	311	1823	2134	1230
7/7/2008	Highway H	Pass	Pass	368	890	1258	1210
7/7/2008	Comb 1500 Mixture	Pass	Pass	361	1017	1378	1230
7/7/2008	Comb 1750 Mixture	Pass	Pass	341	1283	1624	1230
6/1/2009	Outfall # 001	Pass	Pass	442	1150	1592	1548
6/23/2009	Highway H	Pass		NM	NM	NM	744

Pass = no significant difference between the survival (acute) or reproduction (chronic) of organisms at the measured concentrations of chloride and sulfate at a 95% confidence level when compared to a control.

NM: NOT MEASURED

More recently Empire has undertaken additional toxicity testing studies to further evaluate their discharge by spiking a sample of Blackberry Creek with increasing concentrations of chloride to determine the LC50 (lethal concentration expected to kill fifty percent (50%) of exposed test organisms) of chloride to *Ceriodaphnia dubia* at a known hardness and sulfate concentration (Table 2). This testing was performed in part to obtain data for the calculation of a Water Effects Ratio (WER) discussed in the next section.

**Table 2: Summary of Whole Effluent Toxicity Testing 2011**

Date	Site	C. dubia		Chloride (mg/L)	Sulfate (mg/L)	Cl+SO <sub>4</sub> (mg/L)	Hardness (mg/L)
		Survival	Reproduction				
7/18/2011	spiked Highway H	Pass		497	593	1090	741
7/18/2011	spiked Highway H	Pass		685	593	1278	741
7/18/2011	spiked Highway H	Pass		860	593	1453	741
7/18/2011	spiked Highway H	Pass		1060	593	1653	741
7/18/2011	spiked Highway H	Pass		1200	593	1793	741
7/18/2011	spiked Highway H	Pass		1450	593	2043	741
7/18/2011	spiked Highway H	Pass		1660	593	2253	741
7/18/2011	spiked Highway H	Fail		1870	593	2463	741
7/18/2011	spiked Highway H	Fail		2050	593	2643	741
7/18/2011	Highway H	Pass	Pass	330	593	923	741
7/18/2011	spiked Highway H	Pass	Pass	363	593	956	741
7/18/2011	spiked Highway H	Pass	Pass	372	593	965	741
7/18/2011	spiked Highway H	Pass	Pass	411	593	1004	741
7/18/2011	spiked Highway H	Pass	Pass	428	593	1021	741
7/18/2011	spiked Highway H	Pass	Pass	477	593	1070	741
7/18/2011	spiked Highway H	Pass	Pass	510	593	1103	741

Pass = no significant difference between the survival (acute) or reproduction (chronic) of organisms at the measured concentrations of chloride and sulfate at a 95% confidence level when compared to a control.

These toxicity study results demonstrate that Missouri's current chloride and sulfate plus chloride criteria are far too conservative for application to Blackberry Creek and most likely all Missouri streams and rivers. The results of both acute and chronic toxicity testing with standard test organisms clearly show the ability of test organisms to pass acute and chronic WET tests beyond the existing chloride and sulfate plus chloride criteria. In fact, acute and chronic effects were not observed until chloride levels exceeded 2,000 and 1,000 mg/L, respectively.

The Blackberry Creek studies support the view (Mount et al. 1997, Goodfellow et al. 2000, and others) that the type and concentration of individual ions present in water are more useful in predicting adverse

aquatic life effects than general measures of ion concentrations, such as total dissolved solids, conductivity, and sulfate plus chloride. The existing national chloride criteria are based on data that was collected prior to 1987. The acute and chronic national chloride criteria are 860 and 230 mg/L, respectively (USEPA 1988). These criteria were derived from toxicity data obtained by using sodium chloride in laboratory-reconstituted water. These data did not take into consideration the effect of hardness and sulfate on chloride toxicity. However, new research has become available which clearly establishes the relationship of chloride and sulfate toxicity to each other and to hardness (Soucek and Kennedy 2005). Chloride toxicity is heavily dependent on water hardness and to a lesser degree on sulfate concentrations.

The State of Iowa recently reevaluated and revised chloride and sulfate criteria to better protect aquatic life (IDNR 2009). Working with USEPA, IDNR compiled this newer scientific data, identified data gaps, and cooperated with USEPA and others to perform additional toxicity tests. The State of Iowa promulgated revised chloride and sulfate water quality criteria to rule to reflect the new data. Based on these findings, the State of Missouri has begun to review their sulfate and chloride water quality criteria. The new Iowa criteria are expressed by the following equations for the determination of chloride criteria based on hardness and sulfate concentrations:

- Acute Chloride Criteria Equation

$$\text{Acute Value} = -287.8 (\text{hardness})^{0.205797} (\text{sulfate})^{-0.07452}$$

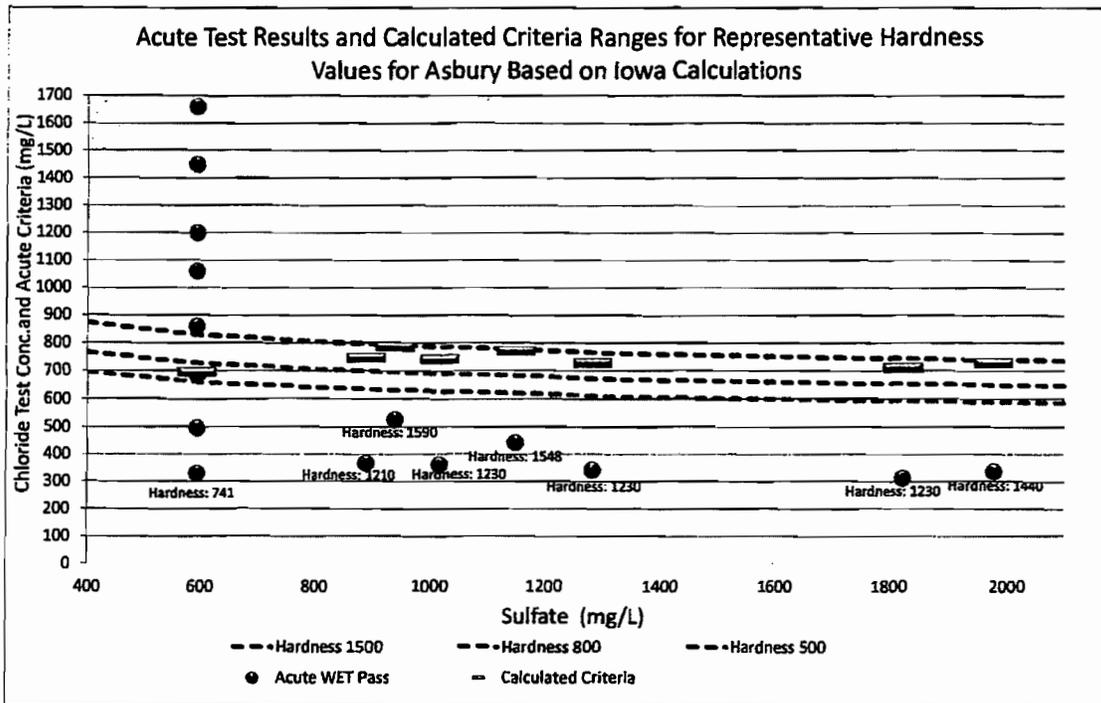
- Chronic Chloride Criteria Equation

$$\text{Chronic Value} = -177.87 (\text{hardness})^{0.205797} (\text{sulfate})^{-0.07452}$$

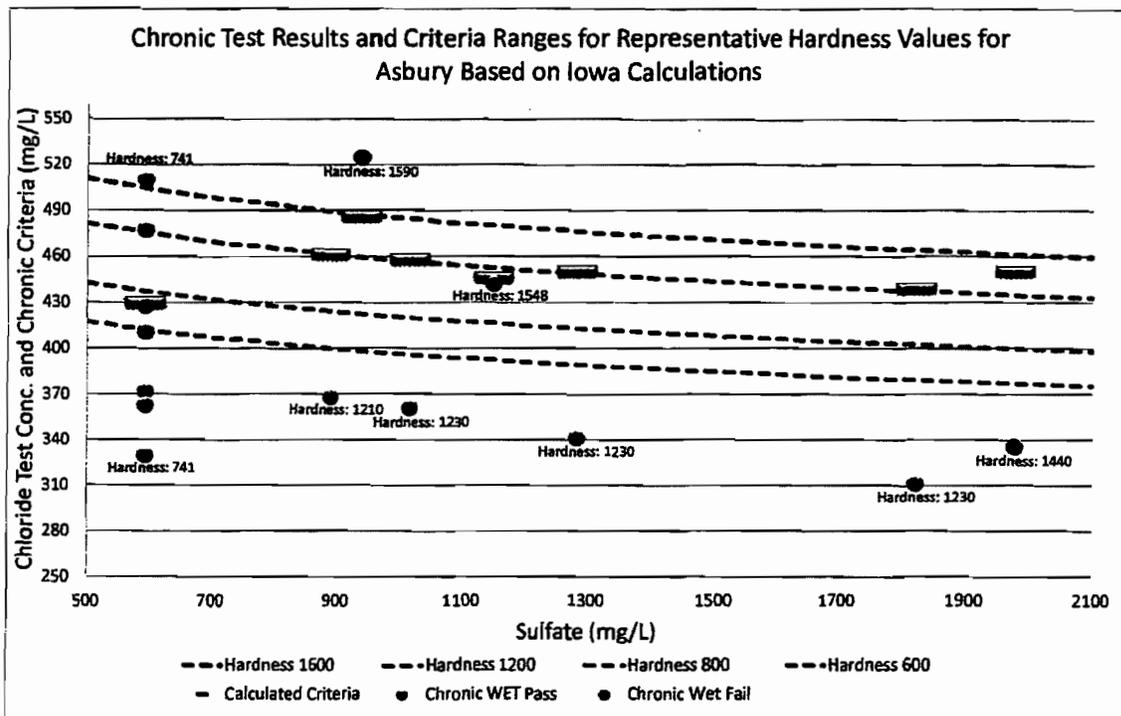
The equations derived for Iowa were based on waters of lower hardness (maximum of 800 mg/L) than found in Blackberry Creek. Figures 1 and 2 provides an extrapolation of Iowa's derived acute and chronic criteria calculations based on hardness and sulfate values representative of the Empire effluent.

Blackberry Creek samples downstream of the Plant effluent have passed all acute toxicity tests performed with both fathead minnows and *Ceriodaphnia dubia* to date. It is important to note that chloride concentrations in these acute tests are all well above the chloride criteria calculated from the Iowa equations. Results of seven chronic tests performed with *Ceriodaphnia dubia* (Figure 2) also fit well with the extrapolated chronic criteria curves and suggest that the equations are valid, or even overprotective, at the hardness levels discharged from the Empire Plant.

**Figure 1. Acute toxicity test results and chloride acute criteria based on hardness-based criteria**



**Figure 2. Chronic toxicity test results and chloride criteria based on hardness-based criteria**



### TOXICITY TESTING FOR CALCULATION OF A WATER EFFECTS RATIO

The WET testing data collected by Empire in July 2011 and presented in Table 2 was further evaluated by calculating a Water Effects Ratio (WER). The purpose of a WER is to take existing site conditions into account by evaluating the differences between toxicity in site water (Blackberry Creek) compared to toxicity in laboratory-reconstituted water. The WER procedure uses toxicity observed for site water (LC50 or IC25) divided by toxicity observed with the same species in laboratory-reconstituted water to establish a ratio (multiplication factor) that is applied to the existing water quality criteria.

To develop a WER, a sample of Blackberry Creek was spiked with increasing concentrations of chloride to determine the LC50 of chloride to *Ceriodaphnia dubia* in Blackberry Creek at a known hardness and sulfate concentration (Table 2). For comparison, a sample of reconstituted water adjusted to a similar sulfate concentration was also spiked with increasing concentration of chloride for LC50 determination.

The LC50 of the reconstituted water was adjusted for hardness and used to calculate an acute WER by dividing the hardness adjusted LC50 into the LC50 of the site water (Table 3). This resulted in an acute WER of 1.02. These results suggest that the chloride criteria suggested by the hardness-dependent Iowa equations are appropriate for Blackberry Creek.

**Table 3. Summary of July 18, 2011 toxicity testing to develop an acute Water Effects Ratio.**

Chloride-spiked Blackberry Creek site water (LC50)	Chloride-spiked Recon. water LC50 un-adjusted for hardness	Chloride-spiked Recon. water LC50 adjusted for hardness	Iowa Equation calculated acute chloride criterion	Water Effects Ratio (site/recon)
1,943 mg/L chloride	1,225 mg/L chloride	1,915mg/L chloride	697 mg/L chloride	1.02

Interestingly, the results of spiking Blackberry Creek water with increasing concentrations of chloride show that chloride toxicity in the presence of increased hardness is dramatically decreased even with relatively high sulfate concentrations (Figure 1). Acute toxicity appears to be mitigated by hardness even more than predicted by the hardness-based sulfate and chloride criteria.

A similar result was obtained of chronic WET tests performed with the same site and reconstituted waters (Figure 2). The only difference was in the lower concentrations of chloride that was used to spike the respective test samples. Results of the testing showed that *Ceriodaphnia dubia* brood production was also better in high hardness waters with moderate sulfate concentrations than predicted by the hardness-based criteria. Brood production even in the highest concentration of Blackberry Creek water (510 mg/L chloride) was very good and not significantly different than that of the control group. Because this result does not allow for an accurate calculation of the IC25 chronic endpoint, the determination of a chronic WER is not possible.

**SUMMARY**

The Water Quality Standards proposed rule recognizes the importance of hardness when mitigating the toxicity of chloride and sulfate to aquatic life beneficial uses. Empire recognizes this relationship and strongly supports MDNR's proposed revision to the current criteria. These proposed criteria represent the latest understanding of aquatic life toxicity resulting from chloride and sulfate exposure and the hardness-based criteria represented in the proposed rule. However, for these criteria to be effective, Empire respectfully requests elimination of the current 1,000 mg/L sulfate plus chloride criterion and background-based large stream criteria provision (10 CSR 20-7.031 (L) and Table A2) as these criteria are also no longer valid. Empire believes that the extensive literature reviews and test results from multiple acute and chronic toxicity tests will assist the department in supporting this request. Additionally, Empire expresses the strong desire to continue testing toward development of a site-specific chloride criteria that will be both protective of the environment and economically feasible for the Plant. Empire appreciates and strongly supports the work of the department on this important issue and thanks the department for consideration of our request.

Sincerely,



Kavan L. Stull

Senior Environmental Coordinator

**Attachments**

**Copies to:**

**Geosyntec Consultants – Columbia, MO**

**Asbury Plant file WP-02**

## ATTACHMENT A

**1. Description of the environmental conditions or standards being prescribed.**

The department is proposing revision of numeric water quality criteria for sulfate and chloride in response to a February 5, 2010 petition to the MCWC by the Missouri Agribusiness Associations. The new sulfate and chloride criteria are based upon new data and criteria development methodologies adopted by the State of Iowa and approved by USEPA. Empire concurs with and supports the department in this revision, but also requests that MDNR eliminate the current 1,000 mg/L sulfate plus chloride criterion and background-based large stream criterion in light of the latest understanding of sulfate and chloride toxicity.

**2. Report of the peer-reviewed scientific data used to commence the rulemaking process.**

The RIR notes the department reviewed information provided by the Iowa Department of Natural Resources (IDNR) and USEPA as part of the State of Iowa's WQS review. The document provided by IDNR, "Water Quality Standards Review: Chloride, Sulfate and Total Dissolved Solids, February 2009" was used to develop the proposed sulfate and chloride revisions to 10 DSR 20-7.031. This peer-reviewed scientific data included in the IDNR review along with recent studies by Empire, support the view that integrative parameters such as Total Dissolved Solids, chloride + sulfate, etc. are not adequate to evaluate effects of individual ions on aquatic life.

**3. Description of the persons who will most likely be affected by the proposed rule, including persons that will bear the costs of the proposed rule and person that will benefit from the proposed rule.**

The RIR notes that facilities that treat wastewater effluent containing sulfate and chloride may be affected by the proposed changes. It also notes that the proposed new criteria are supported in Iowa's WQS by EPA and that it is anticipated that these criteria may, in the future become new federal Section 304(a) criteria for these pollutants. Empire notes that in addition to facilities that treat wastewater effluent containing sulfate and chloride, all persons that utilize water resources in southwest Missouri and energy provided by Empire, will be affected by the proposed rule changes. Empire's service area includes more than 450,000 residents and 169,047 electric customers. While the proposed rule is anticipated to provide some relief to Empire with regard to treatment and monitoring, the 1,000 mg/L chloride plus sulfate criterion and background-based criteria for large streams and rivers will largely negate that relief by maintaining a largely discredited criterion.

**4. Description of the environmental and economic costs and benefits of the proposed rule.**

The RIR suggests that the proposed revisions are not expected to result in significant economic and environmental costs or benefits because the criteria are being revised to levels that are protective of aquatic community used as reviewed and approved by federal and state agencies. Empire suggests that the proposed revision will result in significant economic benefits while still providing protection for aquatic community uses. However, failure to rescind the 1,000 mg/L chloride plus sulfate criterion and background-based criteria for large streams and rivers will largely negate any benefits of the proposed

revisions, and will instead create additional economic costs to the facility and the public it serves, without providing environmental benefits.

**5. Probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rule and any anticipated effect on state revenue.**

The RIR states that permit review, calculation of wasteload allocations, and performance of reasonable potential analyses would not be affected. Therefore, no increased costs to the department are expected from the proposed rule. Empire generally concurs with MDNR's assessment; however, failure to rescind the 1,000 mg/L chloride plus sulfate criterion and background-based criteria for large streams and rivers may result in scientifically unwarranted enforcement actions and potentially inappropriate 303(d) listing of Blackberry Creek.

**6. Comparison of the probable costs and benefits of the proposed rule to the probable costs and benefits of inaction, which includes both economic and environmental costs and benefits.**

The RIR notes that data are insufficient to determine the number and the extent to which treatment systems would be affected by the proposed rule. Inaction with regard to revision of the proposed rule would leave the existing criteria for chloride and sulfate in place. It further states that inaction would provide greater protection to water quality since the current standards are lower than the proposed standards. However, Empire believes that inaction would provide an unnecessary cost, both economically and environmentally, to its operation. In order to comply with existing criteria, addition of higher source water flows would be necessary. This alternative would require additional water wells, greater volumes pumped, and more frequent cooling water blow downs to in an effort to meet the existing criteria. This would result in an increased demand for limited groundwater resources, for an unproven environmental benefit. Inaction with regard to the revision of proposed rules would require flow augmentation to meet the 1000 mg/l S + CL- criteria requiring at least one or two additional wells with blending/regulating system(s) estimated to cost \$600,000 per well or up to \$1.2 million dollars. Projected cooling water discharge would increase 0.6 - 1.4 million gallons per day (MGD) a discharge increase of 80-200%. In addition to the increased depletion of the aquifer the high capital costs as well as operating expenses would be passed on to Empires customers and shareholders. However, this alternative is quite disadvantageous due to the resulting increased aquifer depletion. In addition, greater groundwater withdrawal may increase intrusion of saline groundwater into the Empire well field, which could mitigate the benefit of providing additional diluting water.

**7. Determination of whether there are less costly or less intrusive methods for achieving the proposed rule.**

The RIR states that existing state of Iowa and federal toxicity data and guidance are the least costly and intrusive means for achieving the proposed rule. Empire generally concurs with MDNR's assessment; however, rescinding the 1,000 mg/L chloride plus sulfate criterion and background-based criteria for large streams and rivers is equally important or the effects of the proposed rule will be largely negated.

**8. Description of any alternative method for achieving the purpose of the proposed rule that were seriously considered by the department and the reasons why they were rejected in favor of the proposed rule.**

The RIR states that alternatives to the water quality criteria for sulfate and chloride include the development of site-specific criteria through species recalculation and water effects ratios. The revision proposed was the most science-based alternative that would broadly protect aquatic community uses. Empire generally concurs with this approach but suggests that species recalculation and water effects ratios continue to be appropriate methods on a case-by-case basis. In fact, Empire looks forward to continuing efforts with MDNR to evaluate potential development of site-specific water quality criteria based upon a water effect ratio approach.

**9. Analysis of both short-term and long-term consequences of the proposed rule.**

The RIR states that the short-term and long-term consequences of this rule are the same: the protection of aquatic communities without imposing unnecessary costs to the regulated community. Empire concurs with the Department's assessment. Empire further suggests that failing to approve this proposal, or failing to rescind the 1,000 mg/L chloride plus sulfate criterion and background-based criteria for large streams and rivers will result in long-term consequences of increased costs to the facility and ratepayers, and an increased stress on already diminished groundwater resources.

**10. Explanation of the risks to human health, public welfare or the environment addressed by the proposed rule.**

The RIR states that the proposed revisions address the toxic effects of chloride and sulfate to aquatic life. The administrative record created by the State of Iowa when developing the "WQS Review: Chloride, Sulfate, and Total Dissolved Solids, IDNR 2009" provides further information on risk assessment. Empire concurs with MDNR's statement.

**11. Identification of the sources of scientific information used in evaluating the risk and a summary of such information.**

The RIR notes that the scientific information supporting the proposed sulfate and chloride criteria is provided in "WQS Review: Chloride, Sulfate, and Total Dissolved Solids, IDNR 2009". Empire agrees with the Department's assessment and adds that studies at the Asbury Power Plant have supported the use of the hardness-based sulfate and chloride criteria.

**12. Description and impact statement of any uncertainties and assumptions made in conducting the analysis on the resulting estimate.**

Empire agrees with the Department's assessment that because the state proposes to adopt the latest state and federally approved criteria for chloride and sulfate, uncertainties and assumptions made during the risk assessment may be obtained by reviewing the administrative record created during the IDNR development of technical guidelines and guidance for these pollutants.

**13. Description of any significant countervailing risks that may be caused by the proposed rule.**

Empire agrees with MDNR's assessment that although application of the revised criteria may result in an increase in chloride and sulfate concentrations within receiving stream waters, existing aquatic life communities are not expected to be affected adversely because the revised criteria were developed to be protective of the aquatic life beneficial use.

**14. Identification of at least one, if any, alternative regulatory approaches that will produce comparable human health, public welfare or environmental outcomes.**

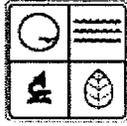
The RIR states that the EPA approved sulfate and chloride criteria as found in the State of Iowa's WQS constitutes an alternative or approach functionally equivalent to federal standards. Empire concurs with the department's assessment; however, the 1,000 mg/L chloride plus sulfate criterion and background-based criteria for large streams and rivers is not part of the EPA approved criteria and, if not rescinded, will negate the effects of the proposed revision.

## ATTACHMENT B

### LITERATURE CITED

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- Mount D.R., Gulley D.D., Hockett J.R., Garrison J.D., Evans J.M. 1997. Statistical models to predict the toxicity of major ions to *C. dubia*, *Daphnia magna* and *Pimephales promelas* (Fathead Minnows). Environ. Toxicol. Chem., 16:2009-2019.
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Missouri  
Department of  
Natural Resources

Public Comments  
for  
Regulatory Impact Report  
LaBarque Creek OSRW Decision  
Submitted To  
Missouri Department of Natural Resources  
Water Protection Program



MISSOURI DEPARTMENT OF NATURAL RESOURCES  
 P.O. BOX 176, JEFFERSON CITY, MISSOURI 65102  
**ATTENDANCE RECORD**

NAME OF MEETING		DATE	ADDRESS	TELEPHONE NUMBER
LA BARQUE CREEK OSRW CWC		10/23/11		
NAME	ORGANIZATION	ADDRESS	TELEPHONE NUMBER	
BOB COFFING	MO MASTER NATURALISTS	3949 DRUMWOOD HILL RD 63015	314-488-4013	
Eugene Regina Zeman		3052 Hwy F	636 938-4013	
BRIAN BERBER		1101 SCENIC RIMME DR.	636-938-1318	
Charlotte Zeman	<del>MASTER</del>	3499 Hwy FF	636 938 6006	
PETE O'NEILL		3150 STONECREST W.	636 938-6282	
JENNA WALKS		1 VALLEY DR	636 938 6670	
JUNNY BERKNER	TOWNSHIP OF LA BARQUE CR	PO BOX 316 EUREKA MO	636 938-6473	
Ray "	"	"	"	
RON NUTZEL	" "	23 HILLSIDE DR	636 938-5136	
Dawn Schnebelan		43 Wildwood Dr.	636 257 0946	
FRED H STOUT	NONE	3 E DOGWOOD TR	" 271 9861	
CONRAD ZOBIE		4112 WINWOOD CIR	314-620-9440	



MISSOURI DEPARTMENT OF NATURAL RESOURCES  
 P.O. BOX 176, JEFFERSON CITY, MISSOURI 65102  
**ATTENDANCE RECORD**

NAME OF MEETING		DATE	
NAME	ORGANIZATION	ADDRESS	TELEPHONE NUMBER
ERIC VONDRUSKA		2 CLICK DR EUREKA	938-6059
Lino Odegard		3333 Hwy FF	636-587-8223
Elmer Becker + Celea		4 Labergue Jr.	636-938-6699
Joe Blanner		3181 Hwy FF	636-938-6134
Jan Oberkramer		2100 Sandy Creek	636 938 - 5664
SANDRA KOMBINK		2 LABERGE TRAIL PACIFIC MO	
Gary + Mary Wesloh	(please send contact list)	2024 Meadow Brook Ln Pacific MO 63069	636-938-9238
Jim Lezzari		3737 TIMBERSTONE TR PACIFIC MO	636-938-7125
Michael Vande Veldy	muvaave137@yahoo.com Need Contact Sheet	635 Hoene Ridge Estates Drive	636-587-7043

RECEIVED

August 7, 2011

AUG 11 2011

Mr. John Hoke  
Missouri Department of Natural Resources  
Water Protection Program  
P.O. Box 176  
Jefferson City, Mo. 65102-0176

WATER PROTECTION PROGRAM

**Re: Designation of La Barque Creek Watershed as on Outstanding State Resource Water**

Dear Mr. Hoke,

Attached is a letter from the Department of Natural Resources concerning the La Barque Creek Watershed and a proposed designation (Outstanding State Resource Water). The watershed falls into the mentioned criteria noted on the A.B.C list.

At first glance the wording of this letter, sent to watershed residents, seems more like an award than a set of new regulations that could be placed upon the watershed. It appears at this time, although not definitive, that the watershed is at level two water quality. The DNR letter mentions that the Clean Water Commission wishes to "recognize certain high quality waters" **that may require exceptionally stringent water-quality management requirements** to assure the conformance with the anti-degradation policy. To fulfill the DNR vision, the watershed water quality would have to be **designated a level three to activate the "exceptionally stringent water quality management requirements"**.

Two DNR "stakeholder" meetings were held, neither offered a firm grasp on present water quality, future water quality or how the people living in the watershed who owned property would be affected. Neither meeting addressed the concerns and/or resident landowner outcome of such a designation. Nor was information offered on the history of such a designation, necessary testing or oversight procedures. Landowners were not clear on the Jefferson County and DNR relationship and how it might affect them.

You mention on Page 22 section j of the IRI that present resident values may increase and those visiting for recreational opportunities would benefit but present landowners are not mentioned. Certainly a meeting with Jefferson County, the Department of Natural Resources and stakeholders might have been more enlightening.

Who are the stakeholders? The dictionary defines "stakeholder" as a being who holds valuables. To me that would mean the group of people who would be most affected by such a proposal, those people who have a vested interest in the land. Right now watershed landowners are committed to common sense

environmentalism. After all, if the whole of La Barque watershed were a park and thousands of people enjoyed hiking, fishing and hunting on the land, would we consider the one fact that we saved all the land for the public to use as a winning proposition? Wouldn't this natural area, in time, be degraded? Would our wildlife thrive, would the endangered plants and streams survive thousands of visitors, maybe so, but it would always be a challenge.

Over the past 50 years, most of the residents of La Barque Watershed have been wonderful stewards of the watershed resources. They have been prudent in building on one to four or five acre lots, with some people living on forty to three hundred acre lots. Residents have a strong sense of ownership in the watershed and have been respectful of their land. They want a good outcome for the land they love. But they also know that the world grows and people do exist and they look to a natural and economic endeavor that will promise a beautiful, clean and natural setting to those who wish to live as *one with nature*. To this end cluster housing has been introduced, riparian corridors have been established, storm water runoff has been addressed, conservation easements have been suggested and contiguous greenways are being planned.

The people who requested this designation barely live or do not live in the watershed. They did not make an effort or give us the courtesy of a contact to the Friends of La Barque Creek Watershed, of whom they were well aware, contact stakeholder residents or the Partners who signed the La Barque Creek Watershed Conservation Plan. They profess that this designation is the greatest thing since the watershed existed but if that is the case, why all the secrecy? The Watershed Plan is a "partnership" and the Friends of La Barque work constantly within the watershed to educate residents and prospective residents about the La Barque.

Attached information will give you some idea of the extent of accomplishment in La Barque Watershed. With the aid of our Partners, we have accomplished all of this in our Island of Wilderness without the hand of the Department of Natural Resources.

It appears the assumption was that without even knowing the "exceptionally stringent regulations" and having a number of questions not answered, acceptance of this designation would be forthcoming. On the contrary, your protocol of this has been a divisive element in the watershed. Support of this designation is withheld at this time.

Best regards

  
Judith Browne

August 12, 2011

Judith Browne  
3195 Stonecrest Lane  
LaBarque Creek, MO 63069

RE: LaBarque Creek Use Designation Comment

Dear Ms. Browne:

Thank you for your comments and for your interest in the proposed designation of LaBarque Creek as an Outstanding State Resource Water. The Department recognizes that landowners and frequent visitors to the area best know how this water body is used and values comments such as yours.

Missouri's Water Quality Standards consist of three components; designated beneficial uses, water quality criteria to protect those uses and an antidegradation policy. The federal Clean Water Act, Sections 303(c)(1) and (2), requires that state water quality standards be reviewed and, where appropriate, revised, at least once every three years. These reviews and revisions are pursuant to the national goal of water quality which provides for the protection and propagation of fish, shellfish and wildlife and provides for recreation in and on the water as outlined in Section 101(a)(2) of the Act.

All classified waters of the state are identified in state rule by how the water body is used. These uses are called designated beneficial uses and water quality criteria are associated with each use to ensure the water body can be safely used as intended. Outstanding State Resource Waters are high-quality waters with significant aesthetic, recreational, or scientific value that are specifically designated as such by the Missouri Clean Water Commission.

The Department reviewed all readily available data and information to determine whether LaBarque Creek in Jefferson County qualifies for designation as an Outstanding State Resource Water per state rules at 10 CSR 20-7.031(8). This review was completed in response to a November 3, 2010 nomination by The LaBarque Creek Stream Team Association before the Missouri Clean Water Commission. The Department has determined that a 5.5-mile segment of LaBarque Creek in Jefferson County does qualify for the Outstanding State Resource Water designation and inclusion in Table E of the state's water quality standards. A public meeting regarding this proposed designation

Judith Browne  
Page Two

was held within the LaBarque Creek watershed on June 23, 2011 at the St. Joseph's Infirmary to gather comments on the proposal.

As part of the rulemaking process, the Department developed a Regulatory Impact Report that included the designation of LaBarque Creek as an Outstanding State Resource Water. A public comment period for the Regulatory Impact Report was held from June 3, 2011 to August 12, 2011. During this period, numerous comments in support and opposition of the designation were received. These comments will be presented for consideration by the Clean Water Commission at their next meeting on September 7, 2011. An additional public comment period will be established during the rule making process later this fall. Information regarding this comment period will be available on the Department website [dnr.mo.gov/env/wpp/rules/wpp-rule-dev.htm](http://dnr.mo.gov/env/wpp/rules/wpp-rule-dev.htm).

All comments received during the Regulatory Impact Report public comment period will also be posted on the Water Protection Program's rulemaking website in late September. If you have questions or require additional information, please contact me at (573) 526-1446, via e-mail at [john.hoke@dnr.mo.gov](mailto:john.hoke@dnr.mo.gov), or by mail at Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, Missouri 65102.

Sincerely,

WATER PROTECTION PROGRAM

John Hoke  
UAA Coordinator

JH:bcl



# St. Louis Audubon Society

P.O. Box 220227 St. Louis, MO 63122 [www.stlouisaudubon.org](http://www.stlouisaudubon.org)

August 12, 2011

Missouri Department of Natural Resources  
Water Protection Program  
P.O. Box 176  
Jefferson City, MO 65102-0176  
Attn: John Hoke

**Re: Petition to designate LaBarque Creek in Jefferson County an outstanding state resource water**

St. Louis Audubon supports the environmental conservation of the LaBarque Creek watershed, including any additional protections afforded by a designation as “outstanding state resource water.” The LaBarque Creek Watershed Conservation Opportunity Area has already highlighted the very unique character of the area, including its outstanding diversity of aquatic life with at least 42 species of freshwater fish. Permanent protection of the water quality in this important watershed is essential to maintaining that diversity.

St. Louis Audubon is currently working with the Friends of LaBarque Creek Watershed and the U.S. Fish & Wildlife Service to document the bird species that depend upon the area. Initial data supports a level of diversity similar to that of the aquatic fauna. Over 100 bird species have been identified on the surveys, including seven sparrow species, 21 vireo and wood warblers and seven woodpecker species. Four of the species observed to date are included on the 2011 Species and Communities of Conservation Concern Checklist, published by MDC.

Please include St. Louis Audubon on your distribution list for all communications regarding this petition. We look forward to participating in this process.

*St. Louis Audubon is a 501 (c) (3) nonprofit charity, chartered in the State of Missouri, and a membership of over 3,400. The organization was founded in 1915 and today serves all, or part of, ten counties in Metro St. Louis. Our mission is to establish a community connection to nature through education and conservation. An important part of that mission is defending the integrity of the natural areas in our Region that form a critical component of that connection—places such as the LaBarque Creek Watershed.*

Most respectfully,

Mitch Leachman  
Executive Director  
St. Louis Audubon Society  
(314) 599-7390  
[director@stlouisaudubon.org](mailto:director@stlouisaudubon.org)

*Our mission is to create a community connection to nature through education and conservation.*

**Hoke, John**

---

**From:** Joe Blanner [Jblanner@bmplaw.com]  
**Sent:** Thursday, August 04, 2011 11:08 AM  
**To:** Hoke, John  
**Subject:** Labarque Creek Watershed - Outstanding State Water Resource  
**Attachments:** 0333\_001.pdf

John:

Attached is my letter in reference to the proposed designation of Labarque Creek as an Outstanding State Water Resource. Please let me know if you have any difficulty opening the attachment.

Thank you,

Joseph C. Blanner  
Behr, McCarter & Potter, P.C.  
7777 Bonhomme, Suite 1400  
St. Louis, MO 63105

Voice: 314-862-3800

Facsimile: 314-862-3953

E-mail: [jblanner@bmplaw.com](mailto:jblanner@bmplaw.com)

LinkedIn: <http://www.linkedin.com/in/josephblanner>

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---

**From:** Canon  
**Sent:** Thursday, August 04, 2011 10:08 AM  
**To:** Joe Blanner  
**Subject:** Attached Image

**JOSEPH AND JESSICA BLANNER  
3181 HIGHWAY FF  
EUREKA, MO 63025  
(636) 938-6134**

July 28, 2011

**VIA ELECTRONIC MAIL**  
**[john.hoke@dnr.mo.gov](mailto:john.hoke@dnr.mo.gov)**

Mr. John Hoke  
Missouri Department of Natural Resources  
Water Protection Program  
P.O. Box 176  
Jefferson City, MO 65102-0176

**Re: Designation of Labarque Creek as Outstanding State Resource Water**

Dear Mr. Hoke:

I am writing to you in reference to the proposed designation of Labarque Creek as an Outstanding State Resource Water. I have lived in the Labarque Creek Watershed for most of my life. My wife's great-grandfather, Truman Post Young, purchased property in the Watershed in 1904. Later, his wife, Hilda J. Young, built her home on their family property in 1952. We currently reside in her former home across from the Hilda J. Young Conservation Area. Our home is seated between the home of my wife's grandmother (Anne Lloyd), her aunt (Nancy Weir) and her other aunt (Christy Lloyd). My parent's, Bruce and Cathy Blanner, also reside in the Watershed. All of the foregoing individuals are signatories to this letter.

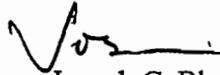
Since my childhood, I have appreciated the beauty and serenity of the forests and the Creek. My wife frequently swam in the Creek with her friends as a child. I played in and around the Creek and throughout the Watershed as well. Since becoming an adult, I have come to appreciate the pristine quality of its water and the large quantity of fish and other wildlife that make their homes in the Creek and surrounding areas. These features make the Watershed a tremendous place to live and raise a family.

Indeed, the Watershed and the Creek are significant resources to the Watershed's residents, such as myself and my family, and significant resources to the State of Missouri as a whole. It is the strong opinion of all of the signatories to this letter that steps should be taken to preserve and protect the Creek and the Watershed for years and even generations to come.

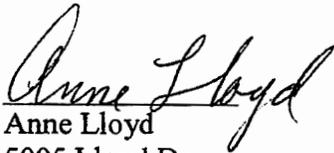
It is our hope that Jefferson County, the Missouri Conservation Department and the Missouri Department of Natural Resources will take appropriate steps to ensure the continued preservation of the Creek and Watershed.

If you would like to discuss this matter further, please feel free to contact me.

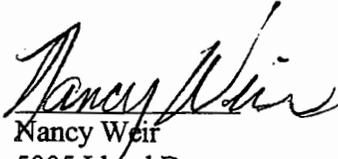
Very truly yours,



Joseph C. Blanner

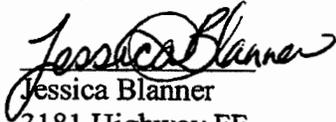


Anne Lloyd  
5005 Lloyd Dr.  
Eureka, MO 63025  
(636) 938-5686

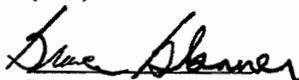


Nancy Weir  
5005 Lloyd Dr.  
Eureka, MO 63025  
(636) 938-5685

Christy Lloyd  
3169 Highway FF  
Eureka, MO 63025



Jessica Blanner  
3181 Highway FF  
Eureka, MO 63025  
(636) 938-6134



Bruce Blanner  
53 Fairlane East  
Pacific, MO 63069  
(636) 938-4555



Cathy Blanner  
53 Fairlane East  
Pacific, MO 63069  
(636) 938-4555

July 18, 2011

John Hoke  
Water Protection Program  
P.O. box 176  
Jefferson City, MO 65102-0176

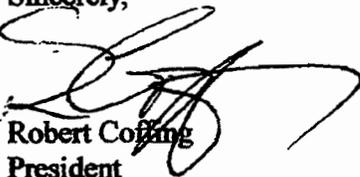
**Subject: Designation of LaBarque Creek as an Outstanding State Resource Water**

Dear Mr. Hoke,

The Labarque Watershed Stream Team Association strongly supports the designation of LaBarque Creek as an Outstanding State Resource water. As regular monitors of the creek waters, we are continually impressed with the high diversity of aquatic life in this watershed. Because of its high diversity, our stream team has been able to help train many volunteer water quality monitors in the St. Louis region. There are virtually no other places in the St. Louis region where one can gain practice in identifying so many different aquatic species. It would be a great loss to the area if this creek were degraded.

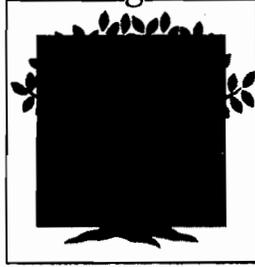
We have also partnered with educational institutions in the area, namely the St. Louis Community College system and the The College School, to help students learn about healthy ecological/aquatic systems. It would be a great loss to these institutions, too, if this resource were not available. For these reasons, therefore, we support its designation as an OSRW.

Sincerely,



Robert Coffing  
President  
Labarque Watershed Stream Team Association  
3949 Dogwood Hill Road  
Catawissa, MO 63015  
(tel.) 314-488-4013

the college school



2011-1 PM 1:15  
WATER PROTECTION PROGRAM

July 28, 2011

Mr. John Hoke  
Department of Natural Resources  
Water Protection Program  
P.O. Box 176  
Jefferson City, MO 65102-0176

Dear Mr. Hoke,

The College School is very excited to hear that **LaBarque Creek** was recently nominated for **Outstanding State Resource Water** by the Missouri Department of Natural Resources. I am writing to share with you The College School's support for this nomination.

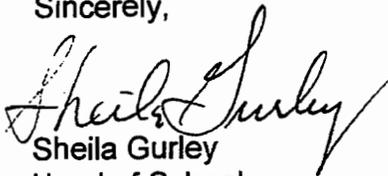
The College School has a long-term commitment to sustainability, to the restoration and preservation of natural communities, and for education that supports the environment. We work hard to encourage both the control of invasive species and the planting of native species in our school community. Last year, we gave our families over 500 four-inch native wildflowers and grasses and more than 300 native trees. In addition, The College School has completed three restoration projects, one with the support of the Missouri Department of Conservation, and this next year we will be working in conjunction with Webster Groves Parks & Recreation Department to renovate Lockwood Park, which is adjacent to our main campus.

Last year, we purchased a 28-acre site in the LaBarque Creek Watershed where our school community will have myriad opportunities to learn more about the natural world and take an active role in protecting and preserving this fragile area. The confluence of the LaBarque and Sandy creeks on this property was one of our major reasons for purchasing this acreage.

The College School provides a unique, experiential education for children in preschool through eighth grade. Our students will be studying, swimming and playing in these waters for many years into the future. Thus, it is of utmost importance to us that the environmental quality and biodiversity of this watershed is at least maintained at its current level if not improved upon.

If LaBarque Creek is chosen as an Outstanding State Resource Water, The College School would welcome the opportunity to work alongside the Department of Natural Resources for environmental stewardship in protecting LaBarque Creek.

Sincerely,

  
Sheila Gurley  
Head of School

**Nowack, Anna**

---

**From:** francisduckworth@aol.com  
**Sent:** Monday, June 20, 2011 1:49 PM  
**To:** Nowack, Anna  
**Cc:** john.e.duckworth@gmail.com; curkevich@blockhawley.com; Ryan.McKenna@senate.mo.gov; Curtman, Paul  
**Subject:** special designation for LaBarque Creek  
**Follow Up Flag:** Follow up  
**Flag Status:** Purple

In Re:  
June 6, 2011  
Dear LaBarque Creek Resident:  
The Department of Natural Resources letter

Dear Ms. Nowack,

I am a property owner who will be affected by the proposed Outstanding State Resource Water designation for LarBarque Creek. I will be unable to attend your scheduled meeting June 23, but wanted to register my opposition to the project.

As I am sure you are aware, the economy and jobs are paramount to the well being of Missouri citizens at this point in time. I am involved in the real estate business in Jefferson County and we are truly suffering a severe loss of business, not due in small part, from multiple layers of regulation. One more set of rules for any part of this area, will just put another nail in the coffin of our businesses and the healthy growth and well-being of our citizenry.

I implore you to not add another layer of rules on our ability to do business.

Sincerely,

Francis Duckworth, Dittmer, Mo. 63023 636-274-3100

August 4, 2011

John Hoke  
Department of Natural Resources  
Water Protection Program  
P.O. Box 176  
Jefferson City, MO 65102-0176

2011 AUG 12 PM 1:37  
WATER PROTECTION PROGRAM

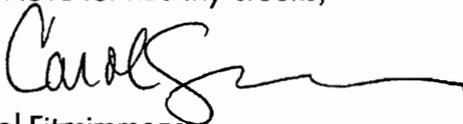
Dear Mr. Hoke,

I am writing to support the efforts to designate LaBarque Creek for Outstanding State Resource Water status. As a science educator and Stream Team water quality monitor, I am acutely aware of water quality and the lack of rich, natural environments for students to learn about natural ecosystems, aquatic plants and animals. As one of the last local creek systems to remain largely unaffected by development, it is with heartfelt feeling that LaBarque Creek receive this outstanding designation from the Department of Natural Resources.

Recently, the LaBarque Creek watershed has provided opportunities for study and exploration for my fourth grade class. Its biodiversity is unique and it provides a model for healthy creek systems that cannot be found in any other nearby creek. Students are repeatedly amazed by the stream creatures and the value these plants and animals provide to the ecosystem. Additionally, students have extended their love for the creek to actively aid in the eradication of invasive species and riparian corridor repair. Through the study of the LaBarque Creek environment, students have come to value healthy water supplies and gained environmental stewardship practices that have informed future interactions with the natural land. LaBarque Creek is a well-loved creek and deserves to be preserved for generations to come.

Thank you for considering this designation and for preserving LaBarque Creek.

With love for healthy creeks,



Carol Fitzsimmons  
Faculty  
The College School  
7825 Big Bend Blvd  
Webster Groves, MO 63119



24 July 2011

RECEIVED  
2011 JUL 27 PM 1:11  
WATER PROTECTION AGENCY

John Hoke  
Water Protection Program  
P.O. Box 176  
Jefferson City, Missouri 65102

Dear Mr. Hoke,

I am writing in support of the designation of La Barque Creek (Jefferson County, MO) as an Outstanding State Resource Water. My expertise as a professional archaeologist has let me walk over miles of rural Missouri. I started surveying sites in the La Barque Creek watershed during 2011 and I personally believe that it is important to designate the watershed as an "Outstanding State Resource Watershed."

Best wishes.



Michael Fuller PHD  
Professor of Anthropology  
St. Louis Community College - Meramec  
<http://users.stlcc.edu/mfuller/>

 **St. Louis Community  
College**  
Meramec

11333 Big Bend Road  
St. Louis, MO 63122-5720

**Michael Fuller, Ph.D.**  
Professor / Anthropology  
Phone: 314/984-7987  
Fax: 314/984-7489  
e-mail: [mfuller@stlcc.edu](mailto:mfuller@stlcc.edu)  
Website: <http://users.stlcc.edu/mfuller/>

**Hoke, John**

---

**From:** Johnson, Steve (S.A.) [sjohn159@ford.com]  
**Sent:** Wednesday, July 20, 2011 1:43 PM  
**To:** Hoke, John  
**Subject:** FW: LaBarque OSWR  
**Attachments:** LaBarque OSWR Support 7-11 SAJ.doc

Good day, Mr. Hoke.

After due consideration, please accept the attached in support of the restrictive designation of the LaBarque watershed zone as an OSWR. I know the move is not supported by private developers. I am certainly a champion of private enterprise. However, experience has repeatedly confirmed that private interests cannot be relied upon to manage the public domain without sacrifices being made. Public oversight is called for to restrict those sacrifices. This rare remnant of a long-gone era is worthy of our protection and stewardship.

<<LaBarque OSWR Support 7-11 SAJ.doc>>

**Steve A. Johnson, REM**

Veolia Environmental Services  
Integrated Services Group  
P.O. Box 25253 - Antioch Station  
Kansas City, MO 64119-5253  
Ph: (816) 459-1738  
Fax: (816) 459-1099

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**Veolia Environmental Services**

Integrated Services Group  
6060 North Hix Road  
Northland, MI 48186  
(734) 729-9242  
[www.veoliaes.com](http://www.veoliaes.com)

July 21, 2011

Mr. John Hoke  
Missouri Department of Natural Resources,  
Water Protection Program  
P.O. Box 176  
Jefferson City, MO 65102-0176

Dear Mr. Hoke:

This letter has been drafted to offer absolute support of the petition initiative to designate the LaBarque Creek watershed as a state-monitored OSRW. Although not a resident of the greater St. Louis metro area, I have spent countless hours on the Meramec and adjacent tributary streams in outdoor pursuits for several decades. In addition, I have a defined appreciation for those remaining areas that display extraordinary diversity of biota. In more than 30 years afield (including service with the MDNR) it is clear that such jewels are growing fewer in number with the march of time and development. Furthermore, few can argue that enhanced protection and development controls must be provided to insure that both current, and successive, generations have the opportunity to study and enjoy the simple experience of visiting a preserved example of what our regional environment once provided. As a benchmark of what our combined conservation efforts should achieve, areas like the LaBarque watershed are very rare and cannot be easily duplicated.

I appreciate your kind indulgence and time granted to review this request. If additional follow-up or support is desired, please contact me at your convenience.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Steve A. Johnson". The signature is fluid and cursive.

Steve A. Johnson, REM  
Senior Resource Program Manager

\sj/SAJ

**Hoke, John**

---

**From:** Joanlegends@aol.com  
**Sent:** Friday, July 29, 2011 1:50 PM  
**To:** Hoke, John  
**Subject:** Labarque Creek Watershed

I have owned a home in High Trails Subdivision for 30+ years and love the area and truly appreciate the pristine quality of the La Barque Creek watershed. I totally support its designation as an Outstanding State Resource Water. We are thinking of selling our home and have found people interested in buying because of the high quality of the area. We and the new potential buyers would not like to see it degraded by large development. We understand that a couple of large landowners would like to sell to developers and such building would degrade the stream as under present rules the DNR would have to approve allowable incremental discharges from any point sources. With the above designation, no degradation is permitted.

Thank you.

Joan Johnson  
18 Trails End  
Eureka, MO 63025  
& a second address:  
#1 Rockwood Forest View  
Eureka, MO 63025  
636 938-5895

August 12, 2011

Mr. John Hoke  
Missouri Department of Natural Resources  
Water Protection Program  
P.O. Box 176  
Jefferson City, MO 65102-0176

*Re: Comments on the Regulatory Impact Report for Proposed Draft  
Amendments to 10 CSR 20-7.031 Water Quality Standards—Designation  
of LaBarque Creek as an Outstanding State Resource Water*

Dear Mr. Hoke:

On behalf of Pat Jones, Great Rivers Environmental Law Center files these comments concerning the proposed changes to 10 CSR 20-7.031. Our comments concern only the LaBarque Creek sections of the Regulatory Impact Report.

The DNR is proposing to designate LaBarque Creek as an Outstanding Natural Resource Water, a long overdue distinction. LaBarque Creek is an outstanding natural resource water, and the state should do whatever it takes to ensure that no developments pollute and destroy it. (This includes not allowing AmerenUE to build transmission lines near it.) If this designation will help DNR in any way protect LaBarque Creek, then the DNR should enact this part of the proposed rule.

When Mo Udall visited LaBarque Creek in the 1970's, he recommended that the area become a national park. Although that has not happened, the state should take whatever steps it can to protect it.

This area is one of the last pristine areas in Jefferson County. Jane Epperson, a Policy Supervisor at MDC, stated that the LaBarque Creek Watershed:

possesses an impressive variety of terrestrial natural communities....Many neotropical migrant birds depend on this large block of unbroken forest for their biological needs...The integrity of the watershed is reflected in the clear waters of LaBarque Creek....At least 42 species of fish have been identified in the creek...This diversity is almost three times greater than any of the 15 other tributaries of the Meramec River below LaBarque.

As you also know, Pat Jones' mother owned the land that became the Hilda Young Conservation Area. Pat donated her share of the property to the Department of Conservation to help persuade the Department to

  
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Kathleen G. Henry  
*Licensed in MO, IL, DC*  
**GENERAL COUNSEL**  
Bruce A. Morrison  
*Licensed in MO, IL*  
**STAFF ATTORNEY**  
Henry B. Robertson  
*Licensed in MO*

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purchase the area. Pat's family and others in the LaBarque Creek area hoped that the land could be protected from further destruction. Hilda Young's last effort was to persuade MDC to purchase the area as it was acquiring other suitable lands. Hilda Young felt that the Department would care for the area and allow it to be used by the public in a manner that would maintain the beauty of the place. The watershed today has been found to be very nearly pristine. Any new intrusion into the area should be denied.

Although the DNR states it cannot determine the exact economic benefit of this proposed designation, the DNR correctly states that "The state of the economy depends to some extent on the state of the environment....What price is good health worth? ...No comparison can be made to environmental benefits without associating a cost to lowered health of citizens and the diminished resources that this rulemaking is intended to prevent."

Mrs. Jones believes the following: "We do not need to allow corporate bullies to pollute our pristine waters anywhere in the state. Ameren has a history of leaving destruction as it claims eminent domain to justify the mess it leaves behind. There was no excuse for what Ameren did to Johnson's Shut-ins and absolutely no way to pay for the destruction. Now Ameren wants to enter the area of LaBarque Creek to construct a transmission line. This area has been declared unpolluted and very nearly pristine and well worth protecting from the likes of Ameren. As our technology gives us new better ways to generate power and better ways to distribute this power it is time for Ameren to join those working for a cleaner world. Just say no to Ameren and keep LaBarque Creek for the rest of us to see and explore and enjoy."

The DNR is constantly pressured by corporations to allow developers to destroy the natural resources of Missouri. The DNR should realize that people do not want to live in heavily polluted areas of the county, and that when the DNR enables polluters to destroy our resources, the DNR in fact, causes economic harm because young people will move away from this state to go to less polluted areas of the country.

We urge the DNR to protect LaBarque Creek and other waters of the state of Missouri.

Very truly yours,



Kathleen G. Henry

RECEIVED  
AUG 11 11 PM 1:34  
WATER PROTECTION PROGRAM

Ray E. Oberkramer  
PO Box 316  
Eureka, Missouri 63025  
August 10, 2011

Mr. John Hoke  
Missouri Department of Natural Resources  
Water Protection Program  
P.O. Box 176  
Jefferson City, Mo. 65102-0176

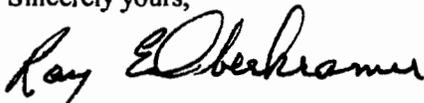
Re: Designation of La Barque Creek Watershed as an Outstanding State Resource  
Water

Dear Mr. Hoke:

Please find enclosed, petitions of landowners in the La Barque Creek Watershed, **opposing** the proposed OSWR classification of La Barque Creek. This is an incomplete list as I am still contacting landowners.

I do not understand the limit on when comments may be made. Since I was asked directly by one of the Commissioners to prepare a complete map, I will be presenting that directly to the commissioners at the September 7th Clean Water Commission meeting.

Sincerely yours,



Ray E. Oberkramer

cc: Ms Malinda Steenbergen  
Commission Secretary  
Missouri Clean Water Commission  
Water Protection Program  
PO Box 176  
Jefferson City, Missouri 65102



Ozark Fly Fishers, Inc  
P.O. Box 440181  
Saint Louis, MO 63144-4181

August 11, 2011

Mr. John Hoke  
Missouri Department of Natural Resources  
Water Protection Program  
P.O. Box 176  
Jefferson City, MO 65102-0176

Dear Mr Hoke,

Ozark Fly Fishers, Inc. would like to endorse the nomination of LaBarque Creek Watershed as an Outstanding State Resource Water Designation. The application itself enumerates the statistical information that overwhelmingly supports the technical reasons that the designation is both appropriate and justified. The fact that such a special place is still intact so close to the major metropolitan area of St. Louis is an important realization of all that can and should be done to protect and conserve it. Now is the time to act on this opportunity before it is lost.

Members of Ozark Fly Fishers, Inc have participated in water quality monitoring of this creek for several years. For many this was an introduction to what is considered a hidden gem in our area of the state. The superiority of the total watershed is what contributes to its lifeline – the water quality. While it will never be regarded as an outstanding fishing stream (in terms of overwhelming numbers and size of fish), it does in fact provide a place for wild fish as part of the pristine character of the stream and the opportunity it provides for unspoiled natural settings. These areas are indeed special and should be protected as such. This is one of the reasons that our members have participated in the water quality monitoring sessions on this stream. Ozark Fly Fishers, Inc Stream Team #31 regularly conducts monitoring on a number of other fishing streams so to extend beyond that for our volunteers represents recognition of a special place beyond just fishing opportunities.

Sincerely,

Robert L. Temper  
Ozark Fly Fishers, Inc., Stream Team # 31 Chairman  
.314-894-0319

July 28, 2011

2011-07-28 PM 12:46  
WATER PROTECTION

John Hoke  
Department of Natural Resources  
Water Protection Program  
P.O. Box 176  
Jefferson City, MO 65102-0176

Greetings Mr. Hoke:

We are writing with regards to the LaBarque Creek and the DNR's nomination to designation as an Outstanding State Resource Water in Missouri. Tim Wood the Sustainability Coordinator has informed all of us at The College School (TCS) about this wonderful news. Our entire family has had the pleasure to explore and study the LaBarque Creek that runs through the TCS property. What a wealth of information and anomaly the creek is for our kids as students and environmental stewards. My oldest daughter Isabella just finished 4<sup>th</sup> grade and her class did a long term water study of the creek's characteristics and ranked the health as well as recorded the quantity and quality of macro-invertebrates. I am so proud that she mentioned the adequate size of the riparian zone, the zone's conditions in different locations and how it could be improved as a watershed.

Tim had the children at TCS helped plant trees and help to reinforce their responsibility in preserving the natural beauty and quality of the Creek. We believe the Creek is vibrant and also balanced and warrants our care and conservation on a state, local and individual levels. From the time my children have spent around the creek their enthusiasm "to study the environment, animals and water" has reinforced our love and appreciation of the outdoors. The diversity of the creek, proximity to a densely populated city like St. Louis, topography, geology and aquatic biodiversity is unique to Missouri and provides many unpolluted and healthy sub eco systems to preserve. The designation of the LaBarque Creek as an outstanding waterway is a clear validation of the high-quality resource that we can be proud to maintain and treasure for generations to come.

Thank you for the nomination and it is our hopes that the DNR will confirm our favorite Creek and watershed as an Outstanding Missouri Resource. We appreciate all that you do at the DNR.

Sincerely,

  
Sharon Hansen Sanchez



sharonsanchez\_70@hotmail.com



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**Eastern Missouri Group**

7164 Manchester Avenue, Saint Louis, MO 63143  
314-644-0890

[emg@missouri.sierraclub.org](mailto:emg@missouri.sierraclub.org)

[www.missouri.sierraclub.org/emg](http://www.missouri.sierraclub.org/emg)

July 19, 2011

John Hoke  
Missouri Department of Natural Resources  
Water Protection Program  
P.O. Box 176  
Jefferson City, MO 65102-0176

RECEIVED

JUL 21 2011

WATER PROTECTION PROGRAM

Dear Mr. Hoke:

The Eastern Missouri Group of the Missouri Chapter of the Sierra Club agrees with the Regulatory Impact Report to add LaBarque Creek, Jefferson County, as an Outstanding State Resource Water to the listing in **10 CSR 20-7.031 Table E**. We believe that LaBarque Creek deserves the enhanced protection from this designation. Every effort should be made to protect the unique biological diversity presently found in this creek.

Many citizens will benefit from recreation and study of the high aquatic diversity found in this stream if the water quality is protected. Nearby residents are the ones who will gain the most because of continued high quality water for drinking, freedom of worry for change in their lifestyles or health because of living in a healthy watershed, and the maintenance of economic value for their homes and property values.

Thank you for permitting the Sierra Club to have a chance to be involved in this process.

Sincerely,

Richard Egan  
Chair  
Sierra Club – Eastern Missouri Group

**Conrad and Joni Zobel  
4112 Winwood Circle  
Pacific, MO 63069  
314-620-9440**

2011 AUG 2 11:11:05  
MISSOURI DEPARTMENT OF NATURAL RESOURCES

August 1, 2011

Mr. John Hoke  
Missouri Department of Natural Resources  
Water Protection Program  
P.O. Box 176  
Jefferson City, MO 65102-0176

Dear Mr. Hoke:

My wife and I live off of John McKeever Road on Winwood Circle. We are in the heart of the LaBarque Creek watershed. I am a commercial photographer and my wife works for U.S. Bank. We have traveled and lived several places. We reside where we are because of the natural qualities of the area.

We moved here from Kalispell, Montana just outside of Glacier National Park. We have built three homes including the home we currently live in. We did not have to build in this area for economic reasons. We chose it because we, like others in the area, enjoy it for its quiet beauty.

We are very excited and 100% behind the nomination to designate LaBarque Creek as an Outstanding State Resources Waters. Not only do we feel it will add quality of life, it will also add economic value to the area and its homeowners.

If we can be of any assistance in this process, please feel free to contact us.

Thank you for your efforts.

Sincerely,

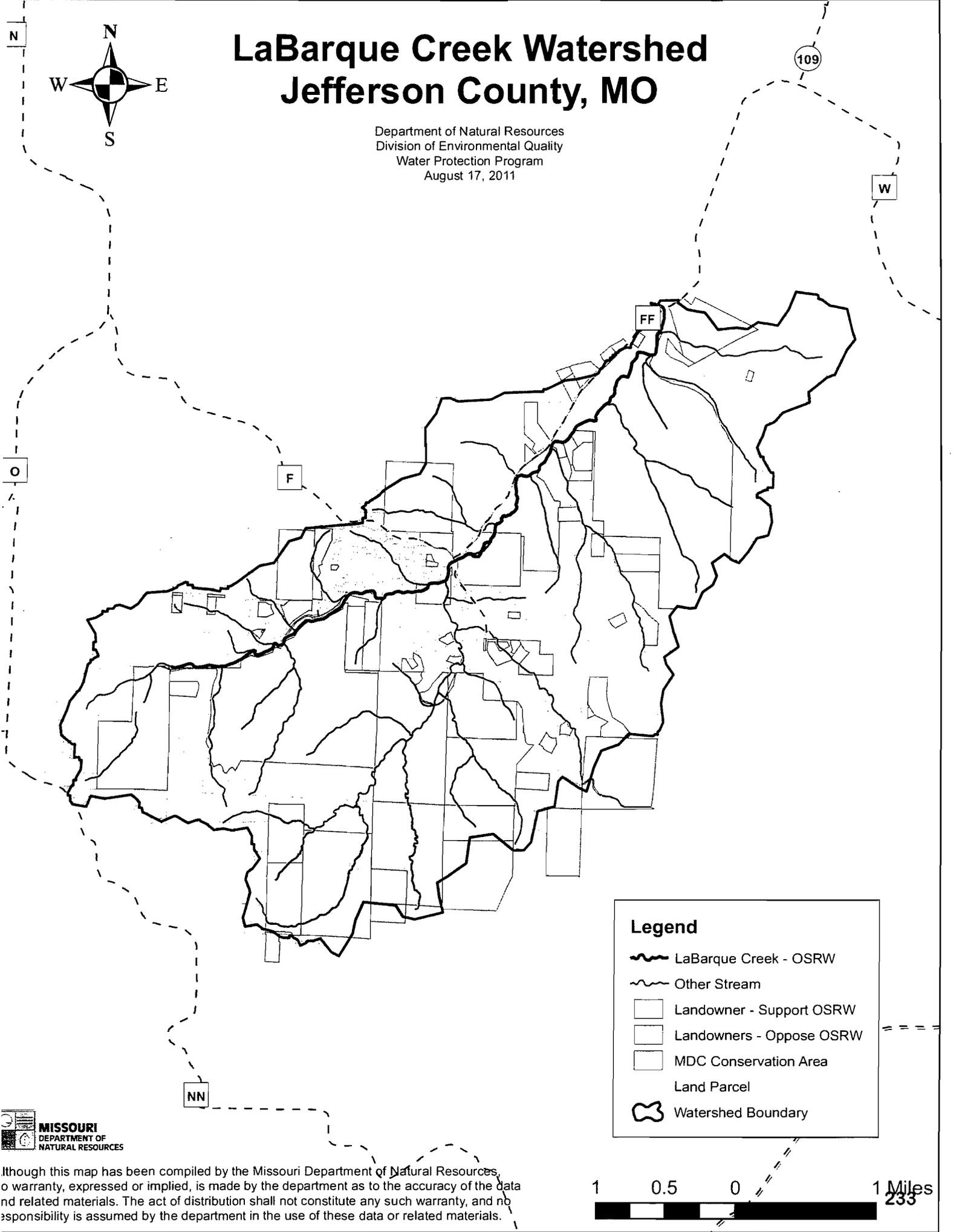
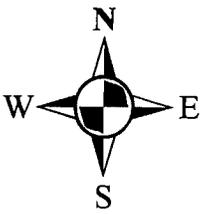


Conrad Zobel



# LaBarque Creek Watershed Jefferson County, MO

Department of Natural Resources  
Division of Environmental Quality  
Water Protection Program  
August 17, 2011



### Legend

- LaBarque Creek - OSRW
- Other Stream
- Landowner - Support OSRW
- Landowners - Oppose OSRW
- MDC Conservation Area
- Land Parcel
- Watershed Boundary



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