



TULANE ENVIRONMENTAL LAW CLINIC

May 10, 2010

*By Hand, U.S. Post, and  
Email Water-Draft-Permit-Comment@adeq.state.ar.us*

166-002

Loretta Reiber, P/E  
Arkansas Department of Environmental Quality  
Permits Branch-Water Division  
5301 Northshore Drive  
North Little Rock, AR 72118-5317

Re: Discharge Permit for Georgia-Pacific LLC, Crossett Paper Operations at 100 Mill Supply Road in Crossett, AR 71635

Permit Number: AR0001210

Dear Ms. Reiber,

Thank you for the opportunity to submit comments on the draft NPDES and Arkansas Air and Water Pollution Act permit renewal for the Georgia-Pacific LLC Crossett Paper Operations, Permit No. AR0001210 (the "Draft Permit"), submitted as part of the May 10, 2010 public hearing on the Draft Permit. The Tulane Environmental Law Clinic submits these comments on behalf of the Ouachita Riverkeeper.<sup>1</sup> These comments supplement and do not replace any of the previous comments that the Ouachita Riverkeeper has submitted. The Ouachita Riverkeeper reserves the right to rely on all public comments submitted in this matter. We request a written response to these comments and notification if and when ADEQ issues a final permit.

We have attached the expert testimony of Barry W. Sulkin, M.S. at Exhibit A ("Sulkin Aff."). Mr. Sulkin's affidavit is incorporated fully and by reference into these comments.

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<sup>1</sup> Ouachita Riverkeeper is a non-profit corporation in Arkansas and Louisiana. It is comprised of citizens in Arkansas and Louisiana concerned about the quality and use of the Ouachita River. Ouachita Riverkeeper's purpose is to ensure that the people who use the Ouachita River enjoy a clean and safe environment and protect that environment for future generations. Ouachita Riverkeeper has members who live, work, or recreate around the Ouachita River in both Arkansas and Louisiana.

## BACKGROUND AND SUMMARY

The Arkansas Department of Environmental Quality ("ADEQ") is proposing to reissue a permit for Georgia-Pacific LLC's ("Georgia-Pacific" or "Applicant") wastewater discharge into Coffee Creek, Mossy Lake, and the Ouachita River. Mossy Lake and Coffee Creek are naturally occurring waterways which Georgia-Pacific uses to treat its wastewater and for which ADEQ has removed designated uses and other water quality standard protections. The Ouachita River is an impaired water body that flows across the Arkansas-Louisiana state line into Northern Louisiana.

It would be unlawful for ADEQ to issue the Draft Permit because, **1)** ADEQ relies on an incomplete and outdated Use Attainability Analysis (UAA) despite a 2007 EPA UAA that reaches different conclusions and requires greater protections for Mossy Lake and Coffee Creek, **2)** the Draft Permit effluent limitations do not protect existing uses in Coffee Creek and Mossy Lake, as they must under 40 C.F.R. 131.12(a)(1), **3)** the Draft Permit fails to show that it will not cause or contribute to the impairments of the Ouachita River, **4)** the Draft Permit violates federal regulations which prohibit facilities from using natural waterways for "in-stream treatment," **5)** the Draft Permit violates anti-backsliding provisions, and **6)** the Draft Permit does not protect the environment and public health. Accordingly, ADEQ must withdraw the Draft Permit and revise it to include more stringent effluent limitations to protect the receiving waters and the people living downstream of the discharge source.

## SPECIFIC COMMENTS

### **I. The Draft Permit Is Unlawful because It Relies on an Incomplete Use Attainability Analysis from 1984 and Fails to Consider a 2007 EPA UAA.**

The Draft Permit unlawfully relies on an incomplete 1984 Use Attainability Analysis (UAA) as the basis for allowing discharges under the Draft Permit – and fails to consider a 2007 EPA UAA that contradicts the 1984 UAA findings. Arkansas regulations designate all waters in the Gulf Coastal Ecoregion for secondary contact recreation and for domestic, industrial, and agricultural water supply, and all water bodies in this region with watersheds greater than 10 square miles are designated for primary contact recreation and as perennial fisheries. Reg. 2, App. A. The Draft Permit, however, does not provide limitations that can protect such designated uses. ADEQ explains this deficiency by relying on the 1984 UAA to remove any such protections:

A UAA was permitted in the 1980's. As a result of this UAA, the fishable, swimmable uses as well as the drinking water use were removed for Coffee Creek and Mossy Lake, Reg. 2.406 and Chapter 5 of Reg. 2 do not apply to Coffee Creek and Mossy Lake.

Draft Permit Fact Sheet, p. 2. ADEQ, however, does not have in its records a complete copy of the 1984 UAA upon which to rely. Also, the 1984 UAA is outdated, because a 2007 EPA UAA contradicts the findings of the 26 year old study. Accordingly, reliance on the 1984 UAA to

allow a permit that fails to protect the receiving waters is arbitrary, capricious, without support or other basis in the evidence, and contrary to law.

*A. ADEQ cannot lawfully rely on the 1984 UAA because a complete copy of that document is not part of the record and is not available to the public for comment.*

ADEQ's 1984 UAA is incomplete and, therefore, cannot support ADEQ's decision to allow discharges that do not protect the receiving waters. ADEQ cannot produce a complete copy of the study, a fact the agency acknowledged by email dated March, 27 2009. See Exhibit B. For example, the 1984 Analysis is missing Sections II C, III, and IV, which include the biological factors of Coffee Creek, findings, and summary and conclusions, respectively. As a result, DEQ has no valid UAA to support the Draft Permit or the removal of the fishable/swimmable and water supply uses that would otherwise apply to Coffee Creek and Mossy Lake.

*B. ADEQ cannot lawfully rely on the 1984 UAA because more recent data show that the 1984 UAA's conclusions are wrong.*

ADEQ's 26 year old 1984 UAA is outdated and incorrect. A 2007 U.S. EPA concludes – contrary to the 1984 UAA - that Coffee Creek and Mossy Lake can attain their appropriate fishable/swimmable uses. See 2007 EPA UAA excerpt, p. 4-1 (“[t]he waters of Coffee Creek and Mossy Lake have the potential to support aquatic life indicative of streams in the ecoregion”), attached at Exhibit C. Among other things, the U.S. EPA 2007 UAA for Coffee Creek and Mossy Lake shows that both water bodies have existing fishable uses. See Ex. C at p. ES-2. (“From the biological data collected it is apparent there is a diverse and abundant, though seasonal, aquatic community in the Reference site stream.”) ADEQ did not consider the findings of the 2007 EPA UAA, instead stating that the three year old study is “under review.” Draft Permit Fact Sheet, p. 2.

Accordingly, ADEQ's decision to issue the Draft Permit is arbitrary, capricious, without support or other basis in the evidence, and contrary to law because it relies on an use attainability analysis that is not part of the record in its complete form, that is 26 years old, and that reaches incorrect conclusions according to 2007 EPA data.

## **II. The Draft Permit Violates Federal And State Antidegradation Requirements.**

ADEQ's Draft Permit fails to meet federal and state antidegradation requirements. For example, the Draft Permit fails to protect existing “fisheries” uses in Coffee Creek and Mossy Lake. Federal and state regulations each provide that “[e]xisting instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.” 40 U.S.C. § 131.12(a)(1); Ark. Reg. 2.201. A stream is fishable if there is “water which is suitable for the protection and propagation of fish or other forms of aquatic life adapted to flowing water systems.” Ark. Reg. 2.302(F)(3). The EPA UAA found key species and indicator species from the lists for the Gulf Coastal Region at Ark. Reg. 2.302(F)(3)(3) at the Reference site on Coffee Creek above the Georgia-Pacific outfall. See Ex. C at p. 3-1 (collecting “two key

species (grass pickerel and longear sunfish) and two indicator species (pirate perch and banded pygmy sunfish)" at the Reference Site). Therefore, Coffee Creek and Mossy Lake have existing fishable and "aquatic life" uses – and permits for discharges into those waters must protect those existing uses. Because the Draft Permit, which is based on the 1984 UAA and the assumption that such uses do not exist, does not protect the existing "fishable" and "aquatic use" uses, it is unlawful.

### **III. The Draft Permit Violates Federal Regulations because It Allows Pollutants into an Impaired Water Body that Will Cause or Contribute to a Violation of State Water Quality Standards.**

The Draft Permit violates federal and corresponding state regulations because Georgia Pacific's discharges under the Draft Permit will cause or contribute to impairment of the receiving water. 40 C.F.R. § 122.44(d)(1)(i) prohibits discharges that cause or contribute to a violation of state water quality criteria, stating:

Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.

Here, ADEQ fails to meet these requirements. For example, the Draft Permit allows an amount of BOD that "would critically suppress the limited [Dissolved Oxygen] in the streams and lakes receiving the waste flows." *See Sulkin Aff.* at ¶ 12.

In another example, the Draft Permit allows increases in the amounts of AOX and Dieldrin without showing that such increased allowances will not cause or contribute to an impairment in the receiving waters. *See id.* at ¶ 16.

Also, ADEQ allows discharges of at least three pollutants (Mercury, Total Recoverable Copper, and Total Recoverable Zinc) for which the Ouachita River is already impaired without showing that these discharges will not cause or contribute to the ongoing impairment. *See Draft Permit Fact Sheet* at p. 4. For example, ADEQ "used background concentrations of 0 mg/l for Total Recoverable Copper and Total Recoverable Zinc when calculating the permit limits for those parameters." But ADEQ admits that "background data exists for the reach of the Ouachita River into which Coffee Creek flows." Because actual background data are available, it would be arbitrary and capricious for ADEQ to use a value of "0 mg/l" – a value that ADEQ knows is incorrect.

Accordingly, ADEQ has not shown that its effluent limitations will adequately control or otherwise avoid causing or contributing to an excursion above any State water quality standard.

#### **IV. The Draft Permit Violates Federal Prohibitions on Using Receiving Waters for In-Stream Treatment.**

The Draft Permit is unlawful because it uses the receiving waters, Mossy Lake and Coffee Creek, as instream treatment for the facility's discharges. Federal regulations explain that technology-based treatment requirements are "the minimum level of control that must be imposed in a permit issued under section 402 of the Act." 40 C.F.R. § 125.3(a). "Technology-based treatment requirements cannot be satisfied through the use of 'non-treatment' techniques such as flow augmentation and in-stream mechanical aerators." *Id.* at § 125.3(f). In other words, ADEQ generally cannot issue a permit and depend on the initial receiving waters to function as treatment for the discharge that further downstream waters receive. Here, however, ADEQ states that "[t]he Mossy Lake/Coffee Creek System has been used as an integral part of the wastewater treatment system of the Georgia-Pacific manufacturing complex in Crossett, AR since the turn of the century." 1984 UAA, sect. I, pt. A; *see Sulkin Aff.* at ¶ 14. Indeed, "mechanical aerators were installed in 1968." *Id.* Such a technique may be allowed on a case by case basis, but only when:

- (1) The technology-based treatment requirements applicable to the discharge are not sufficient to achieve the standards;
- (2) The discharger agrees to waive any opportunity to request a variance under section 301 (c), (g) or (h) of the Act; *and*
- (3) The discharger demonstrates that such a technique is the preferred environmental and economic method to achieve the standards after consideration of alternatives such as advanced waste treatment, recycle and reuse, land disposal, changes in operating methods, and other available methods.

40 C.F.R. § 125.3(f) (emphasis added). Here, there is no indication that "technology-based treatment requirements" would not achieve the standards and no demonstration at all that using Coffee Creek and Mossy Lake for in-stream treatment of Georgia Pacific's waste "is the preferred environmental and economic method to achieve the standards." Moreover, the discharger has not "waive[d] any opportunity to request a variance." Accordingly, the Georgia-Pacific discharge cannot fall under any section 125.3(f) exception. Therefore, 40 C.F.R. § 125.3(f) prohibits Georgia Pacific's use of Coffee Creek and Mossy Lake as in-stream treatment for its discharges reaching the Ouachita River. Accordingly, the Draft Permit, which allows and implements this prohibited in-stream treatment use, is unlawful.

#### **V. The Draft Permit Violates Federal Antibacksliding Provisions.**

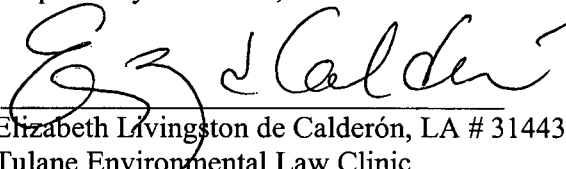
The Draft Permit is unlawful because it violates federal antibacksliding provisions. The Clean Water Act prohibits permit renewals that contain "effluent limitations which are less stringent than the comparable effluent limitations in the previous permit." CWA § 402(o)(1); 33 U.S.C. § 1342(o)(1); *see* 40 C.F.R. 122.44(l). The Draft Permit, however, violates this provision because it allows increased amounts of pollutants compared to the previous permit. *See, e.g.,*

Sulkin Aff. at ¶ 16 (noting backsliding for two pollutants, AOX and Dieldrin). For example, ADEQ states that “[t]he AOX limits at Outfall 001 have increased.” Draft Permit Fact Sheet, p. 3. Although ADEQ attributes these less stringent limits to “[a]n increase in production of unbleached pulp,” it does not show how such an increase conforms with any exception to the antibacksliding requirements under CWA § 402(o)(2) or 40 C.F.R. 122.44(l)(2)(i). *Id.* In another example, ADEQ allows Georgia-Pacific to discharge increased levels of Dieldrin compared to the previous permit. Accordingly, the Draft Permit violates federal antibacksliding requirements.

#### **V. The Draft Permit Does Not Protect the Environment and Public Health.**

The Draft Permit does not adequately protect the environment and public health. For example, the Draft Permit fails to use appropriate detection levels. *See* Sulkin Aff. at ¶ 13. Moreover, ADEQ adopts such inappropriate detection for carcinogenic pollutants, such as dioxin. *See id.* at ¶¶ 14(A), 14(B). ADEQ allows this misleading reporting parameter, despite an historic problem with dioxin contamination in the fish from the receiving waters. *See id.* at ¶ 15. Accordingly, ADEQ must revise the Draft Permit to better protect public health and the environment.

Respectfully submitted,



Elizabeth Livingston de Calderón, LA # 31443

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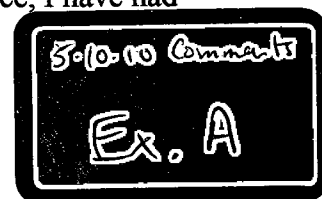
*Counsel for the Ouachita Riverkeeper*

**AFFIDAVIT OF BARRY W. SULKIN, M.S.**

BEFORE ME, the undersigned authority, personally came and appeared, Barry W. Sulkin, M.S., who, after being duly sworn, did depose and say:

**Qualifications**

1. My name is Barry W. Sulkin. I am an expert in the field of environmental science and water quality and in all aspects of discharge permits under the federal Clean Water Act's National Pollutant Discharge Elimination System and related state programs.
2. I am an environmental consultant and also Director of the Tennessee office of PEER (Public Employees for Environmental Responsibility), and am working on behalf of the commenting parties in this matter.
3. I received my Bachelor of Arts in Environmental Science in 1975 from the University of Virginia where I received a du Pont Scholarship. During my undergraduate years, I worked as a Lab Technician and Research Assistant at the University of Virginia and Memphis State University conducting water and soil/sediment analyses and sampling.
4. Following graduation from college in 1976, I joined the staff of what is now called the Tennessee Department of Environment and Conservation as a Water Quality Specialist. I worked in the Chattanooga, Knoxville, and Nashville field offices and the central office of what is now called the Division of Water Pollution Control in positions that included field inspector, enforcement coordinator, assistant field office manager, and assistant manager of the Enforcement Section. My duties included compliance inspections of water systems and wastewater systems under the NPDES permit program, enforcement coordination for the water pollution and drinking water programs, as well as work with the drinking water, dam safety, underground storage tank, and solid/hazardous waste programs. I also conducted investigations regarding fish kills, spills, and general complaints, including problems of stream alteration and pollution, as well as scientific/research investigations regarding water quality.
5. In 1984 I was promoted within the Division to Special Projects Assistant to the Director, and in 1985 I became State-wide manager of the Enforcement and Compliance Section for the Division of Water Pollution Control. In this capacity I was responsible for investigating and preparing enforcement cases, supervising the inspection programs, participating in developing NPDES permit, permit compliance monitoring, and field studies involving stream alterations and water quality impacts.
6. While in this position I received a joint State of Tennessee and Vanderbilt scholarship and took an educational leave to obtain my Masters of Science in Environmental Engineering in 1987 from Vanderbilt University. My thesis was "Harpeth River Below Franklin, Dissolved Oxygen Study," which was a field and laboratory study and computer analysis of stream water quality and impacts of pollutants from an NPDES permitted facility. I returned to my position as manager of the Enforcement and Compliance Section in 1987, where I remained until 1990.
7. Since 1990 I have engaged in a private consulting practice primarily specializing in water quality problems and solutions, regulatory assistance, permits, stream surveys, and various environmental investigations related to water. My work as a consultant has included projects related to federal Clean Water Act permits and related state programs. During my employment at the state agency, as well as in private practice since, I have had



extensive experience and training regarding all aspects of NPDES permits under the federal Clean Water Act and related state programs, including permits and pollution matters related to paper mills.

8. An accurate copy of my curriculum vitae is attached to and incorporated into this Statement.

9. I have reviewed and assessed the latest draft permit for Georgia Pacific's mill discharge from the mill in Crossett, AR, permit number AR0001210 (the "permit").

10. This Statement contains my expert opinions, which I hold to a reasonable degree of scientific certainty. My opinions are based on my application of professional judgment and expertise to sufficient facts or data, consisting specifically of a review of the regulations and documents related to the proposed permit at issue in this matter. These are facts and data typically and reasonably relied upon by experts in my field.

11. In my expert opinion the draft permit is not sufficient to protect the receiving water's actual uses as required by the Clean Water Act for the reasons described below.

### **Summary of Opinions**

12. The amount of BOD allowed by the permit is excessive and would cause pollution or contribute to existing pollution of the receiving waters. Based on the use attainability study by EPA, it has been shown that the waters support at least a limited existing use for fish and aquatic. Therefore the state standards inappropriately indicates that numeric criteria for parameters such as dissolved oxygen (DO) do not apply. The BOD allowed by the permit would critically suppress the limited DO in the streams and lakes receiving the waste flows. To be protective of healthy fish and aquatic life a minimum in-stream DO of about 5 mg/L would need to be maintained, requiring much lower water quality-based BOD permit limits. Typical treated municipal sewage has to meet a monthly average BOD5 limit of at most 30 mg/L and the limit in this permit allows a concentration of over twice that level. It thus seem that this also violates the federal secondary treatment requirement for the town of Crossett sewage that is a part of the discharge under this permit.

13. Information from maps, aerial photos, and the state's 1984 use attainability study suggest that at least a portion of the treatment works for the wastewater is in-stream treatment. Some of the channels, aeration units, and other wastewater conveyance and treatment units appear to be in what are or were once natural lakes and streams. This violates the Clean Water Act requirements to treat wastewater before discharging to waterways, and federal regulations that limit or prohibit in-stream treatment [see 40 CFR 125.3(f)].

14. The language in the permit is unclear as to the use of the term such as detection limits (or levels), permit limits, and minimum quantification (aka quantitation) levels ( or MQLs) – see permit Fact Sheet, pages 4 and 24-25, 27-28; permit Part I pages 4-6 and permit Part II pages 2 and 6 . As used by EPA in their recent report on the subject (see Report of the Federal Advisory Committee on Detection and Quantitation Approaches and Uses in Clean Water Act Programs, EPA December 2007; <http://www.epa.gov/waterscience/methods/det/>) a Detection Level (DL) is the lowest amount of a substance that can be determined to be present, which is lower than and different from a Quantitation Level (QL) which is the lowest amount of a substance that can be identified and reported at a given amount with an established level of accuracy. It appears that the permit may be using these concepts as the same or in reverse, and applying them in a way that would result in some




pollutants being reported as absent when they may be present, but perhaps not quantifiable at a given level of accuracy.

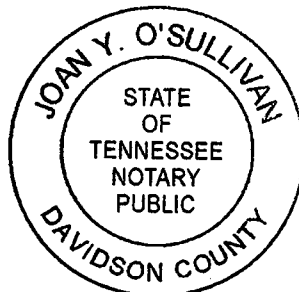
14. The permit limit for dioxin is a daily maximum of <10 pq/L with the "<" symbol indicating this to be a lab method level based on quantitation (not detection), and not a level based on in-stream protection. This level may be the QL of one method, but bioaccumulative dioxin can pose a danger to fish, and can at least be detected at lower levels by some methods (such as Method 1613B and high resolution SIM). The permit states on page 2 of Part II that dioxin (TCDD) testing is to be done with "EPA Method 1613 or latest", with "ML ( $\mu\text{g/L}$ )" of "0.00001 or lower", and that "(t)est results which are less than the respective MQL or DL may be reported as 'zero'". Aside from the problem of use of the ML, MQL and DL terms, this could allow detectable readings of dioxin to be reported as zero when some is actually shown to be present. Available information suggests that test methods exist that can detect lower levels than the stated "ML" of 0.00001  $\mu\text{g/L}$  (10 ppq), and that the levels for Method 1613 should actually be DL of 1.9 ppq and QL of 10 ppq. (see: [http://www.pacelabs.com/assets/documents/dioxins-furans-mdl/1613\\_water.pdf](http://www.pacelabs.com/assets/documents/dioxins-furans-mdl/1613_water.pdf))

15. Considering that the receiving waters have historically shown a problem with dioxin contamination in fish (see <http://www.epa.gov/region6/water/npdes/tmdl/latmdl/attachmentf.pdf>) the permit should require at least the reporting of the presence, if not the amount of dioxin at a lower level than in the draft permit. Similarly the permit limits and reporting levels for mercury need to be evaluated to assure they are at the lowest possible level for reporting of presence and amount, and with limits protective of the receiving waters. It also needs to be determined if any mercury can even be allowed considering the existing mercury contamination of the river and associated TMDL that may not have available allocations for this discharge.

16. The proposed permit allows an increase in the amount AOX from the previous permit limits of 2146 lb/day monthly average to 2193.04 lb/day and 3276 lb/day daily maximum to 3299.97 lb/day. The proposed permit also adds an allowance for Dieldrin, which was not in the previous permit. Such increases and additions would cause or contribute to pollution in the receiving waters and constitute backsliding in contradiction to EPA regulations prohibiting such.

  
BARRY SULKIN

SWORN TO AND ASCRIBED  
BEFORE ME, THIS 5 DAY  
OF may, 2010.



  
NOTARY PUBLIC

MY COMMISSION EXPIRES JULY 24, 2010

**BARRY SULKIN**  
ENVIRONMENTAL CONSULTANT  
4443 PECAN VALLEY ROAD  
NASHVILLE, TN 37218  
PHONE (615) 255-2079 FAX (615) 251-0111

## **CURRICULUM VITA**

Born: May 3, 1953, Memphis, TN

## **EDUCATION**

1987 M.S., **Vanderbilt University** - Nashville, Tennessee  
Major: Environmental Engineering

Master's Thesis: "HARPETH RIVER BELOW FRANKLIN DISSOLVED OXYGEN STUDY"- Field and lab study, QUAL2E computer modeling of river hydrology, water quality, and impacts of a sewage treatment plant.

1975 B.A., **University of Virginia** - Charlottesville, Virginia  
Major: Environmental Science

Additional undergraduate courses: math and engineering at University of Tennessee - Knoxville 1982-1984

## **HONORS**

**River Hero Award**, presented by River Network 2006

**Lifetime Achievement Award**, Tennessee Environmental Council, 1990

**Water Conservationist of the Year**, Tennessee Conservation League, 1989

**State of Tennessee/Vanderbilt University**  
**Environmental Engineering Graduate School Scholarship**, 1985 - 1987

**duPont Scholarship**, University of Virginia, 1971 - 1975

**Eagle Scout**, 1967

## **PROFESSIONAL EXPERIENCE - CURRENT**

Sept. 1990 - **Environmental Consultant**

Present Self-employed

Investigator, consultant, and scientist serving clients such as attorneys, environmental/citizen organizations, cities, individuals, businesses, media, and sub-contractor for other consultants/engineers. Activities include research projects, field studies/sampling, site evaluations, stream/wetland determinations, permit negotiations, information and file research, photography, and expert witness presentations concerning water quality, TMDL, erosion, landfills, NEPA, FERC, NRC, and other environmental issues; also TN Director of Public Employees for Environmental Responsibility (PEER).

Also employed by EPA as special expert to serve on Federal Advisory Committee for Detection and Quantitation and Uses in the Clean Water Act representing environmental groups (June 2005- Dec 2007).

## **PROFESSIONAL EXPERIENCE - PREVIOUS**

1987-June 1990  
and 1985      **Manager**  
Enforcement and Compliance Section  
Division of Water Pollution Control  
Tennessee Dept. of Health and Environment  
Nashville, Tennessee

Responsibilities: Statewide manager of enforcement investigations and legal referrals for water pollution programs under the federal Clean Water Act and the Tennessee Water Quality Act; witness for hearings before the Water Quality Control Board, and local and state courts; data processing and analysis for wastewater permit discharges; field research projects regarding water quality problems, as well as field work involving various stream, river, lake, and wetland issues.

1989              **Instructor**  
Graduate School of Engineering  
University of Tennessee, Knoxville

Responsibilities: Assistant instructor for graduate course in environmental engineering- wastewater treatment.

Sept.-Nov.1986  
and 1981      **Assistant Manager**  
Regional Field Office  
Division of Water Pollution Control  
Tennessee Dept. of Health and Environment  
Nashville, Tennessee

Responsibilities: Coordinated inspections, complaint investigations, field studies, and enforcement for wastewater programs in 41 county region.

Sept. 1985  
- Aug. 1986      Education leave to attend graduate school

1984-1985      **Special Projects Assistant**  
Director's Office - Elmo Lunn, Director  
Division of Water Pollution Control  
Tennessee Dept. of Health and Environment  
Nashville, Tennessee

Responsibilities: Provided statewide coordination and technical assistance on deep well waste injection regulations, clear-cutting forestry problem investigations, animal waste problems, public relations and media presentations, state planning and policy, enforcement and field office coordination.

1982-1984            **Enforcement Coordinator**  
Regional Field Office  
Division of Water Pollution Control  
Tennessee Dept. of Health and Environment  
Knoxville, Tennessee

Responsibilities: Coordinated enforcement action in municipal and industrial drinking water and wastewater programs in 24 county region, including fish kills, spills, complaint investigations, and stream studies.

1981-1982            **Assistant Manager**  
Enforcement Section  
Division of Water Pollution Control  
Tennessee Dept. of Health and Environment  
Nashville, Tennessee

Responsibilities: Coordinated statewide investigations and legal actions for drinking water, wastewater, and safe dam programs.

1977-1981            **Water Quality Specialist**  
Regional Field Office  
Division of Water Pollution Control  
Tennessee Department of Health and Environment  
Nashville, Tennessee

Responsibilities: Inspected drinking water, and municipal and industrial wastewater systems for 41 county area; investigated spills, underground storage tanks, fish kills, and citizen complaints; conducted stream studies; coordinated enforcement program.

1976-1977            **Water Quality Specialist**  
Regional Field Office  
Division of Water Pollution Control  
Tennessee Dept. of Health and Environment  
Chattanooga, Tennessee

Responsibilities: Inspected public drinking water systems for nine county area; investigated spills and citizen complaints.

1975                    **Research Assistant/Lab Technician**  
Department of Environmental Science  
University of Virginia  
Charlottesville, Virginia

Responsibilities: Analyzed soil and sediment from Chesapeake Bay and marsh/wetland sites for Corps of Engineers dredge spoils study.

1974                    **Research Assistant**  
Department of Environmental Science  
University of Virginia  
Charlottesville, Virginia

Responsibilities: Weather research project data processing.

1974                    **Research Assistant/Lab Technician**  
Department of Civil Engineering  
Water Quality Lab  
Memphis State University  
Memphis, Tennessee

Responsibilities: Field sampling and lab analyses of water for study of urbanization impacts of watershed streams.

#### **PROFESSIONAL/CIVIC ORGANIZATIONS, CERTIFICATIONS, & EXPERIENCE (Past & Present)**

*Certified Erosion Prevention and Sedimentation Control Professional (TN), Aug. 2004 & Oct. 2007*

Davidson County Grand Jury, Oct. - Dec. 1998, Nashville, TN

Nashville and Davidson County - Floodplain Review Committee, Oct. - Dec. 1998

National Environmental Health Association  
*Registered Environmental Health Specialist, 1994*

State of Tennessee - *Registered Professional Environmentalist, 1982*

American Society of Civil Engineers

Water Environment Federation

Tennessee Environmental Council  
*Board of Directors 1994 to present*

International Erosion Control Association

Tennessee Scenic Rivers Association

American Water Resources Association

## **ADDITIONAL TRAINING**

"Fundamentals of Erosion Prevention and Sediment Control" certification course by the University of Tennessee and the Tennessee Department of Environment and Conservation, August 26, 2004; Recertification October 9, 2007

"BASINS Training" short course of EPA supported computer mapping and water quality modeling techniques, Utah State Univ., Logan UT, August 6 - 10, 2001

"Wetland Mitigation Techniques" workshop by Tennessee Tech. Univ., Cookeville, TN April 26, 1999

"Pulp and Paper Cluster Rule and Clean Water Act Permits", by Clean Water Network with EPA, Seattle, Washington, February 18-19, 1998

"Bioengineering Techniques for Streambank and Lakeshore Erosion Control", by Wendy Goldsmith, International Erosion Control Association, April 27, 1995

"Fundamentals of Hydrogeology, Karst Hydrogeology, and the Monitoring, Containment, and Treatment of Contaminated Ground Water", by Albert Ogden and Gerald Cox, January 6-7, 1994

"Ground Water Hydrogeology and Dye Tracing in Karst Terrains", by James Quinlan, April 2, 1992

"NPDES Permit Writers Course" by the Environmental Protection Agency (EPA), April 1988

"Sediment Oxygen Demand Workshop", by EPA, U.S. Environmental Research Laboratory, Gulf Breeze, Florida, September, 1987

"Compliance Monitoring for NPDES Permits", by EPA, October, 1978

"Hazardous Materials Tactical Workshop", by Tennessee Civil Defense, April 1978

"Troubleshooting O & M Problems at Municipal Wastewater Treatment Facilities", by EPA, March, 1978

## **PRESENTATIONS/PUBLICATIONS**

May 2001 - May 2009

*River Rally*, annual national training conference held in: California, North Carolina, Washington, Virginia, Colorado, New Hampshire, Ohio, and Maryland; taught various seminars each year on: Clean Water Act, NPDES Permits, Anti-degradation, Stormwater, TMDLs, Enforcement, Wetlands & Mitigation; conference by River Network, Portland, OR

July 2005

*"The Clean Water Act Owner's Manual"*, second edition, contributing writer & editor, River Network, Portland, OR

December 2003

*"Stream Flow and the Clean Water Act"*, Atlanta, GA, with River Network, Portland, OR

February 2003 & December 2004

*"Clean Water Act - Train the Trainer"*, Denver, CO & Madison, WI, with River Network, Portland, OR

May 2002

*"Tracking TMDLs"*, contributing writer & editor, National Wildlife Federation, Montpelier, VT & River Network, Portland, OR

February 2002

*"A Protocol for Establishing Sediment TMDLs"*, contributing writer & editor, developed for the Georgia Conservancy & University of Georgia Institute of Ecology by the Sediment TMDL Technical Advisory Group, Athens, GA

March 2001

*"The Ripple Effect - How to Make Waves in the Turbulent World of Watershed Cleanup Plans"*, contributing writer & editor, Clean Water Network, Washington, D.C.

October 1999 - April 2001

*"Clean Water Act Workshop"*, presenter for three-day training conferences - Vermont, Georgia, Tennessee, Colorado, New Mexico, Ohio, and Alaska, with River Network, Portland, OR

October 2000

*"TMDL Workshop"*, presenter for training in San Diego, CA, with River Network, Portland, OR

April 1999

*"U.S. Environmental Laws & Regulations Compliance - Understanding Your Obligations Under the Clean Water Act"*, session on Clean Water Act for course sponsored by Government Institutes, Inc. of Rockville, MD, given in Nashville, TN

March 1999

*"NPDES and State Water Quality Permits"* and *"The TMDL Process"*, presentations at the Tenn. Clean Water Network conference; March 27, 1999, Bethany Hills Camp, Kingston Springs, TN

March 1999

*"State of the Rivers: Tennessee"* presentation at World Wildlife Fund *"State of the Rivers Conference"*, March 15, 1999, Chattanooga, TN, with co-author of Tenn. section of *"A Conservation Potential Assessment of the Mobile and Tennessee/Cumberland River Basins in Alabama, Georgia, and*

Tennessee" by WWF

December 1998

"*America's Animal Factories*", contributing writer & editor, National Resources Defense Council, Washington, D.C.

December 1998

"*The TMDL Process*", presentation with NRDC attorney at national Sierra Club state leaders conference, Santa Fe, New Mexico, December 11, 1998

October 1998

"*Clean Water Act Permits, Modeling, and TMDLs*" presentation at national conference of clean water organizations & attorneys, by Clean Water Network/NRDC, Oct. 16, 1998, Washington, DC

May 1998

"*Impacts of State Route 840 Upon the Human and Biophysical Environment*" NEPA, ISTEA, and Public Participation in Transportation Projects, Dept. of Environmental Geography guest lecture, Austin Peay State University, May 1, 1998, Clarksville, TN

March 1998

"*The State, EPA, Citizens - How the System Works*" Tennessee Clean Water Conference, Opening Plenary Presentation, March 28, 1998, Nashville, TN

March 1998

"*Total Maximum Daily Loads (TMDL) The Science, Process, & Controversy*" American Water Resources Association 1988 Tennessee Conference; paper presentation as part of panel with EPA representatives on TMDLs, March 3, 1998, Nashville, TN.

February 1997

International Erosion Control Association, on panel of speakers for session on practical applications of erosion controls at annual IECA national conference, Nashville, TN

October 1994

"*Stream Ecology, BMPs, and Compliance*", environmental impacts of road building, Sierra Club Southern Appalachian Highlands Ecosystem Taskforce, Transportation Workshop, Banner Elk, NC

June 1994

"*Fundamentals of Tennessee Environmental Law*", presentation on Water Pollution Control and Compliance Strategies, for course sponsored by Government Institutes, Inc. of Rockville, MD, given in Knoxville, TN

June 1994

University of Tennessee Law School, guest lecture on Water Pollution and the related state and federal laws, Knoxville, TN

October 1992

"*Storm Water Regulations for Saw Mills*" - Seminar sponsored by the Tennessee Association of Forestry and the Univ. of TN, Nashville.



August 1992

"*Storm Water Regulations for Industry*" - Seminars sponsored by the Tennessee Association of Business and the Univ. of TN, Chattanooga, Knoxville, Jackson, and Nashville.

July 1992

Storm Water in Tennessee - A Training Manual for Manufacturers, University of Tennessee Center for Industrial Services

April 1992

"*Dissolved Oxygen Study - Sewage Treatment Impacts and Assessments*", VA Water Pollution Control Assoc. 46th Annual Conference, Roanoke, VA

October 1990

"*The Tainted Waters of the Cumberland*"; Cumberland Journal, v.1, no. 1, pp. 16-20; Nashville, Tennessee.

November 1988

"*A Rapid Bioassessment of Richland Creek, Davidson County*", by M. Browning, B. Sulkin, T. Merritt, TN Div. of Water Pollution Control

June 1988

"*Assimilative Capacity of the Obed River at Crossville, Tennessee*"; U.S. Geological Survey 1st Annual Hydrology Symposium, Nashville, TN

March 1987 - 1994

Vanderbilt University Graduate School of Engineering and Law School; guest lectures on water quality topics and computer modeling of river waste assimilative capacity.

July 1983

Testimony on the pollution at the Oak Ridge nuclear weapons facilities before Congressional hearing chaired by then Congressman Albert Gore.

**Witkowski, Jill M**

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**From:** Dipasquale, Dante M  
**Sent:** Friday, March 27, 2009 1:22 PM  
**To:** Witkowski, Jill M  
**Subject:** FW: 1984 Coffee Creek UAA

see below.

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**From:** Ewing, Jamie [mailto:EWING@adeq.state.ar.us]  
**Sent:** Fri 3/27/2009 1:08 PM  
**To:** Dipasquale, Dante M  
**Cc:** Barnett, Mary  
**Subject:** 1984 Coffee Creek UAA

Mr. Dipasquale,

I'm attorney with the ADEQ and your request for this document was referred to me by Mary Barnett with the Water Division. You had requested a complete copy of the above-reference UAA. Unfortunately, somewhere along the line, the copy of the UAA that we have has become incomplete. The Water Division has search through all of their files, files we have in storage, and files that have been scanned into our document storage system and we just cannot find the rest of the UAA. That document was produced 25 years ago and the Water Division has seen many staff changes and physical location moves in that time and, regrettably, these sections of the UAA have gone missing. We regret that we cannot produce those sections to you and know that you consider them very important and I can assure you that we would not withhold those documents, if they were available.

Please contact me at the email or phone number below if you have any questions. I'll be glad to help.

Thank you and, again, I apologize that the documents you seek are no longer available.

Sincerely,  
Jamie Ewing

Jamie L. Ewing, J.D., LL.M.  
Staff Attorney  
Arkansas Department of Environmental Quality

\*\*\*PLEASE NOTE OUR NEW ADDRESS\*\*\*  
5301 Northshore Drive  
North Little Rock, AR 72118

Direct Line: (501) 682-0918  
Fax: (501) 682-0891  
email: [ewing@adeq.state.ar.us](mailto:ewing@adeq.state.ar.us)  
Web: [www.adeq.state.ar.us](http://www.adeq.state.ar.us)



# USE ATTAINABILITY ANALYSIS AND WATER QUALITY ASSESSMENT OF COFFEE CREEK, MOSSY LAKE, AND THE OUACHITA RIVER



*Prepared for:*

**USEPA Region 6  
1445 Ross Avenue, Suite 1200  
Dallas, TX 75202**

*Prepared by:*

**PARSONS**

**Austin, TX**

*and the*

**University of Arkansas  
Ecological Engineering Group  
Fayetteville, AR**

**December 2007 (version 1.1)**

5-10-10 Comments

E\* C.

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**USE ATTAINABILITY ANALYSIS AND WATER QUALITY  
ASSESSMENT OF COFFEE CREEK, MOSSY LAKE,  
AND THE OUACHITA RIVER**

**Contract 68-C-02-111, Task Order 0011**

*Funded by:*

**USEPA Region 6  
1445 Ross Avenue, Suite 1200  
Dallas, TX 75202**

*Prepared by:*

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Austin, TX 78754**

*and the*

**University of Arkansas  
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Fayetteville, AR 72701**

**December 2007**

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## EXECUTIVE SUMMARY

The purpose of this investigation was to perform a water quality assessment of the Ouachita River, which is the receiving water of the Georgia-Pacific (GP) Crossett paper mill discharge, and to determine if the current "no aquatic life use designation" for Coffee Creek and Mossy Lake is appropriate. The area of the Ouachita River for this study is located in southern Arkansas below the Felsenthal Lock and Dam and upstream of the Louisiana state line. The study area consists of Coffee Creek, Mossy Lake, and a portion of the Ouachita River, a short distance upstream and downstream of the confluence with Coffee Creek.

This study performed an analysis of water samples, sediment samples, aquatic species, and aquatic habitat. The study area contains six sampling stations:

- a Reference Site that is a tributary of Coffee Creek,
- Coffee Creek downstream of the confluence with Georgia-Pacific's (GP) manmade effluent ditch and the Reference Site tributary,
- Mossy Lake,
- Coffee Creek downstream of Mossy Lake,
- Ouachita River upstream of the Coffee Creek below Mossy Lake confluence, and
- Ouachita River downstream of Coffee Creek below Mossy Lake.

Three biological and habitat assessments were also performed at Coffee Creek downstream of Mossy Lake. No water or sediment samples were collected within Coffee Creek below Mossy Lake. No biological or habitat assessments were performed within the Ouachita River.

There were three series of biota assessments (habitat, fish, and macroinvertebrates) starting in June 2005, one in February 2006 and ending in June 2006. The June 2005 biological and habitat assessment was supplemented with biological and habitat data at other stations in August 2005. The study included five water sampling events that occurred in August, October, and December 2005 and May and June 2006. Two sediment sampling events occurred and coincided with the August 2005 and May 2006 water sampling events. Flooding by the seasonal monsoon prevented sampling from February through April 2006.

The water and sediment samples were analyzed for a comprehensive list of potential pollutants. These included general field measurements such as dissolved oxygen and pH, conventional pollutants such as ammonia-nitrogen and sulfate, toxic metals, semi-volatile organic compounds, and pesticides. Additionally, sensitive aquatic species were exposed to the water samples and elutriate water from sediment samples to determine toxicity.

Coffee Creek and Mossy Lake have been exempt from Arkansas' Regulation 2, Chapter 5 specific standards and color since 1984 due to the "no aquatic life use" designation. Therefore, the laboratory analysis results were compared to the generic Gulf Coast Ecoregion (GCER) surface water quality standards (SWQS) for these water bodies.

Applicable Arkansas SWQSS were compared to the laboratory analysis results for samples collected from the Ouachita River.

### **Conclusions**

The purpose of this investigation was to determine if the current "no aquatic life use designation" for Coffee Creek and Mossy Lake is appropriate. From the biological data collected it is apparent there is a diverse and abundant, though seasonal, aquatic community in the Reference Site stream. The fish and macroinvertebrate samples from the Reference Site are indicative of an aquatic community that is seasonally variable and tied to flood flows from the Ouachita River. Coffee Creek had very few fish and was dominated by a highly pollution-tolerant macroinvertebrate community. The same was true for the Mossy Lake biological community with the exception of a slightly more diverse macroinvertebrate assemblage. The Coffee Creek site below Mossy Lake had higher numbers of large predatory fish, due to the proximity of the Ouachita River, but otherwise exhibited an aquatic community much like the other effluent-dominated sites.

Aside from the fish and macroinvertebrate communities using Coffee Creek and Mossy Lake, other wildlife live in or frequently contact the GP effluent. Muskrat, beaver, nutria, turtles, and ducks are known to use Coffee Creek and Mossy Lake, sometimes in very large numbers. Other animals, including deer, turkeys, raccoons, and other large mammals are likely to come into contact with the GP effluent on a frequent basis.

The waters of Coffee Creek and Mossy Lake have the potential to support aquatic life indicative of streams in the ecoregion. They also show evidence of degradation from the effluent of the Georgia Pacific Outfall 001. There were exceedances of several numeric GCER standards in these water bodies, and signs of ecological impairment, including loss of habitat and toxicity to aquatic organisms from both the water column and sediment.

The water quality of all the sites showed deviations from the applied standards, including the Reference Site.

### **Reference Site**

The Reference Site stream does not meet the GCER standards for DO, mercury, and water and sediment toxicity. The deviations from the GCER standards at the Reference Site may have been caused by local pollution, such as the dumping of trash at the road crossings, non-point source pollution, and possibly by natural processes associated with seasonally low flow systems.

### **Coffee Creek, Mossy Lake, and Coffee Creek below Mossy Lake**

The water quality observed in Coffee Creek, Mossy Lake, and Coffee Creek below Mossy Lake was not of high enough quality to support a viable and diverse aquatic community year-round. However, an aquatic life use is potentially attainable in Coffee Creek and Mossy Lake downstream of the Georgia Pacific discharge based upon the habitat and reference site data collected during the study. Without the GP discharge, Coffee Creek and Mossy Lake may be able to sustain a diverse aquatic community during

and after inundation by the Ouachita River and a limited aquatic community during the annual dry seasons. Coffee Creek below Mossy Lake is likely to sustain a viable and diverse aquatic community within the back waters of the Ouachita River

### **Ouachita River**

The sample reach of the Ouachita River where Coffee Creek converges is maintained as a barge canal. The field crew noted dredging occurring upstream of the sampling sites during Event 4. Sediment samples from each station for that event were toxic to sensitive species in the laboratory. Turbidity also exceeded the SWQS for this event.

Two out of five water samples taken from the upstream site exhibited toxicity. Both sediment samples from this site were toxic. Water from the downstream station exhibited toxicity in the laboratory for two out of five sampling events. Again, both sediment samples were toxic.

### **Recommendation**

Part 3 (Streams) of designated use F (Fisheries) on page 3-2 of Arkansas Regulation 2 states: Water which is suitable for the protection and propagation of fish or other forms of aquatic life adapted to flowing water systems whether or not the flow is perennial. The presence of indicator species [Reg 2.302(F)(3)(e)] within the Reference Site, and occasionally within the sites downstream of the outfall, supports an aquatic life use designation for Coffee Creek and Mossy Lake. Data collected in this survey indicate that the aquatic life in the Mossy Lake and Coffee Creek systems is impaired. The source of that impairment is likely the outfall from the Georgia Pacific facility in Crossett, AR.

Please note that our recommendation that Coffee Creek and Mossy Lake support an aquatic life use designation is based upon the physical, chemical, or biological sampling results presented in this report. As described in EPA's *Technical Support Manual: Waterbody Survey and Assessments for Conducting Use Attainability Analyses* (1983), the assessment of potential (*i.e.*, attainable) uses may require additional study beyond these physical, chemical, or biological sampling results.

## SECTION 3 RESULTS AND DISCUSSION

### 3.1 USE ATTAINABILITY ANALYSIS RESULTS

The field data sheets for the macroinvertebrate and fish collection are located in Appendices I and J, respectively.

#### Reference Site

##### A. Fish Data

The first event for fish at the Reference Site occurred on June 21, 2005 and produced the most number and highest diversity of any site for the entire sampling period. Fish were collected using a backpack electro-shocker by Layher Biologics field crew. Fish were field identified and released on site. The field data sheets, located in Appendix J, provide species name, total length, and weight. For the three sampling events, there were a limited number of fish caught, identified and measured for length and weight. Although it is considered a deviation from the QAPP, the field biologist often made a judgment decision to not record the associated length and/or weight during sampling events with limited fish collection. In some cases, only the fish species was recorded and neither the weight nor length was recorded. The recorded fish measurements are provided in Appendix J on the field data sheets.

There were 301 total fish from 15 different species. The majority of fish, 202, were mosquito fish (Figure 3.1). The other species with high numbers were grass pickerel, 25, Mississippi silvery minnow, 16, bantam sunfish, 14, and golden topminnow, 13. There were two key species (grass pickerel and longear sunfish) and two indicator species (pirate perch and banded pygmy sunfish) collected. There was also a species of concern, the bluehead shiner (*Pteronotropis hubbsi*), four of which were captured (AGFC, personal correspondence). The bluehead shiner is of concern because it occurs in the Ouachita and Red River basins in Arkansas, and has been listed as imperiled in Louisiana and other states. The bluehead shiner is thought to spawn in the sloughs and oxbows of the Ouachita River and to use the main channel of the river for migratory movement.



## **SECTION 4 CONCLUSIONS**

### **4.1 USE ATTAINABILITY ANALYSIS**

The purpose of this investigation was to determine if the current "no aquatic life use designation" for Coffee Creek and Mossy Lake is appropriate. From the biological data collected it is apparent there is a diverse and abundant, though seasonal, aquatic community in the Reference Site stream. The fish and macroinvertebrate samples from the Reference Site are indicative of an aquatic community that is seasonally variable and tied to flood flows from the Ouachita River. Coffee Creek had very few fish and was dominated by a highly pollution-tolerant macroinvertebrate community. The same was true for the Mossy Lake biological community with the exception of a slightly more diverse macroinvertebrate assemblage. The Coffee Creek site below Mossy Lake had higher numbers of large predatory fish, due to the proximity of the Ouachita River, but otherwise exhibited an aquatic community much like the other effluent-dominated sites.

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### **4.2 WATER QUALITY ASSESSMENT**

The water quality of all the sites showed deviations from the applied standards, including the Reference Site.

#### **Reference Site**

The Reference Site stream does not meet the GCER standards for DO, mercury, and water and sediment toxicity. The deviations from the GCER standards at the Reference Site may have been caused by local pollution, such as the dumping of trash at the road crossings, non-point source pollution, and possibly by natural processes associated with seasonally low flow systems.

#### **Coffee Creek, Mossy Lake, and Coffee Creek below Mossy Lake**

The water quality observed in Coffee Creek, Mossy Lake, and Coffee Creek below Mossy Lake was not of high enough quality to support a viable and diverse aquatic community year-round. However, an aquatic life use is potentially attainable in Coffee



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